

2170475	DATA SHEET	
valid from: 01.01.2019	ETHERLINE® Cat. 7 P 4 x 2 x AWG22/1	

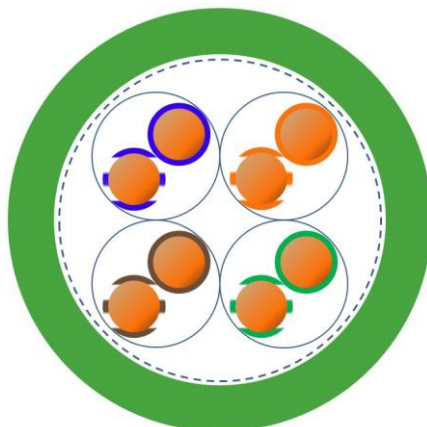
Application

ETHERLINE® CAT.7 P (bandwidth up to 600 MHz), has a performance for the cabling class “F” and a maximum transfer rate (IEEE 802.3) of 10 GBit/s to 100m. The electrical parameter of the cable with a nominal impedance of 100 Ω and excellent shielding Properties (pair and total screen) are normatively specified to IEC 61156-5.

It is provided for industrial secondary and tertiary cable according to EN 50173-3 ISO/IEC 24702. Other applications are Profinet with 4 Pairs, EtherCAT, EtherNet/IP, Power over Ethernet (IEEE's 802.3af) and Power over Ethernet Plus (802.3at).

The product is flame retardant, halogen free, oil resistant and comes in rough industrial environments for use. It is suitable for fixed installation and serves to wiring of machines, tools, devices, appliances and control cabinets.

Design



Conductor	solid bare copper AWG 22/1, Ø approx. 0,643 mm
Insulation	foamed skin polyethylene (02YS), nom Ø 1,50, max Ø 1,60 mm
Core identification code	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
Stranding	2 cores twisted to pairs Pair screening with aluminium laminated foil (overlapping ≥ 25 %) 4 screened pairs twisted and shielded with aluminium laminated foil
Screen	braid of tinned copper wires, coverage 85 % ± 5 %
Taping	thin non-woven tape (optional)
Outer sheath	PUR compound, Colour: green (similar RAL 6018), outer Ø: 8,70 mm ± 0,30 mm

Electrical properties at 20°C

Conductor resistance	max. 57.1 Ω/km
Insulation resistance	min. 5 GΩxkm
Mutual capacitance	nom. 42 nF/km (1 kHz)
Inductance	nom. 850 μH/km (1 kHz / in loop)
Characteristic impedance	100 Ω (±5%) bei 100 MHz
Velocity of propagation	nom. 0,80 c
Signal transit time	nom. 420 ns/100m
Peak operating voltage	125 V
Test voltage	core/core: 1000 V DC/min or 2500 V DC/2sec core/screening: 700 V AC/min or 1700 V AC/2sec

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Electrical transmission properties at 20°C

f [MHz]	Attenuation [dB/100m] standard	NEXT [dB] standard	EL FEXT [dB] standard	Return Loss [dB] standard
4	3,8	78	78	23
10	5,9	78	74	25
16	7,5	78	69,9	25
31,25	10,4	78	64,2	23,6
62,5	14,9	75,6	58,3	21,6
100	19,2	72,4	54	20,1
200	27,6	67,9	48	18
250	31,1	66,4	46	17,3
300	34,3	65,3	44,5	17,3
350	37,4	64,3	43,1	17,3
500	45,5	62	40,1	17,3
600	50,4	60,7	38,4	17,3

Mechanical and thermal properties

Minimum bending radius	fixed installation: 10 x d
Temperature range	fixed installation: -40 °C up to +80 °C
Flammability	acc. to IEC 60332-1-2
Halogen free	acc. to IEC 60754
Oil resistance	acc. to IEC 60811-2-1
General requirements	This cable is conform to the EU-Directive 2011/65/EU (RoHS, Restriction of the use of certain hazardous substances).

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