LAPP GROUP	**DATA SHEET**	2170 226
	UNITRONIC® BUS L2/FIP 7-wire halogen free	valid from : 10.12.2004

Application

Halogen free data cable for the SIEMENS field-net Sinec L2 DP (acc. to DIN 19245 part 3 and EN 50170), for fieldbus system F.I.P.(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.
The cable is intended for limited flexible use and for permanent installation in dry and damp interiors. Due to it's double screening it is suitable for installation in electromagnetically demanding areas.

Design

Conductor	7-wired stranded of bare copper, 0,22 mm^2 (24 AWG), 7x0.2
Insulation	foam-skin PE (02YS); core diameter approx 2.55 mm
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 tinned copper wire braid
Sheath	halogen free, flame retardant compound HM2 acc. to VDE 0207, violet RAL 4001
Outer diameter	approx. 7.8 mm
Weight	approx. 55 kg/km net
Marking on the sheath:	

LAPPKABEL STUTTGART **UNITRONIC® BUS L2/FIP 7-wire halogenfrei** 1 x 2 x 0,64 ART. 2170226

Electrical characteristics at 20°C

Loop resistance			max. Ω/km	186
Screen resistance			max. Ω/km	10
Insulation resistance			min. GΩxkm	5
Mutual capacitance	at	800 Hz	nom. nF/km	28
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
Peak operation voltage (not for purposes of power/high voltage current)			V	250
Test voltage	core/core, core/screen		U_{eff} V	1500

Mechanical and thermal characteristics

Minimum bend radius	single bending	mm	45
	multiple bending	mm	65
Permissible pulling force		max. N	100
Permissible temperature range	static	°C	- 40 up to + 80
	flexible	°C	- 5 up to + 50
Burning load		kWh/m	0.32
Flame retardant	acc. to IEC 60 332-1 / VDE 0482, part 265-2-1		
Non-halogen verification	acc. to IEC 60 754-1 / VDE 0472, part 815		
Low smoke	acc. to IEC 61 034		