



DATA SHEET	2170298
UNITRONIC® EtherLine-H-H CAT. 5e 4 x 2 x 24AWG	valid from : 17.06. 2003

Application

UNITRONIC® EtherLine-H-H CAT. 5e 4 x 2 x 24AWG is a halogen free **CATEGORY 5e high speed data transmission cable** suitable for application in the industrial environments to connect the (FAST-) ETHERNET network with the field bus level. It enables a through going communication from sensor-actuator-level to Internet. This data cable meets the requirements of Standards ISO/IEC 11801 second edition, EN 50173, EN 50288-2-1 as well as EIA/TIA-568B. The high quality double screening ensures a high security during data transmission in areas with electromagnetic fields. The outer sheath is easily strippable from the inner sheath; with the inner sheath is the cable RJ 45 compatible.

The cable is designed for stationary applications in dry and wet rooms.

Connectors	RJ 45 (IP 20)	e. g.: Type CAT. 5, Stewart Connector Nr. 943-SP-370808 SM2,
	RJ 45 (IP 67)	e. g.: Phoenix Contact, Harting, Woodhead

Design

Conductor	solid bare copper wire, 0.51 mm \varnothing ; (24AWG)
Insulation	foam-skin, core diameter max.: 1,0 mm
Stranding	cores twisted to pairs, pairs twisted to cable core
Colour code	pair 1 white/blue - blue pair 2 white/orange - orange pair 3 white/green - green pair 4 white/brown - brown
Screening	aluminium laminated plastic foil braid of tinned copper wires, coverage 85 % \pm 5
Inner sheath	halogen free compound, HM 2 in acc. to VDE 0207, water blue RAL 5021 outer diameter approx. 6,0 mm
Outer sheath	halogen free compound, HM 2 in acc. to VDE 0207, water blue RAL 5021 Outer sheath is easily strippable from the inner sheath
Outer diameter	approx. 7.5 mm

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Electrical properties at 20°C

DC resistance (loop)		max. Ω /km	192
Insulation resistance		min. $G\Omega$ xkm	5
Mutual capacitance at	800 Hz	nom. nF/km	48
Impedance at	1.....100 MHz	Ω	100 \pm 15

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Frequency MHz	Attenuation at		NEXT		PS NEXT	EL FEXT	PS EL FEXT	ACR	
	[dB/100m]		[dB]		[dB]	[dB]	[dB]	[dB]/100m	
	max	nom	min	nom	min	min	min	min	nom
0,064	-	0,6	-	85	80,0	-	-	-	84,4
0,256	-	1,0	-	76	71,1	-	-	-	75,0
0,512	-	1,4	-	72	66,6	-	-	-	70,6
0,772	1,8	1,7	64,0	70	64,0	65,5	62,5	62,2	68,3
1	2,1	1,9	65,3	70	62,3	63,8	60,8	63,2	68,1
4	4,0	3,8	56,3	60	53,3	51,8	48,8	52,3	56,2
10	6,3	6,0	50,3	54	47,3	43,8	40,8	44,0	48,0
16	8,1	7,6	47,2	51	44,2	39,7	36,7	39,2	43,4
20	9,0	8,5	45,8	48	42,8	37,8	34,8	36,8	39,5
31,25	11,4	10,7	42,9	46	39,9	33,9	30,9	31,5	35,3
62,5	16,5	15,2	38,4	42	35,4	27,9	24,9	21,8	26,8
100	21,4	19,4	35,3	40	32,3	23,8	20,8	14,0	20,6
125	-	21,6	-	38	30,8	-	-	-	16,8
155,5	-	24,9	-	37	29,4	-	-	-	12,1
175	-	26,0	-	36	28,7	-	-	-	10,0
200	-	28,0	-	35	27,8	-	-	-	7,0

Nominal velocity of propagation		nom.	0,77c
Signal delay		nom. ns/m	4.3
Transfer impedance at 20 MHz		max. mΩ/m	10
Operating voltage (not for power purposes)		peak value V	125
Test voltage	core/core	V	1000
	core/screen	V	500

Mechanical and thermal characteristics

Minimum bending radius	after installation	with outer sheath	mm	60
		without outer Sheath	mm	45
Permissible temperature range	during installation	°C	- 5 to +60	
	after installation	°C	-30 to +80	
Maximum pulling force	during installation	N	130	
	after installation	N	65	
Fire load		kWh/m	0,48	
Flame propagation	flame retardant acc. to VDE 0482, part 265-2-1 / IEC 60332-1			

General properties

All materials used and during manufacturing are **free of LBS**. (e.g. silicone).

LBS = substances destructive to lacquer-coatings.

Legend

NEXT	near-end crosstalk attenuation
PS NEXT	Power sum near-end crosstalk attenuation
ACR	ratio of attenuation and near-end crosstalk attenuation
FEXT	far-end crosstalk attenuation
EL FEXT	far-end crosstalk attenuation - attenuation
PS EL FEXT	Power sum far-end crosstalk attenuation - attenuation

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