

PRODUCT-DETAILS

# AF09Z-30-22-20

## AF09Z-30-22-20 12-20VDC Contactor



### General Information

Extended Product Type	AF09Z-30-22-20
Product ID	1SBL136001R2022
EAN	3471523113404
Catalog Description	AF09Z-30-22-20 12-20VDC Contactor

Long Description	<p>The AF09Z-30-22-20 is a 3 pole - 690 V IEC or 600 UL contactor with pre-mounted auxiliary contacts and screw terminals, controlling motors up to 4 kW / 400 V AC (AC-3) or 5 hp / 480 V UL and switching power circuits up to 25 A (AC-1) or 25 A UL general use. Thanks to the AF technology, the contactor has a wide control voltage range (12-20 V DC), managing large control voltage variations, reducing panel energy consumptions and ensuring distinct operations in unstable networks. Furthermore, surge protection is built-in, offering a compact solution. AF contactors have a block type design, can be easily extended with add-on auxiliary contact blocks and an additional wide range of accessories.</p>
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### Ordering

Minimum Order Quantity	1 piece
Customs Tariff Number	85364900

### Popular Downloads

Instructions and Manuals	1SBC101027M6801
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CAD Dimensional  
Drawing

2CDC001079B0201

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**Dimensions**


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Product Net Width	45 mm
Product Net Depth / Length	110.5 mm
Product Net Height	86 mm
Product Net Weight	0.36 kg

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**Technical**


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Number of Main Contacts NO	3
Number of Main Contacts NC	0
Number of Auxiliary Contacts NO	2
Number of Auxiliary Contacts NC	2
Standards	IEC/EN 60947-1, IEC/EN 60947-4-1, UL 60947-4-1, CSA C22.2 No. 60947-4-1
Rated Operational Voltage	Auxiliary Circuit 690 V Main Circuit 690 V
Rated Frequency (f)	Auxiliary Circuit 50 / 60 Hz Main Circuit 50 / 60 Hz
Conventional Free-air Thermal Current ( $I_{th}$ )	acc. to IEC 60947-4-1, Open Contactors $\Theta = 40\text{ }^{\circ}\text{C}$ 35 A acc. to IEC 60947-5-1, $\Theta = 40\text{ }^{\circ}\text{C}$ 16 A
Rated Operational Current AC-1 ( $I_e$ )	(690 V) 40 $^{\circ}\text{C}$ 25 A (690 V) 60 $^{\circ}\text{C}$ 25 A (690 V) 70 $^{\circ}\text{C}$ 22 A
Rated Operational Current AC-3 ( $I_e$ )	(415 V) 60 $^{\circ}\text{C}$ 9 A (440 V) 60 $^{\circ}\text{C}$ 9 A (500 V) 60 $^{\circ}\text{C}$ 9.5 A (690 V) 60 $^{\circ}\text{C}$ 7 A (380 / 400 V) 60 $^{\circ}\text{C}$ 9 A (220 / 230 / 240 V) 60 $^{\circ}\text{C}$ 9 A
Rated Operational Current AC-3e ( $I_e$ )	(415 V) 60 $^{\circ}\text{C}$ 9 A (440 V) 60 $^{\circ}\text{C}$ 9 A (500 V) 60 $^{\circ}\text{C}$ 9.5 A (690 V) 60 $^{\circ}\text{C}$ 7 A (380 / 400 V) 60 $^{\circ}\text{C}$ 9 A (220 / 230 / 240 V) 60 $^{\circ}\text{C}$ 9 A
Rated Operational Power AC-3 ( $P_e$ )	(400 V) 4 kW (415 V) 4 kW (440 V) 4 kW (500 V) 5.5 kW (690 V) 5.5 kW (380 / 400 V) 4 kW (220 / 230 / 240 V) 2.2 kW
Rated Operational Power AC-3e ( $P_e$ )	(415 V) 4 kW (440 V) 4 kW (500 V) 5.5 kW (690 V) 5.5 kW (380 / 400 V) 4 kW (220 / 230 / 240 V) 2.2 kW
Rated Operational Current	(500 V) 2 A

AC-15 ( $I_e$ ) (690 V) 2 A  
 (24 / 127 V) 6 A  
 (220 / 240 V) 4 A  
 (400 / 440 V) 3 A

Rated Short-time at 40 °C Ambient Temp, in Free Air, from a Cold State 10 s 150 A  
 Withstand Current Low at 40 °C Ambient Temp, in Free Air, from a Cold State 15 min 35 A  
 Voltage ( $I_{cw}$ ) at 40 °C Ambient Temp, in Free Air, from a Cold State 1 min 60 A  
 at 40 °C Ambient Temp, in Free Air, from a Cold State 1 s 300 A  
 at 40 °C Ambient Temp, in Free Air, from a Cold State 30 s 80 A  
 for 0.1 s 140 A  
 for 1 s 100 A

Maximum Breaking Capacity  $\cos \phi=0.45$  ( $\cos \phi=0.35$  for  $I_e > 100$  A) at 440 V 250 A  
 $\cos \phi=0.45$  ( $\cos \phi=0.35$  for  $I_e > 100$  A) at 690 V 106 A

Maximum Electrical Switching Frequency (AC-1) 600 cycles per hour  
 (AC-15) 1200 cycles per hour  
 (AC-2 / AC-4) 300 cycles per hour  
 (AC-3) 1200 cycles per hour  
 (DC-13) 900 cycles per hour

Rated Operational Current DC-1 ( $I_e$ ) (110 V) 1-Pole, 40 °C 10 A  
 (110 V) 1-Pole, 60 °C 10 A  
 (110 V) 1-Pole, 70 °C 10 A  
 (110 V) 2 Poles in Series, 40 °C 25 A  
 (110 V) 2 Poles in Series, 60 °C 25 A  
 (110 V) 2 Poles in Series, 70 °C 22 A  
 (110 V) 3 Poles in Series, 40 °C 25 A  
 (110 V) 3 Poles in Series, 60 °C 25 A  
 (110 V) 3 Poles in Series, 70 °C 22 A  
 (220 V) 2 Poles in Series, 40 °C 10 A  
 (220 V) 2 Poles in Series, 60 °C 10 A  
 (220 V) 2 Poles in Series, 70 °C 10 A  
 (220 V) 3 Poles in Series, 40 °C 25 A  
 (220 V) 3 Poles in Series, 60 °C 25 A  
 (220 V) 3 Poles in Series, 70 °C 22 A  
 (72 V) 1-Pole, 40 °C 25 A  
 (72 V) 1-Pole, 60 °C 25 A  
 (72 V) 1-Pole, 70 °C 22 A  
 (72 V) 2 Poles in Series, 40 °C 25 A  
 (72 V) 2 Poles in Series, 60 °C 25 A  
 (72 V) 2 Poles in Series, 70 °C 22 A  
 (72 V) 3 Poles in Series, 40 °C 25 A  
 (72 V) 3 Poles in Series, 60 °C 25 A  
 (72 V) 3 Poles in Series, 70 °C 22 A

Rated Operational Current DC-3 ( $I_e$ ) (110 V) 1-Pole, 40 °C 6 A  
 (110 V) 1-Pole, 60 °C 6 A  
 (110 V) 1-Pole, 70 °C 6 A  
 (110 V) 2 Poles in Series, 40 °C 25 A  
 (110 V) 2 Poles in Series, 60 °C 25 A  
 (110 V) 2 Poles in Series, 70 °C 22 A  
 (110 V) 3 Poles in Series, 40 °C 25 A  
 (110 V) 3 Poles in Series, 60 °C 25 A  
 (110 V) 3 Poles in Series, 70 °C 22 A  
 (220 V) 2 Poles in Series, 40 °C 6 A  
 (220 V) 2 Poles in Series, 60 °C 6 A  
 (220 V) 2 Poles in Series, 70 °C 6 A  
 (220 V) 3 Poles in Series, 40 °C 25 A  
 (220 V) 3 Poles in Series, 60 °C 25 A  
 (220 V) 3 Poles in Series, 70 °C 22 A  
 (72 V) 1-Pole, 40 °C 25 A  
 (72 V) 1-Pole, 60 °C 25 A  
 (72 V) 1-Pole, 70 °C 22 A  
 (72 V) 2 Poles in Series, 40 °C 25 A  
 (72 V) 2 Poles in Series, 60 °C 25 A  
 (72 V) 2 Poles in Series, 70 °C 22 A  
 (72 V) 3 Poles in Series, 40 °C 25 A  
 (72 V) 3 Poles in Series, 60 °C 25 A  
 (72 V) 3 Poles in Series, 70 °C 22 A

Rated Operational Current (110 V) 1-Pole, 40 °C 4 A

DC-5 ( $I_e$ )	(110 V) 1-Pole, 60 °C 4 A
	(110 V) 1-Pole, 70 °C 4 A
	(110 V) 2 Poles in Series, 40 °C 10 A
	(110 V) 2 Poles in Series, 60 °C 10 A
	(110 V) 2 Poles in Series, 70 °C 10 A
	(110 V) 3 Poles in Series, 40 °C 25 A
	(110 V) 3 Poles in Series, 60 °C 25 A
	(110 V) 3 Poles in Series, 70 °C 22 A
	(220 V) 2 Poles in Series, 40 °C 4 A
	(220 V) 2 Poles in Series, 60 °C 4 A
	(220 V) 2 Poles in Series, 70 °C 4 A
	(220 V) 3 Poles in Series, 40 °C 9 A
	(220 V) 3 Poles in Series, 60 °C 9 A
	(220 V) 3 Poles in Series, 70 °C 9 A
	(72 V) 1-Pole, 40 °C 9 A
	(72 V) 1-Pole, 60 °C 9 A
	(72 V) 1-Pole, 70 °C 9 A
	(72 V) 2 Poles in Series, 40 °C 25 A
	(72 V) 2 Poles in Series, 60 °C 25 A
	(72 V) 2 Poles in Series, 70 °C 22 A
(72 V) 3 Poles in Series, 40 °C 25 A	
(72 V) 3 Poles in Series, 60 °C 25 A	
(72 V) 3 Poles in Series, 70 °C 22 A	
Rated Operational Current DC-13 ( $I_e$ )	(24 V) 6 A / 144 W (48 V) 2.8 A / 134 W (72 V) 1 A / 72 W (110 V) 0.55 A / 60 W (125 V) 0.55 A / 69 W (220 V) 0.27 A / 60 W (250 V) 0.27 A / 68 W (400 V) 0.15 A / 60 W (500 V) 0.13 A / 65 W (600 V) 0.1 A / 60 W
Rated Insulation Voltage ( $U_i$ )	acc. to IEC 60947-4-1 690 V acc. to IEC 60947-5-1 690 V acc. to UL/CSA 600 V
Rated Impulse Withstand Voltage ( $U_{imp}$ )	6 kV
Maximum Mechanical Switching Frequency	3600 cycles per hour
Rated Control Circuit Voltage ( $U_c$ )	DC Operation 12 ... 20 V
Operate Time	Between Coil De-energization and NC Contact Closing 13 ... 98 ms Between Coil De-energization and NO Contact Opening 11 ... 95 ms Between Coil Energization and NC Contact Opening 38 ... 90 ms Between Coil Energization and NO Contact Closing 40 ... 95 ms
Mounting on DIN Rail	TH35-15 (35 x 15 mm Mounting Rail) acc. to IEC 60715 TH35-7.5 (35 x 7.5 mm Mounting Rail) acc. to IEC 60715
Mounting by Screws (not supplied)	2 x M4 screws placed diagonally
Connecting Capacity Main Circuit	Flexible with Ferrule 1/2x 0.75 ... 6 mm <sup>2</sup> Flexible with Insulated Ferrule 1x 0.75 ... 4 mm <sup>2</sup> Flexible with Insulated Ferrule 2x 0.75 ... 2.5 mm <sup>2</sup> Rigid Solid 1/2x 1 ... 4 mm <sup>2</sup> Rigid Stranded 1/2x 1 ... 6 mm <sup>2</sup>
Connecting Capacity Auxiliary Circuit	Flexible with Ferrule 1/2x 0.75 ... 2.5 mm <sup>2</sup> Flexible with Insulated Ferrule 2x 0.75 ... 1.5 mm <sup>2</sup> Flexible with Insulated Ferrule 1x 0.75 ... 2.5 mm <sup>2</sup> Rigid Solid 1/2x 1 ... 2.5 mm <sup>2</sup> Rigid Stranded 1/2x 1 ... 2.5 mm <sup>2</sup>
Connecting Capacity Control Circuit	Flexible with Ferrule 1/2x 0.75 ... 2.5 mm <sup>2</sup> Flexible with Insulated Ferrule 1x 0.75 ... 2.5 mm <sup>2</sup> Flexible with Insulated Ferrule 2x 0.75 ... 1.5 mm <sup>2</sup> Rigid Solid 1/2x 1 ... 2.5 mm <sup>2</sup>

	Rigid Stranded 1/2x 1 ... 2.5 mm <sup>2</sup>
Wire Stripping Length	Auxiliary Circuit 10 mm Control Circuit 10 mm Main Circuit 10 mm
Degree of Protection	acc. to IEC 60529, IEC 60947-1, EN 60529 Auxiliary Terminals IP20 acc. to IEC 60529, IEC 60947-1, EN 60529 Coil Terminals IP20 acc. to IEC 60529, IEC 60947-1, EN 60529 Main Terminals IP20
Terminal Type	Screw Terminals

## Technical UL/CSA

NEMA Size	00
Continuous Current Rating NEMA	9 A
Horsepower Rating NEMA	(115 V AC) Single Phase 1/3 Hp (200 V AC) Three Phase 1-1/2 Hp (230 V AC) Single Phase 1 Hp (230 V AC) Three Phase 1-1/2 Hp (460 V AC) Three Phase 2 Hp (575 V AC) Three Phase 2 Hp
Maximum Operating Voltage UL/CSA	Main Circuit 600 V
General Use Rating UL/CSA	(600 V AC) 25 A
Horsepower Rating UL/CSA	(120 V AC) Single Phase 3/4 hp (200 ... 208 V AC) Three Phase 2 hp (220 ... 240 V AC) Three Phase 2 hp (240 V AC) Single Phase 1-1/2 hp (440 ... 480 V AC) Three Phase 5 hp (550 ... 600 V AC) Three Phase 7-1/2 hp
Connecting Capacity Main Circuit UL/CSA	Rigid Solid 1/2x 16-10 AWG Rigid Stranded 1/2x 16-10 AWG
Connecting Capacity Auxiliary Circuit UL/CSA	Rigid Solid 1/2x 18-14 AWG Rigid Stranded 1/2x 18-14 AWG
Connecting Capacity Control Circuit UL/CSA	Rigid Solid 1/2x 18-14 AWG Rigid Stranded 1/2x 18-14 AWG
Tightening Torque UL/CSA	Auxiliary Circuit 11 in-lb Control Circuit 11 in-lb Main Circuit 13 in-lb

## Environmental

Ambient Air Temperature	Close to Contactor Fitted with Thermal O/L Relay -25 ... 60 °C Close to Contactor without Thermal O/L Relay -40 ... 70 °C Close to Contactor for Storage -60 ... +80 °C
Climatic Withstand	Category B according to IEC 60947-1 Annex Q
Maximum Operating Altitude Permissible	Without Derating 3000 m
Resistance to Vibrations acc. to IEC 60068-2-6	5 ... 300 Hz 4 g closed position / 2 g open position
Resistance to Shock acc. to IEC 60068-2-27	Closed, Shock Direction: B1 25 g Open, Shock Direction: B1 5 g Shock Direction: A 30 g Shock Direction: B2 15 g Shock Direction: C1 25 g Shock Direction: C2 25 g
RoHS Status	Following EU Directive 2011/65/EU

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## Certificates and Declarations

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ABS Certificate	ABS_20-2060694-PDA
BV Certificate	BV_2634H24898C0
CB Certificate	CB_SE-108879
CCC Certificate	CCC_2010010304445624
CQC Certificate	CQC2010010304445624 CQC2020010304298240
Declaration of Conformity - CCC	2020980304001253 2020980304001082
Declaration of Conformity - CE	1SBD250000U1000
Declaration of Conformity - UKCA	1SBD250031U1000
DNV Certificate	DNV_TAE00001AF-4
EAC Certificate	EAC_RU_FRME77B03447
GOST Certificate	GOST_POCCFR.ME77.B07175.pdf
KC Certificate	KC_HW02016-15004C
LR Certificate	LRS_LR2002723TA-02
RINA Certificate	RINA_ELE240318XG
RMRS Certificate	RMRS_1802705280
UL Certificate	UL-US-2150887-5 UL-CA-2142658-5
UL Listing Card	E312527

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## Container Information

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Package Level 1 Units	box 1 piece
Package Level 1 Width	87 mm
Package Level 1 Depth / Length	113 mm
Package Level 1 Height	47 mm
Package Level 1 Gross Weight	0.36 kg
Package Level 1 EAN	3471523113404
Package Level 2 Units	box 18 piece
Package Level 2 Width	250 mm
Package Level 2 Depth / Length	300 mm
Package Level 2 Height	315 mm
Package Level 2 Gross Weight	6.48 kg
Package Level 3 Units	864 piece

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## Classifications

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Object Classification Code	Q
ETIM 4	EC000066 - Magnet contactor, AC-switching

ETIM 5	EC000066 - Magnet contactor, AC-switching
ETIM 6	EC000066 - Power contactor, AC switching
ETIM 7	EC000066 - Power contactor, AC switching
ETIM 8	EC000066 - Power contactor, AC switching
eClass	V11.0 : 27371003
UNSPSC	39121529
IDEA Granular Category Code (IGCC)	4758 >> Iec Contactors

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## Categories

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Low Voltage Products and Systems → Control Products → Contactors → Block Contactors

