



<b>DATA SHEET</b>	2170222
<b>UNITRONIC® BUS FD P L2/FIP</b>	valid from : 08.07.2004

## Application

UNITRONIC® BUS FD P L2/FIP is a highly flexible data cable for the SIEMENS field-net SINEC L2 DP (to DIN 19245, part 3 and EN 50 170) for fieldbus system FIP (Factory Instrumentation Protocol) as well as for high performance data networks with 150 Ohms nominal impedance. The cable is designed for the system-defined transmission rates of 1.5 MBit/s, 2.5 MBit/s and 12 MBit/s, the transmission characteristics conform to the system and guarantee a high operating security during the data transmission. The used materials are halogen-free. The cable is intended for high flexible application in power chains, on permanently moving machines and linear robots, with high demands to up time, in dry and damp interiors and in rough industrial environment. Due to its double screening it is suitable for installation in electromagnetically demanding areas. The PUR-sheath is very resistant against mineral oils and abrasion.

## Design

Conductor	fine-wire stranded of bare copper 0.25mm <sup>2</sup> (24AWG), 19 x 0.13
Insulation	Foam Skin PE (O2YS) Core Ø app. 2.55 mm, cores red and green
Twisting	2 cores together with 2 fillers
Wrapping	mylar wrap
Screening	aluminum- mylar tape wrap, metal-side outwards On top a tinned copper wire braid
Sheath	PUR, flame retardant, violet (RAL 4001), outer diameter max. 8.0 mm
Marking on the sheath	

LAPPKABEL STUTTGART UNITRONIC® BUS FD P L2/FIP                      1 x 2 x 0,64                      ART. 2170222

## Electrical properties at 20°C

Loop resistance		max. Ω/km	145
Screen resistance		max. Ω/km	10
Insulation resistance		min. GΩxkm	5
Mutual capacitance	at 800 Hz	nom. nF/km	30
Impedance	at 9.6 kHz	Ω	270 ± 27
	at 38.4 kHz	Ω	185 ± 18.5
	at 3 to 20 MHz	Ω	150 ± 15
Line attenuation	at 9.6 kHz	max. dB/100 m	0.3
	at 38.4 kHz	max. dB/100 m	0.4
	at 4 MHz	max. dB/100 m	2.5
	at 16 MHz	max. dB/100 m	4.9
Transfer impedance	at 20 MHz	max. mΩ/m	10
Nominal velocity of propagation		nom.	0.81c
Operation voltage (not for purposes of power/high voltage current)		peak value V	250
Test voltage	core/core / core/screen	U <sub>eff</sub> V	1500

## Mechanical and thermal characteristics

Minimum bend radius		mm	65
Permissible pulling force		N	50
Permissible temperature range	flexible	°C	- 30 up to + 70
Burning load		kWh/m	approx.0.220
Flammability	flame retardant to VDE 0482, part 265-2-1 / IEC 60 332-1		

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