
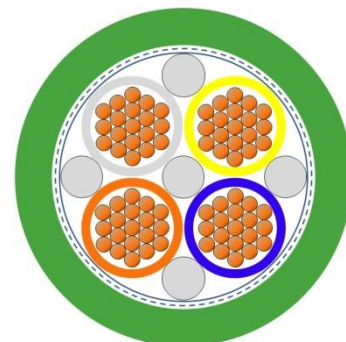


2170940	DATA SHEET	
valid from: 22.10.2020	ETHERLINE® ROBOT PN Cat.5e 1x4x22/19 AWG	

Application

Field of use:	Connecting cable for generic cabling systems acc. to ISO/IEC 11801 and EN 50173
Performance:	Bandwidth up to 100 MHz acc. to IEC 61156-6 Category 5e and EN 50288-2-2, meets the requirements for Type R according to Profinet
Characteristics:	halogen free, flame retardant and largely resistant to acids, alkalis and certain oils
Applications:	PROFINET, EtherCAT, EtherNet/IP, Power over Ethernet (IEEE 802.3af), Power over Ethernet Plus (IEEE 802.3at) and many others




Design

Certification	UL AWM Style 21238 80°C 600V acc. to UL 758
Conductor	fine-wire stranded bare copper 22/19 AWG
Insulation	solid polyolefin core Ø: ca. 1.60 mm
Core identification code	pair 1: white/blue, pair 2: yellow/orange
Stranding	star quad with 4 fillers and central filler
Screen	plastic laminated aluminium foil (overlapping) on top: braid of tinned copper wires (coverage 85 % ± 5 %)
Outer sheath	PUR green, similar to RAL 6018 outer Ø: nom. 6.50 mm (± 0.3 mm)

Electrical properties at 20°C

Loop resistance	max. 11.8 Ω/100 m
Insulation resistance	min. 5 GΩxkm
Mutual capacitance	nom. 47 nF/km
Characteristic impedance	100 ± 15 Ω acc. to IEC 61156-6
Velocity of propagation	0.67 c
Signal propagation time	510 ns/100 m
Delay skew	≤ 20 ns/100 m (at 100 MHz)
Peak operating voltage	EN: 100 V (not for power purposes) UL: 600 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 50288-2-2 and IEC 61156-6 for category 5e. The normative requirements for the transmission properties are shown in the following table:

f [MHz]		4	10	16	20	31,25	62,5	100
(max.) Attenuation	[dB/100 m]	6	9,5	12,1	13,5	17,1	24,8	32
(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:	8x cable Ø
	continuous flexing:	12x cable Ø
Temperature range	fixed:	-40 °C up to +80 °C
	continuous flexing:	-20 °C up to +60 °C
	UL:	80 °C
Bending cycles and power chain operation parameters	travel distance:	5 m
	Acceleration:	10 m/s ²
	Velocity:	3 m/s
	Cycles:	5.000.000
Torsional stress	Torsion angle:	± 180°/m
	Cycles:	5.000.000
Flammability	flame retardant acc. to IEC 60332-1-2 resp. EN 60332-1-2	
	HFT acc. to UL 1581 §1090	
Halogen free	acc. to VDE 0472-815	
Oil resistance	acc. to EN 50363-10-2	
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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