


2170235	DATA SHEET	
valid from: 01.12.2022	UNITRONIC® BUS PA (BK) 1x2x1.3 mm	

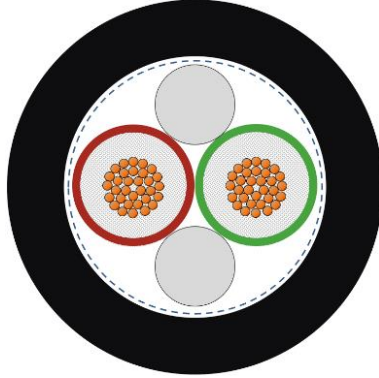
Application

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 power supply for the bus nodes.




Design

Conductor	fine-wire stranded bare copper cross section: 1.0 mm ² 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 black, similar RAL 9005 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	
Weather and UV resistance	acc. to EN 50525-1 §5.7.4.2	
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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