


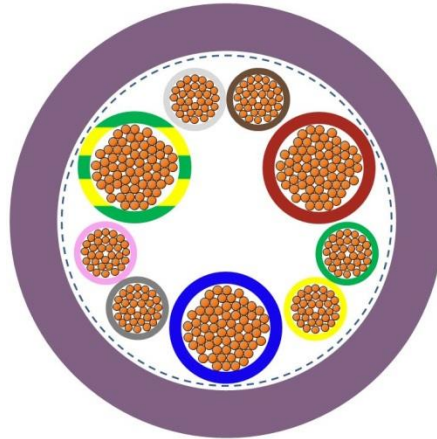
2170218	<b>DATA SHEET</b>	
valid from: 01.02.2019	<b>UNITRONIC® BUS IBS FD P COMBI</b> <b>3x2x0,25 mm<sup>2</sup> + 3x1,0 mm<sup>2</sup></b>	

### Application

UNITRONIC® BUS IBS FD P COMBI is a high flexible data cable for the field-bus system INTERBUS, with a data transmission of 500kBit/s at a length of 400m. The field-bus cable is designed to the requirements of the bus-system INTERBUS, the transmission characteristics are conform to the system and guarantee a high operating security during data transmission.


UNITRONIC® BUS IBS FD P COMBI is designed for high flexible use in power chains, linear robots and permanently moved machines with high lifetime requirements in dry and damp interiors and for rough industry surrounding. The outer sheath ensures low abrasion and also effects high resistance against mineral oil.

### Design



Conductor	<p>data pair: bare copper, 32 x 0.1 mm, ca. 0.25 mm<sup>2</sup></p> <p>power pair: bare copper, ca. 65 x 0.15 mm, ca. 1.0 mm<sup>2</sup></p>
Insulation	<p>data pair: PE, core Ø ca. 1.0 mm</p> <p>power pair: PE, core Ø ca. 1.7 mm</p>
Core identification code	<p>data pair: white-brown, green-yellow, grey-pink (acc. to DIN 47100)</p> <p>power pair: red, blue, green/yellow</p>
Stranding	data pairs twisted together with power supply cores with non-woven tape wrapping on top
Screen	braid of copper wire, tinned wire 0,10 mm – 0,15 mm, coverage 85 % ±5 %
Outer sheath	PUR, halogen free, violet similar to RAL 4001, outer Ø ca. 7.9 mm

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### Electrical properties at 20°C

Conductor resistance	power cores: max. 19,5 Ω/km
Loop resistance	data cores: max. 159,8 Ω/km
Specific volume resistivity	min. 5 GΩ x km
Mutual capacitance	max. 60 nF/km (800Hz)
Characteristic impedance	110 Ω (±20Ω) (64 kHz) 95 Ω (±15Ω) (>1 MHz)
Attenuation	256 kHz max. 1,0 dB/100 m 772 kHz max. 2,5 dB/100 m 1 MHz max. 2,8 dB/100 m 4 MHz max. 6,9 dB/100 m 10 MHz max. 12,0 dB/100 m 16 MHz max. 15,5 dB/100 m 20 MHz max. 17,2 dB/100 m
Near-end cross-talk	772 kHz min. 61 dB 1 MHz min. 59 dB 2 MHz min. 55 dB 4 MHz min. 50 dB 8 MHz min. 46 dB 10 MHz min. 44 dB 16 MHz min. 41 dB 20 MHz min. 40 dB
Velocity of propagation	nom. 0,66 c
Peak operating voltage	data pair: 250 V (not for power applications)
	power pair: 450 V (not for power applications)
Test voltage	conductor/conductor 1500 V conductor/screen 1000 V

### Mechanical and thermal properties

Minimum bending radius	15 x cable Ø
Temperature range	- 30° C up to +70° C
Flammability	flame retardant acc. to IEC 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).

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