

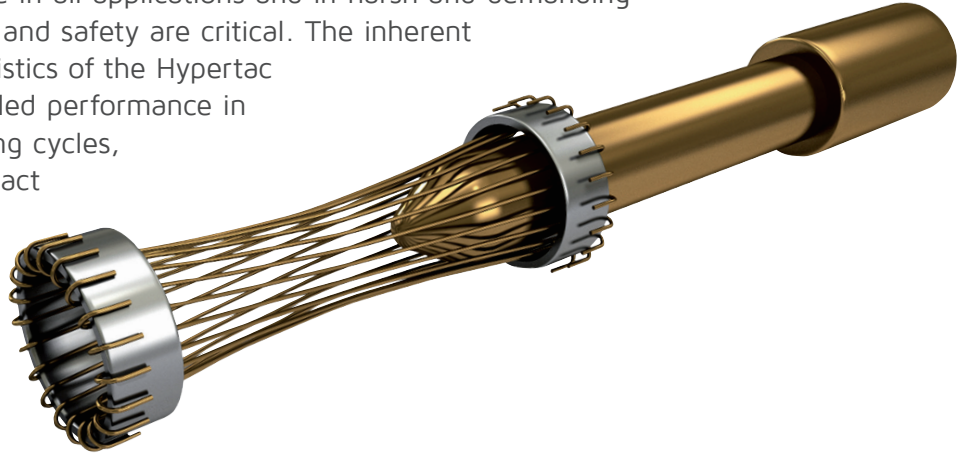
C Series

EMC Metallic Circular Connectors



Hypertac® Hyperboloid Technology

Smiths Interconnect offers an extensive range of superior contact technologies suitable for standard and custom solutions. Hypertac® (HYPERboloid conTACT) is the original superior performing hyperboloid contact technology designed for use in all applications and in harsh and demanding environments where high reliability and safety are critical. The inherent electrical and mechanical characteristics of the Hypertac hyperboloid contact ensures unrivalled performance in terms of reliability, number of mating cycles, low contact force and minimal contact resistance. The shape of the contact sleeve is formed by hyperbolically arranged contact wires, which align themselves elastically as contact lines around the pin, providing a number of linear contact paths.



Features

Benefits

Low insertion/extraction forces

The angle of the socket wires allows tight control of the pin insertion and extraction forces. The spring wires are smoothly deflected to make line contact with the pin.

High density interconnect systems

Significant reductions in size and weight of sub-system designs. No additional hardware is required to overcome mating and un-mating forces.

Long contact life

The smooth and light wiping action minimizes wear on the contact surfaces. Contacts perform up to 100,000 insertion/extraction cycles with minimal degradation in performance.

Low cost of ownership

The Hypertac contact technology will surpass most product requirements, thus eliminating the burden and cost of having to replace the connector or the entire subsystem.

Lower contact resistance

The design provides a far greater contact area and the wiping action of the wires insures a clean and polished contact surface. Our contact technology has about half the resistance of conventional contact designs.

Low power consumption

The lower contact resistance of our technology results in a lower voltage drop across the connector reducing the power consumption and heat generation within the system.

Higher current ratings

The design parameters of the contact (e.g., the number, diameter and angle of the wires) may be modified for any requirement. The number of wires can be increased so the contact area is distributed over a larger surface. Thus, the high current carried by each wire because of its intimate line contact, can be multiplied many times.

Maximum contact performance

The lower contact resistance of the Hypertac contact reduces heat build-up; therefore Hypertac contacts are able to handle far greater current in smaller contact assemblies without the detrimental effects of high temperature.

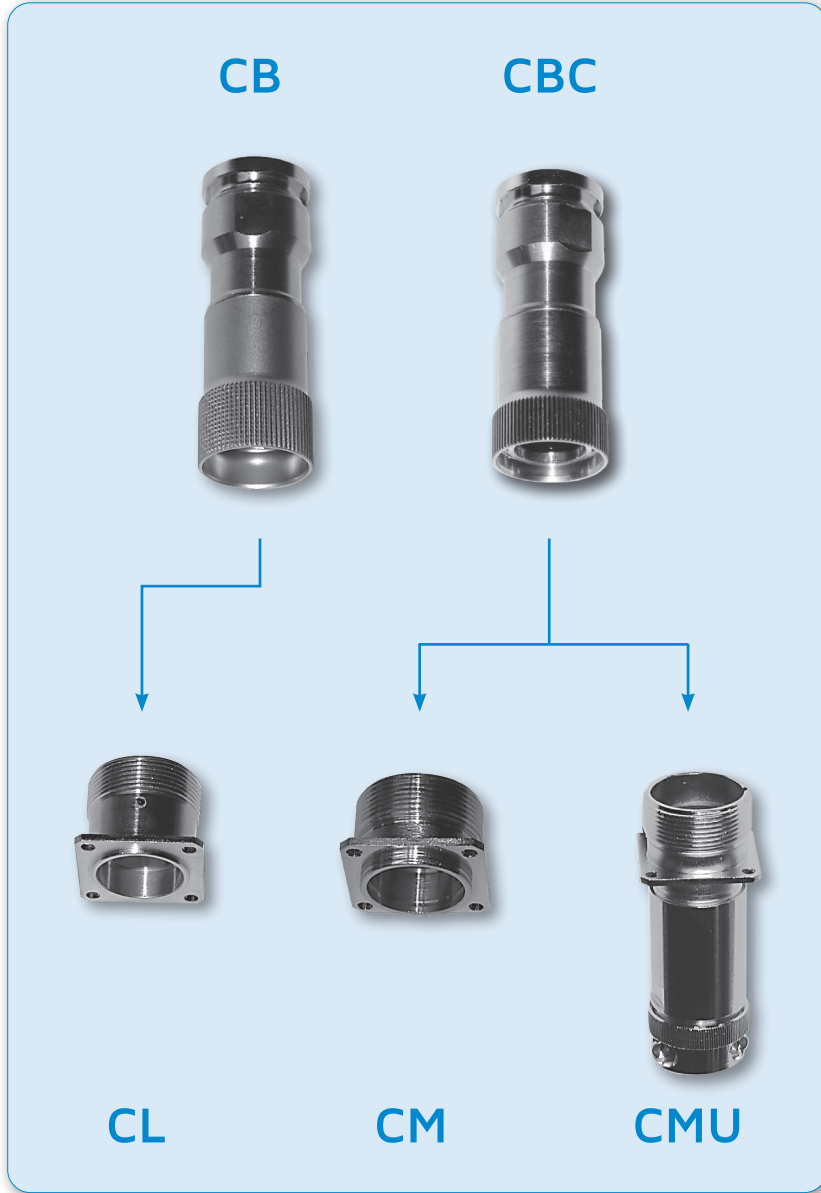
Immunity to shock & vibration

The low mass and resultant low inertia of the wires enable them to follow the most abrupt or extreme excursions of the pin without loss of contact. The contact area extends 360° around the pin and is uniform over its entire length. The 3 dimensional symmetry of the Hypertac contact design guarantees electrical continuity in all circumstances.

Reliability under harsh environments

Harsh environmental conditions require connectors that will sustain their electrical integrity even under the most demanding conditions such as shock and vibration. The Hypertac contact provides unmatched stability in demanding environments when failure is not an option.

Receptacle and Plug Compatibility



Product description



The Smiths Interconnect C Series is an IP67 circular connector with an EMC metal housing. The C Series connectors feature with a compact and small size equipped with gold plating contacts. They guarantee an excellent resistance to the high levels of shocks and vibrations on rail and industrial applications.

The connectors use the ultra-high reliability Hypertac® hyperboloid contact system renowned for delivering unflinching performance for the most demanding railway and mass transit applications.

C series is a circular metal connector series, with an IP67 sealing level and shielding capability for use in harsh environmental conditions such as high vibration levels, damp or shock. It provides long life expectancy and reduces the need of connector maintenance.

The C series connectors offer a monobloc housing to avoid any wrong assembling and sealing problems. Five coding points ensure a safe mating and prevent contacts to be broken when plugging. Cable clamps with a large cabling chamber allows a variable cable diameter range of 6-13.5 mm.

The C series proposes a shielded connection for your EMI and RFI constraints. Available with a large choice of shells, we also offer standard cable assemblies to provide a complete interconnect solution to simplify your supply chain.

EMC Shielded Metallic Circular Connectors

Features & Benefits

Superior Performance

- Hypertac® contact technology ensures immunity to shock and vibration and minimal contact resistance
- Outstanding protection against electromagnetic interference; 70db @ 10MHz
- Corrosion resistant; 500h salt spray (5%NaCl – NF C 20-711)
- Suitable to EN Railway cables

Compact, Flexible Design

- Metal shell
- Threaded coupling sleeve with self-locking mechanism
- Variable cable clamp 6-13.5mm
- Square shape receptacle for panel mount
- Contacts with solder and crimp termination available
- Compact and small size

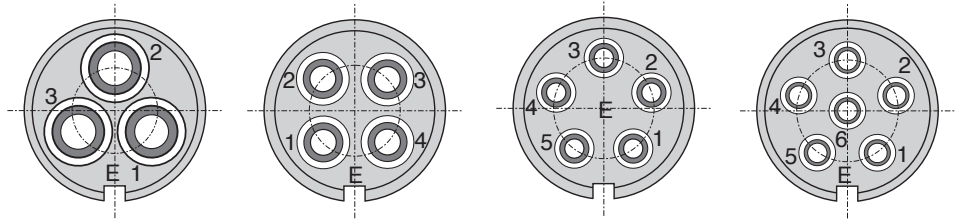
How To Order - CB & CM & CL series

| | C | B | C | 0 | 3 | 2 | 1 | 2 | 2 | 0 | -- | K |
|--------------------------------|--|---|-----|---|-----|-----|---|-------------------|------|------|------|---|
| | 1 | 2 | 3 | 4 | | | 5 | | 6 | | 7 | |
| 1 Series | C Series | | | | | | | | | | | |
| 2 Model | B Plug | M Short receptacle and cable mount receptacle | | | | | | L Long receptacle | | | | |
| 3 Type | - Standard ⁽²⁾ | C ⁽¹⁾ Plug short coupling sleeve (mate with CM receptacle) | | | | | | | | | | |
| | E Five polarized keys for M & L receptacle | U Cable mount receptacle for M model | | | | | | | | | | |
| 4 Layout | Single polarized key | | | | | | | | | | | |
| | 0 3 2 3 contacts Ø 2 mm* | | | 0 4 2 3 contacts Ø 2 mm* | | | | | | | | |
| | 5 1 5 5 contacts Ø 1.50 mm* | | | 6 1 5 6 contacts Ø 1.50 mm** | | | | | | | | |
| | 5 polarized keys | | | | | | | | | | | |
| | 8 1 2 8 contacts Ø 1.20 mm* | | | 1 0 1 10 contacts Ø 1.02 mm* | | | | | | | | |
| | 1 2 1 12 contacts Ø 1.02 mm* | | | | | | | | | | | |
| 5 Part - Polarity | 0 3 Plug without contact | | | 0 4 Receptacle without contact | | | | | | | | |
| | 1 0 Female plug** | | | 1 1 Male plug** - except CBC ⁽¹⁾ | | | | | | | | |
| | 1 2 Female plug* | | | 1 3 Male plug* - except CBC ⁽¹⁾ | | | | | | | | |
| | 2 0 Female Receptacle** except M model | | | | | | 2 1 Male Receptacle** | | | | | |
| | 2 2 Female Receptacle* except M model | | | | | | 2 3 Male Receptacle* | | | | | |
| 6 Termination styles | 0 0 Without contact | | | 2 0 Crimp termination | | | | | | | | |
| | 2 1 Crimp termination only for Ø 2mm contact, 0.34 to 1.34 mm ² | | | | | | | | | | | |
| 7 Connector termination | - - Standard nut for plug CB & CBC or if with coding for the receptacle CL & CM) | | | | | | | | | | | |
| | - 1 Rear nut with female thread M20 x1,5 ⁽³⁾ | | | | | | - 2 Rear nut with female thread M16 x1,5 ⁽³⁾ | | | | | |
| | - 3 Rear nut with female thread M12 x1,5 ⁽³⁾ | | | | | | Without coding 0° for the receptacle CL/ | | | | | |
| | CM/CLE/CME | | | | | | | | | | | |
| | 1 1 CMU with cable-clamp Ø 6 | | | 1 2 CMU with cable-clamp Ø 7 | | | | | | | | |
| | 1 3 CMU with cable-clamp Ø 8 | | | 1 4 CMU with cable-clamp Ø 10 | | | | | | | | |
| | 1 5 CMU with cable-clamp Ø 12 | | | 1 6 CMU with cable-clamp Ø 13,5 | | | | | | | | |
| 8 Coding Tabulation | Single polarized key | | | | | | | | | | | |
| | a | 0° | 30° | 45° | 60° | 75° | 90° | 105° | 120° | 135° | 150° | |
| | Code | | A | F | B | G | C | H | D | J | E | |
| | Five polarized key | | | | | | | | | | | |
| | Code | K (plug only) | | | | | | | | | | |

General Specifications

Single polarized key

Layout



032

042

515

615

| Technical | | | | |
|--|---|---|---|---|
| Contact numbers & Ø | 3 Ø 2 mm | 4 Ø 2 mm | 5 Ø 1.50 mm | 6 Ø 1.50 mm |
| Part number male insert Cable size | CMY0322320 1.34 to 2 mm ² | CMY0422320 0.34 to 1.34 mm ² | CLY5152320 0.34 to 1.91 mm ² | CMY6152120 0.22 to 1.91 mm ² |
| Part number female insert Cable size | CMY0321220 1.34 to 2 mm ² | CMY0421220 0.34 to 1.34 mm ² | CLY5151220 0.34 to 1.91 mm ² | CMY6151020 0.22 to 1.91 mm ² |
| Part number male insert Cable size | CMY0322321 0.34 to 1.34 mm ² | | | |
| Part number female insert Cable size | CMY0321221 0.34 to 1.34 mm ² | | | |
| Insulation material | Thermoplastic | Thermoplastic | Thermoset | Thermoplastic |
| Contact material | Brass | Brass | Brass | Brass |
| Contact plating | Au/Ni | Au/Ni | Au/Ni | Au/Ni |
| Part number male crimp contacts | 0200621-20ROG 1.34 to 2 mm ² 0200631-21ROG 0.34 to 1.34 mm ² | 0201071-20ROG 0.34 to 1.34 mm ² | 0150851-20ROG 0.34 to 1.91 mm ² | 0150871-20-OG 0.22 to 1.91 mm ² |
| Part number female crimp contacts | 0200342-20RN1 1.34 to 2 mm ² 0200352-21RN1 0.34 to 1.34 mm ² | 0200862-20RN1 0.34 to 1.34 mm ² | 0150842-20RGO 0.34 to 1.91 mm ² | 0150682-20-G1 0.22 to 1.91 mm ² |
| Vibration withstanding | 25 to 250 Hz - 5 g following NF F 61-030 | | | |
| Connector life cycles | > 500 mating cycles | | | |
| Contact retention forces | > 90 N with clip | > 90 N with clip | > 70 N with clip | > 70 N with cloc |

Electrical

| | | | | |
|--|------------------------|-----------------|-----------------|-----------------|
| Current rating (all contacts wired) | 15 A | 15 A | 8 A | 8 A |
| Testing voltage | 2 750 / 2 000 V | 2 750 / 2 000 V | 2 800 / 2 500 V | 2 200 / 2 000 V |
| Contact resistance | < 2 mΩ | < 2 mΩ | < 3 mΩ | < 3 mΩ |
| Insulation resistance | ≥ 5.10 ³ MΩ | | | |
| EMC (CB connector) | > 70 db to 100 Mhz | | | |

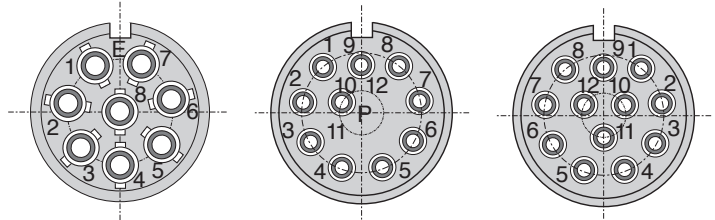
Environmental

| | |
|-----------------------------|--|
| Category | CEI 68-1 (NF C 20-700) -55°C to +125°C/56 days |
| Protection level | IP 67 (NF EN 60529) |
| Corrosion resistance | 500 h. salt spray 5% Na Cl (NF C 20-711) |

General Specifications

Five polarized key

Layout



812

101

121

| Technical | | | |
|---|---|---|---|
| Contact numbers & Ø | 8 Ø 1.20 mm | 10 Ø 1.02 mm | 12 Ø 1.02 mm |
| Part number male insert Cable size | CMY8122320 0.22 to 1.91 mm ² | CMY1012320 1.34 to 2 mm ² | CMY1212320 0.22 to 0.93 mm ² |
| Part number female insert Cable size | CMY8121220 0.22 to 1.91 mm ² | CMY1011220 1.34 to 2 mm ² | CMY1211220 0.22 to 0.93 mm ² |
| Insulation material | Thermoset | Thermoset | Thermoset |
| Contact material | Brass | Brass | Brass |
| Contact plating | Au/Ni | Au/Ni | Au/Ni |
| Part number male crimp contacts | 0120151-20ROG 0.22 to 1.91 mm ² | 0100721-20ROG 0.22 to 0.93 mm ² | 0100721-20ROG 0.22 to 0.93 mm ² |
| Part number female crimp contacts | 0120182-20RG1 0.22 to 1.91 mm ² | 0100612-20RGO 0.22 to 0.93 mm ² | 0100612-20RGO 0.22 to 0.93 mm ² |
| Vibration withstanding | 25 to 250 Hz - 5 g following NF F 61-030 | | |
| Connector life cycles | > 500 mating cycles | | |
| Contact retention forces | > 70 N with clip | | |

Electrical

| | | | |
|-------------------------------------|------------------------|-----------------|-----------------|
| Current rating (all contacts wired) | 5 A | | |
| Testing voltage | 2 400 / 2 200 V | 2 800 / 2 000 V | 1 000 / 1 000 V |
| Contact resistance | < 5 mΩ | < 6 mΩ | < 6 mΩ |
| Insulation resistance | ≥ 5.10 ³ MΩ | | |
| EMC (CB connector) | > 70 db to 100 Mhz | | |

Environmental

| | | | |
|----------------------|--|--|--|
| Category | CEI 68-1 (NF C 20-700) -55°C to +125°C/56 days | | |
| Protection level | IP 67 (NF EN 60529) | | |
| Corrosion resistance | 500 h. salt spray 5% Na Cl (NF C 20-711) | | |

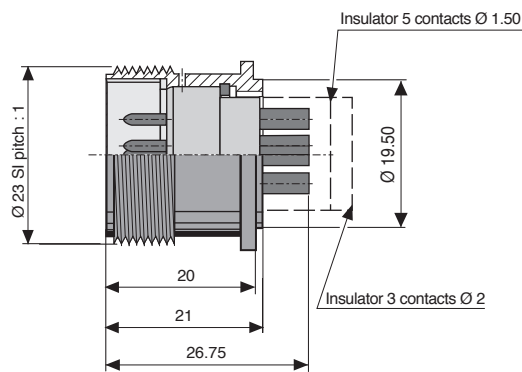
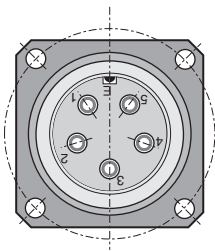
Single Polarized Connectors

Layout 032, 042, 515, 615

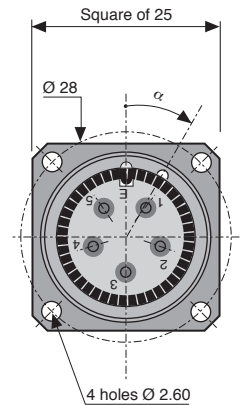
Receptacle dimensions

CL-

Wiring side

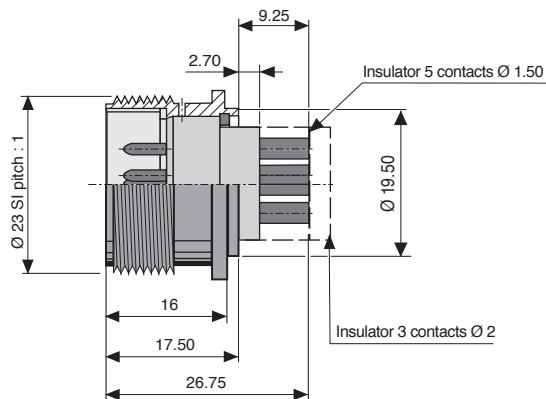
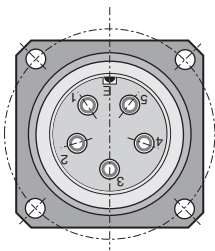


Mating side

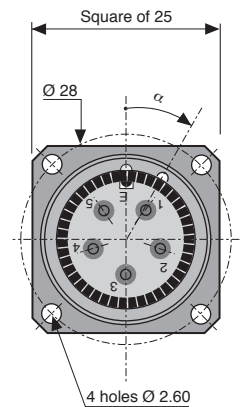


CM-

Wiring side



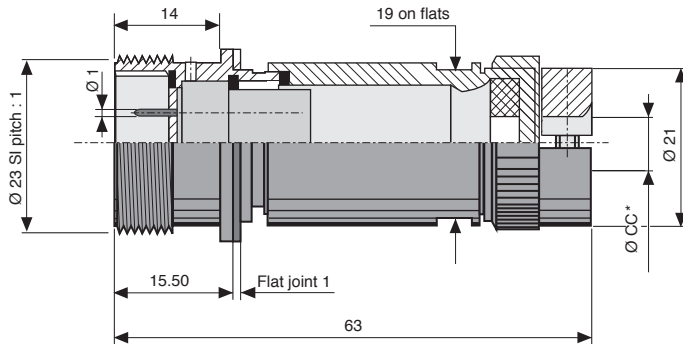
Mating side



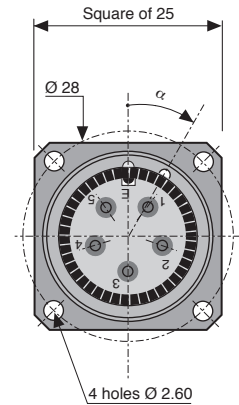
Single Polarized Connectors

Layout 032, 042, 515, 615

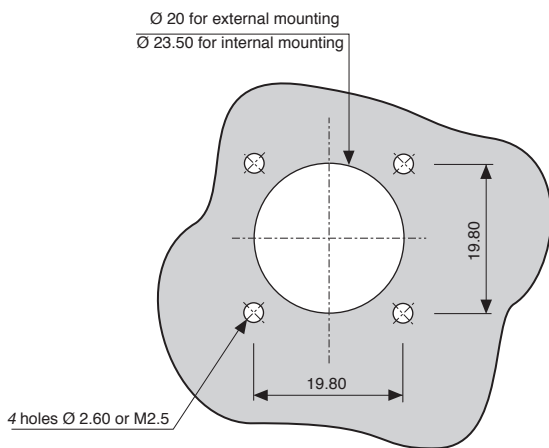
CMU cable mount receptacle dimensions



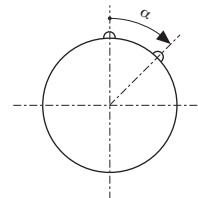
Mating side



Panel cut out



Receptacle coding tabulation



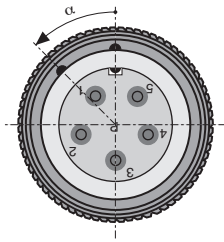
| α | Code |
|----------|------|
| 0° | |
| 30° | A |
| 45° | F |
| 60° | B |
| 75° | G |
| 90° | C |
| 105° | H |
| 120° | D |
| 135° | J |
| 150° | E |

Single Polarized Connectors

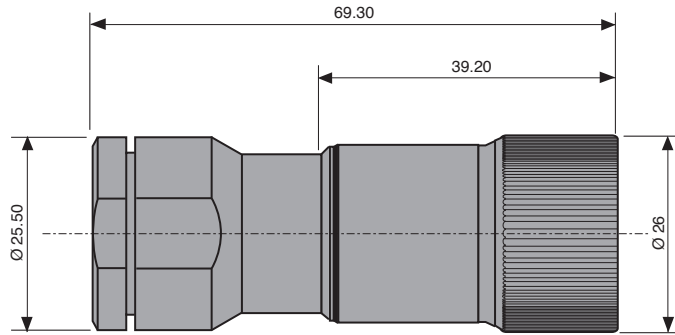
Layout 032, 042, 515, 615

Plug dimensions CB-

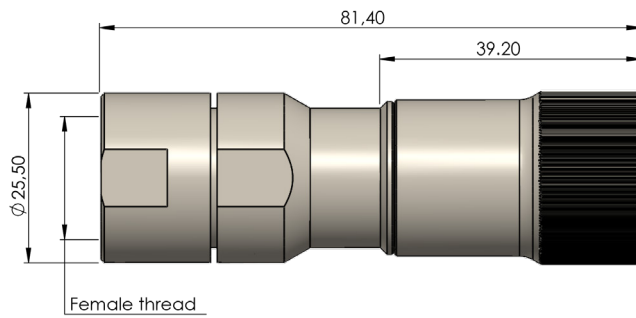
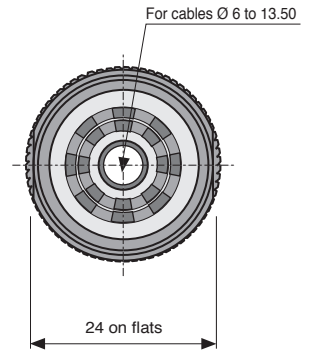
Mating side



Standard nut

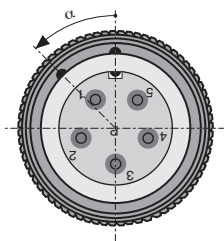


Wiring side

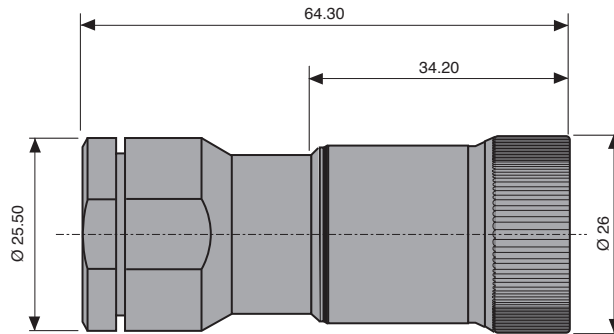


CBC

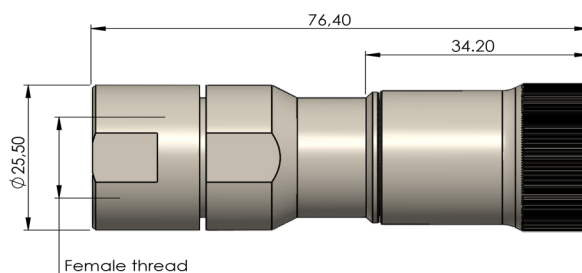
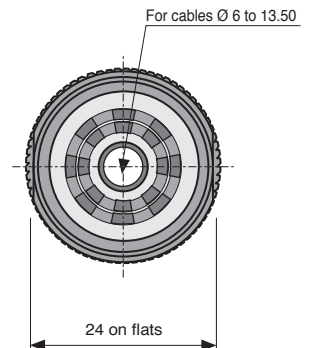
Mating side



Standard nut



Wiring side

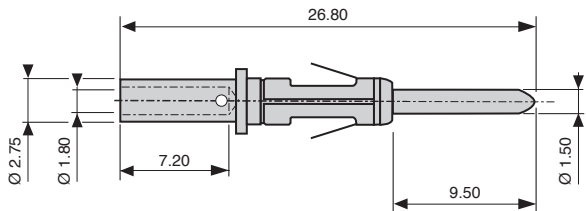


Dimensions are in mm

Contacts

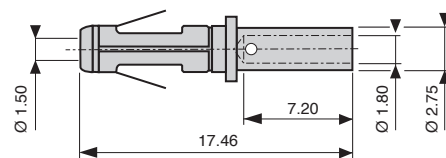
Males

Contacts \varnothing 1.50 for arrangement 515 [0.34 to 1.91 mm²]



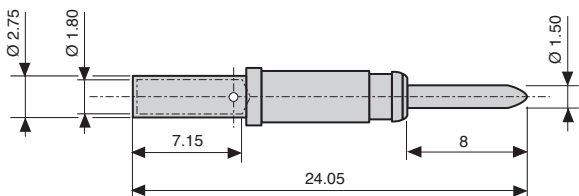
Ref: 0150851-20ROG

Females

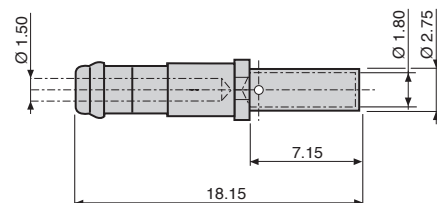


Ref: 0150842-20RGO

Contacts \varnothing 1.50 for arrangement 615 [0.22 to 1.91 mm²]

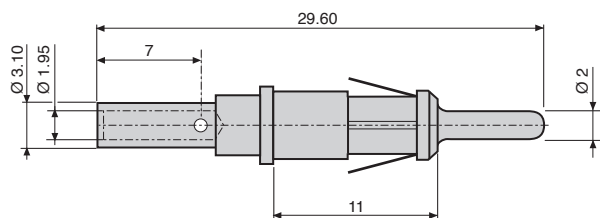


Ref: 0150871-20-OG

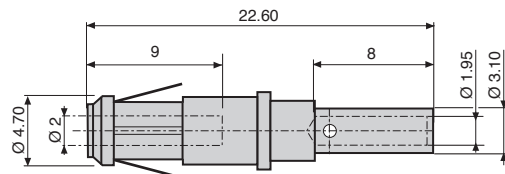


Ref: 0150682-20-G1

Contacts \varnothing 2 for arrangement 032 [1.34 to 2 mm²]

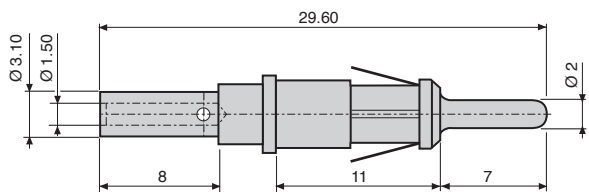


Ref: 0200621-20ROG

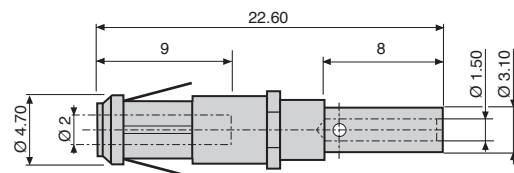


Ref: 0200342-20RN1

Contacts \varnothing 2 for arrangement 032 [0.34 to 1.34 mm²]

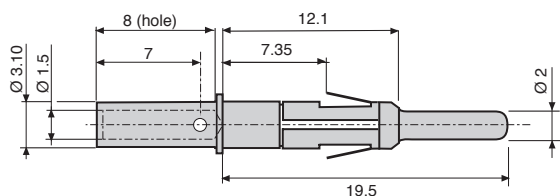


Ref: 0200631-21ROG

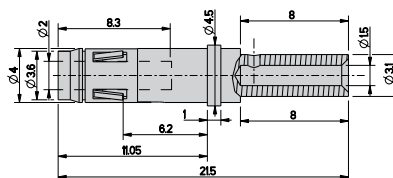


Ref: 0200352-21RN1

Contacts \varnothing 2 for arrangement 042 [0.34 to 1.34 mm²]



Ref: 0201071-20ROG



Ref: 0200862-20RN1

Dimensions are in mm

Layouts - Wiring side viewed

Receptacle

Plug

3 contacts Ø 2.0

Ref.

0 3 2

Contact termination

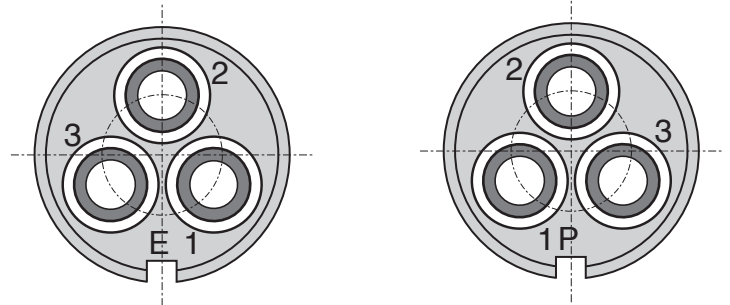
wire size: 1.34 - 2.00 mm²

wire size: 0.34 - 1.34 mm²

Ref.

2 0

2 1



4 contacts Ø 2.0

Ref.

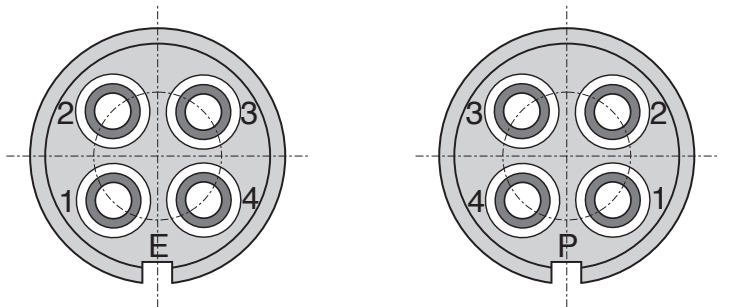
0 4 2

Contact termination

wire size: 0.34 - 1.34 mm²

Ref.

2 0



5 contacts Ø 1.5

Ref.

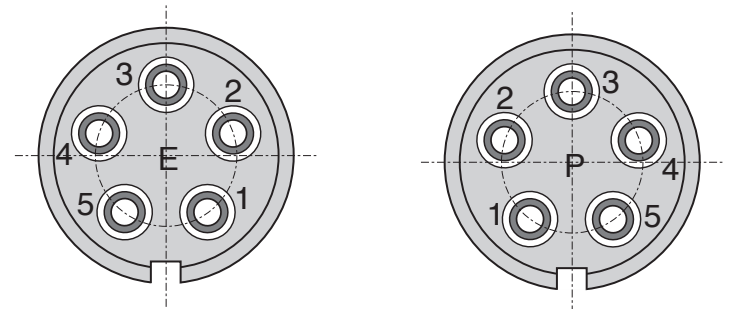
5 1 5

Contact termination

wire size: 0.34 - 1.91 mm²

Ref.

2 0



6 contacts Ø 1.5

Ref.

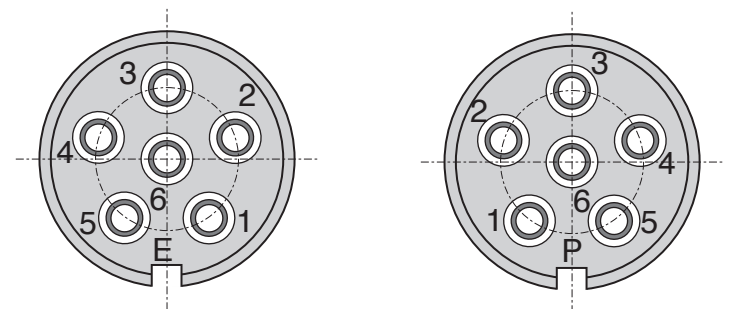
6 1 5

Contact termination

wire size: 0.22 - 1.91 mm²

Ref.

2 0



CONSULT US ABOUT ARRANGEMENTS WITH SOLDER CUP CONTACTS

Five Polarized Keys Connectors

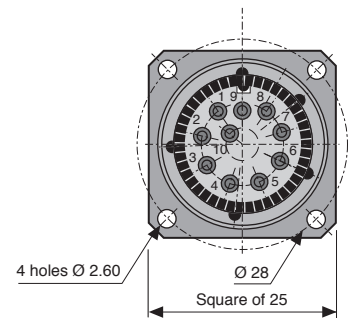
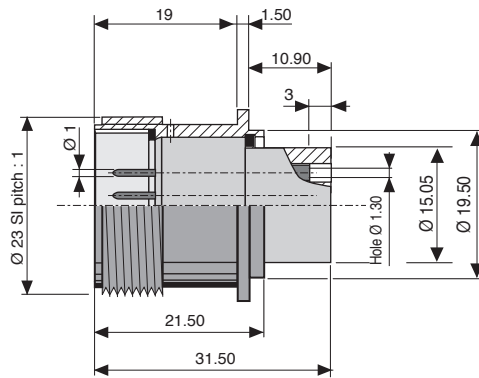
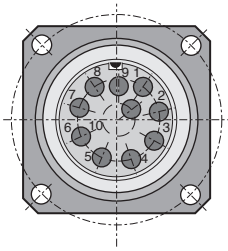
Layout 101, 121, 812

Receptacle dimensions

CLE

Wiring side

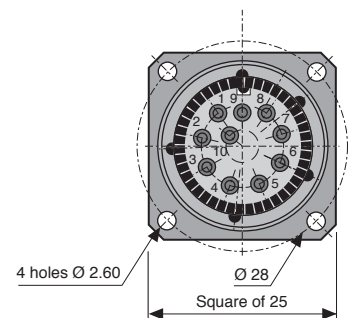
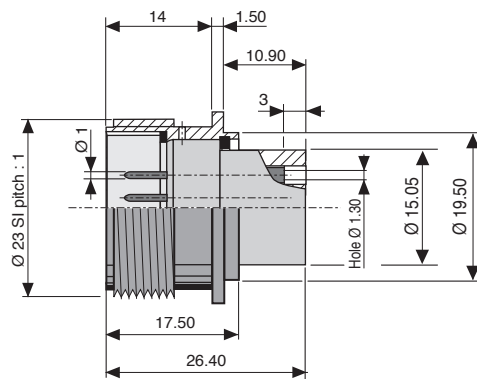
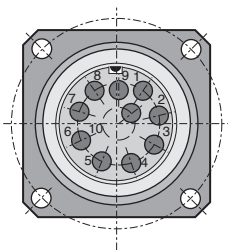
Mating side



CME

Wiring side

Mating side



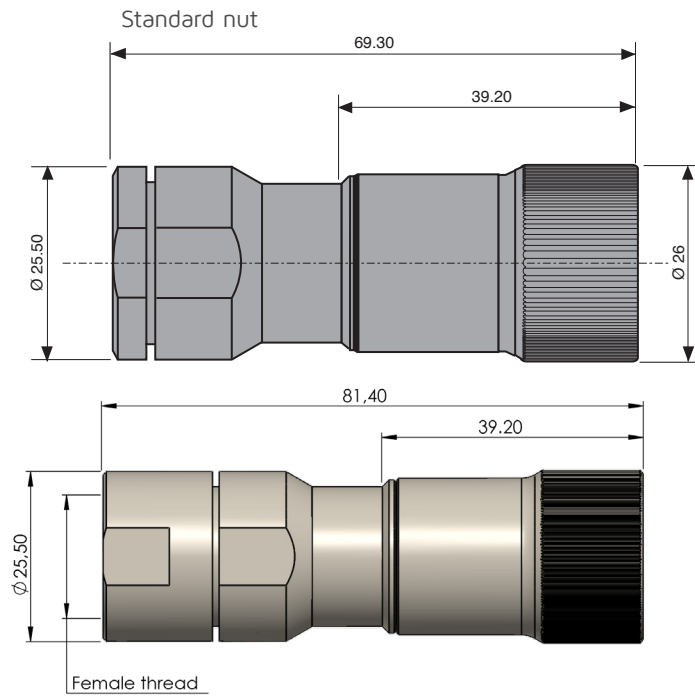
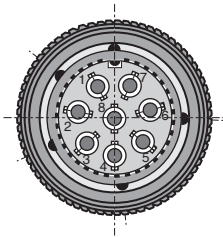
Five Polarized Keys Connectors

Layout 101, 121, 812

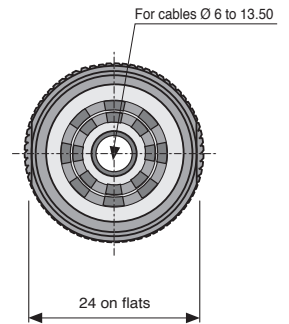
Plug dimensions

CB- - - - -K

Mating side

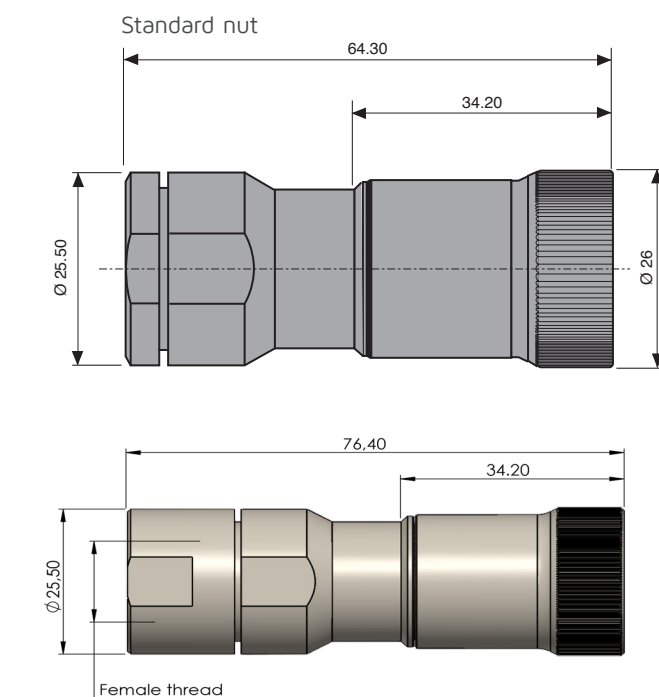
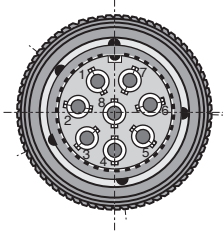


Wiring side

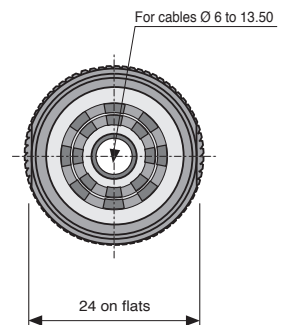


CBC- - - - -K

Mating side



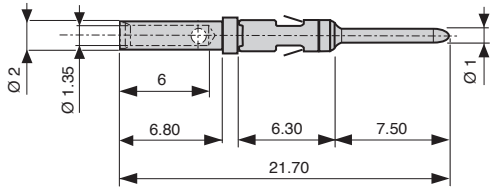
Wiring side



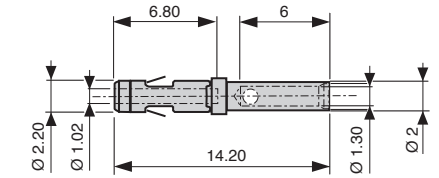
Contacts

Males

Contacts $\varnothing 1$ for arrangements 101 & 121 [0.22 to 0.93 mm²]

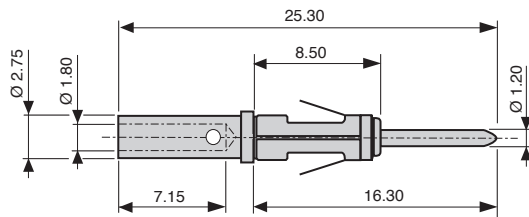


Ref: 0100721-20ROG

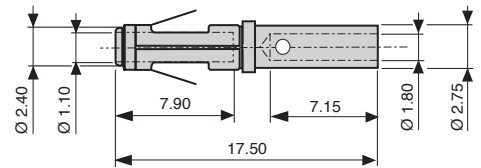


Ref: 0100612-20ROG

Contacts $\varnothing 1.20$ for arrangement 812 [0.22 to 1.91 mm²]



Ref: 0120151-20ROG



Ref: 0120182-20RG1

Arrangements - Wiring side viewed

Receptacle

Plug

8 contacts Ø 1.2

Ref.

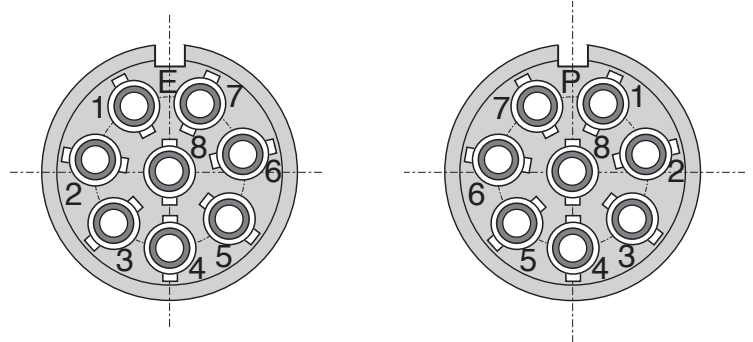
8 1 2

Contact termination

wire size: 0.22 - 1.91 mm²

Ref.

2 0



10 contacts Ø 1.0

Ref.

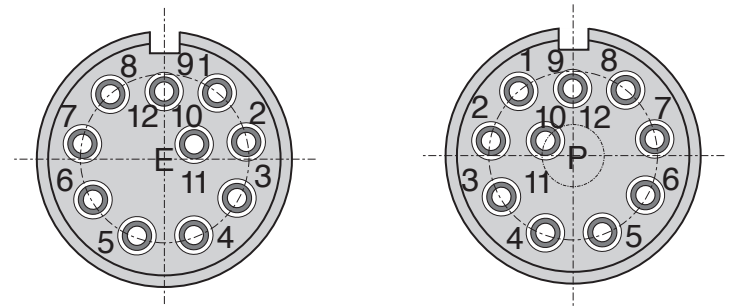
1 0 1

Contact termination

wire size: 0.22 - 0.93 mm²

Ref.

2 0



12 contacts Ø 1.02

Ref.

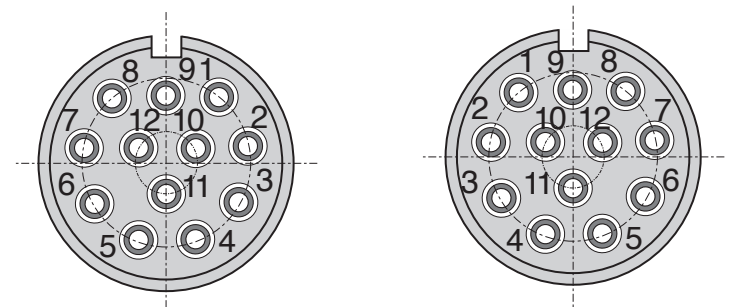
1 2 1

Contact termination

wire size: 0.22 - 0.93 mm²

Ref.

2 0



CONSULT US ABOUT ARRANGEMENTS WITH SOLDER CUP CONTACTS

Tooling

| CONTACTS | CRIMPING | | | | | | INSERTION | EXTRACTION |
|----------------------------------|-----------------------|------|---------------------------|------------|---------------------------------|-------------------|----------------------|----------------------|
| Contact part number | Crimp tool | AWG | Wire cross section | Positioner | Turret | Selector position | Tool part number | |
| 0150 682-20-G1 0150 761-20-OG | ASTRO TOOL TGV 101 | 24 | 0.22 | Without | ASTRO TOOL | 2 | S_051 or S_059 | S_051 or S_072 |
| | | 22 | 0.34 | | | 3 | | |
| | | 20 | 0.60 | | | 4 | | |
| | | 18 | 0.93 | | | 5 | | |
| | | 16 | 1.34 | | | 6 | | |
| | DANIELS FT8 | 24 | 0.22 | Without | DANIELS | 2 | | |
| | | 22 | 0.34 | | | 3 | | |
| | | 20 | 0.60 | | | 4 | | |
| | | 18 | 0.93 | | | 5 | | |
| ASTRO TOOL MS 3191/1 | 22 | 0.34 | SS.0150000002 HYPERTAC | | Without | 6 | | |
| | 20 | 0.60 | | | | 7 | | |
| | 18 | 0.93 | | | | | | |
| | 16 | 1.34 | | | | | | |
| | 14 | 1.91 | | | | | | |
| 0150 851-20ROG 0150 842-22RGO | ASTRO TOOL TGV 101 | 22 | 0.34 | Without | ASTRO TOOL TGV 201* | 3 | SD-0150000005 | |
| | | 20 | 0.60 | | | 4 | | |
| | | 18 | 0.93 | | | 5 | | |
| | | 16 | 1.34 | | | 6 | | |
| | | 14 | 1.91 | | | 7 | | |
| | DANIELS FT8 | 22 | 0.34 | Without | DANIELS SH 462* | 6 | | |
| | | 20 | 0.60 | | | 6 | | |
| | | 18 | 0.93 | | | 7 | | |
| 0200 621-20ROG 0200 342-20RN1 | ASTRO TOOL TGV 101 | 16 | 1.34 | Without | ASTRO TOOL TGV 202 yellow | 6 | SD-0200000001 | |
| | | 15 | 1.50 | | | 6 | | |
| | | 14 | 1.91 | | | 7 | | |
| | | 14 | 2.00 | | | 7 | | |
| | DANIELS FT8 | 16 | 1.34 | Without | DANIELS SH 463 yellow | 6 | | |
| 15 | | 1.50 | 6 | | | | | |
| 15 | | 1.91 | 7 | | | | | |
| 14 | | 2.00 | 7 | | | | | |
| 0200 631-20ROG 0200 352-20RN1 | ASTRO TOOL TGV 101 | 22 | 0.34 | Without | ASTRO TOOL TGV 202 yellow | 5 | SD-0200000001 | |
| | | 20 | 0.60 | | | 5 | | |
| | | 18 | 0.93 | | | 5 | | |
| | | 16 | 1.34 | | | 6 | | |
| | DANIELS FT8 | 22 | 0.34 | Without | DANIELS SH 463 yellow | 5 | | |
| | | 20 | 0.60 | | | 5 | | |
| | | 18 | 0.93 | | | 5 | | |
| | | 16 | 1.34 | | | 6 | | |
| 0201 071-20ROG 0200 862-20RN1 | ASTRO TOOL TGV 101 | 22 | 0.34 | Without | ASTRO TOOL TGV 201 | 3 | SD-0200000003 | |
| | | 20 | 0.60 | | | 4 | | |
| | | 18 | 0.93 | | | 5 | | |
| | | 16 | 1.34 | | | 6 | | |
| | DANIELS FT8 | 22 | 0.34 | Without | DANIELS SH 462 | 5 | | |
| | | 20 | 0.60 | | | 5 | | |
| | | 18 | 0.93 | | | 5 | | |
| | | 16 | 1.34 | | | 6 | | |

| CONTACTS | CRIMPING | | | | | | INSERTION EXTRACTION | |
|----------------------------------|---------------------------|------|--------------------|---------------------------|----------------------------|-------------------|----------------------|---------------|
| Contact part number | Crimp tool | AWG | Wire cross section | Positioner | Turret | Selector position | Tool part number | |
| 0100 612-20RGO 0100 721-20ROG | ASTRO TOOL TGV 101 | 24 | 0.22 | | ASTRO TOOL TGV 210 | 2 | S_069 | S_056 |
| | | 22 | 0.38 | | | 3 | | |
| | | 20 | 0.60 | | | 4 | | |
| | | 18 | 0.93 | | | 5 | | |
| | DANIELS FT8 | 24 | 0.22 | Without | DANIELS TP 945 | 2 | | |
| | | 22 | 0.38 | | | 3 | | |
| | | 20 | 0.60 | | | 4 | | |
| | | 18 | 0.93 | | | 5 | | |
| | ASTRO TOOL M22520/2.01 | 24 | 0.22 | S_055 | | Without | | |
| | | 22 | 0.38 | | | | | |
| | | 20 | 0.60 | | | | | |
| | | 18 | 0.93 | | | | | |
| 0120 182-20RG1 0120 151-20ROG | ASTRO TOOL TGV 101 | 24 | 0.22 | Without | ASTRO TOOL TGV 201 blue | 2 | | SD-0120000002 |
| | | 22 | 0.38 | | | 3 | | |
| | | 20 | 0.60 | | | 4 | | |
| | | 18 | 0.93 | | | 5 | | |
| | | 16 | 1.34 | | | 6 | | |
| | 14 | 1.91 | 7 | | | | | |
| | DANIELS FT8 | 24 | 0.22 | Without | DANIELS SH 462 blue | 2 | | |
| | | 22 | 0.38 | | | 3 | | |
| | | 20 | 0.60 | | | 4 | | |
| 18 | | 0.93 | 5 | | | | | |
| | | 16 | 1.34 | | 6 | | | |
| | | 14 | 1.91 | | 7 | | | |
| ASTRO TOOL MS 3191/1 | | 24 | 0.22 | SS.0150000003 HYPERTAC | | Without | | |
| | | 22 | 0.38 | | | | | |
| | | 20 | 0.60 | | | | | |
| | | 18 | 0.93 | | | | | |
| | | 16 | 1.34 | | | | | |
| | | 14 | 1.50 | | | | | |
| | | 1.91 | | | | | | |

How To Order - CNE & CRE series



C N E

1 2 3

1 2 1

4

1 2

5

2 0

6

1

7

5

8

A

9

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------------|---|------|------------|------|--------------|------|------|---------------------|---------------------|--------|-----------------|---|---|------------|------------|-----|--------|--|--|----------|----------|-----|------|--|--|
| 1 Series | C Series | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 Model | N Standard shell R Long shell version | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 Type | E Five coding key | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 Layout | 1 2 1 12 contacts Ø 1.50 mm* 1 6 1 16 contacts Ø 1.50 mm** | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 Part - Polarity | <table border="0"> <tr> <td>PLUG</td> <td>RECEPTACLE</td> <td></td> </tr> <tr> <td>EXTENSION***</td> <td></td> <td></td> </tr> <tr> <td>0 3 Without contact</td> <td>0 4 Without contact</td> <td>0 6</td> </tr> <tr> <td>Without contact</td> <td></td> <td></td> </tr> <tr> <td>1 2 Female</td> <td>2 2 Female</td> <td>3 2</td> </tr> <tr> <td>Female</td> <td></td> <td></td> </tr> <tr> <td>1 3 Male</td> <td>2 3 Male</td> <td>3 3</td> </tr> <tr> <td>Male</td> <td></td> <td></td> </tr> </table> | PLUG | RECEPTACLE | | EXTENSION*** | | | 0 3 Without contact | 0 4 Without contact | 0 6 | Without contact | | | 1 2 Female | 2 2 Female | 3 2 | Female | | | 1 3 Male | 2 3 Male | 3 3 | Male | | |
| PLUG | RECEPTACLE | | | | | | | | | | | | | | | | | | | | | | | | |
| EXTENSION*** | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 3 Without contact | 0 4 Without contact | 0 6 | | | | | | | | | | | | | | | | | | | | | | | |
| Without contact | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 2 Female | 2 2 Female | 3 2 | | | | | | | | | | | | | | | | | | | | | | | |
| Female | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 3 Male | 2 3 Male | 3 3 | | | | | | | | | | | | | | | | | | | | | | | |
| Male | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 Contact termination | 0 0 Without contact 2 0 Crimp termination | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 Cable clamp type | 1 Straight 2 Right angle | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 Cable clamp | <table border="0"> <tr> <td>Ø mm</td> <td>8</td> <td>10</td> <td>12</td> <td>14</td> <td>16</td> </tr> <tr> <td>Code</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> </tr> </table> | Ø mm | 8 | 10 | 12 | 14 | 16 | Code | 1 | 2 | 3 | 4 | 5 | | | | | | | | | | | | |
| Ø mm | 8 | 10 | 12 | 14 | 16 | | | | | | | | | | | | | | | | | | | | |
| Code | 1 | 2 | 3 | 4 | 5 | | | | | | | | | | | | | | | | | | | | |
| 9 Coding Tabulation | <table border="0"> <tr> <td>a</td> <td>0°</td> <td>25°</td> <td>77°</td> <td>139°</td> <td>211°</td> <td>293°</td> <td>325°</td> </tr> <tr> <td>Coding</td> <td>■</td> <td>A</td> <td>B</td> <td>C</td> <td>D</td> <td>E</td> <td>F</td> </tr> </table> | a | 0° | 25° | 77° | 139° | 211° | 293° | 325° | Coding | ■ | A | B | C | D | E | F | | | | | | | | |
| a | 0° | 25° | 77° | 139° | 211° | 293° | 325° | | | | | | | | | | | | | | | | | | |
| Coding | ■ | A | B | C | D | E | F | | | | | | | | | | | | | | | | | | |

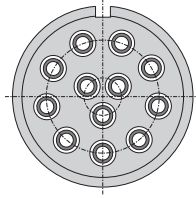
* Clip contact system

** Cloc contact system

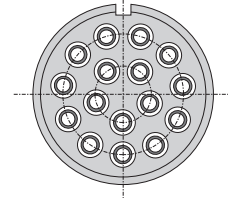
*** only available for the CRE configuration

General Specifications

Layout



121



161

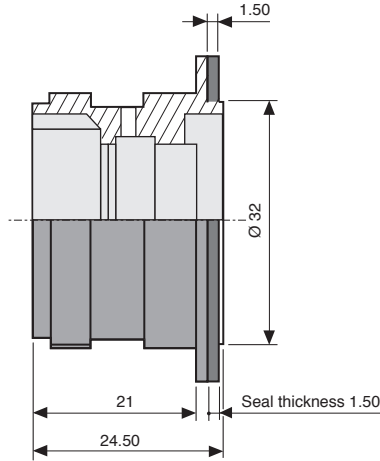
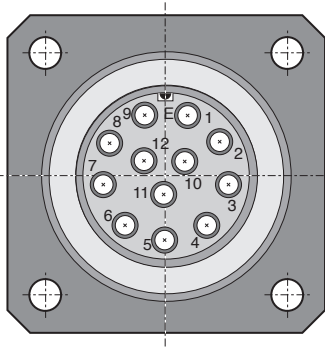
| Technical | 121 | 161 |
|--|--|-----------------------------------|
| Contact numbers & Ø | 12 Ø 1.50mm | 16 Ø 1.50mm |
| Female insert plug | CNY1211220 | CNY1611220 |
| Male insert plug | CNY1211320 | CNY1611320 |
| Female insert receptacle | CNY1212220 | CNY1612220 |
| Male insert receptacle | CNY1212320 | CNY1612320 |
| Insulation material | Thermoset | Nylon |
| Contact material | Brass | Brass |
| Contact plating | Au/Ni | Au/Ni |
| Female crimp contacts & wire size | 0150842-2ORGO 0.34 to 1.34 mm≈ | 0150682-20-G1 0.22 to 1.91 mm≈ |
| Male crimp contacts & wire size | 0150841-2OROG 0.34 to 1.91 mm≈ | 0150761-20-OG 0.22 to 1.91 mm≈ |
| Male crimp pre-mating contacts & wire size | | |
| Vibration withstanding | 25 - 250 Hz - 5 g (following) NF F 61-030 | |
| Connector life cycles | > 500 (mating cycles) | |
| Contact retention forces | > 70 N (clip) | > 40 N (cloc) |
| Electrical | | |
| Current rating (all contacts wired) | 8 A | 6 A |
| D.W.V. | 2 600 VAC | 1 750 VAC |
| Contact resistance | < 2 mΩ | |
| Insulation resistance | > 5.10 ³ MΩ | > 5.10 ³ MΩ |
| Environmental | | |
| Category | CEI 68-1 (NF C 20-700) -55°C to +125°C/56 days | |
| Protection level | IP 56 (NF EN 60529) | |
| Corrosion resistance | 500 h. BS salt spray 5% Na Cl (NF C 20-711) | |

Five Coding Key CNE Connectors

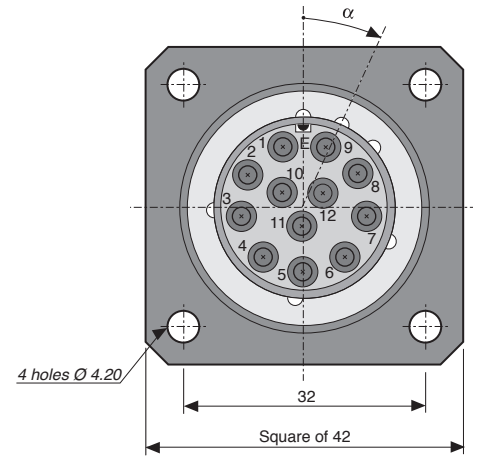
Layout 121

CNE Receptacle dimensions

Wiring side



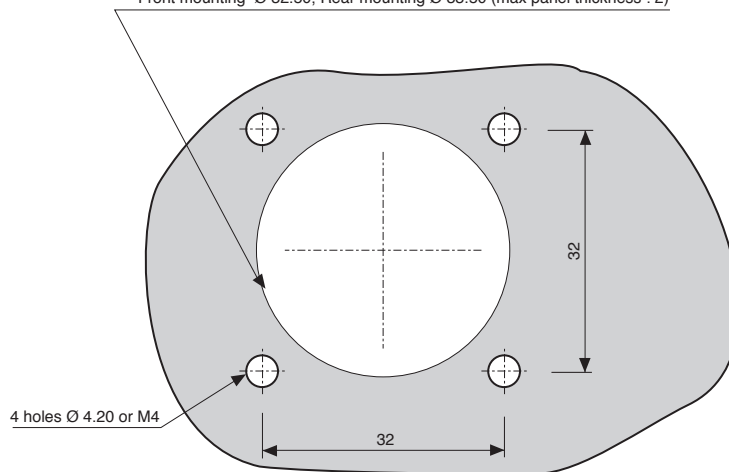
Mating side



See the coding table page 15

Panel cut out

Front mounting Ø 32.50, Rear mounting Ø 33.50 (max panel thickness : 2)



Notes:
 Receptacle shown with layout # 121"
 See the main layouts page 14

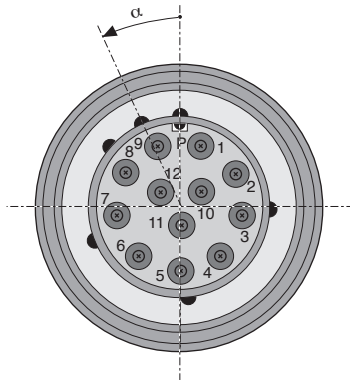
Dimensions are in mm

Five Coding Key CNE Connectors

Layout 121

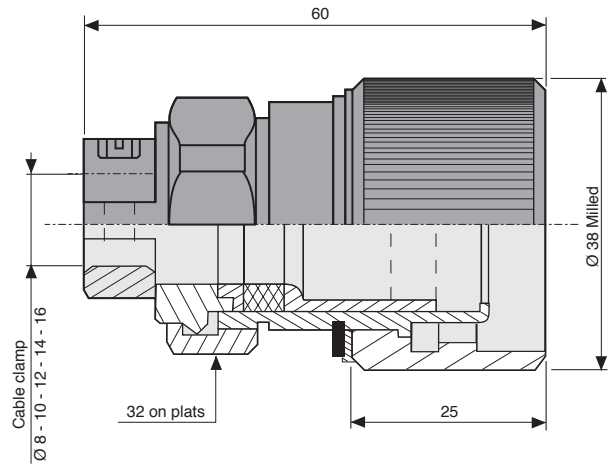
CNE Plug dimensions

Mating side

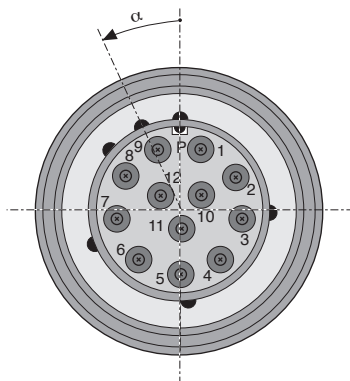


See the coding table page 15

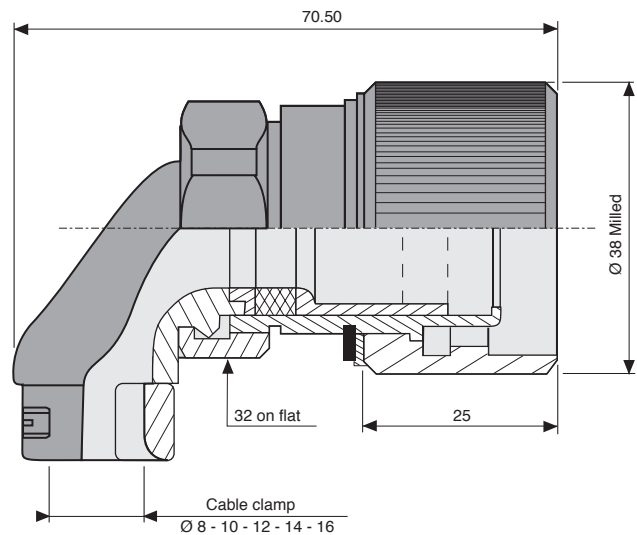
Straight



Right angle



See the coding table page 15



Notes:
Plugs shown with layout # 121"
See the main layouts page 14

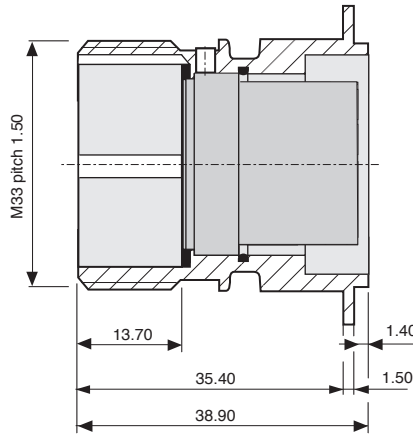
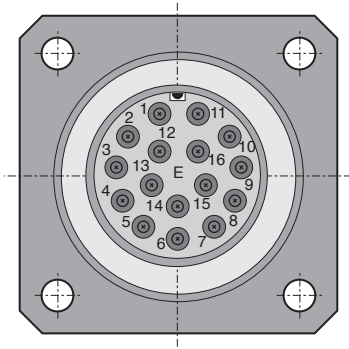
Dimensions are in mm

Five Coding Key CRE Connectors

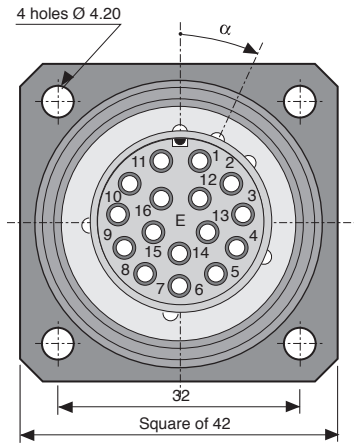
Layout 161

CRE Receptacle dimensions

Wiring side



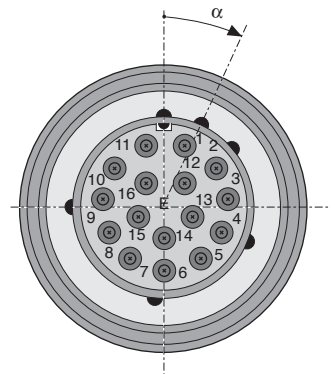
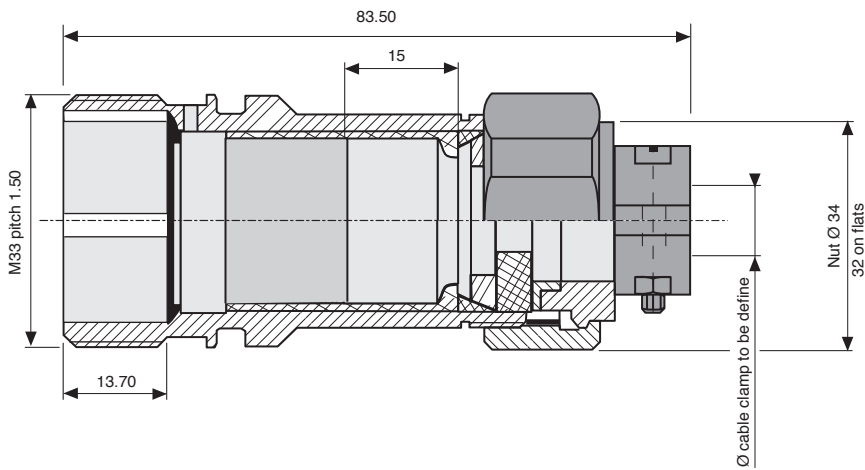
Mating side



See the coding table page 15

CRE Cable receptacle dimensions

Mating side



See the coding table page 15

Notes:
 Receptacle shown with layout # 161"
 See the main layouts page 14

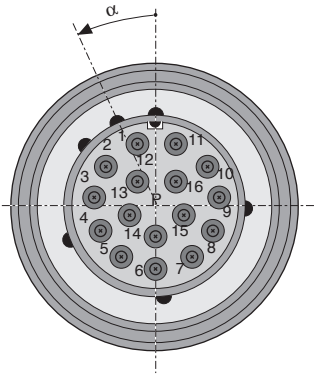
Dimensions are in mm

Five Coding Key CRE Connectors

Layout 161

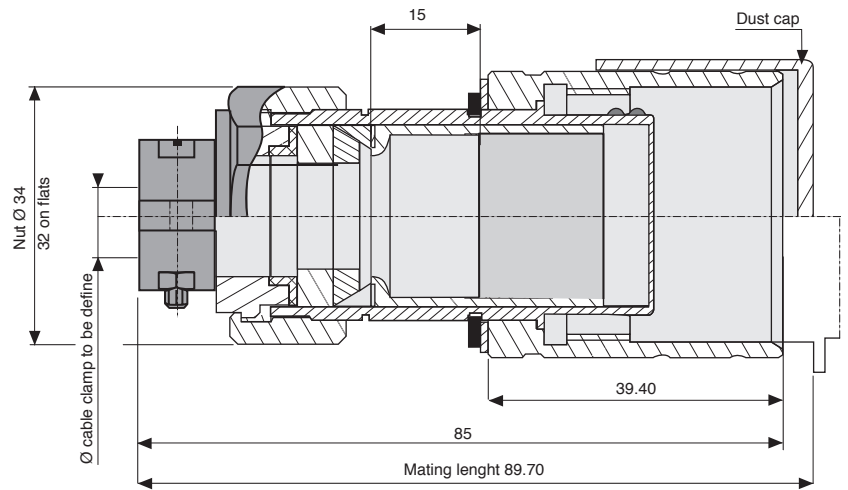
CRE Plug dimensions

Mating side



See the coding table page 15

Straight



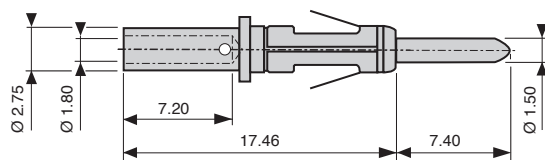
Notes:
Plugs shown with layout # 161"
See the main layouts page 14

Dimensions are in mm

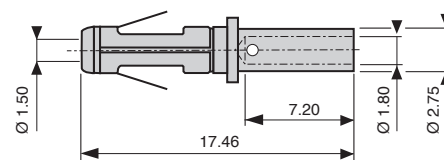
CNE & CRE Contacts Clip retention

Males

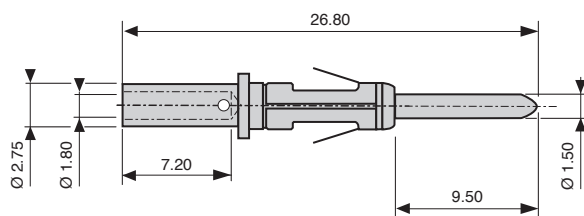
Contacts Ø 1.50 for insert C-Y 121 -- -- [wire size 0.34 - 1.91 mm²]



Ref: 0150841-20ROG



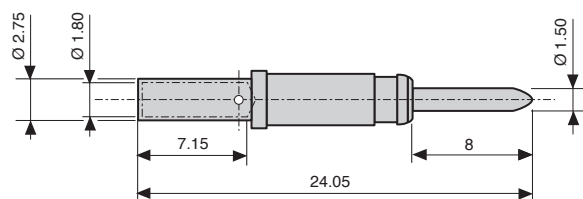
Ref: 0150842-20RGO



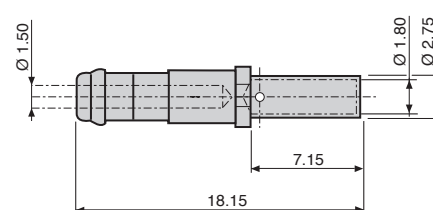
*Ref: 0150851-20ROG

Cloc retention

Contacts Ø 1.50 for insert CNY 161 -- -- [wire size 0.22 - 1.91 mm²]



Ref: 0150761-20-OG



Ref: 0150682-20-G1

Notes:

*For insert CRY 121 -- -- M (11 contacts + 1 grounding contact) used only with male CRE receptacle.

Dimensions are in mm

CNE & CRE Layout wiring side views

Receptacle

Plug

12 contacts Ø 1.5

Ref.

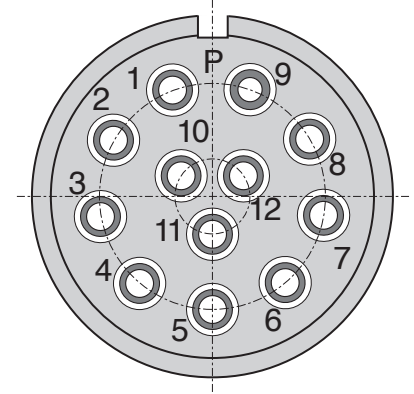
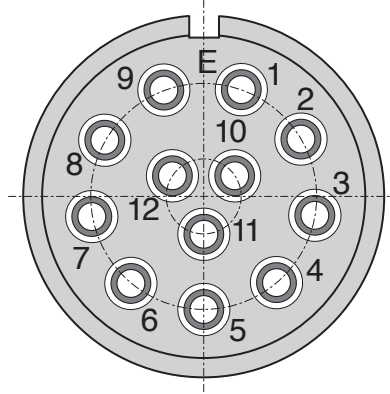
1 2 1

Contact termination

wire size: 0.34 - 1.91 mm²

Ref.

2 0



16 contacts Ø 1.5

Ref.

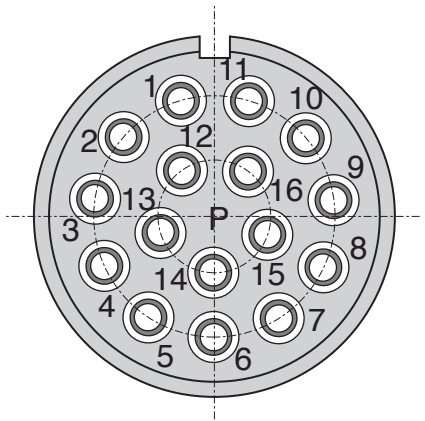
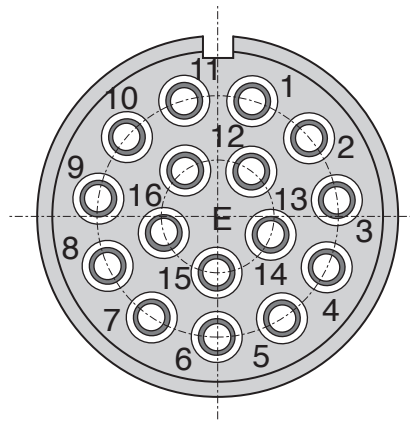
1 6 1

Contact termination

wire size: 0.13 - 1.91 mm²

Ref.

2 0

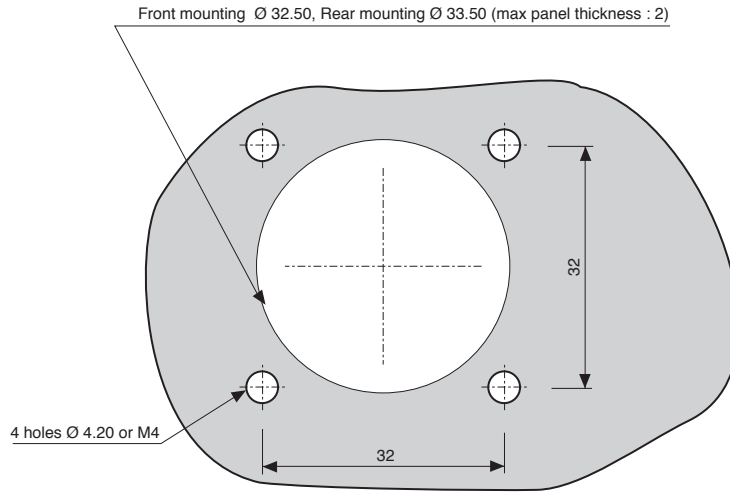


Notes:

*212M insert with 11 contacts + 1 grounding contact used only with male CRE receptacle.

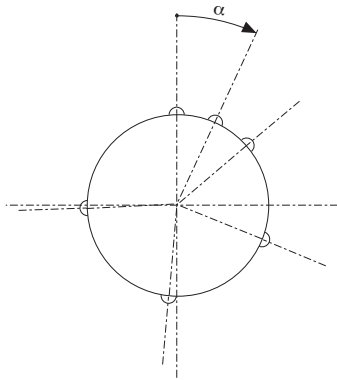
Dimensions are in mm

CNE & CRE Panel cut out

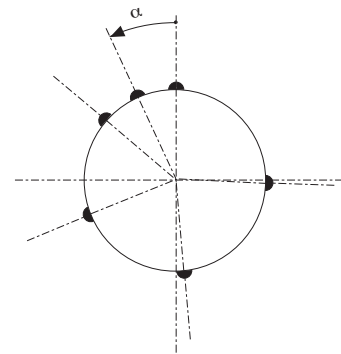


Coding table

Mating side viewed receptacle



Mating side viewed plug



| | | | | | | |
|----------|-----|-----|------|------|------|------|
| α | 25° | 77° | 139° | 211° | 293° | 325° |
| Code | A | B | C | D | E | F |

Wiring Tools

| CONTACTS | CRIMPING | | | | | | ASSEMBLY | |
|--|-----------------------|--|--|------------|-------------------------------------|---------------------------------|------------------------------------|---------------|
| Contact part number | Crimp tool | AWG | Wire cross section | Positioner | Turret | Selector position | Tool part number | |
| | | | | | | | Insertion | Extraction |
| 0150 841-20ROG 0150 851-20ROG 0150 842-20RGO | ASTRO TOOL TGV 101 | 22 20 18 16 14 | 0.34 0.60 0.93 1.34 1.91 | Without | ASTRO TOOL* TGV 201 | 3 4 5 6 7 | Without | SD-0150000005 |
| | DANIELS FT8 | 22 20 18 16 14 | 0.34 0.60 0.93 1.34 1.91 | | DANIELS* SH 462 | 3 4 5 6 7 | | |
| 0150 761-20-OG 0150 682-20-G1 | ASTRO TOOL TGV 101 | 26 24 22 20 18 16 14 | 0.13 0.22 0.34 0.60 0.93 1.34 1.91 | Without | ASTRO TOOL TGV 202 red insert | 2 2 3 4 5 6 7 | S_059 (L/RH) or S_074 (L/ZH) | S_072 |
| | DANIELS FT8 | 26 24 22 20 18 16 14 | 0.13 0.22 0.34 0.60 0.93 1.34 1.91 | | DANIELS SH 463 red insert | 2 2 3 4 5 6 7 | | |

Disclaimer

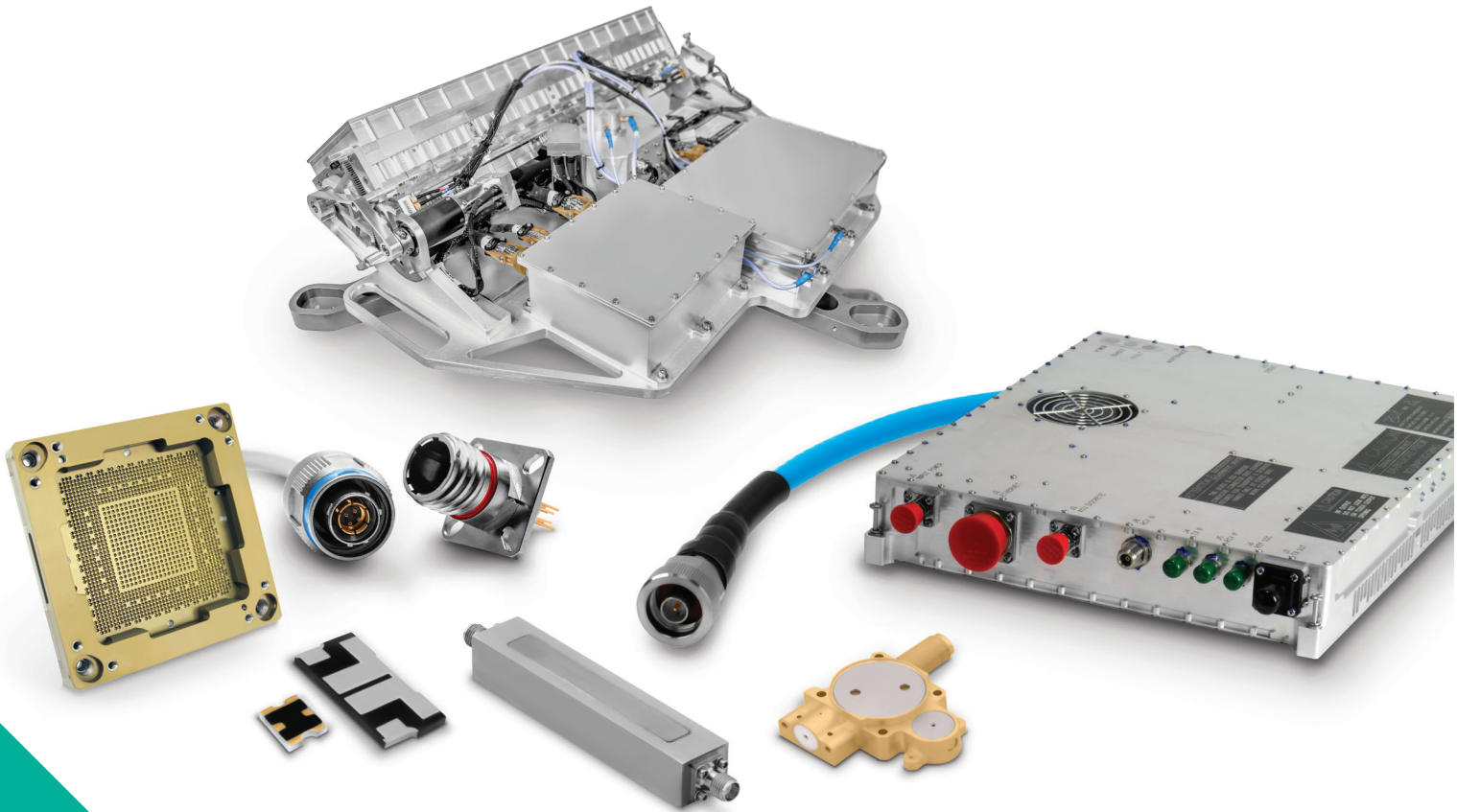
All of the information included in this catalogue is believed to be accurate at the time of printing. It is recommended, however, that users should independently evaluate the suitability of each product for their intended application and be sure that each product is properly installed, used and maintained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

Smiths Interconnect makes no warranties as to the accuracy or completeness of the information, and disclaims any liability regarding its use.

Smiths Interconnect reserves the right to modify design and specifications, in order to improve quality, keep pace with technological development or meet specific production requirements.

No reproduction or use without express permission of editorial and pictorial content, in any manner.

Product Portfolio



Antenna Systems

Cable Assemblies

Connector Solutions

Ferrite Components & Assemblies

RF Filter Components & Assemblies

Integrated Microwave Assemblies

Millimeter-Wave Solutions

RF Components

Test Sockets and WLCSP Probe Heads

Time & Frequency Systems

Worldwide Support

Connectors

Americas

Sales

connectors.uscsr@smithsinterconnect.com

Technical Support

connectors.ustechsupport@smithsinterconnect.com

Europe

Sales

connectors.emeacsr@smithsinterconnect.com

Technical Support

connectors.emeatechsupport@smithsinterconnect.com

Asia

Sales

asiacsr@smithsinterconnect.com

Technical Support

asiatechsupport@smithsinterconnect.com

Fiber Optics & RF Components

Americas

Sales

focom.uscsr@smithsinterconnect.com

Technical Support

focom.techsupport@smithsinterconnect.com

Europe

Sales

focom.emeacsr@smithsinterconnect.com

Technical Support

focom.techsupport@smithsinterconnect.com

Asia

Sales

focom.asiacsr@smithsinterconnect.com

Technical Support

focom.techsupport@smithsinterconnect.com

Semiconductor Test

Americas

Sales

semi.uscsr@smithsinterconnect.com

Technical Support

semi.techsupport@smithsinterconnect.com

Europe

Sales

semi.emeacsr@smithsinterconnect.com

Technical Support

semi.techsupport@smithsinterconnect.com

Asia

Sales

semi.asiacsr@smithsinterconnect.com

Technical Support

semi.techsupport@smithsinterconnect.com

RF/MW Subsystems

Americas, Europe & Asia

Sales

subsystems.csr@smithsinterconnect.com

Technical Support

subsystems.techsupport@smithsinterconnect.com

Connecting Global Markets

more > [smithsinterconnect.com](https://www.smithsinterconnect.com) | [in](#) [X](#) [▶](#)

Copyright© 2024 Smiths Interconnect | All rights reserved | Version 4.1

All of the information included in this catalogue is believed to be accurate at the time of printing.

The information contained within this document is subject at all times to applicable Export Control regulations and legal requirements.