

UNITRONIC® BUS FD P LD
1/2/3 x2x0,25 mm²
DB2170213
 valid from: 08.03.2012

Application

UNITRONIC® BUS FD P LD is a screened, twisted paired flexible cable for bus systems with a data transmission rate up to 10 MBit/s and a nominal impedance of 100 Ohms. The twisting of the conductors into pairs ensure maximum interference suppression of the individual signals. The copper screening protects against external electromagnetic influences. The cable is applicable for constantly moving employment in power chain systems, linear robots and automatic handling machines in dry and damp interiors. The polyurethane outer sheath is largely resistant to certain oils and to abrasion.

Applicable connectors: D-Sub-Connector, 9-pins; Round-Connector, 9-pins (system of protection IP 65)

Design

Conductor	bare copper, superfine-wire stranded nom. 0.25 mm ²
Insulation	PE, core Ø: 1x2x0.25 mm ² (art.-no.: 2170213) : ca. 1.66 mm 2x2x0.25 mm ² (art.-no.: 2170214) : ca. 1.56 mm 3x2x0.25 mm ² (art.-no.: 2170215) : ca. 1.46 mm
Core identification code	acc. to DIN 47100
Stranding	cores stranded to pairs, pairs stranded to bundle
Wrapping	1 layer non woven tape
Screening	braid of tinned copper wires
Outer sheath	PUR, violet similar to RAL 4001, wall thickness nom. 1.0 mm, outer diameter: 1x2x0.25 mm ² (art.-no.: 2170213) : ca. 6.0 mm 2x2x0.25 mm ² (art.-no.: 2170214) : ca. 7.9 mm 3x2x0.25 mm ² (art.-no.: 2170215) : ca. 8.0 mm

Electrical properties at 20° C

Resistance (loop)	max. 159.8 Ω/km
Insulation resistance	min. 5 GΩxkm
Mutual capacitance	max. 60 nF/km (at 800 Hz)
Characteristic impedance	100 Ω up to 120 Ω
cable attenuation	100 kHz: nom. 0.79 dB/100 m 500 kHz: nom. 1.4 dB/100 m 1 MHz: nom. 1.9 dB/100 m 10 MHz: nom. 8.5 dB/100 m
Near-end crosstalk attenuation	1 MHz: min. 50 dB 10MHz: min. 40 dB
Velocity of propagation	nom. 0.66 c
Transfer impedance up to 30 MHz	max. 250 mΩ/m
Signal propagation time	nom. 5.06 ns/m
Operating peak voltage	250 V (not for power purposes)
Test voltage	core/core: 1500 V core/screen: 1000 V

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Minimum bending radius	moved: 15 x Leitungs \varnothing fixed installation: 6 x Leitungs \varnothing
Permissible temperature range	moved: -30° C bis +70° C fixed installation: -40° C bis +80° C
Flame propagation	flame retardant acc. to IEC 60332-1-2
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.