



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 |  |
| | |  |
| D-Coding | | |
| D4 | Industrial Ethernet, Ethernet/IP for Railway Applications |  |

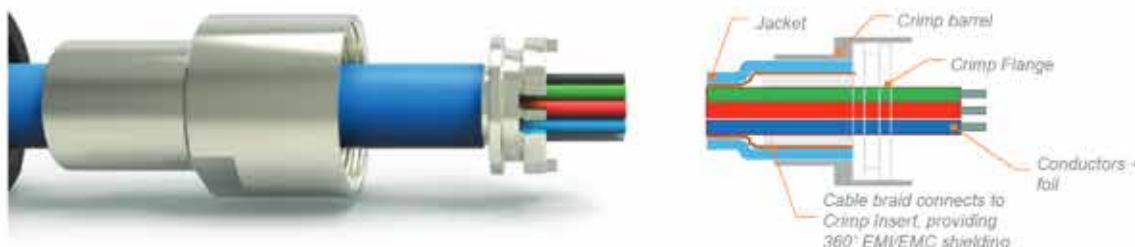
WHY CABLE JACKET CRIMPING?



| | |
|--|--|
| 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


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SECURE DATA TRANSMISSION: RUGGED DESIGN

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

Further, this rugged connector design provides:

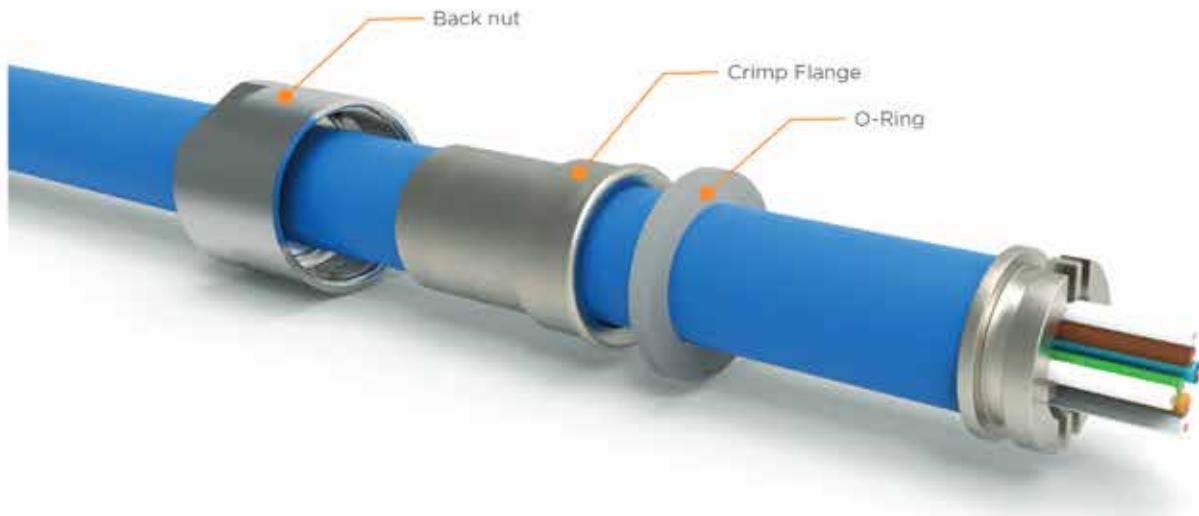
- Vibration proof screw locking due to integral latching
- Defined recommended Torque (1.5Nm) to guarantee optimal locking
- M12 Hexagon Locking nut
- 2x Silicon O-Rings to achieve IP67
- Tamper proof connector system



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

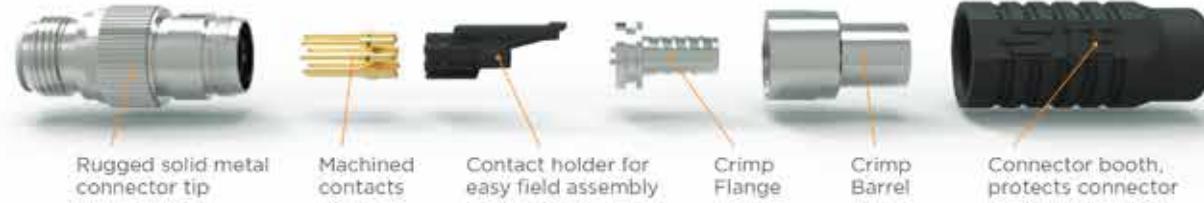
- Vibration-proof screw locking due to integral latching.
- M12 hexagon locking nut.
- Defined recommended torque (of 1.5Nm) to optimize locking.
- Silicon O-rings to achieve IP67.
- Tamper proof.
- EN45545 compliant.
- Solid machined brass housing.

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

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 | AB 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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| 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 |
| A5 | 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 |
| | 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 |

*Connector kit includes contacts

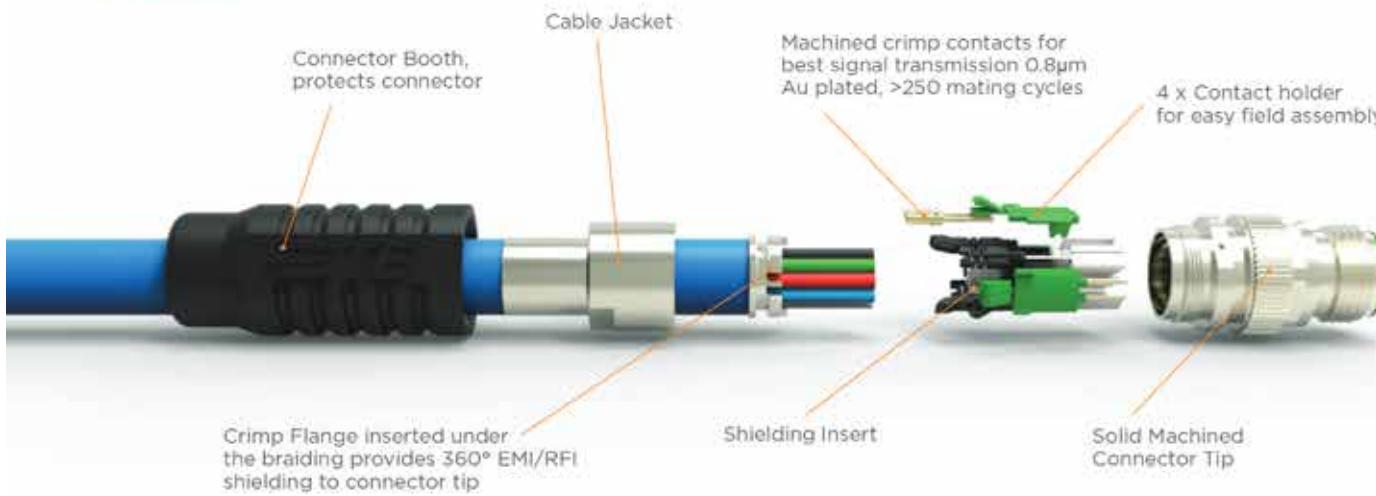
OthersAssembly video: www.te.com/usa-en/videos/industrial/m12-assembly-video.html<https://cwindustrial.co.za>

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 components 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 länge (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 |

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 compatibility 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)

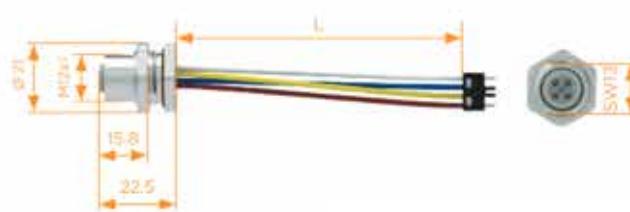
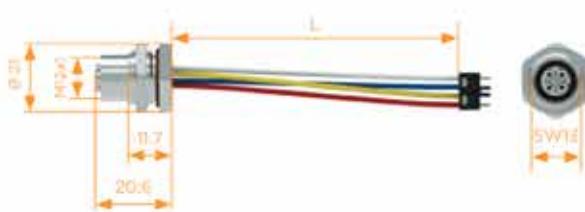
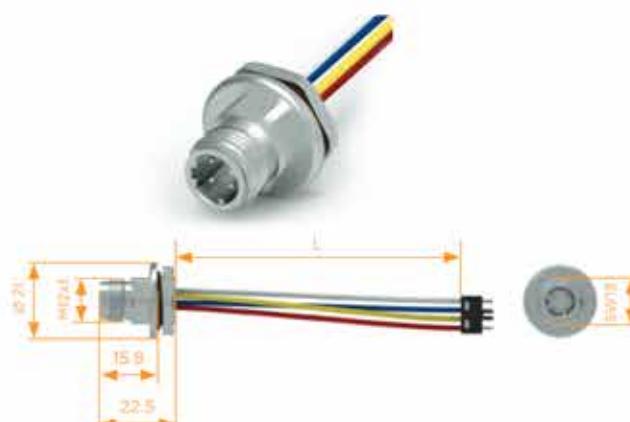
Standards:

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

REAR PANEL MOUNT



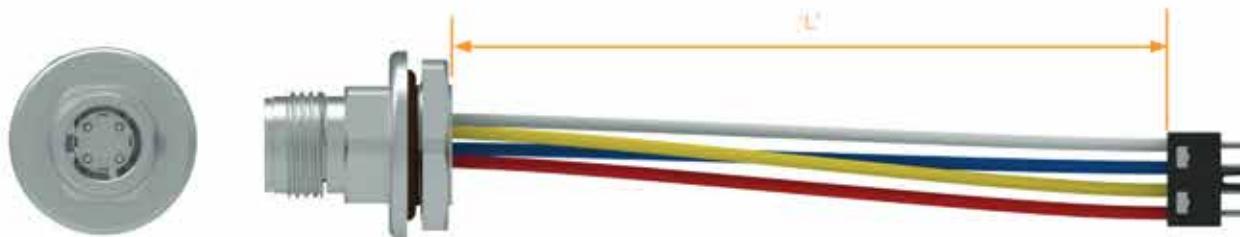
FRONT PANEL MOUNT



<https://cwindustrial.co.za>

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 |





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.



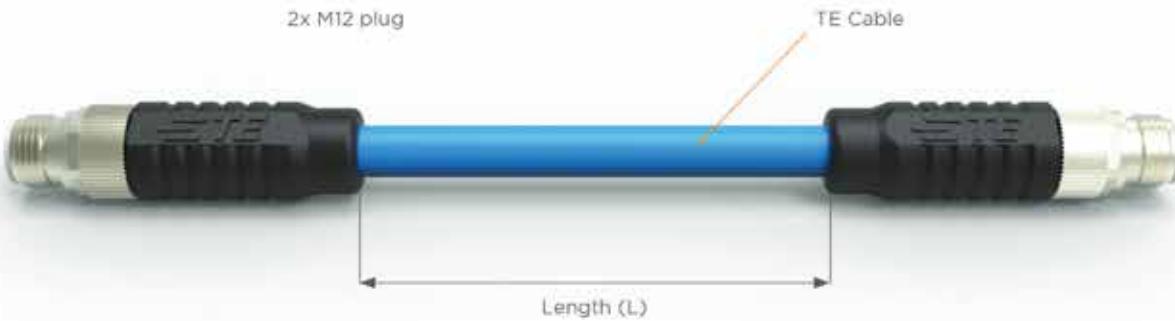
<https://cwindustrial.co.za>

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.

M12 Cable Assemblies

A, D and X-Coded Cable Assemblies

| 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 |

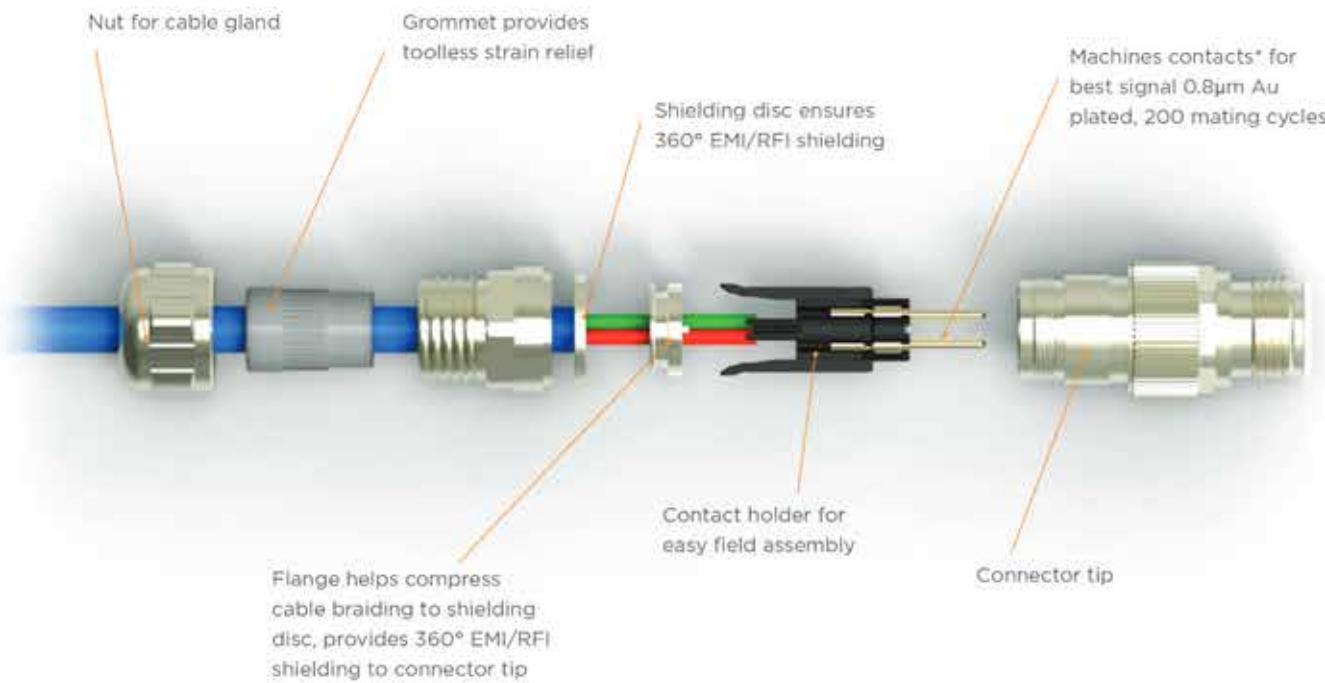
| Wiring Diagram | | | | |
|----------------|------------|--------------|--------------|--------|
| From Pin | Cable type | | | To Pin |
| | | | | |
| 1 | Yellow | White Orange | White Orange | 1 |
| 2 | White | Orange | Orange | 2 |
| 3 | Orange | White Green | White Green | 3 |
| 4 | Blue | Blue | 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 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 separately

<https://cwindustrial.co.za>

DESIGN FEATURES

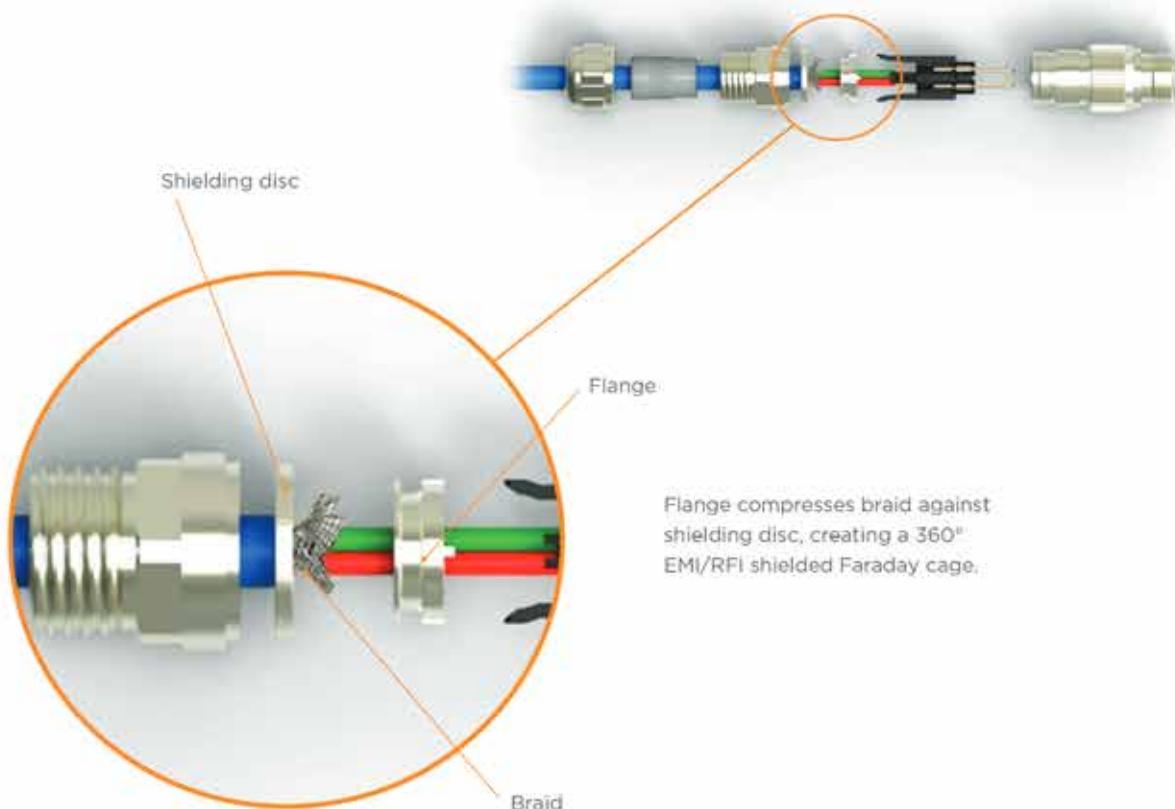
- Vibration-proof screw locking due to integral latching
- Defined recommended torque (of 1.5Nm) to optimize locking
- Easy assembly due to low number of components
- Male and female versions available
- Huge cable clamp range 4-9mm
- Compact and lightweight design:

| 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



PRODUCT PERFORMANCE DATA**Temperature Range:**

-40°C to 85°C (without cable boot)

Current Rating:

A-5 / D-4: 4 Amp, A-B : 2 Amp

Operational Voltage:

A-5 / B-5 / D-4: 50V DC A-B: 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


<https://cwindustrial.co.za>

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 | | | |



Authorized Distributor of TE Connectivity