


2170234	DATA SHEET	
valid from: 01.12.2022	UNITRONIC® BUS PA (BU) 1x2x1.3 mm	

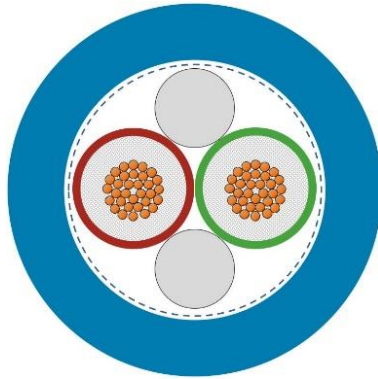
Application

Field of use: Data cable for PROFIBUS PA (Process Automation) fieldbus communication and automation technology according to IEC 61158-2.

Performance: two-wire, screened cable (S/UTP), having a nominal impedance of 100 Ω (at 31.25 kHz), supporting a bandwidth of 31.25 kbit/s over distances up to 1000 m.

Characteristics: flame retardant, UV resistant

Applications: For use in explosive/hazardous areas. The bus cable can serve as an intrinsically safe power supply for the bus nodes.



Design

Conductor: fine-wire stranded bare copper
cross section: 1.0 mm²
conductor diameter: nom. 1.3 mm

Insulation: foam-skin polyolefin
core diameter: max. 2.6 mm

Core identification code: red and green

Stranding: two cores stranded together with two fillers
optional: wrapped by plastic tape (overlapping)

Screen: braid of tinned copper wires (coverage 85 % ± 5 %)

Outer sheath: PVC
blue, similar RAL 5015
outer diameter: 8.0 mm ± 0.3 mm

Electrical properties at 20 °C

Loop resistance: ≤ 39 Ω/km

Insulation resistance: ≥ 5 GΩxkm

Mutual capacitance: core/core: nom. 60 nF/km (800 Hz)
core/screen: nom. 80 nF/km (800 Hz)

Inductance: 31.25 kHz: nom. 0.7 mH/km

Characteristic impedance: 31.25 kHz: 100 Ω ± 20 %
1 MHz: nom. 80 Ω

Attenuation: 7.8 kHz – 39 kHz: ≤ 3 dB/km
100 kHz: ≤ 3.5 dB/km
1 MHz: ≤ 12 dB/km


Velocity of propagation: nom. 0.79 c

Transfer impedance: 100 kHz: ≤ 20 mΩ/m
1 MHz: ≤ 25 mΩ/m
10 MHz: ≤ 125 mΩ/m
30 MHz: ≤ 250 mΩ/m

Maximum operating voltage: IEC/EN: 300 V (not for power purposes)

Test voltage: core/core: 2500 V AC (1 min)
core/screen: 2500 V AC (1 min)

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Mechanical and thermal properties

Minimum bending radius	fixed:	7.5 × outer diameter
	occasional flexing:	10 × outer diameter
Temperature range	fixed:	-40 °C up to +80 °C
	occasional flexing:	-5 °C up to +60 °C
Flammability	flame retardant acc. to. IEC 60332-1-2 resp. EN 60332-1-2	
General requirements	This cable is conform to the EU-Directive 2011/65/EU (RoHS, Restriction of the use of certain hazardous substances) and the LV-Directive 2014/35/EU (Low voltage Directive).	
Environmental information	These cables meet the substance-specific requirements of the EU Directive 2011/65/EU (RoHS).	

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