

SNAPTAC CONNECTOR SERIES

Circular and Rectangular Miniature Snap Fit Connectors



HYPERSPRING® TECHNOLOGY

Snaptac® product range is equipped with Hyperspring® contacts combining our high-reliability hyperboloid contact technology, with the mechanical features of a spring-loaded contact, to produce interconnections with improved signal integrity, high reliability and current density, and proven parametric stability over time.

A key innovation within the Snaptac® connector range is in the design of the spring loaded contact. For the first time, a hyperboloid socket has been combined with a spring loaded plunger to provide a compressible contact.

This arrangement enables the characteristics of very low and stable contact resistance, high current carrying capability, and extremely low wear mechanisms for extended operation over time to be realised within a sealed while unmated connector system. This unique combination enables the spring loading characteristic to be determined separately from the electrical characteristics thus optimising the mechanical, electrical and environmental performance.



TECHNICAL CHARACTERISTICS

| | |
|----------------------------|--|
| Contact Dia | 0.50 mm |
| Current Rating | 3 A |
| Spring Force (max) | 1.5 N |
| Contact Resistance | <15mΩ |
| Mating Cycles | 100,000 |
| Material | |
| - Non functional parts | Brass plated with Au or Ni |
| - Spring contact element | CuBe plated with 1.27 μm Au |
| - Spring element | Stainless steel AISI 302 passivated |
| - Interface pin connection | Bronze or CuBe plated with 1.27 μm Au |
| - Contact terminations | Brass or Bronze plated with 1.27 μm Au |

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SNAPTAC SERIES

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SNAPTAC MINIATURE CONNECTORS

Snaptac® connectors provide a very reliable and robust connector system ideal for use in potentially dirty environments or where fast and easy mating and demating characteristics are required. Through the use of compressible contacts, potential mating and connectivity problems that can arise when the bores of conventional socket contacts become contaminated by the mud and detritus that may occur in everyday use are avoided. The easy to clean nature of the target and chisel blade contact mechanism, together with the sealed when unmated characteristic of both plug and receptacle, make this connector system ideal for harsh environments where reliability is paramount.

Available geometries

Snaptac® connectors are available in both circular (7-, 13-, and 19-) and rectangular (12-, 21-, and 30-) way geometries.

The SnapTac connector plugs are available in two versions, with and without over-moulding, following requests for both turn-key solutions and easy integration into existing designs.

A 90° overmoulded version is also available for the circular connector. The receptacle offers straight through and solder cup termination styles.

The locking mechanism is easy and fast: the circular connector range features a snap on locking, the 12 and 21 way rectangular connectors are push pull, the 30 way rectangular connector has a quick turn locking device.

7, 13 and 19 way circular extenders, with and without overmoulding, are available for applications requiring in-line connection.

Several hardware coding are available to avoid mismatching and to satisfy the customer technical needs as many non standard options are available. Please contact our sales office if you don't find in the catalogue the version that meets your requirements.

Up to 10,000 mating cycles

Tactical communication equipment must survive the rigours of hostile environments and withstand the damage of dust, sand, mud. The connectors used on both the handset and headset can be mated and unmated thousand of times during the equipment life. Snaptac® connectors ensure higher durability and superior performance through the use of the unique Hypertac hyperboloid

contact technology, offering shock and vibration immunity, low contact resistance, high current and voltage ratings, low mating forces, long life and low rate of wear.

The HyperSpring® spring loaded contacts used inside the connectors cannot be damaged or bent from mishandling. Their inherent self cleaning wiping action removes surface contamination, thus ensuring that the connector can't be damaged by the building up of surface films.

Lighter and Compact

Snaptac® connectors combine robust environmental performance with compact size and light weight, which make them ideal for lightweight, compact, wearable EMI shielded electronic systems for applications including communication, identification / recognition, and other critical tasks.

Waterproof and EMI protected

Snaptac® connectors are IP67 sealed according to IEC529 when mated and unmated. They incorporate full line EMI shielding and provide for high robustness throughout their lifetime.

Accessories - Dust caps

Dust caps are available to protect the connector when unmated and to ensure full EMI shielding. The metal version is supplied in the same material of the connector (aluminium, stainless steel), the rubber version is available in fluoro-polymer rubber.

Special flanges have been designed to facilitate the rectangular connector rear panel mounting.

Value Added services

Technical performance data hereby reported refer to Snaptac® connectors equipped with Hypertac cabling and overmoulding. Custom and value added solutions are provided for customers' specific requirements including cabling, mechanical, instrumentation housing and testing. Custom solutions save valuable engineering and manufacturing time for customers and ensure the overall performance of the final product.

▶ APPLICABLE DOCUMENTS

| Base Material - Standard Specification | |
|---|--|
| MIL-M-24519 | Moulding Plastics, Electrical, Thermoplastic |
| ASTM-B-16 | Free-Cutting Brass Rod, Bar and Shapes for Use in Screw Machines |
| ASTM-B-121 | Leaded Brass Plate, Sheet, Strip, and Rolled Bar |
| ASTM-B-139 | Standard Specification for Phosphor Bronze Rod, Bar, and Shapes |
| ASTM-B-196 | Copper-Beryllium Alloy Rod and Bar |
| ASTM-B-197 | Copper Beryllium Alloy Wire |
| ASTM-B-209 | Aluminum and Aluminum-Alloy Sheet and Plate |
| ASTM-B-455 | Standard Specification for Copper-Zinc-Lead Alloy (Leaded-Brass) Extruded Shapes |
| ASTM-A-582 | Free-Machining Stainless Steel Bars and Heat Resisting Steel Bars, Hot Rolled or Cold Finished |
| Surface Treatment - Standard Specification | |
| MIL-C-26074 | Coatings, Electroless Nickel |
| MIL-STD-869 | Standard Specification for Flame Spraying |
| ASTM-B-488 | Electrodeposited Coatings of Gold for Engineering Uses |
| ASTM-A-967 | Chemical Passivation Treatments for Stainless Steel Parts |
| QQ-N-290 | Nickel Plating Electrodeposited |
| Test Procedures | |
| EIA 364 | Test Methods For Electrical Connectors |
| UL94 | Test Methods For Flammability Rating |
| IEC 529 | Degrees of protection provided by enclosures |
| IEC 512 | Electromechanical components for electronic equipment |

TECHNICAL CHARACTERISTICS

CIRCULAR CONNECTOR

| General | |
|---|--|
| Hyperspring® Contact Number | 7,13,19 |
| Receptacle Contact Termination | Solder Cup, Straight PCB |
| Plug Contact Termination | Solder Cup, Straight PCB |
| AWG Contact | 28-24 |
| Cable Diameter Range | Max 6 mm (7 ways) - Max 7.5 mm (13 ways) - Max 8.5 mm (19 ways) |
| Materials and Plating | |
| Inner Insulators | Polyphenilensulfide (PPS) type GST-40F per MIL-M-24519 V0 per UL 94 |
| Interface Insulators | NBR Rubber per CEI 2019 Black V0 per UL 94 |
| Overmoulded | Hot melt Polyamide 6.6 |
| Housing | (see table 1) |
| Locking Hardware | Canted coil spring: Beryllium Copper |
| EMI-Gasket | Canted coil spring: Beryllium Copper |
| Hyperspring® Contacts | |
| Non Functional Parts | Brass as per ASTM-B-455 plated with Au as per ASTM-B-488 |
| Spring Contact Element | CuBe as per ASTM-B-197 plated with Au as per ASTM-B-488 |
| Spring Element | Stainless Steel AISI 302 passivated as per ASTM-A-967 |
| Interface pin connection | Bronze as per ASTM-B-139 plated with Au as per ASTM-B-488 |
| Plug contact terminations (<i>solder cups</i>) | Brass as per ASTM-B-455 plated Au as per ASTM-B-488 |
| Bonding Agent | Epoxy resin |
| Mass data | Related to standard connectors configuration (see table 2) |
| Electrical Characteristics | |
| EMI Shielding | 360° shield coverage |
| Current Rating | 3A@25°C for each contact according to IEC 512-3 |
| Dielectric Withstanding Voltage (<i>between contacts</i>) | 500 Vrms at sea level and 150 Vrms at 21336m according to EIA 364.20 |
| Contact Resistance (<i>low level</i>) | < 15 mΩ for each contact according to EIA 364.6 |
| Insulation Resistance | 5000 MΩ @ 500V d.c. according to EIA364.21 |
| Electrical Bonding Resistance | (see table 3) |
| Mechanical and Environmental Characteristics | |
| Temperature Range | -55°C +85°C |
| Temperature cycling | EIA364.32 Method A |
| Salt Spray | EIA364.26 Condition A - mated connectors |
| Humidity | EIA364.31 Method IV |
| IP Level | 67 mated and unmated IEC 529 |
| Vibration | EIA364.28 Condition III |
| Shock | EIA364.27 Condition G |
| Hyperspring® force (<i>single contact</i>) | Max 1.5 [N] |
| Connector Mating / Unmating Force | EIA364.09 (see table 4) |

Table 1

| Material | | Surface treatment | | | |
|---------------------------------------|-----|---|--|---|---|
| | | Z | N | P | W |
| Aluminium Alloy AV2024 ASTM-B-209 | AA* | Zn/Co on Chemical Black 5 µm SAE AMS-C-26074 | Chemical Ni Matt Grey 20mm SAE AMS-C-26074 | | |
| | BR* | | | | |
| Brass CuZn39Pb3 ASTM-B-16 | | | | | Metal Spraying Tungsten Carbide Black 1-5mm as per MIL-STD-869 |
| Stainless Steel AISI316 ASTM-B-582 | XS* | | | Passivation Matt Grey as per ASTM-A-967 | |

Table 2

| | | Mass data | | |
|-----|-------|-----------|------|------------|
| | | (grams) | Plug | Receptacle |
| C07 | AA | 4 | 4.8 | 4.2 |
| | BR/XS | 7.6 | 10.2 | 8 |
| C13 | AA | 6.7 | 6.5 | 6 |
| | BR/XS | 11.4 | 13.5 | 12 |
| C19 | AA | 8.4 | 7.1 | 7 |
| | BR/XS | 13.7 | 15.1 | 14.2 |

AA: Aluminium Alloy; BR: Brass; XS: Stainless Steel

Table 3

| Electrical Bonding Resistance Vs Material/Surface Treatment | | | | |
|---|---------|---------|---------|--------|
| AAN | AAZ | BRN/BRW | XSP | XSW |
| <15 mΩ | <800 mΩ | <40 mΩ | <250 mΩ | <40 mΩ |

Table 4

| | | Mating & unmating force | | | | |
|-----|-------------|-------------------------|-----|--------------|-----|----------------|
| | | Mating [N] | | Unmating [N] | | Life [# Cycle] |
| | | Min | Max | Min | Max | |
| C07 | AA*/BRN/XSP | 20 | 40 | 18 | 45 | 1K Cycles |
| | BRW/XSW | | | | | 10K Cycles |
| C13 | AA*/BRN/XSP | 20 | 40 | 18 | 45 | 1K Cycles |
| | BRW/XSW | | | | | 10K Cycles |
| C19 | AA*/BRN/XSP | 25 | 45 | 20 | 50 | 1K Cycles |
| | BRW/XSW | | | | | 10K Cycles |

AA: Aluminium Alloy; BR: Brass; XS: Stainless Steel

HOW TO ORDER

ST1091

SNAPTAC

1

2

3

4

5

6

7

8

1 > CONNECTOR FAMILY

2 > CONNECTOR TYPE

C CIRCULAR

3 > NUMBER OF WAYS

07 **13** **19**

4 > CONNECTOR STYLE

P PLUG **R** RECEPTACLE REAR PANEL MOUNT **E** EXTENDER IN LINE **W** EXTENDER REAR PANEL MOUNT
X RECEPTACLE FRONT PANEL MOUNT **Y** PLUG FRONT PANEL MOUNT **Z** PLUG REAR PANEL MOUNT

5 > TERMINATION STYLE

S SOLDER CUP **D** PCB STRAIGHT

6 > HOUSING POLARIZATIONS

FROM C00 UP TO C07

7 > WIRING DIAGRAM ⁽¹⁾

FROM CH01 UP TO CHnn

8 > BASE MATERIAL & SURFACE PROTECTION

AAZ ALUMINIUM ALLOY (AV2024) - ZINC COBALT **AAN** ALUMINIUM ALLOY (AV2024) - NICHEL
BRN BRASS - NICKEL **BRW** BRASS - BLACK TUNGSTEN CARBIDE **XSP** STAINLESS STEEL AISI 316 - PASSIVATED
XSW STAINLESS STEEL AISI 316 - BLACK TUNGSTEN CARBIDE

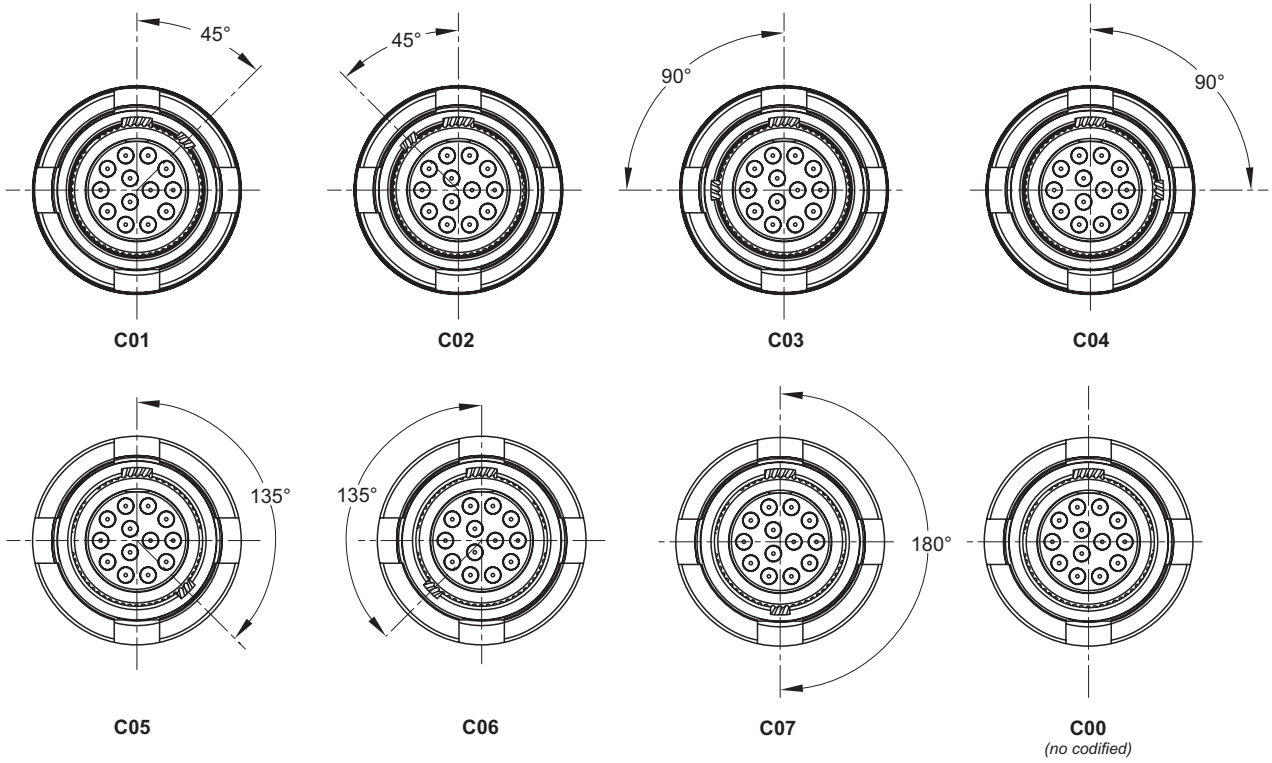
(1) Omit in case of connector without cable harnessing

NOTES

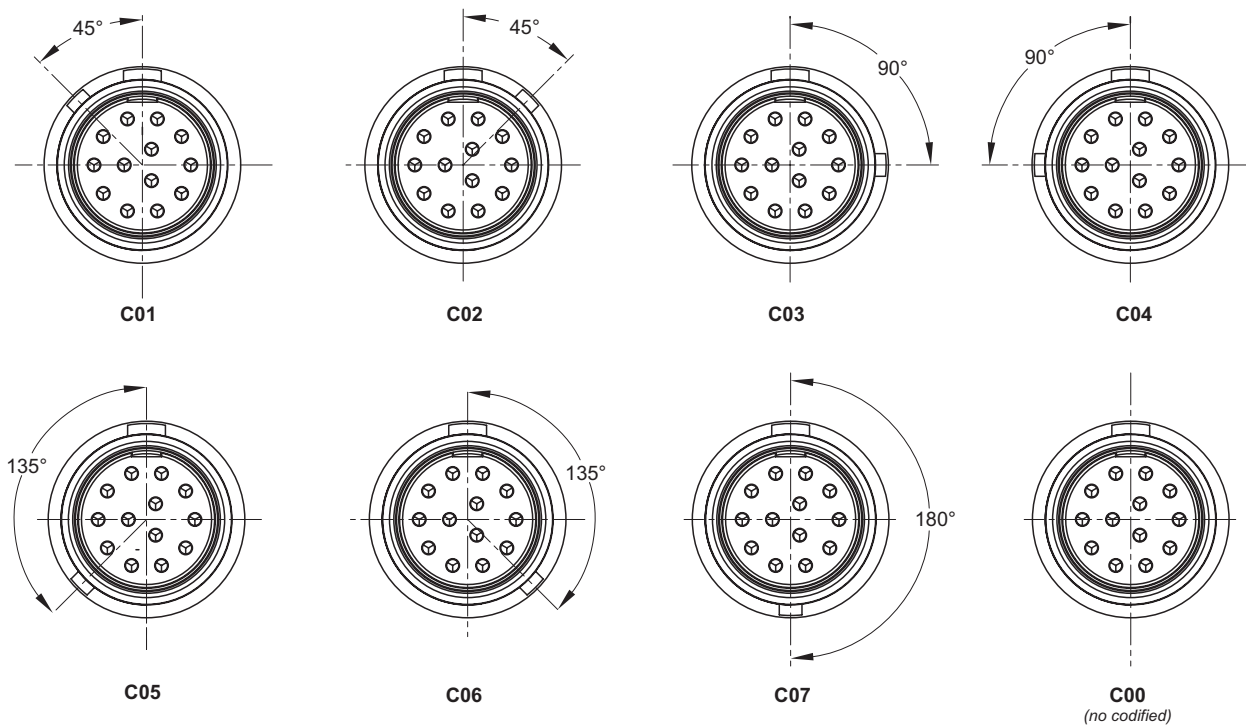
1. Connectors identification does not require empty space (eg: C13PSC01AAZ)
2. Harnessing identification does not require empty space (eg: C13PSC01CH01AAZ)
3. Harnessing is applicable only to connectors type P, E, W.

▶ AVAILABLE POLARIZATIONS

RECEPTACLE MATING SIDE VIEW

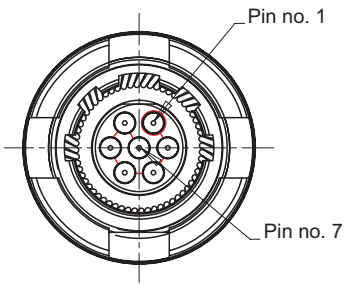


PLUG MATING SIDE VIEW

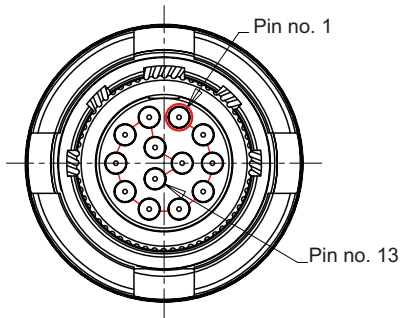


CONTACT ARRANGEMENT - VIEW MATING SIDE

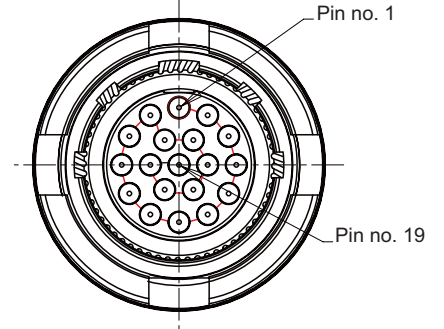
RECEPTACLE C07R



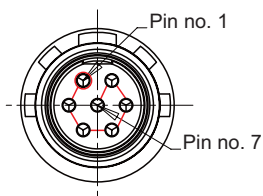
RECEPTACLE C13R



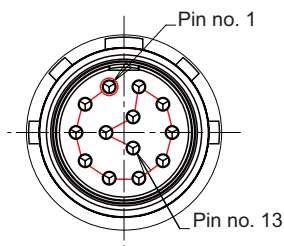
RECEPTACLE C19R



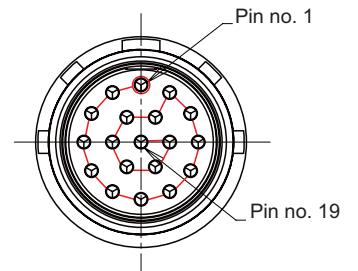
PLUG C07P



PLUG C13P



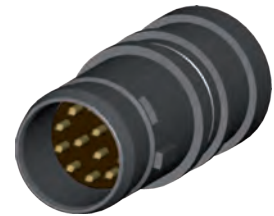
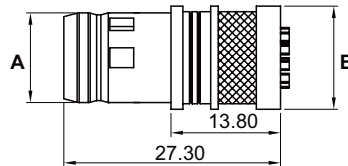
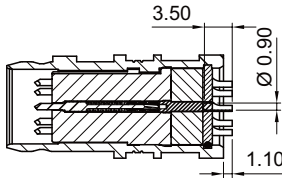
PLUG C19P



PLUG

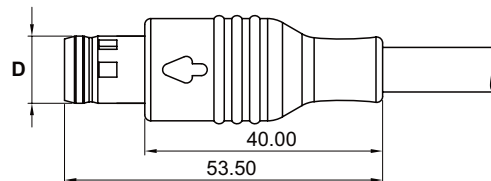
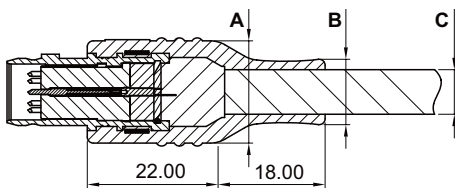
PLUG - SOLDER CUP TERMINATION

| No. of ways | PN | A | B |
|-------------|-------------|---------|---------|
| 7 | C07PSC----- | Ø 8.30 | Ø 10.20 |
| 13 | C13PSC----- | Ø 11.30 | Ø 13.00 |
| 19 | C19PSC----- | Ø 12.30 | Ø 14.00 |



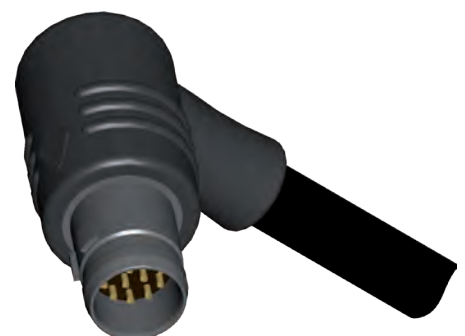
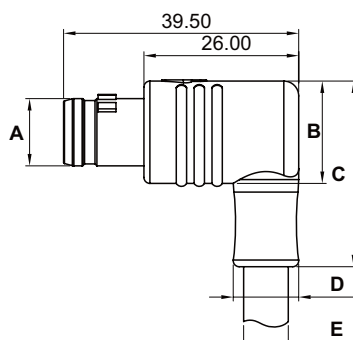
PLUG - SOLDER CUP TERMINATION WITH OVERMOULDING AND CABLING

| No. of ways | PN | A | B | C | D |
|-------------|-----------------|---------|---------|------------|---------|
| 7 | C07PSC--CH----- | Ø 14.50 | Ø 9.50 | Ø 6.00 max | Ø 8.30 |
| 13 | C13PSC--CH----- | Ø 17.20 | Ø 11.00 | Ø 7.50 max | Ø 11.30 |
| 19 | C19PSC--CH----- | Ø 18.20 | Ø 12.00 | Ø 8.50 max | Ø 12.30 |



PLUG - SOLDER CUP TERMINATION WITH 90° OVERMOULDING AND CABLING

| No. of ways | PN | A | B | C | D | E |
|-------------|-----------------|---------|---------|-------|---------|------------|
| 7 | C07PSC--CH----- | Ø 8.30 | Ø 14.50 | 28.50 | Ø 9.50 | Ø 6.00 max |
| 13 | C13PSC--CH----- | Ø 11.30 | Ø 17.20 | 31.20 | Ø 11.00 | Ø 7.50 max |
| 19 | C19PSC--CH----- | Ø 12.30 | Ø 18.20 | 32.20 | Ø 12.00 | Ø 8.50 max |

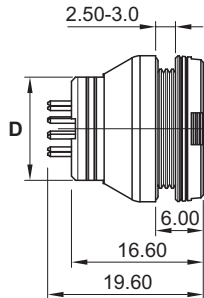
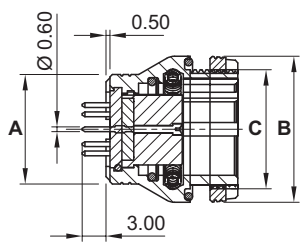


▶ RECEPTACLE

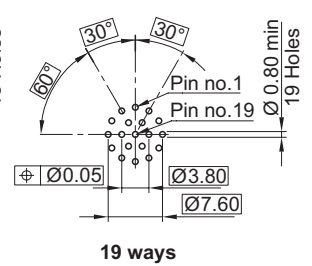
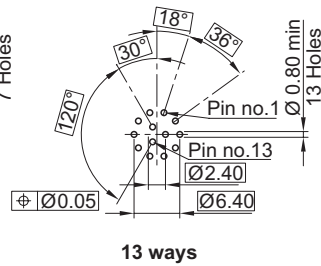
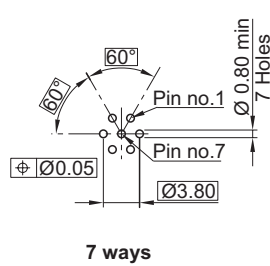
RECEPTACLE - STRAIGHT THROUGH TERMINATION



| No. of ways | PN | A | B | C | D |
|-------------|------------|---------|---------|----------|-------|
| 7 | C07RDC---- | Ø 11.00 | Ø 15.40 | M12x0.75 | 10.00 |
| 13 | C13RDC---- | Ø 13.80 | Ø 18.40 | M15x0.75 | 13.00 |
| 19 | C19RDC---- | Ø 14.80 | Ø 19.40 | M16x0.75 | 14.00 |

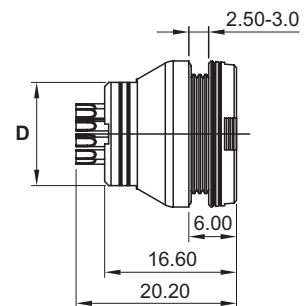
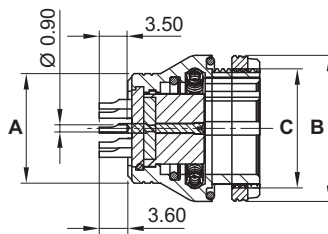


MOUNTING PATTERN - COMPONENT SIDE

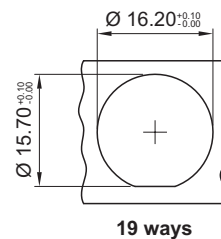
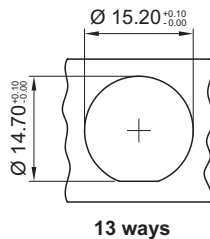
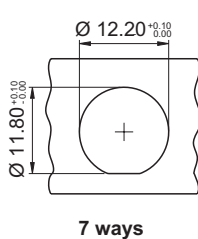


RECEPTACLE - SOLDER CUP TERMINATION

| No. of ways | PN | A | B | C | D |
|-------------|------------|---------|---------|----------|-------|
| 7 | C07RSC---- | Ø 11.00 | Ø 15.40 | M12x0.75 | 10.00 |
| 13 | C13RSC---- | Ø 13.80 | Ø 18.40 | M15x0.75 | 13.00 |
| 19 | C19RSC---- | Ø 14.80 | Ø 19.40 | M16x0.75 | 14.00 |



▶ PANEL CUT-OUT

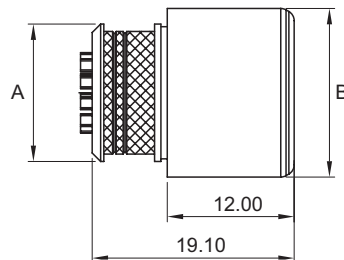
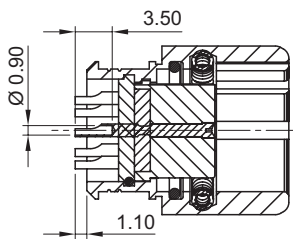


Note: panel thickness max 3 mm

EXTENDER

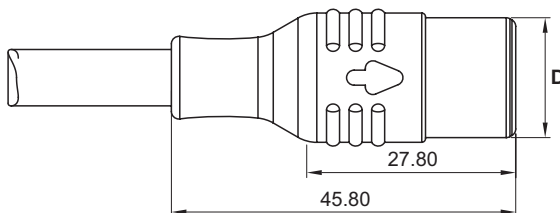
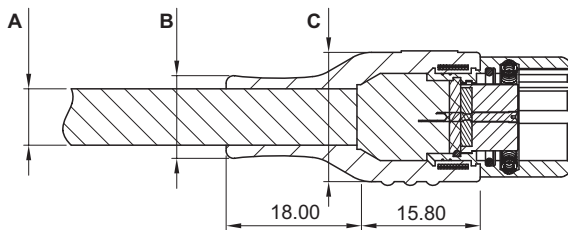
EXTENDER - SOLDER CUP TERMINATION

| No. of ways | PN | A | B |
|-------------|------------|---------|---------|
| 7 | C07ESC---- | Ø 10.20 | Ø 13.00 |
| 13 | C13ESC---- | Ø 13.00 | Ø 16.00 |
| 19 | C19ESC---- | Ø 14.00 | Ø 17.00 |



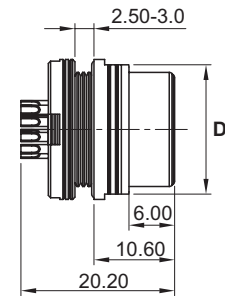
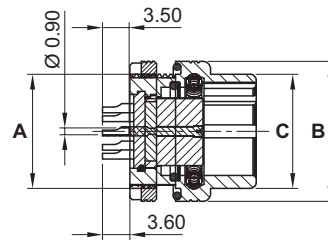
EXTENDER WITH OVERMOULDING AND CABLING

| No. of ways | PN | A | B | C | D |
|-------------|----------------|------------|---------|---------|---------|
| 7 | C07ESC--CH---- | Ø 6.00 max | Ø 9.50 | Ø 14.50 | Ø 13.00 |
| 13 | C13ESC--CH---- | Ø 7.50 max | Ø 11.00 | Ø 17.20 | Ø 16.00 |
| 19 | C19ESC--CH---- | Ø 8.50 max | Ø 12.00 | Ø 18.20 | Ø 17.00 |

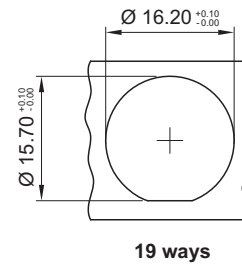
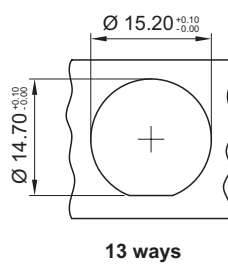
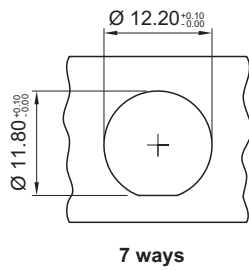


▶ RECEPTACLE - FRONT PANEL MOUNTING WITH SOLDER CUP TERMINATION

| No. of ways | PN | A | B | C | D |
|-------------|------------|----------|---------|---------|-------|
| 7 | C07XSC---- | M12x0.75 | Ø 15.40 | Ø 12.00 | 14.00 |
| 13 | C13XSC---- | M15x0.75 | Ø 18.40 | Ø 15.00 | 17.00 |
| 19 | C19XSC---- | M16x0.75 | Ø 19.40 | Ø 16.00 | 18.00 |



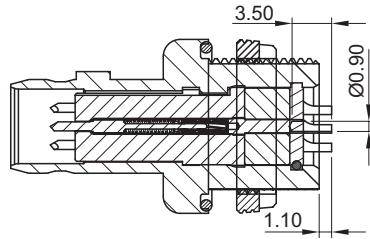
▶ PANEL CUT-OUT



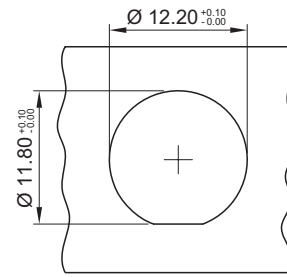
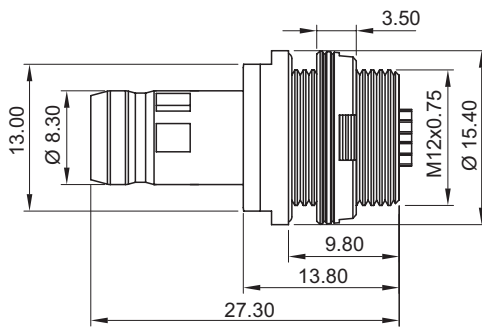
Note: panel thickness max 3 mm

▶ OTHER AVAILABLE OPTIONS

7 WAYS PLUG - FRONT PANEL MOUNTING WITH SOLDER CUP TERMINATION



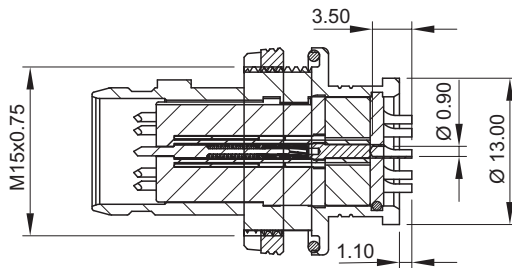
Ref. C07YSC-----



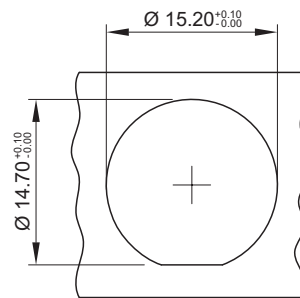
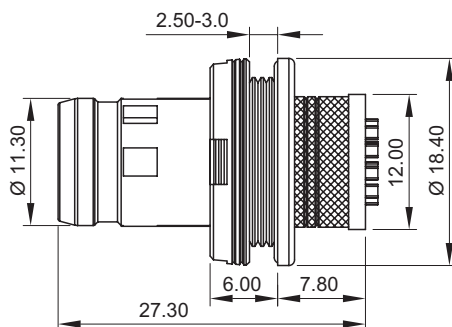
Panel cut-out

Note: for 13 and 19 ways connector details please contact our sales office.

13 WAYS PLUG - REAR PANEL MOUNTING WITH SOLDER CUP TERMINATION



Ref. C13ZSC-----

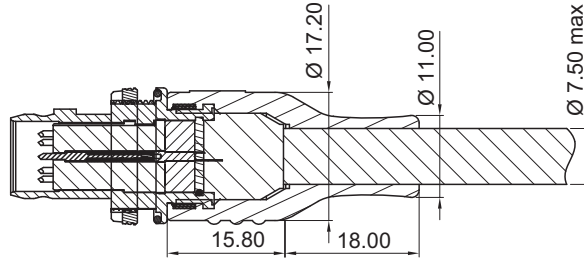


Panel cut-out
panel thickness max 3 mm

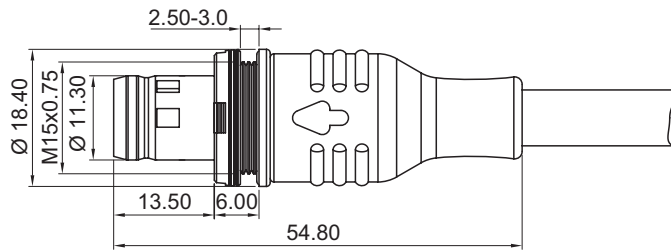
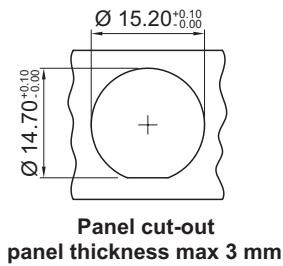
Note: for 7 and 19 ways connector details please contact our sales office.

▶ OTHER AVAILABLE OPTIONS

13 WAYS PLUG - REAR PANEL MOUNTING WITH OVERMOULDING AND CABLING

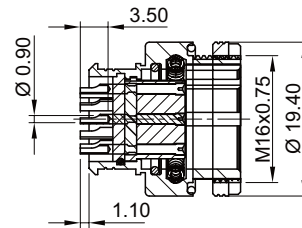


Ref. C13ZSC--CH----

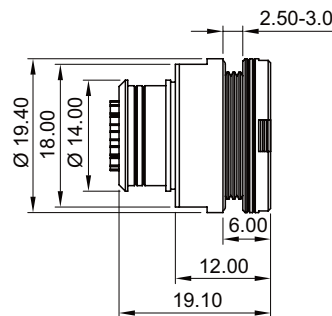
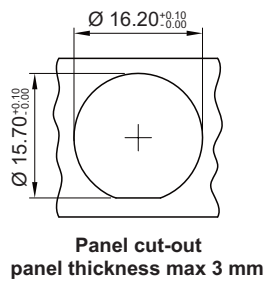


Note: for 7 and 19 ways connector details please contact our sales office.

19 WAYS EXTENDER - REAR PANEL MOUNTING WITH SOLDER CUP TERMINATION



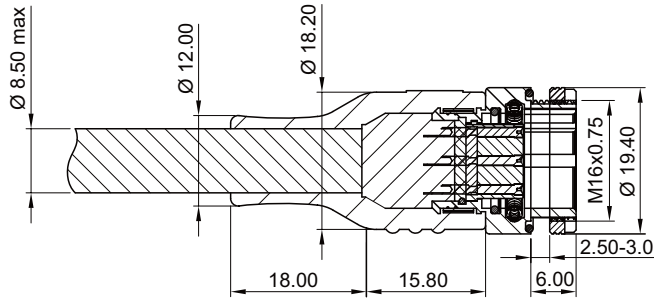
Ref. C19WSC-----



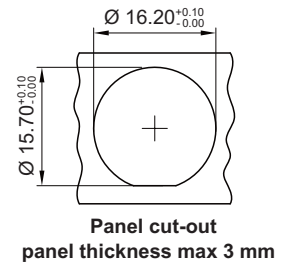
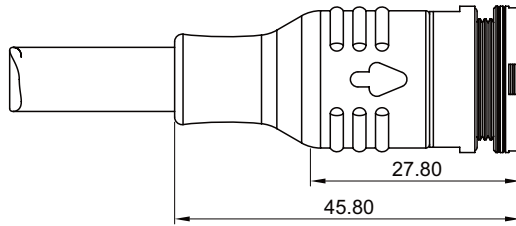
Note: for 7 and 13 ways connector details please contact our sales office.

▶ OTHER AVAILABLE OPTIONS

19 WAYS EXTENDER - REAR PANEL MOUNTING WITH OVERMOULDING AND CABLING



Ref. C19WSC--CH-----



Note: for 7 and 13 ways connector details please contact our sales office.

HOW TO ORDER

ACCESSORIES - DUST CAP

ST1091

SNAPTAC

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1 > CONNECTOR FAMILY

2 > CONNECTOR TYPE

C CIRCULAR

3 > NUMBER OF WAYS

07 **13** **19**

4 > DUST CAP TYPE

CP DUST CAP FOR PLUG **CR** DUST CAP FOR RECEPTACLE

5 > DUST CAP VERSION

MET METALLIC CAP **RUB** RUBBER CAP

6 > BASE MATERIAL & SURFACE PROTECTION

AAZ* ALUMINIUM ALLOY (AV2024) - ZINC COBALT **AAN*** ALUMINIUM ALLOY (AV2024) - NICHEL
BRN* BRASS - NICKEL **BRW*** BRASS - BLACK TUNGSTEN CARBIDE **XSP*** STAINLESS STEEL AISI 316 - PASSIVATED
XSW* STAINLESS STEEL AISI 316 - BLACK TUNGSTEN CARBIDE **FPR**** FLUORO POLYMER RUBBER

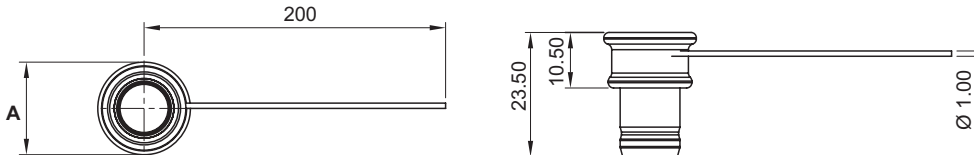
* Only for MET

** Only for RUB

► DUST CAP

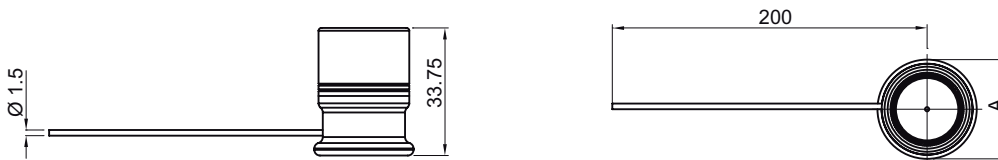
METAL VERSION FOR RECEPTACLE

| No. of ways | PN | A |
|-------------|-------------|---------|
| 7 | C07CRMET--- | Ø 15.00 |
| 13 | C13CRMET--- | Ø 17.50 |
| 19 | C19CRMET--- | Ø 18.50 |



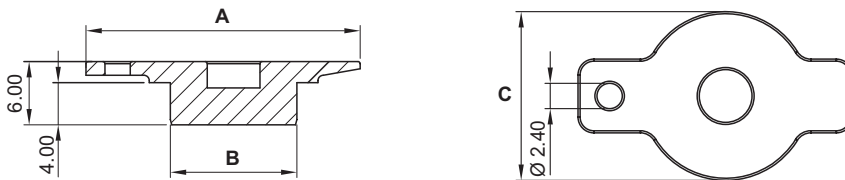
METAL VERSION FOR PLUG

| No. of ways | PN | A |
|-------------|-------------|---------|
| 7 | C07CPMET--- | Ø 15.00 |
| 13 | C13CPMET--- | Ø 17.50 |
| 19 | C19CPMET--- | Ø 18.50 |



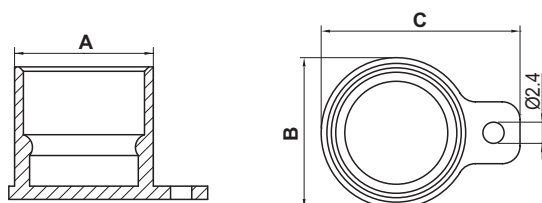
RUBBER VERSION FOR RECEPTACLE

| No. of ways | PN | A | B | C |
|-------------|-------------|-------|---------|---------|
| 7 | C07CRRUBFPR | 23.00 | Ø 9.00 | Ø 13.00 |
| 13 | C13CRRUBFPR | 26.00 | Ø 12.00 | Ø 16.00 |
| 19 | C19CRRUBFPR | 27.00 | Ø 13.00 | Ø 17.00 |



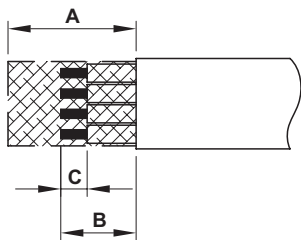
RUBBER VERSION FOR PLUG

| No. of ways | PN | A | B | C |
|-------------|-------------|-------|-------|-------|
| 7 | C07CPRUBFPR | 11.70 | 13.00 | 20.50 |
| 13 | C13CPRUBFPR | 14.70 | 16.50 | 22.25 |
| 19 | C19CPRUBFPR | 15.70 | 17.00 | 22.50 |



▶ **CABLE PREPARATION**

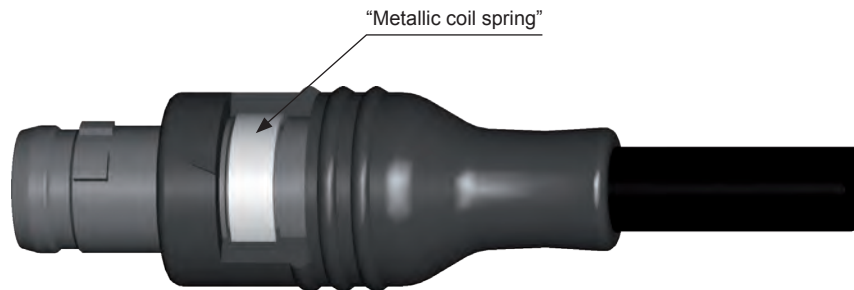
See below the stripping lengths for braid shield (A) and single wire (B & C).



| | Plug (ref P) | Extender (ref E) |
|---|--------------|------------------|
| A | 15 | 13 |
| B | 10 | 10 |
| C | 3.5 | 3.5 |

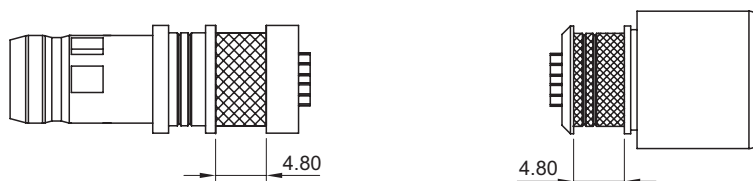
EMI/EMC PROTECTION

Plug (ref. P), extender in line (ref. E) and extender rear panel mounting (ref. W) of this specification are designed to be supplied with assembled cables. The electrical continuity between metal shell and cable shield is granted by a specific metallic coil spring for cable braid as showed in the picture.



| Connector Size | Order Reference |
|----------------|-----------------|
| C07 | M1035 |
| C13 | M1036 |
| C19 | M1036 |

See below the knurled area for braid shield connection.



TECHNICAL CHARACTERISTICS

RECTANGULAR CONNECTOR

| General | |
|---|---|
| Hyperspring® Contact Number | 12, 21, 30 |
| Receptacle Contact Termination | Solder Cup, Straight PCB |
| Plug Contact Termination | Solder Cup |
| AWG Contact | 30-24 |
| Cable Diameter Range | Max 8 mm |
| Materials and Plating | |
| Inner Insulators | Polyphenilensulfide (PPS) type GST-40F per MIL-M-24519 V0 per UL 94 |
| Interface Insulators | NBR Rubber per CEI 2019 Black V0 per UL 94 |
| Overmoulded | Hot melt Polyamide 6.6 |
| Housing | <i>(see table 1)</i> |
| Locking Hardware | Stainless Steel AISI 3xx – Passivated as per ASTM-A-967 – Coating Oxide Black as per MIL-DTL-13924D – Metal Spraying Tungsten Carbide Black as per MIL-STD-869 |
| EMI-Gasket | Conductive Silicon |
| Hyperspring® Contacts | |
| Non Functional Parts | Brass as per ASTM-B-455 plated with Au as per ASTM-B-488 |
| Spring Contact Element | CuBe as per ASTM-B-197 plated with Au as per ASTM-B-488 |
| Spring Element | Stainless Steel AISI 302 passivated as per ASTM-A-967 |
| Interface pin connection | Bronze as per ASTM-B-139 plated with Au as per ASTM-B-488 |
| Plug contact terminations (<i>solder cups</i>) | Brass as per ASTM-B-455 plated Au as per ASTM-B-488 |
| Bonding Agent | Epoxy resin |
| Mass data | Related to standard connectors configuration <i>(see table 2)</i> |
| Electrical Characteristics | |
| EMI Shielding | 360° shield coverage |
| Current Rating | 3A@25°C for each contact according to IEC 512-3 |
| Dielectric Withstanding Voltage (<i>between contacts</i>) | 500 Vrms at sea level and 150 Vrms at 21336m according to EIA 364.20 |
| Contact Resistance (<i>low level</i>) | < 15 mΩ for each contact according to EIA 364.6 |
| Insulation Resistance | 5000 MΩ @ 500V d.c. according to EIA364.21 |
| Mechanical and Environmental Characteristics | |
| Temperature Range | -55°C +85°C |
| Temperature cycling | EIA364.32 Method A |
| Salt Spray | EIA364.26 Condition A - mated connectors |
| Humidity | EIA364.31 Method IV |
| IP Level | 67 mated and unmated IEC 529 |
| Vibration | EIA364.28 Condition III |
| Shock | EIA364.27 Condition G |
| Hyperspring® force (<i>single contact</i>) | Max 1.5 [N] |
| Connector Mating / Unmating Force | Max 60 [N] (12ways) – Max 70 [N] (21ways) - Max 80 [N] (30ways) |

Table 1

| Material | | Surface treatment | |
|---|-----|--|--|
| | | Z | N |
| Aluminium Alloy AV2024 <i>ASTM-B-209</i> | AA* | Zn/Co on Chemical Ni Black 5 µm SAE AMS-C-26074 Class 1 | Chemical Ni Matt Grey 20 µm SAE AMS-C-26074 Class 1 |
| | | | |

Table 2

| (grams) | Mass data | | |
|---------|-----------|-----------------------------|------------|
| | Plug | Plug (front panel mount) | Receptacle |
| R12 | 16 | NA | 5.5 |
| R21 | 23 | NA | 7.5 |
| R30 | 38 | 18 | 7.5 |

HOW TO ORDER

ST1089

SNAPTAC

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1 ▶ CONNECTOR FAMILY**2** ▶ CONNECTOR TYPE**R** RECTANGULAR**3** ▶ NUMBER OF WAYS**12** **21** **30****4** ▶ CONNECTOR STYLE**P** PLUG **R** RECEPTACLE FRONT PANEL MOUNT **Y** PLUG FRONT PANEL MOUNT (only 30 ways)**5** ▶ TERMINATION STYLE**S** SOLDER CUP **D** PCB STRAIGHT (length = 3.15 mm) **L** PCB STRAIGHT (length = 14 mm)**6** ▶ HOUSING POLARIZATIONS

FROM C00 UP TO C07 (only for 12 & 21 ways) - (preferred polarizations C01 - C06 - C11 - C16)

7 ▶ WIRING DIAGRAM ⁽¹⁾

FROM CH01 UP TO CHnn

8 ▶ BASE MATERIAL & SURFACE PROTECTION**AAZ** ALUMINIUM ALLOY (AV2024) - ZINC COBALT **AAN** ALUMINIUM ALLOY (AV2024) - NICHEL*(1) Omit in case of connector without cable harnessing***NOTES**

1 Connectors identification does not require empty space (eg: R12PSC01AAZ)

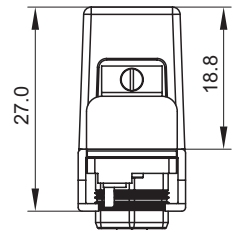
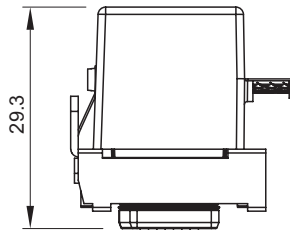
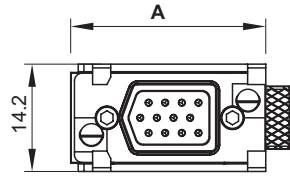
2 Harnessing identification does not require empty space (eg: R12PSC01CH01AAZ)

3 Harnessing is applicable only to connectors type P

4 Straight termination contacts are applicable only to R&Y

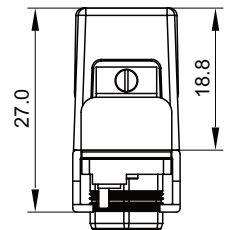
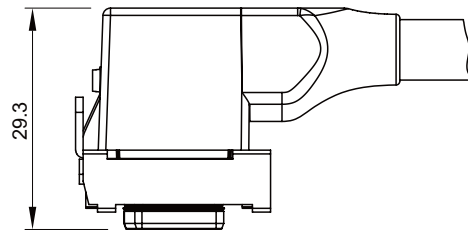
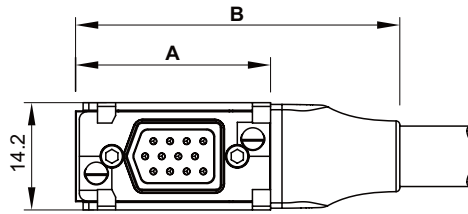
► PLUG

PLUG - SOLDER CUP TERMINATION



| No. of ways | PN | A |
|-------------|-------------|------|
| 12 | R12PSC----- | 25.8 |
| 21 | R21PSC----- | 32.4 |

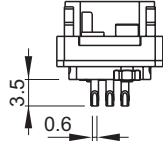
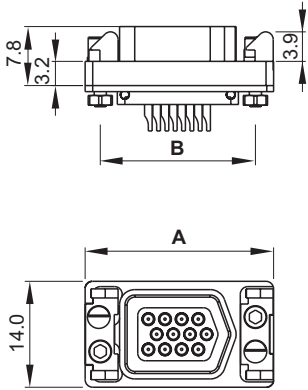
PLUG WITH OVERMOULDING AND CABLING



| No. of ways | PN | A | B |
|-------------|-----------------|------|------|
| 12 | R12PSC--CH----- | 25.8 | 42,9 |
| 21 | R21PSC--CH----- | 32.4 | 49.6 |

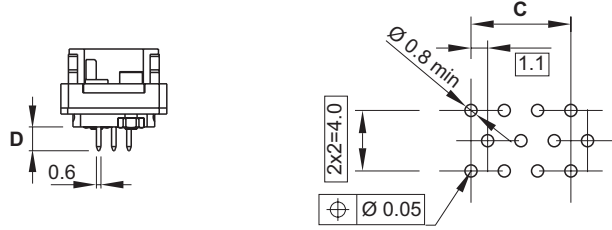
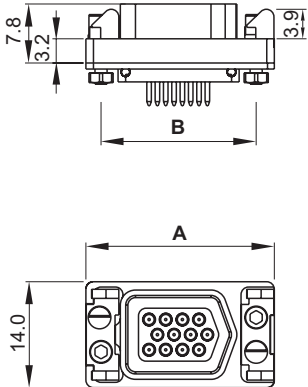
▶ RECEPTACLE

RECEPTACLE - SOLDER CUP TERMINATION



| No. of ways | PN | A | B |
|-------------|------------|------|------|
| 12 | R12RSC---- | 24.9 | 20.5 |
| 21 | R21RSC---- | 31.5 | 27.1 |

RECEPTACLE - STRAIGHT THROUGH TERMINATION

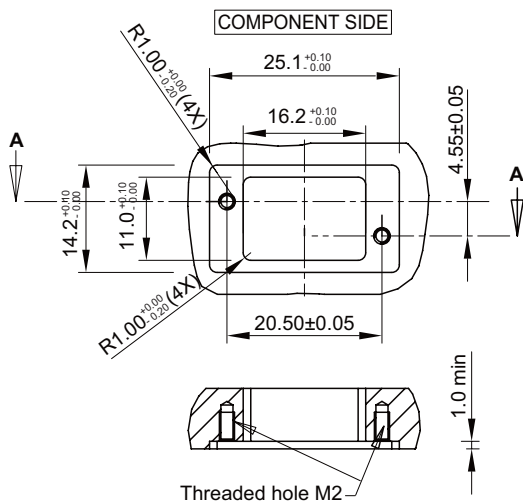


Mounting pattern - Component side

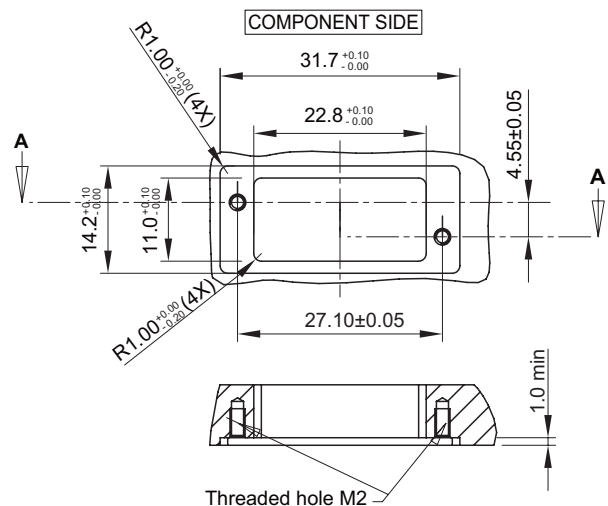
| No. of ways | PN | A | B | C | D |
|-------------|------------|------|------|------|------|
| 12 | R12RDC---- | 24.9 | 20.5 | 6.6 | 3.15 |
| | R12RLC---- | | | | 14 |
| 21 | R21RDC---- | 31.5 | 27.1 | 13.2 | 3.15 |
| | R21RLC---- | | | | 14 |

▶ PANEL CUT-OUT

12 Ways



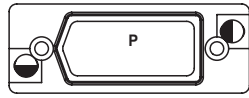
21 Ways



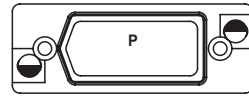
▶ AVAILABLE POLARIZATIONS FOR 12 AND 21 WAYS



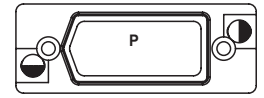
C01



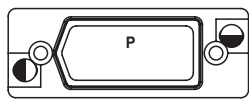
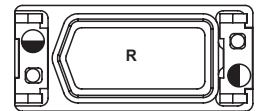
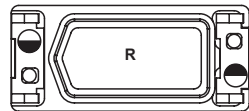
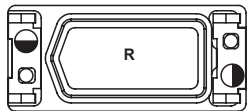
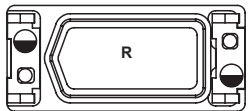
C02



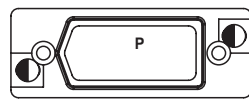
C03



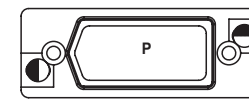
C04



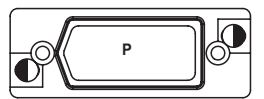
C05



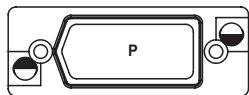
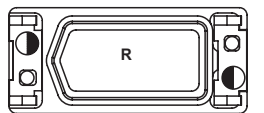
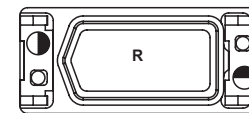
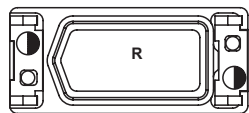
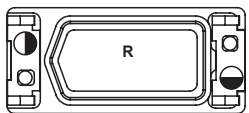
C06



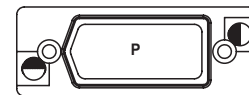
C07



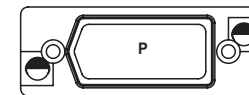
C08



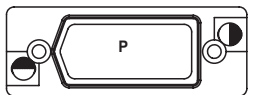
C09



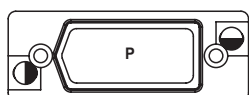
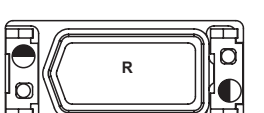
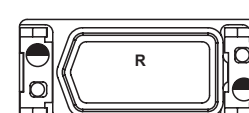
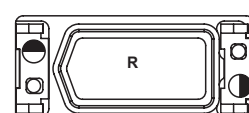
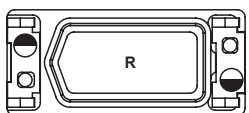
C10



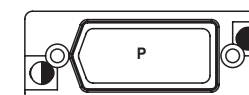
C11



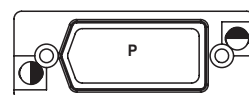
C12



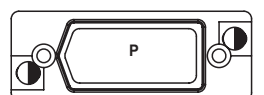
C13



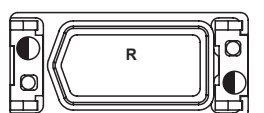
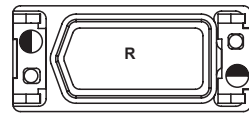
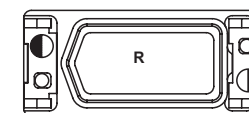
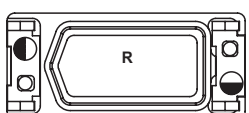
C14



C15

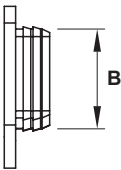
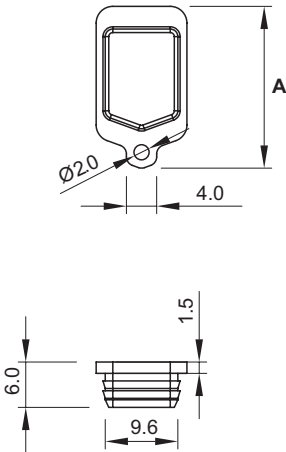


C16



▶ ACCESSORIES

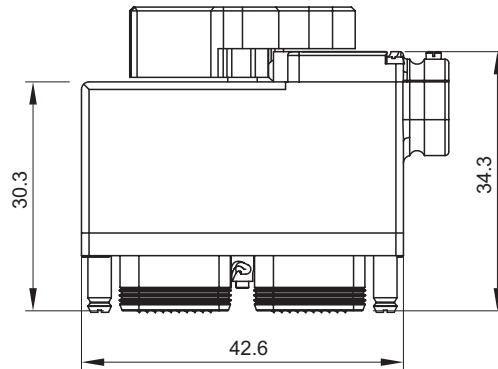
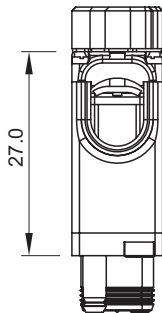
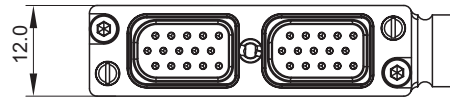
DUST CAP



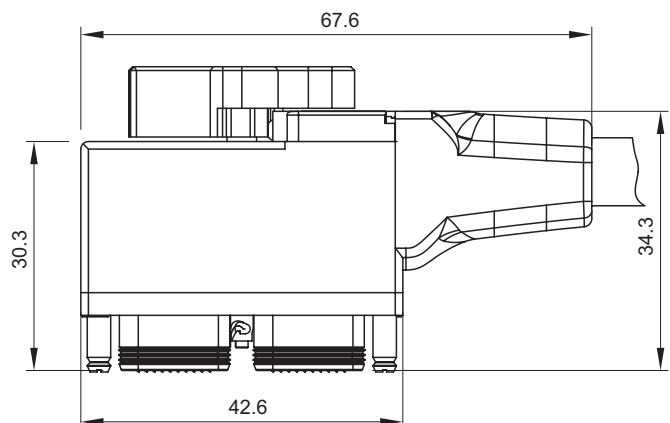
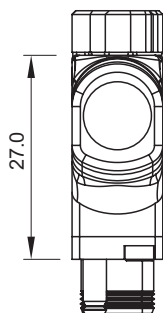
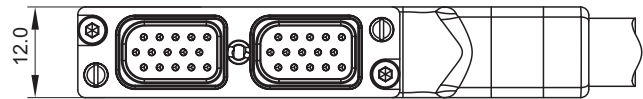
| No. of ways | PN | A | B |
|-------------|-------|------|------|
| 12 | 23841 | 21.4 | 13.2 |
| 21 | 23840 | 28 | 19.8 |

▶ 30 WAYS PLUG

30 WAYS PLUG - SOLDER CUP TERMINATION

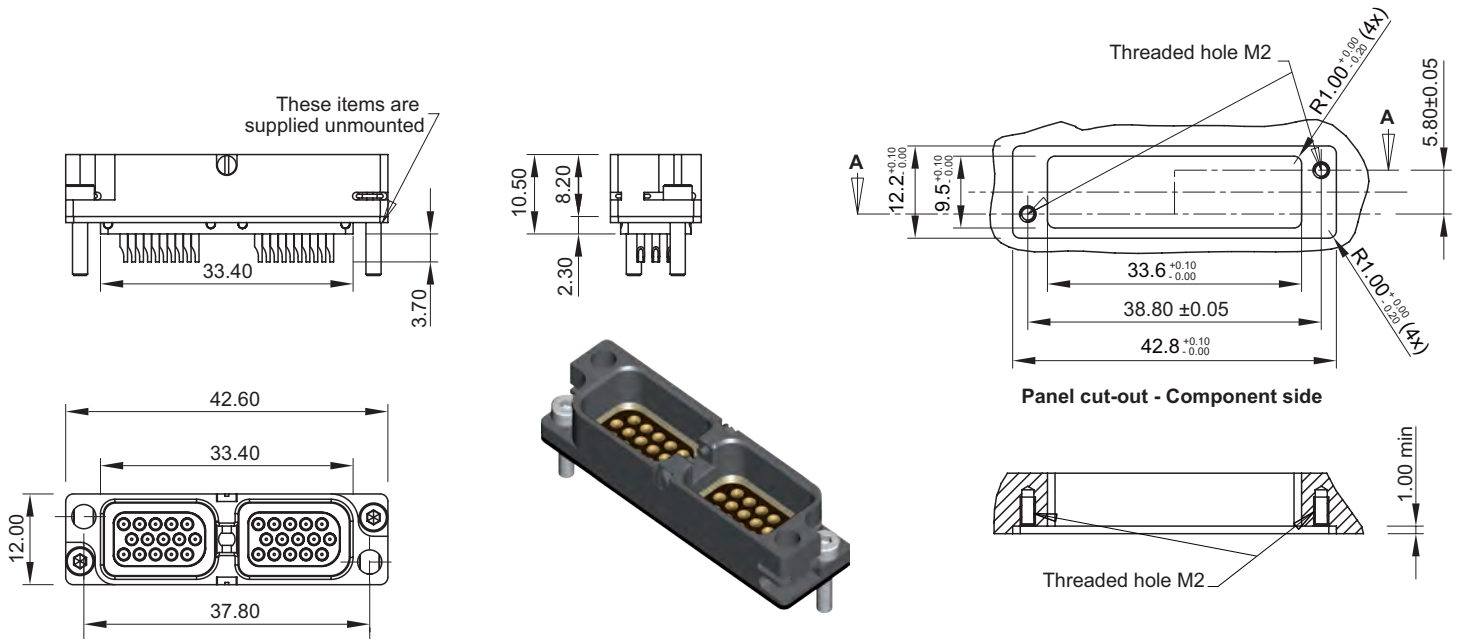


30 WAYS PLUG WITH OVERMOULDING AND CABLING

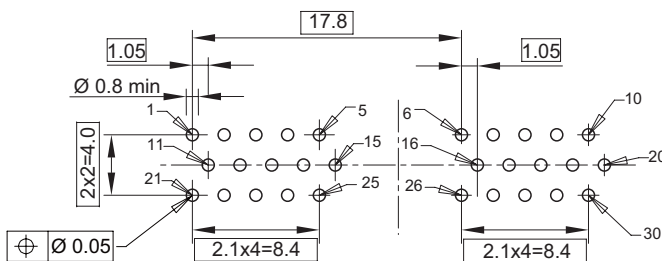
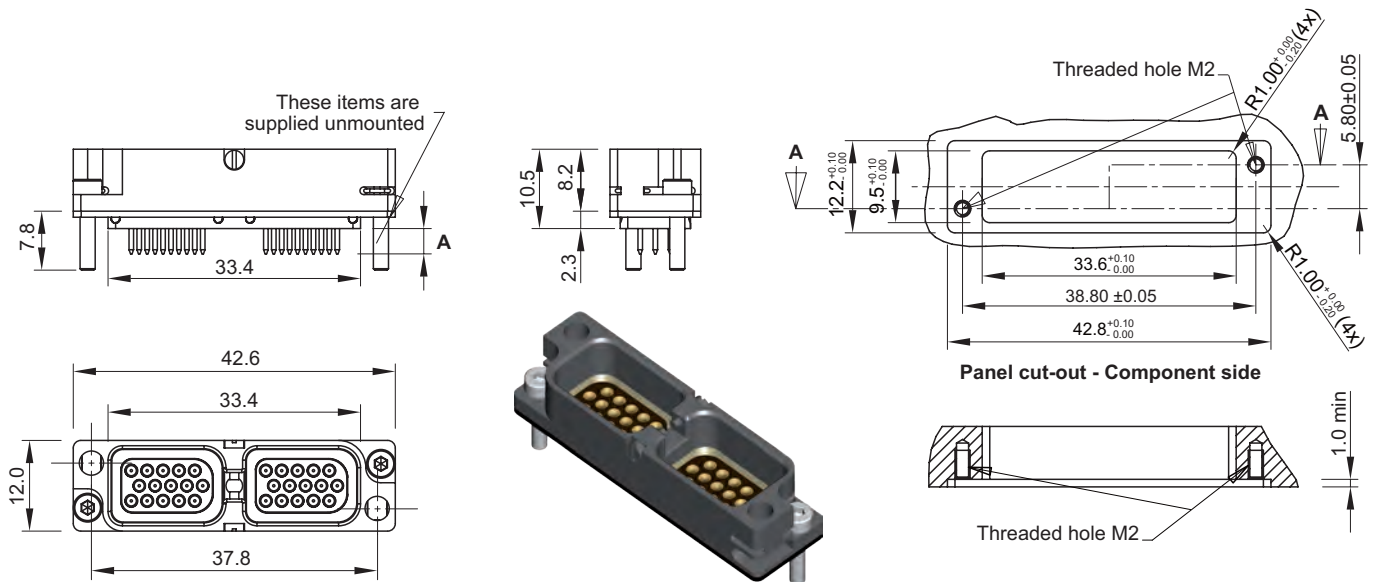


▶ 30 WAYS RECEPTACLE

30 WAYS RECEPTACLE - SOLDER CUP TERMINATION

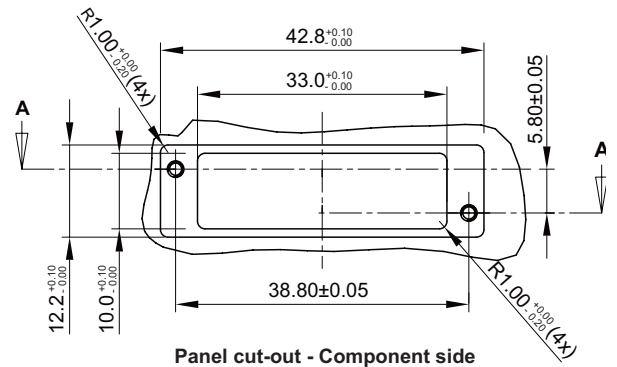
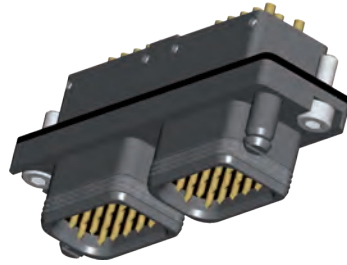
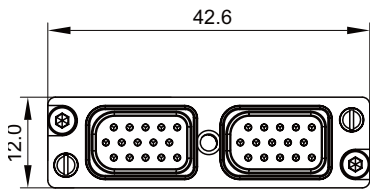


30 WAYS RECEPTACLE - STRAIGHT THROUGH TERMINATION

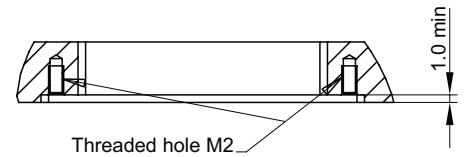
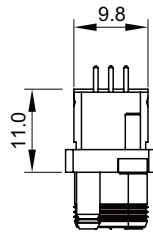
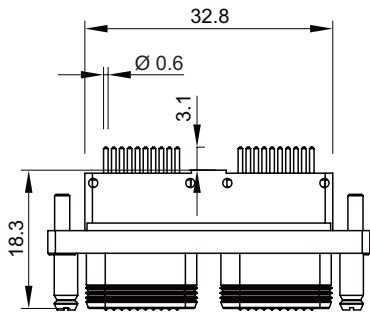


| | A |
|------------|------|
| R30RDC---- | 3.15 |
| R30RLC---- | 14 |

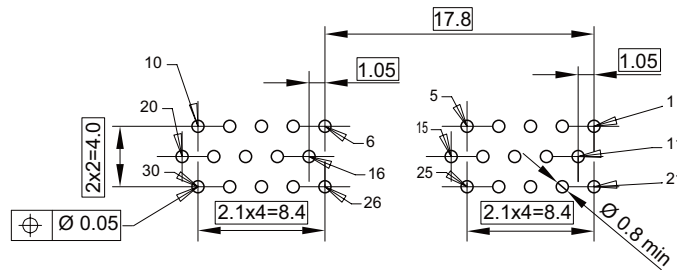
▶ 30 WAYS PLUG - FRONT PANEL MOUNT



Panel cut-out - Component side



Threaded hole M2



Mounting Pattern - Component side

Disclaimer 2014

All of the information included in this catalogue is believed to be accurate at the time of printing. It is recommended, however, that users should independently evaluate the suitability of each product for their intended application and be sure that each product is properly installed, used and maintained to achieve desired results.

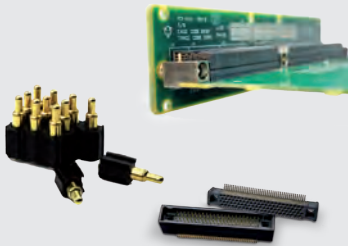
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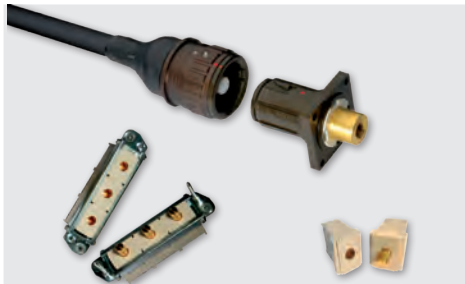
SMITHS CONNECTORS PRODUCT LINES

PCB



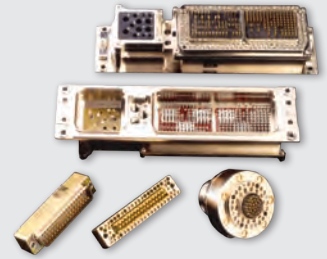
- ▶ Low, medium and high density board-to-board, cable to board and stacking
- ▶ Rugged standard
- ▶ Low profile
- ▶ Signal, power, coaxial & high speed configurations
- ▶ Self configurable board-to-board
- ▶ Spring probe connectors
- ▶ Mixed signal, power and coaxial contact connectors
- ▶ Different termination styles: solder cup, crimp, SMT and SMT flex, press fit, solder dip.

POWER



- ▶ Circular
- ▶ Configurable rectangular
- ▶ Ruggedized
- ▶ Single and Multi-Way Connectors
- ▶ Power contact up to 1,200 Amps
- ▶ Excellent performance in harsh environment conditions
- ▶ Cable assembling

EMI/EMP FILTER



- ▶ EMI/RFI filtering and transient protection
- ▶ RoHS compliant solderless filter connectors available
- ▶ Circular, ARINC, D-Subminiature Micro-D
- ▶ Filtered adapters for "bolt on" EMI /EMP solutions
- ▶ Filter hybrid capability

MODULAR/RECTANGULAR



- ▶ Configurable with modules for signal, power, coax, fiber optics and/or pneumatics
- ▶ Easy configuration in a single frame
- ▶ For rack & panel, and cable applications
- ▶ Guided hardware for blind
- ▶ D-sub connectors
- ▶ Micro-D style
- ▶ Signal connectors for hand held and docking stations

CIRCULAR



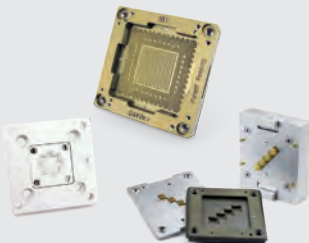
- ▶ Metal and Plastic
- ▶ Industrial M12, M23, M40, M58
- ▶ Crimp and solder terminations
- ▶ Various types of cable clamps
- ▶ Push Pull/ latch mechanism
- ▶ Color coding

HEAVY DUTY



- ▶ Ultra reliable hyperboloid contact
- ▶ Modular solution: signal, power, data contacts, and fiber optics
- ▶ High resistance in harsh environment
- ▶ EMC shielding
- ▶ Easy cable mounting
- ▶ High pressure up to 35K PSI, 250° C
- ▶ High temperature up to 440° C

SPRING PROBES



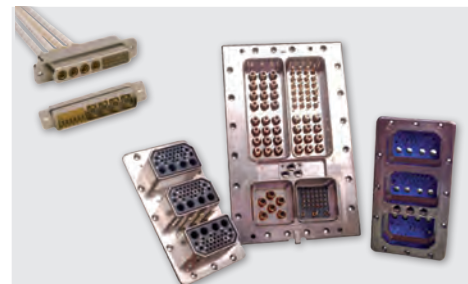
- ▶ Z-axis compliant
- ▶ Blind mate engagement
- ▶ Long cycle life
- ▶ High density
- ▶ Extreme miniaturization
- ▶ Printed circuit board test
- ▶ Bare board test
- ▶ Coaxial contacts

MIL/AERO STANDARD



- ▶ Standard military interface
- ▶ ARINC interface
- ▶ ARINC 801
- ▶ Custom inserts

HIGH SPEED COPPER/FIBER



- ▶ Quadrx and Twinax Connectors
- ▶ Rugged D-Sub Connectors
- ▶ ARINC and MIL-STD Contacts
- ▶ Micro Twinax/Quadrx
- ▶ Butt-Joint and Expanded Beam Contacts
- ▶ ARINC 801 Termini
- ▶ Floating Fiber Termini



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