
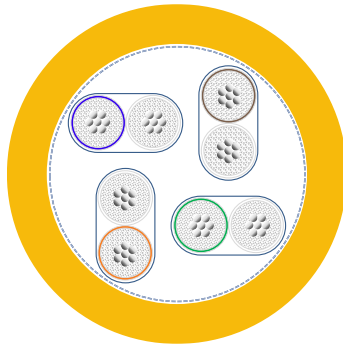


2170581	DATA SHEET	
valid from: 2023-08-11	ETHERLINE® HEAT Cat. 6A FL09YBC11Y 4x2x0.22sn	

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 6+ and EN 50288-10-2. PROFINET® Type C acc. to the "PROFINET Cabling and Interconnection Technology" guideline.
Performance:	4-pair, overall braid screened, foil screened pair symmetrical cable (S/FTP), having a nominal impedance of 100 Ω, supporting a bandwidth of 10 Gbit/s (e.g. 100BASE-T, 1000BASE-T, 2.5GBASE-T, 5GBASE-T, 10GBASE-T) over up to 100 m.
Characteristics:	flame retardant, halogen free, heat resistant, oil resistant, UV resistant, abrasion resistant, mechanical resistant, largely resistant to acids, alkalis and certain oils
Applications: and other	ISO 6722, PROFINET Type C cable for special applications, EtherCAT, EtherNet/IP, PoE (IEEE 802.3af)




Design

Certification	KBA type approval ECE-R 118: E1*118R03/01*0228*00 ISO 6722, temperature class B
Conductor	stranded tinned copper 24/7 AWG (0.22 mm ²)
Insulation	foam-skin PO (Polyolefine) core diameter: max. 1.35 mm
Core identification code	pair 1: white/blue; pair 2: white/orange; pair 3: white/green; pair 4: white/brown
Stranding	cores twisted to pairs four screened pairs stranded to bundle
Pair screen	plastic laminated aluminium foil
Taping	non-woven tape
Screen	braid of tinned copper wires (coverage: nom. 85 %)
Outer sheath	TPU (Thermoplastic polyurethane) gelb, similar RAL 1003 outer diameter: 8.1 mm ± 0.3 mm

Electrical properties at 20 °C

Loop resistance	20 °C:	≤ 18.84 Ω/100 m
Test voltage	core/core:	700 V
	core/screen:	700 V
Maximum operating voltage	IEC/EN:	125 V (not intended to be used in conjunction with low impedance sources, such as utility mains)
Insulation resistance	20 °C:	≥ 5 GΩxkm
Mutual capacitance	1 kHz:	nom. 48 nF/km
Capacitance unbalance	1 kHz:	≤ 1600 pF/km

Creator: KIOS / PDC	Document: DB2170581EN	Page 1 of 2
Released: ALTE / PDC	Version: 05	

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Transfer impedance	Grade 1 acc. to IEC 61156-6	
	1 MHz:	≤ 15 mΩ/m
	10 MHz:	≤ 10 mΩ/m
	30 MHz:	≤ 30 mΩ/m
Coupling attenuation	100 MHz:	
	≤ 100 mΩ/m	
	Type I acc. to IEC 61156-6	
	30 MHz:	≥ 85
Velocity of propagation	100 MHz:	≥ 85
		≥ 85
		≥ 65
	100 MHz:	nom. 0.74 c

Transmission properties at 20°C

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

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]
4	552.0	45.0	5.7	34.0	23.0	66.3	63.3	59.0	56.0	—	23.0
10	545.4	45.0	8.9	30.0	15.0	60.3	57.3	53.0	50.0	—	25.0
20	542.0	45.0	12.6	27.0	9.0	55.8	52.8	48.5	45.5	—	25.0
62.5	538.6	45.0	22.5	22.0	—	48.4	45.4	41.1	38.1	—	20.7
100	537.6	45.0	28.7	20.0	—	45.3	42.3	38.0	35.0	100 ± 5	19.0
200	536.5	45.0	41.4	17.0	—	40.8	37.8	33.5	30.5	—	16.4
250	536.3	45.0	46.6	16.0	—	39.3	36.3	32.0	29.0	—	15.6
500	535.6	45.0	67.9	—	—	34.8	31.8	27.5	24.5	—	15.6

Mechanical and thermal properties

Minimum bending radius	fixed installation:	10× outer diameter
	occasional flexing:	15× outer diameter
Temperature range	fixed installation:	-40 °C up to +105 °C
	occasional flexing:	-30 °C up to +105 °C
Flammability	flame retardant acc. to ISO 6722-1 and IEC 60332-1-2 resp. EN 60332-1-2	
Halogen free	acc. to IEC 60754-1 resp. EN 60754-1	
Oil resistance	acc. to EN 50363-10-2	
UV resistance	acc. to ISO 4892-2, method A	

General requirements

These cables are conform to the LV-Directive 2014/35/EU (Low voltage Directive) and the EU-Directive 2011/65/EU (RoHS, Restriction of the use of certain hazardous substances).

Environmental information

These cables meet the substance-specific requirements of the EU Directive 2011/65/EU (RoHS).

Creator: KIOS / PDC	Document: DB2170581EN	Page 2 of 2
Released: ALTE / PDC	Version: 05	