


<b>2170297</b>	<b>DATA SHEET</b>	
<b>valid from: 23.03.2020</b>	<b>ETHERLINE® P Cat. 5e 4x2x24/1 AWG</b>	

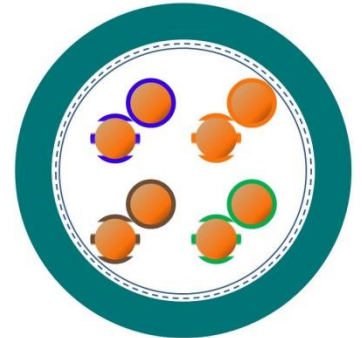
### Application

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

Performance: Bandwidth up to 100 MHz acc. To IEC 61156-5 Category 5e and EN 50288 2-1

Characteristics: halogen free, flame retardant, oil resistant, UV resistant and largely resistant to acids, alkalis and certain oils

Applications: Profinet with 4 pairs, EtherCAT, EtherNet/IP, Power over Ethernet (IEEE 802.3af), Power over Ethernet Plus (IEEE 802.3at) and many others



### Design

Certification: UL AWM style 11117 and 21576 (1000 V, 80 °C) acc. to UL 758  
cRU AWM I/II A/B (FT2) acc. to CSA C22.2 No.210  
certified for CC-Link IE Field Network

Conductor: solid bare copper  
24/1 AWG

Insulation: foamed PE  
core  $\varnothing$ : ca. 1,00 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, pairs stranded together  
wrapped by plastic tape

Screen: plastic laminated aluminum foil  
on top:  
braid of tinned copper wire (coverage ca. 85 %)

Outer sheath: PUR  
blue, similar to RAL 5021  
outer  $\varnothing$ : ca. 6.1 mm

### Electrical properties at 20°C

Loop resistance: max. 19,2  $\Omega$ /100 m

Insulation resistance: min. 5 G $\Omega$ xkm

Mutual capacitance: nom. 48 nF/km

Characteristic impedance: nom. 100  $\Omega$  acc. to IEC 61156-6


Velocity of propagation: 0.77 c

Signal propagation time: <433 ns/100 m

Peak operating voltage: VDE: 125 V (not for power purposes)  
UL: 1000 V

Test voltage: core/core: 3000 V  
core/screen: 3000 V

Creator: KIOS / PDC	Document: DB2170297EN	Page 1 of 2
Released: ALTE / PDC	Version: 08	

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### Electrical transmission properties at 20°C

The transmission characteristics meet the requirements of the standards EN 50288-2-1 and IEC 61156-5 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]	4	6,3	8	9	11,4	16,5	21,3
(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:	7.5 x cable Ø
Temperature range	fixed:	-30 °C up to +80 °C
	occasional flexing:	-5 °C up to +50 °C
	UL:	80 °C
Flammability	flame retardant acc. to IEC 60332-1-2 resp. EN 60332-1-2 Horizontal flame acc. to UL 1581 §1090 and §1100	
Halogen free	acc. to VDE 0472-815	
UV resistance	acc. to. ISO 4892-2, method A	
Oil resistance	acc. to. EN 50363-10-2	
General requirements	These cables are 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).	

Creator: KIOS / PDC	Document: DB2170297EN	Page 2 of 2
Released: ALTE / PDC	Version: 08	