## 2170818

## DATA SHEET

valid from: 01.01.2019

UNITRONIC® BUS IBS FD P COMBI A

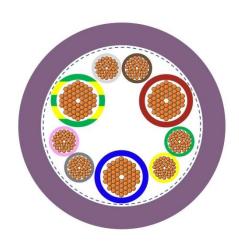


#### **Application**

UNITRONIC® BUS IBS FD P COMBI A 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 A 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 environment. The outer sheath ensures low abrasion and also effects high resistance against mineral oil.

#### Design



Certification c(UL)us CMX 75° C acc. to UL 444

Conductor power supply cores:

bare copper, superfine-wire stranded, 56 x Ø ca. 0.15 mm, ca. 1.0 mm<sup>2</sup>

data cores:

bare copper, superfine-wire stranded (single wire  $\emptyset$  ca. 0.10 mm), ca. 0.25 mm<sup>2</sup>

Insulation power supply cores:

insulation PE, Ø ca. 1.7 mm

data cores: PE, Ø ca. 1.1 mm

power supply cores:

red, blue, yellow/green

data cores:

pair 1: white, brown; pair 2: green, yellow; pair 3: grey, pink

(DIN 47100)

Stranding pairs and cores stranded together with central filler

data cores:

two cores tweisted to pair

Screen braid of copper wire

coverage ca. 85%

Taping non-woven tape, applied longitudinal (optional)

Outer sheath PUR compound,

violet similar to RAL 4001 outer  $\emptyset$ : ca. 7.7 mm

#### Electrical properties at 20°C

Core identification code

Conductor resistance Power supply cores: max. 19.5  $\Omega/km$ 

Loop resistance data cores: 159.8  $\Omega/km$ 

Insulation resistance power supply corres: min. 5 G $\Omega$ xkm

data cores: min. 5 G $\Omega$ xkm

Mutual capacitance data cores: max. 60 nF/km (at 800 Hz) Characteristic impedance data cores: 64 Hz:  $120 \Omega \pm 20 \%$ 

> 1 MHz:  $100 \Omega \pm 15 \Omega$ 

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Attenuation 256 kHz: dB/100m 1.5

722 kHz: dB/100m 2.5 1 MHz: dB/100m 2.8 4 MHz: dB/100m 6.9 10 MHz: dB/100m 12.0 16 MHz: dB/100m 15.5 20 MHz: dB/100m 17.2

Near-end cross-talk 722 kHz: min dB 61

1 MHz: min dB 59 4 MHz: min dB 50 8 MHz: min dB 46 10 MHz: min dB 44 16 MHz: min dB 41 20 MHz: min dB 40

Velocity of propagation data cores: 0.66 c

Peak operating voltage data cores: 250 V (not for power applications)

Rated voltage power supply cores: U<sub>0</sub>/U 300/500 V Test voltage power supply cores (50 Hz, 1 min.):

core/core 1500 V data cores (5: Hz, 1 min.): core/core 1500 V core/screen 1000 V

## Mechanical and thermal properties

Minimum bending radius 15 x cable diameter

Temperature range fixed installation: -40°C up to +80°C

moved: -10 °C up to +70 °C

Flammability flame retardant acc. to IEC 60332-1-2; VW-1 acc. to UL 1581,

section 1080

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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