

**UNITRONIC® BUS PB TORSION 1 x 2 x 0,8****DB2170332**
valid from: 12.01.2012**Application**

Halogen free and flame retardant fieldbus cable, for example for SIEMENS SIMATIC® NET (acc. to DIN 19245 and EN 50170) and FIP-Fieldbus (Factory Instrumentation Protocol) systems. The fieldbus cable is designed for transmission rates of 12 MBit/s (100 m), 1.5 MBit/s (200 m), 500 kbit/s (400 m), 187.5 kbit/s (1000m) and 93.74 kbit/s (1200 m). The transmission characteristics are conform to the system and guarantee a high operating security during the data transmission.

The cable is designed for applications with torsional stress of $\pm 180^\circ/\text{m}$. Due to its double screening it is suitable for installation in electromagnetically demanding areas.

Approval: c(UL)us, type CMX acc. to UL 444 and CSA C22.2 No. 214-02

Design

Conductor	bare copper, nom. 0.38 mm^2
Insulation	Foam-Skin PE, core \varnothing nom. 2.56 mm
Core identification code	cores red and green
Stranding	2 cores together with 2 fillers
Screening	plastic-laminated aluminium foil (side with metal outwards), aluminized non woven tape, braid of tinned copper wires (coverage min. 80%)
Outer sheath	PUR flame retardant and halogen free, violet similar to RAL 4001, wall thickness nom. 1.0 mm, outer diameter: ca. 8.0 mm

Electrical properties at 20° C

Resistance (loop)	max. 110 Ω/km
Insulation resistance	min. 16 $\text{G}\Omega \times \text{km}$
Mutual capacitance	nom. 30 nF/km (at 800 Hz)
Inductance	ca. 0.58 mH/km (at 800 Hz)
Characteristic impedance	9,6 kHz: $270 \Omega \pm 27$ 38,4 kHz: $185 \Omega \pm 18,5$ 3 bis 20 Mhz: $150 \Omega \pm 15$
Line attenuation	9,6 kHz: max. 0.25 dB/100 m 38,4 kHz: max. 0.3 dB/100 m 4 MHz: max. 2.5 dB/100 m 16 MHz: max. 4.9 dB/100 m
Velocity of propagation	ca. 81%
Transfer impedance up to 20 MHz	max. 480 $\text{m}\Omega/\text{m}$
Operating peak voltage	300 V (not for power purposes)
Test voltage DC, 3 sec.	3600 V

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Minimum bending radius	fixed: 4 x outer diameter moved: 15 x outer diameter
Permissible temperature range	fixed: -40 °C up to +80 °C moved: -25 °C up to +75 °C
Flame propagation	flame retardant acc. to IEC 60332-1-2, VW-1 acc. to UL 1581 sec. 1080
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.