


<b>2170298</b>	<b>DATA SHEET</b>	
<b>valid from: 23.03.2020</b>	<b>ETHERLINE® H-H CAT.5e 4x2x24/1 AWG</b>	

### Application

Field of use: Installation cable for generic cabling systems acc. to ISO/IEC 11801 and EN 50173

Performance: Bandwidth up to 100 MHz acc. To IEC 61156-5 Category 5e and EN 50288 2-1

Characteristics: halogen free, flame retardant, and largely resistant to acids, alkalis and certain oils

Applications: Profinet with 4 pairs, EtherCAT, EtherNet/IP, Power over Ethernet (IEEE 802.3af), Power over Ethernet Plus (IEEE 802.3at) and many others



### Design

Certification	certified for CC-Link IE Field Network
Conductor	solid bare copper 24/1 AWG
Insulation	foamed PE core $\varnothing$ : ca. 1,00 mm
Core identification code	pair 1: white-blue/blue; pair 2: white-orange/orange; pair 3: white-green/green; pair 4: white-brown/brown
Stranding	cores twisted to pairs, pairs stranded together
Screen	plastic laminated aluminum foil on top: braid of tinned copper wire (coverage ca. 85 %)
Inner sheath	LSZH outer $\varnothing$ : ca. 6,0 mm
Outer sheath	LSZH blue, similar RAL 5021 outer $\varnothing$ : ca. 7,5 mm

### Electrical properties at 20°C

Loop resistance	max. 19,2 $\Omega$ /100 m
Insulation resistance	min. 5 G $\Omega$ xkm
Mutual capacitance	nom. 48 nF/km
Characteristic impedance	nom. 100 $\Omega$ acc. to IEC 61156-6
Velocity of propagation	0.77 c
Signal propagation time	<430 ns/100 m
Peak operating voltage	125 V (not for power purposes)
Test voltage	core/core: 1000 V core/screen: 500 V

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### Electrical transmission properties at 20°C

The transmission characteristics meet the requirements of the standards EN 50288-2-1 and IEC 61156-5 for category 5e. The normative requirements for the transmission properties are shown in the following table:

<b>f [MHz]</b>	<b>4</b>	<b>10</b>	<b>16</b>	<b>20</b>	<b>31,25</b>	<b>62,5</b>	<b>100</b>
(max.) Attenuation [dB/100 m]	4	6,3	8	9	11,4	16,5	21,3
(min.) TCL [dB]	34	30	28	27	25,1	22	20
(min.) EL TCTL [dB/100 m]	23	15	10,9	9	5,1	—	—
(min.) NEXT [dB]	56,3	50,3	47,2	45,8	42,9	38,4	35,3
(min.) PS EL FEXT [dB/100 m]	49	41	36,9	35	31,1	25,1	21
(min.) ACR-F/EL FEXT [dB/100 m]	52	44	39,9	38	34,1	28,1	24
(min.) Return Loss [dB]	23	25	25	25	23,6	21,5	20,1

### Mechanical and thermal properties

Minimum bending radius	fixed:	7.5 x cable Ø
Temperature range	during installation:	-5 °C up to +60 °C
	fixed:	-30 °C up to +80 °C
Burning load	kWh/m 0,48	
Flammability	flame retardant acc. to IEC 60332-1-2 resp. EN 60332-1-2	
Halogen free	acc. to IEC 60754-1 resp. EN 60754-1	
Corrosivity of gases	acc. to IEC 60754-2 resp. EN 60754-2	
General requirements	These cables are conform to the EU-Directive 2011/65/EU (RoHS, Restriction of the use of certain hazardous substances) and the LV-Directive 2014/35/EU (Low voltage Directive).	
Environmental information	These cables meet the substance-specific requirements of the EU Directive 2011/65/EU (RoHS).	

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