

UNITRONIC® BUS PB TORSION 1x2x0,8
DB2170332
 valid from: 30.01.2018
Application

UNITRONIC® BUS PB TORSION is a 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.

Design

Certification	c(UL)us, type CMX acc. to UL 444 and CSA C22.2 No. 214-17
Conductor	bare copper, ca. 0.8 mm conductor \varnothing , 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
Screen	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

Loop resistance	max. 110 Ω/km
Insulation resistance	min. 16 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 $\Omega \pm 15$
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. 0.81 c
Transfer impedance	max. 200 m Ω/m (up to 30 MHz)
Peak operating voltage	300 V (not for power purposes)
Test voltage DC / 3 sec.	3600 V

Mechanical and thermal properties

Minimum bending radius	fixed: 4 x outer diameter moved: 15 x outer diameter
Temperature range	fixed: -40°C up to +80°C moved: -25°C up to +75°C
Torsional stress	max. $\pm 180^\circ/\text{m}$
Flammability	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	This cable is conform to the EC-Directive 2011/65/EC (RoHS, Restriction of the use of certain hazardous substances).