Line Series Canalis KTC 1000 - 6300 A

E

3

2

Catalogue 2022 Busbar trunking systems Copper

se.com

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Life Is On Schneider

# Green Premium<sup>™</sup>

## An industry leading portfolio of offers delivering sustainable value



More than 75% of our product sales offer superior transparency on the material content, regulatory information and environmental impact of our products:

- RoHS compliance
- REACh substance information
- Industry leading # of PEP's\*
- Circularity instructions



Discover what we mean by green **Check your products!** 

The Green Premium program stands for our commitment to deliver customer valued sustainable performance. It has been upgraded with recognized environmental claims and extended to cover all offers including Products, Services and Solutions.

#### CO<sub>2</sub> and P&L impact through... Resource Performance

Green Premium brings improved resource efficiency throughout an asset's lifecycle. This includes efficient use of energy and natural resources, along with the minimization of  $CO_2$  emissions.

#### Cost of ownership optimization through... Circular Performance

We're helping our customers optimize the total cost of ownership of their assets. To do this, we provide IoT-enabled solutions, as well as upgrade, repair, retrofit, and remanufacture services.

#### Peace of mind through... Well-being Performance

Green Premium products are RoHS and REACh compliant. We're going beyond regulatory compliance with step-by-step substitution of certain materials and substances from our products.

#### Improved sales through... Differentiation

Green Premium delivers strong value propositions through third-party labels and services. By collaborating with third-party organizations we can support our customers in meeting their sustainability goals such as green building certifications.

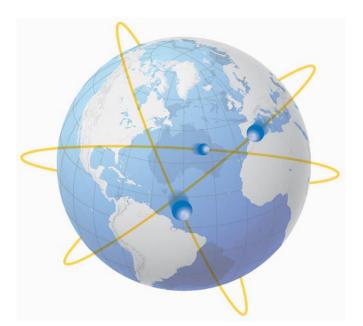
## General content Canalis KTC

Introduction	3
Presentation and description	23
Catalogue numbers and dimensions	49
Design guide	149
Installation guide	191
Recommendations	251
Index	256

<sup>58950-90</sup>

### Introduction

## Canalis the ideal offer to match with your needs



## +70,000

More than 70,000 km of Canalis busbar trunking has been sold around the world.

## A total coordination with the Schneider Electric system

- Canalis is part of a comprehensive offering of Schneider Electric products designed to operate together.
- It guarantees and enhances the safety of people and equipment, and provides installation continuity of service, upgradeability and simplicity.
- This concept covers all low voltage electrical distribution components.
- The result is an optimised electrical installation with even higher performance through full electrical, mechanical and communication compatibility.
- It is perfectly suited to traditional applications (factories, warehouses, etc.)and to the distribution of electrical power from the incoming transformer on through to all types of loads in offices, commercial premises, laboratories, etc.

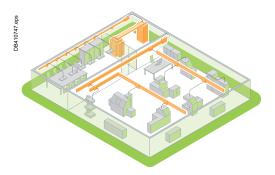


## Canalis KT provides you ...

- ... more flexibility.
- ... ease of connection with the "plug and play" transformer and switchboard connections.
- ... more assistance with our teams ready to assist you throughout your project.

## Introduction A Canalis installation for every distribution system

Schneider Electric offers different distribution systems to fit all your operating needs.



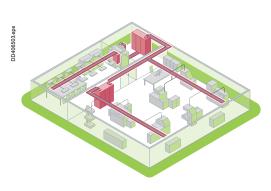
#### Decentralized distribution

### For manufacturing industries

- Mechanical
- Textiles
- Lumber
- Injection moulding
- Electronics
- Pharmaceuticals
- Livestock, etc.

### Decentralized distribution lets you

- Design installations without layout details
- Upgrade without shutting
   down production
- Get systems up and running sooner thanks to faster installation
- Generate savings depending on the number of loads.



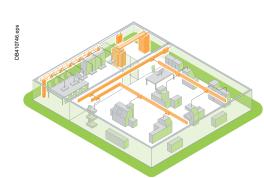
#### Centralized distribution

## For all continuous processes • Cement plants

- Oil and gas
- Petrochemicals
- Steel
- Paper, etc.

### Centralized distribution offers

- Continuity of service
- Combined distribution of power, control and monitoring circuits
- Supervision, etc.



#### Combined distribution

Where the advantages of both centralized and decentralized distribution are required.

### Commercial and service buildings

- pullain
- Offices
- Stores
- Hospitals
- Exhibition halls, etc.

#### Infrastructures

- Airports
- Telecommunications
- Internet data centres
- Tunnels, etc.

#### Industrial facilities

- Pharmaceuticals
- Food processing, etc.

## The Canalis decentralized distribution concept

## Electrical power available at all points within the installation

#### Total coordination of the Schneider Electric system provides maximum safety of life and property, continuity of service, upgradeability and ease of installation.

Total coordination is made easy by the tables in the "Design Guide". They help you choose the right combination of circuit breakers and busbar trunking. Product characteristics are verified by calculations and tests carried out in our laboratories.

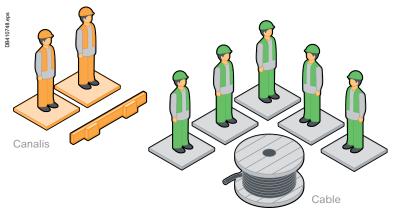


#### A competitive installation

Simplicity, upgradeability, safety and continuity of service and operation.

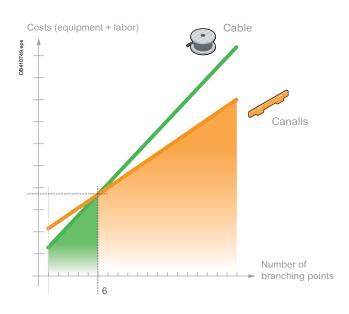
**Savings start as soon as the installation begins.** With tap-off points every 3 metres, Canalis busbar trunking reduces installation costs. Given the low cost of adding new circuits, savings increase as the number of loads

increase, a natural consequence of the growth of your business.



#### Comparative investment

of 400 A electric power system equipment.

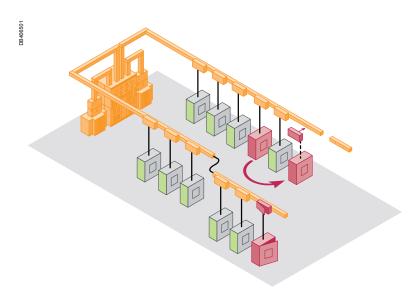


## Introduction The Canalis decentralized distribution concept

#### Upgradeable during operation

In decentralized distribution, evolving operating requirements and costs are integrated right from the start.

- The addition, relocation or replacement of load equipment can be carried out quickly, without de-energizing the supply trunking or shutting down operation.
- The cost of making such changes is greatly reduced:
- loads are located close to supply points
- tap-off points are always available
- tap-units can be reused or new ones added quickly for load.



#### Reusable in the event of major changes

When making major modifications to your installation, the existing trunking can be easily dismantled and reused.

# Introduction Product lifecycle

### Power distribution is a major challenge in the construction and refurbishment of commercial, industrial buildings and data centers.

The choice of device is fundamental as it will have an effect on the building's lifecycle. Infrastructures must comply with existing requirements while being flexible, networked and smart. The Canalis concept is undoubtedly the best solution to meet the needs of today and the challenges of tomorrow.

#### Simple to estimate

**Designing Canalis installations is straightforward** as there is no need to know the exact location, nor the power rating of the loads to be supplied.

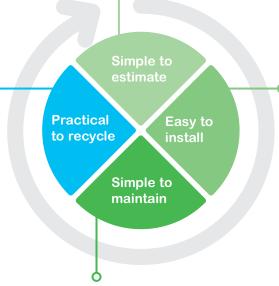
It is therefore very quick to cost the distribution functions. Moreover, Canalis's flexibility means you can invest in existing needs without adversely affecting future expansion.

#### Practical to recycle

Over the last 20 years, recycling has become a major challenge for industry.

The composition of Canalis ranges guarantees a 95% recycling rate.

But the Canalis offers go one better... if a site is being restructured or enlarged, the products can simply be removed and reinstalled in their new environment.



### Simple to maintain

- No maintenance is required on the Canalis electrical contacts.
- The clarity of the Canalis architecture simplifies building maintenance and upgrades:
- > enlarging office space,

> adding check-outs in a supermarket...

**Decentralized distribution ensures continuity of service;** when associated with a 100% maintained or non-maintained supply, the essential functions are guaranteed:

- > maintaining the cold chain in a hypermarket,
- > lighting system in a car park...

#### Easy to install

## The compact nature of Canalis makes it easy to integrate in all parts of the building.

Since it is based on a decentralized architecture, Canalis can be installed at the same time as the building is being built, which optimizes site construction schedules. Because of the delayed differentiation

linked to the Canalis architecture, new constraints can be taken into account without adding to the installation time.

#### Controlling costs

The Canalis ranges are factory-tested, which ensures a very high level of quality on site and considerably improves the success of site acceptance tests.

## Introduction Canalis, in total harmony with the environment

## Safety of life and property



#### With Canalis, no toxic emission in case of fire

The busbar trunking has a low combustible load.Its construction uses very little consumable material and is halogen free. In the event of a fire, the busbar trunking does not emit any gas or toxic smoke.

The busbar trunking helps prevent the propagation of a fire through partition walls and floors.

#### Halogen-sensitive applications

• Public buildings (infrastructures, hospitals, schools, etc.).

- Buildings with evacuation difficulties (high-rises, ships, etc.)
- and service-activity buildings.Sensitive processes (production of electronic components, etc.).

#### Canalis contains no PVCs

When PVCs burn, they produce large amounts of smoke that can be a serious safety hazard.

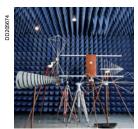
- Reduced visibility:
- > risk of panic
- > complicates rescue work.
- Smoke toxicity:
- > hydrogen chloride gas (highly toxic)
- > carbon monoxide (danger of
- asphyxiation).

#### Example:

Consequences of a fire in a 100 m<sup>2</sup> office with electrical distribution by cables. 200 kg of cables (i.e. 20 kg of PVC) produces:

- 4400 m<sup>3</sup> of smoke.
- 7.5 m<sup>3</sup> of hydrochloric acid.
- 3.7 kg of corroded steel.

#### Health



## Canalis reduces the risk of exposure to electromagnetic fields

According to the WHO (World Health Organisation), exposure to electromagnetic fields can be a health hazard starting at levels as low as 0.2 micro-Teslas and could represent a longterm risk of cancer. Some countries have created standards that stipulate limits (e.g.  $0.2 \ \mu T$  at 1 metre in Sweden).

All electrical conductors generate magnetic fields proportional to the distance between them. The design of Canalis busbar trunking with tightly spaced conductors in a metal enclosure helps to considerably reduce radiated electromagnetic fields.

The electromagnetic field characteristics of Canalis busbar trunking are welldefined and measurements show that they are far below potentially dangerous levels.

You will find the magnetic induction values of our products on the "Characteristics" pages.

Introduction

## Canalis, in total harmony with the environment

## Environment



### Canalis is fully recyclable

- Canalis busbar trunking can be reused. Canalis busbar trunking is designed for a long service life and can easily be dismantled, cleaned and reused.
- All packaging materials can be recycled (cardboard or recyclable polyethylene film).
- All Canalis products are designed for safe end-of-life recycling. PVC, on the other hand, requires neutralisation of the hydrochloric acid produced using lime and generates dioxins that are extremely toxic.

#### Example:

1 kg of PVC generates 1 kg of waste.



## Canalis helps conserve natural resources

The depletion of raw materials (copper, plastics, etc.) is one of our ongoing concerns. For this reason, we have optimised the used of all materials used to make our busbar trunking.

- Reduction of dangerous or polluting materials. We design our products to meet future European directives.
- Reduction in the weight of insulating materials.
- Reduction in the use of plastics for improved fire performance: less energy released during combustion, thereby limiting propagation and facilitating extinction (lower calorific value).

### Conservation of natural resources

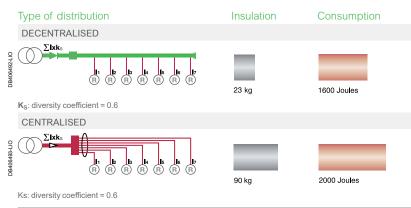


### Canalis reduces your line losses by 20 % Canalis divides your consumption of plastic by a factor of four

The cost of an electrical installation includes the initial investment for the equipment and its installation, the cost of maintenance and the cost of energy losses during operation. The concept of decentralised distribution is a way to merge all the circuits in one and thus to reduce to the maximum the low cross-section lengths and the weight of insulating materials.

#### Example:

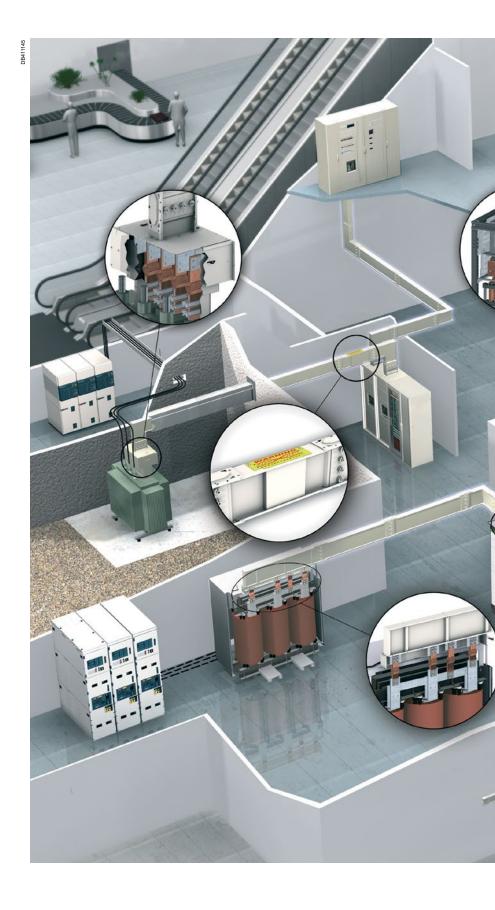
34 m of Canalis KS 250 A trunking equipped with fourteen 4-pole 25 A feeders.

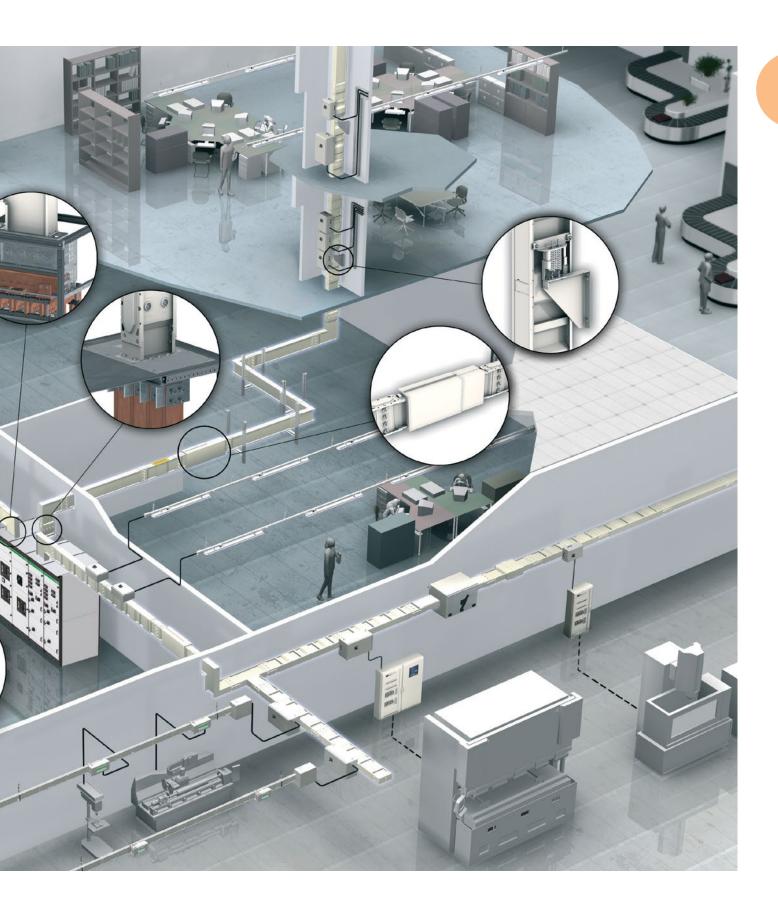


## Introduction Canalis®

## From the transport to the distribution...

Canalis is the core of your installation





## Introduction Canalis KT, a display of advantages

## A compact solution



- The compact size of Canalis KT means it takes up very little space in the building:
- > used as a rising main, it takes up only a minimum of space
- > used for horizontal distribution, it fits easily into the building's structure (false floors, false ceilings, service shafts, etc).
- Changes in direction have been designed to optimise the space taken up, contrary to an equivalent installation using cables which requires large bending radii.
- Tap-off units, complete with protective devices, are fitted along the entire length of the busbar trunking thus reducing the floor area taken up by the electrical distribution switchboards.

## A simple and economical system



- The design study is easy to perform as it does not require a detailed layout of each load. Equipment choice is predetermined and optimised.
- Installing the busbar trunking requires
   2 or 3 people only, for a time equivalent to that for installing cableways. The time normally needed for laying cables is therefore saved.
- Connection to the MV/LV substation is made using a quick fitting joint block. The tap-off units can be prepared in the workshop thus reducing on-site time. Their connection to the busbar trunking is done in a single plugging-on operation.
- Installing busbar trunking lengths can be done as and when building work progresses, thus optimising on-site work and allowing possible unexpected events to be anticipated in advance.
- It is also important to note that busbar trunking is a factory tested solution, meaning the time needed for inspecting connections is reduced (visual inspection of tightening torque).

## Operating continuity

When working on the electrical installation, the busbar trunking provides immediate readability of the electrical circuit thus allowing the appropriate zone to be quickly identified.

Tap-off units can be plugged-on and off without the need for a shutdown; service continuity is thus irreproachable.

## Introduction Canalis KT, a display of advantages

## Certified installation



- Busbar trunking temperature rise and short-circuit withstand are known and independent of the installation.
   Coordination of the Schneider Electric system results in complete control of the electrical network.
- Installation standards UTE C 15-105 chapter B.6.2 and IEC 60364 chapter 5.523.6 stipulate that above 4 parallel cables, it is preferable to use busbar trunking. Paralleling many cables leads to uneven distribution of currents and the risk of abnormal temperature rise.
- Seismic certification to IEC 60980, Richter scale >7 and MSK 64 severity 9.

- The busbar trunking and tap-off units are designed to guarantee the safety of personnel and equipment:
- >plug-on connections to silver-plated copper bars
- > bolted connections with tightening torque guaranteed by torque nuts
- > foolproof system to avoid the risk of assembly errors
- > IP55 certified splash and dust protection
- > sprinkler resistance test in compliance with Volkswagen specifications (valid only for top-mounted units)
- > access to live parts have IPxxD protection (1 mm wire diameter).

Its metal enclosure and high protection degree protect the busbar trunking from all external aggressions (corrosion, rodents, etc).

## A large range of tap-off units

#### Canalis KS tap-off units are fully compatible with Canalis KT:

- They cover all your requirements:
- > Canalis KS tap-off units: 63 to 630 A
- > Canalis KT tap-off units: 400 to 1250 A.
- They offer circuit breaker or fuse protection.

This offer includes tap-off units that can be fitted with the Transparent Ready system:

- They monitor your installation to avoid overloads, thus ensuring service continuity
- They provide metering to allow accurate management of your electrical distribution network (allocation of costs to each consumer).



## Introduction Canalis is adapted for all types of buildings

## Key points

## Office and hospital buildings

- Fire barrier
- Halogen free
- Small size
- Operating continuity

#### Shopping centres, airports and exhibition centres

- Halogen free
- Distribution and metering
- Able to be evolved
- Sprinklers

## Car industry and industrial buildings

- Operating continuity
- Able to be evolved
- Low voltage dropsNetwork readability

#### Internet Data Centers

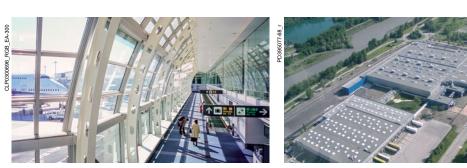
- Operating continuity
- High tap-off density
- Able to be evolved
- Network compactness and readability











## Introduction Canalis<sup>®</sup> Solutions

## Solution for Data Center

- iBusway for Data Center catalogue: DEBU028EN
- iBusway for Data Center brochure: **DEBU027EN**

Solution for lighting management

• Brochure iBusway for lighting management:

• Catalogue iBusway for lighting management:

• iBusway for lighting management: Canalis DALI technical installation guide

DEBU032EN

DEBU035EN

DESWED112002EN



Low voltage distribut Catalogue | 2016

iBusway for

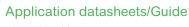


iBusway for Lighting

anagement







- In cruise ships:
   DESWED105014EN
- In livestock production buildings: DESWED105010EN
- In logistic centers:
   DESWED105011EN
- In car parks:
   DESWED108011EN
- In greenhouses:
   DESWED105013EN
- In garages:
   DESWED106004EN
- In hypermarkets:
   KD0C98CTAHYEN
- In automotive industry:
   KD0C98CTAAUEN



Schneider



## Introduction Canalis, the reference all around the world

### Tertiary

Applications	Name	Lighting current	and low	Medium	current	High current	Country
		KBA	KBB	KN	KS	кт	
Offices							
	Air France (headquarters)				•		France
70-Hot Lind	Allianz				•	•	Germany
F	Аха	•			•		France
	Chamber of Commerce					•	Luxembourg
	Commerz Bank		•		•		Germany
A Prover Le Ma	Lexel			•	•		Sweden
	Telefónica					•	Spain
	Trade Center	•				•	Spain
	Tour du RDC				•	•	Tunisia
	Turning Torso				•		Sweden
	Vodafone			•			New Zealand
Internet Data Cente	r						
	Banco Commercial Português				•	•	Portugal
	Colt			•		•	France
	Digiplex			•	•		Sweden
	IBM	•		•	•	•	Spain, Italy
	MCI-Worldcom	•		•	•		Italy, United Kingdor

#### Hotels and restaurants



S				
Hyatt			•	Tunisia
Mc Donald's				France
Soldeo Andorra Hotel		•	•	Spain

#### Hospitals



Children Clinic			•	•	Sweden
Brussels University Hospital					Belgium
Derby Hospital			•		United Kingdom
Oran Hospital		•		•	Algeria
St Joseph Hospital			•		France
Stockholm Hospital			•		Sweden
Val de Grâce Hospital			•		France
Michalon Hospital			•	•	France
Manussia Hospital			•		Egypt

#### Supermarkets and hypermarkets



permarkets						
Alcampo	•		•		•	Spain
Auchan	•	•	•	•	•	World
B&Q		•	•	•		United Kingdom
Carrefour	•	•	•	•	•	World
Соор	•		•	•		Italy
Fnac	•				•	Spain, France
Ikea	•		•	•	•	China, Spain, France, Sweden
Mark & Spencer	•					Belgium, Spain, United Kingdom
Toys'R Us				•		Spain

# Introduction Canalis, the reference all around the world

### Industry

Car industry	BMW	Current KBA	KBB	KN	KS	Current KT	
Car industry							
Car industry							
		•	•	•	•		Italy
	Citroën	•	•	•	•	•	China, Spain, Franc
	Daewo				•		South Korea
	Dacia	•	•	•	•	•	Romania
	lveco	•		•	•	•	Spain, Italy
	Peugeot		•	•	•	•	China, Spain, Franc
	Nissan	•	•	•	•	•	Spain
A10	Renault	•	•	•	•	•	Spain, France, Czech Republic
	Seat			_			Spain
	Valéo	•			•	•	China, France, Italy Poland
	Volkswagen		•	•	•		Spain, Germany
Other industries							
Aerospace industry							
	Airbus	•			•	•	Italy
Food-processing industry							
	Coca-Cola	•				•	Spain, Italy, Belgiur
	Danone	•			•	•	World
	Pasquier			•	•		France
	Greenhouse	I	•				Netherlands
Ceramic industry							
	Esmalglas ceramic	•	•	•	•	•	Spain
Electricity							
	Legrand	•					France, Turkey
Watch-making							
Tracon making	Rolex	•			•	•	Switzerland
Microelectronics							
	Intel	•	•	•	•		Irelande
	ST Micro-electronique	•		•	•	•	France
				-			
Lead industry and water tre							
	Grundfos				•		China
Inductrial to also also as							
Industrial technology	Bosch	•			•	1	China
<b>T</b> alaashaasa							
Telephony	Phillips				•		Netherlands
Telephony							
Telephony	Nokia	•			•		Sweden
		•			•		Sweden
Telephony Textile industry		•		•	•		Sweden

## Introduction Canalis, the reference all around the world

### Infrastructure

Applications	Name	Lighting current	g and low	Mediun	n current	High current	Country
		KBA	KBB	KN	KS	кт	
Airports							
	Paris Airport	•	•	•	•	•	France
	Cairo Airport				•		Egypt
( LEASE	Heathrow Airport			•	•	•	United Kingdom
	Hong-Kong Airport					•	China
	Landvetter Airport				•		Sweden
		•			•	•	Sweden
	Satelite Barajas					•	Spain

#### Marine

PD202250\_r



Chantier de l'Atlantique		•	•	France
Meyerwerft		•	•	Germany

#### Undergrounds



Guanghzou Underground	•				China
London Underground		•			United Kingdom
Madrid Underground	•			•	Spain
Singapore Underground				•	Singapore

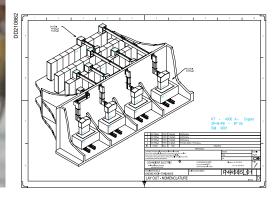
#### Other infrastructures

luies						
	Alexandria Library			•	•	Egypt
	Centre international d'exposition de Suzhou	•		•		China
	CERN			•	•	Switzerland
	Stade de France			•	•	France

# Introduction Canalis tools and services

## Working together on your solution





Our teams are available to provide customers with technical assistance throughout the installation of their projects.

#### Design of electrical distribution architectures:

- design of decentralized transport and distribution systems
- technical and financial optimization of busbar trunking design projects
- transformer/switchboard link
- installation coordination and discrimination.

#### Full installation drawings\*:

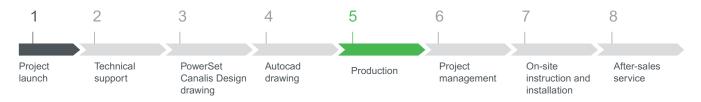
- 3D AutoCAD drawings with corresponding parts lists
- 2D drawing with dimensions
- detailed connection drawings.

\*All AutoCADs are available on Traceparts.com BIM Models: are available on se.com.

#### Site supervision and commissioning assistance.

Training for designers and contractors.

#### Canalis Busway "Total Solution":



## Introduction Canalis tools and services

## Empowering you with smart tools



Not only providing experts to support you in your project but also provide you with smart solutions and tools for fully controllable solution.

Through QR codes on packaging, product and JB labellings sticker; customer experience haven't been more easier:

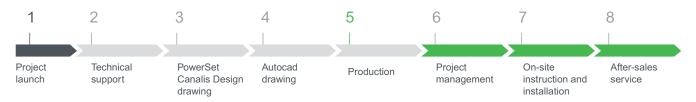
#### For Installers

- Easily check delivered products and dispatch it at it's future location for faster installation
- More agile access to product and installation instructions
- Easy and remote Installation tasks progression follow up through facility expert
- Can easily access all information needed for future extension.

#### For Facility Manager

- Resilient management of future installation through easily accessing all product and project data
- Agile maintenance management through assigning tasks on facility experts for certain junctions using QR codes and labeling sticker on JB.

#### Canalis Busway "Total Solution":



# Introduction Canalis tools and services

## Label Sticker

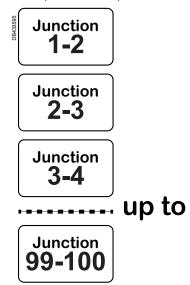
#### Label Sticker



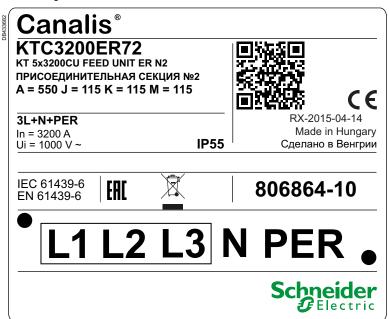
Description	Cat. no
KT JB Positioning Label Sticker	KTB0100YL1

Label stickers to be stick on joint blocks in site during installation. It ease maintenance management and maintenance people to detect JB position and assign tasks on facility expert (Optional Choice).

Example of label roll (Size: 15 mm x 25 mm)



Label image



## Introduction PowerSet Canalis Design

## PowerSet Canalis Design gives you all the help you need

**"Schneider Electric** offers comprehensive design and costing software "

The PowerSet Canalis Design software by Schneider Electric was developed to help you design and cost Canalis busbar trunking runs.

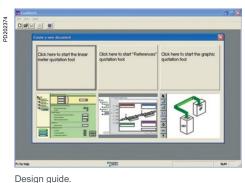
#### PowerSet Canalis Design, Your comprehensive tool

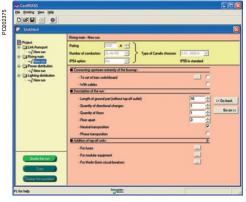
The PowerSet Canalis Design software allows you to quickly design the best layout for your project. It helps you:

- Choose the required material
- Define a list of catalogue numbers and their exact quantities
- Generate a comprehensive quote that includes material and labour.

#### There are 2 options:

- Linear metre costing.
- Graphical costing.



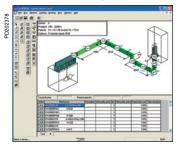


Enter Canalis run characteristics.

# Linear meter costing PD202376

Switchboard access estimation of material and labour costs.

Definition of catalogue numbers



Breakdown of the run by product function.

voject /Fold	ker N/16				
iotal Net amou Current price list	nt of the project (VIX)	l net includedy:	•		
	A-1	CA25 - Tri + N +	PE and/or To + PER	i	
tial Net among	at of the ram - 0.00				
iy Description	Clemen's length	Reference	Unit public price	Project discount	[Total net
					(Total net
1	1*11(2) e*500 e*26			0.0%	(Total set
1		INTACKED AT		0.0%	(Total out
1	1*11(2) e*500 e*26	MANELII MANELII		0.0%	(Total or
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Graphical costing

Introduction	3
Presentation	23
Panorama of Canalis range	24
Lighting distribution Power distribution	24 26
Canalis KTC from 1000 to 6300 A	28
For horizontal transport and distribution	28
For distribution to different levels	30
Tap-off units from 25 to 1250 A	31
Description	32
General	32
Run sections	34
Other run sections - Disconnectors and run protective devices	35
Change of direction sections	36
Connection sections	37
Connection accessories	42
Supports and fixings	44
Tap-off units	45
Plug-on tap-off units for circuit breakers	46
Plug-on tap-off units for fuses	47
Fixed tap-off units for circuit breakers	48
Catalogue numbers and dimensions	49
Design guide Installation quide	149 191
Recommendations	251
Index	256

## **Panorama of Canalis range**

### Lighting distribution

Busbar trunking for lighting and

low power distribution from 25 to 40 A

#### **Canalis KTC**

PD202217\_r2

PD202219\_r

## Low & medium Power Solutions

IP55			
Rated service current	Permissible rated peak current	Rated insulation voltage	Color
Inc	lpk	Ui	
КВА			
25 A 40 A	4.4 kA 9.6 kA	690 V	Pre-lacquered white (RAL9003)
КВВ			
25 A 40 A	4.4 kA 9.6 kA	690 V	Pre-lacquered white (RAL9003)

#### Power distribution from 40 to 160 A IP55

Rated service current	Permissible rated peak current	Rated insulation voltage	Color
Inc	lpk	Ui	
KN			
40 A 63 A 100 A 160 A	6 kA 11 kA 14 KA 20 kA	500 V	Pre-lacquered white (RAL9001)

#### Horizontal and vertical distribution from 100 to 1000 A IP!

D55

Rated service current		Permissible rated peak current	Rated insulation voltage	Color
Inc		lpk	Ui	
KS				
Aluminium:	Copper:		690 V	Pre-lacquered
100 A		15.7 kA		white (RAL9001)
160 A	160 A	22 kA		
250 A	250 A	28 kA		
400 A	400 A	49.2 kA		
500 A		55 kA		
630 A	630 A	67.5 kA		
800 A	800 A	78.7 kA		
1000 A		78.7 kA		





Line components		Branching points			Accessories
Length of components	Number of conductors	Center to center distance		Protection type	
2 m and 3 m	2 or 4 + PE	0.5 m, 1 m on 1 side	L + N + PE or 3L + N + PE (10/16 A) pre-cabled or to be cabled, with phase selection or fixed polarity, with lighting control	With fuses or without protection	<ul> <li>&gt; Flexible components</li> <li>&gt; Fixing devices with quick adjustment</li> <li>&gt; Communication bus (DALI, ASI)</li> <li>&gt; Cable ducts</li> </ul>
2 m and 3 m	Single circuit 2 or $4 + PE$ Dual circuit 2 + 2 + PE 2 + 4 + PE 4 + 4 + PE	0.5 m or 1 m on 1 or 2 sides	L + N + PE or 3L + N + PE (10/16 A) pre-cabled or to be cabled, with phase selection or fixed polarity, with lighting control	With fuses or without protection	<ul> <li>&gt; Flexible components</li> <li>&gt; Fixing devices with quick adjustment</li> <li>&gt; Communication bus (DALI, ASI)</li> <li>&gt; Cable ducts</li> </ul>

Line components		Branching points			Accessories
Length of components	Number of conductors	Center to center distance		Protection type	
2 m and 3 m	4 + PE	0.5 m, 1 m on 1 side	16 A to 63 A (plug-in)	Units for modular circuit breakers, fuses and sockets	<ul> <li>&gt; Flexible components</li> <li>&gt; Fixing devices with quick adjustment</li> <li>&gt; Remote control bus</li> <li>&gt; Cable ducts</li> <li>&gt; Installation accessories</li> </ul>

Line comp	onents	Branching po	Branching points		Accessories
Length of components	Number of conductors	Center to center distance		Protection type	
3 m, 5 m and additional or customized components	4 + PE	0.5 m or 1 m on each side for horizontal version, and on one side for vertical version	16 A to 400 A (plug-in)	Units for circuit breakers (modular, Compact NSX), fuses, sockets	<ul> <li>&gt; Riser ducting offer</li> <li>&gt; Fixing devices with quick adjustment</li> <li>&gt; Cable ducts</li> <li>&gt; Installation accessories</li> <li>&gt; Fire barriers</li> </ul>

## Panorama of Canalis range

**Power distribution** 

#### Canalis KTC

## **High Power Solutions**

J-T-T-REPORT

Power transmission and distribution from 800 to 6300 A IP55

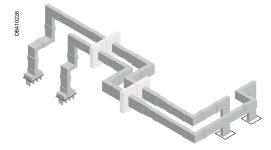
Rated service current		rated peak		Rated insulation voltage	Color
Inc		lpk		Ui	
KT *					
Aluminium:	Copper:	Standard:	Optional:	1000 V	Pre-lacquered
800 A	-	64 kA	73 kA		white (RAL9001)
1000 A	1000 A	110 kA	143 kA		
1250 A	1350 A	110 kA	143 kA		
1600 A	1600 A	143 kA	187 kA		
2000 A	2000 A	154 kA	242 kA		
2500 A	2500 A	176 kA	248 kA		
3200 A	3200 A	189 kA	248 kA		
4000 A	4000 A	198 kA	264 kA		
5000 A	5000 A	209 kA	264 kA		
-	6300 A	209 kA	264 kA		

\* Canalis KT range is available on se.com or catalogue: KTA: ref. DEBU021EN / KTC: ref. DEBU024EN

Power transmission for outdoor and harsh environment from 800 to 6300 A IP68

Rated service current	Permissible rated peak current		Rated insulation voltage	Color
Inc	lpk		Ui	
KR*				
	Aluminium:	Copper:	1000 V	Gray (RAL7030)
800 A	56 kA	-		
1000 A	56 kA	80 kA		
1250 A	117 kA	-		
1350 A	-	80 kA		
1600 A	117 kA	143 kA		
2000 A	143 kA	176 kA		
2500 A	176 kA	176 kA		
3200 A	220 kA	220 kA		
4000 A	220 kA	220 kA		
5000 A	220 kA	275 kA		
6300 A	-	275 kA		

\* Canalis KR range is available on se.com or catalogue ref. DEBU031EN



Line components		Branching points			Accessories
Length of components	Number of conductors	Center to center distance		Protection type	
2 m and 4 m	3P + PE 3P + N + PE 3P + N + PER	0.5 m or 1 m	25 A to 630 A (plug-in) 400 A to 1250 A (bolt-on)	Units for circuit breakers (modular, Compact NSX), fuses, sockets	<ul> <li>Power supply ends</li> <li>Direction change angles and T-pieces</li> <li>Fixing devices and fuses</li> </ul>

	Line components		Branching points			Accessories
	Length of components	Number of conductors	Center to center distance		Protection type	
	Up to 3 m	3L 3L + N or 3L + PE or 3L + PEN 3L + N + PE	-	-	-	<ul> <li>Power supply ends</li> <li>Direction change angles and T-pieces</li> <li>Fixing devices</li> <li>Fire resistant elements</li> </ul>

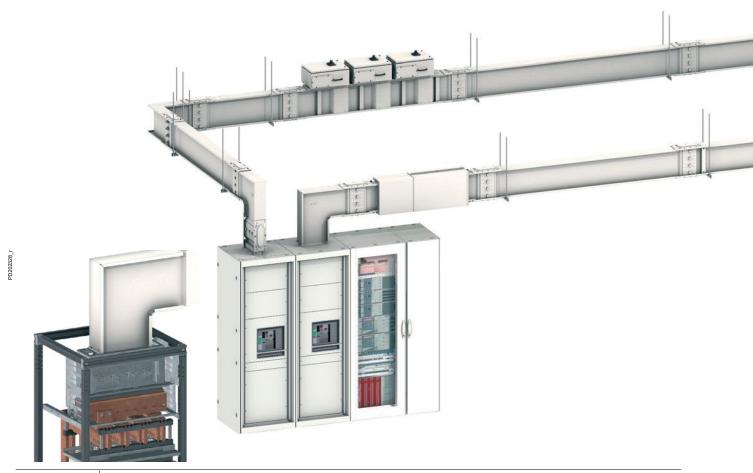
# Canalis KTC from 1000 to 6300 A

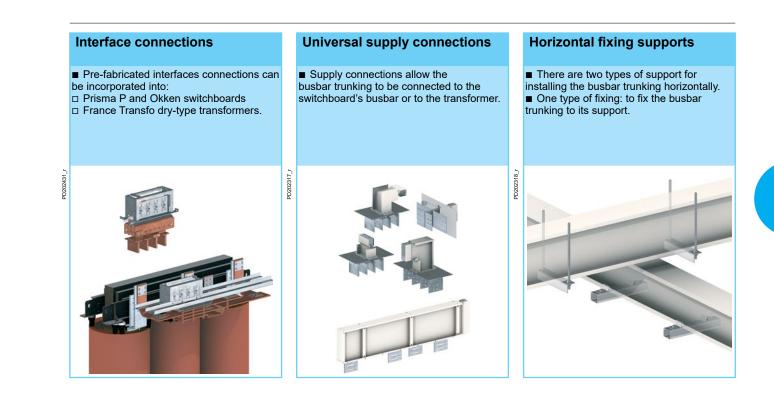
For horizontal transport and distribution

#### **Canalis KTC**

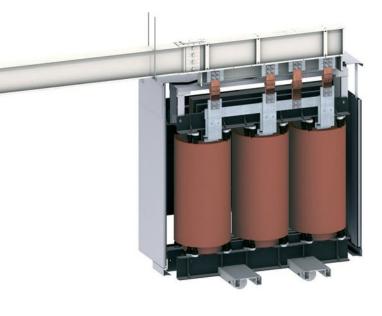
#### **Tap-off units Run sections Change-of-direction sections** Rating: 1000 to 6300 A. Transport sections: fixed lengths: 2 and 4 meters Plug-in tap-off units: ■ Change-of-direction sections adapt to all protection by 25 to 630 A fuses protection by 100 to 630 A Compact NSX Unarge of an equirements adaption busbar trunking requirements. There are both fixed and made-to-□ non-standard lengths: 0.5 and 3 meters circuit breakers. measure lengths. Distribution sections: Fixed tap-off units: Protection by 400 to 1250 A Compact NS and NSX circuit breakers protection by 400 to 1000 A fuses. □ fixed lengths: 2 and 4 meters. PD202314\_r2 PD202315\_r D202315









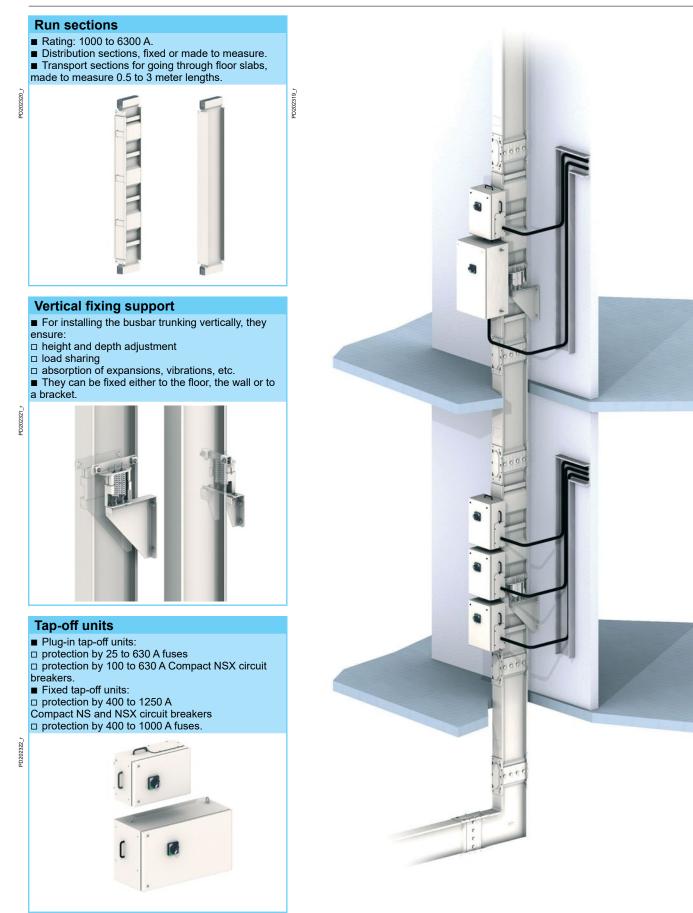


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#### Presentation

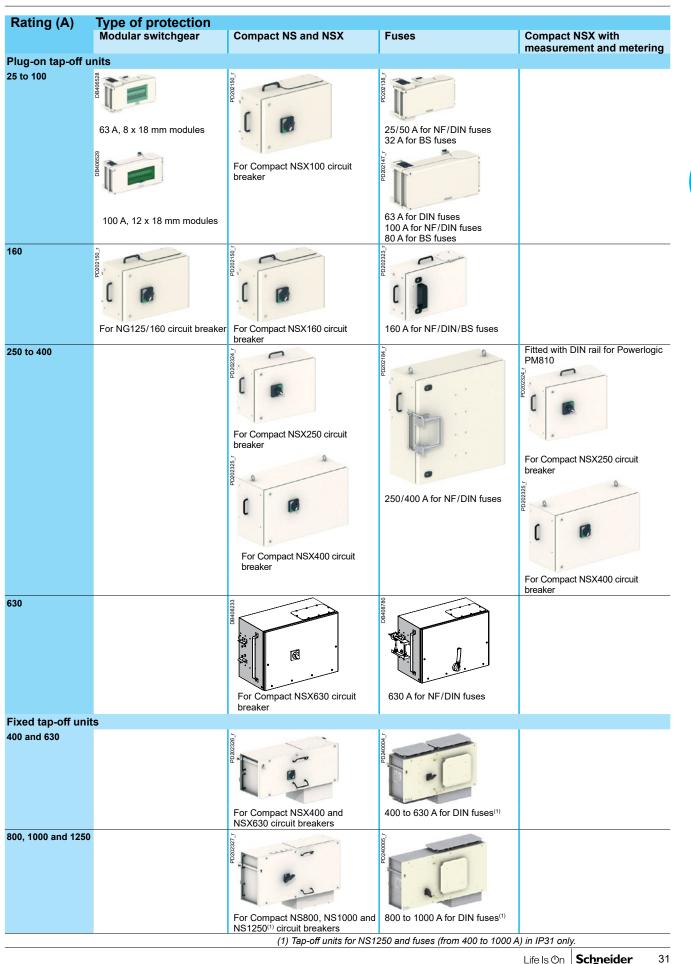
# Canalis KTC from 1000 to 6300 A

For distribution to different levels Rising mains



**Canalis KTC** 

## Tap-off units from 25 to 1250 A

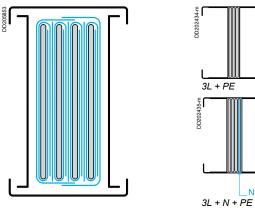


## General

#### **Canalis KTC**

The Canalis KT busbar trunking is intended for high power distribution and transport in industrial, commercial and tertiary buildings. Assembly of prefabricated sections that adapt to all run configurations.

#### **Run sections**



■ 9 ratings are available, from 1000 to 6300 A.

- 4 copper live conductors with identical cross-sections (3L + N + PE version).
- Conductors insulated using polyester film, class B 130°C, halogen free.
- Standard busbar trunking is IP55.
- Insulation voltage: 1000 Volts.
- Available polarities: 3L + PE, 3L + N +PE, 3L + N + PER (reinforced PE)

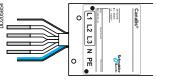
The KT busbar trunking is of compact design and can be installed edgewise, flat or vertically

This design, allows the busbar trunking to be installed through a floor slab or fire barrier wall.

As standard, the Canalis KT busbar trunking acts as a fire barrier in accordance with IEC 61439-6.

The compact technology allows Canalis KT busbar trunking to withstand high short-circuit currents and is suitable for most electricity distribution applications.

The conductors are sandwiched together inside the metal casing.



3L + N + PER

PFB

The RAL 9001 pre-lacquered galvanized steel casing provides protection and mechanical fixing of the conductors.

Further, it is used as the PE protective conductor (in accordance with NFC 15100 and IEC 60364).

In its reinforced version 3L + N + PER, the busbar trunking is fitted with an additional internal copper conductor with a cross-section equal to half that of the phase conductor.

A reinforced version can be supplied on demand. This version has lateral reinforcement (see page "Characteristics").

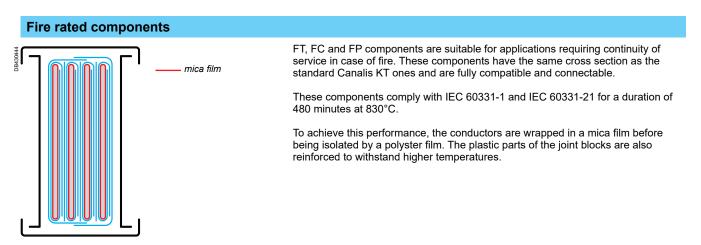
The Canalis KT busbar trunking is suitable for applications containing harmonics by taking into account the appropriate derating factor. See "Harmonic currents" in the Design guide.

#### **Tap-off contact**

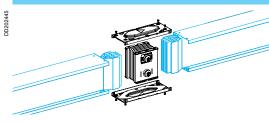
The KS plug-on tap-off units are connected to the busbar trunking whilst live (offload) via spring jaw connections.

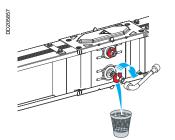
Contact zone coating:

silver-plated copper at jaw contact points.



#### **Joint block**





The junction between sections is made using a joint block.

The joint block provides the following:

- electrical junction between live conductors and between PE protective conductors
- mechanical link between the two sections.

Contact zone coating in silver-plated copper.

It provides simultaneous continuity between all conductors. It is tightened using torque bolt(s) (1 to 4 depending on the rating) with snap-off

heads.

The nut head snaps-off, freeing a red washer, when the correct tightening torque is reached.

This operation is checked visually:

- if the red washer is absent: it has been tightened
- if the red washer is visible: it has not been tightened.

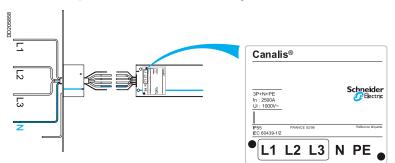
This device guarantees the necessary contact pressure between live conductors and is operator independent.

For dismantling or maintenance operations, the nut has a second head. The tightening torque is 6 daN.m.

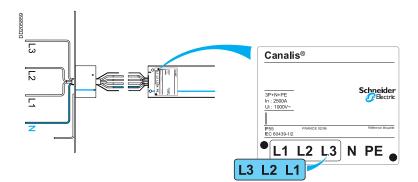
All sections (apart from ER and EL feed units) are supplied with their joint block, delivered in a separate parcel. If the run has a feed unit (ER or EL) at each end, an additional joint block must be ordered.

**Phase order** 

The standard phase order for the busbar trunking is denoted N321.



However, this order can be changed to **N123**. A label showing the phase order «N123» is supplied with each element to indicate the change.



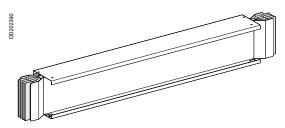
## **Run sections**

**Canalis KTC** 

**Straight sections** 

Transport sections - Type ET Transport the current without tap-off points.

Available in 2 and 4 metre fixed lengths or made to measure from 0.50 to 3 metres.



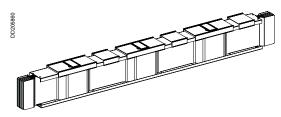
#### Sections with tap-off points for plug-on tap-off units -**Type ED**

ED run sections are for current distribution.

They use 25 to 630 A KS tap-off units.

These tap-off units can be plugged-on whilst live, but off-load.

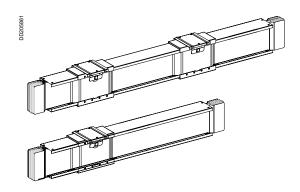
Available in fixed 2 and 4 metre lengths with 3 tap-off points on one side or made to measure from 2,5 to 3,5 metre.



## Sections with tap-off points for fixed tap-off units - Type EB EB run sections are for current distribution.

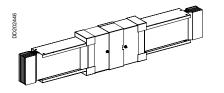
They use specific KT 400 to 1250 A tap-off units.

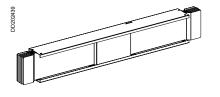
These tap-off units can only be fitted / removed when the run is not energised. Available in a 2 metre fixed length with one tap-off point or a 4 metre fixed length with 2 tap-off points.



## **Other run sections Disconnectors and run** protective devices

#### Other run sections





#### Expansion section - Type DB

It controls and absorbs the expansion of Canalis runs and must be used on runs over 30 metres and each time the busbar trunking passes through a building expansion joint.

Refer to the installation guide.

Available in a 1 metre length, it can be fitted vertically or horizontally. At its centre it has flexible conductor joints and a sliding case able to absorb the relative movements of each part of the section.

#### Transposition sections - Types TN, TP

Used when the phase order of the switchboard is different to that of the transformer.

Available in a 1 metre length and is the same physical size as a transport section. The TN version transposes the neutral.



The TP type transposes the phases.



#### Additional joint block - Type YA

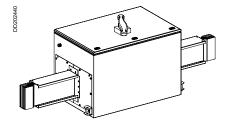
If the run has a feed unit (supplied without a joint block) at each end, an additional joint block must be ordered.

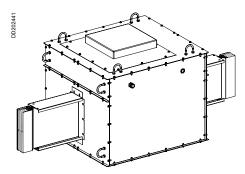
Each joint block is supplied with the necessary covers, nuts and bolts.

#### Run end cover - Type FA

The end cover protects and insulates the conductor ends and is fitted to the last section.

#### **Disconnectors and run protective devices**





Fitted between 2 flat or edgewise sections, they isolate or protect a busbar trunking part run.

Each assembly is supplied fitted with a 3 or 4-pole device complete with rotary handle.

- Supplied with:
- an auxiliary connection terminal
- lifting rings
- upstream and downstream terminal shields.

Colour: white RAL 9001, 100 % polyester paint on galvanized sheet steel.

Refer to manufacturer's data for switchgear characteristics.

Fitted with a rotary handle, the tap-off unit can only be opened once the device has been switched off.

#### Run disconnector tap-off units - Type SL Type SL for:

- Compact NS1000 to 1600 A type NA fixed isolators:
- □ unhingeable door
- □ 3-point closing (possibility of locking with key lock, not supplied) Interpact INV isolator, 2000 to 2500 A:
- □ unhingeable door
- □ 3-point closing (possibility of locking with key lock, not supplied)
- Masterpact NW3200 A type HA fixed isolator supplied with:
- □ transparent protection cover
- □ adaptation kit for Ronis lock + 1 Ronis lock
- □ complete Harting plug, not cabled.

#### Run protection tap-off units - Type PL Type PL for:

- Compact NS1000 to 1600 A type N fixed circuit-breakers:
- □ unhingeable door
- □ 3-point closing (possibility of locking with key lock, not supplied).
- For circuit-breakers greater than 1600 A, consult the sales office.

# **Change of direction sections**

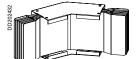
#### **Canalis KTC**

#### Simple changes of direction

Elbows - Types LP and LC To go up or down, to turn right or left: ■ type LP, flat elbow available in fixed or made-to-measure lengths



■ type LP•C, flat made-to-measure angled elbow



■ type LC, edgewise elbow available in fixed or made-to-measure lengths

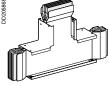


■ type LCoC, edgewise made-to-measure angled elbow.



Edgewise T junctions - Type TC To feed runs perpendicular to the main run.





**Changes of direction** 

#### Zeds - Types ZP, ZC and CP 3-branch made-to-measure:

If at or edgewise, to move the run axis upwards, downwards, to the right or to the left without having to bend the busbar trunking:



□ type ZC, edgewise Zed



edgewise / flat, to provide the busbar trunking with a bend: □ Type CP, edgewise and/or flat Zed.



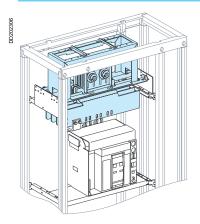
# **Connection sections**

To connect the KTC busbar trunking to different terminals or to transformer, switchboard, generator set, etc. busbars. Canalis offers high performance connection sections which meet all requirements.

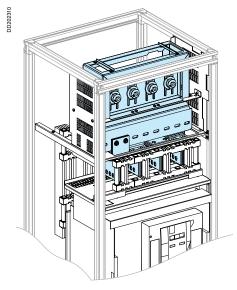
These sections provide installation flexibility combined with quick and simple assembly.

Further, the connections are made using torque bolts which provide both ease of installation (use of a standard spanner for tightening to 60 N.m) and a visual check before energising.

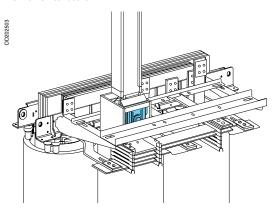
#### Connections via interface to Prisma P, Okken and Trihal



Prisma P switchboard



Okken switchboard



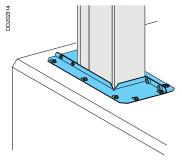
Direct connection to Trihal transformers and Prisma P & Okken switchboards. Supplied factory or panelbuilder assembled and tested to IEC 61439-1 and IEC 61439-6.

Quick and simple connection of the busbar trunking to the interface.

Reduced size

Joint block integrated into the interface.

A sealing kit (rating dependent) must be ordered.



Sealing kit

#### Prisma P and Okken switchboards

For fixed or draw-out incoming device, front or rear connection:

- Masterpact NW08 to NW40 or NT06 to NT16 circuit-breaker
- Compact NS630b to NS1600 circuit-breaker.

Possibility of switching the phases around.

#### France Transfo Trihal dry type transformers

For naturally ventilated or force ventilated transformers.

- Protection degree: IP00
- IP00 ■ IP31.
- . .. 01.

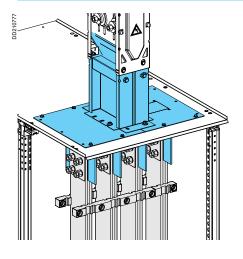
Secondary voltage: 410 V

± 15 mm adjustment in the 3 axes.

# **Connection sections**

#### **Canalis KTC**

#### Universal connections to switchboards and oil immersed transformers

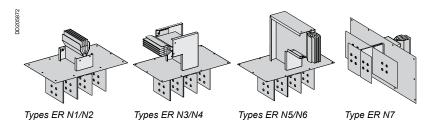


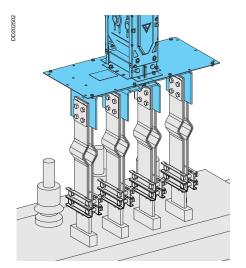
Feed units - Type ER They allow the busbar trunking to be connected to a switchboard's busbar, or to the terminals of an oil immersed transformer, generator set, etc.

They come complete with a mounting plate fitted: ■ either directly to the roof of the switchboard

- or via the intermediary of a protective cover.

Vertical or horizontal incoming busbar trunking.

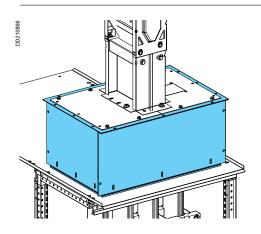




Connection:

- either directly to the busbar
- or by flexible bars and connection plates
  - or by braids
    or by cables.

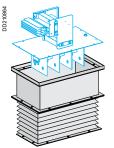
  - ER feed units are supplied without a joint block.
  - If the run has a feed unit at each end, an additional joint block must be ordered.



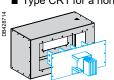
# Protective covers - Types CS, CR, BC Protects the external part of the connection.

Type CS

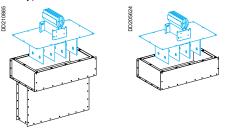
Height adaptable flexible protective cover adaptable for ER N1 to N6 feed units with a between centres distance of 115 mm.



For a vertical incomer - Types CR1 to CR3 Made-to-measure rigid protective cover for ER N1 to N7 feed units. They are height adjustable by ± 50 mm. ■ Type CR1 for a horizontal incomer.



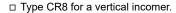
■ Types CR2 and CR3 for a vertical incomer.

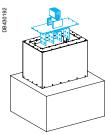


■ Types CR7 and CR8 Protective covers for Minera oil immersed transformers. Only for ER N1 to N6 feed units with a between centres distance of 150 or 170 mm depending on the rating.

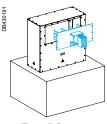
Fit directly onto the BT series transformer tanks.

#### Never use with HV porcelaine bushings.





□ Type CR7 for a horizontal incomer.

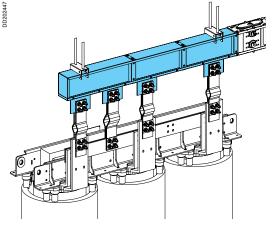


Type BC Protective cover for direct cable connection to ER N1 to N6 feed units with a between centres distance of 115 mm.

# **Connection sections**

#### Canalis KTC

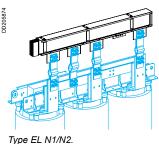
#### Universal connections to dry type transformers



#### Feed units - Type EL

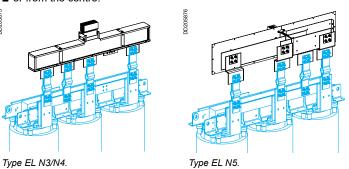
For dry type transformers with the neutral between the phases. They allow optimum connection to the busbar trunking.

The junction with the busbar trunking is achieved: • either from the side



■ or from the centre.

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They are of similar design to straight transport sections and can be installed edgewise or flat.

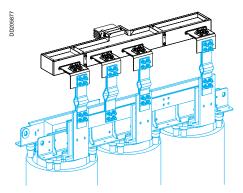
If installed flat, a set of angle brackets can be ordered.

The following must be specified at the time of order:

■ phase order

distance between phases (a  $\pm 20$  mm lateral adjustment can be made use of on site).

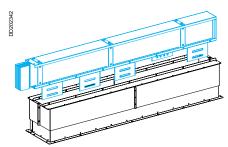
The link between the transformer terminals and the connection section is either by flexible bar connection plates or by braids.



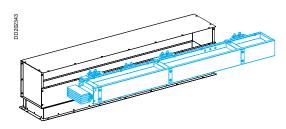
Protective covers - Type CR4 to CR6 These protect the connections with an IP31 casing when connecting to a transformer.

They are height adjustable by ±50 mm.

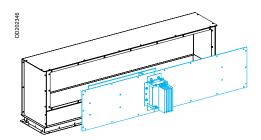
■ Type CR4 Protective cover for EL N1 to N4 feed units. Edgewise assembly.



Type CR5 Protective cover for EL N1 to N4 feed units. Flat assembly.



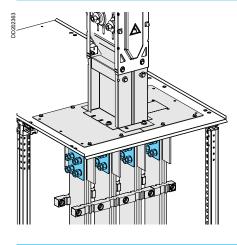
Type CR6
 Protective cover for EL N5 feed unit.
 Edgewise assembly.



# **Connection accessories**

#### Canalis KTC

#### Accessories for direct connection to the switchboard



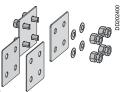
The conductors of ER N1 to N6 feed units are connected directly to the switchboard busbars.

YB2 copper spacers are available to compensate differences in thickness between the switchboard bars (10 mm) and the connection part (6 mm).

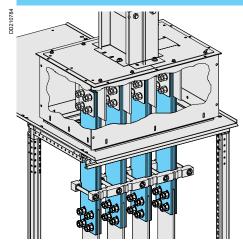
#### Make-up of kit:

- 8 x 2 mm thick copper spacers
- 16 off M12 x 60 mm bolts, class 8.8
- 16 contact washers
- 16 torque nuts
- 8 steel spacer plates.

Order a set per feed unit whatever the rating



#### Switchboard connection accessories using connection plates



The conductors of ER N1 to N6 feed units are connected via connection plates to the switchboard busbars.

The YC are flexible bars made up of 5 copper sheets of 1 x 100/120 mm or of 5 bimetal aluminium/copper sheets 1.4 x 100/120 mm. The number of connection plates needed is proportional to the busbar trunking rating.

There are 2 types:

■ YC1, uninsulated bar, made-to-measure length of 250 to 600 mm with 4 oblong holes at the ER unit end.

The holes at the opposite side are made to measure to match with the switchboard connections.



■ YC5, insulated 600 or 1000 mm long flexible bar, stripped at one end and with 4 oblong holes.

The length of the holes at the switchboard side are to be adapted on-site.



#### Nuts and bolts

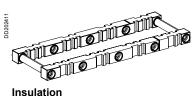
The connection plates are fixed to the feed unit using the YB3 nut and bolt kit, made up of:

- 16 off M12 x 60 mm bolts, class 8.8
- 16 contact washers 8 steel spacer plates.
- 16 torque nuts



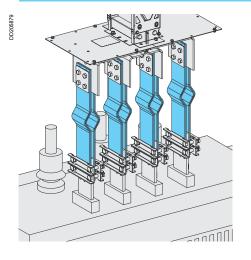
#### Clamps

YS1 clamps enable high short-circuit current levels to be withstood; only for bars with a 115 mm spacing.



Insulation See page 43.

#### Transformer connections - Types YC, YT



The feed unit conductors are connected to the transformer bars via connection plates or braids:

- the YC are flexible bars made up of 5 copper sheets 1 x 100/120 mm or
- of 5 bimetal aluminium/copper sheets 1.4 x 100/120 mm.
- braids, YT type, are copper braids with a 600 mm<sup>2</sup> cross-section.

The number of connection plates needed is proportional to the busbar trunking rating.

#### **Connection plates**

The YC3 is an uninsulated bar with an expansion kink; it is 250 to 600 mm long and has 4 holes at the ER unit end.

The holes at the opposite side are made-to-measure to match with the transformer connections.

They can be fitted to the transformer side:

- either using bar clamps (no drilling)
- or drilled and bolted (to be carried out on site).



 $\mathsf{YS2}$  and  $\mathsf{YS3}$  bar clamps enable connection without the need to drill the connection plates.

They allow height adjustment.

Type YS2, bar clamps for 100 mm transformer connection terminals.

■ Type YS3, bar clamps for 120 mm transformer connection terminals. Make-up of kit: 1 set of 8 parts.



#### **Braids**

Type YT, 400 mm long insulated braid with 4 holes at each end.



The connection plates and braids are fixed to the feed unit using the YB4 nut and bolt kit, made up of:

- 16 off M12 x 80 mm bolts, class 8.8
- 16 contact washers
- 16 torque nuts
- 8 steel spacer plates.

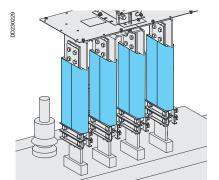
#### Insulation

The YF conduit allows the various conductors of a connection performed with braids or with bare copper foils to be insulated.

Installation is performed after complete assembly of the connection, with scratch fastening for easier setup.

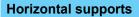
The insulating conduit is formed of a 2-metre plastic duct that can be cut to length as needed.

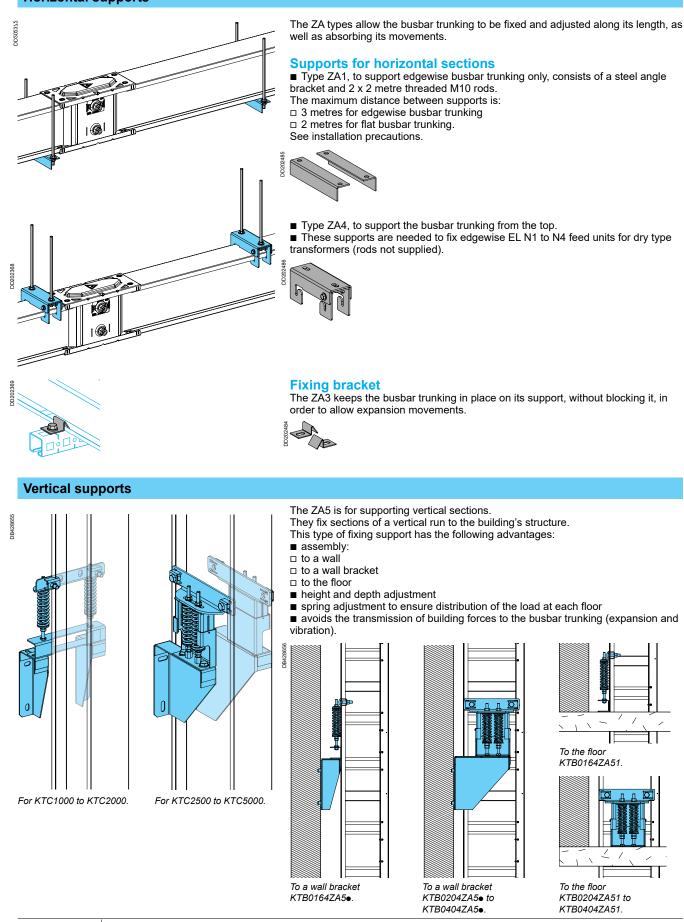




# **Supports and fixings**

#### **Canalis KTC**

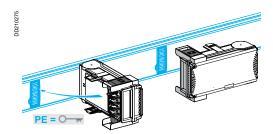




## **Tap-off units**

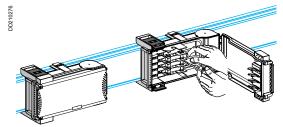
The tap-off units are used to instantly connect loads or secondary runs, and comply with installation standards and regulations (IEC 60364), whatever the earthing system (TT, TNS, TNC or IT).

When off-load, they can be plugged-on and off and be operated whilst live. Plugging-on and plugging-off automatically opens and closes the tap-off point.



No live part is accessible with the door open. The protection degree is IPXXB (finger protection).

They are IP55 by construction (no accessory is required).



#### Safety and operation

Fuse and modular switchgear tap-off units (AC20) are isolated as soon as the tapoff unit door is opened.

Tap-off unit disconnection by opening or closing the cover should be carried out only if the downstreamload is de-energised.

For circuit breaker tap-off units, there are safety mechanisms to prevent:

■ the tap-off unit being plugged-on and plugged-off with the tap-off unit door closed ■ the door being closed if the tap-off unit has not been locked onto the busbar trunking

 access to the electrical equipment and connection terminals when live
 the door being opened in the "ON" position for tap-off units fitted with a Compact NS or NSX or NG circuit breaker.

These tap-off units can be fitted with accessories such as:

- door early break contacts
- adapter for lead sealing etc.

The sheet steel tap-off units are fitted with a carrying handle.

#### Characteristics of tap-off units up to 100 A

- Colour:
- □ white (RAL 9001) body and carrying handles
- □ transparent green door (similar design to the Kaedra enclosures).

Material: self-extinguishing, halogen-free insulating plastic (fire resistant and very high temperature withstand).

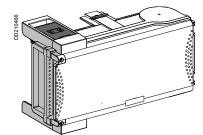
Other characteristics: cable gland drilling zone, stainless steel screws and the door can be lead sealed.

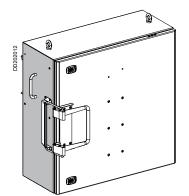
#### Characteristics of tap-off units from 160 to 400 A

- Colour:
- □ white (RAL 9001) body
- □ black carrying handles (RAL 9005)
- □ 100 % polyester paint.
- Material: galvanized sheet steel.

Other characteristics:

- unhingeable door (120° opening hinges)
- vertically bevelled polyurethane seals with a double fold for increased rigidity
- (similar design to the Sarel Spatial 3D enclosures)
- 25 mm grill type gland plates for a maximum access area.



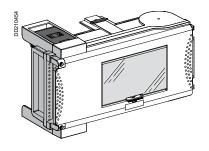


# Plug-on tap-off units for circuit breakers

#### **Canalis KTC**

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#### Isolator tap-off units for modular switchgear

Most 18 mm Multi 9 modular devices can be fitted into these tap-off units. They have a window on the front face for switchgear control and visualisation.

A transparent shutter ensures the window can be sealed.

- Two tap-off ratings are available:
- 63 A nominal current for 8 modules
- 100 A nominal current for 12 modules (accepts C120 circuit breakers).

Tap-off units for NG type modular switchgear These tap-off units are fitted with a DIN rail and upstream connections for 18 mm wide modular devices.

The switchgear is operated via a rotary handle which prevents door opening when the circuit breaker is in the "ON" position.

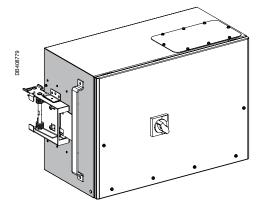
Nominal current: 160 A for a 13-module capacity (accepts NG125 or NG160 fitted with a Vigi unit).

#### Isolator tap-off units for Compact NSX circuit breakers

These tap-off units are fitted with mounting plates and upstream connections for fixed, front-connected 100 to 630 A Compact NSX circuit breakers (N, H or L version) with a rotary handle.

The 400 A tap-off units can only be fitted onto straight lengths with a rating greater than 400 A.

For plug-on circuit breakers, Vigi units, etc, please consult your Schneider Electric contact.



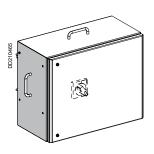
#### Measurement and metering isolator tap-off units

These tap-off units allow sub-metering to re-allocate power consumption costs by consumer and to monitor installations by, for example, following run load levels. The values measured using the Compact NSX TI unit are sent to the measurement unit which then sends the information to a central unit via a bus (See Measurement and metering).

#### They are fitted with:

a mounting plate for a Compact NSX 250 or 400 A circuit breaker with an extended rotary handle and a Compact NSX current transformer module (TI unit) a DIN rail for installing a Powerlogic PM810 measurement unit, a set of terminals, etc.

In severe operating conditions (> 40 °C ambient temperature), we recommend the use of a PM810 without display.



# Plug-on tap-off units for fuses

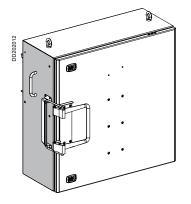
These tap-off units provide the tap-offs with fuse protection (fuses not supplied).

- Plastic tap-off units Fitted with carriers for: 50 to 100 A cylindrical NF fuses 25 to 63 A DIN screwed fuses
- 100 A DIN blade fuses
- 32 to 80 A BS screwed fuses.

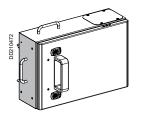
# Steel tap-off units Fitted with carriers for:

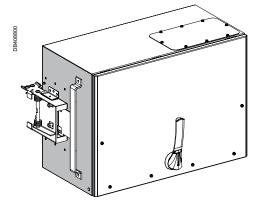
- 160 to 400 A NF/DIN blade fuses
- 160 A BS screwed fuses





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#### **Canalis KTC**

# Fixed tap-off units for circuit breakers

#### Safety and operation

The electrical connection is made by plugging-on the tap-off unit into dedicated tapoff point whilst the busbar trunking is de-energised (plugging-off the unit must also be done with the busbar trunking de-energised).

The connection is mechanically tightened using a one-use torque bolt (10 daN.m). A mechanical foolproof system avoids the risk of incorrect assembly.

The door can only be opened once the load has been isolated (rotary handle).

The bolt can only be tightened or untightened with the door open.

No live part is accessible with the door open, protection degree IP2X.

#### Characteristics of tap-off units from 400 to 1250 A

- Colour:
- u white (RAL 9001) body.
- Material: galvanized sheet steel.
- Other characteristics:

□ the cables exit laterally through 2 aluminium plates (to be drilled by the installation contractor)

□ cabling space can be increased by using the cable box supplied with the tap-off unit

 $\hfill\square$  the door is fixed using 6 captive M6 screws and can be completely removed to facilitate cabling.

#### Steel tap-off units

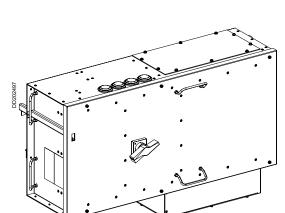
These tap-off units are used to supply loads or secondary runs (e.g. medium power distribution using Canalis KS).

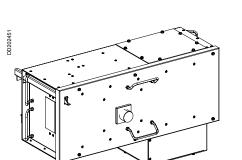
They are fitted to specific EB type straight lengths.

They comply with installation standards and regulations, whatever the earthing system (TT, IT, TNS or TNC):

- tap-off units fitted with a mounting plate for Compact NS and NSX 400/1250 A,
- 3 or 4 P.
- □ fixed device
- □ front connections
- extended rotary handle.
- 3 models:
- Compact NSX400/630 A, connection capacity:
- □ 3 x 300 mm<sup>2</sup> cables for the phases and neutral (hole diameter = 15 mm),
- □ 150 mm<sup>2</sup> for the PE
- Compact NS800/1000 A, connection capacity:
- □ IP54
- □ 4 x 300 mm<sup>2</sup> cables for the phases and neutral (hole diameter = 15 mm)
- □ 200 mm<sup>2</sup> for the PE (cable clamp)
- Compact NS1250 A, connection capacity:
- □ IP31

 $\square$  4 x 300 mm<sup>2</sup> cables for the phases and neutral (hole diameter = 15 mm)  $\square$  200 mm<sup>2</sup> for the PE (cable clamp).





# Catalogue numbers and dimensions

Introduction Presentation and description	3 23
Catalogue-number coding	23 50
0 0	
Canalis KTC 6300 A	51
Run components	52
Additional run components	58
Elbow components for changing direction	62
Zed components for changing direction	68
Fire rated straight feeder lengths	72
Fire rated flat elbows	73
Fire rated edgewise elbows	74
Canalis interfaces for Prisma P LV switchboard	75
Canalis interfaces for Okken LV switchboard	78
Sealing kits	79
Feed units for switchboards and oil immersed transformers	80
Rigid protective covers	88
Protective covers for Minera transformers	90
Flexible protective covers, Cable boxes	92
Feed units for dry-type transformers	94
Protective covers for dry-type transformers	99
Connection accessories	102
Supports and fixings	110
Accessories	113
Fire-barrier kit	113
Tap-off units	114
63 to 100 A tap-off units for modular devices	114
125 to 160 A tap-off units for modular devices	115
100 to 400 A tap-off units for Compact NSX circuit breakers 250 to 400 A tap-off units for Compact NSX circuit breakers	116 117
630 A tap-off units for Compact NSX circuit breakers	118
50 to 100 A tap-off units for NF fuses	119
100 to 400 A tap-off units for NF fuses	120
25 to 63 A tap-off units for DIN fuses	121
100 to 400 A tap-off units for DIN fuses	122
630 A tap-off units with switch-disconnector for DIN fuses 32 to 160 A tap-off units for BS fuses	123 125
Accessories	125
Bolted tap-off units from Canalis KT for Compact NSX/NS	120
400 to 1250 A circuit breakers	127
630 and 1000 A bolted tap-off units with switch-disconnetors	
for DIN fuses	128
Coupling isolators from1000 to 2500 A	129
Coupling isolators 3200 A	130
Protection of the run using Compact NS circuit breakers from 1000 à 1600 A	131
Special products	132
Canalis KH substitution by Canalis KT	134
KTC/KGF connection elements	134
Preserved KH tap-off units and substitution table	135
250 and 630 A tap-off units from Canalis KH range for Compact NSX circuit breakers	138
250 and 630 A tap-off units from Canalis KH range for NF fuses	139
630 A tap-off units from Canalis KH range with switch-disconnector for DIN fuses	140
100 to 630 A tap-off units from Canalis KH with disconnector Jean Muller	141
400 and 630 A tap-off units from Canalis KH with disconnector Jean Muller 250 to 630 A tap-off units from Canalis KH range with Fupact INF fuse switch	142 143
250 to 1000 A fixed tap-off units for Canalis KGF range, with isolator and fuse carriers	144
Fixed tap-off units for Canalis KGF range, for circuit breaker NS630b, NS800, NS1000	145
Expansion of a Canalis KH line by means of Canalis KT	146
Expansion of a Canalis KH line by means of Canalis KT with a T-piece tap-off unit	
Mid KT line power supply with KH tap-off units installed	148
Design guide Installation guide	149 191
Recommendations	251
Index	256

## Catalogue numbers and dimensions

# **Catalogue-number coding**

#### **Canalis KTC**

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Type able box		Code BC							
olted tap-off unit									
ire-barrier		CF							
dgewise and flat zed		СР							
igid protective cover		CR							
lexible protective cover		CS DB							
ap-off unit for Compact NSX		DC	One digit	indicating	the trunkin				
istribution length for bolt-on tap-off ur	nits	EB	polarity	5		5			
istribution length for plug-in tap-off ur		ED	Polarity	DE pr	otective	Short circuit	Code		
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eed unit for dry-type transformers eed unit		EL					•		
eeder length		ET	<u>3L + PE</u>	Stand	ard	Standard	3		
nd cover		FA	3L + N + PE	E Stand	ard	Standard	4		
olted tap-off unit for fuses		HF	3L + N + PE	R Reinfo	orced	Standard	5		
onnection KH/KT		HT	3L + N + PE		orced	Reinforced	7		
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ER for Prisma P and Okken interface	s	PE			, 300 paye	i co characteria			
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ap-off unit with switch-disconnector		SE SI /BI	characters i						
ap-off unit with isolator doewise tee		SL/RL TC	specific to the						
eutral crossover		TN	See the sec			given			
hase crossover		TP	component.		•	-			
ealing kit		TT							
onnection device		YA							
onnection torque nut kit lexible bar		YB YC	Fire rated	l compone	ents.				
racket		YE	Туре			(	Code		
sulating sheath		YF	Fire rated stra				т		
onnection plate		YP	Fire rated edg		W		<u>C</u>		
ar supports		YS	Fire rated flat	elbow		F	P		
raids upports and fixing devices		YT ZA							
dgewise zed		ZC							
lat zed		ZP							
Trunking cross section									
Rating (A)	1000	1350	1600	2000	2500	3200	4000	5000	6300
Number of bar jointing bolts Bar cross-section (mm)	1 70 x 6	<u>1</u> 100 x 6	<u>1</u> 120 x 6	2 160 x 6	2 200 x 6	2 2 x (120 x 6)	4 2 x (160 x 6)	4 2 x (200 x 6)	4 4 x (120 x 6
Trunking height H (mm)	10 × 0	100 x 0	120 × 0	100 X 0	200 x 0	2 X (120 X 0)	2 X (100 X 0)	<u> </u>	24 24 24
			r	╶╴╢╢═╌┑╶──╻╸		244	324	404	244
	140 140	140 140							
Holes for connections (mm)						<u>25</u>	25 <b>1 1 1 1 1 1 1 1 1 1</b>	14x20 25 0 0 0 0 0 0 0 0 0 0 0 0 1	
			25 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9				25 110 50 110		

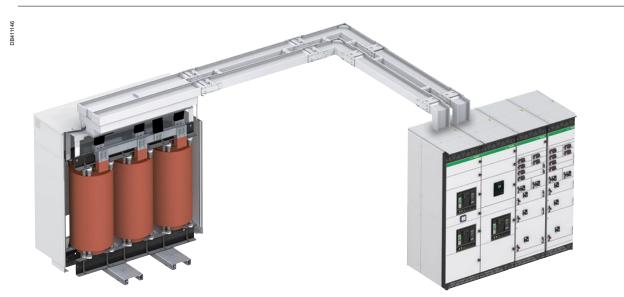
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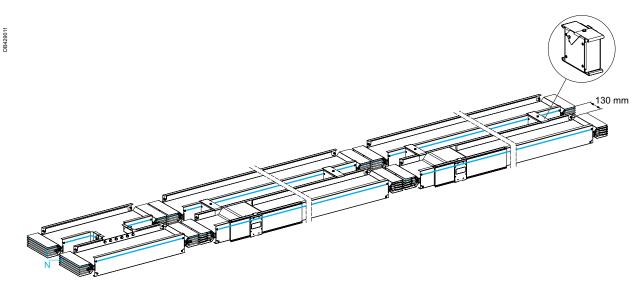
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## Canalis KTC 6300 A

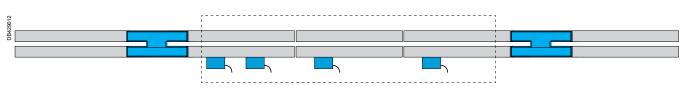
#### Canalis KTC



KTC6300 A is made of 2 units KTC3200 A linked together thanks to guide supports GS.



The current has to be re-balanced between the 2 runs in distribution applications.



If the total load of a group of tap-off units is above 1600 A, then add bridges (edgewise H units) between the 2 runs. Bridges have to be placed before and after the group.

### **Run components IP55**

Canalis KTC 1000 to 5000

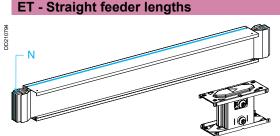
#### Ordering

Complete the catalogue number by replacing "..... by the rating. Important:

add the dimensions of the selected component as a technical comment **Example:** the catalogue number of an 1000 A feeder length, 3L + N + PE, 2450 mm long, is:

KTC1000ET42C, L = 2450

Rating

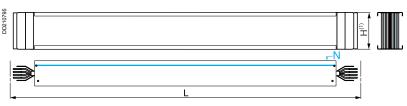


Туре	Length "L"	Cat. no.					
	(mm)	3L + PE	3L + N + PE	3L + N + PER (1)			
Fixed	2000	KTCeeeET320	KTCeeeET420	KTCeeeET52			
	4000	KTCeeeET340	KTCeeeET440	KTCeeeET54			
Made to	500 to 1500	KTCeeeET31A	KTCeeeeET41A	KTCeeeET51			
measure	1501 to 1999	KTCeeeET32B	KTC•••ET42B	KTCeeeET52			
	2001 to 2500	KTCeeeET32C	KTCeeeET42C	KTCeeeET52			
	2501 to 3000	KTCeeeET33D	KTCeeeET43D	KTCeeeET53			
	3001 to 3500	KTCeeeET33E	KTC•••ET43E	KTCeeeET53			
	3501 to 3999	KTCeeeET33F	KTCeeeeET43F	KTCeeeeET53			

KTCeeeeETeee

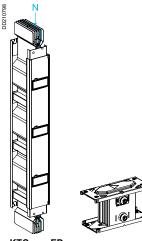
KTC .... ET ...

KTCeeeeEDe201

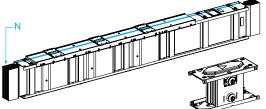


(1) See the "Trunking cross-section" table page 54.

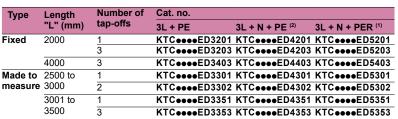
#### ED - Straight lengths for KS plug-in tap-off units



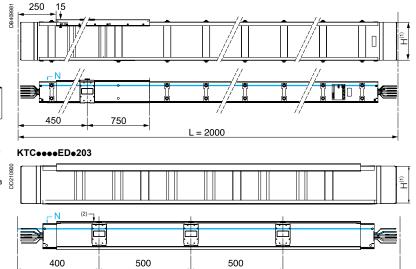
KTC....ED....



KTC....ED....



(1) To order the 3L+N+PER version with reinforced lsc, replace KTCeeeED5eee by KTCeeeED7eee.
 (2) To order the 3L+N+PE 2500 A and 3200 A version with reinforced lsc, replace KTC2500ED4eee by KTC2500ED6eee and KTC3200ED4eee by KTC3200ED6eee.



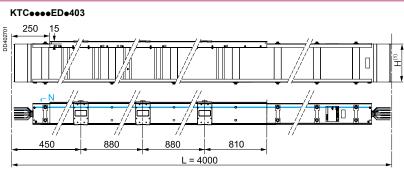
L = 2000

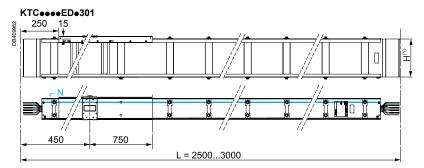
(1) See the "Trunking cross-section" table page 54.

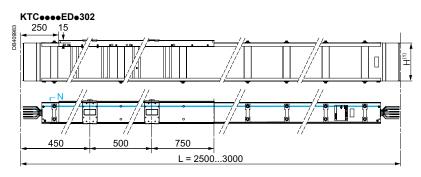
(2) Tap-off units KTB630 can not be installed at this outlet.

#### Canalis KTC 1000 to 5000

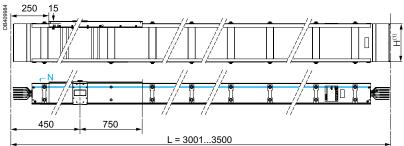
#### Straight lengths for KS plug-in tap-off units



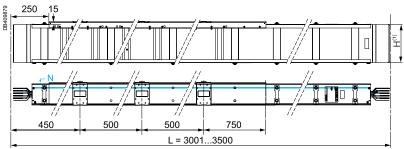




#### KTCeeeeEDe351



#### KTCeeeEDe353

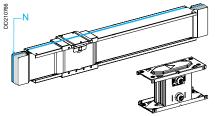


(1) See the "Trunking cross-section" table page 54.

# Run components

#### Canalis KTC 1000 to 5000

#### EB - Straight lengths for bolted tap-off units



KTC•••EB•20

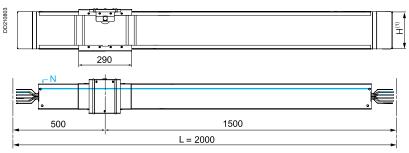
KTC•••EB•40

DD210801

Туре	Length	Number of	Cat. no.		
	"L" (mm)	tap-offs	3L + PE	3L + N + PE	3L + N + PER (1)
Fixed	2000	1	KTCeeeEB320	KTCeeeEB420	KTCeeeEB520
	4000	2	KTC•••EB340	KTCeeeeEB440	KTCeeeEB540

(1) To order the 3L+N+PER version with reinforced Isc, replace KTC••••EB5•• by KTC••••EB7••.

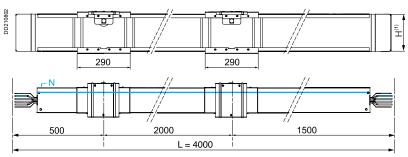
#### KTC



#### KTCeeeeEBe40

1C

(@<sup>|</sup>



(1) See the "Trunking cross-section" table below.

Rating (A)		1000	1350	1600	2000	2500	3200	4000	5000	6300
Weight (kg/m)	3L + PE	19	25	29	36	44	51	66	82	102
	3L + N + PE	23	31	35	45	55	64	84	104	128
	3L + N + PER	25	33	39	49	60	71	92	114	142
Height H (mm) Width W (mm)		140 140								140

DD210867

#### Ordering

Complete the catalogue number by replacing the "••••" with the rating.

Example: a transport section 1000 A, length 4 m. Catalogue number for 3L + N + PE: KTC1000EH440.

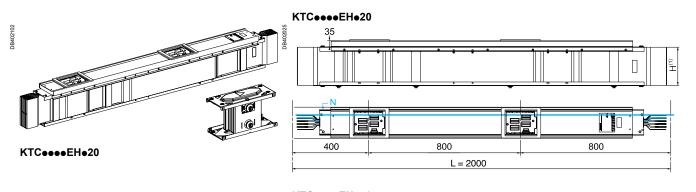
#### EH - Straight sections with KH withdrawable tap-off units

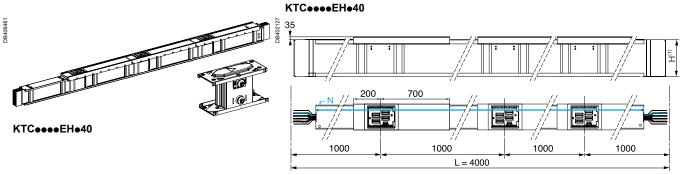
Туре	Length	Number of	Cat. no. <sup>(3)</sup>		
	"L" (mm)	tap-off units	3L + PE	3L + N + PE	3L + N + PER (2)
Fixed	2000	2	KTCeeeEH320	KTCeeeEH420	KTCeeeEH520
	4000	3	KTCeeeEH340	KTCeeeEH440	KTCeeeEH540

(1) See the "Trunking cross-section" table opposite.

(2) To order the 3L+N+PER version with reinforced lsc, replace KTC••••EH5•• by KTC••••EH7••.

(3) Not available for KTC6300.





# Run components

#### Canalis KTC 6300

# ET - Straight feeder lengths

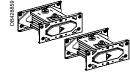
GS - Guide supports are not

delivered with straight lengths.

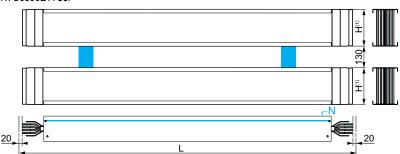
DB428667

			- x-					
Туре	Length "L"	Cat. no.						
	(mm)	3L + PE	3L + N + PE	3L + N + PER (1)				
Fixed	2000	KTC6300ET320	KTC6300ET420	KTC6300ET520				
	4000	KTC6300ET340	KTC6300ET440	KTC6300ET540				
Made to	500 to 1500	KTC6300ET31A	KTC6300ET41A	KTC6300ET51A				
measure	1501 to 1999	KTC6300ET32B	KTC6300ET42B	KTC6300ET52B				
	2001 to 2500	KTC6300ET32C	KTC6300ET42C	KTC6300ET52C				
	2501 to 3000	KTC6300ET33D	KTC6300ET43D	KTC6300ET53D				
	3001 to 3500	KTC6300ET33E	KTC6300ET43E	KTC6300ET53E				
	3501 to 3999	KTC6300ET33F	KTC6300ET43F	KTC6300ET53F				

KTC6300ET.



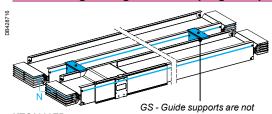
(1) To order the 3L+N+PER version with reinforced lsc, replace KTC6300ET5•• by KTC6300ET7••.



(1) See the "Trunking cross-section" table page 54.

#### ED - Straight lengths for KS plug-in tap-off units

delivered with straight lengths.



 
 Type
 Length "L" (mm)
 Number of tap-offs
 Cat. no. 3L + PE
 3L + N + PE <sup>(2)</sup>
 3L + N + PER <sup>(1)</sup>

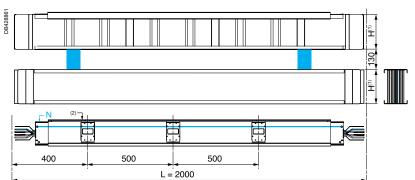
 Fixed
 2000
 3
 KTC6300ED3203
 KTC6300ED4203
 KTC6300ED4203

 4000
 3
 KTC6300ED3403
 KTC6300ED4403
 KTC6300ED4403

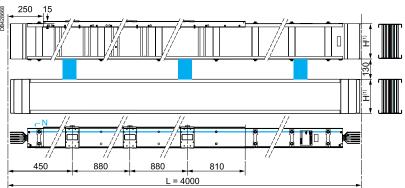
 (1) To action the table of t

(1) To order the 3L+N+PER version with reinforced lsc, replace KTC6300ED5••3 by KTC6300ED7••3.

#### KTCeeeeEDe203



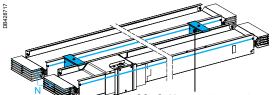
#### KTCeeeeEDe403



(1) See the "Trunking cross-section" table page 54.
 (2) Tap-off units KTB630eeeee can not be installed at this outlet.

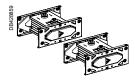


#### EB - Straight lengths for bolted tap-off units



KTC6300EB

GS - Guide supports are not delivered with straight lengths.



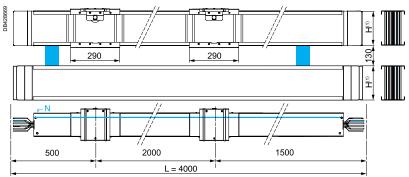
Type	Length	Number of	Cat. no.		
	"L" (mm)	tap-offs	3L + PE	3L + N + PE	3L + N + PER (1)
Fixed	2000	1	KTC6300EB320	KTC6300EB420	KTC6300EB520
	4000	2	KTC6300EB340	KTC6300EB440	KTC6300EB540

(1) To order the 3L+N+PER version with reinforced Isc, replace KTC6300EB5•• by KTC6300EB7••.

#### KTC6300EB•20



#### KTC6300EB•40



(1) See the "Trunking cross-section" table page 54.

## Additional run components IP55

#### Canalis KTC 1000 to 5000

#### Ordering

Complete the catalogue number by replacing "••••" by the rating. *Important:* 

■ add the dimensions of the selected component as a technical comment.

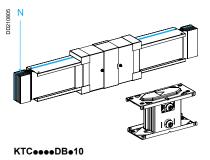
**Example:** the catalogue number of a 1350 A straght expansion unit, 3L + PE, 1000 mm long, is:

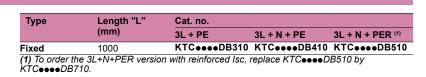
KTC1350DB310

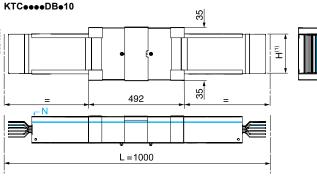
0021

Rating

#### DB - Straight expansion unit

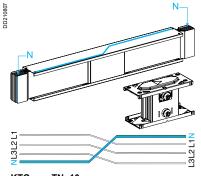






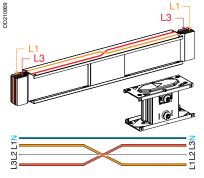
(1) See the "Trunking cross-section" table page 60.

#### **TN - Neutral crossover length**

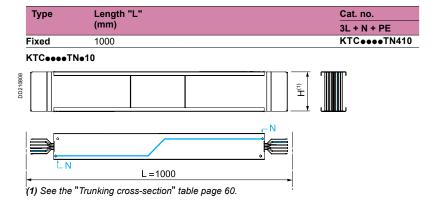


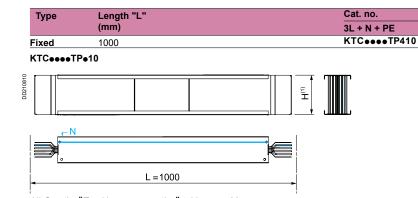
KTC....TN.10

#### **TP - Phase crossover length**



KTC••••TP•10

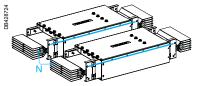




(1) See the "Trunking cross-section" table page 60.

#### Canalis KTC 6300

#### **DB** - Straight expansion unit



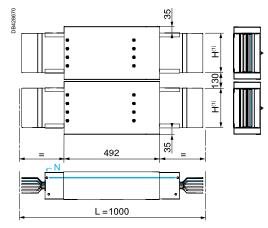
KTC6300DB•10



 
 Type
 Length "L" (mm)
 Cat. no. 3L + PE
 3L + N + PE
 3L + N + PER<sup>(1)</sup>

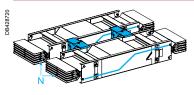
 Fixed
 1000
 KTC6300DB310
 KTC6300DB410
 KTC6300DB510

(1) To order the 3L+N+PER version with reinforced Isc, replace KTC6300DB510 by KTC6300DB710.



(1) See the "Trunking cross-section" table page 60.

#### **TN - Neutral crossover length**

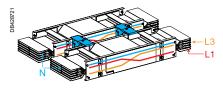




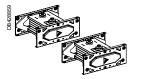
KTC6300TN410

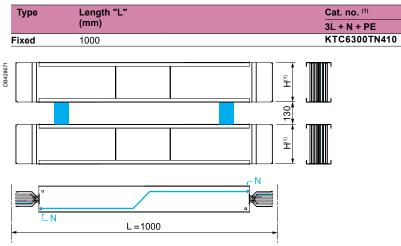


**TP - Phase crossover length** 

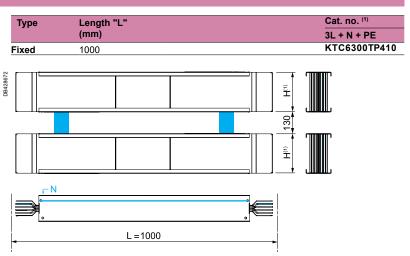








(1) See the "Trunking cross-section" table page 60.



(1) See the "Trunking cross-section" table page 60.

## Additional run components IP55

#### Canalis KTC 1000 to 6300

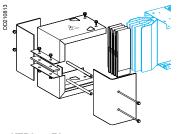


KTC .... YA.

Туре	Cat. no. (2)			
	3L + PE	3L + N + PE	3L + N + PER	
Version code (1)	3	4	5	7
Jointing unit		KTC•••YA4	KTC●●●●YA5	KTCeeeeYA
(1) See catalogue-r (2) References KTC	C6300YA• are m	ade of 2 reference	s KTC3200YA●.	
КТСөөөөҮАө				
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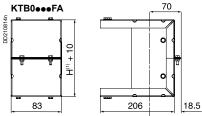
(1) See the "Trunking cross-section" table below.

#### FA - End covers



KTB0

Туре	Rating of the trunking (A)	Height H of the trunking (mm)	Cat. no.
ind cover	1000	74	KTB0074FA
	1350	104	KTB0104FA
	1600	124	KTB0124FA
	2000	164	KTB0164FA
	2500	204	KTB0204FA
	3200	244	KTB0244FA
	4000	324	KTB0324FA
	5000	404	KTB0404FA
	6300 <sup>(2)</sup>	622	KTB0622FA



(1) See the "Trunking cross-section" table below. (2) The reference KTB0622FA is made of 2 references KTB0244FA.

#### Trunking cross-section

Rating (A)		1000	1350	1600	2000	2500	3200	4000	5000	6300
Weight (kg/m)	3L + PE	19	25	29	36	44	51	66	82	102
	3L + N + PE	23	31	35	45	55	64	84	104	128
	3L + N + PER	25	33	39	49	60	71	92	114	142
Height H (mm) Width W (mm)		140 140							+0P	244 140

#### Canalis KTC 6300

#### **GS - Guide support**

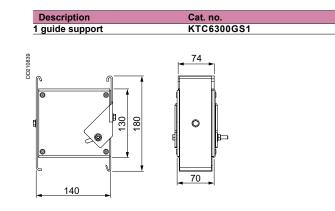


KTC6300GS1

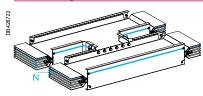
2 guide supports<sup>(1)</sup> are required to linked all KTC3200 elements together in order to create the KTC6300 run.

Weight (kg) 0.6

(1) 3 guide supports are required for 4 m straight length, 1 for straight end feed units ER1. These guide supports carry the label KTC6300A.



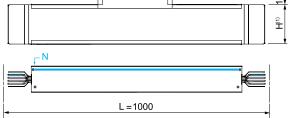
HC - Edgewise H



KTC6300HC•10



	Туре	Length	Cat. no.		
		"L" (mm)	3L + PE	3L + N + PE	3L + N + PER (1)
	Fixed	1000	KTC6300HC310	KTC6300HC410	KTC6300HC510
		order the 3L+N+PER version v 00HC710.	with reinforced Isc, i	replace KTC6300H	C510 by
DB428676		]			



(1) See the "Trunking cross-section" table page 60.

# Catalogue numbers and dimensions

# Elbow components for changing direction

Canalis KTC 1000 to 5000

#### Ordering

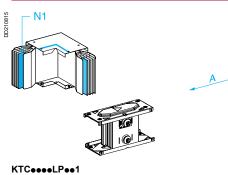
Complete the catalogue number by replacing "••••" by the rating. *Important:* 

■ add the dimensions of the selected unit as a technical comment.

**Example:** the catalogue number of a 1250 A made to measure end feed unit, N2, 3L + N + PE, 235 mm long and with between centres J, K and M = 170 mm, is: KTC1350ER42, A = 235, J = 170, K = 170 and M = 170.



#### LP - Flat elbows



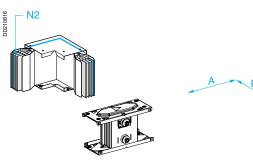
Туре	Position of	Cat. no.	Cat. no.					
	neutral	3L + PE	3L + N + PE	3L + N + PER (1)				
2 fixed branches	N1	KTCeeeeLP3A1	KTCeeeeLP4A1	KTCeeeeLP5A1				
	N2	KTCeeeeLP3A2	KTCeeeeLP4A2	KTCeeeLP5A2				
1 made to	N1	KTCeeeeLP3B1	KTCeeeeLP4B1	KTCeeeLP5B1				
measure short branche	N2	KTC•••LP3B2	KTCeeeeLP4B2	KTCeeeeLP5B2				
1 made to	N1	KTCeeeeLP3D1	KTCeeeeLP4D1	KTCeeeeLP5D1				
measure long branche	N2	KTC•••LP3D2	KTCeeeeLP4D2	KTCeeeeLP5D2				
2 made to	N1	KTCeeeeLP3E1	KTC••••LP4E1	KTCeeeLP5E1				
measure branches	N2	KTC•••LP3E2	KTCeeeeLP4E2	KTCeeeeLP5E2				

В

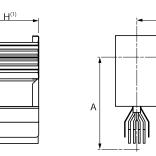
KTC....LP...

0822

B



KTC



(1) See the "Trunking cross-section" table page 67.

#### Dimensions

Туре	Rating (A)	Dimensions (mn	ו)
		Α	В
fixed branches	1000, 1350, 1600, 2000, 2500, 3200, 4000, 5000, 6300	300	300
made to	1000, 1350, 1600,		301 to 799
easure short anche	2000, 2500, 3200, 4000, 5000, 6300	301 to 799	300
made to	1000, 1350, 1600	300	800 to 1000
easure long		800 to 1000	300
ranche	2000, 2500, 3200	300	800 to 1100
		800 to 1100	300
	4000, 5000	300	800 to 1400
		800 to 1400	300
	6300	300	800 to 1100
		800 to 1100	300
made to	1000, 1350, 1600	301 to 600	301 to 1000
easure		301 to 1000	301 to 600
anches	2000, 2500, 3200	301 to 600	301 to 1100
		301 to 1100	301 to 600
	4000, 5000, 6300	301 to 600	301 to 1400
		301 to 1400	301 to 600
	6300	301 to 600	301 to 1100
		301 to 1100	301 to 600

#### 62 Life Is On Schneider

#### Canalis KTC 1000 to 5000

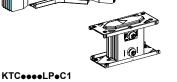
\_N1

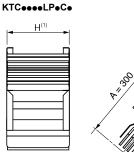
. N2

DD210823

DD210821

#### LP•C - Flat elbows with made to measure angles Position of Туре Cat. no. neutral 3L + PE 3L + N + PE 3L + N + PER (1) Made to KTC••••LP3C1 KTC••••LP4C1 KTC••••LP5C1 N1 measure angle N2 KTC••••LP3C2 KTC••••LP4C2 KTC••••LP5C2 (1) To order the 3L+N+PER version with reinforced lsc, replace KTC••••LP5C• by KTC••••LP7C•.





(1) See the "Trunking cross-section" table page 67.

Dimensions

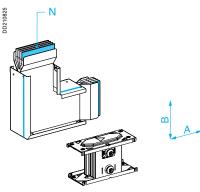
DD210824

Туре	Rating (A)	Dimension	Dimensions (mm)				
		Α	В	W			
Made to measure	All	300	300	91° to 179°			

B = 300

KTCeeeeLPeC2

#### LC - Edgewise elbows



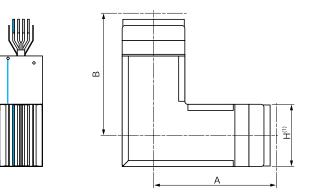
KTC...LC.

Туре	Cat. no.				
	3L + PE	3L + N + PE	3L + N + PER (1)		
2 fixed branches	KTC•••LC3A	KTCeeeeLC4A	KTCeeeeLC5A		
1 made to measure short branche	KTCeeeeLC3B	KTCeeeeLC4B	KTCeeeeLC5B		
1 made to measure long branche	KTCeeeeLC3D	KTCeeeeLC4D	KTCeeeeLC5D		
2 made to measure branches	KTC•••LC3E	KTCeeeeLC4E	KTCeeeeLC5E		
(1) To order the 31 +N+PER version	with reinforced lsc	replace KTC	C5 by		

(1) TO Order and KTCeeeeLC7e.

#### KTC...LC..

DD210826

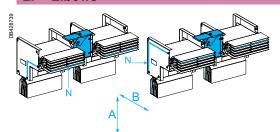


(1) See the "Trunking cross-section" table page 67 and dimensions page 66.

# Elbow components for changing direction

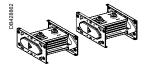
#### Canalis KTC 6300

#### LP - Elbows



KTC6	3001	Pee1

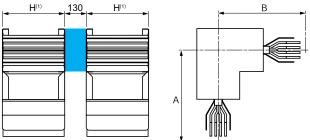
KTC6300LPee2



Туре	Position of	Cat. no.					
	neutral	3L + PE	3L + N + PE	3L + N + PER (1)			
2 fixed branches	N1	KTC6300LP3A1	KTC6300LP4A1	KTC6300LP5A1			
	N2	KTC6300LP3A2	KTC6300LP4A2	KTC6300LP5A2			
1 made to	N1	KTC6300LP3B1	KTC6300LP4B1	KTC6300LP5B1			
measure short branche	N2	KTC6300LP3B2	KTC6300LP4B2	KTC6300LP5B2			
1 made to	N1	KTC6300LP3D1	KTC6300LP4D1	KTC6300LP5D1			
measure long branche	N2	KTC6300LP3D2	KTC6300LP4D2	KTC6300LP5D2			
2 made to	N1	KTC6300LP3E1	KTC6300LP4E1	KTC6300LP5E1			
measure branches	N2	KTC6300LP3E2	KTC6300LP4E2	KTC6300LP5E2			

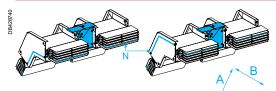
(1) To order the 3L+N+PER version with reinforced Isc, replace KTC6300LP5•• by KTC6300LP7••.

#### 2 x KTC3200LP ...



(1) See the "Trunking cross-section" table page 67 and dimensions page 62.

#### LP•C - Flat elbows with made to measure angles



KTC6300LPeC1

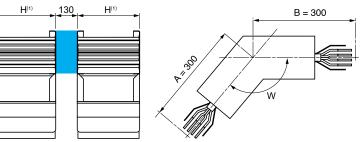
KTC6300LPeC2



Туре	Position of	Cat. no. (2)		
	neutral	3L + PE	3L + N + PE	3L + N + PER (1)
Made to	N1	KTC6300LP3C1	KTC6300LP4C1	KTC6300LP5C1
measure angle	N2	KTC6300LP3C2	KTC6300LP4C2	KTC6300LP5C2

(1) To order the 3L+N+PER version with reinforced lsc, replace KTC6300LP5C• by KTC6300LP7C•.

#### 2 x KTC3200LP•••



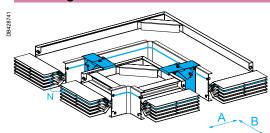
(1) See the "Trunking cross-section" table page 67.

# Dimensions Dimensions (mm) A B W 6300 300 300 91° to 179°

64 Life Is On Schneider

#### Canalis KTC 6300

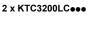
#### LC - Edgewise elbows



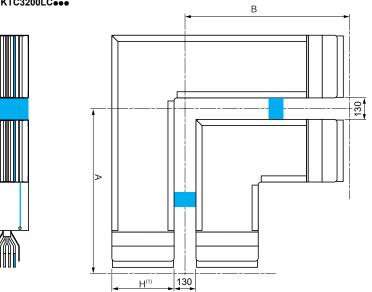
KTC6300LC...



Туре	Cat. no. (2)		
	3L + PE	3L + N + PE	3L + N + PER (1)
2 fixed branches	KTC6300LC3A	KTC6300LC4A	KTC6300LC5A
1 made to measure short branche	KTC6300LC3B	KTC6300LC4B	KTC6300LC5B



DB428675



(1) See the "Trunking cross-section" table page 67 and dimensions page 66.

# Catalogue numbers and dimensions

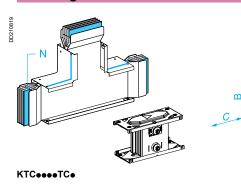
## Elbow components for changing direction IP55

Canalis KTC 1000 to 6300

Poting (A)	Dimensions (r	nm)
Rating (A)	· · ·	•
1000		<u>B</u>
	-	275 290
		300
		320
		340
		360
		400
		440
		548
1000		276 to 774
		275
1350		291 to 789
		290
1600	300	301 to 799
	301 to 799	300
2000	320	321 to 819
	321 to 819	320
2500	340	341 to 839
	341 to 839	340
3200	360	361 to 859
	361 to 859	360
4000	400	401 to 899
	401 to 899	400
5000	440	441 to 939
	441 to 939	440
6300	548	549 to 1047
		548
1000		775 to 1000
		275
1350		790 to 1000
1000		290
1600		800 to 1000
1000		300
2000		820 to 1100
2000		320 10 1100
2500		
2500		840 to 1100
2200		340
3200		860 to 1100
1000		360
4000		900 to 1400
		400
5000		940 to 1400
		440
1000	276 to 745	276 to 1000
	276 to 1000	276 to 745
1350	291 to 730	291 to 1000
	291 to 1000	291 to 730
1600	301 to 720	301 to 1000
	301 to 1000	301 to 720
2000	321 to 700	321 to 1100
	321 to 1100	321 to 700
2500	341 to 680	341 to 1100
2500	341 to 680	
	341 to 680 341 to 1100	341 to 680
2500 3200	341 to 680 341 to 1100 361 to 660	341 to 680 361 to 1100
3200	341 to 680           341 to 1100           361 to 660           361 to 1100	341 to 680 361 to 1100 361 to 660
	341 to 680           341 to 1100           361 to 660           361 to 1100           401 to 620	341 to 680 361 to 1100 361 to 660 401 to 1400
3200	341 to 680           341 to 1100           361 to 660           361 to 1100	341 to 680 361 to 1100 361 to 660
	2500         3200         4000         5000         6300         1000         1350         2000         2500         3200         4000         5000         1000         1350         1000         1350         1000         1350	A           1000         275           1350         290           1600         300           2000         320           2500         340           3200         360           4000         400           5000         440           6300         548           1000         275           276 to 774           1350         290           291 to 789           1600         300           301 to 799           2000         320           321 to 819           2500         340           321 to 819           2500         340           321 to 819           2500         340           3200         360           361 to 859           4000         400           411 to 939           6300         548           549 to 1047           1000         275           775 to 1000           1350         290           790 to 1000           1600         300           800 to 1000           2000         320

#### Canalis KTC 1000 to 5000

#### TC - Edgewise tee

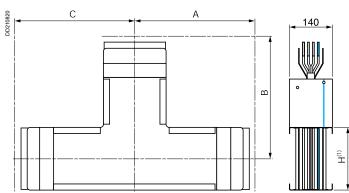


Туре	Cat. no. (2)		
	3L + PE	3L + N + PE	3L + N + PER (1)
Fixed	KTCTC3	KTC••••TC4	KTCTC5

(1) To order the 3L+N+PER version with reinforced lsc, replace KTC●● KTC●●●●TC7.

(2) Not available for KTC6300.

#### KTCeeeTCe



(1) See the "Trunking cross-section" table below.

#### Dimensions

Туре	Rating (A)	Dimension	Dimensions (mm)				
		Α	В	С			
Fixed	1000	275	275	275			
	1350	290	290	290			
	1600	300	300	300			
	2000	320	320	320			
	2500	340	340	340			
	3200	360	360	360			
	4000	400	400	400			
	5000	440	440	440			

#### Trunking cross-section

Rating (A)		1000	1350	1600	2000	2500	3200	4000	5000	6300
Weight (kg/m)	3L + PE	19	25	29	36	44	51	66	82	102
	3L + N + PE	23	31	35	45	55	64	84	104	128
	3L + N + PER	25	33	39	49	60	71	92	114	142
Height H (mm) Width W (mm)								╴╢╴╴┥		130 244
<mark>∢W</mark> _		<u>₹</u>						337		

## **Catalogue numbers** and dimensions

## Zed components for changing direction **IP55**

Canalis KTC 1000 to 5000

#### Ordering

Complete the catalogue number by replacing "..... by the rating. Important:

■ add the dimensions of the selected component as a technical comment. Example: the catalogue number of a 1600 A edgewise zed unit, N2, 3L + N + PE with dimensions A = 300 mm, B = 450 mm, C = 300 mm is: KTC1600ZC42, A = 300, B = 450, C = 300.

3L + N + PE

KTC•••ZP4

3L + N + PER (1)

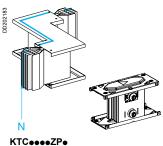
KTC•••ZP5

Cat. no. 3L + PE

KTC•••ZP3

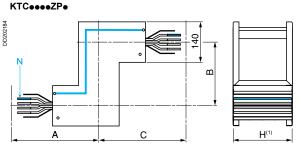


#### **ZP** - Flat zed units



Made to measure (1) To order the 3L+N+PER version with reinforced Isc, replace KTC••••ZP5 by KTC••••ZP7.

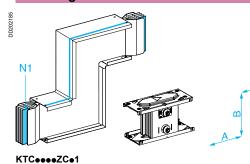
Туре



(1) See the "Trunking cross-section" page 70.

	ensions ting (A)	Dimensions (mm)				
		Α	В	С		
All		300	130 to 599	300		

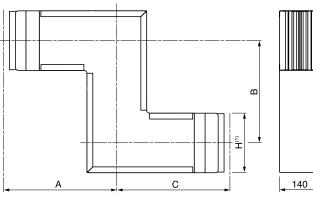
#### ZC - Edgewise zed units



Position of Type Cat. no. neutral 3L + PE 3L + N + PE 3L + N + PER (1) KTCeeeeZC31 KTCeeeeZC41 KTCeeeeZC51 Made to N1 measure KTCeeeZC32 KTC KTCeeeZC52 N2 (1) To order the 3L+N+PER version with reinforced lsc, replace KTCeeeeZC5e by KTCeeeeZC7e.

KTC •••• ZC ••

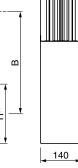
DD202186



(1) See the "Trunking cross-section" page 70.

Dimensions

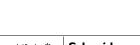
Rating (A)	Dimensions (mm)						
	Α	В	С				
1000	275	90 to 549	275				
1350	290	90 to 579	290				
1600	300	90 to 599	300				
2000	320	90 to 639	320				
2500	340	90 to 679	340				
3200	360	90 to 719	360				
4000	400	90 to 799	400				
5000	440	90 to 879	440				



KTC•••ZC•2

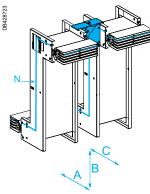
D210827

N2

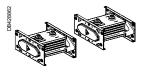


#### Canalis KTC 6300

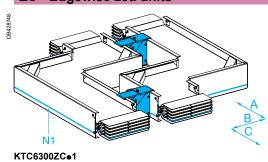
#### ZP - Flat zed units

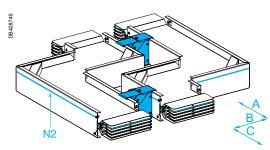


KTC6300ZP•

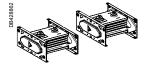


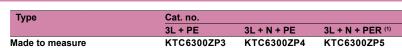
ZC - Edgewise zed units



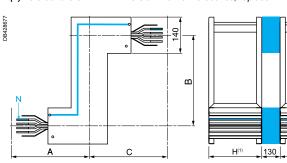


KTC6300ZC•2





(1) To order the 3L+N+PER version with reinforced lsc, replace KTC6300ZP5 by KTC6300ZP7.



(1) See the "Trunking cross-section" page 70.

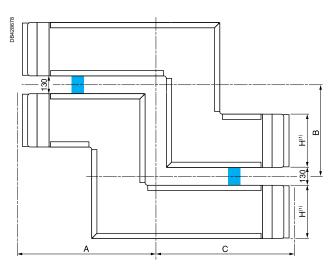
#### Dimensions

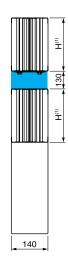
Rating (A)	Dimensions (mm)				
	Α	В	С		
6300	300	130 to 599	300		

 $H^{(1)}$ 

Туре	Position of neutral	Cat. no. <sup>(2)</sup>				
		3L + PE	3L + N + PE	3L + N + PER (1)		
Made to	N1	KTC6300ZC31	KTC6300ZC41	KTC6300ZC51		
measure	N2	KTC6300ZC32	KTC6300ZC42	KTC6300ZC52		

(1) To order the 3L+N+PER version with reinforced lsc, replace KTC6300ZC5• by KTC6300ZC7•.



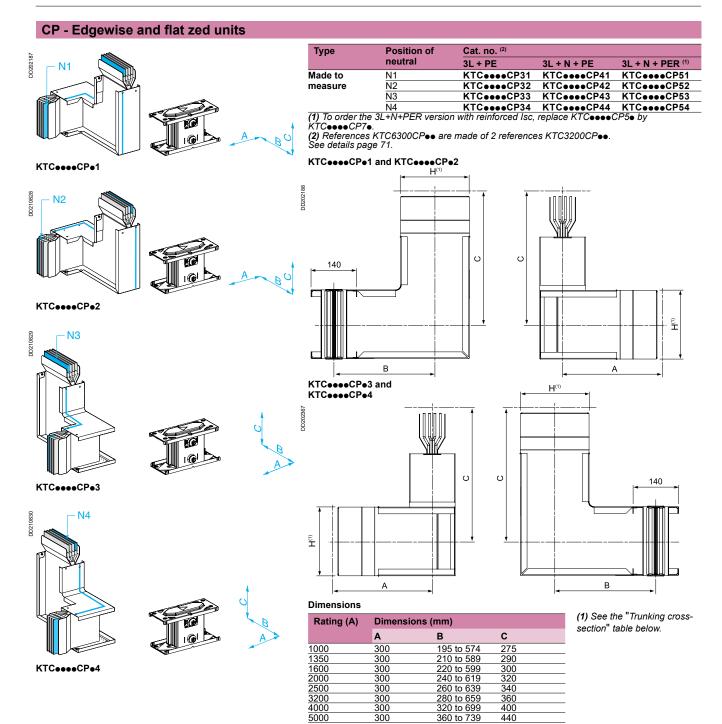


(1) See the "Trunking cross-section" page 70.

Dimensions							
Rating (A)	Dimensions (mm)						
	Α	В	С				
6300	548	90 to 719	548				

# Zed components for changing direction

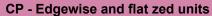
#### Canalis KTC 1000 to 5000

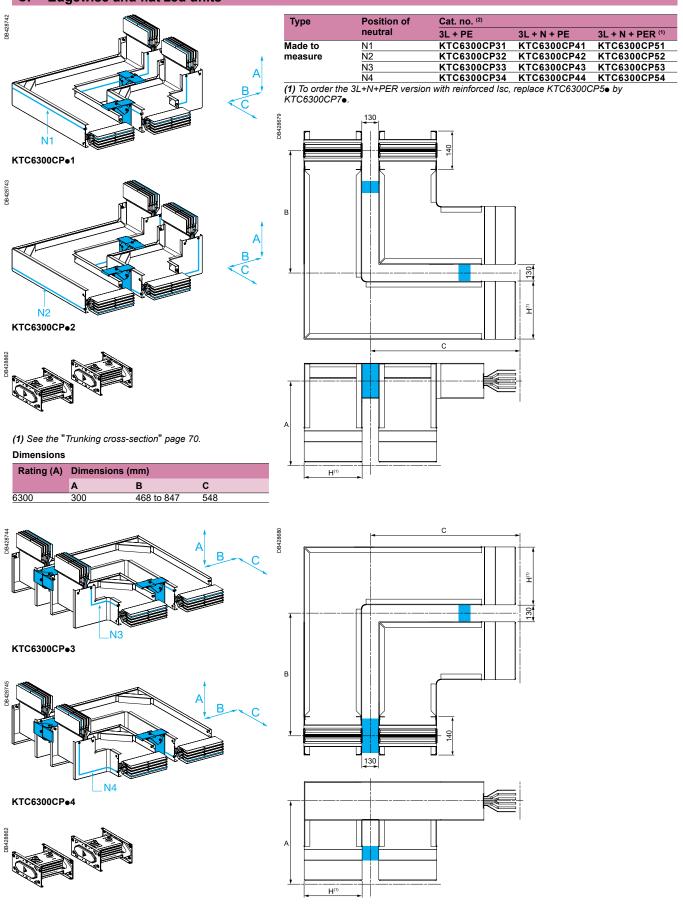


#### **Trunking cross-section**

Rating (A)		1000	1350	1600	2000	2500	3200	4000	5000	6300
Weight (kg/m)	3L + PE	19	25	29	36	44	51	66	82	102
	3L + N + PE	23	31	35	45	55	64	84	104	128
	3L + N + PER	25	33	39	49	60	71	92	114	142
Height H (mm) Width W (mm)		140 140								440 140

# Canalis KTC 6300





# Catalogue numbers and dimensions

# Fire rated straight feeder lengths

Canalis KTC 1000 to 5000

Compliant with the IEC 60331

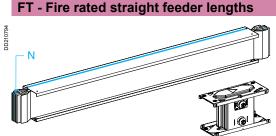
#### Ordering

Complete the catalogue number by replacing "••••" by the rating. *Important:* 

■ add the dimensions of the selected component as a technical comment **Example:** the catalogue number of an 1000 A feeder length, 3L + N + PE, 2450 mm long, is:

KTC1000FT42C, L = 2450

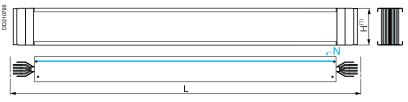
Rating



Туре	Length "L"	Cat. no.					
	(mm)	3L + PE	3L + N + PE	3L + N + PER (1)			
Fixed	2000	KTCeeeFT320	KTCeeeFT420	KTCeeeFT520			
	4000	KTCeeeFT340	KTCeeeFT440	KTCeeeFT540			
Made to	500 to 1500	KTCeeeFT31A	KTCeeeFT41A	KTCeeeFT51			
measure	1501 to 1999	KTCeeeFT32B	KTCeeeFT42B	KTCeeeFT52			
	2001 to 2500	KTCeeeFT32C	KTCeeeFT42C	KTCeeeFT520			
	2501 to 3000	KTCeeeFT33D	KTCeeeFT43D	KTCeeeFT53			
	3001 to 3500	KTC•••FT33E	KTC•••FT43E	KTCeeeFT53E			
	3501 to 3999	KTC•••FT33F	KTC•••FT43F	KTCeeeFT53			

(1) To order the 3L+N+PER version with reinforced lsc, replace KTC••••FT5•• by KTC••••FT7••.

#### KTC •••• FT •••

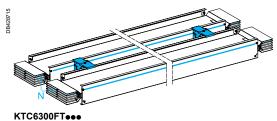


(1) See the "Trunking cross-section" table page 70.

### Canalis KTC 6300

KTC .... FT ...

# FT - Fire rated straight feeder lengths





Туре	Length "L"	Cat. no.	Cat. no.					
	(mm)	3L + PE	3L + N + PE	3L + N + PER (1)				
Fixed	2000	KTC6300FT320	KTC6300FT420	KTC6300FT520				
	4000	KTC6300FT340	KTC6300FT440	KTC6300FT540				
Made to	500 to 1500	KTC6300FT31A	KTC6300FT41A	KTC6300FT51A				
measure	1501 to 1999	KTC6300FT32B	KTC6300FT42B	KTC6300FT52E				
	2001 to 2500	KTC6300FT32C	KTC6300FT42C	KTC6300FT52C				
	2501 to 3000	KTC6300FT33D	KTC6300FT43D	KTC6300FT53D				
	3001 to 3500	KTC5000FT33E	KTC5000FT43E	KTC5000FT53E				
	3501 to 3999	KTC5000FT33F	KTC5000FT43F	KTC5000FT53F				

(1) To order the 3L+N+PER version with reinforced lsc, replace KTC6300FT5● by KTC6300FT7●●.



(1) See the "Trunking cross-section" table page 70.

# **Fire rated flat elbows**

IP55

Compliant with the IEC 60331

# Canalis KTC 1000 to 5000

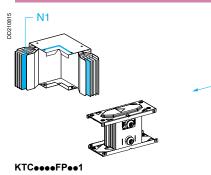
# Ordering

Complete the catalogue number by replacing "••••" by the rating. *Important:* 

■ add the dimensions of the selected component as a technical comment. Example: the catalogue number of a 2000 A flat elbow, N1, 3L + N + PE with dimensions A = 300 mm and B = 650 mm is: KTC2000FP4B1, A = 300, B = 650.

------ Rating

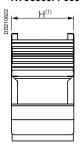
### FP - Fire rated flat elbows

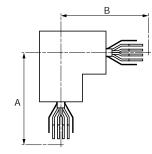


Туре	Position of	Cat. no.	Cat. no.					
	neutral	3L + PE	3L + N + PE	3L + N + PER (1)				
2 fixed branches	N1	KTCeeeeFP3A1	KTCeeeeFP4A1	KTCeeeeFP5A1				
	N2	KTCeeeeFP3A2	KTCeeeeFP4A2	KTC				
1 made to	N1	KTCeeeeFP3B1	KTCeeeeFP4B1	KTCeeeFP5B1				
measure short branche	N2	KTC•••FP3B2	KTC	KTC•••FP5B2				
1 made to	N1	KTCeeeeFP3D1	KTCeeeeFP4D1	KTCeeeFP5D1				
measure long branche	N2	KTC•••FP3D2	KTC	KTC•••FP5D2				
2 made to	N1	KTCeeeeFP3E1	KTC•••FP4E1	KTCeeeeFP5E1				
measure branches	N2	KTC•••FP3E2	KTCFP4E2	KTC•••FP5E2				

(1) To order the 3L+N+PER version with reinforced lsc, replace KTCeeeeFP5ee by KTCeeeeFP7ee.

#### KTC •••• FP •••





(1) See the "Trunking cross-section" table page 70 and dimensions page 66.

B

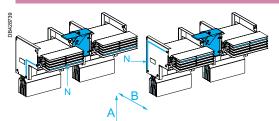
# Canalis KTC 6300

KTC••••FP••2

N2

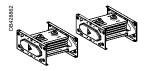
DD210816

#### FP - Fire rated flat elbows



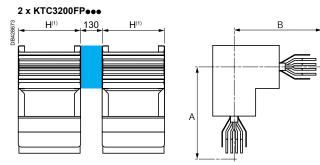
KTC6300FPee1

KTC6300FPee2



Туре	Position of	Cat. no.	Cat. no.				
	neutral	3L + PE	3L + N + PE	3L + N + PER (1)			
2 fixed branches	N1	KTC6300FP3A1	KTC6300FP4A1	KTC6300FP5A1			
	N2	KTC6300FP3A2	KTC6300FP4A2	KTC6300FP5A2			
1 made to	N1	KTC6300FP3B1	KTC6300FP4B1	KTC6300FP5B1			
measure short branche	N2	KTC6300FP3B2	KTC6300FP4B2	KTC6300FP5B2			
1 made to	N1	KTC6300FP3D1	KTC6300FP4D1	KTC6300FP5D1			
measure long branche	N2	KTC6300FP3D2	KTC6300FP4D2	KTC6300FP5D2			
2 made to	N1	KTC6300FP3E1	KTC6300FP4E1	KTC6300FP5E1			
measure branches	N2	KTC6300FP3E2	KTC6300FP4E2	KTC6300FP5E2			

(1) To order the 3L+N+PER version with reinforced Isc, replace KTC6300FP5•• by KTC6300FP7••.



(1) See the "Trunking cross-section" table page 70 and dimensions page 66.

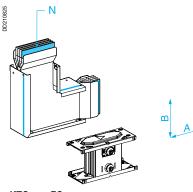
73

# **Fire rated edgewise elbows**

IP55 Compliant with the IEC60331

# Canalis KTC 1000 to 5000

## FC - Fire rated edgewise elbows



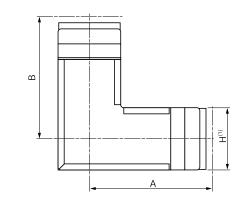
Туре	Cat. no.		
	3L + PE	3L + N + PE	3L + N + PER (1)
2 fixed branches	KTC•••FC3A	KTCFC4A	KTCFC5A
1 made to measure short branche	KTC•••FC3B	KTCeeeFC4B	KTC•••FC5B
1 made to measure long branche	KTC•••FC3D	KTC•••FC4D	KTC•••FC5D
2 made to measure branches	KTC•••FC3E	KTCFC4E	KTC•••FC5E
(1) To order the 31 +N+PER version	with reinforced lsc	replace KTC	C5. by

L+N+PER version with reinforced Isc, replace KTC••••FC5• by KTC•••FC7•.

#### KTC ... FC ...

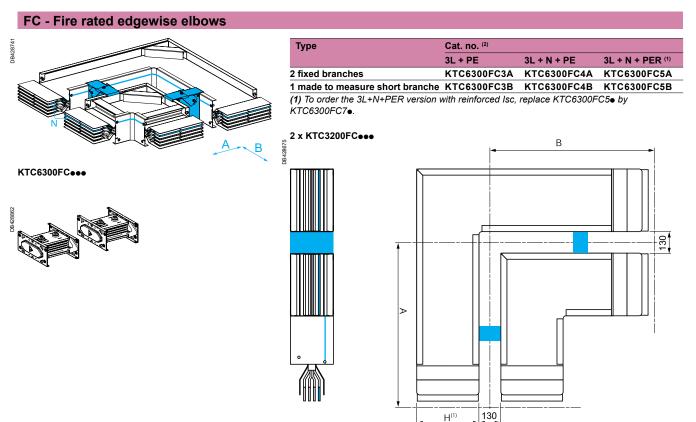






(1) See the "Trunking cross-section" table page 70 and dimensions page 66.

### Canalis KTC 6300



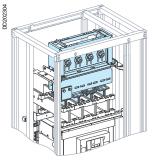
(1) See the "Trunking cross-section" table page 70 and dimensions page 66.

H<sup>(1)</sup>

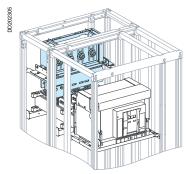
# Canalis interfaces for Prisma P LV switchboard

# Canalis KTC 1000 to 5000

# Interfaces for Masterpact NW circuit breakers



Top direct connection



Rear connection

Interfaces can be ordered by 2 channels:

# ■ as a Canalis KT product, in this case use the reference in this catalogue eg. **KTB04715**

■ as a Prisma or Okken product, in this case remove the radical **KTB** to find the correct reference eg.04715.

All accessories are only available as Prisma or Okken references.

All mounting instruction or other documents will be found by using the reference without **KTB** radical.

Circuit	Type of	Canalis	No. of poles	Conne	ction	Cat. no.	
breaker	circuit breaker	polarity	of circuit breaker	Top direct	Rear	_	
NW08/16	Fixed or	3L+PE	3P			KTB04715	
	drawout	3L+N+PE	4P			KTB04716	
		3L+N+PER	4P			KTB04716+KTB0164PE1	
NW20/25	Fixed or	3L+PE	3P			KTB04725	
	drawout	3L+N+PE	4P			KTB04726	
		3L+N+PER	4P			KTB04726+KTB0244PE1	
NW32	Fixed or	3L+PE	3P			KTB04735	
	drawout	3L+N+PE	4P	•		KTB04736	
		3L+N+PER	4P			KTB04736+KTB0404PE1	
NW40	Fixed or	3L+PE	3P			KTB04737	
	drawout	3L+N+PE	4P			KTB04738	
		3L+N+PER	4P			KTB04738+KTB0404PE1	

For the position in the switchboard, see the "Installation guide".

#### Number of modules required in the switchboard

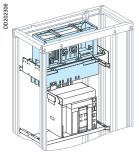
Circuit breaker	Connection	Type of circuit breaker	Number of vertical modules <sup>(1)</sup>
NW08/16	Top direct	Fixed or drawout	27
	Rear	Fixed	16
		Drawout	17
NW20/32	Top direct	Fixed or drawout	28
	Rear	Fixed	16
		Drawout	17
NW40	Rear	Fixed or drawout	36
(1) 1 module = 50 m	m		

(1) 1 module = 50 mm.

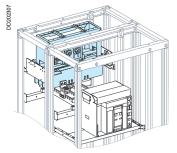
# Canalis interfaces for Prisma P LV switchboard

# Canalis KTC 1000 to 5000

# Interfaces for Masterpact NT and Compact NS circuit breakers



Top direct connection



Rear connection

#### Masterpact NT

	Type of	Canalis	No. of poles	Conne	ction	Cat. no.
breaker	oreaker circuit breaker	polarity	of circuit breaker	Top direct	Rear	_
NT06/12	Fixed or drawout	3L+PE	3P			KTB04703
		3L+N+PE	4P			KTB04704
		3L+N+PER	4P	•		KTB04704+KTB0164PE1
NT16	Fixed or	3L+PE	3P			KTB04703
	drawout	3L+N+PE	4P			KTB04704
		3L+N+PER	4P			KTB04704+KTB0164PE1

For the position in the switchboard, see the "Installation guide".

#### **Compact NS**

Circuit	Type of	Canalis	No. of poles	Conne	ction	Cat. no.
breaker	circuit breaker	polarity	of circuit breaker	Top direct	Rear	
NS630b/	J Fixed or drawout	3L+PE	3P			KTB04703
1250		3L+N+PE	4P			KTB04704
		3L+N+PER	4P			KTB04704+KTB0164PE1
NS1600	Fixed or	3L+PE	3P			KTB04703
	drawout	3L+N+PE	4P			KTB04704
		3L+N+PER	4P			KTB04704+KTB0164PE1

For the position in the switchboard, see the "Installation guide".

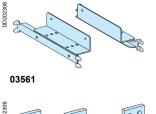
#### Number of modules required in the switchboard

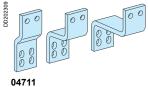
Circuit breaker	Connection	Type of circuit breaker	Number of vertical modules <sup>(1)</sup>	
NT06/12	Top direct	Fixed	17	
NS630b/1250		Drawout	18	
	Rear	Fixed or drawout	16	
NT16 NS1600	Rear	Fixed or drawout	16	

(1) 1 module = 50 mm.

# Canalis KTC 1000 to 5000

# Interface supports and protection covers





Circuit breaker	Type of circ breaker	uit	Conne	ection	Supports	e	erminal ktension ar supports	Cover
NW08/32	Fixed or		Top dir	ect	03561	3	x 04694	04871 + 04861
	drawout		Rear		03561	2	x 04694	04871 + 04863
NW40	Fixed or		Top dir	ect	03561	-		04871 + 04861
	drawout		Rear		03561	-		04871 + 04863
breaker	circuit	pol	arity				circuit	
	breaker	p e .	unty				breaker connection	I
NT06/12	Fixed or	3P	unty	Top direct	03561		breaker	
NT06/12				Top direct Rear	03561 03561		breaker connection	04871 + 04852
NT06/12	Fixed or			-			breaker connection 04712	04871 + 04852 04871 + 04853
NT06/12	Fixed or	3P		Rear	03561		breaker connection 04712 04713	04871 + 04852 04871 + 04853 04871 + 04852 04871 + 04853
NT06/12 NT16	Fixed or	3P		Rear Top direct	03561 03561		breaker connection 04712 04713 04712	04871 + 04852 04871 + 04853 04871 + 04852

# Compact NS

Circuit breaker	Type of circuit breaker	Canalis polarity	Connection	Supports	Canalis/ circuit breaker connection	Cover
NS630b/	Fixed	3P	Top direct	03561	04712	04871 + 04851
1250			Rear	03561	04713	04871 + 04853
		4P	Top direct	03561	04712	04871 + 04851
			Rear	03561	04714	04871 + 04853
	Drawout	3P	Top direct	03561	04711	04871 + 04852
			Rear	03561	04713	04871 + 04854
		4P	Top direct	03561	04712	04871 + 04852
			Rear	03561	04714	04871 + 04854
NS1600	Fixed	3P	Rear	03561	04713	04871 + 04853
		4P	Rear	03561	04714	04871 + 04853
	Drawout	3P	Rear	03561	04713	04871 + 04854
		4P	Rear	03561	04714	04871 + 04854

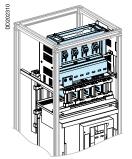
# Arc-chute covers

Circuit breaker	Type of circuit breaker	Canalis polarity	Cat. no.
Masterpact NT	Fixed	3P	47335
		4P	47336
Compact NS	Fixed	3P	33596
		4P	33597

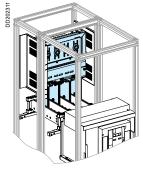
# Canalis interfaces for Okken LV switchboard

# Canalis KTC 1000 to 5000

### Interfaces for Masterpact NW circuit breakers



Top direct connection (RDH)

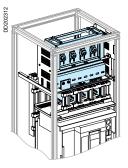


Rear connection (RAR)

Circuit	Type of	Canalis	No. of poles	Conne	ction	Cat. no.
breaker	circuit breaker	polarity	of circuit breaker	Top direct	Rear	_
NW08/16	Drawout	3L+PE	3P			KTB87811
						KTB87821
		3L+N+PE	4P			KTB87812
						KTB87822
		3L+N+PER	4P			KTB87812+KTB0164PE
						KTB87822+KTB0164PE
NW20/25	Drawout	3L+PE	3P			KTB87813
						KTB87823
		3L+N+PE	4P			KTB87814
						KTB87824
		3L+N+PER	4P			KTB87814+KTB0244PE
						KTB87824+KTB0244PE
NW32	Drawout	3L+PE	3P			KTB87815
						KTB87825
		3L+N+PE	4P	•		KTB87816
						KTB87826
		3L+N+PER	4P	-		KTB87816+KTB0404PE
						KTB87826+KTB0404PE
NW40	Drawout	3L+PE	3P			KTB87817
						KTB87827
		3L+N+PE	4P	•		KTB87818
						KTB87828
		3L+N+PER	4P			KTB87818+KTB0404PE
						KTB87828+KTB0404PE

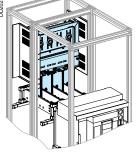
For the position in the switchboard, see the "Installation guide".

### Interfaces for Masterpact NT circuit breakers



Top direct connection (RDH)

Interface supports



Rear connection (RAR) Fitting the interface does not change switchboard modularity as fixed by the devices.

Circuit	Type of	Canalis		Connection		Cat. no.
breaker	circuit breaker	polarity	of circuit breaker	Top direct	Rear	_
NT08/16	Drawout	3L+PE	3P			KTB87811
						KTB87821
		3L+N+PE	4P			KTB87812
						KTB87822
		3L+N+PER	4P			KTB87812+KTB0164PE1
						KTB87822+KTB0164PE1

For the position in the switchboard, see the "Installation guide".

Circuit breaker	Type of circuit breaker	Connection	Cat. no.
NW08/40 NT08/16	Drawout	Top direct	87800
NW08/32 <sup>(1)</sup> NT08/16	Drawout	Rear	87801

(1) For rear connection of the interface to a Masterpact NW40 circuit breaker, the supports are supplied with the interface.

Designation	Cat. no.
Special tightening wrench bit	87808

■ For 2 superimposed 120x10 bars.

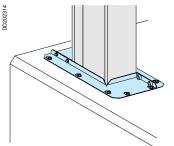
 This tool is essential to tighten the conversion modules on the junction block's spreaders. It is fitted on a torque wrench.

78 Life Is On Schneider

# **Sealing kits** IP55

# Canalis KTC 1000 to 5000

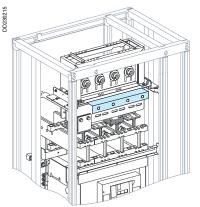
# TT - Sealing kits for switchboard and Trihal transformer roofs with interface



Туре	Rating of the trunking (A)	Height H of the trunking (mm)	Cat. no.
Sealing kit	1000	74	KTB0074TT01
	1350	104	KTB0104TT01
	1600	124	KTB0124TT01
	2000	164	KTB0164TT01
	2500	204	KTB0204TT01
	3200	244	KTB0244TT01
	4000	324	KTB0324TT01
	5000	404	KTB0404TT01

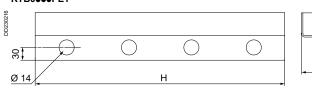
KTB0

## PE - Reinforced protective earth (PER) for Prisma P and Okken interfaces



Height "H" (mm)	Number of holes	Cat.no.
160	2	KTB0164PE1
240	3	KTB0244PE1
400	4	KTB0404PE1





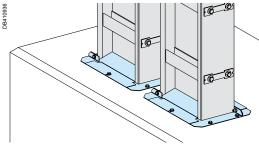


Thickness: 3 mm.

KTB0

# **Canalis KTC 6300**

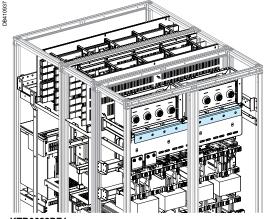
### TT - Sealing kits for switchboard and Trihal transformer roofs with interface

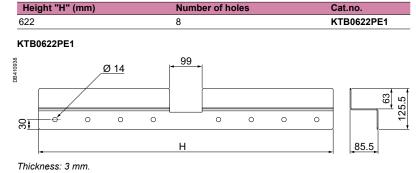


Туре	Rating of the trunking (A)	Height H of the trunking (mm)	Cat. no.
Sealing kit	6300	622	KTB0622TT01
Sealing kit	6300	622	KTB0622

KTB0622TT01

# PE - Reinforced protective earth (PER) for Prisma P and Okken interfaces





KTB0622PE1

# Catalogue numbers and dimensions

# Feed units for switchboards and oil immersed transformers

Canalis KTC 1000 to 5000

# Ordering

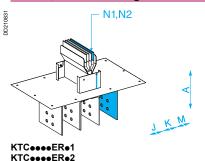
Complete the catalogue number by replacing "••••" by the rating. *Important:* 

add the dimensions of the selected unit as a technical comment.

**Example:** the catalogue number of a 1250 A made to measure end feed unit, N2, 3L + N + PE, 235 mm long and with between centres J, K and M = 170 mm, is: KTC1350ER42, A = 235, J = 170, K = 170 and M = 170.



# ERe1, ERe2 - Straight feed units

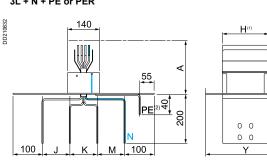


Туре	Position of	Cat. no.		
	neutral	3L + PE	3L + N + PE	3L + N + PER (1)
Fixed	N1	KTCeeeER31	KTCeeeER41	KTCeeeER51
Made to measure	N2	KTCeeeeER32	KTCeeeER42	KTCeeeER52

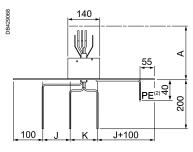
KTC•••ER7•

These end feed units are supplied with a connection kit to create a PEN if needed.

#### KTCeeeeERe1, KTCeeeERe2 3L + N + PE or PER







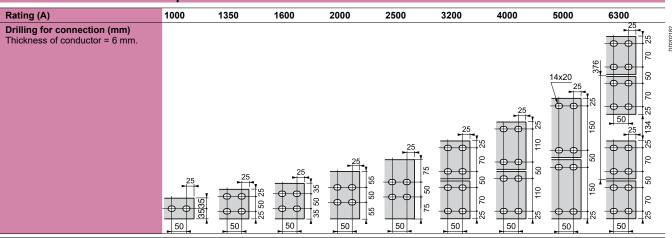
(1) See the "Trunking cross-section" table in the following page.

(2) PE drilled diameter = 14 mm pour cables with crimped lugs.

#### Table of dimensions

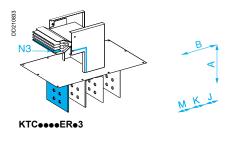
Rating (A)	Neutral	ral Dimensions (mm)				
		Α	J, K, M	Y		
1000 to	N1	235	115	230		
1600	N2	235 to 734	80 to 250	230		
2000 to	N1	235	115	350		
3200	N2	235 to 734	80 to 250	350		
4000	N1	235	115	510		
and 5000	N2	235 to 734	80 to 250	510		

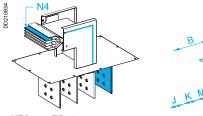
# **Dimensions of connection pads**



# Canalis KTC 1000 to 5000

#### ERe3, ERe4 - Flat elbow feed units



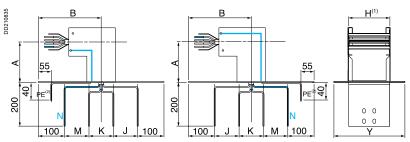


KTCeeeeERe4

Туре	Position of	Cat. no.		
	neutral	3L + PE	3L + N + PE	3L + N + PER (1)
Made to measure	N3	KTC	KTCeeeeER43	KTCeeeeER53
	N4	KTCeeeER34	KTCeeeER44	KTCeeeER54

(1) To order the 3L+N+PER version with reinforced Icc, replace KTCeeeeER5e b KTCeeeeER7e.

#### KTCeeeeERe3 <sup>(3)</sup>, 3L + N + PE or PER KTCeeeeERe4 <sup>(3)</sup>, 3L + N + PE or PER



(1) See the "Trunking cross-section" table below.

(2) PE drilled diameter = 14 mm pour cables with crimped lugs.

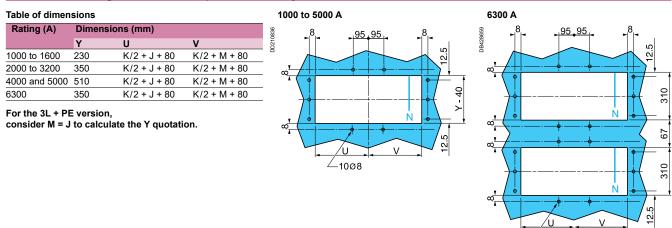
(3) 3L + PE version, see page 80.

These end feed units are supplied with a connection kit to create a PEN if needed.

#### Tableau of dimensions

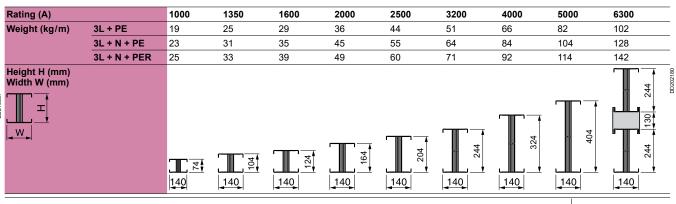
Rating (A)	Neutral	Dimensions (mm)					
		Α	В	J, K, M	Y		
1000 to 1600	N3, N4	200 to 534	300	80 to 250	230		
2000 to 3200	N3, N4	200 to 534	300	80 to 250	350		
4000 and 5000	N3, N4	200 to 534	300	80 to 250	510		

#### Cut-out drawing for feed units placed directly on the device roof



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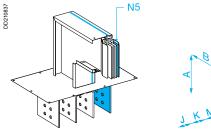
### Trunking cross-section



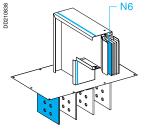
# Feed units for switchboards and oil immersed transformers IP55

# Canalis KTC 1000 to 5000





KTC



KTC•••ER•6





KTCeeeeERe5 <sup>(3)</sup>, 3L + N + PE or PER KTCeeeeERe6 <sup>(3)</sup>, 3L + N + PE or PER

(1) To order the 3L+N+PER version with reinforced lcc, replace KTCeeeeER5e by KTCeeeER7e.

Cat. no.

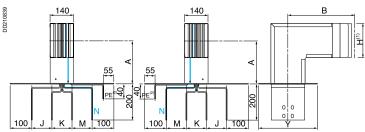
3L + PE

KTCeeeER35

KTCeeeER36

3L + N + PE

KTCeeeER45 KTCeeeER46 3L + N + PER <sup>(1)</sup> KTC•••ER55 KTC•••ER56



(1) See the "Trunking cross-section" table opposite.
 (2) PE drilled diameter = 14 mm pour cables with crimped lugs.

Position of

neutral

N5

N6

(2) FE united diameter – 14 min pour cables with cr (3) 3L + PE version, see page 80.

#### Table of dimensions

Туре

Made to measure

Rating (A)	Neutral	Dimensions (mm)			
		Α	В	J, K, M	Y
1000	N5, N6	175 to 509	275	80 to 250	230
1350	N5, N6	190 to 524	290	80 to 250	230
1600	N5, N6	200 to 534	300	80 to 250	230
2000	N5, N6	220 to 554	320	80 to 250	350
2500	N5, N6	240 to 574	340	80 to 250	350
3200	N5, N6	260 to 594	360	80 to 250	350
4000	N5, N6	300 to 634	400	80 to 250	510
5000	N5, N6	340 to 674	440	80 to 250	510

#### Cut-out drawing for feed units placed directly on the device

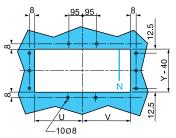
Rating (A)	Dimensions (mm)						
	Y	U	V				
1000 to 1600	230	K/2 + J + 80	K/2 + M + 80				
2000 to 3200	350	K/2 + J + 80	K/2 + M + 80				
4000 and 5000	510	K/2 + J + 80	K/2 + M + 80				
6300	350	K/2 + J + 80	K/2 + M + 80				

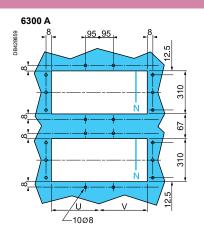
For the 3L + PE version, consider M = J to calculate the Y quotation.

#### 1000 to 5000 A

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DD210836

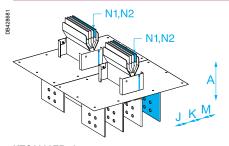




# Dimensions of connection pads

Rating (A)	1000	1350	1600	2000	2500	3200	4000	5000	6300
Drilling for connection (mm) Thickness of conductor = 6 mm.								14x20	

# ER•1, ER•2 - Straight feed units

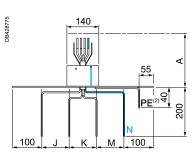


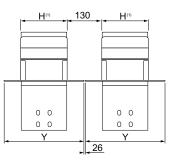
KTC6300ER•1 KTC6300ER•2

Туре	Position of	Cat. no.		
	neutral	3L + PE	3L + N + PE	3L + N + PER (1)
Fixed	N1	KTC6300ER31	KTC6300ER41	KTC6300ER51
Made to measure	N2	KTC6300ER32	KTC6300ER42	KTC6300ER52

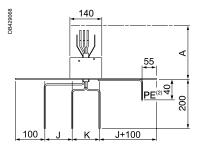
(1) To order the 3L+N+PER version with reinforced lcc, replace KTC6300ER5• by KTC6300ER7•.

#### KTC6300ER•1, KTC6300ER•2 3L + N + PE or PER









(1) See the "Trunking cross-section" table page 86.
 (2) PE drilled diameter = 14 mm pour cables with crimped lugs.

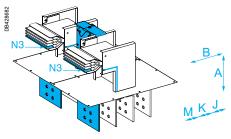
#### Table of dimensions

Rating (A)	Neutral	Dimensions (mm)				
		Α	J, K, M	Y		
6300	N1	235	115	350		
	N2	235 to 734	80 to 250	350		

# Feed units for switchboards and oil immersed transformers IP55

# Canalis KTC 6300

## ER•3, ER•4 - Flat elbow feed units

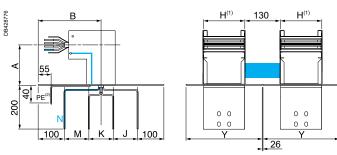


KTC6300ER•3

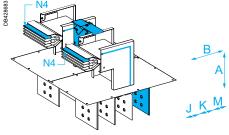
Туре	Position of	Cat. no.		
	neutral	3L + PE	3L + N + PE	3L + N + PER (1)
Made to measure	N3	KTC6300ER33	KTC6300ER43	KTC6300ER53
	N4	KTC6300ER34	KTC6300ER44	KTC6300ER54

(1) To order the 3L+N+PER version with reinforced lcc, replace KTC6300ER5• by KTC6300ER7•.

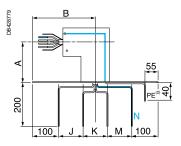
#### KTC6300ER•3 (3), 3L + N + PE or PER



#### KTC6300ER•4 (3), 3L + N + PE or PER



KTC6300ER•4



(1) See the "Trunking cross-section" table page 86.

(2) PE drilled diameter = 14 mm pour cables with crimped lugs.

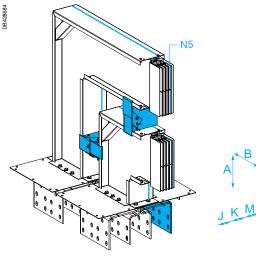
(3) 3L + PE version, see page 80.

#### Tableau of dimensions

Rating (A)	Neutral	Dimensions (mm)				
		Α	в	J, K, M	Y	
6300	N3, N4	200 to 534	300	80 to 250	350	_

# Canalis KTC 6300

## ER•5, ER•6 - Edgewise elbow feed units



KTC6300ER•5

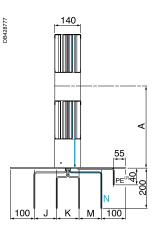
 
 Type
 Position of neutral
 Cat. no.

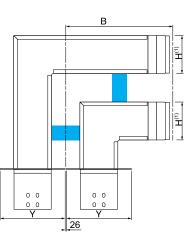
 Made to measure
 N5
 KTC6300ER35
 KTC6300ER45
 KTC6300ER55

 N6
 KTC6300ER36
 KTC6300ER46
 KTC6300ER56

 (1) To order the 3L+N+PER version with reinforced lcc, replace KTC6300ER5•
 by KTC6300ER7•

KTC6300ER•5 (3), 3L + N + PE or PER

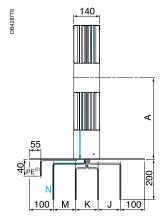




N6 N6

KTC6300ER•6

KTC6300ER•6 <sup>(3)</sup>, 3L + N + PE or PER



(1) See the "Trunking cross-section" table page 86.
(2) PE drilled diameter = 14 mm pour cables with crimped lugs.
(3) 3L + PE version, see page 80.

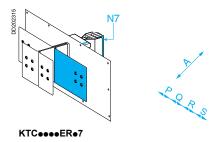
#### Table of dimensions

Rating (A)	Neutral	Dimensions (mm)				
		Α	В	J, K, M	Y	
6300	N3, N4	448 to 782	548	80 to 250	350	

# Feed units for switchboards and oil immersed transformers IP55

# Canalis KTC 1000 to 5000

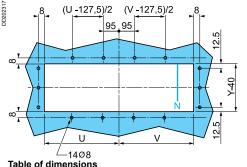
# ER•7 - Bar feed units, flat outlets



		(0)		
Туре		at. no. <sup>(2)</sup>		
	3	L + PE	3L + N + PE	3L + N + PER (1)
Made to measure		TCeeeER37	KTCeeeER47	KTCeeeER57
<ul> <li>(1) To order the 3L+N+ KTCeeeeER77.</li> <li>(2) Not available for K Connection pad dimention</li> </ul>	TC6300.	,	,	R57 by
KTC●●●●ER●7 3L + N + PE or PER				
<u>€</u> 140		<u>1</u> 4	40 <sub>-1</sub>	H <sup>(1)</sup>
	ī			
	∢			
	PE	•	PE ,	
	<u>9</u> <u>N</u>			
	100 N		100100	
		Q	<u>s</u>	
100 P S	100	100 P	R 100	Y
3L + PE				
	<			
	PE			
	100			
100 P		(1) See the "	Trunking cross-sec	tion" table below.
Table of dimensions				
Rating (A) Dim	nensions (mm)			

Rating (A)	Dimensions (mm)					
	Α	P-Q	S - R or R - S	Q, R, S minimum	Y	
1000 to 1600	235 to 734	160 to 600	160 to 600	80	230	
2000 to 3200	235 to 734	160 to 600	160 to 600	80	350	
4000 and 5000	235 to 734	160 to 600	160 to 600	80	510	

### Cut-out drawing for straight feed units connected directly to the device

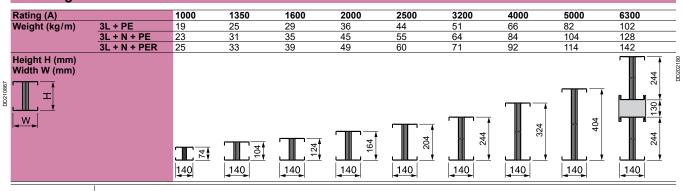


For the 3L + PE version, consider S = 0 to calculate the V quotation.

#### Table of dimensions

Rating (A)	Dimensions (mm)					
	Y	U	V			
1000 to 1600	230		if c > D V = c + 20			
2000 to 3200	350	U = P + 80	if S > R, V = S + 80 if R > S, V = R + 80			
4000 and 5000	510					

**Trunking cross-section** 



Life Is On Schneider 87

# **Rigid protective covers IP55**

Canalis KTC 1000 to 6300

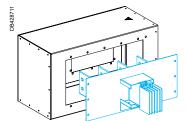
#### Ordering

To order a protective cover onto which a feed connector is fitted, the parameters D, G and Z, which depend on the feed connector, must be given.

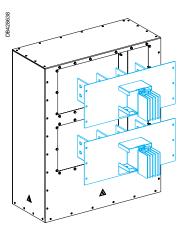
Example: the catalogue number of a rigid vertical protective cover with dimension Y = 350 mm intended for a feed unit with different between centre dimensions D, G and Z (in mm) is:

KTB0350CR2, D = 330, G = 450 and Z = 500.

#### CR1 - Rigid horizontal protective covers for feed units ER N1 to N7



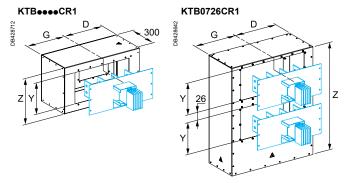
KTBeeeCR1



KTB0726CR1

Important : when ordering a horizontal cover, make sure you indicate dimensions "D, G and Z" with the catalogue number.

Rating (A)	Dimensions "Y" (mm)	Cat. no.	Weight (kg)
1000 to 1600	230	KTB0230CR1	12.00
2000 to 3200	350	KTB0350CR1	12.00
4000 and 5000	510	KTB0510CR1	12.00
6300	350	KTB0726CR1	60.00



#### Protective cover for ER N1 to N6 straight end feed connectors

Dimensions  $\boldsymbol{D}$  and  $\boldsymbol{G}$  are determined by the between centres dimensions (J, K and M) of the end feed connector bars to be protected. The position of the neutral on the feed connector also determines the rule to be used for

calculating parameters D and G.

If the feed connector comes into the cover with the neutral on the right:

**D** = **K**/2 + **M** + 100 G = K/2 + J + 100

If the feed connector comes into the cover with the neutral on the left:

D = K/2 + J + 100 G = K/2 + M + 100

#### For the 3L + PE version, consider M = J to calculate the D and G quotations.

#### Table of dimensions

Rating (A)	Dimensio	Dimensions (mm)					
	Y	D	G	Z			
1000 to 1600	230	220 to 475	220 to 475	310 to 800			
2000 to 3200	350	220 to 475	220 to 475	430 to 800			
4000 and 5000	510	220 to 475	220 to 475	590 to 800			
6300	350	220 to 475	220 to 475	790 to 1200			

#### Protective cover for ER N7 straight end feed connectors

Dimensions D and G are determined by the between centres dimensions (P, Q, R and S) of the end feed connector bars to be protected.

Position of the neutral on the feed connector also determines the rule to be used for calculating parameters D and G.

If the feed connector comes into the cover with the neutral on the right:  $D = max(R\ ;\ S) + 100$  $G = max(P\ ;\ Q) + 100$ 

If the feed connector comes into the cover with the neutral on the left:

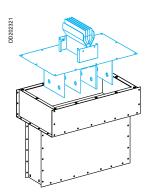
D = max(P; Q) + 100G = max(R; S)+ 100

For the 3L + PE version, consider S = 0 to calculate the D and G quotations.

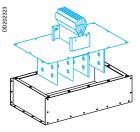
#### Table of dimensions

Rating (A)	Dimensions (r	Dimensions (mm)					
	Y	D	G	Z			
1000 to 1600	230	340 to 1000	340 to 1000	310 to 800			
2000 to 3200	350	340 to 1000	340 to 1000	430 to 800			
4000 and 5000	510	340 to 1000	340 to 1000	590 to 800			

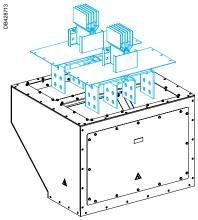
### CR2, CR3 - Rigid vertical protective covers for feed units ER N1 to N7



KTBeeeeCR2



KTBeeeCR3



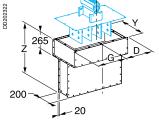
KTB0726CR3

Important: when ordering a vertical cover, make sure you indicate dimensions «D, G and Z» with the catalogue number.

# 400 to 800 mm high covers

Rating (A)	Dimensions "Y" (mm)	Cat. no.	Weight (kg)
1000 to 1600	230	KTB0230CR2	40.00
2000 to 3200	350	KTB0350CR2	40.00
4000 and 5000	510	KTB0510CR2	40.00

### KTBeeeCR2



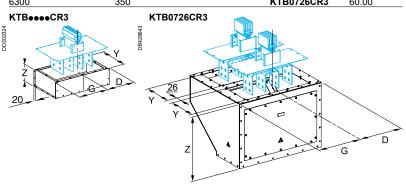
Dimensions **D** and **G** are determined by the between centres dimensions (J, K and M) of the end feed connector bars to be protected. D = K/2 + J + 100G = K/2 + M + 100For the 3L + PE version, consider M = J to calculate the D and G quotations.

#### Table of dimensions for ER N1 to N6 straight feed units

Rating (A)	Dimensio	Dimensions (mm)					
	Y	D	G	Z			
1000 to 1600	230	220 to 475	220 to 475	400 to 800			
2000 to 3200	350	220 to 475	220 to 475	400 to 800			
4000 and 5000	510	220 to 475	220 to 475	400 to 800			

#### 100 to 400 mm high covers

Rating (A)	Dimensions "Y" (mm)	Cat. no.	Weight (kg)
1000 to 1600	230	KTB0230CR3	17.00
2000 to 3200	350	KTB0350CR3	17.00
4000 and 5000	510	KTB0510CR3	17.00
6300	350	KTB0726CR3	60.00



Dimensions  ${\bf D}$  and  ${\bf G}$  are determined by the between centres dimensions of the end feed connector bars to be protected.

#### Table of dimensions for ER N1 to N6 straight feed units

Rating (A)	Dimensio	Dimensions (mm)					
	Y	D	G	Z			
1000 to 1600	230	220 to 475	220 to 475	100 to 400			
2000 to 3200	350	220 to 475	220 to 475	100 to 400			
4000 and 5000	510	220 to 475	220 to 475	100 to 400			
6300	350	220 to 475	220 to 475	591 to 800			

D = K/2 + J + 100 G = K/2 + M + 100 For the 3L + PE version, consider M = J to calculate the D and G quotations.

#### Table of dimensions for ER N7 straight feed units

Rating (A)	Dimensions (mm)				
	Y	D	G	Z	
1000 to 1600	230	220 to 475	220 to 475	100 to 400	
2000 to 3200	350	220 to 475	220 to 475	100 to 400	
4000 and 5000	510	220 to 475	220 to 475	100 to 400	

D = max (P ; Q) + 100 G = max (R ; S) + 100 For the 3L + PE version, consider S = 0 to calculate the D and G quotations.

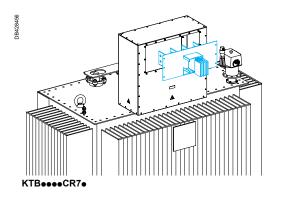
# Protective covers for Minera transformers

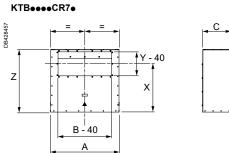
Canalis KTC 1000 to 6300

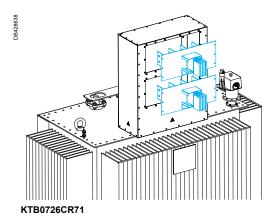
## CR7 - Protective covers for horizontal incomers

These covers are used to connect Canalis KT to Minera transformers. Dimensions are predefined to match with transformer ratings. Refer to the selection guide, see page 244.

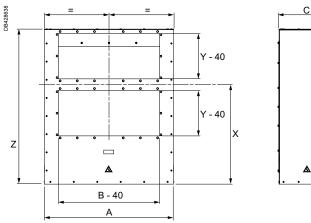
Cat. no.	Y (mm)	Z (mm)	X (mm)	A (mm)	B (mm)	C (mm)	Weight (kg)
KTB0230CR71	230	450	320	780	650	256	30
KTB0350CR71	350	510	320	780	650	256	30
KTB0350CR72	350	540	350	780	650	256	30
KTB0350CR73	350	590	400	855	710	276	30
KTB0350CR74	350	590	400	855	710	359	30
KTB0510CR71	510	705	435	855	710	276	30
KTB0510CR72	510	740	470	855	710	359	30
KTB0510CR73	510	780	510	855	710	359	30
KTB0726CR71	350	1025	469	855	710	359	30











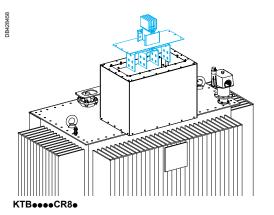
Interfaces selection guide, see page 244 and page 245

# Canalis KTC 1000 to 6300

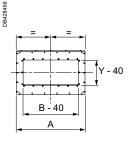
# CR8 - Protective covers for vertical incomers

These covers are used to connect Canalis KT to Minera transformers. Dimensions are predefined to match with transformer ratings. Refer to the selection guide, see page 246.

Cat. no.	Y (mm)	Z (mm)	A (mm)	B (mm)	C (mm)	Weight (kg)
KTB0230CR81	230	480	780	650	251	30
KTB0350CR81	350	580	780	650	380	30
KTB0350CR82	350	600	855	710	380	30
KTB0350CR83	350	520	855	710	380	30
KTB0510CR81	510	600	855	710	540	30
KTB0510CR82	510	615	855	710	540	30
KTB0726CR81	350	591	775	710	770	30



# KTBeeeeCR8e



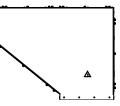
KTB0726CR81

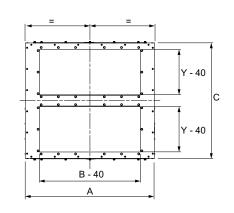
DB428641

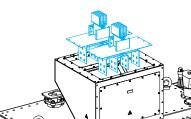


DB428640  $\bigcirc$ 

Ζ ◬







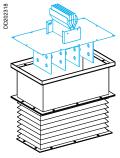
KTB0726CR81

# Flexible protective covers Cable boxes

IP55

# Canalis KTC 1000 to 5000

### CS - Flexible vertical protective covers for straight feed units



KTB...CS0

Covers for ER N1 to N7 straight feed units with between centre dimensions = 115 mm.

Rating (A)	Dimensions "Y" (mm)	Cat. no.	Weight (kg)
1000 to 1600	230	KTB0230CS0	15.00
2000 to 3200	350	KTB0350CS0	17.00
4000 and 5000	510	KTB0510CS0	19.00

300

It is recommended to use insulating sheaths KTB0000YF1 with connection braids KTB0000YT1.

#### KTB...CS0

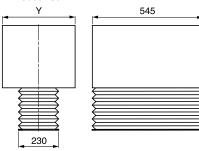
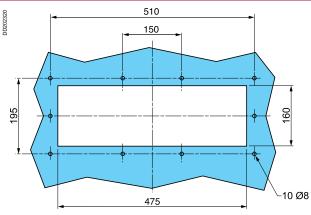
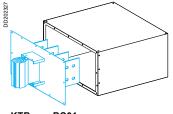


Table of dimensions					
Rating (A) Dimensions (mm)					
	Y	С			
1000 to 1600	230	200 to 650			
2000 to 3200	350	200 to 650			
4000 and 5000	510	200 to 650			

### Cut-out drawing for fixing the flexible vertical protective cover



# **BC - Cable boxes**

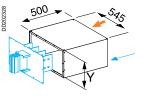


KTBeeeBC01

Rating (A)	Dimensions "Y" (mm)	Cat. no.	Weight (kg)
1000 to 1600	230	KTB0230BC01	15.00
2000 to 3200	350	KTB0350BC01	17.00
4000 and 5000	510	KTB0510BC01	19.00

Cable boxes are only to be used on ER N1 to N6 straight feed units with standard between centre distances = 115 mm.

#### KTBeeeBC01



Cable entry.
 Aluminium plate to be drilled.

#### Table of dimensions

Rating (A)	Dimensions (mm)
	Υ
1000 to 1600	230
2000 to 3200	350
4000 and 5000	510

See table page 80 for connection pad dimensions.

Life Is On Schneider 93

# **Catalogue numbers** and dimensions

# Feed units for dry-type transformers

**IP55** 

# Canalis KTC 1000 to 5000

# Ordering

Complete the catalogue number by replacing "..... by the rating. Important:

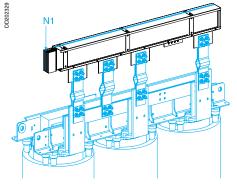
add the dimensions of the selected unit as a technical comment.

Example: the catalogue number of a 3200 A end feed unit, N2, 3L + N + PER, with a between centre distance E = 550 mm, length N = 310 mm and phase order T = 3N21 is:

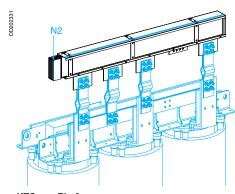
KTC3200EL52, E = 550 mm, N = 310 mm and T = 3.

Rating

### ELe1, ELe2 - N1 and N2 feed units for dry-type transformers



KTCeeeeELe1

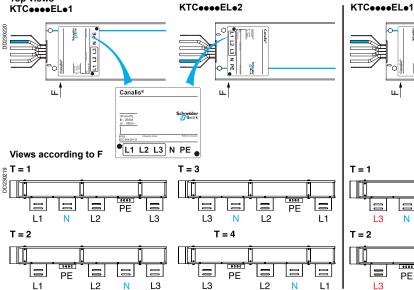


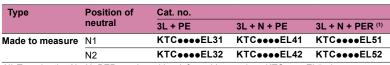
KTCeeeeELe2

### Selecting phase order T Top views

KTCeeeeELe1







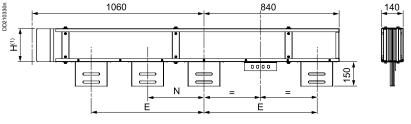
(1) To order the 3L+N+PER version with reinforced lsc, replace KTC+++EL5+ by KTC++++EL7+.

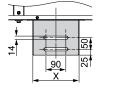
For an installation with flat mounted busbar trunking, add angle brackets between the transformer and the feed unit, see page 98.

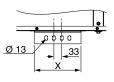
For fixing supports, see KTB ••••ZA4 page 110.

These end feed units are supplied with PEN connection kit.

#### KTC••••EL•1, KTC••••EL•2





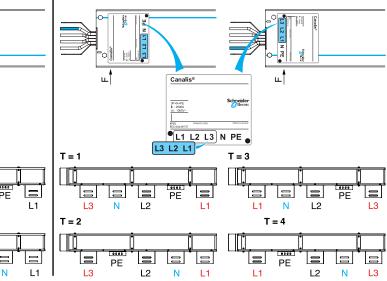


(1) See the "Trunking cross-section" table page 101.

#### Table of dimensions

Rating (A)	Neutral	Dimensions (mm)			
		E	N	Х	
1000 to 1600	N1, N2	390 to 700	195 to E - 195	160	
2000 to 5000	N1, N2	470 to 700	235 to E - 235	200	

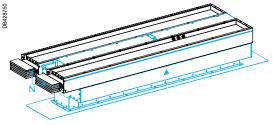
KTC



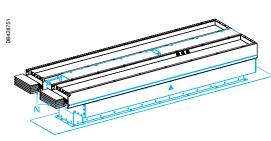
Schneider 94 Life Is On

# **Canalis KTC 6300**

## ELe1, ELe2 - Feed units for dry-type transformers



KTC6300EL•1



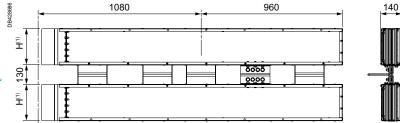
KTC6300EL•2

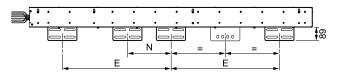
	Position of	Cat. no.			
	neutral	3L + PE	3L + N + PE	3L + N + PER (1)	
Made to measure	N1	KTC6300EL31	KTC6300EL41	KTC6300EL51	
	N2	KTC6300EL32	KTC6300EL42	KTC6300EL52	

(1) To order the 3L+N+PER version with reinforced lsc, replace KTC6300EL5• by KTC6300EL7•.

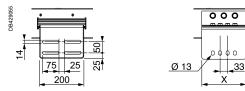
For an installation with flat mounted busbar trunking, add angle brackets between the transformer and the feed unit, see page 98. For fixing supports, see KTBeeeeZA4 page 110.

#### KTC6300ELe1, KTC6300ELe2





x

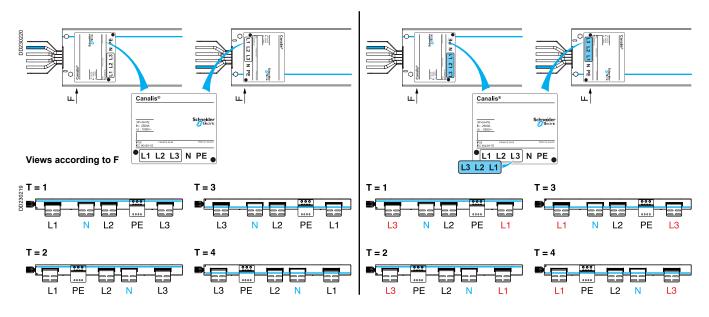


(1) See the "Trunking cross-section" table page 101.

#### Table of dimensions

Rating (A)	Neutral	Dimensions (mm)			
		E	N	Х	
6300	N1, N2	470 to 736	235 to E - 235	200	

# Selecting phase order T

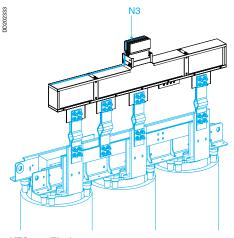


# Feed units for dry-type transformers

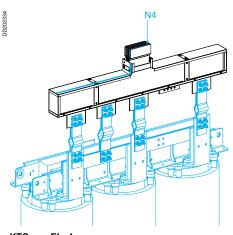
IP55

# Canalis KTC 1000 to 5000

### EL•3, EL•4 - Feed units for dry-type transformers



KTCeeeeELe3



KTC

Selecting phase order T

Position of Туре Cat. no. neutral 3L + PE 3L + N + PE 3L + N + PER (1) KTCeeeEL33 KTCeeeEL43 KTCeeeEL53 N3 Made to measure KTC•••EL34 KTCeeeEL54 KTC•••EL44 N4

(1) To order the 3L+N+PER version with reinforced Isc, replace KTC••••EL5• by KTC••••EL7•.

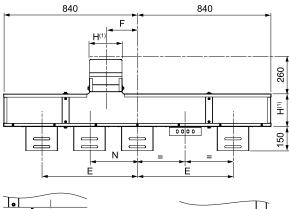
For an installation with flat mounted busbar trunking, add angle brackets between the transformer and the feed unit, see page 98.

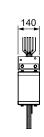
For fixing supports, see KTE••••ZA4 page 110. These end feed units are supplied with PEN connection kit.

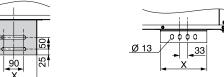
#### KTC000EL03, KTC000EL04

002

4







(1) See the "Trunking cross-section" table page 101.

#### Table of dimensions

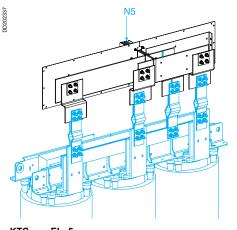
Rating	Neutral	ral Dimensions (mm)				
(A)		E	Ν	F	Х	
1000 to 1600	N3, N4	390 to 700	195 to E - 195	0 to 200	160	
2000 to 5000	N3, N4	470 to 700	235 to E - 235	0 to 200	200	

Top views KTC•••EL•3 KTC KTCeeeeELe3 KTC DD23025 Produce Trans 1000 影 L1 L2 L3 N PE N PE L1 L2 L3 N PE L3 L2 L1 N PE Canalis® Long L 8 -1000 I 10000 I School Sc шÌ щ шÎ шÎ Canalis<sup>®</sup> Canalis® Schneider Schneider +N+PE 2500A 10007 L1 L2 L3 N PE L1 L2 L3 N PE L3 L2 L1 Views according to F T – 1 T = 3T = 1 T = 3 PE  $\equiv$ 1 PF PF PF L2 L3 L3 L2 Ν L2 L1 Ν L1 L3 Ν Ν L2 L3 L1 L1 T = 2 T = 4 T = 2 T = 4 \_\_\_\_ L3 PE  $\equiv$ PE = L2 = PE  $\equiv$ PE  $\equiv$ L2 L3 L1 N L1 L3 L2 N L1 L1 L2 Ν L3

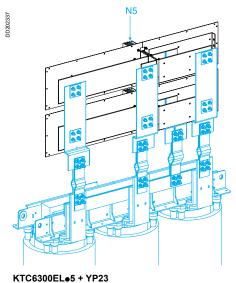
# 96 Life Is On Schneider

# Canalis KTC 1000 to 6300

#### EL•5 - Feed units for dry-type transformers

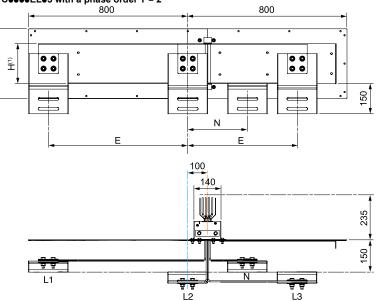


KTC •••• EL •5



For YP23 see page 108.

Position of Cat. no. (2) Туре neutral 3L + PE 3L + N + PER (1) 3L + N + PE KTCeeeEL35 KTC•••EL45 KTCeeeEL55 Made to measure N5 (1) To order the 3L+N+PER version with reinforced lsc, replace KTCeeeeEL55 by KTCeeeeEL75.
 (2) References KTC6300ELe5 are made of 2 references KTC3200ELe5. For an installation with flat mounted busbar trunking, add angle brackets between the transformer and the feed unit, see page 98. These end feed units are supplied with PEN connection kit. KTCeeeeELe5 with a phase order T = 2 800



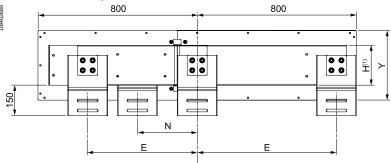
#### KTCeeeeELe5 with a phase order T = 3

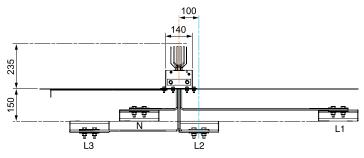
>

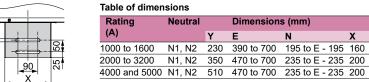
08730 To

ĝ

4







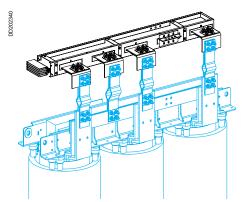
(1) See the "Trunking cross-section" table page 101. Important : the above designs and markings correspond to a phase order of N321, joint block side. If the phase order on the joint block side is N123, inverse markings L1 and L3 on the transformer side.

# Feed units for dry-type transformers

IP55

# Canalis KTC 1000 to 5000

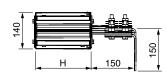
# YE - Angle brackets for installing N1 to N5 feed units flat

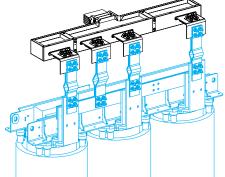


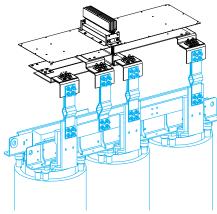
Description	Rating (A)	Phase width "X" (mm)	Cat. no.
4 angle brackets	1000 to 1600	160	KTB0000YE1
+ screws	2000 to 5000	200	KTB0000YE2

## KTB0000YE1, KTB0000YE2









KTB0000YE1, KTB0000YE2

# Protective covers for dry-type transformers

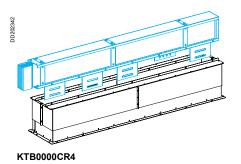
IP55

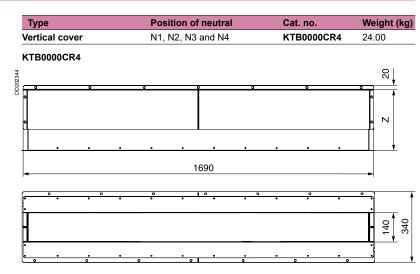
# Canalis KTC 1000 to 5000

# Ordering

There is no need to add technical comments to the catalogue number ordered.

# CR4 - Adjustable vertical protective covers for EL, N1 to N4 feed units, edgewise mounting

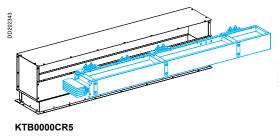


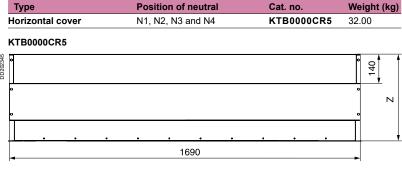


#### Table of dimensions

Rating (A)	Dimensions (mm)			
	Z Minimum	Maximum		
1000 to 1600	200	350		
2000 to 3200	200	350		
4000 and 5000	200	350		

## CR5 - Adjustable horizontal protective covers for EL, N1 to N4 feed units, flat mounting







#### Table of dimensions

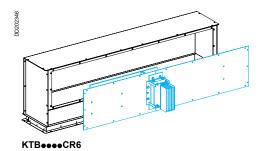
Rating (A)	Dimensions (mm)		
	Z Minimum	Maximum	
1000 to 1600	330	480	
2000 to 3200	330	480	
4000 and 5000	330	480	

# Protective covers for dry-type transformers

IP55

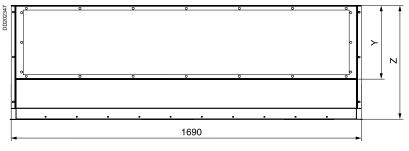
# Canalis KTC 1000 to 5000

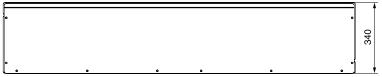
# CR6 - Horizontal protective covers for dry-type transformer N5 feed units



Туре	Position of neutral	Dimension "Y" (mm)	Cat. no.	Weight (kg)
Horizontal covers	N5	230	KTB0230CR6	38.00
		350	KTB0350CR6	40.00
		510	KTB0510CR6	47.00



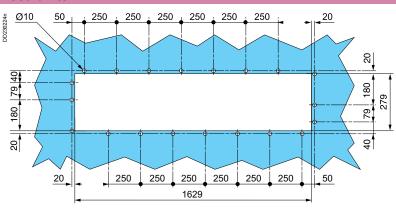




#### Table of dimensions

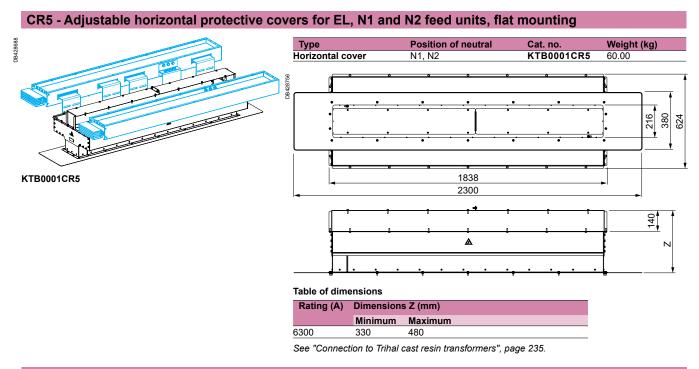
Rating (A)	Dimensions (mm)				
	Y	Z Minimum	Maximum		
1000 to 1600	230	380	530		
2000 to 3200	350	500	650		
4000 and 5000	510	660	810		

# Cut-out drawing for dry-type transformer feed units

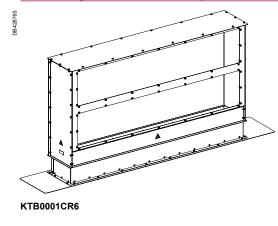


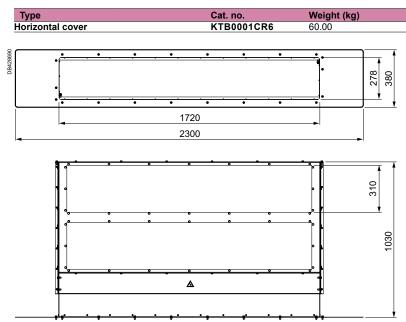
View from the top of the transformer.

# Canalis KTC 6300

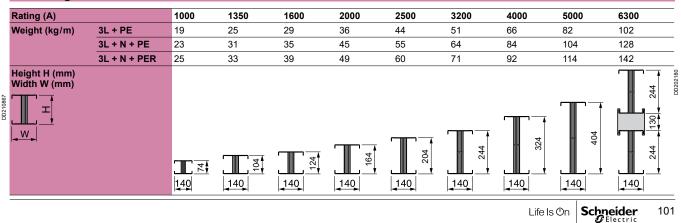


#### CR6 - Adjustable horizontal protective covers for EL, N5 feed units, flat mounting





#### **Trunking cross-section**



# **Connection accessories**

# Canalis KTC 1000 to 6300

#### Ordering

To order YC1 or YC3 flexibles with customized drilled holes at the bottom **Example:** total length = 565 mm with a pattern of 4 centred holes 50x50 at 25 mm of the bottom.

KTB0100YC305B, L=565, A=50, B=25, C=25, D=50, E=2, F=2, Y=25.

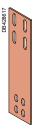
To order flexibles without drilled holes at the bottom. Example: total length = 435 mm. KTB0100YC305B, L=435, E=0, F=0, Y=25.

In all cases E, F and Y need to be filled.

#### YC1 - Made to measure flexible links

Туре	Surface treatment	"Width (mm) W"	"Depth (mm) T"	"Length (mm) L"	Cross-section (mm <sup>2</sup> )	Cat. no.	Weight (kg)
Made to	Bare copper	100	5	300 to 600	500(1)	KTB0100YC105B	2.7
measure		120	5	300 to 600	600(1)	KTB0120YC105B	3.2

(1) Made of 5 sheets 1 mm (100 % CU).



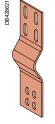
KTB01e0YC105B Bare copper

#### Dimensions DB428618 w 50 Dimensions (mm) 25 L Α 50 в С 14x35 D Е Ø14 F Y В C

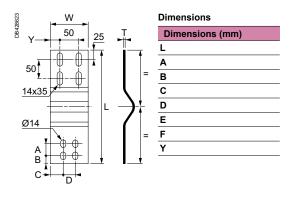
 E = number of vertical holes (bottom pattern)
 F = number of horizontal holes (bottom pattern)

### YC3 - Made to measure flexible links

Туре	Surface treatment	"Width (mm) W"	"Depth (mm) T"	"Length (mm) L"	Cross-section (mm <sup>2</sup> )	Cat. no.	Weight (kg)
Made to	Bare copper	100	5	300 to 600	500(1)	KTB0100YC305B	2.7
measure		120	5	300 to 600	600(1)	KTB0120YC305B	3.2



KTB01e0YC305B Bare copper (1) Made of 5 sheets 1 mm (100 % CU).



 E = number of vertical holes (bottom pattern)
 F = number of horizontal holes (bottom pattern)

# Canalis KTC 1000 to 6300

## YC5 - Insulated flexible links

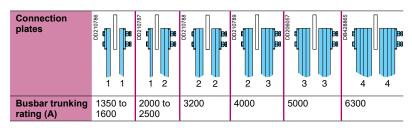
Туре	Surface treatment	"Width (mm) W"	"Depth (mm) T"	"Length (mm) L"	Cross-section (mm <sup>2</sup> )	Cat. no.	Weight (kg)
Fixed,	Bare copper	100	5	1000	500(1)	KTB0100YC50510B	4.5
insulated		100	5	600	500(1)	KTB0100YC50506B	2.7



KTB0100YC505●●B Insulated, bare copper

#### Determining the number of connection plates required

Busbar trunking rating (A)	Bare copper connection plates per phase			
	Number	Equivalent copper cross section (mm <sup>2</sup> )		
1350	2 (100 x 5)	1000		
1600	2 (100 x 5)	1000		
2000	3 (100 x 5)	1500		
2500	3 (100 x 5)	1500		
3200	4 (100 x 5)	2000		
4000	5 (100 x 5)	2500		
5000	6 (100 x 5)	3000		
6300	8 (120 x 5)	4800		



(1) Made of 5 sheets 1 mm (100 % CU).

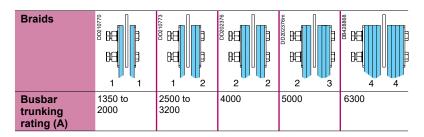
# **Connection accessories**

# Canalis KTC 1000 to 6300

YT - Braids			
DD205934	Description	Cat. no.	Weight (kg)
	Connection braid	KTB0000YT1	2.80
KTB0000YT1			

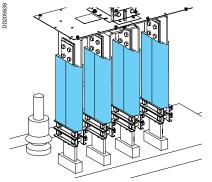
#### Determining the number of braids required

Busbar trunking rating (A)	Braids per phase		
	Number	Cross-section (mm <sup>2</sup> )	
1350	2	1200	
1600	2	1200	
2000	2	1200	
2500	3	1800	
3200	3	1800	
4000	4	2400	
5000	5	3000	
6300	8	4000	



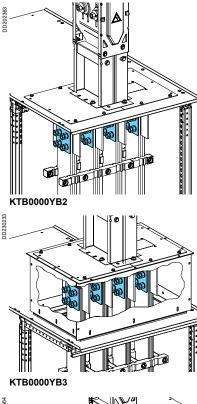
# Canalis KTC 1000 to 6300

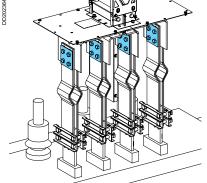
# YF - Insulating sheaths



KTB0000YF1

## **YB** - Spacers and bolts





KTB0000YB4



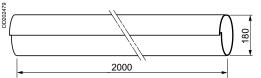
The YF conduit allows the various conductors of a connection performed with braids or with bare copper foils to be insulated.

Installation is performed after complete assembly of the connection, with scratch fastening for easier setup. The insulating conduit is formed of a 2-metre plastic duct that can be cut to length

as needed.

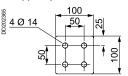
Désignation	Cat. no.	Weight (kg)
Insulating sheath	KTB0000YF1	1.00

#### KTB0000YF1

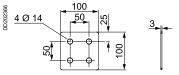


Description		Cat. no.	Weight (kg)
Connection torque nut kit	1 torque nut + 2 flat washers (Ø 60) + 1 elastic washer (Ø 55)	KTB0000YB1	-
Spacers for direct connection	8 x 3 mm galvanized steel spacers + 8 x 2 mm copper spacers + 16 x M12 x 60 bolts + washers and nuts	KTB0000YB2	5.50
Spacer plates for connector plate connections	8 x 3 mm galvanized steel plates + 16 x M12 x 60 bolts + washers and nuts	KTB0000YB3	4.00
	8 x 3 mm galvanized steel plates + 16 x M12 X 80 bolts + washers and nuts	KTB0000YB4	4.00
Set of bolts	16 x M10 x 60 bolts + washers and nuts	KTB0000YB5	2.00

#### Copper spacer

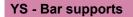


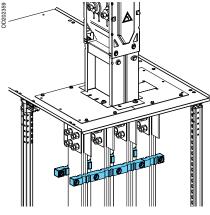
#### Galvanized steel spacer plates

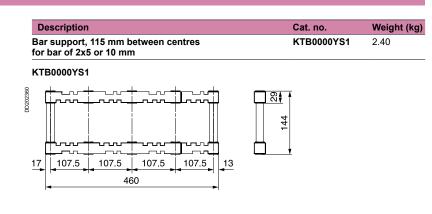


# **Connection accessories**

# Canalis KTC 1000 to 6300

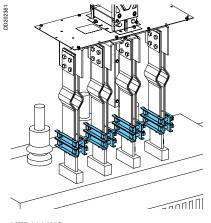






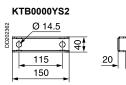
KTB0000YS1

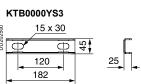
**YS** - Bar clamps



Description	Dimensions of t connection term	ransformer Cat. no. ninals (mm)	Weight (kg)
8 bar clamps	100	KTB0000YS2	6.40
	120	KTB0000YS3	6.40

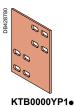
Each bar clamp includes 2 cross members and associated fixings.





KTB0000YS.

### YP1 - Connection plate for oil immersed Minera transformer



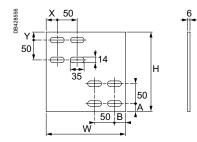
Type YP1

Plates for Minera oil transformer, connection from the top. The product reference is for one phase.

Bolts at the equipments level are not included in the reference.

See selection table page 247.

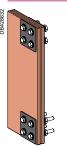
A (mm)	B (mm)	H (mm)	W (mm)	X (mm)	Y (mm)	Cat. no.	Weight (kg)
20	28	200	200	28	20	KTB0000YP11	2.1
20	38	200	200	38	20	KTB0000YP12	2.1
20	28	200	260	28	20	KTB0000YP13	2.8
25	25	200	200	25	21	KTB0000YP14	2.1



Connection selection guide, see page 245 and page 247

### Canalis KTC 6300

### YP2 - Connection plates for KTC6300 end feed units



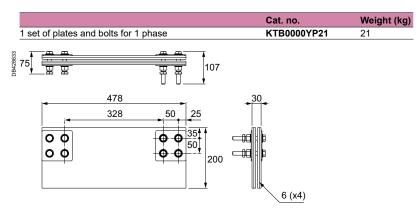
KTB0000YP21

Type YP21 for ER1 to ER6 horizontal incomer

Plates to link connection pads of 2 end feed units KTC3200 (ER1 to ER6) in order to create a KTC6300.

Link to transformer or switchboard has to be connected at the lowest 4 bolts system. The product reference is for one phase and includes screws, nuts and washers at the busbar trunking side.

Bolts at the transformer or switchboard level are not included in the reference.



#### Type YP22 for ER1 to ER6 vertical incomer

Plates to link connection pads of 2 end feed units KTC3200 (ER1 to ER6) in order to create a KTC6300.

The product reference is for one phase and includes screws, nuts and washers at the busbar trunking side.

Bolts at the transformer or switchboard level are not included in the reference.

1 set of plates and bolts for 1 phase     KTB0000YP22     24.5       25     50     328     50     60     75 $\phi$ $\phi$ $\phi$ $\phi$ $\phi$ $\phi$
$\begin{array}{c} \bullet \bullet \\ \hline \hline \bullet \\ \hline \bullet \\ \hline \hline \hline \hline$
<u>6 (x4)</u>

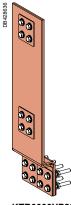


KTB0000YP22

# **Connection accessories**

### Canalis KTC 6300

### YP2 - Connection plates for KTC6300 end feed units



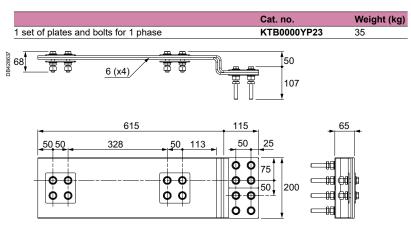
KTB0000YP23

KTB0000YP24



Plates to link connection pads of 2 end feed units KTC3200 EL5 in order to create a KTC6300. The product reference is for one phase and includes screws, nuts and washers at the busbar trunking side.

Bolts at the transformer or switchboard level are not included in the reference.



#### Type YP24 for EL1 and EL2 dry transformer flexible links

Plates to link bottom sides of 2 sets of flexibles in order to a create a single plate at transformer side.

The product reference is for one phase and includes screws, nuts and washers at the busbar trunking side.

Drillings and bolts at the dry transformer level are not included in the reference.

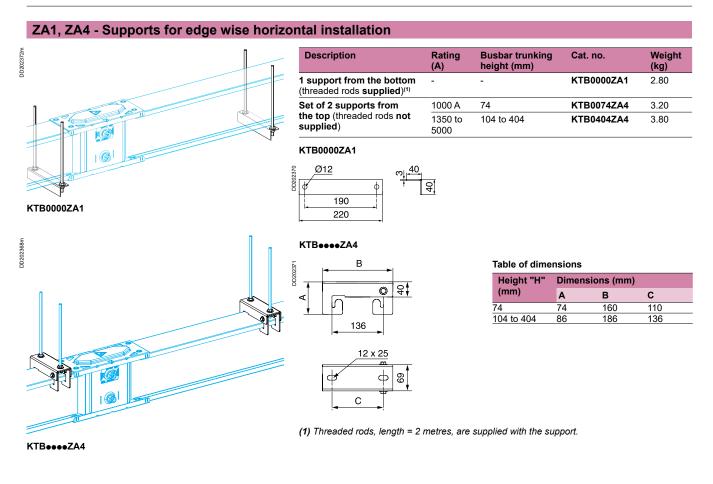
	Cat. no.	Weight (kg)
1 set of plates and bolts for 1 phase	KTB0000YP24	5
98		
$\begin{array}{c} 107 \\ \hline 0 \\ \hline 120 \\ \hline 120 \\ \hline 0 \\ \hline$		

Connection selection guide, see page 234.

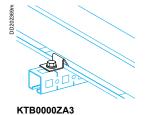
Life Is On Schneider 109

# Supports and fixings

**Canalis KTC** 



### ZA3 - Hooks for edge wise horizontal installation

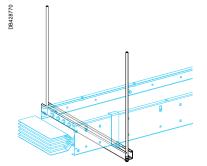


2 fixing grips are needed for each fixing point.

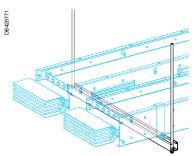
Description	Cat. no.	Weight (kg)
1 set of 8 hooks	KTB0000ZA3	0.60

### KTB000ZA3

### ZA7 - Supports for flat wise horizontal installation (41 x 41)



### KTB



Busbar trunking rating (A) Busbar trunking height "H" (mm) Weight (kg) Length L (mm) Cat. no. 1000 to 1600 (1) 74, 104, 124 280 KTB0124ZA7 0.6 2000, 2500 (1) 164, 204 350 KTB0204ZA7 0.7 3200 (1) 420 KTB0244ZA7 244 0.9 KTB0324ZA7 4000 (1) 490 324 1 560 KTB0404ZA7 5000 (1) 404 1.2 6300 (1) 622 770 KTB0622ZA7 1.6 To be customized (2) All 3000 KTB0000ZA7 6.5

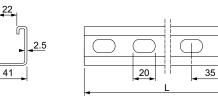
12.5

Weight (kg) 0.14

Threaded rods, length = 2 meters, are supplied with the support.
 Threaded rods not supplied.

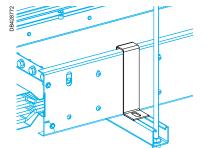
DB428864 7.5

41



KTB0622ZA7

### ZA8 - Bracket for flat wise horizontal installation



KTB0000ZA8

2 brackets are needed for each fixing point.

40

19.5

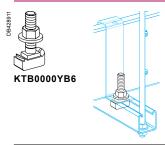
2

4

Description		Cat. no.
1 set of 8 brackets		KTB0000ZA
	er for fixation of KT●●●●ED●●●●. ed with this reference.	
∞ ↓ 2.5	140	

40

YB6	- T-B	olts
-----	-------	------

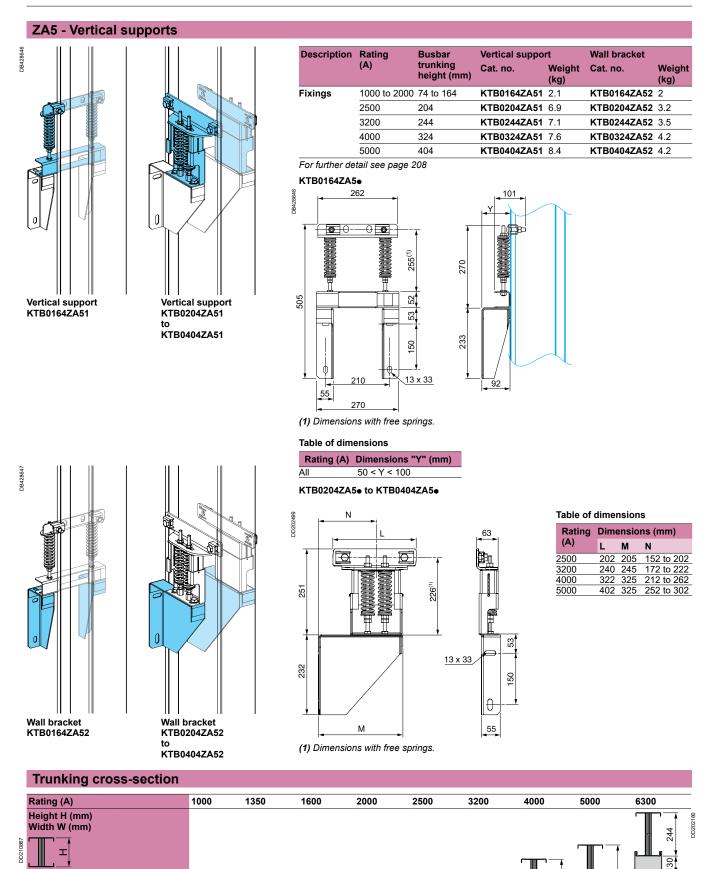


Description	Cat. no.	Weight (kg)
1 box of 50 bolts M10 x 35 for rails 41 x 41	KTB0000YB6	6.0

# Catalogue numbers and dimensions

# Supports and fixings

### **Canalis KTC**



140 T

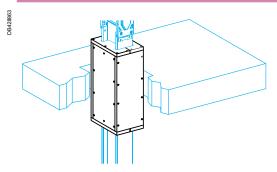
w

# Accessories

Fire-barrier kit

### Canalis KTC 1000 to 6300

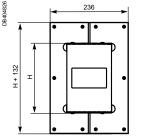
### **CF - Fire-barrier**

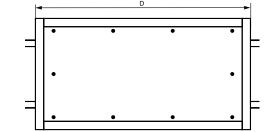


Туре	Busbar trunking rating (A)	Busbar trunking height "H" (mm)	Fire barrier length	Cat. no.
Fire-barrier kit	1000	74	650	KTB0074CF6
	1350	104	650	KTB0104CF6
	1600	124	650	KTB0124CF6
	2000	164	750	KTB0164CF7
	2500	204	750	KTB0204CF7
	3200	244	750	KTB0244CF7
	4000	324	950	KTB0324CF9
	5000	404	950	KTB0404CF9
	6300	622	750	KTB0622CF7 (1)

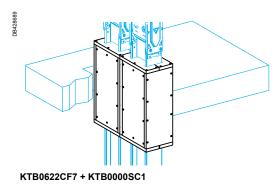
The filler material around the busbar trunking must meet the requirements currently in force to guarantee that the wall and ceiling fire-resistance class (for example DIN 1045 and DIN 1053-1) is maintained.

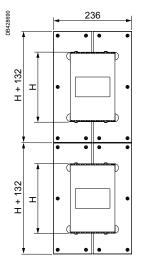
Filler material not supplied. (1) This reference includes a sealant cartridge KTB0000SC1.

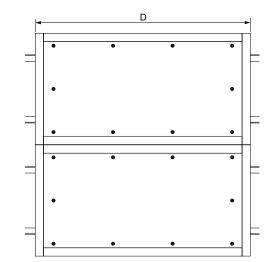




The fire barrier kit can also be made up on site by the installer according to Schneider Electric's drawings and specifications. For further information, consult your sales office.







### SC - Fire-barrier sealant cartridge

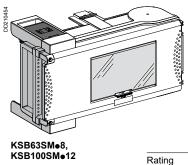
DB429006	A STATIST
ł	KTB0000SC1

Туре	Cat. no.
Fire-barrier sealant cartridge	KTB0000SC1

### 63 to 100 A tap-off units from Canalis KS range for modular devices IP55

### Canalis KTC

#### Tap-off units with isolator, not equipped Disconnection by opening the tap-off unit cover



Tap-off unit disconnection by opening or closing the cover should be carried out only if the downstreamload is de-energised.

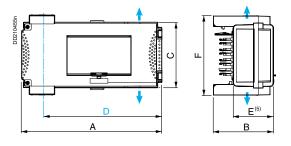
		System earthing arrangement			ar trunking ff unit	TT-TNS-TNC-IT <sup>(1)</sup> TT-TNS-TNS-IT <sup>(1)</sup>	TNC	
		Tap-off polarity				3L + N + PE <sup>(2)</sup>	3L + PEN	
1.5 C		Tap-off diagram (e.g. circuit break protection)	er		слозиеноя Спрозненоя			
Rating (A)	Number of 18 mm modules <sup>(3)</sup>	Connection	Max. size (mm²) Flexible	Rigid	Cable gland <sup>(4)</sup> (not supplied)	Cat. no.	Cat. no.	Weight (kg)
63	8	On devices	16	16	ISO 50 max.	KSB63SM48	KSB63SM58	2.40
100	12	On devices	35	35	ISO 63 max.	KSB100SM412	KSB100SM512	5.00

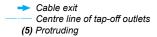
(1) The neutral must be protected or not distributed (3L+PE) for the IT system.
 (2) Also suitable for tap-off unit 3L + PE (N not distributed, IT system also possible).

(2) Also suitable for tap-off unit 3L + PE (N not distributed, IT system also possible).
 (3) Supplied with blanking plates: 1x5 divisible (8 modules) or 2x5 divisible (12 modules).

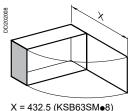
(4) Maximum diameter for a multipolar cable.

#### KSB63SMe8, KSB100SMe12





Dimensions	Rating (A)	
	63	100
A	357	444
В	158	183
С	167	202
D	309	397
B C D E F	108	133
F	202	220



X = 432.5 (KSB03SM08) X = 545.5 (KSB100SM012)

# 125 to 160 A tap-off units from Canalis KS range for modular devices

### Tap-off units for NG modular devices, not equipped



KSB160SMe13

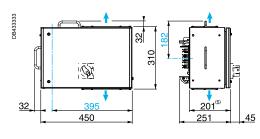
The cover of the tap-off unit may be opened or closed only when the circuit breaker is in the Off position.

		System earthing	1	Busb	ar trunking	TT-TNS-TNC-IT	<sup>(1)</sup> TNC	
		arrangement		Tap-o	off unit	TT-TNS-TNS-IT	(1) TNC	
		Tap-off polarity				3L + N + PE (2)	3L + PEN	
		Tap-off diagram (e.g. circuit brea protection)	ker			Step L1 L2 L3 N PE (1 L3 L3 N PE (		
Rating (A)	Type of circuit-breaker	Connection	Max. size (mm <sup>2</sup> ) Flexible	e Rigid	Cable gland <sup>(;</sup> _(not supplied)		Cat. no.	Weight (kg)
160	NG125 Rotary handle 19088 <sup>(4)</sup> NG160 Rotan( bandle	Terminals	50	70	ISO 25 max.	KSB160SM413	KSB160SM513	8.50

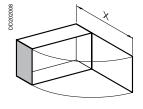
Rotary handle 28060 <sup>(4)</sup>

(1) The neutral must be protected or not distributed (3L+PE) for the IT system.
 (2) Also suitable for tap-off unit 3L + PE (N not distributed, IT system also possible).
 (3) Maximum diameter by unipolar cable.
 (4) Not supplied.

KSB160SMe13



Cable exit
 Centre line of tap-off outlets
 (5) Protruding

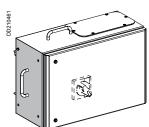


X = 625.5

# 100 to 400 A tap-off units from Canalis KS range for Compact NSX circuit breakers IP55

### **Canalis KTC**

### Tap-off units for Compact NSX, fixed, front-connected circuit breakers, not equipped



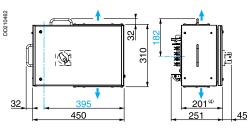
KSBeeeDCe

The cover of the tap-off unit may be opened or closed only when the circuit breaker is in the Off position.

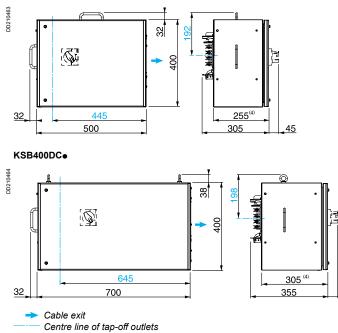
		System earthing			ar trunking	TT-TNS-TNC-IT (	" TNC	
		arrangement		Tap-c	off unit	TT-TNS-TNS-IT (1	<sup>)</sup> TNC	
		Tap-off polarity				3L + N + PE <sup>(2)</sup>	3L + PEN	
		Tap-off diagram (e.g. circuit break protection)	ker				L1 L2 L3 N PE * * *	
Rating (A)	Type of circuit breaker	Connection	Max. size (mm²)		Cable gland <sup>(3</sup> (not supplied)		Cat. no.	Weight (kg)
			Flexible	Rigid				
160	NSX100 or NSX160 Rotary handle 29338	Terminals	50	70	ISO 25 max.	KSB160DC4	KSB160DC5	9.00
250	NSX250 Rotary handle 29338	Terminals	70	150	ISO 32 max.	KSB250DC4	KSB250DC5	12.50
400	NSX400 Rotary handle 32598	Terminals	150	240	ISO 40 max.	KSB400DC4	KSB400DC5	18.00

(1) The neutral must be protected or not distributed (3L+PE) for the IT system.
(2) Also suitable for tap-off unit 3L + PE (N not distributed, IT system also possible).
(3) Maximum diameter by unipolar cable.

#### KSB160DC.

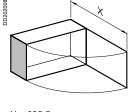




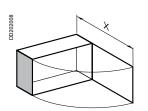


45

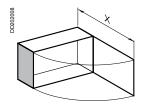
(4) Protruding







X = 726.5

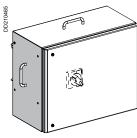


X = 976.5

# 250 to 400 A tap-off units from Canalis KS range for Compact NSX circuit breakers

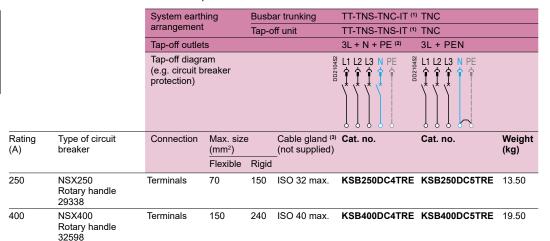
IP55

### Tap-off units for measurements and metering, not equipped



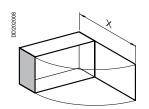
KSB•••DC•TRE

The cover of the tap-off unit may be opened or closed only when the circuit breaker is in the Off position.

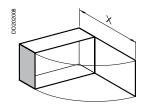


(1) The neutral must be protected or not distributed (3L+PE) for the IT system.
 (2) Also suitable for tap-off unit 3L + PE (N not distributed, IT system also possible).
 (3) Maximum diameter by unipolar cable.

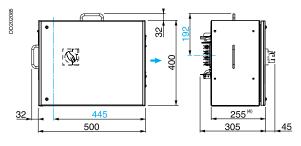
#### KSB250DC•TRE



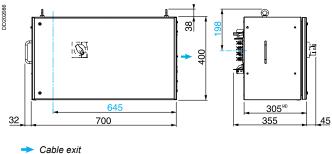
X = 726.5



X = 976.5







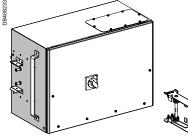
Centre line of tap-off outlets (4) Protruding

### 630 A tap-off units from Canalis KT range for **Compact NSX circuit breakers IP55**

### **Canalis KTC**

KTB0630DC.

### DC - Tap-off units for Compact NSX, fixed, front-connected circuit breakers, not equipped



Tap-off units to be installed on 2 meters elements, only on central outlet. The cover of the tap-off unit may be opened or closed only when the circuit breaker is in the Off position.

		System earthing arrangementBusbar trunkingTap-off unit			TT-TNS-TNC-IT		
					TT-TNS-TNS-IT	<sup>1)</sup> TNC	
		Tap-off pola	rity		3L + N + PE <sup>(2)</sup>	3L + PEN	
		Tap-off diag (e.g. circuit l protection)					
Rating (A)	Type of circuit breaker	Connection	Max. size (mm²) L or N / PE	Cable gland <sup>(3)</sup> (not supplied)	Cat. no.	Cat. no.	Weight (kg)
630(4)(6)	NSX630	Terminals	2 x 300 / 1 x 150	ISO 70 max.	KTB0630DC4		45
	Rotary handle 32598	Terminals	2 x 300 / 1 x 150	ISO 70 max.		KTB0630DC5	46

(1) The neutral must be protected or not distributed (3L+PE) for the IT system.

(2) Also suitable for tap-off unit 3L + PE (N not distributed, IT system also possible).

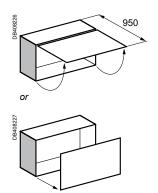
(3) Maximum diameter by unipolar cable.

(4) De-rating coefficient to apply: 0.9.

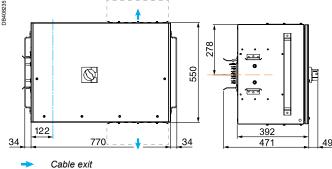
(5) The auto clamping system is included in the reference and delivered in the box.

(6) To be installed on KT ED type distribution length only.

For an installation on Canalis KT delivered before 2016 contact our help desk.



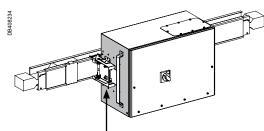




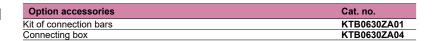
Center line of tap-off outlets

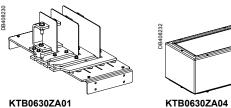
Axis of Canalis KT

Connection box to be fitted above or below



The auto clamping system has to be installed on the KT ED distribution units (5)

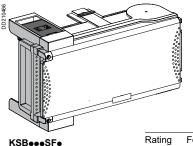






### 50 to 100 A tap-off units from **Canalis KS range for NF fuses** IP55

Tap-off units with isolator for cylindrical fuses Disconnection by opening the tap-off unit cover



Tap-off unit disconnection by opening or closing the cover should be carried out only if the downstreamload is de-energised.

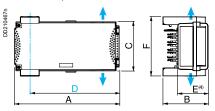
		System earthing Busbar trunking			ar trunking	TT-TNS-TNC-IT <sup>(1)</sup> TNC				
		arrangement		Tap-o	ff unit	TT-TNS-TNS-IT (1	) TNC			
		Tap-off polarity				3L + N + PE (2)	3L + PEN			
		Tap-off diagram (e.g. fuse protec			02010420					
Rating (A)	For fuses (not supplied)	Connection	Max. siz (mm²)	e	Cable gland <sup>(3)</sup> (not supplied)	Cat. no.	Cat. no.	Weight (kg)		
			Flexible	Rigid	_					
50	NF 14 x 51 Type gG : 50 A max. Type aM : 50 A max.	Terminals	25	25	ISO 50 max.	KSB50SF4	KSB50SF5	2.40		
100	NF 22 x 58 Type gG : 100 A max.	Terminals	50	50	ISO 63 max.	KSB100SF4	KSB100SF5	5.00		

Type aM : 100 A max.

(1) The neutral must be not distributed (3L+PE) for the IT system. (2) Also suitable for tap-off unit 3L + PE (N not distributed, IT system also possible only if N not distributed).

(3) Maximum diameter for a multipolar cable.

KSB50SFe, KSB100SFe



X = 432.5 (KSB50SF●) X = 545.5 (KSB100SF●)

D202008

Cable exit Centre line of tap-off outlets (4) Protruding

Dimensions	Rati	ng (A)
	50	100
A	356	444
B C	153	178
С	167	202
D	309	397
D E F	103	128
F	202	220

### 100 to 400 A tap-off units from **Canalis KS range for NF fuses** IP55

### **Canalis KTC**

DD202012

D202008

Tap-off units with is Disconnection by opening			uses									
					Tap-off unit disconnection by opening or closing the cover should be carried out only if the downstreamload is de-energised. It is possible to install an OF contact triggered by cover opening (see the "Accessories" section, page 126).							
				System earthing Busbar trunking			TT-TNS-TNC-IT <sup>(1)</sup> TNC					
e ·	·		arrangement		Тар-о	ff unit	TT-TNS-TNS-IT <sup>(1)</sup> TNC					
			Tap-off polarity				3L + N + PE (2)	3L + PEN				
			Tap-off diagram (e.g. fuse prote			DD210470						
	Rating (A)	For blade-type fuses (not supplied)	Connection	Max. size (mm <sup>2</sup> )	•	Cable gland (not supplied)	Cat. no.	Cat. no.	Weight (kg)			
KSB400SE				Flexible	Rigid	-						
00210422	100	Size 00 Type gG : 100 A max. Type aM : 100 A max.	Terminals	50	50	ISO 63 <sup>(3)</sup> max.	KSB100SE4 (5)	KSB100SE5 (5)	5.00			
	160	Size 00 Type gG : 160 A max. Type aM : 160 A max.	Terminals	35	50	ISO 20 <sup>(4)</sup> max.	KSB160SE4	KSB160SE5	11.00			
		Size 0 Type gG : 160 A max. Type aM : 160 A max.	Terminals	35	50	ISO 20 <sup>(4)</sup> max.	KSB160SF4	KSB160SF5	11.00			
KSB160SE• KSB250SE•	250	Size 1 Type gG : 250 A max. Type aM : 250 A max.	Terminals	150	150	ISO 32 <sup>(4)</sup> max.	KSB250SE4	KSB250SE5	20.00			
	400	Size 2 Type gG : 400 A max. Type aM : 400 A max.	Terminals	240	240	ISO 40 <sup>(4)</sup> max.	KSB400SE4	KSB400SE5	29.20			

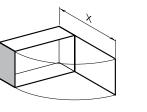
 (1) The neutral must be not distributed (3L+PE) for the IT system.
 (2) Also suitable for tap-off unit 3L + PE (N not distributed, IT system also possible only if N not distributed).

(3) Maximum diameter for a unipolar cable.

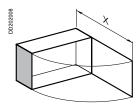
(4) Cable gland for multipolar cable only.

(5) For 100A dimensions, see "Tap-off units with insulators for cylindrical fuses", page 119, catalogue number KSB100SF.

#### KSB160SE., KSB250SE.



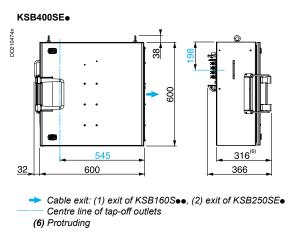
X = 577.5 (KSB160SE•) X = 777 (KSB250SE•)



X = 855

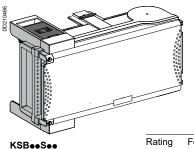
DD210473n ш **(**1) <u>G</u> E (6) В А

Dimensions	Ratir	ig (A)
	160	250
A	450	600
A B C	257	308
С	300	400
D	395	548
E	207	258
D E F G	32	32
G	32	32
Н	182	192



## 25 to 63 A tap-off units from **Canalis KS range for DIN fuses** IP55

Tap-off units with isolator for screw-type fuses Disconnection by opening the tap-off unit covert



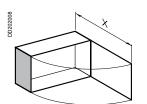
Tap-off unit disconnection by opening or closing the cover should be carried out only if the downstreamload is de-energised.

		System earthing		Busba	ar trunking	TT-TNS-TNC-IT (1)		
		arrangement		Тар-о	ff unit	TT-TNS-TNS-IT (1)	) TNC <sup>(2)</sup>	
		Tap-off polarity				3L + N + PE (2)	3L + PEN	
0.052858280000	8	Tap-off diagram (e.g. fuse protec	tion)		0,290,0420		L1 L2 L3 N PE	
Rating (A)	For fuses (not supplied)	Connection	Max. size (mm²)		Cable gland <sup>(3)</sup> (not supplied)	Cat. no.	Cat. no.	Weight (kg)
			Flexible	Rigid				
25	Diazed E27	Terminals	25	25	ISO 50 max.	KSB25SD4	KSB25SD5	2.40
50	Néoezd E18	Terminals	25	25	ISO 50 max.	KSB50SN4	KSB50SN5	2.40
63	Diazed E33	Terminals	25	25	ISO 63 max.	KSB63SD4	KSB63SD5	2.40

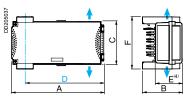
 (1) The neutral must be not distributed (3L+PE) for the IT system.
 (2) Also suitable for tap-off unit 3L + PE (N not distributed, IT system also possible only if N not distributed).

(3) Maximum diameter for a multipolar cable.

KSB••S••



X = 432.5 (KSB25SD●, KSB50SN●) X = 545.5 (KSB63SD●)

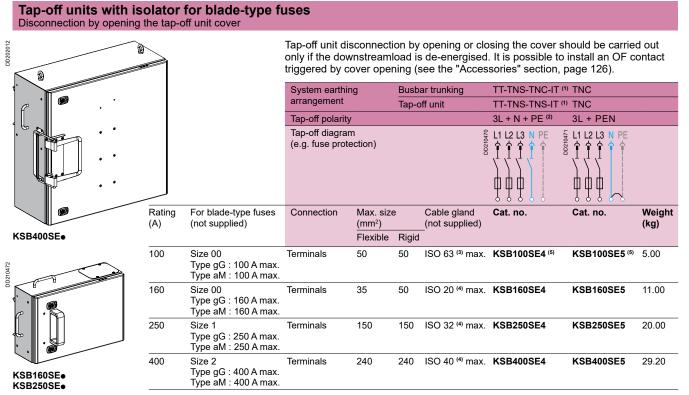


Cable exit Centre line of tap-off outlets (4) Protruding

Dimensions	Rating (A)	
	25 and 50	63
A	356	444
В	153	178
B C D E F	167	202
D	309	397
E	103	198
F	202	220

### 100 to 400 A tap-off units from **Canalis KS range for DIN fuses IP55**

### **Canalis KTC**



(1) The neutral must be not distributed (3L+PE) for the IT system.

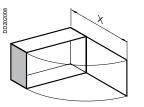
(2) Also suitable for tap-off unit 3L + PE (N not distributed, IT system also possible only if N not distributed).

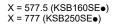
(3) Maximum diameter for a unipolar cable.

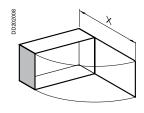
(4) Cable gland for multipolar cable only.

(5) For 100A dimensions, see "Tap-off units with insulators for cylindrical fuses", page 119, catalogue number KSB100SFe.

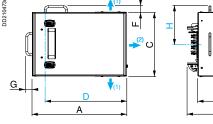
### KSB160SE, KSB250SE

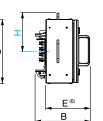






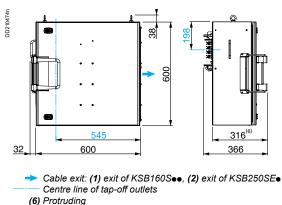






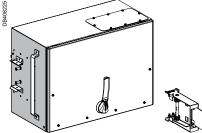
Dimensions	Ratir	ıg (A)
	160	250
A	450	600
В	257	308
С	300	400
D	395	548
E	207	258
F	32	32
A B C D E F G H	32	32
Н	182	192





# 630 A tap-off units from Canalis KT range with switchdisconnector for DIN fuses **IP55**

### SD - Tap-off units with switch-disconnector



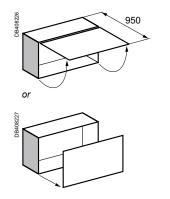
KTB0630SD.

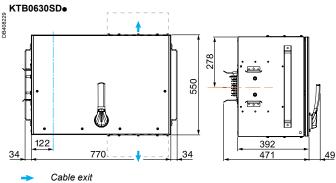
Tap-off units to be installed on 2 meters elements, only on central outlet. The cover of the tap-off unit may be opened or closed only when the switchdisconnector is in the Off position.

			System earthing Busbar trunking			TT-TNS-TNC-IT <sup>(1)</sup> TNC				
		arrangement Tap-off unit				TT-TNS-TNS-	IT <sup>(1)</sup> TNC			
			Tap-off polarity				3L + N + PE <sup>(2)</sup> 3L + PEN			
		Tap-off diagr (e.g. fuse pr								
Rating (A)	Type of fuses	Connection	Max. size L or N / P	` '	Cable gland <sup>(3)</sup> (not supplied)		Cat. no.	Weight (kg)		
630(4)(6)	DIN size 3	Terminals	2 x 300 /	1 x 150	ISO 70 max.	KTB0630SD4		64		
		Terminals	2 x 300 /	1 x 150	ISO 70 max.		KTB0630SD5	68		

(1) The neutral must be protected or not distributed (3L+PE) for the IT system. (2) Also suitable for tap-off unit 3L + PE (N not distributed (SLTPE) for the IT system.
 (3) Maximum diameter by unipolar cable.

(4) De-rating coefficient to apply 0.187.
(5) The auto clamping system is included in the reference and delivered in the box.
(6) To be installed on KT ED type distribution length only.
For an installation on Canalis KT delivered before 2016 contact our help desk.

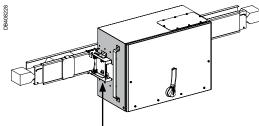




Center line of tap-off outlets

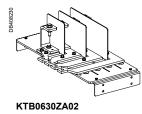
Axis of Canalis KT

Connection box to be fitted above or below



The auto clamping system has to be installed on the KT ED distribution units (5)

Option accessories			Cat. no.
Kit of connection bars			KTB0630ZA02
Extension rotary handle			KTB0630ZA03
Connecting box			KTB0630ZA04
Connocing box			
	53	$\bigcirc$	





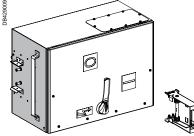


### 630 A tap-off units from Canalis KT range with switchdisconnector for DIN fuses **IP55**

### **Canalis KTC**

KTB0630SE

### SE - Tap-off units with switch-disconnector internal arc tested IEC 61-641



Tap-off units to be installed on 2 meters elements, only on central outlet. The cover of the tap-off unit may be opened or closed only when the switchdisconnector is in the Off position. To be installed on KT ED type distribution length only

				1 20 1	pe distributio	jui only.			
		System eart	0	Busbar	trunking	unking TT-TNS-TNC-IT <sup>(</sup>		TNC	
•		arrangemen	t	Tap-off unit			TT-TNS-TNS-IT <sup>(1)</sup>	TNC	
-	e.	Tap-off polar	rity				3L + N + PE <sup>(2)</sup>	3L + PEN	
		Tap-off diagr (e.g. fuse pr			DD 230226				
Rating (A)	Type of fuses	Connection	Max. size L or N / F	• •	Cable gland <sup>(3)</sup> (not supplied)		Cat. no.	Cat. no.	Weight (kg)
630(4)	DIN size 3	Terminals	2 x 300 /		ISO 70 max.	Right	KTB0630SE4R		72
			1 x 150			Left	KTB0630SE4L		72
								KTB0630SE5R	78
						Left		KTB0630SE5L	78

(1) The neutral must be protected or not distributed (3L+PE) for the IT system.

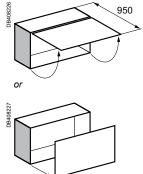
(2) Also suitable for tap-off unit 3L + PE (N not distributed, IT system also possible).

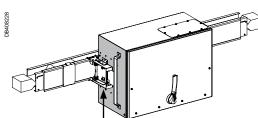
(3) Maximum diameter by unipolar cable.

(4) De-rating coefficient to apply: 0.87.

(5) The auto clamping system and the kit of connection bars are included in the reference and delivered in the box.

For an installation on Canalis KT delivered before 2016 contact our help desk.





**Option accessories** Cat. no. Extension rotary handle KTB0630ZA03 Connecting box KTB0630ZA04 Plate with 5 cable glands 24 to 40 mm KTB0000GP01 Plate with 1 cable clamp 30 to 70 mm KTB0000GP02



KTB0630ZA03



KTB0630ZA04

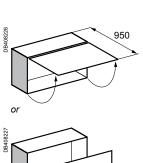




KTB0000GP03

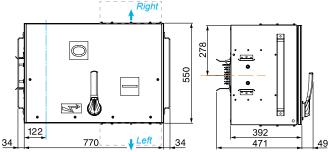
KTB0000GP02

## The auto clamping system has to be installed on the KT ED distribution units (5)



### KTB0630SE.

**DR42900** 



### Cable exit

Center line of tap-off outlets

Plate with 2 cable clamps 30 to 70 mm

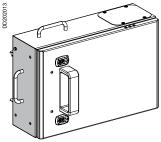
Axis of Canalis KT

Connection box to be fitted above or below

124	Life Is On	Schneider Blectric

## 32 to 160 A tap-off units from **Canalis KS range for BS fuses** IP55

Tap-off units for screw-mounted fuses Disconnection by unplugging the tap-off unit

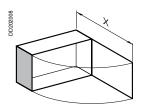


Tap-off unit disconnection by opening or closing the cover should be carried out only if the downstreamload is de-energised.

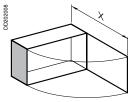
		System earthi	ng	Busb	ar trunking		TT-TNS-TNC-IT (1)	
		arrangement		Tap-c	off unit		TT-TNS-TNS-IT (1)	
		Tap-off polarit	у				3L + N + PE <sup>(2)</sup>	
		Tap-off diagra (e.g. fuse prof				DD210470		
Rating (A)	For fuses (not supplied)	Connection	Max. size (mm <sup>2</sup> )	Э	Cable gland (not supplied)		Cat. no.	Weight (kg)
			Flexible	Rigid				
32	BS88 A1	Terminals	25	25	ISO 50 (3) maxi		KSB32SG4	2.40
80	BS88 A1 or A3	Terminals	35	50	ISO 63 or ISO 20 <sup>(3)</sup> maxi		KSB80SG4	5.00
160	BS88 B1 or B2	Terminals	35	50	ISO 20 (4) maxi		KSB160SG4	11.00

KSBeeSG4

KSB160SG4



X = 432.5 (KSB32SG4) X = 545.5 (KSB80SG4)

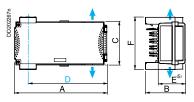


X = 577.5

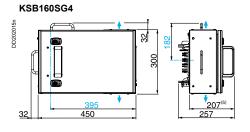
The neutral must be not distributed (3L+PE) for the IT system.
 Also suitable for tap-off unit 3L + PE (N not distributed).
 Maximum diameter for a multipolar cable.

(4) Maximum diameter for a unipolar cable.

KSB32SG4, KSB80SG4



Dimensions	Ratir	ng (A)	
	32	80	
A	356	444	
A B C D E F	153	178	
С	167	202	
D	309	397	
E	103	128	
F	202	220	



Cable exit Centre line of tap-off outlets (5) Protruding

# Accessories for tap-off units from Canalis KS range

IP55

### **Canalis KTC**

### Accessories for all tap-off units for modular devices

Designation	Description	Cat. no.	Weight (kg)
Modular blanking plate	Divisible set of 10 x 5	13940	0.08
Adhesive label <sup>(1)</sup>	Set of 12 label-holders (H = 24 mm, W = 180 mm)	08905	-
	Set of 12 labels (H = 24 mm, W = 432 mm)	08903	-
	Set of 12 divisible labels (H = 24 mm, W = 650 mm)	08907	-

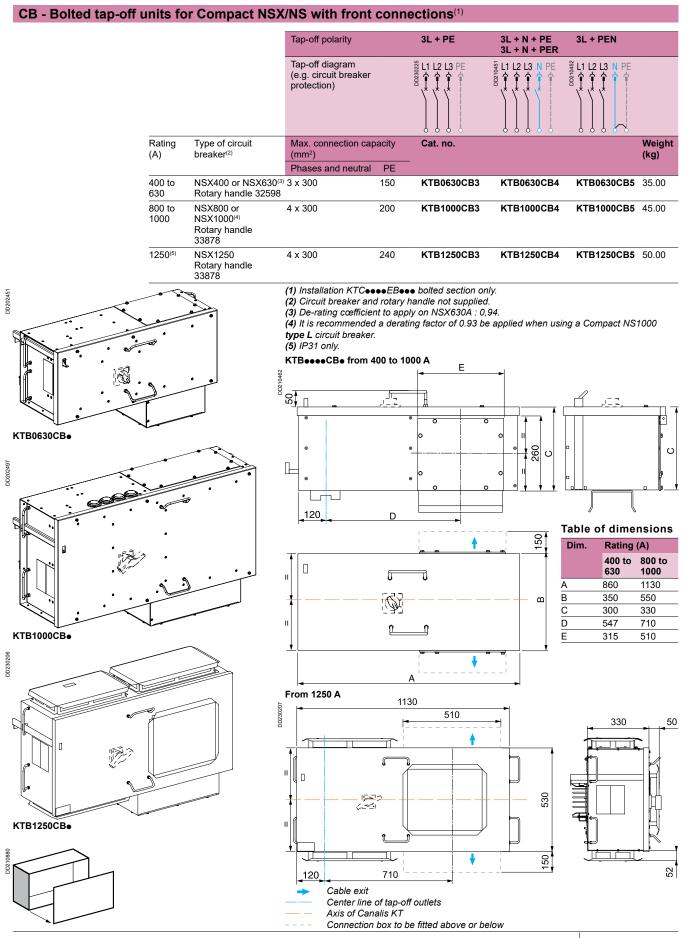
(1) Self-adhesive support complete with transparent cover and paper label.

### Accessories for all sheet-metal tap-off units

Designation	For tap-off unit	Order in multiples of	Cat. no.	Weight (kg)
Cover contact (break before opening)	KSB100S● to KSB400S●	1	KSB400ZC1	0.03

# Bolted tap-off units from Canalis KT for Compact NSX/NS 400 to 1250 A circuit breakers

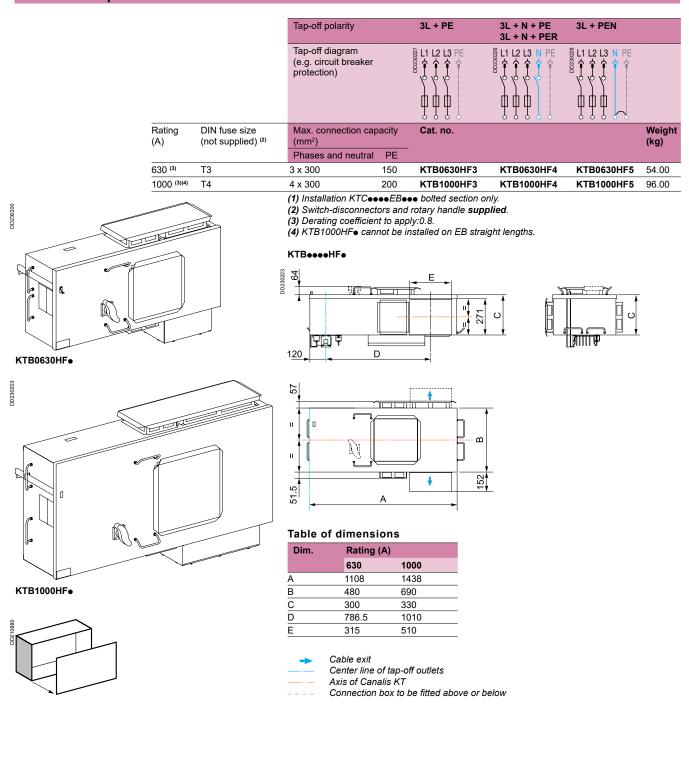
IP54



### 630 and 1000 A bolted tap-off units with switch-disconnectors for DIN fuses IP31

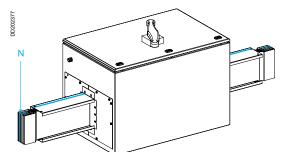
**Canalis KTC** 

HF - Bolted tap-off units with switch-disconnectors (1)



### Coupling isolators from 1000 to 2500 A IP55

### SL - Compact NS type NA coupling isolators

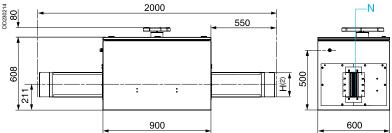


Fits equally on ducting in a flat position, on the edge (door accessible from above or below) or vertically.

Tap-off unit door locking is achieved using a door key lock.

Rating	Type of isolator	Cat. no.					
(A)	(supplied)	3L + PE	3L + N + PE	3L + N + PER (3)	_(kg)		
1000	NS1000 NA	KTC1000SL31	KTC1000SL41	KTC1000SL51	150.00		
1350 (1)	NS1250 NA	KTC1350SL31	KTC1350SL41	KTC1350SL51	165.00		
1600	NS1600 NA	KTC1600SL31	KTC1600SL41	KTC1600SL51	180.00		

### KTC



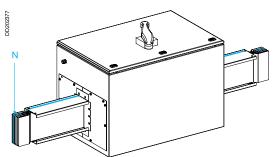
(1) Rated current: 1250 A.

(2) See the "Trunking cross-section" table below.

(3) To order the 3L+N+PER version with reinforced lsc, replace KTC •••• SL51 by

KTC••••SL71.

### SL - Interpact INV coupling isolators

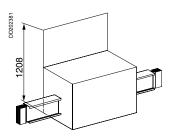


KTCeeeeSLe1

KTC

DD202381

1208

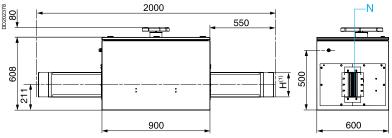


## Fits equally on ducting in a flat position, on the edge (door accessible from above or below) or vertically.

Tap-off unit door locking is achieved using a door key lock.

Rating	Type of isolator	Cat. no.	Cat. no.					
(A)	(supplied)	3L + PE	3L + N + PE	3L + N + PER	(kg)			
2000	INV2000	KTC2000SL31	KTC2000SL41	KTC2000SL51	200.00			
2500	INV2500	KTC2500SL31	KTC2500SL41	KTC2500SL51	210.00			

#### KTCeeeeSLe1



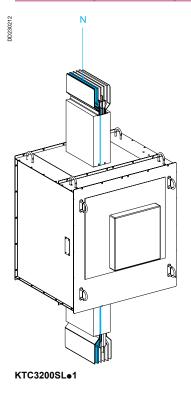
(1) See the "Trunking cross-section" table below.

Trunking cross-section									
Rating (A)	1000	1350	1600	2000	2500	3200	4000	5000	6300
Height H (mm) Width W (mm)									244
							┍╼╖═┑		
W			·		204	244	324	404	244
	140 140			<u> </u>			140	140	

# Coupling isolators 3200 A

### **Canalis KTC**

### SL - Masterpact NW coupling isolators



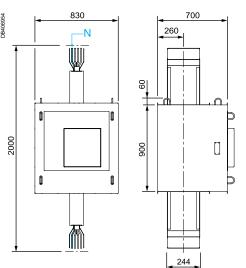
Notice: If the coupling isolator is installed on a **horizontal** busbar trunking the device must be only used as a disconnector and without any accessories (MX, XF, Motor MCH...).

					Weight
(A) (s	supplied)	3L + PE	3L + N + PE	3L + N + PER (1)	(kg)
3000 <sup>(2)</sup> N	W3200 HA	KTC3200SL31	KTC3200SL41	KTC3200SL51	360.00

(1) To order the 3L+N+PER version with reinforced lsc, replace KTC••••SL51 by KTC••••SL71.

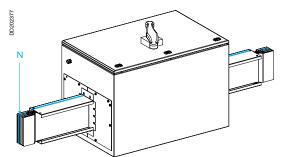
(2) The use of this coupling isolator requires derating the busway run to 3000 A.

### KTC3200SL•1



### Protection of the run using Compact NS circuit breakers from 1000 à 1600 A IP55

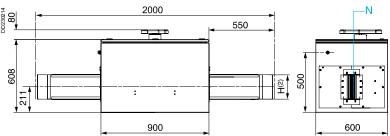
### PL - Protection of the run using Compact NS circuit breakers



Fits equally on ducting in a flat position, on the edge or vertically. Tap-off unit door locking is achieved using a door key lock.

Rating	Type of	Cat. no.			Weight
(A)	isolator <sup>(3)</sup> (supplied)	3L + PE	3L + N + PE	3L + N + PER (4)	(kg)
1000	NS1000 N	KTC1000PL31	KTC1000PL41	KTC1000PL51	150.00
1350 (1)	NS1250 N	KTC1350PL31	KTC1350PL41	KTC1350PL51	165.00
1600	NS1600 N	KTC1600PL31	KTC1600PL41	KTC1600PL51	180.00

#### KTCeeeePLe1



(1) Rated current : 1250 A.

(2) See the "Trunking cross-section" table below.

(3) Manual fixed compact NS circuit breakers type N equipped with a Micrologic 2.0 control unit.

(4) To order the 3L+N+PER version with reinforced Isc, replace KTCeeeePL51 by KTCeeeePL71.

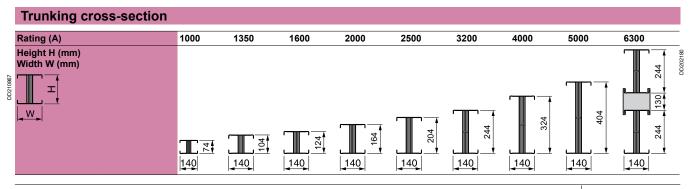
### Protection of a run > 1600 A

KTCeeeePLe1

DD202381

1208

To install protection of a run > 1600 A, consult your sales office.

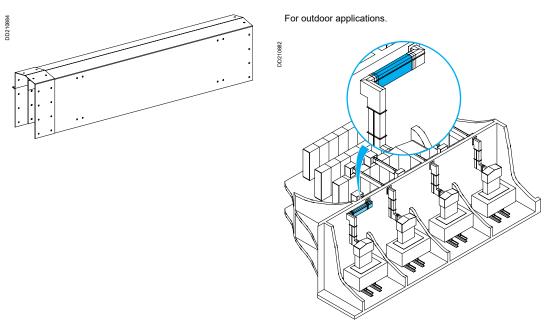


# **Special products**

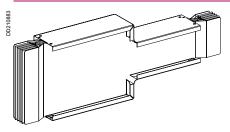
**Canalis KTC** 

For further information about the use and the dimensions, consult your sales office.

### Double skin aluminium enclosure



### **Reduction sections**



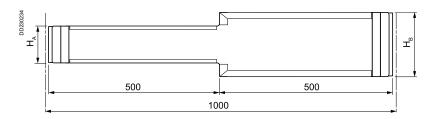
For reducing busbar trunking ratings.

Note: must be used in conjunction with appropriate protection.

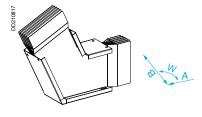
#### Table of sizes

Α	В							
	74	104	124	164	204	244	324	404
74								
104								
124								
164								
204								
244								
324								
404								

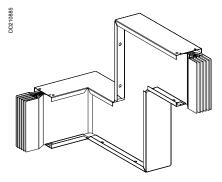
Available.



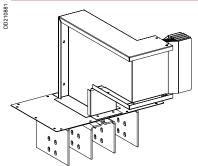
### Edgewise elbow with made to measure angles



### 4-limb zed unit







### On demand

- Surface treatment on conductors for corrosive atmospheres.
   Special colours.
   Seaworthy packaging.

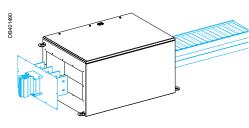
- etc.

# Canalis KH substitution by Canalis KT

KTC/KGF connection elements

### **Canalis KTC or KGF**

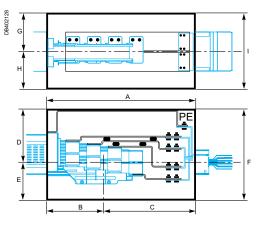
### **HT - Connection elements**



KTB0●●●HT0

Ratings	Cat. no.			
	3L + PE	3L + N + PE	3L + N + PER	Weight (kg)
	KTB0350HT01	KTB0350HT01	KTB0350HT01	63.00
	KTB0350HT02	KTB0350HT02	KTB0350HT02	80.00
See the table below	KTB0510HT01	KTB0510HT01	KTB0510HT01	88.00
Delow	KTB0510HT02	KTB0510HT02	KTB0510HT02	127.00
	KTB0510HT03	KTB0510HT03	KTB0510HT03	137.00

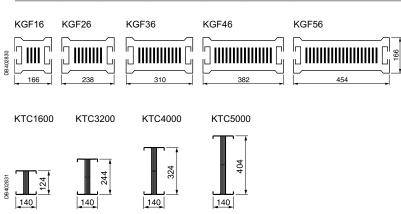
End feed units (J, K, M = 115) are not included in the reference and must be ordered separately.



### **Table of dimensions**

	Α	в	С	D	Е	F	G	н	1
KTB0350HT01	850	331.5	518.5	300	300	600	258	208	466
KTB0350HT02	850	331.5	518.5	300	300	600	258	208	466
KTB0510HT01	890	310	580	300	300	600	329	306	635
KTB0510HT02	890	310	580	300	300	600	329	306	635
KTB0510HT03	890	310	580	300	300	600	329	306	635

KGF type	Rating	L busway	KT type	Rating	H busway	H flange	Connection ref.
KGF16	1600	166	KTC1600	1600	124	230	KTB0350HT01
KGF26	2750	238	KTC3200	3200	244	350	KTB0350HT02
KGF36	3750	310	KTC4000	4000	324	510	KTB0510HT01
KGF46	5000	382	KTC5000	5000	404	510	KTB0510HT02
KGF56	5000	454		Line exte	nsion with k	(T is not po	ssible



KGF Polarity	KTC Polarity	
3L+PE	3L+PE	
3L+1/2N+PE	3L+N+PE	
3L+N+PE	3L+N+PE	
3L+N+PER <sup>(1)</sup>	3L+N+PER	

(1) Version with 120 mm<sup>2</sup> cu conductor or entire conductor.

# Preserved KH tap-off units and substitution table

Protection type	Polarity	Rating	Catalogue number	Status	Substitued by
plator and fuse carriers	3L+PE	160	KH016SD13	Removed	KH025SD15
	02.12	250	KH025SD13	Removed	KH025SD15
		400	KH040SD13	Removed	KH063SD15
		630	KH063SD13	Removed	KH063SD15
	3L+N+PE	160	KH016SD14	Removed	KH025SD14
		250	KH025SD14	Preserved	-
		400	KH040SD14	Removed	KH063SD14
		630	KH063SD14	Preserved	-
	3L+PEN	160	KH016SD15	Removed	KH025SD15
		250	KH025SD15	Preserved	-
		400	KH040SD15	Removed	KH063SD15
		630	KH063SD15 KH063SD1530758	Preserved Removed	- KH063SD15
	3L+NP+PE	160	KH016SD24	Removed	No
	JLTINE TEL	250	KH025SD24	Removed	No
		400	KH040SD24	Removed	No
		630	KH063SD24	Removed	No
h and fuse carriers	3L+PE	200	KH020SD33	Removed	KH025SE351
		315	KH031SD33	Removed	KH040SE351
		500	KH050SD33	Removed	KH063SE351
	3L+N+PE	50	KH005SD34	Removed	KH025SE341
		100	KH010SD34	Removed	KH025SE341
		200	KH020SD34	Removed	KH025SE341
		250	KH025SE341	Preserved	-
		315	KH031SD34	Removed	KH040SE341
		400	KH040SE341	Preserved	-
		500	KH050SD34	Removed	KH063SE341
		630	KH063SE341	Preserved	-
	3L+PEN	50	KH005SD35	Removed	KH025SE351
		100	KH010SD35	Removed	KH025SE351
		200	KH020SD35	Removed	KH025SE351
		250	KH025SE351	Preserved	
		315	KH031SD35	Removed	KH040SE351
		400 500	KH040SE351 KH050SD35	Preserved Removed	- KH063SE351
		500 630	KH050SD35 KH063SE351	Preserved	-
	3L+NP+PE	200	KH020SD44	Removed	- No
		315	KH0203D44 KH031SD44	Removed	No
		500	KH050SD44	Removed	No
breaker manuel	3L+N+PE	160	KH016SD541	Removed	KH025SD541
	1	250	KH025SD541	Preserved	-
		400	KH040SD541	Removed	KH063SD541
		630	KH063SD541	Preserved	-
	3L+PEN	160	KH016SD551	Removed	KH025SD551
		250	KH025SD551	Preserved	-
		400	KH040SD551	Removed	KH063SD551
		630	KH063SD551	Preserved	-
preaker electrical control	3L+N+PE	160	KH016SD542	Removed	KH025SD542
		250	KH025SD542	Preserved	-
		400	KH040SD542	Removed	KH063SD542
		630	KH063SD542	Preserved	-
	3L+PEN	160	KH016SD552	Removed	KH025SD552
		250	KH025SD552	Preserved	-
		400 630	KH040SD552	Removed Prosprived	KH063SD552
Isolator	3L+N+PE	630	KH063SD552	Preserved Removed	- No
isolatul	3L+N+PE 3L+PEN	100	KH063SD841 KH010SD85	Preserved	No
		250	KH0103D85	Preserved	
		400	KH040SD85	Preserved	-
		630	KH063SD85	Preserved	-
			KH063SD8502	Removed	KH063SD85
solator + Pelha	3L+PEN	400	KH040SD9502	Preserved	-
		630	KH063SD9502	Preserved	-
switch	-	-	KH0SD108919802	Removed	No
			KH0SD108919803	Removed	No
			KH0SD108920002	Removed	No
			KH0SD108922201	Removed	No
			KH0SD108922202	Removed	No
-	3L+N+PE	100	KH0SD107080401	Removed	No
		60	KH0SD107076901	Removed	No
	3L+PEN	100	KH0SD107080402	Removed	No
	-	60	KH0SD107076902	Removed	No

# Canalis KH substitution by Canalis KT

Preserved KH tap-off units and substitution table

Bolted tap-off unit					
Protection	Polarity	Rating	Catologue number	Status	Substitued by
Isolator and fuse carriers	3L+PE	160	KH016SB131	Removed	KH025SB131
			KH016SB132	Removed	KH025SB132
		250	KH025SB131	Preserved	-
			KH025SB132	Preserved	-
		400	KH040SB131	Removed	KH063SB131
			KH040SB132	Removed	KH063SB132
		630	KH063SB131	Preserved	-
			KH063SB132	Preserved	-
		1000	KH086SB131	Preserved	-
			KH086SB132	Preserved	-
			KH0SB331132	Removed	KH086SB132
	3L+N+PE	160	KH016SB141	Removed	KH025SB141
			KH016SB142	Removed	KH025SB142
		250	KH025SB141	Preserved	-
			KH025SB142	Preserved	-
		400	KH040SB141	Removed	KH063SB141
			KH040SB142	Removed	KH063SB142
		630	KH063SB141	Preserved	-
			KH063SB142	Preserved	-
		1000	KH086SB141	Preserved	-
			KH086SB142	Preserved	-
	3L+PEN	160	KH016SB151	Removed	No
			KH016SB152	Removed	No
		250	KH025SB151	Removed	No
			KH025SB152	Removed	No
		400	KH040SB151	Removed	No
		100	KH040SB152	Removed	No
		630	KH063SB152	Removed	No
		000			
		1000	KH063SB152	Removed Removed	No No
		1000	KH086SB151		
	3L+NP+PE	160	KH086SB152	Removed	No
	3L+NP+PE	160	KH016SB241	Removed	No
		050	KH016SB242	Removed	No
		250	KH025SB241	Removed	No
		100	KH025SB242	Removed	No
		400	KH040SB241	Removed	No
			KH040SB242	Removed	No
		630	KH063SB241	Removed	No
			KH063SB242	Removed	No
		1000	KH086SB241	Removed	No
			KH086SB242	Removed	No
Switch and fuse carriers	3L+PE	1000	KH086SB331	Removed	No
			KH086SB332	Removed	No
	3P+PE	250	KH025SB331	Removed	No
			KH025SB332	Removed	No
		400	KH040SB331	Removed	No
			KH040SB332	Removed	No
		630	KH063SB331	Removed	No
			KH063SB332	Removed	No
	3P+PEN	1000	KH086SB351	Removed	No
			KH086SB352	Removed	No
	3L+N+PE	250	KH025SB341	Removed	No
			KH025SB342	Removed	No
			KH025SB441	Removed	No
			KH025SB442	Removed	No
		400	KH040SB341	Removed	No
			KH040SB342	Removed	No
			KH040SB441	Removed	No
			KH040SB442	Removed	No
		630	KH063SB341	Removed	No
			KH063SB341	Removed	No
			KH063SB441	Removed	No
		1000	KH063SB442	Removed	No
		1000	KH086SB341	Removed	No
			KH086SB342	Removed	No

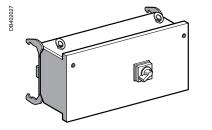
**Canalis KTC** 

Protection	Polarity	Rating	Catologue number	Status	Substitued by
vitch and fuse carriers (con't)	3L+PEN	250	KH025SB351	Removed	No
( )			KH025SB352	Removed	No
		400	KH040SB351	Removed	No
			KH040SB352	Removed	No
		630	KH063SB351	Removed	No
			KH063SB352	Removed	No
rcuit breaker manuel	3L+PE	1000	KH086SB5311	Preserved	-
			KH086SB5312	Preserved	-
	3L+N+PE	250	KH025SB5411	Removed	KH086SB5411
			KH025SB5412	Removed	KH086SB5412
		400	KH040SB5411	Removed	KH086SB5411
			KH040SB5412	Removed	KH086SB5412
		630	KH063SB5411	Removed	KH086SB5411
			KH063SB5412	Removed	KH086SB5412
		1000	KH086SB5411	Preserved	-
			KH086SB5412	Preserved	-
	3L+PEN	250	KH025SB5511	Removed	No
			KH025SB5512	Removed	No
		400	KH040SB5511	Removed	No
			KH040SB5512	Removed	No
		630	KH063SB5511	Removed	No
			KH063SB5512	Removed	No
		1000	KH086SB5511	Removed	No
			KH086SB5512	Removed	No
cuit breaker electrical controle	3P+PEN	250	KH025SB5521	Removed	No
		400	KH040SB5521	Removed	No
		630	KH063SB5521	Removed	No
	3L+N+PE	250	KH025SB5421	Removed	No
			KH025SB5422	Removed	No
		400	KH040SB5421	Removed	No
			KH040SB5422	Removed	No
		630	KH063SB5421	Removed	No
			KH063SB5422	Removed	No
	3L+PEN	250	KH025SB5522	Removed	No
		400	KH040SB5522	Removed	No
		630	KH063SB5522	Removed	No
cuit breaker plug-out	3L+PEN	1000	KH040DD411	Removed	No
			KH0SB1393108	Removed	No
			KH0SB1393132	Removed	No
hers	-	1000	KH0SA345794	Removed	No
			KH0SB1041086	Removed	No
		1500	KH0SA1088568	Removed	No
		2000	KH0SA1088123	Removed	No

### 250 and 630 A tap-off units from Canalis KH range for Compact NSX circuit breakers IP31

### Canalis KTC

### Tap-off units for Compact NSX, fixed, front-connected circuit breakers, not equipped



KH0eeSD5ee

The cover of the tap-off unit may be opened or closed only when the circuit breaker is in the Off position.

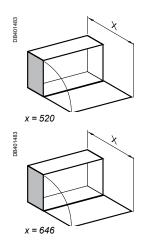
### Plug-in tap-off units for extended rotary

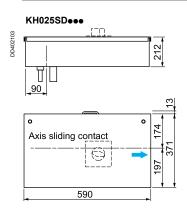
•	•					
System arrange	earthing ment <sup>(1)</sup>		Busbar trunking	TT-TNS-TNC-IT	TNC	
			Tap-off unit	TT-TNS-TNS-IT	TNC	
Tap-off	polarity			3L + N + PE	3L + PEN	
	diagram cuit breaker pro	tection)		1 1 1 2 13 N PE		
Rating (A)	Type of circuit breaker	Cable capacity (mm <sup>2</sup> )	Cable clamp on (mm)	Cat. no.		Weight (kg)
250	NSX250 N/H/L	1 x 150	3070	KH025SD541	KH025SD551	32.00
630	NSX630 N/H/L	2 x 300	2 x 3070	KH063SD541	KH063SD551	45.00
(1) These	e units can he fitte	ed either or	Canalis KTC	or KGE		

(1) These units can be fitted either on Canalis KTC or KGF.

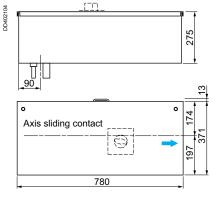
# Plug-in tap-off units for motor mechanisme control 220 V - 50 Hz (not supplied)

	n earthing ement <sup>(1)</sup>		Busbar trunking	TT-TNS-TNC-IT	TNC	
			Tap-off unit	TT-TNS-TNS-IT	TNC	
Tap-off	polarity			3L + N + PE	3L + PEN	
	diagram rcuit breaker pro	otection)		L1 L2 L3 N PE	PP	
Rating (A)	Type of circuit breaker	Cable capacity (mm <sup>2</sup> )	Cable clamp on (mm)	Cat. no.		Weight (kg)
250	NSX250 N/H/L control 31541			KH025SD542	KH025SD552	32.00
630	NSX630 N/H/L control 32841			KH063SD542	KH063SD552	45.00



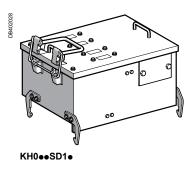


#### KH063SD ...



### **250 and 630 A tap-off units from Canalis KH range for NF fuses** IP31

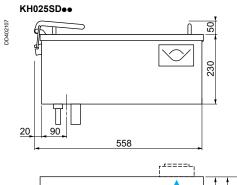
### Tap-off units with isolator for blade-type fuses

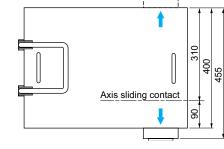


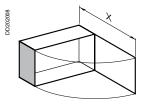
Tap-off disconnection by opening or closing the cover should be carried out only if the downstreamload is de-energised.

System earthing arrangement <sup>(1)</sup>		Busbar trunking	TT-TNS-TNC-IT	TNC		
			Tap-off unit	TT-TNS-TNS-IT	TNC	
Tap-off polarit	y			3L + N + PE	3L + PEN	
Tap-off diagra (e.g. fuse prot						
Rating (A)	Fuse size	Cable capacity (mm <sup>2</sup> )	Cable clamp on (mm)	Cat. no.		Weight (kg)
250	1	1 x 95	1 x 30-70	KH025SD14	KH025SD15	37.00
630	3	2 x 185	2 x 30-70	KH063SD14	KH063SD15	56.00

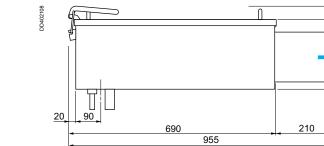
(1) These units can be fitted either on Canalis KTC or KGF.

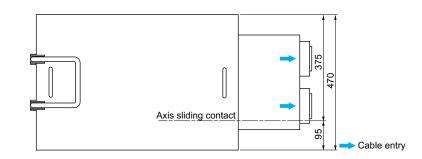


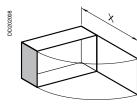




x = 790







x = 920

KH063SD.

50

230

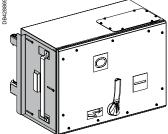
55

### 630 A tap-off units from Canalis KH range with switchdisconnector for DIN fuses **IP55**

### **Canalis KTC**

KHB0630SE

### SE - Tap-off units with switch-disconnector internal arc tested IEC 61-641



The cover of the tap-off unit may be opened or closed only when the switchdisconnector is in the Off position.

To be installed on KT EH type or on former KHF or KGF distribution length.

					•			0	
		System eart	hing	Busbar	trunking		TT-TNS-TNC-IT(1	) TNC	
		arrangemen	t	Tap-off	unit		TT-TNS-TNS-IT(1)	TNC	
		Tap-off pola	rity				3L + N + PE <sup>(2)</sup>	3L + PEN	
•		Tap-off diagi (e.g. fuse pr				00.230220			
Rating (A)	Type of fuses	Connection	Max. size L or N / F	• •	Cable gland (not supplied		Cat. no.	Cat. no.	Weight (kg)
630(4)	DIN size 3	Terminals	2 x 300 /		ISO 70 max.	Right	KHB0630SE4R	1	72
		1 x 1	1 x 150			Left	KHB0630SE4L		72
						Right		KHB0630SE5R	78
						Left		KHB0630SE5L	78

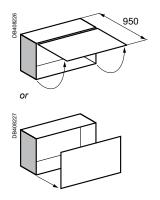
(1) The neutral must be protected or not distributed (3L+PE) for the IT system.

(2) Also suitable for tap-off unit 3L + PE (N not distributed, IT system also possible).

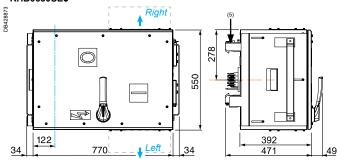
(3) Maximum diameter by unipolar cable.

(4) De-rating coefficient to apply: 0.87.

(5) The tap-off unit is delivered with automatic clamps, the kit of connection bars is included in the reference and delivered in the box.



KHB0630SE.



Cable exit

Center line of tap-off outlets

Axis of Canalis KT

Connection box to be fitted above or below

Option accessories	Cat. no.
Extension rotary handle	KTB0630ZA03
Connecting box	KTB0630ZA04
Plate with 5 cable glands 24 to 40 mm	KTB0000GP01
Plate with 1 cable clamp 30 to 70 mm	KTB0000GP02
Plate with 2 cable clamps 30 to 70 mm	KTB0000GP03

DB408231



KTB0630ZA03



KTB0630ZA04



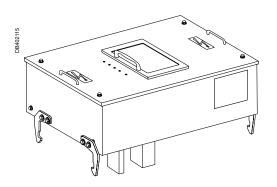


KTB0000GP03

# 100 to 630 A tap-off units from Canalis KH with disconnector Jean Muller

IP43

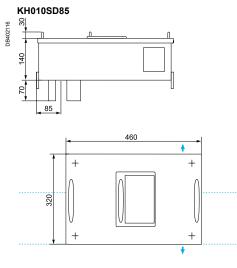
### Tap-off units with disconnector Jean Muller



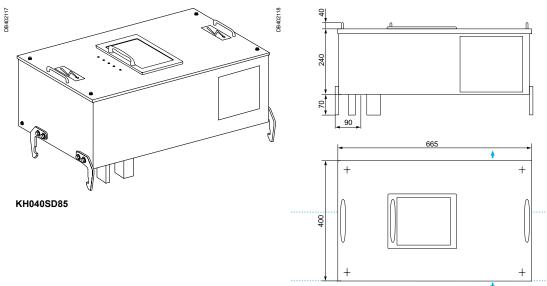
System earthing arrangement (1) TNC Busbar trunking Tap-off unit TNC 3L + PEN Tap-off polarity Tap-off diagram 5 L1 L2 L3 N PE (e.g. fuse protection) Î Î î 2021 ффф Ith (A) Weight Fuse Cable Cat. no. size capacity (kg) (mm<sup>2</sup>) 100 With MULLER disconnector 00 1 x 50 KH010SD85 12.50 250 With MULLER disconnector 1 1 x 95 KH025SD85 37.00 400 With MULLER disconnector 2 1 x 185 KH040SD85 39.00 KH063SD85 46.00 630 With MULLER disconnector 3 2 x 185

KH010SD85

(1) These units can be fitted either on Canalis KTC or KGF.



### KH025SD85 - KH040SD85 - KH063SD85



### 400 and 630 A tap-off units from Canalis KH with disconnector Jean Muller IP43

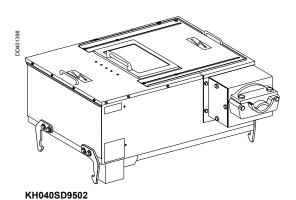
### Canalis KTC

DB401399

90.

680

### Tap-off units with disconnector internal arc tested IEC 61-641

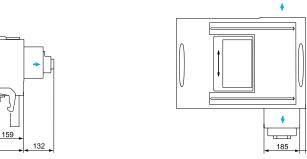


 $\square$ 

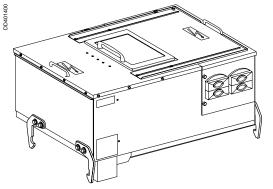
285

System earthing arrangement <sup>(1)</sup>			Busbar trunking	TNC	
			Tap-off unit	TNC	
Tap-of	f polarity			3L + PEN	
	f diagram ise protection)				
lth (A)		Fuse size	Cable capacity (mm²)	Cat. no.	Weight (kg)
400	With MULLER disconnector	2	1 x 185	KH040SD9502	39.00
630	With MULLER disconnector	3	2 x 185	KH063SD9502	46.00

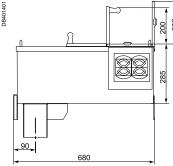
(1) These units can be fitted either on Canalis KTC or KGF.



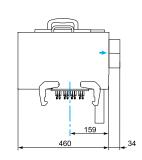
Connecting box is equipped with a 30 to 70 mm aluminium cable clamp.



KH063SD9502



YP YP YP



69

Connecting plate is equipped with 4 plastic cable clamps.





### If 2 cables exit are needed, stand alone connecting box can be ordered.

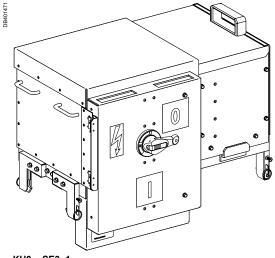
Designation	Cat. no.
Connecting box for KH040SD9502 with a 30 to 70 mm aluminium cable clamp	KH040ZA07
Connecting plate for KH063SD9502 with 4 plastic clamps	KH063ZA07

KH040ZA07

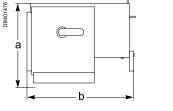
KH063ZA07

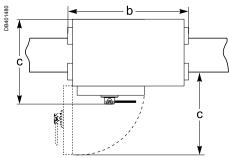
# 250 to 630 A tap-off units from **Canalis KH range with Fupact INF** fuse switch **IP43**

# Tap-off units from Canalis KH range with Fupact INF fuse switch



KH0eeSE3e1







Extension handle.



Cable box with 1 hole + cable gland.



DB401474

Cable box with 2 hole + cable glands.w

Tap-off unit installed under voltage, unloaded, for KTC2500, KTC3200, KTC4000.

### **Functionalities**

■ Insulation and protection of the outlet by Fupact fuse-switch Schneider Electric (supplied).

■ To be used only above or below the busbar trunking.

System earth	ing arrangement <sup>(1)</sup>	Busbar trunking	TT-TNS-TNC-IT	TNC
		Tap-off unit	TT-TNS-TNS-IT	TNC
Tap-off polar	ity		3L + N + PE	3L+ PEN
Tap-off diagr (e.g. fuse pro				
Rating (A)	lth (A)	Fuse size (DIN 43653)	Cat. no.	
250	250	1	KH025SE341	KH025SE351
400	350	2	KH040SE341	KH040SE351
630	500	3	KH063SE341	KH063SE351

(1) These units can be fitted either on Canalis KTC or KGF.

#### Dimensions KHOeeSE3e1

Dimensions (mm)	KH025SEe1	KH040SEe1	KH063SEe1
а	569	569	665
b	700	760	765
С	590	590	620
d	165	165	165
e	255	255	285
f	550	550	650

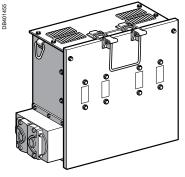
#### **Optional accessories**

Accessories	Cat. no.
Extension handle (for KH0eeSE3e1)	KH063ZA03
Cable box with 1 hole (for for KH025SE3●1) (cable gland not supplied, to be ordered separately)	KH025ZA05
Cable box with 1 hole (for for KH040SE3●1) (cable gland not supplied, to be ordered separately)	KH040ZA05
Cable box with 1 hole (for for KH063SE3●1) (cable gland not supplied, to be ordered separately)	KH063ZA05
Cable box with 2 hole (for for KH040SE3•1) (cable gland not supplied, to be ordered separately)	KH040ZA06
Cable box with 2 hole (for for KH063SE3●1) (cable gland not supplied, to be ordered separately)	KH063ZA06
Cable gland (185 - 240 mm <sup>2</sup> ) for cable boxes KH0••ZA05 and KH0••ZA06	KH063ZA10

# 250 to 1000 A fixed tap-off units for Canalis KGF range, with isolator and fuse carriers

# Canalis KGF only

# Tap-off units with isolator for blade-type fuses



## KH0eeSB1ee



DB40148



Opposite of yellow label.

Available 2021 Available 2021 The cover of the tap-off unit may be opened or closed only when the load is switched Off.

	System earthing arrangement <sup>(1)</sup>		Busbar trunking	IT-TT-TNS	TT-TNS-TNC-IT <sup>(3)</sup>						
			Tap-off unit	IT-TT-TNS		TT-TNS-TNS-IT	(3)				
Tap-off	oolarity			3L + PE		3L + N + PE					
Tap-off ( (e.g. fus											
Rating (A)	Fuse size	Cable capacity (mm <sup>2</sup> )	Cable clamp on (mm)	Cat. no. (4)	Weight (kg)	Cat. no. (4)	Weight (kg)				
250	1	1 x 150	1 x 30-70	KH025SB13.	46.00	KH025SB14•	48.00				
630	3	2 x 300	2 x 30-70	KH063SB13•	71.00	KH063SB14•	75.00				
1000	4	4 x 185	-	KH086SB13.	86.00	KH086SB14•	90.00				

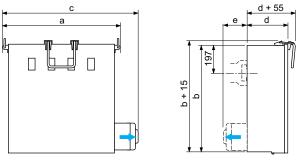
(1) To be installed only on Canalis KGF junction, do not use on Canalis KT.

(3) Also suitable for tap-off unit 3L + PE (N not distributed).

(4) The reference number ends with 1 if the tap-off unit is mounted on the identification label side. The reference number ends with 2 if the tap-off unit is mounted on the opposite side to the label.

### KH0eeSBeee

DB402113



Rating (A)	а	b	с	d	е
160/250	540	500	630	265	-
400/630	640	600	750	290	-
1000	650	485	-	300	120

## Connexion equipment for type SB <sup>(2)</sup> tap-off units

Note: this equipment sould be ordered at the same time as the SB tap-off unit.

Type of busbar trunking	SB tap-off unit (except 1000 A)	SB tap-off unit 1000 A only
KGF 16	KH016CB	KH016CB311571
KGF 26	KH026CB	KH026CB311571
KGF 36	KH036CB	KH036CB311571
KGF 46	KH046CB	KH046CB311571
KGF 56	KH056CB	KH056CB311571

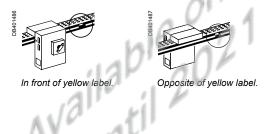
(2) The neutral must be not distributed (3L + PE) for the IT system.

# Fixed tap-off units for Canalis KGF range, for circuit breaker NS630b, NS800, NS1000

# Canalis KGF only

## Fixed tap-off units for Canalis KGF range

KH086SB5e1e



#### ■ Tap-off units are installed in the joint of 2 elements<sup>(1)</sup>.

- The link between tap-off unit and busbar trunking is realised by a set connecting
- links (see below the complementary kit catalogue numbers).
- Connection of 3 cables maxi per phase (holes Ø 14).
- Protection indice: IP31.
- Type of circuit breaker:

**IP31** 

- □ extended rotary handle ref. 33878
- □ fixed device with Front connection.

System ea	rthing arr	angement (1)	Busbar trunking	IT-TT-TNS	TT-TNS-TNC-IT	
			Tap-off unit	IT-TT-TNS	TT-TNS-TNS-IT	-
Tap-off po	larity			3L + PE	3L + N + PE	
Tap-off dia (e.g. circui		protection)				
Rated current In 35°C (2)	Control	Type of circuit breakers	Side	Cat. no. <sup>(3)</sup>		Weight (kg)
1000 A	Manual	N, H, L MG	In front of yellow label	KH086SB5311	KH086SB5411	88.00
		NS630b, NS800, NS1000 <sup>(2)</sup>	Opposite of yellow label	KH086SB5312	KH086SB5412	88.00

(1) To be installed only on Canalis KGF junction, do not use on Canalis KT.

(2) The circuit breaker more than 1000 Å, with the same dimension, cannot be used on these tap-off units.

(3) The reference number ends with 1 if the tap-off unit is mounted on the identification label side. The reference number ends with 2 if the tap-off unit is mounted on the opposite side to the label.

## Connexion equipment for type SB5 tap-off units



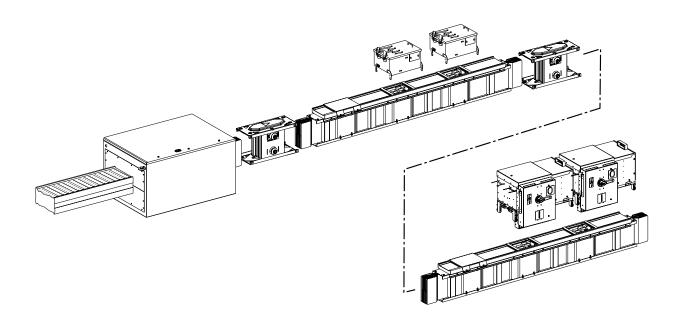
## **Complementary kit**

Note: this equipment should be ordered at the same time as the SB tap-off unit.

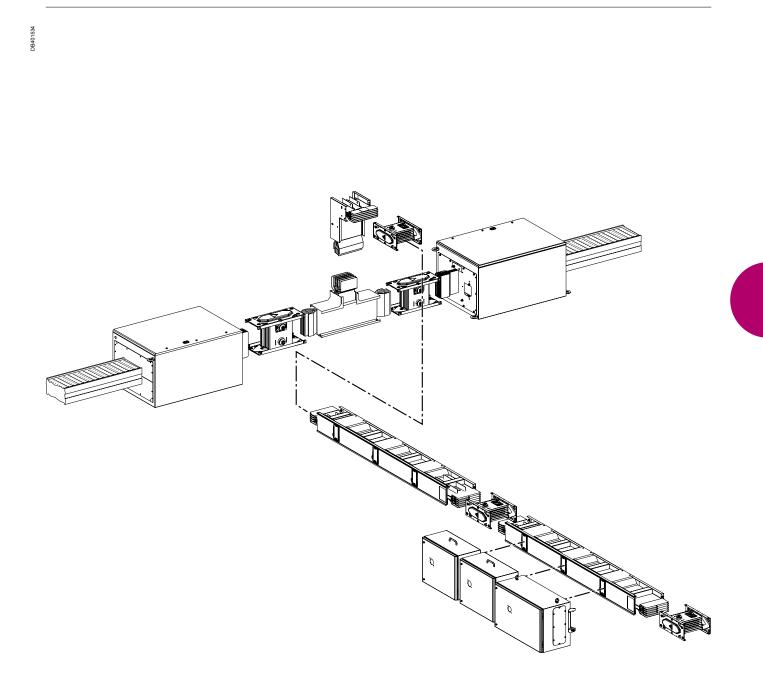
Type of busbar trunking	Cat. no.	Mounting position	
KGF 16	KH018CB86NS		$\overline{}$
KGF 26	KH028CB86NS		
KGF 36	KH038CB86NS	or	
KGF 46	KH048CB86NS		
KGF 56	KH058CB86NS		

# Expansion of a Canalis KH line by means of Canalis KT

# **Canalis KTC**

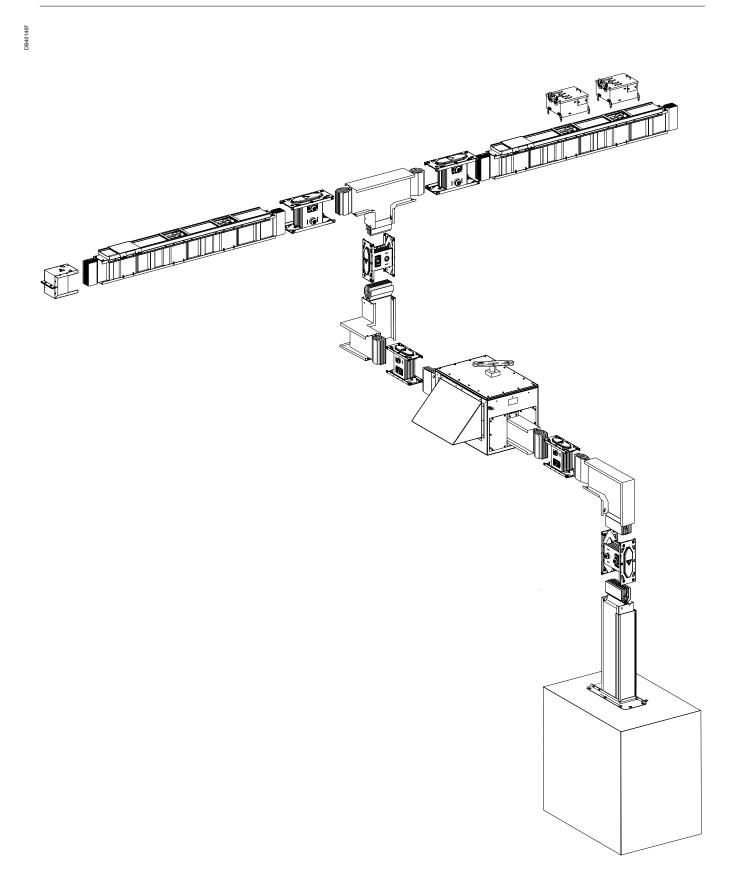


# Expansion of a Canalis KH line by means of Canalis KT with a T-piece tap-off unit



# Mid KT line power supply with KH tap-off units installed

# **Canalis KTC**



# Design guide

Introduction Presentation and description Catalogue numbers and dimensions	3 23 49
<b>Characteristics</b> Canalis KTC 3L + PE Canalis KTC 3L + N + PE Canalis KTC 3L + N + PER	<b>150</b> 150 151 152
Other characteristics	153
<b>Determining the rating</b> Providing power distribution using Canalis	<b>154</b> 154
Sizing the busbar trunking	156
Protection of circuits supplied by several paralleled transformers	158
<b>Coordination</b> Protection of busbar trunking against overloads Protection against short-circuits	<b>160</b> 160 162
<b>Circuit breaker / busbar trunking coordination</b> Non-limiting or time-delayed circuit breaker Limiter circuit breaker	<b>163</b> 163 164
Protecting busbar trunking with a Compact NS circuit breaker	165
Selection guide	166
	172
Degree of protection	
Degree of protection Harmonic currents	174
Harmonic currents	174
Harmonic currents Direct current Frequencies	174 176 178
Harmonic currents Direct current Frequencies 400 Hz Measurements and metering	174 176 178 178 179
Harmonic currents Direct current Frequencies 400 Hz Measurements and metering Canalis part of StruxureWare	174 176 178 178 178 179
Harmonic currents Direct current Frequencies 400 Hz Measurements and metering Canalis part of StruxureWare Fire resistance	<ul> <li>174</li> <li>176</li> <li>178</li> <li>178</li> <li>179</li> <li>182</li> </ul>

# **Characteristics**

Canalis KTC 3L + PE

# **Canalis KTC**

# **Characteristics of run sections**

				Symbol	Unit	Busba	r trunki	ng ratin	a (A)					
General	characte	ristics		-,		1000	1350	1600	2000	2500	3200	4000	5000	6300
Compliance v										C/EN 614	39-6			
Protection de				IP						55				
								indoors o			the busb	ar truncki	ng: edgev	wise,
Shock resista	2000			IK		flat or v	ertical. Se	ee test co	ndition, p	age 172. 08			-	
		n ambient temperature	- of 35°C		A	1000	1350	1600	2000	2500	3200	4000	5000	6300
Rated insulat			01000	Ui	V	1000	1000	1000	2000	1000	0200	4000	0000	0000
Rated operat	× *			Ue	V					1000				
Operating fre	quency			f	Hz	50/60 (	for 60 to 4	400 Hz A(	C or for D	C, consu	lt us)			
Short-cir	cuit curr	rent withstand												
Standard v	version 3L ·	+ PE												
Allowable rat	ed short-time	withstand current (t =	= 1 s)	Icw	kA	50	50	65	70	80	86	90	95	120
Allowable rat				lpk	kA	110	110	143	154	176	189	198	209	264
Maximum the	ermal stress I	²t (t = 1 s)		l²t	A <sup>2</sup> s 10 <sup>6</sup>	2500	2500	4225	12100	12769	7396	8100	9025	14400
		cteristics												
Phase con				-		0.044		0.004	0.040		0.040		0.007	
Average resis		ambient temperature	of 20°C	R <sub>20</sub> R <sub>1</sub>	mΩ/m mΩ/m	0.041	0.029	0.024	0.018	0.014	0.012	0.009	0.007	0.006
		and at 35°C and at 50	) Hz	κ <sub>1</sub> Χ <sub>1</sub>	mΩ/m	0.049	0.035	0.029	0.022	0.018	0.015	0.012	0.009	0.0075
		and at 35°C and at 5		Z <sub>1</sub>	mΩ/m	0.054	0.039	0.033	0.010	0.011	0.000	0.007	0.007	0.0085
PE = casin														
Average resistance at an ambient temperature of 20°C				mΩ/m	0.203	0.178	0.164	0.143	0.126	0.113	0.093	0.080	0.0565	
Casing (equivalent copper cross-section)				mm²	120	130	140	155	165	180	190	200	360	
Fault loo	p charac	cteristics												
1 10000	Average resistance		R <sub>0 ph/PE</sub>	mΩ/m	0.688	0.566	0.509	0.435	0.378	0.335	0.279	0.238	0.168	
	mothod	Average reactance		X <sub>0 ph/PE</sub>	mΩ/m	0.666	0.489	0.410	0.315	0.247	0.196	0.147	0.113	0.098
	At 00%0	Average impedance		Z <sub>0 ph/PE</sub>	mΩ/m	0.958	0.748	0.654	0.537	0.452	0.388	0.315	0.263	0.194
Impedance method	At 20°C	Average resistance	Ph/Ph Ph/PE	R <sub>b0 ph/ph</sub>	mΩ/m mΩ/m	0.078	0.056 0.351	0.047 0.298	0.036 0.239	0.029	0.025	0.019 0.135	0.015	0.013
	method At Inc and	Average resistance		R <sub>b0 ph/PE</sub> R <sub>b1 ph/ph</sub>	mΩ/m	0.433	0.068	0.250	0.233	0.036	0.032	0.024	0.019	0.005
	at 35°C	, tronago roolotarioo	Ph/PE	R <sub>b1 ph/PE</sub>	mΩ/m	0.527	0.428	0.364	0.292	0.247	0.214	0.173	0.141	0.107
	At Inc and	Average reactance	Ph/Ph	X <sub>b ph/ph</sub>	mΩ/m	0.040	0.029	0.024	0.019	0.015	0.013	0.010	0.008	0.007
	at 35°C and at 50 H	1-	Ph/PE	X <sub>b ph/PE</sub>	mΩ/m	0.426	0.329	0.275	0.212	0.170	0.141	0.106	0.084	0.071
Other ch														
		SIICS												
Voltage dro	р			Lina ta lin	e voltage c	Iron in ve		r 100 mo	trop and	oromo	(A) at 50	Uz with lo	ad aproa	dovor
				the run. F shown in	or the case this table.	of loads	concentr	ated at th	e end of a	a run, the	voltage o	drops are	double th	iose
					lation table s divided b		to three-p	hase load	ds. For si	ngle-phas	se loads,	the voltag	je drop gi	ven in
For a cosine	φof			1	V/100 m/A	0.0043	0.0031	0.0026	0.0019	0.0015	0.0013	0.0010	0.0008	0.00065
				0.9	V/100 m/A	0.0047	0.0034	0.0029	0.0022	0.0018	0.0015	0.0012	0.0010	0.00075
				0.8	V/100 m/A	0.0046	0.0033	0.0028	0.0022	0.0018	0.0015	0.0012	0.0010	0.00075
				0.7	V/100 m/A	0.0044	0.0031	0.0027	0.0021	0.0018	0.0014	0.0012	0.0010	0.0007
Average w	eiaht							•						
3L + PE					kg/m	19	25	29	36	44	51	66	82	102
Fire load v	alue													
					kWh/m	2.1	2.9	3.2	3.9	5.7	6.2	8.9	11.2	12.4
Radiated n	nagnetic fie	eld												
Radiated mag trunking	gnetic field st	trength 1 metre from t	he	В	μT	0.4	0.6	0.8	1.1	1.5	2.1	2.6	3.7	4.5

# **Characteristics of run sections**

				Symbol	Unit	Busha	r trunki	na ratin	na (A)					
General	characte	ristics		- <b>J</b>		1000	1350	1600	2000	2500	3200	4000	5000	6300
Compliance v										C/EN 614				
Protection de				IP					12,	55	00 0			
	0								nly) is po		the busb	ar truncki	ng: edge	wise,
<u></u>				117		flat or v	ertical. Se	e test co	ndition, p					
Shock resista		n ambient temperature	of 35°C	IK Inc	A	1000	1350	1600	2000	08 2500	3200	4000	5000	6300
Rated insulat			9 01 35 0	Ui	V	1000	1330	1000	2000	1000	3200	4000	5000	0300
Rated operat				Ue	V					1000				
Operating fre	<u> </u>			f	Hz	50/60 (1	for 60 to 4	400 Hz A	C or for D		lt us)			
Short-cir	cuit cur	rent withstand												
Standard v			- 4 - )	1	1.4	50	50	05	70	00	00	00	05	400
Allowable rat		e withstand current (t =	= 1 s)	lcw lpk	kA kA	50 110	50 110	65 143	70 154	80 176	86 189	90 198	95 209	120 264
Maximum the				l <sup>2</sup> t	A <sup>2</sup> s 10 <sup>6</sup>	2500	2500	4225	4900	6400	7396	8100	9025	14400
-		· ·			11010	2000	2000		1000	0.00		0.00	0020	
		cteristics												
Phase con		ambient torraster	of 20°C	D	m0/m	0.044	0.020	0.024	0.049	0.014	0.040	0.000	0.007	0.000
Average resis		ambient temperature		R <sub>20</sub> R <sub>1</sub>	mΩ/m mΩ/m	0.041	0.029	0.024	0.018	0.014 0.018	0.012	0.009	0.007	0.006
		and at 35°C and at 50	) Hz	X <sub>1</sub>	mΩ/m	0.049	0.035	0.029	0.022	0.018	0.015	0.012	0.009	0.0075
		and at 35°C and at 5		Z <sub>1</sub>	mΩ/m	0.054	0.039	0.033	0.026	0.021	0.000	0.014	0.012	0.0085
PE = casin										•	-			
	0	ambient temperature	of 20°C		mΩ/m	0.203	0.178	0.164	0.143	0.126	0.113	0.093	0.080	0.0565
	Casing (equivalent copper cross-section)				mm²	120	130	140	155	165	180	190	200	360
Fault loo	n charac	storietice												
Symmetrical		Average resistance		D	mΩ/m	0.192	0.138	0.116	0.089	0.071	0.062	0.046	0.037	0.031
components	at 20°C	Average reactance		R <sub>0 ph/N</sub> X <sub>0 ph/N</sub>	mΩ/m	0.192	0.089	0.075	0.058	0.071	0.002	0.040	0.037	0.020
method		Average impedance	•	Z <sub>0 ph/N</sub>	mΩ/m	0.229	0.164	0.138	0.106	0.084	0.074	0.055	0.044	0.037
	Ph/PE	Average resistance		R <sub>0 ph/PE</sub>	mΩ/m	0.688	0.566	0.509	0.435	0.378	0.335	0.279	0.238	0.168
	at 20°C	Average reactance		X <sub>0 ph/PE</sub>	mΩ/m	0.666	0.489	0.410	0.315	0.247	0.196	0.147	0.113	0.098
		Average impedance		Z <sub>0 ph/PE</sub>	mΩ/m	0.958	0.748	0.654	0.537	0.452	0.388	0.315	0.263	0.194
Impedance	At 20°C	Average resistance	Ph/Ph	R <sub>b0 ph/ph</sub>	mΩ/m	0.078	0.056	0.047	0.036	0.029	0.025	0.019	0.015	0.013
method			Ph/N	R <sub>b0 ph/N</sub>	mΩ/m	0.080	0.057	0.048	0.037	0.029	0.026	0.019	0.015	0.013
	At Inc and	Average resistance	Ph/PE Ph/Ph	R <sub>b0 ph/PE</sub>	mΩ/m mΩ/m	0.439	0.351	0.298	0.239	0.199	0.170	0.135	0.110	0.085
	at 35°C	Average resistance	Ph/N	R <sub>b1 ph/ph</sub> R <sub>b1 ph/N</sub>	mΩ/m	0.094	0.000	0.057	0.044	0.036	0.032	0.024	0.019	0.010
			Ph/PE	R <sub>b1 ph/PE</sub>	mΩ/m	0.527	0.428	0.364	0.292	0.247	0.214	0.173	0.141	0.107
	At Inc and	Average reactance	Ph/Ph	X <sub>b ph/ph</sub>	mΩ/m	0.040	0.029	0.024	0.019	0.015	0.013	0.010	0.008	0.007
	at 35°C		Ph/N	X <sub>b ph/N</sub>	mΩ/m	0.065	0.047	0.040	0.030	0.024	0.021	0.016	0.013	0.011
	and at 50 H		Ph/PE	X <sub>b ph/PE</sub>	mΩ/m	0.426	0.329	0.275	0.212	0.170	0.141	0.106	0.084	0.071
Other ch	aracteris	stics												
Voltage dro	ор			_										
					ne voltage (		· · · ·				. ,			
					or the case this table.	e of loads	concentr	ated at th	e end of a	a run, the	voltage	arops are	double ti	lose
					ulation table	e applies t	to three-p	hase loa	ds. For si	ngle-phas	se loads,	the voltag	ge drop g	iven in
					is divided b	-								
For a cosine	φ of			1	V/100	0.0043	0.0031	0.0026	0.0019	0.0015	0.0013	0.0010	0.0008	0.00065
				0.9	m/A V/100	0.0047	0.0034	0.0029	0.0022	0.0018	0.0015	0.0012	0.0010	0.00075
				0.0	m/A	0.0047	0.0004	0.0029	0.0022	0.0010	0.0013	0.0012	0.0010	0.00070
				0.8	V/100	0.0046	0.0033	0.0028	0.0022	0.0018	0.0015	0.0012	0.0010	0.00075
				0 -	m/A	0.0515	0.005	0.00	0.0051	0.00.15	0.001	0.00.15	0.00.15	0.00
				0.7	V/100 m/A	0.0044	0.0031	0.0027	0.0021	0.0018	0.0014	0.0012	0.0010	0.0007
					in/A		I		1					<u> </u>
Average w	eight													
3L + N + PE					kg/m	23	31	35	45	55	64	84	104	128
<b></b>														
Fire load v	alue				1.14// /	0.5			50	7.0		44 -	1 4 4 3	140
-					kWh/m	2.5	3.6	4.1	5.9	7.3	8.0	11.5	14.4	16
Padiated -	nagnotio fi	ald												
Radiated na		<b>εια</b> trength 1 metre from t	he	В	μT	0.4	0.6	0.8	1.1	1.5	2.1	2.6	3.7	4.5
trunking	grietie lielu st			J	μı	0.4	0.0	0.0		1.0	2.1	2.0	0.7	7.0
							•		•	•		•	•	•

# Characteristics

Canalis KTC 3L + N + PER

# **Canalis KTC**

# **Characteristics of run sections**

				Symbol	Unit	Busba	ır trunki	ng ratir	ig (A)						
General	characte	ristics				1000	1350	1600	2000	2500	3200	4000	5000	6300	
Compliance v										C/EN 614					
Protection de		<u> </u>		IP			55								
	9.00					Any ins	tallation (	indoors o	nlv) is po		the bush	ar truncki	na. eque	wise	
							ertical. Se						g. euge		
Shock resista	ince			IK						08					
Nominal rated	l current at ar	n ambient temperature	e of 35°C	Inc	A	1000	1350	1600	2000	2500	3200	4000	5000	6300	
Rated insulation voltage			Ui	V					1000						
Rated operati	ing voltage			Ue	V					1000					
Operating fre	quency			f	Hz	50/60 (	for 60 to 4	400 Hz A	C or for D	C, consu	lt us)				
Short-cir	cuit curr	ent withstand													
Standard v															
Allowable rate	ed short-time	withstand current (t =	= 1 s)	Icw	kA	50	50	65	70	80	86	90	95	120	
Allowable rate			,	lpk	kA	110	110	143	154	176	189	198	209	264	
	rmal stress l <sup>2</sup>			l <sup>2</sup> t	A <sup>2</sup> s 10 <sup>6</sup>	2500	2500	4225	4900	6400	7396	8100	9025	14400	
Reinforced	version 3	+ N + PER (optio	onal)												
		withstand current (t =	•	Icw	kA	65	65	85	110	113	113	120	120	120	
	ed peak curre	· · ·	,	lpk	kA	143	143	187	242	248	248	264	264	264	
Maximum the	rmal stress			l <sup>2</sup> t	A <sup>2</sup> s 10 <sup>6</sup>	4225	4225	7225	12100	12769	12769	14400	14400	14400	
Conduct	or chara	cteristics													
Phase con		clensucs													
Average resistance at an ambient temperature of 20°C			R <sub>20</sub>	mΩ/m	0.041	0.029	0.024	0.018	0.014	0.012	0.009	0.007	0.006		
Average resistance at Inc and at 35°C			R <sub>1</sub>	mΩ/m	0.049	0.035	0.029	0.022	0.018	0.012	0.012	0.009	0.007		
Average reactance at Inc and at 35°C and at 50 Hz			X <sub>1</sub>	mΩ/m	0.022	0.016	0.015	0.013	0.011	0.008	0.007	0.007	0.004		
Average impedance at lnc and at 35°C and at 50 Hz			Z <sub>1</sub>	mΩ/m	0.054	0.039	0.033	0.026	0.021	0.017	0.014	0.012	0.008		
· ·		protective conduc													
		ambient temperature			mΩ/m	0.050	0.039	0.034	0.026	0.022	0.019	0.014	0.012	0.009	
Copper cross					mm²	210	300	360	480	600	720	960	1200	1440	
	_	torictice													
Fault loo Symmetrical	•	Average resistance	-	R <sub>0 ph/N</sub>	mΩ/m	0.189	0.134	0.113	0.085	0.069	0.057	0.043	0.035	0.029	
components	at 35°C	Average reactance		X <sub>0 ph/N</sub>	mΩ/m	0.087	0.061	0.054	0.003	0.003	0.029	0.022	0.033	0.023	
method		Average impedance		Z <sub>0 ph/N</sub>	mΩ/m	0.208	0.148	0.125	0.095	0.080	0.023	0.049	0.039	0.032	
	Ph/PE	Average resistance		R <sub>0 ph/PE</sub>	mΩ/m	0.206	0.157	0.135	0.106	0.087	0.074	0.057	0.000	0.037	
	at 35°C	Average reactance		X <sub>0 ph/PE</sub>	mΩ/m	0.067	0.051	0.043	0.034	0.028	0.024	0.019	0.015	0.012	
		Average impedance		Z <sub>0 ph/PE</sub>	mΩ/m	0.217	0.164	0.142	0.111	0.091	0.078	0.060	0.049	0.039	
mpedance	At 20°C	Average resistance	Ph/Ph	R <sub>b0 ph/ph</sub>	mΩ/m	0.083	0.058	0.048	0.036	0.029	0.024	0.018	0.014	0.012	
method			Ph/N	R <sub>b0 ph/N</sub>	mΩ/m	0.087	0.059	0.019	0.239	0.199	0.170	0.135	0.110	0.085	
			Ph/PER	R <sub>b0 pb/PE</sub>	mΩ/m	0.105	0.077	0.065	0.050	0.041	0.034	0.026	0.021	0.017	
	At Inc and	Average resistance	Ph/Ph	R <sub>b1 ph/ph</sub>	mΩ/m	0.099	0.071	0.059	0.044	0.036	0.030	0.023	0.019	0.015	
	at 35°C	<b>U</b>	Ph/N	R <sub>b1 ph/N</sub>	mΩ/m	0.104	0.072	0.060	0.045	0.036	0.031	0.023	0.019	0.016	
			Ph/PE	R <sub>b1 ph/PE</sub>	mΩ/m	0.126	0.094	0.080	0.061	0.051	0.043	0.033	0.027	0.022	
	At Inc and	Average reactance		X <sub>b ph/ph</sub>	mΩ/m	0.028	0.020	0.017	0.013	0.011	0.009	0.004	0.006	0.005	
	at 35°C	U U	Ph/N	X <sub>b ph/N</sub>	mΩ/m	0.043	0.032	0.028	0.021	0.017	0.015	0.011	0.009	0.008	
	and at 50 H	Z	Ph/PE	X <sub>b ph/PE</sub>	mΩ/m	0.050	0.040	0.035	0.029	0.023	0.020	0.016	0.013	0.010	
Other ch	aracteris	tics													
Voltage dro	۲ <b>۲</b>			Line-to-lin	e voltage o	Iron in w	olts (\/) ne	er 100 me	tres and	ner amn /	(A) at 50	Hz with Ic	ad shree	nd over	
Voltage dro															
Voltage dro				the run. F	or the case	e or loads	CONCENT	aleu al il		a i uii. uie	vollaue	ulops ale	uouple li		
Voltage dro				the run. F shown in		e or loads	concenti	aleu al li		a run, me	voltage	liops are	double tr	1030	
Voltage dro				shown in This calcu	this table. Ilation table	e applies					-				
Voltage dro				shown in This calcu	this table.	e applies y 1.732.		hase loa	ds. For si	ngle-phas	se loads,		ge drop gi	iven in	

		m/A									
	0.9	V/100	0.0047	0.0034	0.0029	0.0022	0.0018	0.0015	0.0012	0.0010	0.00075
		m/A									
	0.8	V/100	0.0046	0.0033	0.0028	0.0022	0.0018	0.0015	0.0012	0.0010	0.00075
		m/A									
	0.7	V/100	0.0044	0.0031	0.0027	0.0021	0.0018	0.0014	0.0012	0.0010	0.0007
		m/A									
Average weight											
3L + N + PER		kg/m	25	33	39	49	60	71	92	114	142
Fire load value											
		kWh/m	2.5	3.6	4.1	5.9	7.3	8.0	11.5	14.4	16

		KVVII/III	2.5	3.0	4.1	5.9	1.3	0.0	C.11	14.4	10
Radiated magnetic field											
Radiated magnetic field strength 1 metre from the trunking	В	μT	0.4	0.6	0.8	1.1	1.5	2.1	2.6	3.7	4.5
		_						•			-

# **Characteristics of run sections**

## **Other characteristics**

### Choice of products when harmonics are present (see "harmonic currents" for more details).

THD ≤ 15 %	15 % < THD ≤ 33 %	THD > 33 %	Busbar trunking	Rating (A)
1000	800	630	KTC	1000
1350	1000	800	KTC	1350
1600	1350	1000	KTC	1600
2000	1600	1350	KTC	2000
2500	2000	1600	KTC	2500
3200	2500	2000	KTC	3200
4000	3200	2500	KTC	4000
5000	4000	3200	KTC	5000
6300	5000	4000	KTC	6300

Example. For a total rms current of 2356 A (estimation based on power drawn by loads, including harmonics), the operational current is 2500 A. THD is estimated at 30 %. The appropriate trunking is KTC 3200 A.

#### Allowable current as a function of ambient temperature

Canalis busbar trunking is sized to operate at an ambient air does not exceed +40°C and its average over a period of 24 h does not exceed +35°C, above this value, the busbar trunking must be derated.

Where k1 = ambient temperature derating coefficient.

	Symbol	Unit	Ambiant temperature 24 hours average						
		°C	35	40	45	50	55		
Busbar trunking installed indoors	k1	%	k1=1	k1=0.97	k1=0.93	k1=0.90	k1=0.86		
Busbar trunking installed outside under an aluminium roof	k1	%	See "Busbar trunking installed outside under an aluminium roof" on page 155.						
Busbar trunking installed in a fire duct	k1	%	Please, see yo	Please, see your sales office.					

#### Through-wall fire barrier

Tests performed in accordance with the requirements of NF EN 1363-1 and those specific to EN 1366-3.

	Performance criteria	
	Fire integrity	Thermal insulation
Without external fire barrier	120 mn	30 mn
With external fire barrier	120 mn	120 mn

# **Tap-off unit characteristics**

General characteristics	Symbol	Unit	
Protection degree	IP		55
Shock resistance	IK		08
Rated insulation voltage	Ui	V	400 or 500 depending on protection device
Rated operating voltage	Ue	V	
Operating frequency	f	Hz	50/60

## Derating to apply to the KTC6300

Installation type	Utilisation					
	Transport	Distribution				
Edgewise installation	1	0.94				
Flatwise installation	0.9	0.9				

# **Determining the rating** Providing power distribution using Canalis

**Canalis KTC** 

## Apart from extreme atmospheres, Canalis can be installed anywhere!

The order described below is only aimed at presenting the different stages for a simple installation.

For a detailed design, it is necessary to use appropriate tools, approved by control bodies, in compliance with local installation standards. The Ecodial software, edited by Schneider Electric, meets this requirement perfectly.

# Design order:

1 - Define run layouts.

- 2 Identify external influences.
- 3 Determine the current rating (Ib).
- 4 Calculate the nominal current (In) taking into account derating coefficients.
- 5 Choose the busbar trunking rating.
- 6 Check the rating with respect to allowable voltage drop.
- 7 Check busbar trunking overloads.
- 8 Check the rating with respect to short-circuit withstand current.
- 9 Choose the source and feeder circuit breakers.

## 1 - Canalis busbar trunking layout

The layout of the distribution runs depends on the position of the loads and where the source is located.

Load protection is placed in the tap-off boxes, at the point of use.

A single and same Canalis busbar trunking supplies a group of loads of different ratings.

Schneider Electric has tools you can use to help you choose the architecture best suited to your application:

the Idpro software to simulate the organisation of your electrical networks

■ application orientated technical guides (car industry, data centers, shopping centres, etc).

## 2 - Identification of external influences



### **Protection degree**

Canalis KT busbar trunking is IP55 and IPxxD by construction. This protection degree protects the busbar trunking against:

- dust
- penetration by a 1mm diameter wire
- water projections from all directions.

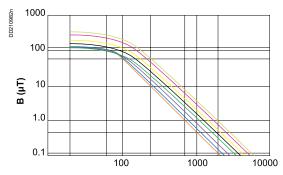
It can be installed in almost all premises; for more details see the "Determining the protection degree" page 172.

Wherever the busbar trunking must pass outside the building, an aluminium roof can be supplied; consult your Schneider Electric distributor for information concerning this option.

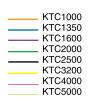
#### **Corrosive atmosphere**

The busbar trunking has been qualified for industrial atmospheres. For sulphurous atmospheres such as sulphur dioxide (SO<sub>2</sub>) and hydrogen sulphide (H<sub>2</sub>S), there is a suitable Canalis KT solution, consult your Schneider Electric distributor for more information on this option.

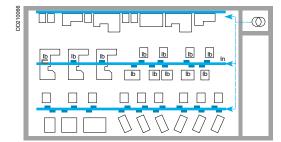
Example: paper mills, water treatment works, etc.



#### distance from the center of the Busbar (mm)



## 3 - Determining the current rating (lb)



#### **Radiated electromagnetic fields**

According to the WHO (World Health Organisation), exposure to radiated electromagnetic fields above 0.2 micro Tesla can be dangerous causing a risk of cancer over the long term. Some countries have standardised the limit: Sweden =  $0.2 \mu$ T, at a distance of 1 metre.

All electrical conductors generate a magnetic field, the strength of which is proportional to the distance between them. The Canalis busbar trunking concept (metal casing and conductors near together) helps to considerably reduce radiated electromagnetic fields.

In specific cases where particularly low values are required (computer rooms, hospitals, some offices), it is important to keep in mind the following:

■ the induction generated around 3-phase distribution. This is proportional to the current and the distance between the conductors, and inversely proportional to the square of the distance with respect to the busbar trunking and the screening effect of the case

■ the induction generated around busbar trunking. This is less than the induction generated around an equivalent cable distribution

■ Canalis' steel casing. This attenuates the induction more than an equivalent aluminium casing of the same thickness (screening effect)

■ the induction generated around busbar trunking with sandwiched bars. This is particularly low because of the short distance between the bars and the additional attenuation provided by the steel casing.

Calculation of the total current (Ib) absorbed by a run is equal to the sum of the currents absorbed by all of the loads.

The loads do not all operate at the same time and, as they are not continuously at full load, a stacking or simultaneity factor Ks has to be taken into account: Ib =  $\Sigma$  Ib load x Ks

# Stacking factor Ks depending on the number of loads according to IEC 61439-1

Application	Number of loads	Ks coefficient
Lighting, heating	-	1
Distribution (mechanic workshop)	23	0.9
	45	0.8
	69	0.7
	1040	0.6
	40 and over	0.5

*Caution:* for industrial installations, remember to take into account future increases in the number of machines. A 20 % reserve is recommended.

# 4 - Calculating nominal current (In) by applying a derating coefficient

#### Ambient temperature

Canalis busbar trunking is sized to operate at an average ambient temperature of 35°C, above this value, the busbar trunking must be derated.

Example: Canalis KTC1350 A installed inside with an ambient temperature of  $50^{\circ}$ C: In = 1350 x 0.90 = 1215 A.

 $ln \ge lb x k1 = lz$ 

Where k1 = ambient temperature derating coefficient.

Type of installation	Canalis KT		Ambiant temperature 24 hours average (°C)					
			35	40	45	50	55	
Busbar trunking installed inside	$\square$	All	1	0.97	0.93	0.90	0.86	
Busbar trunking installed outside under an aluminium roof	$\widehat{[]]}$	All	0.86	0.83	0.80	0.77	0.74	
Busbar trunking installed in a fire duct			Please	, see your	sales offic	æ.		

# Sizing the busbar trunking

**Canalis KTC** 

## 5 - Choosing the busbar trunking rating according to the nominal current In

Nominal current In (A)	Busbar trunking	
0 to 1000	KTC1000	
1001 to 1350	KTC1350	
1351 to 1600	KTC1600	
1601 to 2000	KTC2000	
2001 to 2500	KTC2500	
2501 to 3200	KTC3200	
3201 to 4000	KTC4000	
4001 to 5000	KTC5000	
5001 to 6300	KTC6300	

# 6 - Checking the rating with respect to allowable voltage drop

The voltage drop between the start and all points of use must not be greater than the values in the table below:

Installation supplied by:	Lighting	Other use
Low voltage public distribution network	3 %	5 %
High voltage distribution network	6 %	8 %

The allowable voltage drop is that which is compatible with correct load operation (refer to manufacturers' guides).

■ Read voltage drop in V/100 m/A for the busbar trunking chosen in accordance with temperature rise.

■ Determine the voltage drop for the worst case loads, i.e. those furthest from the source and for the highest current.

If the voltage drop exceeds allowable limits, choose the next rating up. Re-check the voltage drop for the new rating.

Voltage drop, in volts per 100 metres and per amp for 3-phase 50 Hz current with load spread over the run. For loads concentrated at the end of a run (transport), the voltage drops are double those shown in the table below:

Delta U for e	Delta U for evenly distributed loads (V/100m/A)											
	KTC10	KTC13	KTC16	KTC20	KTC25	KTC32	KTC40	KTC50	KTC63			
Cosine $\phi$ = 1	0.0043	0.0031	0.0026	0.0019	0.0015	0.0013	0.0010	8000.0	0.00065			
Cosine $\phi$ = 0.9	0.0047	0.0034	0.0029	0.0022	0.0018	0.0015	0.0012	0.0010	0.00075			
Cosine $\phi$ = 0.8	0.0046	0.0033	0.0028	0.0022	0.0018	0.0015	0.0012	0.0010	0.00075			
Cosine $\phi$ = 0.7	0.0044	0.0031	0.0027	0.0021	0.0018	0.0014	0.0012	0.0010	0.0007			

Example: for the KTC1600 A busbar trunking:

Ib = 1530 A In = 1600 A Length L = 87 m Cosine  $\varphi$  = 0.8. According to the above tab

According to the above table, the voltage drop coefficient for 100 metres and per amp is equal to 0.0028V/100m/A.

0.0028 x 0.87 x 1530 = 3.72 V For a voltage = 400 V, in percentages: 3.72 / 400 = 0.0093 that is to say 0.9 %.

## 7 - Protecting against busbar trunking overloads

To allow for extensions, the busbar trunking is generally protected at its nominal current Inc (or its allowable current Iz if the ambient temperature coefficient k1 is applied).

Circuit breaker protection:

□ adjust Ir of the circuit breaker such that:

 $Iz = Ib x k1 \leq Ir \leq Inc$ 

Circuit breaker protection allows the Canalis busbar trunking to be used at full capacity because the standardised nominal current In of the circuit breaker is  $\ln \leq \ln c/K2$  where K2 = 1.

Protection using gG (gI) fuse:

□ determine the standardised nominal current In of the fuse such that: In  $\leq$  Inc/K2 □ where K2 = 1.1

choose the standardised rating In that is equal to or just lower.

Check the following condition:  $\ln \ge \ln x \, k1 = lz$ .

If this condition is not met, choose the busbar trunking with the next rating up.

*Note:* using gl fuses for protection means reducing the busbar trunking's allowable current.

### 8 - Checking the rating and choice of circuit breaker with respect to short-circuit withstand current

Short-circuit current withstand is shown in the table below.

This value must be greater than the prospective short-circuit current, at all points of the installation.

Calculate the short-circuit current value at the worst case points.

■ Check the chosen rating allows the busbar trunking to cope with this short-circuit current.

- If this is not the case, there are 2 possible solutions:
- choose a higher rating busbar trunking and re-check
- provide a peak current limiting protection system upstream of the busbar trunking.

**Warning**: regarding the TNS or TNC earthing system, based on the value of L-PE fault loop impedance and the level of L-PE short-circuit, choose the correct coordination between the protection and the busbar trunking.

Canalis KT is more than sized to cope with short-circuit currents. Some specific cases require checks to be carried out: transformers in parallel, low rating Canalis installed close to a transformer, etc.

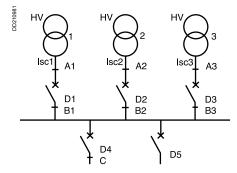
# Protection of circuits supplied by several paralleled transformers

## **Canalis KTC**

# 9 - Choosing source and feeder circuit breakers according to the number and rating of the supply transformers

The choice of a circuit breaker to protect a circuit depends mainly on the following 2 criteria:

- the nominal current of the source or the loads, which determines the appropriate rating of the device,
- the maximum short-circuit current at the point in question, which determines the minimum breaking capacity of the device.



For the case of several parallel transformers <sup>(1)</sup>:

the source circuit breaker D1 must have a breaking capacity greater than the largest of the 2 following values:

□ either lsc1 (short-circuit at B1)

□ or lsc2 + lsc3 (short-circuit at A1)

■ the feeder circuit breaker D4 must have a breaking capacity greater than lsc1 + lsc2 + lsc3.

The table allows the following to be determined:

■ the source circuit breaker, according to the number and rating of the supply transformers (in the case of a single transformer, the table recommends a fixed circuit breaker; in the case of several transformers, the table shows a drawout circuit breaker and a fixed circuit breaker)

■ the feeder circuit breaker, according to the sources and the nominal current rating of the feeder (the circuit breakers shown in the table can be replaced by limiter circuit breakers if the cascading technique is to be used with other circuit breakers downstream of the feeder).

(1) To couple several transformers in parallel, the transformers must have the same Usc, the same transformation ratio, the same coupling and the ratio of the power rating of the 2 transformers must be less than or equal to 2.

#### Example:

3 incoming 1250 kVA transformers 20 kV/410 V (In = 1760 A).

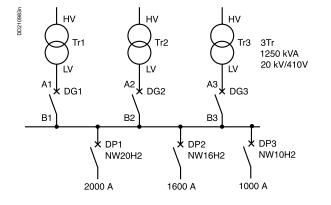
Feeders: including one 2000 A feeder, one 1600 A feeder and one 1000 A feeder. What circuit breakers should be fitted at the incomer and for the feeders? Incomer circuit breakers:

either the Drawout Masterpact NW20N1 or the Drawout NS2000N circuit breakers can be chosen. The choice will depend on the options required.

Feeder circuit breakers:

the NW20H2 for the 2000 A feeder, the NW16H2 for the 1600 A feeder and the NW10H2 for the 1000 A feeder are to be chosen.

These circuit breakers have the advantage of providing discrimination (full discrimination) with the NW12H1 or NS1250N circuit breakers.



## Calculation assumption:

■ the upstream network short-circuit power is not defined

■ the transformers are 20 kV/410 V

■ between each transformer and corresponding circuit breaker there is 5 metres of KT busbar trunking

■ between a source circuit breaker and a feeder circuit breaker there is 1 metre of

■ the equipment is installed into a switchboard with an ambient temperature of 40°C.

Transformer		Source	Irce Source circuit breaker F		Feeder c	ircuit brea	aker				
P (kVA)	In (A)	Usc (%)	lsc (kA)	min. break. cap. (kA)		min. break. cap. (kA)	≤ 100 A	160 A	250 A	400 A	630 A
1 transfo	ormer										
50	70	4	2	2	NSX100N TM-D/STR22SE	2	NSX100N				
100	141	4	4	4	NSX160N TM-D/STR22SE	4	NSX100N	NSX160N			
160	225	4	6	6	NSX250N TM-D/STR22SE	6	NSX100N	NSX160N	NSX250N		
250	352	4	9	9	NSX400N STR23SE/53UE	9	NSX100N	NSX160N	NSX250N	NSX400N	
400	563	4	14	14	NSX630N STR23SE/53UE	14	NSX100N	NSX160N	NSX250N	NSX400N	NSX630N
630	887	4	22	22	NS1000N NT10H1 NW10N1 Micrologic	22	NSX100N	NSX160N	NSX250N	NSX400N	NSX630N
300	1127	6	19	19	NS1250N NT12H1 NW12N1 Micrologic	19	NSX100N	NSX160N	NSX250N	NSX400N	NSX630N
1000	1408	6	23	23	NS1600N NT16H1 NW16N1 Micrologic	23	NSX100N	NSX160N	NSX250N	NSX400N	NSX630N
1250	1760	6	29	29	NW20N1 Micrologic	29	NSX100H	NSX160N	NSX250N	NSX400N	NSX630N
1600	2253	6	38	38	NW25H1 Micrologic	38	NSX100H	NSX160H	NSX250H	NSX400N	NSX630N
2000	2816	6	47	47	NW32H1 Micrologic	47	NSX100H	NSX160H	NSX250H	NSX400H	NSX630H
2500	3521	6	59	59	NW40H1 Micrologic	59	NSX100H	NSX160H	NSX250H	NSX400H	NSX630H
2 transf	formers		1					'			
50	70	4	2	2	NSX100N TM-D/STR22SE	4	NSX100N	NSX160N			
100	141	4	4	4	NSX160N TM-D/STR22SE	7	NSX100N	NSX160N	NSX250N		
160	225	4	6	6	NSX250N TM-D/STR22SE	11	NSX100N	NSX160N	NSX250N	NSX400N	
250	352	4	9	9	NSX400N STR23SE/53UE	18	NSX100N	NSX160N	NSX250N	NSX400N	NSX630N
400	563	4	14	14	NSX630N STR23SE/53UE	28	NSX100H	NSX160N	NSX250N	NSX400N	NSX630N
630	887	4	22	22	NS1000N NT10H1 NW10N1 Micrologic	44	NSX100H	NSX160H	NSX250H	NSX400N	NSX630N
300	1127	6	19	19	NS1250N NT12H1 NW12N1 Micrologic	38	NSX100H	NSX160H	NSX250H	NSX400N	NSX630N
1000	1408	6	23	23	NS1600N NT16H1 NW16N1 Micrologic	47	NSX100H	NSX160H	NSX250H	NSX400H	NSX630H
1250	1760	6	29	29	NW20N1 Micrologic	59	NSX100H	NSX160H	NSX250H	NSX400H	NSX630H
1600	2253	6	38	38	NW25H1 Micrologic	75	NSX100L	NSX160L	NSX250L	NSX400L	NSX630L
2000	2816	6	47	47	NW32H1 Micrologic	94	NSX100L	NSX160L	NSX250L	NSX400L	NSX630L
2500	3521	6	59	59	NW40H1 Micrologic	117	NSX100L	NSX160L	NSX250L	NSX400L	NSX630L
3 transf	formers	1	1	1							
50	70	4	2	4	NSX100N TM-D/STR22SE	5	NSX100N	NSX160N	NSX250N		
100	141	4	4	7	NSX160N TM-D/STR22SE	11	NSX100N		NSX250N	NSX400N	
160	225	4	6	11	NSX250N TM-D/STR22SE	17	NSX100N	NSX160N	NSX250N	NSX400N	NSX630N
250	352	4	9	18	NSX400N STR23SE/53UE	26	NSX100H	NSX160N			NSX630N
400	563	4	14	28	NSX630N STR23SE/53UE	42	NSX100H	NSX160H	NSX250H		NSX630N
530	887	4	22	44	NS1000N NT10L1 NW10H1 Micrologic	67	NSX100H		NSX250H		NSX630H
300	1127	6	19	38	NS1250N NT12H1 NW12N1 Micrologic	56	NSX100H	NSX160H			NSX630H
1000	1408	6	23	47	NS1600N NW16H1 Micrologic	70	NSX100H	NSX160H			NSX630H
1250	1760	6	29	59	NS2000N NW20N1 Micrologic	88	NSX100L	NSX160L	NSX250L	NSX400L	NSX630L
1600	2253	6	38	75	NS2500N NW25H2 Micrologic	113	NSX100L	NSX160L	NSX250L	NSX400L	NSX630L
2000	2235	6	47	94	NS3200N NW32H2 Micrologic	141	NSX100L	NSX160L	NSX250L	NSX400L	NSX630L

Usc values as defined in HD 428.

bars

Canalis KTC

# Coordination Protection of busbar trunking against overloads

## System performance is guaranteed by coordination between the Schneider Electric Introduction circuit breaker protection and the distribution spread over the Canalis busbar trunkina Fully coordinated distributed electrical distribution perfectly meets the requirements of safety, service continuity, system changes and simplicity. In the following pages, we will explain the advantages of the Schneider Electric system and Schneider Electric circuit breaker protection, as well as the selection guide tables for coordination between the Schneider Electric circuit breakers and the Canalis busbar trunking. The use of Schneider Electric circuit breakers provides: protection against overloads and short-circuits coordination between the protective devices and the Canalis busbar trunking: □ full discrimination from 1 to 6300 A between all the circuit breakers of the Schneider Electric ranges □ cascading: - reinforcement of the small and medium power busbar trunking short-circuit protective devices. This enables all short-circuit levels to be covered - protection of tap-offs using standard circuit breakers: this is achieved whatever the position of the tap-off unit on the Canalis busbar trunking ■ the use of standard circuit breakers makes for simpler design whilst respecting a high level of dependability fault location is quick and easy ■ resetting is easy once the fault has been cleared by the site operator. In order to take into consideration thermal overload protection of busbar trunking, the different technologies of the protection switchgear and the maximum overload operating currents must be considered.

By design, the thermal adjustment of a circuit breaker is more accurate.



- □ Ib : current rating
- □ Iz : allowable busbar trunking current
- □ k1 : temperature derating coefficient
- □ k2 : derating coefficient linked to the type of switchgear:
- fuse k2 = 1.1
- Iz = Ib x k1.
- In = I standardised fuse or circuit breaker.

#### Example:

- For a current rating Ib = 1900 A in an ambient temperature of 35°C:
- fuse protection:
  - Iz = Ib x k1 x k2 = 1900 x 1 x 1.1 = 2090 A
- The correct choice of busbar trunking is the KTC2500 (Iz = 2500 A), ■ circuit breaker protection:
  - Iz = Ib x k1 x k2 = 1900 x 1 x 1 = 1900 A
  - The correct choice of busbar trunking is the KTC2000 (Iz = 2000 A),

A difference of 20 % in the measurement of operating currents results in an overrating of the busbar trunking of 10 % if it is protected by fuses.

#### Explanations

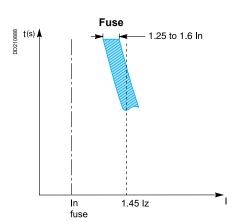
- Calibration of thermal asymptotes:
- □ the distribution fuse is calibrated to operate for overloads of between 1.25 and 1.6 times its nominal current (In fuse)

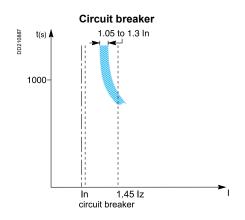
□ the circuit breaker is calibrated to operate for overloads of between 1.05 and 1.3 times (1.2 for circuit breakers with electronic protection) its setting current (Ir which is a function of circuit breaker In).

Maximum operating current:

□ the maximum limit for this current is set by installation standards (IEC 364, NFC 15-100, etc) at 1.45 times the allowable current of the busbar trunking.







- circuit breaker k2 = 1.

# Thermal setting accuracy

■ A fuse is for a fixed rating, a change in the current to be protected requires a change of fuse.

The spacing between 2 fuse ratings is around 25 %.

The typical ratings are conform to the numbers of the "Renard" series. Example: 40 - 50 - 63 - 80 - 100 - 125 - 160 - 200 - etc.

- The circuit breaker provides the possibility of fine adjustment:
- □ 5 % for circuit breakers fitted with standard thermal-magnetic trip units
- $\square$  3 % for circuit breakers fitted with electronic trip units.

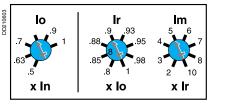
A circuit breaker with a nominal rating of 100 A can be easily set to the following values:

Ir = 100 A, 95 A, 90 A, 85 A, 80 A.

#### Example:

A circuit breaker with a nominal rating of 1600 A set at 1344 A would be used to protect a KTC1600 (Inc = 1344 A) busbar trunking used in an ambient temperature of  $50^{\circ}$ C (k1 = 0.84).

Setting range of circuit breakers fitted with electronic trip units



Example of setting possibilities.

Circuit breakers fitted with electronic trip units have the following setting ranges: ■ thermal protection Ir adjustable from 0.4 In to In

■ short-circuit protection adjustable from 2 Ir to 10 Ir.

#### Example:

A 250 A circuit breaker (NS250N fitted with an STR22SE) can easily have the following settings:

- thermal protection from 100 to 250 A
- short-circuit protection from 200 to 2500 A.

## Avdantages

This provides great flexibility for:

modifications (flexibility), extensions (installation changes): the protective devices easily adapt to the load to be protected and to the earthing system (protection of personnel and equipment)

maintenance, the use of this type of device considerably reduces the stocks of maintenance components.

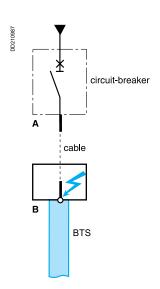
# Coordination

# Protection against short-circuits

**Canalis KTC** 

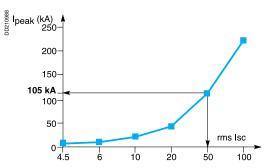
Busbar trunking characteristics	The busbar trunking must meet all of the rules detailed in IEC 61439-1 and IEC 61439-6.
	The sizing of busbar trunking for short-circuits is determined by the following characteristics:
	■ the allowable rated peak current lpk (kÂ).
	This characteristic represents the busbar trunking's instantaneous electrodynamic withstand limits. The peak current value is often the most restrictive instantaneous characteristic for the protective device
	<ul> <li>The maximum short-time withstand rms current lcw (kArms/s).</li> <li>This characteristic represents the allowable temperature rise limit of the conductors during a given time period (0.1 to 1s)</li> <li>The thermal stress in A<sup>2</sup>s.</li> </ul>
	This characteristic represents the instantaneous thermal stress withstand of the
	busbar trunking. In general, if the short-circuit generates fault conditions compatible with the first two characteristics, this constraint is "automatically satisfied".
Circuit breaker characteristics	The circuit breaker must satisfy the requirements of product construction standards (IEC 60947-2, etc) and installation standards (IEC 60364 or those in force in the country concerned), i.e. have a breaking capacity lcu <sup>(1)</sup> greater than the prospective short-circuit current lsc at the point where it is installed.
	(1) Installation standard IEC 60364 and construction standards specify the breaking capacity of a circuit breaker as being:
	<ul> <li>the ultimate breaking capacity, Icu, if it is not coordinated with an upstream protective device,</li> <li>the reinforced breaking capacity (cascading) if there is coordination with the upstream protective device.</li> </ul>
Circuit breaker / busbar trunking system	When the busbar trunking is directly protected, the circuit breaker must be chosen as follows:
characteristics	■ Icu of the circuit breaker ≥ prospective Isc at point A
	I peak of the busbar trunking ≥ prospective asymmetrical or limited lsc at point A
00210386	■ busbar trunking thermal withstand Icw ≥ thermal stress through the busbar trunking.
	When the busbar trunking is protected downstream of a cable, the circuit breaker must be chosen as follows:
Isc at point A	■ Icu of the circuit breaker ≥ prospective Isc at point A
	- I washe of the baseline to which a Same and other second states of a line it of the second of D

I peak of the busbar trunking ≥ prospective isc at point A
 I peak of the busbar trunking ≥ prospective asymmetrical or limited isc at point B
 busbar trunking thermal withstand icw ≥ thermal stress through the busbar trunking.

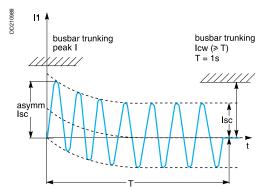


BTS

Ĺ.



Current value of the 1<sup>st</sup> peak as a function of lsc rms.



Transient and established conditions of a short duration shortcircuit.

# **Circuit breaker/busbar trunking** coordination

# Non-limiting or time-delayed circuit

# breaker

This is applicable for non-limiting circuit breakers (instantaneous or time-delayed) and time-delayed limiting circuit breakers. These are mainly air circuit breakers (≥ 800 A).

This type of circuit breaker is used for time discrimination and is therefore often associated with KT type busbar trunking.

It must be checked that the busbar trunking can handle the peak fault current to which it may be subjected and the thermal withstand during any time delay. The allowable peak current (I peak) of the busbar trunking must be greater than the peak current value of the prospective asymmetrical short-circuit current (Isc asym) at A.

The asymmetrical short-circuit current value is obtained by multiplying the symmetrical short-circuit current value (Isc) by a standardised asymmetrical coefficient (k).

It is the first value of the 1<sup>st</sup> transient asymmetrical peak of the short-circuit which is taken into account.

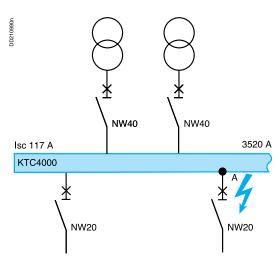
# Standardised table for calculating asymmetrical short-circuit values

Isc: prospective symmetrical short- circuit value	Asymmetrical coefficient
kA (rms value)	k
4,5 ≤ I ≤ 6	1.5
6 < I ≤ 10	1.7
10 < l ≤ 20	2.0
20 < l ≤ 50	2.1
50 < I	2.2

#### Example:

For a circuit with a prospective short-circuit current of 50 kA rms, the 1<sup>st</sup> peak reaches 105 kÅ (50 kA x 2.1), see figure opposite.

The short-time withstand value (Icw) of the busbar trunking must be greater than the current flowing through the installation during the duration of the short-circuit (Isc) (duration T - total breaking time - including any time delay).



At point A, the prospective short-circuit current is 117 kArms. To meet this constraint, a reinforced KTC4000 is needed because: Icw KTC4000 > Isc prospective at point A.

The Icw or Ipk values of standard or reinforced KTC trunking allow the easy construction of circuits with time discrimination, even with high short-circuit values.

**Canalis KTC** 

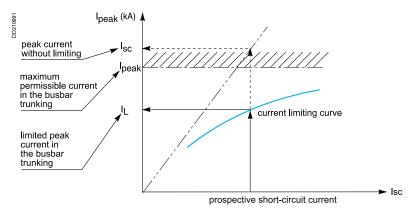
# **Circuit breaker/busbar trunking coordination** Limiter circuit breaker

This is mainly applicable to the protection of busbar trunking using moulded case circuit breakers ( $\leq$  1600 A).

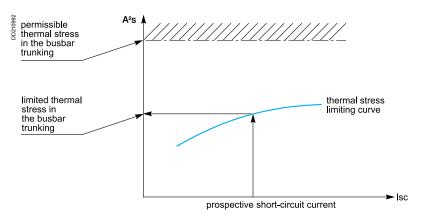
This type of circuit breaker is used for energy discrimination and is therefore often associated with Canalis KTC.

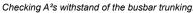
Here, it has to be checked that the busbar trunking can cope with the peak current (lpk) limited by the protective device and the corresponding thermal stress (A<sup>2</sup>s): ■ the peak current (l peak), once limited by the circuit breaker, must be less than the allowable peak current value of the busbar trunking

■ the thermal stress, once limited by the circuit breaker, must be less than the allowable thermal stress of the busbar trunking.

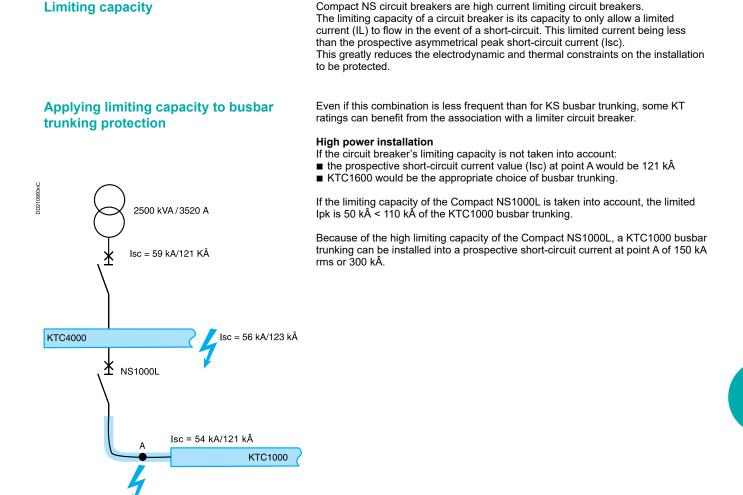


Checking peak I withstand of the busbar trunking.





# Protecting busbar trunking with a Compact NS circuit breaker



# **Selection guide**

# Canalis KTC

The selection guide below will, according to the prospective short-circuit current of the installation, allow you to determine the type of circuit breaker needed to fully protect the busbar trunking.

**Example:** for an installation with a prospective lsc of 150 kA, the circuit breaker needed to protect a KTC1350 A busbar trunking is a **NS1000L** or **NT10L1** (the rating depends on the circuit's nominal current).

#### For a voltage of 380 / 415 V Type of Canalis busbar trunking KTC1000 Isc max kArms 42 kA 65 kA 50 kA 85 kA 100 kA 150 kA Type of circuit Compact NS NS800N NS8001 NS1000N NS1000L breaker NS1250N MTZ1 08 H1/H2/H3/L1 MTZ1 08 H2/H3/L1 MTZ1 08 L1 Masterpact MTZ1 MTZ1 10 H1/H2/H3/L1 MTZ1 10 H2/H3/L1 MTZ1 10 L1 MTZ1 12 H1/H2/H3 MTZ1 12 H2/H3 Masterpact MTZ2 MTZ2 08 N1/H1/H2/L1 MTZ2 08 H1/H2/L1 MTZ2 10 N1/H1/H2/L1 MTZ2 10 H1/H2/L1 MTZ2 12 N1/H1/H2/L1 MTZ2 12 H1/H2/L1 Masterpact NT NT08H1 NT08H2 NT08L1 NT10H1 NT10H2 NT10L1 NT12H1 NT12H2 Masterpact NW NW08N1 NW08H1 **NW10N1** NW10H1 NW12N1 NW12H1 **KTC1000 Reinforced short-circuit level** Type of Canalis busbar trunking Isc max kArms 42 kA 50 kA 65 kA 85 kA 100 kA 150 kA Type of circuit Compact NS NS800N NS800H NS800L breaker **NS1000N** NS1000H NS1000L NS1250H Masterpact MTZ1 MT71 08 H2/H3/L1 MTZ1 08 H3/L1 MTZ1 10 H3/L1 MT71 08 H1/H2/H3/L1 MTZ1 08 L1 MTZ1 10 H1/H2/H3/L1 MTZ1 10 H2/H3/L1 MTZ1 10 L1 MTZ1 12 H1/H2/H3 MTZ1 12 H2/H3 MTZ1 12 H3 Masterpact MTZ2 MTZ2 08 N1/H1/H2/L1 MTZ2 08 H1/H2/L1 MTZ2 08 L1 MTZ2 10 N1/H1/H2/L1 MTZ2 10 H1/H2/L1 MTZ2 10 L1 MTZ2 12 N1/H1/H2/L1 MTZ2 12 H1/H2/L1 MTZ2 12 L1 Masterpact NT NT08L1 NT08H1 NT08H2 NT10H1 NT10H2 NT10L1 NT12H1 NT12H2 NW08H1 Masterpact NW NW08N1 NW08L1 **NW10L1 NW10N1 NW10H1** NW12N1 NW12H1 NW12I 1 Type of Canalis busbar trunking KTC1350 lsc max kArms 42 kA 50 kA 65 kA 85 kA 100 kA 150 kA Type of circuit Compact NS NS1000N NS1000L breaker NS1250N **NS1600N** MTZ1 10 H2/H3/L1 MTZ1 10 L1 MTZ1 10 H1/H2/H3/L1 Masterpact MTZ1 MTZ1 12 H1/H2/H3 MTZ1 12 H2/H3 MTZ1 16 H1/H2/H3 MTZ1 16 H2/H3 Masterpact MTZ2 MTZ2 10 N1/H1/H2/L1 MTZ2 10 H1/H2/L1 MTZ2 12 H1/H2/L1 MTZ2 12 N1/H1/H2/L1 MTZ2 16 N1/H1/H2/L1 MTZ2 16 H1/H2/L1 Masterpact NT NT10H1 NT10H2 **NT10L1** NT12H1 NT12H2 NT16H1 NT16H2 Masterpact NW NW10N1 NW10H1 NW12N1 NW12H1 NW16N1 NW16H1 Type of Canalis busbar trunking **KTC1350 Reinforced short-circuit level** Isc max kArms 42 kA 50 kA 65 kA 85 kA 100 kA 150 kA Type of circuit Compact NS NS1000N NS1000H NS1000L breaker NS1250N NS1250H NS1600H **NS1600N** MTZ1 10 H3/L1 MTZ1 12 H3 MTZ1 10 H1/H2/H3/L1 MTZ1 10 H2/H3/L1 MTZ1 10 L1 Masterpact MTZ1 MTZ1 12 H1/H2/H3 MTZ1 12 H2/H3 MTZ1 16 H1/H2/H3 MTZ1 16 H2/H3 MTZ1 16 H3 Masterpact MTZ2 MTZ2 10 N1/H1/H2/L1 MTZ2 10 H1/H2/L1 MTZ2 10 L1 MTZ2 12 N1/H1/H2/L1 MTZ2 12 L1 MTZ2 12 H1/H2/L1 MTZ2 16 N1/H1/H2/L1 MTZ2 16 H1/H2/L1 MTZ2 16 L1 Masterpact NT NT10L1 NT10H1 NT10H2 NT12H1 NT12H2 NT16H1 NT16H2 Masterpact NW NW10H1 NW10L1 NW10N1 NW12N1 NW12H1 NW12L1 NW16N1 NW16H1 **NW16L1**

Type of Can	alis busbar trunking	KTC1600					
	Isc max kArms	42 kA	50 kA	65 kA	85 kA	100 kA	150 kA
ype of circuit preaker	Compact NS		NS1250N <b>NS1600N</b>	NS1250H NS1600H NS1600bN NS2000N			
	Masterpact MTZ1	MTZ1 12 H1/H2/H3 MTZ1 16 H1/H2/H3	MTZ1 12 H2/H3 MTZ1 16 H2/H3	MTZ1 12 H3 MTZ1 16 H3			
	Masterpact MTZ2	MTZ2 12 N1/H1/H2/L1 MTZ2 16 N1/H1/H2/L1 MTZ2 20 N1/H1/H2/H3/L1	MTZ2 12 H1/H2/L1 MTZ2 16 H1/H2/L1 MTZ2 20 H1/H2/H3/	/L1	MTZ2 12 L1 MTZ2 16 L1 MTZ2 20 L1		
	Masterpact NT	<b>NT12H1</b> NT16H1	NT12H2 NT16H2				
	Masterpact NW	NW12N1 <b>NW16N1</b> NW20H1		NW12H1 <b>NW16H1</b> NW20H1		NW12L1 NW16L1 NW20L1	
Type of Can	alis busbar trunking	KTC1600 Reinforce	d short-circuit le				
	Isc max kArms	42 kA	50 kA	65 kA	85 kA	100 kA	150 kA
ype of circuit reaker	Compact NS		NS1250N	NS1250H NS1600H <b>NS1600bN</b> NS2000N	<b>NS1600bH</b> NS2000H		
	Masterpact MTZ1	MTZ1 12 H1/H2/H3 MTZ1 16 H1/H2/H3	MTZ1 12 H2/H3 MTZ1 16 H2/H3	MTZ1 12 H3 MTZ1 16 H3			
	Masterpact MTZ2	MTZ2 12 N1/H1/H2/L1 MTZ2 16 N1/H1/H2/L1 MTZ2 20 N1/H1/H2/H3/L1	MTZ2 12 H1/H2/L1 MTZ2 16 H1/H2/L1 MTZ2 20 H1/H2/H3/	'L1	MTZ2 12 H2/L1 MTZ2 16 H2/L1 MTZ2 20 H2/H3/L1	MTZ2 12 L1 <b>MTZ2 16 L1</b> MTZ2 20 L1	-
	Masterpact NT	NT12H1 <b>NT16H1</b>	NT12H2 NT16H2				
	Masterpact NW	NW12N1 NW16N1		NW12H1 <b>NW16H1</b> NW20H1	NW12H2 NW16H2 NW20H2		NW12L1 NW16L1 NW20L1
Type of Can	alis busbar trunking	KTC2000	Land				
ype of circuit	Isc max kArms Compact NS	42 kA	50 kA	65 kA NS1600bN	85 kA	100 kA	150 kA
reaker	Masterpact MTZ1	MTZ1 16 H1/H2/H3	MTZ1 16 H2/H3	NS2000N MTZ1 16 H3	_		
	Masterpact MTZ2	MTZ2 16 N1/H1/H2/L1 MTZ2 20 N1/H1/H2/H3/L1 MTZ2 25 H1/H2/H3	MTZ2 16 H1/H2/L1 MTZ2 20 H1/H2/H3/		MTZ2 16 L1 MTZ2 20 L1	<u> </u>	
	Masterpact NT	NT16H1	NT16H2				
	Masterpact NW	NW16N1 <b>NW20H1</b> NW25H1		NW16H1 <b>NW20H1</b> NW25H1		NW 16 L1 NW20L1	
Type of Can	alis busbar trunking	KTC2000 Reinforce	d short-circuit le	vel			
ype of circuit	Isc max kArms Compact NS	42 kA	50 kA	65 kA NS1600bN	85 kA NS1600bH	100 kA	150 kA
reaker				NS2000N	NS2000H		
	Masterpact MTZ1 Masterpact MTZ2	MTZ1 16 H1/H2/H3 MTZ2 16 N1/H1/H2/L1			MTZ2 16 H2/L1 MTZ2 20 H2/H3/L		MTZ2 16 L1 MTZ2 20 L1
	Masterpact NT	MTZ2 20 N1/H1/H2/H3/L1 MTZ2 25 H1/H2/H3 NT16H1	MTZ2 20 H1/H2/H3/L1		MTZ2 25 H2/H3	.1	
	Masterpact NW	NW16N1		NW16H1	-	NW16H2	NW16L1
	·	NW20H1 NW25H1		NW20H1 NW25H1		NW20H2 NW25H2	NW20L1
Type of Can	alis busbar trunking	KTC2500	1				
	Isc max kArms	42 kA	50 kA	65 kA	80 kA	100 kA	150 kA
ype of circuit reaker	Masterpact MTZ2	MTZ2 20 H1/H2/H3/L1 MTZ2 25 H1/H2/H3 MTZ2 32 H1/H2/H3			MTZ2 20 H2/H3/L1 MTZ2 25 H2/H3 MTZ2 32 H2/H3	MTZ2 20 L1	
	Masterpact NW			NW20H1 <b>NW25H1</b> NW32H1	NW20H2 NW25H2 NW32H2	NW20L1	NW20L1
Type of Can	alis busbar trunking Isc max kArms	KTC2500 Reinforce	ed short-circuit le		80 kA	100 kA	110 kA
vpe of circuit	Masterpact MTZ2	MTZ2 20 H1/H2/H3/L1			MTZ2 20 H2/H3/L		MTZ2 20 H3/L1
reaker		MTZ2 25 H1/H2/H3 MTZ2 32 H1/H2/H3			MTZ2 25 H2/H3 MTZ2 32 H2/H3		MTZ2 25 H3 MTZ2 32 H3
	Masterpact NW			NW20H1 NW25H1		NW20H2 NW25H2	NW20L1 (150 k NW25H3

(1) L1 up to 150 kA.

# **Canalis KTC**

Type of Can	alis busbar trunking	KTC3200					
	Isc max kArms		50 kA	65 kA	85 kA	100 kA	110 kA
ype of circuit reaker	Masterpact MTZ2	MTZ2 25 H1/H2/H3 MTZ2 32 H1/H2/H3 MTZ2 40 H1/H2/H3			MTZ2 25 H2/H3 MTZ2 32 H2/H3 MTZ2 40 H2/H3		
	Masterpact MTZ3	MTZ3 40 H1/H2					
	Masterpact NW			NW25H1	NW25H2		
	·			<b>NW32H1</b> NW40H1	NW32H2 NW40H2		
					NW40bH1		
Type of Can	alis busbar trunking	KTC3200 Reinforc					
	Isc max kArms	42 kA	50 kA	65 kA	85 kA	100 kA	110 kA
Type of circuit preaker	Masterpact MTZ2	MTZ2 25 H1/H2/H3 MTZ2 32 H1/H2/H3 MTZ2 40 H1/H2/H3			MTZ2 25 H2/H3 MTZ2 32 H2/H3 MTZ2 40 H2/H3		MTZ2 25 H3 MTZ2 32 H3 MTZ2 40 H3
	Masterpact MTZ3	MTZ3 40 H1/H2					MTZ3 40 H2
	Masterpact NW			NW25H1 <b>NW32H1</b> NW40H1		NW25H2 NW32H2 NW40H2 NW40bH1	<b>NW32H3</b> NW40H3 NW40bH2
Type of Can	alis busbar trunking	KTC4000	1				
Entry of stars the	Isc max kArms	42 kA	50 kA	65 kA	90 kA	100 kA	110 kA
Type of circuit preaker	Masterpact MTZ2	MTZ2 32 H1/H2/H3 MTZ2 40 H1/H2/H3			MTZ2 32 H2/H3 MTZ2 40 H2/H3		
	Masterpact MTZ3	MTZ3 40 H1/H2 MTZ3 50 H1/H2			1		
	Masterpact NW			NW32H1 NW40H1 NW40bH1	NW32H2 NW40H2 NW40bH1		
Turne of Com	alia huahar trunking	KTC4000 Deinford	ad abart aircuit la	NW50H1	NW50H1		
Type of Can	alis busbar trunking	KTC4000 Reinforc			00.1-4	400 1-4	400 14
	Isc max kArms	<b>42 kA</b> MTZ2 32 H1/H2/H3	50 kA	65 kA	90 kA MTZ2 32 H2/H3	100 kA	120 kA MTZ2 32 H3
oreaker	Masterpact MTZ2	MTZ2 40 H1/H2/H3			MTZ2 32 H2/H3 MTZ2 40 H2/H3		MTZ2 32 H3
Jicanci	Masterpact MTZ3	MTZ3 40 H1/H2 MTZ3 50 H1/H2			11122 40 112/110		MTZ3 40 H2 MTZ3 50 H2
	Masterpact NW			NW32H1 <b>NW40H1</b> NW40bH1 NW50H1		NW32H2 NW40H2 NW40bH1 NW50H1	NW32H3 NW40H3 NW40bH2 NW50H2
Type of Can	alis busbar trunking	KTC5000					
	Isc max kArms	42 kA	50 kA	65 kA	95 kA	100 kA	110 kA
Type of circuit preaker	Masterpact MTZ2	MTZ2 32 H1/H2/H3 MTZ2 40 H1/H2/H3			MTZ2 32 H2/H3 MTZ2 40 H2/H3		
	Masterpact MTZ3	MTZ3 40 H1/H2 MTZ3 50 H1/H2 MTZ3 63 H1/H2					
	Masterpact NW			NW40H1	NW40H2 NW40bH1 <b>NW50H1</b> NW63H1		
Type of Can	alis busbar trunking						
	Isc max kArms		50 kA	65 kA	90 kA	100 kA	120 kA
Type of circuit preaker	Masterpact MTZ2	MTZ2 32 H1/H2/H3 MTZ2 40 H1/H2/H3			MTZ2 32 H2/H3 MTZ2 40 H2/H3		MTZ2 32 H3 MTZ2 40 H3
	Masterpact MTZ3	MTZ3 40 H1/H2 MTZ3 50 H1/H2 MTZ3 63 H1/H2					MTZ3 40 H2 MTZ3 50 H2 MTZ3 63 H2
	Masterpact NW			NW40H1 NW40bH1 <b>NW50H1</b> NW63H1		NW40H2 (≤ 95 kA) NW40bH1 (≤ 95 kA) <b>NW50H1 (≤ 95 kA)</b> NW63H1 (≤ 95 kA)	NW40H3 NW40bH2 NW50H2 NW63H2
Type of Can	alis busbar trunking	KTC6300 / KTC630	0 Reinforced sho		·	/	
	lsc max kArms		50 kA	65 kA		100 kA	120 kA
Type of circuit breaker	Masterpact MTZ3		MTZ2 32 H1/H2/H3 MTZ2 40 H1/H2/H3			MTZ2 32 H2/H3 MTZ2 40 H2/H3	MTZ2 32 H3 MTZ2 40 H3
	Masterpact MTZ3		MTZ3 40 H1/H2 MTZ3 50 H1/H2 MTZ3 63 H1/H2			•	MTZ3 40 H2 MTZ3 50 H2 MTZ3 63 H2

Type of Can	alis busbar trunking	KTC1000						
	lsc max kArms	25 kA	30 kA	42 kA	50 kA	65 kA	75 kA	100 kA
Type of circuit preaker	Compact NS		NS800N NS1000N NS1250N	NS800H <b>NS1000H</b> NS1250H			NS800LB	
	Masterpact MTZ1	MTZ1 08 H1/H2/L1 MTZ1 10 H1/H2/L1 MTZ1 12 H1/H2		H2	_			
	Masterpact MTZ2	MTZ2 08 N1/H1/H MTZ2 10 N1/H1/H	H2/L1		MTZ2 08 H1/H2/L1 MTZ2 10 H1/H2/L1 MTZ2 12 H1/H2/L1			
	Masterpact NT	MTZ2 12 N1/H1/ŀ		NT08H1/H2 NT10H1/H2 NT12H1/H2	MTZ2 12 H1/H2/L1			
	Masterpact NW			NW08N1 NW10N1 NW12N1	NW08H1 NW10H1 NW12H1			
Type of Can	alis busbar trunking	KTC1000 Reir	forced short	t-circuit level				
-	Isc max kArms	25 kA	30 kA	42 kA	50 kA	65 kA	75 kA	100 kA
Type of circuit breaker			NS800N NS1000N NS1250N	NS800H <b>NS1000H</b> NS1250H			NS800LB	
	Masterpact MTZ1	MTZ1 08 H1/H2/L1 MTZ1 10 H1/H2/L1 MTZ1 12 H1/H2			_			
	Masterpact MTZ2	MTZ2 8 N1/H1/H2 MTZ2 10 N1/H1/H2 MTZ2 12 N1/H1/H	H2/L1		MTZ2 8 H1/H2/L1 MTZ2 10 H1/H2/L1 MTZ2 12 H1/H2/L1		MTZ2 8 H/L1 MTZ2 10 L1 MTZ2 12 L1	
	Masterpact NT			NT08H1/H2 NT10H1/H2 NT12H1/H2				
	Masterpact NW			NW08N1 <b>NW10N1</b> NW12N1		NW08H1 <b>NW10H1</b> NW12H1		
Type of Can	alis busbar trunking							
Type of circuit breaker	Isc max kArms Compact NS	25 kA	30 kA NS1000N NS1250N NS1600N	42 kA NS1000H NS1250H NS1600H	50 kA	65 kA	75 kA	100 kA
					NS1600bN			
	Masterpact MTZ1	MTZ1 08 H1/H2/L1 MTZ1 12 H1/H2 MTZ1 16 H1/H2	MTZ1 08 H1/H	H2				
	Masterpact MTZ2	MTZ2 10 N1/H1/F MTZ2 12 N1/H1/F MTZ2 16 N1/H1/F	H2/L1		MTZ2 10 H1/H2/L1 MTZ2 12 H1/H2/L1 MTZ2 16 H1/H2/L1			
	Masterpact NT			NT10H1/H2 NT12H1/H2 NT16H1/H2				
	Masterpact NW			NW10N1 NW12N1 NW16N1	NW10H1 NW12H1 NW16H1			
Type of Can	alis busbar trunking	KTC1350 Reir	forced short	t-circuit level				
	Isc max kArms	25 kA	30 kA	42 kA	50 kA	65 kA	75 kA	100 kA
Type of circuit breaker	Compact NS		NS1000N NS1250N NS1600N	NS1000H NS1250H NS1600H				
	Masterpact MTZ1	MTZ1 08 H1/H2/L1 MTZ1 08 H1/H2 MTZ1 12 H1/H2		H2	NS1600bN	NS1600bN		
		MTZ1 16 H1/H2						
	Masterpact MTZ2	MTZ2 10 N1/H1/H			MTZ2 10 H1/H2/L MTZ2 12 H1/H2/L MTZ2 16 H1/H2/L	.1	MTZ2 10 L1 MTZ2 12 L1 MTZ2 16 L1	
		MTZ2 12 N1/H1/H MTZ2 16 N1/H1/H	H2/L1					
	Masterpact NT		H2/L1	NT10H1/H2 NT12H1/H2 NT16H1/H2				

# **Canalis KTC**

Type of Can	alis busbar trunking							
	Isc max kArms	25 kA	30 kA	42 kA	50 kA	65 kA	85 kA	100 kA
Type of circuit	Compact NS		NS1250N	NS1250H				
oreaker			NS1600N	NS1600H	_	NS1600bN	_	
						NS16000N NS2000N		
	Masterpact MTZ1	MTZ1 12 H1/H2				110200011	_	
	Musicipuotininzi	MTZ1 16 H1/H2						
	Masterpact MTZ2	MTZ2 12 N1/H1	/H2/L1		MTZ2 12 H1/H2/L	1	MTZ2 12 L1	
		MTZ2 16 N1/H1			MTZ2 16 H1/H2/L		MTZ2 16 L1	
		MTZ2 20 N1/H1	/H2/H3/L1		MTZ2 20 H1/H2/H	I3/L1	MTZ2 20 L1	
	Masterpact NT			NT12H1/H2				
				NT16H1/H2				
	Masterpact NW			NW12N1		NW12H1	NW12L1 (≤ 75 kA)	
				NW16N1		NW16H1 NW20H1	NW16L1 (≤ 75 kA)	
Turne of Com	alia huahan tuunkina	KTC4000 De	ufour of obou	4 aluarri 4 larral		INVV20H I	NW20 L1 (≤ 75 kA)	
Type of Can	alis busbar trunking Isc max kArms		30 kA	t-circuit level	50 kA	65 kA	85 kA	100 kA
Type of circuit		23 KA	NS1250N	NS1250H	JU KA	03 KA	OJ KA	100 KA
breaker	Compactive		NS1600N	NS1600H				
					-	NS1600bN	-	
						NS2000N		
	Masterpact MTZ1	MTZ1 12 H1/H2						
		MTZ1 16 H1/H2			MT70 40 114 # 15 "			MTTO IOLI
	Masterpact MTZ2	MTZ2 12 N1/H1 MTZ2 16 N1/H1			MTZ2 12 H1/H2/L MTZ2 16 H1/H2/L		MTZ2 12 H2/L1 MTZ2 16 H2/L1	MTZ2 12 L1 MTZ2 16 L1
		MTZ2 20 N1/H1			MTZ2 20 H1/H2/H	-		MTZ2 16 L1
	Masterpact NT			NT12H1/H2			WITZZ 20 TIZ/TIJ/LI	
				NT16H1/H2				
	Masterpact NW			NW12N1		NW12H1	NW12H2 (≤ 75 kA)	NW12L1
				NW16N1		NW16H1	NW16H2 (≤ 75 kA)	
						NW20H1	NW20H2 (≤ 75 kA)	NW20L1
Type of Can	alis busbar trunking	KTC2000	1		1			
	Isc max kArms	25 kA	30 kA	42 kA	50 kA	65 kA	85 kA	100 kA
Type of circuit breaker	Compact NS		NS1600N	NS1600H	_	NS1600bN	_	
Dieakei						NS2000N		
						NS2500N		
	Masterpact MTZ1	MTZ1 16 H1/H2						
	Masterpact MTZ2	MTZ2 16 N1/H1	/H2/L1		MTZ2 16 H1/H2/L	1	MTZ2 16 L1	
		MTZ2 20 N1/H1			MTZ2 20 H1/H2/H	13/L1	MTZ2 20 L1	
		MTZ2 25 H1/H2	/H3				_	
	Masterpact NT		_	NT16H1/H2 NW16N1		NW16H1	_	NW16L1
	Masterpact NW					NW10H1 NW20H1		NW10L1 NW20L1
						NW25H1		NWZULI
				-	1			
Type of Can	alis busbar trunking	KTC2000 Re	nforced shor	t-circuit level				
	Isc max kArms	25 kA	30 kA	42 kA	50 kA	65 kA	85 kA	100 kA
Type of circuit	Compact NS		NS1600N	NS1600H	_		_	
breaker						NS1600bN		
						NS2000N		
	Masterpact MTZ1	MTZ1 16 H1/H2			-	NS2500N	-	
	Masterpact MTZ2	MTZ2 16 N1/H1			MTZ2 16 H1/H2/L	1	MTZ2 16 L1	MTZ2 16 L1
	Madorpademite	MTZ2 20 N1/H1			MTZ2 20 H1/H2/H		MTZ2 20 H2/H3/L1	
		MTZ2 25 H1/H2					MTZ2 25 H2/H3	
	Masterpact NT			NT16H1/H2				
	Masterpact NW			NW16N1		NW16H1	NW16H2 (≤ 75 kA)	NW16L1
						NW20H1	NW20H2 (≤ 75 kA)	
Type of Con	alis busbar trunking	KTC2500				NW25H1	NW25H2 (≤ 75 kA)	INVV25H3
Type of Can	lsc max kArms	25 kA	30 kA	42 kA	50 kA	65 kA	80 kA	100 kA
Type of circuit			JU NA	72 1.4		NS2000N		100 KA
breaker						NS2500N		
						NS3200N		
	Masterpact MTZ1	MTZ1 16 H1/H2						
	Masterpact MTZ2	MTZ2 20 N1/H1			MTZ2 20 H1/H2/H	I3/L1	MTZ2 20 H2/H3/L1	MTZ2 20 L1
		MTZ2 25 H1/H2					MTZ2 25 H2/H3	
		MTZ2 32 H1/H2	нз	NT46U4/UC			MTZ2 32 H2/H3	
	Maatarac -+ NT							
	Masterpact NT			NT16H1/H2	-			
	Masterpact NT Masterpact NW					NW20H1 NW25H1	NW20H2 NW25H2	NW20L1

Type of Can	alis busbar trunking	KTC2500 Rein	forced short-c	ircuit lovel				
	lsc max kArms		30 kA	42 kA	50 kA	65 kA	85 kA	100 kA
Type of circuit breaker	Compact NS					NS2000N NS2500N NS3200N		
	Masterpact MTZ1	MTZ1 16 H1/H2				110020011		
	Masterpact MTZ2	MTZ2 20 N1/H1/H	I2/H3/L1		MTZ2 20 H1/H2/H	I3/L1	MTZ2 20 H2/H3/L1	MTZ2 20 H3/L1
			<b>MTZ2 25 H1/H2/H3</b> MTZ2 32 H1/H2/H3				MTZ2 25 H2/H3 MTZ2 32 H2/H3	MTZ2 25 H3 MTZ2 32 H3
	Masterpact NT Masterpact NW			NT16H1/H2		NW20H1	NW20H2 (≤ 80 kA)	NW20H3
	·					NW20H1 NW25H1 NW32H1	NW20H2 (≤ 80 kA) NW25H2 (≤ 80 kA) NW32H2 (≤ 80 kA)	NW20H3 NW25H3 NW32H3
Type of Can	alis busbar trunking	KTC3200	30 kA	40 % 4	50 44	CE KA	95 kA	400 %
Type of circuit	Isc max kArms	25 KA	30 KA	42 kA	50 kA	65 kA NS2500N	85 kA	100 kA
breaker	Compactive					NS3200N		
	Masterpact MTZ2	MTZ2 32 H1/H2/H MTZ2 40 H1/H2/H					MTZ2 32 H2/H3 MTZ2 40 H2/H3	
	Masterpact MTZ3	MTZ3 40 H1/H2						
	Masterpact NW					NW25H1 <b>NW32H1</b> NW40H1	NW25H2 NW32H2 NW40H2 NW40b H1/H2	
Type of Can	alis busbar trunking	KTC3200 Rein			1			
True of sine sit	Isc max kArms	25 kA	30 kA	42 kA	50 kA	65 kA	85 kA	100 kA
Type of circuit breaker	Masterpact MTZ2	MTZ2 32 H1/H2/H	3			NS2500N NS3200N	MTZ2 32 H2/H3	MTZ2 32 H3
	Masterpact MTZ3	MTZ2 40 H1/H2/H MTZ3 40 H1/H2						MTZ2 40 H3
	Masterpact NW					NW25H1	NW25H2	NW25H3
						NW32H1 NW40H1	NW32H2 NW40H2	NW32H3 NW40H3 NW40bH1/2
Type of Can	alis busbar trunking	KTC4000	•					
	lsc max kArms	25 kA	30 kA	42 kA	50 kA	65 kA	85 kA	100 kA
Type of circuit breaker	Compact NS Masterpact MTZ2	MTZ2 32 H1/H2/H				NS3200N	MTZ2 32 H2/H3	
DICARCI		MTZ2 32 H1/H2/H	MTZ2 32 H2/H3 MTZ2 40 H2/H3					
	Masterpact MTZ3	MTZ3 40 H1/H2 MTZ3 50 H1/H2		1		1		
T	Masterpact NW					NW32H1 <b>NW40H1</b>	NW32H2 NW40H2 NW40bH1/H2 NW50 H1/H2	
Type of Can	alis busbar trunking Isc max kArms	KTC4000 Rein	30 kA	42 kA	50 kA	65 kA	85 kA	100 kA
Type of circuit		20 104				NS3200N		
breaker	Masterpact MTZ2	MTZ2 32 H1/H2/H MTZ2 40 H1/H2/H					MTZ2 32 H2/H3 MTZ2 40 H2/H3	
	Masterpact MTZ3	MTZ3 40 H1/H2 MTZ3 50 H1/H2 MTZ3 63 H1/H2						
	Masterpact NW					NW32H1 NW40H1	NW32H2 NW40H2	NW32H3 NW40H3 NW40bH1/H2 NW50H1/H2
Type of Can	alis busbar trunking	KTC5000			1			
	Isc max kArms Masterpact MTZ2	25 kA	30 kA	42 kA	50 kA	65 kA	<b>85 kA</b> MTZ2 32 H2/H3	<b>95 kA</b> MTZ2 32 H3
breaker	Masterpact MTZZ						MTZ2 40 H2/H3	MTZ2 40 H3
	Masterpact MTZ3					MTZ3 40 H1/H2 MTZ3 50 H1/H2 MTZ3 63 H1/H2	2	
Type of Can	alis busbar trunking	KTC5000 Rein	forced short-c	ircuit level	·			
••	Isc max kArms	25 kA	30 kA	42 kA	50 kA	65 kA	85 kA	100 kA
Type of circuit breaker	Masterpact MTZ2						MTZ2 32 H2/H3 MTZ2 40 H2/H3	MTZ2 32 H3
Dieakei	Masterpact MTZ3					MTZ3 40 H1/H2 MTZ3 50 H1/H2 MTZ3 63 H1/H2	2 2	11122 40 113
		·	·	•		· · · · · ·		
Type of Can	alis busbar trunking	KTC6300			1			
Type of circuit	Isc max kArms Masterpact MTZ2	25 kA	30 kA	42 kA	50 kA	65 kA MT72 40 H1/H2/H3	85 kA MTZ2 40 H2/H3	<b>100 kA</b> MT72 40 H3
breaker	Masterpact MTZ3					MTZ3 40 H1/H2 MTZ3 40 H1/H2 MTZ3 50 H1/H2 MTZ3 63 H1/H2	2 2	WT22 +0113

# **Degree of protection**

# Canalis KTC

**Degree of protection IP** 

Standard IEC 60364-5-51 categorises a large number of external influences to which electrical installations can be subjected, for instance the presence of water, solid objects, shocks, vibrations and corrosive substances. The importance of these influences depends on the installation conditions. For example, the presence of water can vary from a few drops to total immersion.

Standard IEC 60529 (February 2001) indicates the degree of protection provided by electrical equipment enclosures against accidental direct contact with live parts and against the ingress of solid foreign objects or water.

This standard does not apply to protection against the risk of explosion or conditions such as humidity, corrosive gases, fungi or vermin.

The IP code comprises 2 characteristic numerals and may include an additional letter when the actual protection of persons against direct contact with live parts is better than that indicated by the first numeral.

The first numeral characterises the protection of the equipment against penetration of solid objects and the protection of people. The second numeral characterises the protection of the equipment against penetration of water with harmful effects.

## Remarks concerning the degree of protection IP

The degree of protection IP must always be read and understood numeral by numeral and not as a whole. For example, an IP31 enclosure is suitable for an environment that requires a

minimum degree of protection IP21. However an IP30 wall-mount enclosure is not suitable.

The degrees of protection indicated in this catalogue are valid for the enclosures as presented. However, the indicated degree of protection is guaranteed only when the installation and device mounting are carried out in accordance with professional standard practice.

# Additional letter

Protection of persons against direct contact with live parts.

The additional letter is used only if the actual protection of persons is higher than that indicated by the first characteristic numeral of the IP code. If only the protection of persons is of interest, the two characteristic numerals are replaced by the letter "X", e.g. IPxxB.

# **Degree of protection IK**

Standard IEC 62-262 defines a coding system (IK code) indicating the degree of protection provided by electrical equipment enclosures against external mechanical impact.

Installation standard IEC 60-364 provides a cross-reference between the various degrees of protection and the environmental conditions classification, relating to the selection of equipment according to external factors.

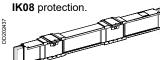
## IK codeee

The IK code comprises 2 characteristic numerals (e.g. IK05).

Practical guide UTE C 15-103 shows, in the form of tables, the characteristics required for electrical equipment (including minimum degrees of protection), according to the locations in which they are installed.

# Meaning of the numerals and letters representing the degree of protection IP.

The Canalis KTC busbar trunking products are designed to provide **IP55D and** 



1st characteristic numeral: corresponds to protection of equipment against penetration of solid objects and protection of persons against direct contact with live parts.

Protection of equipment	Protection of persons		
Non-protected.	Non-protected.	0	
Protected against the penetration of solid objects having a diameter greater than or equal to 50 mm.	Protected against direct contact with the back of the hand (accidental contact).	1	0 20 mm
Protected against the penetration of solid objects having a diameter greater than or equal to 12.5 mm.	Protected against direct finger contact.	2	\$10012,5 mm
Protected against the penetration of solid objects having a diameter greater than or equal to 2.5 mm.	Protected against direct contact with a 2.5 mm diameter tool.	3	91001200 02,5 mm
Protected against the penetration of solid objects having a diameter greater than 1 mm.	Protected against direct contact with a 1 mm diameter wire.	4	Ø1 mm
Dust protected (no harmful deposits).	Protected against direct contact with a 1 mm diameter wire.	5	DD210018
Dust tight.	Protected against direct contact with a 1 mm diameter wire.	6	DD210019

2nd characteristic numeral: corresponds to protection of equipment against penetration of water with harmful effects.

# Protection of equipment

Non-protected.	0	
Protected against vertical dripping water (condensation).	1	DD210006
Protected against dripping water at an angle of up to 15°.	2	15. 15.
Protected against rain at an angle of up to 60°.	3	DD210008
Protected against splashing water in all directions.	4	DD210000
Protected against water jets in all directions. Test duration: 1 mn/m <sup>2</sup> casing	5	
Protected against powerful jets of water and waves.	6	DD210011
Protected against the effects of temporary immersion.	7	Z1001 200
Protected against the effects of prolonged immersion under specified conditions.	8	D0210013
With the back of the band		

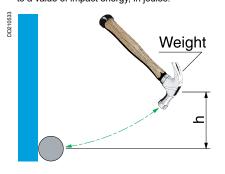
## **Additional letter**

Corresponds to protection of persons against direct contact with live parts.

Α	With the back of the hand.
В	With the finger.
С	With a 2.5 mm diameter tool
D	With a 1 mm diameter tool

# Degrees of protection IK against mechanical impact

The IK code comprises 2 characteristic numerals corresponding to a value of impact energy, in joules.



	Weight (kg)	Height (cm)	Energy (J)
00	Non-protected		
01	0.20	7.50	0.15
02		10	0.20
03		17.50	0.35
04		25	0.50
05		35	0.70
06	0.50	20	1
07		40	2
08	1.70	30	5
09	5	20	10
10		40	20

# Harmonic currents

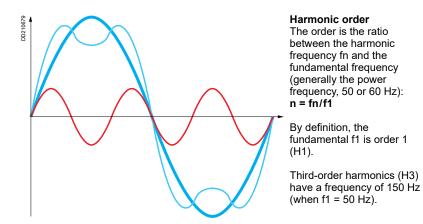
**Canalis KTC** 

# **Origin of harmonic currents**

Harmonic currents are caused by non-linear loads connected to distribution systems, i.e. by loads that draw current with a waveform different that that of the voltage that supplies them.

The most common non-linear loads are equipment including rectifiers, fluorescent lighting and computer hardware.

In installations with a distributed neutral, non-linear loads may cause significant overloads in the neutral conductor due to the presence of third-order harmonics.



# Estimating THD (total harmonic distortion)

The presence of third-order harmonics depends on the applications involved. It is necessary to carry out an in-depth study on each non-linear load to determine the level of H3:

ih3 (%) = 100 x i3 / i1

■ i3 = rms current of H3

■ i1 = rms current of the fundamental

Assuming that H3 is preponderant among harmonics, the THD is close to the value of H3 (ih3 (%)).

There are two decisive factors:

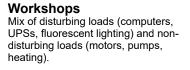
■ the types of connected devices:

□ disturbing loads: fluorescent lighting, computer hardware, rectifiers, arc furnaces, etc.

 $\hfill\square$  non-disturbing loads: heating, motors, pumps, etc.

■ the ratio between the two types of disturbing loads.



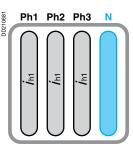


Low probability of harmonics THD ≤ 15 %.



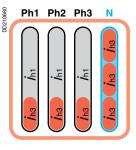
Offices Numerous disturbing loads (computers, UPSs, fluorescent lighting).

High probability of harmonics 15 % < THD ≤ 33 %. Effects of harmonics on Canalis busbar trunking



## Fundamental frequency: ih1 (50 Hz)

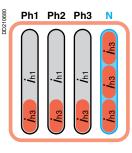
No current in the neutral. The conductors are correctly sized.



#### Fundamental frequency: ih1 (50 Hz) and 33 % of H3

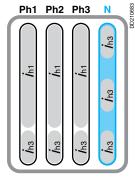
Abnormal temperature rise in the conductors caused by current at a higher frequency in the phases (skin effect) and current in the neutral caused by summing of the H3 harmonics.

# The only effective solution



Fundamental frequency: ih1 (50 Hz) and 33 % H3

Reduce the current density in ALL conductors by using appropriately sized trunking.



# **Busbar-trunking selection**

THD ≤ 15 %	15 % < THD ≤ 33 %	THD > 33 %	Busbar trunking	Rating (A)
1000	800	630	KTC	1000
1350	1000	800	KTC	1350
1600	1350	1000	KTC	1600
2000	1600	1350	KTC	2000
2500	2000	1600	KTC	2500
3200	2500	2000	KTC	3200
4000	3200	2500	KTC	4000
5000	4000	3200	KTC	5000

Example. For a total rms current of 2356 A (estimation based on power drawn by loads, including harmonics), the operational current is 2500 A. THD is estimated at 30 %. The appropriate trunking is KTC 3200 A.

#### For more information on harmonics

See the Cahier Technique publications on the Schneider Electric web site: www.se.com

# **Direct current**

**Canalis KTC** 

# Determining the DC current value

#### **Thermal effect** Rule

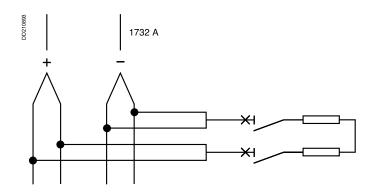
The total power dissipated as heat must remain constant in the duct: Pac = Pdc

Where:

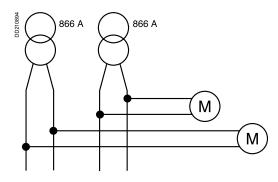
- the power dissipated as heat: **Pac** = 3 x R x lac<sup>2</sup> where:
- □ R= resistance of a conductor
- □ lac = conductor rms current
- the dissipated power for 4 conductors: **Pdc** = 4 x R x ldc<sup>2</sup> where:
- $\Box$  Idc = direct current.

# Selection table

1 source Case of 2 conductors in parallel for the + and 2 conductor in parallel for the – (only 1 circuit in the busbar trunking):



■ 2 sources Case of 1 conductor for the + and 1 conductor for the – (2 circuits possible in the same busbar trunking):



Busbar trunking rating (A)	1 source	2 sources
1000	1732	866
1350	2165	1083
1600	2771	1385
2000	3464	1732
2500	4330	2165
3200	5542	2771
4000	6928	3464
5000	8660	4330
6300	10910	5455

## Protection

With DC, there is no zero crossing point of the voltage and current to facilitate arc extinction in the protective device.

The arcing time is longer and the energy that has to be absorbed is higher than for AC.

The voltage of the DC arc must rise to the source voltage very quickly in order to "put out" the short-circuit current. "Shortened" electrical equation: Unetwork = R x lsc + Uarc where:

■ Isc = (Unetwork - Uarc) / R

Isc = 0 when Uarc = Unetwork.

## Use with specific switchgear

A quick rise in arcing voltage can be achieved by using series fuses, one fuse on the + and one fuse on the - of each circuit.

For some current rating and fuse characteristics, the placing of two fuses in series on each polarity may be specified (highly inductive circuit).

In some cases, two fuses must be placed in parallel for each polarity.

### Saline environment

For use in a saline environment, storage and installation precautions must be followed.

Please contact your sales office.

# Frequencies 400 Hz

# **Canalis KTC**

# KT busbar trunking derating at 400 Hz

Values at 35 °C. Application of a derating coefficient at 400 Hz combined with that for temperature derating.

Busbar trunking derating								
	KTC10	KTC13	KTC16	KTC20	KTC25	KTC32	KTC40	KTC50
In (A)	688	851	1014	1327	1635	2024	2394	3162
Coefficient K at 400 Hz	0.86	0.85	0.84	0.83	0.82	0.81	0.80	0.79

# Voltage drop

3-phase voltage drop, in millivolts per metre and per amp 400 Hz with load spread over the run.

For a concentration of load at the end of a run (transport), the voltage drops are double those shown in the table below.

Delta U evenly spread (mV. A. m)								
	KTC10	KTC13	KTC16	KTC20	KTC25	KTC32	KTC40	KTC50
Cos Φ = 1.0	0.079	0.068	0.057	0.044	0.038	0.033	0.025	0.020
Cos Φ = 0.9	0.12	0.109	0.096	0.079	0.067	0.054	0.045	0.039
Cos Φ = 0.8	0.13	0.121	0.108	0.089	0.076	0.060	0.051	0.045

# **Conductor characteristics**

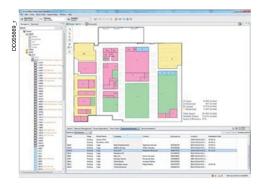
Conductor impedance								
	KTC10	KTC13	KTC16	KTC20	KTC25	KTC32	KTC40	KTC50
Average ohmic resistance of phase and neutral conductors at In <sup>(1)</sup> Rb1ph (m $\Omega$ /m)	0.092	0.079	0.066	0.051	0.044	0.039	0.029	0.023
Average resistance at In and rated $F(Hz)^{(1)}$ Xph (m $\Omega$ /m)	0.14	0.128	0.120	0.104	0.088	0.064	0.059	0.056

(1) In line with the CENELEC RO.64.013 document.

### **Measurements and metering**

Canalis part of StruxureWare

### The StruxureWare platform



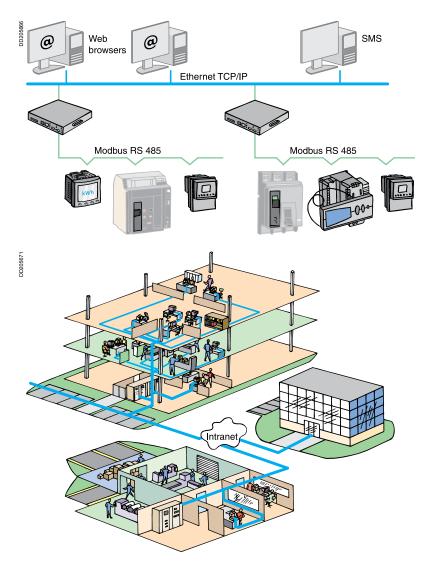


Canalis associated to Schneider Electric measurement and communication devices provides a simple solution to access information (status, measurements, etc.) available from your electrical distribution equipment (transformers, switchboards, busbar trunking).

This information can be accessed from any PC connected to your Ethernet network.

The supervision can make your company more competitive by:

- reducing operating costs
- optimising equipment performance
- improving the reliability of the electrical power supply.



### Customer needs for measurements and metering

In all non-residential buildings, the need for sub-metering exists and is growing underthe combined effects of:

- national and supra-national energy regulations
- the need to reduce overheads and production costs
- the allocation of energy expenditures to cost centres
- the outsourcing of operations tasks to specialists.

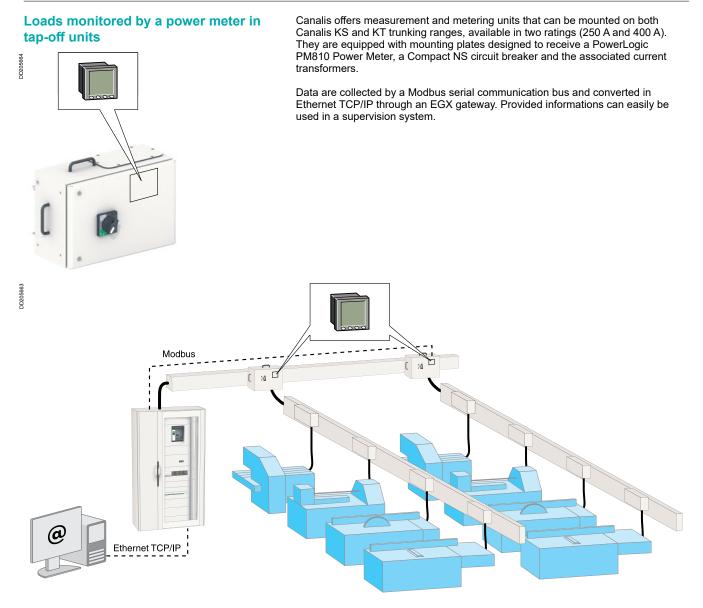
Operators must therefore have access to reliable pre-processed information in order to:

- identify areas for potential savings
- model building energy flows and anticipate evolving needs
- optimise energy supply and consumption.

### **Measurements and metering**

Canalis part of StruxureWare

### **Canalis KTC**



Data acquisition in distributed architectures

When busbar trunking is located upstream of a secondary trunking line, the measurement devices should be installed in the tap-off units.



Life Is On Schneider 181

### **Fire resistance**

### **Canalis KTC**

**Definition of tests** 

- As required by standards, Canalis KT busbar trunking complies with:
- 1 material resistance to abnormal temperatures.
- 2 flame propagation resistance.
- 3 fire barrier function when going through a partition wall.4 conservation of all circuits for 1.30 hours in an insulating sheath.

### 1 - Insulating material resistance test to abnormal temperatures

#### Objective

To check a material will not be suspected as being the origin of a secondary fire outbreak.

As defined in standards § 8.1.3 IEC 61439-1 and IEC 60695-2-10 to -2-13.

#### Method

Application of an incandescent wire for 30 seconds on the insulating materials in contact with live parts.

#### **Result criteria**

The specimen is considered to have passed the incandescent wire test if: ■ if there is no visible flame and no sustained incandescence ■ the specimen's flames and incandescence go out within 30 seconds of the

incandescent wire being removed.

### 2 - Flame propagation resistance test

#### Objective

To check a busbar trunking will not create secondary fire outbreaks.

As defined in standards § 10.101 IEC 61439-6 and IEC 60332 part 3.

#### Method

■ Application of a flame for 40 minutes on a straight length of busbar trunking whose centre is located 2.5 metres from the edge of the burner.

#### **Result criteria**

The specimen is considered to have passed the test if:

combustion does not occur

the maximum extent of the burned part (external and internal) of the busbar trunking does not go beyond 2.5 metres above the lower edge of the burner.

### 3 - Fire barrier test through a partition wall

#### Objective

To check a busbar trunking will not propagate a fire from one room to another by crossing a fire barrier wall for 60, 120, 180, or 240 minutes.

As defined in standard EN 1366-3; EN 1363-1; ISO 834; DIN 4102 part 9.

#### Method

The fire barrier busbar trunking section to be tested is placed in an oven which executes a standardised temperature-time curve.

#### **Result criteria**

The specimen is considered to have passed the test if:

■ there are no flames behind the fire barrier

■ there is no smoke or gas behind the fire barrier (not requested by the standard; can appear as a remark in the test report)

■ the temperature rise of the casing behind the fire barrier does not exceed 180°C.

### 4 - Conservation of all circuits in fire conditions test

#### Objective

To check all the busbar trunking's electrical circuits are preserved in fire conditions.

As defined in standard DIN 4102 part 12.

#### Method

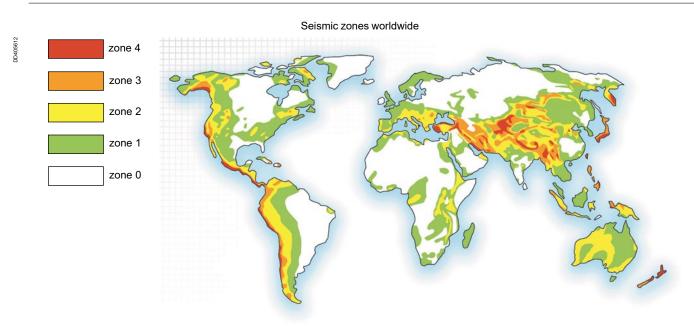
Its entire length inserted, the busbar trunking is taken as a specimen in an insulating sheath.

#### **Result criteria**

- The specimen is considered to have passed the test if:
- conductor continuity is preserved
- there is no short-circuit between conductors.

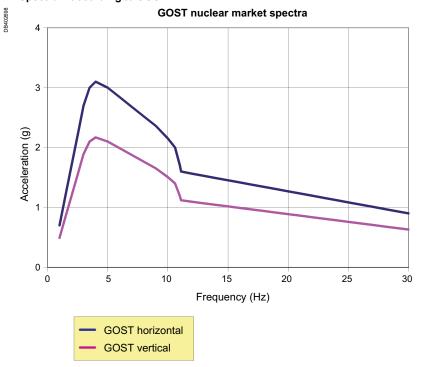
### Seismic resistance

### Canalis KTC



Canalis KT is seismic certified in accordance with the protocol described in IEC 60980 and a seismic level equivalent to >7 on the Richter scale and severity 9 on the international MSK- 64 scale.

The spectrum used for testing is the one specified for civil engineering and nuclear applications in GOST 17516.1-90.



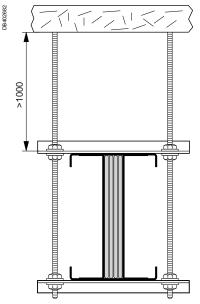
Spectrum according to GOST

### Installation and support

Supports for conventional applications can be used for seismic applications by following the recommendations below:

#### For flexible support

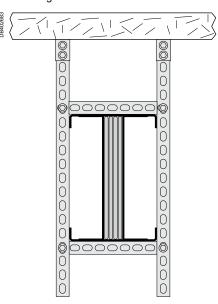
Use supports and rods, with a minimum length of 1000 mm and additional clamping as per the following diagram.



Safety limit: 250 mm round the busbar trunking (amplitude noted during testing).

#### For rigid support

Use of conventional mechanically welded consoles with rigid busbar trunking fastening.



For both cases:

its conventional fixing centre distances are maintained (3 m edgewise, 2 m flat)
 the levels achieved are applicable for horizontal, edgewise or flat or vertical installations.

**Testing and commissioning** procedure

**Canalis KTC** 

All the operations described below are given for indication only. Under no circumstances can they be used to substitute the installation company's own procedures and engage Schneider Electric's responsibility.

#### Scope

High power busbar trunking, transformer-switchboard links.

### **Required tools**

- Multimeter.
- 500 V megger.
- Roto-phase.

#### **Prerequisites**

- If need be, the old equipment has been removed from the premises.
- The new equipment has been manoeuvred into the premises where it is to be installed by the installation contractor.
- The equipment has been installed by the installation contractor in accordance with manufacturer's recommendations.

The equipment's installation diagram, connection diagram and assembly results sheet are available for the commissioning engineer.

### De-energising the installation and making it safe

The works manager is responsible for worksite safety and must ensure the installation is de-energised and made safe in accordance with safety rules before any inspection or measurement is performed.

### Equipment checking, positioning and identification

After the installation contractor has positioned, assembled and connected the busbar trunking in accordance with the supplied installation, assembly and connection diagrams, and using the recommended tools and handling equipment, the following characteristics must:

be noted

■ be checked for compliance with respect to the details shown on the drawing.

Brand	-	Busbar trunking rating:	-
Equipment type:	-	Serial number:	-
Reference:	-	Date of manufacture:	-
Transformer power:	-	Source circuit breaker (busbar trunking protection):	_

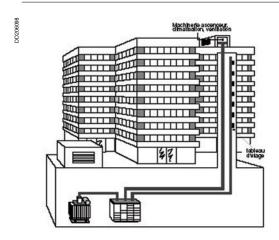
#### General visual inspection

The equipment has been chosen according to its electrical environment (rating and protection adapted to operating conditions). The following points do not require checking.

### Points concerning reception, storage and handling

No signs of:

- shock (which may deteriorate internal insulation: conductor insulation on straight lengths or at the tap-off points or joint blocks)
- humidity or oxidation (equipment stored outside should have been covered with
- a plastic sheet, sheltered from humidity, dirt and dust)
- firm's label defining the product's characteristics.



### **Checking power connections**

#### Points concerning installation and fittings

Assembly compliance with the specifications of the installation drawing, service instructions and the catalogue:

- no busbar trunking twisting
   positioning and distance of the busbar trunking with respect to the building
- fixings, compliance of the between centres distance of the equipment for flat or edgewise, horizontal or vertical distribution
- clamps, not fully blocked to allow movement due to longitudinal forces
- presence of expansion sections if necessary.

22 6 daN.m

### General visual inspection

Check the number of connection parts and their cross-sections for each conductor (see "Installation guide").

Check insulation distances between 2 conductors and between conductors and metal panels.

Check the tightening torque of bolts not fitted with torque nuts. For bolts fitted with torque nuts, check the head has broken-off.



Check the bolt length exceeding the nut ; some bolts may have been removed and then put back, but left untightened.

Mark each tightened nut using indelible varnish. As well as a means of selfinspection to ensure correct tightening torque, it also allows any untightening to be identified.

Class 8-8 nuts and bolts (M8 on LV switchboard side, see "Commissioning Guide for Schneider Electric LV Switchboards").

Bolt	Tightening torque
HM16	16 daN.m
HM14	12 daN.m
HM12	7 daN.m
HM10	5 daN.m

The results of all these checks must be noted on the results sheet by the installation contractor.

#### Checking insulation between live conductors

These measurements and checks can only be performed if:

each link is disconnected by an isolating device

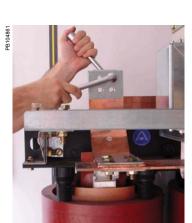
each link is disconnected from the upstream transformer, with the main circuit breaker upstream of the LV switchboard unplugged and in the open position.

Test means: 500V DC megger (DC to avoid capacitive currents) Measurements: 6 measurements between live conductors (between phases and

then between each phase and neutral). LV circuit insulation value, according to IEC 60364-6 (and 61.3.3) standard:

■ rated voltage < 500 V U test DC = 500 V Ri ≥ 1 MΩ

- Ri ≥ 1 MΩ. ■ rated voltage > 500 V U test DC = 1000 V



# Testing and commissioning procedure

### **Canalis KTC**

### Checking the earth network and locks

### Earth network

#### General visual inspection

- Check:
- the galvanised steel casing sides are earthed (note: this depends on the earthing system)
- connection quality
- cable cross-section
- there are no loose metal parts (washers, screws) in the tap-off units.

**Note**: the results of these checks must have already been noted on the results sheet by the installation contractor.

#### Checking insulation between live conductors and earth

Following this check, each link must be reconnected to the upstream transformer (use the  $2^{nd}$  available 6 daN.m torque bolt heads).

**Test means:** 500V DC megger (DC to avoid capacitive currents) **Measurements:** between each phase or neutral <sup>(1)</sup> and earth (the casing if it is connected to earth).

LV circuit insulation value, according to IEC 60364-6 (and 61.3.3) standard:

- rated voltage < 500 V U test DC = 500 V Ri ≥ 1 MΩ
- rated voltage > 500 V U test DC = 1000 V Ri ≥ 1 MΩ

(1) No neutral insulation if the earthing system is such that the neutral is connected to or used as the earth.

**Caution:** In this case, once the transformer has been reconnected (star secondary), the phaseearth measurement is the winding resistance.

### PE protective circuit equipotential

Reference: IEC 61439-1:

Check PE protective circuit continuity by visual inspection and random continuity testing.

The previously performed "phases-PE" insulation test must have been compliant. **Test means:** ohmmeter.

#### Locks

To protect personnel by not allowing access to live parts through the use of locks. Only concerns key operated safety locks.

Checking connections and auxiliary testing

Check not relevant to busbar trunking.



### De-energised equipment operating tests Checking source circuit breaker protection settings

Compliance check in accordance with the installation drawing specifications: Imax thermal

In magnetic.

**Note:** this check is only to be performed if the busbar trunking is commissioned at the same time as the transformer: the source circuit breaker protection setting checks are related to transformer commissioning. Check not relevant if the transformer has already been commissioned.

If this check is successful, the busbar trunking can be commissioned and the energised operating tests performed with the appropriate protective equipment

### Commissioning and energised equipment operating tests

*Note*: commissioning can only be carried out by personnel with appropriate authorisations.

Preliminary operation: energising the off-load transformer. **Closing the source circuit breaker.** 

### Checking phase order

Objective: to detect, in order to correct, an inversion of the phases or neutral amongst the busbar trunking's 4 incoming and outgoing connections with respect to the transformer output.

Test means: roto-phase or 3-phase harmonic analyser.

If busbar trunking energising is successful, a progressive start-up of the factory must be requested to definitively validate commissioning.

If unsuccessful, the previous checks must be carried out again to try and locate the fault. Before undertaking this, the equipment must once again be made safe.

### Final putting into service test

This test is performed once the busbar trunking has been energised. The progressive start-up of loads will highlight any undesirable phenomena due to the increased average load.

#### Real life operating test

Once the high power busbar trunking has been energised, the other busbar trunking must be gradually put into service starting with those furthest from the load, then each load itself, those with high pull-in currents, then the lighting, contactors, heating, motors, etc.

There must not be excessive vibration, and no sparkovers should be observed.

The test simply consists of checking correct busbar trunking operation according to:

- the average number of machines in operation
- The average number of machines in operation
   the load variation of each individual load
- the simultaneous operation of machines (superimposing of peaks).

If everything is in order, the busbar trunking is declared "in-service". Testing is completed.

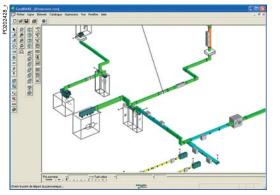
### Installation guide

Introduction	3
Presentation and description	23
Catalogue numbers and dimensions	49
Design guide	149
Layout advice	<b>192</b>
Run optimisation	192
Positioning and supports	195
Anticipate unexpected worksite problems	198
Tips for determining dimensions at the worksite	199
Horizontal distribution	<b>202</b>
Positioning the tap-off units	202
Tap-off units	203
Checking and compensating for expansion	204
<b>Rising mains</b> General Positioning the busbar trunking without external fire barrier Positioning the tap-off units Positioning of supports Positioning the external fire barriers Installation with feed via a cable box or direct onto the switchboard	208 209 210 211 212 213
Panorama of connection solutions	216
Connection to LV switchboards	<b>218</b>
Selection guide	218
By Canalis interface	220
By universal feed unit	226
By feed and connection plates	228
Connection to cast resin transformers	<b>232</b>
Selection guide	232
Connection to Trihal Dry type transformers	<b>234</b>
Selection guide	234
Connection to Trihal cast resin transformers	<b>235</b>
By Canalis interface	235
Connection to cast resin transformers	<b>238</b>
By universal feed and connection plates	238
Connection to Minera transformers by standard interface	<b>244</b>
Horizontal incomer	244
Connection to Minera immersed transformers by standard interface	<b>246</b>
Vertical incomer	246
Connection to oil immersed transformers	<b>248</b>
By feed and connection plates or braids	248
Recommendations	251
Index	256

### Layout advice Run optimisation

### **Canalis KTC**

### **PowerSet Canalis Design software**



*PowerSet Canalis Design* software can be used to design the busbar trunking line.

The easy-to-use program creates a graphic model of the line, determines the length and draws up the list of Canalis KT parts to order.

The Canalis KT line is easy to specify simply by indicating the required dimensions. However, it is strongly advised to use the shortest and simplest path possible between the transformer and the switchboard.

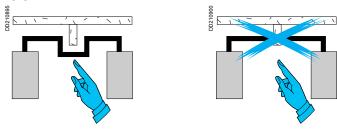
It is important to carefully plan the layout of the transformer and switchboard in order to use:

- the maximum number of standard components rather than made-to-measure components
- the minimum number of components for changing direction
- straight made-to-measure components rather than made-to-measure components for changing direction.

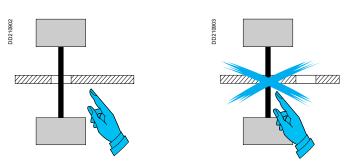
Advice

Before defining your busbar trunking run, it is recommended you pay particular attention to the various parameters which could be detrimental to the installation.

### Obstacles that obstruct the busbar trunking such as beams, pipes, etc.



Badly positioned places for going through walls and floors.

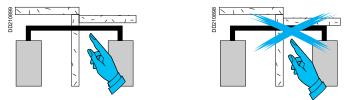


Joint positions in the middle of a partition wall.

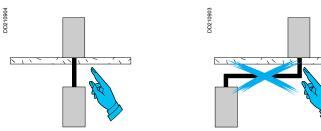


**Insufficient ceiling height.** If the busbar trunking must be installed edgewise between a transformer and switchboard, ensure the ceiling height is sufficient for fitting the joint blocks from the top.

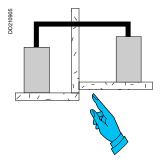
Reserve a space between the busbar trunking and the ceiling equal to 100 mm (variable depending on the rating, see "Catalogue numbers and dimensions").



### Going through a floor to bottom feed a switchboard on the next floor.



### Difference in floor levels of 2 rooms.



Also make sure that as the work progresses other tradesmen do not carry out installations that could hinder your initial layout.

## Layout advice

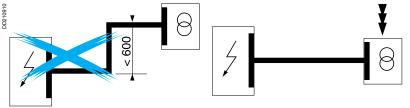
### **Run optimisation**

### **Canalis KTC**

### **Examples of link optimisation**

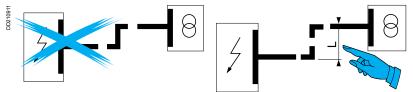
### Example 1

Reducing the number of changes of direction by modifying the switchboard or transformer layout.



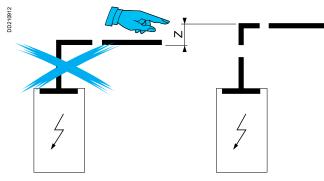
### Example 2

Use of 2 standard elbows in place of a made to measure zed by increasing dimension "L".



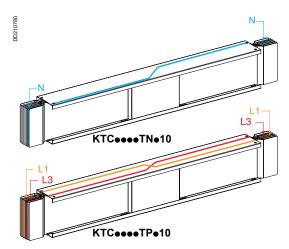
### Modification of the busbar trunking height

By slightly increasing dimension "Z", replace a made to measure elbow feed connector with a standard feed connector and standard elbow section.



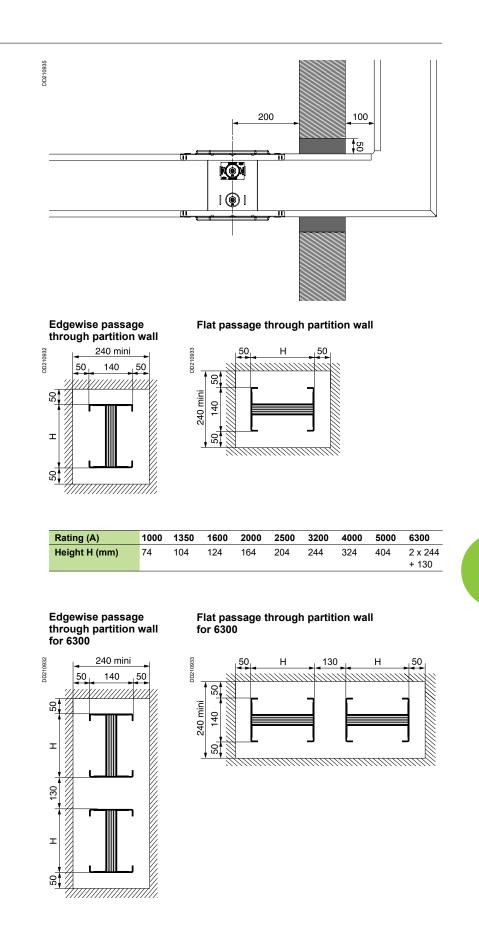
When choosing the layout of the electrical installation, it is important care is taken when positioning the neutral between the transformer and the switchboard. If the neutral position is different to that planned, it is recommended the transformer is moved, if possible, to align the neutral with respect to the switchboard's neutral. When it is not possible to move the transformer, it is recommended the phase order in the switchboard is inversed.

If this cannot be done, use the phase and neutral transposition section.



### Neutral position

### Positioning and supports



### Layout advice Positioning and supports

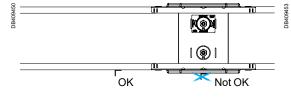
### **Canalis KTC**

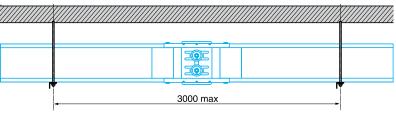
A support point as close as possible to the connections is needed because transformers, generator sets and switchboards must not support the weight of the busbar trunking.

In some industries, for service continuity reasons, transformers may be replaced quickly. The busbar trunking must be able to support itself.

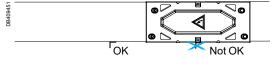
### Edgewise horizontal installation

The maximum recommended distance between supports is 3 metres. In all cases, provide for 2 supports for 4 metre sections. For clamping busbar trunking to support brackets, see page 206.





### Flat horizontal installation

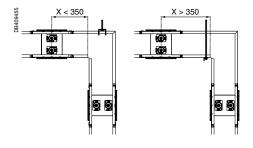


# The recommended distance between supports is 2 metres. In addition, a support must be placed at 400 mm maximum from the joint block axis. For clamping busbar trunking to support brackets, see page 206.

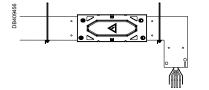
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400 max	2000 max		400 max

### Example of spreading out supports

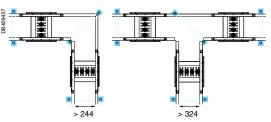
### Supporting of LC elbow with a vertical branch

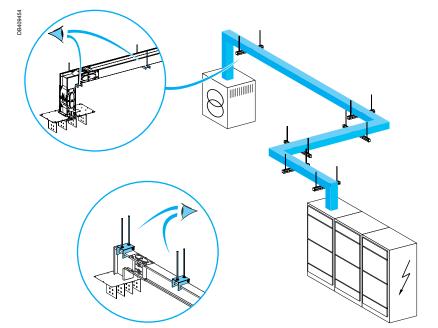


#### Supporting of LP elbow with a vertical branch



### Supporting of LC elbows and TC tees (top view)



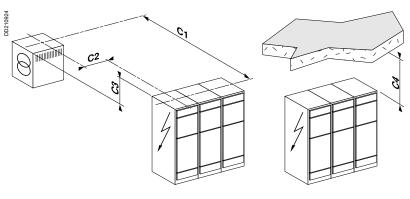


### Rules to follow

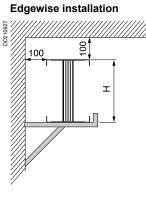
- An element must never be left unsupported.
- For easier leveling, always use two supports for each element wherever possible.
   A bracket must never coincide with a junction block.
- The capacity of fixing brackets in terms of supporting is at least the weight of the
- busbar trunking system plus 90 kg, in accordance with IEC 61439-6.
- Terminals must be fixed by its own brackets not be supported by transformers or switchboards.
- Vertical branches must be always supported the closer as possible to the elbow angle.
- Elbows and zeds must be supported individually.
- Supports must be installed close to junctions.

Defining the layout, dimensions to be provided

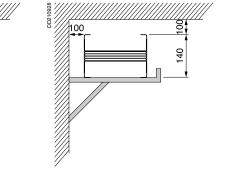
The position of the joint block with respect to the transformer axes and switchboard edges (defined in the "Installation guide").



### Distance of the busbar trunking from the wall





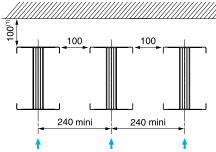


Rating (A)	1000	1350	1600	2000	2500	3200	4000	5000	6300
Height H (mm)	74	104	124	164	204	244	324	404	2 x 244
									+ 1

### Distance between busbar trunking (without tap-off units)

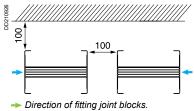
### Edgewise installation

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(1) Provide 2 times the height if the joint block must be fitted from the top.
 Direction of fitting joint blocks.

### Flat installation

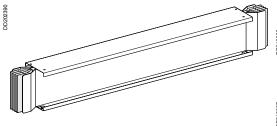


## Layout advice

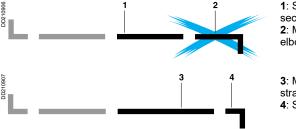
### Anticipate unexpected worksite problems

### Canalis KTC





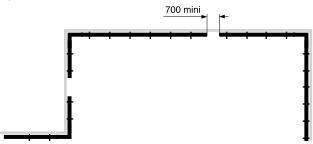
This section will be ordered after the gap to be filled has been measured at the end of the job. To optimise its delivery to site, prefer a straight section with a length of less than 2 metres rather than made to measure elbows.



1: Standard straight section. 2: Made to measure elbow.

3: Made to measure straight section.4: Standard elbow.

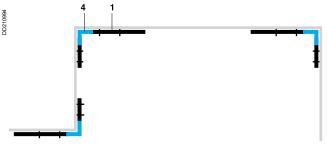
On the drawing, provide a minimum dimension of 700 mm to guarantee an adjustment of  $\pm 200$  mm on-site. The minimum length of straight sections being equal to 500 mm.



Layout recommendations for adjustable or undecided sections

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In order to provide for the place needed for undecided section, install the elbows and the sections attached to the elbows in each angle (support each assembly using 2 supports on each straight section).



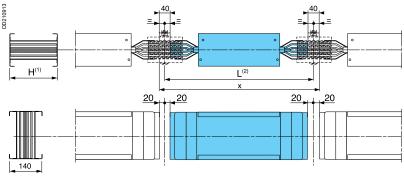
And then complete the layout with standard and made to measure straight sections.

# Tips for determining dimensions at the worksite

### Straight section

The nominal length "L" of a straight section is measured from the axis of the joint block to the other axis of the joint block, in millimetres (the joint block axis is located 20 mm from the end of the bars).

Dimension L of the standard or made to measure section =  $\mathbf{x}$  - 40 mm.

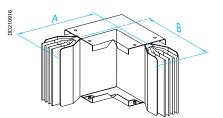


(1): For the different busbar trunking heights, see page 197.(2): See "Run sections" in "Catalogue numbers and Dimensions".

x : measured dimension.

Example: **x** = 1860 mm hence L = 1860 - 40 = 1820 mm.

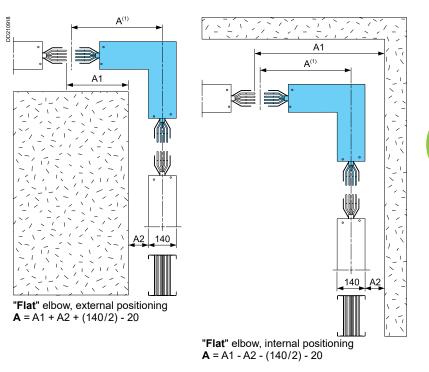
### **Change-of-directions**



A and B: See "Changes of direction" in "Catalogue numbers and Dimensions".

### Flat elbows

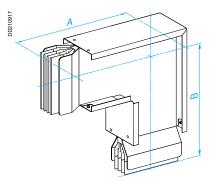
The nominal length of each branch is measured from the axis of the joint block to the axis of the other branch, in millimetres. The joint block axis is located 20 mm from the end of the bars.



(1) See "Changes of direction" in "Catalogue numbers and Dimensions".

### Layout advice Tips for determining dimensions at the worksite

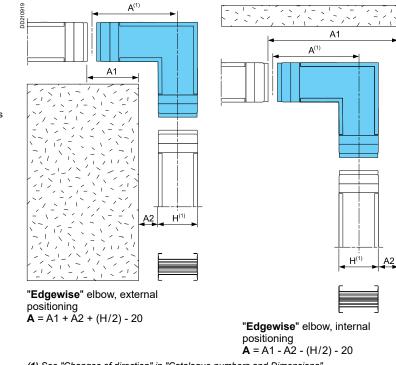
### **Canalis KTC**



A and B: See "Changes of direction" in "Catalogue numbers and Dimensions".

### **Edgewise elbows**

The nominal length of each branch is measured from the axis of the joint block to the axis of the other branch, in millimetres. The joint block axis is located 20 mm from the end of the bars.

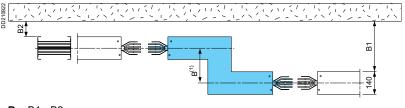


(1) See "Changes of direction" in "Catalogue numbers and Dimensions".



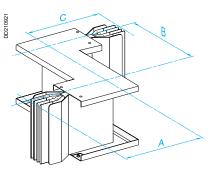
The nominal length of each branch is measured from the axis of the joint block to the axis of the other branch, in millimetres. The joint block axis is located 20 mm from the end of the bars.

The nominal length of the intermediary branch(es) is measured from the axis of one branch to the axis of another.

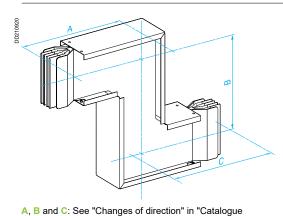


**B** = B1 - B2

(1) See "Changes of direction" in "Catalogue numbers and Dimensions".



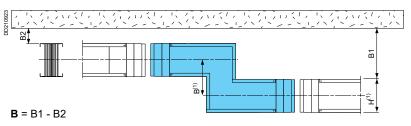
A, B and C: See "Changes of direction" in "Catalogue numbers and Dimensions".



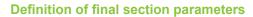
Edgewise Zed

The nominal length of each branch is measured from the axis of the joint block to the axis of the other branch, in millimetres. The joint block axis is located 20 mm from the end of the bars.

The nominal length of the intermediary branch(es) is measured from the axis of one branch to the axis of another.

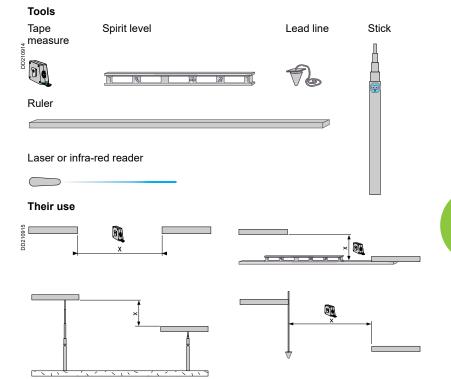


(1) See "Changes of direction" in "Catalogue numbers and Dimensions".



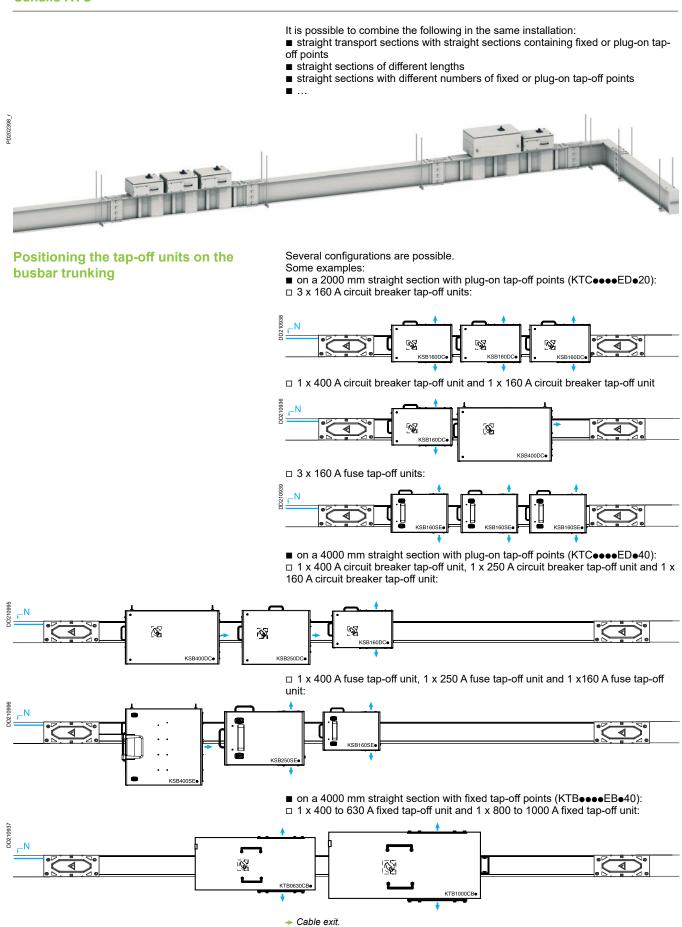
numbers and Dimensions".

Reminder: the final section should preferably be a straight section. Take into account the neutral position when choosing the section.

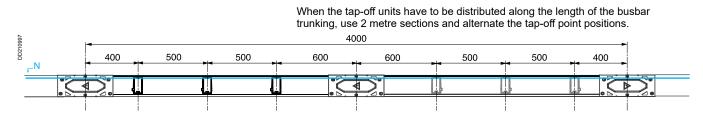


### Horizontal distribution Positioning the tap-off units

### Canalis KTC

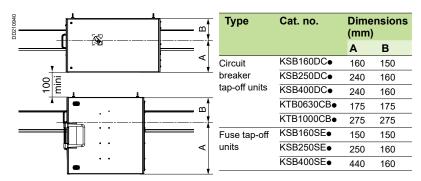


### Tap-off units



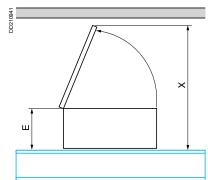
### Recommendations for installing 2 parallel busbar trunking runs

For an installation with tap-off units, provide for a between centres distance that takes into account the minimum dimension of 100 mm and the dimensions A and B of the tap-off units.

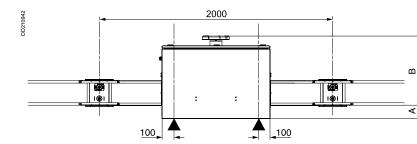


### Tap-off unit door opening

Provide for a minimum distance of 1000 mm between the busbar trunking and the ceiling to allow for the opening of tap-off unit doors.



Туре	Cat. no.	Dimen (mm)	sions			
		Х	E <sup>(1)</sup>			
Circuit	KSB160DC•	625.5	246			
breaker tap-off units	KSB250DC•	726.5	300			
	KSB400DC	976,5	350			
Fuse tap-off	KSB160SE●	577,5	207			
units	KSB250SE	777	258			
	KSB400SE	855	316			
(1) With the handle.						



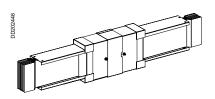
Rating (A)	Dimensi	ons (mm)	
	Α	В	
1000	174	514	
1350	159	529	
1600	149	539	
2000	129	559	
2500	109	579	
3200	89	599	



### Horizontal distribution

Checking and compensating for expansion

### **Canalis KTC**



Long part runs

Expansion poses a problem when:

■ the runs are made up of long straight sections

■ when the busbar trunking passes through an expansion joint between two buildings.

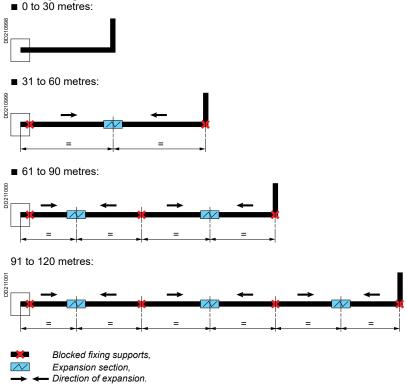
Electrical busbar trunking can be subjected to a multitude of load variations during its service life (e.g. day / night, summer / winter) which cause temperature rise differences and thus variable expansions.

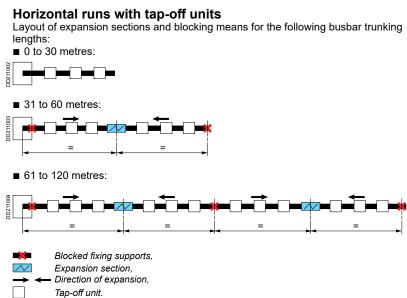
To absorb expansion in a Canalis KT busbar trunking, a specific section must be used: the expansion section.

### Horizontal runs without tap-off units

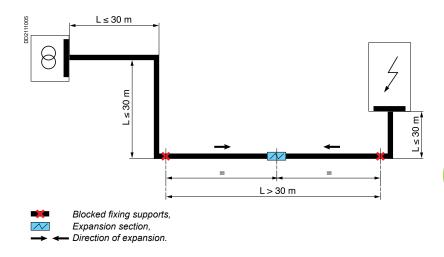
If the busbar trunking length is greater than 30 metres, provide for expansion sections and appropriate blocking means. The ends and, in some cases, the centre of part runs must be blocked in order to direct the extensions towards the expansion sections.

Layout of expansion sections and blocking means for the following busbar trunking lengths:





### Transformer / switchboard links



### Horizontal distribution

Checking and compensating for expansion

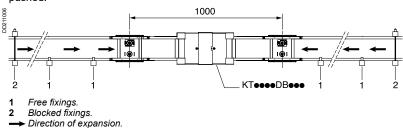
**Canalis KTC** 

### Rules for fixing busbar trunking to the supports

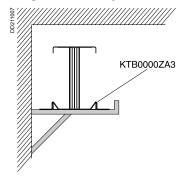
For correct system operation, the expansion of the part run in question must be directed towards the expansion section.

This implies:

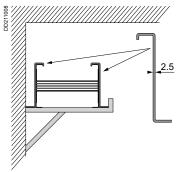
the busbar trunking must be free from all longitudinal movement on its supports
 the expansion section must be blocked on the opposite side to that by which it is pushed.



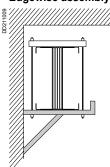
### Installation of free fixings Edgewise assembly



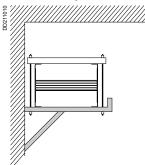
Flat assembly



Installation of blocked fixings Edgewise assembly

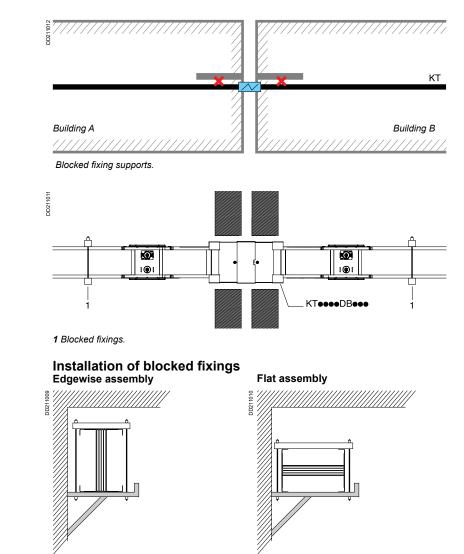


Flat assembly



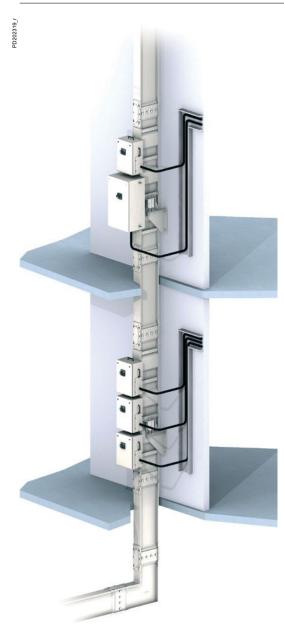
## Passing through a joint between 2 buildings

Here, the expansion section allows the busbar trunking to absorb the forces due to the relative movement between the 2 buildings.



### **Rising mains** General

### **Canalis KTC**



Canalis KT enables power distribution to each floor of multi-storey buildings (office buildings, hotels, hospitals, etc). In this application, Canalis KT retains all its construction principles:

Vertically mounted, the protection degree of the KT busbar trunking is IP55 as standard.

### Installing a rising main

### 1 Installation principle

- Installation at each floor of:
- a 2 metre distribution section.
- a made to measure transport section to go through the floor slab,
- a busbar trunking support,
- up to 3 x 160 A tap-off units or a 250 or 400 A tap-off unit and a 160 A tap-off unit.

#### 2 Installation feed

The installation feed is achieved using either a cable box or by direct connection to an electrical distribution switchboard.

#### 3 Busbar trunking supports

The supports fix the vertical run section to the building structure. a floor slab support. It can be fixed to either the wall, to a wall bracket or directly to the floor, This type of fixing support has the following advantages:

- fitting to either the wall, to a wall bracket or directly to the floor
- height adjustment to make up for positioning errors
- depth adjustment from 50 to 100 mm
- spring adjustment to ensure distribution of the load at each floor

■ absorption of building stresses with respect to the busbar trunking (expansion, vibration, etc) thanks to the springs.

### 4 Tap-off units

All Canalis KS tap-off units can be mounted vertically on the Canalis KT without the risk of interference with the supports.

### Positioning the neutral D210960 The busbar trunking must be positioned with the neutral on the right. Positioning the joint block It is important the joint block is not positioned in the floor slab. ≥ 200 We recommend you provide for a distance of: 400 mm between the floor slab and the joint block axis to be able to install a support to the wall or wall bracket to facilitate the re-filling of the hole and to cope with possible building faults (e.g. screed not indicated on the drawings). Provide 500 mm for a floor fixing. ■ 200 mm between the upper joint block and the ceiling to allow the busbar trunking to be boxed-in when filling-in the hole with plaster or concrete. DD210961 0 ≥ 400 000 ≥400 ≥ 200 0 <u>8</u> 500 Positioning the tap-offs The run sections are fitted with 3 tap-off points. Spaced at 500 mm intervals, they 500 provide a high density of tap-offs per floor. Edgewise passage through Flat passage through partition wall partition wall 800 240 mini DD210933 50 140 50 202 50 20 240 mini 4 ≥ 400 Т 5

3

2

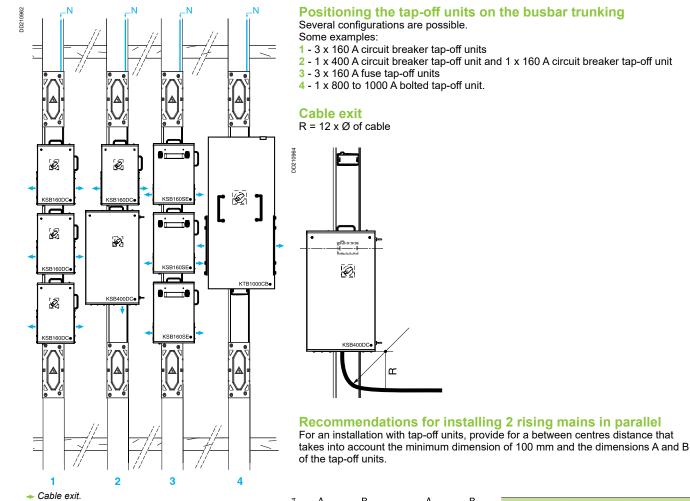
Rating (A)	1000	1350	1600	2000	2500	3200	4000	5000
Height H (mm)	74	104	124	164	204	244	324	404

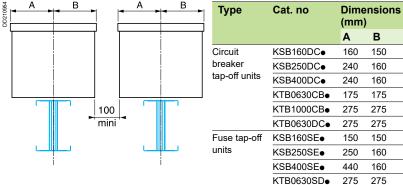
Positioning the busbar trunking without

external fire barrier

### **Rising mains** Positioning the tap-off units

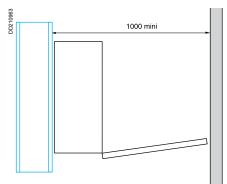
### **Canalis KTC**



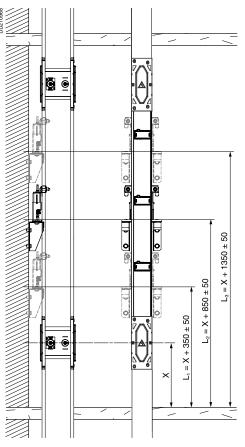


### Tap-off unit door opening

If installed in a technical room, provide for a minimum distance of 1000 mm between the busbar trunking and the wall in order to be able to open the doors of the tap-off units.



### Positioning of supports





Spring hangers vertical supports KTB ••••ZA5• are designed for buildings with an average gap between floors of 3 to 4 meters between each floor.

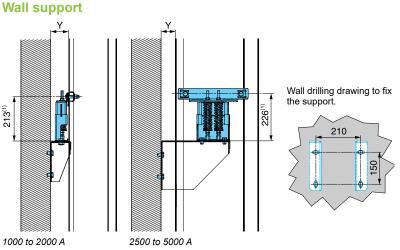
- If these distance is punctually reduced or increased (Max 5 meters with no more than 1 element without support in between) additional supports should then be added to fit a good column consistency. The average distance between supports should stay between 3 to 4 meters.

- Also, a distribution element with high rating tap offs (630 A and more) should have a spring hanger on its length.

D210967

9966 à

- 2 fixing systems are available: a rear wall fixing system for 800 A to 1600 A busbar trunking
- a side wall fixing system for 2000 A to 4000 A busbar trunking.



(1) Dimensions with free springs. Y : 50 mm minimum to 100

: 50 mm minimum to 100 mm maximum

### Wall bracket support (if Y > 100 mm)

3200

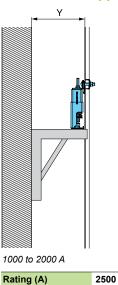
244

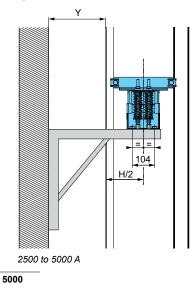
204

4000

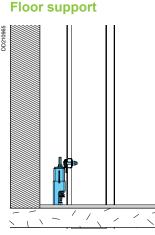
324

404





Height H (mm)



\_  $\mathbf{X}$ 

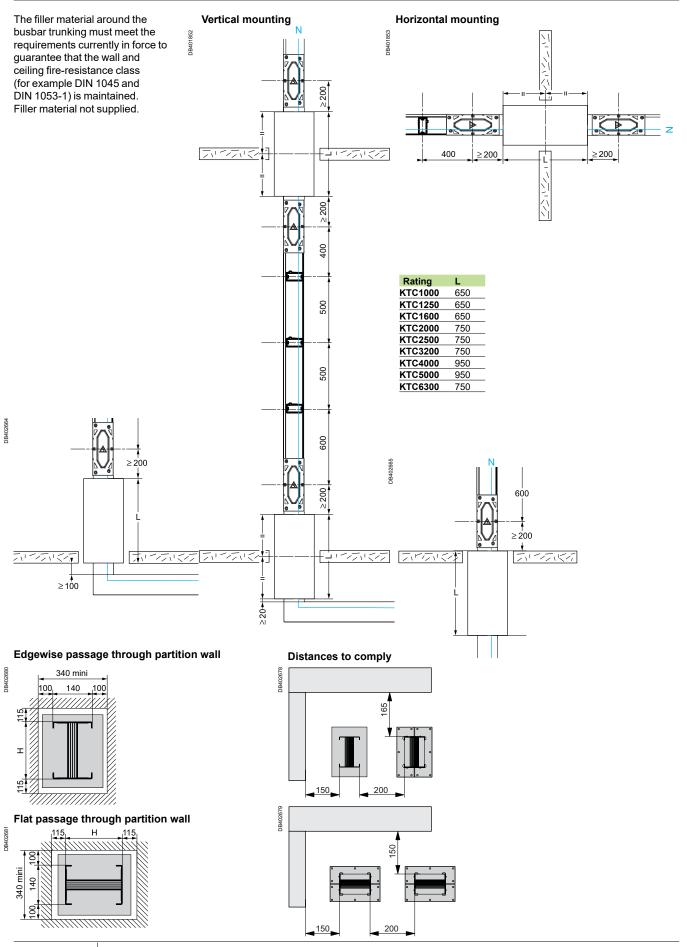
1000 to 2000 A

211

2500 to 5000 A

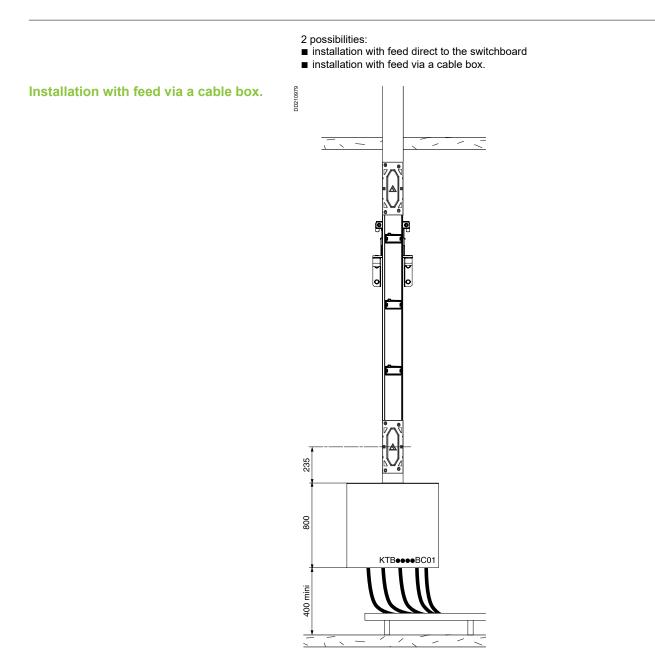
### **Rising mains** Positioning the external fire barriers

### **Canalis KTC**



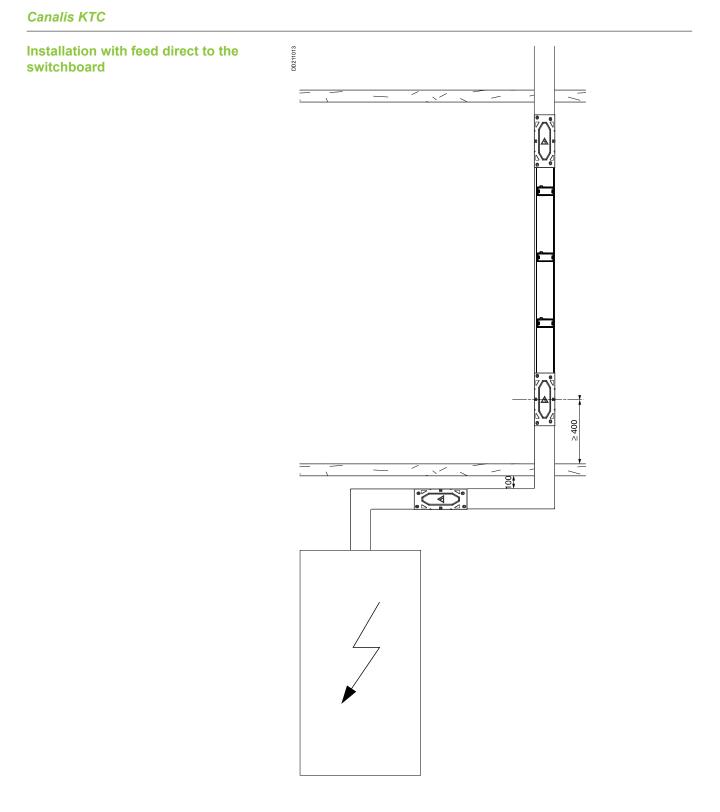
212 Life Is On Schneider

# Installation with feed via a cable box or direct onto the switchboard



### **Rising mains**

Installation with feed via a cable box or direct onto the switchboard



Life Is On Schneider 215

# **Panorama of** connection solutions

# **Canalis KTC**

The S	chneider E	lectric system	n									
	-	n Trihal transform	ners/Ca		omplete tra sing dedica ansformer tested and fast and fi shorter lea <b>dvantages</b> No design Simplified pre-define source pre-define source	ansformer/ ated interf and the sy d standarc lexible insti- ad times. s n work for layout de ed position routing (o ze (no add her and sw d times an e on the with er end: ± of service er can be er, trunkin ully tested ce with sta fire-withsta of electron	Canalis K aces, the f witchboard lised conne sign: of the conne sign: of the joir nly three c ditional cov vitchboard d fewer ca orksite: 15 mm adj nases can e: replaced i g and swit in complia ndards an and capab	ections ctions. hting unit dimensions vers requir supplied v talogue nu ustments : be inverte n less thar chboard d ance with I d installati ility. adiation ards <sup>(1)</sup>	oard instal onnects din red). with conne umbers for along all th d. n one hour esigned to EC 61439	llation. rectly to th ctions alre- connection nree axes	e dry-type eady mour ons.	
Trihal tra	Insformers				Prisma P	or Okken s	witchboar	ds				
Rating	Naturally ventilated	Forced ventilated (AF) dry-type				W circuit b			NS/NW ci	ircuit break	kers	NW circui breakers
		transformers,			800 A	1000 A	1250 A	1600 A	2000 A	2500 A	3200 A	4000 A
	transformers	25 % overload	la ta afa a			1000 A	1230 A	1000 A		2300 A		
	le max.	accepted le max.	Interfac		08/16				20/25		32	40
		-		Junctions					H244		H404	H404
630 kVA	887 A	1109 A	n°1	H124	KTC1350,	KTC1000, KTC1350, KTC1600	KTC1350,		-	-	-	-
800 kVA	1126 A	1408 A	n°2	H164	KTC1600, KTC2000	KTC1600, KTC2000	KTC1600, KTC2000	KTC2000		KTC2000		-
1000 kVA	1408 A	1760 A	n°3	H204		KTC1600, KTC2000		KTC1600, KTC2000	KTC2000, KTC2500		-	-
1250 kVA		2200 A	n°4	H244	-	-	-	-	KTC2500, KTC3200	KTC2000, KTC2500, KTC3200		-
1600 kVA	2253 A	2816 A	n°5	H324						KTC2500, KTC3200	KTC3200, KTC4000	
2000 kVA	2813 A	3516 A	n°6	H404	-	-	-	-	-	-	KTC4000,	KTC3200, KTC4000, KTC5000
0500 1.1/4	0500 A	4400 4	97	11404							KTC4000	1/10 4000

KTC4000, KTC4000, KTC5000 KTC5000 (1) The compatibilities indicated correspond to the electrical connection possibilities; in all cases, coordination between circuit breaker and electrical busbar trunking must be checked. Connection to an LV

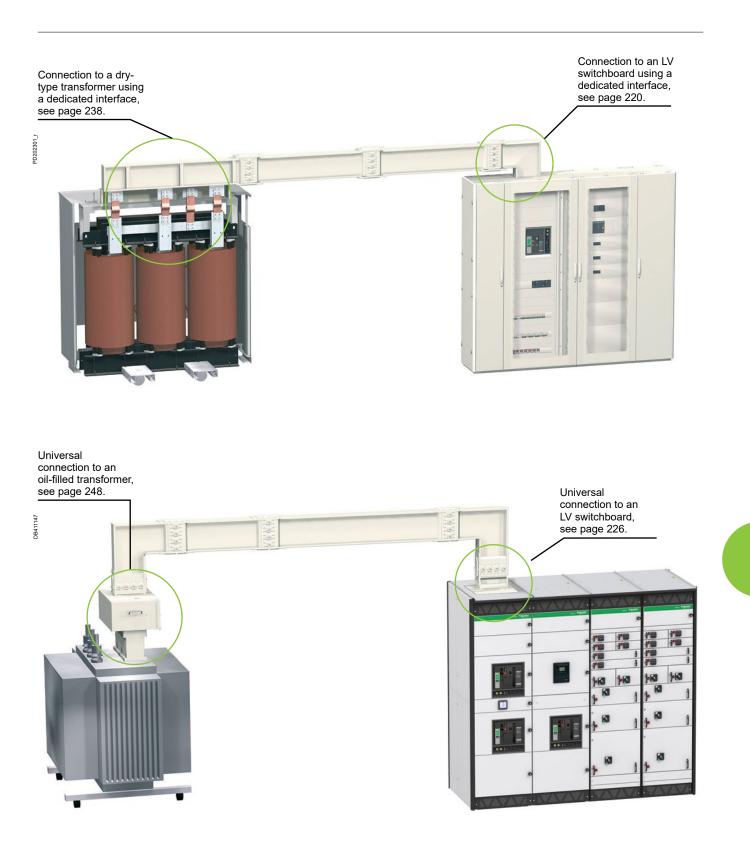
H404

n°7



2500 kVA 3520 A

4400 A

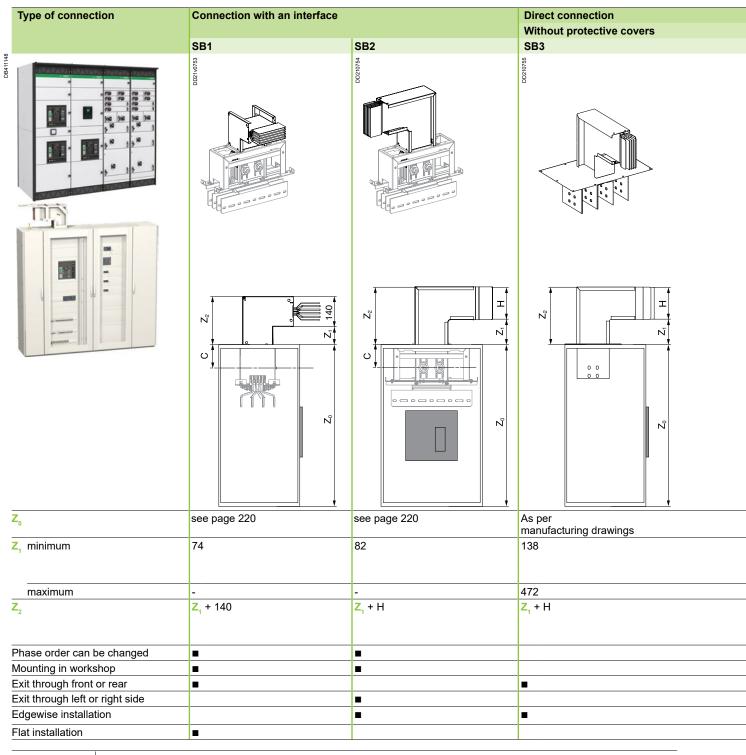


# **Connection to LV switchboards** Selection guide

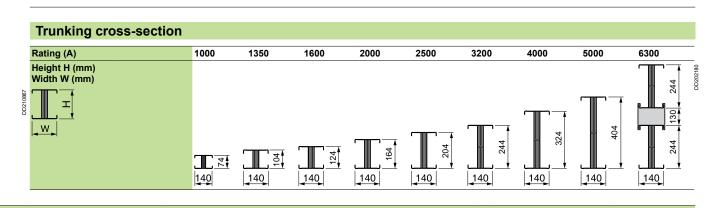
# **Canalis KTC**

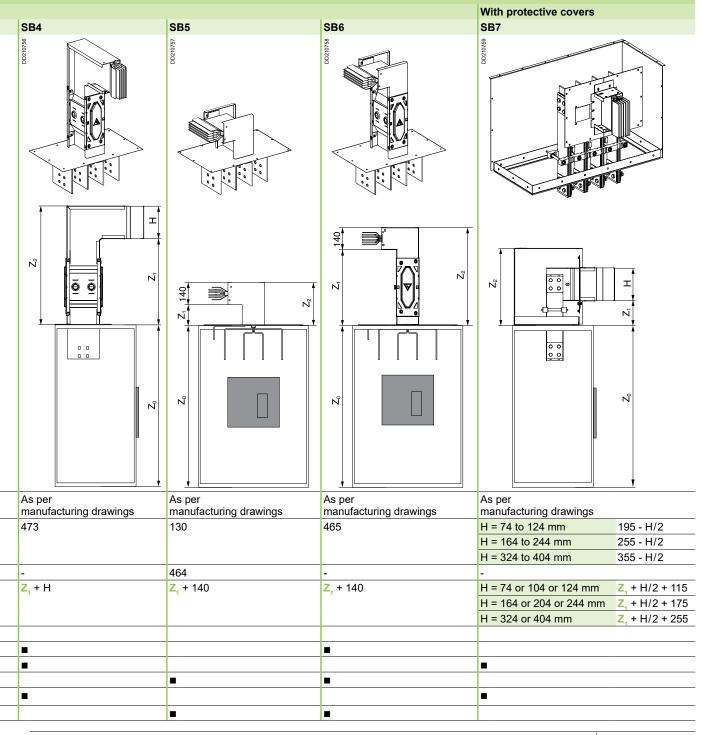
This guide may be used to:

- select the connection best suited to your installation (incoming direction, trunking installed flat or edgewise, different phase order)
- check the total height of the connection with respect to the ceiling, i.e. dimension Z0 + Z2 (100 mm minimum clearance required between top of
- connection and ceiling) ■ optimise the connection by ensuring that (Z0 + Z1)<sub>switchboard</sub> = (Z0 + Z1)<sub>transformer</sub> to
- avoid having to use elbows and zed units
- position the fixing devices used to support the trunking.



Schneider Electric 218 Life Is On





# **Connection to LV switchboards**

By Canalis interface

# **Canalis KTC**



Switchboards can be equipped with connections for Canalis KT. Jointing with the switchboard is via a standard run component (straight length, elbow, etc.) and a jointing unit (identical to those used between line components). The trunking enters the switchboard via the top (roof).

#### Switchboard connections are available from 800 to 4000 A.

Type of switchboard	Rating of trunking (A)	Type of circuit breaker	Type of connection
Prisma P	800 to 1600	Compact NS	Top direct and rear
		Masterpact NT	Top direct and rear
	800 to 3200	Masterpact NW	Top direct and rear
	4000	Masterpact NW	Rear
Okken	800 to 4000	Masterpact NW	Top direct and rear

# Connections are tested and qualified under normal operating conditions in terms of temperature rise ( $\Delta\theta)$ and short-circuit currents (Isc).

The panel builder receives and connects the Canalis KT interface in the workshop. The phase order at the interface output can be adapted if necessary (this information must be forwarded to the panel builder). The switchboard is then delivered to the site and the trunking can be rapidly

connected using a simple jointing unit with torque nuts to ensure the correct tightening torque.

#### Compatibility between Canalis KT and the interface in the switchboard <sup>(1)(2)</sup>

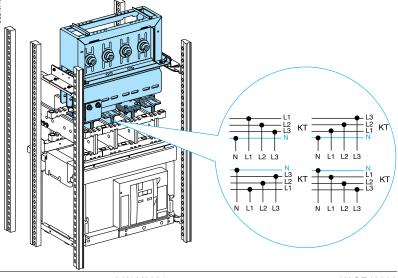
Canalis KT				Circuit breakers in Okken and Prisma P switchboards						
			NS/NT/NW			NS/NW			NW	
Cat. no.	Rating	Height	Sealing kit	800 and 1000 A	1250 A	1600 A	2000 A	2500 A	3200 A	4000 A
	(A)	(mm)		Interface 08/16		Interface 20/25		Interface 32	Interface 40	
				H164 <sup>(3)</sup>			H244 <sup>(3)</sup>		H404 <sup>(3)</sup>	H404 <sup>(3)</sup>
KTC1000	1000	74	KTB0074TT01							
KTC1350	1350	104	KTB0104TT01							
KTC1600	1600	124	KTB0124TT01							
KTC2000	2000	164	KTB0164TT01							
KTC2500	2500	204	KTB0204TT01							
KTC3200	3200	244	KTB0244TT01							
KTC4000	4000	324	KTB0324TT01							
KTC5000	5000	404	KTB0404TT01							

(1) The compatibilities indicated correspond to the electrical connection possibilities; in all cases, coordination between circuit breaker and electrical busbar trunking must be checked.
(2) Coordination with a dry-type transformer, see the "Transformer" section, see page 235.
(3) Height of the jointing unit in millimetres.

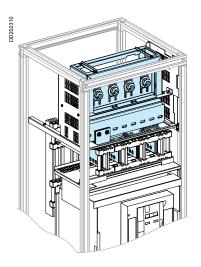
The prefabricated connections installed in the switchboard are designed to operate without derating and can therefore operate at the rated circuit-breaker current.

# Phase order

Using the dedicated interface, it is possible to change the phase order if it is different between the trunking and the switchboard.



# **Top direct connection (TDC)**

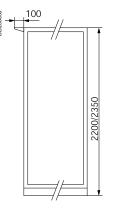


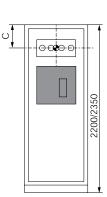
To 800 to 4000 A Masterpact NW circuit breakers ■ Enclosure 600 or 1000 mm deep, access through the front.

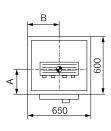
# Position of the jointing unit

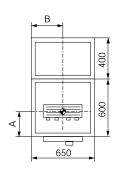
Circuit breaker	Dimensions (mm)			
		Α	В	С
Drawout, 3P/4P <sup>(1)</sup>	NW08/16	175	325	156
	NW20/25	175	325	156
	NW32	175	325	156
	NW40	175	325	156

(1) To order, see "Catalogue numbers", page 78.









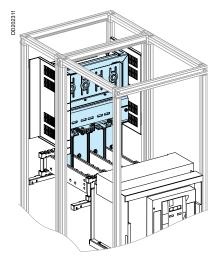
Reference point

# **Connection to LV switchboards**

By Canalis interface Connection to Okken switchboards

# **Canalis KTC**

# **Rear connection (RC)**

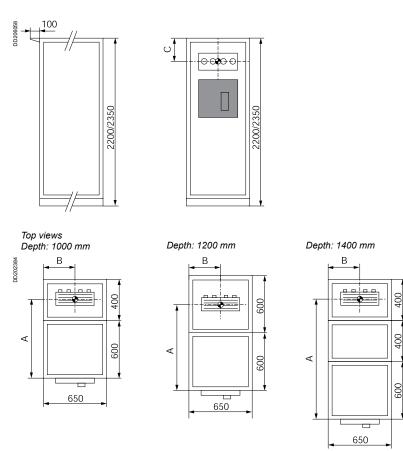


To 800 to 4000 A Masterpact NW circuit breakers ■ Enclosure 1000, 1200 or 1400 mm deep, access through the rear.

### Position of the jointing unit

Circuit breaker			isions (			
		Α	A Depth (mm) 1000 1200 1400		В	С
		Depth				
		1000				
Drawout, 3P/4P <sup>(1)</sup> ,	NW08/16	825	-	-	363	317
top position	NW20/25	825	-	-	363	317
	NW32	825	-	-	363	317
	NW40	-	953	-	363	156
Drawout, 3P/4P <sup>(1)</sup> ,	NW08/16	825		-	363	942
medium position	NW20/25	825		-	363	942
	NW32	825		-	363	942
	NW40	-	953	-	363	881
Drawout, 3P/4P <sup>(1)</sup> ,	NW08/16	-	-	1225	363	1417
bottom position	NW20/25	-	-	1225	363	1417
	NW32	-	-	1225	363	1417

(1) To order, see "Catalogue numbers", page 78.

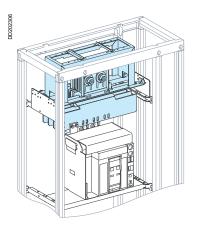


#### Reference point

# **Bottom connection**

For installations with connections through the bottom, please consult us.

# **Top direct connection (TDC)**



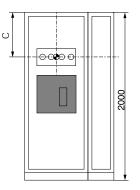
# To a Compact NS1250 or Masterpact NT1200 circuit breaker ■ Enclosure 400 mm deep, access through the front.

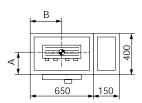
#### Position of the jointing unit

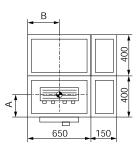
Circuit breaker		Dimensions <sup>(1)</sup> (mm)			
		Α	В	С	
Fixed, 3P/4P <sup>(2)</sup>	NS800/1250	236	325	160	
	NT08/12	260	325	160	
Drawout, 3P/4P (2)	NS800/1250	260	325	170	
	or 08/NT12				

(1) Dimensions measured from switchboard framework.

(2) To order, see "Catalogue numbers", page 76.







Reference point

DD210765

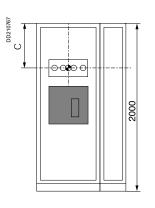
To 800 to 3200 A Masterpact NW circuit breakers ■ Enclosure 600 mm deep, access through the front.

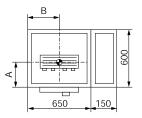
#### Position of the jointing unit

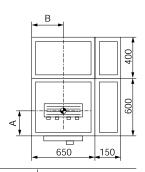
Circuit breaker	Dimensions <sup>(1)</sup> (mm)			
		Α	В	С
Fixed, 3P/4P <sup>(2)</sup>	NW08/16	185	325	264
	NW20/25	185	325	289
	NW32	185	325	264
Drawout, 3P/4P <sup>(2)</sup>	NW08/16	185	344	164
	NW20/25	185	344	214
	NW32	185	344	214

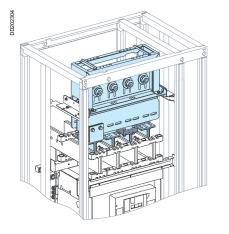
(1) Dimensions measured from switchboard framework.

(2) To order, see "Catalogue numbers", page 75.









Version: 3.5

04/10/2021

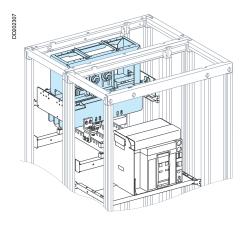
# **Connection to LV switchboards**

# By Canalis interface Connection to Prisma P switchboards

# **Canalis KTC**

DD202305

# **Rear connection (RC)**



### To a Compact NS1600 or Masterpact NT1600 circuit breaker

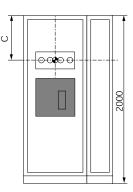
- Two enclosures combined:
- $\hfill\square$  1 enclosure, 400 mm deep, for the circuit breaker
- □ 1 enclosure, 400 mm deep, for the Canalis KT/switchboard interface.

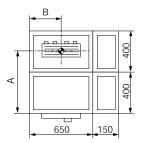
#### Position of the jointing unit

Circuit breaker			Dimensions <sup>(1)</sup> (mm)			
		Α	В	С		
Fixed, 3P/4P <sup>(2)</sup>	NS800/1600 or NT08/16	638	325	160		
Drawout, 3P/4P <sup>(2)</sup>	NS800/1600 or NT08/16	638	325	170		

(1) Dimensions measured from switchboard framework.

(2) To order, see "Catalogue numbers", page 76.





Reference point

DD210769

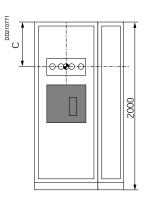
#### To 800 to 4000 A Masterpact NW circuit breakers

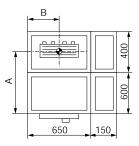
- Two enclosures combined:
- □ 1 enclosure, 600 mm deep, for the circuit breaker
- □ 1 enclosure, 400 mm deep, for the Canalis KT/switchboard interface.

#### Position of the jointing unit

Disjoncteur			Dimensions <sup>(1)</sup> (en mm)			
		Α	В	С		
Fixed, 3P/4P (2)	NW08/16	815	325	264		
	NW20/25	757	325	414		
	NW32	774	325	414		
	NW40	790	325	414		
Drawout, 3P/4P <sup>(2)</sup>	NW08/16	815	317	414		
	NW20/25	815	342	414		
	NW32	815	317	439		
	NW40	790	325	414		

(1) Dimensions measured from switchboard framework.
 (2) To order, see "Catalogue numbers", page 75.



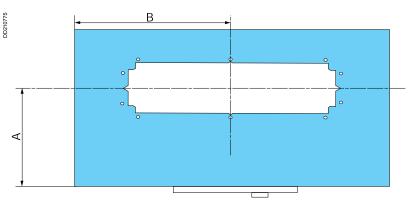


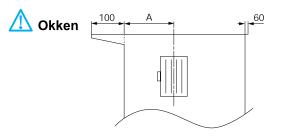
• Reference point

# By Canalis interface Connection to Okken and Prisma P switchboards

The sealing kit must be ordered with the KT trunking. The size of the trunking determines that of the sealing kit. For the different types of kit, see the "Catalogue numbers and dimensions" pages.

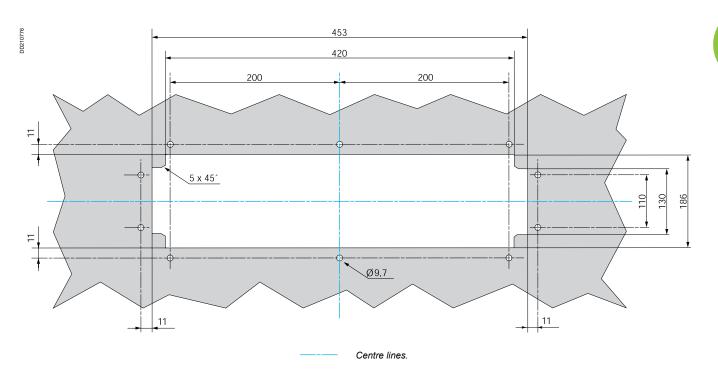
The kit includes a drilling and cut-out drawing for the switchboard roof.



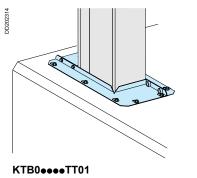


**Cut-out drawing (for all the ratings)** 

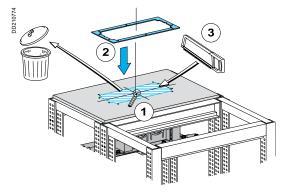
It is advised to cut out the switchboard roof in the workshop. *Important*: the dimensions are measured from switchboard framework.



# Sealing kit







# **Connection to LV switchboards**

By universal feed unit

# **Canalis KTC**



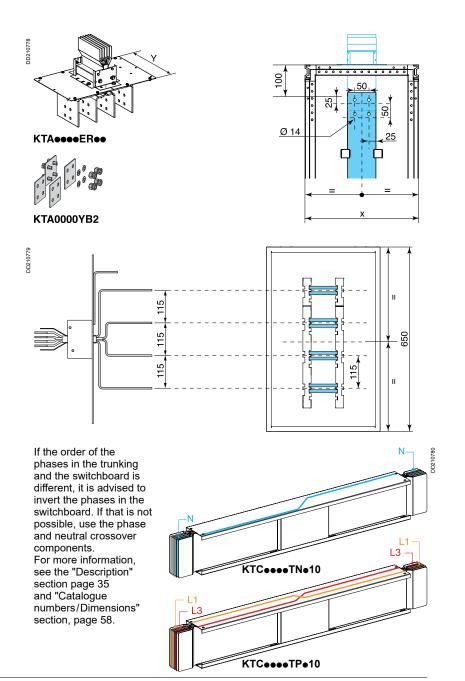
Busbars in switchboard (recommended distance between centres = 115 mm) Canalis KT can be connected to switchboards via a universal connector. To simplify the work, it is advised to fit the switchboard busbars with a distance between centres of 115 mm.

Jointing with the switchboard is via a straight or elbow universal feed unit with a straight or flat outlet.

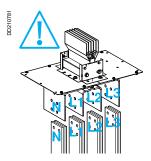
Connections are made using torque nuts offering both ease of use and the possibility of a visual check before energising.

# Enclosure depth depending on the rating of the trunking

Rating of trunking (A)	Depth "Y" of flange feed unit plate (mm)	Minimum depth "X" of switchboard (mm)
1000 to 1600	230	400
2000 to 3200	350	400
4000 and 5000	510	600



**Phase order** 

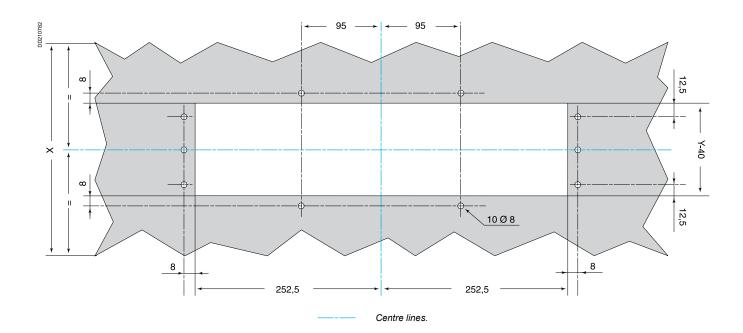


04/10/2021

# Cut-out drawing

It is advised to cut out the switchboard roof in the workshop.

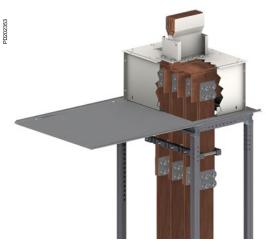
Cut-out for universal feeder unit, with distance between centres = 115 mm						
Rating of trunking (A) Depth "Y" of flange feed unit plate (mm)						
1000 to 1600	230					
2000 to 3200	350					
4000 and 5000	510					



# **Connection to LV switchboards**

By feed and connection plates

# **Canalis KTC**



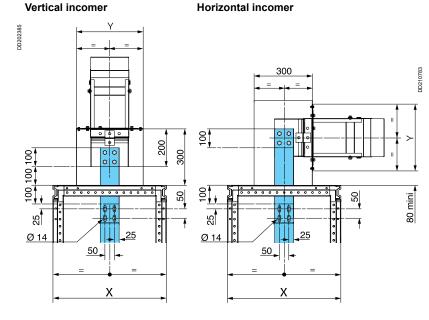
Universal feed unit (recommended distance between centres = 115 mm)

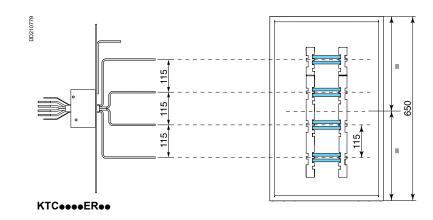
Connection plates are flexible copper bars, insulated or not, and drilled at one or both ends. They are supplied with bolts, washers and torque nuts for connection to straight or elbow universal feed units.

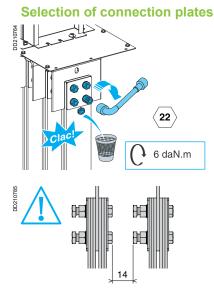
To simplify the work, it is advised to universal feed units with a distance between centres of 115 mm.

#### Enclosure depth depending on the rating of the trunking

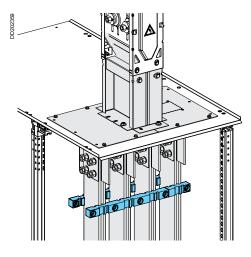
Rating of trunking (A)	Depth "Y" of flange feed unit plate (mm)	Minimum depth "X" of switchboard (mm)
1000 to 1600	230	400
2000 to 3200	350	400
4000 and 5000	510	600



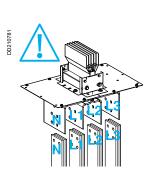


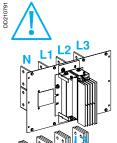


# Short-circuit withstand



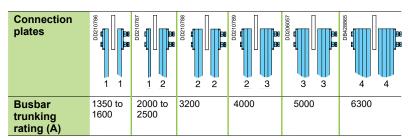
# **Phase order**





The required number of connection plates is indicated in the table below.

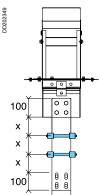
Busbar trunking rating	Bare copper connection plates per phase				
(A)	Number	Section (mm <sup>2</sup> )			
1350	2 (100 x 5)	1000			
1600	2 (100 x 5)	1000			
2000	3 (100 x 5)	1500			
2500	3 (100 x 5)	1500			
3200	4 (100 x 5)	2000			
4000	5 (100 x 5)	2500			
5000	6 (100 x 5)	3000			
6300	8 (120 x 5)	4800			



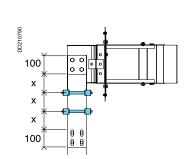
#### Short-circuit withstand table

Short-time withstand current (Icw)	Maximum distance between support centres X (mm)
≤ 43 kA	400
43 kA ≤ lcw ≤ 50 kA	225
50 kA ≤ Icw ≤ 100 kA	150

#### Vertical incomer

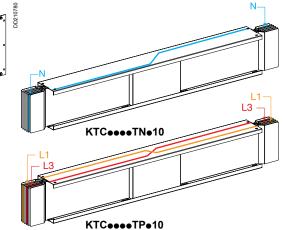


#### Horizontal incomer



If the order of the phases in the trunking and the switchboard is different, it is advised to invert the phases in the switchboard. If that is not possible, use the phase and neutral crossover components. For more information, see the "Descsription" section page 35 and "Catalogue

numbers/Dimensions" section, page 58.

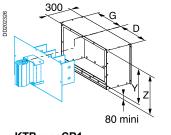


# **Connection to LV switchboards**

By feed and connection plates

# **Canalis KTC**

# **Dimensions of protective covers**



KTBeeeCR1

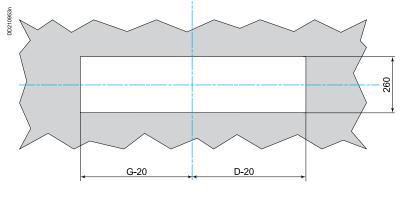
# Horizontal incomer

Rigid horizontal cover KTB  $\bullet\bullet\bullet\bullet$  CR1 for ER straight outlet feed connectors type N1 to N6

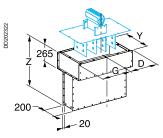
Rating (A)	Dimensio	Dimensions (mm)						
	Y	D	G	Z				
1000 to 1600	230	220 to 475	220 to 475	310 to 800				
2000 to 3200	350	220 to 475	220 to 475	430 to 800				
4000 and 5000	510	220 to 475	220 to 475	590 to 800				

Cut-out drawing

It is advised to cut out the switchboard roof in the workshop.



- Centre lines.



KTBeeeCR2

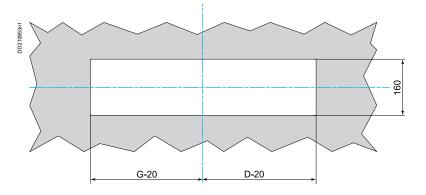
# **Cut-out drawing**

# Vertical incomer

Rigid vertical cover KTBeeeeCR2 (400 to 800 mm height) for ER straight outlet feed connectors type N1 to N6

Rating (A)	Dimensio	Dimensions (mm)							
	Y	D	G	Z					
1000 to 1600	230	220 to 475	220 to 475	400 to 800					
2000 to 3200	350	220 to 475	220 to 475	400 to 800					
4000 and 5000	510	220 to 475	220 to 475	400 to 800					

#### It is advised to cut out the switchboard roof in the workshop.

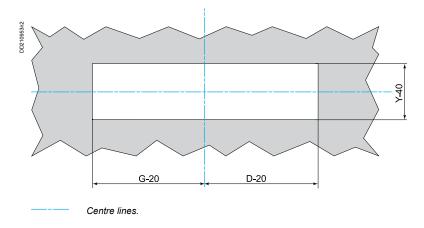


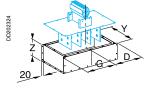
Centre lines.

# Rigid vertical cover KTBeeeeCR3 (100 to 400 mm height) for ER straight outlet feed connectors type N1 to N6

Rating (A)	Dimensi	Dimensions (mm)						
	Y	D	G	Z				
1000 to 1600	230	220 to 475	220 to 475	400 to 800				
2000 to 3200	350	220 to 475	220 to 475	400 to 800				
4000 and 5000	510	220 to 475	220 to 475	400 to 800				

# It is advised to cut out the switchboard roof in the workshop.





KTBeeeCR3

# **Cut-out drawing**

# **Canalis KTC**

**Connection to cast resin** transformers Selection guide

This guide will allow you to:

■ choose the connection best suited to your layout (incoming direction, flat or edgewise busbar trunking, possibility of adjusting phase order)

• check the total height of the link with respect to the premises' ceiling height, dimension Z0 + Z2 (plan for 100 mm minimum between the upper point of the link

- and the ceiling) • optimise your link whilst respecting the following rule:
- $(Z_0 + Z_1)_{switchboard} = (Z_0 + Z_1)_{transformer}$  to avoid multiple elbows to change levels  $\blacksquare$  position the sections for the busbar trunking supports.

	Type of connection	Connection with interface to		Universal connection
		TS1	TS2	TS3
PD202399_				
	Z <sub>o</sub>	See page 235	See page 235	According to manufacturer's drawing
	Z <sub>1</sub> minimum	230	238	350
	maximum	-	-	350
1	Z <sub>2</sub>	Z <sub>1</sub> + 140	Z, + H	Z <sub>1</sub> + H
	Selecting phase order	Fixed	Fixed	At time of order
Ì	Front or rear exit			
Ī	Right or left exit			
	Edgewise layout			
	Flat layout			
-				

(1) To use standard connection plates L = 406 mm in accordance with our recommendations.

Trunking cross-section									
Rating (A)	1000	1350	1600	2000	2500	3200	4000	5000	6300
Height H (mm) Width W (mm)	72 140							40 <sup>0</sup>	244 140 140

TS4	TS5	TS6	TS7	TS8
		385 + H 235 + H 235 + H 235 + H 150 00 10 10 10 10 10 10 10 10 1		
According to manufacturer's drawing	According to	According to manufacturer's drawing	According to	According to manufacturer's drawing
280	manufacturer's drawing 350	280	manufacturer's drawing 350	-
280 (1)	350 <sup>(1)</sup>	280 (1)	350 <sup>(1)</sup>	-
420 (1)	Z, + H	420 (1)	$H = 74 \text{ or } 104 \text{ or } Z_1 + H/2$ $124 \text{ mm} + 115$ $H = 164 \text{ or } 204$ $r + H/2$ $r + H/2$ $r + 175$ $H = 324 \text{ or}$ $Z_1 + H/2$ $404 \text{ mm}$ $+ 255$	500 (1)
At time of order	At time of order	At time of order	At time of order	At time of order
		-		
			•	
		l	[=	l

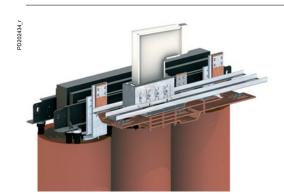
# **Connection to Trihal Dry type transformers**

Selection guide

Canalis KTC 6300

KTC Trihal Dry type Tra	(TC Trihal Dry type Transfomer connection								
Box		Flexible links reference and quantity	Connection plates reference and quantity	Bolts sets reference and quantity					
Decasor		DB429825							
Catalogue number	Polarity	KTB0100YC50510B	KTB0000YP24	KTB0000YB4					
KTB0001CR5	3P	36	3	6					
	4P	48	4	8					

# **Connection to Trihal cast resin transformers** By Canalis interface



The Trihal dry-type transformers are supplied with a specific interface tested to receive the Canalis KT busbar trunking. Jointing with the switchboard is achieved using a standard run section (straight, elbow section, etc) and a joint block identical to that for connecting run elements.

The Canalis KT/dry type transformer interface, which is fitted to the transformer, is designed to accept the transformer's 25 % overload in the case of forced ventilation.

The connections are tested and qualified in normal operating conditions with respect to temperature rise ( $\Delta\theta$ ) and short-circuits (Isc).

The busbar trunking is quickly connected to the dry-type transformer using a simple joint block with torque nuts, guaranteeing tightening torque.

# Table of compatibility between Canalis KT and the connection interface for naturally ventilated (AN) dry-type transformers.

Dry-typ	e transforme	er	Canalis KTC			
Rating I nominal (1)		Interfa	ace			
(kVA)	(A)	Туре	Junction	Rating (A)	Cross-section	Туре
630	887	1	H124	1600	140 x 74	KTC1000
800	1126	2	H164	2000	140 x 104	KTC1350
1000	1408	3	H204	2500	140 x 124	KTC1600
1250	1760	4	H244	3200	140 x 164	KTC2000
1600	2253	5	H324	4000	140 x 204	KTC2500
2000	2816	6	H404	5000	140 x 244	KTC3200
2500	3520	7	H404	5000	140 x 324	KTC4000

(1) I is given as an indication only and is calculated with U - 410 V.

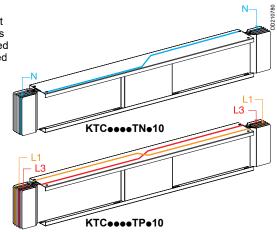
# Table of compatibility between Canalis KT and the connection interface for forced ventilated (AF) dry-type transformers.

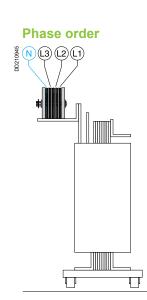
Dry-typ	e transforme	er	Canalis KTC			
Rating I nominal (1)		Interfa	ice			
(kVA)	(A)	Туре	Junction	Rating (A)	Cross-section	Туре
630	1108	1	H124	1600	140 x 104	KTC1350
800	1407	2	H164	2000	140 x 124	KTC1600
1000	1760	3	H204	2500	140 x 164	KTC2000
1250	2253	4	H244	3200	140 x 204	KTC2500
1600	2816	5	H324	4000	140 x 244	KTC3200
2000	3520	6	H404	5000	140 x 324	KTC4000

(1) I is given as an indication only and is calculated with U - 410 V.

If, for reasons of busbar trunking operating conditions or performance requirements, you have to use a rating other than those defined in the above tables, consult us.

If the phase order of the busbar trunking is different to that of the switchboard's busbars, it is recommended a phase inversion is carried out in the switchboard. If this cannot be done, use the phase and neutral transposition section. For more information on transposition sections, see "Description" page 35 and "Catalogue numbers/Dimensions" section, page 58.

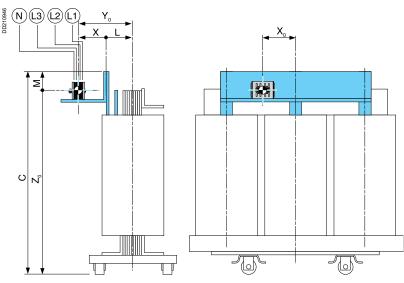




**Canalis KTC** 

# **Connection to Trihal cast resin transformers**

By Canalis interface



Reference point

#### Dimensions X, M and X<sub>0</sub>

Dimensions	Trans	Transformer power (kVA)							
(mm)	630	800	1000	1250	1600	2000	2500		
х	147	150	170	147	150	170	153		
Μ	100	100	108	93	124	144	149		
X <sub>0</sub>	233	215	265	245	300	300	322.5		
Interface type	1	2	3	4	5	6	7		

#### Dimensions Y<sub>o</sub> and Z<sub>o</sub>

 $Y_0 = X + L$  $Z_0 = C - M$ 

Dimensions C and L are different according to country standards.

#### French standard

FT no.235627 rev. 3 - Primary voltage: 20 kV - Insulation voltage: 24 kV -Secondary voltage: 410 V

Dimensions	Transformer power (kVA)								
(mm)	630	800	1000	1250	1600	2000	2500		
С	1614	1744	1749	1929	2089	2209	2297		
L	220	225	240	240	240	257	275		

#### German standard

FT no.235763 rev. 0 - Primary voltage: 20 kV - Insulation voltage: 24 kV - Secondary voltage: 400 V

Dimensions	Transf	Transformer power (kVA)								
(mm)	630	800	1000	1250	1600	2000	2500			
С	1734	1744	1749	2019	1979	2199	2279			
L	210	220	225	245	255	255	265			

#### Spanish standard

FT no.235515 rev. 3 - Primary voltage: 20 kV - Insulation voltage: 24 kV -Secondary voltage: 420 V

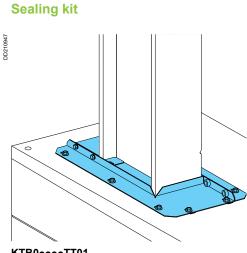
Dimensions	Transfo	Transformer power (kVA)								
(mm)	630	800	1000	1250	1600	2000				
С	1614	1744	1879	1929	1979	2194				
L	220	225	215	245	250	245				

#### Belgian standard

FT no.235820 rev. 0 - Primary voltage: 15 kV - Insulation voltage: 17.5 kV - Secondary voltage: 400 V

Dimensions (mm)	Transformer power (kVA)								
	630	800	1000	1250	1600	2000	2500		
С	1484	1564	1694	1844	2054	2149	2164		
L	215	210	215	225	230	255	235		

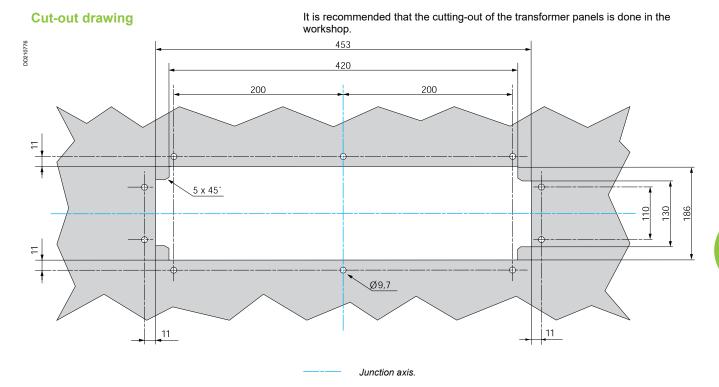
# Dimensions



The sealing kit must be ordered with the KT busbar trunking. The busbar trunking size defines the sealing kit size. For the different types of kit, see "Catalogue numbers/Dimensions".

The kit includes a drilling and cut-out template for the dry-type transformer panels.

KTB0



# **Connection to cast resin** transformers

By universal feed and connection plates

Canalis KT can be connected to cast resin transformers using a universal feed. The connection is made using a flexible busbar (connection plates or braids) to avoid transmitting vibrations and expansions. The connection plates are made up of either insulated or non-insulated flexible copper bars, drilled at one or both ends. A nut and bolt kit allows connection to the feed.

The connections use torque-head bolts which provide both ease of installation and visual inspection of correct tightening before energising.

If the transformer is supplied with panels, provide for an additional cover to maintain the protection degree.

# Choice of Canalis KT busbar trunking rating according to transformer power.

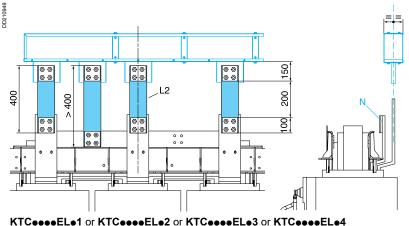
Transformer		KIC rating at nominal
Power (kVA)	I nominal <sup>(1)</sup> (A)	power <sup>(2)</sup> (A)
630	887	1000
800	1126	1350
1000	1408	1600
1250	1760	2000
1600	2253	2500
2000	2816	3200
2500	3520	4000
3150	4435	5000

(1) I is given as an indication only and is calculated with U = 410 V and at transformer nominal setting, without forced ventilation.

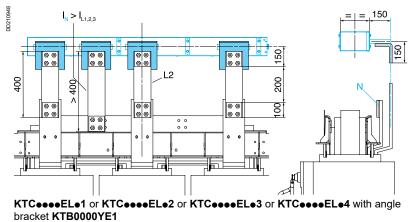
(2) The busbar trunking rating is defined for normal operating conditions.

**Recommended configurations for short-**

### TS3 and TS5 universal connection, edgewise mounting



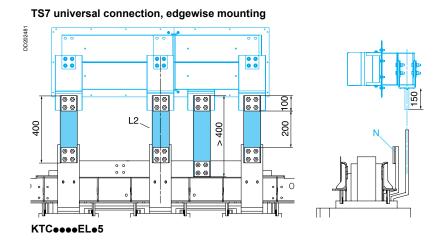
# TS4 and TS6 universal connection, flat mounting (using angle brackets)



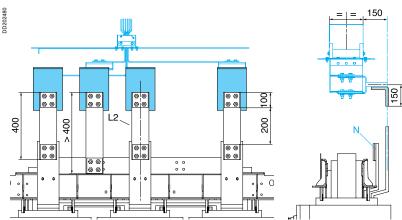
# **Canalis KTC**

D202352





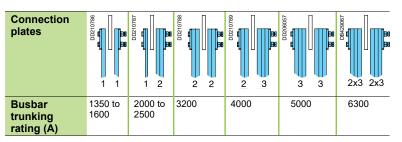
TS7 universal connection, flat mounting (using angle brackets)

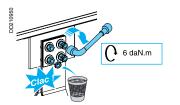


KTC••••EL•5 with angle bracket KTB0000YE

# The required number of connection plates is indicated in the table below.

Busbar trunking rating	Bare copper connec	ction plates per phase
(A)	Number	Section (mm <sup>2</sup> )
1350	2 (100 x 5)	1000
1600	2 (100 x 5)	1000
2000	3 (100 x 5)	1500
2500	3 (100 x 5)	1500
3200	4 (100 x 5)	2000
4000	5 (100 x 5)	2500
5000	6 (100 x 5)	3000
6300	12 (YC5 - 100 x 5)	6000





**Definition of connection plates** 

# Connection to cast resin transformers

By universal feed and connection plates

# **Canalis KTC**

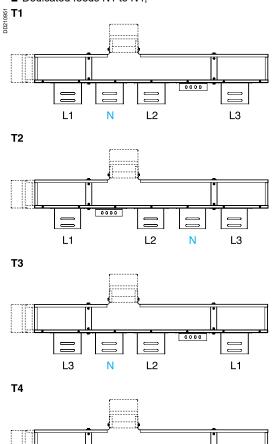
# Phase order

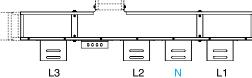
# Phase selection is made when the feed is ordered.

Phase L2 is fixed and can therefore be used as a reference for installing the feed on the transformer.

#### The different phase selection possibilities (T)

# Dedicated feeds N1 to N4,



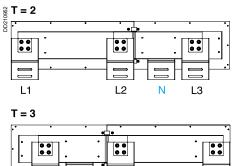


**Important:** the drawings and references above correspond to a phase order of N321, joint block side. If the phase order on the joint block side is N123, inverse T=1 with T=3 and T=2 with T=4.

Feed with flat bars N5.

L3

N



L2

**Important:** the drawings and references above correspond to a phase order of N321, joint block side. If the phase order on the joint block side is N123, inverse L1 and L3 on the transformer side marking.

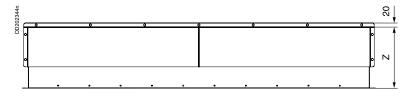
L1

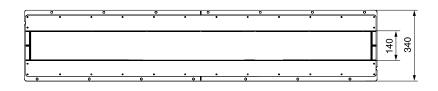
# **Dimensions of protective covers**

# Vertical protection covers for dry-type transformer feeds N1, N2, N3 and N4 $\,$

Rating (A)	Dimension	is (mm)		
	Y	Z		
		Minimum	Maximum	
1000 to 1600	230	200	350	
2000 to 3200	350	200	350	
4000 to 5000	510	200	350	

# KTB0000CR4

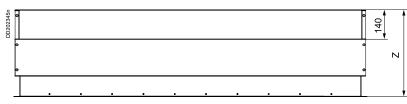


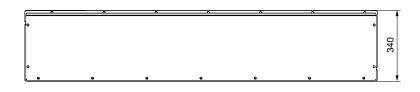


# Horizontal protection covers for dry-type transformer feeds N1, N2, N3 and N4 $\,$

Rating (A)	Dimensions	s (mm)		
	Y	Z		
		Minimum	Maximum	
1000 to 1600	230	330	480	
2000 to 3200	350	330	480	
4000 to 5000	510	330	480	

# KTB0000CR5





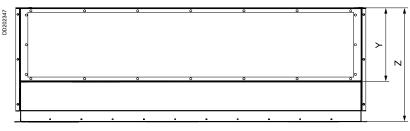
# **Connection to cast resin** transformers

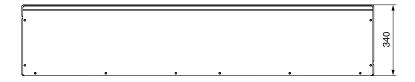
By universal feed and connection plates

# Horizontal protection cover for dry-type transformer feed N5

Rating (A)	Dimensior	ns (mm)		
	Y	Z		
		Minimum	Maximum	
1000 to 1600	230	380	530	
2000 to 3200	350	500	650	
4000 to 5000	510	660	810	

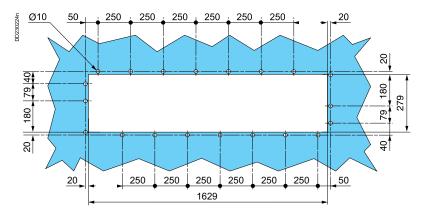
### KTBeeeCR6





# Cut-out drawing for dry-type transformer panels

It is recommended that the cutting-out of the transformer panels is done in the workshop.

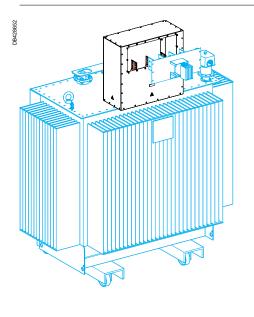


View from the top of the transformer.

# **Canalis KTC**

Life Is On Schneider 243

# **Canalis KTC**



# **Connection to Minera** transformers by standard interface

# Horizontal incomer

Canalis KT is easily connectable to Minera transformers.

A pre-designed interface including cover, flexible links and bolts is installed in place of the cable box delivered (or not) with the transformer.

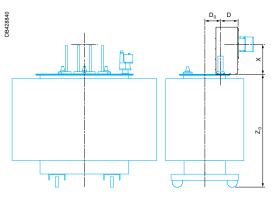
This solution that connects end feed units ER1 to ER6, make the design simple and fast.

- Position of the flange is given by the table 1.
- Products that compose the interface are given in the table 2.

The dimensions D and X are given by the Table 1.

 $D_0$  and  $Z_0$  must be taken from the transformer documentation.

The interface is always centered in the middle of the transformer indifferently for the 3P or 4P versions.



# **KTC Minera interfaces composition - horizontal incomer**

	Protective covers			Flexible	Flexible links reference and quantity						
	DB428401			De Cart							
Туре	Catalogue number	D (mm)	X (mm)	Polarity	KTB0100YC3058 (dimensions in m	nm)					
					A = 32 B = 60 C = 34	L = 320 A = 32 B = 30 C = 34 D = 32 E = 2 F = 2 F = 2 Y = 25	L = 350 A = 32 B = 31 C = 15 D = 32 E = 2 F = 2 F = 2 Y = 25	L = 350 A = 32 B = 31 C = 53 D = 32 E = 2 F = 2 Y = 25			
КТС Н2	KTB0230CR71	150	320	3P 4P	6 8						
КТС НЗ	KTB0350CR72	150	350	3P 4P		9 12					
KTC H4	KTB0350CR73	150	400	3P 4P			6 7	3 5			
KTC H5	KTB0350CR73	150	400	3P 4P			6 8	6 8			
KTC H6	KTB0350CR74	180	400	3P 4P							
КТС Н7	KTB0510CR72	180	470	3P 4P							
KTC H8	KTB0510CR73	180	510	3P 4P							
KTC H9	KTB0510CR73	180	510	3P 4P							
KTC H10	KTB0726CR71	180	469	3P 4P							

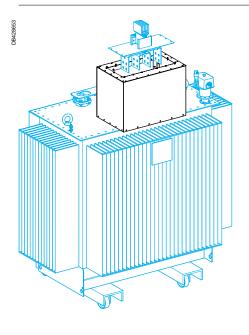
Interface details, see page 90

Minera t	transform	er	Canalis K	Canalis KT feed unit ER1, ER2, ER3, ER4, ER5, ER6							
Rating (kVA)	l nominal (A)	Bar bushing dimensions (mm)	Between centres J, K and M (mm)	KTC1350	KTC1600	KTC2000	KTC2500	KTC3200	KTC4000	KTC5000	KTC6300
630	887	$\frac{63}{215}$ $\frac{31.5}{15}$	150	Type KTC H2							
800	1126			Type KTC H2	Type KTC H2						
1000	1408	87 31.5 31.5 31.5 31.5 011 014.5 0100000000000000000000000000000000000			Type KTC H2	Туре КТС НЗ					
1250	1760	N 31.5 31.5 12	170			Type KTC H4	Type KTC H4				
1600	2253						Туре КТС Н4	Type KTC H5			
2000	2816							Туре КТС Н6	Туре КТС Н7		
2500	3520								Type KTC H8	Type KTC H9	
3150	4435									Туре КТС Н9	Type KTC H1

						Bolts sets refe	ntity	Connection plates	
						Bages			
KTB0120Y (dimension						KTB0000YB3	KTB0000YB4	KTB0000YB5	KTB0000YP21
L = $350$ A = $50$ B = $24$ C = $20$ D = $50$ E = $2$ F = $2$ F = $2$ Y = $50$	L = 350  A = 50  B = 24  C = 50  D = 50  E = 2  F = 2  Y = 20	L = 370 A = 50 B = 24 C = 20 D = 50 E = 2 F = 2 Y = 50	L = 370 A = 50 B = 24 C = 50 D = 50 E = 2 F = 2 Y = 20	L = 400 A = 50 B = 41 C = 20 D = 50 E = 2 F = 2 Y = 50	L = 400 A = 50 B = 41 C = 50 D = 50 E = 2 F = 2 Y = 20				
						1		1	
						1		1	
						1		1	
						1		1	
						1		1	
						1		1	
						1		1	
						1		1	
6	6					2			
8	8					2			
		6	9				2		
		8	12				2		
				6	9		2		
				8	12		2		
				9	9		2		
				12	12		2		
12	12						1		3
16	16						1		4

Set of bolts details, see page 105

Canalis KTC



# **Connection to Minera immersed** transformers by standard interface

# Vertical incomer

Canalis KT is easily connectable to Minera transformers.

A pre-designed interface including cover, flexible links and bolts is installed in place of the cable box delivered (or not) with the transformer.

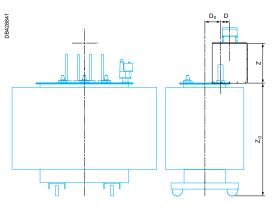
This solution that connects end feed units ER1 to ER6, make the design simple and fast.

- Position of the flange is given by the table 1
- Products that compose the interface are given in the table 2.

The dimensions D and Z are given by the Table 1.

 $\boldsymbol{D}_{_0}$  and  $\boldsymbol{Z}_{_0}$  must be taken from the transformer documentation.

The interface is always centered in the middle of the transformer indifferently for the 3P or 4P versions.



# **KTC Minera interfaces composition - vertical incomer**

	Protective covers			Flexible	links refe	erence a	nd quan	tity					
	Sales of the second sec												
Type Catalogue number D (mm) Z (mm)			Polarity						KTB0120YC305B				
					L = 320	L = 320 A = 32 B = 50 C = 53 D = 32 E = 2 F = 2 Y = 19	1		L = 320 A = 32 B = 60 C = 53 D = 32 E = 2 F = 2 Y = 25		L = 320 A = 50 B = 24 C = 41 D = 50 E = 2 F = 2 Y = 20	L = 320 A = 50 B = 32 C = 35 D = 50 E = 2 F = 2 Y = 35	L = 340 A = 50 B = 20 C = 35 D = 50 E = 2 F = 2 Y = 35
KTC V2	KTB0230CR81	25	480	3P	3	3							
				4P	4	4							
KTC V3	KTB0350CR81	94	580	3P			9						
				4P			12						
KTC V4	KTB0350CR82	74	600	3P				6	3				
				4P				7	5				
KTC V5	KTB0350CR82	74	600	3P				6	6				
				4P				8	8				
KTC V6	KTB0350CR83	21	520	3P						6	6		
				4P						8	8		
KTC V7	KTB0510CR82	101	615	3P								15	
				4P								20	
KTC V8	KTB0510CR82	101	615	3P									15
				4P									20
KTC V9	KTB0510CR82	101	615	3P									18
				4P									24
KTC V10	KTB0726CR81	202	591	3P	1								24
				4P									32

Interface details, see page 91

Vertical incomer interface											
Minera t	ransform	er	Canalis KT feed unit ER1, ER2, ER3, ER4, ER5, ER6								
Rating (kVA)	l nominal (A)	Bar bushing dimensions (mm)	Between centres J, K and M (mm)	KTC1350	KTC1600	KTC2000	KTC2500	KTC3200	KTC4000	KTC5000	KTC6300
630	887		150	Type KTC V2							
800	1126			Type KTC V2	Type KTC V2						
1000	1408	8 31.5 31.			Type KTC V2	Туре КТС V3					
1250	1760		170			Type KTC V4	Type KTC V4				
1600	2253						Type KTC V4	Type KTC V5			
2000	2816							Type KTC V6	Type KTC V7		
2500	3520								Type KTC V8	Type KTC V9	
3150	4435									Type KTC V9	Type KTC V10

<b>Connection plate</b>	s reference and q	Bolts sets reference and quantity					
					B B C		
KTB0000YP11	KTB0000YP12	KTB0000YP13	KTB0000YP14	KTB0000YP22	KTB0000YB3	KTB0000YB4	KTB0000YB5
(dimensions in mm)	(dimensions in mm)	(dimensions in mm)	(dimensions in mm)				
A = 20	A = 20	A = 20	A = 20				
	B = 38 H = 200	B = 28 H = 260	B = 25 H = 200				
	H = 200 W = 200	H = 200 W = 200	H = 200 W = 200				
			X = 25				
Y = 20	Y = 20	Y = 20	Y = 21				
					1		1
					1		1
3					2		1
4					2		1
	3				2		1
	4				2		1
	3				2		1
	4				2		1
					2		
			0		2	0	
			3		1	2	
			4 3		1 1	2 2	
			4		1	2	
			3		1	2	
			4		1	2	
				3		1	
				4		1	

Set of bolts details, see page 105

# Installation guide

# **Connection to oil immersed transformers**

By feed and connection plates or braids

Connection to an oil immersed transformer is made using flexible bars (connection plates) to avoid transmitting transformer vibrations to the busbar trunking and to limit the stress on connection terminals.

# Choice of busbar trunking

Dry-type transf	ormer	Canalis KTC b	Canalis KTC busbar trunking			
Rating (kVA)	l nominal <sup>(1)</sup> (A)	Rating (A)	Cross-section			
630	887	1000	140 x 74			
800	1126	1350	140 x 104			
1000	1408	1600	140 x 124			
1250	1760	2000	140 x 164			
1600	2253	2500	140 x 204			
2000	2816	3200	140 x 244			
2500	3520	4000	140 x 324			
3150	4435	5000	140 x 404			

(1) I is given as an indication only and is calculated with U - 410 V.

**Note:** If, for reasons of busbar trunking operating conditions or performance requirements, you have to use a rating other than those defined in the above tables, consult us.

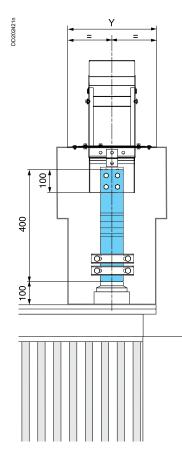
#### Protective cover width

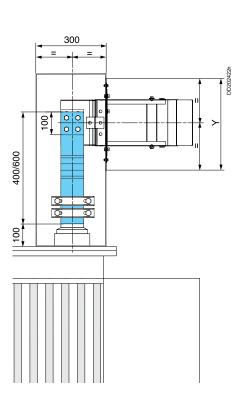
Busbar trunking rating (A)	Dimensions "Y" of the feed
1350 to 1600	230
2000 to 3200	350
4000 to 5000	510

Recommended configurations for shortcircuit withstand (connection plate L = 400 mm)

#### Vertical incomer

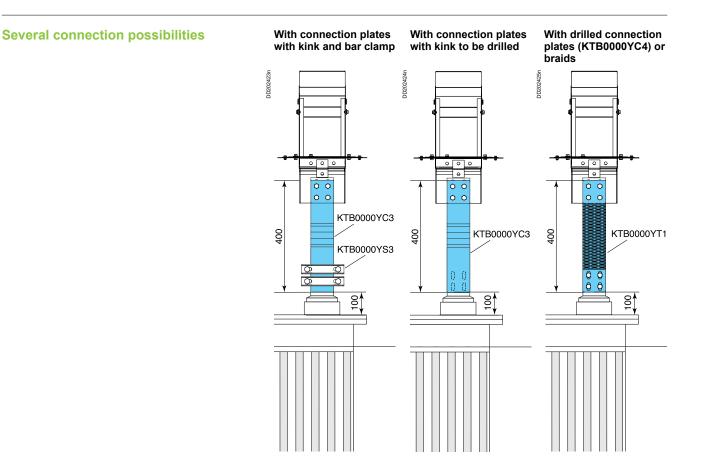
#### Horizontal incomer



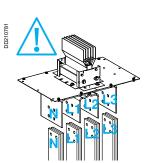


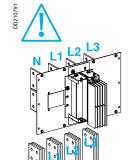
D202344

**Canalis KTC** 

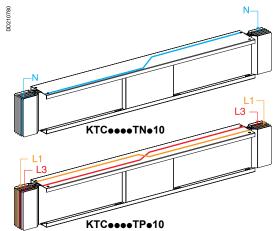


# Phase order





If the phase order of the busbar trunking is different to that of the switchboard's busbars, it is recommended a phase inversion is carried out in the switchboard. If this cannot be done, use the phase and neutral transposition section. For more information on transposition sections, see "Description" page 35 and "Catalogue numbers/Dimensions" page 58.



# **Connection to oil immersed** transformers

By feed and connection plates or braids

The number of connection plates is defined in the table below:

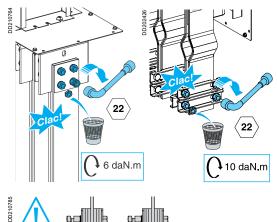
Number

**Busbar trunking rating** 

(A)

# **Canalis KTC**

# **Definition of connection plates**



AP-

14

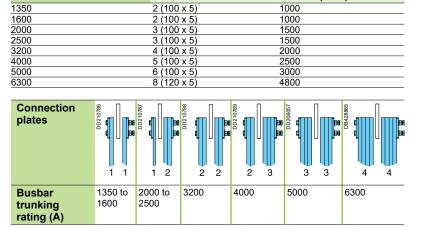
**Connection to porcelain bushings** 

H

F

**Definition of braids** 

D20235

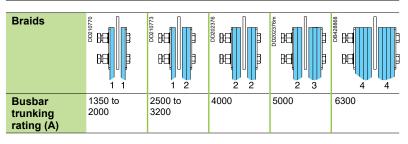


Bare copper connection plates per phase

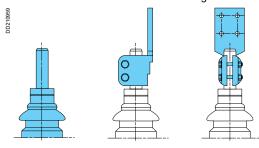
Section (mm<sup>2</sup>)

The number of braids is defined in the table below:

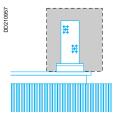
Busbar trunking rating	Braids per phase				
(A)	Number	Cross-section (mm)			
1350	2	1200			
1600	2	1200			
2000	2	1200			
2500	3	1800			
3200	3	1800			
4000	4	2400			
5000	5	3000			
6300	8	4000			



Connection terminals of the type defined below must be used. These are available in the transformer manufacturers' catalogues.



The transformers can be supplied with or without a low voltage cover. This cover is not used in our solutions.



Cover

### Recommendations

Introduction Presentation and description Catalogue numbers and dimensions Design guide Installation guide	3 23 49 149 191
Reception, handling and storage	252
Maintenance Run sections	<b>254</b> 254
Recycling	255
Index	256

### **Reception, handling and storage**

Canalis KTC

This document contains practical information, lays out the general recommendations (as a complement to the installation regulations) and specifies the basic instructions that must be respected when handling and storing Schneider Electric Canalis busbar trunking system.

The purchaser's engineering, installation and operating staff must become acquainted with this document and become familiar with the appearance and characteristics of each of the Canalis busbar trunking system's components. Appropriate planning and coordination between the different job functions is indispensable for ensuring an efficient installation of the equipment.

Each Canalis busbar trunking system is carefully inspected and packaged at the assembly plant.

The entire system is checked both structurally and electrically. At the end of inspection, the busbar trunking system is prepared for shipping. Each section is packed to guarantee easy handling before its installation. The catalogue number is written on each shipping unit.

#### Warning

#### **RISK OF ELECTRIC SHOCK, BURNS OR EXPLOSION**

■ Protect the equipment against all contact with water, salt, concrete and other corrosive surroundings both before and during installation.

Outdoor equipment is not resistant to bad weather until after it has been fully and correctly installed.

Do not sit or walk on the equipment.

If these instructions are not respected, the equipment may deteriorate leading to a risk of serious or mortal injury.

#### Reception

Upon reception, check the information on the shipping note corresponds to the equipment received to ensure all of the order has been received and shipped. Complaints concerning missing components or other errors must be sent in writing to Schneider Electric SAS within 30 days from the date the shipping item was received. If no complaint has been received within 30 days from the date the shipping item was received, Schneider Electric SAS will no longer be responsible for repairs or replacements that may be required.

Upon reception, check the various units of the busbar trunking system immediately to identify any damage that has occurred during transport. If there is observed or suspected damage, file a claim immediately with the carrier and inform the nearest Schneider Electric office.

#### Handling

Handle Canalis products with the greatest of care to avoid damaging the internal components of the system and to avoid changing the external appearance of the various parts, as well as the bar ends (connection terminals).

The busbar trunking must be constantly supported by independent means, in such a way its weight is not resting on the top of the transformers or distribution switchboards.

The distance between these support means must not exceed 3 metres.

Avoid exposing the busbar trunking to twisting, embossing or impacts, and all other actions likely to causing damage.

Ensure the handling equipment available at the site of installation is suitable for handling busbar trunking. In particular, check the lifting capacity of the crane or the other lifting equipment to be used. Take great care when unpacking the equipment:

■ use a nail-head puller when unpacking wooden crates

■ if hauling the busbar trunking with a crane, use Nylon slings to spread the weight of the unit being lifted

if using cables, insert a spacing means to avoid damaging the busbar trunking
 if using a forklift truck, position the busbar trunking on the forks in such a way the weight is evenly distributed.

1 - Cut the strapping holding the packaging case using suitable cutting tools.

2 - Use suitable tools to remove the strengthened steel packaging at each end of the busbar trunking.

Take care not to damage the steel box so as not to damage the busbar trunking. Avoid the use of objects with sharp edges when lifting the busbar trunking.

3 - Dispose of all used packaging in an appropriate way.

Never drag the busbar trunking along the floor. Do not use the end bars to lift sections of the busbar trunking.

### Protection against humidity during storage

If the busbar trunking is not installed and commissioned immediately, leave it in the original Canalis packaging and store it in a clean and dry place at a uniform temperature.

The busbar trunking must not be stored outside. However, if outside storage is necessary, cover the busbar trunking in such a way as to protect it from bad weather and to avoid contact with the elements.

Temporary electrical heating must be provided for underneath the covering means to prevent condensation.

The supplied heat must be of suitable temperature and uniformly distributed underneath the covering means.

Outdoor busbar trunking is not resistant to bad weather until after it has been fully and correctly installed.

During installation, take particular care to protect rising mains from humidity arising from unfinished roofs, walls and other similar elements.

Deserts can provide at least 2 specific situations for KT storage from standard other locations:

- sand pollution.

- significant thermal variations nights/days that can create condensation due to the colder busduct KT compared from atmosphere when it is humid (this risk should be evaluated from local context).

About sand: When the products are not installed but in their standard transport packings, we can't completely guaranty the protection against sand/wind to not reach the products.

As it's important to keep all electrical contacts clean from any foreign body and abrasion, our products must be protected from sand during storage period before and during installation.

The optionnal sea-packaging with wood boxes is including a waterproof system, it allows to keep the products protected against the 2 above risks.

### Maintenance

Run sections

#### **Canalis KTC**



 If the busbar trunking is accessible, carry out infrared temperature measurements on all the electrical connections (junction blocks, terminal connections, tap-off units),
 If the busbar trunking is not accessible, install a thermal monitoring system which will communicate temperatures to a remote supervision.

These operations are relevant only if the busbar trunking has reached a stabilized temperature and if the measure of current has been done.

#### Notice

A periodic thermal monitoring allows tracking and detecting abnormal drifts. In case of abnormal results, check with a torque wrench, all the connections.

Туре	Torque (N.m)
Junction block bolts	60 ± 10%

If these values decrease significantly over time, consult Schneider Electric for a deeper analysis.

If needed concerned material must be replaced with new factory mounted products. Consult your local Schneider Electric office for all replacements.

Before re-energising the busbar trunking, carry out an insulation resistance test in compliance with the instructions given in the "Testing and commissioning procedure" section.

After having performed all the necessary inspections and repairs mentioned above, it may be desirable to carry out infrared temperature measurements on all the electrical connections.



### Recycling

#### **Recycling busbar trunking**



Example: 1 kg of PVC generates 1 kg of waste.

Canalis busbar trunking can be reused. Canalis busbar trunking is designed for a long service life and can easily be dismantled, cleaned and reused.

All packaging materials can be recycled (cardboard or recyclable polyethylene film).

All Canalis products are designed for safe end-of-life recycling. PVC, on the other hand, requires neutralisation of the hydrochloric acid produced using lime and generates dioxins that are extremely toxic.

#### Canalis helps conserve natural resources

The depletion of raw materials (copper, plastics, etc.) is one of our ongoing concerns.

For this reason, we have optimised the used of all materials used to make our busbar trunking.

Reduction of dangerous or polluting materials. We design our products to meet future European directives.

 Reduction in the weight of insulating materials.
 Reduction in the use of plastics for improved fire performance: less energy released during combustion, thereby limiting propagation and facilitating extinction (lower calorific value).

Cat no	Designations	Deree
Cat. no.	Designations	Pages
03000 03561	CANALIS SUPPORT	77
05501	CANALIS SUFFORT	11
04000		
04694	CONNECTION SUPPORT, 115 MM BETWEEN CENTRES	77
04711	CANALIS CONNECTION FOR FRONT- CONNECTED NS-NT, 3P	77
04712	CANALIS CONNECTION FOR FRONT- CONNECTED NS-NT, 4P	77
04713	CANALIS CONNECTION FOR REAR- CONNECTED NS-NT, 3P	77
04714	CANALIS CONNECTION FOR REAR- CONNECTED NS-NT, 4P	77
04851	FRONT CONNECTION COVER FOR VERTICAL FIXED NS1600	77
04852	FRONT CONNECTION COVER FOR VERTICAL FIXED NS1600-NT	77
04853	REAR CONNECTION COVER FOR VERTICAL FIXED NS1600	77
04854	REAR CONNECTION COVER FOR VERTICAL FIXED NS1600-NT	77
04861	FRONT CONNECTION COVER FOR NW	77
04863	REAR CONNECTION COVER FOR NW	77
04871	CANALIS COVER	77
00000		
08000		100
08903	12 ADHESIVE LABEL HOLDERS, H=24 MM, W=432 MM	126
08905	12 ADHESIVE LABEL HOLDERS, H=24 MM, W=180 MM	126
08907	12 ADHESIVE LABEL HOLDERS, H=24 MM, W=650 MM	126
12000		
13000 13940	BLANKING PLATES, SET OF 10X5 MODULES FORR KAEDRA	126
30000		
33596	ARC-CHUTE COVER, FIXED NS, 3P	77
33597	ARC-CHUTE COVER, FIXED NS, 4P	77
40000		
47335	ARC-CHUTE COVER, FIXED NT, 3P	77
47336	ARC-CHUTE COVER, FIXED NT, 4P	77
80000		
87800	DBA 115 INSTALLATION KIT FOR KT BBT 800/4000A TDC	78
87801	DBA 115 INSTALLATION KIT FOR KT BBT 800/3200A RC	78
87808	SPECIAL TIGHTENING WRENCH BIT	78
KH0		
KH010SD85	KH BOX PLUG IN 3L PEN SECT MULLER 100 T00	141
KH016CB	CONNECTING LINKS SHIELD	144
KH016CB311571	CONNECTING LINKS SHIELD	144
KH018CB86NS	CONNECTING LINKS TAP OFF BOX SB NS1000	145
KH025SB131	KH FIXED BOX 3L PE FUS 250 T2 N1	144
KH025SB132	KH FIXED BOX 3L PE FUS 250 T2 N2	144
KH025SB141	KH FIXED BOX 3L N PE FUS 250 T2 N1	144
KH025SB142	KH FIXED BOX 3L N PE FUS 250 T2 N2	144
KH025SD14 KH025SD15	KH BOX PLUG IN 3L N PE FUSES 250 T2 KH BOX PLUG IN 3L PEN FUSES 250 T2	139 139
KH025SD15	KH BOX PLUG IN 3L PEN PUSES 250 12 KH BOX PLUG IN 3L N PE NSX250	139
KH025SD542	KH BOX PLUG IN 3L N PE NSX250	138

Cat. no.	Designations	Pages
KH025SD551	KH BOX PLUG IN 3L PEN NSX250	138
KH025SD552	KH BOX PLUG IN 3L PEN NSX250	138
KH025SD85	KH BOX PLUG IN 3L PEN SECT MULLER 250 T1	141
KH025SE341	KH BOX PLUG IN 3L N PE INTER FUSES 250 T1	143
KH025SE351	KH BOX PLUG IN 3L PEN INTER FUSES 250 T1	143
KH025ZA05	CABLE BOX 1 HOLE FOR KH025SE	143
KH026CB	CONNECTING LINKS SHIELD	144
KH026CB311571	CONNECTING LINKS SHIELD	144
KH028CB86NS	CONNECTING LINKS TAP OFF BOX SB NS1000	145
KH036CB	CONNECTING LINKS SHIELD	144
KH036CB311571	CONNECTING LINKS SHIELD	144
KH038CB86NS	CONNECTING LINKS TAP OFF BOX SB NS1000	145
KH040SD85	KH BOX PLUG IN 3L PEN SECT MULLER 400 T2	141
KH040SD9502	KH BOX PLUG IN 3L PEN SECT PEHLA 400 T2	142
KH040SE341	KH BOX PLUG IN 3L N PE INTER FUSES 400 T2	143
KH040SE351	KH BOX PLUG IN 3L PEN INTER FUSES 400 T2	143
KH040ZA05	CABLE BOX 1 HOLE FOR KH040SE	143
KH040ZA06	CABLE BOX 2 HOLES FOR KH040SE	143
KH040ZA07	CONNECTING BOX FOR KH040SD9502	142
KH046CB	CONNECTING LINKS SHIELD	144
KH046CB311571	CONNECTING LINKS SHIELD	144
KH048CB86NS	CONNECTING LINKS TAP OFF BOX SB NS1000	145
KH056CB	CONNECTING LINKS SHIELD	144
	CANAL ELEC EQUIP ECLIS COF 1000A	144
KH058CB86NS	CONNECTING LINKS TAP OFF BOX SB NS1000	145
KH063SB131	KH FIXED BOX 3L PE FUS 630 T3 N1	144
KH063SB132	KH FIXED BOX 3L PE FUS 630 T3 N2	144
KH063SB141	KH FIXED BOX 3L N PE FUS 630 T3 N1	144
KH063SB142	KH FIXED BOX 3L N PE FUS 630 T3 N2	144
KH063SD14	KH BOX PLUG IN 3L N PE FUSES 630 T3	139
KH063SD15	KH BOX PLUG IN 3L PEN FUSES 630 T3	139
KH063SD541	KH BOX PLUG IN 3L N PE NSX630	138
KH063SD542	KH BOX PLUG IN 3L N PE NSX630	138
KH063SD551	KH BOX PLUG IN 3L PEN NSX630	138
KH063SD552	KH BOX PLUG IN 3L PEN NSX630	138 141
KH063SD85 KH063SD9502	KH BOX PLUG IN 3L PEN SECT MULLER 630 T3 KH BOX PLUG IN 3L PEN SECT PEHLA 630 T3	141
KH063SE341	KH BOX PLUG IN 3L PEN SECT PENLA 030 T3	142
KH063SE351	KH BOX PLUG IN 3L PEN INTER FUSES 630 T3	143
KH063ZA03	EXTENDED REMOTE HANDLE FOR TOU	143
IN TOODEROO	FUPACT KH0XXSE3X1	140
KH063ZA05	CABLE BOX 1 HOLE FOR KH063SE	143
KH063ZA06	CABLE BOX 2 HOLES FOR KH063SE	143
KH063ZA07	CONNECTING PLATE FOR KH063SD9502	142
KH063ZA10	CABLE GLAND 185 A 240 MM2	143
KH086SB131	KH FIXED BOX 3L PE FUS T4 1000 N1	144
KH086SB132	KH FIXED BOX 3L PE FUS T4 1000 N2	144
KH086SB141	KH FIXED BOX 3L N PE FUS 1000 T4 N1	144
KH086SB142	KH FIXED BOX 3L N PE FUS 1000 T4 N2	144
KH086SB5311	KH FIXED BOX 3L PE NS1000 N1	145
KH086SB5312	KH FIXED BOX 3L PE NS1000 N2	145
KH086SB5411	KH FIXED BOX 3L N PE NS1000 T4 N1	145
KH086SB5412	KH FIXED BOX 3L N PE NS1000 T4 N2	145
КНВ		
KHB0630SE4L	KH COFFRET 630A FUS 3LN ADV L	140
KHB0630SE4R	KH COFFRET 630A FUS 3LN ADV R	140
KHB0630SE5L	KH COFFRET 630A FUS 3LPEN ADV L	140
KHB0630SE5R	KH COFFRET 630A FUS 3LPEN ADV R	140
KSB		
KSB25SD4	TAP-OFF UNIT 25 A FUSE E27	121
KSB25SD5	TAP-OFF UNIT 25 A FUSE E27	121
KSB32SG4	CONNECTOR 32 A FUSE BS88A1	125
KSB50SF4	TAP-OFF UNIT 50 A FUSE 14X51	119
KSB50SF5	TAP-OFF UNIT 50 A FUSE 14X51	119

Cat. no.	Designations	Pages	Cat. no.	Designations	Pages
KSB50SN4	TAP-OFF UNIT 50 A FUSE E18	121	KTB0000ZA7	CANALIS KT FLAT WISE SUPPORT 3M	111
KSB50SN5	TAP-OFF UNIT 50 A FUSE E18	121	KTB0000ZA8	KT FLAT WISE FIXING GRIP	111
KSB63SD4	TAP-OFF UNIT 63 A FUSE E33	121	KTB0001CR5	KT VERT COVER FEED EL N1 TO N2	101
KSB63SD5	TAP-OFF UNIT 63 A FUSE E33	121	KTB0001CR6	KT HORI COVER FEED EL N1 TO N2	101
KSB63SM48	TAP-OFF UNIT 63 A 8 MODULES	114	KTB0074CF6	KT FIRE BARRIER KIT H74 L650	113
KSB63SM58	TAP-OFF UNIT 63 A 8 MODULES	114	KTB0074FA	KT END COVER H74	60
KSB80SG4	TAP-OFF UNIT 80 A FUSE BS88A1	125	KTB0074TT01	KT KT ROOF PLATE H74	79
KSB100SE4	TAP-OFF UNIT 100 A FUSE T00	120, 122	KTB0074ZA4	KT HORI TOP BRACKED H74	110
KSB100SE5	TAP-OFF UNIT 100 A FUSE T00	120, 122	KTB0100YC105B	CANALIS KT LINK BI STRAIGHT 100 X MTM	102
KSB100SF4	TAP-OFF UNIT 100 A FUSE 22X58	119	KTB0100YC305B	CANALIS KT LINK BI WAVY 100 X MTM	102
KSB100SF5	TAP-OFF UNIT 100 A FUSE 22X58	119	KTB0100YC50506B	CANALIS KT LINK BI INSULATED 100 X 600	103
KSB100SM412	TAP-OFF UNIT 100 A 12 MODULES	114	KTB0100YC50510B	CANALIS KT LINK BI INSULATED 100 X 1000	103
KSB100SM512	TAP-OFF UNIT 100 A 12 MODULES	114	KTB0104CF6	KT FIRE BARRIER KIT H104 L650	113
KSB160DC4	TAP-OFF UNIT 160 A COMPACT NS	116	KTB0104FA	KT END COVER H104	60
KSB160DC5	TAP-OFF UNIT 160 A COMPACT NS	116	KTB0104TT01	KT KT ROOF PLATE H104	79
KSB160SE4	TAP-OFF UNIT 160 A FUSE T00	120, 122	KTB0120YC105B	CANALIS KT LINK BI STRAIGHT 120 X MTM	102
KSB160SE5	TAP-OFF UNIT 160 A FUSE T00	120, 122	KTB0120YC305B	CANALIS KT LINK BI WAVY 120 X MTM	102
KSB160SF4	TAP-OFF UNIT 160 A FUSE TO	120	KTB0124CF6	KT FIRE BARRIER KIT H124 L650	113
KSB160SF5	TAP-OFF UNIT 160 A FUSE T0	120	KTB0124FA	KT END COVER H124	60
	TAP-OFF UNIT 160 A FUSE BS88	125	KTB0124TT01	KT KT ROOF PLATE H124	79
	TAP-OFF UNIT NG 160 A	115	KTB0124ZA7	CANALIS KT FLAT WISE SUPPORT H124	111
	TAP-OFF UNIT NG 160 A	115	KTB0164CF7	KT FIRE BARRIER KIT H164 L750	113
KSB250DC4	TAP-OFF UNIT 250 A COMPACT NS	116	KTB0164FA	KT END COVER H164	60
	TAP-OFF UNIT 250 A COMPACT NS TRE	117	KTB0164PE1	KT END COVER H164	75, 76,
KSB250DC5	TAP-OFF UNIT 250 A COMPACT NS	116			78, 79
KSB250DC5TRE	TAP-OFF UNIT 250 A COMPACT NS TRE	117	KTB0164TT01	KT KT ROOF PLATE H164	79
	TAP-OFF UNIT 250 A FUSE T1	120, 122	KTB0164ZA51	CANALIS KT VERTICAL SUPPORT H74A164	112
	TAP-OFF UNIT 250 A FUSE T1	120, 122	KTB0164ZA52	CANALIS KT WALL BRACKET H74A164	112
	TAP-OFF UNIT 400 A COMPACT NS	116	KTB0204CF7	KT FIRE BARRIER KIT H204 L750	113
	TAP-OFF UNIT 400 A COMPACT NS TRE	117	KTB0204FA	KT END COVER H204	60
	TAP-OFF UNIT 400 A COMPACT NS	116	KTB0204TT01	KT KT ROOF PLATE H204	79
	TAP-OFF UNIT 400 A COMPACT NS TRE	117	KTB0204ZA51	CANALIS KT VERTICAL SUPPORT H204	112
	TAP-OFF UNIT 400 A FUSE T2	120, 122	KTB0204ZA52	CANALIS KT WALL BRACKET H204	112
	TAP-OFF UNIT 400 A FUSE T2	120, 122	KTB0204ZA7	CANALIS KT FLAT WISE SUPPORT H204 KT CABLES BOX Y230	111 92
KSB400ZC1	TAP-OFF UNIT DOOR MICROSWITCH 400 A	126	KTB0230BC01		
			KTB0230CR1 KTB0230CR2	KT HORI COVER FEED ER Y230 KT HIGH VERT COVER FEED Y230	88 89
КТВ			KTB0230CR3	KT LOW VERT COVER FEED Y230	89
	KT VERT COVER FEED EL N1 TO 4	99	KTB0230CR3	KT HORI COVER FEED EL N5 Y230	100
	KT HORI COVER FEED EL N1 TO 4	99	KTB0230CR71	CANALIS KT HORI COVER FOR OIL	90
KTB0000GP01	KT PLAQUE CABLE 5 X 24 TO 40	124, 140	KI BOZGOOK/ I	TR Y230 N1	30
KTB0000GP02	KT PLAQUE CABLE 1 X 30 TO 70	124, 140	KTB0230CR72	KT VERT COVER FOR OIL TR Y230	100
	KT PLAQUE CABLE 2 X 30 TO 70	124, 140	KTB0230CR81	CANALIS KT VERT COVER FOR OIL	91
KTB0000SC1	CANALIS KT FIRE BARRIER SEALANT	113		TR Y230 N1	
KTB0000YB1	KT BOLT SNAP-OF HEAD	105	KTB0230CS0	KT FLEXIBLE COVER Y230 E115	92
	KT SCREWS M12X60 NUTS & PLATES	105	KTB0244CF7	KT FIRE BARRIER KIT H244 L750	113
KTB0000YB3	KT SCREWS M12X60 & TORQUE NUTS	105	KTB0244FA	KT END COVER H244	60
KTB0000YB4	KT SCREWS M12X80 & TORQUE NUTS	105	KTB0244PE1	KT END COVER H244	75, 78, 7
KTB0000YB5	CANALIS KT SCREWS M10X60 & NUTS	105	KTB0244TT01	KT KT ROOF PLATE H244	79
KTB0000YB6	CANALIS KT T BOLT	111	KTB0244ZA51	CANALIS KT VERTICAL SUPPORT H244	112
	KT L PLATE 160	98	KTB0244ZA52	CANALIS KT WALL BRACKET H244	112
KTB0000YE2	KT L PLATE 200	98	KTB0244ZA7	CANALIS KT FLAT WISE SUPPORT H244	111
KTB0000YF1	KT INSULATING SHEATH	105	KTB0324CF9	KT FIRE BARRIER KIT H324 L950	113
	CANALIS KT CONNECTION PLATE N1	106	KTB0324FA	KT END COVER H324	60
KTB0000YP12	CANALIS KT CONNECTION PLATE N2	106	KTB0324TT01	KT KT ROOF PLATE H324	79
KTB0000YP13	CANALIS KT CONNECTION PLATE N3	106	KTB0324ZA51	CANALIS KT VERTICAL SUPPORT H324	112
	CANALIS KT CONNECTION PLATE NA	106	KTB0324ZA52	CANALIS KT WALL BRACKET H324	112
KTB0000YP21	KT CONNECTION PLATE HORI ER1 TO ER6	107	KTB0324ZA7	CANALIS KT FLAT WISE SUPPORT H304	111
	KT CONNECTION PLATE VERT ER1 TO ER6		KTB0350BC01	KT CABLES BOX Y350	92
KTB0000YP23	KT CONNECTION PLATE EL5	108	KTB0350CR1	KT HORI COVER FEED ER Y350	88
	KT CONNECTION PLATE EL1 TO EL2	108	KTB0350CR2	KT HIGH VERT COVER FEED Y350	89
KTB0000YS1	KT SUPPORT FOR BARS DBA115	106	KTB0350CR3	KT LOW VERT COVER FEED Y350	89
	KT CLAMP 100	106	KTB0350CR6	KT HORI COVER FEED EL N5 Y350	100
	KT CLAMP 120	106	KTB0350CR71	CANALIS KT HORI COVER FOR OIL	90
KTB0000YT1	KT BRAID 600MM2 L400 8	104		TR Y350 N1	
KTB0000ZA1	KT HORI FIXING BRACKED KT FIXING GRIP	110 110	KTB0350CR72	CANALIS KT HORI COVER FOR OIL TR Y350 N2	90

Cat. no.	Designations	Pages
KTB0350CR73	CANALIS KT HORI COVER FOR OIL TR Y350 N3	90
KTB0350CR74	CANALIS KT HORI COVER FOR OIL TR Y350 N4	90
KTB0350CR81	CANALIS KT VERT COVER FOR OIL TR Y350 N1	91
KTB0350CR82	KT VCANALIS KT VERT COVER FOR OIL TR Y350 N2	91
KTB0350CR83	KT VCANALIS KT VERT COVER FOR OIL TR Y350 N3	91
KTB0350CS0	KT FLEXIBLE COVER Y350 E115	92
KTB0350HT01	KT CONNECTION KHF KGF Y350 N1	134
KTB0350HT02	KT CONNECTION KHF KGF Y350 N2	134
KTB0404CF9	KT FIRE BARRIER KIT H404 L950	113
KTB0404FA	KT END COVER H404	60
KTB0404PE1	KT END COVER H404	75, 78, 79
KTB0404TT01 KTB0404ZA4	KT KT ROOF PLATE H404 KT HORI TOP BRACKED H104 A 404	79 110
KTB0404ZA4	CANALIS KT VERTICAL SUPPORT H404	112
KTB0404ZA51	CANALIS KT VERTICAL SUPPORT H404 CANALIS KT WALL BRACKET H404	112
KTB0404ZA32	CANALIS KT WALL DIVACKET THOU	112
KTB04042A7	CANALIS INTERFACE, 1600 A, 3P	76
KTB04704	CANALIS INTERFACE, 1600 A, 4P	76
KTB04715	CANALIS CONNECTION, 1600 A, NW, 3P	75
KTB04716	CANALIS CONNECTION, 1600 A, NW, 4P	75
KTB04725	CANALIS CONNECTION, 2500 A, NW, 3P	75
KTB04726	CANALIS CONNECTION, 2500 A, NW, 4P	75
KTB04735	CANALIS CONNECTION, 3200 A, NW, 3P	75
KTB04736	CANALIS CONNECTION, 3200 A, NW, 4P	75
KTB04737	CANALIS CONNECTION, 4000 A, NW, 3P	75
KTB04738	CANALIS CONNECTION, 4000 A, NW, 4P	75
KTB0510BC01	KT CABLES BOX Y510	92
KTB0510CR1	KT HORI COVER FEED ER Y510	88
KTB0510CR2	KT HIGH VERT COVER FEED Y510	89
KTB0510CR3	KT LOW VERT COVER FEED Y510	89
KTB0510CR6	KT HORI COVER FEED EL N5 Y510	100
KTB0510CR71	CANALIS KT HORI COVER FOR OIL TR Y510 N1	90
KTB0510CR72	CANALIS KT HORI COVER FOR OIL TR Y510 N2	90
KTB0510CR73	CANALIS KT HORI COVER FOR OIL TR Y510 N3	90
KTB0510CR81	CANALIS KT VERT COVER FOR OIL TR Y510 N1	91
KTB0510CR82	CANALIS KT VERT COVER FOR OIL TR Y510 N2	91
KTB0510CS0	KT FLEXIBLE COVER Y510 E115	92
KTB0510HT01	KT CONNECTION KHF KGF Y510 N1	134
KTB0510HT02 KTB0510HT03	KT CONNECTION KHF KGF Y510 N2	134
KTB0510H103	KT CONNECTION KHF KGF Y510 N3 KT FIRE BARRIER KIT H622 L750	134
KTB0622CF7	KT END COVER H622	113 60
KTB0622PE1	KT REINFORCED PROTECTIVE EARTH H622	
KTB0622TT01	KT KT ROOF PLATE H622	79
KTB0622ZA7	CANALIS KT FLAT WISE SUPPORT H622	111
KTB0630CB3	KT FIXED TAP-OFF 3L PE NS630	127
KTB0630CB4	KT FIXED TAP-OFF 3L N PE NS630	127
KTB0630CB5	KT FIXED TAP-OFF 3L PEN NS630	127
KTB0630DC4	KT PLUGIN 630A NSX 3LN	118
KTB0630DC5	KT PLUGIN 630A NSX 3LPEN	118
KTB0630HF3	KT COFF 3L PE FUS SWITCH 630	128
KTB0630HF4	KT COFF 3L N PE FUS SWITCH 630	128
KTB0630HF5	KT COFF 3L PEN FUS SWITCH 630	128
KTB0630SD4	KT PLUGIN 630A FUS 3LN	123
KTB0630SD5	KT PLUGIN 630A FUS 3LPEN	123
KTB0630SE4L	KT COFFRET 630A FUS 3LN ADV L	124
KTB0630SE4R	KT COFFRET 630A FUS 3LN ADV R	124
KTB0630SE5L	KT COFFRET 630A FUS 3LPEN ADV L	124

Cat. no.	Designations	Pages
KTB0630SE5R	KT COFFRET 630A FUS 3LPEN ADV R	124
KTB0630ZA01	KT CONNECTION BARS KIT 630 NSX	118
KTB0630ZA02	KT CONNECTION BARS KIT 630 FUSE	123
KTB0630ZA03	KT ROTARY HANDLE FOR FUSES	123, 124, 140
KTB0630ZA04	KT CONNECTING BOX	118, 123, 124, 140
KTB0726CR1	KT HORI COVER FEED ER Y726	88
KTB0726CR3	KT LOW VERT COVER FEED Y726	89
KTB0726CR71	KT HORI COVER FEED ER Y726	90
KTB0726CR81	KT LOW VERT COVER FEED Y726	91
KTB1000CB3	KT FIXED TAP-OFF 3L PE NS1000	127
KTB1000CB4	KT FIXED TAP-OFF 3L N PE NS1000	127
KTB1000CB5	KT FIXED TAP-OFF 3L PEN NS1000	127
KTB1000HF3	KT COFF 3L PE FUS SWITCH 1000	128
KTB1000HF4	KT COFF 3L N PE FUS SWITCH 1000	128
KTB1000HF5	KT COFF 3L PEN FUS SWITCH 1000 KT COFF BOULO 3L PEN NS1000	128
KTB1250CB3 KTB1250CB4		127 127
KTB1250CB4	KT COFF BOULO 3L PEN NS1000 KT COFF BOULO 3L PEN NS1000	127
KTB1250CB5	DBA 115 CONNECTING BLOCK FOR KT BBT	78
	DBA 115 CONNECTING BLOCK FOR KT BBT 800/1600A 3P TDC DBA 115 CONNECTING BLOCK FOR KT BBT	
KTB87812	800/1600A 4P TDC	78
KTB87813	DBA 115 CONNECTING BLOCK FOR KT BBT 2000/2500A 3P TDC	78
KTB87814	DBA 115 CONNECTING BLOCK FOR KT BBT 2000/2500A 4P TDC	78
KTB87815	DBA 115 CONNECTING BLOCK FOR KT BBT 3200A 3P TDC	78
KTB87816	DBA 115 CONNECTING BLOCK FOR KT BBT 3200A 4P TDC	78
KTB87817	DBA 115 CONNECTING BLOCK FOR KT BBT 4000A 3P TDC	78
KTB87818	DBA 115 CONNECTING BLOCK FOR KT BBT 4000A 4P TDC	78
KTB87821	DBA 115 CONNECTING BLOCK FOR KT BBT 800/1600A 3P RC	78
KTB87822	DBA 115 CONNECTING BLOCK FOR KT BBT 800/1600A 4P RC	78
KTB87823	DBA 115 CONNECTING BLOCK FOR KT BBT 2000/2500A 3P RC	78
KTB87824	DBA 115 CONNECTING BLOCK FOR KT BBT 2000/2500A 4P RC	78
KTB87825	DBA 115 CONNECTING BLOCK FOR KT BBT 3200A 3P RC	78
KTB87826	DBA 115 CONNECTING BLOCK FOR KT BBT 3200A 4P RC	
KTB87827	DBA 115 CONNECTING BLOCK FOR KT BBT 4000A 3P RC	78
KTB87828	DBA 115 CONNECTING BLOCK FOR KT BBT 4000A 4P RC	78
KTC1000		
KTC1000CP31	KT 3X1000CO FLAT EDGEWISE N1	70
KTC1000CP32	KT 3X1000CO FLAT EDGEWISE N2	70
KTC1000CP33	KT 3X1000CO FLAT EDGEWISE N3	70
KTC1000CP34	KT 3X1000CO FLAT EDGEWISE N4	70
KTC1000CP41	KT 4X1000CO FLAT EDGEWISE N1	70
KTC1000CP42	KT 4X1000CO FLAT EDGEWISE N2	70
KTC1000CP43 KTC1000CP44	KT 4X1000CO FLAT EDGEWISE N3 KT 4X1000CO FLAT EDGEWISE N4	70 70
KTC1000CP44	KT 5X1000CO FLAT EDGEWISE N1	70
KTC1000CP51	KT 5X1000CO FLAT EDGEWISE NT	70
KTC1000CP53	KT 5X1000CO FLAT EDGEWISE N3	70
KTC1000CP54	KT 5X1000CO FLAT EDGEWISE N4	70
KTC1000CP71	KT 5X1000CO FLAT EDGEWISE N1	70
KTC1000CP72	KT 5X1000CO FLAT EDGEWISE N2	70
KTC1000CP73	KT 5X1000CO FLAT EDGEWISE N3	70

Cat. no.	Designations	Pages	Cat. no.	Designations	Pages
KTC1000CP74	KT 5X1000CO FLAT EDGEWISE N4	70	KTC1000EL73	KT 5X1000CO FEED UNIT EL N3	96
KTC1000DB310	KT 3X1000CO EXPANSION UNIT	58	KTC1000EL74	KT 5X1000CO FEED UNIT EL N4	96
	KT 4X1000CO EXPANSION UNIT	58	KTC1000EL75	KT 5X1000CO FEED UNIT EL N5	97
	KT 5X1000CO EXPANSION UNIT	58	KTC1000ER31	KT 3X1000CO FEED UNIT ER N1	80
	KT 5X1000CO EXPANSION UNIT	58	KTC1000ER32	KT 3X1000CO FEED UNIT ER N2	80
	KT 3X1000CO BOLT ON LENGTH 2M	54	KTC1000ER33	KT 3X1000CO FEED UNIT ER N3	81
	KT 3X1000CO BOLT ON LENGTH 4M	54	KTC1000ER34	KT 3X1000CO FEED UNIT ER N4	81
	KT 4X1000CO BOLT ON LENGTH 2M	54	KTC1000ER35	KT 3X1000CO FEED UNIT ER N5	82
	KT 4X1000CO BOLT ON LENGTH 4M	54	KTC1000ER36	KT 3X1000CO FEED UNIT ER N6	82
	KT 5X1000CO BOLT ON LENGTH 2M	54	KTC1000ER37 KTC1000ER41	KT 3X1000CO FEED UNIT ER N7	86
	KT 5X1000CO BOLT ON LENGTH 4M KT 5X1000CO BOLT ON LENGTH 2M	54 54	KTC1000ER41	KT 4X1000CO FEED UNIT ER N1 KT 4X1000CO FEED UNIT ER N2	80 80
	KT 5X1000CO BOLT ON LENGTH 2M	54	KTC1000ER42	KT 4X1000CO FEED UNIT ER N3	81
	KT 1X1000CO PLUG-IN LENGTH 2M	52	KTC1000ER44	KT 4X1000CO FEED UNIT ER N4	81
	KT 3X1000CO PLUG-IN LENGTH 2M	52	KTC1000ER45	KT 4X1000CO FEED UNIT ER N5	82
	KT 1X1000CO PLUG-IN LENGTH	52	KTC1000ER46	KT 4X1000CO FEED UNIT ER N6	82
	KT 2X1000CO PLUG-IN LENGTH	52	KTC1000ER47	KT 4X1000CO FEED UNIT ER N7	86
	KT 1X1000CO PLUG-IN LENGTH	52	KTC1000ER51	KT 5X1000CO FEED UNIT ER N1	80
	KT 3X1000CO PLUG-IN LENGTH	52	KTC1000ER52	KT 5X1000CO FEED UNIT ER N2	80
	KT 3X1000CO PLUG-IN LENGTH 4M	52	KTC1000ER53	KT 5X1000CO FEED UNIT ER N3	81
	KT 1X1000CO PLUG-IN LENGTH 2M	52	KTC1000ER54	KT 5X1000CO FEED UNIT ER N4	81
	KT 4X1000CO PLUG-IN LENGTH 2M	52	KTC1000ER55	KT 5X1000CO FEED UNIT ER N5	82
(TC1000ED4301	KT 1X1000CO PLUG-IN LENGTH	52	KTC1000ER56	KT 5X1000CO FEED UNIT ER N6	82
(TC1000ED4302	KT 2X1000CO PLUG-IN LENGTH	52	KTC1000ER57	KT 5X1000CO FEED UNIT ER N7	86
CTC1000ED4351	KT 1X1000CO PLUG-IN LENGTH	52	KTC1000ER71	KT 5X1000CO FEED UNIT ER N1	80
(TC1000ED4353	KT 3X1000CO PLUG-IN LENGTH	52	KTC1000ER72	KT 5X1000CO FEED UNIT ER N2	80
(TC1000ED4403	KT 4X1000CO PLUG-IN LENGTH 4M	52	KTC1000ER73	KT 5X1000CO FEED UNIT ER N3	81
TC1000ED5201	KT 1X1000CO PLUG-IN LENGTH 2M	52	KTC1000ER74	KT 5X1000CO FEED UNIT ER N4	81
TC1000ED5203	KT 5X1000CO PLUG-IN LENGTH 2M	52	KTC1000ER75	KT 5X1000CO FEED UNIT ER N5	82
CTC1000ED5301	KT 1X1000CO PLUG-IN LENGTH	52	KTC1000ER76	KT 5X1000CO FEED UNIT ER N6	82
	KT 2X1000CO PLUG-IN LENGTH	52	KTC1000ER77	KT 5X1000CO FEED UNIT ER N7	86
	KT 1X1000CO PLUG-IN LENGTH	52		KT 3X1000CO FEEDER LENGTH	52
	KT 3X1000CO PLUG-IN LENGTH	52	KTC1000ET320	KT 3X1000CO FEEDER LENGTH 2M	52
	KT 5X1000CO PLUG-IN LENGTH 4M	52	KTC1000ET32B	KT 3X1000CO FEEDER LENGTH	52
	KT 1X1000CO PLUG-IN LENGTH 2M	52		KT 3X1000CO FEEDER LENGTH	52
	KT 5X1000CO PLUG-IN LENGTH 2M	52		KT 3X1000CO FEEDER LENGTH	52
	KT 1X1000CO PLUG-IN LENGTH KT 2X1000CO PLUG-IN LENGTH	52 52		KT 3X1000CO FEEDER LENGTH KT 3X1000CO FEEDER LENGTH	52 52
	KT 1X1000CO PLUG-IN LENGTH	52	KTC1000ET33P	KT 3X1000CO FEEDER LENGTH	52
	KT 3X1000CO PLUG-IN LENGTH	52		KT 4X1000CO FEEDER LENGTH	52
	KT 5X1000CO PLUG-IN LENGTH 4M	52	KTC1000ET41A	KT 4X1000CO FEEDER LENGTH 2M	52
	KT 3X1000CO KH PLUG-IN LENGTH 2M	55		KT 4X1000CO FEEDER LENGTH	52
	KT 3X1000CO KH PLUG-IN LENGTH 4M	55		KT 4X1000CO FEEDER LENGTH	52
	KT 4X1000CO KH PLUG-IN LENGTH 2M	55		KT 4X1000CO FEEDER LENGTH	52
	KT 4X1000CO KH PLUG-IN LENGTH 4M	55		KT 4X1000CO FEEDER LENGTH	52
	KT 5X1000CO KH PLUG-IN LENGTH 2M	55		KT 4X1000CO FEEDER LENGTH	52
	KT 5X1000CO KH PLUG-IN LENGTH 4M	55		KT 4X1000CO FEEDER LENGTH 4M	52
	KT 5X1000CO KH PLUG-IN LENGTH 2M	55		KT 5X1000CO FEEDER LENGTH	52
	KT 5X1000CO KH PLUG-IN LENGTH 4M	55	KTC1000ET520	KT 5X1000CO FEEDER LENGTH 2M	52
(TC1000EL31	KT 3X1000CO FEED UNIT EL N1	94	KTC1000ET52B	KT 5X1000CO FEEDER LENGTH	52
TC1000EL32	KT 3X1000CO FEED UNIT EL N2	94	KTC1000ET52C	KT 5X1000CO FEEDER LENGTH	52
(TC1000EL33	KT 3X1000CO FEED UNIT EL N3	96	KTC1000ET53D	KT 5X1000CO FEEDER LENGTH	52
TC1000EL34	KT 3X1000CO FEED UNIT EL N4	96	KTC1000ET53E	KT 5X1000CO FEEDER LENGTH	52
(TC1000EL35	KT 3X1000CO FEED UNIT EL N5	97	KTC1000ET53F	KT 5X1000CO FEEDER LENGTH	52
(TC1000EL41	KT 4X1000CO FEED UNIT EL N1	94		KT 5X1000CO FEEDER LENGTH 4M	52
TC1000EL42	KT 4X1000CO FEED UNIT EL N2	94		KT 5X1000CO FEEDER LENGTH	52
	KT 4X1000CO FEED UNIT EL N3	96	KTC1000ET720		52
TC1000EL44	KT 4X1000CO FEED UNIT EL N4	96		KT 5X1000CO FEEDER LENGTH	52
TC1000EL45	KT 4X1000CO FEED UNIT EL N5	97		KT 5X1000CO FEEDER LENGTH	52
	KT 5X1000CO FEED UNIT EL N1	94		KT 5X1000CO FEEDER LENGTH	52
	KT 5X1000CO FEED UNIT EL N2	94		KT 5X1000CO FEEDER LENGTH	52
(TC1000EL53	KT 5X1000CO FEED UNIT EL N3	96		KT 5X1000CO FEEDER LENGTH	52
(TC1000EL54	KT 5X1000CO FEED UNIT EL N4	96	KTC1000ET740	KT 5X1000CO FEEDER LENGTH 4M	52
	KT EXADODOO EEED LINIT EL NE	97	KTC1000FC3A	KT 3X1000CO EDGEWISE ELBOW	74
	KT 5X1000CO FEED UNIT EL N5 KT 5X1000CO FEED UNIT EL N1	94	KTC1000FC3B	KT 3X1000CO EDGEWISE ELBOW	74

Cat. no.	Designations	Pages	Cat. no.	Designations	Page
KTC1000FC3E	KT 3X1000CO EDGEWISE ELBOW	74	KTC1000FT53E	KT 5X1000CO FEEDER LENGTH FIRE	72
KTC1000FC4A	KT 4X1000CO EDGEWISE ELBOW	74	KTC1000FT53F	KT 5X1000CO FEEDER LENGTH FIRE	72
TC1000FC4B	KT 4X1000CO EDGEWISE ELBOW	74	KTC1000FT540	KT 5X1000CO FEEDER LENGTH FIRE 4M	72
TC1000FC4D	KT 4X1000CO EDGEWISE ELBOW	74	KTC1000FT71A	KT 5X1000CO FEEDER LENGTH FIRE	72
TC1000FC4E	KT 4X1000CO EDGEWISE ELBOW	74	KTC1000FT720	KT 5X1000CO FEEDER LENGTH FIRE 2M	72
TC1000FC5A	KT 5X1000CO EDGEWISE ELBOW	74	KTC1000FT72B	KT 5X1000CO FEEDER LENGTH FIRE	72
(TC1000FC5B (TC1000FC5D	KT 5X1000CO EDGEWISE ELBOW	74	KTC1000FT72C	KT 5X1000CO FEEDER LENGTH FIRE KT 5X1000CO FEEDER LENGTH FIRE	72
TC1000FC5D	KT 5X1000CO EDGEWISE ELBOW KT 5X1000CO EDGEWISE ELBOW	74 74	KTC1000FT73D KTC1000FT73E	KT 5X1000CO FEEDER LENGTH FIRE	72 72
(TC1000FC3E	KT 5X1000CO EDGEWISE ELBOW	74	KTC1000FT73E	KT 5X1000CO FEEDER LENGTH FIRE	72
TC1000FC7A	KT 5X1000CO EDGEWISE ELBOW	74	KTC1000FT73P	KT 5X1000CO FEEDER LENGTH FIRE 4M	72
(TC1000FC7D	KT 5X1000CO EDGEWISE ELBOW	74	KTC1000LC3A	KT 3X1000CO EDGEWISE ELBOW	63
TC1000FC7E	KT 5X1000CO EDGEWISE ELBOW	74	KTC1000LC3B	KT 3X1000CO EDGEWISE ELBOW	63
TC1000FP3A1		73	KTC1000LC3D	KT 3X1000CO EDGEWISE ELBOW	63
	KT 3X1000CO FLAT ELBOW N2 FIRE	73	KTC1000LC3E	KT 3X1000CO EDGEWISE ELBOW	63
	KT 3X1000CO FLAT ELBOW N1 FIRE	73	KTC1000LC4A	KT 4X1000CO EDGEWISE ELBOW	63
TC1000FP3B2	KT 3X1000CO FLAT ELBOW N2 FIRE	73	KTC1000LC4B	KT 4X1000CO EDGEWISE ELBOW	63
TC1000FP3D1	KT 3X1000CO FLAT ELBOW N1 FIRE	73	KTC1000LC4D	KT 4X1000CO EDGEWISE ELBOW	63
TC1000FP3D2	KT 3X1000CO FLAT ELBOW N2 FIRE	73	KTC1000LC4E	KT 4X1000CO EDGEWISE ELBOW	63
TC1000FP3E1	KT 3X1000CO FLAT ELBOW N1 FIRE	73	KTC1000LC5A	KT 5X1000CO EDGEWISE ELBOW	63
TC1000FP3E2	KT 3X1000CO FLAT ELBOW N2 FIRE	73	KTC1000LC5B	KT 5X1000CO EDGEWISE ELBOW	63
	KT 4X1000CO FLAT ELBOW N1 FIRE	73	KTC1000LC5D	KT 5X1000CO EDGEWISE ELBOW	63
	KT 4X1000CO FLAT ELBOW N2 FIRE	73	KTC1000LC5E	KT 5X1000CO EDGEWISE ELBOW	63
TC1000FP4B1	KT 4X1000CO FLAT ELBOW N1 FIRE	73	KTC1000LC7A	KT 5X1000CO EDGEWISE ELBOW	63
	KT 4X1000CO FLAT ELBOW N2 FIRE	73	KTC1000LC7B	KT 5X1000CO EDGEWISE ELBOW	63
	KT 4X1000CO FLAT ELBOW N1 FIRE	73	KTC1000LC7D	KT 5X1000CO EDGEWISE ELBOW	63
	KT 4X1000CO FLAT ELBOW N2 FIRE	73	KTC1000LC7E	KT 5X1000CO EDGEWISE ELBOW	63
TC1000FP4E1		73	KTC1000LP3A1	KT 3X1000CO FLAT ELBOW N1	62
	KT 4X1000CO FLAT ELBOW N2 FIRE	73		KT 3X1000CO FLAT ELBOW N2	62
TC1000FP5A1		73	KTC1000LP3B1	KT 3X1000CO FLAT ELBOW N1	62
	KT 5X1000CO FLAT ELBOW N2 FIRE KT 5X1000CO FLAT ELBOW N1 FIRE	73 73	KTC1000LP3B2	KT 3X1000CO FLAT ELBOW N2 KT 3X1000CO FLAT ELBOW N1	62 63
	KT 5X1000CO FLAT ELBOW NT FIRE	73		KT 3X1000CO FLAT ELBOW N1 KT 3X1000CO FLAT ELBOW N2	63
TC1000FP5D1		73	KTC1000LP3C2	KT 3X1000CO FLAT ELBOW N2 KT 3X1000CO FLAT ELBOW N1	62
	KT 5X1000CO FLAT ELBOW NT FIRE	73		KT 3X1000CO FLAT ELBOW NT	62
	KT 5X1000CO FLAT ELBOW N2 FIRE	73	KTC1000LP3E1		62
	KT 5X1000CO FLAT ELBOW N2 FIRE	73		KT 3X1000CO FLAT ELBOW N2	62
	KT 5X1000CO FLAT ELBOW N1 FIRE	73		KT 4X1000CO FLAT ELBOW N1	62
	KT 5X1000CO FLAT ELBOW N2 FIRE	73		KT 4X1000CO FLAT ELBOW N2	62
TC1000FP7B1	KT 5X1000CO FLAT ELBOW N1 FIRE	73	KTC1000LP4B1	KT 4X1000CO FLAT ELBOW N1	62
TC1000FP7B2	KT 5X1000CO FLAT ELBOW N2 FIRE	73	KTC1000LP4B2	KT 4X1000CO FLAT ELBOW N2	62
TC1000FP7D1	KT 5X1000CO FLAT ELBOW N1 FIRE	73	KTC1000LP4C1	KT 4X1000CO FLAT ELBOW N1	63
TC1000FP7D2	KT 5X1000CO FLAT ELBOW N2 FIRE	73	KTC1000LP4C2	KT 4X1000CO FLAT ELBOW N2	63
TC1000FP7E1	KT 5X1000CO FLAT ELBOW N1 FIRE	73	KTC1000LP4D1	KT 4X1000CO FLAT ELBOW N1	62
TC1000FP7E2	KT 5X1000CO FLAT ELBOW N2 FIRE	73	KTC1000LP4D2	KT 4X1000CO FLAT ELBOW N2	62
	KT 3X1000CO FEEDER LENGTH FIRE	72		KT 4X1000CO FLAT ELBOW N1	62
TC1000FT320		72		KT 4X1000CO FLAT ELBOW N2	62
	KT 3X1000CO FEEDER LENGTH FIRE	72		KT 5X1000CO FLAT ELBOW N1	62
	KT 3X1000CO FEEDER LENGTH FIRE	72		KT 5X1000CO FLAT ELBOW N2	62
	KT 3X1000CO FEEDER LENGTH FIRE	72		KT 5X1000CO FLAT ELBOW N1	62
	KT 3X1000CO FEEDER LENGTH FIRE	72 72		KT 5X1000CO FLAT ELBOW N2	62 63
TC1000FT33F	KT 3X1000CO FEEDER LENGTH FIRE KT 3X1000CO FEEDER LENGTH FIRE 4M	72 72		KT 5X1000CO FLAT ELBOW N1 KT 5X1000CO FLAT ELBOW N2	63 63
	KT 4X1000CO FEEDER LENGTH FIRE 4M	72		KT 5X1000CO FLAT ELBOW N2 KT 5X1000CO FLAT ELBOW N1	62
TC1000FT41A		72		KT 5X1000CO FLAT ELBOW NT KT 5X1000CO FLAT ELBOW N2	62
	KT 4X1000CO FEEDER LENGTH FIRE	72		KT 5X1000CO FLAT ELBOW N2 KT 5X1000CO FLAT ELBOW N1	62
	KT 4X1000CO FEEDER LENGTH FIRE	72		KT 5X1000CO FLAT ELBOW NT	62
	KT 4X1000CO FEEDER LENGTH FIRE	72		KT 5X1000CO FLAT ELBOW N1	62
	KT 4X1000CO FEEDER LENGTH FIRE	72		KT 5X1000CO FLAT ELBOW N2	62
TC1000FT43F		72		KT 5X1000CO FLAT ELBOW N1	62
TC1000FT440		72		KT 5X1000CO FLAT ELBOW N2	62
	KT 5X1000CO FEEDER LENGTH FIRE	72		KT 5X1000CO FLAT ELBOW N1	63
TC1000FT520		72		KT 5X1000CO FLAT ELBOW N2	63
	KT 5X1000CO FEEDER LENGTH FIRE	72		KT 5X1000CO FLAT ELBOW N1	62
TC1000FT52C	KT 5X1000CO FEEDER LENGTH FIRE	72	KTC1000LP7D2	KT 5X1000CO FLAT ELBOW N2	62
	KT 5X1000CO FEEDER LENGTH FIRE	72		KT 5X1000CO FLAT ELBOW N2	6

KTC1000PL31       F         KTC1000PL41       F         KTC1000PL51       F         KTC1000SL31       F         KTC1000SL41       F         KTC1000SL51       F         KTC1000SL51       F         KTC1000SL51       F         KTC1000SL71       F         KTC1000TC3       F         KTC1000TC4       F         KTC1000TC5       F         KTC1000TC4       F         KTC1000TP410       F         KTC1000YA3       F	KT 5X1000CO FLAT ELBOW N2KT 5X1000CO LINE PROTECTOR NSKT 4X1000CO LINE PROTECTOR NSKT 5X1000CO LINE PROTECTOR NSKT 5X1000CO LINE PROTECTOR NSKT 3X1000CO ISOLATOR UNIT NAKT 4X1000CO ISOLATOR UNIT NAKT 5X1000CO TEE ON EDGEKT 4X1000CO TEE ON EDGEKT 5X1000CO TEE ON EDGEKT 4X1000CO NEUTRAL PERMUTAKT 4X1000CO PHASES PERMUTA	62 131 131 131 129 129 129 129 67 67 67 67	KTC1350ED3353         KT 3X1350CO PLUG-IN LENGTH           KTC1350ED3403         KT 3X1350CO PLUG-IN LENGTH 4M           KTC1350ED4201         KT 1X1350CO PLUG-IN LENGTH 2M           KTC1350ED4203         KT 4X1350CO PLUG-IN LENGTH 2M           KTC1350ED4203         KT 4X1350CO PLUG-IN LENGTH 2M           KTC1350ED4301         KT 1X1350CO PLUG-IN LENGTH 2M           KTC1350ED4302         KT 2X1350CO PLUG-IN LENGTH           KTC1350ED4351         KT 1X1350CO PLUG-IN LENGTH           KTC1350ED4353         KT 3X1350CO PLUG-IN LENGTH           KTC1350ED4403         KT 4X1350CO PLUG-IN LENGTH           KTC1350ED5201         KT 1X1350CO PLUG-IN LENGTH 4M           KTC1350ED5203         KT 5X1350CO PLUG-IN LENGTH 2M           KTC1350ED5203         KT 5X1350CO PLUG-IN LENGTH 2M	52 52 52 52 52 52 52 52 52 52 52
KTC1000PL41       F         KTC1000PL51       F         KTC1000SL31       F         KTC1000SL41       F         KTC1000SL51       F         KTC1000SL51       F         KTC1000SL51       F         KTC1000SL51       F         KTC1000SL51       F         KTC1000TC3       F         KTC1000TC4       F         KTC1000TC5       F         KTC1000TC4       F	KT 4X1000CO LINE PROTECTOR NSKT 5X1000CO LINE PROTECTOR NSKT 5X1000CO LINE PROTECTOR NSKT 5X1000CO ISOLATOR UNIT NAKT 4X1000CO ISOLATOR UNIT NAKT 5X1000CO TEE ON EDGEKT 4X1000CO NEUTRAL PERMUTA	131         131         129         129         129         67         67         67         67         67	KTC1350ED4201         KT 1X1350CO PLUG-IN LENGTH 2M           KTC1350ED4203         KT 4X1350CO PLUG-IN LENGTH 2M           KTC1350ED4301         KT 1X1350CO PLUG-IN LENGTH           KTC1350ED4302         KT 2X1350CO PLUG-IN LENGTH           KTC1350ED4303         KT 1X1350CO PLUG-IN LENGTH           KTC1350ED4351         KT 1X1350CO PLUG-IN LENGTH           KTC1350ED4353         KT 3X1350CO PLUG-IN LENGTH           KTC1350ED4403         KT 4X1350CO PLUG-IN LENGTH           KTC1350ED4403         KT 4X1350CO PLUG-IN LENGTH 4M           KTC1350ED5201         KT 1X1350CO PLUG-IN LENGTH 2M           KTC1350ED5203         KT 5X1350CO PLUG-IN LENGTH 2M	52 52 52 52 52 52 52 52 52 52
KTC1000PL51       F         KTC1000SL31       F         KTC1000SL41       F         KTC1000SL51       F         KTC1000SL51       F         KTC1000SL71       F         KTC1000TC3       F         KTC1000TC4       F         KTC1000TC5       F         KTC1000TC7       F         KTC1000TC4       F         KTC1000TA40       F         KTC1000TA40       F         KTC1000TP410       F         KTC1000YA3       F	XT 5X1000CO LINE PROTECTOR NS XT 5X1000CO LINE PROTECTOR NS XT 3X1000CO ISOLATOR UNIT NA XT 4X1000CO ISOLATOR UNIT NA XT 5X1000CO ISOLATOR UNIT NA XT 5X1000CO ISOLATOR UNIT NA XT 3X1000CO TEE ON EDGE XT 4X1000CO TEE ON EDGE XT 5X1000CO TEE ON EDGE XT 5X1000CO TEE ON EDGE XT 5X1000CO TEE ON EDGE XT 4X1000CO NEUTRAL PERMUTA	131         129         129         129         67         67         67         67         67         67	KTC1350ED4203       KT 4X1350CO PLUG-IN LENGTH 2M         KTC1350ED4301       KT 1X1350CO PLUG-IN LENGTH         KTC1350ED4302       KT 2X1350CO PLUG-IN LENGTH         KTC1350ED4351       KT 1X1350CO PLUG-IN LENGTH         KTC1350ED4353       KT 3X1350CO PLUG-IN LENGTH         KTC1350ED4403       KT 4X1350CO PLUG-IN LENGTH         KTC1350ED4403       KT 4X1350CO PLUG-IN LENGTH 4M         KTC1350ED5201       KT 1X1350CO PLUG-IN LENGTH 4M         KTC1350ED5201       KT 1X1350CO PLUG-IN LENGTH 2M         KTC1350ED5203       KT 5X1350CO PLUG-IN LENGTH 2M	52 52 52 52 52 52 52 52 52
KTC1000PL71         F           KTC1000SL31         F           KTC1000SL41         F           KTC1000SL51         F           KTC1000SL71         F           KTC1000TC3         F           KTC1000TC4         F           KTC1000TC5         F           KTC1000TC7         F           KTC1000TN410         F           KTC1000TN410         F           KTC1000TA3         F	KT 5X1000CO LINE PROTECTOR NS KT 5X1000CO ISOLATOR UNIT NA KT 4X1000CO ISOLATOR UNIT NA KT 5X1000CO ISOLATOR UNIT NA KT 5X1000CO TEE ON EDGE KT 4X1000CO TEE ON EDGE KT 5X1000CO TEE ON EDGE KT 5X1000CO TEE ON EDGE KT 5X1000CO TEE ON EDGE KT 4X1000CO NEUTRAL PERMUTA	131         129         129         129         67         67         67         67	KTC1350ED4301         KT 1X1350CO PLUG-IN LENGTH           KTC1350ED4302         KT 2X1350CO PLUG-IN LENGTH           KTC1350ED4351         KT 1X1350CO PLUG-IN LENGTH           KTC1350ED4353         KT 3X1350CO PLUG-IN LENGTH           KTC1350ED4403         KT 4X1350CO PLUG-IN LENGTH           KTC1350ED4403         KT 4X1350CO PLUG-IN LENGTH 4M           KTC1350ED5201         KT 1X1350CO PLUG-IN LENGTH 4M           KTC1350ED5201         KT 1X1350CO PLUG-IN LENGTH 2M           KTC1350ED5203         KT 5X1350CO PLUG-IN LENGTH 2M	52 52 52 52 52 52 52 52
KTC1000SL31       H         KTC1000SL41       H         KTC1000SL51       H         KTC1000SL71       H         KTC1000TC3       H         KTC1000TC4       H         KTC1000TC5       H         KTC1000TC7       H         KTC1000TC7       H         KTC1000TC4       H         KTC1000TC5       H         KTC1000TC4       H         KTC1000TC4       H         KTC1000TC4       H         KTC1000TC4       H         KTC1000TA4       H	XT 3X1000CO ISOLATOR UNIT NA XT 4X1000CO ISOLATOR UNIT NA XT 5X1000CO ISOLATOR UNIT NA XT 5X1000CO ISOLATOR UNIT NA XT 3X1000CO TEE ON EDGE XT 4X1000CO TEE ON EDGE XT 5X1000CO TEE ON EDGE XT 5X1000CO TEE ON EDGE XT 4X1000CO NEUTRAL PERMUTA	129 129 129 67 67 67 67	KTC1350ED4302         KT 2X1350CO PLUG-IN LENGTH           KTC1350ED4351         KT 1X1350CO PLUG-IN LENGTH           KTC1350ED4353         KT 3X1350CO PLUG-IN LENGTH           KTC1350ED4403         KT 4X1350CO PLUG-IN LENGTH           KTC1350ED5201         KT 1X1350CO PLUG-IN LENGTH 4M           KTC1350ED5201         KT 1X1350CO PLUG-IN LENGTH 2M           KTC1350ED5201         KT 1X1350CO PLUG-IN LENGTH 2M           KTC1350ED5203         KT 5X1350CO PLUG-IN LENGTH 2M	52 52 52 52 52 52
KTC1000SL41         H           KTC1000SL51         H           KTC1000SL71         H           KTC1000TC3         H           KTC1000TC4         H           KTC1000TC5         H           KTC1000TC7         H           KTC1000TC7         H           KTC1000TC7         H           KTC1000TC4         H           KTC1000TC7         H           KTC1000TC4         H           KTC1000TC4         H           KTC1000TC4         H           KTC1000TA410         H           KTC1000YA3         H	KT 4X1000CO ISOLATOR UNIT NAKT 5X1000CO ISOLATOR UNIT NAKT 5X1000CO ISOLATOR UNIT NAKT 3X1000CO TEE ON EDGEKT 4X1000CO TEE ON EDGEKT 5X1000CO TEE ON EDGEKT 5X1000CO TEE ON EDGEKT 5X1000CO TEE ON EDGEKT 5X1000CO TEE ON EDGEKT 4X1000CO TEE ON EDGEKT 4X1000CO NEUTRAL PERMUTA	129 129 129 67 67 67	KTC1350ED4351         KT 1X1350CO PLUG-IN LENGTH           KTC1350ED4353         KT 3X1350CO PLUG-IN LENGTH           KTC1350ED4403         KT 4X1350CO PLUG-IN LENGTH 4M           KTC1350ED5201         KT 1X1350CO PLUG-IN LENGTH 2M           KTC1350ED5203         KT 5X1350CO PLUG-IN LENGTH 2M	52 52 52 52 52
KTC1000SL51       F         KTC1000SL71       F         KTC1000TC3       F         KTC1000TC4       F         KTC1000TC5       F         KTC1000TC7       F         KTC1000TC7       F         KTC1000TC4       F         KTC1000TC5       F         KTC1000TC4       F         KTC1000TC4       F         KTC1000TC4       F         KTC1000TA4       F         KTC1000TA4       F         KTC1000TA4       F         KTC1000TA4       F         KTC1000TA4       F         KTC1000TA4       F	XT 5X1000CO ISOLATOR UNIT NA XT 5X1000CO ISOLATOR UNIT NA XT 3X1000CO TEE ON EDGE XT 4X1000CO TEE ON EDGE XT 5X1000CO TEE ON EDGE XT 5X1000CO TEE ON EDGE XT 4X1000CO NEUTRAL PERMUTA	129 129 67 67 67	KTC1350ED4353         KT 3X1350CO PLUG-IN LENGTH           KTC1350ED4403         KT 4X1350CO PLUG-IN LENGTH 4M           KTC1350ED5201         KT 1X1350CO PLUG-IN LENGTH 2M           KTC1350ED5203         KT 5X1350CO PLUG-IN LENGTH 2M	52 52 52
KTC1000SL71       H         KTC1000TC3       H         KTC1000TC4       H         KTC1000TC5       H         KTC1000TC7       H         KTC1000TN410       H         KTC1000TP410       H         KTC1000YA3       H	KT 5X1000CO ISOLATOR UNIT NAKT 5X1000CO TEE ON EDGEKT 4X1000CO TEE ON EDGEKT 5X1000CO TEE ON EDGEKT 5X1000CO TEE ON EDGEKT 5X1000CO TEE ON EDGEKT 4X1000CO NEUTRAL PERMUTA	129 67 67 67	KTC1350ED4403 KT 4X1350CO PLUG-IN LENGTH 4M KTC1350ED5201 KT 1X1350CO PLUG-IN LENGTH 2M KTC1350ED5203 KT 5X1350CO PLUG-IN LENGTH 2M	52 52
KTC1000TC3       H         KTC1000TC4       H         KTC1000TC5       H         KTC1000TC7       H         KTC1000TN410       H         KTC1000TP410       H         KTC1000YA3       H	KT 3X1000CO TEE ON EDGE         KT 4X1000CO TEE ON EDGE         KT 5X1000CO TEE ON EDGE         KT 5X1000CO TEE ON EDGE         KT 5X1000CO TEE ON EDGE         KT 4X1000CO NEUTRAL PERMUTA	67 67 67	KTC1350ED5201 KT 1X1350CO PLUG-IN LENGTH 2M KTC1350ED5203 KT 5X1350CO PLUG-IN LENGTH 2M	52
KTC1000TC4         H           KTC1000TC5         H           KTC1000TC7         H           KTC1000TN410         H           KTC1000TP410         H           KTC1000YA3         H	KT 4X1000CO TEE ON EDGE KT 5X1000CO TEE ON EDGE KT 5X1000CO TEE ON EDGE KT 4X1000CO NEUTRAL PERMUTA	67 67	KTC1350ED5203 KT 5X1350CO PLUG-IN LENGTH 2M	
KTC1000TC5         H           KTC1000TC7         H           KTC1000TN410         H           KTC1000TP410         H           KTC1000YA3         H	KT 5X1000CO TEE ON EDGE KT 5X1000CO TEE ON EDGE KT 4X1000CO NEUTRAL PERMUTA	67		52
KTC1000TN410         H           KTC1000TP410         H           KTC1000YA3         H	KT 4X1000CO NEUTRAL PERMUTA	67	KTC1350ED5301 KT 1X1350CO PLUG-IN LENGTH	52
KTC1000TP410		<b>.</b> .	KTC1350ED5302 KT 2X1350CO PLUG-IN LENGTH	52
KTC1000YA3	T 4X1000CO PHASES PERMITA	58	KTC1350ED5351 KT 1X1350CO PLUG-IN LENGTH	52
		58	KTC1350ED5353 KT 3X1350CO PLUG-IN LENGTH	52
KTO4000VA4	KT 3X1000CO JUNCTION BLOC	60	KTC1350ED5403 KT 5X1350CO PLUG-IN LENGTH 4M	52
KTC1000YA4	KT 4X1000CO JUNCTION BLOC	60	KTC1350ED7201 KT 1X1350CO PLUG-IN LENGTH 2M	52
	KT 5X1000CO JUNCTION BLOC	60	KTC1350ED7203 KT 5X1350CO PLUG-IN LENGTH 2M	52
	KT 5X1000CO JUNCTION BLOC	60	KTC1350ED7301 KT 1X1350CO PLUG-IN LENGTH	52
	KT 3X1000CO EDGEWISE ZED N1	68	KTC1350ED7302 KT 2X1350CO PLUG-IN LENGTH	52
	T 3X1000CO EDGEWISE ZED N2	68	KTC1350ED7351 KT 1X1350CO PLUG-IN LENGTH	52
	KT 4X1000CO EDGEWISE ZED N1	68	KTC1350ED7353 KT 3X1350CO PLUG-IN LENGTH	52
	T 4X1000CO EDGEWISE ZED N2	68	KTC1350ED7403 KT 5X1350CO PLUG-IN LENGTH 4M	52
	<pre>KT 5X1000CO EDGEWISE ZED N1 KT 5X1000CO EDGEWISE ZED N2</pre>	68 68	KTC1350EH320 KT 3X1350CO KH PLUG-IN LENGTH 2M KTC1350EH340 KT 3X1350CO KH PLUG-IN LENGTH 4M	55 55
	T 5X1000CO EDGEWISE ZED NZ	68 68	KTC1350EH340 KT 3X1350CO KH PLUG-IN LENGTH 4M KTC1350EH420 KT 4X1350CO KH PLUG-IN LENGTH 2M	55
	T 5X1000CO EDGEWISE ZED N1	68	KTC1350EH420 KT 4X1350CO KH PLUG-IN LENGTH 2M	55
	T 3X1000CO ZED ON FLAT	68	KTC1350EH520 KT 5X1350CO KH PLUG-IN LENGTH 2M	55
	T 4X1000CO ZED ON FLAT	68	KTC1350EH540 KT 5X1350CO KH PLUG-IN LENGTH 4M	55
	T 5X1000CO ZED ON FLAT	68	KTC1350EH720 KT 5X1350CO KH PLUG-IN LENGTH 2M	55
	KT 5X1000CO ZED ON FLAT	68	KTC1350EH740 KT 5X1350CO KH PLUG-IN LENGTH 4M	55
			KTC1350EL31 KT 3X1350CO FEED UNIT EL N1	94
KTC1350			KTC1350EL32 KT 3X1350CO FEED UNIT EL N2	94
	KT 3X1350CO FLAT EDGEWISE N1	70	KTC1350EL33 KT 3X1350CO FEED UNIT EL N3	96
KTC1350CP32	KT 3X1350CO FLAT EDGEWISE N2	70	KTC1350EL34 KT 3X1350CO FEED UNIT EL N4	96
KTC1350CP33	KT 3X1350CO FLAT EDGEWISE N3	70	KTC1350EL35 KT 3X1350CO FEED UNIT EL N5	97
KTC1350CP34	KT 3X1350CO FLAT EDGEWISE N4	70	KTC1350EL41 KT 4X1350CO FEED UNIT EL N1	94
KTC1350CP41	KT 4X1350CO FLAT EDGEWISE N1	70	KTC1350EL42 KT 4X1350CO FEED UNIT EL N2	94
	KT 4X1350CO FLAT EDGEWISE N2	70	KTC1350EL43 KT 4X1350CO FEED UNIT EL N3	96
	KT 4X1350CO FLAT EDGEWISE N3	70	KTC1350EL44         KT 4X1350CO FEED UNIT EL N4           KTC1350EL45         KT 4X1350CO FEED UNIT EL N5	96 97
	KT 4X1350CO FLAT EDGEWISE N4	70	KTC1350EL45         KT 4X1350CO FEED UNIT EL N5           KTC1350EL51         KT 5X1350CO FEED UNIT EL N1	97 94
	KT 5X1350CO FLAT EDGEWISE N1	70	<b>KTC1350EL52</b> KT 5X1350CO FEED UNIT EL N2	94
	T 5X1350CO FLAT EDGEWISE N2	70 70	<b>KTC1350EL53</b> KT 5X1350CO FEED UNIT EL N3	96
	T 5X1350CO FLAT EDGEWISE NS	70	<b>KTC1350EL54</b> KT 5X1350CO FEED UNIT EL N4	96
	T 5X1350CO FLAT EDGEWISE N4	70	KTC1350EL55 KT 5X1350CO FEED UNIT EL N5	97
	T 5X1350CO FLAT EDGEWISE N1	70	KTC1350EL71 KT 5X1350CO FEED UNIT EL N1	94
	KT 5X1350CO FLAT EDGEWISE N3	70	KTC1350EL72 KT 5X1350CO FEED UNIT EL N2	94
	KT 5X1350CO FLAT EDGEWISE N4	70	KTC1350EL73 KT 5X1350CO FEED UNIT EL N3	96
	KT 3X1350CO EXPANSION UNIT	58	KTC1350EL74 KT 5X1350CO FEED UNIT EL N4	96
KTC1350DB410	KT 4X1350CO EXPANSION UNIT	58	KTC1350EL75 KT 5X1350CO FEED UNIT EL N5	97
KTC1350DB510	KT 5X1350CO EXPANSION UNIT	58	KTC1350ER31 KT 3X1350CO FEED UNIT ER N1	80
	KT 5X1350CO EXPANSION UNIT	58	KTC1350ER32 KT 3X1350CO FEED UNIT ER N2	80
	KT 3X1350CO BOLT ON LENGTH 2M	54	KTC1350ER33 KT 3X1350CO FEED UNIT ER N3	81
	KT 3X1350CO BOLT ON LENGTH 4M	54	KTC1350ER34 KT 3X1350CO FEED UNIT ER N4	81 82
	AT 4X1350CO BOLT ON LENGTH 2M	54	KTC1350ER35         KT 3X1350CO FEED UNIT ER N5           KTC1350ER36         KT 3X1350CO FEED UNIT ER N6	82
	AT 4X1350CO BOLT ON LENGTH 4M	54	KTC1350ER37 KT 3X1350CO FEED UNIT ER NO	86
	KT 5X1350CO BOLT ON LENGTH 2M	54	<b>KTC1350ER41</b> KT 4X1350CO FEED UNIT ER N7	80
	(T 5X1350CO BOLT ON LENGTH 4M	54 54	<b>KTC1350ER42</b> KT 4X1350CO FEED UNIT ER N2	80
	KT 5X1350CO BOLT ON LENGTH 2M KT 5X1350CO BOLT ON LENGTH 4M	54	<b>KTC1350ER43</b> KT 4X1350CO FEED UNIT ER N3	81
	T 1X1350CO PLUG-IN LENGTH 2M	54 52	<b>KTC1350ER44</b> KT 4X1350CO FEED UNIT ER N4	81
	T 3X1350CO PLUG-IN LENGTH 2M	52	<b>KTC1350ER45</b> KT 4X1350CO FEED UNIT ER N5	82
	T 1X1350CO PLUG-IN LENGTH ZM	52	KTC1350ER46 KT 4X1350CO FEED UNIT ER N6	82
	T 2X1350CO PLUG-IN LENGTH	52	KTC1350ER47 KT 4X1350CO FEED UNIT ER N7	86
	T 1X1350CO PLUG-IN LENGTH	52	KTC1350ER51 KT 5X1350CO FEED UNIT ER N1	80

Cat. no.	Designations	Pages	Cat. no.	Designations	Pages
KTC1350ER52	KT 5X1350CO FEED UNIT ER N2	80	KTC1350FP3D2	KT 3X1350CO FLAT ELBOW N2 FIRE	73
KTC1350ER53	KT 5X1350CO FEED UNIT ER N3	81	KTC1350FP3E1	KT 3X1350CO FLAT ELBOW N1 FIRE	73
KTC1350ER54	KT 5X1350CO FEED UNIT ER N4	81	KTC1350FP3E2	KT 3X1350CO FLAT ELBOW N2 FIRE	73
KTC1350ER55	KT 5X1350CO FEED UNIT ER N5	82	KTC1350FP4A1	KT 4X1350CO FLAT ELBOW N1 FIRE	73
KTC1350ER56	KT 5X1350CO FEED UNIT ER N6	82	KTC1350FP4A2	KT 4X1350CO FLAT ELBOW N2 FIRE	73
KTC1350ER57	KT 5X1350CO FEED UNIT ER N7	86	KTC1350FP4B1	KT 4X1350CO FLAT ELBOW N1 FIRE	73
KTC1350ER71	KT 5X1350CO FEED UNIT ER N1	80	KTC1350FP4B2	KT 4X1350CO FLAT ELBOW N2 FIRE	73
KTC1350ER72	KT 5X1350CO FEED UNIT ER N2	80	KTC1350FP4D1	KT 4X1350CO FLAT ELBOW N1 FIRE	73
KTC1350ER73	KT 5X1350CO FEED UNIT ER N3	81	KTC1350FP4D2	KT 4X1350CO FLAT ELBOW N2 FIRE	73
KTC1350ER74	KT 5X1350CO FEED UNIT ER N4	81	KTC1350FP4E1	KT 4X1350CO FLAT ELBOW N1 FIRE	73
KTC1350ER75	KT 5X1350CO FEED UNIT ER N5	82	KTC1350FP4E2	KT 4X1350CO FLAT ELBOW N2 FIRE	73
KTC1350ER76	KT 5X1350CO FEED UNIT ER N6	82	KTC1350FP5A1	KT 5X1350CO FLAT ELBOW N1 FIRE	73
KTC1350ER77	KT 5X1350CO FEED UNIT ER N7	86		KT 5X1350CO FLAT ELBOW N2 FIRE	73
KTC1350ET31A	KT 3X1350CO FEEDER LENGTH	52	KTC1350FP5B1	KT 5X1350CO FLAT ELBOW N1 FIRE	73
KTC1350ET320	KT 3X1350CO FEEDER LENGTH 2M	52	KTC1350FP5B2	KT 5X1350CO FLAT ELBOW N2 FIRE	73
KTC1350ET32B	KT 3X1350CO FEEDER LENGTH	52		KT 5X1350CO FLAT ELBOW N1 FIRE	73
	KT 3X1350CO FEEDER LENGTH	52		KT 5X1350CO FLAT ELBOW N2 FIRE	73
	KT 3X1350CO FEEDER LENGTH	52		KT 5X1350CO FLAT ELBOW N1 FIRE	73
	KT 3X1350CO FEEDER LENGTH	52		KT 5X1350CO FLAT ELBOW N2 FIRE	73
	KT 3X1350CO FEEDER LENGTH	52		KT 5X1350CO FLAT ELBOW N1 FIRE	73
		52		KT 5X1350CO FLAT ELBOW N2 FIRE	73
	KT 4X1350CO FEEDER LENGTH	52		KT 5X1350CO FLAT ELBOW N1 FIRE	73
	KT 4X1350CO FEEDER LENGTH 2M	52		KT 5X1350CO FLAT ELBOW N2 FIRE	73
	KT 4X1350CO FEEDER LENGTH	52		KT 5X1350CO FLAT ELBOW N1 FIRE	73
	KT 4X1350CO FEEDER LENGTH	52		KT 5X1350CO FLAT ELBOW N2 FIRE	73
	KT 4X1350CO FEEDER LENGTH	52		KT 5X1350CO FLAT ELBOW N1 FIRE	73
	KT 4X1350CO FEEDER LENGTH	52		KT 5X1350CO FLAT ELBOW N2 FIRE	73
	KT 4X1350CO FEEDER LENGTH	52		KT 3X1350CO FEEDER LENGTH FIRE	72
	KT 4X1350CO FEEDER LENGTH 4M	52	KTC1350FT320		72 72
	KT 5X1350CO FEEDER LENGTH	52 52		KT 3X1350CO FEEDER LENGTH FIRE	72
	KT 5X1350CO FEEDER LENGTH 2M KT 5X1350CO FEEDER LENGTH	52		KT 3X1350CO FEEDER LENGTH FIRE KT 3X1350CO FEEDER LENGTH FIRE	72
	KT 5X1350CO FEEDER LENGTH	52		KT 3X1350CO FEEDER LENGTH FIRE	72
	KT 5X1350CO FEEDER LENGTH	52		KT 3X1350CO FEEDER LENGTH FIRE	72
	KT 5X1350CO FEEDER LENGTH	52	KTC1350FT340	KT 3X1350CO FEEDER LENGTH FIRE 4M	72
	KT 5X1350CO FEEDER LENGTH	52		KT 4X1350CO FEEDER LENGTH FIRE	72
	KT 5X1350CO FEEDER LENGTH 4M	52	KTC1350FT420		72
	KT 5X1350CO FEEDER LENGTH	52		KT 4X1350CO FEEDER LENGTH FIRE	72
	KT 5X1350CO FEEDER LENGTH 2M	52		KT 4X1350CO FEEDER LENGTH FIRE	72
KTC1350ET72B	KT 5X1350CO FEEDER LENGTH	52	KTC1350FT43D	KT 4X1350CO FEEDER LENGTH FIRE	72
KTC1350ET72C	KT 5X1350CO FEEDER LENGTH	52	KTC1350FT43E	KT 4X1350CO FEEDER LENGTH FIRE	72
KTC1350ET73D	KT 5X1350CO FEEDER LENGTH	52	KTC1350FT43F	KT 4X1350CO FEEDER LENGTH FIRE	72
KTC1350ET73E	KT 5X1350CO FEEDER LENGTH	52	KTC1350FT440	KT 4X1350CO FEEDER LENGTH FIRE 4M	72
KTC1350ET73F	KT 5X1350CO FEEDER LENGTH	52	KTC1350FT51A	KT 5X1350CO FEEDER LENGTH FIRE	72
KTC1350ET740	KT 5X1350CO FEEDER LENGTH 4M	52	KTC1350FT520	KT 5X1350CO FEEDER LENGTH FIRE 2M	72
KTC1350FC3A	KT 3X1350CO EDGEWISE ELBOW	74	KTC1350FT52B	KT 5X1350CO FEEDER LENGTH FIRE	72
KTC1350FC3B	KT 3X1350CO EDGEWISE ELBOW	74	KTC1350FT52C	KT 5X1350CO FEEDER LENGTH FIRE	72
KTC1350FC3D	KT 3X1350CO EDGEWISE ELBOW	74	KTC1350FT53D	KT 5X1350CO FEEDER LENGTH FIRE	72
KTC1350FC3E	KT 3X1350CO EDGEWISE ELBOW	74		KT 5X1350CO FEEDER LENGTH FIRE	72
KTC1350FC4A	KT 4X1350CO EDGEWISE ELBOW	74	KTC1350FT53F	KT 5X1350CO FEEDER LENGTH FIRE	72
KTC1350FC4B	KT 4X1350CO EDGEWISE ELBOW	74	KTC1350FT540	KT 5X1350CO FEEDER LENGTH FIRE 4M	72
KTC1350FC4D	KT 4X1350CO EDGEWISE ELBOW	74		KT 5X1350CO FEEDER LENGTH FIRE	72
KTC1350FC4E	KT 4X1350CO EDGEWISE ELBOW	74	KTC1350FT720	KT 5X1350CO FEEDER LENGTH FIRE 2M	72
KTC1350FC5A	KT 5X1350CO EDGEWISE ELBOW	74	KTC1350FT72B	KT 5X1350CO FEEDER LENGTH FIRE	72
KTC1350FC5B	KT 5X1350CO EDGEWISE ELBOW	74	KTC1350FT72C	KT 5X1350CO FEEDER LENGTH FIRE	72
KTC1350FC5D	KT 5X1350CO EDGEWISE ELBOW	74	KTC1350FT73D	KT 5X1350CO FEEDER LENGTH FIRE	72
KTC1350FC5E	KT 5X1350CO EDGEWISE ELBOW	74		KT 5X1350CO FEEDER LENGTH FIRE	72
KTC1350FC7A	KT 5X1350CO EDGEWISE ELBOW	74	KTC1350FT73F	KT 5X1350CO FEEDER LENGTH FIRE	72
KTC1350FC7B	KT 5X1350CO EDGEWISE ELBOW	74	KTC1350FT740	KT 5X1350CO FEEDER LENGTH FIRE 4M	72
KTC1350FC7D	KT 5X1350CO EDGEWISE ELBOW	74	KTC1350LC3A	KT 3X1350CO EDGEWISE ELBOW	63
KTC1350FC7E	KT 5X1350CO EDGEWISE ELBOW KT 3X1350CO FLAT ELBOW N1 FIRE	74 73	KTC1350LC3B KTC1350LC3D	KT 3X1350CO EDGEWISE ELBOW KT 3X1350CO EDGEWISE ELBOW	63 63
		73			63
	KT 3X1350CO FLAT ELBOW N2 FIRE KT 3X1350CO FLAT ELBOW N1 FIRE	73	KTC1350LC3E KTC1350LC4A	KT 3X1350CO EDGEWISE ELBOW KT 5X1350CO EDGEWISE ELBOW	63 63
	KT 3X1350CO FLAT ELBOW NT FIRE	73			
	KT 3X1350CO FLAT ELBOW N2 FIRE	73	KTC1350LC4B KTC1350LC4D	KT 4X1350CO EDGEWISE ELBOW KT 5X1350CO EDGEWISE ELBOW	63 63
KIC1350FP307			N I G L 3 3 0 I G 4 I J		0.5

Cat. no.	Designations	Pages	Cat. no.	Designations	Pages
TC1350LC4E	KT 4X1350CO EDGEWISE ELBOW	63	KTC1350YA7	KT 5X1350CO JUNCTION BLOC	60
TC1350LC5A	KT 5X1350CO EDGEWISE ELBOW	63	KTC1350ZC31	KT 3X1350CO EDGEWISE ZED N1	68
TC1350LC5B	KT 5X1350CO EDGEWISE ELBOW	63	KTC1350ZC32	KT 3X1350CO EDGEWISE ZED N2	68
TC1350LC5D	KT 5X1350CO EDGEWISE ELBOW	63	KTC1350ZC41	KT 4X1350CO EDGEWISE ZED N1	68
TC1350LC5E	KT 5X1350CO EDGEWISE ELBOW	63	KTC1350ZC42	KT 4X1350CO EDGEWISE ZED N2	68
TC1350LC7A	KT 5X1350CO EDGEWISE ELBOW	63	KTC1350ZC51	KT 5X1350CO EDGEWISE ZED N1	68
TC1350LC7B	KT 5X1350CO EDGEWISE ELBOW	63	KTC1350ZC52	KT 5X1350CO EDGEWISE ZED N2	68
TC1350LC7D	KT 5X1350CO EDGEWISE ELBOW	63	KTC1350ZC71	KT 5X1350CO EDGEWISE ZED N1	68
TC1350LC7E	KT 5X1350CO EDGEWISE ELBOW	63	KTC1350ZC72	KT 5X1350CO EDGEWISE ZED N2	68
	KT 3X1350CO FLAT ELBOW N1	62	KTC1350ZP3	KT 3X1350CO ZED ON FLAT	68
	KT 3X1350CO FLAT ELBOW N2	62	KTC1350ZP4	KT 4X1350CO ZED ON FLAT	68
	KT 3X1350CO FLAT ELBOW N1	62	KTC1350ZP5	KT 5X1350CO ZED ON FLAT	68
	KT 3X1350CO FLAT ELBOW N2	62	KTC1350ZP7	KT 5X1350CO ZED ON FLAT	68
	KT 3X1350CO FLAT ELBOW N1	63			
	KT 3X1350CO FLAT ELBOW N2	63	KTC1600		
	KT 3X1350CO FLAT ELBOW N1	62	KTC1600CP31	KT 3X1600CO FLAT EDGEWISE N1	70
	KT 3X1350CO FLAT ELBOW N2	62	KTC1600CP32	KT 3X1600CO FLAT EDGEWISE N2	70
	KT 3X1350CO FLAT ELBOW N1	62	KTC1600CP33	KT 3X1600CO FLAT EDGEWISE N3	70
	KT 3X1350CO FLAT ELBOW N2	62	KTC1600CP34	KT 3X1600CO FLAT EDGEWISE N4	70
	KT 4X1350CO FLAT ELBOW N1	62	KTC1600CP41	KT 4X1600CO FLAT EDGEWISE N1	70
	KT 4X1350CO FLAT ELBOW N2	62	KTC1600CP42	KT 4X1600CO FLAT EDGEWISE N2	70
	KT 4X1350CO FLAT ELBOW N1	62	KTC1600CP43	KT 4X1600CO FLAT EDGEWISE N3	70
	KT 4X1350CO FLAT ELBOW N2	62	KTC1600CP44	KT 4X1600CO FLAT EDGEWISE N4	70
	KT 4X1350CO FLAT ELBOW N1	63	KTC1600CP51	KT 5X1600CO FLAT EDGEWISE N1	70
	KT 4X1350CO FLAT ELBOW N2	63	KTC1600CP52	KT 5X1600CO FLAT EDGEWISE N2	70
	KT 4X1350CO FLAT ELBOW N1	62	KTC1600CP53	KT 5X1600CO FLAT EDGEWISE N3	70
	KT 4X1350CO FLAT ELBOW N2	62	KTC1600CP54	KT 5X1600CO FLAT EDGEWISE N4	70
	KT 4X1350CO FLAT ELBOW N1	62	KTC1600CP71	KT 5X1600CO FLAT EDGEWISE N1	70
	KT 4X1350CO FLAT ELBOW N2	62	KTC1600CP72	KT 5X1600CO FLAT EDGEWISE N2	70
	KT 5X1350CO FLAT ELBOW N1	62	KTC1600CP73	KT 5X1600CO FLAT EDGEWISE N3	70
	KT 5X1350CO FLAT ELBOW N2	62	KTC1600CP74	KT 5X1600CO FLAT EDGEWISE N4	70
	KT 5X1350CO FLAT ELBOW N1	62	KTC1600DB310		58
	KT 5X1350CO FLAT ELBOW N2	62	KTC1600DB410		58
	KT 5X1350CO FLAT ELBOW N1	63	KTC1600DB510	KT 5X1600CO EXPANSION UNIT	58
	KT 5X1350CO FLAT ELBOW N2	63		KT 5X1600CO EXPANSION UNIT	58
	KT 5X1350CO FLAT ELBOW N1	62		KT 3X1600CO BOLT ON LENGTH 2M	54
	KT 5X1350CO FLAT ELBOW N2	62		KT 3X1600CO BOLT ON LENGTH 4M	54
	KT 5X1350CO FLAT ELBOW N1	62		KT 4X1600CO BOLT ON LENGTH 2M	54
	KT 5X1350CO FLAT ELBOW N2 KT 5X1350CO FLAT ELBOW N1	62		KT 4X1600CO BOLT ON LENGTH 4M	54
	KT 5X1350CO FLAT ELBOW NT	62 62		KT 5X1600CO BOLT ON LENGTH 2M	54
	KT 5X1350CO FLAT ELBOW N2 KT 5X1350CO FLAT ELBOW N1	62		KT 5X1600CO BOLT ON LENGTH 4M	54
	KT 5X1350CO FLAT ELBOW NT KT 5X1350CO FLAT ELBOW N2	62		KT 5X1600CO BOLT ON LENGTH 2M	54
	KT 5X1350CO FLAT ELBOW N2 KT 5X1350CO FLAT ELBOW N1			KT 5X1600CO BOLT ON LENGTH 4M	54
	KT 5X1350CO FLAT ELBOW NT KT 5X1350CO FLAT ELBOW N2	63 63		1 KT 1X1600CO PLUG-IN LENGTH 2M	52
	KT 5X1350CO FLAT ELBOW N2 KT 5X1350CO FLAT ELBOW N1	62		3 KT 3X1600CO PLUG-IN LENGTH 2M	52
	KT 5X1350CO FLAT ELBOW NT KT 5X1350CO FLAT ELBOW N2	62		1 KT 1X1600CO PLUG-IN LENGTH	52
	KT 5X1350CO FLAT ELBOW N2 KT 5X1350CO FLAT ELBOW N1	62		2 KT 2X1600CO PLUG-IN LENGTH	52
	KT 5X1350CO FLAT ELBOW NT KT 5X1350CO FLAT ELBOW N2	62		1 KT 1X1600CO PLUG-IN LENGTH	52
TC1350LP7E2	KT 3X1350CO FLAT ELBOW N2 KT 3X1350CO LINE PROTECTOR NS	131		3 KT 3X1600CO PLUG-IN LENGTH	52
TC1350PL31	KT 4X1350CO LINE PROTECTOR NS	131		3 KT 3X1600CO PLUG-IN LENGTH 4M	52
TC1350PL41	KT 5X1350CO LINE PROTECTOR NS	131		1 KT 1X1600CO PLUG-IN LENGTH 2M	52
TC1350PL71	KT 5X1350CO LINE PROTECTOR NS	131		3 KT 4X1600CO PLUG-IN LENGTH 2M	52
TC1350SL31	KT 3X1350CO ISOLATOR UNIT NA	129		1 KT 1X1600CO PLUG-IN LENGTH	52
TC1350SL31	KT 4X1350CO ISOLATOR UNIT NA	129		2 KT 2X1600CO PLUG-IN LENGTH	52
C1350SL51	KT 5X1350CO ISOLATOR UNIT NA	129		1 KT 1X1600CO PLUG-IN LENGTH	52
C1350SL71	KT 5X1350CO ISOLATOR UNIT NA	129		3 KT 3X1600CO PLUG-IN LENGTH	52
C1350CL71	KT 3X1350CO TEE ON EDGE	67		3 KT 4X1600CO PLUG-IN LENGTH 4M	52
C1350TC3	KT 4X1350CO TEE ON EDGE	67		1 KT 1X1600CO PLUG-IN LENGTH 2M	52
TC1350TC4	KT 5X1350CO TEE ON EDGE	67		3 KT 5X1600CO PLUG-IN LENGTH 2M	52
TC1350TC5	KT 5X1350CO TEE ON EDGE	67		1 KT 1X1600CO PLUG-IN LENGTH	52
TC1350TC7	KT 4X1350CO NEUTRAL PERMUTA	58		2 KT 2X1600CO PLUG-IN LENGTH	52
TC1350TN410	KT 4X1350CO PHASES PERMUTA	58		1 KT 1X1600CO PLUG-IN LENGTH	52
TC1350YA3	KT 3X1350CO JUNCTION BLOC	60		3 KT 3X1600CO PLUG-IN LENGTH	52
TC1350TA3	KT 4X1350CO JUNCTION BLOC	60		3 KT 5X1600CO PLUG-IN LENGTH 4M 1 KT 1X1600CO PLUG-IN LENGTH 2M	52 52

Cat. no.	Designations	Pages	Cat. no.	Designations	Page
TC1600ED7301	KT 1X1600CO PLUG-IN LENGTH	52	KTC1600ET33E	KT 3X1600CO FEEDER LENGTH	52
TC1600ED7302	KT 2X1600CO PLUG-IN LENGTH	52	KTC1600ET33F	KT 3X1600CO FEEDER LENGTH	52
TC1600ED7351	KT 1X1600CO PLUG-IN LENGTH	52	KTC1600ET340	KT 3X1600CO FEEDER LENGTH 4M	52
TC1600ED7353	KT 3X1600CO PLUG-IN LENGTH	52	KTC1600ET41A	KT 4X1600CO FEEDER LENGTH	52
TC1600ED7403	KT 5X1600CO PLUG-IN LENGTH 4M	52	KTC1600ET420	KT 4X1600CO FEEDER LENGTH 2M	52
TC1600EH320	KT 3X1600CO KH PLUG-IN LENGTH 2M	55	KTC1600ET42B	KT 4X1600CO FEEDER LENGTH	52
	KT 3X1600CO KH PLUG-IN LENGTH 4M	55	KTC1600ET42C	KT 4X1600CO FEEDER LENGTH	52
TC1600EH420	KT 4X1600CO KH PLUG-IN LENGTH 2M	55		KT 4X1600CO FEEDER LENGTH	52
TC1600EH440	KT 4X1600CO KH PLUG-IN LENGTH 4M	55	KTC1600ET43E	KT 4X1600CO FEEDER LENGTH	52
TC1600EH520	KT 5X1600CO KH PLUG-IN LENGTH 2M	55		KT 4X1600CO FEEDER LENGTH	52
TC1600EH540	KT 5X1600CO KH PLUG-IN LENGTH 4M	55	KTC1600ET440	KT 4X1600CO FEEDER LENGTH 4M	52
TC1600EH720	KT 5X1600CO KH PLUG-IN LENGTH 2M	55		KT 5X1600CO FEEDER LENGTH	52
TC1600EH740	KT 5X1600CO KH PLUG-IN LENGTH 4M	55	KTC1600ET520		52
TC1600EL31	KT 3X1600CO FEED UNIT EL N1	94		KT 5X1600CO FEEDER LENGTH	52
TC1600EL32	KT 3X1600CO FEED UNIT EL N2	94		KT 5X1600CO FEEDER LENGTH	52
TC1600EL33	KT 3X1600CO FEED UNIT EL N3	96		KT 5X1600CO FEEDER LENGTH	52
TC1600EL34	KT 3X1600CO FEED UNIT EL N4	96	KTC1600ET53E	KT 5X1600CO FEEDER LENGTH	52
TC1600EL35	KT 3X1600CO FEED UNIT EL N5	97		KT 5X1600CO FEEDER LENGTH	52
TC1600EL41	KT 4X1600CO FEED UNIT EL N1	94	KTC1600ET540	KT 5X1600CO FEEDER LENGTH 4M	52
TC1600EL42	KT 4X1600CO FEED UNIT EL N2	94		KT 5X1600CO FEEDER LENGTH	52
TC1600EL43	KT 4X1600CO FEED UNIT EL N3	96	KTC1600ET720	KT 5X1600CO FEEDER LENGTH 2M	52
TC1600EL44	KT 4X1600CO FEED UNIT EL N4	96	KTC1600ET72B	KT 5X1600CO FEEDER LENGTH	52
TC1600EL45	KT 4X1600CO FEED UNIT EL N5	97	KTC1600ET72C	KT 5X1600CO FEEDER LENGTH	52
TC1600EL51	KT 5X1600CO FEED UNIT EL N1	94	KTC1600ET73D	KT 5X1600CO FEEDER LENGTH	52
TC1600EL52	KT 5X1600CO FEED UNIT EL N2	94	KTC1600ET73E	KT 5X1600CO FEEDER LENGTH	52
TC1600EL53	KT 5X1600CO FEED UNIT EL N3	96	KTC1600ET73F	KT 5X1600CO FEEDER LENGTH	52
TC1600EL54	KT 5X1600CO FEED UNIT EL N4	96	KTC1600ET740	KT 5X1600CO FEEDER LENGTH 4M	52
TC1600EL55	KT 5X1600CO FEED UNIT EL N5	97	KTC1600FC3A	KT 3X1600CO EDGEWISE ELBOW	74
TC1600EL71	KT 5X1600CO FEED UNIT EL N1	94	KTC1600FC3B	KT 3X1600CO EDGEWISE ELBOW	74
TC1600EL72	KT 5X1600CO FEED UNIT EL N2	94	KTC1600FC3D	KT 3X1600CO EDGEWISE ELBOW	74
TC1600EL73	KT 5X1600CO FEED UNIT EL N3	96	KTC1600FC3E	KT 3X1600CO EDGEWISE ELBOW	74
TC1600EL74	KT 5X1600CO FEED UNIT EL N4	96	KTC1600FC4A	KT 4X1600CO EDGEWISE ELBOW	74
TC1600EL75	KT 5X1600CO FEED UNIT EL N5	97	KTC1600FC4B	KT 4X1600CO EDGEWISE ELBOW	74
TC1600ER31	KT 3X1600CO FEED UNIT ER N1	80	KTC1600FC4D	KT 4X1600CO EDGEWISE ELBOW	74
TC1600ER32	KT 3X1600CO FEED UNIT ER N2	80	KTC1600FC4E	KT 4X1600CO EDGEWISE ELBOW	74
TC1600ER33	KT 3X1600CO FEED UNIT ER N3	81	KTC1600FC5A	KT 5X1600CO EDGEWISE ELBOW	74
TC1600ER34	KT 3X1600CO FEED UNIT ER N4	81	KTC1600FC5B	KT 5X1600CO EDGEWISE ELBOW	74
TC1600ER35	KT 3X1600CO FEED UNIT ER N5	82	KTC1600FC5D	KT 5X1600CO EDGEWISE ELBOW	74
TC1600ER36	KT 3X1600CO FEED UNIT ER N6	82	KTC1600FC5E	KT 5X1600CO EDGEWISE ELBOW	74
TC1600ER37	KT 3X1600CO FEED UNIT ER N7	86	KTC1600FC7A	KT 5X1600CO EDGEWISE ELBOW	74
TC1600ER41	KT 4X1600CO FEED UNIT ER N1	80	KTC1600FC7B	KT 5X1600CO EDGEWISE ELBOW	74
TC1600ER42	KT 4X1600CO FEED UNIT ER N2	80	KTC1600FC7D	KT 5X1600CO EDGEWISE ELBOW	74
TC1600ER43	KT 4X1600CO FEED UNIT ER N3	81	KTC1600FC7E	KT 5X1600CO EDGEWISE ELBOW	74
TC1600ER44	KT 4X1600CO FEED UNIT ER N4	81	KTC1600FP3A1	KT 3X1600CO FLAT ELBOW N1 FIRE	73
TC1600ER45	KT 4X1600CO FEED UNIT ER N5	82	KTC1600FP3A2	KT 3X1600CO FLAT ELBOW N2 FIRE	73
TC1600ER46	KT 4X1600CO FEED UNIT ER N6	82	KTC1600FP3B1	KT 3X1600CO FLAT ELBOW N1 FIRE	73
TC1600ER47	KT 4X1600CO FEED UNIT ER N7	86		KT 3X1600CO FLAT ELBOW N2 FIRE	73
TC1600ER51	KT 5X1600CO FEED UNIT ER N1	80	KTC1600FP3D1	KT 3X1600CO FLAT ELBOW N1 FIRE	73
TC1600ER52	KT 5X1600CO FEED UNIT ER N2	80		KT 3X1600CO FLAT ELBOW N2 FIRE	73
TC1600ER53	KT 5X1600CO FEED UNIT ER N3	81		KT 3X1600CO FLAT ELBOW N1 FIRE	73
TC1600ER54	KT 5X1600CO FEED UNIT ER N4	81		KT 3X1600CO FLAT ELBOW N2 FIRE	73
TC1600ER55	KT 5X1600CO FEED UNIT ER N5	82	KTC1600FP4A1		73
C1600ER56	KT 5X1600CO FEED UNIT ER N6	82		KT 4X1600CO FLAT ELBOW N2 FIRE	73
TC1600ER57	KT 5X1600CO FEED UNIT ER N7	86		KT 4X1600CO FLAT ELBOW N1 FIRE	73
C1600ER71	KT 5X1600CO FEED UNIT ER N1	80		KT 4X1600CO FLAT ELBOW N2 FIRE	73
C1600ER72	KT 5X1600CO FEED UNIT ER N2	80		KT 4X1600CO FLAT ELBOW N1 FIRE	73
C1600ER73	KT 5X1600CO FEED UNIT ER N3	81		KT 4X1600CO FLAT ELBOW N2 FIRE	73
C1600ER74	KT 5X1600CO FEED UNIT ER N4	81		KT 4X1600CO FLAT ELBOW N2 FIRE	73
C1600ER74	KT 5X1600CO FEED UNIT ER N5	82		KT 4X1600CO FLAT ELBOW NT FIRE	73
C1600ER75	KT 5X1600CO FEED UNIT ER NS	82	KTC1600FP4E2		73
TC1600ER76	KT 5X1600CO FEED UNIT ER N6	86		KT 5X1600CO FLAT ELBOW NT FIRE	73
	KT 3X1600CO FEED ONT ER N7	52		KT 5X1600CO FLAT ELBOW N2 FIRE	73
TC1600ET320	KT 3X1600CO FEEDER LENGTH 2M	52		KT 5X1600CO FLAT ELBOW N2 FIRE	73
	KT 3X1600CO FEEDER LENGTH	52		KT 5X1600CO FLAT ELBOW N1 FIRE	73
11. TRUNE 1 570	KT 3X1600CO FEEDER LENGTH	52	KICI600FP5D2	KT 5X1600CO FLAT ELBOW N2 FIRE	73

Cat. no.	Designations	Pages	Cat. no.	Designations	Pages
KTC1600FP5E2	-	73	KTC1600LP3E2	KT 3X1600CO FLAT ELBOW N2	62
KTC1600FP7A1	KT 5X1600CO FLAT ELBOW N1 FIRE	73	KTC1600LP4A1	KT 4X1600CO FLAT ELBOW N1	62
	KT 5X1600CO FLAT ELBOW N2 FIRE	73		KT 4X1600CO FLAT ELBOW N2	62
	KT 5X1600CO FLAT ELBOW N1 FIRE	73		KT 4X1600CO FLAT ELBOW N1	62
	KT 5X1600CO FLAT ELBOW N2 FIRE	73		KT 4X1600CO FLAT ELBOW N2	62
	KT 5X1600CO FLAT ELBOW N1 FIRE	73		KT 4X1600CO FLAT ELBOW N1	63
	KT 5X1600CO FLAT ELBOW N2 FIRE KT 5X1600CO FLAT ELBOW N1 FIRE	73 73		KT 4X1600CO FLAT ELBOW N2 KT 4X1600CO FLAT ELBOW N1	63 62
	KT 5X1600CO FLAT ELBOW NT FIRE	73		KT 4X1600CO FLAT ELBOW NT KT 4X1600CO FLAT ELBOW N2	62
	KT 3X1600CO FEEDER LENGTH FIRE	72		KT 4X1600CO FLAT ELBOW N1	62
KTC1600FT320	KT 3X1600CO FEEDER LENGTH FIRE 2M	72		KT 4X1600CO FLAT ELBOW N2	62
KTC1600FT32B	KT 3X1600CO FEEDER LENGTH FIRE	72	KTC1600LP5A1	KT 5X1600CO FLAT ELBOW N1	62
KTC1600FT32C	KT 3X1600CO FEEDER LENGTH FIRE	72	KTC1600LP5A2	KT 5X1600CO FLAT ELBOW N2	62
KTC1600FT33D	KT 3X1600CO FEEDER LENGTH FIRE	72		KT 5X1600CO FLAT ELBOW N1	62
	KT 3X1600CO FEEDER LENGTH FIRE	72		KT 5X1600CO FLAT ELBOW N2	62
	KT 3X1600CO FEEDER LENGTH FIRE	72		KT 5X1600CO FLAT ELBOW N1	63
KTC1600FT340	KT 3X1600CO FEEDER LENGTH FIRE 4M KT 4X1600CO FEEDER LENGTH FIRE	72 72		KT 5X1600CO FLAT ELBOW N2 KT 5X1600CO FLAT ELBOW N1	63 62
KTC1600FT41A	KT 4X1600CO FEEDER LENGTH FIRE 2M	72		KT 5X1600CO FLAT ELBOW NT KT 5X1600CO FLAT ELBOW N2	62
	KT 4X1600CO FEEDER LENGTH FIRE	72		KT 5X1600CO FLAT ELBOW N2 KT 5X1600CO FLAT ELBOW N1	62
	KT 4X1600CO FEEDER LENGTH FIRE	72		KT 5X1600CO FLAT ELBOW N2	62
KTC1600FT43D	KT 4X1600CO FEEDER LENGTH FIRE	72	KTC1600LP7A1	KT 5X1600CO FLAT ELBOW N1	62
KTC1600FT43E	KT 4X1600CO FEEDER LENGTH FIRE	72	KTC1600LP7A2	KT 5X1600CO FLAT ELBOW N2	62
KTC1600FT43F	KT 4X1600CO FEEDER LENGTH FIRE	72		KT 5X1600CO FLAT ELBOW N1	62
KTC1600FT440	KT 4X1600CO FEEDER LENGTH FIRE 4M	72		KT 5X1600CO FLAT ELBOW N2	62
	KT 5X1600CO FEEDER LENGTH FIRE	72		KT 5X1600CO FLAT ELBOW N1	63
KTC1600FT520	KT 5X1600CO FEEDER LENGTH FIRE 2M KT 5X1600CO FEEDER LENGTH FIRE	72 72		KT 5X1600CO FLAT ELBOW N2 KT 5X1600CO FLAT ELBOW N1	63 62
	KT 5X1600CO FEEDER LENGTH FIRE	72		KT 5X1600CO FLAT ELBOW NT	62
	KT 5X1600CO FEEDER LENGTH FIRE	72		KT 5X1600CO FLAT ELBOW N1	62
KTC1600FT53E	KT 5X1600CO FEEDER LENGTH FIRE	72		KT 5X1600CO FLAT ELBOW N2	62
KTC1600FT53F	KT 5X1600CO FEEDER LENGTH FIRE	72	KTC1600PL31	KT 3X1600CO LINE PROTECTOR NS	131
KTC1600FT540	KT 5X1600CO FEEDER LENGTH FIRE 4M	72	KTC1600PL41	KT 4X1600CO LINE PROTECTOR NS	131
KTC1600FT71A	KT 5X1600CO FEEDER LENGTH FIRE	72	KTC1600PL51	KT 5X1600CO LINE PROTECTOR NS	131
KTC1600FT720	KT 5X1600CO FEEDER LENGTH FIRE 2M	72	KTC1600PL71	KT 5X1600CO LINE PROTECTOR NS	131
	KT 5X1600CO FEEDER LENGTH FIRE KT 5X1600CO FEEDER LENGTH FIRE	72 72	KTC1600SL31 KTC1600SL41	KT 3X1600CO ISOLATOR UNIT NA KT 4X1600CO ISOLATOR UNIT NA	129 129
	KT 5X1600CO FEEDER LENGTH FIRE	72	KTC1600SL51	KT 5X1600CO ISOLATOR UNIT NA	129
	KT 5X1600CO FEEDER LENGTH FIRE	72	KTC1600SL71	KT 5X1600CO ISOLATOR UNIT NA	129
	KT 5X1600CO FEEDER LENGTH FIRE	72	KTC1600TC3	KT 3X1600CO TEE ON EDGE	67
KTC1600FT740	KT 5X1600CO FEEDER LENGTH FIRE 4M	72	KTC1600TC4	KT 4X1600CO TEE ON EDGE	67
KTC1600LC3A	KT 3X1600CO EDGEWISE ELBOW	63	KTC1600TC5	KT 5X1600CO TEE ON EDGE	67
KTC1600LC3B	KT 3X1600CO EDGEWISE ELBOW	63	KTC1600TC7	KT 5X1600CO TEE ON EDGE	67
KTC1600LC3D	KT 3X1600CO EDGEWISE ELBOW	63	KTC1600TN410	KT 4X1600CO NEUTRAL PERMUTA	58
KTC1600LC3E	KT 3X1600CO EDGEWISE ELBOW	63	KTC1600TP410	KT 4X1600CO PHASES PERMUTA	58
KTC1600LC4A KTC1600LC4B	KT 4X1600CO EDGEWISE ELBOW KT 4X1600CO EDGEWISE ELBOW	63 63	KTC1600YA3 KTC1600YA4	KT 3X1600CO JUNCTION BLOC KT 4X1600CO JUNCTION BLOC	60 60
KTC1600LC4D	KT 4X1600CO EDGEWISE ELBOW	63	KTC1600YA5	KT 5X1600CO JUNCTION BLOC	60
KTC1600LC4E	KT 4X1600CO EDGEWISE ELBOW	63	KTC1600YA7	KT 5X1600CO JUNCTION BLOC	60
KTC1600LC5A	KT 5X1600CO EDGEWISE ELBOW	63	KTC1600ZC31	KT 3X1600CO EDGEWISE ZED N1	68
KTC1600LC5B	KT 5X1600CO EDGEWISE ELBOW	63	KTC1600ZC32	KT 3X1600CO EDGEWISE ZED N2	68
KTC1600LC5D	KT 5X1600CO EDGEWISE ELBOW	63	KTC1600ZC41	KT 4X1600CO EDGEWISE ZED N1	68
KTC1600LC5E	KT 5X1600CO EDGEWISE ELBOW	63	KTC1600ZC42	KT 4X1600CO EDGEWISE ZED N2	68
KTC1600LC7A	KT 5X1600CO EDGEWISE ELBOW	63	KTC1600ZC51	KT 5X1600CO EDGEWISE ZED N1	68
KTC1600LC7B KTC1600LC7D	KT 5X1600CO EDGEWISE ELBOW KT 5X1600CO EDGEWISE ELBOW	63 63	KTC1600ZC52 KTC1600ZC71	KT 5X1600CO EDGEWISE ZED N2 KT 5X1600CO EDGEWISE ZED N1	68 68
KTC1600LC7E	KT 5X1600CO EDGEWISE ELBOW	63	KTC1600ZC72	KT 5X1600CO EDGEWISE ZED NT KT 5X1600CO EDGEWISE ZED N2	68
	KT 3X1600CO FLAT ELBOW N1	62	KTC1600ZP3	KT 3X1600CO ZED ON FLAT	68
	KT 3X1600CO FLAT ELBOW N2	62	KTC1600ZP4	KT 4X1600CO ZED ON FLAT	68
	KT 3X1600CO FLAT ELBOW N1	62	KTC1600ZP5	KT 5X1600CO ZED ON FLAT	68
KTC1600LP3B2	KT 3X1600CO FLAT ELBOW N2	62	KTC1600ZP7	KT 5X1600CO ZED ON FLAT	68
	KT 3X1600CO FLAT ELBOW N1	63			
	KT 3X1600CO FLAT ELBOW N2	63	KTC2000		
	KT 3X1600CO FLAT ELBOW N1	62	KTC2000CP31	KT 3X2000CO FLAT EDGEWISE N1	70
	KT 3X1600CO FLAT ELBOW N2 KT 3X1600CO FLAT ELBOW N1	62 62	KTC2000CP32	KT 3X2000CO FLAT EDGEWISE N2	70
NICIOULF3E1		02	KTC2000CP33	KT 3X2000CO FLAT EDGEWISE N3	70

### Index

at. no.	Designations	Pages	Cat. no.	Designations	Pages
TC2000CP34	KT 3X2000CO FLAT EDGEWISE N4	70	KTC2000EL41	KT 4X2000CO FEED UNIT EL N1	94
TC2000CP41	KT 4X2000CO FLAT EDGEWISE N1	70	KTC2000EL42	KT 4X2000CO FEED UNIT EL N2	94
TC2000CP42	KT 4X2000CO FLAT EDGEWISE N2	70	KTC2000EL43	KT 4X2000CO FEED UNIT EL N3	96
TC2000CP43	KT 4X2000CO FLAT EDGEWISE N3	70	KTC2000EL44	KT 4X2000CO FEED UNIT EL N4	96
TC2000CP44	KT 4X2000CO FLAT EDGEWISE N4	70	KTC2000EL45	KT 4X2000CO FEED UNIT EL N5	97
TC2000CP51	KT 5X2000CO FLAT EDGEWISE N1	70	KTC2000EL51	KT 5X2000CO FEED UNIT EL N1	94
TC2000CP52	KT 5X2000CO FLAT EDGEWISE N2	70	KTC2000EL52	KT 5X2000CO FEED UNIT EL N2	94
TC2000CP53	KT 5X2000CO FLAT EDGEWISE N3	70	KTC2000EL53	KT 5X2000CO FEED UNIT EL N3	96
TC2000CP54	KT 5X2000CO FLAT EDGEWISE N4	70	KTC2000EL54	KT 5X2000CO FEED UNIT EL N4	96
TC2000CP71	KT 5X2000CO FLAT EDGEWISE N1	70	KTC2000EL55	KT 5X2000CO FEED UNIT EL N5	97
TC2000CP72	KT 5X2000CO FLAT EDGEWISE N2	70	KTC2000EL71	KT 5X2000CO FEED UNIT EL N1	94
TC2000CP73	KT 5X2000CO FLAT EDGEWISE N3	70	KTC2000EL72	KT 5X2000CO FEED UNIT EL N2	94
TC2000CP74	KT 5X2000CO FLAT EDGEWISE N4	70	KTC2000EL73	KT 5X2000CO FEED UNIT EL N3	96
TC2000DB310		58	KTC2000EL74	KT 5X2000CO FEED UNIT EL N4	96
TC2000DB410		58	KTC2000EL75	KT 5X2000CO FEED UNIT EL N5	97
	KT 5X2000CO EXPANSION UNIT	58	KTC2000ER31	KT 3X2000CO FEED UNIT ER N1	80
	KT 5X2000CO EXPANSION UNIT	58	KTC2000ER32	KT 3X2000CO FEED UNIT ER N2	80
	KT 3X2000CO BOLT ON LENGTH 2M	54	KTC2000ER33	KT 3X2000CO FEED UNIT ER N3	81
	KT 3X2000CO BOLT ON LENGTH 4M	54	KTC2000ER34	KT 3X2000CO FEED UNIT ER N4	81
	KT 4X2000CO BOLT ON LENGTH 2M	54	KTC2000ER35	KT 3X2000CO FEED UNIT ER N5	82
	KT 4X2000CO BOLT ON LENGTH 4M	54	KTC2000ER36	KT 3X2000CO FEED UNIT ER N6	82
	KT 5X2000CO BOLT ON LENGTH 2M	54	KTC2000ER37	KT 3X2000CO FEED UNIT ER N7	86
	KT 5X2000CO BOLT ON LENGTH 4M KT 5X2000CO BOLT ON LENGTH 2M	54	KTC2000ER41	KT 4X2000CO FEED UNIT ER N1 KT 4X2000CO FEED UNIT ER N2	80 80
		54	KTC2000ER42		80 81
	KT 5X2000CO BOLT ON LENGTH 4M KT 1X2000CO PLUG-IN LENGTH 2M	54 52	KTC2000ER43 KTC2000ER44	KT 4X2000CO FEED UNIT ER N3 KT 4X2000CO FEED UNIT ER N4	81
	KT 3X2000CO PLUG-IN LENGTH 2M	52	KTC2000ER44	KT 4X2000CO FEED UNIT ER N4	82
	KT 1X2000CO PLUG-IN LENGTH	52	KTC2000ER45	KT 4X2000CO FEED UNIT ER N6	82
	KT 2X2000CO PLUG-IN LENGTH	52	KTC2000ER40	KT 4X2000CO FEED UNIT ER N7	86
	KT 1X2000CO PLUG-IN LENGTH	52	KTC2000ER51	KT 5X2000CO FEED UNIT ER N1	80
	KT 3X2000CO PLUG-IN LENGTH	52	KTC2000ER52	KT 5X2000CO FEED UNIT ER N2	80
	KT 3X2000CO PLUG-IN LENGTH 4M	52	KTC2000ER53	KT 5X2000CO FEED UNIT ER N3	81
	KT 1X2000CO PLUG-IN LENGTH 2M	52	KTC2000ER54	KT 5X2000CO FEED UNIT ER N4	81
	KT 4X2000CO PLUG-IN LENGTH 2M	52	KTC2000ER55	KT 5X2000CO FEED UNIT ER N5	82
	KT 1X2000CO PLUG-IN LENGTH	52	KTC2000ER56	KT 5X2000CO FEED UNIT ER N6	82
	KT 2X2000CO PLUG-IN LENGTH	52	KTC2000ER57	KT 5X2000CO FEED UNIT ER N7	86
	KT 1X2000CO PLUG-IN LENGTH	52	KTC2000ER71	KT 5X2000CO FEED UNIT ER N1	80
	KT 3X2000CO PLUG-IN LENGTH	52	KTC2000ER72	KT 5X2000CO FEED UNIT ER N2	80
TC2000ED4403	KT 4X2000CO PLUG-IN LENGTH 4M	52	KTC2000ER73	KT 5X2000CO FEED UNIT ER N3	81
TC2000ED5201	KT 1X2000CO PLUG-IN LENGTH 2M	52	KTC2000ER74	KT 5X2000CO FEED UNIT ER N4	81
TC2000ED5203	KT 5X2000CO PLUG-IN LENGTH 2M	52	KTC2000ER75	KT 5X2000CO FEED UNIT ER N5	82
TC2000ED5301	KT 1X2000CO PLUG-IN LENGTH	52	KTC2000ER76	KT 5X2000CO FEED UNIT ER N6	82
TC2000ED5302	KT 2X2000CO PLUG-IN LENGTH	52	KTC2000ER77	KT 5X2000CO FEED UNIT ER N7	86
TC2000ED5351	KT 1X2000CO PLUG-IN LENGTH	52	KTC2000ET31A	KT 3X2000CO FEEDER LENGTH	52
TC2000ED5353	KT 3X2000CO PLUG-IN LENGTH	52	KTC2000ET320	KT 3X2000CO FEEDER LENGTH 2M	52
TC2000ED5403	KT 5X2000CO PLUG-IN LENGTH 4M	52	KTC2000ET32B	KT 3X2000CO FEEDER LENGTH	52
TC2000ED7201	KT 1X2000CO PLUG-IN LENGTH 2M	52	KTC2000ET32C	KT 3X2000CO FEEDER LENGTH	52
TC2000ED7203	KT 5X2000CO PLUG-IN LENGTH 2M	52	KTC2000ET33D	KT 3X2000CO FEEDER LENGTH	52
TC2000ED7301	KT 1X2000CO PLUG-IN LENGTH	52	KTC2000ET33E	KT 3X2000CO FEEDER LENGTH	52
TC2000ED7302	KT 2X2000CO PLUG-IN LENGTH	52	KTC2000ET33F	KT 3X2000CO FEEDER LENGTH	52
TC2000ED7351	KT 1X2000CO PLUG-IN LENGTH	52	KTC2000ET340	KT 3X2000CO FEEDER LENGTH 4M	52
TC2000ED7353	KT 3X2000CO PLUG-IN LENGTH	52	KTC2000ET41A	KT 4X2000CO FEEDER LENGTH	52
TC2000ED7403	KT 5X2000CO PLUG-IN LENGTH 4M	52	KTC2000ET420	KT 4X2000CO FEEDER LENGTH 2M	52
TC2000EH320	KT 3X2000CO KH PLUG-IN LENGTH 2M	55	KTC2000ET42B	KT 4X2000CO FEEDER LENGTH	52
C2000EH340	KT 3X2000CO KH PLUG-IN LENGTH 4M	55	KTC2000ET42C	KT 4X2000CO FEEDER LENGTH	52
	KT 4X2000CO KH PLUG-IN LENGTH 2M	55		KT 4X2000CO FEEDER LENGTH	52
	KT 4X2000CO KH PLUG-IN LENGTH 4M	55		KT 4X2000CO FEEDER LENGTH	52
	KT 5X2000CO KH PLUG-IN LENGTH 2M	55	KTC2000ET43F	KT 4X2000CO FEEDER LENGTH	52
	KT 5X2000CO KH PLUG-IN LENGTH 4M	55	KTC2000ET440	KT 4X2000CO FEEDER LENGTH 4M	52
TC2000EH720		55		KT 5X2000CO FEEDER LENGTH	52
TC2000EH740		55	KTC2000ET520	KT 5X2000CO FEEDER LENGTH 2M	52
TC2000EL31	KT 3X2000CO FEED UNIT EL N1	94	KTC2000ET52B	KT 5X2000CO FEEDER LENGTH	52
TC2000EL32	KT 3X2000CO FEED UNIT EL N2	94		KT 5X2000CO FEEDER LENGTH	52
TC2000EL33	KT 3X2000CO FEED UNIT EL N3	96		KT 5X2000CO FEEDER LENGTH	52
TC2000EL34	KT 3X2000CO FEED UNIT EL N4	96	KTC2000ET53E	KT 5X2000CO FEEDER LENGTH	52

Cat. no.	Designations	Pages	Cat. no.	Designations	Pages
KTC2000ET540	KT 5X2000CO FEEDER LENGTH 4M	52	KTC2000FT420	KT 4X2000CO FEEDER LENGTH FIRE 2M	72
KTC2000ET71A	KT 5X2000CO FEEDER LENGTH	52	KTC2000FT42B	KT 4X2000CO FEEDER LENGTH FIRE	72
KTC2000ET720 KTC2000ET72B	KT 5X2000CO FEEDER LENGTH 2M	52	KTC2000FT42C KTC2000FT43D	KT 4X2000CO FEEDER LENGTH FIRE	72 72
	KT 5X2000CO FEEDER LENGTH KT 5X2000CO FEEDER LENGTH	52 52	KTC2000FT43D	KT 4X2000CO FEEDER LENGTH FIRE KT 4X2000CO FEEDER LENGTH FIRE	72
KTC2000ET73D	KT 5X2000CO FEEDER LENGTH	52	KTC2000FT43E	KT 4X2000CO FEEDER LENGTH FIRE	72
	KT 5X2000CO FEEDER LENGTH	52	KTC2000FT440	KT 4X2000CO FEEDER LENGTH FIRE 4M	72
KTC2000ET73F	KT 5X2000CO FEEDER LENGTH	52	KTC2000FT51A	KT 5X2000CO FEEDER LENGTH FIRE	72
KTC2000ET740	KT 5X2000CO FEEDER LENGTH 4M	52	KTC2000FT520	KT 5X2000CO FEEDER LENGTH FIRE 2M	72
KTC2000FC3A	KT 3X2000CO EDGEWISE ELBOW	74	KTC2000FT52B	KT 5X2000CO FEEDER LENGTH FIRE	72
KTC2000FC3B	KT 3X2000CO EDGEWISE ELBOW	74	KTC2000FT52C	KT 5X2000CO FEEDER LENGTH FIRE	72
KTC2000FC3D	KT 3X2000CO EDGEWISE ELBOW	74	KTC2000FT53D	KT 5X2000CO FEEDER LENGTH FIRE	72
KTC2000FC3E	KT 3X2000CO EDGEWISE ELBOW	74	KTC2000FT53E	KT 5X2000CO FEEDER LENGTH FIRE	72
KTC2000FC4A	KT 4X2000CO EDGEWISE ELBOW	74 74	KTC2000FT53F KTC2000FT540	KT 5X2000CO FEEDER LENGTH FIRE	72 72
KTC2000FC4B KTC2000FC4D	KT 4X2000CO EDGEWISE ELBOW KT 4X2000CO EDGEWISE ELBOW	74	KTC2000FT540	KT 5X2000CO FEEDER LENGTH FIRE 4M KT 5X2000CO FEEDER LENGTH FIRE	72
KTC2000FC4E	KT 4X2000CO EDGEWISE ELBOW	74	KTC2000FT720	KT 5X2000CO FEEDER LENGTH FIRE 2M	72
KTC2000FC5A	KT 5X2000CO EDGEWISE ELBOW	74	KTC2000FT72B	KT 5X2000CO FEEDER LENGTH FIRE	72
KTC2000FC5B	KT 5X2000CO EDGEWISE ELBOW	74	KTC2000FT72C	KT 5X2000CO FEEDER LENGTH FIRE	72
KTC2000FC5D	KT 5X2000CO EDGEWISE ELBOW	74	KTC2000FT73D	KT 5X2000CO FEEDER LENGTH FIRE	72
KTC2000FC5E	KT 5X2000CO EDGEWISE ELBOW	74	KTC2000FT73E	KT 5X2000CO FEEDER LENGTH FIRE	72
KTC2000FC7A	KT 5X2000CO EDGEWISE ELBOW	74	KTC2000FT73F	KT 5X2000CO FEEDER LENGTH FIRE	72
KTC2000FC7B	KT 5X2000CO EDGEWISE ELBOW	74	KTC2000FT740	KT 5X2000CO FEEDER LENGTH FIRE 4M	72
KTC2000FC7D	KT 5X2000CO EDGEWISE ELBOW	74	KTC2000LC3A	KT 3X2000CO EDGEWISE ELBOW	63
KTC2000FC7E KTC2000FP3A1	KT 5X2000CO EDGEWISE ELBOW KT 3X2000CO FLAT ELBOW N1 FIRE	74 73	KTC2000LC3B KTC2000LC3D	KT 3X2000CO EDGEWISE ELBOW KT 3X2000CO EDGEWISE ELBOW	63 63
	KT 3X2000CO FLAT ELBOW NT FIRE	73	KTC2000LC3D	KT 3X2000CO EDGEWISE ELBOW	63
KTC2000FP3B1	KT 3X2000CO FLAT ELBOW N2 FIRE	73	KTC2000LC4A	KT 4X2000CO EDGEWISE ELBOW	63
	KT 3X2000CO FLAT ELBOW N2 FIRE	73	KTC2000LC4B	KT 4X2000CO EDGEWISE ELBOW	63
KTC2000FP3D1	KT 3X2000CO FLAT ELBOW N1 FIRE	73	KTC2000LC4D	KT 4X2000CO EDGEWISE ELBOW	63
KTC2000FP3D2	KT 3X2000CO FLAT ELBOW N2 FIRE	73	KTC2000LC4E	KT 4X2000CO EDGEWISE ELBOW	63
KTC2000FP3E1	KT 3X2000CO FLAT ELBOW N1 FIRE	73	KTC2000LC5A	KT 5X2000CO EDGEWISE ELBOW	63
KTC2000FP3E2	KT 3X2000CO FLAT ELBOW N2 FIRE	73	KTC2000LC5B	KT 5X2000CO EDGEWISE ELBOW	63
KTC2000FP4A1	KT 4X2000CO FLAT ELBOW N1 FIRE	73	KTC2000LC5D	KT 5X2000CO EDGEWISE ELBOW	63
	KT 4X2000CO FLAT ELBOW N2 FIRE	73	KTC2000LC5E	KT 5X2000CO EDGEWISE ELBOW	63
KTC2000FP4B1 KTC2000FP4B2	KT 4X2000CO FLAT ELBOW N1 FIRE KT 4X2000CO FLAT ELBOW N2 FIRE	73 73	KTC2000LC7A KTC2000LC7B	KT 5X2000CO EDGEWISE ELBOW KT 5X2000CO EDGEWISE ELBOW	63 63
KTC2000FP4B2	KT 4X2000CO FLAT ELBOW N2 FIRE	73	KTC2000LC7B	KT 5X2000CO EDGEWISE ELBOW	63
	KT 4X2000CO FLAT ELBOW N2 FIRE	73	KTC2000LC7E	KT 5X2000CO EDGEWISE ELBOW	63
KTC2000FP4E1		73	KTC2000LP3A1	KT 3X2000CO FLAT ELBOW N1	62
KTC2000FP4E2	KT 4X2000CO FLAT ELBOW N2 FIRE	73	KTC2000LP3A2	KT 3X2000CO FLAT ELBOW N2	62
KTC2000FP5A1	KT 5X2000CO FLAT ELBOW N1 FIRE	73	KTC2000LP3B1	KT 3X2000CO FLAT ELBOW N1	62
	KT 5X2000CO FLAT ELBOW N2 FIRE	73		KT 3X2000CO FLAT ELBOW N2	62
	KT 5X2000CO FLAT ELBOW N1 FIRE	73		KT 3X2000CO FLAT ELBOW N1	63
	KT 5X2000CO FLAT ELBOW N2 FIRE	73		KT 3X2000CO FLAT ELBOW N2	63
	KT 5X2000CO FLAT ELBOW N1 FIRE KT 5X2000CO FLAT ELBOW N2 FIRE	73 73		KT 3X2000CO FLAT ELBOW N1 KT 3X2000CO FLAT ELBOW N2	62 62
	KT 5X2000CO FLAT ELBOW N2 FIRE	73		KT 3X2000CO FLAT ELBOW N2 KT 3X2000CO FLAT ELBOW N1	62
	KT 5X2000CO FLAT ELBOW NT FIRE	73		KT 3X2000CO FLAT ELBOW NT	62
	KT 5X2000CO FLAT ELBOW N1 FIRE	73		KT 4X2000CO FLAT ELBOW N1	62
KTC2000FP7A2	KT 5X2000CO FLAT ELBOW N2 FIRE	73	KTC2000LP4A2	KT 4X2000CO FLAT ELBOW N2	62
KTC2000FP7B1	KT 5X2000CO FLAT ELBOW N1 FIRE	73	KTC2000LP4B1	KT 4X2000CO FLAT ELBOW N1	62
	KT 5X2000CO FLAT ELBOW N2 FIRE	73		KT 4X2000CO FLAT ELBOW N2	62
	KT 5X2000CO FLAT ELBOW N1 FIRE	73		KT 4X2000CO FLAT ELBOW N1	63
	KT 5X2000CO FLAT ELBOW N2 FIRE	73		KT 4X2000CO FLAT ELBOW N2	63
	KT 5X2000CO FLAT ELBOW N1 FIRE	73 73		KT 4X2000CO FLAT ELBOW N1	62 62
	KT 5X2000CO FLAT ELBOW N2 FIRE KT 3X2000CO FEEDER LENGTH FIRE	73		KT 4X2000CO FLAT ELBOW N2 KT 4X2000CO FLAT ELBOW N1	62
	KT 3X2000CO FEEDER LENGTH FIRE KT 3X2000CO FEEDER LENGTH FIRE 2M	72		KT 4X2000CO FLAT ELBOW NT KT 4X2000CO FLAT ELBOW N2	62
	KT 3X2000CO FEEDER LENGTH IKE 2M	72		KT 5X2000CO FLAT ELBOW N2 KT 5X2000CO FLAT ELBOW N1	62
	KT 3X2000CO FEEDER LENGTH FIRE	72		KT 5X2000CO FLAT ELBOW N2	62
	KT 3X2000CO FEEDER LENGTH FIRE	72		KT 5X2000CO FLAT ELBOW N1	62
KTC2000FT33E	KT 3X2000CO FEEDER LENGTH FIRE	72	KTC2000LP5B2	KT 5X2000CO FLAT ELBOW N2	62
	KT 3X2000CO FEEDER LENGTH FIRE	72		KT 5X2000CO FLAT ELBOW N1	63
	KT 3X2000CO FEEDER LENGTH FIRE 4M	72		KT 5X2000CO FLAT ELBOW N2	63
KTC2000FT41A	KT 4X2000CO FEEDER LENGTH FIRE	72	KTC2000LP5D1	KT 5X2000CO FLAT ELBOW N1	62

Cat. no.	Designations	Pages	Cat. no. Designations	Pages
KTC2000LP5D2	KT 5X2000CO FLAT ELBOW N2	62	KTC2500EB720 KT 5X2500CO BOLT ON LENGTH 2M	54
KTC2000LP5E1	KT 5X2000CO FLAT ELBOW N1	62	KTC2500EB740 KT 5X2500CO BOLT ON LENGTH 4M	54
KTC2000LP5E2	KT 5X2000CO FLAT ELBOW N2	62	KTC2500ED3201 KT 1X2500CO PLUG-IN LENGTH 2M	52
KTC2000LP7A1	KT 5X2000CO FLAT ELBOW N1	62	KTC2500ED3203 KT 3X2500CO PLUG-IN LENGTH 2M	52
KTC2000LP7A2	KT 5X2000CO FLAT ELBOW N2	62	KTC2500ED3301 KT 1X2500CO PLUG-IN LENGTH	52
KTC2000LP7B1	KT 5X2000CO FLAT ELBOW N1	62	KTC2500ED3302 KT 2X2500CO PLUG-IN LENGTH	52
KTC2000LP7B2	KT 5X2000CO FLAT ELBOW N2	62	KTC2500ED3351 KT 1X2500CO PLUG-IN LENGTH	52
KTC2000LP7C1	KT 5X2000CO FLAT ELBOW N1	63	KTC2500ED3353 KT 3X2500CO PLUG-IN LENGTH	52
KTC2000LP7C2	KT 5X2000CO FLAT ELBOW N2	63	KTC2500ED3403 KT 3X2500CO PLUG-IN LENGTH 4M	52
KTC2000LP7D1	KT 5X2000CO FLAT ELBOW N1	62	KTC2500ED4201 KT 1X2500CO PLUG-IN LENGTH 2M	52
	KT 5X2000CO FLAT ELBOW N2	62	KTC2500ED4203 KT 4X2500CO PLUG-IN LENGTH 2M	52
	KT 5X2000CO FLAT ELBOW N1	62	KTC2500ED4301 KT 1X2500CO PLUG-IN LENGTH	52
	KT 5X2000CO FLAT ELBOW N2	62	KTC2500ED4302 KT 2X2500CO PLUG-IN LENGTH	52
KTC2000SL31	KT 3X2000CO ISOLATOR UNIT INV	129	KTC2500ED4351 KT 1X2500CO PLUG-IN LENGTH	52
KTC2000SL41	KT 4X2000CO ISOLATOR UNIT INV	129	KTC2500ED4353 KT 3X2500CO PLUG-IN LENGTH	52
KTC2000SL51	KT 5X2000CO ISOLATOR UNIT INV	129	KTC2500ED4403 KT 4X2500CO PLUG-IN LENGTH 4M	52
KTC2000TC3	KT 3X2000CO TEE ON EDGE	67	KTC2500ED5201 KT 1X2500CO PLUG-IN LENGTH 2M	52
KTC2000TC4	KT 4X2000CO TEE ON EDGE	67	KTC2500ED5203 KT 5X2500CO PLUG-IN LENGTH 2M	52
KTC2000TC5	KT 5X2000CO TEE ON EDGE	67	KTC2500ED5301 KT 1X2500CO PLUG-IN LENGTH	52
KTC2000TC7	KT 5X2000CO TEE ON EDGE	67	KTC2500ED5302 KT 2X2500CO PLUG-IN LENGTH	52
KTC2000TN410	KT 4X2000CO NEUTRAL PERMUTA	58	KTC2500ED5351 KT 1X2500CO PLUG-IN LENGTH	52
KTC2000TP410	KT 4X2000CO PHASES PERMUTA	58	KTC2500ED5353 KT 3X2500CO PLUG-IN LENGTH	52
KTC2000YA3	KT 3X2000CO JUNCTION BLOC	60	KTC2500ED5403 KT 5X2500CO PLUG-IN LENGTH 4M	52
KTC2000YA4	KT 4X2000CO JUNCTION BLOC KT 5X2000CO JUNCTION BLOC	60 60	KTC2500ED6201 KT 1X2500CO PLUG-IN LENGTH 2M KTC2500ED6203 KT 5X2500CO PLUG-IN LENGTH 2M	52 52
KTC2000YA5				52 52
KTC2000YA7 KTC2000ZC31	KT 5X2000CO JUNCTION BLOC KT 3X2000CO EDGEWISE ZED N1	60 68	KTC2500ED6301 KT 1X2500CO PLUG-IN LENGTH KTC2500ED6302 KT 2X2500CO PLUG-IN LENGTH	52
KTC2000ZC32	KT 3X2000CO EDGEWISE ZED N1	68	KTC2500ED6352 KT 222500CO PLUG-IN LENGTH	52
KTC2000ZC32	KT 4X2000CO EDGEWISE ZED NZ	68	KTC2500ED6353 KT 3X2500CO PLUG-IN LENGTH	52
KTC2000ZC41	KT 4X2000CO EDGEWISE ZED N1	68	KTC2500ED6403 KT 5X2500CO PLUG-IN LENGTH	52
KTC2000ZC51	KT 5X2000CO EDGEWISE ZED N2	68	KTC2500ED7201 KT 1X2500CO PLUG-IN LENGTH 2M	52
KTC2000ZC52	KT 5X2000CO EDGEWISE ZED N2	68	KTC2500ED7203 KT 5X2500CO PLUG-IN LENGTH 2M	52
KTC2000ZC71	KT 5X2000CO EDGEWISE ZED N1	68	KTC2500ED7301 KT 1X2500CO PLUG-IN LENGTH	52
KTC2000ZC72	KT 5X2000CO EDGEWISE ZED N2	68	KTC2500ED7302 KT 2X2500CO PLUG-IN LENGTH	52
KTC2000ZP3	KT 3X2000CO ZED ON FLAT	68	KTC2500ED7351 KT 1X2500CO PLUG-IN LENGTH	52
KTC2000ZP4	KT 4X2000CO ZED ON FLAT	68	KTC2500ED7353 KT 3X2500CO PLUG-IN LENGTH	52
KTC2000ZP5	KT 5X2000CO ZED ON FLAT	68	KTC2500ED7403 KT 5X2500CO PLUG-IN LENGTH 4M	52
KTC2000ZP7	KT 5X2000CO ZED ON FLAT	68	KTC2500EH320 KT 3X2500CO KH PLUG-IN LENGTH 2M	55
			KTC2500EH340 KT 3X2500CO KH PLUG-IN LENGTH 4M	55
KTC2500			KTC2500EH420 KT 4X2500CO KH PLUG-IN LENGTH 2M	55
KTC2500CP31	KT 3X2500CO FLAT EDGEWISE N1	70	KTC2500EH440 KT 4X2500CO KH PLUG-IN LENGTH 4M	55
KTC2500CP32	KT 3X2500CO FLAT EDGEWISE N2	70	KTC2500EH520 KT 5X2500CO KH PLUG-IN LENGTH 2M	55
KTC2500CP33	KT 3X2500CO FLAT EDGEWISE N3	70	KTC2500EH540 KT 5X2500CO KH PLUG-IN LENGTH 4M	55
KTC2500CP34	KT 3X2500CO FLAT EDGEWISE N4	70	KTC2500EH720 KT 5X2500CO KH PLUG-IN LENGTH 2M	55
KTC2500CP41	KT 4X2500CO FLAT EDGEWISE N1	70	KTC2500EH740 KT 5X2500CO KH PLUG-IN LENGTH 4M	55
KTC2500CP42	KT 4X2500CO FLAT EDGEWISE N2	70	KTC2500EL31 KT 3X2500CO FEED UNIT EL N1	94
KTC2500CP43	KT 4X2500CO FLAT EDGEWISE N3	70	KTC2500EL32 KT 3X2500CO FEED UNIT EL N2	94
KTC2500CP44	KT 4X2500CO FLAT EDGEWISE N4	70	KTC2500EL33 KT 3X2500CO FEED UNIT EL N3	96
KTC2500CP51	KT 5X2500CO FLAT EDGEWISE N1	70	KTC2500EL34 KT 3X2500CO FEED UNIT EL N4	96
KTC2500CP52	KT 5X2500CO FLAT EDGEWISE N2	70	KTC2500EL35 KT 3X2500CO FEED UNIT EL N5	97
KTC2500CP53	KT 5X2500CO FLAT EDGEWISE N3	70	KTC2500EL41 KT 4X2500CO FEED UNIT EL N1	94
KTC2500CP54	KT 5X2500CO FLAT EDGEWISE N4	70	KTC2500EL42 KT 4X2500CO FEED UNIT EL N2	94
KTC2500CP71	KT 5X2500CO FLAT EDGEWISE N1	70	KTC2500EL43 KT 4X2500CO FEED UNIT EL N3	96
KTC2500CP72	KT 5X2500CO FLAT EDGEWISE N2	70	KTC2500EL44 KT 4X2500CO FEED UNIT EL N4	96
KTC2500CP73	KT 5X2500CO FLAT EDGEWISE N3	70	KTC2500EL45 KT 4X2500CO FEED UNIT EL N5	97
KTC2500CP74	KT 5X2500CO FLAT EDGEWISE N4	70	KTC2500EL51 KT 5X2500CO FEED UNIT EL N1	94
	KT 3X2500CO EXPANSION UNIT	58	KTC2500EL52 KT 5X2500CO FEED UNIT EL N2	94
	KT 4X2500CO EXPANSION UNIT	58	KTC2500EL53 KT 5X2500CO FEED UNIT EL N3	96
	KT 5X2500CO EXPANSION UNIT	58	KTC2500EL54 KT 5X2500CO FEED UNIT EL N4	96
	KT 5X2500CO EXPANSION UNIT	58	KTC2500EL55 KT 5X2500CO FEED UNIT EL N5	97
	KT 3X2500CO BOLT ON LENGTH 2M	54	KTC2500EL71         KT 5X2500CO FEED UNIT EL N1           KTC2500EL72         KT 5X2500CO FEED UNIT EL N2	94
	KT 3X2500CO BOLT ON LENGTH 4M	54	KTC2500EL72 KT 5X2500CO FEED UNIT EL N2	94
	KT 4X2500CO BOLT ON LENGTH 2M	54	KTC2500EL73         KT 5X2500CO FEED UNIT EL N3           KTC2500EL74         KT 5X2500CO FEED UNIT EL N4	96 96
KTC2500EB440	KT 4X2500CO BOLT ON LENGTH 4M	54	KTC2500EL74         KT 5X2500CO FEED UNIT EL N4           KTC2500EL75         KT 5X2500CO FEED UNIT EL N5	96
KTOOFOOFDER		54		51
	KT 5X2500CO BOLT ON LENGTH 2M KT 5X2500CO BOLT ON LENGTH 4M	54	KTC2500ER31 KT 3X2500CO FEED UNIT ER N1	80

Cat. no.	Designations	Pages	Cat. no.	Designations	Pages
TC2500ER32	KT 3X2500CO FEED UNIT ER N2	80	KTC2500FC4E	KT 4X2500CO EDGEWISE ELBOW	74
(TC2500ER33	KT 3X2500CO FEED UNIT ER N3	81	KTC2500FC5A	KT 5X2500CO EDGEWISE ELBOW	74
TC2500ER34	KT 3X2500CO FEED UNIT ER N4	81	KTC2500FC5B	KT 5X2500CO EDGEWISE ELBOW	74
TC2500ER35	KT 3X2500CO FEED UNIT ER N5	82	KTC2500FC5D	KT 5X2500CO EDGEWISE ELBOW	74
TC2500ER36	KT 3X2500CO FEED UNIT ER N6	82	KTC2500FC5E	KT 5X2500CO EDGEWISE ELBOW	74
TC2500ER37	KT 3X2500CO FEED UNIT ER N7	86	KTC2500FC7A	KT 5X2500CO EDGEWISE ELBOW	74
TC2500ER41	KT 4X2500CO FEED UNIT ER N1	80	KTC2500FC7B	KT 5X2500CO EDGEWISE ELBOW	74
TC2500ER42	KT 4X2500CO FEED UNIT ER N2	80	KTC2500FC7D	KT 5X2500CO EDGEWISE ELBOW	74
TC2500ER43	KT 4X2500CO FEED UNIT ER N3	81	KTC2500FC7E	KT 5X2500CO EDGEWISE ELBOW	74
TC2500ER44	KT 4X2500CO FEED UNIT ER N4	81	KTC2500FP3A1	KT 3X2500CO FLAT ELBOW N1 FIRE	73
TC2500ER45	KT 4X2500CO FEED UNIT ER N5	82	KTC2500FP3A2	KT 3X2500CO FLAT ELBOW N2 FIRE	73
TC2500ER46	KT 4X2500CO FEED UNIT ER N6	82		KT 3X2500CO FLAT ELBOW N1 FIRE	73
TC2500ER47	KT 4X2500CO FEED UNIT ER N7	86		KT 3X2500CO FLAT ELBOW N2 FIRE	73
TC2500ER51	KT 5X2500CO FEED UNIT ER N1	80	KTC2500FP3D1	KT 3X2500CO FLAT ELBOW N1 FIRE	73
TC2500ER52	KT 5X2500CO FEED UNIT ER N2	80		KT 3X2500CO FLAT ELBOW N2 FIRE	73
TC2500ER53	KT 5X2500CO FEED UNIT ER N3	81	KTC2500FP3E1	KT 3X2500CO FLAT ELBOW N1 FIRE	73
TC2500ER54	KT 5X2500CO FEED UNIT ER N4	81		KT 3X2500CO FLAT ELBOW N2 FIRE	73
TC2500ER55	KT 5X2500CO FEED UNIT ER N5	82	KTC2500FP4A1	KT 4X2500CO FLAT ELBOW N1 FIRE	73
TC2500ER56	KT 5X2500CO FEED UNIT ER N6	82		KT 4X2500CO FLAT ELBOW N2 FIRE	73
TC2500ER57	KT 5X2500CO FEED UNIT ER N7	86	KTC2500FP4B1		73
TC2500ER71	KT 5X2500CO FEED UNIT ER N1	80		KT 4X2500CO FLAT ELBOW N2 FIRE	73
TC2500ER72	KT 5X2500CO FEED UNIT ER N2	80		KT 4X2500CO FLAT ELBOW N1 FIRE	73
TC2500ER73	KT 5X2500CO FEED UNIT ER N3	81		KT 4X2500CO FLAT ELBOW N2 FIRE	73
TC2500ER74	KT 5X2500CO FEED UNIT ER N4	81		KT 4X2500CO FLAT ELBOW N1 FIRE	73
TC2500ER75	KT 5X2500CO FEED UNIT ER N5	82		KT 4X2500CO FLAT ELBOW N2 FIRE	73
TC2500ER76	KT 5X2500CO FEED UNIT ER N6	82	KTC2500FP5A1	KT 5X2500CO FLAT ELBOW N1 FIRE	73
TC2500ER77	KT 5X2500CO FEED UNIT ER N7	86		KT 5X2500CO FLAT ELBOW N2 FIRE	73
	KT 3X2500CO FEEDER LENGTH	52	KTC2500FP5B1		73
TC2500ET320	KT 3X2500CO FEEDER LENGTH 2M	52		KT 5X2500CO FLAT ELBOW N2 FIRE	73
C2500ET32B	KT 3X2500CO FEEDER LENGTH	52	KTC2500FP5D1	KT 5X2500CO FLAT ELBOW N1 FIRE	73
	KT 3X2500CO FEEDER LENGTH	52		KT 5X2500CO FLAT ELBOW N2 FIRE	73
	KT 3X2500CO FEEDER LENGTH	52	KTC2500FP5E1		73
	KT 3X2500CO FEEDER LENGTH	52		KT 5X2500CO FLAT ELBOW N2 FIRE	73
	KT 3X2500CO FEEDER LENGTH	52		KT 5X2500CO FLAT ELBOW N1 FIRE	73
TC2500ET340	KT 3X2500CO FEEDER LENGTH 4M	52		KT 5X2500CO FLAT ELBOW N2 FIRE	73
	KT 4X2500CO FEEDER LENGTH	52	KTC2500FP7B1	KT 5X2500CO FLAT ELBOW N1 FIRE	73
TC2500ET420	KT 4X2500CO FEEDER LENGTH 2M	52		KT 5X2500CO FLAT ELBOW N2 FIRE	73
TC2500ET42B	KT 4X2500CO FEEDER LENGTH	52	KTC2500FP7D1	KT 5X2500CO FLAT ELBOW N1 FIRE	73
	KT 4X2500CO FEEDER LENGTH	52		KT 5X2500CO FLAT ELBOW N2 FIRE	73
	KT 4X2500CO FEEDER LENGTH	52	KTC2500FP7E1		73
	KT 4X2500CO FEEDER LENGTH	52		KT 5X2500CO FLAT ELBOW N2 FIRE	73
	KT 4X2500CO FEEDER LENGTH	52		KT 3X2500CO FEEDER LENGTH FIRE	72
	KT 4X2500CO FEEDER LENGTH 4M	52		KT 3X2500CO FEEDER LENGTH FIRE 2M	72
	KT 5X2500CO FEEDER LENGTH	52		KT 3X2500CO FEEDER LENGTH FIRE	72
	KT 5X2500CO FEEDER LENGTH 2M	52		KT 3X2500CO FEEDER LENGTH FIRE	72
	KT 5X2500CO FEEDER LENGTH	52		KT 3X2500CO FEEDER LENGTH FIRE	72
	KT 5X2500CO FEEDER LENGTH	52		KT 3X2500CO FEEDER LENGTH FIRE KT 3X2500CO FEEDER LENGTH FIRE	72
	KT 5X2500CO FEEDER LENGTH	52	KTC2500FT33F		72
	KT 5X2500CO FEEDER LENGTH	52	KTC2500FT340	KT 3X2500CO FEEDER LENGTH FIRE 4M	72
	KT 5X2500CO FEEDER LENGTH	52 52		KT 4X2500CO FEEDER LENGTH FIRE	72 72
	KT 5X2500CO FEEDER LENGTH 4M KT 5X2500CO FEEDER LENGTH	52	KTC2500FT420	KT 4X2500CO FEEDER LENGTH FIRE 2M KT 4X2500CO FEEDER LENGTH FIRE	72
	KT 5X2500CO FEEDER LENGTH KT 5X2500CO FEEDER LENGTH 2M	52		KT 4X2500CO FEEDER LENGTH FIRE	72
	KT 5X2500CO FEEDER LENGTH 2M	52		KT 4X2500CO FEEDER LENGTH FIRE	72
	KT 5X2500CO FEEDER LENGTH	52		KT 4X2500CO FEEDER LENGTH FIRE	72
	KT 5X2500CO FEEDER LENGTH	52		KT 4X2500CO FEEDER LENGTH FIRE	72
	KT 5X2500CO FEEDER LENGTH	52	KTC2500FT43F	KT 4X2500CO FEEDER LENGTH FIRE 4M	72
	KT 5X2500CO FEEDER LENGTH				
		52		KT 5X2500CO FEEDER LENGTH FIRE	72
TC2500ET740		52	KTC2500FT520	KT 5X2500CO FEEDER LENGTH FIRE 2M	72
	KT 3X2500CO EDGEWISE ELBOW	74		KT 5X2500CO FEEDER LENGTH FIRE	72
TC2500FC3B	KT 3X2500CO EDGEWISE ELBOW	74		KT 5X2500CO FEEDER LENGTH FIRE	72
TC2500FC3D	KT 3X2500CO EDGEWISE ELBOW	74		KT 5X2500CO FEEDER LENGTH FIRE	72
TC2500FC3E	KT 3X2500CO EDGEWISE ELBOW	74	K1C2500FT53E	KT 5X2500CO FEEDER LENGTH FIRE	72
			VTC		
TC2500FC4A TC2500FC4B	KT 4X2500CO EDGEWISE ELBOW KT 4X2500CO EDGEWISE ELBOW	74 74	KTC2500FT53F KTC2500FT540	KT 5X2500CO FEEDER LENGTH FIRE KT 5X2500CO FEEDER LENGTH FIRE 4M	72 72

at. no.	Designations	Pages	Cat. no.	Designations	Pages
TC2500FT720	KT 5X2500CO FEEDER LENGTH FIRE 2M	72	KTC2500TC3	KT 3X2500CO TEE ON EDGE	67
	KT 5X2500CO FEEDER LENGTH FIRE	72	KTC2500TC4	KT 4X2500CO TEE ON EDGE	67
TC2500FT72C	KT 5X2500CO FEEDER LENGTH FIRE	72	KTC2500TC5	KT 5X2500CO TEE ON EDGE	67
TC2500FT73D	KT 5X2500CO FEEDER LENGTH FIRE	72	KTC2500TC7	KT 5X2500CO TEE ON EDGE	67
TC2500FT73E	KT 5X2500CO FEEDER LENGTH FIRE	72	KTC2500TN410	KT 4X2500CO NEUTRAL PERMUTA	58
TC2500FT73F	KT 5X2500CO FEEDER LENGTH FIRE	72	KTC2500TP410	KT 4X2500CO PHASES PERMUTA	58
	KT 5X2500CO FEEDER LENGTH FIRE 4M	72	KTC2500YA3	KT 3X2500CO JUNCTION BLOC	60
	KT 3X2500CO EDGEWISE ELBOW	63	KTC2500YA4	KT 4X2500CO JUNCTION BLOC	60
TC2500LC3B	KT 3X2500CO EDGEWISE ELBOW	63	KTC2500YA5	KT 5X2500CO JUNCTION BLOC	60
	KT 3X2500CO EDGEWISE ELBOW	63	KTC2500YA7	KT 5X2500CO JUNCTION BLOC	60
TC2500LC3E	KT 3X2500CO EDGEWISE ELBOW	63	KTC2500ZC31	KT 3X2500CO EDGEWISE ZED N1	68
TC2500LC4A	KT 4X2500CO EDGEWISE ELBOW	63 63	KTC2500ZC32 KTC2500ZC41	KT 3X2500CO EDGEWISE ZED N2	68 68
	KT 4X2500CO EDGEWISE ELBOW KT 4X2500CO EDGEWISE ELBOW	63	KTC2500ZC41	KT 4X2500CO EDGEWISE ZED N1 KT 4X2500CO EDGEWISE ZED N2	68
	KT 4X2500CO EDGEWISE ELBOW	63	KTC2500ZC42	KT 5X2500CO EDGEWISE ZED N2 KT 5X2500CO EDGEWISE ZED N1	68
	KT 5X2500CO EDGEWISE ELBOW	63	KTC2500ZC51	KT 5X2500CO EDGEWISE ZED N1 KT 5X2500CO EDGEWISE ZED N2	68
	KT 5X2500CO EDGEWISE ELBOW	63	KTC2500ZC32	KT 5X2500CO EDGEWISE ZED N2 KT 5X2500CO EDGEWISE ZED N1	68
	KT 5X2500CO EDGEWISE ELBOW	63	KTC2500ZC72	KT 5X2500CO EDGEWISE ZED N1	68
TC2500LC5E	KT 5X2500CO EDGEWISE ELBOW	63	KTC2500ZP3	KT 3X2500CO ZED ON FLAT	68
	KT 5X2500CO EDGEWISE ELBOW	63	KTC2500ZP4	KT 4X2500CO ZED ON FLAT	68
	KT 5X2500CO EDGEWISE ELBOW	63	KTC2500ZP5	KT 5X2500CO ZED ON FLAT	68
	KT 5X2500CO EDGEWISE ELBOW	63	KTC2500ZP7	KT 5X2500CO ZED ON FLAT	68
	KT 5X2500CO EDGEWISE ELBOW	63		-	
TC2500LP3A1	KT 3X2500CO FLAT ELBOW N1	62	KTC3200		
TC2500LP3A2	KT 3X2500CO FLAT ELBOW N2	62	KTC3200CP31	KT 3X3200CO FLAT EDGEWISE N1	70
TC2500LP3B1	KT 3X2500CO FLAT ELBOW N1	62	KTC3200CP32	KT 3X3200CO FLAT EDGEWISE N2	70
TC2500LP3B2	KT 3X2500CO FLAT ELBOW N2	62	KTC3200CP33	KT 3X3200CO FLAT EDGEWISE N3	70
TC2500LP3C1	KT 3X2500CO FLAT ELBOW N1	63	KTC3200CP34	KT 3X3200CO FLAT EDGEWISE N4	70
TC2500LP3C2	KT 3X2500CO FLAT ELBOW N2	63	KTC3200CP41	KT 4X3200CO FLAT EDGEWISE N1	70
TC2500LP3D1	KT 3X2500CO FLAT ELBOW N1	62	KTC3200CP42	KT 4X3200CO FLAT EDGEWISE N2	70
	KT 3X2500CO FLAT ELBOW N2	62	KTC3200CP43	KT 4X3200CO FLAT EDGEWISE N3	70
	KT 3X2500CO FLAT ELBOW N1	62	KTC3200CP44	KT 4X3200CO FLAT EDGEWISE N4	70
	KT 3X2500CO FLAT ELBOW N2	62	KTC3200CP51	KT 5X3200CO FLAT EDGEWISE N1	70
	KT 4X2500CO FLAT ELBOW N1	62	KTC3200CP52	KT 5X3200CO FLAT EDGEWISE N2	70
	KT 4X2500CO FLAT ELBOW N2	62	KTC3200CP53	KT 5X3200CO FLAT EDGEWISE N3	70
	KT 4X2500CO FLAT ELBOW N1	62	KTC3200CP54	KT 5X3200CO FLAT EDGEWISE N4	70
	KT 4X2500CO FLAT ELBOW N2	62	KTC3200CP71	KT 5X3200CO FLAT EDGEWISE N1	70
	KT 4X2500CO FLAT ELBOW N1 KT 4X2500CO FLAT ELBOW N2	63 63	KTC3200CP72	KT 5X3200CO FLAT EDGEWISE N2	70
		62	KTC3200CP73	KT 5X3200CO FLAT EDGEWISE N3	70
	KT 4X2500CO FLAT ELBOW NT	62	KTC3200CP74	KT 5X3200CO FLAT EDGEWISE N4	70
	KT 4X2500CO FLAT ELBOW N2	62	KTC3200DB310	KT 3X3200CO EXPANSION UNIT	58
	KT 4X2500CO FLAT ELBOW N2	62		KT 4X3200CO EXPANSION UNIT	58
	KT 5X2500CO FLAT ELBOW N1	62		KT 5X3200CO EXPANSION UNIT	58
	KT 5X2500CO FLAT ELBOW N2	62		KT 5X3200CO EXPANSION UNIT KT 3X3200CO BOLT ON LENGTH 2M	58 54
	KT 5X2500CO FLAT ELBOW N1	62		KT 3X3200CO BOLT ON LENGTH 2M	54
	KT 5X2500CO FLAT ELBOW N2	62		KT 4X3200CO BOLT ON LENGTH 2M	54
TC2500LP5C1	KT 5X2500CO FLAT ELBOW N1	63		KT 4X3200CO BOLT ON LENGTH 4M	54
TC2500LP5C2	KT 5X2500CO FLAT ELBOW N2	63		KT 5X3200CO BOLT ON LENGTH 2M	54
TC2500LP5D1	KT 5X2500CO FLAT ELBOW N1	62		KT 5X3200CO BOLT ON LENGTH 4M	54
TC2500LP5D2	KT 5X2500CO FLAT ELBOW N2	62		KT 5X3200CO BOLT ON LENGTH 2M	54
	KT 5X2500CO FLAT ELBOW N1	62		KT 5X3200CO BOLT ON LENGTH 4M	54
TC2500LP5E2	KT 5X2500CO FLAT ELBOW N2	62		KT 1X3200CO PLUG-IN LENGTH 2M	52
	KT 5X2500CO FLAT ELBOW N1	62		KT 3X3200CO PLUG-IN LENGTH 2M	52
	KT 5X2500CO FLAT ELBOW N2	62	KTC3200ED3301	KT 1X3200CO PLUG-IN LENGTH	52
	KT 5X2500CO FLAT ELBOW N1	62	KTC3200ED3302	KT 2X3200CO PLUG-IN LENGTH	52
	KT 5X2500CO FLAT ELBOW N2	62	KTC3200ED3351	KT 1X3200CO PLUG-IN LENGTH	52
	KT 5X2500CO FLAT ELBOW N1	63	KTC3200ED3353	KT 3X3200CO PLUG-IN LENGTH	52
	KT 5X2500CO FLAT ELBOW N2	63		KT 3X3200CO PLUG-IN LENGTH 4M	52
	KT 5X2500CO FLAT ELBOW N1	62		KT 1X3200CO PLUG-IN LENGTH 2M	52
	KT 5X2500CO FLAT ELBOW N2	62		KT 4X3200CO PLUG-IN LENGTH 2M	52
	KT 5X2500CO FLAT ELBOW N1	62		KT 1X3200CO PLUG-IN LENGTH	52
	KT 5X2500CO FLAT ELBOW N2	62		KT 2X3200CO PLUG-IN LENGTH	52
	KT 3X2500CO ISOLATOR UNIT INV	129		KT 1X3200CO PLUG-IN LENGTH	52
	KT 4X2500CO ISOLATOR UNIT INV	129	KTC3200ED4353	KT 3X3200CO PLUG-IN LENGTH	52

Cat. no.	Designations	Pages	Cat. no.	Designations	Pages
	KT 1X3200CO PLUG-IN LENGTH 2M	52	KTC3200ER54	KT 5X3200CO FEED UNIT ER N4	81
KTC3200ED5203	KT 5X3200CO PLUG-IN LENGTH 2M	52	KTC3200ER55	KT 5X3200CO FEED UNIT ER N5	82
KTC3200ED5301	KT 1X3200CO PLUG-IN LENGTH	52	KTC3200ER56	KT 5X3200CO FEED UNIT ER N6	82
KTC3200ED5302	KT 2X3200CO PLUG-IN LENGTH	52	KTC3200ER57	KT 5X3200CO FEED UNIT ER N7	86
	KT 1X3200CO PLUG-IN LENGTH	52	KTC3200ER71	KT 5X3200CO FEED UNIT ER N1	80
	KT 3X3200CO PLUG-IN LENGTH	52	KTC3200ER72	KT 5X3200CO FEED UNIT ER N2	80
	KT 5X3200CO PLUG-IN LENGTH 4M	52	KTC3200ER73	KT 5X3200CO FEED UNIT ER N3	81
	KT 1X3200CO PLUG-IN LENGTH 2M	52	KTC3200ER74	KT 5X3200CO FEED UNIT ER N4	81
	KT 5X3200CO PLUG-IN LENGTH 2M	52 52	KTC3200ER75 KTC3200ER76	KT 5X3200CO FEED UNIT ER N5 KT 5X3200CO FEED UNIT ER N6	82 82
	KT 2X3200CO PLUG-IN LENGTH	52	KTC3200ER78	KT 5X3200CO FEED UNIT ER N7	86
	KT 1X3200CO PLUG-IN LENGTH	52	KTC3200ET31A	KT 3X3200CO FEEDER LENGTH	52
	KT 3X3200CO PLUG-IN LENGTH	52	KTC3200ET320	KT 3X3200CO FEEDER LENGTH 2M	52
KTC3200ED6403	KT 5X3200CO PLUG-IN LENGTH 4M	52	KTC3200ET32B	KT 3X3200CO FEEDER LENGTH	52
KTC3200ED7201	KT 1X3200CO PLUG-IN LENGTH 2M	52	KTC3200ET32C	KT 3X3200CO FEEDER LENGTH	52
KTC3200ED7203	KT 5X3200CO PLUG-IN LENGTH 2M	52	KTC3200ET33D	KT 3X3200CO FEEDER LENGTH	52
	KT 1X3200CO PLUG-IN LENGTH	52		KT 3X3200CO FEEDER LENGTH	52
	KT 2X3200CO PLUG-IN LENGTH	52		KT 3X3200CO FEEDER LENGTH	52
	KT 1X3200CO PLUG-IN LENGTH	52	KTC3200ET340	KT 3X3200CO FEEDER LENGTH 4M	52
	KT 3X3200CO PLUG-IN LENGTH	52		KT 4X3200CO FEEDER LENGTH	52
	KT 5X3200CO PLUG-IN LENGTH 4M KT 3X3200CO KH PLUG-IN LENGTH 2M	52 55	KTC3200ET420	KT 4X3200CO FEEDER LENGTH 2M KT 4X3200CO FEEDER LENGTH	52 52
	KT 3X3200CO KH PLUG-IN LENGTH 2M	55		KT 4X3200CO FEEDER LENGTH	52
KTC3200EH340		55	KTC3200ET42C		52
KTC3200EH440		55		KT 4X3200CO FEEDER LENGTH	52
KTC3200EH520	KT 5X3200CO KH PLUG-IN LENGTH 2M	55		KT 4X3200CO FEEDER LENGTH	52
KTC3200EH540	KT 5X3200CO KH PLUG-IN LENGTH 4M	55	KTC3200ET440	KT 4X3200CO FEEDER LENGTH 4M	52
KTC3200EH720	KT 5X3200CO KH PLUG-IN LENGTH 2M	55	KTC3200ET51A	KT 5X3200CO FEEDER LENGTH	52
KTC3200EH740	KT 5X3200CO KH PLUG-IN LENGTH 4M	55	KTC3200ET520	KT 5X3200CO FEEDER LENGTH 2M	52
KTC3200EL31	KT 3X3200CO FEED UNIT EL N1	94	KTC3200ET52B	KT 5X3200CO FEEDER LENGTH	52
KTC3200EL32	KT 3X3200CO FEED UNIT EL N2	94		KT 5X3200CO FEEDER LENGTH	52
KTC3200EL33	KT 3X3200CO FEED UNIT EL N3	96		KT 5X3200CO FEEDER LENGTH	52
KTC3200EL34	KT 3X3200CO FEED UNIT EL N4	96		KT 5X3200CO FEEDER LENGTH	52
KTC3200EL35 KTC3200EL41	KT 3X3200CO FEED UNIT EL N5 KT 4X3200CO FEED UNIT EL N1	97 94	KTC3200ET53F	KT 5X3200CO FEEDER LENGTH KT 5X3200CO FEEDER LENGTH 4M	52 52
KTC3200EL41	KT 4X3200CO FEED UNIT EL N1 KT 4X3200CO FEED UNIT EL N2	94		KT 5X3200CO FEEDER LENGTH 4M	52
KTC3200EL43	KT 4X3200CO FEED UNIT EL N3	96	KTC3200ET720	KT 5X3200CO FEEDER LENGTH 2M	52
KTC3200EL44	KT 4X3200CO FEED UNIT EL N4	96		KT 5X3200CO FEEDER LENGTH	52
KTC3200EL45	KT 4X3200CO FEED UNIT EL N5	97	KTC3200ET72C	KT 5X3200CO FEEDER LENGTH	52
KTC3200EL51	KT 5X3200CO FEED UNIT EL N1	94	KTC3200ET73D	KT 5X3200CO FEEDER LENGTH	52
KTC3200EL52	KT 5X3200CO FEED UNIT EL N2	94		KT 5X3200CO FEEDER LENGTH	52
KTC3200EL53	KT 5X3200CO FEED UNIT EL N3	96	KTC3200ET73F	KT 5X3200CO FEEDER LENGTH	52
KTC3200EL54	KT 5X3200CO FEED UNIT EL N4	96	KTC3200ET740	KT 5X3200CO FEEDER LENGTH 4M	52
KTC3200EL55	KT 5X3200CO FEED UNIT EL N5	97	KTC3200FC3A	KT 3X3200CO EDGEWISE ELBOW	74
KTC3200EL71	KT 5X3200CO FEED UNIT EL N1	94	KTC3200FC3B	KT 3X3200CO EDGEWISE ELBOW	74
KTC3200EL72 KTC3200EL73	KT 5X3200CO FEED UNIT EL N2 KT 5X3200CO FEED UNIT EL N3	94 96	KTC3200FC3D KTC3200FC3E	KT 3X3200CO EDGEWISE ELBOW KT 3X3200CO EDGEWISE ELBOW	74 74
KTC3200EL74	KT 5X3200CO FEED UNIT EL N4	96	KTC3200FC3E	KT 4X3200CO EDGEWISE ELBOW	74
KTC3200EL75	KT 5X3200CO FEED UNIT EL N5	90	KTC3200FC4A	KT 4X3200CO EDGEWISE ELBOW	74
KTC3200ER31	KT 3X3200CO FEED UNIT ER N1	80	KTC3200FC4D	KT 4X3200CO EDGEWISE ELBOW	74
KTC3200ER32	KT 3X3200CO FEED UNIT ER N2	80	KTC3200FC4E	KT 4X3200CO EDGEWISE ELBOW	74
KTC3200ER33	KT 3X3200CO FEED UNIT ER N3	81	KTC3200FC5A	KT 5X3200CO EDGEWISE ELBOW	74
KTC3200ER34	KT 3X3200CO FEED UNIT ER N4	81	KTC3200FC5B	KT 5X3200CO EDGEWISE ELBOW	74
KTC3200ER35	KT 3X3200CO FEED UNIT ER N5	82	KTC3200FC5D	KT 5X3200CO EDGEWISE ELBOW	74
KTC3200ER36	KT 3X3200CO FEED UNIT ER N6	82	KTC3200FC5E	KT 5X3200CO EDGEWISE ELBOW	74
KTC3200ER37	KT 3X3200CO FEED UNIT ER N7	86	KTC3200FC7A	KT 5X3200CO EDGEWISE ELBOW	74
KTC3200ER41	KT 4X3200CO FEED UNIT ER N1	80	KTC3200FC7B	KT 5X3200CO EDGEWISE ELBOW	74
KTC3200ER42	KT 4X3200CO FEED UNIT ER N2	80 81	KTC3200FC7D	KT 5X3200CO EDGEWISE ELBOW	74
KTC3200ER43 KTC3200ER44	KT 4X3200CO FEED UNIT ER N3 KT 4X3200CO FEED UNIT ER N4	81 81	KTC3200FC7E	KT 5X3200CO EDGEWISE ELBOW KT 3X3200CO FLAT ELBOW N1 FIRE	74 73
KTC3200ER44	KT 4X3200CO FEED UNIT ER N4 KT 4X3200CO FEED UNIT ER N5	82		KT 3X3200CO FLAT ELBOW NT FIRE	73
KTC3200ER46	KT 4X3200CO FEED UNIT ER N6	82		KT 3X3200CO FLAT ELBOW N1 FIRE	73
KTC3200ER47	KT 4X3200CO FEED UNIT ER N7	86		KT 3X3200CO FLAT ELBOW N2 FIRE	73
KTC3200ER51	KT 5X3200CO FEED UNIT ER N1	80		KT 3X3200CO FLAT ELBOW N1 FIRE	73
KTC3200ER52	KT 5X3200CO FEED UNIT ER N2	80	KTC3200FP3D2	KT 3X3200CO FLAT ELBOW N2 FIRE	73
	KT 5X3200CO FEED UNIT ER N3	81	KTC2200ED2E4	KT 3X3200CO FLAT ELBOW N1 FIRE	73

Cat. no.	Designations	Pages	Cat. no.	Designations	Page
TC3200FP3E2	KT 3X3200CO FLAT ELBOW N2 FIRE	73	KTC3200LC5B	KT 5X3200CO EDGEWISE ELBOW	63
TC3200FP4A1	KT 4X3200CO FLAT ELBOW N1 FIRE	73	KTC3200LC5D	KT 5X3200CO EDGEWISE ELBOW	63
TC3200FP4A2	KT 4X3200CO FLAT ELBOW N2 FIRE	73	KTC3200LC5E	KT 5X3200CO EDGEWISE ELBOW	63
TC3200FP4B1	KT 4X3200CO FLAT ELBOW N1 FIRE	73	KTC3200LC7A	KT 5X3200CO EDGEWISE ELBOW	63
TC3200FP4B2	KT 4X3200CO FLAT ELBOW N2 FIRE	73	KTC3200LC7B	KT 5X3200CO EDGEWISE ELBOW	63
TC3200FP4D1	KT 4X3200CO FLAT ELBOW N1 FIRE	73	KTC3200LC7D	KT 5X3200CO EDGEWISE ELBOW	63
TC3200FP4D2	KT 4X3200CO FLAT ELBOW N2 FIRE	73	KTC3200LC7E	KT 5X3200CO EDGEWISE ELBOW	63
TC3200FP4E1	KT 4X3200CO FLAT ELBOW N1 FIRE	73	KTC3200LP3A1	KT 3X3200CO FLAT ELBOW N1	62
TC3200FP4E2	KT 4X3200CO FLAT ELBOW N2 FIRE	73	KTC3200LP3A2	KT 3X3200CO FLAT ELBOW N2	62
TC3200FP5A1	KT 5X3200CO FLAT ELBOW N1 FIRE	73	KTC3200LP3B1	KT 3X3200CO FLAT ELBOW N1	62
TC3200FP5A2	KT 5X3200CO FLAT ELBOW N2 FIRE	73	KTC3200LP3B2	KT 3X3200CO FLAT ELBOW N2	62
TC3200FP5B1	KT 5X3200CO FLAT ELBOW N1 FIRE	73	KTC3200LP3C1	KT 3X3200CO FLAT ELBOW N1	63
TC3200FP5B2	KT 5X3200CO FLAT ELBOW N2 FIRE	73	KTC3200LP3C2	KT 3X3200CO FLAT ELBOW N2	63
TC3200FP5D1	KT 5X3200CO FLAT ELBOW N1 FIRE	73	KTC3200LP3D1	KT 3X3200CO FLAT ELBOW N1	62
TC3200FP5D2	KT 5X3200CO FLAT ELBOW N2 FIRE	73	KTC3200LP3D2	KT 3X3200CO FLAT ELBOW N2	62
TC3200FP5E1	KT 5X3200CO FLAT ELBOW N1 FIRE	73	KTC3200LP3E1	KT 3X3200CO FLAT ELBOW N1	62
TC3200FP5E2	KT 5X3200CO FLAT ELBOW N2 FIRE	73	KTC3200LP3E2	KT 3X3200CO FLAT ELBOW N2	62
TC3200FP7A1	KT 5X3200CO FLAT ELBOW N1 FIRE	73	KTC3200LP4A1	KT 4X3200CO FLAT ELBOW N1	62
TC3200FP7A2	KT 5X3200CO FLAT ELBOW N2 FIRE	73	KTC3200LP4A2	KT 4X3200CO FLAT ELBOW N2	62
TC3200FP7B1	KT 5X3200CO FLAT ELBOW N1 FIRE	73	KTC3200LP4B1	KT 4X3200CO FLAT ELBOW N1	62
	KT 5X3200CO FLAT ELBOW N2 FIRE	73	KTC3200LP4B2	KT 4X3200CO FLAT ELBOW N2	62
	KT 5X3200CO FLAT ELBOW N1 FIRE	73	KTC3200LP4C1		63
	KT 5X3200CO FLAT ELBOW N2 FIRE	73		KT 4X3200CO FLAT ELBOW N2	63
TC3200FP7E1	KT 5X3200CO FLAT ELBOW N1 FIRE	73	KTC3200LP4D1	KT 4X3200CO FLAT ELBOW N1	62
TC3200FP7E2	KT 5X3200CO FLAT ELBOW N2 FIRE	73	KTC3200LP4D2	KT 4X3200CO FLAT ELBOW N2	62
	KT 3X3200CO FEEDER LENGTH FIRE	72		KT 4X3200CO FLAT ELBOW N1	62
TC3200FT320	KT 3X3200CO FEEDER LENGTH FIRE 2M	72	KTC3200LP4E2	KT 4X3200CO FLAT ELBOW N2	62
TC3200FT32B	KT 3X3200CO FEEDER LENGTH FIRE	72	KTC3200LP5A1	KT 5X3200CO FLAT ELBOW N1	62
	KT 3X3200CO FEEDER LENGTH FIRE	72	KTC3200LP5A2	KT 5X3200CO FLAT ELBOW N2	62
	KT 3X3200CO FEEDER LENGTH FIRE	72	KTC3200LP5B1		62
	KT 3X3200CO FEEDER LENGTH FIRE	72		KT 5X3200CO FLAT ELBOW N2	62
	KT 3X3200CO FEEDER LENGTH FIRE	72	KTC3200LP5C1		63
	KT 3X3200CO FEEDER LENGTH FIRE 4M	72		KT 5X3200CO FLAT ELBOW N2	63
	KT 4X3200CO FEEDER LENGTH FIRE	72	KTC3200LP5D1	KT 5X3200CO FLAT ELBOW N1	62
TC3200FT420	KT 4X3200CO FEEDER LENGTH FIRE 2M	72		KT 5X3200CO FLAT ELBOW N2	62
	KT 4X3200CO FEEDER LENGTH FIRE	72	KTC3200LP5E1		62
	KT 4X3200CO FEEDER LENGTH FIRE	72	KTC3200LP5E2	KT 5X3200CO FLAT ELBOW N2	62
	KT 4X3200CO FEEDER LENGTH FIRE	72	KTC3200LP7A1	KT 5X3200CO FLAT ELBOW N1	62
	KT 4X3200CO FEEDER LENGTH FIRE	72		KT 5X3200CO FLAT ELBOW N2	62
	KT 4X3200CO FEEDER LENGTH FIRE	72	KTC3200LP7B1		62
	KT 4X3200CO FEEDER LENGTH FIRE 4M	72		KT 5X3200CO FLAT ELBOW N2	62
	KT 5X3200CO FEEDER LENGTH FIRE	72		KT 5X3200CO FLAT ELBOW N2	63
	KT 5X3200CO FEEDER LENGTH FIRE 2M	72		KT 5X3200CO FLAT ELBOW N1	63
	KT 5X3200CO FEEDER LENGTH FIRE	72		KT 5X3200CO FLAT ELBOW N2	62
	KT 5X3200CO FEEDER LENGTH FIRE	72		KT 5X3200CO FLAT ELBOW NT	62
	KT 5X3200CO FEEDER LENGTH FIRE	72		KT 5X3200CO FLAT ELBOW N2 KT 5X3200CO FLAT ELBOW N1	62
	KT 5X3200CO FEEDER LENGTH FIRE	72	KTC3200LP7E1	KT 5X3200CO FLAT ELBOW NT KT 5X3200CO FLAT ELBOW N2	62
	KT 5X3200CO FEEDER LENGTH FIRE	72	KTC3200LP7E2	KT 3X3200CO FLAT ELBOW N2 KT 3X3200CO ISOLATOR UNIT NW	130
	KT 5X3200CO FEEDER LENGTH FIRE 4M	72	KTC3200SL31	KT 4X3200CO ISOLATOR UNIT NW	130
	KT 5X3200CO FEEDER LENGTH FIRE 4M	72	KTC3200SL41	KT 5X3200CO ISOLATOR UNIT NW	130
	KT 5X3200CO FEEDER LENGTH FIRE 2M	72	KTC32003L51	KT 5X3200CO ISOLATOR UNIT NW	130
	KT 5X3200CO FEEDER LENGTH FIRE 2M	72	KTC32003L71	KT 3X3200CO TEE ON EDGE	67
	KT 5X3200CO FEEDER LENGTH FIRE	72	KTC3200TC4	KT 4X3200CO TEE ON EDGE	67
	KT 5X3200CO FEEDER LENGTH FIRE	72	KTC3200TC4	KT 5X3200CO TEE ON EDGE	67
	KT 5X3200CO FEEDER LENGTH FIRE	72	KTC3200TC5	KT 5X3200CO TEE ON EDGE	67
	KT 5X3200CO FEEDER LENGTH FIRE	72	KTC3200TC7	KT 4X3200CO NEUTRAL PERMUTA	58
	KT 5X3200CO FEEDER LENGTH FIRE 4M	72	KTC3200TN410	KT 4X3200CO NEUTRAL PERMUTA	58
	KT 3X3200CO EDGEWISE ELBOW		KTC32001P410	KT 3X3200CO PHASES PERMUTA KT 3X3200CO JUNCTION BLOC	
		63			60
	KT 3X3200CO EDGEWISE ELBOW	63	KTC3200YA4	KT 4X3200CO JUNCTION BLOC	60
	KT 3X3200CO EDGEWISE ELBOW	63	KTC3200YA5	KT 5X3200CO JUNCTION BLOC	60
	KT 3X3200CO EDGEWISE ELBOW	63	KTC3200YA7	KT 5X3200CO JUNCTION BLOC	60
	KT 4X3200CO EDGEWISE ELBOW	63	KTC3200ZC31	KT 3X3200CO EDGEWISE ZED N1	68
	KT 4X3200CO EDGEWISE ELBOW	63	KTC3200ZC32	KT 3X3200CO EDGEWISE ZED N2	68
	KT 4X3200CO EDGEWISE ELBOW	63	KTC3200ZC41	KT 4X3200CO EDGEWISE ZED N1	68
TC3200LC4E	KT 4X3200CO EDGEWISE ELBOW	63	KTC3200ZC42	KT 4X3200CO EDGEWISE ZED N2	68
TC3200LC5A	KT 5X3200CO EDGEWISE ELBOW	63	KTC3200ZC51	KT 5X3200CO EDGEWISE ZED N1	68

Cat. no.	Designations	Pages	Cat. no.	Designations	Pages
KTC3200ZC52	KT 5X3200CO EDGEWISE ZED N2	68	KTC4000EH340	KT 3X4000CO KH PLUG-IN LENGTH 4M	55
KTC3200ZC71	KT 5X3200CO EDGEWISE ZED N1	68	KTC4000EH420	KT 4X4000CO KH PLUG-IN LENGTH 2M	55
KTC3200ZC72	KT 5X3200CO EDGEWISE ZED N2	68	KTC4000EH440	KT 4X4000CO KH PLUG-IN LENGTH 4M	55
KTC3200ZP3	KT 3X3200CO ZED ON FLAT	68	KTC4000EH520	KT 5X4000CO KH PLUG-IN LENGTH 2M	55
KTC3200ZP4 KTC3200ZP5	KT 4X3200CO ZED ON FLAT KT 5X3200CO ZED ON FLAT	68 68	KTC4000EH540 KTC4000EH720	KT 5X4000CO KH PLUG-IN LENGTH 4M KT 5X4000CO KH PLUG-IN LENGTH 2M	55 55
KTC3200ZP3	KT 5X3200CO ZED ON FLAT	68	KTC4000EH720	KT 5X4000CO KH PLUG-IN LENGTH 2M	55
		00	KTC4000EL31	KT 3X4000CO FEED UNIT EL N1	94
KTC4000			KTC4000EL32	KT 3X4000CO FEED UNIT EL N2	94
KTC4000CP31	KT 3X4000CO FLAT EDGEWISE N1	70	KTC4000EL33	KT 3X4000CO FEED UNIT EL N3	96
KTC4000CP32	KT 3X4000CO FLAT EDGEWISE N2	70	KTC4000EL34	KT 3X4000CO FEED UNIT EL N4	96
KTC4000CP33	KT 3X4000CO FLAT EDGEWISE N3	70	KTC4000EL35	KT 3X4000CO FEED UNIT EL N5	97
KTC4000CP34	KT 3X4000CO FLAT EDGEWISE N4	70	KTC4000EL41	KT 4X4000CO FEED UNIT EL N1	94
KTC4000CP41	KT 4X4000CO FLAT EDGEWISE N1	70	KTC4000EL42	KT 4X4000CO FEED UNIT EL N2	94
KTC4000CP42	KT 4X4000CO FLAT EDGEWISE N2	70	KTC4000EL43 KTC4000EL44	KT 4X4000CO FEED UNIT EL N3	96 96
KTC4000CP43	KT 4X4000CO FLAT EDGEWISE N3	70	KTC4000EL44	KT 4X4000CO FEED UNIT EL N4 KT 4X4000CO FEED UNIT EL N5	96
KTC4000CP44	KT 4X4000CO FLAT EDGEWISE N4	70	KTC4000EL51	KT 5X4000CO FEED UNIT EL N1	94
KTC4000CP51 KTC4000CP52	KT 5X4000CO FLAT EDGEWISE N1 KT 5X4000CO FLAT EDGEWISE N2	70 70	KTC4000EL52	KT 5X4000CO FEED UNIT EL N2	94
KTC4000CP52	KT 5X4000CO FLAT EDGEWISE N2 KT 5X4000CO FLAT EDGEWISE N3	70	KTC4000EL53	KT 5X4000CO FEED UNIT EL N3	96
KTC4000CP54	KT 5X4000CO FLAT EDGEWISE N3	70	KTC4000EL54	KT 5X4000CO FEED UNIT EL N4	96
KTC4000CP71	KT 5X4000CO FLAT EDGEWISE N1	70	KTC4000EL55	KT 5X4000CO FEED UNIT EL N5	97
KTC4000CP72	KT 5X4000CO FLAT EDGEWISE N2	70	KTC4000EL71	KT 5X4000CO FEED UNIT EL N1	94
KTC4000CP73	KT 5X4000CO FLAT EDGEWISE N3	70	KTC4000EL72	KT 5X4000CO FEED UNIT EL N2	94
KTC4000CP74	KT 5X4000CO FLAT EDGEWISE N4	70	KTC4000EL73	KT 5X4000CO FEED UNIT EL N3	96
	KT 3X4000CO EXPANSION UNIT	58	KTC4000EL74	KT 5X4000CO FEED UNIT EL N4	96 97
	KT 4X4000CO EXPANSION UNIT	58	KTC4000EL75 KTC4000ER31	KT 5X4000CO FEED UNIT EL N5 KT 3X4000CO FEED UNIT ER N1	97 80
	KT 5X4000CO EXPANSION UNIT	58 58	KTC4000ER32	KT 3X4000CO FEED UNIT ER N2	80
	KT 5X4000CO EXPANSION UNIT KT 3X4000CO BOLT ON LENGTH 2M	56 54	KTC4000ER33	KT 3X4000CO FEED UNIT ER N3	81
KTC4000EB320	KT 3X4000CO BOLT ON LENGTH 4M	54	KTC4000ER34	KT 3X4000CO FEED UNIT ER N4	81
KTC4000EB420	KT 4X4000CO BOLT ON LENGTH 2M	54	KTC4000ER35	KT 3X4000CO FEED UNIT ER N5	82
KTC4000EB440	KT 4X4000CO BOLT ON LENGTH 4M	54	KTC4000ER36	KT 3X4000CO FEED UNIT ER N6	82
KTC4000EB520	KT 5X4000CO BOLT ON LENGTH 2M	54	KTC4000ER37	KT 3X4000CO FEED UNIT ER N7	86
KTC4000EB540	KT 5X4000CO BOLT ON LENGTH 4M	54	KTC4000ER41	KT 4X4000CO FEED UNIT ER N1	80
	KT 5X4000CO BOLT ON LENGTH 2M	54	KTC4000ER42	KT 4X4000CO FEED UNIT ER N2	80 81
	KT 5X4000CO BOLT ON LENGTH 4M	54	KTC4000ER43 KTC4000ER44	KT 4X4000CO FEED UNIT ER N3 KT 4X4000CO FEED UNIT ER N4	81
	KT 1X4000CO PLUG-IN LENGTH 2M KT 3X4000CO PLUG-IN LENGTH 2M	52 52	KTC4000ER45	KT 4X4000CO FEED UNIT ER N5	82
	KT 1X4000CO PLUG-IN LENGTH 2M	52	KTC4000ER46	KT 4X4000CO FEED UNIT ER N6	82
	KT 2X4000CO PLUG-IN LENGTH	52	KTC4000ER47	KT 4X4000CO FEED UNIT ER N7	86
	KT 1X4000CO PLUG-IN LENGTH	52	KTC4000ER51	KT 5X4000CO FEED UNIT ER N1	80
KTC4000ED3353	KT 3X4000CO PLUG-IN LENGTH	52	KTC4000ER52	KT 5X4000CO FEED UNIT ER N2	80
KTC4000ED3403	KT 3X4000CO PLUG-IN LENGTH 4M	52	KTC4000ER53	KT 5X4000CO FEED UNIT ER N3	81
KTC4000ED4201	KT 1X4000CO PLUG-IN LENGTH 2M	52	KTC4000ER54	KT 5X4000CO FEED UNIT ER N4	81
	KT 4X4000CO PLUG-IN LENGTH 2M	52	KTC4000ER55	KT 5X4000CO FEED UNIT ER N5	82
	KT 1X4000CO PLUG-IN LENGTH	52	KTC4000ER56 KTC4000ER57	KT 5X4000CO FEED UNIT ER N6 KT 5X4000CO FEED UNIT ER N7	82 86
	KT 2X4000CO PLUG-IN LENGTH	52	KTC4000ER71	KT 5X4000CO FEED UNIT ER N1	80
	KT 1X4000CO PLUG-IN LENGTH KT 3X4000CO PLUG-IN LENGTH	52 52	KTC4000ER72	KT 5X4000CO FEED UNIT ER N2	80
	KT 4X4000CO PLUG-IN LENGTH	52	KTC4000ER73	KT 5X4000CO FEED UNIT ER N3	81
	KT 1X4000CO PLUG-IN LENGTH 4M	52	KTC4000ER74	KT 5X4000CO FEED UNIT ER N4	81
	KT 5X4000CO PLUG-IN LENGTH 2M	52	KTC4000ER75	KT 5X4000CO FEED UNIT ER N5	82
KTC4000ED5301	KT 1X4000CO PLUG-IN LENGTH	52	KTC4000ER76	KT 5X4000CO FEED UNIT ER N6	82
KTC4000ED5302	KT 2X4000CO PLUG-IN LENGTH	52	KTC4000ER77	KT 5X4000CO FEED UNIT ER N7	86
	KT 1X4000CO PLUG-IN LENGTH	52		KT 3X4000CO FEEDER LENGTH	52
	KT 3X4000CO PLUG-IN LENGTH	52	KTC4000ET320	KT 3X4000CO FEEDER LENGTH 2M	52 52
	KT 5X4000CO PLUG-IN LENGTH 4M	52		KT 3X4000CO FEEDER LENGTH KT 3X4000CO FEEDER LENGTH	52 52
	KT 1X4000CO PLUG-IN LENGTH 2M	52		KT 3X4000CO FEEDER LENGTH	52
	KT 5X4000CO PLUG-IN LENGTH 2M KT 1X4000CO PLUG-IN LENGTH	52 52		KT 3X4000CO FEEDER LENGTH	52
	KT 1X4000CO PLUG-IN LENGTH KT 2X4000CO PLUG-IN LENGTH	52 52		KT 3X4000CO FEEDER LENGTH	52
	KT 1X4000CO PLUG-IN LENGTH	52		KT 3X4000CO FEEDER LENGTH 4M	52
	KT 3X4000CO PLUG-IN LENGTH	52	KTC4000ET41A	KT 4X4000CO FEEDER LENGTH	52
	KT 5X4000CO PLUG-IN LENGTH 4M	52	KTC4000ET420	KT 4X4000CO FEEDER LENGTH 2M	52
	KT 3X4000CO KH PLUG-IN LENGTH 2M	55	KTC4000ET42B	KT 4X4000CO FEEDER LENGTH	52

Cat. no.	Designations	Pages	Cat. no.	Designations	Pages
KTC4000ET42C	KT 4X4000CO FEEDER LENGTH	52		KT 5X4000CO FLAT ELBOW N2 FIRE	73
CTC4000ET43D	KT 4X4000CO FEEDER LENGTH	52	KTC4000FP7E1	KT 5X4000CO FLAT ELBOW N1 FIRE	73
	KT 4X4000CO FEEDER LENGTH	52		KT 5X4000CO FLAT ELBOW N2 FIRE	73
TC4000ET43F	KT 4X4000CO FEEDER LENGTH	52	KTC4000FT31A	KT 3X4000CO FEEDER LENGTH FIRE	72
TC4000ET440	KT 4X4000CO FEEDER LENGTH 4M	52	KTC4000FT320	KT 3X4000CO FEEDER LENGTH FIRE 2M	72
TC4000ET51A	KT 5X4000CO FEEDER LENGTH	52	KTC4000FT32B	KT 3X4000CO FEEDER LENGTH FIRE	72
TC4000ET520	KT 5X4000CO FEEDER LENGTH 2M	52	KTC4000FT32C	KT 3X4000CO FEEDER LENGTH FIRE	72
TC4000ET52B	KT 5X4000CO FEEDER LENGTH	52	KTC4000FT33D	KT 3X4000CO FEEDER LENGTH FIRE	72
TC4000ET52C	KT 5X4000CO FEEDER LENGTH	52	KTC4000FT33E	KT 3X4000CO FEEDER LENGTH FIRE	72
TC4000ET53D	KT 5X4000CO FEEDER LENGTH	52	KTC4000FT33F	KT 3X4000CO FEEDER LENGTH FIRE	72
	KT 5X4000CO FEEDER LENGTH	52	KTC4000FT340	KT 3X4000CO FEEDER LENGTH FIRE 4M	72
TC4000ET53F	KT 5X4000CO FEEDER LENGTH	52	KTC4000FT41A	KT 4X4000CO FEEDER LENGTH FIRE	72
TC4000ET540	KT 5X4000CO FEEDER LENGTH 4M	52	KTC4000FT420	KT 4X4000CO FEEDER LENGTH FIRE 2M	72
TC4000ET71A		52	KTC4000FT42B	KT 4X4000CO FEEDER LENGTH FIRE	72
TC4000ET720	KT 5X4000CO FEEDER LENGTH 2M	52	KTC4000FT42C	KT 4X4000CO FEEDER LENGTH FIRE	72
TC4000ET72B	KT 5X4000CO FEEDER LENGTH	52	KTC4000FT43D	KT 4X4000CO FEEDER LENGTH FIRE	72
	KT 5X4000CO FEEDER LENGTH	52	KTC4000FT43E	KT 4X4000CO FEEDER LENGTH FIRE	72
TC4000ET73D	KT 5X4000CO FEEDER LENGTH	52	KTC4000FT43F	KT 4X4000CO FEEDER LENGTH FIRE	72
TC4000ET73E	KT 5X4000CO FEEDER LENGTH	52	KTC4000FT440	KT 4X4000CO FEEDER LENGTH FIRE 4M	72
TC4000ET73F	KT 5X4000CO FEEDER LENGTH	52	KTC4000FT51A	KT 5X4000CO FEEDER LENGTH FIRE	72
TC4000ET740	KT 5X4000CO FEEDER LENGTH 4M	52	KTC4000FT520	KT 5X4000CO FEEDER LENGTH FIRE 2M	72
TC4000FC3A	KT 3X4000CO EDGEWISE ELBOW	74	KTC4000FT52B	KT 5X4000CO FEEDER LENGTH FIRE	72
TC4000FC3B	KT 3X4000CO EDGEWISE ELBOW	74	KTC4000FT52C	KT 5X4000CO FEEDER LENGTH FIRE	72
TC4000FC3D	KT 3X4000CO EDGEWISE ELBOW	74	KTC4000FT53D	KT 5X4000CO FEEDER LENGTH FIRE	72
TC4000FC3E	KT 3X4000CO EDGEWISE ELBOW	74	KTC4000FT53E	KT 5X4000CO FEEDER LENGTH FIRE	72
TC4000FC4A	KT 4X4000CO EDGEWISE ELBOW	74	KTC4000FT53F	KT 5X4000CO FEEDER LENGTH FIRE	72
TC4000FC4B	KT 4X4000CO EDGEWISE ELBOW	74	KTC4000FT540	KT 5X4000CO FEEDER LENGTH FIRE 4M	72
TC4000FC4D	KT 4X4000CO EDGEWISE ELBOW	74	KTC4000FT71A	KT 5X4000CO FEEDER LENGTH FIRE	72
TC4000FC4E	KT 4X4000CO EDGEWISE ELBOW	74	KTC4000FT720	KT 5X4000CO FEEDER LENGTH FIRE 2M	72
TC4000FC5A	KT 5X4000CO EDGEWISE ELBOW	74	KTC4000FT72B	KT 5X4000CO FEEDER LENGTH FIRE	72
TC4000FC5B	KT 5X4000CO EDGEWISE ELBOW	74	KTC4000FT72C	KT 5X4000CO FEEDER LENGTH FIRE	72
TC4000FC5D	KT 5X4000CO EDGEWISE ELBOW	74	KTC4000FT73D	KT 5X4000CO FEEDER LENGTH FIRE	72
TC4000FC5E	KT 5X4000CO EDGEWISE ELBOW	74	KTC4000FT73E	KT 5X4000CO FEEDER LENGTH FIRE	72
TC4000FC7A	KT 5X4000CO EDGEWISE ELBOW	74	KTC4000FT73F	KT 5X4000CO FEEDER LENGTH FIRE	72
TC4000FC7B	KT 5X4000CO EDGEWISE ELBOW	74	KTC4000FT740	KT 5X4000CO FEEDER LENGTH FIRE 4M	72
TC4000FC7D	KT 5X4000CO EDGEWISE ELBOW	74	KTC4000LC3A	KT 3X4000CO EDGEWISE ELBOW	63
TC4000FC7E	KT 5X4000CO EDGEWISE ELBOW	74	KTC4000LC3B	KT 3X4000CO EDGEWISE ELBOW	63
TC4000FP3A1	KT 3X4000CO FLAT ELBOW N1 FIRE	73	KTC4000LC3D	KT 3X4000CO EDGEWISE ELBOW	63
TC4000FP3A2	KT 3X4000CO FLAT ELBOW N2 FIRE	73	KTC4000LC3E	KT 3X4000CO EDGEWISE ELBOW	63
TC4000FP3B1	KT 3X4000CO FLAT ELBOW N1 FIRE	73	KTC4000LC4A	KT 4X4000CO EDGEWISE ELBOW	63
TC4000FP3B2	KT 3X4000CO FLAT ELBOW N2 FIRE	73	KTC4000LC4B	KT 4X4000CO EDGEWISE ELBOW	63
TC4000FP3D1	KT 3X4000CO FLAT ELBOW N1 FIRE	73	KTC4000LC4D	KT 4X4000CO EDGEWISE ELBOW	63
TC4000FP3D2	KT 3X4000CO FLAT ELBOW N2 FIRE	73	KTC4000LC4E	KT 4X4000CO EDGEWISE ELBOW	63
TC4000FP3E1	KT 3X4000CO FLAT ELBOW N1 FIRE	73	KTC4000LC5A	KT 5X4000CO EDGEWISE ELBOW	63
TC4000FP3E2	KT 3X4000CO FLAT ELBOW N2 FIRE	73	KTC4000LC5B	KT 5X4000CO EDGEWISE ELBOW	63
	KT 4X4000CO FLAT ELBOW N1 FIRE	73	KTC4000LC4D	KT 4X4000CO EDGEWISE ELBOW	63
TC4000FP4A2	KT 4X4000CO FLAT ELBOW N2 FIRE	73	KTC4000LC4E	KT 4X4000CO EDGEWISE ELBOW	63
TC4000FP4B1	KT 4X4000CO FLAT ELBOW N1 FIRE	73	KTC4000LC7A	KT 5X4000CO EDGEWISE ELBOW	63
	KT 4X4000CO FLAT ELBOW N2 FIRE	73	KTC4000LC7B	KT 5X4000CO EDGEWISE ELBOW	63
	KT 4X4000CO FLAT ELBOW N1 FIRE	73	KTC4000LC7D	KT 5X4000CO EDGEWISE ELBOW	63
	KT 4X4000CO FLAT ELBOW N2 FIRE	73	KTC4000LC7E	KT 5X4000CO EDGEWISE ELBOW	63
	KT 4X4000CO FLAT ELBOW N1 FIRE	73	KTC4000LP3A1	KT 3X4000CO FLAT ELBOW N1	62
	KT 4X4000CO FLAT ELBOW N2 FIRE	73		KT 3X4000CO FLAT ELBOW N2	62
	KT 5X4000CO FLAT ELBOW N1 FIRE	73		KT 3X4000CO FLAT ELBOW N1	62
	KT 5X4000CO FLAT ELBOW N2 FIRE	73		KT 3X4000CO FLAT ELBOW N2	62
	KT 5X4000CO FLAT ELBOW N1 FIRE	73		KT 3X4000CO FLAT ELBOW N1	63
	KT 5X4000CO FLAT ELBOW N2 FIRE	73		KT 3X4000CO FLAT ELBOW N2	63
	KT 5X4000CO FLAT ELBOW N1 FIRE	73		KT 3X4000CO FLAT ELBOW N1	62
	KT 5X4000CO FLAT ELBOW NT FIRE	73		KT 3X4000CO FLAT ELBOW NT	62
	KT 5X4000CO FLAT ELBOW N2 FIRE	73		KT 3X4000CO FLAT ELBOW N2 KT 3X4000CO FLAT ELBOW N1	62
	KT 5X4000CO FLAT ELBOW NT FIRE	73		KT 3X4000CO FLAT ELBOW NT KT 3X4000CO FLAT ELBOW N2	62
					62
	KT 5X4000CO FLAT ELBOW N1 FIRE	73		KT 4X4000CO FLAT ELBOW N1	
	KT 5X4000CO FLAT ELBOW N2 FIRE	73		KT 4X4000CO FLAT ELBOW N2	62
	KT 5X4000CO FLAT ELBOW N1 FIRE	73		KT 4X4000CO FLAT ELBOW N1	62
	KT 5X4000CO FLAT ELBOW N2 FIRE	73 73		KT 4X4000CO FLAT ELBOW N2	62
	KT 5X4000CO FLAT ELBOW N1 FIRE			KT 4X4000CO FLAT ELBOW N1	63

Cat. no.	Designations	Pages	Cat. no.	Designations	Pages
	KT 4X4000CO FLAT ELBOW N2	63	KTC5000DB410	KT 4X5000CO EXPANSION UNIT	58
	KT 4X4000CO FLAT ELBOW N1	62		KT5X5000CO EXPANSION UNIT	58
	KT 4X4000CO FLAT ELBOW N2 KT 4X4000CO FLAT ELBOW N1	62 62		KT5X5000CO EXPANSION UNIT	58 54
	KT 4X4000CO FLAT ELBOW NT	62		KT 3X5000CO BOLT ON LENGTH 2M KT 3X5000CO BOLT ON LENGTH 4M	54 54
	KT 5X4000CO FLAT ELBOW N2	62		KT 4X5000CO BOLT ON LENGTH 2M	54
	KT 5X4000CO FLAT ELBOW N2	62		KT 4X5000CO BOLT ON LENGTH 4M	54
	KT 5X4000CO FLAT ELBOW N1	62		KT 5X5000CO BOLT ON LENGTH 2M	54
KTC4000LP5B2	KT 5X4000CO FLAT ELBOW N2	62	KTC5000EB540	KT 5X5000CO BOLT ON LENGTH 4M	54
KTC4000LP5C1	KT 5X4000CO FLAT ELBOW N1	63	KTC5000EB720	KT 5X5000CO BOLT ON LENGTH 2M	54
	KT 5X4000CO FLAT ELBOW N2	63		KT 5X5000CO BOLT ON LENGTH 4M	54
	KT 5X4000CO FLAT ELBOW N1	62		KT 1X5000CO PLUG-IN LENGTH 2M	52
	KT 5X4000CO FLAT ELBOW N2 KT 5X4000CO FLAT ELBOW N1	62 62		KT 3X5000CO PLUG-IN LENGTH 2M KT 1X5000CO PLUG-IN LENGTH	52 52
	KT 5X4000CO FLAT ELBOW N1	62		KT 2X5000CO PLUG-IN LENGTH	52
	KT 5X4000CO FLAT ELBOW N2	62		KT 1X5000CO PLUG-IN LENGTH	52
	KT 5X4000CO FLAT ELBOW N2	62		KT 3X5000CO PLUG-IN LENGTH	52
KTC4000LP7B1	KT 5X4000CO FLAT ELBOW N1	62	KTC5000ED3403	KT 3X5000CO PLUG-IN LENGTH 4M	52
KTC4000LP7B2	KT 5X4000CO FLAT ELBOW N2	62	KTC5000ED4201	KT 1X5000CO PLUG-IN LENGTH 2M	52
	KT 5X4000CO FLAT ELBOW N1	63		KT 4X5000CO PLUG-IN LENGTH 2M	52
	KT 5X4000CO FLAT ELBOW N2	63		KT 1X5000CO PLUG-IN LENGTH	52
	KT 5X4000CO FLAT ELBOW N1	62		KT 2X5000CO PLUG-IN LENGTH	52
	KT 5X4000CO FLAT ELBOW N2 KT 5X4000CO FLAT ELBOW N1	62 62		KT 1X5000CO PLUG-IN LENGTH KT 3X5000CO PLUG-IN LENGTH	52 52
	KT 5X4000CO FLAT ELBOW NT	62		KT 4X5000CO PLUG-IN LENGTH 4M	52
KTC4000TC3	KT 3X4000CO TEE ON EDGE	67		KT 1X5000CO PLUG-IN LENGTH 2M	52
KTC4000TC4	KT 4X4000CO TEE ON EDGE	67		KT 5X5000CO PLUG-IN LENGTH 2M	52
КТС4000ТС5	KT 5X4000CO TEE ON EDGE	67	KTC5000ED5301	KT 1X5000CO PLUG-IN LENGTH	52
KTC4000TC7	KT 5X4000CO TEE ON EDGE	67	KTC5000ED5302	KT 2X5000CO PLUG-IN LENGTH	52
KTC4000TN410	KT 4X4000CO NEUTRAL PERMUTA	58	KTC5000ED5351	KT 1X5000CO PLUG-IN LENGTH	52
KTC4000TP410	KT 4X4000CO PHASES PERMUTA	58		KT 3X5000CO PLUG-IN LENGTH	52
KTC4000YA3	KT 3X4000CO JUNCTION BLOC	60		KT 5X5000CO PLUG-IN LENGTH 4M	52
KTC4000YA4 KTC4000YA5	KT 4X4000CO JUNCTION BLOC KT 5X4000CO JUNCTION BLOC	60 60		KT 1X5000CO PLUG-IN LENGTH 2M KT 5X5000CO PLUG-IN LENGTH 2M	52 52
KTC4000YA5	KT 5X4000CO JUNCTION BLOC	60		KT 1X5000CO PLUG-IN LENGTH 2M	52
KTC4000ZC31	KT 3X4000CO EDGEWISE ZED N1	68		KT 2X5000CO PLUG-IN LENGTH	52
KTC4000ZC32	KT 3X4000CO EDGEWISE ZED N2	68		KT 1X5000CO PLUG-IN LENGTH	52
KTC4000ZC41	KT 4X4000CO EDGEWISE ZED N1	68	KTC5000ED7353	KT 3X5000CO PLUG-IN LENGTH	52
KTC4000ZC42	KT 4X4000CO EDGEWISE ZED N2	68		KT 5X5000CO PLUG-IN LENGTH 4M	52
KTC4000ZC51	KT 5X4000CO EDGEWISE ZED N1	68		KT 3X5000CO KH PLUG-IN LENGTH 2M	55
KTC4000ZC52	KT 5X4000CO EDGEWISE ZED N2	68		KT 3X5000CO KH PLUG-IN LENGTH 4M	55
KTC4000ZC71 KTC4000ZC72	KT 5X4000CO EDGEWISE ZED N1 KT 5X4000CO EDGEWISE ZED N2	68 68		KT 4X5000CO KH PLUG-IN LENGTH 2M KT 4X5000CO KH PLUG-IN LENGTH 4M	55 55
KTC4000ZP3	KT 3X4000CO ZED ON FLAT	68	KTC5000EH520	KT 5X5000CO KH PLUG-IN LENGTH 2M	55
KTC4000ZP4	KT 4X4000CO ZED ON FLAT	68		KT 5X5000CO KH PLUG-IN LENGTH 4M	55
KTC4000ZP5	KT 5X4000CO ZED ON FLAT	68		KT 5X5000CO KH PLUG-IN LENGTH 2M	55
KTC4000ZP7	KT 5X4000CO ZED ON FLAT	68	KTC5000EH740	KT 5X5000CO KH PLUG-IN LENGTH 4M	55
			KTC5000EL31	KT 3X5000CO FEED UNIT EL N1	94
KTC5000			KTC5000EL32	KT 3X5000CO FEED UNIT EL N2	94
KTC5000CP31	KT 3X5000CO FLAT EDGEWISE N1	70	KTC5000EL33	KT 3X5000CO FEED UNIT EL N3	96
KTC5000CP32	KT 3X5000CO FLAT EDGEWISE N2	70	KTC5000EL34 KTC5000EL35	KT 3X5000CO FEED UNIT EL N4 KT 3X5000CO FEED UNIT EL N5	96 97
KTC5000CP33 KTC5000CP34	KT 3X5000CO FLAT EDGEWISE N3 KT 3X5000CO FLAT EDGEWISE N4	70 70	KTC5000EL33	KT 4X5000CO FEED UNIT EL NS	97
KTC5000CP34	KT 4X5000CO FLAT EDGEWISE N4	70	KTC5000EL42	KT 4X5000CO FEED UNIT EL N2	94
KTC5000CP41	KT 4X5000CO FLAT EDGEWISE NT KT 4X5000CO FLAT EDGEWISE N2	70	KTC5000EL43	KT 4X5000CO FEED UNIT EL N3	96
KTC5000CP43	KT 4X5000CO FLAT EDGEWISE N2	70	KTC5000EL44	KT 4X5000CO FEED UNIT EL N4	96
KTC5000CP44	KT 4X5000CO FLAT EDGEWISE N4	70	KTC5000EL45	KT 4X5000CO FEED UNIT EL N5	97
KTC5000CP51	KT 5X5000CO FLAT EDGEWISE N1	70	KTC5000EL51	KT 5X5000CO FEED UNIT EL N1	94
KTC5000CP52	KT 5X5000CO FLAT EDGEWISE N2	70	KTC5000EL52	KT 5X5000CO FEED UNIT EL N2	94
KTC5000CP53	KT 5X5000CO FLAT EDGEWISE N3	70	KTC5000EL53	KT 5X5000CO FEED UNIT EL N3	96
KTC5000CP54	KT 5X5000CO FLAT EDGEWISE N4	70	KTC5000EL54 KTC5000EL55	KT 5X5000CO FEED UNIT EL N4 KT 5X5000CO FEED UNIT EL N5	96 97
KTC5000CP71	KT 5X5000CO FLAT EDGEWISE N1	70 70	KTC5000EL71	KT 5X5000CO FEED UNIT EL NS	94
KTC5000CP72 KTC5000CP73	KT 5X5000CO FLAT EDGEWISE N2 KT 5X5000CO FLAT EDGEWISE N3	70	KTC5000EL72	KT 5X5000CO FEED UNIT EL N2	94
	KT 5X5000CO FLAT EDGEWISE NS	70	KTC5000EL73	KT 5X5000CO FEED UNIT EL N3	96
KTC5000CP74					

Cat. no.	Designations	Pages	Cat. no.	Designations	Pages
KTC5000EL75	KT 5X5000CO FEED UNIT EL N5	97	KTC5000FC4B	KT 4X5000CO EDGEWISE ELBOW	74
KTC5000ER31	KT 3X5000CO FEED UNIT ER N1	80	KTC5000FC4D	KT 4X5000CO EDGEWISE ELBOW	74
KTC5000ER32	KT 3X5000CO FEED UNIT ER N2	80	KTC5000FC4E	KT 4X5000CO EDGEWISE ELBOW	74
TC5000ER33	KT 3X5000CO FEED UNIT ER N3	81	KTC5000FC5A	KT 5X5000CO EDGEWISE ELBOW	74
TC5000ER34	KT 3X5000CO FEED UNIT ER N4	81	KTC5000FC5B	KT 5X5000CO EDGEWISE ELBOW	74
(TC5000ER35	KT 3X5000CO FEED UNIT ER N5	82	KTC5000FC5D	KT 5X5000CO EDGEWISE ELBOW	74
CTC5000ER36	KT 3X5000CO FEED UNIT ER N6	82	KTC5000FC5E	KT 5X5000CO EDGEWISE ELBOW	74
(TC5000ER37	KT 3X5000CO FEED UNIT ER N7	86	KTC5000FC7A	KT 5X5000CO EDGEWISE ELBOW	74
(TC5000ER41	KT 4X5000CO FEED UNIT ER N1	80	KTC5000FC7B	KT 5X5000CO EDGEWISE ELBOW	74
(TC5000ER42	KT 4X5000CO FEED UNIT ER N2	80	KTC5000FC7D	KT 5X5000CO EDGEWISE ELBOW	74
(TC5000ER43	KT 4X5000CO FEED UNIT ER N3	81	KTC5000FC7E	KT 5X5000CO EDGEWISE ELBOW	74
(TC5000ER44	KT 4X5000CO FEED UNIT ER N4	81	KTC5000FP3A1	KT 3X5000CO FLAT ELBOW N1 FIRE	73
(TC5000ER45	KT 4X5000CO FEED UNIT ER N5	82	KTC5000FP3A2	KT 3X5000CO FLAT ELBOW N2 FIRE	73
TC5000ER46	KT 4X5000CO FEED UNIT ER N6	82	KTC5000FP3B1	KT 3X5000CO FLAT ELBOW N1 FIRE	73
TC5000ER47	KT 4X5000CO FEED UNIT ER N7	86	KTC5000FP3B2	KT 3X5000CO FLAT ELBOW N2 FIRE	73
TC5000ER51	KT 5X5000CO FEED UNIT ER N1	80	KTC5000FP3D1	KT 3X5000CO FLAT ELBOW N1 FIRE	73
TC5000ER52	KT 5X5000CO FEED UNIT ER N2	80	KTC5000FP3D2	KT 3X5000CO FLAT ELBOW N2 FIRE	73
TC5000ER53	KT 5X5000CO FEED UNIT ER N3	81	KTC5000FP3E1	KT 3X5000CO FLAT ELBOW N1 FIRE	73
TC5000ER54	KT 5X5000CO FEED UNIT ER N4	81	KTC5000FP3E2	KT 3X5000CO FLAT ELBOW N2 FIRE	73
TC5000ER55	KT 5X5000CO FEED UNIT ER N5	82	KTC5000FP4A1	KT 4X5000CO FLAT ELBOW N1 FIRE	73
TC5000ER56	KT 5X5000CO FEED UNIT ER N6	82	KTC5000FP4A2	KT 4X5000CO FLAT ELBOW N2 FIRE	73
TC5000ER57	KT 5X5000CO FEED UNIT ER N7	86	KTC5000FP4B1	KT 4X5000CO FLAT ELBOW N1 FIRE	73
TC5000ER71	KT 5X5000CO FEED UNIT ER N1	80	KTC5000FP4B2	KT 4X5000CO FLAT ELBOW N2 FIRE	73
TC5000ER72	KT 5X5000CO FEED UNIT ER N2	80	KTC5000FP4D1	KT 4X5000CO FLAT ELBOW N1 FIRE	73
TC5000ER73	KT 5X5000CO FEED UNIT ER N3	81	KTC5000FP4D2	KT 4X5000CO FLAT ELBOW N2 FIRE	73
TC5000ER74	KT 5X5000CO FEED UNIT ER N4	81	KTC5000FP4E1	KT 4X5000CO FLAT ELBOW N1 FIRE	73
TC5000ER75	KT 5X5000CO FEED UNIT ER N5	82	KTC5000FP4E2	KT 4X5000CO FLAT ELBOW N2 FIRE	73
TC5000ER76	KT 5X5000CO FEED UNIT ER N6	82	KTC5000FP5A1	KT 5X5000CO FLAT ELBOW N1 FIRE	73
TC5000ER77	KT 5X5000CO FEED UNIT ER N7	86	KTC5000FP5A2	KT 5X5000CO FLAT ELBOW N2 FIRE	73
TC5000ET31A	KT 3X5000CO FEEDER LENGTH	52	KTC5000FP5B1	KT 5X5000CO FLAT ELBOW N1 FIRE	73
TC5000ET320	KT 3X5000CO FEEDER LENGTH 2M	52	KTC5000FP5B2	KT 5X5000CO FLAT ELBOW N2 FIRE	73
TC5000ET32B	KT 3X5000CO FEEDER LENGTH	52	KTC5000FP5D1	KT 5X5000CO FLAT ELBOW N1 FIRE	73
TC5000ET32C	KT 3X5000CO FEEDER LENGTH	52	KTC5000FP5D2	KT 5X5000CO FLAT ELBOW N2 FIRE	73
TC5000ET33D	KT 3X5000CO FEEDER LENGTH	52	KTC5000FP5E1	KT 5X5000CO FLAT ELBOW N1 FIRE	73
TC5000ET33E	KT 3X5000CO FEEDER LENGTH	52	KTC5000FP5E2	KT 5X5000CO FLAT ELBOW N2 FIRE	73
TC5000ET33F	KT 3X5000CO FEEDER LENGTH	52	KTC5000FP7A1	KT 5X5000CO FLAT ELBOW N1 FIRE	73
TC5000ET340	KT 3X5000CO FEEDER LENGTH 4M	52	KTC5000FP7A2	KT 5X5000CO FLAT ELBOW N2 FIRE	73
TC5000ET41A	KT 4X5000CO FEEDER LENGTH	52	KTC5000FP7B1	KT 5X5000CO FLAT ELBOW N1 FIRE	73
TC5000ET420	KT 4X5000CO FEEDER LENGTH 2M	52	KTC5000FP7B2	KT 5X5000CO FLAT ELBOW N2 FIRE	73
TC5000ET42B	KT 4X5000CO FEEDER LENGTH	52	KTC5000FP7D1	KT 5X5000CO FLAT ELBOW N1 FIRE	73
TC5000ET42C	KT 4X5000CO FEEDER LENGTH	52	KTC5000FP7D2	KT 5X5000CO FLAT ELBOW N2 FIRE	73
TC5000ET43D	KT 4X5000CO FEEDER LENGTH	52	KTC5000FP7E1	KT 5X5000CO FLAT ELBOW N1 FIRE	73
TC5000ET43E	KT 4X5000CO FEEDER LENGTH	52	KTC5000FP7E2	KT 5X5000CO FLAT ELBOW N2 FIRE	73
TC5000ET43F	KT 4X5000CO FEEDER LENGTH	52	KTC5000FT31A	KT 3X5000CO FEEDER LENGTH FIRE	72
TC5000ET440	KT 4X5000CO FEEDER LENGTH 4M	52	KTC5000FT320	KT 3X5000CO FEEDER LENGTH FIRE 2M	72
	KT 5X5000CO FEEDER LENGTH	52	KTC5000FT32B		72
	KT 5X5000CO FEEDER LENGTH 2M	52		KT 3X5000CO FEEDER LENGTH FIRE	72
	KT 5X5000CO FEEDER LENGTH	52	KTC5000FT33D	KT 3X5000CO FEEDER LENGTH FIRE	72
	KT 5X5000CO FEEDER LENGTH	52	KTC5000FT33E	KT 3X5000CO FEEDER LENGTH FIRE	72
	KT 5X5000CO FEEDER LENGTH	52	KTC5000FT33F	KT 3X5000CO FEEDER LENGTH FIRE	72
	KT 5X5000CO FEEDER LENGTH	52	KTC5000FT340	KT 3X5000CO FEEDER LENGTH FIRE 4M	72
	KT 5X5000CO FEEDER LENGTH	52	KTC5000FT41A	KT 4X5000CO FEEDER LENGTH FIRE	72
	KT 5X5000CO FEEDER LENGTH 4M	52	KTC5000FT420	KT 4X5000CO FEEDER LENGTH FIRE 2M	72
	KT 5X5000CO FEEDER LENGTH	52	KTC5000FT42B	KT 4X5000CO FEEDER LENGTH FIRE	72
TC5000ET720		52	KTC5000FT42C	KT 4X5000CO FEEDER LENGTH FIRE	72
	KT 5X5000CO FEEDER LENGTH	52	KTC5000FT43D	KT 4X5000CO FEEDER LENGTH FIRE	72
	KT 5X5000CO FEEDER LENGTH	52	KTC5000FT43E	KT 4X5000CO FEEDER LENGTH FIRE	72
	KT 5X5000CO FEEDER LENGTH	52	KTC5000FT43F	KT 4X5000CO FEEDER LENGTH FIRE	72
	KT 5X5000CO FEEDER LENGTH	52	KTC5000FT440	KT 4X5000CO FEEDER LENGTH FIRE 4M	72
TC5000ET73F		52	KTC5000FT51A	KT 5X5000CO FEEDER LENGTH FIRE	72
TC5000ET740		52	KTC5000FT520	KT 5X5000CO FEEDER LENGTH FIRE 2M	72
TC5000FC3A	KT 3X5000CO EDGEWISE ELBOW	74	KTC5000FT52B	KT 5X5000CO FEEDER LENGTH FIRE	72
TC5000FC3B	KT 3X5000CO EDGEWISE ELBOW	74	KTC5000FT52C	KT 5X5000CO FEEDER LENGTH FIRE	72
TC5000FC3D	KT 3X5000CO EDGEWISE ELBOW	74	KTC5000FT53D	KT 5X5000CO FEEDER LENGTH FIRE	72
TC5000FC3E	KT 3X5000CO EDGEWISE ELBOW	74	KTC5000FT53E	KT 5X5000CO FEEDER LENGTH FIRE	72

Cat. no.	Designations	Pages	Cat. no.	Designations	Pages
KTC5000FT540	KT 5X5000CO FEEDER LENGTH FIRE 4M	72	KTC5000TC4	KT 4X5000CO TEE ON EDGE	67
KTC5000FT71A	KT 5X5000CO FEEDER LENGTH FIRE	72	KTC5000TC5	KT 5X5000CO TEE ON EDGE	67
CTC5000FT720	KT 5X5000CO FEEDER LENGTH FIRE 2M	72	KTC5000TC7	KT 5X5000CO TEE ON EDGE	67
(TC5000FT72B	KT 5X5000CO FEEDER LENGTH FIRE	72	KTC5000TN410	KT 4X5000CO NEUTRAL PERMUTA	58
TC5000FT72C	KT 5X5000CO FEEDER LENGTH FIRE	72	KTC5000TP410	KT 4X5000CO PHASES PERMUTA	58
CTC5000FT73D	KT 5X5000CO FEEDER LENGTH FIRE	72	KTC5000YA3	KT 3X5000CO JUNCTION BLOC	60
(TC5000FT73E	KT 5X5000CO FEEDER LENGTH FIRE	72	KTC5000YA4	KT 4X5000CO JUNCTION BLOC	60
CTC5000FT73F	KT 5X5000CO FEEDER LENGTH FIRE	72	KTC5000YA5	KT 5X5000CO JUNCTION BLOC	60
(TC5000FT740	KT 5X5000CO FEEDER LENGTH FIRE 4M	72	KTC5000YA7	KT 5X5000CO JUNCTION BLOC	60
TC5000LC3A	KT 3X5000CO EDGEWISE ELBOW	63	KTC5000ZC31	KT 3X5000CO EDGEWISE ZED N 1	68
TC5000LC3B	KT 3X5000CO EDGEWISE ELBOW	63	KTC5000ZC32	KT 3X5000CO EDGEWISE ZED N2	68
CTC5000LC3D	KT 3X5000CO EDGEWISE ELBOW	63	KTC5000ZC41	KT 4X5000CO EDGEWISE ZED N1	68
TC5000LC3E	KT 3X5000CO EDGEWISE ELBOW	63	KTC5000ZC42	KT 4X5000CO EDGEWISE ZED N2	68
TC5000LC4A	KT 4X5000CO EDGEWISE ELBOW	63	KTC5000ZC51	KT 5X5000CO EDGEWISE ZED N1	68
TC5000LC4B	KT 4X5000CO EDGEWISE ELBOW	63	KTC5000ZC52	KT 5X5000CO EDGEWISE ZED N2	68
TC5000LC4D	KT 4X5000CO EDGEWISE ELBOW	63	KTC5000ZC71	KT 5X5000CO EDGEWISE ZED N1	68
TC5000LC4E	KT 4X5000CO EDGEWISE ELBOW	63	KTC5000ZC72	KT 5X5000CO EDGEWISE ZED N2	68
TC5000LC5A	KT 5X5000CO EDGEWISE ELBOW	63	KTC5000ZP3	KT 3X5000CO ZED ON FLAT	68
TC5000LC5B	KT 5X5000CO EDGEWISE ELBOW	63	KTC5000ZP4	KT 4X5000CO ZED ON FLAT	68
TC5000LC5D	KT 5X5000CO EDGEWISE ELBOW	63	KTC5000ZP5	KT 5X5000CO ZED ON FLAT	68
TC5000LC5E	KT 5X5000CO EDGEWISE ELBOW	63	KTC5000ZP7	KT 5X5000CO ZED ON FLAT	68
TC5000LC7A	KT 5X5000CO EDGEWISE ELBOW	63			
KTC5000LC7B	KT 5X5000CO EDGEWISE ELBOW	63	KTC6300		
KTC5000LC7D	KT 5X5000CO EDGEWISE ELBOW	63	KTC6300CP31	KT 3X6300CO FLAT EDGEWISE N1	71
TC5000LC7E	KT 5X5000CO EDGEWISE ELBOW	63	KTC6300CP32	KT 3X6300CO FLAT EDGEWISE N2	71
(TC5000LP3A1	KT 3X5000CO FLAT ELBOW N1	62	KTC6300CP33	KT 3X6300CO FLAT EDGEWISE N3	71
	KT 3X5000CO FLAT ELBOW N2	62	KTC6300CP34	KT 3X6300CO FLAT EDGEWISE N4	71
(TC5000LP3B1	KT 3X5000CO FLAT ELBOW N1	62	KTC6300CP41	KT 4X6300CO FLAT EDGEWISE N1	71
	KT 3X5000CO FLAT ELBOW N2	62	KTC6300CP42	KT 4X6300CO FLAT EDGEWISE N2	71
(TC5000LP3C1	KT 3X5000CO FLAT ELBOW N1	63	KTC6300CP43	KT 4X6300CO FLAT EDGEWISE N3	71
	KT 3X5000CO FLAT ELBOW N2	63	KTC6300CP44	KT 4X6300CO FLAT EDGEWISE N4	71
	KT 3X5000CO FLAT ELBOW N1	62	KTC6300CP51	KT 5X6300CO FLAT EDGEWISE N1	71
	KT 3X5000CO FLAT ELBOW N2	62	KTC6300CP52	KT 5X6300CO FLAT EDGEWISE N2	71
TC5000LP3E1	KT 3X5000CO FLAT ELBOW N1	62	KTC6300CP53	KT 5X6300CO FLAT EDGEWISE N3	71
	KT 3X5000CO FLAT ELBOW N2	62	KTC6300CP54	KT 5X6300CO FLAT EDGEWISE N4	71
CTC5000LP4A1	KT 4X5000CO FLAT ELBOW N1	62 62	KTC6300CP71	KT 5X6300CO FLAT EDGEWISE N1	71
(TC5000LP4A2	KT 4X5000CO FLAT ELBOW N2 KT 4X5000CO FLAT ELBOW N1	62	KTC6300CP72	KT 5X6300CO FLAT EDGEWISE N2	71
	KT 4X5000CO FLAT ELBOW NT	62	KTC6300CP73	KT 5X6300CO FLAT EDGEWISE N3	71
	KT 4X5000CO FLAT ELBOW N2 KT 4X5000CO FLAT ELBOW N1	63	KTC6300CP74	KT 5X6300CO FLAT EDGEWISE N4	71
	KT 4X5000CO FLAT ELBOW NT	63	KTC6300DB310	KT 3X6300CO EXPANSION UNIT	59
	KT 4X5000CO FLAT ELBOW N2 KT 4X5000CO FLAT ELBOW N1	62		KT 4X6300CO EXPANSION UNIT	59
	KT 4X5000CO FLAT ELBOW NT	62		KT 5X6300CO EXPANSION UNIT	59
	KT 4X5000CO FLAT ELBOW N2	62		KT 5X6300CO EXPANSION UNIT	59
	KT 4X5000CO FLAT ELBOW NT	62		KT 3X6300CO BOLT ON LENGTH 2M	57
	KT 5X5000CO FLAT ELBOW N2 KT 5X5000CO FLAT ELBOW N1	62		KT 3X6300CO BOLT ON LENGTH 4M	57
	KT 5X5000CO FLAT ELBOW NT	62		KT 4X6300CO BOLT ON LENGTH 2M	57
	KT 5X5000CO FLAT ELBOW N2 KT 5X5000CO FLAT ELBOW N1	62		KT 4X6300CO BOLT ON LENGTH 4M	57
	KT 5X5000CO FLAT ELBOW NT	62		KT 5X6300CO BOLT ON LENGTH 2M	57
	KT 5X5000CO FLAT ELBOW N2 KT 5X5000CO FLAT ELBOW N1	63		KT 5X6300CO BOLT ON LENGTH 4M	57
	KT 5X5000CO FLAT ELBOW N1	63		KT 5X6300CO BOLT ON LENGTH 2M	57
	KT 5X5000CO FLAT ELBOW N2 KT 5X5000CO FLAT ELBOW N1	62		KT 5X6300CO BOLT ON LENGTH 4M	57
	KT 5X5000CO FLAT ELBOW N2	62		KT 3X6300CO PLUG-IN LENGTH 2M	56
	KT 5X5000CO FLAT ELBOW N2 KT 5X5000CO FLAT ELBOW N1	62		KT 3X6300CO PLUG-IN LENGTH 4M	56
	KT 5X5000CO FLAT ELBOW N1	62		KT 4X6300CO PLUG-IN LENGTH 2M	56
	KT 5X5000CO FLAT ELBOW N1	62		KT 4X6300CO PLUG-IN LENGTH 4M KT 5X6300CO PLUG-IN LENGTH 2M	56
	KT 5X5000CO FLAT ELBOW N2	62			56
	KT 5X5000CO FLAT ELBOW N1	62			56 56
	KT 5X5000CO FLAT ELBOW N1	62		KT 5X6300CO PLUG-IN LENGTH 2M	56
	KT 5X5000CO FLAT ELBOW N2	63		KT 5X6300CO PLUG-IN LENGTH 4M	56
	KT 5X5000CO FLAT ELBOW NT	63	KTC6300EL31	KT 3X6300CO FEED UNIT EL N1	95
	KT 5X5000CO FLAT ELBOW N2	62	KTC6300EL32	KT 3X6300CO FEED UNIT EL NE	95
	KT 5X5000CO FLAT ELBOW NT	62	KTC6300EL35	KT 3X6300CO FEED UNIT EL N5	97
	KT 5X5000CO FLAT ELBOW N2 KT 5X5000CO FLAT ELBOW N1	62	KTC6300EL41	KT 4X6300CO FEED UNIT EL N1	95
		62	KTC6300EL42	KT 4X6300CO FEED UNIT EL N2	95
(TC50001 P7E2	KT 5X5000CO FLAT ELBOW N2	h2	KTC6300EL45	KT 4X6300CO FEED UNIT EL N5	97

Cat. no.	Designations	Pages	Cat. no.	Designations	Pages
CTC6300EL52	KT 5X6300CO FEED UNIT EL N2	95	KTC6300FC5B	KT 5X6300CO EDGEWISE ELBOW	74
CTC6300EL55	KT 5X6300CO FEED UNIT EL N5	97	KTC6300FC7A	KT 5X6300CO EDGEWISE ELBOW	74
TC6300EL71	KT 5X6300CO FEED UNIT EL N1	95	KTC6300FC7B	KT 5X6300CO EDGEWISE ELBOW	74
TC6300EL72	KT 5X6300CO FEED UNIT EL N2	95	KTC6300FP3A1	KT 3X6300CO FLAT ELBOW N1 FIRE	73
TC6300EL75	KT 5X6300CO FEED UNIT EL N5	97	KTC6300FP3A2	KT 3X6300CO FLAT ELBOW N2 FIRE	73
TC6300ER31	KT 3X6300CO FEED UNIT ER N1	83	KTC6300FP3B1	KT 3X6300CO FLAT ELBOW N1 FIRE	73
TC6300ER32	KT 3X6300CO FEED UNIT ER N2	83	KTC6300FP3B2	KT 3X6300CO FLAT ELBOW N2 FIRE	73
TC6300ER33	KT 3X6300CO FEED UNIT ER N3	84	KTC6300FP3D1	KT 5X6300CO FLAT ELBOW N1 FIRE	73
TC6300ER34	KT 3X6300CO FEED UNIT ER N4	84	KTC6300FP3D2	KT 3X6300CO FLAT ELBOW N2 FIRE	73
TC6300ER35	KT 3X6300CO FEED UNIT ER N5	85	KTC6300FP3E1	KT 5X6300CO FLAT ELBOW N1 FIRE	73
TC6300ER36	KT 3X6300CO FEED UNIT ER N6	85	KTC6300FP3E2	KT 3X6300CO FLAT ELBOW N2 FIRE	73
TC6300ER41	KT 4X6300CO FEED UNIT ER N1	83	KTC6300FP4A1	KT 4X6300CO FLAT ELBOW N1 FIRE	73
TC6300ER42	KT 4X6300CO FEED UNIT ER N2	83	KTC6300FP4A2	KT 4X6300CO FLAT ELBOW N2 FIRE	73
TC6300ER43	KT 4X6300CO FEED UNIT ER N3	84	KTC6300FP4B1	KT 4X6300CO FLAT ELBOW N1 FIRE	73
TC6300ER44	KT 4X6300CO FEED UNIT ER N4	84	KTC6300FP4B2	KT 4X6300CO FLAT ELBOW N2 FIRE	73
TC6300ER45	KT 4X6300CO FEED UNIT ER N5	85	KTC6300FP4D1	KT 5X6300CO FLAT ELBOW N1 FIRE	73
TC6300ER46	KT 4X6300CO FEED UNIT ER N6	85	KTC6300FP4D2	KT 4X6300CO FLAT ELBOW N2 FIRE	73
TC6300ER51	KT 5X6300CO FEED UNIT ER N1	83	KTC6300FP4E1	KT 5X6300CO FLAT ELBOW N1 FIRE	73
TC6300ER52	KT 5X6300CO FEED UNIT ER N2	83	KTC6300FP4E2	KT 4X6300CO FLAT ELBOW N2 FIRE	73
TC6300ER53	KT 5X6300CO FEED UNIT ER N3	84	KTC6300FP5A1	KT 5X6300CO FLAT ELBOW N1 FIRE	73
TC6300ER54	KT 5X6300CO FEED UNIT ER N4	84	KTC6300FP5A2	KT 5X6300CO FLAT ELBOW N2 FIRE	73
TC6300ER55	KT 5X6300CO FEED UNIT ER N5	85	KTC6300FP5B1	KT 5X6300CO FLAT ELBOW N1 FIRE	73
TC6300ER56	KT 5X6300CO FEED UNIT ER N6	85	KTC6300FP5B2	KT 5X6300CO FLAT ELBOW N2 FIRE	73
TC6300ER71	KT 5X6300CO FEED UNIT ER N1	83	KTC6300FP5D1	KT 5X6300CO FLAT ELBOW N1 FIRE	73
TC6300ER72	KT 5X6300CO FEED UNIT ER N2	83	KTC6300FP5D2	KT 5X6300CO FLAT ELBOW N2 FIRE	73
TC6300ER73	KT 5X6300CO FEED UNIT ER N3	84	KTC6300FP5E1	KT 5X6300CO FLAT ELBOW N1 FIRE	73
TC6300ER74	KT 5X6300CO FEED UNIT ER N4	84	KTC6300FP5E2	KT 5X6300CO FLAT ELBOW N2 FIRE	73
TC6300ER75	KT 5X6300CO FEED UNIT ER N5	85	KTC6300FP7A1	KT 5X6300CO FLAT ELBOW N1 FIRE	73
TC6300ER76	KT 5X6300CO FEED UNIT ER N6	85	KTC6300FP7A2	KT 5X6300CO FLAT ELBOW N2 FIRE	73
TC6300ET31A	KT 3X6300CO FEEDER LENGTH	56	KTC6300FP7B1	KT 5X6300CO FLAT ELBOW N1 FIRE	73
TC6300ET320	KT 3X6300CO FEEDER LENGTH 2M	56	KTC6300FP7B2	KT 5X6300CO FLAT ELBOW N2 FIRE	73
TC6300ET32B	KT 3X6300CO FEEDER LENGTH	56	KTC6300FP7D1	KT 5X6300CO FLAT ELBOW N1 FIRE	73
TC6300ET32C	KT 3X6300CO FEEDER LENGTH	56	KTC6300FP7D2	KT 5X6300CO FLAT ELBOW N2 FIRE	73
TC6300ET33D	KT 3X6300CO FEEDER LENGTH	56	KTC6300FP7E1	KT 5X6300CO FLAT ELBOW N1 FIRE	73
TC6300ET33E	KT 3X6300CO FEEDER LENGTH	56	KTC6300FP7E2	KT 5X6300CO FLAT ELBOW N2 FIRE	73
TC6300ET33F	KT 3X6300CO FEEDER LENGTH	56	KTC6300FT31A	KT 3X6300CO FEEDER LENGTH FIRE	72
TC6300ET340	KT 3X6300CO FEEDER LENGTH 4M	56	KTC6300FT320	KT 3X6300CO FEEDER LENGTH FIRE 2M	72
TC6300ET41A	KT 4X6300CO FEEDER LENGTH	56	KTC6300FT32B	KT 3X6300CO FEEDER LENGTH FIRE	72
TC6300ET420	KT 4X6300CO FEEDER LENGTH 2M	56	KTC6300FT32C	KT 3X6300CO FEEDER LENGTH FIRE	72
TC6300ET42B	KT 4X6300CO FEEDER LENGTH	56	KTC6300FT33D	KT 3X6300CO FEEDER LENGTH FIRE	72
TC6300ET42C	KT 4X6300CO FEEDER LENGTH	56	KTC6300FT33E	KT 3X6300CO FEEDER LENGTH FIRE	72
TC6300ET43D	KT 4X6300CO FEEDER LENGTH	56	KTC6300FT33F	KT 3X6300CO FEEDER LENGTH FIRE	72
TC6300ET43E	KT 4X6300CO FEEDER LENGTH	56	KTC6300FT340	KT 3X6300CO FEEDER LENGTH FIRE 4M	72
TC6300ET43F	KT 4X6300CO FEEDER LENGTH	56	KTC6300FT41A	KT 4X6300CO FEEDER LENGTH FIRE	72
TC6300ET440	KT 4X6300CO FEEDER LENGTH 4M	56	KTC6300FT420	KT 4X6300CO FEEDER LENGTH FIRE 2M	72
TC6300ET51A	KT 5X6300CO FEEDER LENGTH	56	KTC6300FT42B	KT 4X6300CO FEEDER LENGTH FIRE	72
TC6300ET520	KT 5X6300CO FEEDER LENGTH 2M	56	KTC6300FT42C	KT 4X6300CO FEEDER LENGTH FIRE	72
TC6300ET52B	KT 5X6300CO FEEDER LENGTH	56	KTC6300FT43D	KT 4X6300CO FEEDER LENGTH FIRE	72
TC6300ET52C	KT 5X6300CO FEEDER LENGTH	56	KTC6300FT43E	KT 4X6300CO FEEDER LENGTH FIRE	72
TC6300ET53D	KT 5X6300CO FEEDER LENGTH	56	KTC6300FT43F	KT 4X6300CO FEEDER LENGTH FIRE	72
TC6300ET53E	KT 5X6300CO FEEDER LENGTH	56	KTC6300FT440	KT 4X6300CO FEEDER LENGTH FIRE 4M	72
TC6300ET53F	KT 5X6300CO FEEDER LENGTH	56	KTC6300FT51A	KT 5X6300CO FEEDER LENGTH FIRE	72
TC6300ET540	KT 5X6300CO FEEDER LENGTH 4M	56	KTC6300FT520	KT 5X6300CO FEEDER LENGTH FIRE 2M	72
TC6300ET71A	KT 5X6300CO FEEDER LENGTH	56	KTC6300FT52B	KT 5X6300CO FEEDER LENGTH FIRE	72
TC6300ET720	KT 5X6300CO FEEDER LENGTH 2M	56	KTC6300FT52C	KT 5X6300CO FEEDER LENGTH FIRE	72
TC6300ET72B	KT 5X6300CO FEEDER LENGTH	56	KTC6300FT53D	KT 5X6300CO FEEDER LENGTH FIRE	72
TC6300ET72C	KT 5X6300CO FEEDER LENGTH	56	KTC6300FT53E	KT 5X6300CO FEEDER LENGTH FIRE	72
TC6300ET73D	KT 5X6300CO FEEDER LENGTH	56	KTC6300FT53F	KT 5X6300CO FEEDER LENGTH FIRE	72
TC6300ET73E	KT 5X6300CO FEEDER LENGTH	56	KTC6300FT540	KT 5X6300CO FEEDER LENGTH FIRE 4M	72
TC6300ET73F	KT 5X6300CO FEEDER LENGTH	56	KTC6300FT71A	KT 5X6300CO FEEDER LENGTH FIRE	72
TC6300ET740		56	KTC6300FT720	KT 5X6300CO FEEDER LENGTH FIRE 2M	72
TC6300FC3A	KT 3X6300CO EDGEWISE ELBOW	74	KTC6300FT72B	KT 5X6300CO FEEDER LENGTH FIRE	72
TC6300FC3B	KT 3X6300CO EDGEWISE ELBOW	74	KTC6300FT72C	KT 5X6300CO FEEDER LENGTH FIRE	72
TC6300FC4A	KT 4X6300CO EDGEWISE ELBOW	74	KTC6300FT73D	KT 5X6300CO FEEDER LENGTH FIRE	72
TC6300FC4B	KT 4X6300CO EDGEWISE ELBOW	74	KTC6300FT73E	KT 5X6300CO FEEDER LENGTH FIRE	72

Cat. no.	Designations	Pages
KTC6300FT740	KT 5X6300CO FEEDER LENGTH FIRE 4M	72
KTC6300GS1	KT 6300CU GUIDE SUPPORT	61
KTC6300HC310 KTC6300HC410	KT 3X6300CO H EDGEWISE KT 4X6300CO H EDGEWISE	61 61
KTC6300HC410	KT 5X6300CO H EDGEWISE	61
KTC6300HC710	KT 5X6300CO H EDGEWISE	61
KTC6300LC3A	KT 3X6300CO EDGEWISE ELBOW	65
KTC6300LC3B	KT 3X6300CO EDGEWISE ELBOW	65
KTC6300LC4A	KT 4X6300CO EDGEWISE ELBOW	65
KTC6300LC4B	KT 4X6300CO EDGEWISE ELBOW	65
KTC6300LC5A	KT 5X6300CO EDGEWISE ELBOW	65
KTC6300LC5B	KT 5X6300CO EDGEWISE ELBOW	65
KTC6300LC7A	KT 5X6300CO EDGEWISE ELBOW	65
KTC6300LC7B	KT 5X6300CO EDGEWISE ELBOW	65
KTC6300LP3A1	KT 3X6300CO FLAT ELBOW N1	64
KTC6300LP3A2	KT 3X6300CO FLAT ELBOW N2	64
KTC6300LP3B1 KTC6300LP3B2	KT 3X6300CO FLAT ELBOW N1 KT 3X6300CO FLAT ELBOW N2	64 64
KTC6300LP3C1	KT 3X6300CO FLAT ELBOW N2 KT 3X6300CO FLAT ELBOW N2	64
KTC6300LP3C2	KT 3X6300CO FLAT ELBOW NT	64
KTC6300LP3D1	KT 5X6300CO FLAT ELBOW N2	64
KTC6300LP3D2	KT 3X6300CO FLAT ELBOW N2	64
KTC6300LP3E1	KT 5X6300CO FLAT ELBOW N1	64
KTC6300LP3E2	KT 3X6300CO FLAT ELBOW N2	64
KTC6300LP4A1	KT 4X6300CO FLAT ELBOW N1	64
KTC6300LP4A2	KT 4X6300CO FLAT ELBOW N2	64
KTC6300LP4B1	KT 4X6300CO FLAT ELBOW N1	64
KTC6300LP4B2	KT 4X6300CO FLAT ELBOW N2	64
KTC6300LP4C1	KT 4X6300CO FLAT ELBOW N1	64
KTC6300LP4C2 KTC6300LP4D1	KT 4X6300CO FLAT ELBOW N2 KT 5X6300CO FLAT ELBOW N1	64 64
KTC6300LP4D1	KT 4X6300CO FLAT ELBOW N2	64
KTC6300LP4E1	KT 5X6300CO FLAT ELBOW N2	64
KTC6300LP4E2	KT 4X6300CO FLAT ELBOW N2	64
KTC6300LP5A1	KT 5X6300CO FLAT ELBOW N1	64
KTC6300LP5A2	KT 5X6300CO FLAT ELBOW N2	64
KTC6300LP5B1	KT 5X6300CO FLAT ELBOW N1	64
KTC6300LP5B2	KT 5X6300CO FLAT ELBOW N2	64
KTC6300LP5C1	KT 5X6300CO FLAT ELBOW N1	64
KTC6300LP5C2 KTC6300LP5D1	KT 5X6300CO FLAT ELBOW N2 KT 5X6300CO FLAT ELBOW N1	64 64
KTC6300LP5D1	KT 5X6300CO FLAT ELBOW NT	64 64
KTC6300LP5E1	KT 5X6300CO FLAT ELBOW N2	64
KTC6300LP5E2	KT 5X6300CO FLAT ELBOW N2	64
KTC6300LP7A1	KT 5X6300CO FLAT ELBOW N1	64
KTC6300LP7A2	KT 5X6300CO FLAT ELBOW N2	64
KTC6300LP7B1	KT 5X6300CO FLAT ELBOW N1	64
KTC6300LP7B2	KT 5X6300CO FLAT ELBOW N2	64
KTC6300LP7C1	KT 5X6300CO FLAT ELBOW N1	64
KTC6300LP7C2	KT 5X6300CO FLAT ELBOW N2	64
KTC6300LP7D1	KT 5X6300CO FLAT ELBOW N1	64
KTC6300LP7D2 KTC6300LP7E1	KT 5X6300CO FLAT ELBOW N2	64
KTC6300LP7E1	KT 5X6300CO FLAT ELBOW N1 KT 5X6300CO FLAT ELBOW N2	64 64
KTC6300TN410	KT 4X6300CO NEUTRAL PERMUTA	59
KTC6300TP410	KT 4X6300CO PHASES PERMUTA	59
KTC6300YA3	KT 3X6300CO JUNCTION BLOC	60
KTC6300YA4	KT 4X6300CO JUNCTION BLOC	60
KTC6300YA5	KT 5X6300CO JUNCTION BLOC	60
KTC6300YA7	KT 5X6300CO JUNCTION BLOC	60
KTC6300ZC31	KT 3X6300CO EDGEWISE ZED N1	69
KTC6300ZC32	KT 3X6300CO EDGEWISE ZED N2	69
KTC6300ZC41	KT 4X6300CO EDGEWISE ZED N1	69
KTC6300ZC42	KT 4X6300CO EDGEWISE ZED N2	69
KTC6300ZC51 KTC6300ZC52	KT 5X6300CO EDGEWISE ZED N1 KT 5X6300CO EDGEWISE ZED N2	69 69
1003002032	NT 5A050000 LDGEWISE ZED NZ	03

Cat. no.	Designations	Pages
KTC6300ZC71	KT 5X6300CO EDGEWISE ZED N1	69
KTC6300ZC72	KT 5X6300CO EDGEWISE ZED N2	69
KTC6300ZP3	KT 3X6300CO ZED ON FLAT	69
KTC6300ZP4	KT 4X6300CO ZED ON FLAT	69
KTC6300ZP5	KT 5X6300CO ZED ON FLAT	69
KTC6300ZP7	KT 5X6300CO ZED ON FLAT	69



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