M12 RAIL CONNECTOR SERIES

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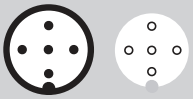
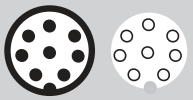
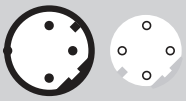
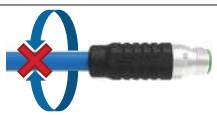
M12 CODINGS

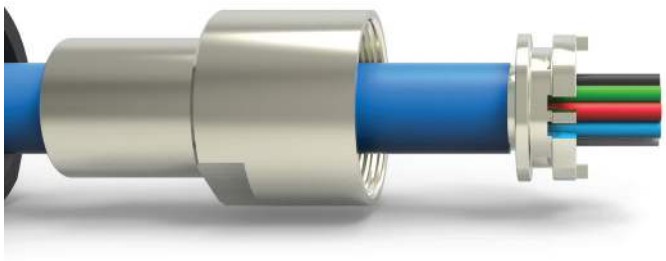
M12 - The Codings		
A-Coding		
A5	Actuator - sensor plug for DeviceNet, IO link and Profibus	
A8		
D-Coding		
D4	Industrial Ethernet, Ethernet/IP for Railway Applications	

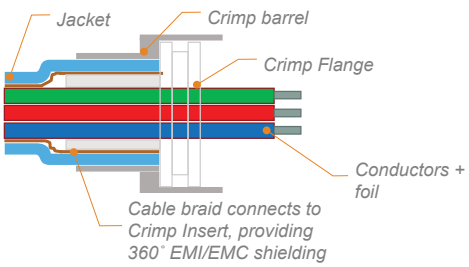
WHY CABLE JACKET CRIMPING?

Eliminates cable rotation (torsion proof)	
Best EMI/RFI performance through 360˚ shield termination	
IP67 sealing	
Tamper free (vandalism)	
Faster Field Assembly time	

SECURE DATA TRANSMISSION: EMI/RFI

- Best EMI/EMC/RFI performance due to 360˚ crimped cable braid
- Stable electrical connection between cable braid and crimp flange keeps 360˚ cable intact throughout the tip of the connector
- Crimp Flange protects the conductors: Reduce risk of breakage





SECURE DATA TRANSMISSION: RUGGED DESIGN

Cable jacket Crimping eliminates cable rotation, which potentially leads to breakage of conductors

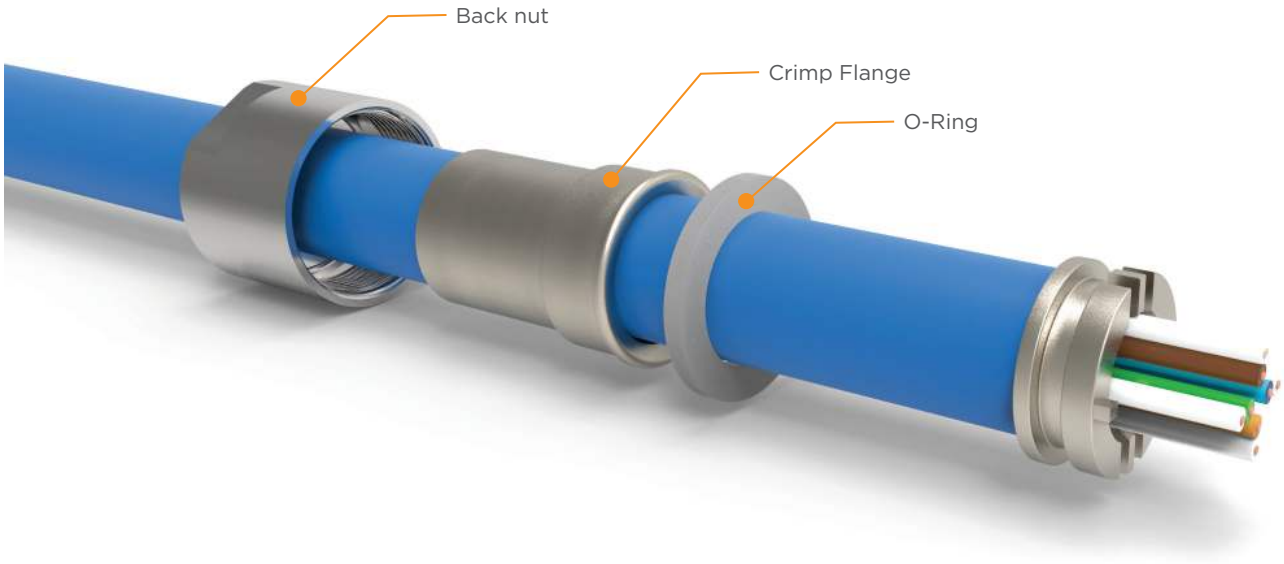
Further, this rugged connector design provides:

- Vibration proof screw locking due to integral latching
- Defined recommended Torque (1.5Nm) to guarantee optimal locking
- M12 Hexagon Locking nut
- 2x Silicon O-Rings to achieve IP67
- Tamper proof connector system

Crimping the cable jacket prevents cable rotation which is likely to occur in a cable gland. This can potentially lead to breakage of the conductors in the cable. Which are very difficult to find.

IP 67 SEALED (WHEN MATED)

Once the “back nut” is tightened according to the specified torque & the “crimp flange” is crimped, the O-ring retained within the “back nut” creates an IP67 seal between the crimp flange, cable and “back nut”. This process also creates a secure **tamper proof*** attachment to the cable.



* Connector cannot be opened anymore after crimping

M12 Rail Straight
A and D-Coded Connectors

The Straight M12, field installable connectors are pre-assembled, thereby saving assembly time.

They provide 360° EMI/RFI shielding, torsion and vibration proof cable strain relief with our crimp flange technology and machined crimp contacts.

RUGGED DESIGN FEATURES

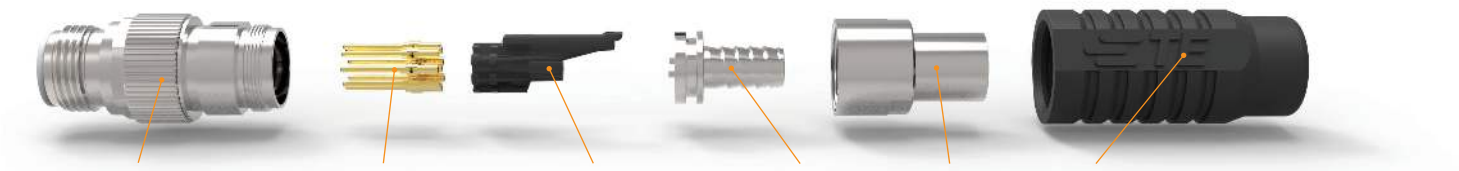
- Vibration-proof screw locking due to integral latching.
- M12 hexagon locking nut.
- Defined recommended torque (of 1.5Nm) to optimize locking.
- Silicon O-rings to achieve IP67.
- Tamper proof.
- EN45545 compliant.
- Solid machined brass housing.

SECURE DATA TRANSMISSION

- Best signal transmission due to:
  - machined crimp contacts.
  - with 0.8 m Au over Ni.
  - Up to 500 mating cycles.
- Secured cable shield termination.
- Vibration and shock resistant.
- Effective 360° EMI/RFI shielding achieved by full metal housing and crimp flange system.
- Torsion proof cable strain relief.

COMPACT DESIGN ENVELOPE

- Overall diameter: Ø15.2 mm.
- Overall length: 48mm for version w/o grip boot.
- Overall diameter: Ø16.0 mm
- Overall length: 56 mm for version with grip boot
- Lightweight design:
  - 24gr w/o boot
  - 26gr with boot



PRODUCT PERFORMANCE DATA

Temperature Range:
-40°C to 85°C (without cable boot)

Current Rating:
A-5 / D-4: 4 Amp, A-8 : 2 Amp

Operational Voltage:
A-5 / B-5 / D-4: 50V DC A-8: 30V DC

Contact Resistance:
<5 mΩ

Insulation Resistance:
>100 MΩ

Data Transmission Characteristics:
IEC 11801:2002 Class D

Data Transmission Rate:
Up to 1GBit/s

IP Rating:
IP67

Mating Cycles:
Up to 500 mating cycles with G1 contacts (standard G2 contacts 250 cycles)

Standards:
EN61373 Class 1, Fire Performance NFF 16101, 16102, EN45545 HL3 R22/R23

TOOLING

Cable stripping	Contact crimp tool	Contact positioner	Crimp tool cable jacket	Crimp insert cable jacket tool	Insertion tool crimp flange (handle)	Insert for handle	Connector assembly tool
2119000-1	601966-1 (compact) or 601967-1 (standard)	See Table	1-2823557-1	1-2823558-6	1-2823560-1	1-2823561-1	1-2823564-1
							

Contact Positioner	Crimp tool	Gender	D4 and A5 Coding	A8 Coding	X-Code
	Compact	Pin	601966-2	1-2823582-8	2-2823582-0
		Socket		1-2823582-9	2-2823582-1
	Standard	Pin	1-2823582-4	1-2823582-6	N/A
		Socket			

Coding	Gender	Connector kit PN*	Matching with cable	Cable PN	Cable construction
D4	Male	1-2823445-1	Radox 6.6mm	12584038	4 x AWG22
	Female	1-2823446-1	Radox 6.6mm	12584038	4 x AWG22
	Male	1-2823445-2	Radox 7.3mm	12568935	4 X AWG22
	Female	1-2823446-2	Radox 7.3mm	12568935	4 x AWG22
	Male	1-2823445-3	Radox 8.3mm	12585489	4 x AWG20
	Female	1-2823446-3	Radox 8.3mm	12585489	4 x AWG20
	Male	1-2823445-4	Radox 8.2mm	84124806	8 x AWG22
	Female	1-2823446-4	Radox 8.2mm	84124806	8 x AWG22
	Male	1-2823445-5	Radox 7.3mm	12568935	4 x AWG22
	Female	1-2823446-5	Radox 7.3mm	12568935	4 x AWG22
	Male	1-2823445-6	Megaline 5.4mm Leoni	20123 3103012	8 x AWG26
	Female	1-2823446-6	Megaline 5.4mm Leoni	20123 3103012	8 x AWG26
	Male	1-2823445-7	Radox 8.2mm	84124806	8 x AWG22
	Female	1-2823446-7	Radox 8.2mm	84124806	8 x AWG22
	Male	1-2823445-8	Belden 6.7mm	BE43769	8 x AWG22
	Female	1-2823446-8	Belden 6.7mm	BE43769	8 x AWG22
	Male	1-2823445-9	Radox 6.6mm	303195	8 x AWG22
	Female	1-2823446-9	Radox 6.6mm	303195	8 x AWG22
	Male	2-2823445-0	TE Cat 7 24 AWG TECC0011C7	2297799-1	8 x AWG24
	Female	2-2823446-0	TE Cat 7 24 AWG TECC0011C7	2297799-1	8 x AWG24
	Male	2-2823445-1	TE Cat 5 22 AWG TECC0026C5	2320808-1	4 x AWG22
	Female	2-2823446-1	TE Cat 5 22 AWG TECC0026C5	2320808-1	4 x AWG22
A5	Male	1-2823449-1	Radox 6.6mm	12584038	4 x AWG22
	Female	1-2823450-1	Radox 6.6mm	12584038	4 x AWG22
	Male	1-2823449-2	Radox 7.3mm	12568935	4 x AWG22
	Female	1-2823450-2	Radox 7.3mm	12568935	4 x AWG22
	Male	1-2823449-3	Radox 8.3mm	12585489	4 x AWG20
	Female	1-2823450-3	Radox 8.3mm	12585489	4 x AWG20
	Male	1-2823449-8	TE Cat 5 22 AWG TECC0026C5	2320808-1	4 x AWG22
	Female	1-2823450-8	TE Cat 5 22 AWG TECC0026C5	2320808-1	4 x AWG22
	Male	1-2823449-7	TE Cat 7 24 AWG TECC0011C7	2297799-1	8 x AWG24
	Female	1-2823450-7	TE Cat 7 24 AWG TECC0011C7	2297799-1	8 x AWG24
A8	Male	1-2823447-1	Radox 8.2mm	84124806	8 x AWG22
	Female	1-2823448-1	Radox 8.2mm	84124806	8 x AWG22
	Male	1-2823447-2	Betatrans C-Fle 8.8mm	302834-871433	8 x AWG24
	Female	1-2823448-2	Betatrans C-Fle 8.8mm	302834-871433	8 x AWG24
	Male	1-2823447-3	Megaline 5.3mm Leoni	20123 3103012	8 x AWG26
	Female	1-2823448-3	Megaline 5.3mm Leoni	20123 3103012	8 x AWG26
	Male	1-2823447-4	Radox 8.2mm	84124806	8 x AWG22
	Female	1-2823448-4	Radox 8.2mm	84124806	8 x AWG22
	Male	1-2823449-4	Radox 7.3mm	12568935	4 x AWG22
	Female	1-2823450-4	Radox 7.3mm	12568935	4 x AWG22
	Male	1-2823449-6	TE Cat 7 24 AWG TECC0011C7	2297799-1	8 x AWG24
	Female	1-2823450-6	TE Cat 7 24 AWG TECC0011C7	2297799-1	8 x AWG24
	Male	1-2823449-5	Radox 6.6mm	12584038	4 x AWG22
	Female	1-2823450-5	Radox 6.6mm	12584038	4 x AWG22

***Connector kit includes contacts**

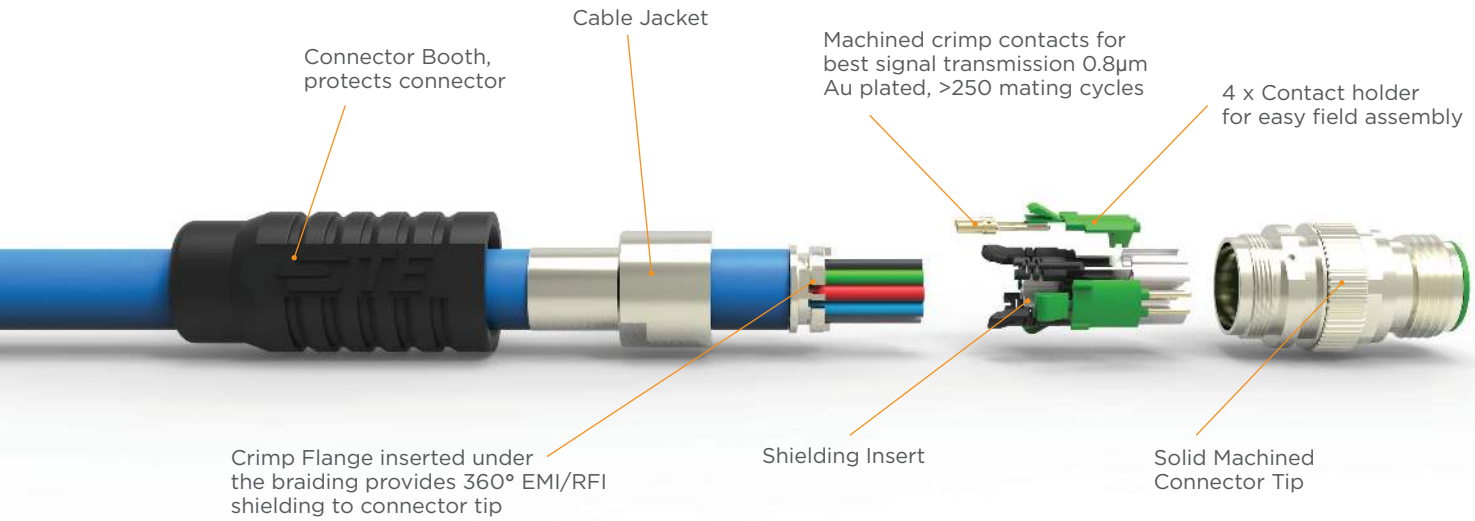
Others
Assembly video: www.te.com/usa-en/videos/industrial/m12-assembly-video.html

M12 Rail Straight
X-Coded Connectors

Modern Railway networks are all about speed and reliability. If it were the data transmission speed, the assembly time, avoiding network interruptions or reducing cost of service, all are equally important. Our full metal shell IP67 sealed X-coded M12 connector offers all of the above and more in one product.

The 360° cable shield termination secures a very high data transmission speed while the machined, gold plated crimp contacts and unique torsion free jacket crimping system ensure uninterrupted service throughout the connector lifetime.

FEATURES



BENEFITS

Speed:
up to 10Gb/second according to IEC 802.3an Cat 6a

Reliability:
Unique cable jacket crimping system reduces failures

High data performance due to 360° EMI shielding

High system reliability due to Torsion free cable crimping leads reduced cost of service

FEATURES

- Field installable and compact dimensions
- Full metal shell and IP67 sealed
- Turned crimp contacts for high vibration environments
- All non metal compenents except for the booth NFF-16-101/102 and EN45545-2 HL3 compliant
- The crimp flange and crimp barrel will be qualified to match the chosen cable contacts available for wire size AWG22-28

PRODUCT PERFORMANCE DATA

Temperature Range:
-40°C to 85°C (without cable boot)

Current Rating:
A-5 / D-4: 4 Amp, A-8 : 2 Amp

Operational Voltage:
A-5 / B-5 / D-4: 50V DC A-8: 30V DC

Contact Resistance:
<5 mΩ

Insulation Resistance:
>100 MΩ

Data Transmission Characteristics:
IEC 11801:2002 Class D

Data Transmission Rate:
Up to 1GBit/s

IP Rating:
IP67

Mating Cycles:
Up to 500 mating cycles with G1 contacts
(standard G2 contacts 250 cycles)

Standards:
EN61373 Class 1, Fire Performance NFF 16101, 16102, EN45545
HL3 R22/R23

TOOLING

Cable stripping	Contact crimp tool	Contact positioner	Crimp tool cable jacket	Crimp insert cable jacket tool	Insertion tool crimp flange (handle)	Insert for handle	Connector assembly tool
2119000-1	601966-1 (compact) or 601967-1 (standard)	See Table	1-2823557-1	1-2823558-6	1-2823560-1	1-2823561-1	1-2823564-1
							

Coding	Picture	No. of contacts	Gender	PN	Cable	Cat	Supplier PN	Color	No. conductors
X-Coding		8	Male	1-2315714-1	H&S Radox Cat 7	Cat 7	84124806	Blue	8 x AWG24
			Female	1-2315715-1	H&S Radox Cat 7	Cat 7	84124806	Blue	8 x AWG24
			Male	1-2315714-2	TE Cat 7 24 AWG TECC0011C7	Cat 7	2297799-1	Blue	8 x AWG24
			Female	1-2315715-2	TE Cat 7 24 AWG TECC0011C7	Cat 7	2297799-1	Blue	8 x AWG24

M12 Rail 90°
A and D-Coded Connectors

The right angled M12 rail cable connector is field installable and developed for the fault-free data transfer in harsh environments and for difficult installation conditions. The connector is specifically suited for harsh conditions due to the crimp termination on the machined single contact and for the crimped cable strain relief. The miniaturised design provides the flexibility for the angled cable exit to solve tight installation conditions.

RUGGED DESIGN FEATURES

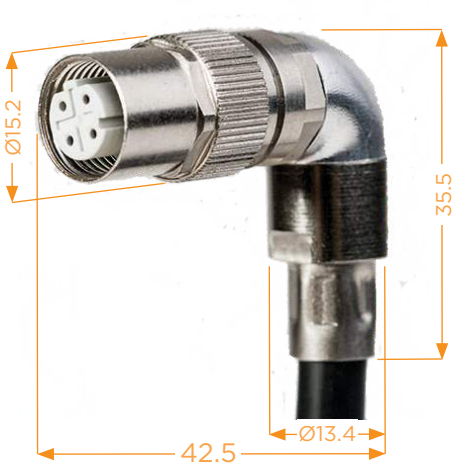
- Vibration-proof screw locking due to integral latching.
- M12 hexagon locking nut.
- Defined recommended torque (of 1.5Nm) to optimize locking.
- Silicon O-rings to achieve IP67.
- Tamper proof.
- EN45545 compliant.
- Solid machined brass housing.

SECURE DATA TRANSMISSION

- Best signal transmission due to:
  - machined crimp contacts.
  - with 0.8 m Au over Ni.
  - Up to 500 mating cycles.
- Secured cable shield termination.
- Vibration and shock resistant.
- Effective 360° EMI/RFI shielding achieved by full metal housing and crimp flange system.
- Torsion proof cable strain relief.

COMPACT DESIGN ENVELOPE

- Overall diameter: Ø15.2 mm.
- 8 cable exit options (8x45°).



PRODUCT PERFORMANCE DATA

Temperature Range:
-40°C to 85°C (without cable boot)

Current Rating:
A-5 / D-4: 4 Amp, A-8 : 2 Amp

Operational Voltage:
A-5 / B-5 / D-4: 50V DC A-8:30V DC

Contact Resistance:
<5 mΩ

Insulation Resistance:
>100 MΩ

Data Transmission Characteristics:
IEC 11801:2002 Class D

Data Transmission Rate:
Up to 1GBit/s

IP Rating:
IP67

Mating Cycles:
Up to 500 mating cycles with G1 contacts
(standard G2 contacts 250 cycles)

Standards:
EN61373 Class 1, Fire Performance NFF 16101, 16102, EN45545-2 HL3 R22/R23

TOOLING

Cable stripping	Contact crimp tool	Contact positioner	Crimp tool cable jacket	Crimp insert cable jacket tool	Insertion tool crimp flange (handle)	Insert for handle	Connector assembly tool
2119000-1	601966-1 (compact) or 601967-1 (standard)	See Table	1-2823557-1	1-2823558-6	1-2823560-1	1-2823561-1	1-2823564-1
							

Contact Positioner	Crimp tool	Gender	D4 and A5 Coding	A8 Coding
	Compact	Pin	601966-2	1-2823582-8
		Socket		1-2823582-9
	Standard	Pin	1-2823582-4	1-2823582-6
		Socket		

SELECTION GUIDE

Coding	Gender	Connector kit PN*	Matching with cable	Cable PN	Cable construction
D4	Male	1-2823588-1	CAT 5 RADOX 7.3mm H&S	12568935	4 x AWG22
	Female	1-2823588-2			
	Male	1-2823588-3	TE CAT 5	2320808-1	4 X AWG22
	Female	1-2823588-4			
A5	Male	1-2823587-1	TE CAT 5	2320808-1	4 X AWG22
	Female	1-2823587-2			
A8	Male	1-2823587-3	TE CAT 7	2297799-1	8 X AWG24
	Female	1-2823587-4			

***Connector kit includes contacts**

Others
Assembly video: www.te.com/usa-en/videos/industrial/m12-assembly-video.html

For easy handling on the PCB and compatability with wave soldering processes this range of front and rear mounted bulkhead M12 connectors provide an alternative PCB termination, offering increased PCBA positioning flexibility. The incorporated Wireclip has an integrated PCB retention feature to secure it in the PCB during the reflow process. Individual wires come stripped and pre-tinned ready for soldering.

PRODUCT PERFORMANCE DATA

Coding:

A-Coding with 5 poles or 8 poles

D-Coding with 4 poles

Standard wire length

80mm, custom lengths also available upon request

Front and rear bulkhead mounted versions

Integrated PCBA retention via pre assembled Wireclip

Panel thickness:

maximum 4mm

Solid machined full metal body

Temperature Range:
-40°C to 85°C (without cable boot)

Current Rating:
A-5 / D-4: 4 Amp, A-8 : 2 Amp

Operational Voltage:
A-5 / B-5 / D-4: 50V DC A-8: 30V DC

Contact Resistance:
<5 mΩ

Insulation Resistance:
>100 MΩ

Data Transmission Characteristics:
IEC 11801:2002 Class D

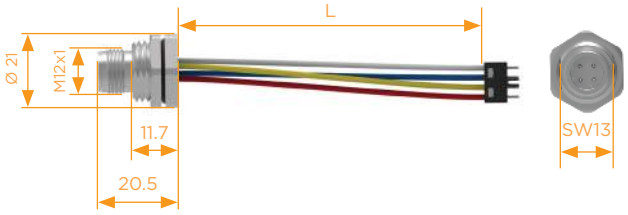
Data Transmission Rate:
Up to 1GBit/s

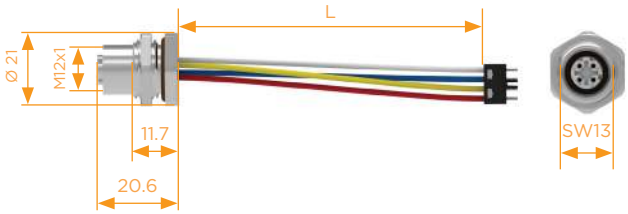
IP Rating:
IP67

Mating Cycles:
Up to 500 mating cycles with G1 contacts (standard G2 contacts 250 cycles)

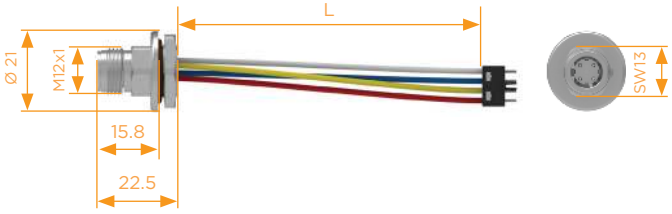
Standards:
EN61373 Class 1, Fire Performance NFF 16101, 16102, EN45545 HL3 R22/R23

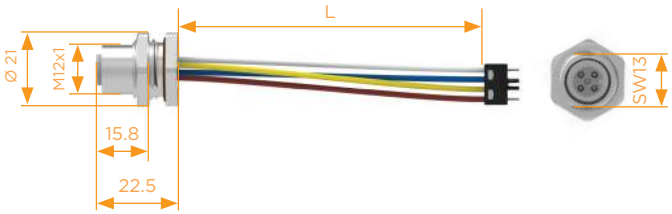
REAR PANEL MOUNT





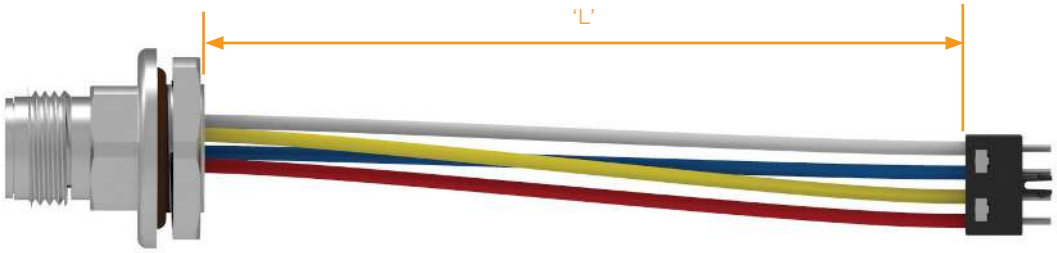
FRONT PANEL MOUNT





SELECTION GUIDE

Cable Length 'L'	Code	Mounting	Gender	Part Number	Description
80mm	D4	Front Panel	Male	1-2823589-1	M12 D-Code Male front panel mount
			Female	1-2823589-2	M12 D-Code Female front panel mount
		Rear Panel	Male	1-2823589-3	M12 D-Code Male rear panel mount
			Female	1-2823589-4	M12 D-Code Female rear panel mount
	A5	Front Panel	Male	1-2823590-1	M12 A-Code Male front panel mount
			Female	1-2823590-2	M12 A-Code Female front panel mount
		Rear panel	Male	1-2823590-3	M12 A-Code Male rear panel mount
			Female	1-2823590-4	M12 D-Code Female rear panel mount
	A8	Front Panel	Male	1-2823590-5	M12 A-Code Male front panel mount
			Female	1-2823590-6	M12 A-Code Female front panel mount
		Rear Panel	Male	1-2823590-7	M12 A-Code Male rear panel mount
			Female	1-2823590-8	M12 D-Code Female rear panel mount



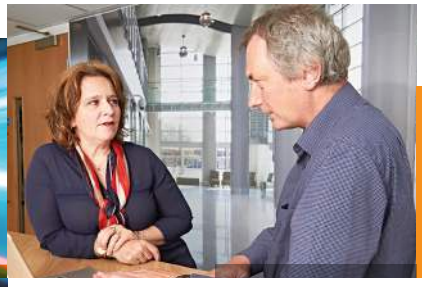
M12 Cable Assemblies

A, D and X-Coded Cable Assemblies

TE Connectivity's M12 cable assemblies fit heavy industrial applications. The cables are pre-assembled so customers can reduce installation time. With its ruggedized design and contacts, the cable can withstand severe shocks and vibrations according to EN 61373 Cat1 ClassB. They secure a very high data transmission speed up to 10 Gb/s and feature compact straight and right angle connectors allowing the cable to be used in confined areas.

The unique crimped cable strain relief reduces conductor breakage and ultimately system failure. At the same time, the crimping system creates a tamper proof installation, reducing accidental opening of the connector.

With its fire and smoke characteristics conforming to EN45545 HL3 this cable assembly can be used in public transportation applications as well as other industrial areas where fire and smoke compliancy is required.



M12 Cable Assemblies

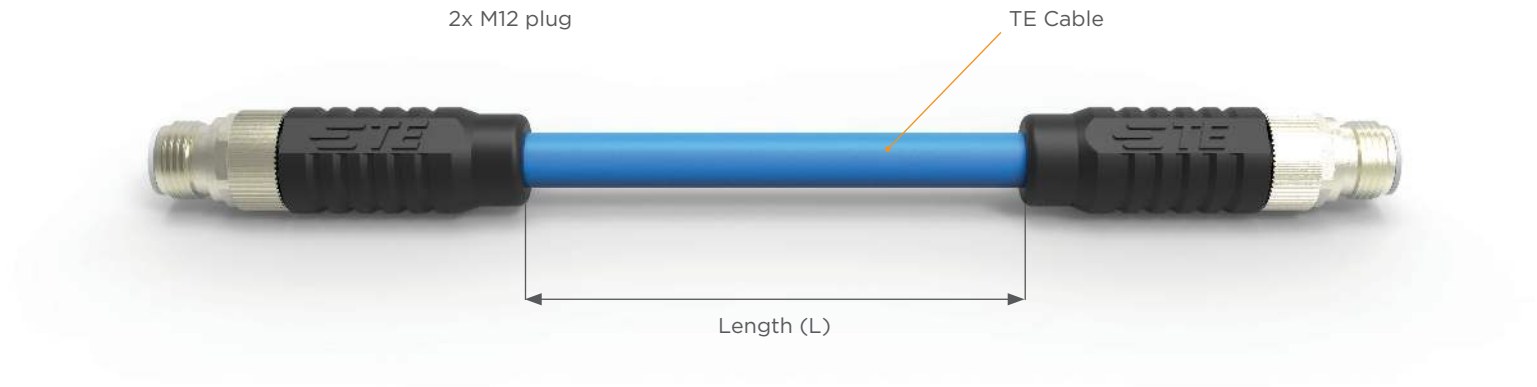
A, D and X-Coded Cable Assemblies

BENEFIT STATEMENTS

- Decrease installation time with pre-assembled cable assemblies
- Fire and smoke compliant according to EN45545 HL3
- With 42.5mm length, the right angle connector can be used in limited space areas
- Available with CAT5e or CAT7 Cable with data speed up to 10Gb/s allowing for higher network speed and capacity

FEATURES

- Pre-assembled cable assembly
- Crimped cable strain relief
- Available with CAT5e or CAT7 cable in D4-Male, A8-Male and X8-Male coding
- Shock and vibration compliant according to EN61373 Cat1 ClassB
- Available in lengths from 1m to 20m with 0.5m increments. Other lengths available upon request.



PRODUCT APPLICATIONS

- Public transportation
- Railway
- Tram
- Metro
- Heavy industrial applications

Left connector	D4-Male Straight	D4-Male Straight	A8-Male Straight	A8-Male Straight	X8-Male Straight
Right connector	D4-Male Straight	D4-Male Right Angle	A8-Male Straight TE	A8-Male Right Angle	X8-Male Straight
Cable	TE Cat 5 Cable PN2320808-1	TE Cat 5 Cable PN2320808-1	TE Cat 7 Cable PN2297799-1	TE Cat 7 Cable PN2297799-1	TE Cat 7 Cable PN2297799-1
Max. Data Speed	100Mb/s	100Mb/s	1Gb/s	1Gb/s	10Gb/s
Image					
1.0m	2322330-1	2322422-1	2322421-1	2322423-1	1-2317142-1
1.5m	2322330-2	2322422-2	2322421-2	2322423-2	1-2317142-2
2.0m	2322330-3	2322422-3	2322421-3	2322423-3	1-2317142-3
2.5m	2322330-4	2322422-4	2322421-4	2322423-4	1-2317142-4
3.0m	2322330-5	2322422-5	2322421-5	2322423-5	1-2317142-5
3.5m	2322330-6	2322422-6	2322421-6	2322423-6	1-2317142-6
4.0m	2322330-7	2322422-7	2322421-7	2322423-7	1-2317142-7
4.5m	2322330-8	2322422-8	2322421-8	2322423-8	1-2317142-8
5.0m	2322330-9	2322422-9	2322421-9	2322423-9	1-2317142-9
5.5m	1-2322330-0	1-2322422-0	1-2322421-0	1-2322423-0	2-2317142-0
6.0m	1-2322330-1	1-2322422-1	1-2322421-1	1-2322423-1	2-2317142-1
6.5m	1-2322330-2	1-2322422-2	1-2322421-2	1-2322423-2	2-2317142-2
7.0m	1-2322330-3	1-2322422-3	1-2322421-3	1-2322423-3	2-2317142-3
7.5m	1-2322330-4	1-2322422-4	1-2322421-4	1-2322423-4	2-2317142-4
8.0m	1-2322330-5	1-2322422-5	1-2322421-5	1-2322423-5	2-2317142-5
8.5m	1-2322330-6	1-2322422-6	1-2322421-6	1-2322423-6	2-2317142-6
9.0m	1-2322330-7	1-2322422-7	1-2322421-7	1-2322423-7	2-2317142-7
9.5m	1-2322330-8	1-2322422-8	1-2322421-8	1-2322423-8	2-2317142-8
10.0m	1-2322330-9	1-2322422-9	1-2322421-9	1-2322423-9	2-2317142-9
10.5	2-2322330-0	2-2322422-0	2-2322421-0	2-2322423-0	3-2317142-0
11.0m	2-2322330-1	2-2322422-1	2-2322421-1	2-2322423-1	3-2317142-1
11.5m	2-2322330-2	2-2322422-2	2-2322421-2	2-2322423-2	3-2317142-2
12.0m	2-2322330-3	2-2322422-3	2-2322421-3	2-2322423-3	3-2317142-3
12.5m	2-2322330-4	2-2322422-4	2-2322421-4	2-2322423-4	3-2317142-4
13.0m	2-2322330-5	2-2322422-5	2-2322421-5	2-2322423-5	3-2317142-5
13.5m	2-2322330-6	2-2322422-6	2-2322421-6	2-2322423-6	3-2317142-6
14.0m	2-2322330-7	2-2322422-7	2-2322421-7	2-2322423-7	3-2317142-7
14.5m	2-2322330-8	2-2322422-8	2-2322421-8	2-2322423-8	3-2317142-8
15.0m	2-2322330-9	2-2322422-9	2-2322421-9	2-2322423-9	3-2317142-9
15.5m	3-2322330-0	3-2322422-0	3-2322421-0	3-2322423-0	4-2317142-0
16.0m	3-2322330-1	3-2322422-1	3-2322421-1	3-2322423-1	4-2317142-1
16.5m	3-2322330-2	3-2322422-2	3-2322421-2	3-2322423-2	4-2317142-2
17.0m	3-2322330-3	3-2322422-3	3-2322421-3	3-2322423-3	4-2317142-3
17.5m	3-2322330-4	3-2322422-4	3-2322421-4	3-2322423-4	4-2317142-4
18.0m	3-2322330-5	3-2322422-5	3-2322421-5	3-2322423-5	4-2317142-5
18.5m	3-2322330-6	3-2322422-6	3-2322421-6	3-2322423-6	4-2317142-6
19.0m	3-2322330-7	3-2322422-7	3-2322421-7	3-2322423-7	4-2317142-7
19.5m	3-2322330-8	3-2322422-8	3-2322421-8	3-2322423-8	4-2317142-8
20.0m	3-2322330-9	3-2322422-9	3-2322421-9	3-2322423-9	4-2317142-9

Note: For more cable assembly options please contact a sales representative.

Cable Specifications		
	 TE Cat 5ᵉ cable	 TE Cat 7 cable
No of conductors	4	8
No of pairs	2 (Quad Core)	4 (Individually Shielded)
Cross section	22 AWG	24 AWG
Temp range	-40°C to +90°C	-20°C to +80°C
Construction	SFTP Insulation: Colour coded thermoplastic Conductor: Stranded, tin plated copper Inner Sheath: Low smoke, fire retardant, zero halogen Black Shield 1: Alumised polyester tape Shield 2: Tinned copper braid Jacket: Low smoke, fire retardant, zero halogen EM104 TE Blue	SFTP Insulation: Colour coded thermoplastic Conductor: Stranded tinned copper Shield 1: Alumised polyester tape Shield 2: Tinned copper braid Jacket: Low smoke, fire retardant, zero halogen
Features	Flame Retardant, halogen free, low toxicity, low smoke, oil resistant, fuel resistant	Flame retardant, halogen free, flexible, low toxicity, low smoke, oil resistant, fuel resistant
Standards	EN45545-2 R15/R16 - Hazard level 3, ANSI/TIA-568-C.2, DIN 5510-2	EN45545-2 R15/R16 - Hazard level 3, IEC61156-6, ISO/IEC 11801, DIN 5510-2

Wiring Diagram				
From Pin	Cable type			To Pin
1	Yellow	White Orange	White Orange	1
2	White	Orange	Orange	2
3	Orange	White Green	White Green	3
4	Blue	Blue	Green	4
5	–	Green	White Brown	5
6	–	White Blue	Brown	6
7	–	White Brown	White Blue	7
8	–	Brown	Blue	8

Connector Specifications			
			
	D4-Male	A8-Male	X8-Male
No of pins	4	8	8
Gender	Male (pin)		
Coding	D-Coding	A-Coding	X-Coding
Temperature range	-40°C to 85°C (without cable boot), -40°C to 70°C (with cable boot)		
Current rating	4A	2A	0.5A
Operational voltage	50V	30V	48V
Max Data transmission rate	100Mbit/s	1Gbit/s	10Gbit/s
IP rating	IP67		
Mating cycles	> 250 mating cycles		
Standards	EN61373 Cat1 Class B, NFF-16-101 I2/F2. EN45545-2 HL3 R22/R23		
Materials	Housing: Cu Alloy NI Plated, Insulator and contact holder: thermoplastic, Contact: Cu alloy Au plated, Sealing: Elastomer, Boot: TPE		

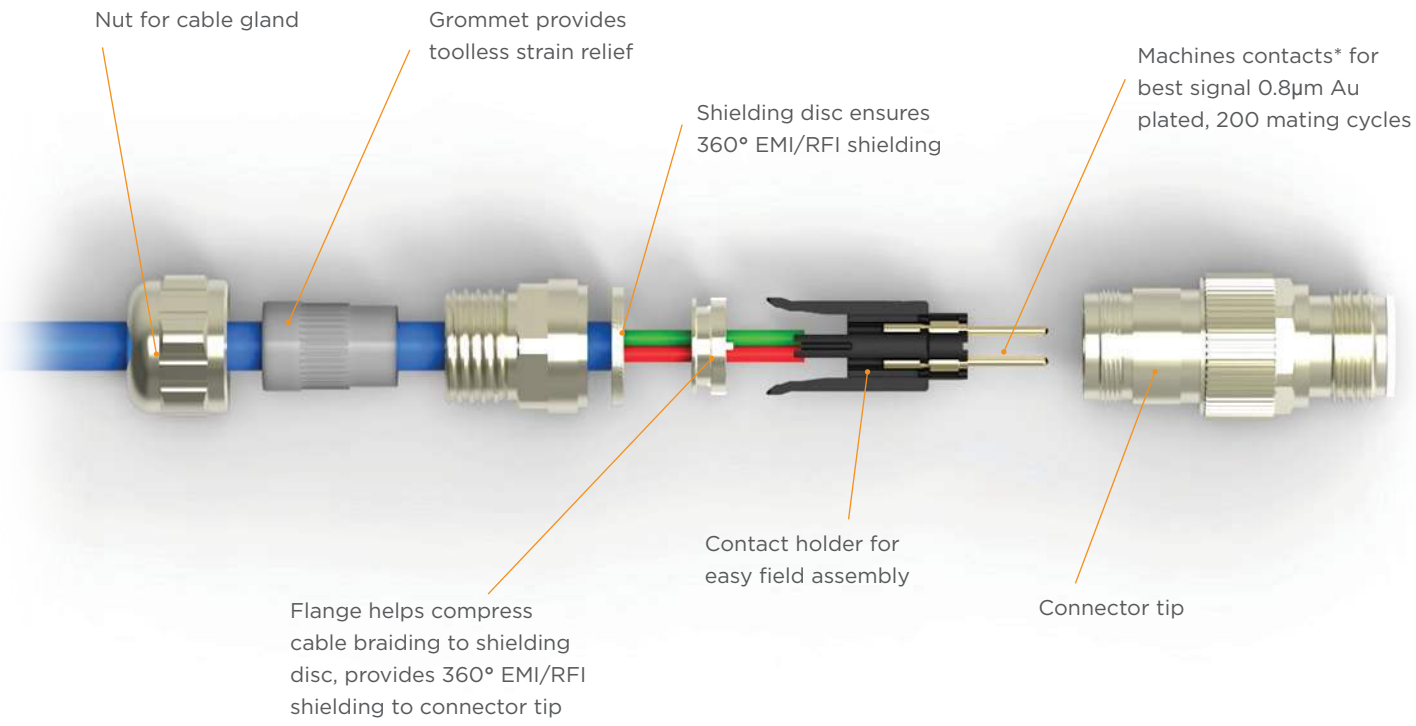
M12 Cable Gland Series
A and D-Coded Connectors

M12 Cable Connectors for field assembly. With 360° EMI/RFI shielding, machined crimp contacts, the M12 receptacle connectors with fully shielded housing are pre-assembled.

M12 CABLE GLAND SERIES

- Male and Female connectors
- D4, A5 and A8 coding
- IP 67 sealed
- Up to 4A for A5 and D4, up to 2A for A8 version
- Toolless strain relief assembly by cable gland

FEATURES



* Contacts to be ordered seperately

DESIGN FEATURES

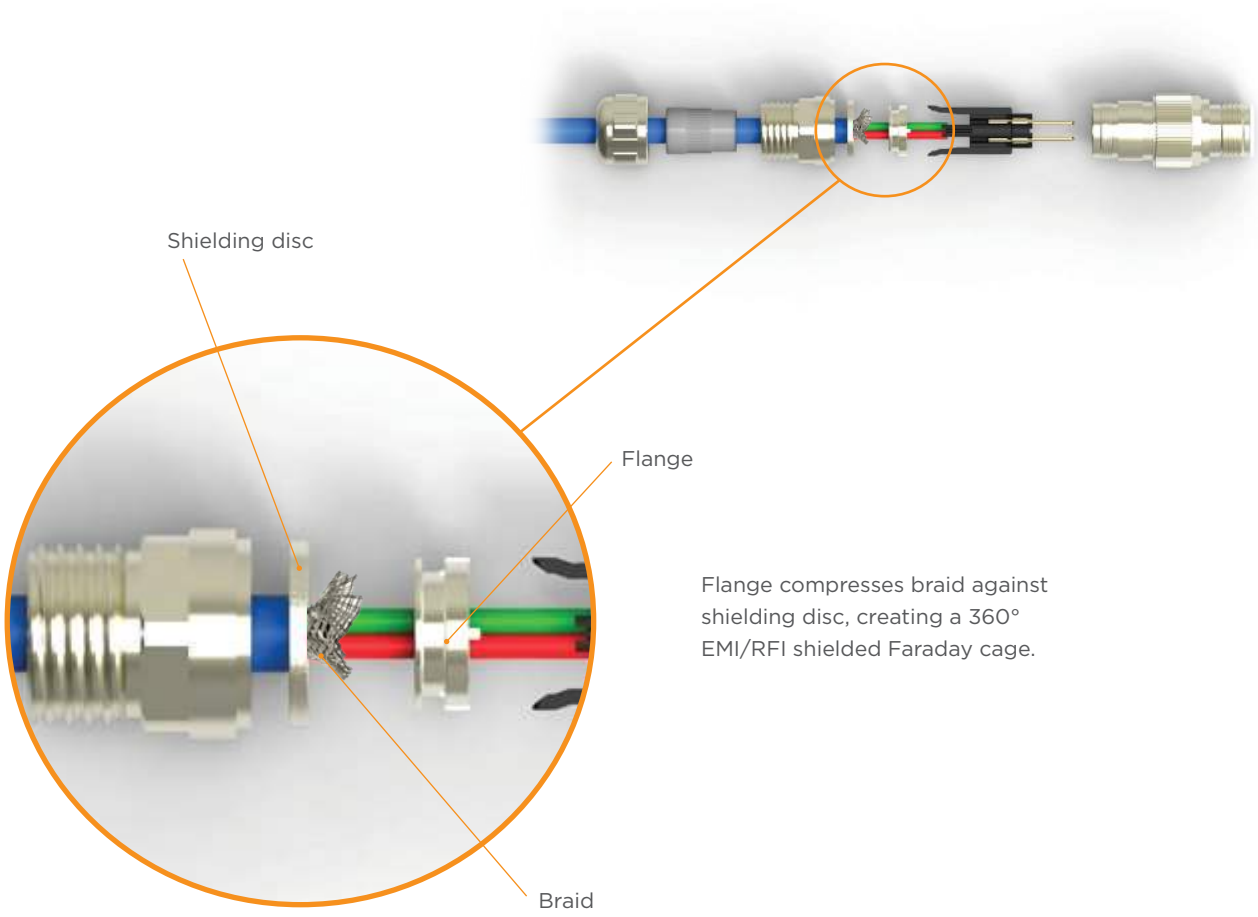
- Vibration-proof screw locking due to integral latching
- Defined recommended torque (of 1.5Nm) to optimize locking
- Easy assembly due to low number of components
- Male and female versions available
- Huge cable clamp range 4-9mm
- Compact and lightweight design:

Cable DIA	Diameter (mm)	Length (mm)
4-6.5 mm	15.5	50
5.5-9 mm	19.0	49

360° SHIELDING

The flange system with shielding disc and flange provides the following advantages:

- Secure 360° EMI/RFI shielding
- Safe cable shield transfer to device connector without interruption from vibration or shock
- Effective 360° EMI/RFI shielding achieved by full metal housing



Flange compresses braid against shielding disc, creating a 360° EMI/RFI shielded Faraday cage.

PRODUCT PERFORMANCE DATA

Temperature Range:
-40°C to 85°C (without cable boot)

Current Rating:
A-5 / D-4: 4 Amp, A-8 : 2 Amp

Operational Voltage:
A-5 / B-5 / D-4: 50V DC A-8: 30V DC

Contact Resistance:
<5 mΩ

Insulation Resistance:
>100 MΩ

Data Transmission Characteristics:
IEC 11801:2002 Class D

Data Transmission Rate:
Up to 1GBit/s

IP Rating:
IP67

Mating Cycles:
>200 mating cycles

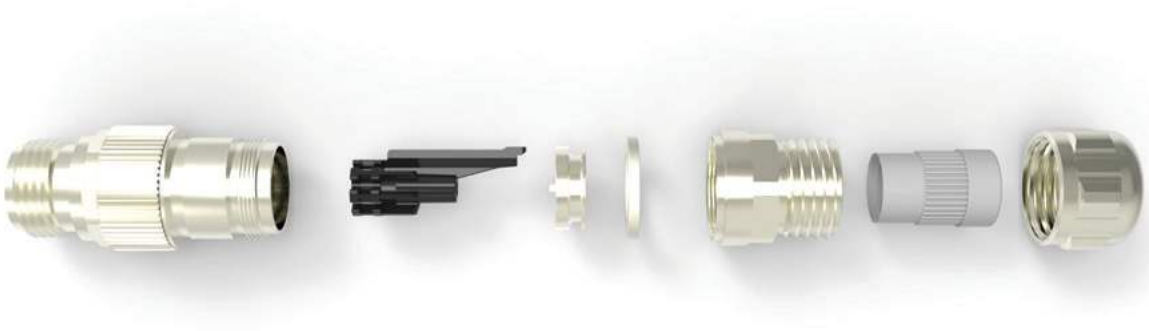
Standards:
EN61373 Class 1, Fire Performance NFF 16101, 16102, EN45545

Materials	
Housing	Cu alloy Ni plated
Insulator & Contact holder	Thermoplastic
Contact Material	Cu alloy
Contact Plating	Au
Sealing	Elastomer

BENEFITS

The flange system with shielding disc and flange provides the following advantages:

- Quick and easy field assembly time
- Very competitive pricing
- Rugged connector due to solid machined metal (brass) housing
- Machined 0.8 µm Au plated crimp contacts (min, 200 Mating cycles)
- IP67 water proofing



ORDERING INFORMATION

Coding	Picture	# Contacts	Gender	Cable Dia (mm)	PN
A-Coding		5	Male	4-6.5	1-2312527-1
				5.5-9	1-2312527-2
			Female	4-6.5	1-2312501-1
				5.5-9	1-2312501-2
		8	Male	4-6.5	1-2312547-1
				5.5-9	1-2312547-2
			Female	4-6.5	1-2308323-1
				5.5-9	1-2308323-2
D-Coding		4	Male	4-6.5	1-2308331-1
				5.5-9	1-2308331-2
			Female	4-6.5	1-2308336-1
				5.5-9	1-2308336-2

For Connector	Gender	Picture	Wire size	PN
D4 and A5 Coding	Male		AWG20	1-2314102-1
			AWG22	1-2314102-2
	Female		AWG20	1-2314103-1
			AWG22	1-2314103-2
A8 Coding	Male		AWG20	1-2314097-1
			AWG22	1-2314097-2
	Female		AWG20	1-2314101-1
			AWG22	1-2314101-2

For Connector	PN	Picture
Cable jacket stripping	2119000-1	
Crimping of contacts	601967-1 (standard) OR 601966-1 (compact)	

Contact Positioner	Crimp tool	Gender	D4 and A5 Coding	A8 Coding	X-Code
	Compact	Pin	601966-2	1-2823582-8	2-2823582-0
		Socket		1-2823582-9	2-2823582-1
	Standard	Pin	1-2823582-4	1-2823582-6	N/A
		Socket			

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1-1773953-2 01/19 Original