



<b>DATA SHEET</b>	2170217
<b>UNITRONIC® BUS Yv COMBI IBS</b> <b>3 x 2 x 0.22 mm<sup>2</sup> + 3 x 1.0 mm<sup>2</sup></b>	valid from : 09.02.2004

## Application

UNITRONIC® BUS Yv COMBI IBS is a data cable for the field-bus system INTERBUS, with integrated power supply cores in the cable for the bus logic of member (Installation remote bus cable). UNITRONIC® BUS Yv COMBI IBS is for a data transmission rate 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 Yv COMBI IBS is certified by the INTERBUS-CLUB.

The cable is intended for limited flexible use and for permanent installation in- and outdoor, as well as used in ground installation. By aboveground installation the outer sheath is resistant to atmospheric UV-irradiation.

Applicable connectors            D-Sub-connector,  
   Round connector (IP 65)

## Design

Data transmission pairs            stranded conductor: bare copper, 0.22 mm<sup>2</sup> multicore  
   insulation: PE, core diameter approx. 1.0 mm  
   cores twisted to pairs  
   core colour: white-brown, green-yellow, grey-pink (DIN 47100)

Power supply cores                 stranded conductor: bare copper, 1.0 mm<sup>2</sup>  
   insulation: PE, core diameter approx. 1.7 mm  
   colour coding: red, blue, green/yellow

Cable core                             3 pairs 0.22 mm<sup>2</sup> with 3 cores 1.0 mm<sup>2</sup> stranded  
   taping  
   braid of tinned copper

Inner sheath                            PVC, violet  
   Inner sheath diameter **max. 7.9 mm**

Sheath                                    PVC, black

Outer diameter                        approx 9.5 mm

Sheath printing:

LAPP KABEL STUTTGART **UNITRONIC® BUS Yv COMBI IBS** 3 x 2 x 0,22 + 3 x 1,0            ART. 2170217

## Electrical properties at 20° C

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Data transmission pairs				
Loop resistance		max. Ω/km	186	
Insulation resistance		min GΩx km	5	
Mutual capacitance at 800 Hz		max nF/km	60	
Impedance at	f= 64 kHz	Ω	110 ± 20	
	f> 1 MHz	Ω	95 ± 15	
Attenuation at	256 kHz	max dB/100m	1.0	
	772 kHz	max dB/100m	2.5	
	1 MHz	max dB/100m	2.8	
	4 MHz	max dB/100m	6.9	
	10 MHz	max dB/100m	12.0	
	16 MHz	max dB/100m	15.5	
	20 MHz	max dB/100m	17.2	
Near-end cross-talk attenuation at	772 kHz	min dB	61	
	1 MHz	min dB	59	
	2 MHz	min dB	55	
	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	
Signal velocity of propagation		nom.	0.66c	
Peak operating voltage (not for purposes of power)		V	250	
Electricity supply cores				
Conductor resistance		max. Ω/km	19.5	
Insulation resistance		Min. GΩx km	5	
Peak operating voltage (not for purposes of power)		V	450	
Cable core	Test voltage	core/core	U <sub>eff</sub> V	1500
		core/screen	U <sub>eff</sub> V	1000
Transfer impedance at		30 MHz	max. MΩ/m	250

### Mechanical and thermal characteristics

Minimum bend radius	static	mm	75
	flex. use	mm	140
Temperature range	static	°C	- 30 up to + 80
	flex. use	°C	- 5 up to + 70
Burning load		kWh/m	0.4
Flame propagation	flame retardant to VDE 0482, part 265-2-1 / IEC 60 332-1		

### General properties

All materials used and during manufacturing have to be **free of LBS** (e.g. silicone).  
LBS = substances destructive to lacquer-coatings.

INTERBUS = registered trademark of Phoenix Contact GmbH&Co

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