

METATRONIX

Innovative Intelligent Transport Systems



EthCables

METATRONIX Ethernet cables are used as original equipment by the main Bus Manufacturers. All cables are R118 certified.

The EthCables can be provided in standard lenght (1,00; 2,00; 3,00; 5,00; 7,50; 10,00; 12,50; 15,00; 17,50; 20,00; 25,00 m.) or custom according to Customer needs.

Connector 1	Connector 2	Cable type	P/N
M12M	M12M	CAT 5e SF-UTP Profinet type B 1x4x22AWG PUR	BETH0100xx
M12M 90	M12M 90		BETH0400xx
M12M	M12M 90		BETH0500xx
M12M	M12F		BETH1300xx
M12M	M12FP	CAT 5e SF-UTP Profinet type B 1x4x22AWG PUR	BETH0200xx
RJ45M	RJ45M		BETH2200xx
M12M	RJ45M	CAT 5e SF-UTP Profinet type B 1x4x22AWG PUR	BETH1600xx
M12M 90	RJ45M		BETH1700xx
M12M	n/a		BETH0300xx
M12M 90	n/a		BETH1000xx
RJ45M	n/a	CAT 6A SF-UTP Ethernet 4x2x26AWG PUR	BETH1900xx
RJ45 8P M	RJ45 8P M		BETH2400xx
M12 8P X M	M12 8P X M		BETH2500xx
RJ45 8P M	n/a	CAT 7 S-FTP Ethernet 4x2x26AWG PUR	BETH2700xx
RJ45 8P M	RJ45 8P M		BETH2000xx
M12 8P X M	RJ45 8P M		BETH2100xx
M12 8P X M	M12 8P X M		BETH2300xx

M12 MOULDED CONNECTORS

Moulded Body:	PUR
Housing Insert:	PA 6 V2 GF GW 750÷850
Contact:	Gold plated Brass
Connection:	Crimped
Locking:	Nickel plated Brass
Sealing:	NBR
Protection:	IP67
Compliance:	RoHS 2002/95/CE

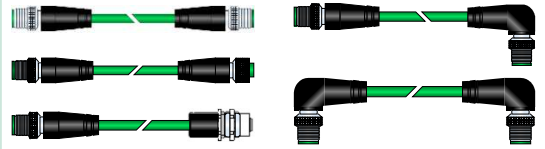
The Ethernet cables are ITxPT
Certified on Labelled Buses



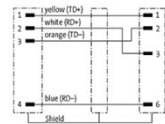
INFORMATION TECHNOLOGY
For PUBLIC TRANSPORT



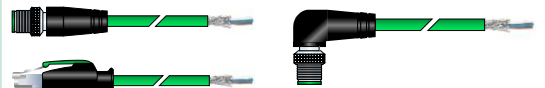
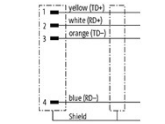
CAT 5e SF-UTP Profinet type B 1x4x22AWG PUR – Connectors: M12 D coded



CAT 5e SF-UTP Profinet type B 1x4x22AWG PUR – Connectors: M12 D coded, RJ45



CAT 5e SF-UTP Profinet type B 1x4x22AWG PUR – Connectors: M12 D coded, RJ45



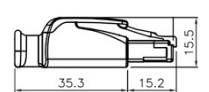
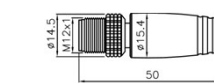
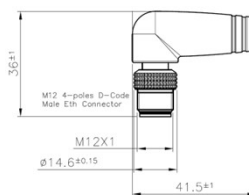
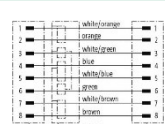
CAT 5e SF-UTP Profinet type B 1x4x22AWG PUR – Connectors: M12 X coded, RJ45



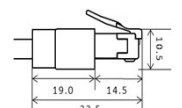
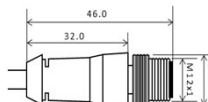
CAT 6A SF-UTP Ethernet 4x2x26AWG PUR – Connectors: M12 X coded, RJ45



CAT 7 S-FTP Ethernet 4x2x26AWG PUR – Connectors: M12 X coded, RJ45

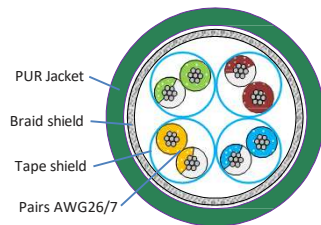


A



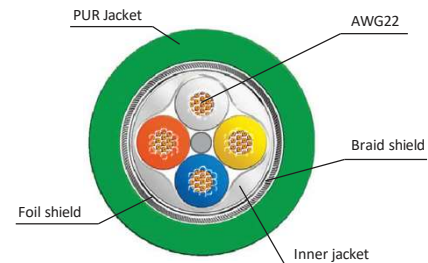
B

Industrial Ethernet Cable CAT 7



4x(2xAWG26/7)

Industrial Ethernet Cable CAT 5e



2x(2xAWG22)

TECHNICAL DATA

Conductors:

Stranded bare copper wire
UL 758 tab 5.9; EN 13602 - ETP1, DIN 40500 E-Cu 58.

Insulation:

PEE compound (02Y); nominal diameter 1,03 mm

Pairs assembly:

Cores twisted in pairs;

Pairs shield:

Each pair shielded with Al/PET tape (Aluminium face outside);
optical coverage 100%.

Total assembly:

Pairs 4x(2xAWG26) stranded together (see indicative Sketch).

Total shield:

Braid type; Tin copper wire; nom. optical Coverage 75%.

Jacket:

PUR compound (11Y); diameter 6.90 ±0.20mm; colour Green similar RAL6026.

Electric:

Voltage rating 50 Vrms (UL 30V)

Voltage test 1000 V x 1 min.

Physical:

Operating temperature range -40°C to +80°C (static)

Operating temperature range -25°C to +80°C (dynamic)

Minimum bending radius 7.5 x D (fixed)

Minimum bending radius 12.5 x D (dynamic)

UV resistant yes (UL1581 Standard requirement on complete cable)

Max installation pulling force 100N

Chemical:

Oil resistant yes (UL758) Silicone, Pb, Cd, Hg, FCKW free yes

Halogen free yes (CEI EN 60754-1 / VDE 0482-754-1)

Flame:

Flame resistant UL Vertical flame test; VW-1; CSA FT1; IEC 60332-1-2

Electrical transmission properties @20°C:

Max electric resistance 150.3 Ω/Km (IEC 60344)

Impedance 100 +/-15% Ω

Capacitance @1KHz 47 pF/m (nominal)

Propagation velocity 72 % (nominal)

Propagation delay <534 ns/100m

Delay skew <45 ns/100m

Transfer Impedance 5 mΩ/m @10MHz

TECHNICAL DATA

Conductors

Stranded bare copper wire

EN 13602-ETP1 DIN 40500 E-CU 58, CL6, UL 758 tab. 5.3

Insulation

PE compound, nominal diameter 1,45 mm

Filler

LSZH Flame retardant compound, nominal diameter 4.30 mm, Avg. thickness 0.35 mm, Hardness 49 ShD, color white

Tape

Aluminium/Polyester

Optical coverage 100%

Shield

Braid type Tin Copper, Coverage 80%

Outer Jacket

PUR Compound, 90 ShA, UL 20233, diameter 6.70 ±0.20mm, color Green RAL 6018

Electric

Operating Voltage 300 V UL

Voltage test 1500 V x 1min

Physical:

Temperature range -40°C +80°C (static) -25°C to +70°C (dynamic)

Bending Radius ≥ 5 x D (static)

Maximum speed ≤ 60m/min

Maximum acceleration 5m/sec²

Maximum life cycles 3 Million (only in conditions recommended)

Weight 28,00 Kg/Km

Flame rating

Flame resistant UL Vertical flame test; VW-1; CSA FT1; IEC 60332-1

Chemical

Oil resistant EN50363-10-2; UL758/UL2556

UV resistant UL1581/2556 max 300 h

Halogen free IEC 60754-1, EN50237-2-1, VDE 0472-815

Electrical transmission properties @20°C:

Max electric resistance 55 Ω/Km

Impedance 100 +/-15% Ω

Capacitance @1KHz 50 pF/m (nominal)

Insulation resistance >5000 M.Ω x Km

Capacitance pair to ground <1600 pF/m

Compliance

PROFINET, EtherCAT



AWM Style 20236 (80°C/30V)



Accordance to Directives:

2014/35/UE; 2014/30/UE; 2011/65/CE; 2015/863/UE



AWM Style 20233 (80°C/300V)



Accordance to Directives:

2014/35/UE; 2014/30/UE; 2011/65/CE; 2015/863/UE