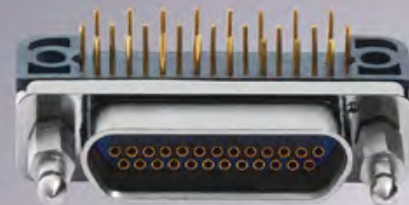


D-Click & Versatys® connectors

Fast-latching Micro-D and versatile combo solutions



Fast-latching connectors

- D-Click & Versatys® connectors for space applications - 6
- D-Click fast-latching system - 8
- Panel mounting guide - 9
- D-Click hardware - 10

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Micro-D connectors

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- Micro-D D-Click pigtail connectors - 22
- Micro-D D-Click backshells - 25
- Micro-D D-Click PCB connectors - 27
- Custom Designed connectors - 40

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Versatys® connectors (MMC)

- General information - 42
- Dismountable Versatys® pigtail connectors - 51
- Non-dismountable Versatys® pigtail connectors - 56
- Versatys® PCB connectors - 59
- Versatys® kit components - 64

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41

Wires

- Wires codes for twist pin contacts - 68
- Wires codes for power contacts - 69
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AXON' CABLE D-Click connectors

Fast-latching connectors

- D-Click & Versatys® connectors for space applications - 6
 - D-Click fast-latching system - 8
 - Panel mounting guide - 9
 - D-Click hardware - 10



D-Click & Versatys® connectors

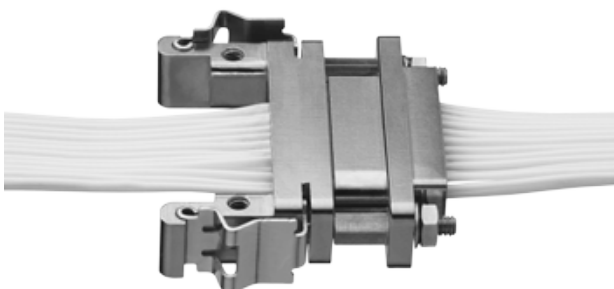
Headquartered in the beautiful Champagne region of France, AXON' is a worldwide leader in specialist interconnect. The company excels in the design and manufacture of wires, cables, terminated harnesses and interconnect solutions for high technology applications.

As a specialist in advanced interconnect solutions, Axon' Cable has extensive experience in Micro-D connectors including pigtail and PCB connectors, solder cup connectors, QPL qualified Micro-D to MIL-DTL-83513, micro-strip and saver connectors.



ULTRA-FAST CONNECTION AND MODULARITY

Axon' Cable has developed miniature connectors equipped with a user-friendly latching system which gives greater flexibility to customers. A new range of Micro-D products equipped with the **D-Click** fast latching system allows customers to use the Micro-D technology in space-constrained systems where access to the connectors is difficult. The company has also engineered **Versatys®**, a new concept of compact power connectors. Compared with power D-Sub connectors, this new range of connectors gives rise to substantial space and weight saving. With interchangeable lines (power contacts and wires), users can customize their own connectors. **Versatys®** connectors can optionally also be equipped with the fast-latching **D-Click** system. Both innovative connector types generate real time savings as no tooling is required for this operation.



A FAST LATCHING SYSTEM: ONE CLICK AND YOU'RE DONE!

Axon' Cable has enlarged their range of highly reliable Micro-D connectors by developing **D-Click** fast latching connectors. Equipped with an easy-to-use mating and latching system, this range of Micro-D connectors enables a much faster installation during harness integration. **D-Click** connectors are available from **9 to 37** ways.

The Micro-D connector range includes:

- Pigtail & PCB connectors
- Backshells
- Custom designed connectors

How does the D-Click system work

A very **quick** connection / disconnection:

- Latch-posts on one connector serve as guide pins into the shell of the mating connector, on which two latch springs then trap the waisted latch-posts for a very fast and reliable connection
- Just squeeze the **D-Click** latch springs together to disconnect.

WHY CHOOSE D-Click FAST LATCHING CONNECTORS?

- No hardware and no tooling required for the connection: time-saving solution for harness integration.
- Very easy to move from standard Micro-D technology to **D-Click** connectors: no mechanical changes required to either the PCB layout or to the equipment panel cut-outs.
- The **D-Click** latching system can make it easier to use Micro-D technology in systems where gaining access with tools could be difficult.
- These low-insertion-force connectors equipped with Twist Pin contacts meet all the standard performance requirements of MIL-DTL-83513.
- The **D-Click** latching system has been tested according to an ESA-based qualification test plan and is particularly specified by integrators of satellite mega-constellations, for example, where integration time is of the essence.



▲ METROLOGY LABORATORY



▲ WEIGHT & SPACE SAVING

for space applications

Applications:

- Mega-constellations
- Satellites, launchers
- Any space-constrained equipment where rapid integration is a must.

This catalogue presents solutions for space applications only. For any other applications including avionics and research centres, please contact us.



VERSATYS®: MINIATURE VERSATILE CONNECTORS

Versatys® is a new concept of power connectors giving far greater flexibility to customers. Removable contacts and fast-locking versions make integration with customer equipment faster and easier. The modular and flexible design enables customers to build their own connector configurations. Compared with power D-Sub connectors, **Versatys®** connectors represent an ideal solution for weight and space saving, delivering greater flexibility for space applications.

Versatys® connectors equipped with the **D-Click** system allow for substantial time saving during integration.

WHY CHOOSE VERSATYS® MINIATURE VERSATILE CONNECTORS?

Users can build the connectors themselves which gives more flexibility to the design. In the case of a defective line or contact, the user just needs to change the concerned line but not the whole connector. This generates **real time savings** as no tooling is required for this operation.

Components of the **Versatys®** connector including the shell, contacts and wires can all be ordered in kit form. This is a real tailor-made solution!

Versatys® has already been chosen for a major new generation of satellites because of its technical qualities and fast locking system.



QUALITY ASSURANCE

ISO 9001

ISO 9100

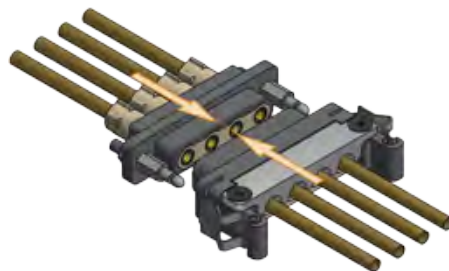
ISO 14001

ISO 45001

D-CCLICK FAST-LATCHING SYSTEM

► How it works

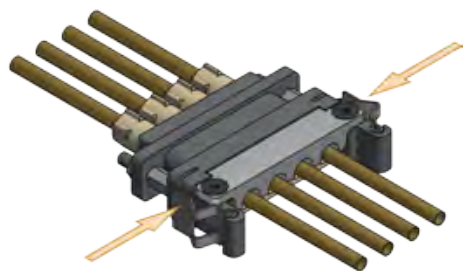
MATING



Simply mate the connectors together...

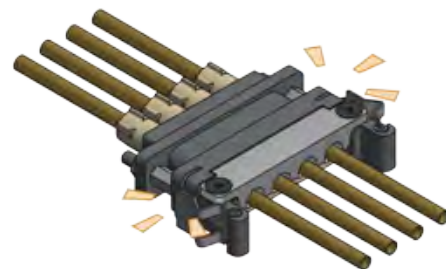
STEP
1

DE-MATING



Squeeze the two latch springs together...

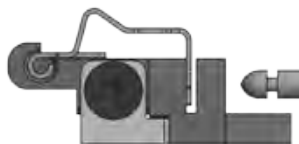
STEP
2



...until the hardware clicks.



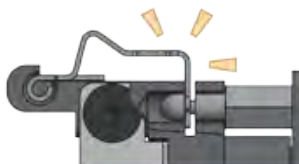
...and pull to de-mate the connectors.



Align the connectors face to face and push together



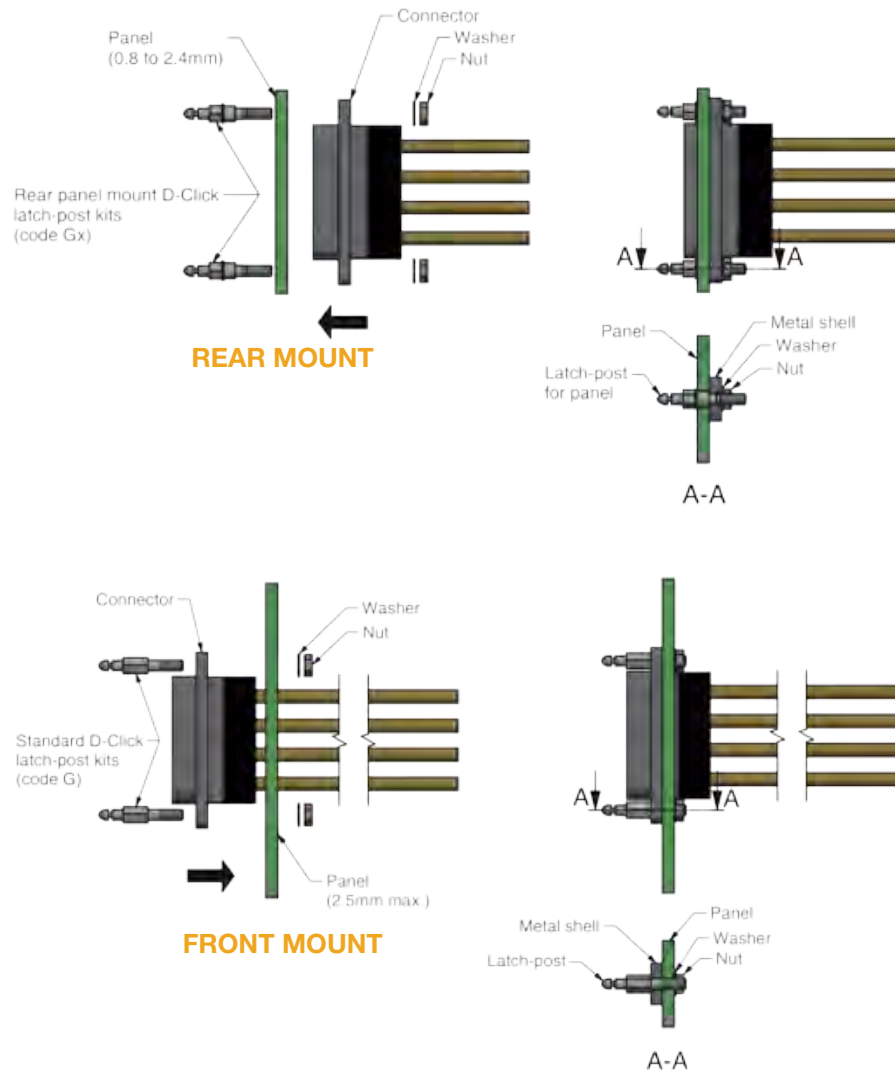
The head of the latch-post enters and starts to displace the latch spring until...



... it clicks audibly into place: the hardware is correctly locked.

PANEL MOUNTING GUIDE

► Panel Mounting



D-CLICK HARDWARE

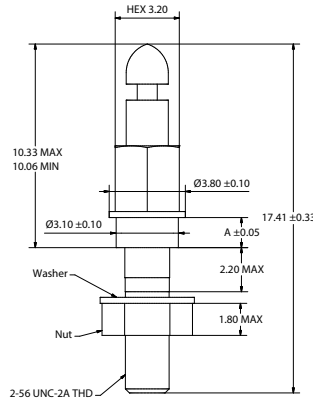
► Hardware for rear panel mount connectors

- 3 versions of rear panel mount latch-posts: - 1 version for pigtails connectors,
- 2 versions for PCB connectors.
- 1 kit consists of : - 2 latch-posts, 2 washers and 2 nuts for pigtail connectors
- 2 latch-posts for PCB connectors
- Material: passivated 300 series stainless steel.

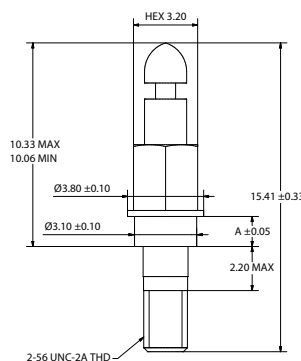
Dimensions are given in millimetres (inches).

HARDWARE CODE	Pigtails	G1	G2	G3	G4	G5
	PCB (without threaded inserts)	G1	G2	G3	G4	G5
	PCB (with threaded insert)	H1	H2	H3	H4	H5
PANEL THICKNESS -0.0 / +0.2 (-.000 / +.008)	mm	0.8	1.2	1.6	2	2.4
	inch	.031	.047	.062	.079	.094
DIM. A ±0.05 (±.002)	mm	0.7	1.1	1.5	1.9	2.3
	inch	.028	.043	.059	.075	.091

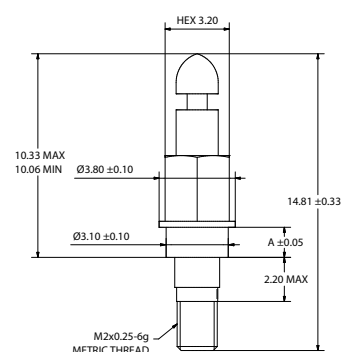
FOR PIGTAILS



FOR BS, 75RB, 75SA & 75SB PCB



FOR CBR & 75RC PCB



RECOMMENDED TORQUE: 0.35 N.m / 3.1 inch-pounds

D-CLICK HARDWARE

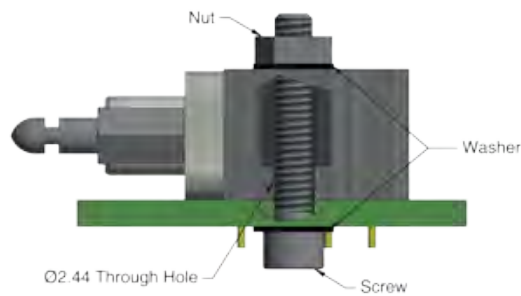
► PCB connector mounting instructions

Axon' offers two different ways to mount your connectors to your PCB.

PCB CONNECTORS WITH NO THREADED INSERTS

The first method relies on a Ø2.44 through hole in the connector tray. The mounting of the connector to the PCB is made with a Screw/washers/nut assembly. The screw and nut can be either top- or bottom-mounted.

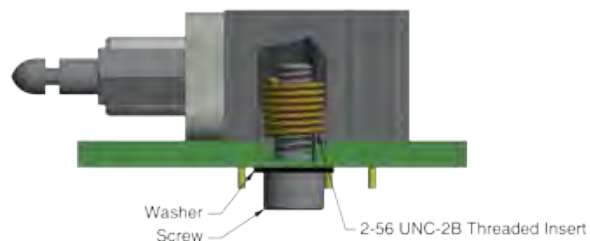
Hardware code: **G & Gx**



PCB CONNECTORS WITH THREADED INSERTS INSTALLED

The second method uses threaded inserts pre-installed in the connector tray. With this method a bottom-mounted screw alone is required with a recommended torque value of 0.14 N.m.

Hardware code: **H & Hx**

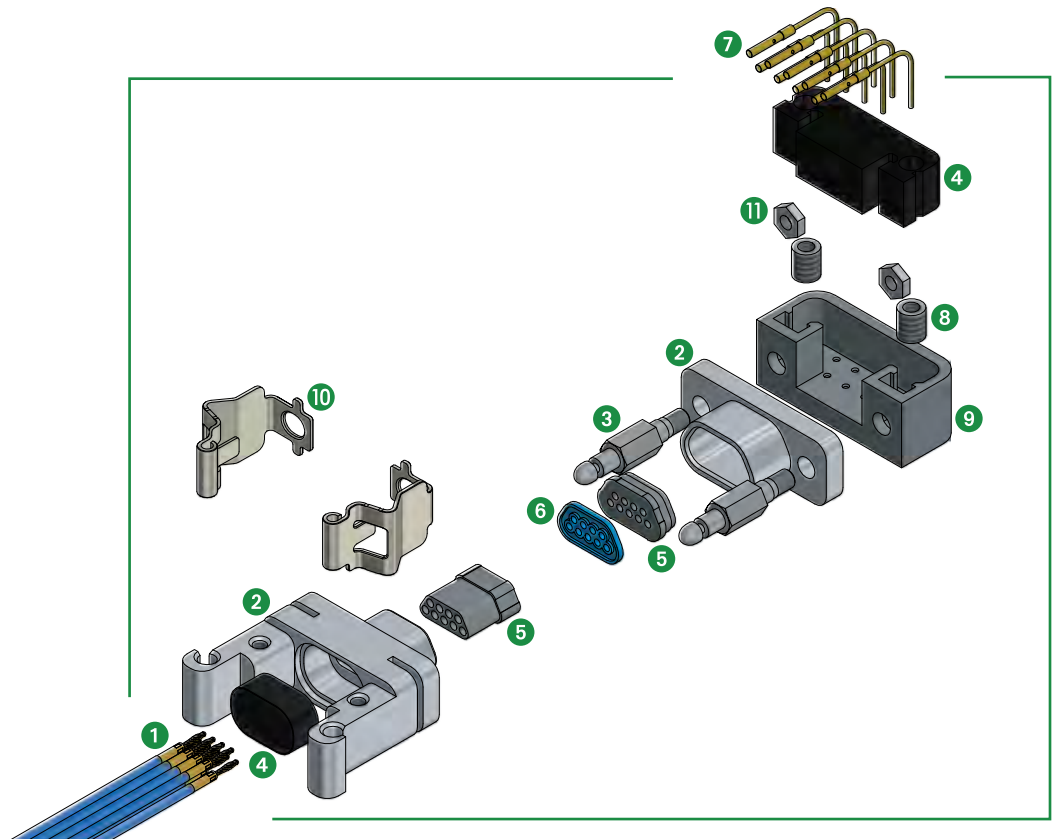


AXON' CABLE D-Click connectors

Micro-D connectors

General information - 14
Micro-D D-Click pigtail connectors - 22
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Micro-D D-Click PCB connectors - 27
Custom Designed connectors - 40

GLOSSARY OF TERMS



TWIST PIN	1	Male contact, fitted to plug connector.
SHELL	2	Connector metal body.
D-CLICK LATCH-POST	3	Mates with latch spring.
POTTING	4	Epoxy compound used as an encapsulant.
INSERT	5	Moulded insulation housing, separating each connection.
INTERFACIAL SEAL	6	Fitted to socket connector only.
SOCKET	7	Female contact, fitted to socket connector (also known as socket).
INSERT (2-56 UNC 2A)	8	Used to screw the connector onto the PCB.
TRAY	9	Junction box used for PCB connectors only.
D-CLICK LATCH SPRING	10	Latches onto the D-Click latch-post.
HEX NUTS	11	Rear retention for the latch-posts.

PCB connector	●	Connector with footprint for printed circuit board.
CBR connector	●	Condensed Board Right Angle connector.
BS connector	●	Board Straight connector.
Pigtail connector	●	Connector with insulated or uninsulated wires.
D-Click connector	●	Connector designed for D-Click hardware.
D-Click hardware	●	Mechanical hardware allowing quick mating & demating even without tools.

CONNECTORS ARE SUPPLIED WITH ANTI-STATIC PROTECTIVE DUST CAPS

GENERAL CHARACTERISTICS

per MIL-DTL-83513*

Based on its Micro-D range, AXON's D-Click connector range is designed for quick mating & de-mating. The innovative latching hardware allows rapid, reliable and secure connections with no tooling required. The Micro-D D-Click range, which is covered by the MIL-DTL-83513* standard, is ideally suited to equipment and applications where weight, miniaturisation and long term performance are required. It is available in 6 contact arrangements (9 to 37 contacts) for rectangular Micro-D connectors.

► Electrical & mechanical characteristics

CHARACTERISTICS	SPECIFICATION	TEST METHOD
CURRENT RATING	2.5 A max. for AWG26 & uninsulated wires* 1.5 A max. for AWG28 wires*	
CONTACT RESISTANCE	5 mΩ @ current rating 6 mΩ @ low level current	Para 9.1.1.3 OF ESCC 3401
INSULATION RESISTANCE	5000 MΩ min. @ 500 Vdc	Para 9.1.1.1 OF ESCC 3401
DIELECTRIC WITHSTANDING VOLTAGE	600 Vrms / 2 mA (leakage current)	Para 9.1.1.2 OF ESCC 3401
WORKING VOLTAGE - SEA LEVEL 0 m - ALTITUDE 33 km	150 Vrms 100 Vrms	Para 9.13.5 OF ESCC 3401
CONTACT ENGAGING AND SEPARATION FORCE	1.667 N max. 0.137 N max.	Para 4.3.9 OF ESCC 3401/029
CONNECTOR MATING AND DE-MATING FORCE	Mating: 20 N (9 ways) to 82 N (37 ways) max. De-mating: 1.3 N min. / 20 N max. (9 ways) to 5.1 N min. / 82 N max. (37 ways)	Para 9.20 OF ESCC 3401
CONTACT RETENTION	22.25 N for female contacts	Para 9.17 OF ESCC 3401
DURABILITY	500 mating cycles min.	Para 9.18 OF ESCC 3401
TEMPERATURE RANGE	-55°C / +125°C	
VIBRATION	20 g's - no discontinuity >1μs	Para 9.11 OF ESCC 3401
SHOCK	50 g's - no discontinuity >1μs	Para 9.12 OF ESCC 3401
SALT SPRAY	48 hours	Para 9.22 OF ESCC 3401

*: For a single contact. Please refer to derating rule of ESCC 3401/029.

► Material & Finish

COMPONENT	MATERIAL	FINISH
MALE CONTACT (TWIST PIN)	COPPER AND BERYLLIUM COPPER	GOLD PLATING IN ACCORDANCE WITH ASTM-B488, TYPE II, CLASS 1 (1.27 μm (0.00005") MIN), CODE C
FEMALE CONTACT	COPPER ALLOY	OVER NICKEL UNDERPLATE IN ACCORDANCE WITH SAE-AMS-QQ-N-290 CLASS 2 (1.27 μm (0.00005") TO 3.81 μm (0.00015"))
METAL SHELL	ALUMINIUM ALLOY, TYPE 6061	ELECTROLESS NICKEL PLATING IN ACCORDANCE WITH SAE-AMS2404, CLASS 4, .0005 INCH MIN.
PLASTIC INSERT / PCB TRAY	LIQUID CRYSTAL POLYMER, 30% LOADED GLASS FIBRE POLYESTER, 94VO, IN ACCORDANCE WITH MIL-M-24519 (200°C)	
INTERFACIAL SEAL	FLUOROSILICONE RUBBER	HEAT-CURED TO MEET ECSS-Q-70-71 A OUTGASSING REQUIREMENTS
LATCH-POST / HARDWARE	STAINLESS STEEL, 300 SERIES	PASSIVATION IN ACCORDANCE WITH SAE-AMS-2700
LATCH SPRING	BERYLLIUM COPPER	ELECTROLESS NICKEL PLATING IN ACCORDANCE WITH SAE-AMS2404, CLASS 4, .00015 INCH MIN.
ENCAPSULANT	SPACE GRADE EPOXY RESIN	
INSULATED WIRE	- POLYIMIDE INSULATED WIRES IN ACCORDANCE WITH ESCC 3901/002 - PTFE INSULATED WIRES IN ACCORDANCE WITH ESCC 3901/013 - ETFE INSULATED SILVER PLATED COPPER IN ACCORDANCE WITH SAE-AS22759/33	
UNINSULATED WIRE	SOLID COPPER WIRES IN ACCORDANCE WITH QQ-W-343 TYPE 'S' GOLD PLATED ACCORDING TO MIL-G-45204, CLASS 2 GRADE C OR D	

*: ISSUE G AT TIME OF GOING TO PRESS

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 21st 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 21st October 2000.

COMPONENT SPECIFIC RoHS COMPLIANCE

COMPONENT	MATERIAL	FINISH	RoHS STATUS
PIN CONTACT (TWIST PIN)	COPPER + BERYLLIUM COPPER	GOLD	RoHS Compliant
SOCKET CONTACT	COPPER ALLOY	GOLD	RoHS Compliant
METAL SHELL	ALUMINIUM ALLOY TYPE 6061	ELECTROLESS NICKEL	RoHS Compliant
PLASTIC INSERT / PCB TRAY	LIQUID CRYSTAL POLYMER	N/A	RoHS Compliant
INTERFACIAL SEAL	FLUOROSILICONE RUBBER	N/A	RoHS Compliant
LATCH PIN / HARDWARE	STAINLESS STEEL 300 SERIES	PASSIVATION	RoHS Compliant
LATCH SPRING	BERYLLIUM COPPER	ELECTROLESS NICKEL	RoHS Compliant
PCB TERMINATION	SOLID COPPER WIRE	GOLD	RoHS Compliant
	SOLID COPPER WIRE	NOT LEADED TIN 97% MAX TIN	RoHS Compliant
ENCAPSULANT	EPOXY RESIN 150°C & 200°C VERSIONS	N/A	RoHS 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.

D-CLICK CONNECTOR WEIGHTS

D-CLICK CONNECTOR WEIGHTS IN GRAMS							
NB OF CONTACT	GENDER	PIGTAIL DC HARDWARE	PIGTAIL G HARDWARE	PCB CBR .100" pitch	PCB CBR .075" pitch	PCB BS .100" pitch	PCB BS .075" pitch
9	MALE	4.1	3.0	4.2	4.2	4.8	4.5
	FEMALE	4.0	3.0	4.2	4.1	4.8	4.5
15	MALE	4.6	3.5	5.0	5.0	5.4	5.3
	FEMALE	4.5	3.4	4.9	4.9	5.3	5.2
21	MALE	5.1	4.0	5.8	5.6	6.5	6.0
	FEMALE	5.0	3.9	5.7	5.5	6.4	5.9
25	MALE	5.5	4.3	6.2	6.1	6.9	6.4
	FEMALE	5.3	4.1	6.1	6.0	6.8	6.3
31	MALE	6.0	4.7	7.7	6.9	8.0	7.2
	FEMALE	5.7	4.6	7.5	6.7	7.8	7.0
37	MALE	6.0	5.3	8.7	7.8	9.2	8.0
	FEMALE	5.7	5.1	8.4	7.5	8.9	7.7

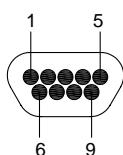
NOTES

NOMINAL WEIGHT SHOWN. ADD 10% FOR MAXIMUM WEIGHT.
CONNECTOR WEIGHT INCLUDES HARDWARE.
PIGTAILS: SEE TABLE PAGE 68 FOR WIRE WEIGHT CALCULATION.

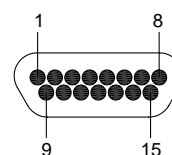
CONTACT ARRANGEMENTS

► Mating face of male rectangular connector

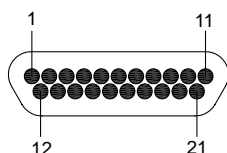
- 1.27 mm (.050") contact spacing.
- 1.09 mm (.043") spacing between rows.



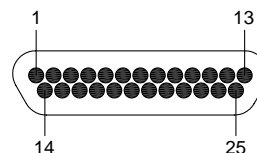
9 CONTACTS



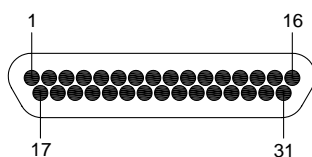
15 CONTACTS



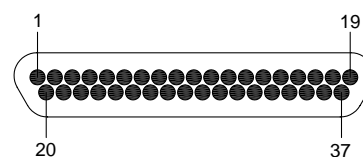
21 CONTACTS



25 CONTACTS



31 CONTACTS

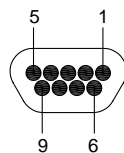


37 CONTACTS

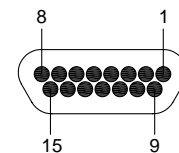
CONTACT ARRANGEMENTS

► Mating face of female rectangular connector

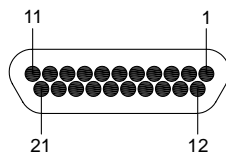
- 1.27 mm (.050") contact spacing.
- 1.09 mm (.043") spacing between rows.



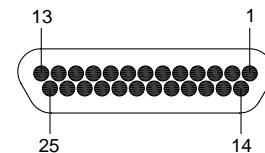
9 CONTACTS



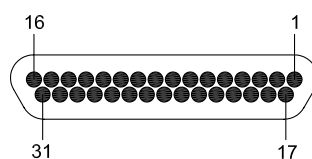
15 CONTACTS



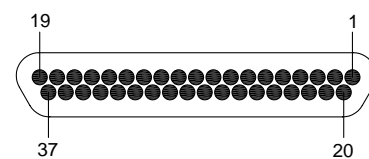
21 CONTACTS



25 CONTACTS



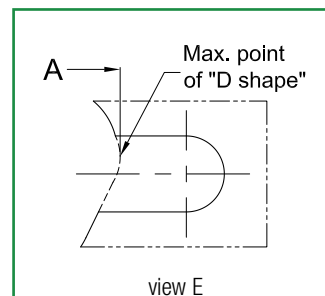
31 CONTACTS



37 CONTACTS

PANEL CUTOUTS

► Metal shell

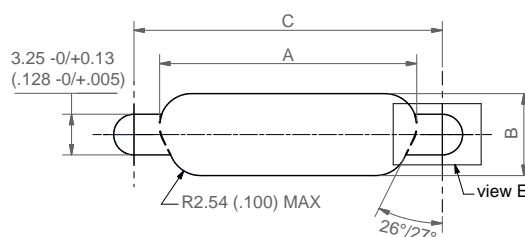
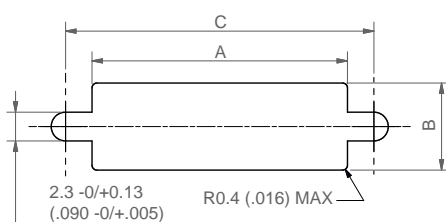


9 TO 37 CONTACTS

**FIGURE 1
FRONT MOUNT**

**FIGURE 2
REAR MOUNT**

Dimensions are in millimetres (inches).

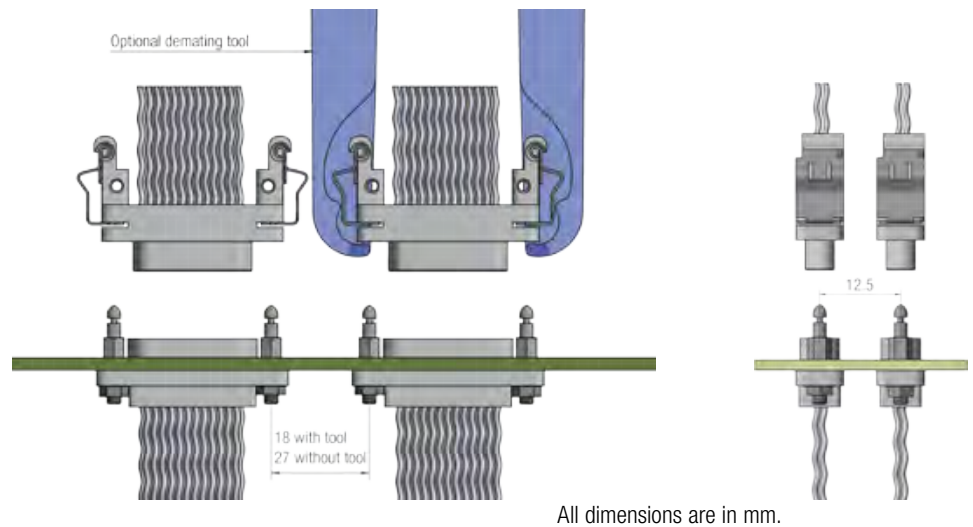


► Dimensions

Dimensions are in millimetres (inches).

LAYOUT	FIGURE N°	A -0/ +0.1 (-0 /+0.004)	B -0/ +0.1 (-0 /+0.004)	C -0/ +0.13 (-0 /+0.005)
9	1	10.26 (.404)	6.96 (.274)	14.48 (.570)
	2	10.36 (.408)	6.55 (.258)	14.48 (.570)
15	1	14.07 (.554)	6.96 (.274)	18.29 (.720)
	2	14.20 (.559)	6.55 (.258)	18.29 (.720)
21	1	17.88 (.704)	6.96 (.274)	22.10 (.870)
	2	18.00 (.709)	6.55 (.258)	22.10 (.870)
25	1	20.42 (.804)	6.96 (.274)	24.64 (.970)
	2	20.55 (.809)	6.55 (.258)	24.64 (.970)
31	1	24.23 (.954)	6.96 (.274)	28.45 (1.120)
	2	24.36 (.959)	6.55 (.258)	28.45 (1.120)
37	1	28.04 (1.104)	6.96 (.274)	32.26 (1.270)
	2	28.17 (1.109)	6.55 (.258)	32.26 (1.270)

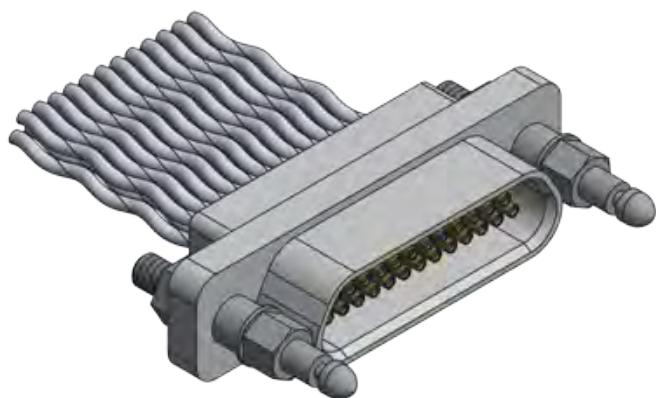
► Minimum spacing between D-Click connectors



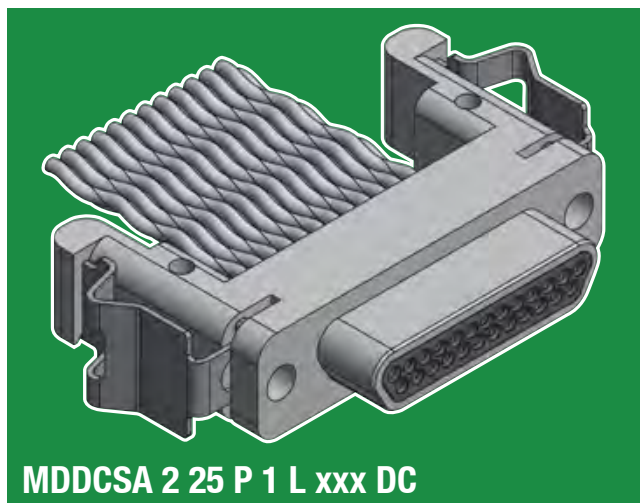
With a dedicated tool: 18.00 mm between nearest hardware hole centres

Without tool: 27.00 mm between nearest hardware hole centres

AXON' has designed a specific de-mating tool, to help squeeze the 2 latch springs together and remove the connector where there is limited space. The use of this tool makes it possible to install connectors closer to each other. Please contact AXON' for this tooling information.



MDDCSA 2 25 S 1 L xxx G5



MDDCSA 2 25 P 1 L xxx DC

MICRO-D D-CLICK PIGTAIL CONNECTORS



IDENTIFICATION CODE

MDDCSA 2 25 P B L 050 DC

SERIES

MDDCSA: Micro-D D-Click AXON® Series.

CONNECTOR TYPE

2: Nickel aluminium shell.

NUMBER OF CONTACTS

09, 15, 21, 25, 31, 37.

CONNECTOR GENDER

P: Male (pin contacts).

S: Female (socket contacts).

WIRE TYPE

ESCC 3901 001 (Polyimide)

A: ESCC 3901 001 24 (AWG26).

B: ESCC 3901 001 47 (AWG28).

ESCC 3901 012 (Cross-linked ETFE)

J: ESCC 3901 012 03 (AWG26).

K: ESCC 3901 012 02 (AWG28).

ESCC 3901 018 (PTFE & Polyimide)

N: ESCC 3901 018 04 (AWG26).

O: ESCC 3901 018 03 (AWG28).

ESCC 3901 002 (Polyimide light)

C: ESCC 3901 002 56 (AWG26).

D: ESCC 3901 002 61 (AWG28).

ESCC 3901 013 (PTFE)

L: ESCC 3901 013 02 (AWG26).

M: ESCC 3901 013 01 (AWG28).

ESCC 3901 019 (CELLOFLON® PTFE)

P: ESCC 3901 019 03 (AWG26).

Q: ESCC 3901 019 02 (AWG28).

G: Uninsulated wires: gold plated AWG2501.

E: Single wire M22759/33-26 (for space application by MIL-DTL-83513).

See page 68 for wire types.

COLOUR CODE

F: All yellow (for wire types E, J & K).

L: All white (for wire types E, J & K).

BLANK: If wire type is A, B, C, D, G, L, M, N, O, P & Q.

See page 70 for colour code.

WIRE LENGTH (cm)

Wire length in centimeters (1 cm = 10 mm = 0.394").

HARDWARE

DC: D-Click latch springs.

G: D-Click latch-posts.

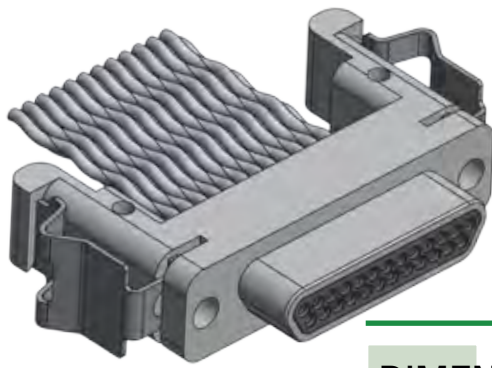
Gx (x: 1 to 5): D-Click latch-posts, rear panel mount.

See page 10 & 11 for D-Click hardware.

LAT level to be indicated when ordering - see page 71

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

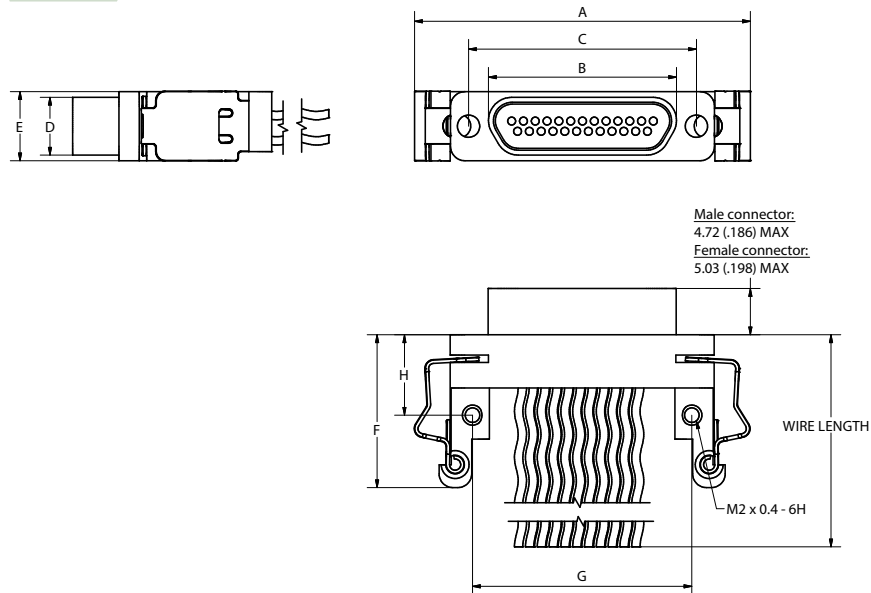
CONNECTORS ARE SUPPLIED WITH ANTI-STATIC PROTECTIVE DUST CAPS



PIGTAIL WITH LATCH SPRINGS

DIMENSIONS

Dimensions are in millimetres (inches).

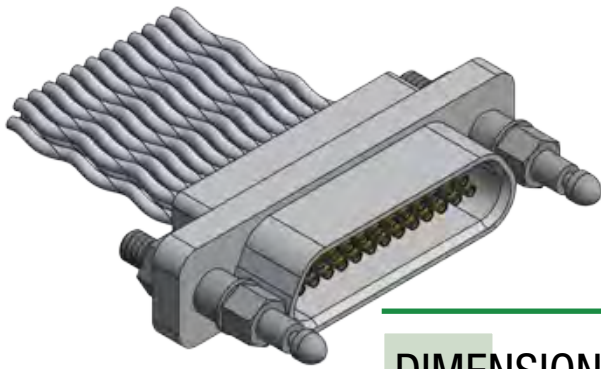


	A max.	B max.		C ± 0.13 (±.005)	D max.		E max.	F max.	G ± 0.13 (±.005)	H ± 0.13 (±.005)
		Male	Female		Male	Female				
9 P / 9 S	26.34 1.037	8.48 .334	10.16 .400	14.35 .565	4.69 .185	6.35 .250	7.82 .308	16.73 .569	13.43 .529	2.91 .115
15 P / 15 S	30.15 1.187	12.29 .484	14.00 .551	18.16 .715	4.69 .185	6.35 .250	7.82 .308	16.73 .569	17.24 .679	2.91 .115
21 P / 21 S	33.96 1.337	16.10 .634	17.81 .701	21.97 .865	4.69 .185	6.35 .250	7.82 .308	16.73 .569	21.05 .829	2.91 .115
25 P / 25 S	36.50 1.437	18.64 .734	20.35 .801	24.51 .965	4.69 .185	6.35 .250	7.82 .308	16.73 .569	23.59 .929	2.91 .115
31 P / 31 S	40.27 1.585	22.45 .884	24.16 .951	28.32 1.115	4.69 .185	6.35 .250	7.82 .308	16.73 .569	27.36 1.077	2.91 .115
37 P / 37 S	44.12 1.737	26.26 1.034	27.96 1.101	32.13 1.265	4.69 .185	6.35 .250	7.82 .308	16.73 .569	31.21 1.229	2.91 .115

SUMMARY OF CHARACTERISTICS

ELECTRICAL & MECHANICAL PERFORMANCE	
CURRENT RATING	2.5 A max.
CONTACT RESISTANCE	5 mΩ max.
INSULATION RESISTANCE	5000 MΩ min. @ 500 V _{DC}
DIELECTRIC WITHSTANDING VOLTAGE	Sea level: 150 V _{RMS} Altitude 33 km: 100 V _{RMS}
CONTACT ENGAGING FORCE	1.667 N max.
CONTACT SEPARATING FORCE	0.137 N min.
CONTACT RETENTION	22.25 N
DURABILITY	500 mating cycles min.
VIBRATION	20g's - No discontinuity > 1 μs
SHOCK	50g's - No discontinuity > 1 μs

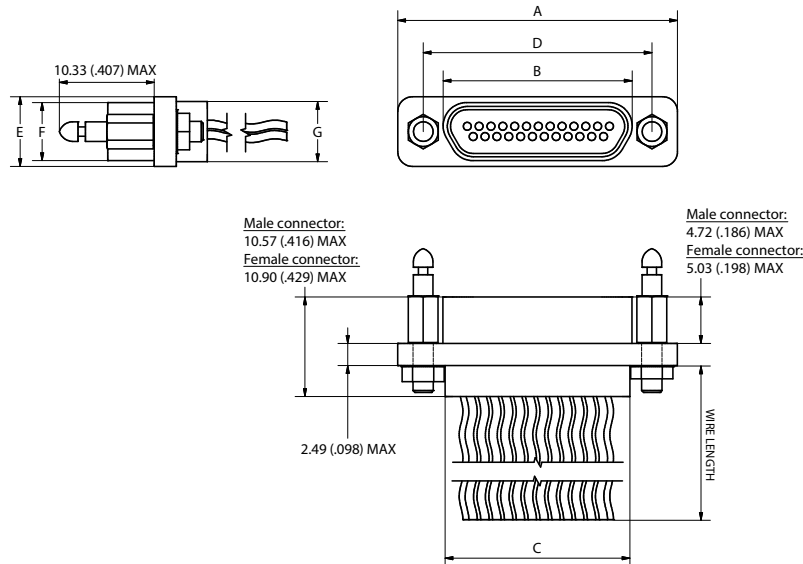
MATERIAL & FINISH	
SHELL	Aluminium alloy 6061 with electroless nickel
MOULDED INSULATOR	Liquid Crystal Polymer (LCP)
INTERFACIAL SEAL	Fluorosilicone rubber
PIN CONTACT	Copper and beryllium copper, gold over nickel plating
SOCKET CONTACT	Copper alloy, gold over nickel plating
ENCAPSULANT	Epoxy resin
LATCH SPRINGS	Beryllium copper with nickel plating



PIGTAIL WITH LATCH-POSTS

DIMENSIONS

Dimensions are in millimetres (inches).

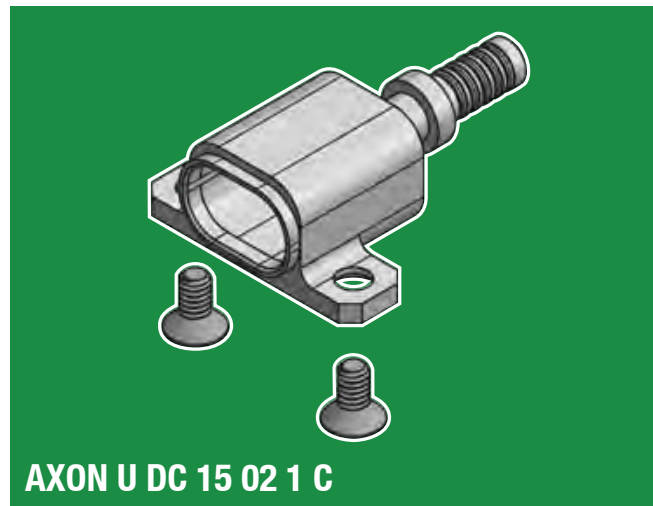
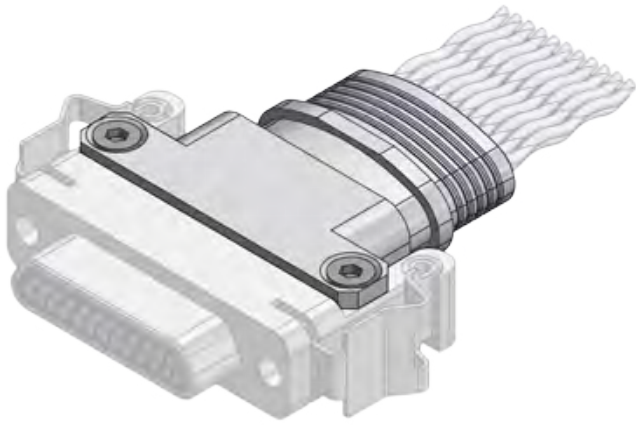


	A max. ± 0.25 (±.010)	B max.		C -0.46/+0.25 (-.018/+0.010)	D ± 0.13 (±.005)	E ± 0.25 (±.010)	F max.		G max.
		Male	Female				Male	Female	
9 P / 9 S	19.69 .775	8.48 .334	10.16 .400	9.91 .390	14.35 .565	7.57 .298	4.69 .185	6.35 .250	6.86 .270
15 P / 15 S	23.50 .925	12.29 .484	14.00 .551	13.72 .540	18.16 .715	7.57 .298	4.69 .185	6.35 .250	6.86 .270
21 P / 21 S	27.31 1.075	16.10 .634	17.81 .701	17.53 .690	21.97 .865	7.57 .298	4.69 .185	6.35 .250	6.86 .270
25 P / 25 S	29.85 1.740	18.64 .734	20.35 .801	20.07 .790	24.51 .965	7.57 .298	4.69 .185	6.35 .250	6.86 .270
31 P / 31 S	33.66 2.040	22.45 .883	24.16 .951	23.88 .940	28.32 1.115	7.57 .298	4.69 .185	6.35 .250	6.86 .270
37 P / 37 S	37.47 1.475	26.26 1.034	27.96 1.101	27.69 1.090	32.13 1.265	7.57 .298	4.69 .185	6.35 .250	6.86 .270

SUMMARY OF CHARACTERISTICS

ELECTRICAL & MECHANICAL PERFORMANCE	
CURRENT RATING	2.5 A max.
CONTACT RESISTANCE	5 mΩ max.
INSULATION RESISTANCE	5000 MΩ min. @ 500 V _{DC}
DIELECTRIC WITHSTANDING VOLTAGE	Sea level: 150 V _{RMS} Altitude 33 km: 100 V _{RMS}
CONTACT ENGAGING FORCE	1.667 N max.
CONTACT SEPARATING FORCE	0.137 N min.
CONTACT RETENTION	22.25 N
DURABILITY	500 mating cycles min.
VIBRATION	20g's – No discontinuity > 1 μs
SHOCK	50g's – No discontinuity > 1 μs

MATERIAL & FINISH	
SHELL	Aluminium alloy 6061 with electroless nickel
MOULDED INSULATOR	Liquid Crystal Polymer (LCP)
INTERFACIAL SEAL	Fluorosilicone rubber
PIN CONTACT	Copper and beryllium copper, gold over nickel plating
SOCKET CONTACT	Copper alloy, gold over nickel plating
ENCAPSULANT	Epoxy resin
LATCH-POSTS / HARDWARE	300 series stainless steel, passivated



AXON U DC 15 02 1 C

MICRO-D D-CLICK BACKSHELLS



IDENTIFICATION CODE

AXON

U

DC

15

02

1

C

SERIES

STYLE TYPE

U: Top entry.

VARIANT

DC: D-Click connectors variant.

CONNECTOR SIZE

09, 15, 21, 25, 31, 37.

ENTRY SIZE & TYPE

From 01 to 03: circular entries,
From 04E to 07E: elliptical entries,
See page 26 for dimensions.
Other entry sizes available on request.

MATERIAL

1: Aluminium.
Other materials available on request.

PLATING OPTION

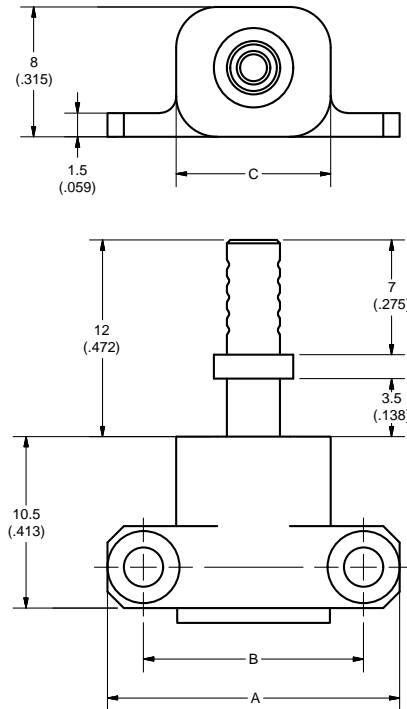
C: Electroless nickel per SAE-AMS-2404, class 4, (13 µm/.0005 min).
Other platings available on request.

Backshells are supplied with passivated
stainless steel hex drive flat head M2 screws.

DIMENSIONS

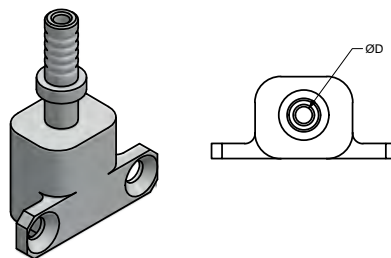
Dimensions are in millimetres (inches).

TOP ENTRY



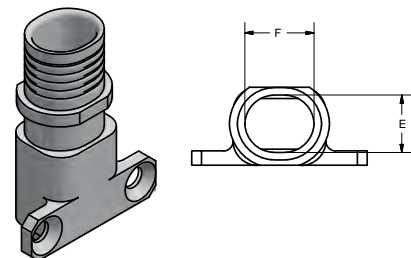
SHELL SIZE	A	B	C
9	17.87 .704	13.43 .529	9.47 .373
15	21.68 .854	17.24 .679	13.28 .523
21	25.49 1.003	21.05 .832	17.09 .673
25	28.03 1.104	23.59 .929	19.63 .773
31	31.80 1.252	27.36 1.077	23.40 .921
37	35.65 1.404	31.21 1.229	27.25 1.073

CIRCULAR ENTRY



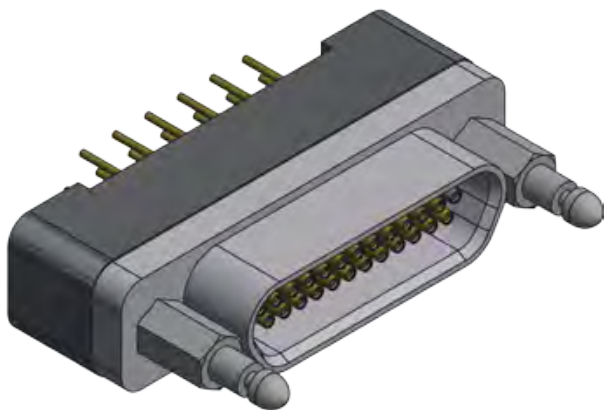
ENTRY SIZE	SHELL SIZE	Ø D
01	09-37	1.6 .063
02	09-37	3.2 .126
03	09-37	4.8 .189

ELLIPTICAL ENTRY

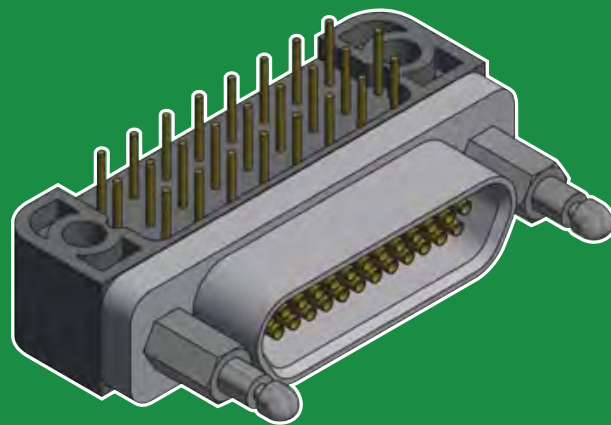


ENTRY SIZE	SHELL SIZE	E	F
04E	09-37	5.80 .228	7.0 .276
05E	15-37	5.80 .228	10.8 .425
06E	25-37	5.80 .228	15.2 .598
07E	37	5.80 .228	20.1 .791

These backshells can be used only with pigtail connectors equipped with D-Click latch springs (MDDCSAxxxxDC).



MDDCSA 2 25 S 75SB H G 2



MDDCSA 2 25 S CBR G G 2

MICRO-D D-CLICK PCB CONNECTORS



IDENTIFICATION CODE

MDDCSA

2

25

S

CBR

G

G

2

SERIES

MDDCSA: Micro-D D-Click AXON® series.

CONNECTOR TYPE

2: Nickel aluminium shell.

NUMBER OF CONTACTS

09, 15, 21, 25, 31, 37.

CONNECTOR GENDER

P: Male (pin contacts).

S: Female (socket contacts).

PCB VERSION

75RB: 0.075" Condensed Board Right Angle.

75SB: 0.075" Condensed Board Straight Specific Layout.

CBR: 0.100" Condensed Board Right Angle.

BS: 0.100" Condensed Board Straight.

HARDWARE

G: D-Click latch-posts, no threaded inserts.

H: D-Click latch-posts and threaded inserts installed.

Gx (x: 1 to 5): D-Click latch-posts, rear panel mount, no threaded inserts.

Hx (x: 1 to 5): D-Click latch-posts, rear panel mount and threaded inserts installed.

x= 1: 0.8 mm thickness **2:** 1.2 mm thickness **3:** 1.6 mm thickness

4: 2.0 mm thickness **5:** 2.4 mm thickness

See page 10 & 11 for D-Click hardware.

CONDUCTOR TYPE

G: Uninsulated ESCC wire AWG 2501 gold plated.

TAIL LENGTH

1: 2.80 mm (0.110"). **2:** 3.80 mm (0.150").

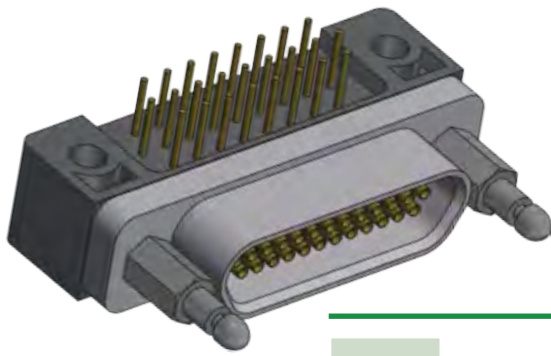
3: 4.80 mm (0.190"). **4:** 6.35 mm (0.250").

Tolerance: ± 0.38 mm (0.015").

Other lengths available on request.

LAT level to be indicated when ordering - see page 71

CONNECTORS ARE SUPPLIED WITH ANTI-STATIC PROTECTIVE DUST CAPS

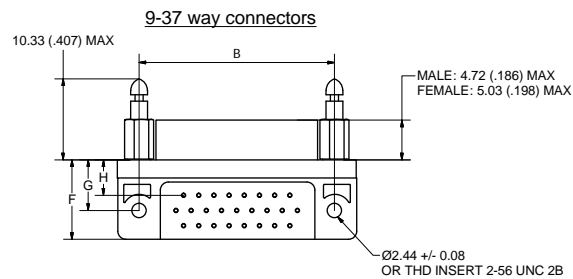
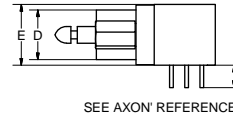
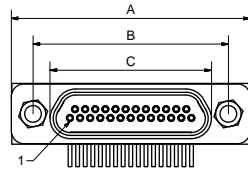


CBR TYPE

0.075" PITCH

DIMENSIONS

Dimensions are in millimetres (inches).



SEE CONTACT LAYOUT ON PCB PAGES 29 TO 30

	A max.	B ± 0.13 (±.005)	C max.		D max.		E max.	F max.	G ± 0.25 (±.010)	H ± 0.25 (±.010)
			Male	Female	Male	Female				
9 P / 9 S	19.94 .785	14.35 .565	8.48 .334	10.16 .400	4.69 .185	6.35 .250	7.82 .308	10.16 .400	6.35 .250	5.40 .213
15 P / 15 S	23.75 .935	18.16 .715	12.29 .484	14.00 .551	4.69 .185	6.35 .250	7.82 .308	10.16 .400	6.35 .250	4.45 .175
21 P / 21 S	27.56 1.085	21.97 .865	16.10 .634	17.81 .701	4.69 .185	6.35 .250	7.82 .308	10.16 .400	6.35 .250	4.45 .175
25 P / 25 S	30.10 1.185	24.51 .965	18.64 .734	20.35 .801	4.69 .185	6.35 .250	7.82 .308	10.16 .400	6.35 .250	4.45 .175
31 P / 31 S	33.91 1.335	28.32 1.115	22.45 .883	24.16 .951	4.69 .185	6.35 .250	7.82 .308	10.16 .400	6.35 .250	4.45 .175
37 P / 37 S	37.72 1.485	32.13 1.265	26.26 1.034	27.96 1.101	4.69 .185	6.35 .250	7.82 .308	10.16 .400	6.35 .250	4.45 .175

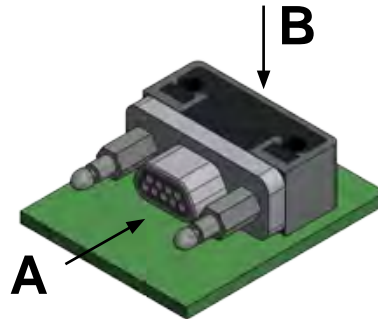
SUMMARY OF CHARACTERISTICS

ELECTRICAL & MECHANICAL PERFORMANCE	
CURRENT RATING	2.5 A max.
CONTACT RESISTANCE	5 mΩ max.
INSULATION RESISTANCE	5000 MΩ min. @ 500 V _{DC}
DIELECTRIC WITHSTANDING VOLTAGE	Sea level: 150 V _{RMS} Altitude 33 km: 100 V _{RMS}
CONTACT ENGAGING FORCE	1.667 N max.
CONTACT SEPARATING FORCE	0.137 N min.
CONTACT RETENTION	22.25 N
DURABILITY	500 mating cycles min.
VIBRATION	20g's – No discontinuity > 1 μs
SHOCK	50g's – No discontinuity > 1 μs

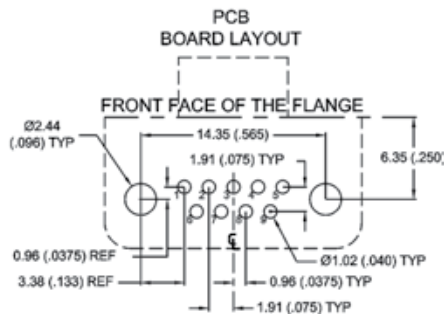
MATERIAL & FINISH	
SHELL	Aluminium alloy 6061 with electroless nickel
MOULDED INSULATOR	Liquid Crystal Polymer (LCP)
INTERFACIAL SEAL	Fluorosilicone rubber
PIN CONTACT	Copper and beryllium copper, gold over nickel plating
SOCKET CONTACT	Copper alloy, gold over nickel plating
ENCAPSULANT	Epoxy resin
LATCH-POSTS / HARDWARE	300 series stainless steel, passivated

PCB LAYOUT FOR CBR TYPE - 0.075" PITCH - 75RB MALE CONNECTORS

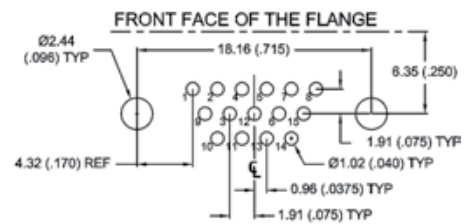
VIEW A



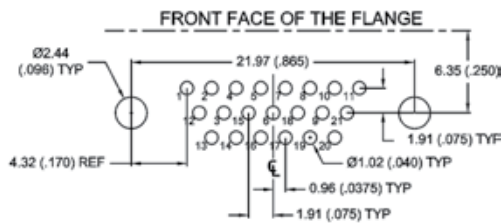
9 CONTACTS - VIEW B



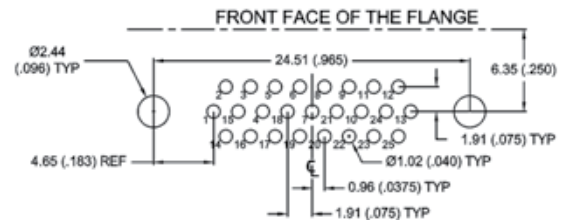
15 CONTACTS - VIEW B



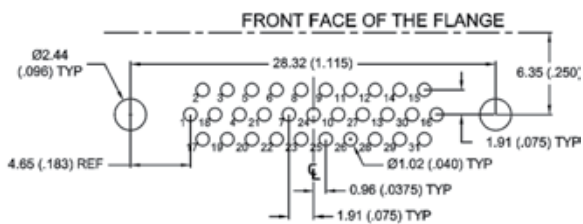
21 CONTACTS - VIEW B



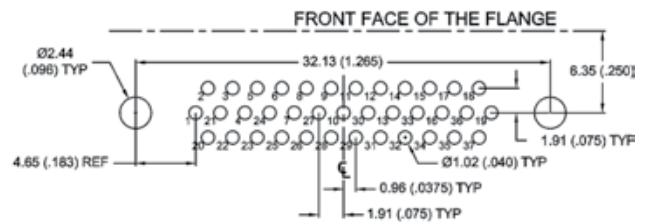
25 CONTACTS - VIEW B



31 CONTACTS - VIEW B



37 CONTACTS - VIEW B

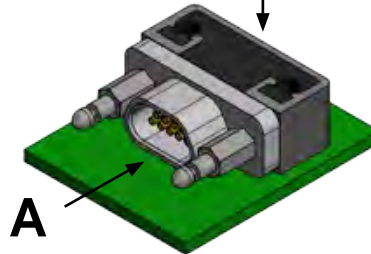


PCB LAYOUT FOR CBR TYPE - 0.075" PITCH - 75RB FEMALE CONNECTORS

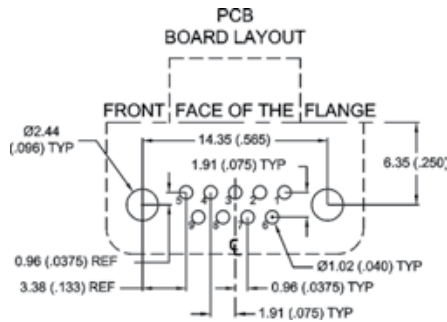
VIEW A



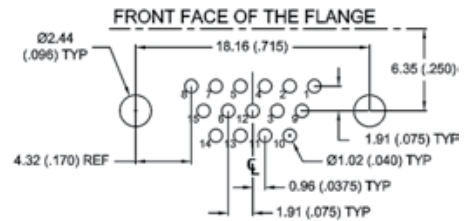
B



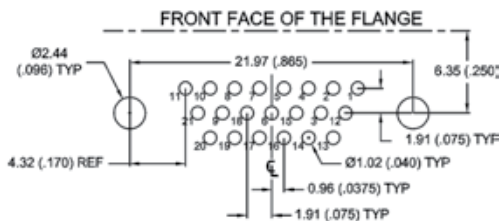
9 CONTACTS - VIEW B



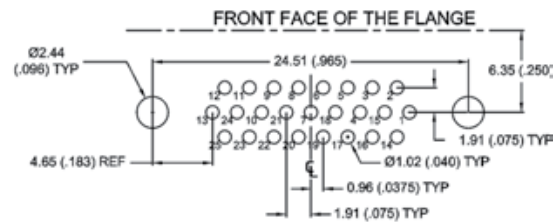
15 CONTACTS - VIEW B



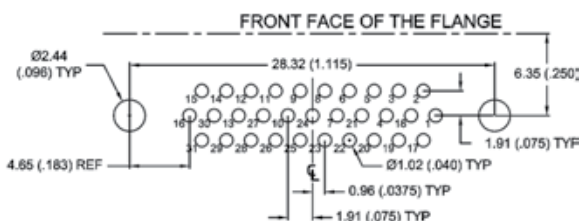
21 CONTACTS - VIEW B



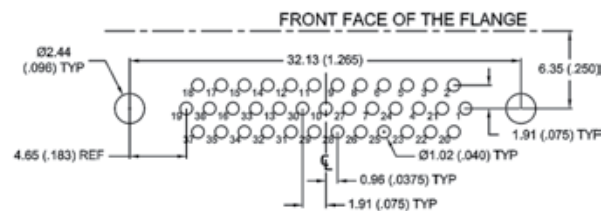
25 CONTACTS - VIEW B

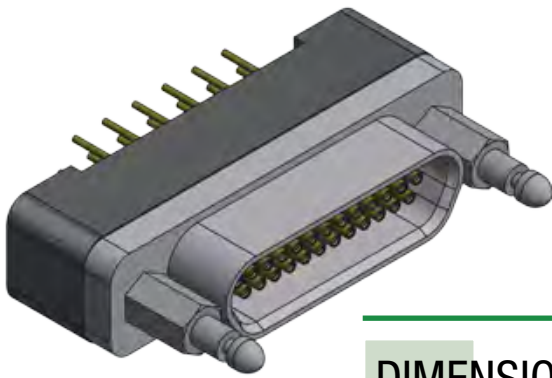


31 CONTACTS - VIEW B



37 CONTACTS - VIEW B



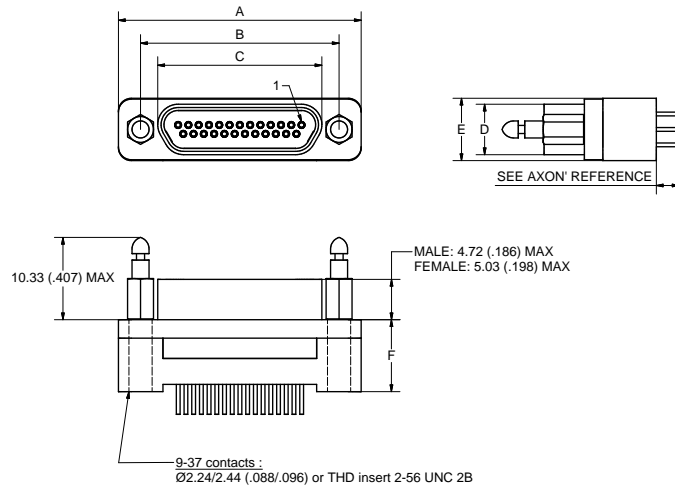


BS TYPE

0.075" PITCH

DIMENSIONS

Dimensions are in millimetres (inches).



SEE CONTACT LAYOUT ON PCB PAGES 32 TO 33

	A max.	B ± 0.13 (±.005)	C max.		D max.		E max.	F max.
			Male	Female	Male	Female		
9 P / 9 S	19.94 .785	14.35 .565	8.48 .334	10.16 .400	4.69 .185	6.35 .250	7.87 .310	9.02 .355
15 P / 15 S	23.75 .935	18.16 .715	12.29 .484	14.00 .551	4.69 .185	6.35 .250	7.87 .310	9.02 .355
21 P / 21 S	27.56 1.085	21.97 .865	16.10 .634	17.81 .701	4.69 .185	6.35 .250	7.87 .310	9.02 .355
25 P / 25 S	30.10 1.185	24.51 .965	18.64 .734	20.35 .801	4.69 .185	6.35 .250	7.87 .310	9.02 .355
31 P / 31 S	33.91 1.335	28.32 1.115	22.45 .883	24.16 .951	4.69 .185	6.35 .250	7.87 .310	9.02 .355
37 P / 37 S	37.72 1.485	32.13 1.265	26.26 1.034	27.96 1.101	4.69 .185	6.35 .250	7.87 .310	9.02 .355

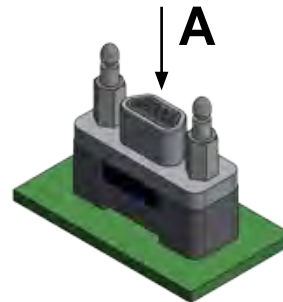
SUMMARY OF CHARACTERISTICS

ELECTRICAL & MECHANICAL PERFORMANCE	
CURRENT RATING	2.5 A max.
CONTACT RESISTANCE	5 mΩ max.
INSULATION RESISTANCE	5000 MΩ min. @ 500 V _{DC}
DIELECTRIC WITHSTANDING VOLTAGE	Sea level: 150 V _{RMS} Altitude 33 km: 100 V _{RMS}
CONTACT ENGAGING FORCE	1.667 N max.
CONTACT SEPARATING FORCE	0.137 N min.
CONTACT RETENTION	22.25 N
DURABILITY	500 mating cycles min.
VIBRATION	20g's – No discontinuity > 1 μs
SHOCK	50g's – No discontinuity > 1 μs

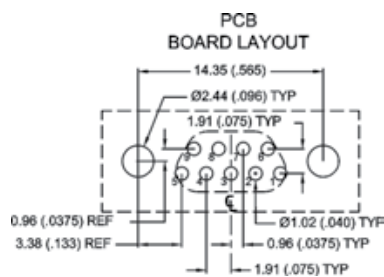
MATERIAL & FINISH	
SHELL	Aluminium alloy 6061 with electroless nickel
MOULDED INSULATOR	Liquid Crystal Polymer (LCP)
INTERFACIAL SEAL	Fluorosilicone rubber
PIN CONTACT	Copper and beryllium copper, gold over nickel plating
SOCKET CONTACT	Copper alloy, gold over nickel plating
ENCAPSULANT	Epoxy resin
LATCH-POSTS / HARDWARE	300 series stainless steel, passivated

PCB LAYOUT FOR BS TYPE - 0.075" PITCH - 75SB SPECIFIC LAYOUT - MALE CONNECTORS

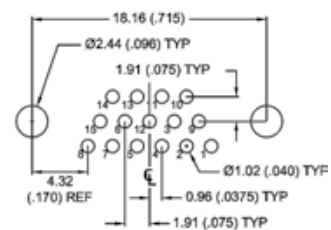
VIEW A



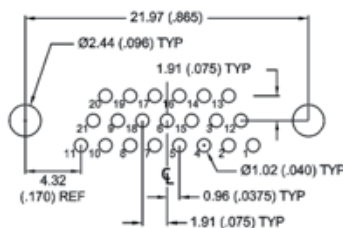
9 CONTACTS - VIEW A



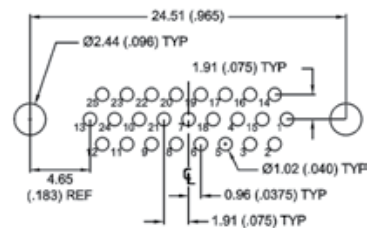
15 CONTACTS - VIEW A



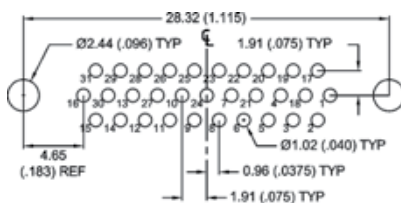
21 CONTACTS - VIEW A



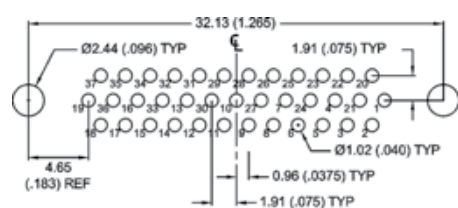
25 CONTACTS - VIEW A



31 CONTACTS - VIEW A

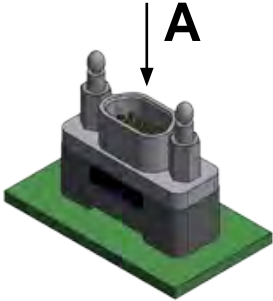


37 CONTACTS - VIEW A

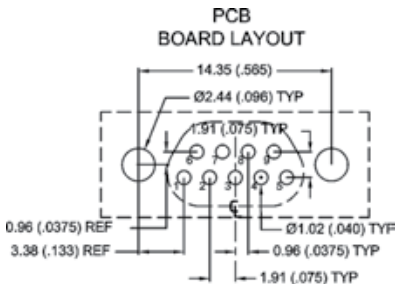


TYPE - 0.075" PITCH - 75SB
OUT - FEMALE CONNECTORS

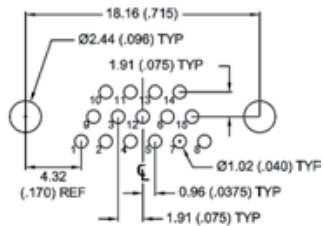
VIEW A



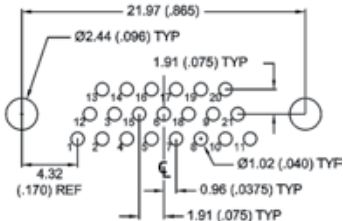
9 CONTACTS - VIEW A



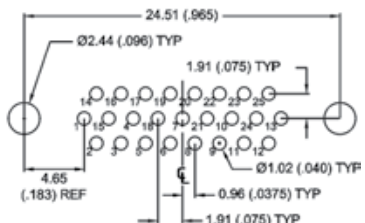
15 CONTACTS - VIEW A



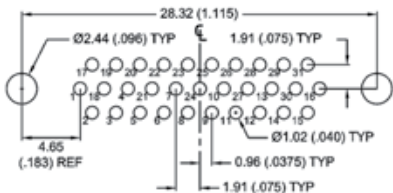
21 CONTACTS - VIEW ALL



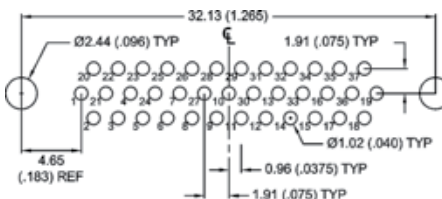
25 CONTACTS - VIEW ALL

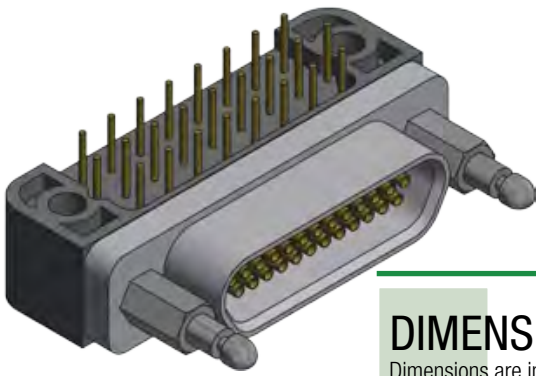


31 CONTACTS - VIEW ALL



37 CONTACTS - VIEW ALL



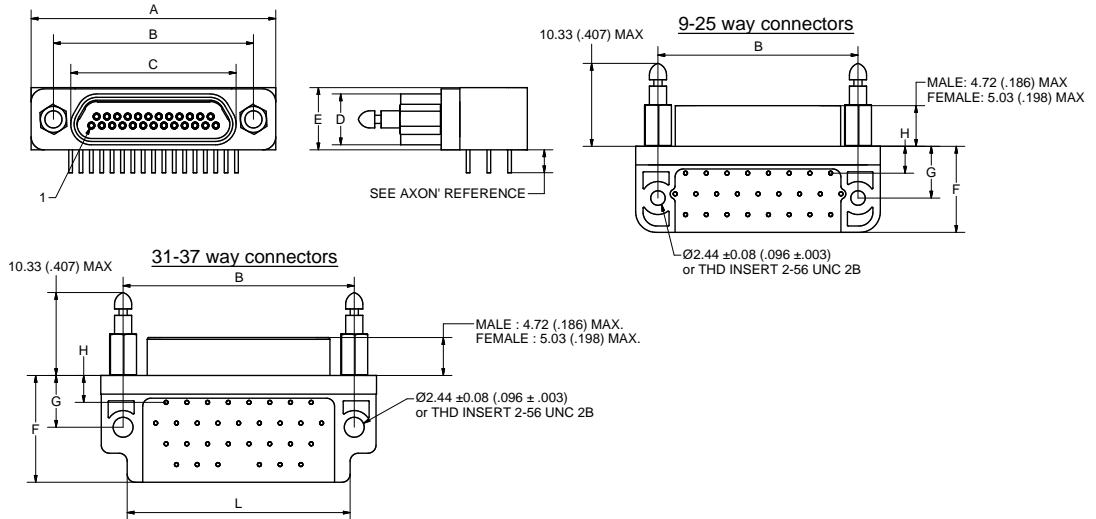


CBR TYPE

0.100" PITCH

DIMENSIONS

Dimensions are in millimetres (inches).



SEE CONTACT LAYOUT ON PCB PAGES 35 & 36

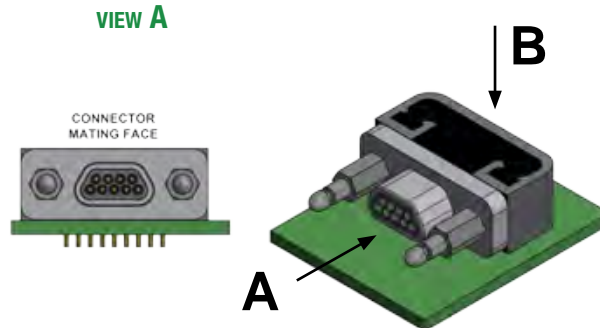
	A max.	B ± 0.13 (±.005)	C max.		D max.		E max.	F max.	G ± 0.25 (±.010)	H ± 0.25 (±.010)	L max.
			Male	Female	Male	Female					
9 P / 9 S	19.94 .785	14.35 .565	8.48 .334	10.16 .400	4.69 .185	6.35 .250	7.82 .308	10.80 .425	6.35 .250	5.84 .230	-
15 P / 15 S	23.75 .935	18.16 .715	12.29 .484	14.00 .551	4.69 .185	6.35 .250	7.82 .308	10.80 .425	6.35 .250	3.30 .130	-
21 P / 21 S	27.56 1.085	21.97 .865	16.10 .634	17.81 .701	4.69 .185	6.35 .250	7.82 .308	10.80 .425	6.35 .250	3.30 .130	-
25 P / 25 S	30.10 1.185	24.51 .965	18.64 .734	20.35 .801	4.69 .185	6.35 .250	7.82 .308	10.80 .425	6.35 .250	3.30 .130	-
31 P / 31 S	33.91 1.335	28.32 1.115	22.45 .883	24.16 .951	4.69 .185	6.35 .250	7.82 .308	13.34 .525	6.35 .250	3.30 .130	27.69 1.090
37 P / 37 S	37.72 1.485	32.13 1.265	26.26 1.034	27.96 1.101	4.69 .185	6.35 .250	7.82 .308	13.34 .525	6.35 .250	3.30 .130	30.23 1.190

SUMMARY OF CHARACTERISTICS

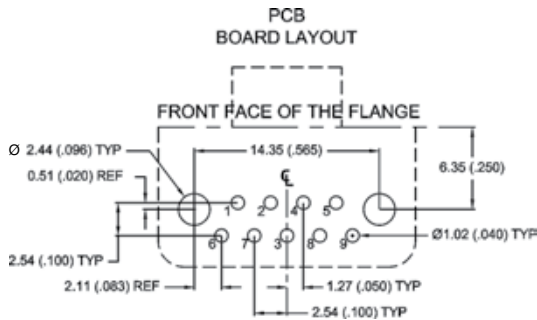
ELECTRICAL & MECHANICAL PERFORMANCE	
CURRENT RATING	2.5 A max.
CONTACT RESISTANCE	5 mΩ max.
INSULATION RESISTANCE	5000 MΩ min. @ 500 V _{DC}
DIELECTRIC WITHSTANDING VOLTAGE	Sea level: 150 V _{RMS} Altitude 33 km: 100 V _{RMS}
CONTACT ENGAGING FORCE	1.667 N max.
CONTACT SEPARATING FORCE	0.137 N min.
CONTACT RETENTION	22.25 N
DURABILITY	500 mating cycles min.
VIBRATION	20g's - No discontinuity > 1 μs
SHOCK	50g's - No discontinuity > 1 μs

MATERIAL & FINISH	
SHELL	Aluminium alloy 6061 with electroless nickel
MOULDED INSULATOR	Liquid Crystal Polymer (LCP)
INTERFACIAL SEAL	Fluorosilicone rubber
PIN CONTACT	Copper and beryllium copper, gold over nickel plating
SOCKET CONTACT	Copper alloy, gold over nickel plating
ENCAPSULANT	Epoxy resin
LATCH-POSTS / HARDWARE	300 series stainless steel, passivated

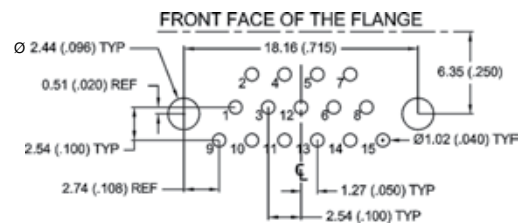
PCB LAYOUT FOR CBR TYPE 0.100" PITCH - MALE CONNECTORS



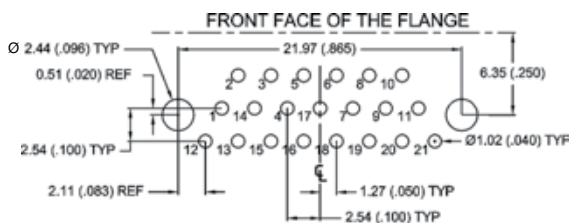
9 CONTACTS - VIEW B



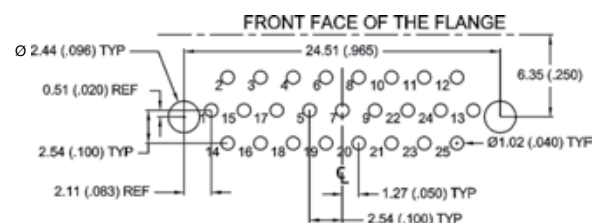
15 CONTACTS - VIEW B



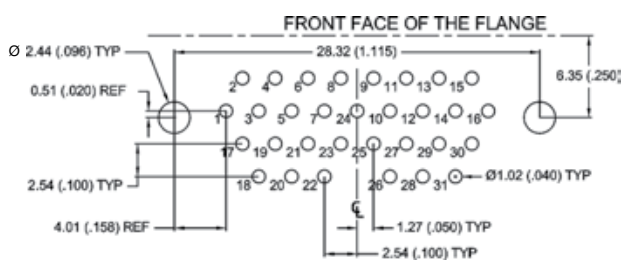
21 CONTACTS - VIEW B



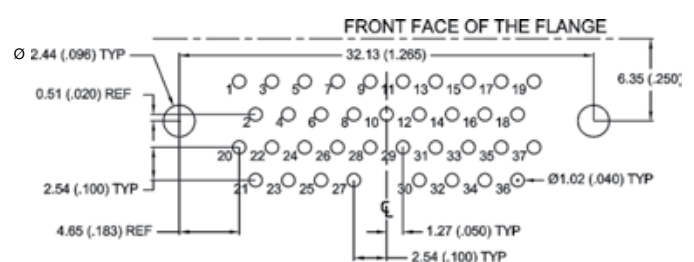
25 CONTACTS - VIEW B



31 CONTACTS - VIEW B



37 CONTACTS - VIEW B

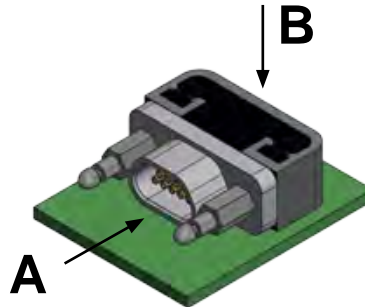


PCB LAYOUT FOR CBR TYPE 0.100" PITCH - FEMALE CONNECTORS

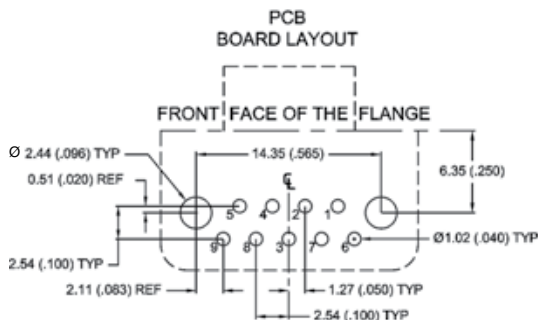
VIEW A



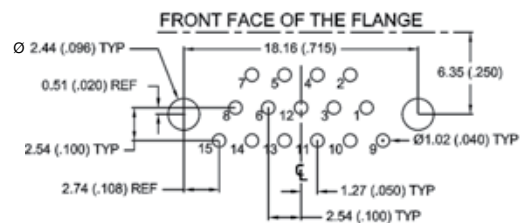
B



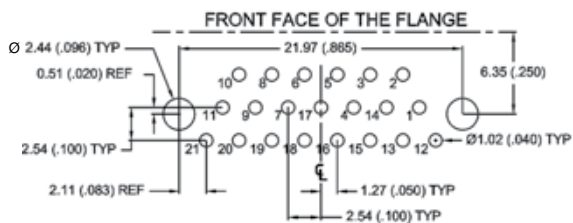
9 CONTACTS - VIEW B



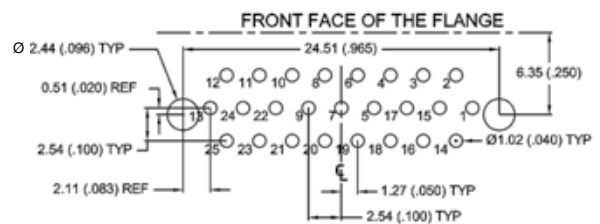
15 CONTACTS - VIEW B



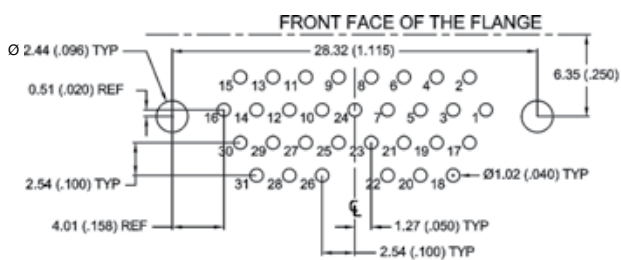
21 CONTACTS - VIEW B



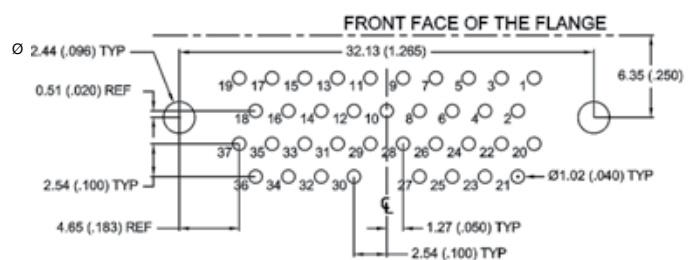
25 CONTACTS - VIEW B



31 CONTACTS - VIEW B

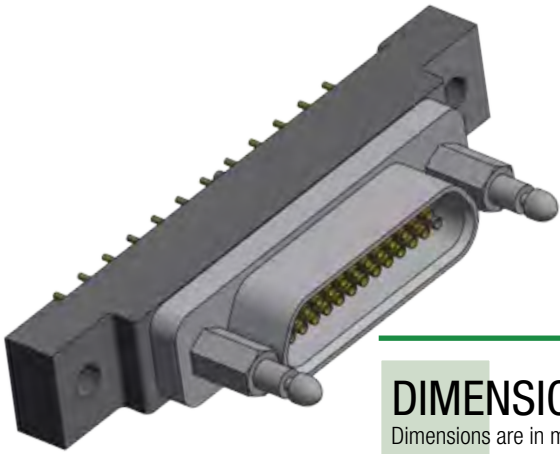


37 CONTACTS - VIEW B



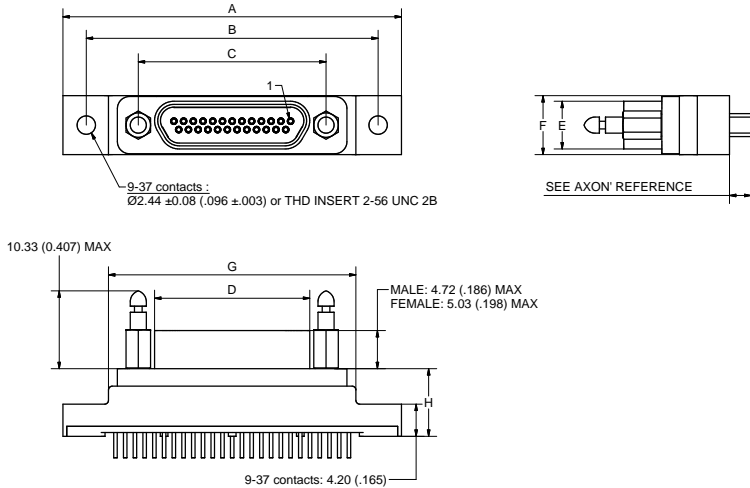
BS TYPE

0.100" PITCH



DIMENSIONS

Dimensions are in millimetres (inches).



SEE CONTACT LAYOUT ON PCB PAGES 38 & 39

	A max.	B ± 0.18 (±.007)	C ± 0.13 (±.005)	D max.		E max.		F max.	G max.	H max.
				Male	Female	Male	Female			
9 P / 9 S	35.31 1.390	29.21 1.150	14.35 .565	8.48 .334	10.16 .400	4.69 .185	6.35 .250	7.82 .308	19.94 .785	9.02 .355
15 P / 15 S	35.31 1.390	29.21 1.150	18.16 .715	12.29 .484	14.00 .551	4.69 .185	6.35 .250	7.82 .308	24.00 .945	9.02 .355
21 P / 21 S	42.93 1.690	36.83 1.450	21.97 .865	16.10 .634	17.81 .701	4.69 .185	6.35 .250	7.82 .308	29.72 1.170	9.02 .355
25 P / 25 S	44.20 1.740	38.10 1.500	24.51 .965	18.64 .734	20.35 .801	4.69 .185	6.35 .250	7.82 .308	32.39 1.275	9.02 .355
31 P / 31 S	51.82 2.040	45.72 1.800	28.32 1.115	22.45 .883	24.16 .951	4.69 .185	6.35 .250	7.82 .308	40.01 1.575	9.02 .355
37 P / 37 S	59.44 2.340	53.34 2.100	32.13 1.265	26.26 1.034	27.96 1.101	4.69 .185	6.35 .250	7.82 .308	47.63 1.875	9.02 .355

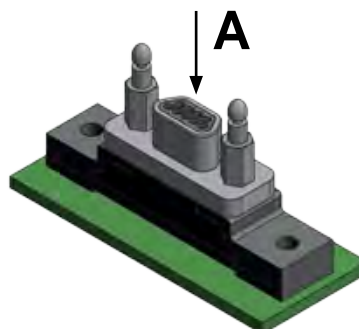
SUMMARY OF CHARACTERISTICS

ELECTRICAL & MECHANICAL PERFORMANCE	
CURRENT RATING	2.5 A max.
CONTACT RESISTANCE	5 mΩ max.
INSULATION RESISTANCE	5000 MΩ min. @ 500 V _{DC}
DIELECTRIC WITHSTANDING VOLTAGE	Sea level: 150 V _{RMS} Altitude 33 km: 100 V _{RMS}
CONTACT ENGAGING FORCE	1.667 N max.
CONTACT SEPARATING FORCE	0.137 N min.
CONTACT RETENTION	22.25 N
DURABILITY	500 mating cycles min.
VIBRATION	20g's – No discontinuity > 1 μs
SHOCK	50g's – No discontinuity > 1 μs

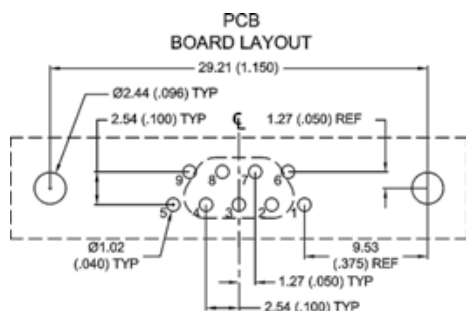
MATERIAL & FINISH	
SHELL	Aluminium alloy 6061 with electroless nickel
MOULDED INSULATOR	Liquid Crystal Polymer (LCP)
INTERFACIAL SEAL	Fluorosilicone rubber
PIN CONTACT	Copper and beryllium copper, gold over nickel plating
SOCKET CONTACT	Copper alloy, gold over nickel plating
ENCAPSULANT	Epoxy resin
LATCH-POSTS / HARDWARE	300 series stainless steel, passivated

PCB LAYOUT FOR BS TYPE 0.100" PITCH - MALE CONNECTORS

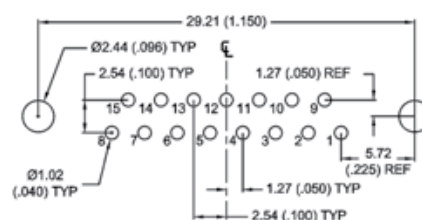
VIEW A



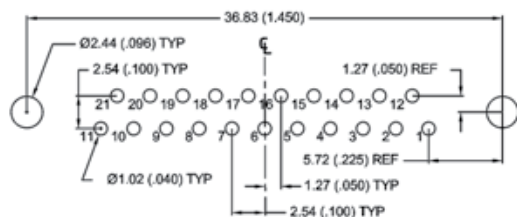
9 CONTACTS - VIEW A



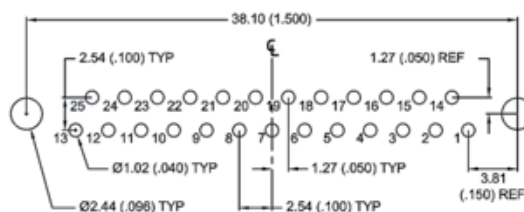
15 CONTACTS - VIEW A



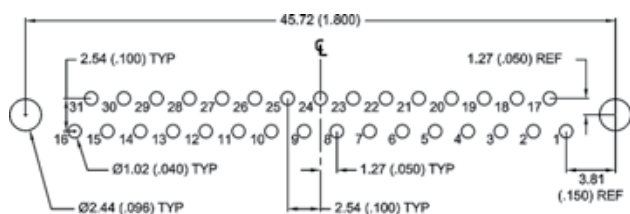
21 CONTACTS - VIEW A



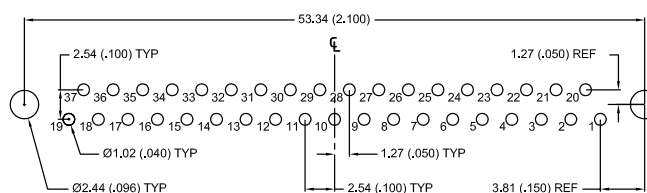
25 CONTACTS - VIEW A



31 CONTACTS - VIEW A

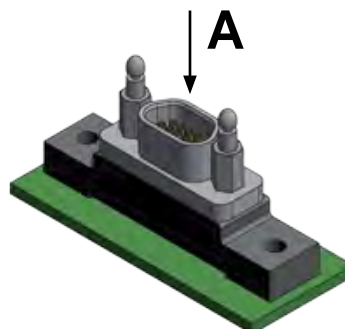


37 CONTACTS - VIEW A

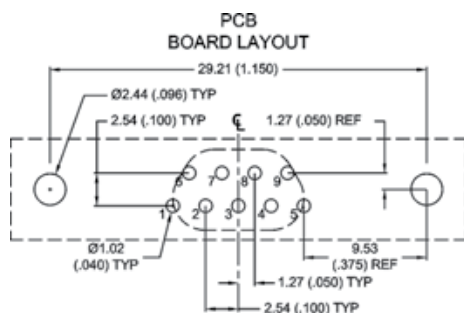


PCB LAYOUT FOR BS TYPE 0.100" PITCH - FEMALE CONNECTORS

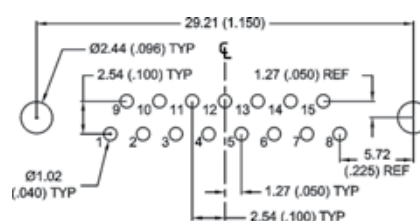
VIEW A



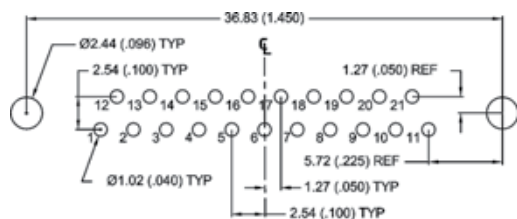
9 CONTACTS - VIEW A



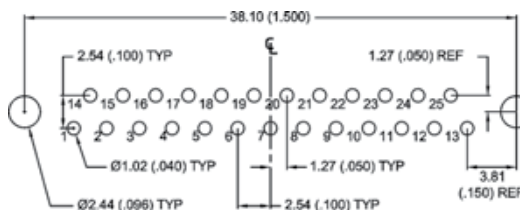
15 CONTACTS - VIEW A



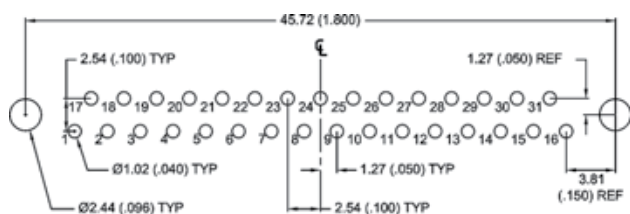
21 CONTACTS - VIEW A



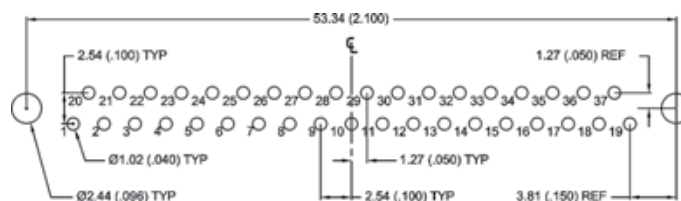
25 CONTACTS - VIEW A



31 CONTACTS - VIEW A



37 CONTACTS - VIEW A



CUSTOM DESIGNED CONNECTORS

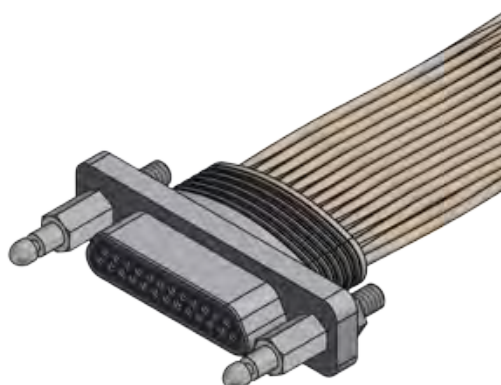
In addition to the standard range of D-Click connectors and assemblies, AXON' is able to develop custom solutions tailored to your needs, all based on D-Click & twist pin contact technology.

Built on years of customising Micro-D connectors, AXON' has considerable experience in a range of technologies aimed at providing enhanced properties to metal shell connectors, such as hermeticity, rendering the entire connector non-magnetic, or making it suitable for use in space.

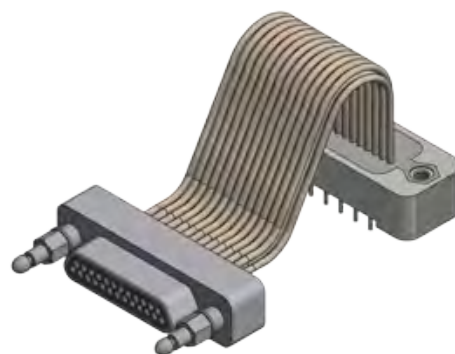
AXON' is the sole manufacturer in Europe to have fully integrated in-house the design and the manufacture of the Micro-D & D-Click systems, including:

- Twist pins, shells, inserts and interfacial seals.
- Custom designed conductors, wires and cables.
- Complex assembly processes including optimised EMC shielding, branch braiding and overmoulding.

This high level of vertical integration enables AXON' to offer complete solutions which meet the demanding requirements of the aeronautics, space, military, industrial and off-shore markets.



▲ CUSTOM ALL-IN-ONE CONNECTOR AND SHIELDED BACKSHELL DESIGN, FITTED WITH D-CLICK LATCH-POSTS



▲ REAR PANEL-MOUNT CONNECTOR WITH BLIND TAPPED HOLES AND FRONT-MOUNTING LATCH-POSTS, LINKED TO A CUSTOM PCB HEADER

AXON' CABLE D-Click connectors

Versatys® connectors (MMC)

General information -	42
Dismountable Versatys® pigtail connectors -	51
Non-dismountable Versatys® pigtail connectors -	56
Versatys® PCB connectors -	59
Versatys® kit components -	64

VERSATYS® MINIATURE VERSATILE CONNECTORS



Versatys® is a new concept of compact power connectors giving far greater flexibility to customers. Removable contacts and fast-locking versions make integration with customer equipment faster and easier. **Versatys®** connectors represent an ideal solution for weight and space saving, delivering greater flexibility for avionics and space applications. **Versatys®** connectors equipped with the D-click system deliver substantial time saving during integration. The **Versatys®** range has been developed for space applications. For any other applications, do not hesitate to contact us.

Features

- Miniature Power Combo connector with similar performance to Power D-Sub
- 4 way and 8 way versions, with D-Click fast latching
- Available in potted or individually dismountable power lines
- Up to 40 A per line for the dismountable version

Advantages/Benefits

- Similar power performance to Sub-D power combo, but in a significantly smaller size
- Tool-less mating in under 1 second
- Quick and tool-less swapping / reconfiguring of lines with removable power line option
- 500 mates / de-mates guaranteed
- Selected for Space flight on mega constellation
- D-Click latching - all the same advantages as for Micro-D D-Click

WHY CHOOSE VERSATYS® MINIATURE VERSATILE CONNECTORS?

Users can build the connectors themselves which gives more flexibility to the design. In the case of a defective line or contact, the user just needs to change the concerned line but not the whole connector. This generates **real time savings** as no tooling is required for this operation.

Components of the **Versatys®** connector including the shell, contacts and wires can all be ordered in kit form. This is a real tailor-made solution!

Versatys® has already been chosen for a major new generation of satellites because of its technical qualities and fast locking system.



Depending on your needs, Versatys® power connectors can be ordered in different forms: pigtails, kits or PCB. Irrespective of the version, Versatys® are offered with 4 or 8 lines.

► MMCSA DISMOUNTABLE VERSATYS® PIGTAIL CONNECTORS

MMCSA pigtails are delivered as a complete product ready to be connected into the customer's system. They are made with a housing, hardware and dismountable lines. They are identified by one single part number.

Example of a part number to order a dismountable Versatys® MMCSA pigtail **MMCSA 2 S 4S12 P G 020 DC** - see product coding page 51.

► MMCSA VERSATYS® CONNECTORS IN KIT FORM

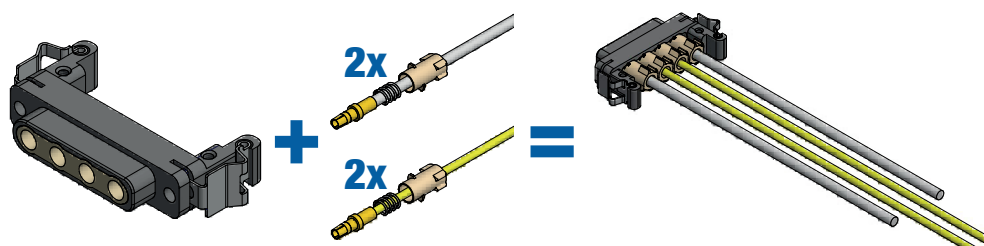
Housings and lines* are ordered separately with different part numbers. Customers can build their connectors by themselves. This version is particularly interesting for user who need different AWG sizes or different line lengths. It gives much flexibility when the design is not fixed.

How to order MMCSA Versatys® connectors:

- 1/ Choose your type of housing: number of ways, gender (pin or socket), type of hardware (see page 64).
 - 2/ Choose your lines: wire types, wire lengths and contact sizes (see page 65). The number of ways in your housing has to correspond to the number of lines.
- If you order pin contacts, you have to order a pin housing.

Example of a kit:

- To order one 4-way socket contact housing with latch springs, the identification code is: **MMCSA H 2 S 4S12 P DC** - please refer to page 64).
- To order 2 socket contact lines (AWG12) with 20 cm long white wires, the identification code is: **MMCSA PL S12 F9 020 S** - please refer to page 65).
- To order 2 socket contact lines (AWG14) with 40 cm long yellow wires, the identification code is: **MMCSA PL S12 E4 040 S** - please refer to page 65).



► MMCS NON-DISMOUNTABLE VERSATYS® PIGTAIL CONNECTORS

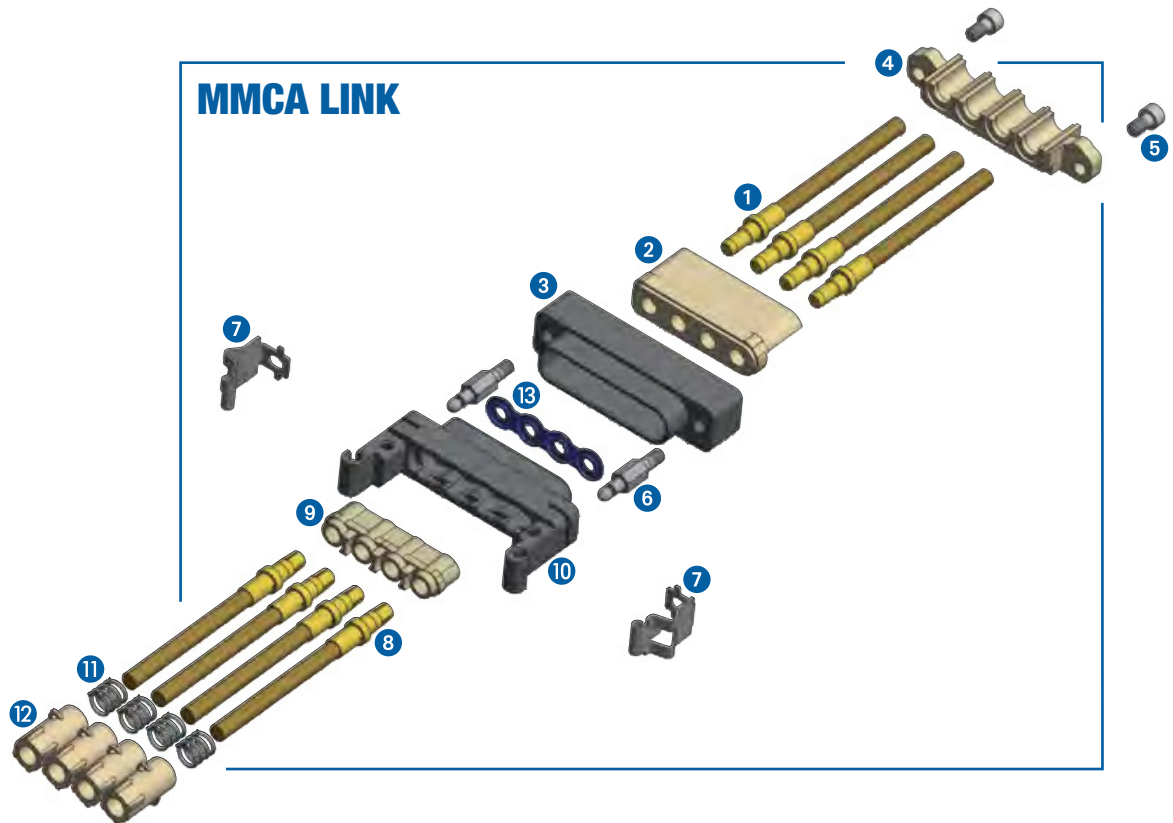
Versatys® Micro Modular pigtails can also be ordered in non-dismountable (potted) configuration. This is a robust solution when the design is fixed. Non-dismountable pigtails can mate with dismountable versions. Both versions are compatible. Please refer to product coding on page 56.

► MMCS VERSATYS® PCB CONNECTORS

All Versatys® pigtail versions can be connected to MMC PCB connectors. They are available in Straight and Right Angle versions. They are always equipped with latch-posts hardware. Please refer to the product coding on page 59.

*: A line is a wire terminated with a contact (pin or socket).

GLOSSARY OF TERMS



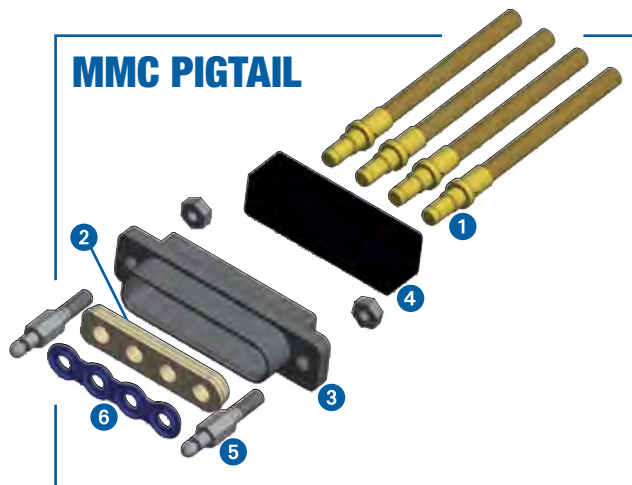
PIN	1	Male contact, fitted to pin contact connector.
PIN CONNECTOR INSERT	2	Moulded insulation housing, separating each connection.
PIN CONNECTOR SHELL	3	Connector metal body.
BACKSHELL	4	Holds the contacts into place.
SCREW	5	Holds the backshell.
D-CCLICK LATCH-POST	6	Mates with latch spring.
D-CCLICK LATCH SPRING	7	Latches onto the D-Click latch-post.
SOCKET	8	Female contact, fitted to socket contact connector.
SOCKET CONNECTOR INSERT	9	Moulded insulation housing, separating each connection.
SOCKET CONNECTOR SHELL	10	Connector metal body.
SPRING	11	Helps the Contact Locking Part to lock the contact into the shell.
CONTACT LOCKING PART	12	Locks the contact into the shell.
INTERFACIAL SEAL	13	Fitted to pin connector only.

PCB connector	•	Connector with footprint for printed circuit board.
CBR connector	•	Condensed Board Right Angle connector.
BS connector	•	Board Straight connector.
Pigtail connector	•	Connector with insulated wires.
Versatys connector (MMC)	•	Power connector in a Micro-D based shell (also exists with removable contacts).
D-Click connector	•	Connector designed for D-Click hardware.
D-Click hardware	•	Mechanical hardware allowing quick mating & demating even without tools.

CONNECTORS ARE SUPPLIED WITH ANTI-STATIC PROTECTIVE DUST CAPS

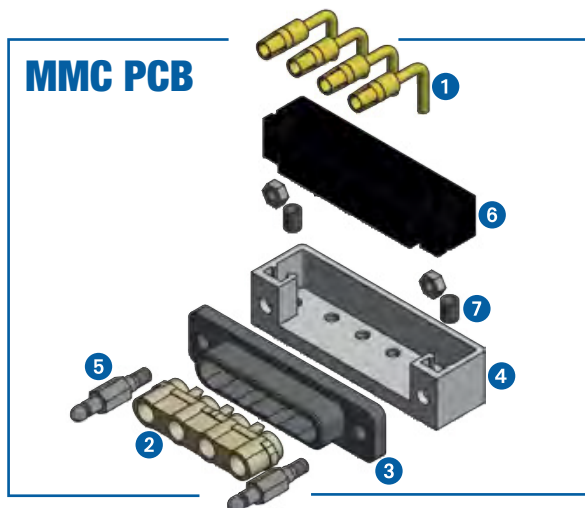
GLOSSARY OF TERMS

MMC PIGTAIL



- | | | |
|---------------------|---|--|
| PIN OR SOCKET | 1 | Male or female contact, fitted to connector (pin shown on the above scheme). |
| INSERT | 2 | Moulded insulation housing, separating each connection. |
| SHELL | 3 | Connector metal body. |
| POTTING | 4 | Epoxy compound used as an encapsulant. |
| D-CCLICK LATCH-POST | 5 | Mates with latch spring. |
| INTERFACIAL SEAL | 6 | Fitted to pin connector only. |

MMC PCB



- | | | |
|----------------------------|---|---|
| PIN OR SOCKET | 1 | Male or female contact, fitted to connector (socket shown on the above scheme). |
| INSERT | 2 | Moulded insulation housing, separating each connection. |
| SHELL | 3 | Connector metal body. |
| TRAY | 4 | Junction box, used for PCB connectors only. |
| D-CCLICK LATCH-POST | 5 | Mates with latch spring. |
| POTTING | 6 | Epoxy compound used as an encapsulant. |
| THREADED INSERT (OPTIONAL) | 7 | Fixes the connector to the PCB. |

GENERAL CHARACTERISTICS

► Electrical & mechanical characteristics

CHARACTERISTIC	SPECIFICATION	TEST METHOD
	-55°C / 150°C for potted connectors (MMCS) -55°C / 200°C for dismantable connectors (MMCSA)	
OPERATING TEMPERATURE		
CURRENT RATING	40 A max.*	PARA 9.26 OF ESCC 3401
CONTACT RESISTANCE	2.5 mΩ max.	PARA 9.1.1.3 OF ESCC 3401, TEST @ 1A
LOW LEVEL CONTACT RESISTANCE	2 mΩ max.	PARA 9.1.1.3 OF ESCC 3401, TEST @ 10 mA
INSULATION RESISTANCE	1000 MΩ min. under 500 Vdc	PARA 9.1.1.1 OF ESCC 3401, IEC N°512, TEST 3A
VOLTAGE PROOF	No breakdown or flashover	PARA 9.1.1.2 OF ESCC 3401, IEC N°512, TEST 4A, 1000 VRMS
VOLTAGE DROP	AWG12 wire: Vd ≤ 3 mV under 23 A AWG14 wire: Vd ≤ 3.5 mV under 17 A AWG16 wire: Vd ≤ 3.5 mV under 13 A	PARA 5-4-2 OF ECSS-Q-ST-7026
CONTACT ENGAGING AND SEPARATION FORCE	0.85 N min. / 6.0 N max.	PARA 9.28 OF ESCC 3401
DURABILITY	500 mating cycles min.	PARA 9.18 OF ESCC 3401
SINE VIBRATION	20 g's - No discontinuity >1μs	IEC N°512-4, TEST 6D
RANDOM VIBRATION	No discontinuity >1μs	IEC N°68-2-35, TEST FDA, 0.2 g² / Hz, 20 TO 2000 Hz, 3 AXIS
SHOCK	50 g's - No discontinuity >1μs	IEC N°512-4, TEST 6C
SALT SPRAY	48 hours	PARA 9.22 OF ESCC 3401, IEC N°68-2-11, TEST KA
INSERT RETENTION	50 N	PARA 9.23 OF ESCC 3401
CONTACT RETENTION	30 N	PARA 9.17 OF ESCC 3401

*: Value for the contact only.

Derating values for pigtailed: please refer to ESCC 3901 specification to obtain maximum current.

Derating values for PCB connectors: maximum current to be applied depends on PCB design and use.

► Material & Finish

COMPONENT	MATERIAL	FINISH
POWER CONTACTS	BERYLLIUM COPPER	GOLD PLATING IN ACCORDANCE WITH MIL-DTL-45204, TYPE II, CLASS 1 (1.27 μm (0.00005") MIN), GRADE C OVER NICKEL UNDERPLATE
METAL SHELL	ALUMINIUM ALLOY, TYPE 6061	ELECTROLESS NICKEL PLATING IN ACCORDANCE WITH SAE-AMS2404, CLASS 4, .0005 INCH MIN.
PLASTIC INSERT / PCB TRAY / CONTACT LOCKING PART	LIQUID CRYSTAL POLYMER, 30% LOADED GLASS FIBRE POLYESTER, 94VO, IN ACCORDANCE WITH MIL-M-24519 (200°C) NATURAL PEEK OR 30% LOADED GLASS FIBRE	
INTERFACIAL SEAL	FLUOROSILICONE RUBBER	HEAT-CURED TO MEET ECSS-Q-70-71 A OUTGASSING REQUIREMENTS
LATCH-POST / HARDWARE	STAINLESS STEEL, 300 SERIES	PASSIVATION IN ACCORDANCE WITH SAE-AMS2700
LATCH SPRING	BERYLLIUM COPPER	ELECTROLESS NICKEL PLATING IN ACCORDANCE WITH SAE-AMS2404, CLASS 4, .00015 INCH MIN.
ENCAPSULANT	EPOXY RESIN	
INSULATED WIRE	- ESCC 3901.001: POLYIMIDE INSULATED SILVER PLATED COPPER - ESCC 3901.012: EXTRUDED CROSS-LINKED ETFE INSULATED SILVER PLATED COPPER - ESCC 3901.013: PTFE INSULATED SILVER PLATED COPPER - ESCC 3901.019: CELLOFLON® EXPANDED PTFE INSULATED SILVER PLATED COPPER	
CONTACT SPRING	STAINLESS STEEL	

VERSATYS CONNECTOR WEIGHTS

D-CLICK CONNECTOR WEIGHTS IN GRAMS						
NB OF CONTACT	CONNECTOR GENDER	DISMOUNTABLE (MMCA)		NON-DISMOUNTABLE (MMC)		
		PIGTAIL DC HARDWARE	PIGTAIL G HARWARE	PIGTAIL G HARDWARE	PCB CBR	PCB BS
4	PIN	9.5	9.5	9.6	9.7	8.3
	SOCKET	8.1	7.9	9.9	9.6	8.3
8	PIN	15.1	15.1	18.8	16.9	13.8
	SOCKET	13.2	13.0	19.4	16.9	13.9

NOTES

NOMINAL WEIGHT SHOWN. ADD 10% FOR MAXIMUM WEIGHT.

PIGTAILS: DOES NOT INCLUDE WIRE WEIGHT. SEE TABLE PAGE 69 FOR WIRE WEIGHT CALCULATION.

PCB CONNECTORS: NOMINAL WEIGHT INCLUDES THE HARDWARE WEIGHT

FOR COMPONENTS ORDERED IN KIT, PLEASE REFER TO THE WEIGHT OF THE ASSEMBLED COUNTERPART.

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 21st 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 21st October 2000.

COMPONENT SPECIFIC RoHS COMPLIANCE

COMPONENT	MATERIAL	FINISH	RoHS STATUS
POWER CONTACTS	BERYLLIUM COPPER	GOLD	RoHS Compliant
PLASTIC INSERT / PCB TRAY	LIQUID CRYSTAL POLYMER	N/A	RoHS Compliant
	PEEK	N/A	RoHS Compliant
METAL SHELL	ALUMINIUM ALLOY TYPE 6061	ELECTROLESS NICKEL	RoHS Compliant
INTERFACIAL SEAL	FLUOROSILICONE RUBBER	N/A	RoHS Compliant
LATCH PIN / HARDWARE	STAINLESS STEEL 300 SERIES	PASSIVATION	RoHS Compliant
LATCH SPRING	BERYLLIUM COPPER	ELECTROLESS NICKEL	RoHS Compliant
ENCAPSULANT	EPOXY RESIN	N/A	RoHS Compliant
CONTACT SPRING	STAINLESS STEEL	N/A	RoHS Compliant

► Application of REACH

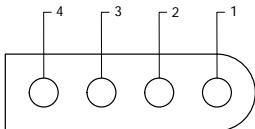
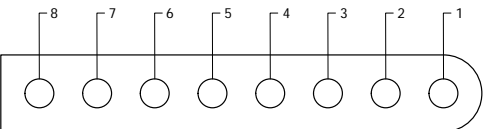
The new EU regulation on the Registration, Evaluation, Authorisation and restriction of Chemicals (REACH) came into force in June 2007. The regulation concerns the authorised use of chemicals. It requires manufacturers and importers to register substances and their use with the European Chemical Agency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

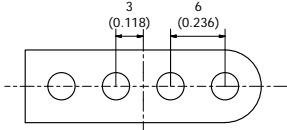
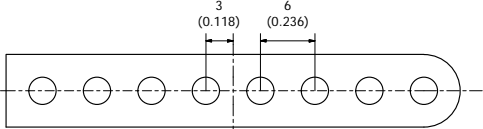
To this day AXON' CABLE have not identified any component containing any SVHC in their product range.

CONTACT ARRANGEMENTS & SPACING

► Contact arrangements

INSERT type	Front view of connector arrangement
4S12	
8S12	

► Contact spacing

4S12	
8S12	

Dimensions are in millimetres (inches).

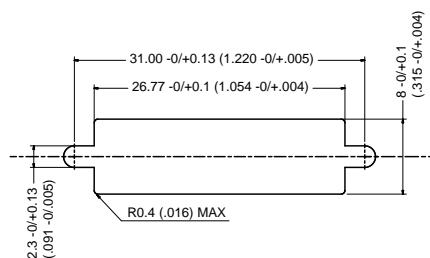
OTHER CONTACT ARRANGEMENTS AVAILABLE ON REQUEST

PANEL CUTOUTS

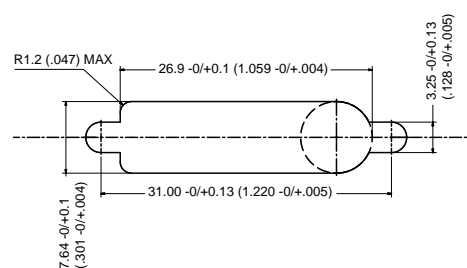
► Panel cutouts

4S12

FRONT MOUNT



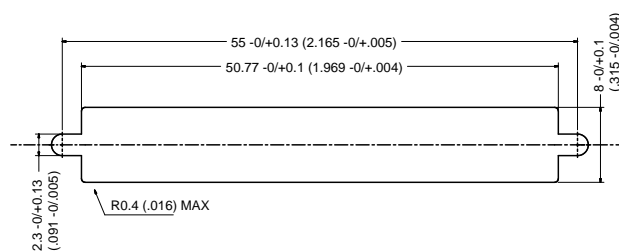
REAR MOUNT



Dimensions are in millimetres (inches).

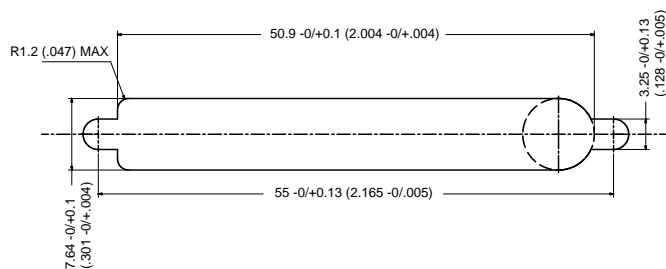
8S12

FRONT MOUNT

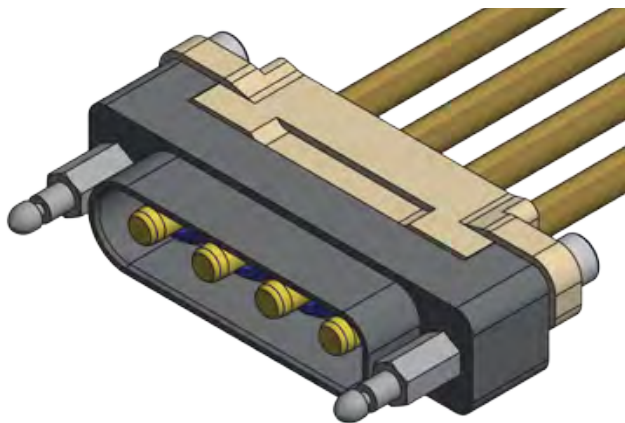


Dimensions are in millimetres (inches).

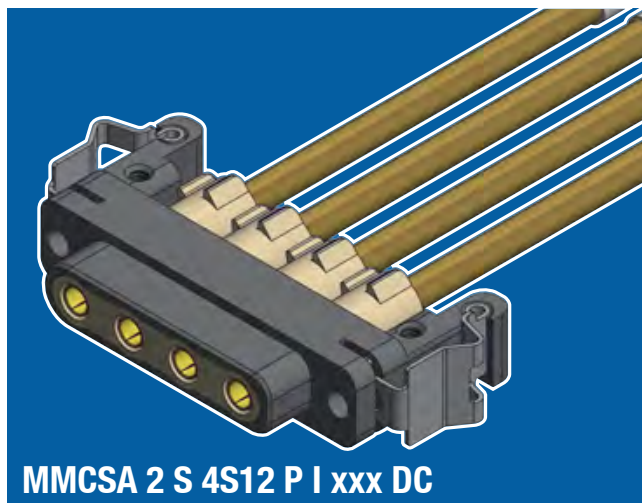
REAR MOUNT



Dimensions are in millimetres (inches).

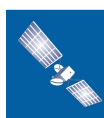


MMCSA 2 P 4S12 P I xxx G



MMCSA 2 S 4S12 P I xxx DC

DISMOUNTABLE VERSATYS® PIGTAIL CONNECTORS



IDENTIFICATION CODE

MMCSA 2 S 4S12 P I 020 DC

SERIES

MMCSA: Space Micro Modular Connector Dismountable.

CONNECTOR TYPE

2: Nickel aluminium shell.

CONNECTOR GENDER

P: Pin (pin contacts).
S: Socket (socket contacts).

INSERT

4S12: 4 points size 12.
8S12: 8 points size 12.
Other configuration available on request.

TYPE

P: Power.

WIRE TYPE

ESCC 3901 001 (Polyimide):

A: ESCC 3901 001 29 (AWG16).
B: ESCC 3901 001 30 (AWG14).
C: ESCC 3901 001 31 (AWG12).

ESCC 3901 013 (PTFE):

G: ESCC 3901 013 57 (AWG16).

ESCC 3901 012 (cross-linked ETFE):

Dx: ESCC 3901 012 08 (AWG16).
Ex: ESCC 3901 012 09 (AWG14).
Fx: ESCC 3901 012 10 (AWG12).

x= 4: Yellow **9:** White.

Other colors available on request.

ESCC 3901 019 (CELLOFLON® PTFE):

H: ESCC 3901 019 07 (AWG16).
I: ESCC 3901 019 08 (AWG12).

See page 69 for wire types.

WIRE LENGTH (in cm)

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

HARDWARE

DC: D-Click latch springs.

G: D-Click latch-posts.

Gx (x: 1 to 5): D-Click latch-posts, rear panel mount.

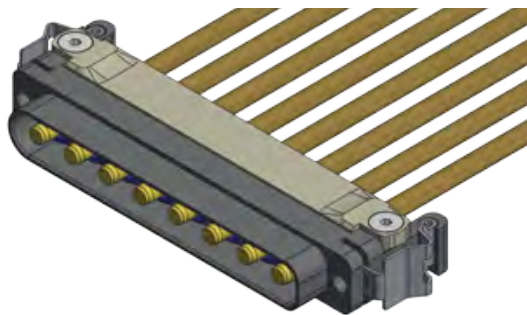
x= 1: 0.8 mm thickness **2:** 1.2 mm thickness **3:** 1.6 mm thickness
4: 2.0 mm thickness **5:** 2.4 mm thickness

See page 10 & 11 for D-Click hardware.

LAT level to be indicated when ordering - see page 71

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

CONNECTORS ARE SUPPLIED WITH ANTI-STATIC PROTECTIVE DUST CAPS

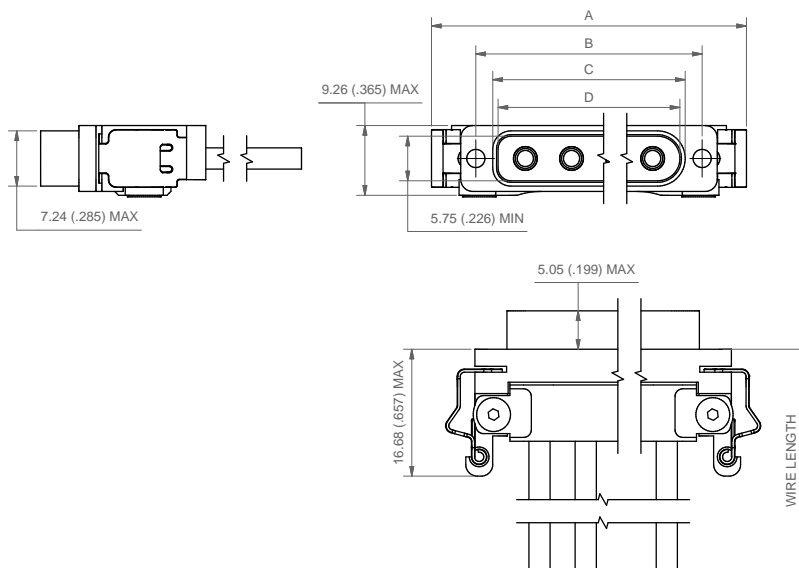


PIN CONNECTORS WITH LATCH SPRINGS

MMCSA SERIES

DIMENSIONS

Dimensions are in millimetres (inches).

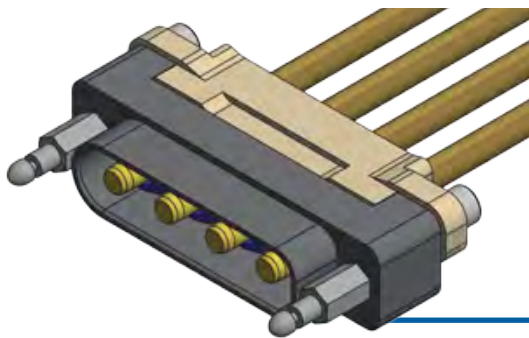


	A max.	B ± 0.13 (±.005)	C max.	D min.
4S12	43 1.693	30.86 1.215	26.53 1.044	25.04 .986
8S12	67 2.638	54.86 2.160	50.53 1.989	49.04 1.931

SUMMARY OF CHARACTERISTICS

ELECTRICAL & MECHANICAL PERFORMANCE	
TEMPERATURE	- 55°C / + 200°C
CURRENT RATING	40 A max.
CONTACT RESISTANCE	2.5 mΩ max.
INSULATION RESISTANCE	1000 MΩ min. @ 500 V _{DC}
VOLTAGE PROOF	1000 V _{RMS}
CONTACT ENGAGING FORCE	6.0 N max.
CONTACT SEPARATING FORCE	0.85 N min.
CONTACT RETENTION	30 N
DURABILITY	500 mating cycles min.
VIBRATION	20g's – No discontinuity > 1 μs
SHOCK	50g's – No discontinuity > 1 μs

MATERIAL & FINISH	
SHELL	Aluminium alloy 6061 with electroless nickel
MOULDED INSULATOR	Liquid Crystal Polymer (LCP)
INTERFACIAL SEAL	Fluorosilicone rubber
POWER CONTACT	Beryllium copper with gold over nickel plating
ENCAPSULANT	Epoxy resin
LATCH SPRINGS	Beryllium copper with nickel plating



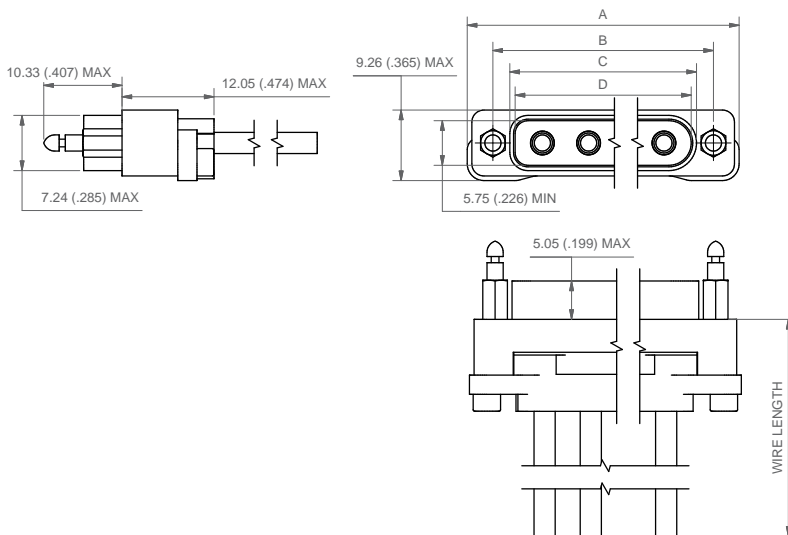
DISMOUNTABLE VERSATYS® PIGTAILS

PIN CONNECTORS WITH LATCH-POSTS

MMCSA SERIES

DIMENSIONS

Dimensions are in millimetres (inches).

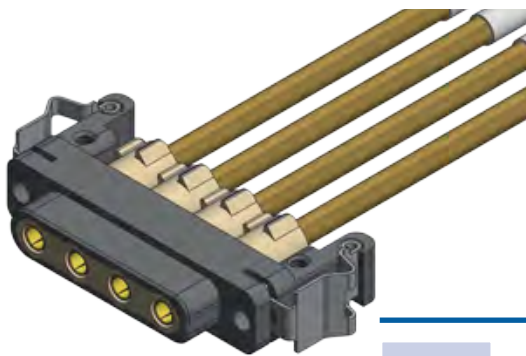


	A max.	B ± 0.13 (± 0.005)	C max.	D min.
4S12	37.62 1.481	30.86 1.215	26.53 1.044	25.04 .986
8S12	61.62 2.426	54.86 2.160	50.53 1.989	49.04 1.931

SUMMARY OF CHARACTERISTICS

ELECTRICAL & MECHANICAL PERFORMANCE	
TEMPERATURE	- 55°C / + 200°C
CURRENT RATING	40 A max.
CONTACT RESISTANCE	2.5 mΩ max.
INSULATION RESISTANCE	1000 MΩ min. @ 500 V _{DC}
VOLTAGE PROOF	1000 V _{RMS}
CONTACT ENGAGING FORCE	6.0 N max.
CONTACT SEPARATING FORCE	0.85 N min.
CONTACT RETENTION	30 N
DURABILITY	500 mating cycles min.
VIBRATION	20g's – No discontinuity > 1 μs
SHOCK	50g's – No discontinuity > 1 μs

MATERIAL & FINISH	
SHELL	Aluminium alloy 6061 with electroless nickel
MOULDED INSULATOR	Liquid Crystal Polymer (LCP)
INTERFACIAL SEAL	Fluorosilicone rubber
POWER CONTACT	Beryllium copper with gold over nickel plating
ENCAPSULANT	Epoxy resin
LATCH-POSTS / HARDWARE	300 series stainless steel, passivated



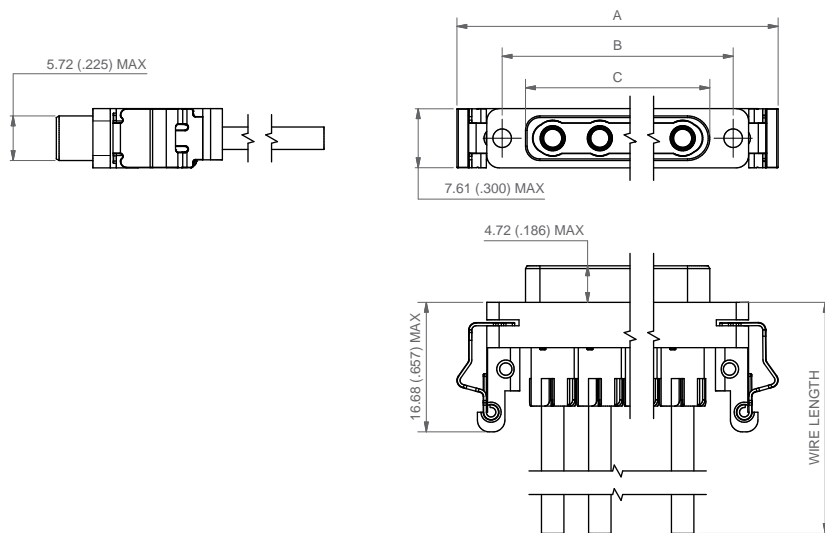
DISMOUNTABLE VERSATYS® PIGTAILS

SOCKET CONNECTORS WITH LATCH SPRINGS

MMCSA SERIES

DIMENSIONS

Dimensions are in millimetres (inches).

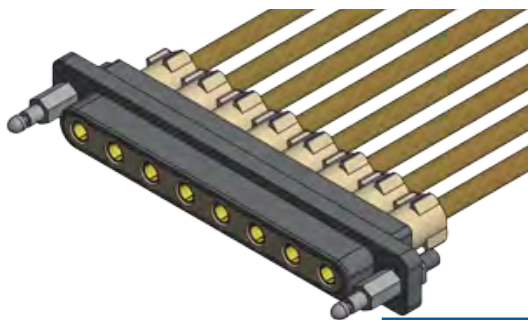


	A max.	B ± 0.13 (±.005)	C max.
4S12	43 1.693	30.86 1.215	24.96 .983
8S12	67 2.638	54.86 2.160	48.96 1.928

SUMMARY OF CHARACTERISTICS

ELECTRICAL & MECHANICAL PERFORMANCE	
TEMPERATURE	- 55°C / + 200°C
CURRENT RATING	40 A max.
CONTACT RESISTANCE	2.5 mΩ max.
INSULATION RESISTANCE	1000 MΩ min. @ 500 V _{DC}
VOLTAGE PROOF	1000 V _{RMS}
CONTACT ENGAGING FORCE	6.0 N max.
CONTACT SEPARATING FORCE	0.85 N min.
CONTACT RETENTION	30 N
DURABILITY	500 mating cycles min.
VIBRATION	20g's – No discontinuity > 1 μs
SHOCK	50g's – No discontinuity > 1 μs

MATERIAL & FINISH	
SHELL	Aluminium alloy 6061 with electroless nickel
MOULDED INSULATOR	Liquid Crystal Polymer (LCP)
INTERFACIAL SEAL	Fluorosilicone rubber
POWER CONTACT	Beryllium copper with gold over nickel plating
ENCAPSULANT	Epoxy resin
LATCH SPRINGS	Beryllium copper with nickel plating



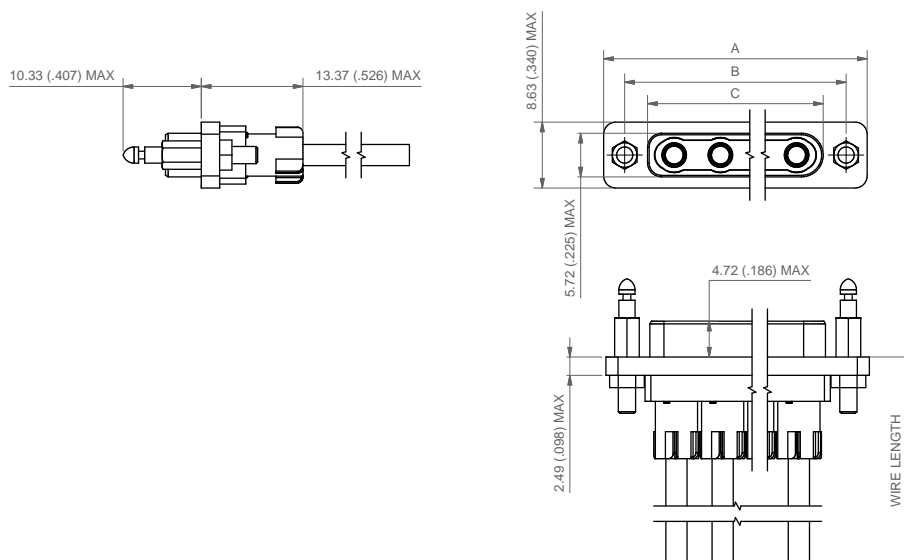
DISMOUNTABLE VERSATYS® PIGTAILS

SOCKET CONNECTORS WITH LATCH-POSTS

MMCSA SERIES

DIMENSIONS

Dimensions are in millimetres (inches).

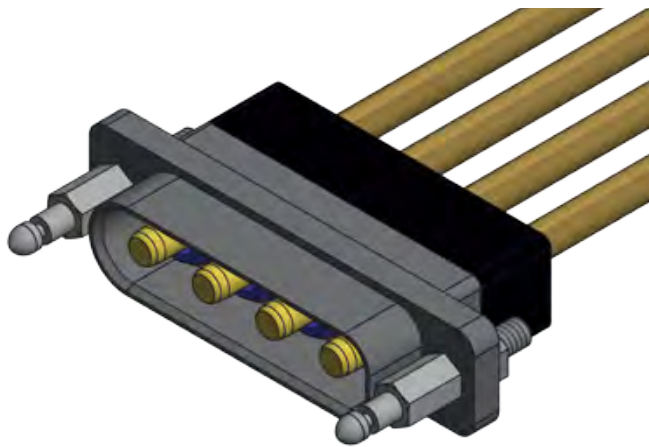


	A max.	B ± 0.13 (±.005)	C max.
4S12	36.39 1.433	30.86 1.215	24.96 .983
8S12	60.39 2.378	54.86 2.160	48.96 1.928

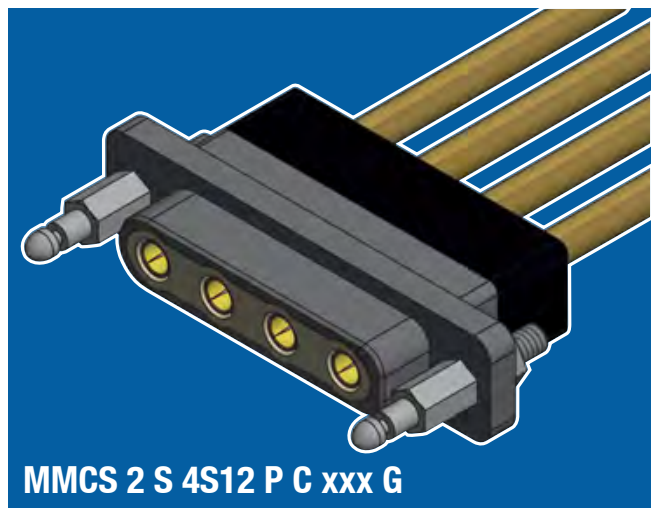
SUMMARY OF CHARACTERISTICS

ELECTRICAL & MECHANICAL PERFORMANCE	
TEMPERATURE	- 55°C / + 200°C
CURRENT RATING	40 A max.
CONTACT RESISTANCE	2.5 mΩ max.
INSULATION RESISTANCE	1000 MΩ min. @ 500 V _{DC}
VOLTAGE PROOF	1000 V _{RMS}
CONTACT ENGAGING FORCE	6.0 N max.
CONTACT SEPARATING FORCE	0.85 N min.
CONTACT RETENTION	30 N
DURABILITY	500 mating cycles min.
VIBRATION	20g's – No discontinuity > 1 μs
SHOCK	50g's – No discontinuity > 1 μs

MATERIAL & FINISH	
SHELL	Aluminium alloy 6061 with electroless nickel
MOULDED INSULATOR	Liquid Crystal Polymer (LCP)
INTERFACIAL SEAL	Fluorosilicone rubber
POWER CONTACT	Beryllium copper with gold over nickel plating
ENCAPSULANT	Epoxy resin
LATCH-POSTS / HARDWARE	300 series stainless steel, passivated



MMCS 2 P 4S12 P C xxx G



MMCS 2 S 4S12 P C xxx G

NON-DISMOUNTABLE VERSATYS® PIGTAIL CONNECTORS



IDENTIFICATION CODE

MMCS

2

S

4S12

P

C

020

G

SERIES

MMCS: Space Micro Modular Connector.

CONNECTOR TYPE

2: Nickel aluminium shell.

CONNECTOR GENDER

P: Pin (pin contacts).

S: Socket (socket contacts).

NUMBER OF WAYS

4S12: 4 points size 12.

8S12: 8 points size 12.

Other configuration available on request.

TYPE

P: Power.

WIRE TYPE

ESCC 3901 001 (Polyimide):

A: ESCC 3901 001 29 (AWG16).

B: ESCC 3901 001 30 (AWG14).

C: ESCC 3901 001 31 (AWG12).

ESCC 3901 013 (PTFE):

G: ESCC 3901 013 57 (AWG16).

ESCC 3901 012 (cross-linked ETFE):

Dx: ESCC 3901 012 08 (AWG16).

Ex: ESCC 3901 012 09 (AWG14).

Fx: ESCC 3901 012 10 (AWG12).

x= 4: Yellow

9: White.

Other colors available on request.

ESCC 3901 019 (CELLOFLON® PTFE):

H: ESCC 3901 019 07 (AWG16).

I: ESCC 3901 019 08 (AWG12).

See page 69 for wire types.

WIRE LENGTH (in cm)

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

HARDWARE

G: D-Click latch-posts.

Gx (x: 1 to 5): D-Click latch-posts, rear panel mount.

x= 1: 0.8 mm thickness

2: 1.2 mm thickness

3: 1.6 mm thickness

4: 2.0 mm thickness

5: 2.4 mm thickness

See page 10 & 11 for D-Click hardware.

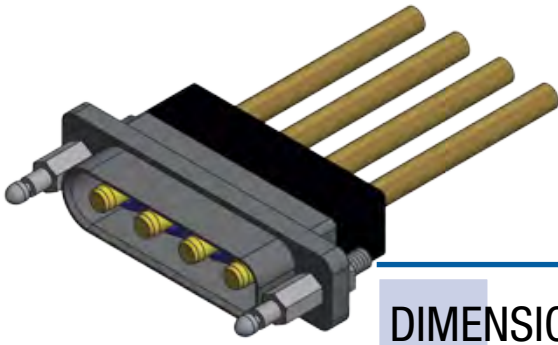
LAT level to be indicated when ordering - see page 71

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

CONNECTORS ARE SUPPLIED WITH ANTI-STATIC PROTECTIVE DUST CAPS

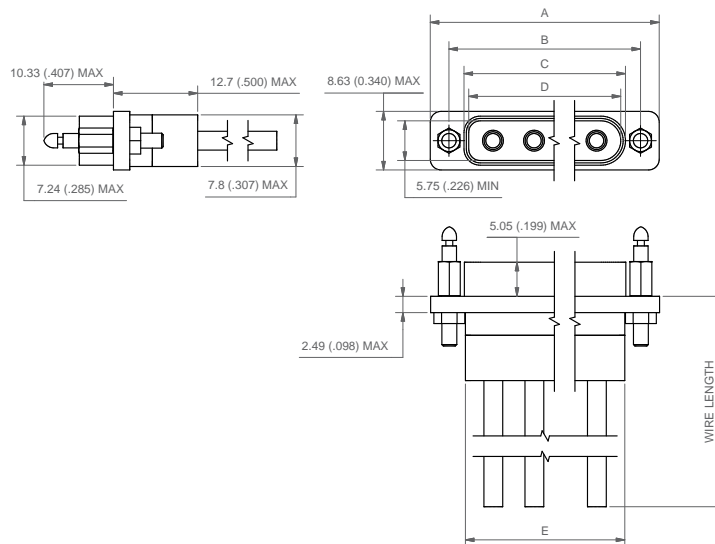
PIN CONNECTORS WITH LATCH-POSTS

MMCS SERIES



DIMENSIONS

Dimensions are in millimetres (inches).



	A max.	B ± 0.13 (±.005)	C max.	D min.	E max.
4S12	36.39 1.433	30.86 1.215	26.53 1.044	25.04 .986	26.4 1.039
8S12	60.39 2.378	54.86 2.160	50.53 1.989	49.04 1.931	50.4 1.984

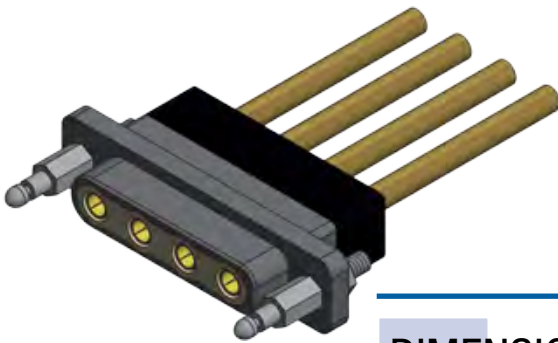
SUMMARY OF CHARACTERISTICS

ELECTRICAL & MECHANICAL PERFORMANCE	
TEMPERATURE	- 55°C / + 150°C
CURRENT RATING	25 A max.
CONTACT RESISTANCE	2.5 mΩ max.
INSULATION RESISTANCE	1000 MΩ min. @ 500 Vdc
VOLTAGE PROOF	1000 VRMS
CONTACT ENGAGING FORCE	6.0 N max.
CONTACT SEPARATING FORCE	0.85 N min.
CONTACT RETENTION	30 N
DURABILITY	500 mating cycles min.
VIBRATION	20g's – No discontinuity > 1 μs
SHOCK	50g's – No discontinuity > 1 μs

MATERIAL & FINISH	
SHELL	Aluminium alloy 6061 with electroless nickel
MOULDED INSULATOR	Liquid Crystal Polymer (LCP)
INTERFACIAL SEAL	Fluorosilicone rubber
POWER CONTACT	Beryllium copper with gold over nickel plating
ENCAPSULANT	Epoxy resin
LATCH -POSTS / HARDWARE	300 series stainless steel, passivated

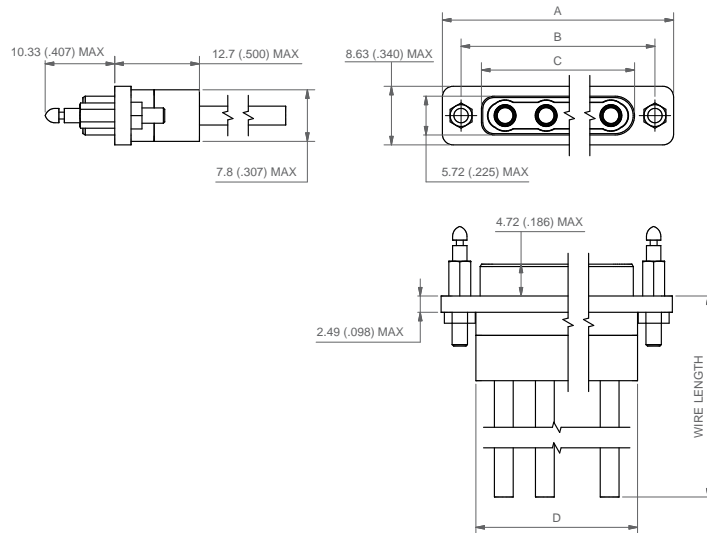
SOCKET CONNECTORS WITH LATCH-POSTS

MMCS SERIES



DIMENSIONS

Dimensions are in millimetres (inches).

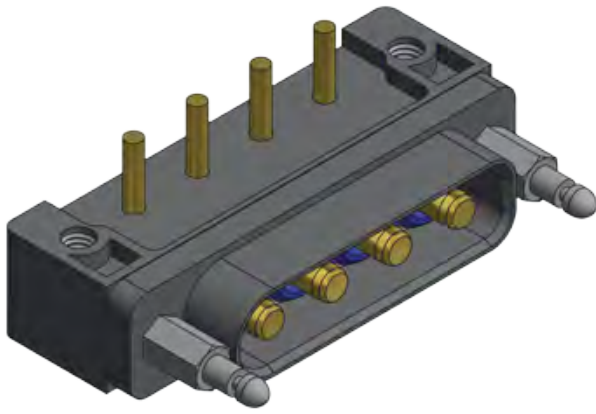


	A max.	B ± 0.13 (±.005)	C max.	D max.
4S12	36.39 1.433	30.86 1.215	24.96 .983	26.4 1.039
8S12	60.39 2.378	54.86 2.160	48.96 1.928	50.4 1.984

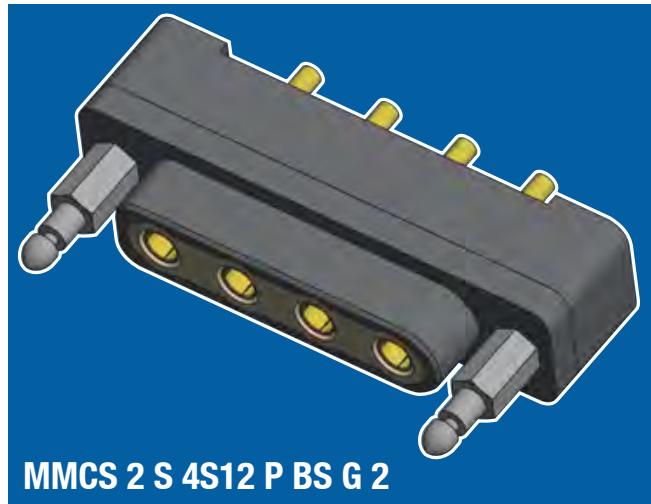
SUMMARY OF CHARACTERISTICS

ELECTRICAL & MECHANICAL PERFORMANCE	
TEMPERATURE	- 55°C / + 150°C
CURRENT RATING	25 A max.
CONTACT RESISTANCE	2.5 mΩ max.
INSULATION RESISTANCE	1000 MΩ min. @ 500 V _{DC}
VOLTAGE PROOF	1000 V _{RMS}
CONTACT ENGAGING FORCE	6.0 N max.
CONTACT SEPARATING FORCE	0.85 N min.
CONTACT RETENTION	30 N
DURABILITY	500 mating cycles min.
VIBRATION	20g's – No discontinuity > 1 μs
SHOCK	50g's – No discontinuity > 1 μs

MATERIAL & FINISH	
SHELL	Aluminium alloy 6061 with electroless nickel
MOULDED INSULATOR	Liquid Crystal Polymer (LCP)
INTERFACIAL SEAL	Fluorosilicone rubber
POWER CONTACT	Beryllium copper with gold over nickel plating
ENCAPSULANT	Epoxy resin
LATCH-POSTS / HARDWARE	300 series stainless steel, passivated

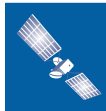


MMCS 2 P 4S12 P CBR G 2



MMCS 2 S 4S12 P BS G 2

VERSATYS® PCB CONNECTORS



IDENTIFICATION CODE

MMCS 2 S 4S12 P BS G 2

SERIES

MMCS: Space Micro Modular Connector.

CONNECTOR TYPE

2: Nickel aluminium shell.

CONNECTOR GENDER

P: Pin (pin contacts).

S: Socket (socket contacts).

NUMBER OF WAYS

4S12: 4 points size 12.

8S12: 8 points size 12.

Other configuration available on request.

TYPE

P: Power.

PCB VERSION

BS: Board Straight.

CBR: Condensed Board Right Angle.

HARDWARE

G: D-Click latch-posts, no threaded inserts.

H: D-Click latch-posts and threaded inserts installed.

Gx (x: 1 to 5): D-Click latch-posts, rear panel mount, no threaded inserts.

Hx (x: 1 to 5): D-Click latch-posts, rear panel mount and threaded inserts installed.

x= 1: 0.8 mm thickness **2:** 1.2 mm thickness **3:** 1.6 mm thickness

4: 2.0 mm thickness **5:** 2.4 mm thickness

See page 10 & 11 for D-Click hardware.

TAIL LENGTH

1: 2.70 mm (0.106"). **2:** 3.50 mm (0.138"). **3:** 4.30 mm (0.169").

Tolerance: ± 0.38 mm (0.015").

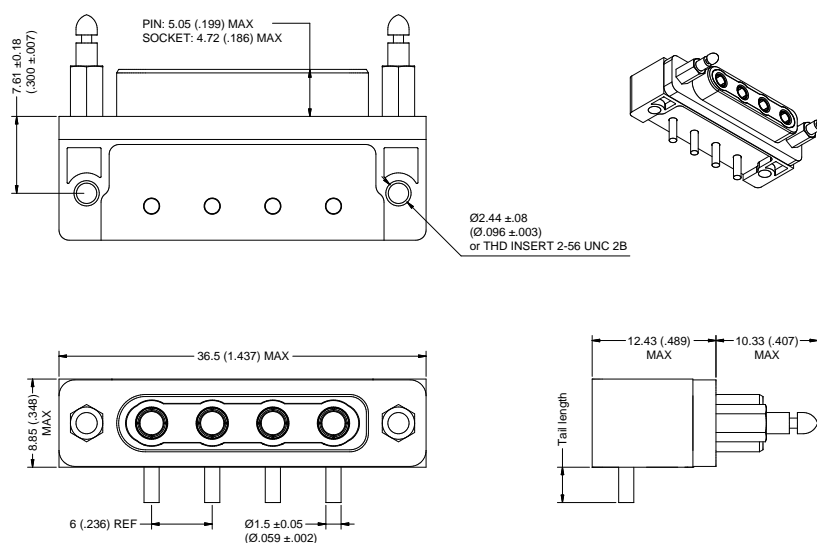
Other lengths available on request.

LAT level to be indicated when ordering - see page 71

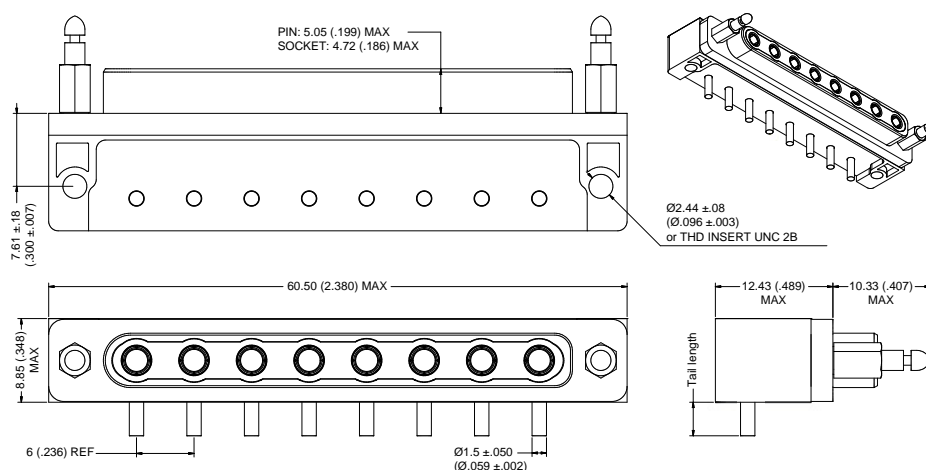
CONNECTORS ARE SUPPLIED WITH ANTI-STATIC PROTECTIVE DUST CAPS

CBR PCB POWER CONNECTORS DIMENSIONS

4S12 CBR power connectors



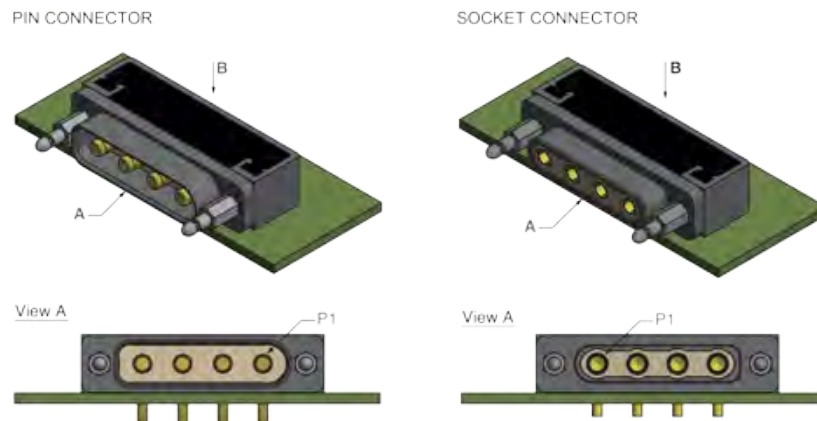
8S12 CBR power connectors



Dimensions are in millimetres

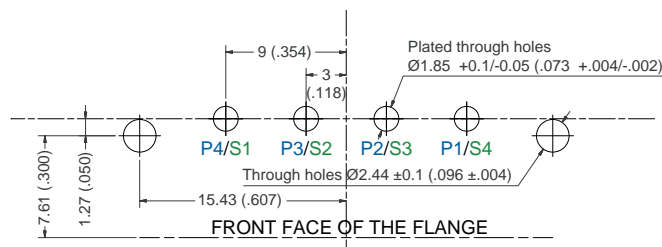
CBR PCB POWER CONNECTORS DIMENSIONS

CBR PCB layouts



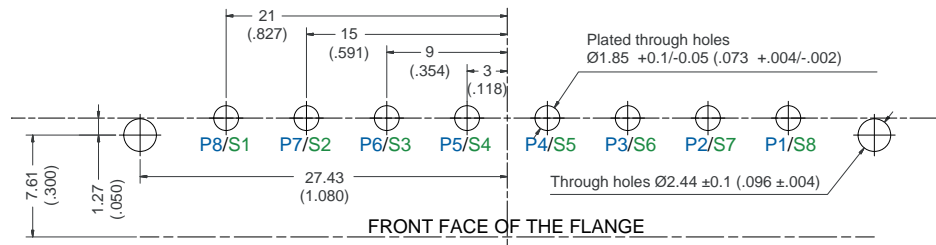
4S12 CBR power connectors (view B)

PIN CONNECTOR / SOCKET CONNECTOR



8S12 CBR power connectors (view B)

PIN CONNECTOR / SOCKET CONNECTOR

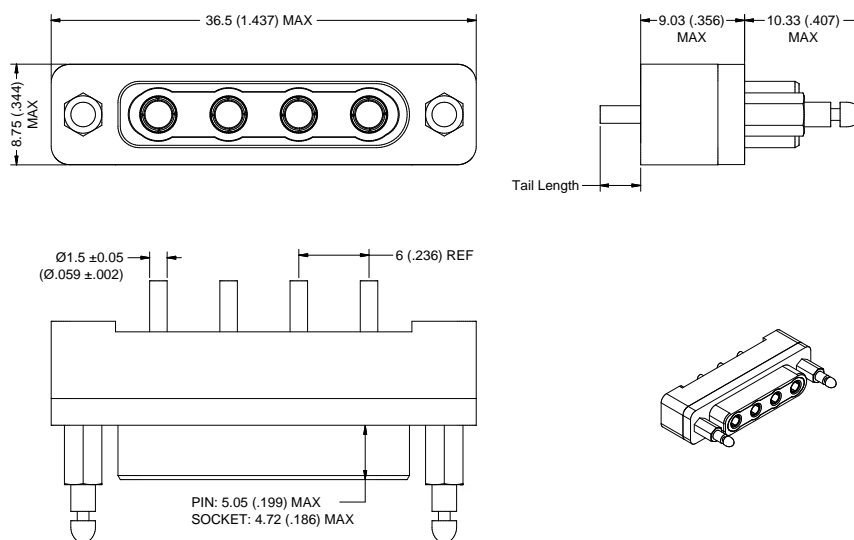


Notes:

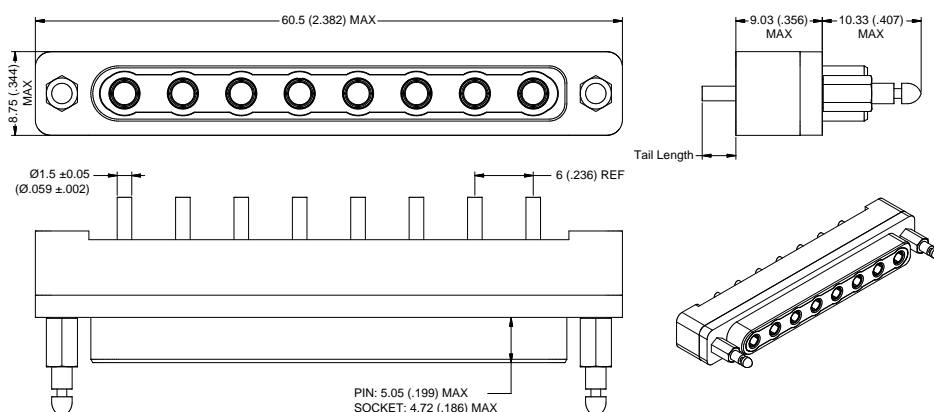
- Dimensions in mm (inches)
- PCB Mounting: Maximum torque 0.44 N.m with through hole and 0.14 N.m when threaded inserts installed.

BS PCB POWER CONNECTORS DIMENSIONS

► 4S12 BS power connectors



► 8S12 BS power connectors

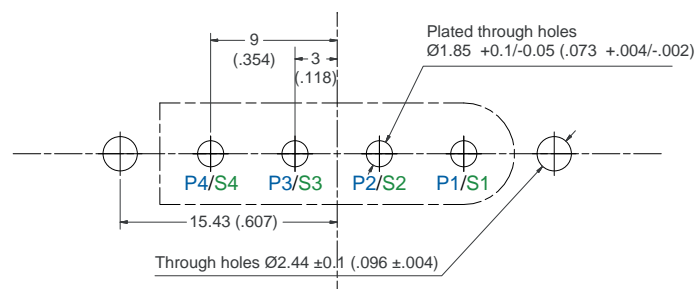


Dimensions are in millimetres

BS PCB POWER CONNECTORS DIMENSIONS

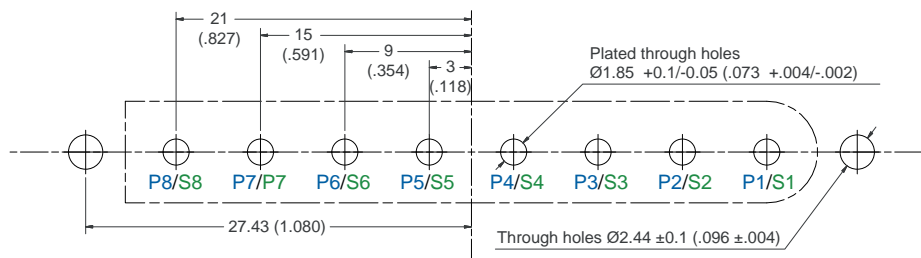
► 4S12 BS power connectors

PIN CONNECTOR / SOCKET CONNECTOR



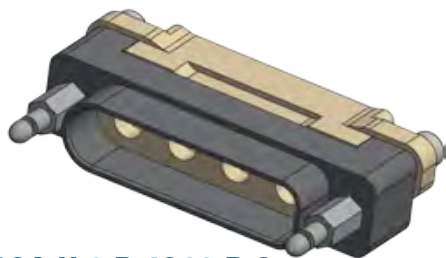
► 8S12 BS power connectors

PIN CONNECTOR / SOCKET CONNECTOR



Notes:

- Dimensions in mm (inches)
- Pin & socket are identical
- PCB Mounting: Maximum torque 0.44 N.m with through hole and 0.14 N.m when threaded inserts installed.



MMCSA H 2 P 4S12 P G



MMCSA H 2 S 4S12 P G

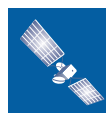


MMCSA H 2 P 4S12 P DC



MMCSA H 2 S 4S12 P DC

KITS: VERSATYS® POWER HOUSINGS



IDENTIFICATION CODE

MMCSA

H

2

S

4S12

P

DC

SERIES

MMCSA: Space Micro Modular Connector Dismountable kit.

SUBCOMPONENT

H: Housing (connector body + insulating insert + hardware).

CONNECTOR TYPE

2: Nickel aluminium shell.

CONNECTOR GENDER

P: Pin (pin contacts).

S: Socket (socket contacts).

NUMBER OF WAYS

4S12: 4 points size 12.

8S12: 8 points size 12.

See pages 52 to 55 for housing dimensions.

TYPE

P: Power connector.

HARDWARE

DC: D-Click latch springs.

G: D-Click latch-posts.

Gx (x: 1 to 5): D-Click latch-posts, rear panel mount.

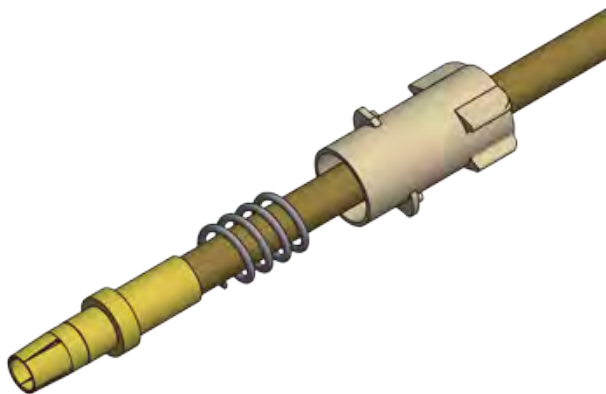
x= 1: 0.8 mm thickness **2:** 1.2 mm thickness **3:** 1.6 mm thickness

4: 2.0 mm thickness **5:** 2.4 mm thickness

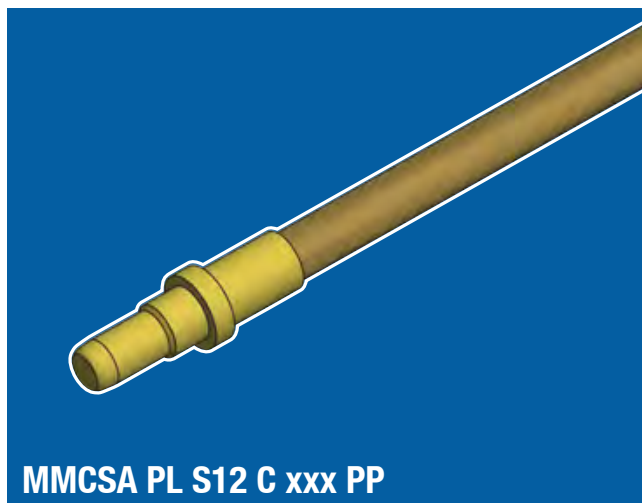
See page 10 & 11 for D-Click hardware.

LAT level to be indicated when ordering - see page 71

CONNECTORS ARE SUPPLIED WITH ANTI-STATIC PROTECTIVE DUST CAPS



MMCSA PL S12 C xxx SS



MMCSA PL S12 C xxx PP

KITS: VERSATYS® POWER LINES



IDENTIFICATION CODE

MMCSA

PL

S12

C

020

PP

SERIES

MMCSA: Space Micro Modular Connector Dismountable kit.

SUBCOMPONENT

PL: Power line.

CONTACT SIZE

S12: Size 12.

WIRE TYPE

ESCC 3901 001 (Polyimide):

A: ESCC 3901 001 29 (AWG16).

B: ESCC 3901 001 30 (AWG14).

C: ESCC 3901 001 31 (AWG12).

ESCC 3901 013 (PTFE):

G: ESCC 3901 013 57 (AWG16).

ESCC 3901 012 (cross-linked ETFE):

Dx: ESCC 3901 012 08 (AWG16).

Ex: ESCC 3901 012 09 (AWG14).

Fx: ESCC 3901 012 10 (AWG12).

x= 4: Yellow 9: White.

Other colors available on request.

ESCC 3901 019 (CELLOFLON® PTFE):

H: ESCC 3901 019 07 (AWG16).

I: ESCC 3901 019 08 (AWG12).

See page 69 for wire types.

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

TERMINATION CHOICE

P: One pin contact, one end only.

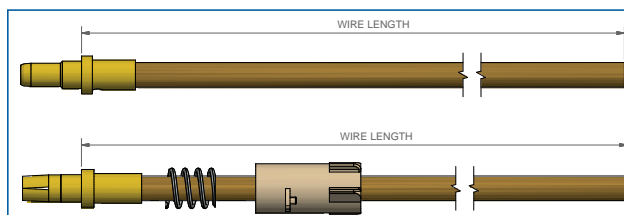
S: One socket contact, one end only.

PS: Pin to socket contacts.

PP: Pin to pin contacts.

SS: Socket to socket contacts.

LAT level to be indicated when ordering - see page 71



AXON' CABLE D-Click connectors

Wires

Wire codes for twist pin contacts - 68

Wire codes for power contacts - 69

Colour codes - 70

LAT levels - 71

WIRE CODES FOR TWIST PIN CONTACTS

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 ² (sq in)	RESISTANCE Ω/100m (Ω/ 1000 ft)
G	GPC2501	1.45	GOLD PLATED COPPER	25	1x0.455 1x.018	0.455 .018	0.163 .000252	11 33.5
T (FOR PCB)	GPC2501 RoHS SOLDER DIPPED TIN	1.81	GOLD PLATED COPPER AND TIN LEAD-FREE (97% TIN MAX.)	24	1x0.510 1x.0201	0.510 .0201	0.205 .000317	11 33.5

► Insulated wires

WIRE CODE	WIRE DESIGNATION	MAX. WEIGHT g/m	CONDUCTOR						INSULATION		TEMPERATURE RATING	VOLTAGE RATING
			MATERIAL	AWG	CONSTRUCTION mm (inch)	Ø mm (inch)	AREA mm ² (sq in)	MAX. RESIST. Ω/1km (Ω/1000 ft)	MATERIAL	MAX. Ø mm (inch)		
A	ESCC 3901 001 24	2.05	SPCA	26	19x0.10 19x.0039	0.53 .020	0.15 .000232	148 45	POLYIMIDE	0.84 .033	-100°C / +200°C	600 V _{AC}
B	ESCC 3901 001 47	1.37	SPCA	28	19x0.08 19x.0031	0.43 .017	0.10 .000155	242 74	POLYIMIDE	0.73 .028	-100°C / +200°C	600 V _{AC}
C	ESCC 3901 002 56	1.93	SPCA	26	19x0.10 19x.0039	0.53 .020	0.15 .000232	148 45	POLYIMIDE LIGHT	0.78 .031	-100°C / +200°C	600 V _{AC}
D	ESCC 3901 002 61	1.23	SPCA	28	19x0.08 19x.0031	0.43 .017	0.10 .000155	242 74	POLYIMIDE LIGHT	0.68 .027	-100°C / +200°C	600 V _{AC}
E	M22759/33-26	2.08	HIGH STRENGTH SPCA	26	19x0.102 19x.0040	0.483 .019	0.154 .000239	147 44.8	CROSS-LINKED EXTRUDED MODIFIED ETFE	0.86 .034	-90°C / +200°C	600 V _{AC}
J	ESCC 3901 012 03	2.11	SPCA	26	19x0.10 19x.0039	0.53 .020	0.15 .000232	149 45	CROSS-LINKED ETFE	0.86 .034	-100°C / +200°C	600 V _{AC}
K	ESCC 3901 012 02	1.35	SPCA	28	7x0.12 7x.0047	0.38 .015	0.08 .000124	244 74	CROSS-LINKED ETFE	0.70 .028	-100°C / +200°C	600 V _{AC}
L	ESCC 3901 013 02	2.30	SPCA	26	7x0.16 19x.0063	0.50 .020	0.14 .000217	146 45	PTFE & POLYIMIDE	0.89 .035	-100°C / +200°C	600 V _{AC}
M	ESCC 3901 013 01	1.80	SPCA	28	7x0.127 7x.0050	0.42 .017	0.089 .000138	215 66	PTFE & POLYIMIDE	0.82 .032	-100°C / +200°C	600 V _{AC}
N	ESCC 3901 018 04	2.68	SPCA	26	7x0.160 7x.0063	0.49 .019	0.14 .000217	150 46	CELLOFLO [®] , POLYIMIDE & PTFE	1.03 .041	-200°C / +200°C	600 V _{AC}
O	ESCC 3901 018 03	1.81	SPCA	28	7x0.126 19x.0050	0.39 .015	0.089 .000138	239 73	CELLOFLO [®] , POLYIMIDE & PTFE	0.9 .035	-200°C / +200°C	600 V _{AC}
P	ESCC 3901 019 03	1.9	SPCA	26	19x0.10 19x.0039	0.57 .022	0.15 .000232	157 48	CELLOFLO [®] & POLYIMIDE	0.96 .038	-200°C / +200°C	600 V _{AC}
Q	ESCC 3901 019 02	1.4	SPCA	28	7x0.127 19x.0050	0.47 .018	0.09 .000139	253 77	CELLOFLO [®] & POLYIMIDE	0.87 .034	-200°C / +200°C	600 V _{AC}

SPCA = SILVER PLATED COPPER ALLOY

OTHER WIRE TYPES AVAILABLE ON REQUEST

WIRE CODES FOR POWER CONTACTS

► Insulated wires for MMCS & MMCSA

WIRE CODE	WIRE DESIGNATION	MAX. WEIGHT g/m	CONDUCTOR						INSULATION		WIRE COLOR
			MATERIAL	AWG	CONSTRUCTION mm (inch)	MAX. Ø mm (inch)	AREA mm ² (sq in)	MAX. DC RESISTANCE AT 20°C Ω/km (Ω/1000 ft)	MATERIAL	MAX. Ø mm (inch)	
A	ESCC 3901 001 29	14.0	SPC*	16	19x0.300 19x.0118	1.53 .0602	1.30 .00202	14.3 4.360	POLYIMIDE	1.85 .073	BROWN
B	ESCC 3901 001 30	19.6	SPC*	14	27x0.300 27x.0118	1.87 .0736	1.90 .00295	10.1 3.079	POLYIMIDE	2.19 .086	KHAKI-BEIGE
C	ESCC 3901 001 31	32.1	SPC*	12	45x0.300 45x.0118	2.50 .0984	3.20 .00496	6.03 1.838	POLYIMIDE	2.80 .110	KHAKI-BEIGE
D	ESCC 3901 012 08	14.59	SPC*	16	19x0.300 19x.0118	1.55 .0610	1.20 .00186	14.8 4.512	EXTRUDED CROSS-LINKED ETFE	1.90 .075	TO BE SPECIFIED
E	ESCC 3901 012 09	19.60	SPC*	14	37x0.250 37x.0098	1.82 .0717	2.00 .00310	10.2 3.110	EXTRUDED CROSS-LINKED ETFE	2.29 .090	TO BE SPECIFIED
F	ESCC 3901 012 10	31.23	SPC*	12	37x0.320 37x.0126	2.28 .0898	3.00 .00465	6.51 1.985	EXTRUDED CROSS-LINKED ETFE	2.74 .108	TO BE SPECIFIED
G	ESCC 3901 013 57	17	SPC*	16	19x0.285 19x.0112	1.44 .0567	1.23 .00191	16.5 5.030	PTFE	2.23 .088	AMBER
H	ESCC 3901 019 07	13.00	SPC*	16	19x0.300 19x.0118	1.49 .0587	1.20 .00186	14 4.268	CELLOFON® PTFE	1.98 .078	AMBER
I	ESCC 3901 019 08	27.00	SPC*	12	37x0.320 37x.0126	2.18 .0858	3.00 .00465	7 2.134	CELLOFON® PTFE	2.73 .107	AMBER

*: SILVER PLATED COPPER

OTHER WIRE TYPES AVAILABLE ON REQUEST

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 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

LAT LEVELS

The required level of Lot Acceptance Testing is to be specified when ordering.
The sample size of the three Lot Acceptance Tests are shown in the diagram below.
All components assigned to a subgroup shall be subjected to all the tests of that subgroup in the table test sequence.

AXON' Micro-D D-Click & MMC connectors are tested according to ESCC 3401.

Lot Acceptance "level 3":

No additional tests or inspections are required for this level.

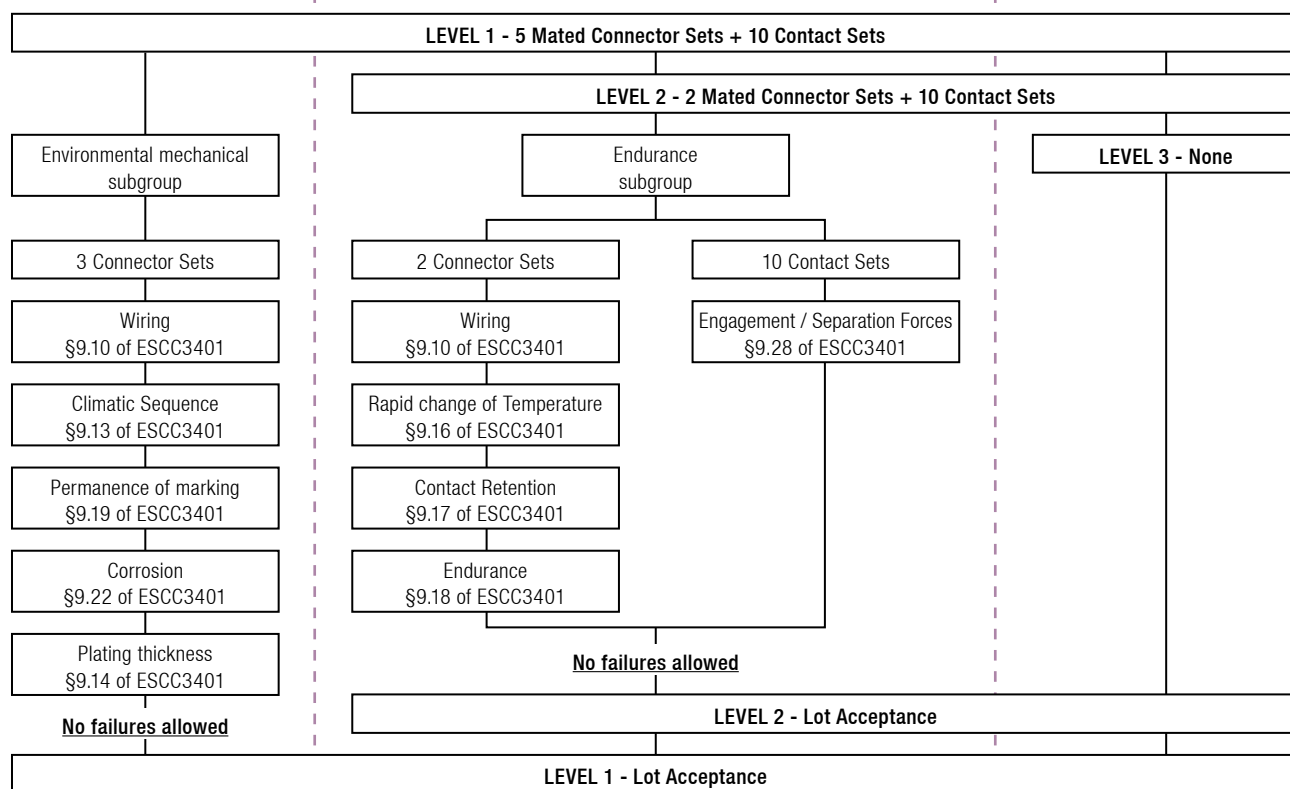
Lot Acceptance "level 2":

This level includes the electrical and endurance subgroup.

Lot Acceptance "level 1":

This level includes everything in level 2 plus environmental and mechanical subgroups.

➤ SAMPLE SIZES ACCORDING TO REQUIRED LAT LEVEL





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Photos: Nickelkrome, Bastien Guilbert

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