
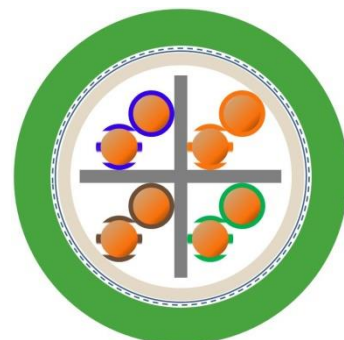


2170584	DATA SHEET	
valid from: 15.07.2020	ETHERLINE® PN CAT.6A FRNC FC 4x2x23/1 AWG	

Application

Field of use:	Installation cable for generic cabling systems acc. to ISO/IEC 11801 and EN 50173
Performance:	Bandwidth up to 500 MHz acc. to IEC 61156-5 Category 6A and EN 50288-10-1
Characteristics:	halogen free, flame retardant and largely resistant to acids, alkalis and certain oils, the "Fast Connect" design allows easy stripping and assembly of the cable
Applications:	PROFINET, EtherCAT, EtherNet/IP, Power over Ethernet (IEEE 802.3af), Power over Ethernet Plus (IEEE 802.3at) and many others




Design

Certification	c(UL)us CMX 75°C acc. to UL 444 & CSA 22.2 No. 214 RU AWM Style 21281 80°C 300V FT2 acc. to. UL 758
Conductor	solid bare copper 23/1 AWG
Insulation	solid polyethylen
Core identification code	pair 1: white/blue-blue, pair 2: white/orange-orange, pair 3: white/green-green, pair 4: white/brown-brown
Stranding	2 cores stranded to pair, 4 pairs stranded to bundle with central cross element on top: plastic tape (overlapping)
Inner sheath	LSZH outer Ø: nom. 6.60 mm
Screen	plastic laminated aluminium foil (overlapping) on top: braid of tinned copper wires (coverage 85 % ± 5 %)
Outer sheath	FRNC green, similar RAL 6018 outer Ø: 8.9 mm (± 0.3 mm)

Electrical properties at 20°C

Loop resistance	max. 14.64 Ω/100 m
Insulation resistance	min. 5 GΩ x km
Mutual capacitance	nom. 48 nF/km
Characteristic impedance	100 ± 15 Ω acc. to IEC 61156-5
Velocity of propagation	0.75c
Signal propagation time	490 ns/100 m
Delay skew	max. 20 ns/100 m
Peak operating voltage	EN: 125 V (not for power purposes) UL: 300 V
Test voltage	core/core: 2000 V core/screen: 2000 V

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Electrical transmission properties at 20°C

The transmission characteristics meet the requirements of the standards EN 50288-10-1 and IEC 61156-5 for category 6A. The normative requirements for the transmission properties are shown in the following table:

f [MHz]		4	10	20	62,5	100	200	250	500
(max.) Attenuation	[dB/100 m]	3,8	5,9	8,4	15	19,1	27,6	31,1	45,3
(min.) TCL	[dB]	34	30	27	22	20	17	16	—
(min.) EL TCTL	[dB/100 m]	23	15	9	—	—	—	—	—
(min.) NEXT	[dB]	66,3	60,3	55,8	48,4	45,3	40,8	39,3	34,8
(min.) PS EL FEXT	[dB/100 m]	53	45	39	29,1	25	19	17	11
(min.) ACR-F/EL FEXT	[dB/100 m]	56	48	42	32,1	28	22	20	17
(min.) Return Loss	[dB]	23	25	25	21,5	20,1	18	17,3	17,3

Mechanical and thermal properties

Minimum bending radius	fixed installation: 8x cable Ø
Temperature range	fixed installation: -30 °C up to +80 °C UL: 75 °C
Flammability	flame retardant acc. to IEC 60332-1-2; VW-1 acc. to UL 1581 §1080
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 61034-1 resp. EN 61034-1
General requirements	This cable is conform to EU-Directive 2014/35/EU (Low Voltage Directive) and to 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).

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