

2170587	DATA SHEET	
valid from: 15.07.2020	ETHERLINE® PN CAT.6A FRNC FLEX FC 4x2x23/7 AWG	

Application

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

Performance: Bandwidth up to 500 MHz acc. to IEC 61156-6 Category 6A and EN 50288-10-2

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 stranded bare copper
23/7 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. 15.0 Ω/100 m

Insulation resistance min. 5 GΩ x km

Mutual capacitance nom. 45 nF/km

Characteristic impedance 100 ± 15 Ω acc. to IEC 61156-6

Velocity of propagation 0.78 c

Signal propagation time 510 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 50288-10-2 and IEC 61156-6 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]	5,7	8,9	12,6	22,5	28,7	41,4	46,6	67,9
(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	14
(min.) Return Loss	[dB]	23	25	25	21,5	20,1	18	17,3	17,3

Mechanical and thermal properties

Minimum bending radius	fixed: 4x cable Ø occasional flexing: 8x cable Ø
Temperature range	fixed: -40 °C up to +80 °C occasional flexing: -5 °C up to +50 °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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