



M12 D-coded & X-coded Ethernet cordset

M12 D-coded / X-coded Industrial Ethernet Cable Assembly

Cat 5e M12 D-coded (100 Mbps) & Cat 6A M12 X-coded (10 Gbps) Ethernet assembly



M12 D-Code / X-Code

Cat 5e / Cat 6A

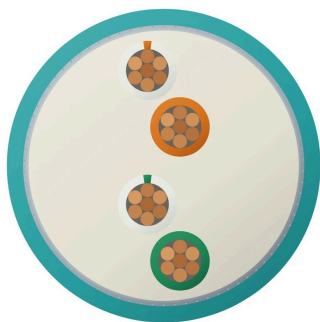
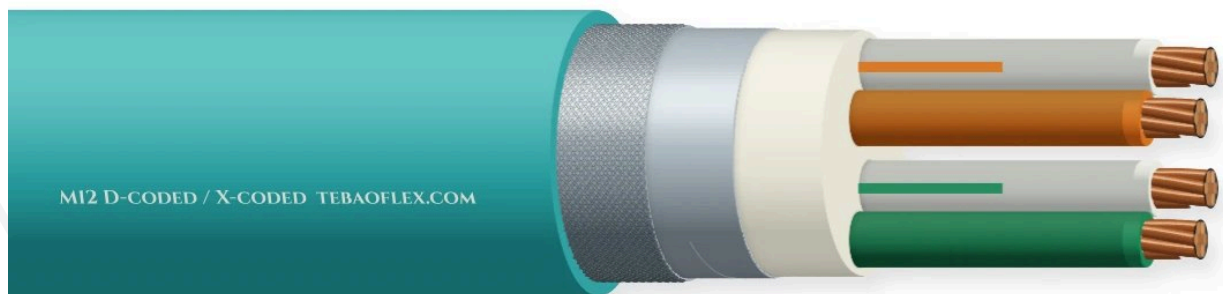
PROFINET / 10GbE

Application

360° EMC-shielded Industrial Ethernet cordset to IEC 61076-2-101 (4-pole D-coded Cat 5e for PROFINET/EtherCAT) and IEC 61076-2-109 (8-pole X-coded Cat 6A for 10 Gbps vision & rail backbones), 100 % Fluke channel certified.

Typical uses: PROFINET & EtherCAT I/O, GigE & 10GigE Machine Vision, EN 50155 Rolling Stock Ethernet, Automotive Welding & Robotics, PoE+ / PoE++ LiDAR & Cameras

Construction



Cross-section, not to scale

- 1 Stranded tinned copper data conductors
- 2 Foam-skin PE low-loss dielectric
- 3 SF/UTP or S/FTP double EMC shield
- 4 PROFINET Green PUR-HF or Rail jacket
- 5 360° shielded M12 D/X shell & RJ45
- 6 Overmoulded TPU strain-relief boot

Technical data

Typical values

Transmission class	Class D Cat 5e (100 MHz) · Class EA Cat 6A (500 MHz)	Data rate & PoE support	100BASE-TX (D-code) · 1/2.5/10GBASE-T + IEEE 802.3bt PoE++ (X-code)
Characteristic impedance	100 ± 5 Ω at 100 MHz	Rated voltage / current	50 V AC / 60 V DC · 4 A (D-code) / 0.5 A per pin (X-code)
Transfer impedance	≤ 20 mΩ/m at 10 MHz (Grade 1 EMC)	Operating temperature (fixed)	−40 °C to +85 °C
Drag-chain flexing temperature	−25 °C to +75 °C	PoE+ / PoE++ thermal rise	Verified at 90 W 4PPoE bundle load rise
Drag-chain endurance	≥ 3,000,000 (X-code) · ≥ 5,000,000 cycles (D-code Type C)	Min. bend radius	5 × OD (fixed) · 8–10 × OD (drag chain)
Vibration & shock	EN 61373 Category 1 Class B railway qualified	Mating cycles	≥ 100 cycles (IEC 61076-2-101 / 109)
Ingress protection	IP67 / IP68 (M12 mated) · IP20 (RJ45 cabinet end)	Oil & coolant resistance	IEC 60811-404 / UL Oil Res I & II
Fire & smoke (Rail option)	EN 45545-2 HL3 / IEC 60332-1-2 / IEC 60754	Standards	IEC 61076-2-101 (D-code) & IEC 61076-2-109 (X-code)
Standard packing	Individually bagged with printed Fluke DSX channel test report		

Sizes

15 standard constructions

Tick the sizes you need and send this page to info@tebaoflex.com or WhatsApp +86 185 9591 3361.

Order designation	End A ↔ End B Termination	Coding & Category	Length m	Cable OD mm	Copper kg/km	Cable Wt kg/km	Flex R mm
M12 D-Coded 4-Pin Cat 5e PROFINET / EtherCAT Assemblies (100 Mbps) 8 sizes							
☐ M12D-MM-1M-PN	M12-D Male Straight ↔ M12-D Male Straight	D-Code Cat 5e (1×4×22AWG)	1.0	6.5	32	63	52
☐ M12D-MM-2M-PN	M12-D Male Straight ↔ M12-D Male Straight	D-Code Cat 5e (1×4×22AWG)	2.0	6.5	32	63	52
☐ M12D-MM-5M-PN	M12-D Male Straight ↔ M12-D Male Straight	D-Code Cat 5e (1×4×22AWG)	5.0	6.5	32	63	52
☐ M12D-MM-10M-PN	M12-D Male Straight ↔ M12-D Male Straight	D-Code Cat 5e (1×4×22AWG)	10.0	6.5	32	63	52
☐ M12D-RJ45-2M-PN	M12-D Male Straight ↔ Shielded RJ45	D-Code Cat 5e (1×4×22AWG)	2.0	6.5	32	63	52
☐ M12D-RJ45-5M-PN	M12-D Male Straight ↔ Shielded RJ45	D-Code Cat 5e (1×4×22AWG)	5.0	6.5	32	63	52
☐ M12D-ANG-RJ45-5M-PN	M12-D Male 90° Angled ↔ Shielded RJ45	D-Code Cat 5e (1×4×22AWG)	5.0	6.5	32	63	52
☐ M12D-MM-5M-RAIL	M12-D Male ↔ M12-D Male (Railway RADOX)	D-Code Cat 5e (EN 45545 HL3)	5.0	6.6	32	68	53
M12 X-Coded 8-Pin Cat 6A High-Speed Ethernet Assemblies (10 Gbps / PoE++) 7 sizes							
☐ M12X-MM-1M-C6A	M12-X Male Straight ↔ M12-X Male Straight	X-Code Cat 6A (4×2×26AWG)	1.0	6.4	28	54	51
☐ M12X-MM-3M-C6A	M12-X Male Straight ↔ M12-X Male Straight	X-Code Cat 6A (4×2×26AWG)	3.0	6.4	28	54	51
☐ M12X-MM-5M-C6A	M12-X Male Straight ↔ M12-X Male Straight	X-Code Cat 6A (4×2×26AWG)	5.0	6.4	28	54	51
☐ M12X-MM-10M-C6A	M12-X Male Straight ↔ M12-X Male Straight	X-Code Cat 6A (4×2×26AWG)	10.0	6.4	28	54	51
☐ M12X-RJ45-2M-C6A	M12-X Male Straight ↔ Cat 6A RJ45	X-Code Cat 6A (4×2×26AWG)	2.0	6.4	28	54	51
☐ M12X-RJ45-5M-C6A	M12-X Male Straight ↔ Cat 6A RJ45	X-Code Cat 6A (4×2×26AWG)	5.0	6.4	28	54	51
☐ M12X-MM-10M-RAIL	M12-X Male ↔ M12-X Male (Railway 10GbE)	X-Code Cat 6A (EN 45545 HL3)	10.0	6.8	31	66	54

– Maximum channel length is 90 m + 10 m patch for 22 AWG D-coded PROFINET trunks, and 60 m for 26 AWG X-coded stranded patch cables.

Standards and approvals

- ✓ IEC 61076-2-101 (D-Code) & IEC 61076-2-109 (X-Code)
- ✓ ISO/IEC 11801 Class D / Class EA & PROFINET Type C

Certifications



Management systems: ISO 9001, ISO 14001, ISO 45001

Request a quotation

Send the size, length and destination. An application engineer replies within 2 business hours.

WhatsApp / phone

+86 185 9591 3361

Email

info@tebaoflex.com

Web

tebaoflex.com/cables/m12-industrial-ethernet-cable-assembly



Typical values for this cable type, based on IEC 61076-2-101 / IEC 61076-2-109 / ISO/IEC 11801. Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.