

<b>2170299</b>	<b>DATA SHEET</b>	
<b>valid from: 2023-06-26</b>	<b>ETHERLINE® H Flex Cat. 5e 4x2x26/7 AWG</b>	

## Application

Field of use:	Flexible Industrial Ethernet cable for generic cable system acc. to ISO/IEC 11801 and EN 50173. Suitable for occasional flexing. Meeting the transmission requirements of IEC 61156-6, Category 5e and EN 50288-2-2.
Performance:	4-pair, overall braid and foil screened symmetrical cable (SF/UTP), having a nominal impedance of 100 Ω, supporting a bandwidth of 100 Mbit/s (e.g. 10BASE-T, 100BASE-T) over up to 60 m.
Characteristics:	flame retardant, halogen free, low-corrosivity of gases, low smoke density
Applications:	CC-Link IE, EtherCAT, EtherNet/IP and other



## Design

Certification	certified for CC-Link IE Field Network
Conductor	stranded bare copper 26/7 AWG
Insulation	PO (Polyolefine) core diameter: max. 1.04 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 four pairs stranded to bundle
Taping	plastic tape
Screen	plastic laminated aluminum foil on top: braid of tinned copper wires (coverage nom. 85 %)
Outer sheath	HFFR (halogen-free flame-retardant compound) blue, similar RAL 502 1 outer diameter: 6.2 mm ± 0.3 mm

## Electrical properties at 20 °C

Loop resistance	≤ 28 Ω/100 m
Test voltage	core/core: 700 V core/screen: 700 V
Maximum operating voltage	125 V (not for power applications)
Insulation resistance	≥ 5 GΩxkm
Mutual capacitance	1 kHz: nom. 50 nF/km
Capacitance unbalance	1 kHz: ≤ 1600 pF/km
Transfer impedance	Grade 1 acc. to IEC 61156-6 1 MHz: ≤ 15 mΩ/m 10 MHz: ≤ 10 mΩ/m 30 MHz: ≤ 30 mΩ/m 100 MHz: ≤ 100 mΩ/m
Coupling attenuation	Type I acc. to IEC 61156-6 30 MHz: ≥ 85 100 MHz: ≥ 85 1000 MHz: ≥ 65
Velocity of propagation	100 MHz: nom. 67 c

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Characteristic impedance                      nom. 100 Ω acc. to IEC 61156-6

### Transmission properties at 20°C

The transmission characteristics meet the requirements of IEC 61156-6 for category 5e.

Frequency	(max.) Phase delay	(max.) Differential delay	(max.) Attenuation	(min.) TCL Level 1	(min.) EL TCTL Level 1	(min.) NEXT	(min.) PS NEXT	(min.) ACR-F	(min.) PS ACR-F	Char. Impedance	(min.) RL
f [MHz]	[ns/ 100 m]	[ns/ 100 m]	[dB/ 100 m]	[dB]	[dB]	[dB]	[dB]	[dB/ 100 m]	[dB/ 100 m]	[Ohm]	[dB]
<b>4</b>	552.0	45.0	6.0	34.0	23.0	56.3	53.3	55.0	52.0	—	23.0
<b>10</b>	545.4	45.0	9.5	30.0	15.0	50.3	47.3	49.0	46.0	—	25.0
<b>16</b>	543.0	45.0	12.1	28.0	10.9	47.2	44.2	45.9	42.9	—	25.0
<b>20</b>	542.0	45.0	13.5	27.0	9.0	45.8	42.8	44.5	41.5	—	25.0
<b>30</b>	540.6	45.0	16.7	25.2	5.5	43.1	40.1	41.8	38.8	—	23.5
<b>62.5</b>	538.6	45.0	24.8	22.0	—	38.4	35.4	37.1	34.1	—	20.7
<b>100</b>	537.6	45.0	32.0	20.0	—	35.3	32.3	34.0	31.0	100 ± 5	19.0

### Mechanical and thermal properties

Minimum bending radius	fixed installation:                      8× outer diameter occasional flexing:                      15× outer diameter
Temperature range	fixed installation:                      -20°C up to +80°C occasional flexing:                      -5°C up to +50°C
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
Smoke density	acc. to IEC 61034-2 resp. EN 61034-2

#### General requirements

These cables 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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