2170853	DATA SHEET	LAPP
valid from: 01.01.2019	UNITRONIC® BUS PB FRNC FC	

Application

Halogen free, high flame retardant data cable for field bus system PROFIBUS DP,PROFIBUS FMS, (Siemens SIMATIC NET) acc. to DIN 19245, part 3 and EN 50170 cable type A, and for field bus system FIP (Factory Instrumentation Protocol) as well as for high performance data networks with 150 Ohms 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 suitable for permanent installation in dry and wet rooms. With the „Fast Connect“ stripping tool the cable is intended for the fast mounting of the connectors.
The end of the cable can be prepared for the mounting of the cable plug with one work step, especially for the IDC (Insulation Displacement Connector) method.

Design

Certification	c(UL)us type CMG 60 °C acc. to UL 444
Conductor	solid bare copper, ca. 0.32 mm², ca. 0.64 conductor diameter (22 AWG)
Insulation	skin foam skin PE
Core identification code	red and green
Stranding	two cores stranded to pair
Inner sheath	thermoplastic and halogen free filling compound
Screen	plastic laminated aluminum foil , metal side outwards on top: braid of tinned copper wire, coverage ca. 65 %
Taping	one layer polyester tape
Outer sheath	PUR compound, flame retardant and halogen free violet, similar to RAL 4001 outer diameter: ca. 7.9 mm stripping force of sheath on a length of 50 mm ± 10%: min. 5 N, max. 70 N

Electrical properties at 20°C

Conductor resistance	screen resistance: max. 10 Ω/km
Loop resistance	max. 115 Ω/km
Insulation resistance	min. 5 GΩ x km
Mutual capacitance	nom. 28 nF/km (at 800 Hz)
Characteristic impedance	9.6 kHz: 270 Ω ± 27 Ω 38.4 kHz: 185 Ω ± 18.5 Ω 3 up to 20 Mhz: 150 Ω ± 15 Ω
Attenuation	9.6 kHz: max. 0.25 dB/100 m 38.4 kHz: max. 0.4 dB/100 m 4 MHz: max. 2.2 dB/100 m 16 MHz: max. 4.2 dB/100 m
Velocity of propagation	nom. 0.81 c
Transfer impedance	max. 10 mΩ/m (up to 20 MHz)
Peak operating voltage	250 V (not for power applications)
Test voltage	conductor/conductor 1500 V conductor/screen 1500 V

Mechanical and thermal properties

Minimum bending radius	fixed installation:10 x cable diamter
Temperature range	moved: -5° C up to +70° C fixed installation: -30° C up to +80° C
Flammability	flame retardant acc. to - FT4/IEEE 1202 acc. to UL 1685 - Category D acc. to IEC 60332-3-25
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).