

# CIRCULAR MICRO-D CONNECTORS

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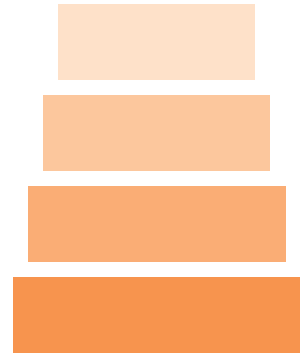
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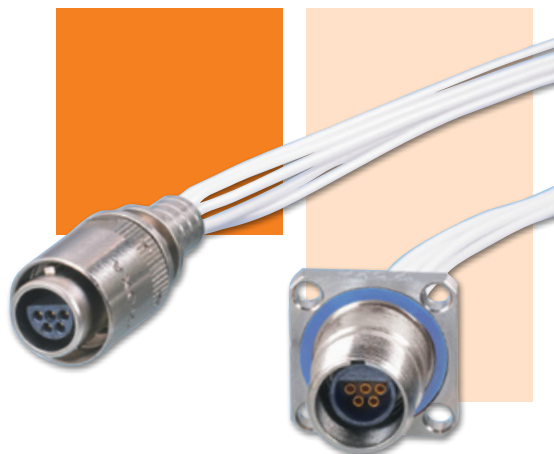
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**PANEL CUT-OUTS & ACCESSORIES**

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▲ ENGINEERING DEPARTMENT

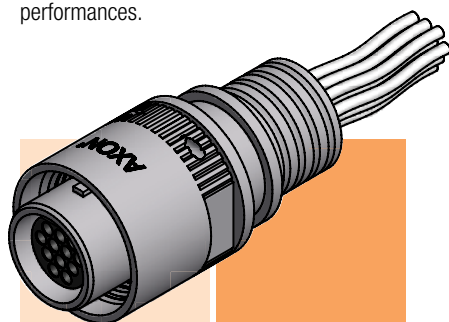
# Micro-D Line<sup>®</sup>, twist

## MINIATURE CIRCULAR CONNECTORS SYSTEMS IN HIGH

### WEIGHT & SPACE SAVING

AXON' miniature circular connectors offer reliable connections for systems requiring reduced weight and miniaturization. Medical sensors, military equipment, research centres, nuclear power control systems, aircraft electronics and avionics equipment are just a few examples.

The circular connector range benefits from the expertise in the AXON' D-Line<sup>®</sup> MIL-DTL-83513 D-Shape connectors and features easy-to-use connect and disconnect functionality. The MIL-DTL-83513 is the standard which dictates the design and performance for Micro-D connectors. These well-known robust connectors rise to the challenge of demanding applications and harsh environments. Despite their high pin density, small size and lightweight bodies, the AXON' miniature circular connectors offer similar performances to their rectangular Micro-D cousins with the added benefit of good EMI performances.



### RELIABLE TWIST PIN CONTACT

The heart of both the rectangular and circular connectors is the twist pin contact, which by its design and performance is highly reliable and enables the system to meet the most severe requirements - often significantly more so than stipulated in the MIL-DTL-83513 standard.

### A COMPLETE RANGE FOR EVERY REQUIREMENT

Designed with 360° shield termination, durable twist-pin contacts and IP 67/68\* waterproofness (IEC60529), the connectors are suitable for use in many harsh environments.

The standard range of Micro-D circular connectors consists of 5 basic types:

- **Metric thread connectors - MCAT** - This variant is ideal for applications which require space and weight saving and good EMI performances.
- **Three lug bayonet connectors - MCA3B** - Used when quick coupling is needed.
- **Triple start connectors (with anti-decoupling) - MCAC** - This version is specially designed to withstand vibration.
- **Breakaway connectors - MCABK** - This is a connector with an in-built spring to secure the connection. Quick to connect and disconnect, lightweight and small.
- **Plastic shells - MCA** - These circular plastic connectors are easy to use, very small and lightweight. They are ideal for applications which require easy connection and space saving.

In addition to the standard range of circular Micro-D connectors, AXON' offers **PCB connectors** designed for our 4 types of metal shell connectors.

Please refer to our *Product selection guide* page 334 to choose the most appropriate solution.

\*: IP 67: The standard defines an immersion up to 1 m for 30 minutes.

IP 68: Immersion beyond 1 m and conditions specified by the manufacturer.





▲ METROLOGY LABORATORY



▲ CLEAN ROOM

# pin circular solutions

## FOR CRITICAL INTERCONNECT TECHNOLOGY APPLICATIONS

### CUSTOM DESIGNED SOLUTIONS

In addition to standard types, our engineering team can assist in designing any special version or custom design to meet specific requirements. Some examples of tailor-made connectors and assemblies are presented in this brochure (see page 77). Our sales and design team will help you in the choice and design of your specific requirements for a complete interconnect solution based on AXON' miniature circular connectors.

Maximize your supply chain efficiency by ordering D-Line® circular connectors from AXON' as complete cable assemblies with overmouldings.



▲ HIGH DENSITY CIRCULAR CONNECTOR

#### Main characteristics of AXON' miniature circular connectors

| FEATURES             | VALUE                  |
|----------------------|------------------------|
| CURRENT RATING       | 3 A max.               |
| CONTACT RESISTANCE   | 8 mΩ max.              |
| DURABILITY           | 500 mating cycles min. |
| TEMPERATURE RANGE    |                        |
| - Standard Version   | -55°C / +150°C         |
| - High Temp. Version | -55°C / +200°C         |
| VIBRATION            | 20 g's                 |
| SHOCK                | 50 g's                 |
| WATER RESISTANCE     | IP67 / IP68*           |

\*: IP 67: The standard defines an immersion up to 1 m for 30 minutes.

IP 68: Immersion beyond 1 m and conditions specified by the manufacturer.

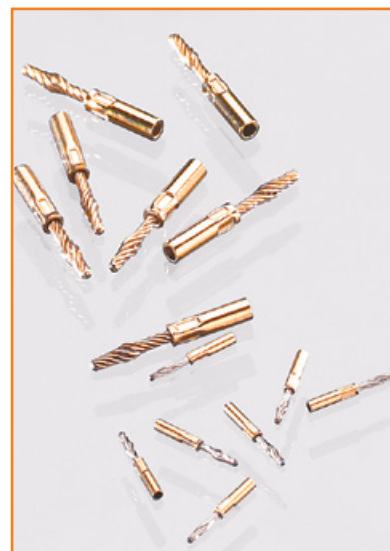
### QUALITY ASSURANCE

|          |         |           |          |           |             |
|----------|---------|-----------|----------|-----------|-------------|
| ISO 9001 | EN 9100 | ISO 14001 | TS 16949 | ISO 13485 | OHSAS 18001 |
|----------|---------|-----------|----------|-----------|-------------|

# TWIST PIN CONTACT TECHNOLOGY

The Micro-D male contact is made up of 10 strands of beryllium-copper and copper alloy twisted together, welded then bumped. These sprung strands are in fact compressed during insertion into the turned female contact and therefore a high number of electrical contact points is permanently assured, while retaining flexibility and ease of insertion / extraction.

The plating of these contacts is a minimum of 1.27 microns of gold in accordance with MIL-G-45204 type 2, class 1, and this gives additional operational security. Furthermore, the Twist Pin contact is auto-guided into its female contact, even if it is not centred in its recess.



▲ TWIST PIN CONTACTS

As with all contacts conforming to MIL-DTL-83513, the AXON' Micro-D contacts accept as standard 24, 26, 28 and 30 AWG wires. In order to meet specific customer requests, AXON' can also offer solutions for large section wires up to 22 AWG and for miniature wires as small as 36 AWG.

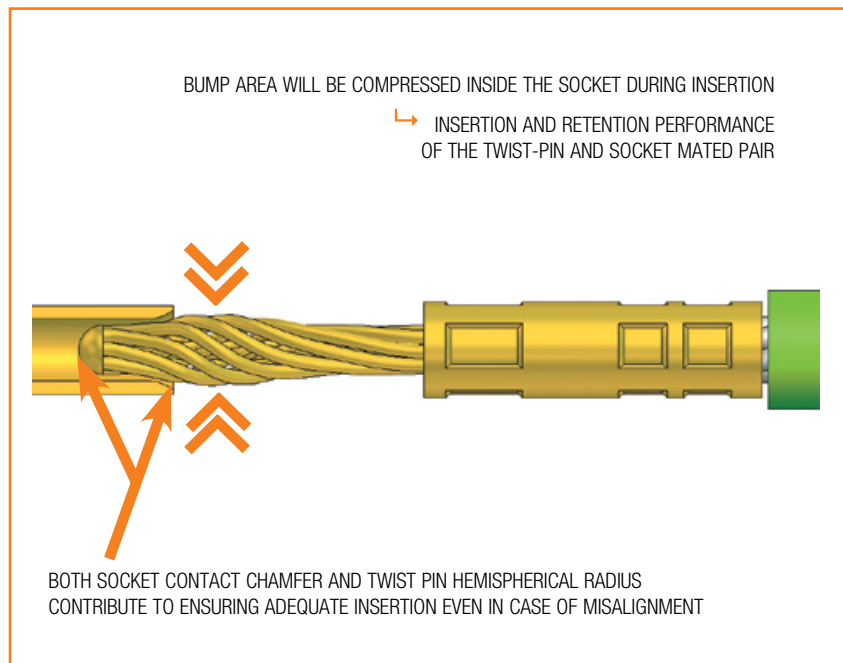
## ► Twist pin performance versus MIL-DTL-83513 specification

| CHARACTERISTIC                               | AXON' TWIST PIN      | MIL REQUIREMENT    |
|----------------------------------------------|----------------------|--------------------|
| NUMBER OF CONTACT POINTS WITH FEMALE CONTACT | 7                    | No requirement     |
| CONTACT RESISTANCE (FOLLOWING TEST §3.5.6)   | Max 3 mΩ (under 3 A) | 8 mΩ (under 2.5 A) |
| VIBRATION (NO DISCONTINUITY > 1 μs)          | 200 g*               | 20 g*              |
| SHOCK (NO DISCONTINUITY > 1 μs)              | 500 g*               | 50 g*              |
| CRIMPING                                     | 22 to 36 AWG         | 24 to 26 AWG       |

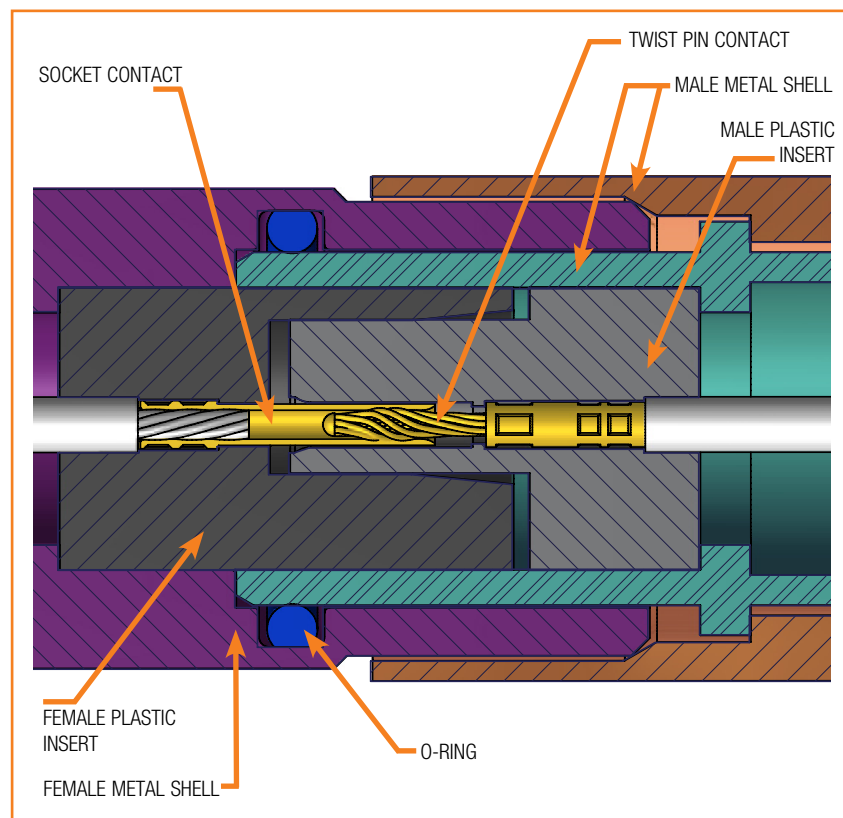
\*: Vibration & shock values depending on test profiles.



## ► Before insertion



## ► After insertion



# PRODUCT SELECTION GUIDE

|                    | METRIC THREAD<br>MCAT                                                                    | THREE LUG BAYONET<br>MCA3B                                                          | TRIPLE START THREAD<br>(ANTI-DECOUPLING)<br>MCAC                                     |
|--------------------|------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|                    |        |  |  |
| COUPLING TYPE      | SIMPLE METRIC THREAD                                                                     | QUICK COUPLING 3 LUG BAYONET                                                        | TRIPLE START TRAPEZOIDAL THREAD                                                      |
| SHELL TYPE         | CABLE PLUGS AND JACKS<br>PANEL RECEPTACLE: JAM NUT OR SQUARE FLANGE, REAR OR FRONT MOUNT |                                                                                     |                                                                                      |
| PCB VERSIONS       | AVAILABLE                                                                                |                                                                                     |                                                                                      |
| COUPLING METHOD    | ISO METRIC THREAD, TORQUE TIGHTENING REQUIRED                                            | HAND COUPLING                                                                       | 1.5 TURN TO MATE, SECURED WITH RATCHET SYSTEM, HAND COUPLING                         |
| MATERIAL & PLATING | BRASS + NICKEL PLATING                                                                   | BRASS + NICKEL PLATING                                                              | BRASS + NICKEL PLATING                                                               |
| N° OF CONTACTS     | 5, 7, 12, 15, 19 & 37                                                                    | 5, 7, 12, 15, 19 & 37                                                               | 5, 7, 12, 15, 19 & 37                                                                |
| ADVANTAGES         | VERY SMALL SIZE                                                                          | QUICK CONNECT / DISCONNECT                                                          | QUICK THREAD MATING, GOOD FOR VIBRATION                                              |
| EASE OF CONNECTION | ★★                                                                                       | ★★★★                                                                                | ★★★                                                                                  |
| SPACE SAVING       | ★★★★                                                                                     | ★★★                                                                                 | ★★                                                                                   |
| WEIGHT SAVING      | ★★★★                                                                                     | ★★★                                                                                 | ★★                                                                                   |
| EMI PERFORMANCE    | ★★★★                                                                                     | ★★                                                                                  | ★★★                                                                                  |
| TEMPERATURE        | -55°C / +150°C OR -55°C / +200°C, DEPENDING ON RESIN OPTION                              |                                                                                     |                                                                                      |
| WATER RESISTANCE   | IP67 / IP68*                                                                             |                                                                                     |                                                                                      |
| VIBRATION          | 20 g                                                                                     |                                                                                     |                                                                                      |
| SHOCK              | 50 g                                                                                     |                                                                                     |                                                                                      |
| MATING CYCLES      | MINIMUM 500 CYCLES, PLEASE SPECIFY IF MORE ARE REQUIRED                                  |                                                                                     |                                                                                      |
| APPLICATIONS       | AERONAUTICS, MILITARY, ON-BOARD ELECTRONICS, MISSILES, RADARS, ETC.                      |                                                                                     |                                                                                      |

\*: IP 67: The standard defines an immersion up to 1 m for 30 minutes.

IP 68: Immersion beyond 1 m and conditions specified by the manufacturer.

# PRODUCT SELECTION GUIDE

| BREAKAWAY<br>MCABK                                                                             | PLASTIC SHELLS<br>MCA                                                              |                                                                                     |
|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|              |  |  |
| BREAKAWAY TYPE CONNECTOR,<br>WITH SPRING TO SECURE<br>CONNECTION                               | READY TO MATE PLASTIC INSERT                                                       | COUPLING TYPE                                                                       |
| CABLE PLUGS AND JACKS<br>PANEL RECEPTACLE: JAM NUT OR<br>SQUARE FLANGE, REAR OR FRONT<br>MOUNT | CABLE PLUGS & JACKS, SOLDER<br>CUPS                                                | SHELL TYPE                                                                          |
| AVAILABLE                                                                                      | ON REQUEST                                                                         | PCB VERSIONS                                                                        |
| HAND COUPLING                                                                                  | HAND COUPLING                                                                      | COUPLING METHOD                                                                     |
| ALUMINIUM + NICKEL PLATING                                                                     | LCP PLASTIC                                                                        | MATERIAL & PLATING                                                                  |
| 5, 7, 12, 15, 19 & 37                                                                          | 5, 7, 12, 15, 19 & 37                                                              | N° OF CONTACTS                                                                      |
| QUICK CONNECT / DISCONNECT<br>CALIBRATED RELEASE FORCE                                         | «EASY TO USE», VERY SMALL AND<br>LIGHTWEIGHT                                       | ADVANTAGES                                                                          |
| ★★★★★                                                                                          | ★★★★★                                                                              | EASE OF CONNECTION                                                                  |
| ★★★                                                                                            | ★★★★★                                                                              | SPACE SAVING                                                                        |
| ★★★★★                                                                                          | ★★★★★                                                                              | WEIGHT SAVING                                                                       |
| ★★★                                                                                            | N/A                                                                                | EMI PERFORMANCE                                                                     |
| -55°C / +150°C OR -55°C / +200°C, DEPENDING ON RESIN OPTION                                    |                                                                                    | TEMPERATURE                                                                         |
| IP67 / IP68*                                                                                   | N/A                                                                                | WATER RESISTANCE                                                                    |
| 20 g                                                                                           | N/A                                                                                | VIBRATION                                                                           |
| 50 g                                                                                           | N/A                                                                                | SHOCK                                                                               |
| MINIMUM 500 CYCLES, PLEASE SPECIFY IF MORE ARE REQUIRED                                        |                                                                                    | MATING CYCLES                                                                       |
| MODERN SOLDIER SYSTEMS,<br>GENERAL INDUSTRY.                                                   | MEDICAL, MILITARY,<br>PROTOTYPING.                                                 | APPLICATIONS                                                                        |

GENERAL  
INFORMATION

Circular  
Micro-D connectors

# CONNECTOR DIMENSIONS

All drawings on these two pages are drawn at scale 1:1. Dimensions are in millimeters.  
The front views are 12 way connectors.

1:1

**METRIC THREAD**

**THREE LUG BAYONET**

**37 WAYS**

Ø18.9

Ø20.7

**19 WAYS**

Ø16.0

Ø17.7

**12/15 WAYS**

Ø12.6

Ø14.7

**5/7 WAYS**

Ø10.1

Ø13.2

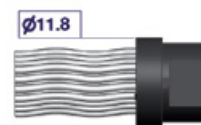
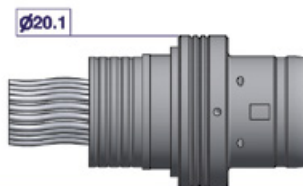
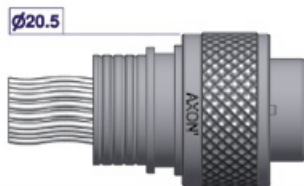
# CONNECTOR DIMENSIONS

|                   | METRIC<br>THREAD | THREE LUG<br>BAYONET | ANTI-<br>DECOUPLING | BREAKAWAY   | PLASTIC     |
|-------------------|------------------|----------------------|---------------------|-------------|-------------|
| <b>37 WAYS</b>    | 18.9 (.744)      | 20.7 (.815)          | 20.5 (.807)         | 20.1 (.791) | 11.8 (.465) |
| <b>19 WAYS</b>    | 16 (.63)         | 17.7 (.697)          | 17.5 (.689)         | 17.4 (.685) | 9.2 (.362)  |
| <b>12/15 WAYS</b> | 12.6 (.496)      | 14.7 (.579)          | 15.5 (.61)          | 15.1 (.594) | 6.9 (.272)  |
| <b>5/7 WAYS</b>   | 10.1 (.398)      | 13.2 (.52)           | 13.5 (.531)         | 15.1 (.594) | 5.7 (.224)  |

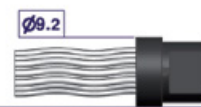
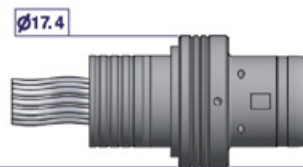
Dimensions are in millimeters (inches).



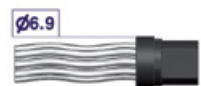
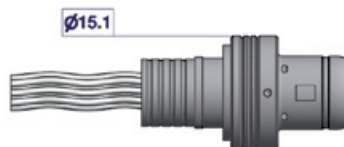
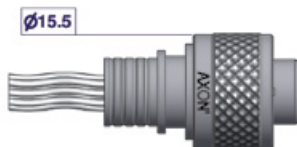
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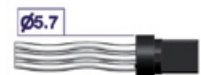
**37 WAYS**



**19 WAYS**

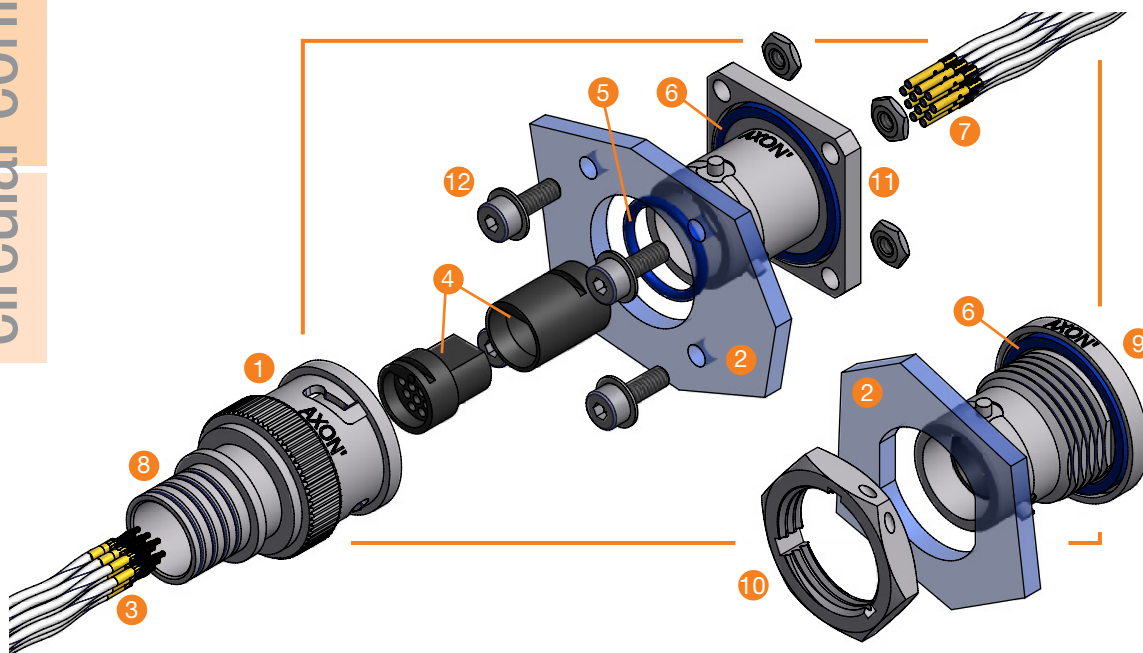


**12/15 WAYS**



**5/7 WAYS**

## GLOSSARY OF TERMS



|                          |    |                                                                                                                    |
|--------------------------|----|--------------------------------------------------------------------------------------------------------------------|
| IN-LINE PLUG SHELL       | 1  | Cable connector metal body                                                                                         |
| PANEL CUT-OUT            | 2  | Shape used to lock socket receptacle in position                                                                   |
| TWIST PIN                | 3  | Male contact, fitted to male connector                                                                             |
| INSERT                   | 4  | Moulded insulation housing, separating each connection                                                             |
| INTERNAL O-RING          | 5  | For waterproofness between plug and socket connector                                                               |
| PANEL SEAL               | 6  | For waterproofness between the panel and the socket connector                                                      |
| SOCKET                   | 7  | Female contact, fitted to female connector                                                                         |
| REAR FUNNEL              | 8  | For in-line plugs only - Short version for heatshrink boot only or long for screen termination and heatshrink boot |
| JAM NUT RECEPTACLE       | 9  | Female connector metal body locked by special nut                                                                  |
| SPECIAL NUT              | 10 | Locks the jam nut socket receptacle to the panel                                                                   |
| SQUARE FLANGE RECEPTACLE | 11 | Female connector metal body locked by 4 screws                                                                     |
| HEX. SOCKET HEAD SCREW   | 12 | Locks the square flange socket receptacle to the panel                                                             |

- Standard connector ● Manufactured to the standard dimensions and specifications.
- Special connector ● A standard connector modified to meet specific customer requirements.
- Custom made connector ● Designed to meet specific customer requirements.
- Pigtail connector ● Connector with insulated or uninsulated wires.
- Solder cup connector ● Connector with solder cup type of contacts, usually used for prototyping.
- Harness ● Cable assembly with two or more connectorised ends.
- LCP ● Liquid Crystal Polymer.
- Potting ● Epoxy compound used as an encapsulant.
- In-line plug ● Male or female cable connector.
- Panel mount connector ● Female connector designed to be mounted onto a panel, either with a nut or 4 screws.

# GENERAL CHARACTERISTICS

Based on the standard technology of our Micro-D rectangular range with twist pin contacts, the performances and characteristics of the Micro-D circular range are ideally suited to equipment and applications where weight, miniaturisation and long term performance are required. It is available in 6 contact arrangements, from 05 to 37 contacts.

## TECHNICAL DATA SHEET

| CHARACTERISTIC                                                                     | SPECIFICATION                                                                                 | TEST METHOD                  |
|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|------------------------------|
| CURRENT RATING                                                                     | 3 A max.                                                                                      | EIA-364-70                   |
| CONTACT RESISTANCE                                                                 | 8 mΩ max.                                                                                     | EIA-364-06                   |
| INSULATION RESISTANCE                                                              | 5000 MΩ min. @ 500 V <sub>dc</sub>                                                            | EIA-364-21                   |
| DIELECTRIC WITHSTANDING VOLTAGE<br>- SEA LEVEL 0 M<br>- ALTITUDE 21 KM (70.000 FT) | 600 V <sub>AC</sub><br>150 V <sub>AC</sub>                                                    | EIA-364-20                   |
| CONTACT ENGAGING & SEPARATION FORCE<br>(FOR TWIST-PIN CONTACT PAIR)                | 170 g max. (6 oz)<br>14 g min. (0.5 oz)                                                       | EIA-364-37                   |
| BREAKAWAY CONNECTOR DE-MATING FORCES<br>(AVERAGE, FOR WHOLE CONNECTORS)            | 5 ways: 25 N - 7 ways: 27 N<br>12 ways: 30 N - 15 ways: 35 N<br>19 ways: 50 N - 37 ways: 65 N | EIA-364-09                   |
| CONTACT RETENTION                                                                  | 2.26 kg (5 lbs) for 5 seconds min.                                                            | EIA-364-29                   |
| DURABILITY                                                                         | 500 mating cycles min.                                                                        | EIA-364-09                   |
| TEMPERATURE RANGE: - STANDARD<br>- HIGH TEMPERATURE                                | -55°C / +150°C<br>-55°C / +200°C                                                              |                              |
| VIBRATION                                                                          | 20 g - no discontinuity > 1 μs                                                                | EIA-364-28 TEST CONDITION IV |
| SHOCK                                                                              | 50 g - no discontinuity > 1 μs                                                                | EIA-364-27 TEST CONDITION E  |
| SALT SPRAY                                                                         | 48 Hours                                                                                      | EIA-364-26 TEST CONDITION B  |
| WATER RESISTANCE                                                                   | IP67                                                                                          | IEC 60529                    |
| HUMIDITY                                                                           | Insulation resistance > 1 MΩ                                                                  | EIA-364-31 TEST METHOD IV    |
| SHELL TO SHELL CONDUCTIVITY                                                        | 10 mΩ max                                                                                     | EIA-364-83                   |
| SHIELDING EFFECTIVENESS                                                            | 40 to 55 dB up to 10 GHz<br>(depending on versions)                                           | IEC 61276                    |

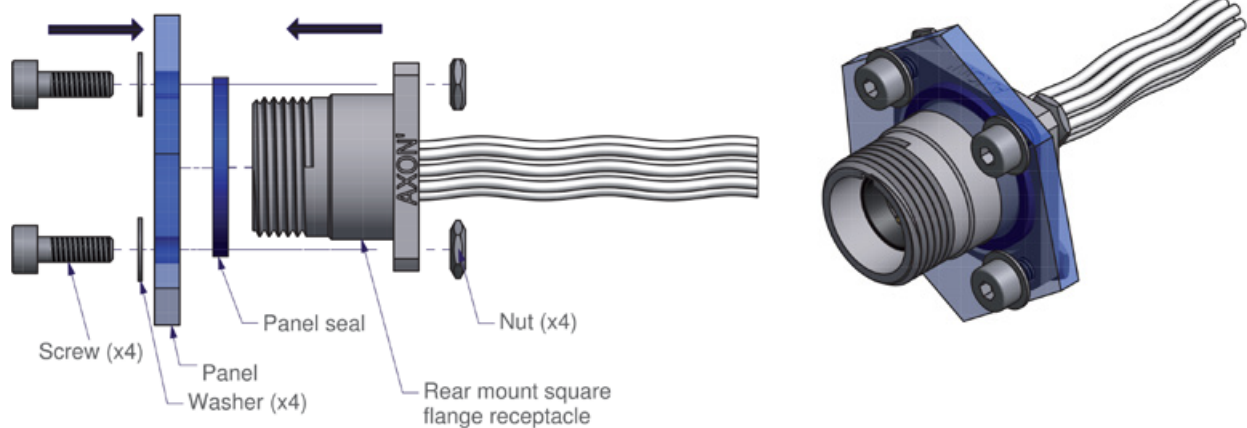
## MATERIALS AND FINISHES

| COMPONENT                     | MATERIAL                                                                                               | FINISH                                                                                                                                                                                                          |
|-------------------------------|--------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MALE CONTACT (TWIST PIN)      | COPPER AND BERYLLIUM COPPER                                                                            | GOLD PLATING IN ACCORDANCE WITH ASTM-B488, TYPE II, CLASS 1 (1.27μm (0.00005 in) MIN), CODE C OVER NICKEL UNDERPLATE IN ACCORDANCE WITH SAE-AMS-QQ-N-290, CLASS 2 (1.27 μm (0.00005 in) TO 3.81μm (0.00015 in)) |
| FEMALE CONTACT                | COPPER ALLOY                                                                                           |                                                                                                                                                                                                                 |
| METAL SHELLS / FUNNELS / NUTS | ALUMINIUM ALLOY, TYPE 7075                                                                             | ELECTROLESS NICKEL PLATING IN ACCORDANCE WITH SAE-AMS2404, CLASS 4, .0005 INCH MIN.                                                                                                                             |
|                               | BRASS                                                                                                  | ELECTROLESS NICKEL PLATING IN ACCORDANCE WITH SAE-AMS2404, .0005 INCH MIN.                                                                                                                                      |
|                               | STAINLESS STEEL, 300 SERIES                                                                            | PASSIVATION IN ACCORDANCE WITH SAE-AMS2700                                                                                                                                                                      |
| PLASTIC INSERT / PCB TRAY     | LIQUID CRYSTAL POLYMER, 30% LOADED GLASS FIBRE POLYESTER, 94V0, IN ACCORDANCE WITH MIL-M-24519 (200°C) | -                                                                                                                                                                                                               |
| O-RING / PANEL SEALS          | FLUOROSILICONE RUBBER                                                                                  | -                                                                                                                                                                                                               |
| ENCAPSULANT                   | EPOXY RESIN                                                                                            | -                                                                                                                                                                                                               |
| INSULATED WIRE                | PTFE INSULATED SILVER PLATED COPPER WITH NEMA-HP3                                                      | -                                                                                                                                                                                                               |
|                               | PTFE INSULATED SILVER PLATED COPPER IN ACCORDANCE WITH SAE-AS22759/11                                  | -                                                                                                                                                                                                               |
|                               | CROSSLINKED ETFE INSULATED SILVER PLATED COPPER IN ACCORDANCE WITH SAE-AS22759/33                      | -                                                                                                                                                                                                               |
| UNINSULATED WIRE              | GOLD PLATED SOLID COPPER WIRE IN ACCORDANCE WITH A-A59551                                              | -                                                                                                                                                                                                               |
|                               | TIN PLATED SOLID COPPER WIRE IN ACCORDANCE WITH A-A59551                                               | -                                                                                                                                                                                                               |
| SPRINGS FOR BREAKAWAY         | STAINLESS STEEL                                                                                        | -                                                                                                                                                                                                               |

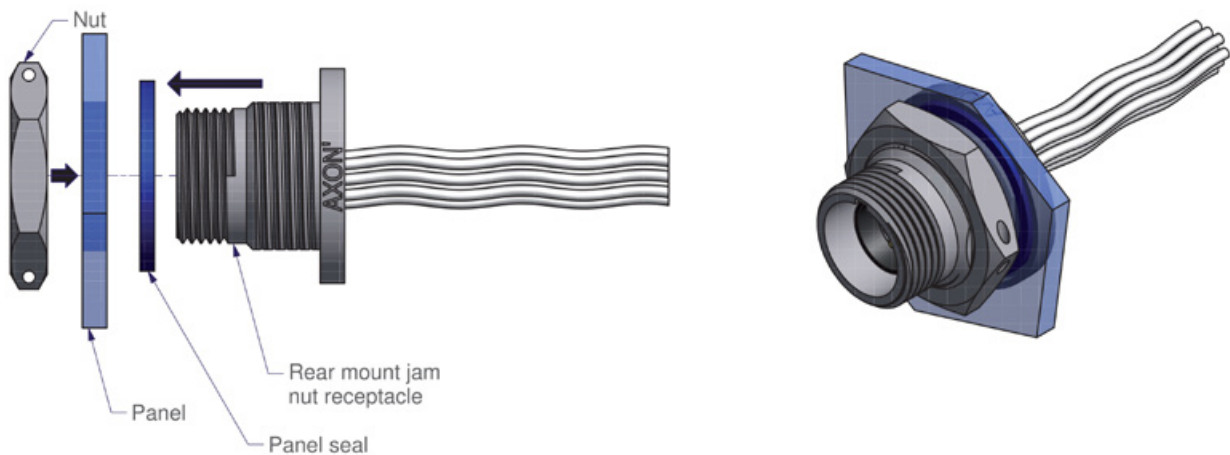
# REAR PANEL MOUNTING GUIDE

In addition to our in-line male and female plugs, designed to be used with flying leads or composite cables, we have designed 4 versions of panel mount connectors, equipped with panel seal, to support a wide range of mounting configurations. Available for selection are either a jam nut round flange or square flange with 4 screws, both for front or rear mount configuration. Installation recommendations are presented in the following diagrams. All the details of panel cut-outs are available pages 350 to 353.

## ► SQUARE FLANGE RECEPTACLES

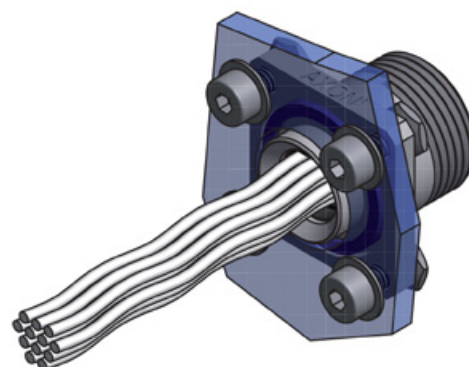
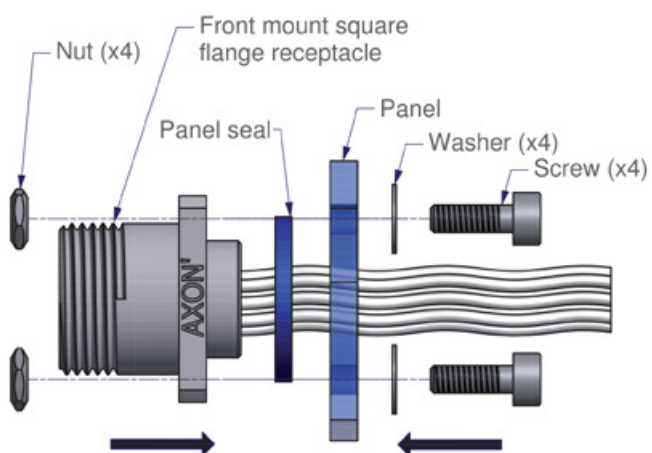


## ► JAM NUT RECEPTACLES

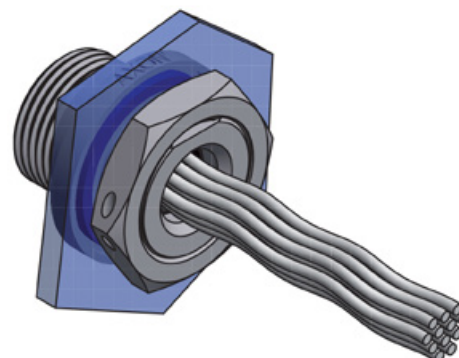
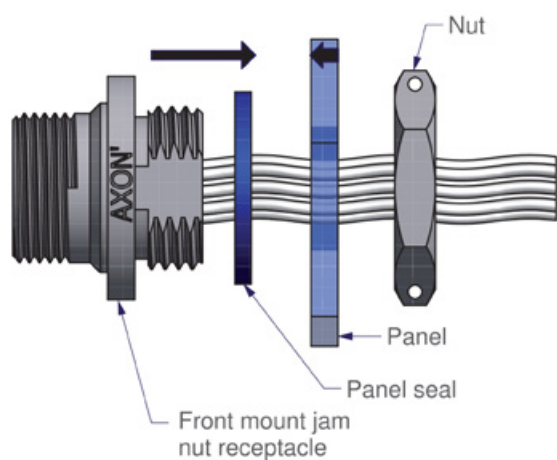


# FRONT PANEL MOUNTING GUIDE

## ► SQUARE FLANGE RECEPTACLES



## ► JAM NUT RECEPTACLES

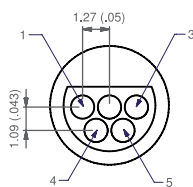


# CONTACT ARRANGEMENTS

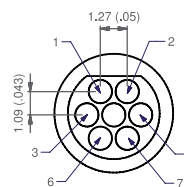
## ► Mating face of male circular connector

- 1.27 mm (.050") contact spacing.

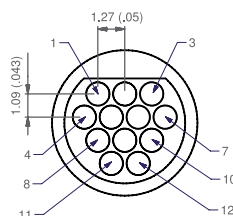
Dimensions are in millimeters (inches).



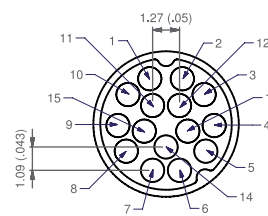
**5 CONTACTS**



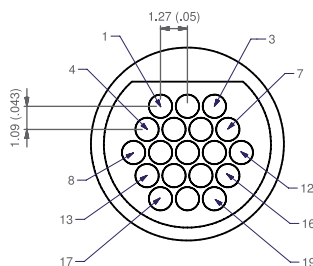
**7 CONTACTS**



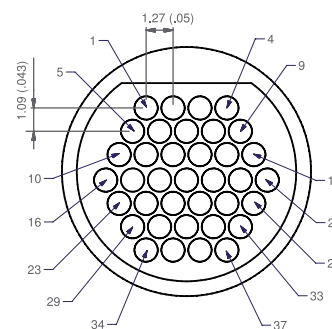
**12 CONTACTS**



**15 CONTACTS**



**19 CONTACTS**



**37 CONTACTS**

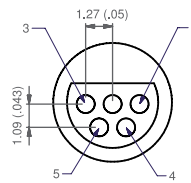
OTHER CONTACT ARRANGEMENTS AVAILABLE ON REQUEST

# CONTACT ARRANGEMENTS

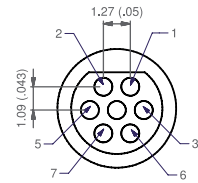
## ► Mating face of female circular connector

- 1.27 mm (.050") contact spacing.

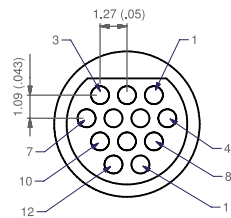
Dimensions are in millimeters (inches).



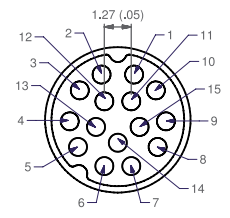
**5 CONTACTS**



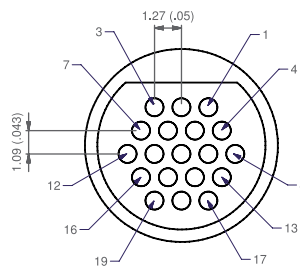
**7 CONTACTS**



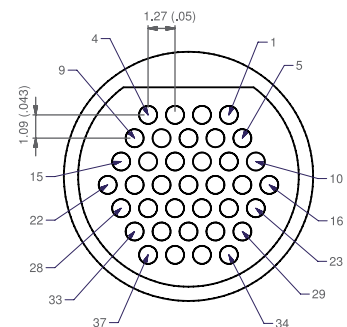
**12 CONTACTS**



**15 CONTACTS**



**19 CONTACTS**



**37 CONTACTS**

# REACH & RoHS COMPLIANCE

## ► RoHS compliance

AXON' CABLE has been pro-actively implementing measures for many years to ensure compliance with the European Directive 2011/65/EU which came into force on 21<sup>st</sup> July 2011. The Directive prohibits the use of Hazardous Substances such as lead, mercury, hexavalent chromium, cadmium, bromine compounds (PBB and PBDE) and various phthalates. It relates to all components of products which are used in the manufacture of electrical and electronic equipment.

As a cable and connector manufacturer, AXON' has taken actions to ensure compliance with directive 2000/53/EC applicable since 21<sup>st</sup> October 2000.

### COMPONENT SPECIFIC RoHS COMPLIANCE

| COMPONENT                                        | MATERIAL                     | FINISH                        | RoHS STATUS       |
|--------------------------------------------------|------------------------------|-------------------------------|-------------------|
| <b>PIN CONTACT<br/>(TWIST PIN)</b>               | COPPER + BERYLLIUM<br>COPPER | GOLD                          | RoHS<br>Compliant |
| <b>SOCKET CONTACT</b>                            | COPPER ALLOY                 | GOLD                          | RoHS<br>Compliant |
| <b>PLASTIC<br/>SHELL &amp; INSERT</b>            | LIQUID CRYSTAL<br>POLYMER    | N/A                           | RoHS<br>Compliant |
| <b>PCB TRAY</b>                                  | PEEK SERIE 1000              | N/A                           | RoHS<br>Compliant |
| <b>METAL<br/>SHELL</b>                           | ALUMINIUM ALLOY SERIES 7000  | ELECTROLESS NICKEL            | RoHS<br>Compliant |
|                                                  | BRASS                        | ELECTROLESS NICKEL            | RoHS<br>Compliant |
| <b>O-RING SEAL</b>                               | FLUOROSILICONE RUBBER        | N/A                           | RoHS<br>Compliant |
| <b>SPRING WASHERS<br/>&amp; LATCHING SPRINGS</b> | STAINLESS STEEL 300 SERIES   | PASSIVATION                   | RoHS<br>Compliant |
| <b>ENCAPSULANT</b>                               | EPOXY RESIN 150°C VERSION    | N/A                           | RoHS<br>Compliant |
|                                                  | EPOXY RESIN 200°C VERSION    | N/A                           | RoHS<br>Compliant |
| <b>«STANDARD» SERIES<br/>PCB TERMINATION</b>     | SOLID COPPER WIRE            | GOLD                          | RoHS<br>Compliant |
|                                                  | SOLID COPPER WIRE            | NOT LEADED TIN<br>97% MAX TIN | RoHS<br>Compliant |

## ► Application of REACH

The new EU regulation on the Registration, Evaluation, Authorisation and restriction of Chemicals (REACH) came into force in June 2007. The regulation concerns the authorised use of chemicals. It requires manufacturers and importers to register substances and their use with the European Chemical Agency (ECHA).

AXON' CABLE is known as a "downstream user" with respect to the REACH regulation, and a manufacturer of "Articles". AXON' CABLE products are not intended to release any undesired substance under normal and reasonable operations of use.

To this day AXON' CABLE have not identified any component containing any SVHC in their product range.

# WIRE CODES

Nominal dimensions are used throughout this chapter.

## ► Solid uninsulated wires

| WIRE CODE      | WIRE DESIGNATION                     | WEIGHT g/m | CONDUCTOR                                                 |     |                        |                |                              |                               |
|----------------|--------------------------------------|------------|-----------------------------------------------------------|-----|------------------------|----------------|------------------------------|-------------------------------|
|                |                                      |            | MATERIAL                                                  | AWG | CONSTRUCTION mm (inch) | Ø mm (inch)    | AREA mm <sup>2</sup> (sq in) | RESISTANCE Ω/100m (Ω/1000 ft) |
| G              | GPC2501                              | 1.45       | GOLD PLATED COPPER                                        | 25  | 1x0.455<br>1x.018      | 0.455<br>.018  | 0.163<br>.000252             | 11<br>33.5                    |
| T              | TPCL2401                             | 1.81       | TIN PLATED COPPER                                         | 24  | 1x0.510<br>1x.0201     | 0.510<br>.0201 | 0.205<br>.000317             | 9<br>27.4                     |
| T<br>(FOR PCB) | GPC2501<br>RoHS SOLDER<br>DIPPED TIN | 1.81       | GOLD PLATED COPPER AND<br>TIN LEAD-FREE<br>(97% TIN MAX.) | 24  | 1x0.510<br>1x.0201     | 0.510<br>.0201 | 0.205<br>.000317             | 11<br>33.5                    |

## ► Insulated wires

| WIRE CODE | WIRE DESIGNATION | WEIGHT g/m | CONDUCTOR              |     |                        |                |                              |                               | INSULATION                         |              | TEMPERATURE RATING | VOLTAGE RATING      |
|-----------|------------------|------------|------------------------|-----|------------------------|----------------|------------------------------|-------------------------------|------------------------------------|--------------|--------------------|---------------------|
|           |                  |            | MATERIAL               | AWG | CONSTRUCTION mm (inch) | Ø mm (inch)    | AREA mm <sup>2</sup> (sq in) | RESISTANCE Ω/100m (Ω/1000 ft) | MATERIAL                           | Ø mm (inch)  |                    |                     |
| 1         | E 2607           | 2.70       | SPC **                 | 26  | 7x0.160<br>7x.0063     | 0.480<br>.0189 | 0.141<br>.000218             | 12.8<br>39.0                  | EXTRUDED PTFE                      | 1.00<br>.039 | -90°C / +200°C     | 600 V <sub>AC</sub> |
| 3         | M22759/11-26*    | 2.82       | SPC **                 | 26  | 19x0.102<br>19x.0040   | 0.504<br>.020  | 0.154<br>.000239             | 12.6<br>38.4                  | EXTRUDED PTFE                      | 0.96<br>.038 | -90°C / +200°C     | 600 V <sub>AC</sub> |
| 4         | E 2619           | 3.00       | SPC **                 | 26  | 19x0.102<br>19x.0040   | 0.504<br>.020  | 0.154<br>.000239             | 12<br>36.6                    | EXTRUDED PTFE                      | 1.00<br>.039 | -90°C / +200°C     | 600 V <sub>AC</sub> |
| 6         | E 2807           | 2.00       | SPC **                 | 28  | 7x0.127<br>7x.0050     | 0.381<br>.015  | 0.088<br>.000137             | 20.1<br>61.3                  | EXTRUDED PTFE                      | 0.90<br>.035 | -90°C / +200°C     | 600 V <sub>AC</sub> |
| 8         | E 3007           | 1.50       | SPC **                 | 30  | 7x0.102<br>7x.0040     | 0.304<br>.012  | 0.057<br>.000882             | 31<br>94.5                    | EXTRUDED PTFE                      | 0.80<br>.031 | -90°C / +200°C     | 600 V <sub>AC</sub> |
| E         | M22759/33-26     | 2.08       | HIGH STRENGTH SPCA *** | 26  | 19x0.102<br>19x.0040   | 0.483<br>.019  | 0.154<br>.000238             | 14.7<br>44.8                  | CROSSLINKED EXTRUDED MODIFIED ETFE | 0.81<br>.032 | -90°C / +200°C     | 600 V <sub>AC</sub> |
| F         | E 2607*          | 2.70       | SPC **                 | 26  | 7x0.160<br>7x.0063     | 0.480<br>.0189 | 0.141<br>.000218             | 12.8<br>39.0                  | EXTRUDED PTFE                      | 1.00<br>.039 | -90°C / +200°C     | 600 V <sub>AC</sub> |

\*: ONLY FOR COLOUR CODE V

\*\* : SILVER PLATED COPPER

\*\*\*: SILVER PLATED COPPER ALLOY

# WIRE COLOUR CODES

## ► Colour codes F and L

All the wires have the same colour.  
Available with all wire types.

| COLOUR CODE | COLOUR |
|-------------|--------|
| F           | YELLOW |
| L           | WHITE  |

**OTHER COLOURS AVAILABLE ON REQUEST.**

## ► Colour code W

Also called 10 colour repeat (10 colours repeated in sequence) as per MIL-DTL-83513.  
Available with all wire types.

| PIN NUMBER | MIL-STD-681<br>NUMBER | COLOUR |
|------------|-----------------------|--------|
| 1          | 0                     | BLACK  |
| 2          | 1                     | BROWN  |
| 3          | 2                     | RED    |
| 4          | 3                     | ORANGE |
| 5          | 4                     | YELLOW |
| 6          | 5                     | GREEN  |
| 7          | 6                     | BLUE   |
| 8          | 7                     | VIOLET |
| 9          | 8                     | GREY   |
| 10         | 9                     | WHITE  |
| 11         | 0                     | BLACK  |
| 12         | 1                     | BROWN  |
| 13         | 2                     | RED    |
| 14         | 3                     | ORANGE |
| 15         | 4                     | YELLOW |
| 16         | 5                     | GREEN  |
| 17         | 6                     | BLUE   |
| 18         | 7                     | VIOLET |
| 19         | 8                     | GREY   |
| 20         | 9                     | WHITE  |
| 21         | 0                     | BLACK  |

## ► Colour code V

Only available with 2607 AWG wires (Micro-D wire code F) and 2619 AWG wires (Micro-D wire code 3).

Colours and coloured stripes as per MIL-STD-681 system (except the appropriate colour code is the contact number minus 1).

Only available for Micro-D connectors with 51 contacts or less.

| CONTACT NUMBER | MIL-STD-681 NUMBER | BASE COLOUR | FIRST STRIPE | SECOND STRIPE |
|----------------|--------------------|-------------|--------------|---------------|
| 1              | 0                  | BLACK       | -            | -             |
| 2              | 1                  | BROWN       | -            | -             |
| 3              | 2                  | RED         | -            | -             |
| 4              | 3                  | ORANGE      | -            | -             |
| 5              | 4                  | YELLOW      | -            | -             |
| 6              | 5                  | GREEN       | -            | -             |
| 7              | 6                  | BLUE        | -            | -             |
| 8              | 7                  | VIOLET      | -            | -             |
| 9              | 8                  | GREY        | -            | -             |
| 10             | 9                  | WHITE       | -            | -             |
| 11             | 90                 | WHITE       | BLACK        | -             |
| 12             | 91                 | WHITE       | BROWN        | -             |
| 13             | 92                 | WHITE       | RED          | -             |
| 14             | 93                 | WHITE       | ORANGE       | -             |
| 15             | 94                 | WHITE       | YELLOW       | -             |
| 16             | 95                 | WHITE       | GREEN        | -             |
| 17             | 96                 | WHITE       | BLUE         | -             |
| 18             | 97                 | WHITE       | VIOLET       | -             |
| 19             | 98                 | WHITE       | GREY         | -             |
| 20             | 901                | WHITE       | BLACK        | BROWN         |
| 21             | 902                | WHITE       | BLACK        | RED           |
| 22             | 903                | WHITE       | BLACK        | ORANGE        |
| 23             | 904                | WHITE       | BLACK        | YELLOW        |
| 24             | 905                | WHITE       | BLACK        | GREEN         |
| 25             | 906                | WHITE       | BLACK        | BLUE          |
| 26             | 907                | WHITE       | BLACK        | VIOLET        |
| 27             | 908                | WHITE       | BLACK        | GREY          |
| 28             | 912                | WHITE       | BROWN        | RED           |
| 29             | 913                | WHITE       | BROWN        | ORANGE        |
| 30             | 914                | WHITE       | BROWN        | YELLOW        |
| 31             | 915                | WHITE       | BROWN        | GREEN         |
| 32             | 916                | WHITE       | BROWN        | BLUE          |
| 33             | 917                | WHITE       | BROWN        | VIOLET        |
| 34             | 918                | WHITE       | BROWN        | GREY          |
| 35             | 923                | WHITE       | RED          | ORANGE        |
| 36             | 924                | WHITE       | RED          | YELLOW        |
| 37             | 925                | WHITE       | RED          | GREEN         |

# TEST & INSPECTION

## ▶ Micro-D components

### ▶ METAL SHELLS

- Dimensions measured with non-contact optical equipment.
- Plating thickness measured with X-ray spectrometer.

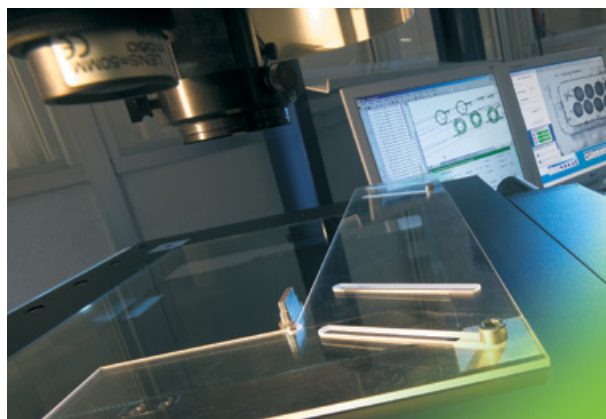
### ▶ PLASTIC COMPONENTS

(shells, inserts, trays for PCB connectors,...).

- Dimensions measured with non-contact optical equipment.

### ▶ CONTACTS

- Dimensions measured with non-contact optical equipment.
- Plating thickness measured with X-ray spectrometer.
- Insertion and retention forces.
- Electrical resistance of mated contacts.



▲ NON CONTACT OPTICAL MEASUREMENT



▲ EXAMPLE OF CONTACT INSPECTION

## ► Micro-D assemblies

AXON' carries out electrical tests on all the manufactured Micro-D harnesses and connectors.

### ► TYPICAL TESTS

| FOR<br>MICRO-D HARNESSSES                                                                      | FOR<br>MICRO-D PCB CONNECTORS                                                                                                         |
|------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>- continuity.</li><li>- insulation resistance.</li></ul> | <ul style="list-style-type: none"><li>- contact resistance.</li><li>- insulation resistance.</li><li>- dielectric strength.</li></ul> |

If requested by the customer for special products, AXON' can carry out other tests such as:

- Transfer impedance ( $Z_T$ ) for shielded harnesses.
- Insertion and return loss for Micro-D with coaxial contacts.
- Attenuation plots for filtered products.
- Waterproofness tests.
- X-ray inspection.
- Mating and de-mating tests.
- And other specific tests as required.

AXON' carries out sample inspection for visual and dimensional criteria. The goods are delivered with:

- a certificate of compliance.
- a test report (on request).

AXON' maintains batch traceability records for 10 years (or more if required).

In order to guarantee a high quality level for each product, AXON' uses a wide variety of production tools, systems, machines and jigs. These include optimized line design, poka yoke, standardized operations and TPM (Total Productive Maintenance).



▲ STIRRED MODE CHAMBER

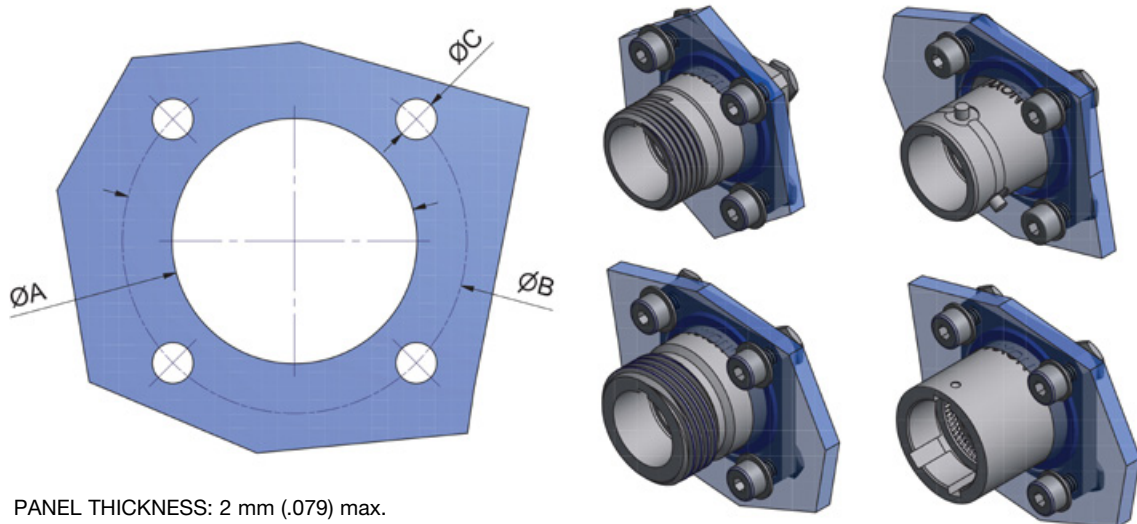


▲ AUTOMATIC CONTINUITY &  
INSULATION RESISTANCE TEST



▲ X-RAY INSPECTION

## PANEL CUT-OUTS FOR REAR MOUNT SQUARE FLANGE RECEPTACLES



### ► TABLE OF DIMENSIONS - millimetres (inches)

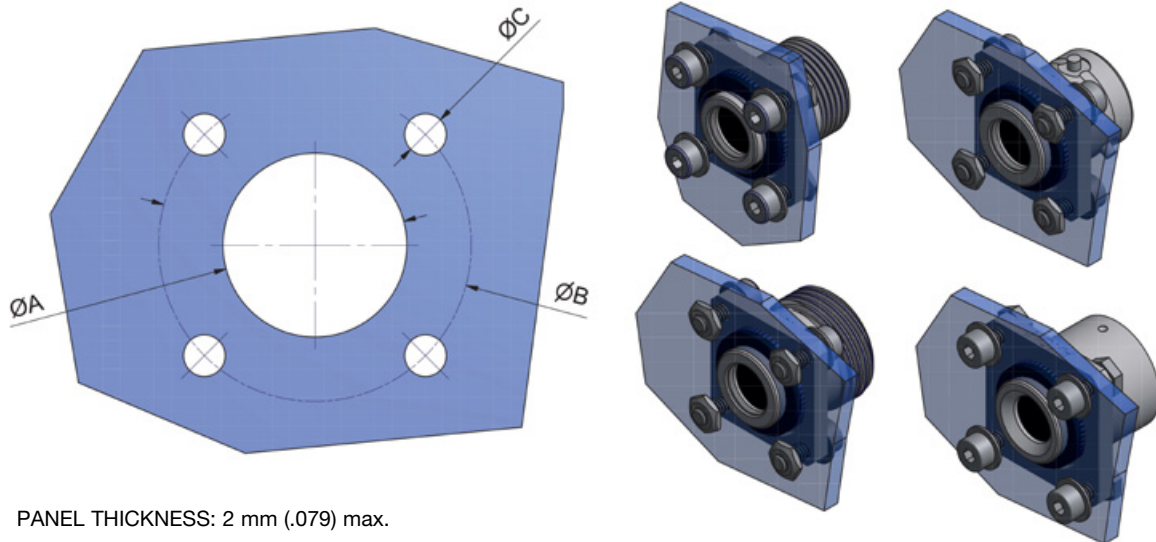
| NUMBERS OF WAYS | CONNECTOR TYPE    | A +0.3/-0 (+0.012/-0) | B (BSC)      | C ±0.05 (±0.002) |
|-----------------|-------------------|-----------------------|--------------|------------------|
| 5 OR 7          | METRIC THREAD     | 9.7 (.382)            | 16 (.631)    | 2.2 (.087)       |
|                 | THREE LUG BAYONET | 11.7 (.461)           | 18.5 (.728)  | 2.2 (.087)       |
|                 | TRIPLE START      | 11.7 (.461)           | 18.5 (.728)  | 2.2 (.087)       |
|                 | BREAKAWAY         | 13.2 (.52)            | 19.5 (.768)  | 2.2 (.087)       |
| 12 OR 15        | METRIC THREAD     | 11.7 (.461)           | 18.5 (.728)  | 2.2 (.087)       |
|                 | THREE LUG BAYONET | 13.2 (.52)            | 19.5 (.768)  | 2.2 (.087)       |
|                 | TRIPLE START      | 13.2 (.52)            | 19.5 (.768)  | 2.2 (.087)       |
|                 | BREAKAWAY         | 13.2 (.52)            | 19.5 (.768)  | 2.2 (.087)       |
| 19              | METRIC THREAD     | 15.2 (.598)           | 22.5 (.886)  | 3.2 (.126)       |
|                 | THREE LUG BAYONET | 16.2 (.638)           | 24.5 (.965)  | 3.2 (.126)       |
|                 | TRIPLE START      | 15.2 (.598)           | 22.5 (.886)  | 3.2 (.126)       |
|                 | BREAKAWAY         | 15.9 (.626)           | 24.5 (.965)  | 3.2 (.126)       |
| 37              | METRIC THREAD     | 17.2 (.677)           | 24.5 (.965)  | 3.2 (.126)       |
|                 | THREE LUG BAYONET | 19.2 (.756)           | 27 (1.063)   | 3.2 (.126)       |
|                 | TRIPLE START      | 18.5 (.728)           | 27 (1.063)   | 3.2 (.126)       |
|                 | BREAKAWAY         | 18.6 (.732)           | 27.5 (1.083) | 3.2 (.126)       |

### ► Recommended screws for panel mounting

| HOLE DIMENSIONS | ISO METRIC THREAD SCREWS     | UNIFIED THREAD STANDARD SCREWS |
|-----------------|------------------------------|--------------------------------|
| 2.2 (.087)      | DIN EN ISO 4762 - CHC M2 x 6 | CHC 2-56 UNC - 1/4             |
| 3.2 (.126)      | DIN EN ISO 4762 - CHC M3 x 8 | CHC 4-40 UNC - 5/16            |

SUPPLIED WITHOUT PANEL MOUNTING SCREWS

## PANEL CUT-OUTS FOR FRONT MOUNT SQUARE FLANGE RECEPTACLES



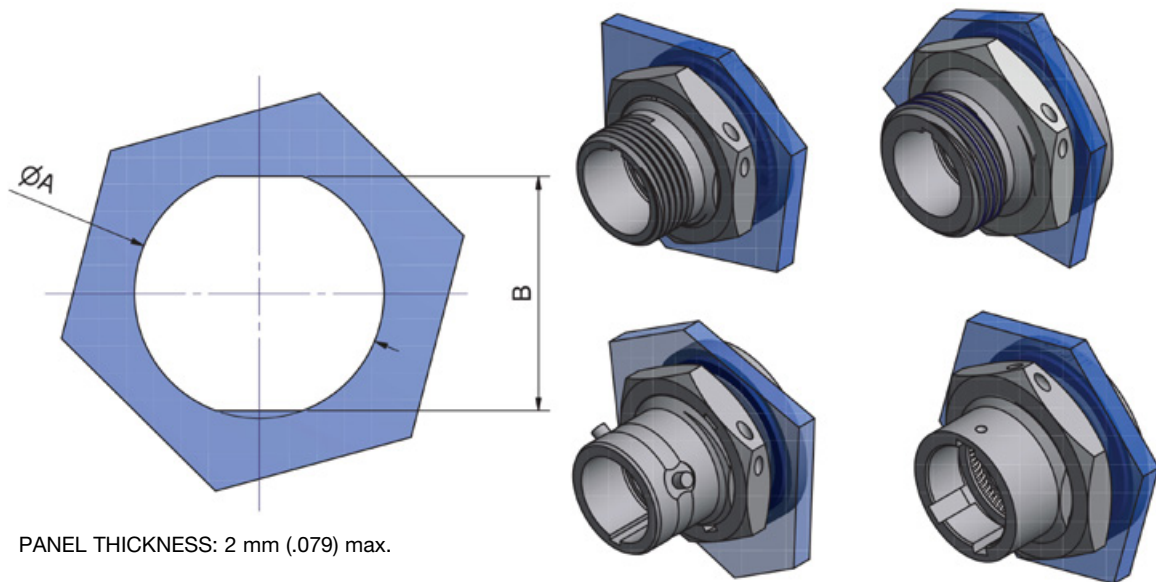
### ► TABLE OF DIMENSIONS - millimetres (inches)

| NUMBERS OF WAYS | CONNECTOR TYPE    | A +0.3/-0 (+0.012/-0) | B (BSC)    | C ±0.05 (±0.002) |
|-----------------|-------------------|-----------------------|------------|------------------|
| 5 OR 7          | METRIC THREAD     | 8.7 (.342)            | 16 (.631)  | 2.2 (.087)       |
|                 | THREE LUG BAYONET | 9.7 (.382)            | 16 (.631)  | 2.2 (.087)       |
|                 | TRIPLE START      | 9.2 (.362)            | 16 (.631)  | 2.2 (.087)       |
|                 | BREAKAWAY         | 9.7 (.382)            | 19 (.748)  | 2.2 (.087)       |
| 12 OR 15        | METRIC THREAD     | 8.7 (.342)            | 16.5 (.65) | 2.2 (.087)       |
|                 | THREE LUG BAYONET | 9.7 (.382)            | 17 (.669)  | 2.2 (.087)       |
|                 | TRIPLE START      | 9.2 (.362)            | 17 (.669)  | 2.2 (.087)       |
|                 | BREAKAWAY         | 9.7 (.382)            | 19 (.748)  | 2.2 (.087)       |
| 19              | METRIC THREAD     | 12.2 (.48)            | 19 (.748)  | 2.2 (.087)       |
|                 | THREE LUG BAYONET | 12.2 (.48)            | 19 (.748)  | 2.2 (.087)       |
|                 | TRIPLE START      | 12.2 (.48)            | 19 (.748)  | 2.2 (.087)       |
|                 | BREAKAWAY         | 13.2 (.52)            | 23 (.906)  | 3.2 (.126)       |
| 37              | METRIC THREAD     | 15.2 (.598)           | 24 (.945)  | 3.2 (.126)       |
|                 | THREE LUG BAYONET | 15.2 (.598)           | 24 (.945)  | 3.2 (.126)       |
|                 | TRIPLE START      | 15.2 (.598)           | 24 (.945)  | 3.2 (.126)       |
|                 | BREAKAWAY         | 15.2 (.598)           | 26 (1.024) | 3.2 (.126)       |

### ► Recommended screws for panel mounting

| HOLE DIMENSIONS | ISO METRIC THREAD SCREWS     | UNIFIED THREAD STANDARD SCREWS |
|-----------------|------------------------------|--------------------------------|
| 2.2 (.087)      | DIN EN ISO 4762 - CHC M2 x 6 | CHC 2-56 UNC - 1/4             |
| 3.2 (.126)      | DIN EN ISO 4762 - CHC M3 x 8 | CHC 4-40 UNC - 5/16            |

## PANEL CUT-OUTS FOR REAR MOUNT JAM NUT RECEPTACLES



### ► TABLE OF DIMENSIONS - millimetres (inches)

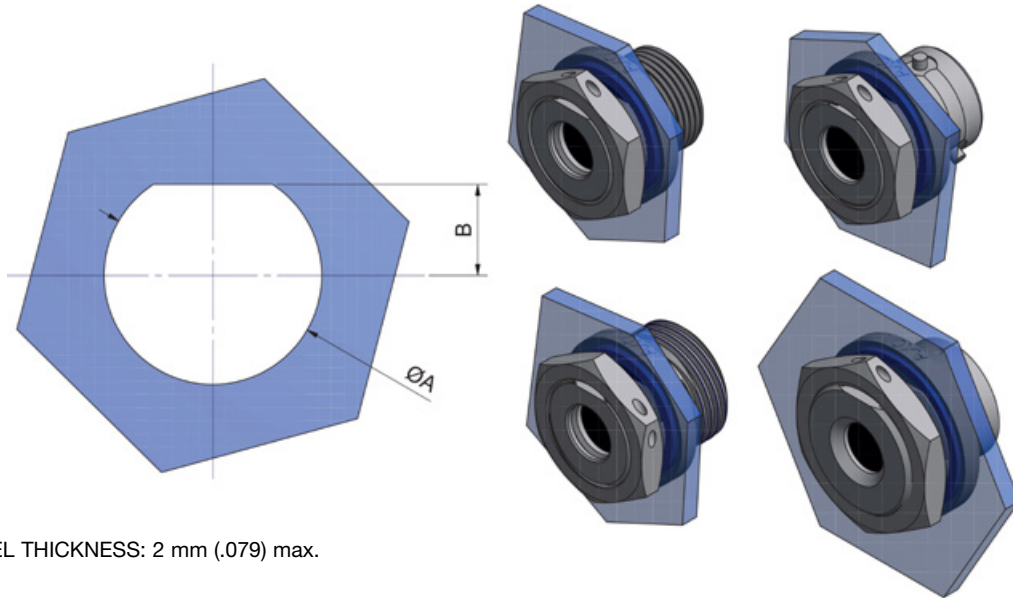
| NUMBERS OF WAYS | CONNECTOR TYPE    | A +0.3/-0<br>(+0.012/-0) | B +0.3/-0<br>(+0.012/-0) | NUT THREAD     | RECOMMENDED TORQUE |
|-----------------|-------------------|--------------------------|--------------------------|----------------|--------------------|
| 5 OR 7          | METRIC THREAD     | 12.2 (.48)               | 11.2 (.441)              | M12x1          | 1.5 Nm             |
|                 | THREE LUG BAYONET | 12.2 (.48)               | 11.2 (.441)              | M12x1 + NOTCH* | 1.5 Nm             |
|                 | TRIPLE START      | 13.2 (.62)               | 12.2 (.48)               | M13x1          | 1.5 Nm             |
|                 | BREAKAWAY         | 15.2 (.598)              | 13.2 (.62)               | M14x0.75       | 1.5 Nm             |
| 12 OR 15        | METRIC THREAD     | 13.2 (.62)               | 12.2 (.48)               | M13x1          | 1.5 Nm             |
|                 | THREE LUG BAYONET | 13.2 (.52)               | 12.2 (.48)               | M13x1 + NOTCH* | 1.5 Nm             |
|                 | TRIPLE START      | 15.2 (.598)              | 14.2 (.559)              | M15x1          | 1.5 Nm             |
|                 | BREAKAWAY         | 15.2 (.598)              | 13.2 (.62)               | M14x0.75       | 1.5 Nm             |
| 19              | METRIC THREAD     | 16.2 (.638)              | 15.2 (.598)              | M16x1          | 2 Nm               |
|                 | THREE LUG BAYONET | 16.2 (.638)              | 15.2 (.598)              | M16x1 + NOTCH* | 2 Nm               |
|                 | TRIPLE START      | 17.2 (.677)              | 16.2 (.638)              | M17x1          | 2 Nm               |
|                 | BREAKAWAY         | 18.2 (.717)              | 16.2 (.638)              | M18x1          | 2 Nm               |
| 37              | METRIC THREAD     | 19.2 (.756)              | 18.2 (.717)              | M19x1          | 2 Nm               |
|                 | THREE LUG BAYONET | 19.2 (.756)              | 18.2 (.717)              | M19x1 + NOTCH* | 2 Nm               |
|                 | TRIPLE START      | 20.2 (.795)              | 19.2 (.756)              | M20x1          | 2 Nm               |
|                 | BREAKAWAY         | 20.2 (.795)              | 19.2 (.756)              | M20x1          | 2 Nm               |

\*: We recommend front mount for Three Lug Bayonet, please contact us for specific rear mount cut-outs.

SUPPLIED WITH JAM NUTS

**axon**  
cable & interconnect

## PANEL CUT-OUTS FOR FRONT MOUNT JAM NUT RECEPTACLES



PANEL THICKNESS: 2 mm (.079) max.

### ► TABLE OF DIMENSIONS - millimetres (inches)

| NUMBERS OF WAYS | CONNECTOR TYPE    | A +0.3/-0<br>(+0.012/-0) | B +0.3/-0<br>(+0.012/-s0) | NUT THREAD | RECOMMENDED TORQUE |
|-----------------|-------------------|--------------------------|---------------------------|------------|--------------------|
| 5 OR 7          | METRIC THREAD     | 9.2 (.362)               | 3.6 (.142)                | M9x0.75    | 1 Nm               |
|                 | THREE LUG BAYONET | 9.2 (.362)               | 3.6 (.142)                | M9x0.75    | 1 Nm               |
|                 | TRIPLE START      | 9.2 (.362)               | 3.6 (.142)                | M9x0.75    | 1 Nm               |
|                 | BREAKAWAY         | 13.2 (.52)               | 5.6 (.22)                 | M13x1      | 1.5 Nm             |
| 12 OR 15        | METRIC THREAD     | 12.2 (.48)               | 5.1 (.201)                | M9x0.75    | 1 Nm               |
|                 | THREE LUG BAYONET | 12.2 (.48)               | 5.1 (.201)                | M9x0.75    | 1 Nm               |
|                 | TRIPLE START      | 12.2 (.48)               | 5.1 (.201)                | M9x0.75    | 1 Nm               |
|                 | BREAKAWAY         | 15.2 (.598)              | 6.6 (.26)                 | M15x1      | 1.5 Nm             |
| 19              | METRIC THREAD     | 13.2 (.52)               | 5.85 (.201)               | M12x1      | 1.5 Nm             |
|                 | THREE LUG BAYONET | 13.2 (.52)               | 5.85 (.201)               | M12x1      | 1.5 Nm             |
|                 | TRIPLE START      | 13.2 (.52)               | 5.85 (.201)               | M12x1      | 1.5 Nm             |
|                 | BREAKAWAY         | 17.2 (.677)              | 7.1 (.28)                 | M17x1      | 2 Nm               |
| 37              | METRIC THREAD     | 16.2 (.64)               | 7.35 (.289)               | M15x1      | 1.5 Nm             |
|                 | THREE LUG BAYONET | 16.2 (.64)               | 7.35 (.289)               | M15x1      | 1.5 Nm             |
|                 | TRIPLE START      | 16.2 (.64)               | 7.35 (.289)               | M15x1      | 1.5 Nm             |
|                 | BREAKAWAY         | 19.2 (.756)              | 8.6 (.339)                | M19x1      | 2 Nm               |

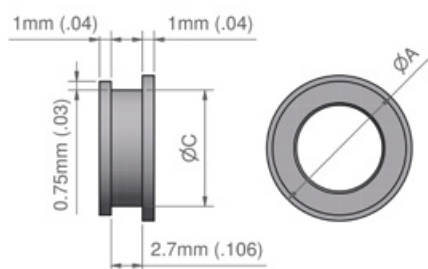
GENERAL  
INFORMATION

Circular  
Micro-D connectors

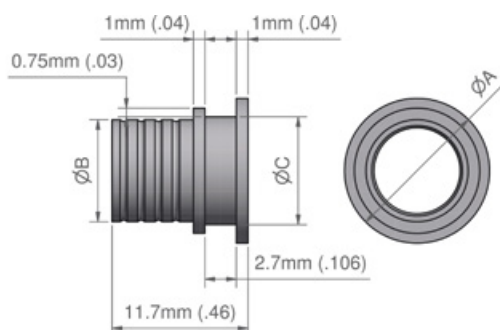
# REAR FUNNEL DIMENSIONS

Our in-line male and female plugs are available with two types of funnel, both designed to provide effective cable termination with heat-shrink tubing and boots. A groove on the funnels is designed to ensure excellent grip with the lip of the heat-shrink boot.

## Short version for heat shrinkable boots



## Long version for AXOCLAMP® & heat shrinkable boots



## ► TABLE OF DIMENSIONS - millimetres (inches)

| NUMBER OF WAYS | Ø A (MAX)      | Ø B (MAX)      | Ø C (MAX)    |
|----------------|----------------|----------------|--------------|
| 5 OR 7         | 9.6<br>(.378)  | 7.2<br>(.283)  | 8<br>(.315)  |
| 12 OR 15       | 12<br>(.472)   | 8.8<br>(.346)  | 9<br>(.354)  |
| 19             | 14.6<br>(.575) | 12<br>(.472)   | 12<br>(.472) |
| 37             | 17.1<br>(.673) | 14.4<br>(.567) | 15<br>(.591) |

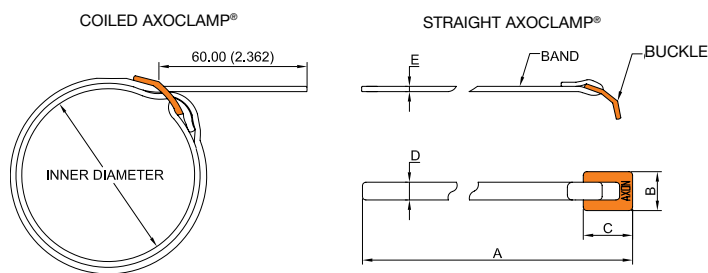


▲ HEAT SHRINKABLE BOOTS

# AXOCLAMP® EMI BAND TERMINATION

Material: stainless steel AISI 316.

360° shield termination for connectors can be carried out with a patented metal band called AXOCLAMP®. This ensures the continuity of shielding efficiency at the cable / connector junction.



## IDENTIFICATION CODE

| AXCL      | 01                                                         |
|-----------|------------------------------------------------------------|
| AXOCLAMP® | BAND TYPES<br>01: standard<br>03: microband double wrapped |

The standard version is coiled but straight AXOCLAMP® can be delivered on request (reference example AXCL03D). Minimum quantity: 100 pieces per reference.

## DIMENSIONS

Dimensions are in millimetres (inches).

| SPECIFICATIONS    | AXOCLAMP® STANDARD | AXOCLAMP® MICROBAND |
|-------------------|--------------------|---------------------|
| REFERENCE         | AX CL 01           | AX CL 03            |
| DIMENSION A       | 375 (14.764)       | 200 (7.874)         |
| DIMENSION B       | 9 (.364)           | 5.2 (.205)          |
| DIMENSION C       | 10 (.394)          | 5.5 (.217)          |
| DIMENSION D       | 5.9 (.232)         | 3 (.118)            |
| DIMENSION E       | 0.5 (.020)         | 0.35 (.014)         |
| MINIMUM DIAMETER* | 10 (.394)          | 5 (.197)            |
| MAXIMUM DIAMETER* | 40 (1.575)         | 15 (.591)           |

\*: Minimum and maximum diameter of the rear funnel on which the AXOCLAMP® can be mounted.  
For other dimensions, please consult us.

## BANDING TOOLS

|                    | MANUAL<br>HAND<br>TOOL | CLAMPING<br>VALUES | PNEUMATIC<br>CLAMPING<br>TOOL | RECOMMENDED<br>BANDING<br>VALUES* | CALIBRATION<br>DEVICE |
|--------------------|------------------------|--------------------|-------------------------------|-----------------------------------|-----------------------|
| AXOCLAMP® AX CL 01 | A 40199                | 100-180 LBS        | A 35199                       | 160                               | A 50099               |
| AXOCLAMP® AX CL 03 | A 30199                | 60-100 LBS         | A 35599                       | 90                                | A 50099               |

\*: Banding values are given for information only.



# METAL PIGTAIL MICRO-D CIRCULAR CONNECTORS

## METRIC THREAD CONNECTORS - MCA<sup>T</sup>

- Metric Thread range . . . . . 358
- Identification code. . . . . 359
- In-line plugs . . . . . 360
- Panel mount, female receptacles. . . . . 362
- Master key positions / Weights / Torque . . . . . 364

## THREE LUG BAYONET CONNECTORS - MCA<sup>3B</sup>

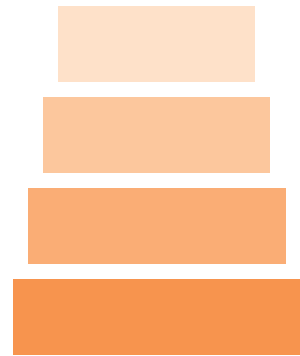
- Three Lug Bayonet range . . . . . 366
- Identification code. . . . . 367
- In-line plugs . . . . . 368
- Panel mount, female receptacles. . . . . 370
- Master key positions / Weights . . . . . 372

## TRIPLE START CONNECTORS (ANTI-DECOUPLING) - MCA<sup>C</sup>

- Triple Start range . . . . . 374
- Identification code. . . . . 375
- In-line plugs . . . . . 376
- Panel mount, female receptacles. . . . . 378
- Master key positions / Weights . . . . . 380

## BREAKAWAY CIRCULAR CONNECTORS - MCA<sup>BK</sup>

- Breakaway range . . . . . 382
- Identification code. . . . . 383
- In-line plugs . . . . . 384
- Panel mount, female receptacles. . . . . 386
- Master key positions / Weights . . . . . 388



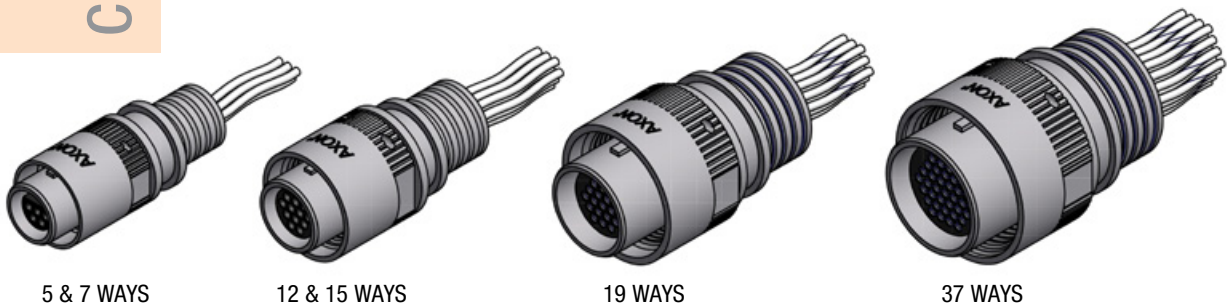
PIGTAIL  
CONNECTORS

Circular  
Micro-D connectors

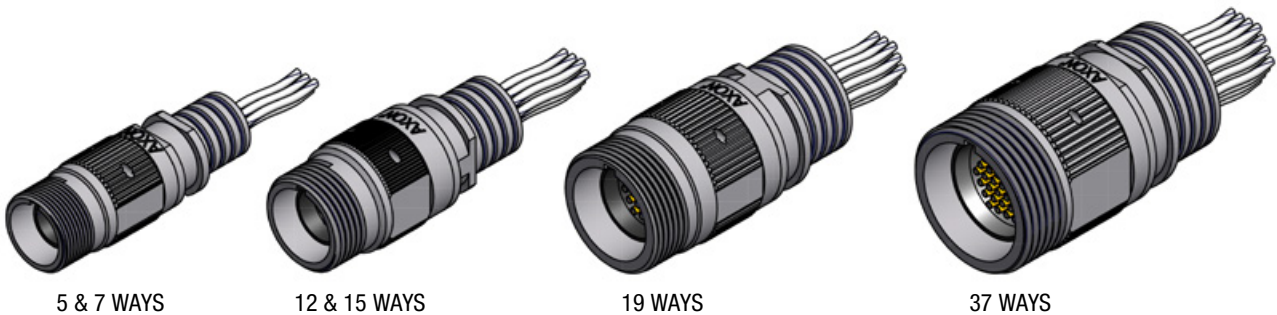
# METRIC THREAD CONNECTOR RANGE - MCAT

The Metric Thread connector range is suited to systems where miniaturization, weight and EMI performances are paramount.

## IN-LINE MALE PLUGS



## IN-LINE FEMALE PLUGS

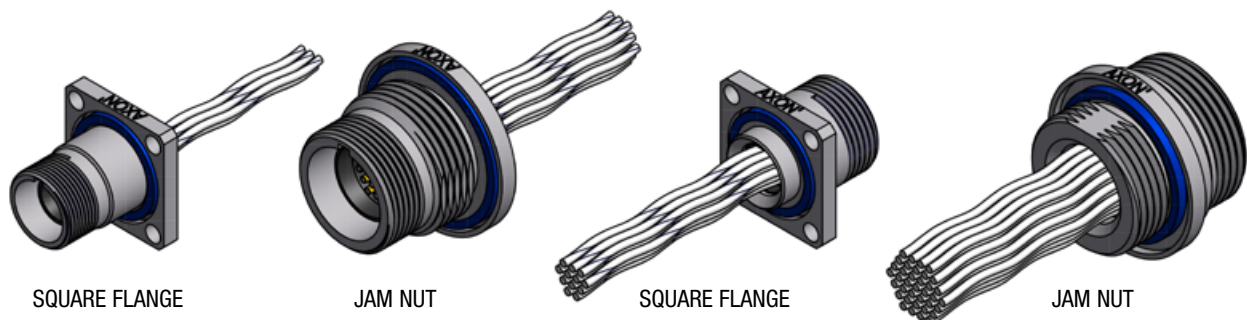


## PANEL MOUNT JAM NUT & SQUARE FLANGE RECEPTACLES

Rear mount

AVAILABLE IN ALL SIZES

Front mount



# IDENTIFICATION CODE

**MCA**

**T**

**V**

**07**

**-**

**06**

**P**

**4**

**L**

**050**

**A**

**02**

## SERIES

**MCA:** Micro-D Circular AXON'.

## COUPLING SYSTEM

**T:** Metric thread.

## MATERIAL & FINISH TYPE

**V:** Nickel plated brass + epoxy resin 150°C.

**W:** Nickel plated brass + epoxy resin 200°C.

## NUMBER OF CONTACTS 05, 07, 12, 15, 19, 37.

See pages 342 & 343 for contact arrangements.

## CONNECTOR TYPE

**00:** Rear panel mount square flange receptacle (female only).

**01:** Front panel mount square flange receptacle (female only).

**06:** In-line plug (male or female).

**07:** Rear panel mount jam nut receptacle (female only).

**08:** Front panel mount jam nut receptacle (female only).

## CONNECTOR GENDER

**P:** Male connector (pin contacts).

**S:** Female connector (socket contacts).

## WIRE TYPE

**1:** E2607, AWG 26, 7 strands, 600 V.

**4:** E2619, AWG 26, 19 strands, 600 V.

**6:** E2807, AWG 28, 7 strands, 600 V.

**8:** E3007, AWG 30, 7 strands, 600 V.

**E:** M22759/33, AWG 26, 19 strands, 600 V.

*Specific wires on request.*

*Uninsulated wires (for panel mount only)*

*For colour code V*

**3:** M22759/11, AWG 26, 19 strands, 600 V.

**F:** E2607, AWG 26, 7 strands, 600 V.

**G:** AWG 25 Gold plated.

**T:** AWG 24 Tin plated.

See page 345 for wire types.

## COLOUR CODE

**L:** All white.

**F:** All yellow.

**BLANK:** If wire type is **G** or **T**.

**W:** 10 colour repeated code.

**V:** MIL-STD-681 striped (only for wire types 3 and F).

See pages 346 & 347 for colour code.

## WIRE LENGTH (in cm)

Caution! Wire length in centimetres - (1 cm = 10 mm = 0.394").

| L              | 5 ≤ L ≤ 10       | 10 < L ≤ 100      | L > 100     |
|----------------|------------------|-------------------|-------------|
| in cm (inches) | 1.97 ≤ L ≤ 3.940 | 3.940 < L ≤ 39.40 | L > 39.40   |
| TOLERANCE      | -0 / +0.5        | -0 / +3           | -0 / +5     |
| in cm (inches) | -0 / +0.200      | -0 / +1.180       | -0 / +1.970 |

## MASTER KEY POSITION

**A:** 0°.

**B:** 90°.

**C:** 180°.

**D:** 270°.

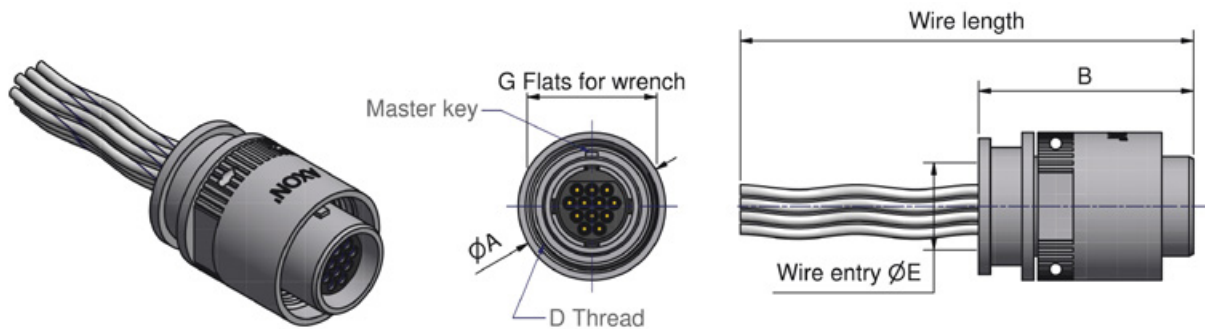
See page 364 for master key positions.

## REAR FUNNEL (for In-line plugs only)

**01:** for heat-shrinkable boots only.

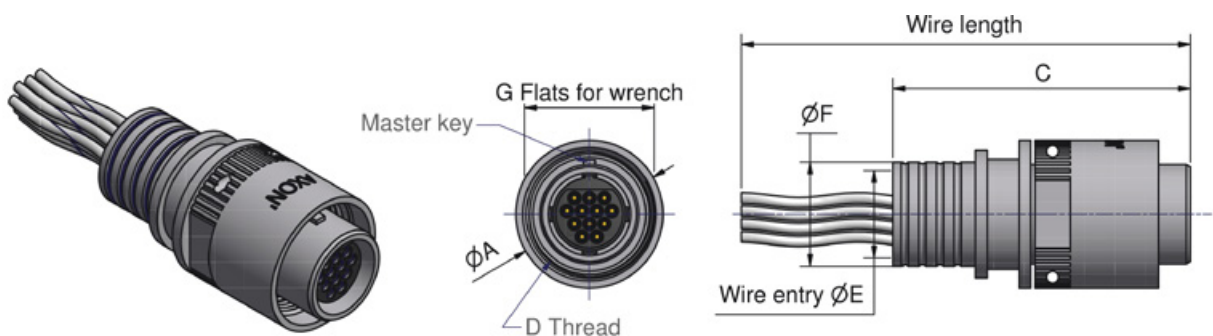
**02:** for 360° screen termination and heat-shrinkable boots.

## METRIC THREAD IN-LINE MALE PLUGS



**In-line male plug, short funnel (for heat-shrinkable boots only)**

**MCATxxx-06Pxxxxxx01**



**In-line male plug, screen termination funnel**

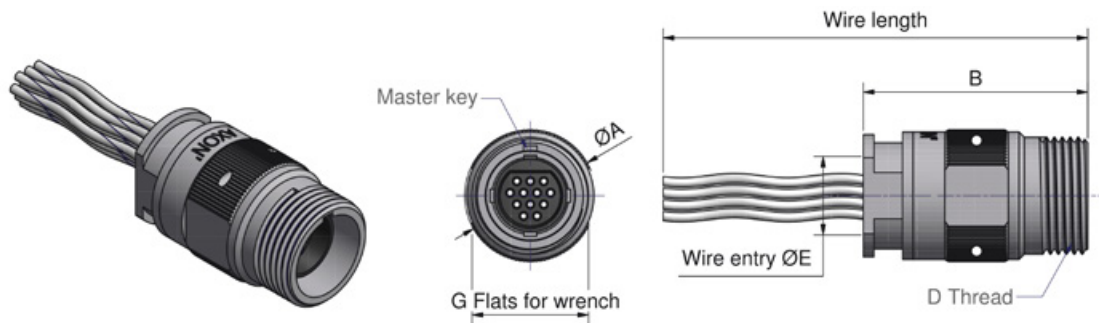
**MCATxxx-06Pxxxxxx02**

### TABLE OF DIMENSIONS - millimetres (inches)

| NUMBER OF WAYS | Ø A (MAX)      | B (MAX)         | C (MAX)          | D THREAD | WIRE ENTRY Ø E | SCREEN TERM. FUNNEL Ø F | G FLATS FOR LOW PROFILE WRENCH |
|----------------|----------------|-----------------|------------------|----------|----------------|-------------------------|--------------------------------|
| 5 OR 7         | 10.1<br>(.398) | 18.45<br>(.726) | 25.45<br>(1.002) | M9x0.5   | 5.8<br>(.228)  | 7.2<br>(.283)           | 9<br>(.354)                    |
| 12 OR 15       | 12.6<br>(.496) | 18.45<br>(.726) | 25.45<br>(1.002) | M11x0.75 | 7.4<br>(.291)  | 8.8<br>(.346)           | 11<br>(.433)                   |
| 19             | 16<br>(.630)   | 20.2<br>(.795)  | 27.2<br>(1.071)  | M14x0.75 | 9.6<br>(.378)  | 12<br>(.472)            | 15<br>(.591)                   |
| 37             | 18.9<br>(.744) | 20.2<br>(.795)  | 27.2<br>(1.071)  | M17x1    | 12<br>(.472)   | 14.4<br>(.567)          | 18<br>(.709)                   |

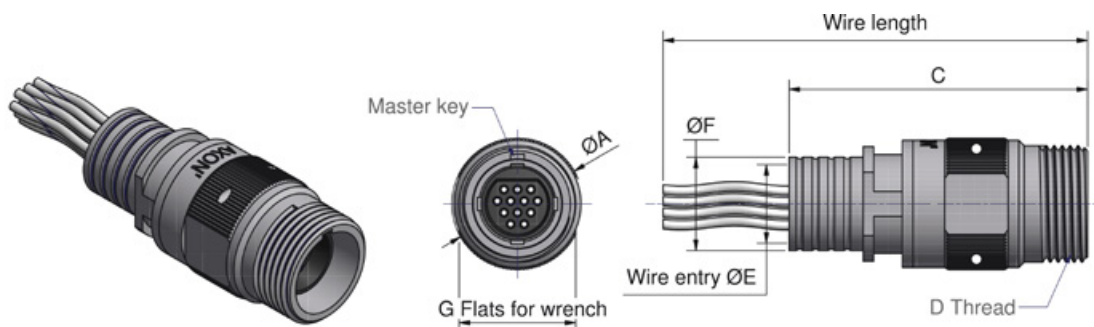
FOR RECOMMENDED TORQUE SEE PAGE 365  
FOR MASTER KEY POSITIONS SEE PAGE 364  
FOR REAR FUNNEL DIMENSIONS SEE PAGE 354

## METRIC THREAD IN-LINE FEMALE PLUGS



**In-line female plug, short funnel (for heat-shrinkable boots only)**

**MCATxxx-06Sxxxxxx01**



**In-line female plug, screen termination funnel**

**MCATxxx-06Sxxxxxx02**

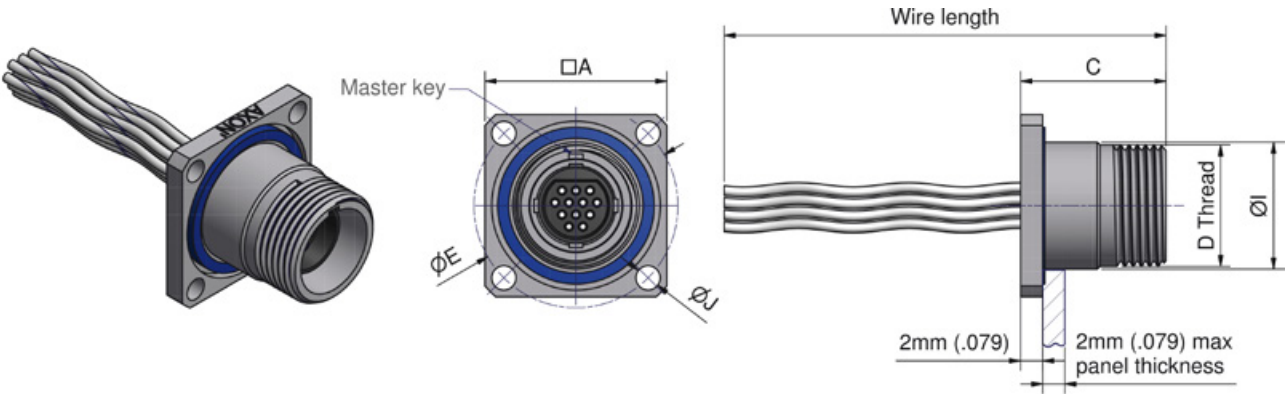
PIGTAIL  
CONNECTORS

Circular  
Micro-D connectors

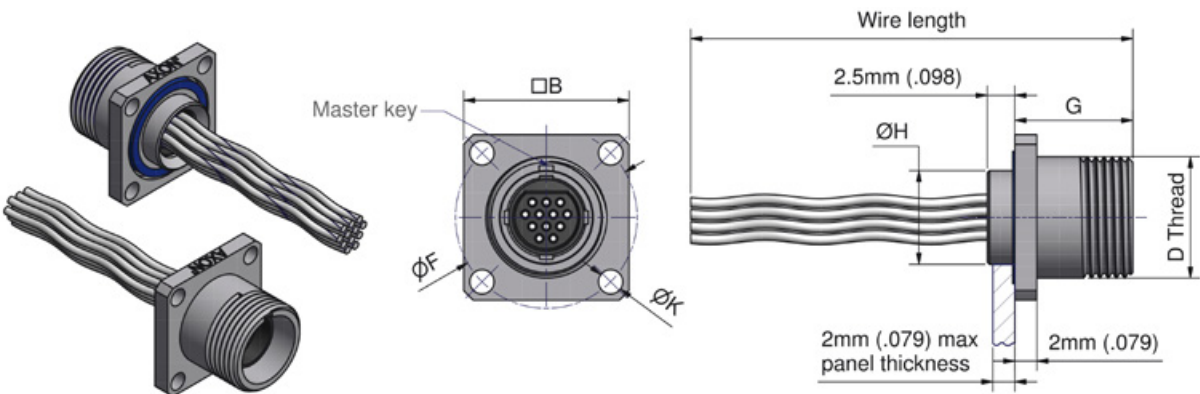
### ► TABLE OF DIMENSIONS - millimetres (inches)

| NUMBER OF<br>WAYS | Ø A (MAX)      | B (MAX)        | C (MAX)         | D THREAD | WIRE ENTRY<br>Ø E | SCREEN<br>TERM,<br>FUNNEL Ø F | G FLATS FOR<br>LOW PROFILE<br>WRENCH |
|-------------------|----------------|----------------|-----------------|----------|-------------------|-------------------------------|--------------------------------------|
| 5 OR 7            | 10<br>(.394)   | 21.4<br>(.843) | 28.4<br>(1.118) | M9x0.5   | 5.8<br>(.228)     | 7.2<br>(.283)                 | 9<br>(.354)                          |
| 12 OR 15          | 12.5<br>(.492) | 21.4<br>(.843) | 28.4<br>(1.118) | M11x0.75 | 7.4<br>(.291)     | 8.8<br>(.346)                 | 11<br>(.433)                         |
| 19                | 15<br>(.591)   | 22.9<br>(.902) | 29.9<br>(1.177) | M14x0.75 | 9.6<br>(.378)     | 12<br>(.472)                  | 14<br>(.551)                         |
| 37                | 17.5<br>(.689) | 22.9<br>(.902) | 29.9<br>(1.177) | M17x1    | 12<br>(.472)      | 14.4<br>(.567)                | 16<br>(0.63)                         |

# METRIC THREAD PANEL MOUNT SQUARE FLANGE FEMALE RECEPTACLES



Rear mount square flange female  
MCATxxx-00Sxxxxxx



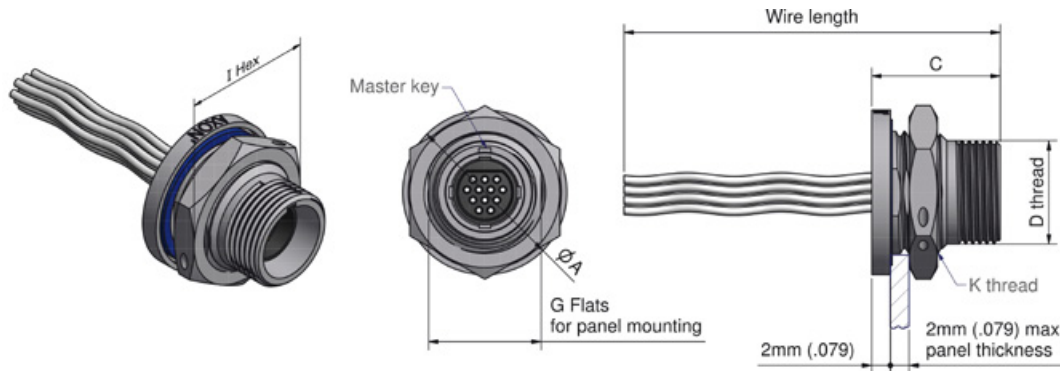
Front mount square flange female  
MCATxxx-01Sxxxxxx

## TABLE OF DIMENSIONS - millimetres (inches)

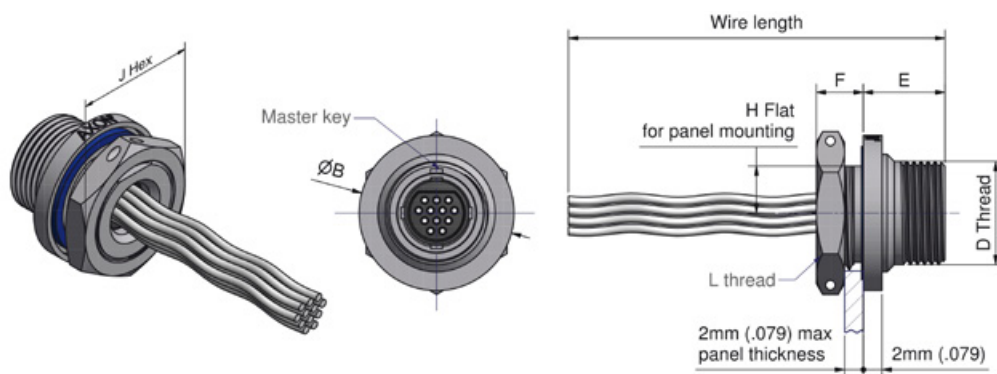
| NUMBER OF WAYS | A (MAX)        | B (MAX)        | C (MAX)        | D THREAD | Ø E BSC        | Ø F BSC       | G (MAX)        | Ø H (MAX)      | I (MAX)        | Ø J<br>+0.2 / -0<br>(+.008 / -.0) | Ø K<br>+0.2 / -0<br>(+.008 / -.0) |
|----------------|----------------|----------------|----------------|----------|----------------|---------------|----------------|----------------|----------------|-----------------------------------|-----------------------------------|
| 5 OR 7         | 14.6<br>(.575) | 14.6<br>(.575) | 13.3<br>(.524) | M9X0.5   | 16<br>(.631)   | 16<br>(.631)  | 10.8<br>(.425) | 8.6<br>(.339)  | 9.6<br>(.378)  | 2.2<br>(.087)                     | 2.2<br>(.087)                     |
| 12 OR 15       | 16.6<br>(.654) | 15.1<br>(.594) | 13.3<br>(.524) | M11X0.75 | 18.5<br>(.728) | 16.5<br>(.65) | 10.8<br>(.425) | 8.6<br>(.339)  | 11.6<br>(.457) | 2.2<br>(.087)                     | 2.2<br>(.087)                     |
| 19             | 20.1<br>(.791) | 16.6<br>(.654) | 14.8<br>(.583) | M14X0.75 | 22.5<br>(.886) | 19<br>(.748)  | 12.3<br>(.484) | 12.1<br>(.476) | 15.1<br>(.594) | 3.2<br>(.126)                     | 2.2<br>(.087)                     |
| 37             | 21.6<br>(.85)  | 21.1<br>(.831) | 14.8<br>(.583) | M17X1    | 24.5<br>(.965) | 24<br>(.945)  | 12.3<br>(.484) | 15.1<br>(.595) | 17.1<br>(.673) | 3.2<br>(.126)                     | 3.2<br>(.126)                     |

FOR PANEL MOUNTING GUIDE SEE PAGES 340 & 341  
FOR MASTER KEY POSITIONS SEE PAGE 364  
SUPPLIED WITHOUT PANEL MOUNTING SCREWS  
FOR PANEL CUT-OUT DIMENSIONS SEE PAGES 350 & 351

## METRIC THREAD PANEL MOUNT JAM NUT FEMALE RECEPTACLES



Rear mount jam nut female  
**MCATxxx-07Sxxxxxx**



Front mount jam nut female  
**MCATxxx-08Sxxxxxx**

PIGTAIL  
CONNECTORS

Circular  
Micro-D connectors

### ► TABLE OF DIMENSIONS - millimetres (inches)

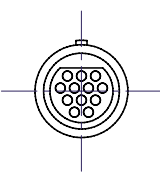
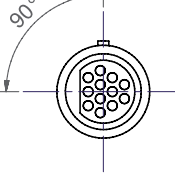
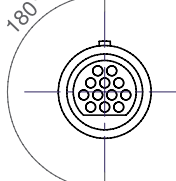
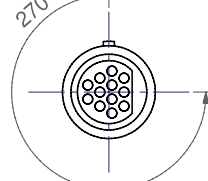
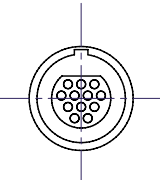
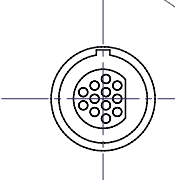
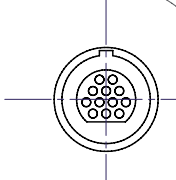
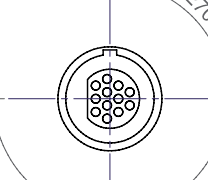
| NUMBER OF WAYS | Ø A (MAX)      | Ø B (MAX)      | C (MAX)        | D THREAD | E (MAX)        | F (MAX)       | G BSC        | H BSC          | I HEX        | J HEX        | K THREAD | L THREAD |
|----------------|----------------|----------------|----------------|----------|----------------|---------------|--------------|----------------|--------------|--------------|----------|----------|
| 5 OR 7         | 16.6<br>(.654) | 14.1<br>(.555) | 13.8<br>(.543) | M9x0.5   | 8.8<br>(.346)  | 5.1<br>(.201) | 11<br>(.433) | 3.5<br>(.138)  | 15<br>(.591) | 12<br>(.472) | M12x1    | M9x0.75  |
| 12 OR 15       | 17.6<br>(.693) | 16.6<br>(.654) | 13.8<br>(.543) | M11x0.75 | 9.1<br>(.358)  | 5.1<br>(.201) | 12<br>(.472) | 5<br>(.197)    | 16<br>(.63)  | 15<br>(.591) | M13x1    | M12x1    |
| 19             | 21.3<br>(.839) | 17.6<br>(.693) | 14.8<br>(.583) | M14x0.75 | 10.6<br>(.417) | 5.6<br>(.22)  | 15<br>(.591) | 5.75<br>(.226) | 19<br>(.748) | 16<br>(.63)  | M16x1    | M13x1    |
| 37             | 24.1<br>(.949) | 21.3<br>(.839) | 14.8<br>(.583) | M17x1    | 10.6<br>(.417) | 5.6<br>(.22)  | 18<br>(.709) | 7.25<br>(.285) | 22<br>(.866) | 19<br>(.75)  | M19x1    | M16x1    |

FOR PANEL MOUNTING GUIDE SEE PAGES 340 & 341  
FOR MASTER KEY POSITIONS SEE PAGE 364  
FOR PANEL CUT-OUT DIMENSIONS SEE PAGES 352 & 353

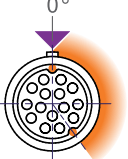
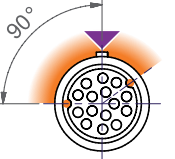
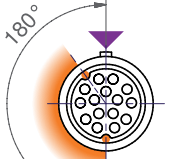
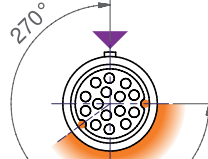
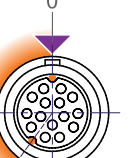
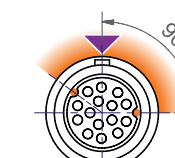
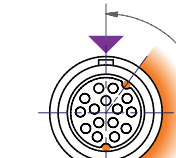
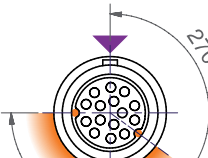
SUPPLIED WITHOUT PANEL MOUNTING SCREWS

## METRIC THREAD

### ► MASTER KEY POSITIONS (5, 7, 12, 19 & 37 way connectors)

| KEY CODE                                                                     | A                                                                                  | B                                                                                  | C                                                                                   | D                                                                                    |
|------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| ORIENTATION                                                                  | 0°                                                                                 | 90°                                                                                | 180°                                                                                | 270°                                                                                 |
| <b>MALE KEYING</b><br>(for in-line male plugs)                               |   |   |   |   |
| <b>FEMALE KEYING</b><br>(for in-line female plugs & panel mount receptacles) |  |  |  |  |

### ► MASTER KEY POSITIONS (15 way connectors)

| KEY CODE                                                                     | A                                                                                   | B                                                                                   | C                                                                                    | D                                                                                     |
|------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| ORIENTATION                                                                  | 0°                                                                                  | 90°                                                                                 | 180°                                                                                 | 270°                                                                                  |
| <b>MALE KEYING</b><br>(for in-line male plugs)                               |  |  |  |  |
| <b>FEMALE KEYING</b><br>(for in-line female plugs & panel mount receptacles) |  |  |  |  |

## METRIC THREAD

### ► TABLE OF WEIGHTS (estimated) - grams (ounces)

| METRIC<br>THREAD<br>(with<br>insert) | IN-LINE MALE PLUG |                                 | IN-LINE FEMALE PLUG |                                 | PANEL MOUNT SQUARE<br>FLANGE FEMALE<br>RECEPTACLE |                | PANEL MOUNT JAM NUT<br>FEMALE RECEPTACLE |                |
|--------------------------------------|-------------------|---------------------------------|---------------------|---------------------------------|---------------------------------------------------|----------------|------------------------------------------|----------------|
|                                      | SHORT<br>FUNNEL   | SCREEN<br>TERMINATION<br>FUNNEL | SHORT<br>FUNNEL     | SCREEN<br>TERMINATION<br>FUNNEL | REAR MOUNT                                        | FRONT<br>MOUNT | REAR MOUNT                               | FRONT<br>MOUNT |
| 5 OR 7                               | 6.3<br>(.23)      | 6.8<br>(.24)                    | 6.8<br>(.24)        | 7.7<br>(.27)                    | 6.3<br>(.22)                                      | 6.3<br>(.22)   | 10.6<br>(.37)                            | 6.5<br>(.23)   |
| 12 OR 15                             | 9.3<br>(.33)      | 10<br>(.35)                     | 10.7<br>(.38)       | 11.5<br>(.4)                    | 8.7<br>(.31)                                      | 6.6<br>(.23)   | 12<br>(.42)                              | 6.9<br>(.24)   |
| 19                                   | 13.2<br>(0.47)    | 15.5<br>(.55)                   | 16.3<br>(.57)       | 18.9<br>(.67)                   | 15<br>(.53)                                       | 10.7<br>(.38)  | 18.1<br>(.64)                            | 12.6<br>(.45)  |
| 37                                   | 19<br>(.67)       | 21.6<br>(.76)                   | 19.2<br>(.68)       | 22.8<br>(.8)                    | 16.3<br>(.58)                                     | 14.6<br>(.52)  | 22.7<br>(.8)                             | 16.9<br>(.6)   |

MAXIMUM WEIGHT OF THE CONNECTOR WITHOUT WIRES  
FOR WIRE WEIGHTS SEE PAGE 345

### ► TORQUE

| NUMBER<br>OF CONTACTS | RECOMMENDED<br>TORQUE |
|-----------------------|-----------------------|
| 5                     | 1.5 Nm                |
| 7                     | 1.5 Nm                |
| 12                    | 2 Nm                  |
| 15                    | 2 Nm                  |
| 19                    | 2 Nm                  |
| 37                    | 2 Nm                  |

PIGTAIL  
CONNECTORS

Circular  
Micro-D connectors

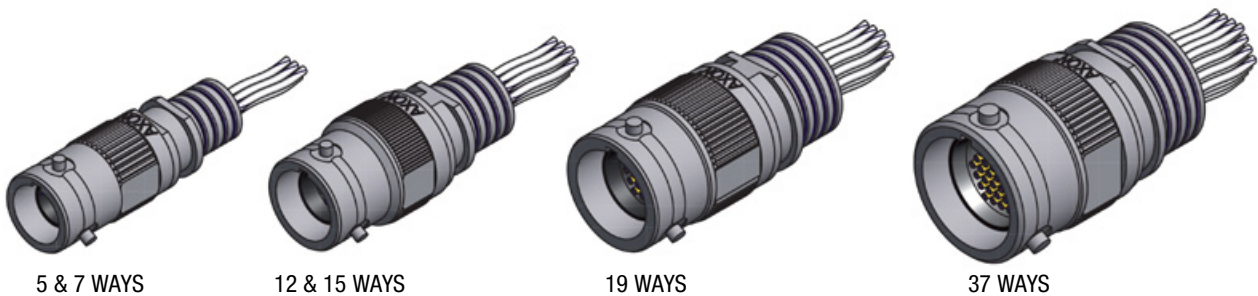
# THREE LUG BAYONET CONNECTOR RANGE - MCA3B

The Three Lug Bayonet connectors are intended for use in applications which require quick coupling (connect / disconnect).

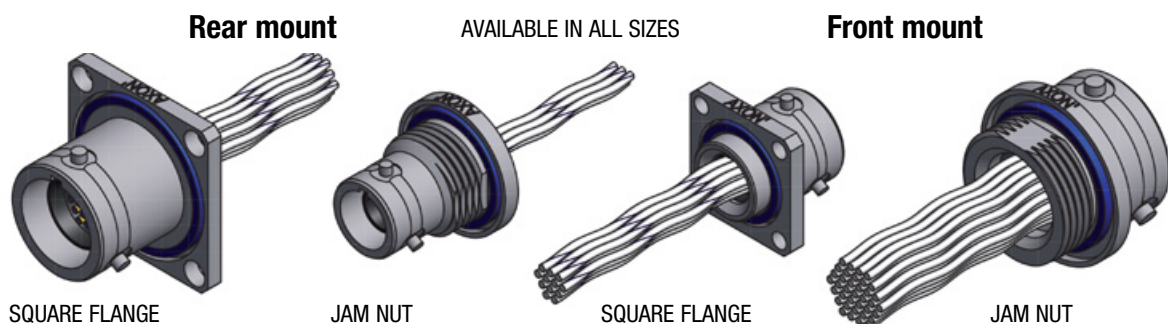
## IN-LINE MALE PLUGS



## IN-LINE FEMALE PLUGS



## PANEL MOUNT JAM NUT & SQUARE FLANGE RECEPTACLES



# IDENTIFICATION CODE

**MCA 3B V 07 - 06 P 4 L 050 A 02**

## SERIES

**MCA:** Micro-D Circular AXON'.

## COUPLING SYSTEM

**3B:** Three lug bayonet.

## SHELL TYPE

**V:** Nickel plated brass + epoxy resin 150°C.

**W:** Nickel plated brass + epoxy resin 200°C.

## NUMBER OF CONTACTS 05, 07, 12, 15, 19, 37.

See pages 342 & 343 for contact arrangements.

## CONNECTOR TYPE

**00:** Rear panel mount square flange receptacle (female only).

**01:** Front panel mount square flange receptacle (female only).

**06:** In-line plug (male or female).

**07:** Rear panel mount jam nut receptacle (female only).

**08:** Front panel mount jam nut receptacle (female only).

## CONNECTOR GENDER

**P:** Male connector (pin contacts).

**S:** Female connector (socket contacts).

## WIRE TYPE

**1:** E2607, AWG 26, 7 strands, 600 V.

**4:** E2619, AWG 26, 19 strands, 600 V.

**6:** E2807, AWG 28, 7 strands, 600 V.

**8:** E3007, AWG 30, 7 strands, 600 V.

**E:** M22759/33, AWG 26, 19 strands, 600 V.

*Specific wires on request.*

*Uninsulated wires (for panel mount only)*

*For colour code V*

**3:** M22759/11, AWG 26, 19 strands, 600 V.

**F:** E2607, AWG 26, 7 strands, 600 V.

**G:** AWG 25 Gold plated.

**T:** AWG 24 Tin plated.

See page 345 for wire types.

## COLOUR CODE

**L:** All white.

**F:** All yellow.

**BLANK:** If wire type is **G** or **T**.

**W:** 10 colour repeated code.

**V:** MIL-STD-681 striped (only for wire types 3 and F).

See pages 346 & 347 for colour code.

## WIRE LENGTH (in cm)

Caution! Wire length in centimetres - (1 cm = 10 mm = 0.394").

| L              | 5 ≤ L ≤ 10       | 10 < L ≤ 100      | L > 100     |
|----------------|------------------|-------------------|-------------|
| in cm (inches) | 1.97 ≤ L ≤ 3.940 | 3.940 < L ≤ 39.40 | L > 39.40   |
| TOLERANCE      | -0 / +0.5        | -0 / +3           | -0 / +5     |
| in cm (inches) | -0 / +0.200      | -0 / +1.180       | -0 / +1.970 |

## MASTER KEY POSITION

**A:** 0°.

**B:** 90°.

**C:** 180°.

**D:** 270°.

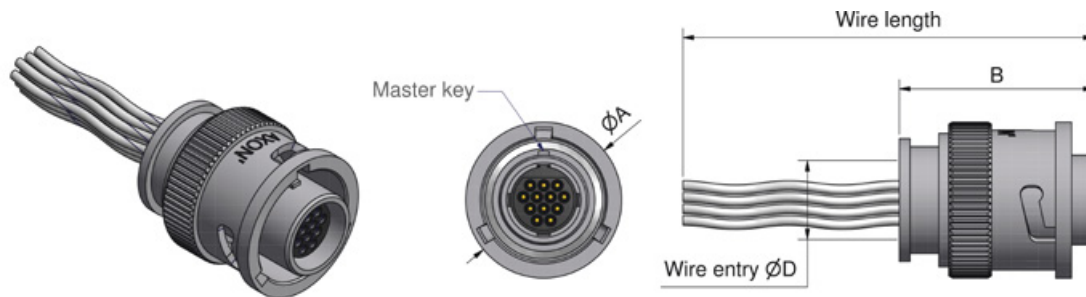
See page 372 for master key positions.

## REAR FUNNEL (for In-line plugs only)

**01:** for heat-shrinkable boots only.

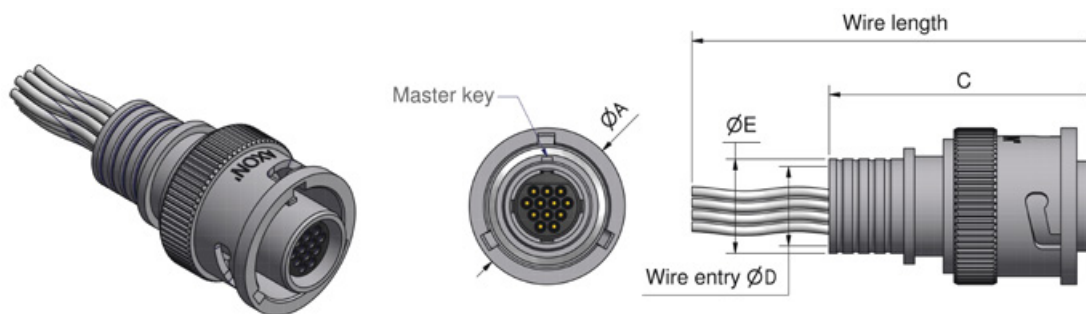
**02:** for 360° screen termination and heat-shrinkable boots.

## THREE LUG BAYONET IN-LINE MALE PLUGS



**In-line male plug, short funnel (for heat-shrinkable boots only)**

**MCA3Bxxx-06Pxxxxxx01**



**In-line male plug, screen termination funnel**

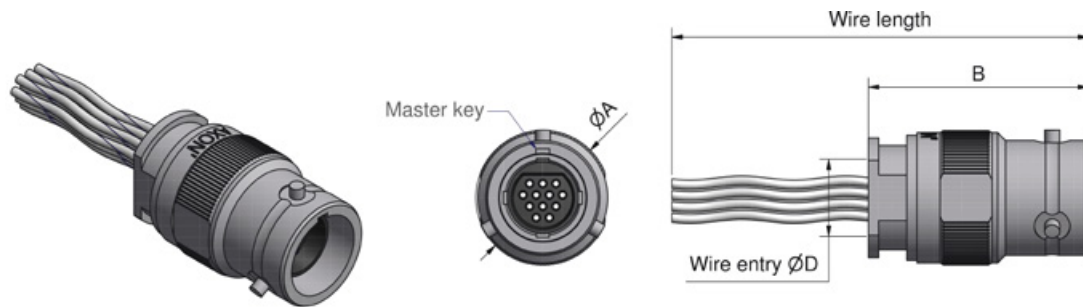
**MCA3Bxxx-06Pxxxxxx02**

### ▶ TABLE OF DIMENSIONS - millimetres (inches)

| NUMBER OF WAYS | Ø A (MAX)      | B (MAX)        | C (MAX)         | WIRE ENTRY Ø D | SCREEN TERM.<br>FUNNEL Ø E |
|----------------|----------------|----------------|-----------------|----------------|----------------------------|
| 5 OR 7         | 13.2<br>(.52)  | 18.5<br>(.728) | 25.5<br>(1.003) | 5.8<br>(.228)  | 7.2<br>(.283)              |
| 12 OR 15       | 14.7<br>(.579) | 18.5<br>(.728) | 25.5<br>(1.003) | 7.4<br>(.291)  | 8.8<br>(.346)              |
| 19             | 17.7<br>(.695) | 20.2<br>(.795) | 27.2<br>(1.071) | 9.6<br>(.378)  | 12<br>(.472)               |
| 37             | 20.7<br>(.815) | 20.2<br>(.795) | 27.2<br>(1.071) | 12<br>(.472)   | 14.4<br>(.567)             |

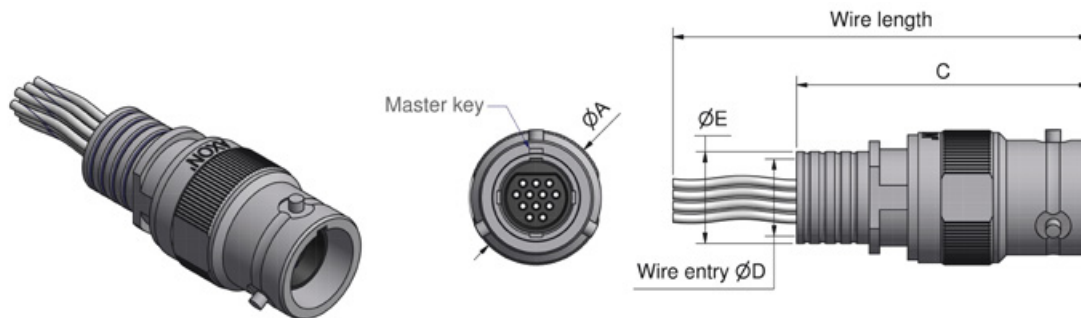
FOR MASTER KEY POSITIONS SEE PAGE 372  
FOR REAR FUNNEL DIMENSIONS SEE PAGE 354

## THREE LUG BAYONET IN-LINE FEMALE PLUGS



**In-line female plug, short funnel (for heat-shrinkable boots only)**

**MCA3Bxxx-06Sxxxxxx01**



**In-line female plug, screen termination funnel**

**MCA3Bxxx-06Sxxxxxx02**

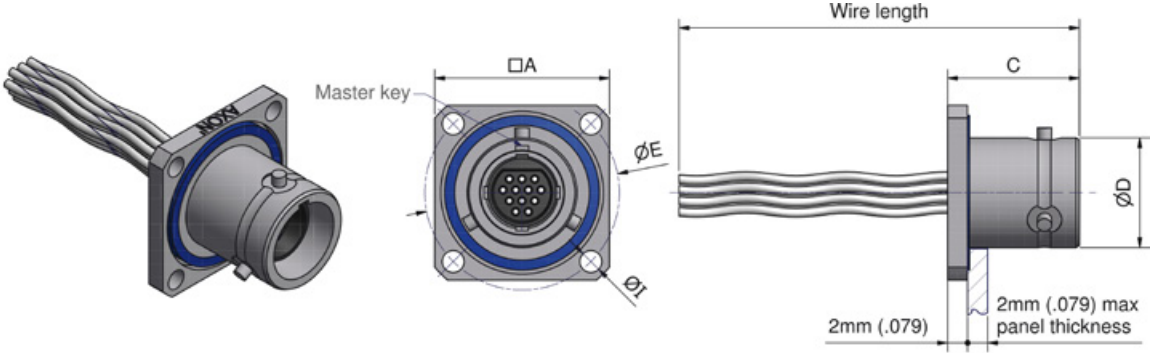
PIGTAIL  
CONNECTORS

Circular  
Micro-D connectors

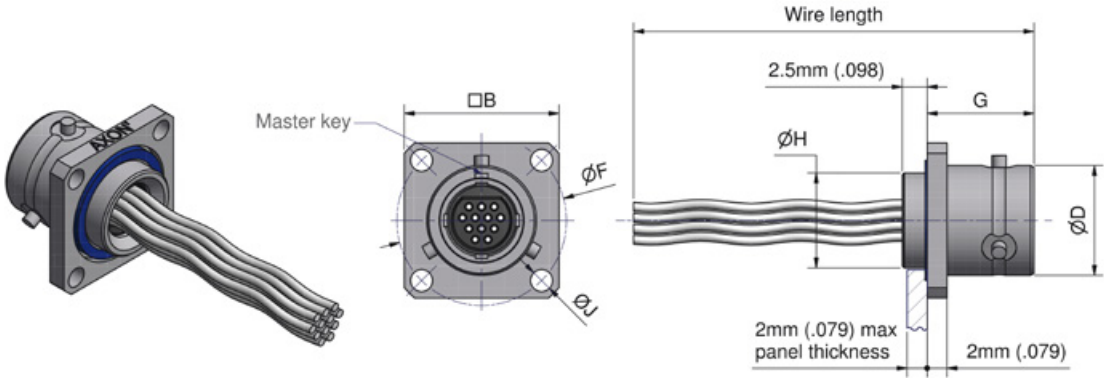
### ► TABLE OF DIMENSIONS - millimetres (inches)

| NUMBER OF WAYS | Ø A (MAX)    | B (MAX)        | C (MAX)         | WIRE ENTRY Ø D | SCREEN TERM.<br>FUNNEL Ø E |
|----------------|--------------|----------------|-----------------|----------------|----------------------------|
| 5 OR 7         | 10<br>(.394) | 21.4<br>(.843) | 28.4<br>(1.118) | 5.8<br>(.229)  | 7.2<br>(.283)              |
| 12 OR 15       | 13<br>(.512) | 21.4<br>(.843) | 28.4<br>(1.118) | 7.4<br>(.292)  | 8.8<br>(.346)              |
| 19             | 15<br>(.591) | 22.9<br>(.902) | 29.9<br>(1.177) | 9.6<br>(.378)  | 12<br>(.472)               |
| 37             | 18<br>(.709) | 22.9<br>(.902) | 29.9<br>(1.177) | 12<br>(.472)   | 14.4<br>(.567)             |

# THREE LUG BAYONET PANEL MOUNT SQUARE FLANGE FEMALE RECEPTACLES



Rear mount square flange female  
**MCA3Bxxx-00Sxxxxxx**



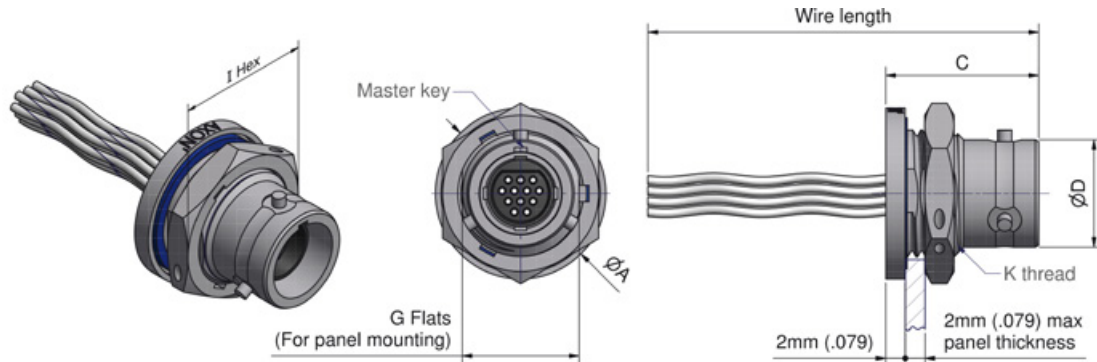
Front mount square flange female  
**MCA3Bxxx-01Sxxxxxx**

## ▶ TABLE OF DIMENSIONS - millimetres (inches)

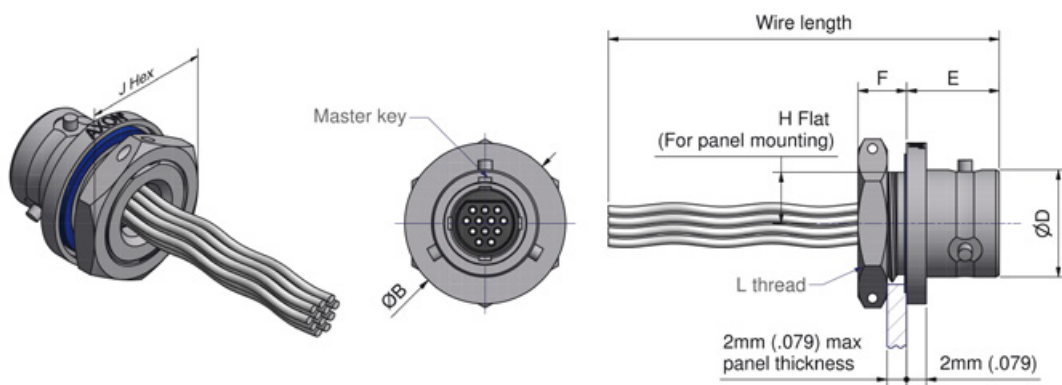
| NUMBER OF WAYS | A (MAX)        | B (MAX)        | C (MAX)        | D (MAX)        | E BSC          | F BSC        | G (MAX)        | H (MAX)        | I<br>+0.2 / -0<br>(+.008 / -.0) | J<br>+0.2 / -0<br>(+.008 / -.0) |
|----------------|----------------|----------------|----------------|----------------|----------------|--------------|----------------|----------------|---------------------------------|---------------------------------|
| 5 OR 7         | 16.6<br>(.654) | 14.6<br>(.575) | 13.3<br>(.524) | 9.6<br>(.378)  | 18.5<br>(.728) | 16<br>(.631) | 10.8<br>(.425) | 9.6<br>(.378)  | 2.2<br>(.087)                   | 2.2<br>(.087)                   |
| 12 OR 15       | 17.6<br>(.693) | 15.6<br>(.614) | 13.3<br>(.524) | 11.1<br>(.437) | 19.5<br>(.768) | 17<br>(.669) | 10.8<br>(.425) | 9.6<br>(.378)  | 2.2<br>(.087)                   | 2.2<br>(.087)                   |
| 19             | 21.6<br>(.85)  | 16.6<br>(.654) | 14.8<br>(.583) | 14.1<br>(.555) | 24.5<br>(.965) | 19<br>(.748) | 12.3<br>(.484) | 12.1<br>(.476) | 3.2<br>(.127)                   | 2.2<br>(.087)                   |
| 37             | 24.1<br>(.949) | 21.1<br>(.831) | 14.8<br>(.583) | 17.1<br>(.673) | 27<br>(1.063)  | 24<br>(.945) | 12.3<br>(.484) | 15.1<br>(.594) | 3.2<br>(.126)                   | 3.2<br>(.126)                   |

SUPPLIED WITHOUT PANEL MOUNTING SCREWS  
 FOR PANEL MOUNTING GUIDE SEE PAGES 340 & 341  
 FOR MASTER KEY POSITIONS SEE PAGE 372  
 FOR PANEL CUT-OUT DIMENSIONS SEE PAGES 350 & 351

## THREE LUG BAYONET PANEL MOUNT JAM NUT FEMALE RECEPTACLES



Rear mount jam nut female  
**MCA3Bxxx-07Sxxxxxx**



Front mount jam nut female  
**MCA3Bxxx-08Sxxxxxx**

PIGTAIL  
CONNECTORS

Circular  
Micro-D connectors

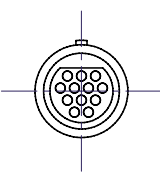
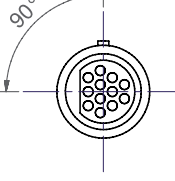
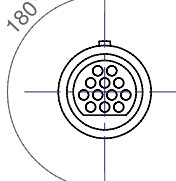
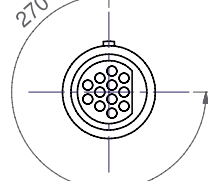
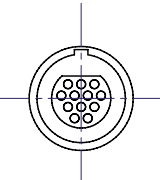
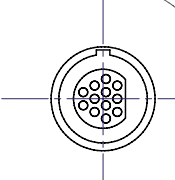
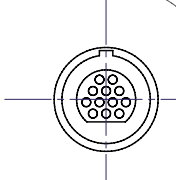
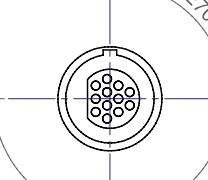
### ► TABLE OF DIMENSIONS - millimetres (inches)

| NUMBER OF WAYS | Ø A (MAX)      | Ø B (MAX)      | C (MAX)        | Ø D (MAX)      | E (MAX)        | F (MAX)       | G BSC        | H BSC          | I HEX        | J HEX        | K THREAD | L THREAD |
|----------------|----------------|----------------|----------------|----------------|----------------|---------------|--------------|----------------|--------------|--------------|----------|----------|
| 5 OR 7         | 16.6<br>(.654) | 14.1<br>(.555) | 15.8<br>(.622) | 9.6<br>(.378)  | 9.6<br>(.378)  | 5.1<br>(.201) | 11<br>(.433) | 3.5<br>(.138)  | 15<br>(.591) | 12<br>(.473) | M12x1    | M9x0.75  |
| 12 OR 15       | 17.6<br>(.693) | 16.6<br>(.654) | 15.8<br>(.622) | 11.1<br>(.437) | 9.6<br>(.378)  | 5.1<br>(.201) | 12<br>(.473) | 5<br>(.197)    | 16<br>(.63)  | 15<br>(.591) | M13x1    | M12x1    |
| 19             | 21.3<br>(.839) | 17.6<br>(.693) | 16.8<br>(.661) | 14.1<br>(.555) | 10.6<br>(.417) | 5.6<br>(.22)  | 15<br>(.591) | 5.75<br>(.226) | 19<br>(.748) | 16<br>(.63)  | M16x1    | M13x1    |
| 37             | 24.1<br>(.949) | 21.3<br>(.839) | 16.1<br>(.634) | 17.1<br>(.673) | 10.6<br>(.417) | 5.6<br>(.22)  | 18<br>(.709) | 7.25<br>(.285) | 22<br>(.866) | 19<br>(.75)  | M19x1    | M16x1    |

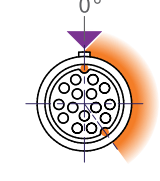
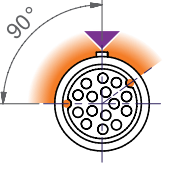
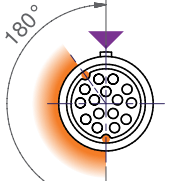
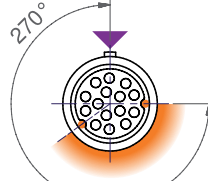
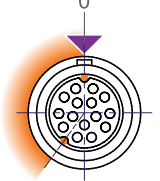
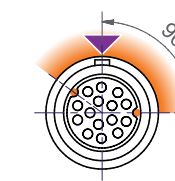
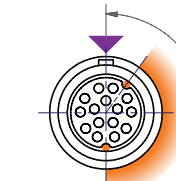
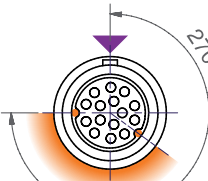
FOR PANEL MOUNTING GUIDE SEE PAGES 340 & 341  
FOR MASTER KEY POSITIONS SEE PAGE 372  
FOR PANEL CUT-OUT DIMENSIONS SEE PAGES 352 & 353

## THREE LUG BAYONET

### ► MASTER KEY POSITIONS (5, 7, 12, 19 & 37 way connectors)

| KEY CODE                                                                     | A                                                                                  | B                                                                                  | C                                                                                   | D                                                                                    |
|------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| ORIENTATION                                                                  | 0°                                                                                 | 90°                                                                                | 180°                                                                                | 270°                                                                                 |
| <b>MALE KEYING</b><br>(for in-line male plugs)                               |   |   |   |   |
| <b>FEMALE KEYING</b><br>(for in-line female plugs & panel mount receptacles) |  |  |  |  |

### ► MASTER KEY POSITIONS (15 way connectors)

| KEY CODE                                                                     | A                                                                                   | B                                                                                   | C                                                                                    | D                                                                                     |
|------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| ORIENTATION                                                                  | 0°                                                                                  | 90°                                                                                 | 180°                                                                                 | 270°                                                                                  |
| <b>MALE KEYING</b><br>(for in-line male plugs)                               |  |  |  |  |
| <b>FEMALE KEYING</b><br>(for in-line female plugs & panel mount receptacles) |  |  |  |  |

## THREE LUG BAYONET

### ► TABLE OF WEIGHTS (estimated) - grams (ounces)

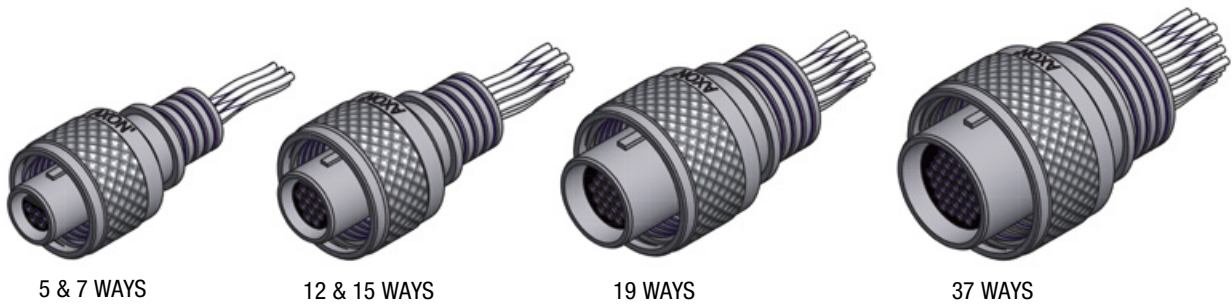
| THREE LUG BAYONET | IN-LINE MALE PLUG |                           | IN-LINE FEMALE PLUG |                           | PANEL MOUNT SQUARE FLANGE FEMALE RECEPTACLE |               | PANEL MOUNT JAM NUT FEMALE RECEPTACLE |               |
|-------------------|-------------------|---------------------------|---------------------|---------------------------|---------------------------------------------|---------------|---------------------------------------|---------------|
|                   | SHORT FUNNEL      | SCREEN TERMINATION FUNNEL | SHORT FUNNEL        | SCREEN TERMINATION FUNNEL | REAR MOUNT                                  | FRONT MOUNT   | REAR MOUNT                            | FRONT MOUNT   |
| 5 OR 7            | 8.1<br>(.29)      | 8.6<br>(.30)              | 6.8<br>(.24)        | 7.6<br>(.27)              | 7.2<br>(.25)                                | 6.2<br>(.22)  | 9.6<br>(.34)                          | 6.8<br>(.24)  |
| 12 OR 15          | 9.9<br>(.35)      | 10.5<br>(.37)             | 10.5<br>(.37)       | 11.2<br>(.40)             | 8.4<br>(.30)                                | 6.9<br>(.24)  | 12.3<br>(.43)                         | 6.6<br>(.23)  |
| 19                | 14.0<br>(.49)     | 16.2<br>(.57)             | 15.1<br>(.53)       | 17.5<br>(.62)             | 13.8<br>(.47)                               | 10.1<br>(.36) | 18.5<br>(.65)                         | 11.1<br>(.39) |
| 37                | 18.0<br>(.64)     | 20.5<br>(.72)             | 19.0<br>(.67)       | 22.3<br>(.79)             | 17.4<br>(.61)                               | 14.2<br>(.50) | 22.5<br>(.79)                         | 14.6<br>(.51) |

MAXIMUM WEIGHT OF THE CONNECTOR WITHOUT WIRES  
FOR WIRE WEIGHTS SEE PAGE 345

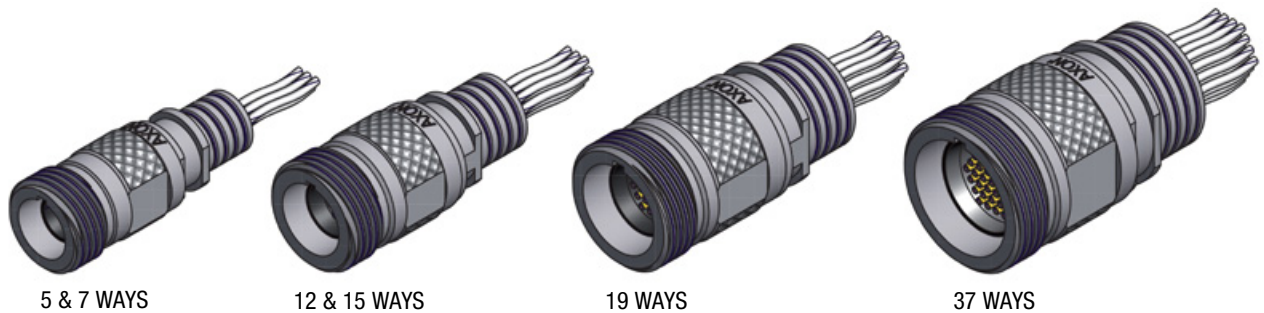
# TRIPLE START (ANTI-DECOUPLING) CONNECTOR RANGE - MCAC

With its anti-decoupling system, the Triple Start Thread connector range is specially designed to withstand vibration.

## IN-LINE MALE PLUGS



## IN-LINE FEMALE PLUGS



## PANEL MOUNT JAM NUT & SQUARE FLANGE RECEPTACLES

Rear mount

AVAILABLE IN ALL SIZES

Front mount



# IDENTIFICATION CODE

**MCA**

**C**

**V**

**07**

**-**

**06**

**P**

**4**

**L**

**050**

**A**

**02**

## SERIES

**MCA:** Micro-D Circular AXON'.

## COUPLING SYSTEM

**C:** Triple start thread & anti-decoupling system.

## MATERIAL & FINISH TYPE

**V:** Nickel plated brass + epoxy resin 150°C.

**W:** Nickel plated brass + epoxy resin 200°C.

## NUMBER OF CONTACTS 05, 07, 12, 15, 19, 37.

See pages 342 & 343 for contact arrangements.

## CONNECTOR TYPE

**00:** Rear panel mount square flange receptacle (female only).

**01:** Front panel mount square flange receptacle (female only).

**06:** In-line plug (male or female).

**07:** Rear panel mount jam nut receptacle (female only).

**08:** Front panel mount jam nut receptacle (female only).

## CONNECTOR GENDER

**P:** Male connector (pin contacts).

**S:** Female connector (socket contacts).

## WIRE TYPE

**1:** E2607, AWG 26, 7 strands, 600 V.

**4:** E2619, AWG 26, 19 strands, 600 V.

**6:** E2807, AWG 28, 7 strands, 600 V.

**8:** E3007, AWG 30, 7 strands, 600 V.

**E:** M22759/33, AWG 26, 19 strands, 600 V.

*Specific wires on request.*

*Uninsulated wires (for panel mount only)*

*For colour code V*

**3:** M22759/11, AWG 26, 19 strands, 600 V.

**F:** E2607, AWG 26, 7 strands, 600 V.

**G:** AWG 25 Gold plated.

**T:** AWG 24 Tin plated.

See page 345 for wire types.

## COLOUR CODE

**L:** All white.

**F:** All yellow.

**BLANK:** If wire type is **G** or **T**.

**W:** 10 colour repeated code.

**V:** MIL-STD-681 striped (only for wire types 3 and F).

See pages 346 & 347 for colour code.

## WIRE LENGTH (in cm)

Caution! Wire length in centimetres - (1 cm = 10 mm = 0.394").

| L              | 5 ≤ L ≤ 10       | 10 < L ≤ 100      | L > 100     |
|----------------|------------------|-------------------|-------------|
| in cm (inches) | 1.97 ≤ L ≤ 3.940 | 3.940 < L ≤ 39.40 | L > 39.40   |
| TOLERANCE      | -0 / +0.5        | -0 / +3           | -0 / +5     |
| in cm (inches) | -0 / +0.200      | -0 / +1.180       | -0 / +1.970 |

## MASTER KEY POSITION

**A:** 0°.

**B:** 90°.

**C:** 180°.

**D:** 270°.

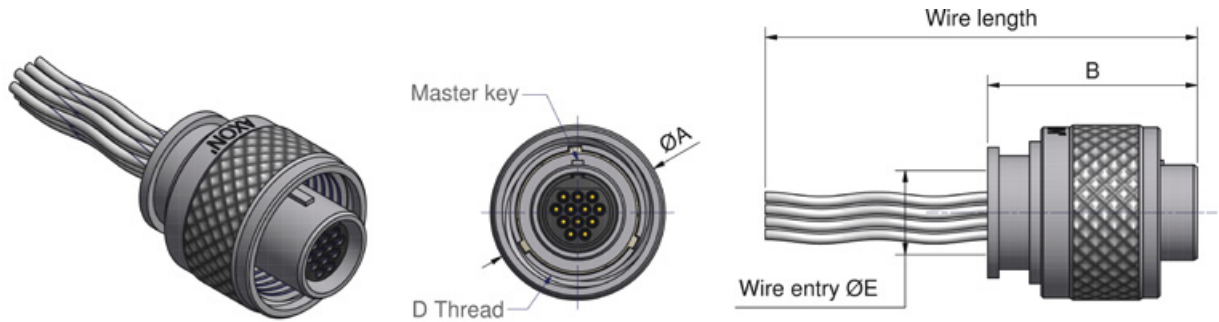
See page 380 for master key positions.

## REAR FUNNEL (for In-line plugs only)

**01:** for heat-shrinkable boots only.

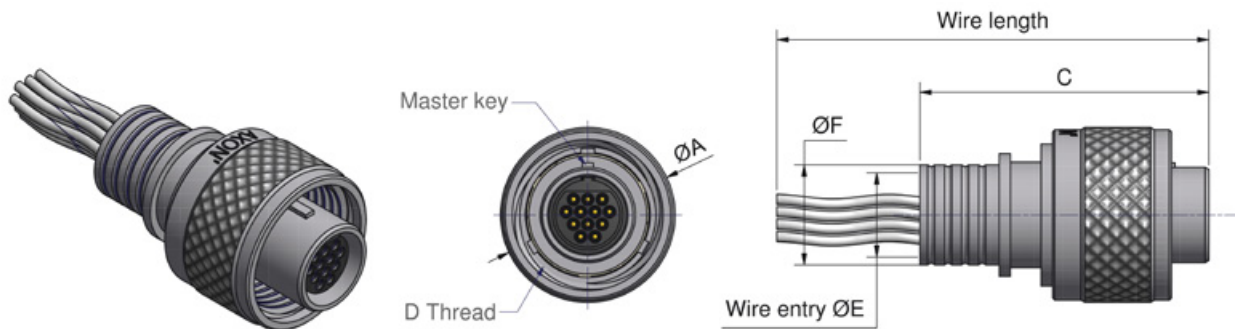
**02:** for 360° screen termination and heat-shrinkable boots.

## TRIPLE START (ANTI-DECOUPLING) IN-LINE MALE PLUGS



**In-line male plug, short funnel (for heat-shrinkable boots only)**

**MCACxxx-06Pxxxxxx01**



**In-line male plug, screen termination funnel**

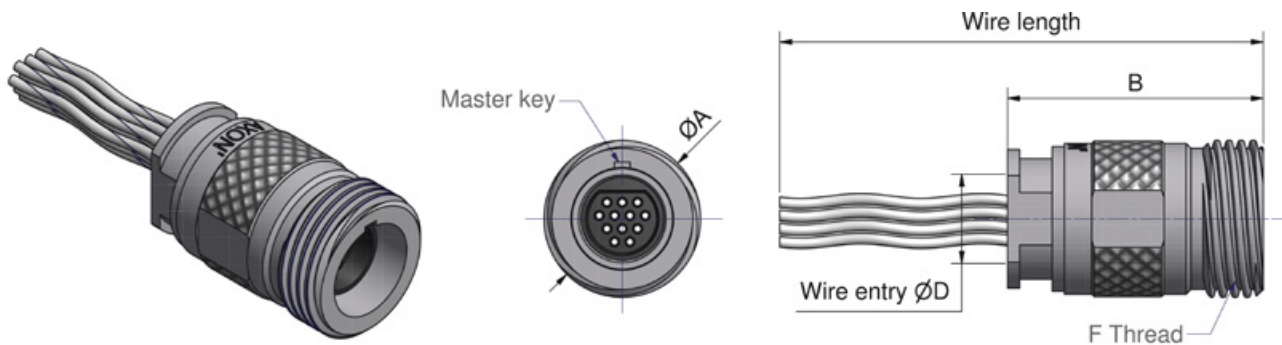
**MCACxxx-06Pxxxxxx02**

### ► TABLE OF DIMENSIONS - millimetres (inches)

| NUMBER OF<br>WAYS | Ø A (MAX)      | B (MAX)        | C (MAX)         | D THREAD | WIRE ENTRY<br>Ø E | SCREEN TERM.<br>FUNNEL Ø F |
|-------------------|----------------|----------------|-----------------|----------|-------------------|----------------------------|
| 5 OR 7            | 13.5<br>(.531) | 18.7<br>(.736) | 25.7<br>(1.012) | Tr11x3P1 | 5.8<br>(.228)     | 7.2<br>(.283)              |
| 12 OR 15          | 15.5<br>(.611) | 18.7<br>(.736) | 25.7<br>(1.012) | Tr13x3P1 | 7.4<br>(.291)     | 8.8<br>(.346)              |
| 19                | 17.5<br>(.689) | 20.8<br>(.819) | 27.8<br>(1.094) | Tr15x3P1 | 9.6<br>(.378)     | 12<br>(.472)               |
| 37                | 20.5<br>(.807) | 20.8<br>(.819) | 27.8<br>(1.094) | Tr18x3P1 | 12<br>(.472)      | 14.4<br>(.567)             |

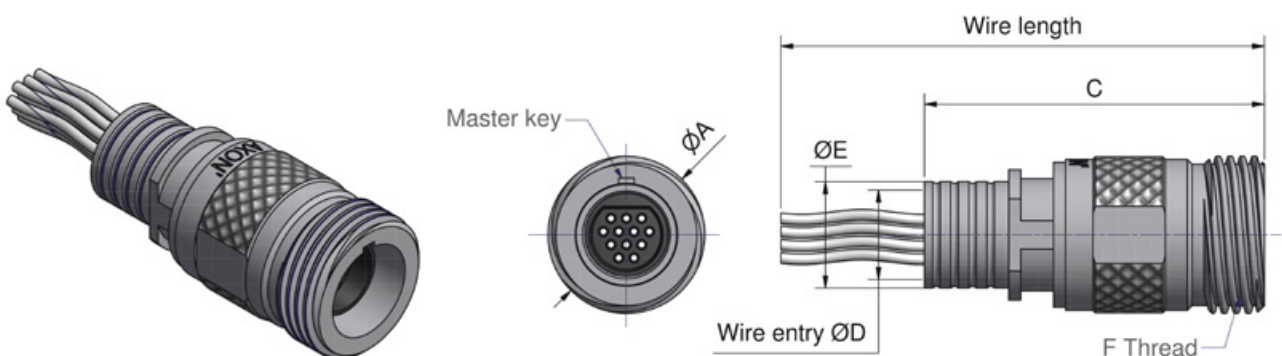
FOR MASTER KEY POSITIONS SEE PAGE 380  
FOR REAR FUNNEL DIMENSIONS SEE PAGE 354

## TRIPLE START (ANTI-DECOUPLING) IN-LINE FEMALE PLUGS



**In-line female plug, short funnel (for heat-shrinkable boots only)**

**MCACxxx-06Sxxxxxx01**



**In-line female plug, screen termination funnel**

**MCACxxx-06Sxxxxxx02**

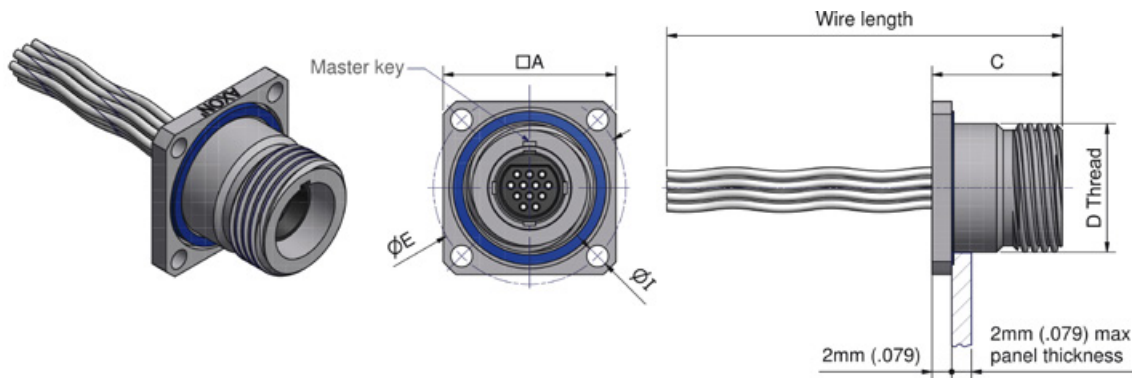
PIGTAIL  
CONNECTORS

Circular  
Micro-D connectors

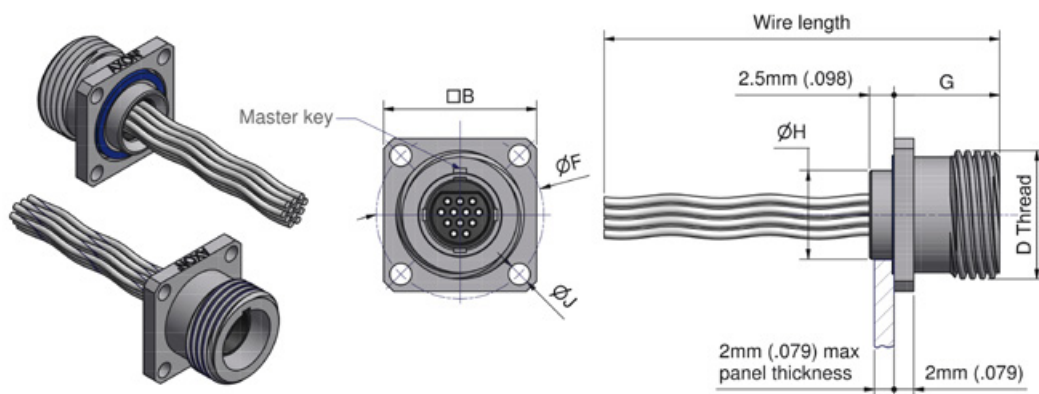
### ► TABLE OF DIMENSIONS - millimetres (inches)

| NUMBER OF<br>WAYS | Ø A (MAX)    | B (MAX)        | C (MAX)         | WIRE ENTRY<br>Ø D | SCREEN TERM.<br>FUNNEL Ø E | F THREAD |
|-------------------|--------------|----------------|-----------------|-------------------|----------------------------|----------|
| 5 OR 7            | 11<br>(.433) | 21.4<br>(.843) | 28.4<br>(1.118) | 5.8<br>(.228)     | 7.2<br>(.283)              | Tr11x3P1 |
| 12 OR 15          | 13<br>(.512) | 21.4<br>(.843) | 28.4<br>(1.118) | 7.4<br>(.291)     | 8.8<br>(.346)              | Tr13x3P1 |
| 19                | 15<br>(.591) | 22.9<br>(.902) | 29.9<br>(1.177) | 9.6<br>(.378)     | 12<br>(.472)               | Tr15x3P1 |
| 37                | 18<br>(.709) | 22.9<br>(.902) | 29.9<br>(1.177) | 12<br>(.472)      | 14.4<br>(.567)             | Tr18x3P1 |

## TRIPLE START (ANTI-DECOUPLING) PANEL MOUNT SQUARE FLANGE FEMALE RECEPTACLES



Rear mount square flange female  
**MCACxxx-00Sxxxxxx**



Front mount square flange female  
**MCACxxx-01Sxxxxxx**

### TABLE OF DIMENSIONS - millimetres (inches)

| NUMBER OF WAYS | A (MAX)        | B (MAX)        | C (MAX)        | D THREAD | Ø E BSC        | Ø F BSC      | G (MAX)        | Ø H (MAX)      | Ø I<br>+0.2 / -0<br>(+.008 / -.0) | Ø J<br>+0.2 / -0<br>(+.008 / -.0) |
|----------------|----------------|----------------|----------------|----------|----------------|--------------|----------------|----------------|-----------------------------------|-----------------------------------|
| 5 OR 7         | 16.6<br>(.654) | 14.6<br>(.575) | 13.3<br>(.524) | Tr11x3P1 | 18.5<br>(.728) | 16<br>(.631) | 10.8<br>(.425) | 9.1<br>(.358)  | 2.2<br>(.087)                     | 2.2<br>(.087)                     |
| 12 OR 15       | 17.6<br>(.693) | 15.6<br>(.614) | 13.3<br>(.524) | Tr13x3P1 | 19.5<br>(.768) | 17<br>(.669) | 10.8<br>(.425) | 9.1<br>(.358)  | 2.2<br>(.087)                     | 2.2<br>(.087)                     |
| 19             | 20.1<br>(.791) | 16.6<br>(.654) | 14.8<br>(.583) | Tr15x3P1 | 22.5<br>(.886) | 19<br>(.748) | 12.3<br>(.484) | 12.1<br>(.476) | 3.2<br>(.126)                     | 2.2<br>(.087)                     |
| 37             | 24.1<br>(.949) | 21.1<br>(.831) | 14.8<br>(.583) | Tr18x3P1 | 27<br>(1.063)  | 24<br>(.945) | 12.3<br>(.484) | 15.1<br>(.594) | 3.2<br>(.126)                     | 3.2<br>(.126)                     |

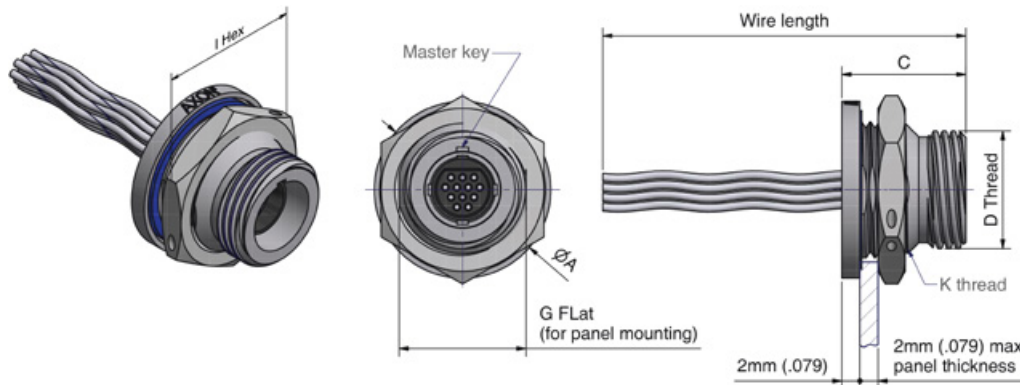
FOR PANEL MOUNTING GUIDE SEE PAGES 340 & 341

FOR MASTER KEY POSITIONS SEE PAGE 380

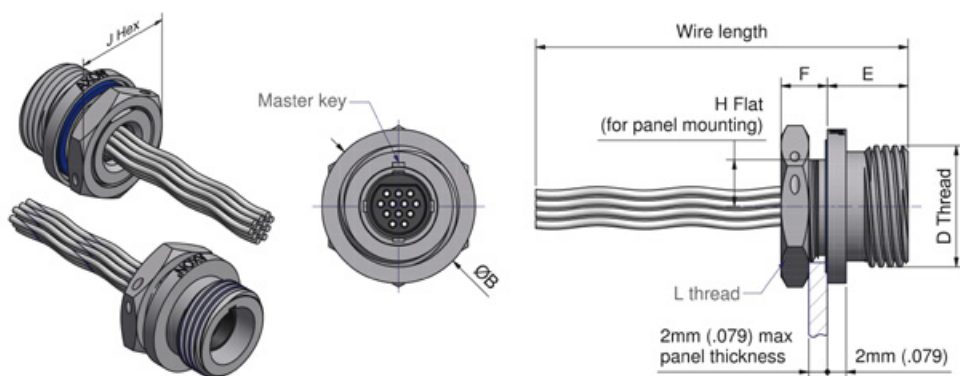
SUPPLIED WITHOUT PANEL MOUNTING SCREWS

FOR PANEL CUT-OUT DIMENSIONS SEE PAGES 350 & 351

## TRIPLE START (ANTI-DECOUPLING) PANEL MOUNT JAM NUT FEMALE RECEPTACLES



**Rear mount jam nut female**  
**MCACxxx-07Sxxxxxx**



**Front mount jam nut female**  
**MCACxxx-08Sxxxxxx**

PIGTAIL  
CONNECTORS

Circular  
Micro-D connectors

### ► TABLE OF DIMENSIONS - millimetres (inches)

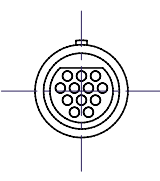
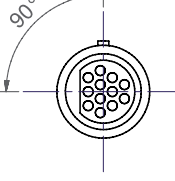
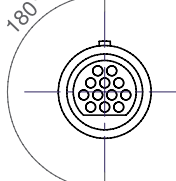
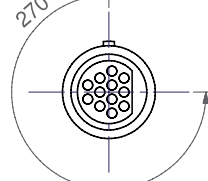
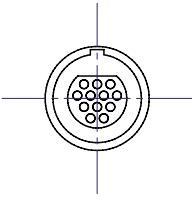
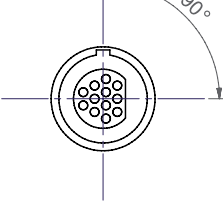
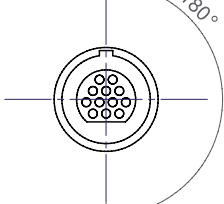
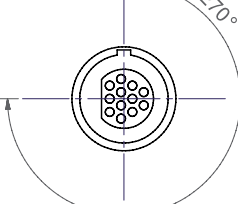
| NUMBER OF WAYS | Ø A (MAX)      | Ø B (MAX)      | C (MAX)        | D THREAD | E (MAX)        | F (MAX)       | G BSC        | H BSC          | I HEX        | J HEX        | K THREAD | L THREAD |
|----------------|----------------|----------------|----------------|----------|----------------|---------------|--------------|----------------|--------------|--------------|----------|----------|
| 5 OR 7         | 17.6<br>(.693) | 14.1<br>(.555) | 13.8<br>(.543) | Tr11x3P1 | 8.8<br>(.346)  | 5.1<br>(.201) | 12<br>(.473) | 3.5<br>(.138)  | 16<br>(.631) | 12<br>(.473) | M13x1    | M9x0.75  |
| 12 OR 15       | 19.6<br>(.772) | 16.6<br>(.654) | 13.8<br>(.543) | Tr13x3P1 | 9.1<br>(.358)  | 5.1<br>(.201) | 14<br>(.551) | 5<br>(.197)    | 18<br>(.709) | 15<br>(.591) | M15x1    | M12x1    |
| 19             | 21.6<br>(.85)  | 17.6<br>(.693) | 14.8<br>(.583) | Tr15x3P1 | 10.6<br>(.417) | 5.6<br>(.22)  | 16<br>(.631) | 5.75<br>(.226) | 20<br>(.787) | 16<br>(.63)  | M17x1    | M13x1    |
| 37             | 24.6<br>(.969) | 21.3<br>(.839) | 14.8<br>(.583) | Tr18x3P1 | 10.6<br>(.417) | 5.6<br>(.22)  | 19<br>(.748) | 7.25<br>(.285) | 23<br>(.906) | 19<br>(.75)  | M20x1    | M16x1    |

FOR PANEL MOUNTING GUIDE SEE PAGES 340 & 341  
FOR MASTER KEY POSITIONS SEE PAGE 380  
FOR PANEL CUT-OUT DIMENSIONS SEE PAGES 352 & 353

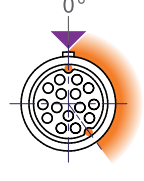
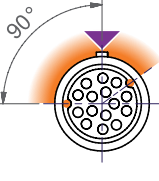
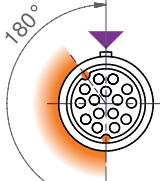
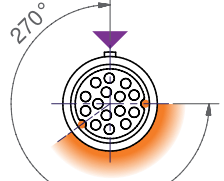
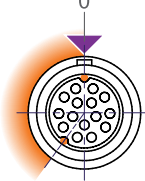
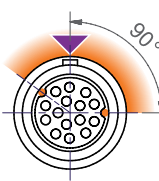
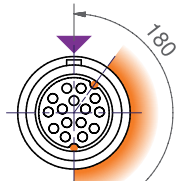
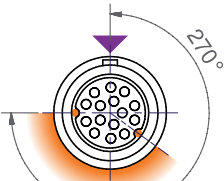
SUPPLIED WITHOUT PANEL MOUNTING SCREWS

## TRIPLE START (ANTI-DECOUPLING)

### ► MASTER KEY POSITIONS (5, 7, 12, 19 & 37 way connectors)

| KEY CODE                                                                     | A                                                                                  | B                                                                                  | C                                                                                   | D                                                                                    |
|------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| ORIENTATION                                                                  | 0°                                                                                 | 90°                                                                                | 180°                                                                                | 270°                                                                                 |
| <b>MALE KEYING</b><br>(for in-line male plugs)                               |   |   |   |   |
| <b>FEMALE KEYING</b><br>(for in-line female plugs & panel mount receptacles) |  |  |  |  |

### ► MASTER KEY POSITIONS (15 way connectors)

| KEY CODE                                                                     | A                                                                                   | B                                                                                   | C                                                                                    | D                                                                                     |
|------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| ORIENTATION                                                                  | 0°                                                                                  | 90°                                                                                 | 180°                                                                                 | 270°                                                                                  |
| <b>MALE KEYING</b><br>(for in-line male plugs)                               |  |  |  |  |
| <b>FEMALE KEYING</b><br>(for in-line female plugs & panel mount receptacles) |  |  |  |  |

## TRIPLE START (ANTI-DECOUPLING)

### ► TABLE OF WEIGHTS (estimated) - grams (ounces)

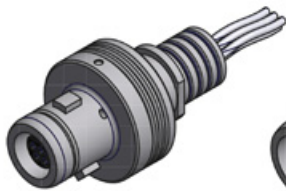
| TRIPLE START | IN-LINE MALE PLUG |                           | IN-LINE FEMALE PLUG |                           | PANEL MOUNT SQUARE FLANGE FEMALE RECEPTACLE |               | PANEL MOUNT JAM NUT FEMALE RECEPTACLE |               |
|--------------|-------------------|---------------------------|---------------------|---------------------------|---------------------------------------------|---------------|---------------------------------------|---------------|
|              | SHORT FUNNEL      | SCREEN TERMINATION FUNNEL | SHORT FUNNEL        | SCREEN TERMINATION FUNNEL | REAR MOUNT                                  | FRONT MOUNT   | REAR MOUNT                            | FRONT MOUNT   |
| 5 OR 7       | 9.0<br>(.32)      | 9.5<br>(.34)              | 8.1<br>(.29)        | 8.9<br>(.32)              | 8.7<br>(.30)                                | 6.7<br>(.24)  | 12.3<br>(.43)                         | 6.9<br>(.24)  |
| 12 OR 15     | 11.2<br>(.39)     | 11.8<br>(.42)             | 12.2<br>(.43)       | 12.9<br>(.45)             | 11.0<br>(.39)                               | 8.1<br>(.29)  | 15.7<br>(.55)                         | 7.6<br>(.27)  |
| 19           | 15.3<br>(.54)     | 17.48<br>(.62)            | 15.7<br>(.56)       | 18.0<br>(.64)             | 14.2<br>(.5)                                | 10.1<br>(.36) | 18.4<br>(.65)                         | 11.1<br>(.39) |
| 37           | 19.8<br>(.70)     | 22.23<br>(.70)            | 19.5<br>(.69)       | 22.8<br>(.80)             | 19.0<br>(.67)                               | 14.3<br>(.51) | 23.4<br>(.82)                         | 14.8<br>(.52) |

MAXIMUM WEIGHT OF THE CONNECTOR WITHOUT WIRES  
FOR WIRE WEIGHTS SEE PAGE 345

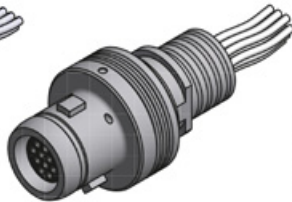
# BREAKAWAY CONNECTOR RANGE - MCABK

Breakaway connectors are connectors with a spring to secure the connection. Easy to handle, they are lightweight and small.

## IN-LINE MALE PLUGS



5 & 7 WAYS



12 & 15 WAYS



19 WAYS



37 WAYS

## IN-LINE FEMALE PLUGS



5 & 7 WAYS



12 & 15 WAYS



19 WAYS



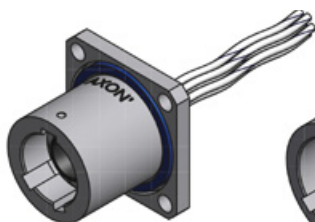
37 WAYS

## PANEL MOUNT JAM NUT & SQUARE FLANGE RECEPTACLES

Rear mount

AVAILABLE IN ALL SIZES

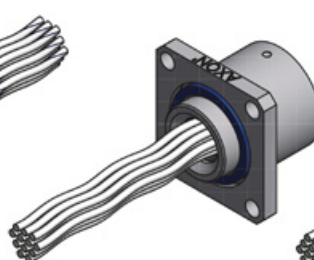
Front mount



SQUARE FLANGE



JAM NUT



SQUARE FLANGE



JAM NUT

# IDENTIFICATION CODE

**MCA BK L 07 - 06 P 4 L 050 A 02**

## SERIES

**MCA:** Micro-D Circular AXON'.

## COUPLING SYSTEM

**BK:** Breakaway.

## MATERIAL & FINISH TYPE

**L:** Nickel plated aluminium + epoxy resin 150°C.

**M:** Nickel plated aluminium + epoxy resin 200°C.

## NUMBER OF CONTACTS 05, 07, 12, 15, 19, 37.

See pages 342 & 343 for contact arrangements.

## CONNECTOR TYPE

**00:** Rear panel mount square flange receptacle (female only).

**01:** Front panel mount square flange receptacle (female only).

**06:** In-line plug (male or female).

**07:** Rear panel mount jam nut receptacle (female only).

**08:** Front panel mount jam nut receptacle (female only).

## CONNECTOR GENDER

**P:** Male connector (pin contacts).

**S:** Female connector (socket contacts).

## WIRE TYPE

**1:** E2607, AWG 26, 7 strands, 600 V.

**4:** E2619, AWG 26, 19 strands, 600 V.

**6:** E2807, AWG 28, 7 strands, 600 V.

**8:** E3007, AWG 30, 7 strands, 600 V.

**E:** M22759/33, AWG 26, 19 strands, 600 V.

*Specific wires on request.*

*Uninsulated wires (for panel mount only)*

**G:** AWG 25 Gold plated.

**T:** AWG 24 Tin plated.

See page 345 for wire types.

For colour code V

**3:** M22759/11, AWG 26, 19 strands, 600 V.

**F:** E2607, AWG 26, 7 strands, 600 V.

## COLOUR CODE

**L:** All white.

**F:** All yellow.

**BLANK:** If wire type is **G** or **T**.

**W:** 10 colour repeated code.

**V:** MIL-STD-681 striped (only for wire types 3 and F).

See pages 346 & 347 for colour code.

## WIRE LENGTH (in cm)

Caution! Wire length in centimetres - (1 cm = 10 mm = 0.394").

| L              | 5 ≤ L ≤ 10       | 10 < L ≤ 100      | L > 100     |
|----------------|------------------|-------------------|-------------|
| in cm (inches) | 1.97 ≤ L ≤ 3.940 | 3.940 < L ≤ 39.40 | L > 39.40   |
| TOLERANCE      | -0 / +0.5        | -0 / +3           | -0 / +5     |
| in cm (inches) | -0 / +0.200      | -0 / +1.180       | -0 / +1.970 |

## MASTER KEY POSITION

**A:** 0°.

**B:** 90°.

**C:** 180°.

**D:** 270°.

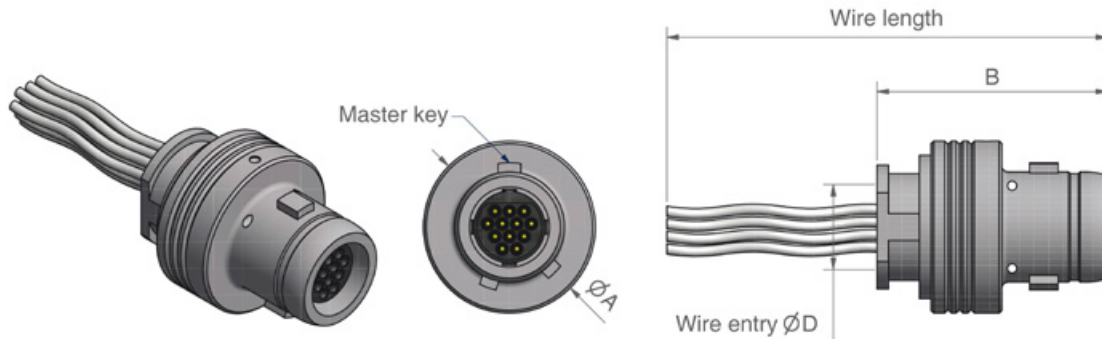
See page 388 for master key positions.

## REAR FUNNEL (for In-line plugs only)

**01:** for heat-shrinkable boots only.

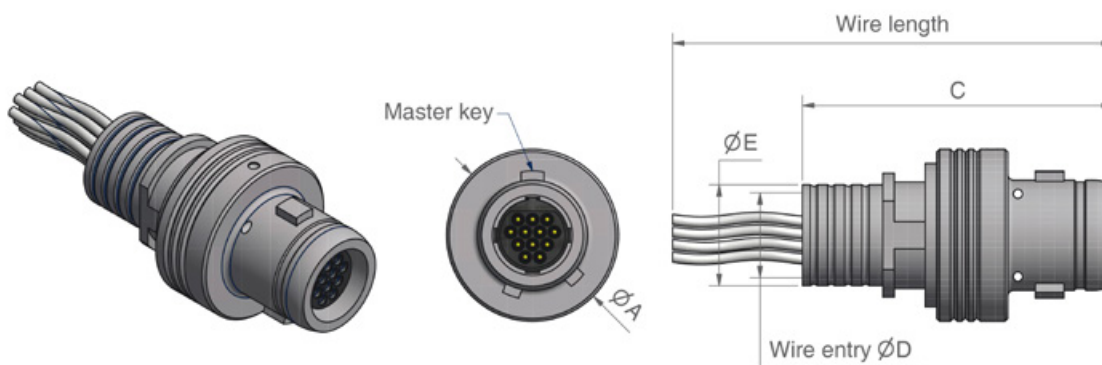
**02:** for 360° screen termination and heat-shrinkable boots.

## BREAKAWAY IN-LINE MALE PLUGS



**In-line male plug, short funnel (for heat-shrinkable boots only)**

**MCABKxxx-06Pxxxxxx01**



**In-line male plug, screen termination funnel**

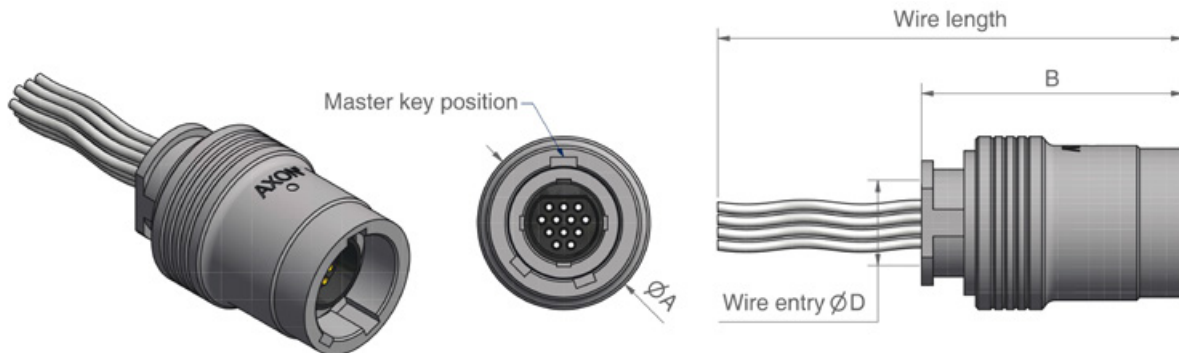
**MCABKxxx-06Pxxxxxx02**

### TABLE OF DIMENSIONS - millimetres (inches)

| NUMBER OF WAYS | Ø A (MAX)      | B (MAX)        | C (MAX)         | WIRE ENTRY<br>Ø D | SCREEN TERM.<br>FUNNEL Ø E |
|----------------|----------------|----------------|-----------------|-------------------|----------------------------|
| 5 OR 7         | 15.1<br>(.594) | 20.3<br>(.799) | 27.3<br>(1.074) | 5.8<br>(.228)     | 7.2<br>(.283)              |
| 12 OR 15       | 15.1<br>(.594) | 20.3<br>(.799) | 27.3<br>(1.074) | 7.4<br>(.291)     | 8.8<br>(.346)              |
| 19             | 17.4<br>(.685) | 22<br>(.866)   | 29<br>(1.142)   | 9.6<br>(.378)     | 12<br>(.472)               |
| 37             | 20.1<br>(.791) | 22<br>(.866)   | 29<br>(1.142)   | 12<br>(.472)      | 14.4<br>(.567)             |

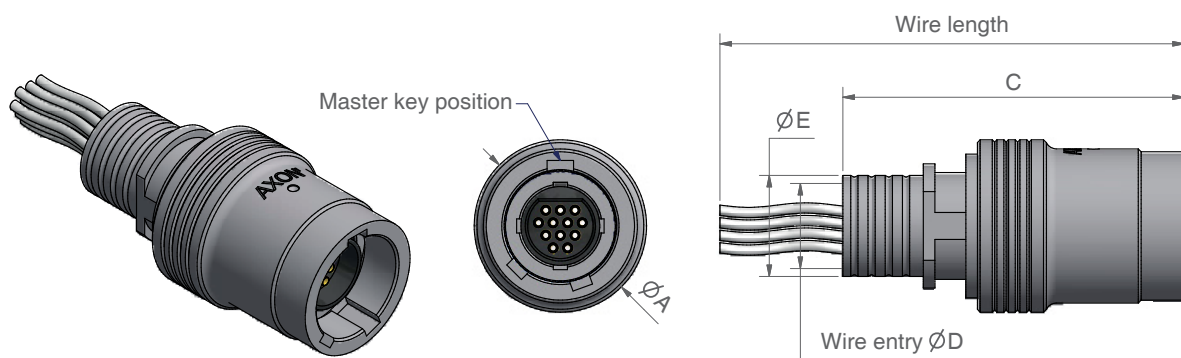
FOR MASTER KEY POSITIONS SEE PAGE 388  
FOR REAR FUNNEL DIMENSIONS SEE PAGE 354

## BREAKAWAY IN-LINE FEMALE PLUGS



**In-line female plug, short funnel (for heat-shrinkable boots only)**

**MCABKxxx-06Sxxxxxx01**



**In-line female plug, screen termination funnel**

**MCABKxxx-06Sxxxxxx02**

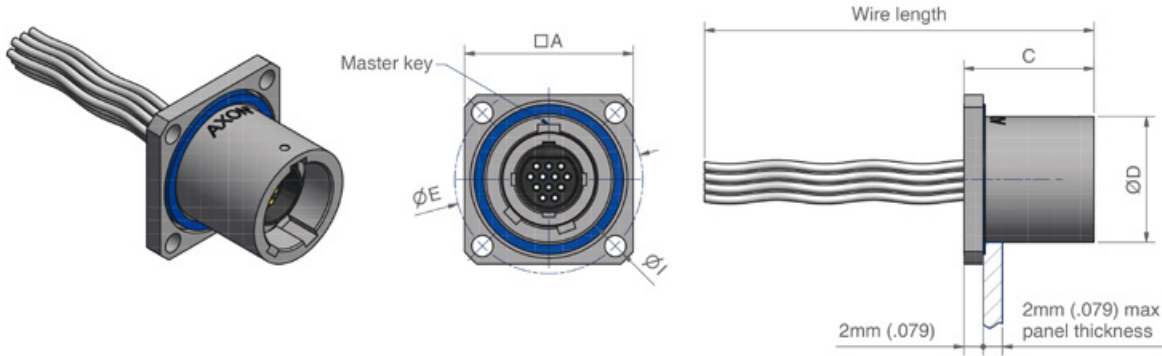
PIGTAIL  
CONNECTORS

Circular  
Micro-D connectors

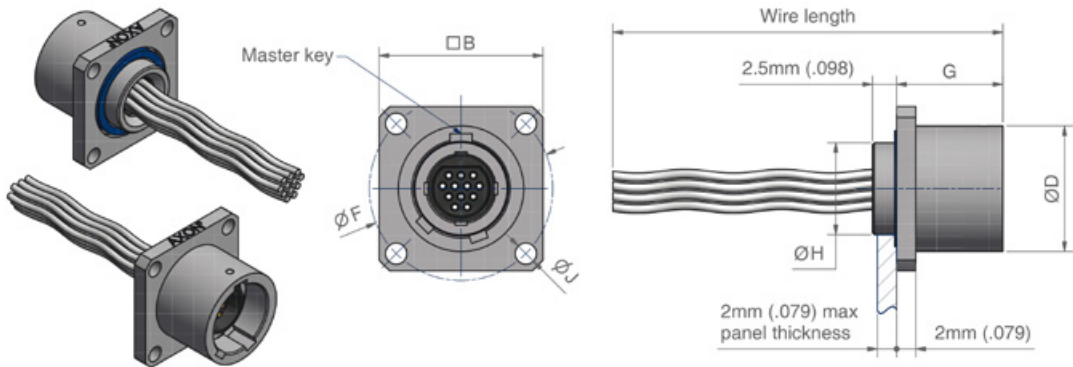
### ▶ TABLE OF DIMENSIONS - millimetres (inches)

| NUMBER OF WAYS | Ø A (MAX)      | B (MAX)        | C (MAX)         | WIRE ENTRY<br>Ø D | SCREEN TERM.<br>FUNNEL Ø E |
|----------------|----------------|----------------|-----------------|-------------------|----------------------------|
| 5 OR 7         | 15.1<br>(.594) | 22.9<br>(.902) | 29.9<br>(1.177) | 5.8<br>(.228)     | 7.2<br>(.283)              |
| 12 OR 15       | 15.1<br>(.594) | 22.9<br>(.902) | 29.9<br>(1.177) | 7.4<br>(.291)     | 8.8<br>(.346)              |
| 19             | 17.4<br>(.685) | 24.4<br>(.961) | 31.4<br>(1.236) | 9.6<br>(.378)     | 12<br>(.472)               |
| 37             | 20.1<br>(.791) | 24.4<br>(.961) | 31.4<br>(1.236) | 12<br>(.472)      | 14.4<br>(.567)             |

# PANEL MOUNT SQUARE FLANGE FEMALE RECEPTACLES



Rear mount square flange female  
**MCABKxxx-00Sxxxxxx**



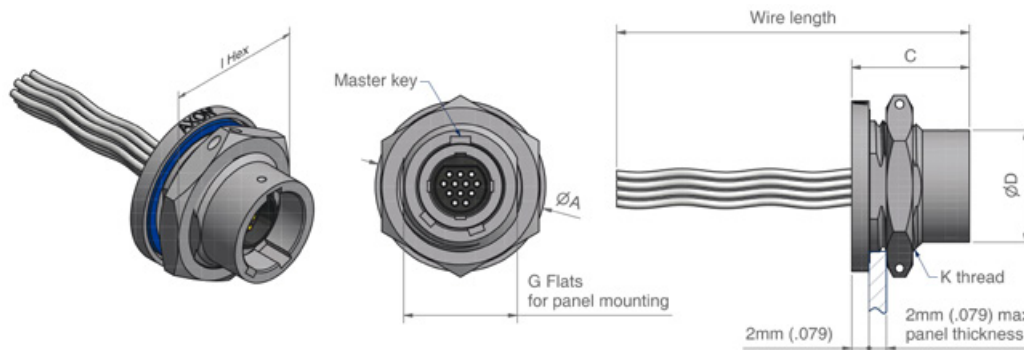
Front mount square flange female  
**MCABKxxx-01Sxxxxxx**

## TABLE OF DIMENSIONS - millimetres (inches)

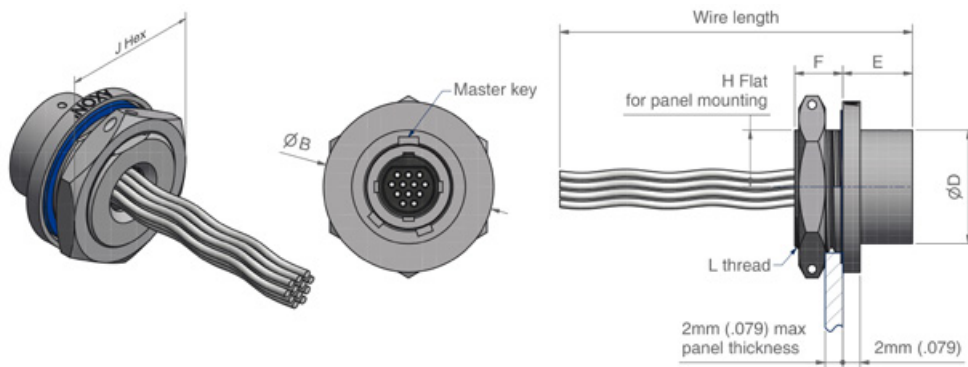
| NUMBER OF WAYS | □A (MAX)       | □B (MAX)       | C (MAX)        | Ø D (MAX)      | Ø E BSC         | Ø F BSC       | G (MAX)        | Ø H (MAX)      | Ø I<br>+0.2 / -0<br>(+.008 / -.0) | Ø J<br>+0.2 / -0<br>(+.008 / -.0) |
|----------------|----------------|----------------|----------------|----------------|-----------------|---------------|----------------|----------------|-----------------------------------|-----------------------------------|
| 5 OR 7         | 17.6<br>(.693) | 17.1<br>(.673) | 13.7<br>(.539) | 13.1<br>(.515) | 19.5<br>(.768)  | 19<br>(.748)  | 11.2<br>(.441) | 9.6<br>(.378)  | 2.2<br>(.087)                     | 2.2<br>(.087)                     |
| 12 OR 15       | 17.6<br>(.693) | 17.1<br>(.673) | 13.7<br>(.539) | 13.1<br>(.515) | 19.5<br>(.768)  | 19<br>(.748)  | 11.2<br>(.441) | 9.6<br>(.378)  | 2.2<br>(.087)                     | 2.2<br>(.087)                     |
| 19             | 22.1<br>(.87)  | 21.1<br>(.831) | 15.2<br>(.598) | 15.8<br>(.622) | 24.5<br>(.965)  | 23<br>(.906)  | 12.7<br>(.5)   | 13.1<br>(.516) | 3.2<br>(.126)                     | 3.2<br>(.126)                     |
| 37             | 24.1<br>(.949) | 23.1<br>(.909) | 15.2<br>(.598) | 18.5<br>(.728) | 27.5<br>(1.083) | 26<br>(1.024) | 12.7<br>(.5)   | 15.1<br>(.594) | 3.2<br>(.126)                     | 3.2<br>(.126)                     |

FOR PANEL MOUNTING GUIDE SEE PAGES 340 & 341  
FOR MASTER KEY POSITIONS SEE PAGE 388  
SUPPLIED WITHOUT PANEL MOUNTING SCREWS  
FOR PANEL CUT-OUT DIMENSIONS SEE PAGES 350 & 351

# PANEL MOUNT JAM NUT FEMALE BREAKAWAY RECEPTACLES



**Rear mount jam nut female**  
**MCABKxxx-07Sxxxxxx**



**Front mount jam nut female**  
**MCABKxxx-08Sxxxxxx**

PIGTAIL  
CONNECTORS

Circular  
Micro-D connectors

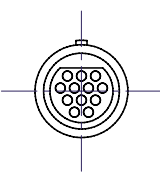
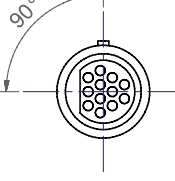
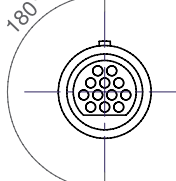
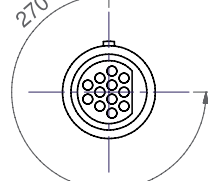
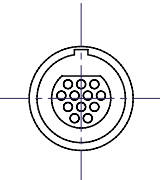
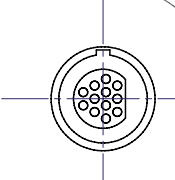
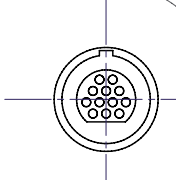
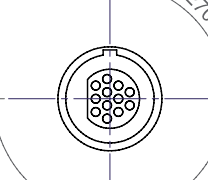
## ► TABLE OF DIMENSIONS - millimetres (inches)

| NUMBER OF WAYS | Ø A (MAX)      | Ø B (MAX)      | C (MAX)        | Ø D (MAX)      | E (MAX)       | F (MAX)      | G BSC        | H BSC         | I HEX        | J HEX        | K THREAD | L THREAD |
|----------------|----------------|----------------|----------------|----------------|---------------|--------------|--------------|---------------|--------------|--------------|----------|----------|
| 5 OR 7         | 19.6<br>(.772) | 17.6<br>(.693) | 13.7<br>(.539) | 13.1<br>(.516) | 8.1<br>(.319) | 5.6<br>(.22) | 13<br>(.512) | 5.5<br>(.217) | 18<br>(.709) | 16<br>(.63)  | M14x0.75 | M13x1    |
| 12 OR 15       | 19.6<br>(.772) | 19.6<br>(.772) | 13.7<br>(.539) | 13.1<br>(.516) | 8.1<br>(.319) | 5.6<br>(.22) | 13<br>(.512) | 6.5<br>(.256) | 18<br>(.709) | 18<br>(.709) | M14x0.75 | M15x1    |
| 19             | 22.3<br>(.878) | 21.6<br>(.85)  | 15.2<br>(.598) | 15.8<br>(.622) | 9.6<br>(.378) | 5.6<br>(.22) | 16<br>(.63)  | 7<br>(.276)   | 22<br>(.866) | 20<br>(.787) | M18x1    | M17x1    |
| 37             | 24.6<br>(.969) | 24.1<br>(.949) | 15.2<br>(.598) | 18.5<br>(.728) | 9.6<br>(.378) | 5.6<br>(.22) | 19<br>(.748) | 8.5<br>(.335) | 23<br>(.906) | 22<br>(.866) | M20x1    | M19x1    |

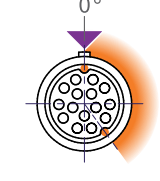
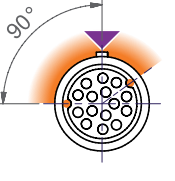
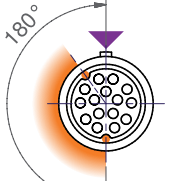
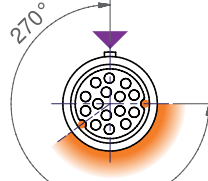
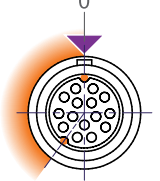
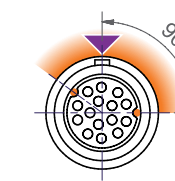
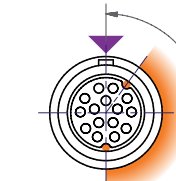
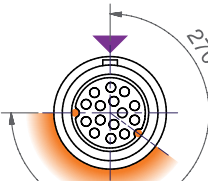
FOR PANEL MOUNTING GUIDE SEE PAGES 340 & 341  
FOR MASTER KEY POSITIONS SEE PAGE 388  
FOR PANEL CUT-OUT DIMENSIONS SEE PAGES 352 & 353

SUPPLIED WITHOUT PANEL MOUNTING SCREWS

► **MASTER KEY POSITIONS (5, 7, 12, 19 & 37 way connectors)**

| KEY CODE                                                                     | A                                                                                  | B                                                                                  | C                                                                                   | D                                                                                    |
|------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| ORIENTATION                                                                  | 0°                                                                                 | 90°                                                                                | 180°                                                                                | 270°                                                                                 |
| <b>MALE KEYING</b><br>(for in-line male plugs)                               |   |   |   |   |
| <b>FEMALE KEYING</b><br>(for in-line female plugs & panel mount receptacles) |  |  |  |  |

► **MASTER KEY POSITIONS (15 way connectors)**

| KEY CODE                                                                     | A                                                                                   | B                                                                                   | C                                                                                    | D                                                                                     |
|------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| ORIENTATION                                                                  | 0°                                                                                  | 90°                                                                                 | 180°                                                                                 | 270°                                                                                  |
| <b>MALE KEYING</b><br>(for in-line male plugs)                               |  |  |  |  |
| <b>FEMALE KEYING</b><br>(for in-line female plugs & panel mount receptacles) |  |  |  |  |

## BREAKAWAY

### ► TABLE OF WEIGHTS (estimated) - grams (ounces)

| BREAKAWAY | IN-LINE MALE PLUG |                           | IN-LINE FEMALE PLUG |                           | PANEL MOUNT SQUARE FLANGE FEMALE RECEPTACLE |              | PANEL MOUNT JAM NUT FEMALE RECEPTACLE |              |
|-----------|-------------------|---------------------------|---------------------|---------------------------|---------------------------------------------|--------------|---------------------------------------|--------------|
|           | SHORT FUNNEL      | SCREEN TERMINATION FUNNEL | SHORT FUNNEL        | SCREEN TERMINATION FUNNEL | REAR MOUNT                                  | FRONT MOUNT  | REAR MOUNT                            | FRONT MOUNT  |
| 5 OR 7    | 4.8<br>(.17)      | 5.2<br>(.19)              | 6.9<br>(.25)        | 7.3<br>(.26)              | 4.8<br>(.17)                                | 4.3<br>(.16) | 6.4<br>(.23)                          | 5.2<br>(.19) |
| 12 OR 15  | 5.0<br>(.18)      | 5.3<br>(.19)              | 6.2<br>(.22)        | 6.5<br>(.23)              | 4.2<br>(.15)                                | 3.7<br>(.13) | 5.6<br>(.20)                          | 5.6<br>(.20) |
| 19        | 6.8<br>(.24)      | 7.7<br>(.27)              | 8.4<br>(.30)        | 9.2<br>(.32)              | 6.5<br>(.23)                                | 5.7<br>(.21) | 8.3<br>(.30)                          | 7.2<br>(.25) |
| 37        | 8.8<br>(.31)      | 9.8<br>(.35)              | 10.5<br>(.37)       | 11.6<br>(.41)             | 7.9<br>(.28)                                | 6.9<br>(.25) | 9.2<br>(.32)                          | 8.5<br>(.30) |

MAXIMUM WEIGHT OF THE CONNECTOR WITHOUT WIRES  
FOR WIRE WEIGHTS SEE PAGE 345

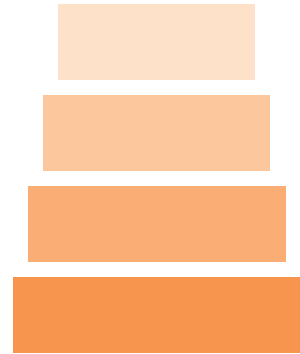
PIGTAIL  
CONNECTORS

Circular  
Micro-D connectors



# METAL PCB MICRO-D CIRCULAR CONNECTORS

|                                                             |     |
|-------------------------------------------------------------|-----|
| PCB circular connector range . . . . .                      | 392 |
| ● Identification code                                       |     |
| (Metric Thread, Three Lug Bayonet & Triple Start) . . . . . | 393 |
| <i>Metric Thread PCB connectors dimensions</i> . . . . .    | 394 |
| <i>Tree Lug Bayonet PCB connectors dimensions</i> . . . . . | 396 |
| <i>Triple Start PCB connectors dimensions</i> . . . . .     | 398 |
| <i>Master Key positions</i> . . . . .                       | 400 |
| ● Identification code (Breakaway) . . . . .                 | 401 |
| <i>Breakaway PCB connectors dimensions</i> . . . . .        | 402 |
| <i>Master Key positions</i> . . . . .                       | 404 |
| ● Tables of weights . . . . .                               | 405 |
| ● 0.050" pitch PCB layouts . . . . .                        | 406 |
| ● 0.075" pitch PCB layouts . . . . .                        | 408 |
| ● 15 way connectors PCB layout . . . . .                    | 410 |



PCB  
CONNECTORS

Circular  
Micro-D connectors

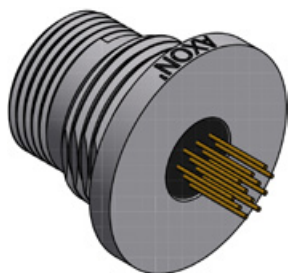
# PCB CONNECTOR RANGE

In addition to the standard range of circular Micro-D connectors, AXON' offers PCB connectors designed for our 4 types of connector: Metric Thread, Three Lug Bayonet, Triple Start (anti-decoupling) and Breakaway. They are available in 2 layouts: 0.050" & 0.075" pitch.

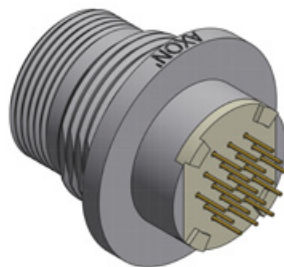
AXON' Micro-D Printed Circuit Board connectors are designed for interconnection of printed circuit boards inside-the-box to external cables through panels. The gender of a PCB connector is female. On request, EMI optimized versions and ground-pins can be offered.

Printed Circuit Board connectors are available in rear mount version only.

## LAYOUT PITCH OPTIONS



PCB layout, 0.050" (1.27 mm) pitch.



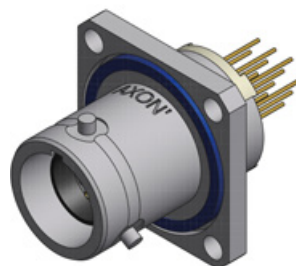
PCB layout, 0.075" (1.905 mm) pitch.

## EXAMPLES

19 way  
metric thread connector  
rear mount jam nut panel  
0.075" pitch  
**MCATV19-12S75SG3A**



12 way  
bayonet connector  
rear mount square flange panel  
0.075" pitch  
**MCA3BV12-10S75SG3A**



15 way  
breakaway connector  
rear mount jam nut panel  
0.075" pitch  
**MCABKL15-12S75SG3A**



19 way  
triple start connector  
rear mount jam nut panel  
0.075" pitch  
**MCACV19-12S75SG3A**



# IDENTIFICATION CODE

METRIC THREAD (MCAT), THREE LUG BAYONET (MCA3B)  
& TRIPLE START THREAD (MCAC)

**MCA**
**T**
**V**
**07**
**-**
**10**
**S**
**75S**
**G**
**3**
**A**

## SERIES

**MCA:** Micro-D Circular AXON'.

## COUPLING SYSTEM

**T:** Metric thread.  
**3B:** Three lug bayonet.  
**C:** Triple start thread & anti-decoupling system.

## MATERIAL & FINISH TYPE

**V:** Nickel plated brass + epoxy resin 150°C.  
**W:** Nickel plated brass + epoxy resin 200°C.

## NUMBER OF CONTACTS 05, 07, 12, 15, 19, 37.

*See page 343 for contact arrangements.*

## CONNECTOR TYPE

**10:** Rear panel mount square flange receptacle, PCB version.  
**12:** Rear panel mount jam nut receptacle, PCB version.

## CONNECTOR GENDER

**S:** Female connector (socket contacts).

## PCB VERSION

**50S:** 0.050" pitch board, straight.  
**75S:** 0.075" pitch board, straight.

## CONDUCTOR TYPE

**G:** Gold plated solid conductor AWG25.  
**T:** Tin plated solid conductor AWG24.  
*See page 345 for conductor type.*

## TAIL LENGTH

**1:** 2.80 mm (0.110").  
**2:** 3.80 mm (0.150").  
**3:** 4.80 mm (0.190").  
**4:** 6.35 mm (0.250").  
*Tolerance: ±0.38 mm (0.015").*  
*Other lengths available on request.*

## MASTER KEY POSITION

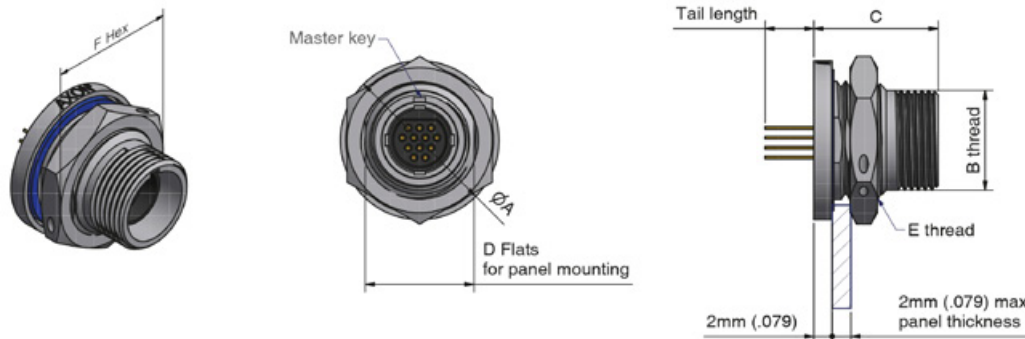
**A:** 0°. **B:** 90°. **C:** 180°. **D:** 270°. *See page 400 for master key positions.*

ADDITIONAL GROUND PINS AVAILABLE ON REQUEST

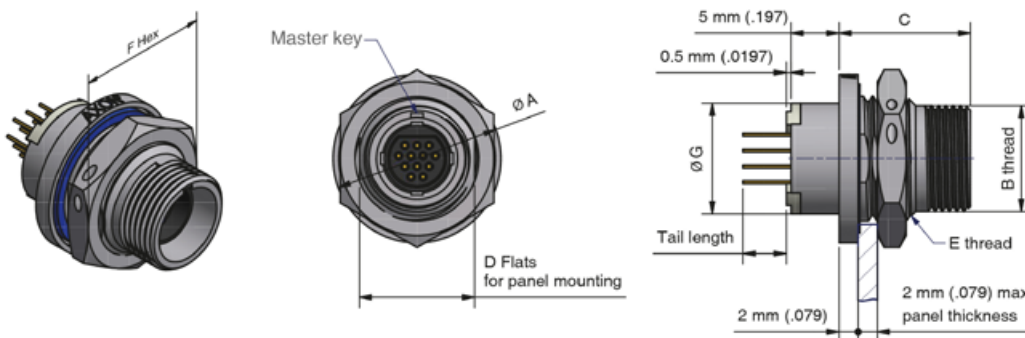
FOR PANEL MOUNTING GUIDE SEE PAGES 340 & 341  
FOR PANEL CUT-OUT DIMENSIONS SEE PAGES 350 & 352

PANEL MOUNT SQUARE FLANGE CONNECTORS ARE SUPPLIED WITHOUT PANEL MOUNTING SCREWS

## METRIC THREAD PCB CONNECTORS



**Rear mount jam nut female PCB 0.050" pitch**  
**MCATxxx-12S50Sxxx**



**Rear mount jam nut female PCB 0.075" pitch**  
**MCATxxx-12S75Sxxx**

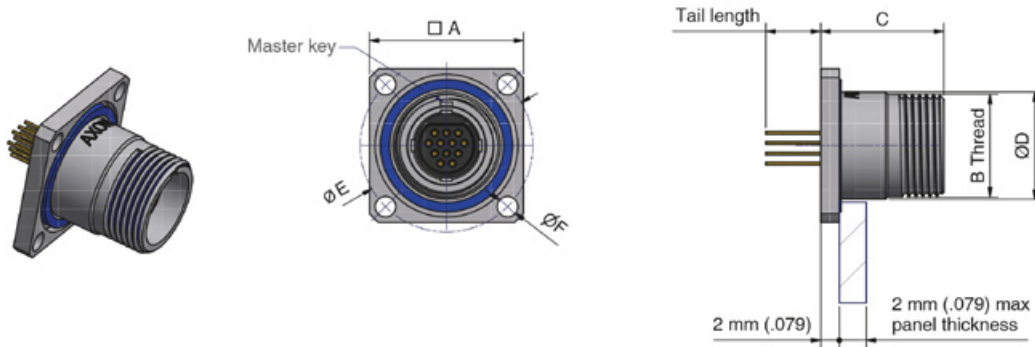
### TABLE OF DIMENSIONS - millimetres (inches)

| NUMBER OF WAYS | Ø A (MAX)      | B THREAD | C (MAX)        | D BSC        | E THREAD | F HEX        | Ø G (MAX)      |
|----------------|----------------|----------|----------------|--------------|----------|--------------|----------------|
| 5 OR 7         | 16.6<br>(.654) | M9x0.5   | 13.8<br>(.543) | 11<br>(.433) | M12x1    | 15<br>(.591) | 9.1<br>(.358)  |
| 12 OR 15       | 17.6<br>(.693) | M11x0.75 | 13.8<br>(.543) | 12<br>(.472) | M13x1    | 16<br>(.63)  | 11.6<br>(.457) |
| 19             | 21.3<br>(.839) | M14x0.75 | 14.8<br>(.583) | 15<br>(.591) | M16x1    | 19<br>(.748) | 13.6<br>(.535) |
| 37             | 24.1<br>(.949) | M17x1    | 14.8<br>(.583) | 18<br>(.709) | M19x1    | 22<br>(.866) | 16.6<br>(.654) |

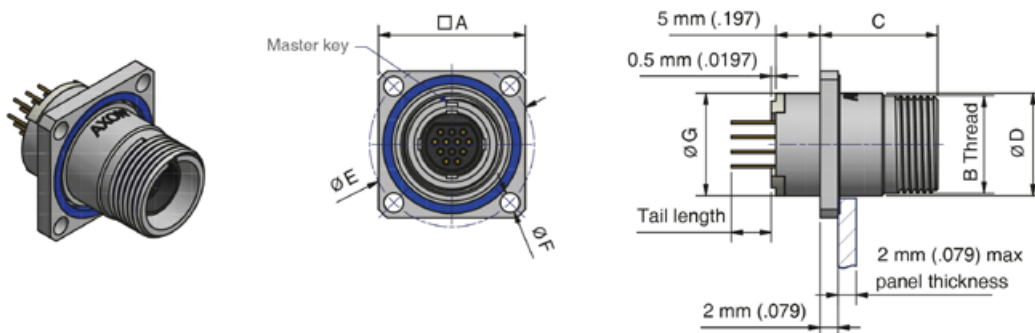
FOR PANEL MOUNTING GUIDE SEE PAGES 340 & 341  
FOR MASTER KEY POSITIONS SEE PAGE 388  
FOR PANEL CUT-OUT DIMENSIONS SEE PAGE 352

SUPPLIED WITH JAM NUTS

## METRIC THREAD PCB CONNECTORS



**Rear mount square flange female PCB 0.050" pitch**  
**MCATxxx-10S50Sxxx**



**Rear mount square flange female PCB 0.075" pitch**  
**MCATxxx-10S75Sxxx**

PCB  
CONNECTORS

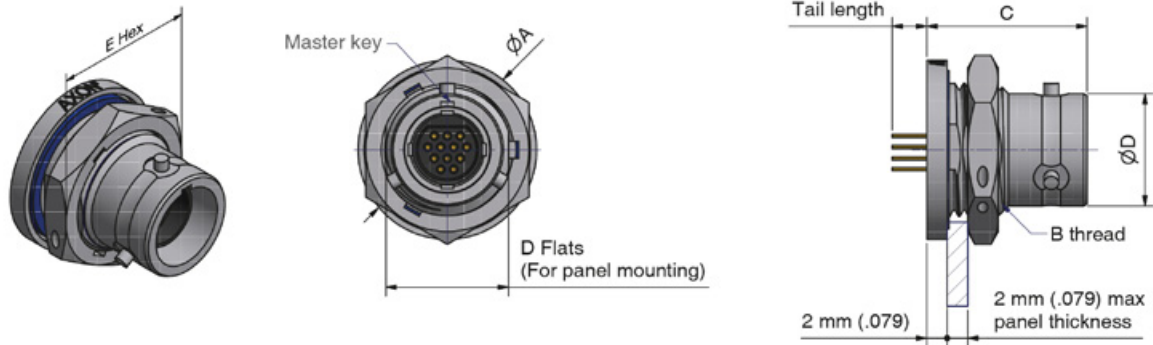
Circular  
Micro-D connectors

### ► TABLE OF DIMENSIONS - millimetres (inches)

| NUMBER OF<br>WAYS | □ A (MAX)      | B THREAD | C (MAX)        | Ø D BSC        | Ø E BSC        | Ø F<br>+0.2 / -0<br>(+.008 / -.0) | Ø G (MAX)      |
|-------------------|----------------|----------|----------------|----------------|----------------|-----------------------------------|----------------|
| 5 OR 7            | 14.6<br>(.575) | M9x0.5   | 13.3<br>(.524) | 9.6<br>(.378)  | 16<br>(.631)   | 2.2<br>(.087)                     | 9.1<br>(.358)  |
| 12 OR 15          | 16.6<br>(.654) | M11x0.75 | 13.3<br>(.524) | 11.6<br>(.457) | 18.5<br>(.728) | 2.2<br>(.087)                     | 11.6<br>(.457) |
| 19                | 20.1<br>(.791) | M14x0.75 | 14.8<br>(.583) | 15.1<br>(.594) | 22.5<br>(.886) | 3.2<br>(.126)                     | 13.6<br>(.535) |
| 37                | 21.6<br>(.85)  | M17x1    | 14.8<br>(.583) | 17.1<br>(.673) | 24.5<br>(.965) | 3.2<br>(.126)                     | 16.6<br>(.654) |

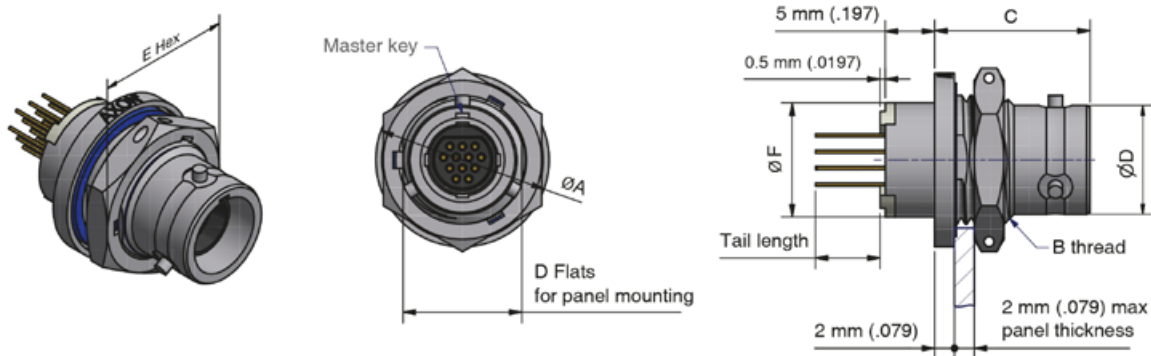
FOR PANEL MOUNTING GUIDE SEE PAGES 340 & 341  
FOR MASTER KEY POSITIONS SEE PAGE 388  
FOR PANEL CUT-OUT DIMENSIONS SEE PAGES 350

## THREE LUG BAYONET PCB CONNECTORS



Rear mount jam nut female PCB 0.050" pitch

**MCA3Bxxx-12S50Sxxx**



Rear mount jam nut female PCB 0.075" pitch

**MCA3Bxxx-12S75Sxxx**

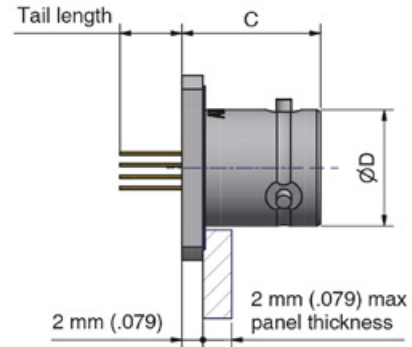
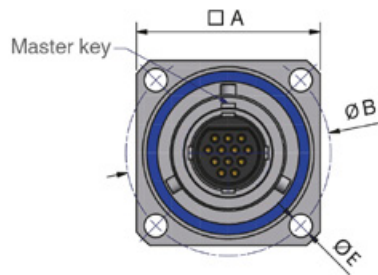
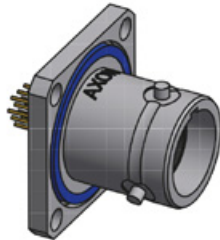
### TABLE OF DIMENSIONS - millimetres (inches)

| NUMBER OF WAYS | Ø A (MAX)      | B THREAD | C (MAX)        | D FLAT       | E HEX        | Ø F (MAX)      |
|----------------|----------------|----------|----------------|--------------|--------------|----------------|
| 5 OR 7         | 16.6<br>(.654) | M12x1    | 15.8<br>(.622) | 11<br>(.433) | 15<br>(.591) | 9.1<br>(.358)  |
| 12 OR 15       | 17.6<br>(.693) | M13x1    | 15.8<br>(.622) | 12<br>(.473) | 16<br>(.63)  | 11.6<br>(.457) |
| 19             | 21.3<br>(.839) | M16x1    | 16.8<br>(.661) | 15<br>(.591) | 19<br>(.748) | 13.6<br>(.535) |
| 37             | 24.1<br>(.949) | M19x1    | 16.8<br>(.661) | 18<br>(.709) | 22<br>(.866) | 16.6<br>(.654) |

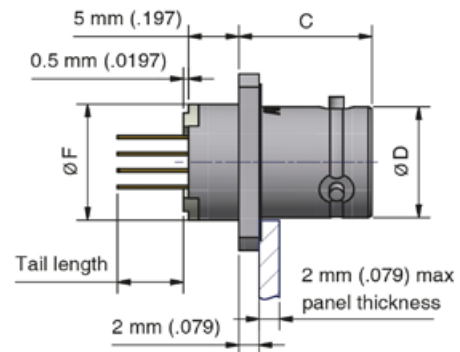
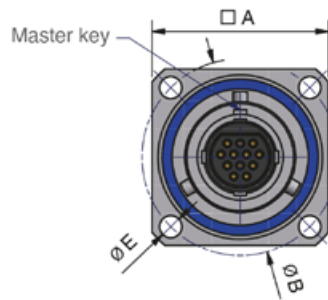
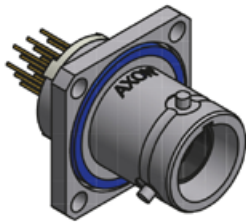
FOR PANEL MOUNTING GUIDE SEE PAGES 340 & 341  
FOR MASTER KEY POSITIONS SEE PAGE 388  
FOR PANEL CUT-OUT DIMENSIONS SEE PAGE 352

SUPPLIED WITH JAM NUTS

## THREE LUG BAYONET PCB CONNECTORS



**Rear mount square flange female PCB 0.050" pitch**  
**MCA3Bxxx-10S50Sxxx**



**Rear mount square flange female PCB 0.075" pitch**  
**MCA3Bxxx-10S75Sxxx**

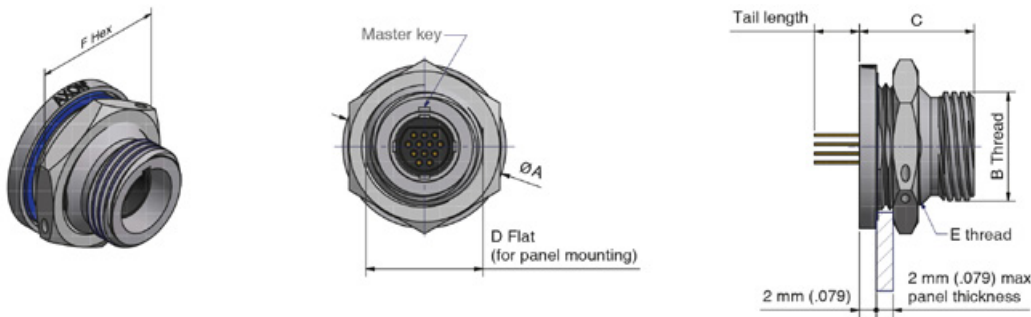
PCB  
CONNECTORS

Circular  
Micro-D connectors

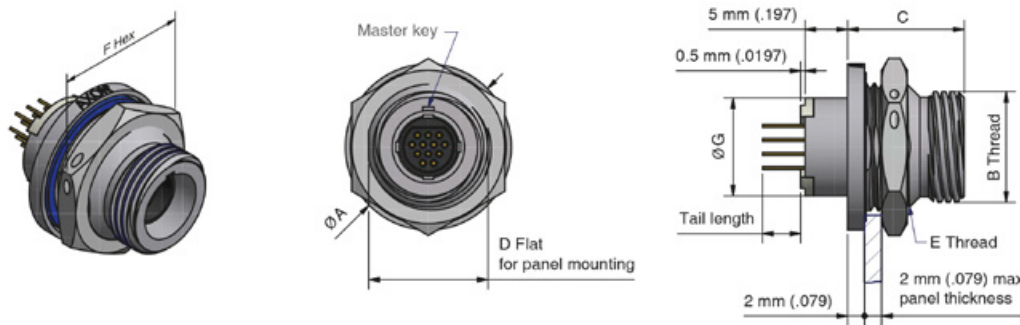
### ► TABLE OF DIMENSIONS - millimetres (inches)

| NUMBER OF WAYS | □ A (MAX)      | Ø B BSC        | C (MAX)        | Ø D (MAX)      | Ø E<br>+0.2 / -0<br>(+.008 / -.0) | Ø F (MAX)      |
|----------------|----------------|----------------|----------------|----------------|-----------------------------------|----------------|
| 5 OR 7         | 16.6<br>(.654) | 18.5<br>(.728) | 13.3<br>(.524) | 9.6<br>(.378)  | 2.2<br>(.087)                     | 9.1<br>(.358)  |
| 12 OR 15       | 17.6<br>(.693) | 19.5<br>(.768) | 13.3<br>(.524) | 11.1<br>(.437) | 2.2<br>(.087)                     | 11.6<br>(.457) |
| 19             | 21.6<br>(.85)  | 24.5<br>(.965) | 14.8<br>(.583) | 14.1<br>(.555) | 3.2<br>(.126)                     | 13.6<br>(.535) |
| 37             | 24.1<br>(.949) | 27<br>(1.063)  | 14.8<br>(.583) | 17.1<br>(.673) | 3.2<br>(.126)                     | 16.6<br>(.654) |

# TRIPLE START (ANTI-DECOUPLING) PCB CONNECTORS



**Rear mount jam nut female PCB 0.050" pitch**  
**MCACxxx-12S50Sxxx**



**Rear mount jam nut female PCB 0.075" pitch**  
**MCACxxx-12S75Sxxx**

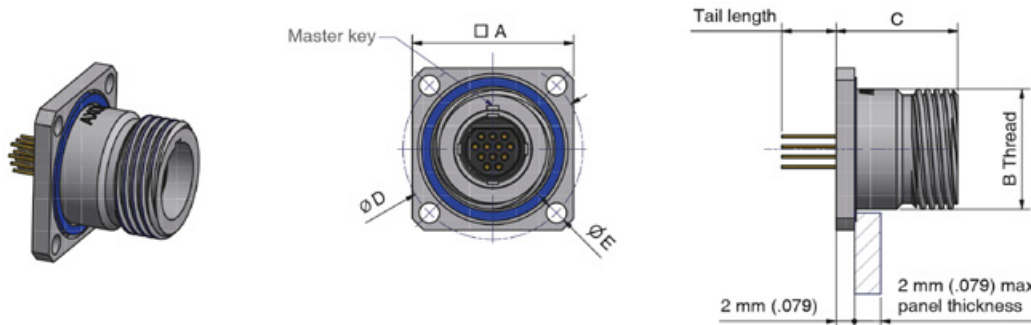
## ▶ TABLE OF DIMENSIONS - millimetres (inches)

| NUMBER OF WAYS | Ø A (MAX)      | B THREAD | C (MAX)        | D BSC        | E THREAD | F HEX        | Ø G (MAX)      |
|----------------|----------------|----------|----------------|--------------|----------|--------------|----------------|
| 5 OR 7         | 17.6<br>(.693) | Tr11x3P1 | 13.8<br>(.543) | 12<br>(.473) | M13x1    | 16<br>(.631) | 9.1<br>(.358)  |
| 12 OR 15       | 19.6<br>(.772) | Tr13x3P1 | 13.8<br>(.543) | 14<br>(.551) | M15x1    | 18<br>(.709) | 11.6<br>(.457) |
| 19             | 21.6<br>(.85)  | Tr15x3P1 | 14.8<br>(.583) | 16<br>(.631) | M17x1    | 20<br>(.787) | 13.6<br>(.535) |
| 37             | 24.6<br>(.969) | Tr18x3P1 | 14.8<br>(.583) | 19<br>(.748) | M20x1    | 23<br>(.906) | 16.6<br>(.654) |

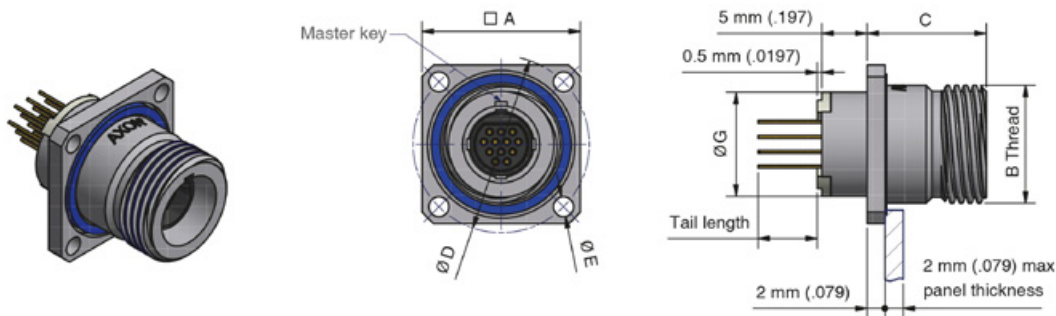
FOR PANEL MOUNTING GUIDE SEE PAGES 340 & 341  
FOR MASTER KEY POSITIONS SEE PAGE 388  
FOR PANEL CUT-OUT DIMENSIONS SEE PAGE 352

SUPPLIED WITH JAM NUTS

## TRIPLE START (ANTI-DECOUPLING) PCB CONNECTORS



Rear mount square flange female PCB 0.050" pitch  
**MCACxxx-10S50Sxxx**



Rear mount square flange female PCB 0.075" pitch  
**MCACxxx-10S75Sxxx**

PCB  
CONNECTORS

Circular  
Micro-D connectors

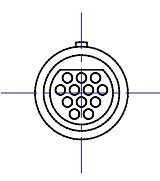
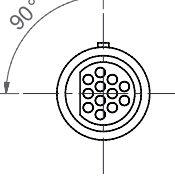
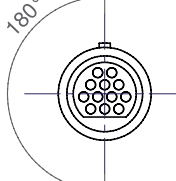
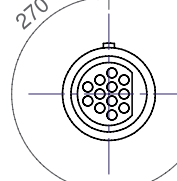
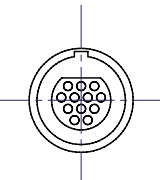
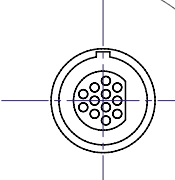
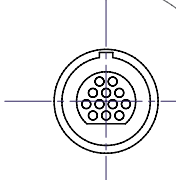
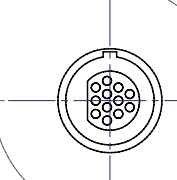
### ► TABLE OF DIMENSIONS - millimetres (inches)

| NUMBER OF<br>WAYS | □A (MAX)       | B THREAD | C (MAX)        | Ø D BSC        | Ø E<br>+0.2 / -0<br>(+.008 / -.0) | Ø G (MAX)      |
|-------------------|----------------|----------|----------------|----------------|-----------------------------------|----------------|
| 5 OR 7            | 16.6<br>(.654) | Tr11x3P1 | 13.3<br>(.524) | 18.5<br>(.728) | 2.2<br>(0.87)                     | 9.1<br>(.358)  |
| 12 OR 15          | 17.6<br>(.693) | Tr13x3P1 | 13.3<br>(.524) | 19.5<br>(.768) | 2.2<br>(0.87)                     | 11.6<br>(.457) |
| 19                | 20.1<br>(.791) | Tr15x3P1 | 14.8<br>(.583) | 22.5<br>(.886) | 3.2<br>(.126)                     | 13.6<br>(.535) |
| 37                | 24.1<br>(.949) | Tr18x3P1 | 14.8<br>(.583) | 27<br>(1.063)  | 3.2<br>(.126)                     | 16.6<br>(.654) |

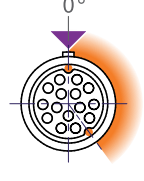
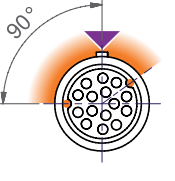
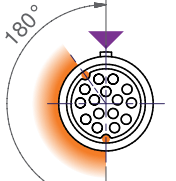
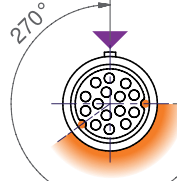
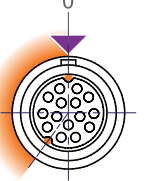
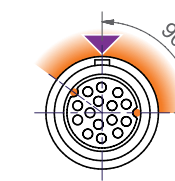
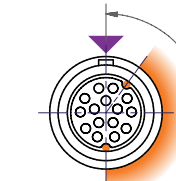
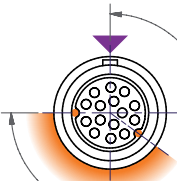
FOR PANEL MOUNTING GUIDE SEE PAGES 340 & 341  
FOR MASTER KEY POSITIONS SEE PAGE 388  
FOR PANEL CUT-OUT DIMENSIONS SEE PAGES 350

## PCB CONNECTORS

### ► MASTER KEY POSITIONS (5, 7, 12, 19 & 37 way connectors)

| KEY CODE                                                                     | A                                                                                  | B                                                                                  | C                                                                                   | D                                                                                    |
|------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| ORIENTATION                                                                  | 0°                                                                                 | 90°                                                                                | 180°                                                                                | 270°                                                                                 |
| <b>MALE KEYING</b><br>(for in-line male plugs)                               |   |   |   |   |
| <b>FEMALE KEYING</b><br>(for in-line female plugs & panel mount receptacles) |  |  |  |  |

### ► MASTER KEY POSITIONS (15 way connectors)

| KEY CODE                                                                     | A                                                                                   | B                                                                                   | C                                                                                    | D                                                                                     |
|------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| ORIENTATION                                                                  | 0°                                                                                  | 90°                                                                                 | 180°                                                                                 | 270°                                                                                  |
| <b>MALE KEYING</b><br>(for in-line male plugs)                               |  |  |  |  |
| <b>FEMALE KEYING</b><br>(for in-line female plugs & panel mount receptacles) |  |  |  |  |

# IDENTIFICATION CODE BREAKAWAY (MCABK)

**MCA**

**BK**

**L**

**12**

**-**

**12**

**S**

**75S**

**G**

**3**

**A**

## SERIES

**MCA:** Micro-D Circular AXON'.

## COUPLING SYSTEM

**BK:** Breakaway.

## MATERIAL & FINISH TYPE

**L:** Nickel plated aluminium + epoxy resin 150°C.

**M:** Nickel plated aluminium + epoxy resin 200°C.

## NUMBER OF CONTACTS 05, 07, 12, 15, 19, 37.

*See page 343 for contact arrangements.*

## CONNECTOR TYPE

**10:** Rear panel mount square flange receptacle, PCB version.

**12:** Rear panel mount jam nut receptacle, PCB version.

## CONNECTOR GENDER

**S:** Female connector (socket contacts).

## PCB VERSION

**50S:** 0.050" pitch board, straight.

**75S:** 0.075" pitch board, straight.

## CONDUCTOR TYPE

**G:** Gold plated solid conductor AWG25.

**T:** Tin plated solid conductor AWG24.

*See page 345 for conductor type.*

## TAIL LENGTH

**1:** 2.80 mm (0.110").

**2:** 3.80 mm (0.150").

**3:** 4.80 mm (0.190").

**4:** 6.35 mm (0.250").

*Tolerance: ±0.38 mm (0.015").*

*Other lengths available on request.*

## MASTER KEY POSITION

**A:** 0°.

**B:** 90°.

**C:** 180°.

**D:** 270°.

*See page 404 for master key positions.*

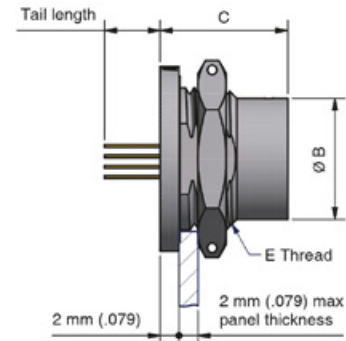
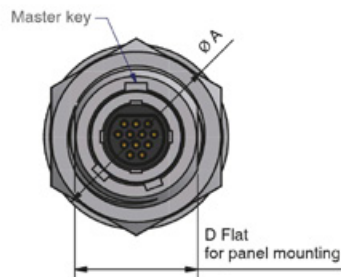
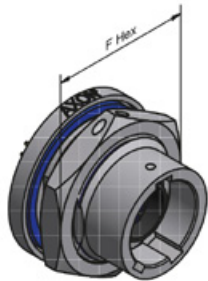
ADDITIONAL GROUND PINS AVAILABLE ON REQUEST

FOR PANEL MOUNTING GUIDE SEE PAGES 340 & 341

FOR PANEL CUT-OUT DIMENSIONS SEE PAGES 350 & 352

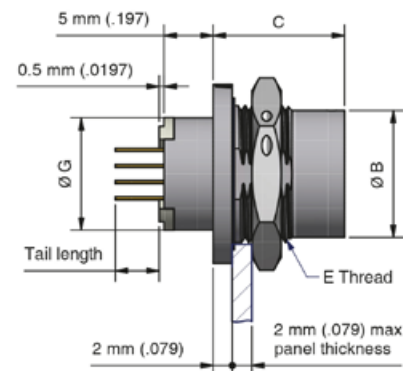
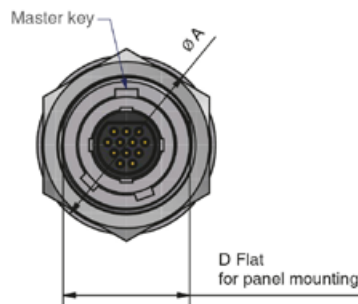
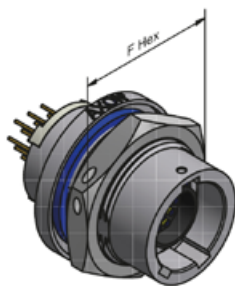
PANEL MOUNT SQUARE FLANGE CONNECTORS ARE SUPPLIED WITHOUT PANEL MOUNTING SCREWS

## BREAKAWAY PCB CONNECTORS



**Rear mount jam nut female PCB 0.050" pitch**

**MCABKxxx-12S50Sxxx**



**Rear mount jam nut female PCB 0.075" pitch**

**MCABKxxx-12S75Sxxx**

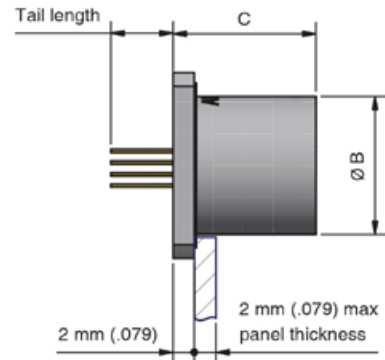
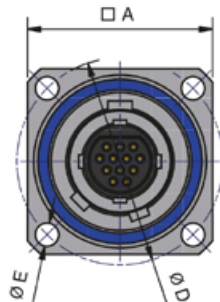
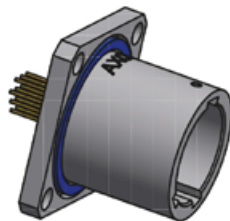
### TABLE OF DIMENSIONS - millimetres (inches)

| NUMBER OF WAYS | Ø A (MAX)      | Ø B            | C (MAX)        | D BSC        | E THREAD | F (MAX)      | G              |
|----------------|----------------|----------------|----------------|--------------|----------|--------------|----------------|
| 5 OR 7         | 19.6<br>(.772) | 13.1<br>(.516) | 13.7<br>(.539) | 13<br>(.512) | M14x0.75 | 16<br>(.630) | 9.1<br>(.358)  |
| 12 OR 15       | 19.6<br>(.772) | 13.1<br>(.516) | 13.7<br>(.539) | 13<br>(.512) | M14x0.75 | 18<br>(.709) | 11.6<br>(.457) |
| 19             | 22.3<br>(.878) | 15.8<br>(.622) | 15.2<br>(.598) | 16<br>(.63)  | M18x1    | 22<br>(.866) | 13.6<br>(.535) |
| 37             | 24.6<br>(.969) | 18.5<br>(.728) | 15.2<br>(.598) | 19<br>(.748) | M20x1    | 23<br>(.906) | 16.6<br>(.654) |

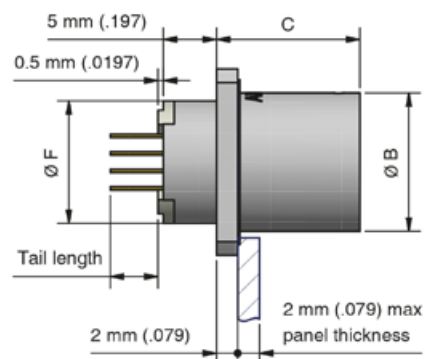
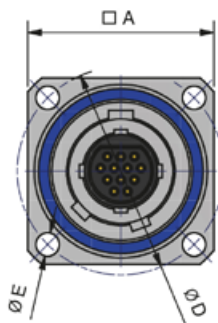
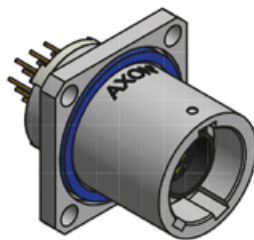
FOR PANEL MOUNTING GUIDE SEE PAGES 340 & 341  
FOR MASTER KEY POSITIONS SEE PAGE 404  
FOR PANEL CUT-OUT DIMENSIONS SEE PAGE 352

SUPPLIED WITH JAM NUTS

## BREAKAWAY PCB CONNECTORS



**Rear mount square flange female PCB 0.050" pitch**  
**MCABKxxx-10S50Sxxx**



**Rear mount square flange female PCB 0.075" pitch**  
**MCABKxxx-10S75Sxxx**

PCB  
CONNECTORS

Circular  
Micro-D connectors

### ► TABLE OF DIMENSIONS - millimetres (inches)

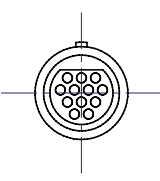
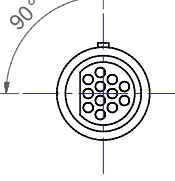
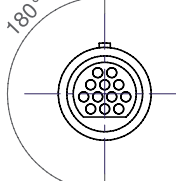
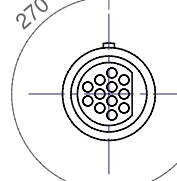
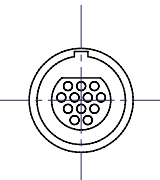
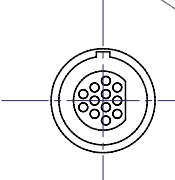
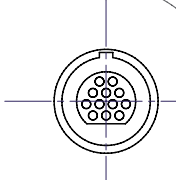
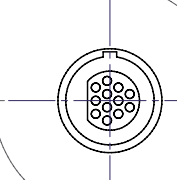
| NUMBER OF<br>WAYS | □ A (MAX)      | Ø B (MAX)      | C (MAX)        | Ø D BSC         | Ø E<br>+0.2 / -0<br>(+.008 / -.0) | Ø F (MAX)      |
|-------------------|----------------|----------------|----------------|-----------------|-----------------------------------|----------------|
| 5 OR 7            | 17.6<br>(.693) | 13.1<br>(.515) | 13.7<br>(.539) | 19.5<br>(.768)  | 2.2<br>(.087)                     | 9.1<br>(.358)  |
| 12 OR 15          | 17.6<br>(.693) | 13.1<br>(.515) | 13.7<br>(.539) | 19.5<br>(.768)  | 2.2<br>(.087)                     | 11.6<br>(.457) |
| 19                | 22.1<br>(.87)  | 15.8<br>(.622) | 15.2<br>(.598) | 24.5<br>(.965)  | 3.2<br>(.126)                     | 13.6<br>(.535) |
| 37                | 24.1<br>(.949) | 18.5<br>(.728) | 15.2<br>(.598) | 27.5<br>(1.083) | 3.2<br>(.126)                     | 16.6<br>(.654) |

FOR PANEL MOUNTING GUIDE SEE PAGES 340 & 341  
FOR MASTER KEY POSITIONS SEE PAGE 404  
FOR PANEL CUT-OUT DIMENSIONS SEE PAGES 350

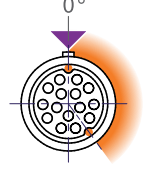
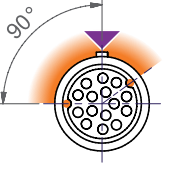
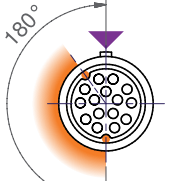
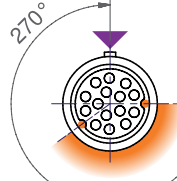
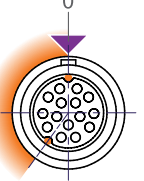
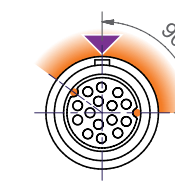
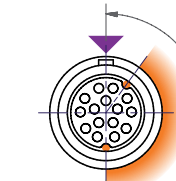
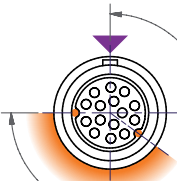
SUPPLIED WITHOUT PANEL MOUNTING SCREWS

## PCB CONNECTORS

### ► MASTER KEY POSITIONS (5, 7, 12, 19 & 37 way connectors)

| KEY CODE                                                                     | A                                                                                  | B                                                                                  | C                                                                                   | D                                                                                    |
|------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| ORIENTATION                                                                  | 0°                                                                                 | 90°                                                                                | 180°                                                                                | 270°                                                                                 |
| <b>MALE KEYING</b><br>(for in-line male plugs)                               |   |   |   |   |
| <b>FEMALE KEYING</b><br>(for in-line female plugs & panel mount receptacles) |  |  |  |  |

### ► MASTER KEY POSITIONS (15 way connectors)

| KEY CODE                                                                     | A                                                                                   | B                                                                                   | C                                                                                    | D                                                                                     |
|------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| ORIENTATION                                                                  | 0°                                                                                  | 90°                                                                                 | 180°                                                                                 | 270°                                                                                  |
| <b>MALE KEYING</b><br>(for in-line male plugs)                               |  |  |  |  |
| <b>FEMALE KEYING</b><br>(for in-line female plugs & panel mount receptacles) |  |  |  |  |

## PCB CONNECTORS

### ► TABLES OF WEIGHTS (estimated) - grams (ounces)

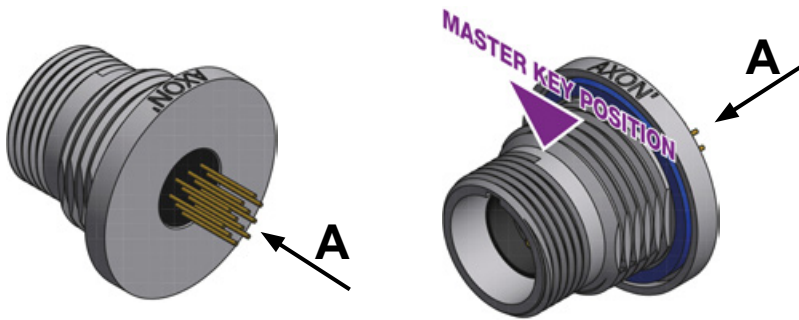
| PCB<br>0.050"<br>PITCH | METRIC THREAD    |               | THREE LUG BAYONET |               | ANTI-DECOUPLING  |               | BREAKAWAY        |              |
|------------------------|------------------|---------------|-------------------|---------------|------------------|---------------|------------------|--------------|
|                        | SQUARE<br>FLANGE | JAM NUT       | SQUARE<br>FLANGE  | JAM NUT       | SQUARE<br>FLANGE | JAM NUT       | SQUARE<br>FLANGE | JAM NUT      |
| 5 OR 7                 | 5.7<br>(.21)     | 9.6<br>(.34)  | 7.2<br>(.26)      | 9.6<br>(.34)  | 8.8<br>(.31)     | 12.3<br>(.44) | 4.8<br>(.17)     | 6.4<br>(.23) |
| 12 OR 15               | 7.9<br>(.28)     | 11<br>(.39)   | 8.4<br>(.31)      | 12.3<br>(.44) | 11.1<br>(.39)    | 15.7<br>(.56) | 4.2<br>(.15)     | 5.6<br>(.20) |
| 19                     | 13.7<br>(.48)    | 16.5<br>(.58) | 13.8<br>(.49)     | 18.5<br>(.66) | 14.2<br>(.50)    | 18.5<br>(.65) | 6.5<br>(.23)     | 8.3<br>(.30) |
| 37                     | 14.8<br>(.55)    | 20.7<br>(.73) | 17.4<br>(.62)     | 22.5<br>(.80) | 19<br>(.67)      | 23.4<br>(.83) | 7.9<br>(.28)     | 9.2<br>(.33) |

| PCB<br>0.075"<br>PITCH | METRIC THREAD    |               | THREE LUG BAYONET |               | ANTI-DECOUPLING  |               | BREAKAWAY        |               |
|------------------------|------------------|---------------|-------------------|---------------|------------------|---------------|------------------|---------------|
|                        | SQUARE<br>FLANGE | JAM NUT       | SQUARE<br>FLANGE  | JAM NUT       | SQUARE<br>FLANGE | JAM NUT       | SQUARE<br>FLANGE | JAM NUT       |
| 5 OR 7                 | 7.3<br>(.26)     | 11.2<br>(.40) | 8.8<br>(.31)      | 11.2<br>(.40) | 10.4<br>(.37)    | 13.9<br>(.49) | 5.6<br>(.20)     | 7.2<br>(.26)  |
| 12 OR 15               | 10.3<br>(.37)    | 13.4<br>(.48) | 10.8<br>(.38)     | 14.7<br>(.52) | 13.5<br>(.48)    | 18.1<br>(.64) | 5.5<br>(.20)     | 6.9<br>(.25)  |
| 19                     | 16.6<br>(.59)    | 19.4<br>(.69) | 16.7<br>(.59)     | 21.4<br>(.76) | 17.1<br>(.60)    | 21.4<br>(.76) | 8.2<br>(.29)     | 9.9<br>(.35)  |
| 37                     | 18.7<br>(.66)    | 24.6<br>(.87) | 21.3<br>(.75)     | 26.4<br>(.94) | 22.9<br>(.81)    | 27.3<br>(.97) | 10.3<br>(.37)    | 11.6<br>(.41) |

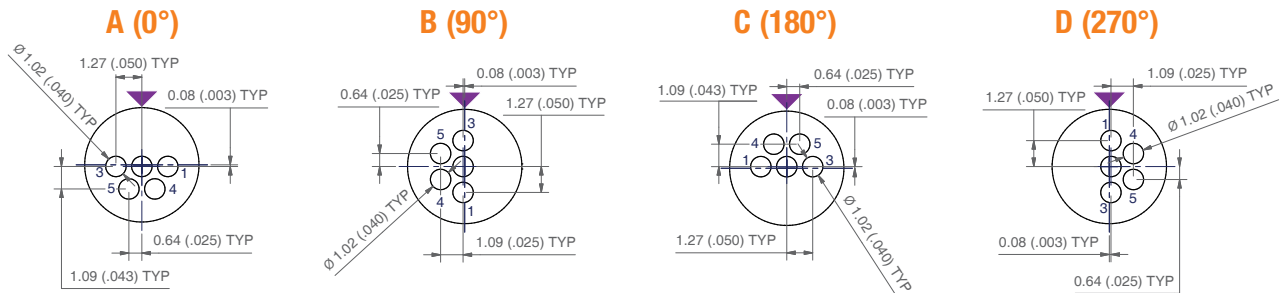
PCB  
CONNECTORS

Circular  
Micro-D connectors

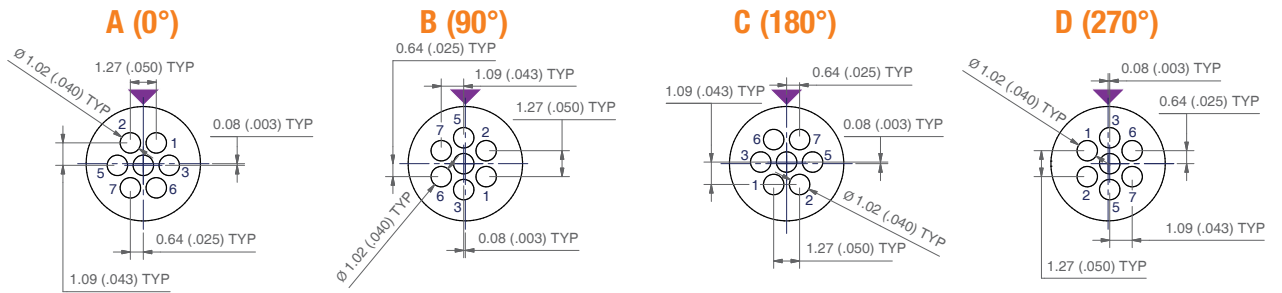
# PCB LAYOUT 0.050" PITCH



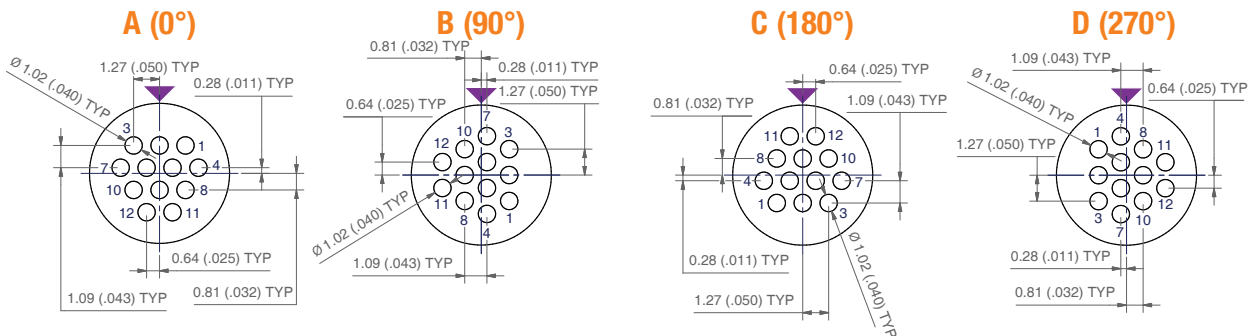
## 5 CONTACTS - VIEW A



## 7 CONTACTS - VIEW A

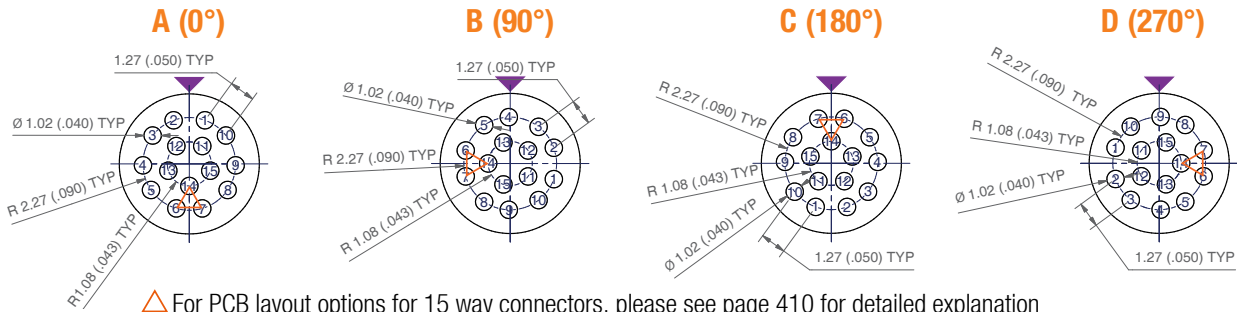


## 12 CONTACTS - VIEW A



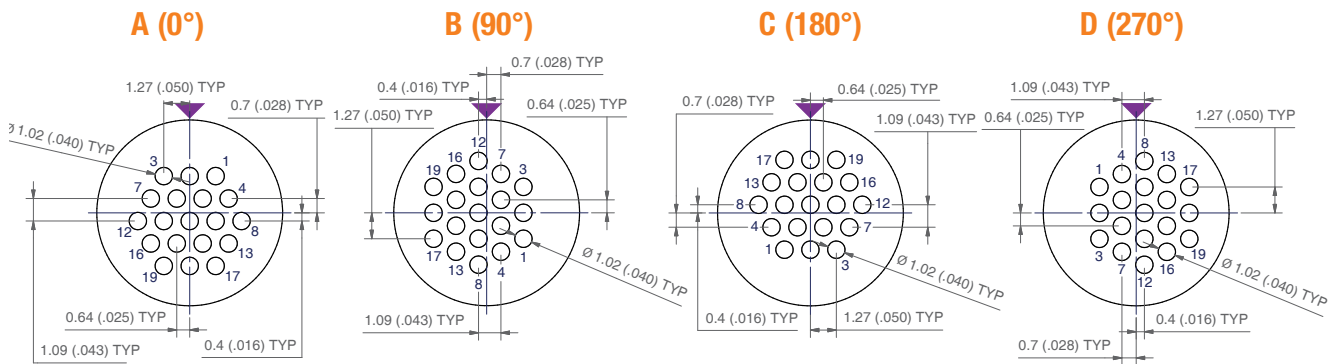
# PCB LAYOUT 0.050" PITCH

## 15 CONTACTS - VIEW A

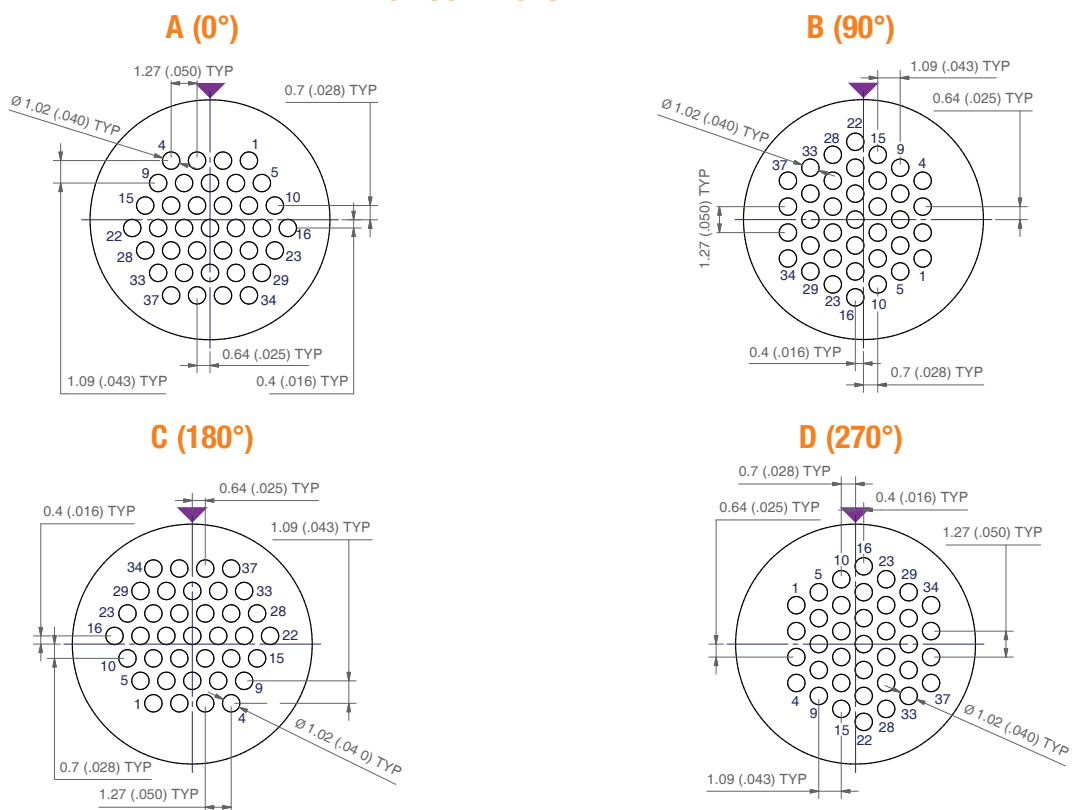


△ For PCB layout options for 15 way connectors, please see page 410 for detailed explanation

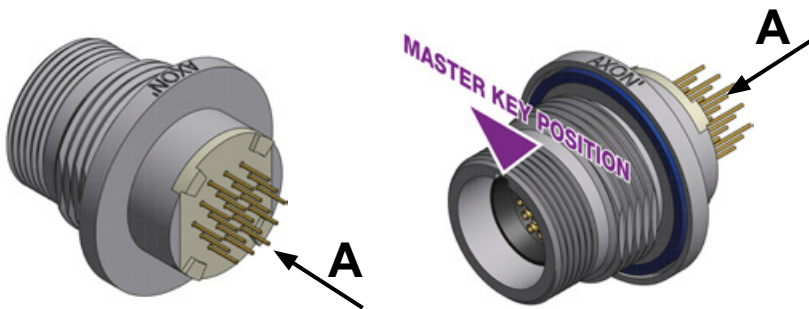
## 19 CONTACTS - VIEW A



## 37 CONTACTS - VIEW A

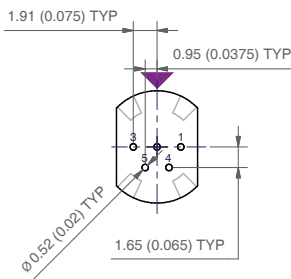


# PCB LAYOUT 0.075" PITCH

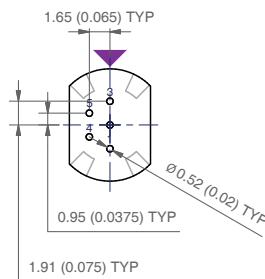


## 5 CONTACTS - VIEW A

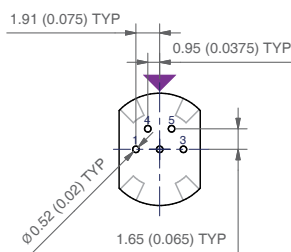
A (0°)



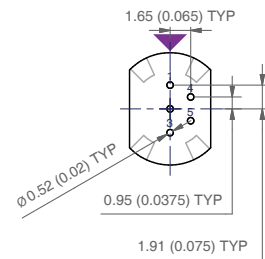
B (90°)



C (180°)

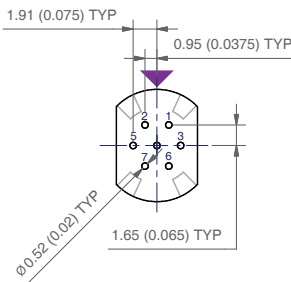


D (270°)

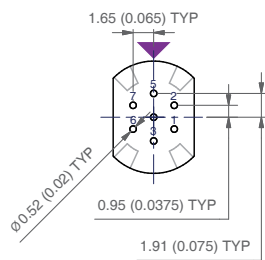


## 7 CONTACTS - VIEW A

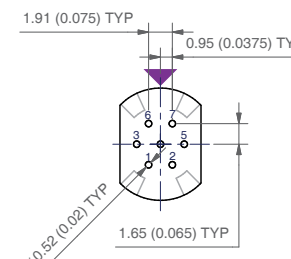
A (0°)



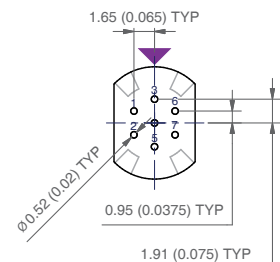
B (90°)



C (180°)

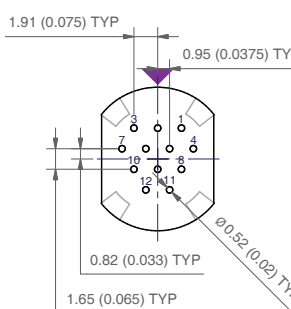


D (270°)

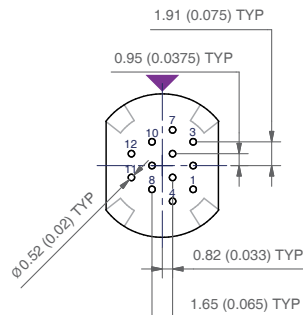


## 12 CONTACTS - VIEW A

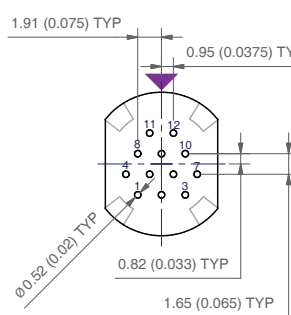
A (0°)



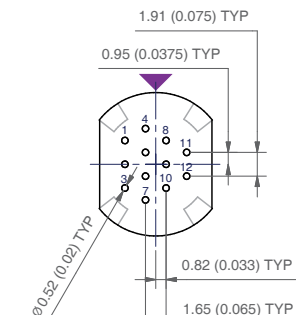
B (90°)



C (180°)



D (270°)



# PCB LAYOUT 0.075" PITCH

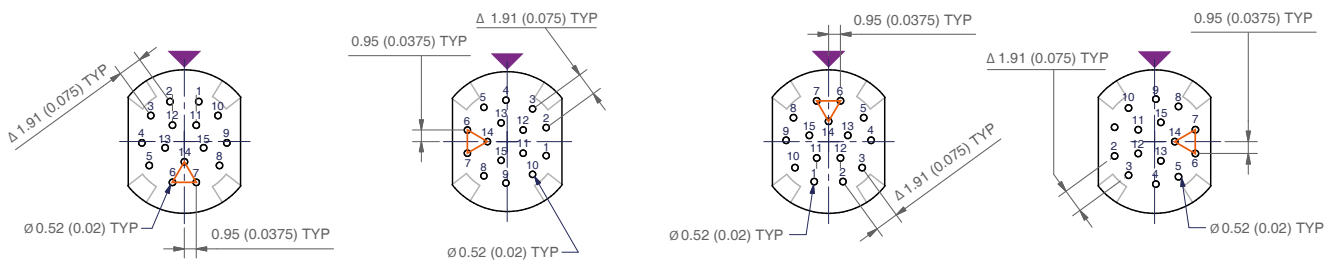
## 15 CONTACTS - VIEW A

A (0°)

B (90°)

C (180°)

D (270°)



△ For PCB layout options for 15 way connectors, please see page 410 for detailed explanation

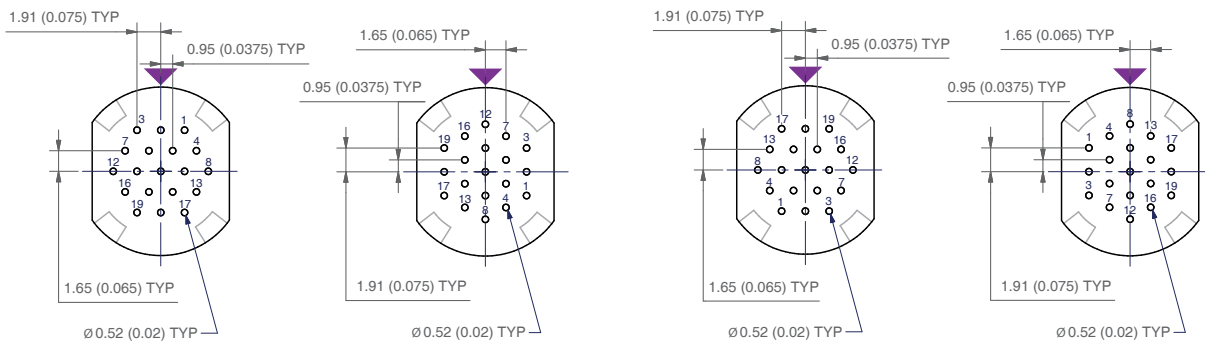
## 19 CONTACTS - VIEW A

A (0°)

B (90°)

C (180°)

D (270°)



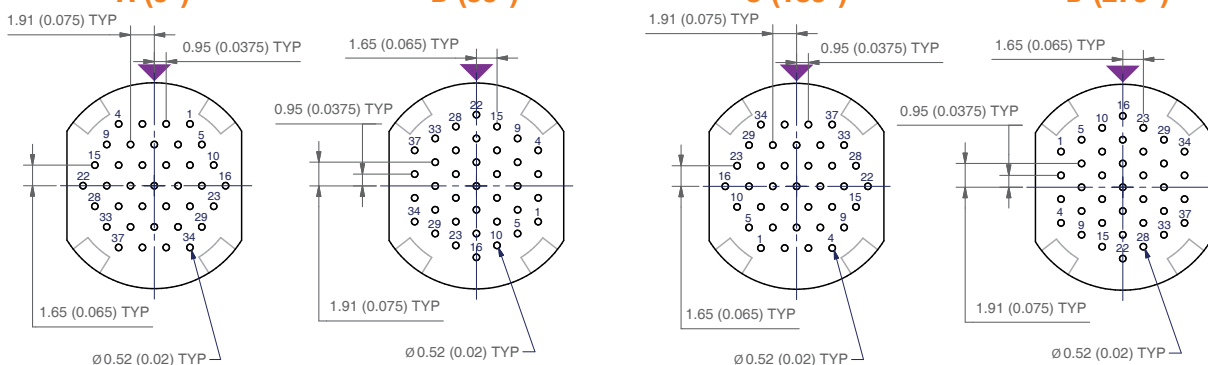
## 37 CONTACTS - VIEW A

A (0°)

B (90°)

C (180°)

D (270°)



PCB  
CONNECTORS

Circular  
Micro-D connectors

# 15 WAY CONNECTORS

## PCB LAYOUTS

This page describes in more detail the construction of the PCB layouts for the 15-way connectors shown on pages X (0.050" pitch) and Y (0.075" pitch).

Two geometrical patterns combine to create this layout:

| PATTERNS     | Two concentric circles. | A circular array of five equilateral triangles, 72° apart. |
|--------------|-------------------------|------------------------------------------------------------|
|              |                         |                                                            |
|              |                         |                                                            |
| 0.075" PITCH |                         |                                                            |

# PLASTIC MICRO-D CIRCULAR CONNECTORS

## SOLDER CUP & PIGTAIL CONNECTOR - MCA

- Solder cup connector . . . . . 412
- Pigtail connector . . . . . 414



PLASTIC  
CONNECTORS

Circular  
Micro-D connectors



# SOLDER CUP CONNECTOR

## PLASTIC SHELL

- Compact low weight connector.
- Small overall dimensions.
- Easy to integrate in custom solutions.
- Ideal for prototyping or where pigtail type connectors cannot be used.
- 5 to 15 contacts.

## IDENTIFICATION CODE

**MCA**

**P**

**12**

**S**

**FS**

### SERIES

**MCA:** Micro-D Circular AXON' plastic shell.

### CONNECTOR TYPE

**P:** LCP shell + potting 150°C.

**L:** LCP shell + potting 200°C.

### NUMBER OF CONTACTS

**05, 07, 12, 15.**

*See pages 342 & 343 for contact arrangements.*

### CONNECTOR GENDER

**P:** male (pin contacts).

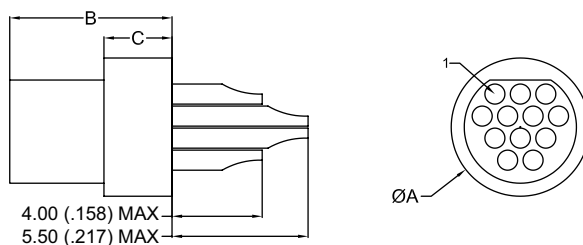
**S:** female (socket contacts).

### SOLDER CUP

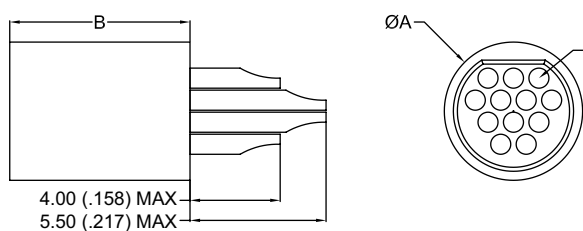
## DIMENSIONS

Dimensions are in millimetres (inches).

### MALE connector



### FEMALE connector



| NUMBER OF WAYS | Ø A<br>± 0.10<br>(.004) | B ± 0.10 (.004) |              | C<br>max.    |
|----------------|-------------------------|-----------------|--------------|--------------|
|                |                         | Male (P)        | Female (S)   |              |
| 5 OR 7         | 5.60<br>.220            | 8.10<br>.319    | 9.00<br>.354 | 3.50<br>.138 |
| 12             | 6.86<br>.270            | 8.10<br>.319    | 9.00<br>.354 | 3.50<br>.138 |
| 15             | 6.86<br>.270            | 8.10<br>.319    | 9.00<br>.354 | 3.50<br>.138 |

## SUMMARY OF CHARACTERISTICS

| ELECTRICAL & MECHANICAL PERFORMANCE |                                                                                   |
|-------------------------------------|-----------------------------------------------------------------------------------|
| CURRENT RATING                      | 3 A max.                                                                          |
| CONTACT RESISTANCE                  | 8 mΩ max.                                                                         |
| INSULATION RESISTANCE               | 5000 MΩ min. @ 500 V <sub>DC</sub>                                                |
| DIELECTRIC WITHSTANDING VOLTAGE     | Sea level: 600 V <sub>AC</sub><br>Altitude 21 km (70,000 ft): 150 V <sub>AC</sub> |
| CONTACT ENGAGING FORCE              | 170 g max. (6 oz)                                                                 |
| CONTACT SEPARATING FORCE            | 14 g min. (0.5 oz)                                                                |
| CONTACT RETENTION                   | 2.26 kg (5 lbs)                                                                   |
| DURABILITY                          | 500 mating cycles min.                                                            |

| MATERIAL & FINISH |                                                       |
|-------------------|-------------------------------------------------------|
| MOULDED SHELL     | Liquid Crystal Polymer (LCP)                          |
| PIN CONTACT       | Copper and beryllium copper, gold over nickel plating |
| SOCKET CONTACT    | Copper alloy, gold over nickel plating                |
| SOLDER CUP        | Copper alloy, gold over nickel plating                |
| ENCAPSULANT       | Epoxy resin                                           |



# PIGTAIL CONNECTOR

## PLASTIC SHELL

- Low cost plastic connector.
- 5 to 37 contacts.

## IDENTIFICATION CODE

**MCA**

**P**

**12**

**S**

**4**

**L**

**050**

### SERIES

**MCA:** Micro-D Circular AXON' plastic shell.

### CONNECTOR TYPE

**P:** LCP shell + potting 150°C.

**L:** LCP shell + potting 200°C.

### NUMBER OF CONTACTS

**05, 07, 12, 15, 19, 37.**

*See pages 342 & 343 for contact arrangements.*

### CONNECTOR GENDER

**P:** male (pin contacts).

**S:** female (socket contacts).

### WIRE TYPE

*For colour code V only*

**3:** M22759/11, AWG26, 19 strands, 600 V.

**F:** E 2607, AWG26, 7 strands, 600 V.

*Solid uninsulated wires*

**G:** AWG 25 gold plated.

**T:** AWG 24 tin plated.

*See page 345 for wire types*

### COLOUR CODE

**F:** All yellow.

**L:** All white.

**V:** MIL-STD-681 striped (only for wire types 3 and F).

**W:** 10 colour repeated code.

**BLANK:** if wire type is **G** or **T**.

*See pages 346 & 347 for colour code.*

### WIRE LENGTH (in cm)

**Caution!** wire length in centimetres - (1 cm = 10 mm = 0.394").

| L              | L ≤ 10      | 10 < L ≤ 100      | L > 100     |
|----------------|-------------|-------------------|-------------|
| in cm (inches) | L ≤ 3.940   | 3.940 < L ≤ 39.40 | L > 39.40   |
| TOLERANCE      | -0 / +0.5   | -0 / +3           | -0 / +5     |
| in cm (inches) | -0 / +0.200 | -0 / +1.180       | -0 / +1.970 |

*For colour codes F, L, W*

**1:** E 2607, AWG 26, 7 strands, 600 V.

**4:** E 2619, AWG 26, 19 strands, 600 V.

**6:** E 2807, AWG 28, 7 strands, 600 V.

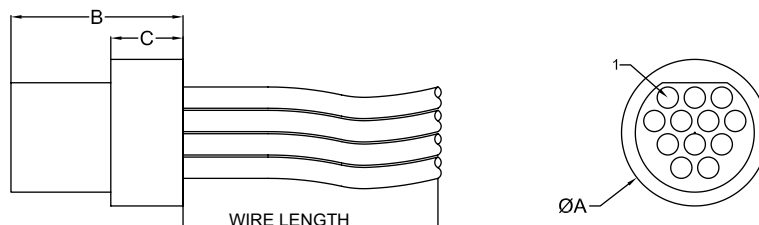
**8:** E 3007, AWG 30, 7 strands, 600 V.

**E:** M22759/33, AWG 26,19 strands, 600 V.

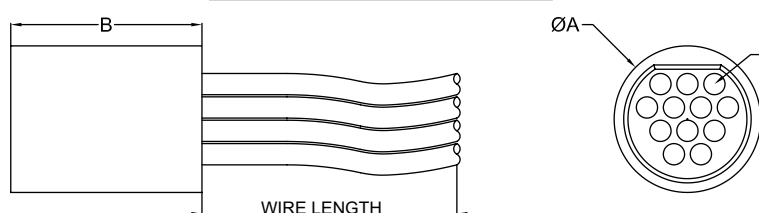
## DIMENSIONS

Dimensions are in millimetres (inches).

### MALE connector



### FEMALE connector



| NUMBER OF WAYS | Ø A<br>± 0.10 (.004) | B ± 0.10 (.004) |               | C<br>max.    |
|----------------|----------------------|-----------------|---------------|--------------|
|                |                      | Male (P)        | Female (S)    |              |
| 5 OR 7         | 5.60<br>.220         | 8.10<br>.319    | 9.00<br>.354  | 3.50<br>.138 |
| 12 OR 15       | 6.86<br>.270         | 8.10<br>.319    | 9.00<br>.354  | 3.50<br>.138 |
| 19             | 9.10<br>.358         | 9.00<br>.354    | 10.00<br>.393 | 4.50<br>.177 |
| 37             | 11.75<br>.463        | 9.00<br>.354    | 10.00<br>.393 | 4.50<br>.177 |

PLASTIC  
CONNECTORS

Circular  
Micro-D connectors

## SUMMARY OF CHARACTERISTICS

| ELECTRICAL & MECHANICAL PERFORMANCE |                                                                                   | MATERIAL & FINISH |                                                       |
|-------------------------------------|-----------------------------------------------------------------------------------|-------------------|-------------------------------------------------------|
| CURRENT RATING                      | 3 A max.                                                                          | MOULDED SHELL     | Liquid Crystal Polymer (LCP)                          |
| CONTACT RESISTANCE                  | 8 mΩ max.                                                                         | PIN CONTACT       | Copper and beryllium copper, gold over nickel plating |
| INSULATION RESISTANCE               | 5 000 MΩ min. @ 500 V <sub>dc</sub>                                               | SOCKET CONTACT    | Copper alloy, gold over nickel plating                |
| DIELECTRIC WITHSTANDING VOLTAGE     | Sea level: 600 V <sub>ac</sub><br>Altitude 21 km (70,000 ft): 150 V <sub>ac</sub> | ENCAPSULANT       | Epoxy resin                                           |
| CONTACT ENGAGING FORCE              | 170 g max. (6 oz)                                                                 |                   |                                                       |
| CONTACT SEPARATING FORCE            | 14 g min. (0.5 oz)                                                                |                   |                                                       |
| CONTACT RETENTION                   | 2.26 kg (5 lbs)                                                                   |                   |                                                       |
| DURABILITY                          | 500 mating cycles min.                                                            |                   |                                                       |