Application

UNITRONIC® BUS L2/FIP is a data cable for the SIEMENS network SIMATIC NET (acc. to DIN 19245 part 3 and EN 50170), 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 data transmission. It is suitable for interfaces RS 422 and RS 485.
The sheath of Polyethylene is not flame retardant, but physiologically recognized as safe, therefore the cable is only suitable for the use in the field of food and beverage interiors.
The cable is intended for permanent installation in dry and damp. Due to it's double screening it is suitable for installation in electromagnetically demanding areas.

Design

Conductor	single wire of bare copper, 0.64mm $\varnothing$ (22AWG)
Insulation	foam-skin PE (02YS); core diameter approx 2.5mm
Coding	cores red and green
Twisting	2 cores together with 2 fillers (core-filler-core-filler)
Wrapping	mylar wrap
Screening	aluminium-mylar tape wrap, metal-side outwards, on top a bare-copper wire braid
Sheath	PE, black, outer diameter max. 7.8 mm
Weight	approx. 55 kg/km net

Marking on the sheath:

LAPPKABEL STUTTGART **UNITRONIC® BUS   L2/FIP PE**   1 x 2 x 0,64   ART. 2170233

Electrical characteristics at 20°C

Loop resistance				max. Ω/km	115
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	0.25
	at	38.4	kHz	max. dB/100 m	0.4
	at	4	MHz	max. dB/100 m	2.2
	at	16	MHz	max. dB/100 m	4.2
Transfer impedance	at 20 MHz			max. mΩ/m	10
Nominal velocity of propagation				nom.	0.81c
Peak operation voltage (not for purposes of power/high voltage current)				V	250
Test voltage core/core and core/screen				U_{eff} V	1500

Mechanical and thermal characteristics

Minimum bend radius	single bending	mm	75
	multiple bending	mm	150
Permissible pulling force		N	100
Permissible temperature range	static	°C	-.40 up to +.80
	flexible	°C	- 5 up to + 50
Burning load		kWh/m	approx. 0,306

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