

UNITRONIC® BUS PB FD P A 1x2x0,64DB2170822
valid from: 14.09.2012**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.

Approval: UL/CSA type CMX acc. to UL 444 and CSA C22.2 No. 214-02

Design

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 Ø ca. 2.55 mm
Core identification code	cores red and green
Stranding	2 cores together with 2 fillers
Wrapping	1 layer non-woven tape, overlapping
Screening	plastic-laminated aluminium foil (side with metal outwards) <u>on top:</u> braid of tinned copper wires, coverage ca. 85%
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

Resistance (loop)	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
Line 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
Operating peak voltage	250 V (not for power purposes)
Test voltage U _{eff} (core/core and core/screen)	1500 V



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Minimum bending radius	moved: 65 mm
Permissible temperature range	moved: -40 °C up to +75 °C fixed installation: -40 °C up to +80 °C
Torsional movement in WTG	TW-0 (5000 cycles at ≥ +5 °C) TW-2 (2000 cycles at ≥ -40 °C) ±150 °/m at 1 revolution/min.
Flame propagation	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	Dangerous and forbidden substances acc. to RoHS directive (2002/95/EG) are not allowed to the manufacturing.