


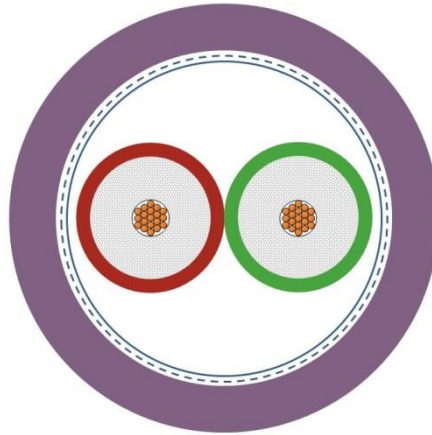
2170822	DATA SHEET	
valid from: 01.01.2019	UNITRONIC® BUS PB FD P A	

Application

UNITRONIC® BUS FD P A is a highly flexible, flame retardant and halogen free data cable for the field-bus system PROFIBUS DB and PROFIBUS FMS (Siemens SIMATIC NET) acc. to DIN 19245 and EN 50170 cable-type A, for fieldbus system FIP (Factory Instrumentation Protocol) as well as for high performance data networks with 150 Ω nominal impedance. The cable is designed for the system-defined transmission rates of 9.6 Kbit/s up to 12 MBit/s, the transmission characteristics are conform to the system and guarantee a high operating security during the data transmission.

The cable is intended for high flexible application in power chains, on permanently moving machines and linear robots in dry and damp interiors and in rough industrial environment. This cable is suitable for torsional application in wind turbines (WTG). The torsional load is limited to applications, as they typically occur in the loop of a wind turbine.

Design




Certification	UL/cUL type CMX acc. to UL 444 and CSA C22.2 No. 214-02
Conductor	bare copper, ca. 0.25 mm ² , fine-wire stranded (19 x 0.13 mm; 24 AWG)
Insulation	skin foam skin PE, wall thickness ca. 0.95 mm, core diameter ca. 2.55 mm
Core identification code	cores red and green
Stranding	two cores together with two fillers
Screen	plastic-laminated aluminium foil (side with metal outwards) on top: braid of tinned copper wires, coverage ca. 85%
Taping	one layer non-woven tape, overlapping
Outer sheath	Polyurethane, violet (similar to RAL 4001), wall thickness ca. 0.85 mm, outer diameter: ca. 7.7 mm, max. 8.0 mm

Electrical properties at 20°C

Conductor resistance	max. 156 Ω/km
Insulation resistance	min. 5 GΩxkm
Mutual capacitance	max. 30 nF/km (at 800 Hz)
Characteristic impedance	9.6 kHz: 270 Ω ± 27 38.4 kHz: 185 Ω ± 18 3 up to 20 Mhz: 150 Ω ± 15
Attenuation	9.6 kHz: max. 0.3 dB/100 m 38.4 kHz: max. 0.5 dB/100 m 200 kHz: max. 0.9 dB/100 m 4 MHz: max. 2.5 dB/100 m 16 MHz: max. 4.9 dB/100 m
Peak operating voltage	250 V (not for power applications)
Test voltage	conductor/conductor 1500 V conductor/screen 1500 V

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Mechanical and thermal properties

Minimum bending radius	moved: 65 mm
Temperature range	moved: -40 °C up to +75 °C fixed installation: -40 °C up to +80 °C
Torsional stress	TW-0 (5000 cycles at ≥ +5 °C) TW-2 (2000 cycles at ≥ -40 °C) ±150 °/m at 1 revolution/min.
Flammability	flame retardant acc. to IEC 60332-1-2 and VW 1 acc. to UL 1581
Halogen free	halogen free acc. to VDE 0472-815
General requirements	This cable is conform to the EU-Directive 2011/65/EU (RoHS, Restriction of the use of certain hazardous substances).

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