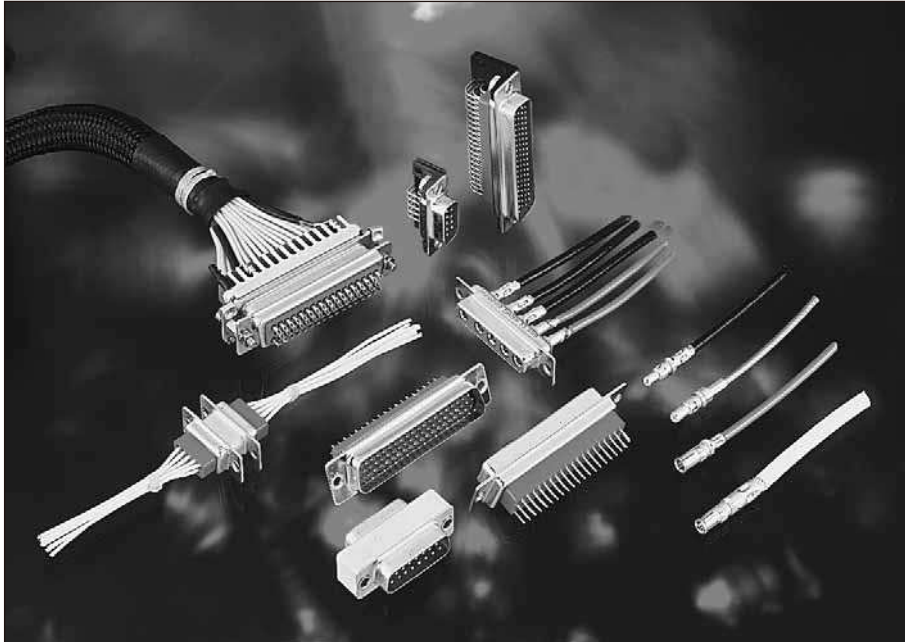




Connectors



Section

I

Non-magnetic D-Sub Connectors



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• Non magnetic D-Sub Connectors

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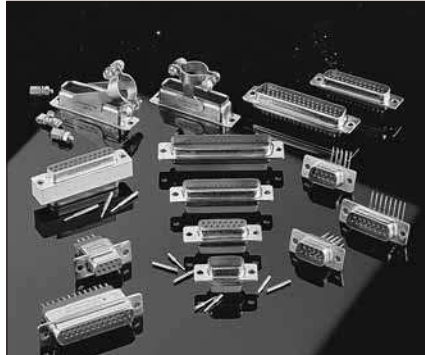
Connectors

Applications

Satellite
 Launcher
 Space station
 Shuttle hardware
 Probe

Standards

ESA/SCC 3401/GSFC/MIL-DTL-24308
 class M (QPL)



Description

D-Sub product lines conform to the MIL-DTL-24308 standard and are qualified by ESA according to ESA/SCC 3401. These products are also qualified by NASA according to GSFC.

A number of signal, power, high density and coax layouts are available, using non-magnetic shell materials.

Cross reference table for ESA/SCC/SOURIAU/GSFC

| ESA/SCC P/N | SOURIAU P/N | GSFC P/N | Description |
|---------------|--------------------------|-------------------|--|
| 3401/001/01/B | D*M-NMB | S311-P-10 | Standard density connectors with non removable contacts |
| 3401/001/02/B | 8635-NMB (spills) | - | High density connectors with non removable contacts |
| 3401/004 * | 8949 004 xx NMB | - | Coaxial contacts for SCC 3401/001/01B |
| 3401/040 * | 8949 040 xx NMB | - | Power contacts for SCC 3401/001/01B |
| 3401/002/01/B | 8630-NMB | S311-P-4/09 | Standard density connectors with removable crimp contacts |
| 3401/002/02/B | 8635-NMB (crimp) | S311-P-4/07 | High density connectors with removable crimp contacts |
| 3401/005 | 8949 xxxx | S311-P-4/08 & /10 | Crimp contacts for SCC 3401/002 |
| 3401/020/01/B | D*BMA #20 | - | Standard density connectors savers with removable crimp contacts |
| 3401/020/02/B | D*BMA #22 | - | High density connectors savers with removable crimp contacts |
| 3401/021 | 8949 xxxx EL | - | Savers contacts for SCC 3401/020 |
| 3401/022 * | Dx 8949 xx NM | - | Accessories (screw lock, dust caps, ...) |
| 3401/069 | 8949 004 xxNMB | - | Twinax Contacts |
| 3401/072 ** | Dx 8949 xx NMB | - | Accessories (light weight backshell) |

(*) These components have no ESA/SCC certification (no ESA trademark on the component).

(**) Pending ESA Qualification.

Quality Assurance Testing

• Qualification

The ESA/SCC D-Sub non-magnetic connectors are qualified to specification 3401.

• Production control

Visual (100%)

Dimensional (by sampling)

Insulation resistance (100%)

Dielectric withstanding voltage (100%)

Contact retention (100%)

Female contact capability (100%)

• Final production tests

Visual (100%)

Dimensional (by sampling)

Intermeatability

• Lot acceptance tests

Two levels are proposed according to the ESA/SC specification 3401 CHART V.

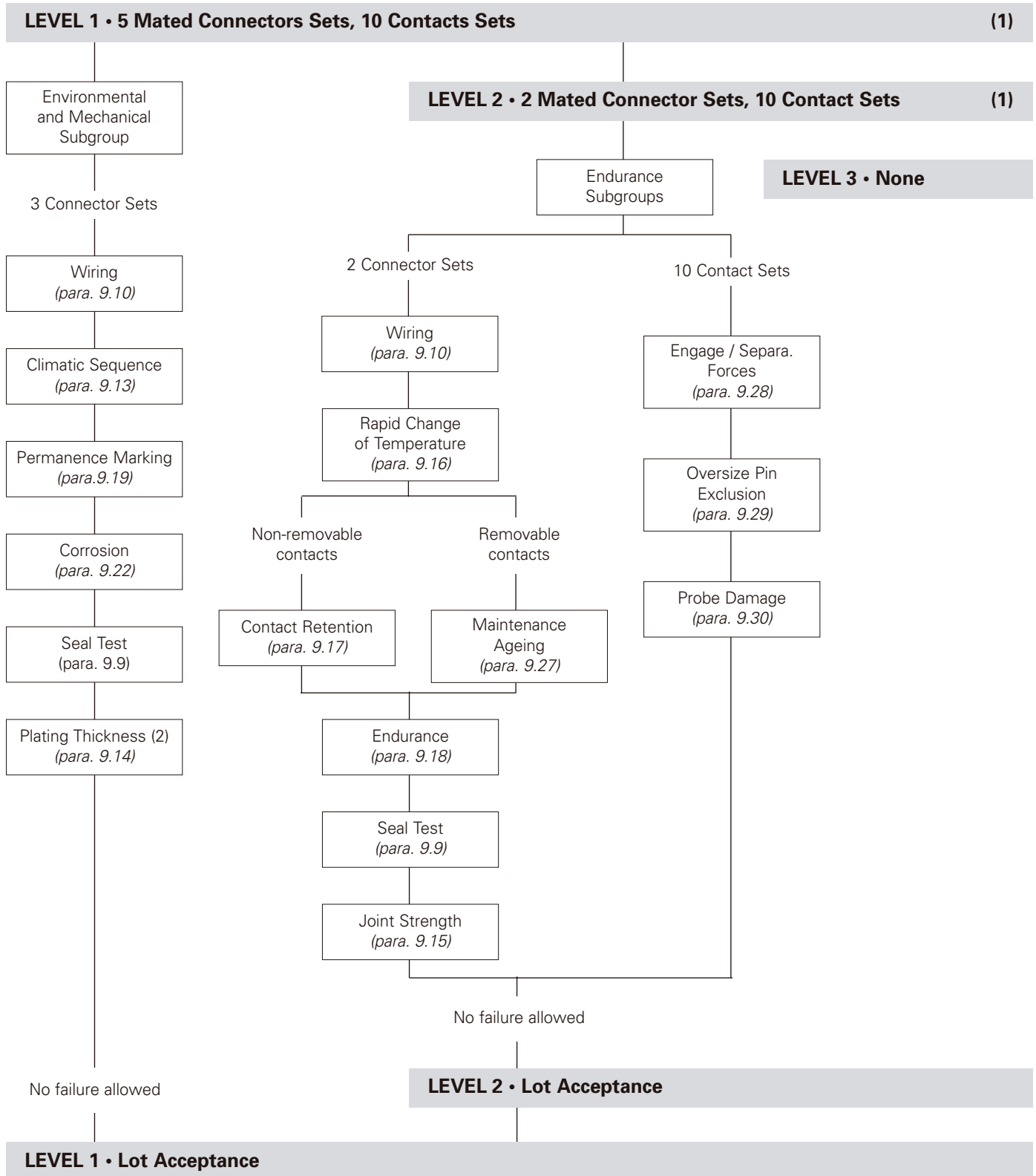
Lot acceptance level shall be specified in the purchase order.

LAT 1 _____ Environmental and mechanical sub-group

└── LAT2 _____ Endurance sub-group



CHART V - Lot Acceptance Tests



Notes :

- (1) For distribution within the sample, see Para. 8.2.2.
 - (2) Hermetic connectors only.
- All Para. refer to ESA/SCC Generic Specification n° 3401.



Materials & Finishes

| Component | Material | Plating |
|---|--|--|
| Shells | Brass | 1,27 micron gold to meet MIL/NASA - 0,7 micron gold ESA |
| Insulators | Diallyphtalate (according to MIL-M-14 class SGDF) | Outgassing : TML : 1% according to CVCM : 0,1% ECSS-Q-70-02A |
| Contacts 3401/005 /040 & /021 3401/004 | Copper alloy | <ul style="list-style-type: none"> • 1,27 microns gold mini over 1 micron copper mini • 2,54 microns gold mini over 1 micron copper mini |
| Accessories | Brass | • 0,7 micron gold mini over 1 micron copper mini |

Electrical characteristics

| Characteristics | Symbol | Rating | Unit |
|---|----------|--|------|
| Working voltage sea level (/50 Hz) <ul style="list-style-type: none"> • # 20 contacts • # 22 contacts • Power and straight coaxial contacts • 90° coaxial contacts • Twin axe | U_R | 300 250 250 200 | Vrms |
| Dielectric Withstanding Voltage (at sea level / 33000 m) <ul style="list-style-type: none"> • # 20 and # 22 contacts • Power and Straight coaxial contacts • 90° coaxial contacts • 90° Twin ax | | 1250 / 200 1000 / 100 800 / 100 | Vrms |
| Rated current <ul style="list-style-type: none"> • # 20 and coaxial center contacts • # 22 PCB contact • # 20 crimp contact AWG 26/28 • # 22 crimp contact | I_R | 7,5 3 3 5 | A |
| • Power contacts | | Wire size # 8 # 10 # 12 # 14 # 16 40 A 30 A 20 A 15 A 10 A | |
| Contact resistance (low level current) <ul style="list-style-type: none"> • # 20 • # 22 • Contact coaxial center and outer contact • Power | Rcl Max. | 6 6 8,5 2,5 | mΩ |
| <ul style="list-style-type: none"> • # 20 (under 10 mA) • # 22 (under 10 mA) | | | |
| Contact resistance (rated current) <ul style="list-style-type: none"> • # 20 (under 7,5 A) • # 22 PCB (under 3,0 A) • # 22 crimp (under 5,0 A) • # 20 crimp AWG 26/28 (under 3 A) • # 20 crimp (under 7,5 A) • Coaxial and power contacts (see rated current charac.) | Rcr Max. | 5 10 5 5 5 7 | mΩ |

Environmental characteristics

| Characteristics | Rating | Unit | ESA/SCC 3401 test method |
|-----------------------------|-----------------------------------|--------|--------------------------|
| Operating temperature range | -55 to +125 | °C | - |
| Storage temperature | 1000 h/125°C | - | Para. 9.21 |
| Thermal shock | from -55 to +125 | °C | IEC 512-6 test 11d |
| Damp heat | 10 cycles 24 h | - | IEC 68-2-30 test Dd |
| Mechanical endurance | 500 | cycles | Para. 9.18 |
| Vibrations | 20 | g | IEC 512-4 test 6d |
| Shock | 50 g with an 11 ms duration pulse | - | IEC 512-4 test 6c |
| Contact retention | 40 | N | Para. 9.17 |
| Vacuum test (125°C/24 h) | 10 ⁻⁶ | Torr | ECSS-Q-70-02A |

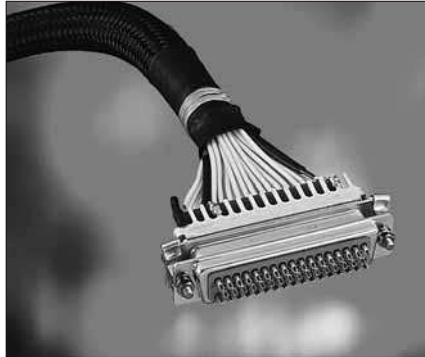


Applications

Satellite
 Launcher
 Space station
 Shuttle hardware
 Probe

Standards

ESA/SCC 3401/001/GSFC/
 MIL-DTL-24308 class M (QPL)



Standard density and Non removable contacts

ESA/SCC 3401/001 non-magnetic connectors are equipped with non removable contacts.

They are available with solder buckets, straight spills, 90° spills, wire wrap contacts and mixed layouts with coaxial and power contacts.

The connectors are Flight qualified parts.

Part Number / Ordering information

| | |
|---------------------------------|--|
| SCC specification number | 3401 001 01 B D B M Y 9W4 P NMB OL3 |
| Type Variant | 01 : standard density (contact # 20) |
| B Testing Level | not to be modified |
| D*M series | |
| Shell Size | E = 9 cts ; A = 15 cts ; B = 25 cts ; C = 37 cts ; D = 50 cts |
| Mounting | Without indication : fixed mounting Y : floating mounting E : 4.40 captive nuts |
| Contact Layout Code | (see page 11) |
| Contact Type | P : Pin (male) S : Socket (female) |
| Residual Magnetism Level | NMB : ≤ 200 gammas |
| Contact Termination Code | |

Contact termination code

Contact terminations are indicated as follows :

| Contact termination code for variant 01 (std density) | | |
|---|-----------------|---|
| Code for Ø 0.63 | Code for Ø 0.76 | Contact type |
| Without indication | | Solder buckets |
| OL3 | Z | Straight spills |
| 1A0N | 2A0N | 90° spills, without bracket, 2,54 mm pitch between row |
| 1B0N | 2B0N | 90° spills, without bracket, 2,84 mm pitch between row |
| 1A7N | 2A7N | 90° spills, with bracket, with UNC 4-40 clinch nuts and 2,54 mm pitch between row |
| 1B7N | 2B7N | 90° spills, with bracket, with UNC 4-40 clinch nuts and 2,84 mm pitch between row |
| 1A9N | 2A9N | 90° spills, with bracket, with M3 clinch nuts and 2,54 mm pitch between row |
| 1B9N | 2B9N | 90° spills, with bracket, with M3 clinch nuts and 2,84 mm pitch between row |
| F179A | | Wire wrap termination 3 wraps |

Note : Mixed layout are not available in 90° spills



Contact layouts

Contact layouts are indicated by the codes specified hereafter (male insulation front view) :

| Shell size | Code | Nb cts | | Layout |
|------------|-------|--------|-----|--------|
| | | # 20 | # 8 | |
| E | 9 | 9 | 0 | |
| | 5W1 | 4 | 1 | |
| A | 15 | 15 | 0 | |
| | 3W3 | 0 | 3 | |
| | 3WK3* | 0 | 3 | |
| | 7W2 | 5 | 2 | |
| | 11W1 | 10 | 1 | |
| | B | 25 | 25 | 0 |
| 5W5 | | 0 | 5 | |
| 9W4 | | 5 | 4 | |
| 13W3 | | 10 | 3 | |

| Shell size | Code | Nb cts | | Layout |
|------------|-------|--------|-----|--------|
| | | # 20 | # 8 | |
| B | 17W2 | 15 | 2 | |
| C | 37 | 37 | 0 | |
| | 8W8 | 0 | 8 | |
| | 17W5 | 12 | 5 | |
| | 21WA4 | 17 | 4 | |
| | 25W3 | 22 | 3 | |
| | 27W2 | 25 | 2 | |
| D | 50 | 50 | 0 | |
| | 24W7 | 17 | 7 | |
| | 36W4 | 32 | 4 | |

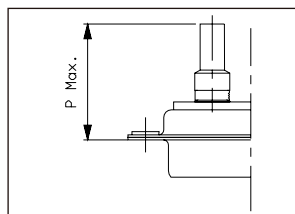
Standard (# 20) contact
Coaxial or power (# 8) contact

(*) : 3WK3 insulator with built-in keying (middle part recessed or protruding with respect to each side), to avoid mistmounting (K = Keying)
Available only with Space Grade version D*M, insulator material : VALOX NOT DAP.

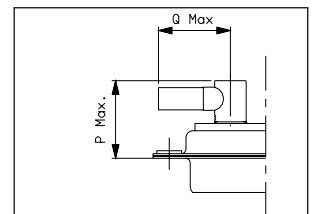
Contact types

• Coaxial contacts 3401 004 & 8949 004 NMB

| Variants | P1 * Max. | P2 ** Max. |
|----------------------------|---------------|---------------|
| 01-02-05-06 11-12-15-16 | 19,60 .771 | 19,80 .780 |
| 09-10-19-20 | 22,30 .878 | 22,50 .886 |

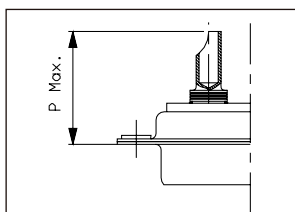


| Variants | P1 * Max. | P2 ** Max. | Q Max |
|----------------------------|---------------|---------------|---------------|
| 03-04-07-08 13-14-17-18 | 14,30 .563 | 14,50 .570 | 12,50 .492 |

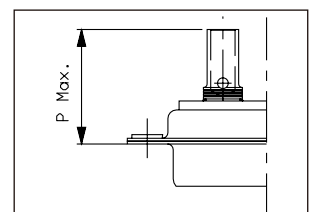


• Power contacts 3401 040 & 8949 040 NMB

| Variants | P1 * Max. | P2 ** Max. |
|----------------------|---------------|---------------|
| 01-02-03 04-05-06 | 17,70 .697 | 17,90 .705 |



| Variants | P1 * Max. | P2 ** Max. |
|----------------------|---------------|---------------|
| 07-08-09 10-11-12 | 19,80 .780 | 20 .787 |



(*) P1 : for male connectors sizes E and A, and for female connectors all sizes.

(**) P2 : for male connectors sizes B, C and D.

Note : Mixed layout are not available in 90° spills

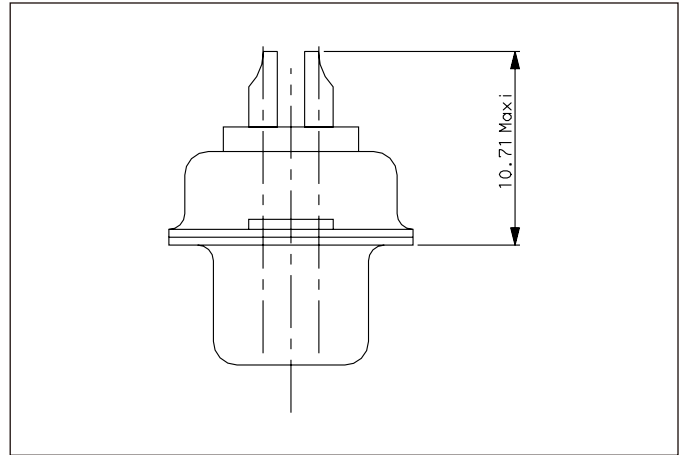
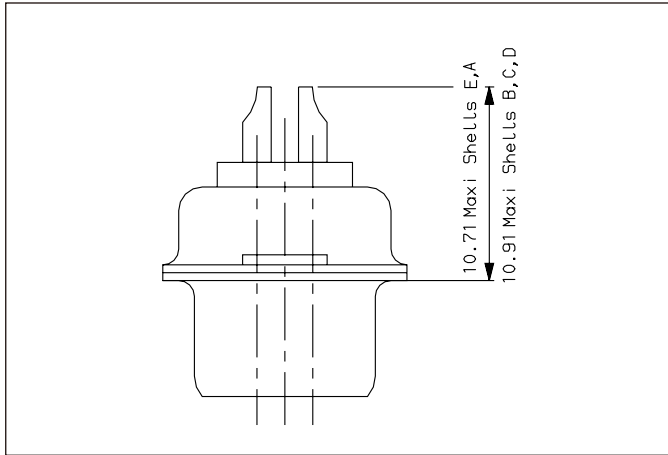


Dimensions (in mm)

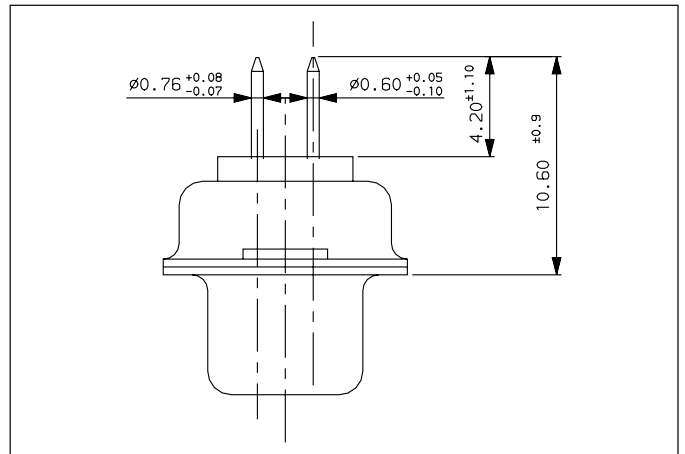
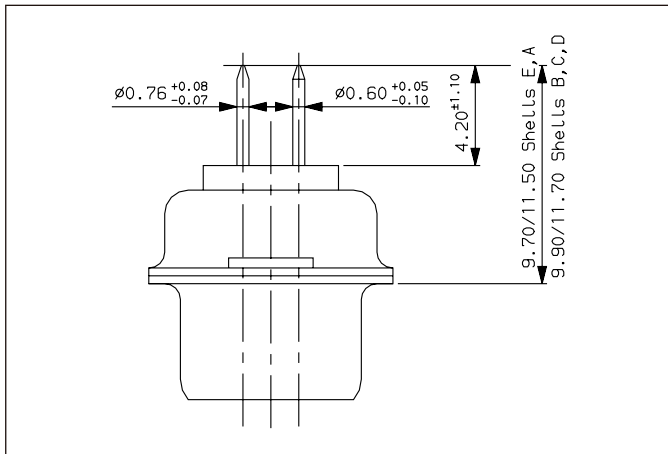
Male connectors

Female connectors

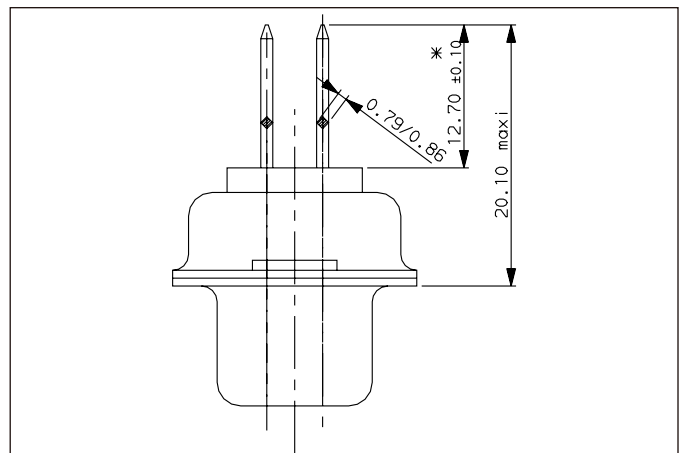
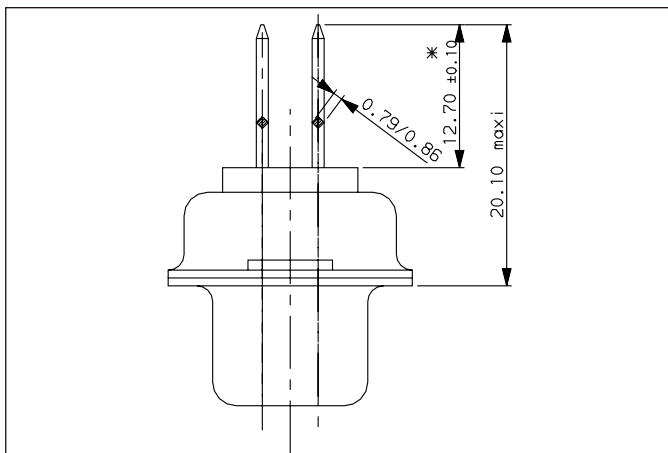
Solder Bucket



Straight spills (Z / OL3)



Wire wrap (F179A)



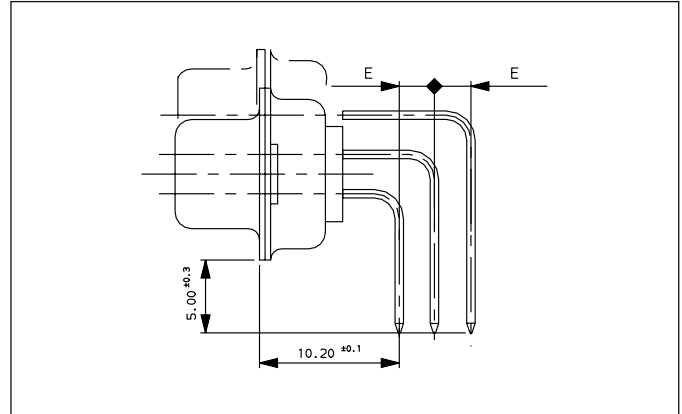
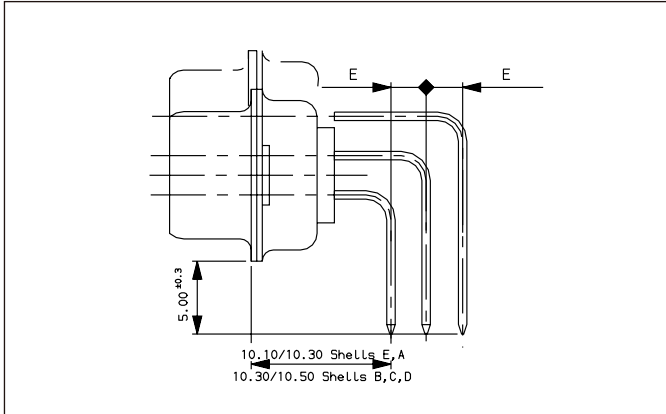
(*) The dimension is the length of the square part of the contact.



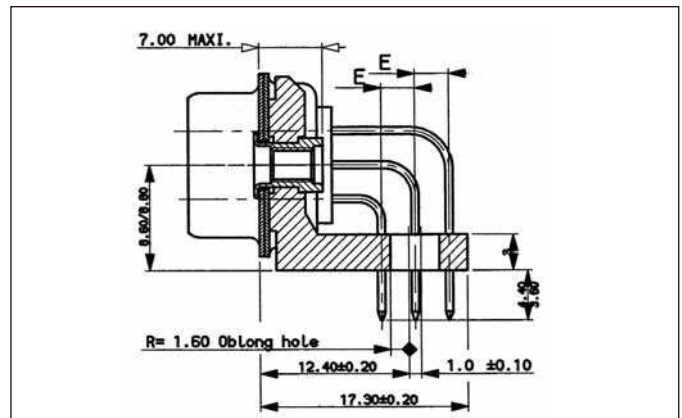
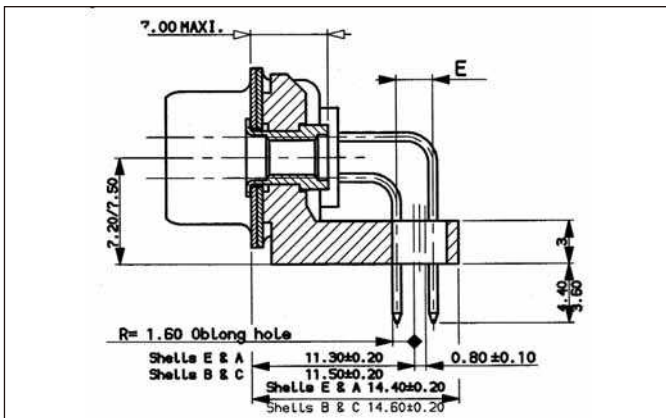
Male connectors

Female connectors

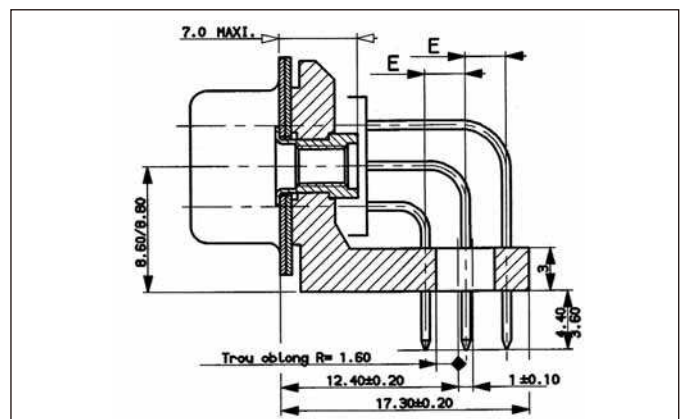
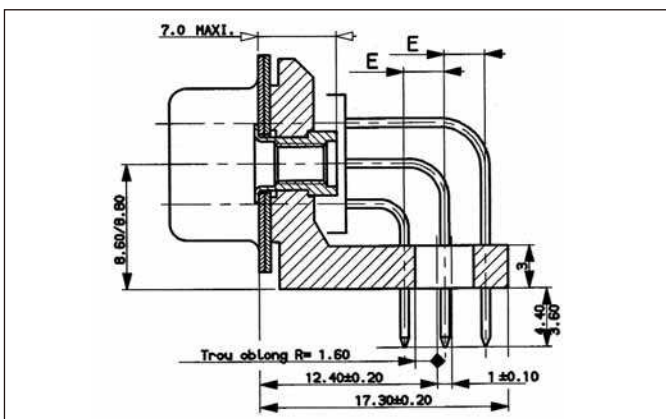
90° spills (1A0N / 2A0N / 1B0N / 2B0N)



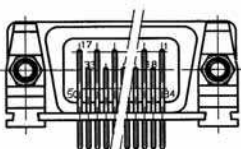
90° spills with bracket (shell size E to C)



90° spills with bracket (shell size D)



The dimensions of the 90° spills are the same as the spills for the part number 1A0N & 2A0N.



For the dimension E :

| Contact termination code | E (pitch between row) |
|------------------------------------|-----------------------|
| 1A0N, 2A0N, 1A7N, 2A7N, 1A9N, 2A9N | 2,54 mm |
| 1B0N, 2B0N, 1B7N, 2B7N, 1B9N, 2B9N | 2,84 mm |



Applications

Satellite
 Launcher
 Space station
 Shuttle hardware
 Probe

Standards

ESA/SCC 3401/001/GFSC
 MIL-DTL-24308



High density and Non removable contacts

ESA/SCC 3401/001 non-magnetic connectors are equipped with non removable contacts.

They are available with straight spills, 90° spills, contacts.

The connectors are Flight qualified parts.

Part Number / Ordering information

| | |
|--|---|
| SCC specification number | 3401 001 02 B D B M Y 44 P NMB OL3 |
| Type Variant 02 : high density (contact # 22) | |
| B Testing Level not to be modified | |
| D*M series | |
| Shell Size E = 15 cts ; A = 26 cts ; B = 44 cts ; C = 62 cts ; D = 78 cts | |
| Mounting Without indication : fixed mounting Y : floating mounting E : 4.40 captive nuts | |
| Contact Layout Code (see page 15) | |
| Contact Type P : Pin (Male) S : Socket (Female) | |
| Residual Magnetism Level NMB : ≤ 200 gammas | |
| Contact Termination Code (see table below) | |

Contact termination code

Contact terminations are indicated as follows :

| Contact termination code for variant 02 (high density) | | |
|--|-------------------------------------|---|
| For 15 to 62 contacts (shell size : E, A, B & C) | For 78 contacts (shell size : D) | Contact type |
| OL3 | | Straight spills |
| 1C0N | 1D0N | 90° spills, without bracket |
| 1C7N | 1D7N | 90° spills, with bracket and UNC 4-40 clinch nuts |
| 1C9N | 1D9N | 90° spills, with bracket and M3 clinch nuts |



Contact layouts

Contact layouts are indicated by the codes specified hereafter (male insulation front view) :

| Shell size | Code | Nb cts # 22 | Layout |
|------------|------|-------------|--------|
| E | 15 | 15 | |
| A | 26 | 26 | |
| B | 44 | 44 | |

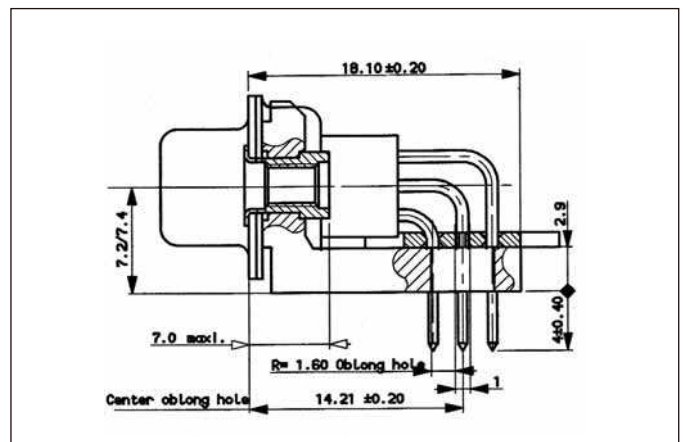
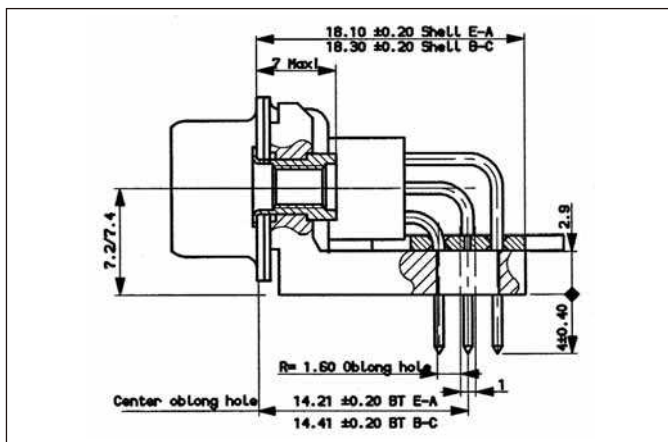
| Shell size | Code | Nb cts # 22 | Layout |
|------------|------|-------------|--------|
| C | 62 | 62 | |
| D | 78 | 78 | |

Dimensions (in mm)

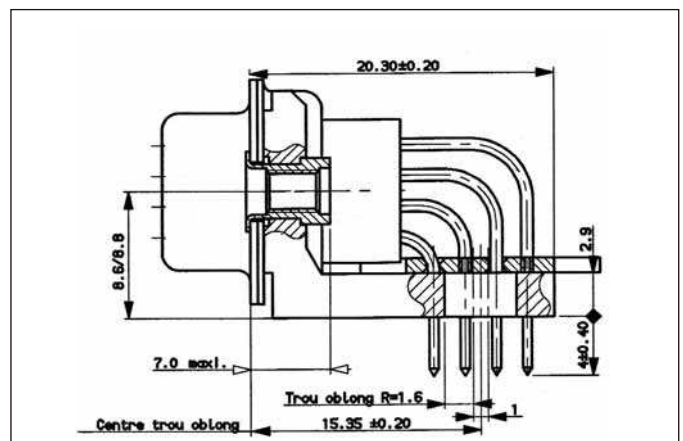
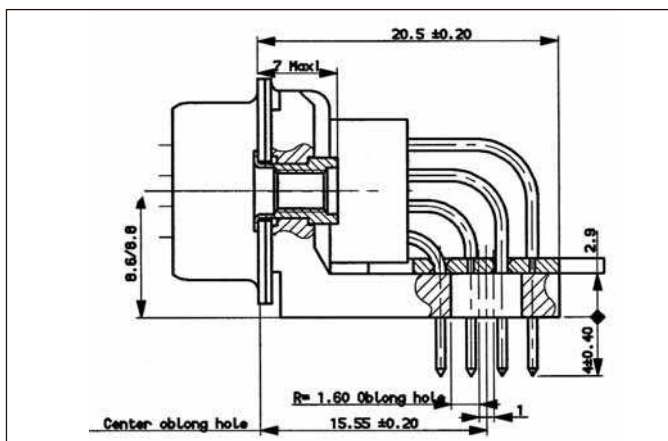
Male connectors

Female connectors

1C7N & 1C9N (shell E to C)

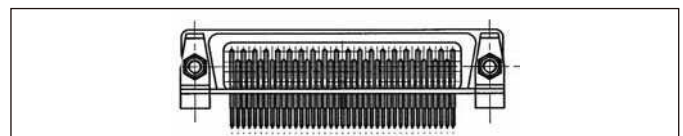


1D7N & 1D9N (shell D)



The dimensions of the 90° spills are the same as the spills for the part number 1CON & 1DON.

Rear view of the connectors ⇒

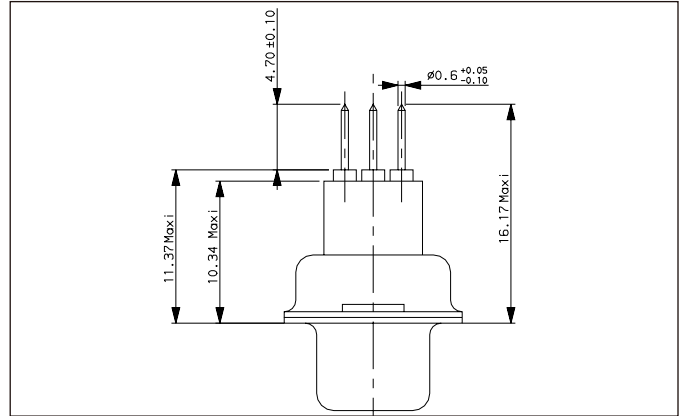
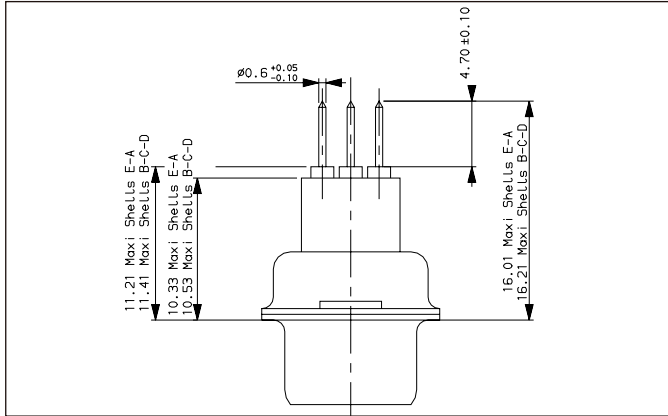




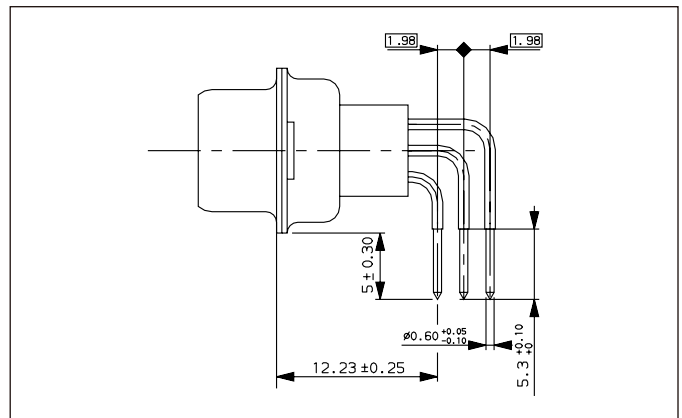
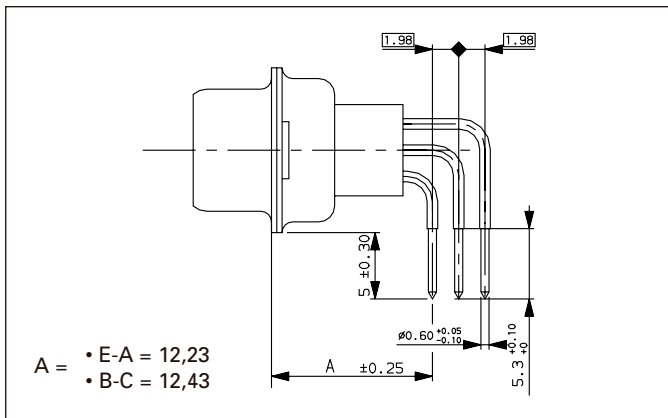
Male connectors

Female connectors

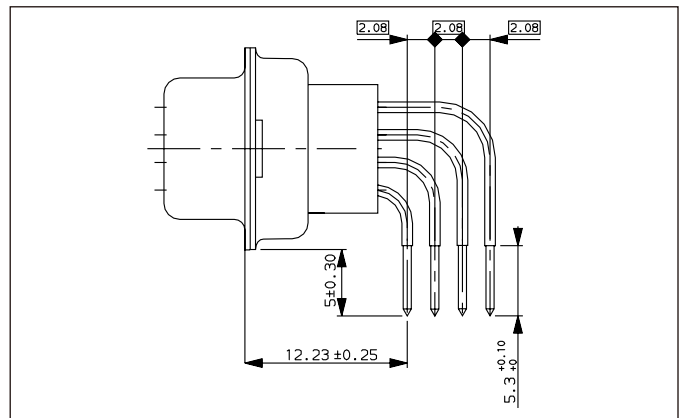
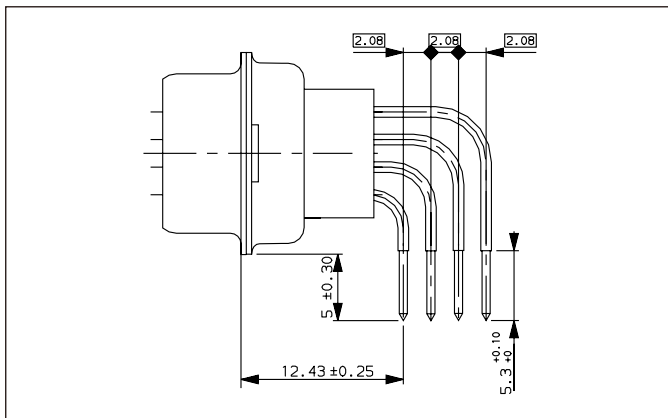
Straight spills (OL3)



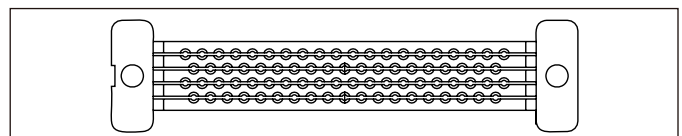
1C0N (shell size E to C)



1D0N (shell size D)



Connectors delivered with brittle drilled bar ⇒



ESA/SCC 3401 002 01B



Applications

Satellite
 Launcher
 Space station
 Shuttle hardware
 Probe



Standard density & Removable Crimp Contacts

ESA/SCC 3401/002 non-magnetic connectors are used with ESA/SCC 3401/005 removable crimp contacts.

Standard density (# 20 contacts) layouts are Flight qualified parts.

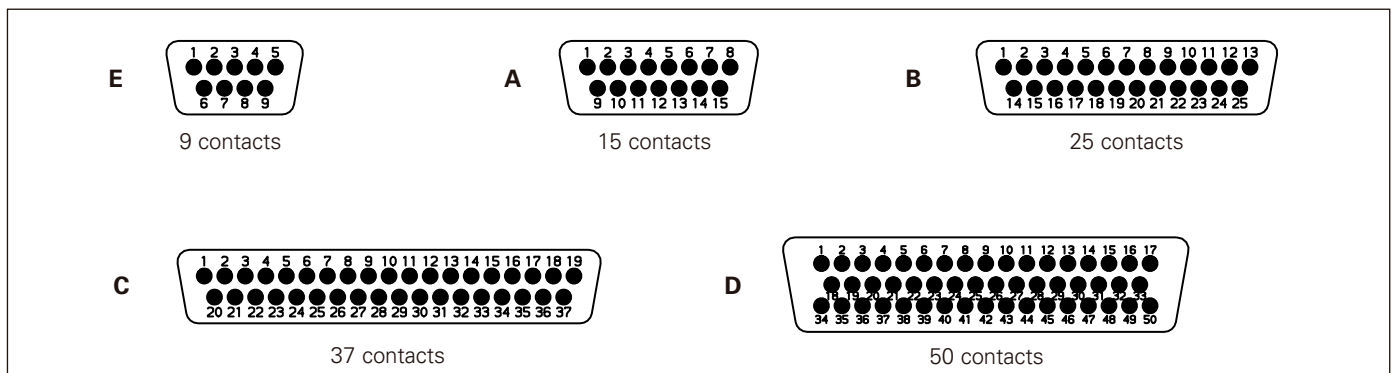
Standards

ESA/SCC 3401/002/GSFC/
 MIL-DTL-24308 class M(QPL)

Part Number / Ordering information

| | |
|---------------------------------|--|
| SCC specification number | 3401 002 01 B D B MA Y 25 P NMB FO |
| Type variant | 01 : standard density (contact # 20) |
| B Testing level | not to be modified |
| D*MA series | |
| Shell size | E = 9 cts ; A = 15 cts ; B = 25 cts ; C = 37 cts ; D = 50 cts |
| Mounting | <p>Without indication : fixed mounting</p> <p>Y : floating mounting</p> <p>E : 4.40 captive nuts.</p> <p>G : rear grommet</p> |
| Contact layout Code | 9 cts - 15 cts - 25 cts - 37 cts - 50 cts |
| Contact Type | <p>P : Pin</p> <p>S : Socket</p> |
| Residual Magnetism Level | NMB : ≤ 200 gammas |
| Contact Termination Code | <p>Without indication : connectors delivered with # 20 contacts for wire AWG 20-24</p> <p>FO : connectors delivered without contacts</p> <p>(FO is not marked on the connector)</p> |

Contact layouts (male insulation front view)





Applications

Satellite
 Launcher
 Space station
 Shuttle hardware
 Probe

Standards

ESA/SCC 3401/002/GSFC/
 MIL-DTL-24308 class M (QPL)



High Density & Removable Crimp Contacts

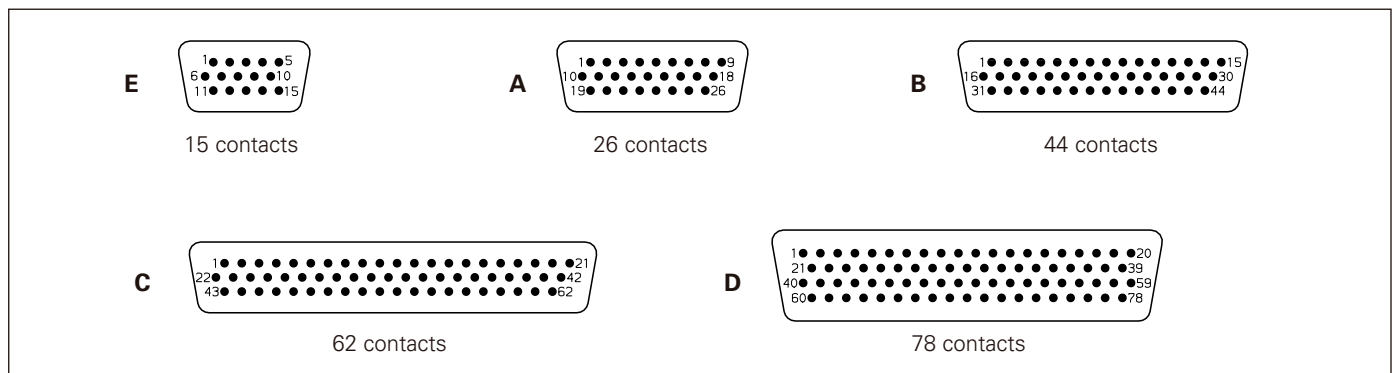
ESA/SCC 3401/002 non-magnetic connectors are used with ESA/SCC 3401/005 removable crimp contacts.

High density (# 22 contacts) layouts are Flight qualified parts.

Part Number / Ordering information

| | |
|---------------------------------|---|
| SCC specification number | 3401 002 02 B D B MA Y 44 P NMB FO |
| Type Variant | 02 : high density (contact # 22) |
| B Testing Level | not to be modified |
| D*MA series | |
| Shell Size | E = 15 cts ; A = 26 cts ; B = 44 cts ; C = 62 cts ; D = 78 cts |
| Mounting | Without indication : fixed mounting Y : floating mounting E : 4.40 captive nuts G : rear grommet |
| Contact Layout Code | 15 cts - 26 cts - 44 cts - 62 cts - 78 cts |
| Contact Type | P : Pin S : Socket |
| Residual Magnetism Level | NMB : ≤ 200 gammas |
| Contact Termination Code | Without indication : connectors delivered with # 22 contacts for wire AWG 22-26 FO : connectors delivered without contacts (FO is not marked on the connector) |

Contact layouts (male insulation front view)



3401 020 01B & 3401 020 02B



Applications

Satellite
 Launcher
 Space station
 Shuttle hardware
 Probe



Standard and high density D-Sub savers, Removable Contacts

ESA/SCC 3401/020 savers are used to protect flight equipment connectors from multiple matings, during tests.

They are used also on a bulkhead as feed-thru connectors.

They are used with ESA/SCC 3401 021 pin-socket contacts.

These products are also suitable for Flight.

Standards

ESA/SCC 3401 020

Part Number / Ordering information

• Standard density

| | | | | | | | | | |
|---------------------------------|---|-----------|----------|----------|--------------|-----------|-----------|------------|-----------|
| SCC specification number | 3401 020 | 01 | B | D | B BMA | 25 | PS | NMB | FO |
| Type Variant | 01 : standard density (contact # 20) | | | | | | | | |
| B Testing Level | not to be modified | | | | | | | | |
| D*BMA series | | | | | | | | | |
| Shell Size | E = 9 cts ; A = 15 cts ; B = 25 cts ; C = 37 cts ; D = 50 cts | | | | | | | | |
| Contact Layout Code | 9 cts - 15 cts - 25 cts - 37 cts - 50 cts | | | | | | | | |
| Contact Type | PS : Pin - Socket | | | | | | | | |
| Residual Magnetism Level | NMB : ≤ 200 gammas | | | | | | | | |
| Contact Termination Code | Without indication : connectors delivered with saver contact # 20 FO : connectors delivered without contacts (FO is not marked on the connector) | | | | | | | | |

• High density

| | | | | | | | | | |
|---------------------------------|---|-----------|----------|----------|--------------|-----------|-----------|------------|-----------|
| SCC specification number | 3401 020 | 02 | B | D | B BMA | 44 | PS | NMB | FO |
| Type Variant | 02 : high density (contact # 22) | | | | | | | | |
| B Testing Level | not to be modified | | | | | | | | |
| D*BMA series | | | | | | | | | |
| Shell Size | E = 15 cts ; A = 26 cts ; B = 44 cts ; C = 62 cts ; D = 78 cts | | | | | | | | |
| Contact Layout Code | 15 cts - 26 cts - 44 cts - 62 cts - 78 cts | | | | | | | | |
| Contact Type | PS : Pin - Socket | | | | | | | | |
| Residual Magnetism Level | NMB : ≤ 200 gammas | | | | | | | | |
| Contact Termination Code | Without indication : connectors delivered with saver contact # 22 FO : connectors delivered without contacts (FO is not marked on the connector) | | | | | | | | |

See contact layouts for saver connectors p.17 for standard density and p. 18 for high density.



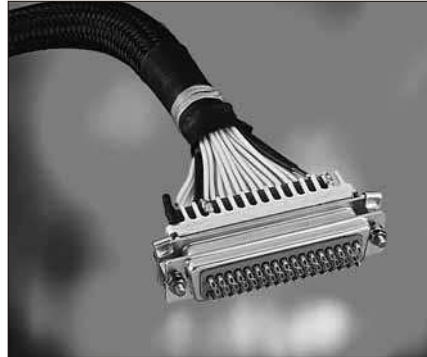
D*M-NMB

Applications

Satellite
Launcher
Space station
Shuttle hardware
Probe

Standards

D*M-NMB



Standard density D-Sub, Non Removable Contacts (Space Grade)

D*M-NMB non-magnetic connectors use the same components as the 3401/001 ESA/SCC and S311-P-10 GSFC connectors. However they are manufactured in accordance full ESA or NASA, MIL-DTL-24308. Consequently no traceability information can be delivered for these items. They are available with solder buckets, straight spills, 90° spills, wire wrap contacts and mixed layouts with coaxial and power contacts. This version is suitable for Engineering Models as well as Flight Models.

Part Number / Ordering information

| | | | | | | | | | | |
|---|----------|----------|----------|----------|-----------|----------|------------|----------|------------|------------|
| Series : D*M (contact # 20) | D | B | M | F | 25 | P | 511 | U | NMB | *** |
| Shell Size | | | | | | | | | | |
| E = 9 cts ; A = 15 cts ; B = 25 cts ; C = 37 cts ; D = 50 cts | | | | | | | | | | |
| Mounting | | | | | | | | | | |
| Nothing : standard mount | | | | | | | | | | |
| F : float mount | | | | | | | | | | |
| O : UNC 4-40 clinch nut | | | | | | | | | | |
| L : M3 clinch nut | | | | | | | | | | |
| Contact Layout Code | | | | | | | | | | |
| (see below 11) | | | | | | | | | | |
| Contact Type | | | | | | | | | | |
| P : Pin (male) | | | | | | | | | | |
| S : Socket (female) | | | | | | | | | | |
| Contact Termination Code | | | | | | | | | | |
| (see page 21) | | | | | | | | | | |
| Nothing : delivered without bracket but with bar | | | | | | | | | | |
| U : delivered with bracket & bar, but without clinch nut (*) | | | | | | | | | | |
| Residual Magnetism and Shell Plating | | | | | | | | | | |
| NMB : ≤ 200 gamma maximum residual magnetism : shell plated 1.27 micron gold mini over copper (conform to GSFC) | | | | | | | | | | |
| Special Modification | | | | | | | | | | |

(*) **Note** : Code U only used for the 5**, 8** & 7** series.

Contact layouts

Contact layouts are indicated by the codes specified hereafter :

| Shell size | Code | Nb cts # 20 | Nb cts # 8 |
|------------|------|-------------|------------|
| E | 09 | 9 | 0 |
| | 5W1 | 4 | 1 |
| A | 15 | 15 | 0 |
| | 3W3 | 0 | 3 |
| | 3WK3 | 0 | 3 |
| | 7W2 | 5 | 2 |
| | 11W1 | 10 | 1 |
| B | 25 | 25 | 0 |
| | 5W5 | 0 | 5 |
| | 9W4 | 5 | 4 |
| | 13W3 | 10 | 3 |
| | 17W2 | 15 | 2 |

| Shell size | Code | Nb cts # 20 | Nb cts # 8 |
|------------|-------|-------------|------------|
| C | 37 | 37 | 0 |
| | 8W8 | 0 | 8 |
| | 17W5 | 12 | 5 |
| | 21WA4 | 17 | 4 |
| | 25W3 | 22 | 3 |
| | 27W2 | 25 | 2 |
| D | 50 | 50 | 0 |
| | 24W7 | 17 | 7 |
| | 36W4 | 32 | 4 |

See layouts p. 11

Note : Mixed layout are not available in 90° spills



Contact termination code

Contact terminations are indicated as follows :

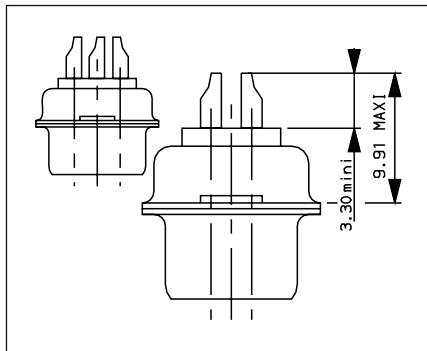
| Contact termination code for D*M-NMB | | |
|--------------------------------------|-----------------|--|
| Code for Ø 0,63 | Code for Ø 0,76 | Contact type |
| | 011 | Solder bucket |
| 311 | 211 | Straight spills |
| | 411 | Wire wrap, 3 wraps |
| | 711 | 90° spills, 2.84 mm pitch & US Footprint (2) |
| 511 | 2A0N | 90° spills, without bracket, 2.54 mm pitch & European Footprint (1) |
| 811 | 2B0N | 90° spills, without bracket, 2.84 mm pitch & European Footprint (1) |
| 1A9N | 2A9N | 90° spills, with bracket, 2.54 mm pitch, M3 clinch nuts & European Footprint (1) |
| 1B9N | 2B9N | 90° spills, with bracket, 2.84 mm pitch, M3 clinch nuts & European Footprint (1) |
| | 2AUN | 90° spills, with bracket, 2.54 mm pitch & European Footprint (1) |
| | 2BUN | 90° spills, with bracket, 2.84 mm pitch & European Footprint (1) |
| 1A7N | 2A7N | 90° spills, with bracket, 2.54 mm pitch, # 4-40 clinch nuts & European Footprint (1) |
| 1B7N | 2B7N | 90° spills, with bracket, 2.84 mm pitch, # 4-40 clinch nuts & European Footprint (1) |
| | 2B7S | 90° spills, with bracket, 2.84 mm pitch, # 4-40 clinch nuts & US Footprint (2) |
| | 2B9S | 90° spills, with bracket, 2.84 mm pitch, M3 clinch nuts & US Footprint (2) |

- (1) **European Footprint** : Distance from rear of flange to first row ⇒ 9.40 mm (.37 inch)
- (2) **US Footprint** : Distance from rear of flange to first row ⇒ 7.19 mm (.283 inch)

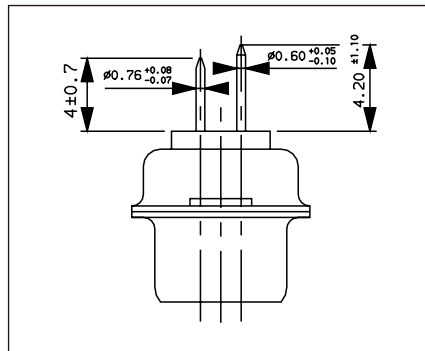
Dimensions for termination code (in mm)

Male & Female Connectors

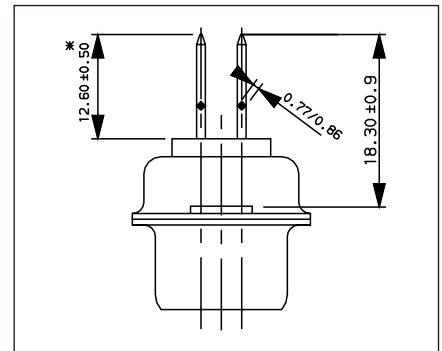
011



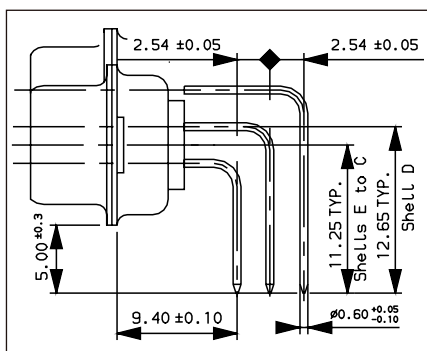
211 & 311



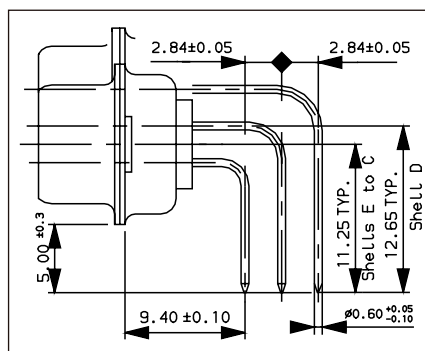
411



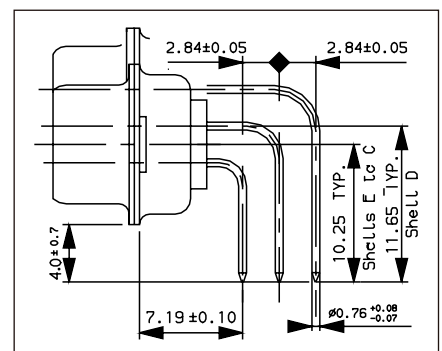
511



811



711



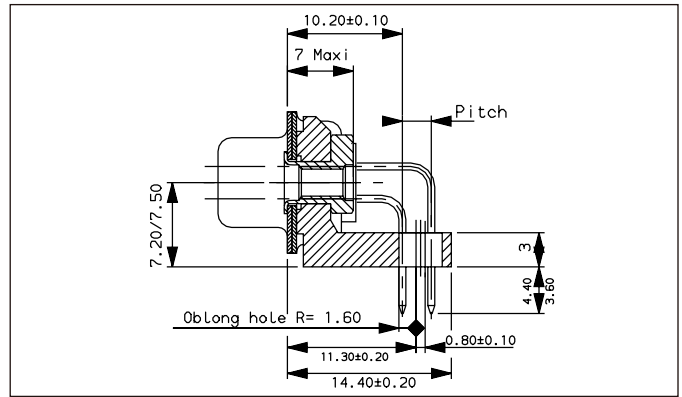
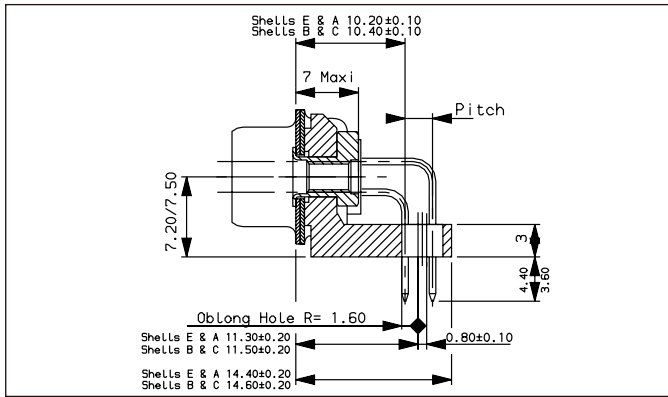
(*) The dimension is the length of the square part of the contact.



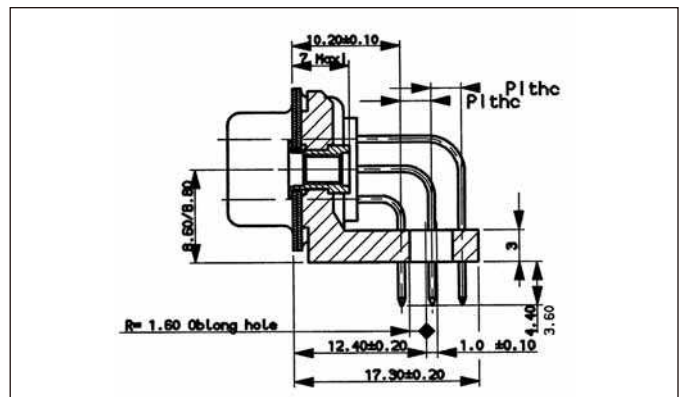
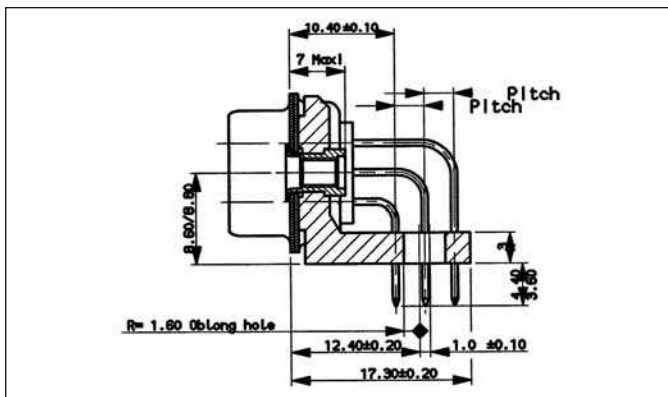
Male connectors

Female connectors

90° spills with bracket - European footprint (shell size E to C)

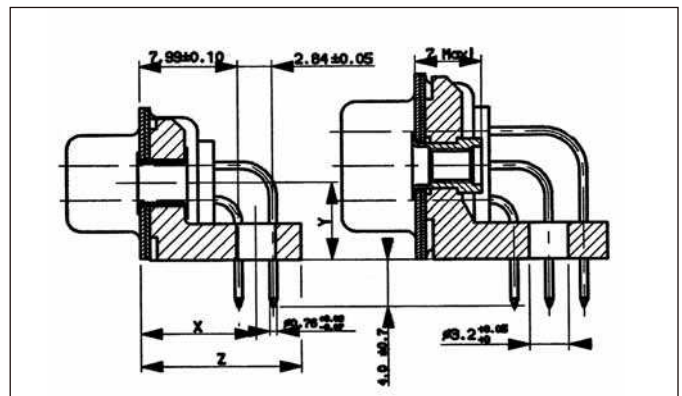
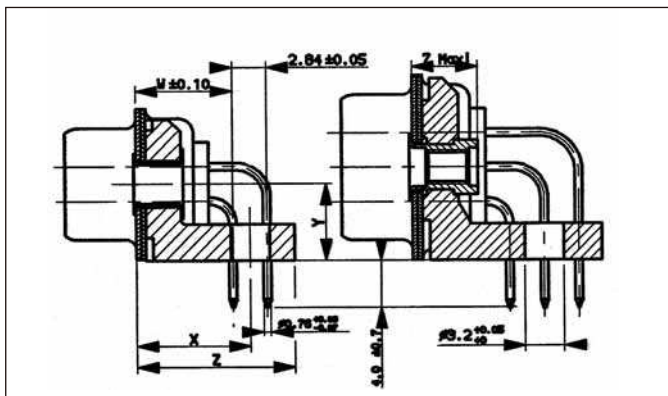


90° spills with bracket - European footprint (shell size D)



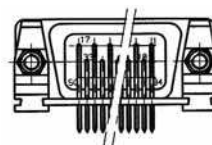
For the pitch :
 ⇒ 2,54 mm for **1A9N, 2A9N, 1A7N & 2A7N**
 ⇒ 2,84 mm for **1B9N, 2B9N, 1B7N & 2B7N**

90° spills with bracket - US footprint (711U, 2B7S & 2B9S)



| Shell size | W | X | Y | Z | | |
|------------|--------------|---------------|---------------|--------------|---------------|---------------|
| E & A | 7,99 .315 | 9,28 .365 | 9,60 .378 | 6,34 .250 | 12,94 .509 | 13,16 .518 |
| B & C | 8,19 .322 | 9,48 .373 | 9,80 .386 | 6,34 .250 | 13,14 .517 | 13,36 .526 |
| D | 8,19 .322 | 10,87 .428 | 11,19 .441 | 7,67 .302 | 15,63 .615 | 15,85 .624 |

| Shell size | X | Y | Z | | |
|------------|---------------|---------------|--------------|---------------|---------------|
| E to C | 9,28 .365 | 9,60 .378 | 6,34 .250 | 12,94 .509 | 13,16 .518 |
| D | 10,67 .420 | 10,99 .433 | 7,67 .302 | 15,43 .607 | 15,65 .616 |



8630-NMB (Crimp)



Applications

Satellite
 Launcher
 Space station
 Shuttle hardware
 Probe

Standards

8630-NMB



Standard density D-Sub Removable Contacts (Space Grade)

8630-NMB non-magnetic connectors use the same components as the ESA/SCC 3401 001 01B and S-311-P-4/09 GSFC.

However they are manufactured in accordance with ESA NASA, MIL-DTL-24308. Consequently no traceability information can be delivered for these items. They are used with removable crimp contacts. This version is suitable for Engineering Models as well as Flight Models.

Part Number / Ordering information

| | | | | | | | | | | |
|---|------------|----------|----------|-----------|----------|----------|-----------|------------|----------|------------|
| Series : 8630 (standard density) # 20 contacts layouts | 863 | 0 | L | 25 | P | 0 | 11 | NMB | L | *** |
| Mounting style 0 : standard mount 1 : floating mount | | | | | | | | | | |
| Other mounting style Nothing : standard or floating mount O : UNC 4-40 clinch nuts L : M3 clinch nuts | | | | | | | | | | |
| Contact layout Code 09 cts - 15 cts - 25 cts - 37 cts - 50 cts | | | | | | | | | | |
| Contact Type P : Pin S : Socket | | | | | | | | | | |
| (*) 0 : for wire # 20 to 24 R : for wire # 26 to 28 E : for wire # 18 | | | | | | | | | | |
| (*) Contact plating 11 = 1.27 micron gold over copper Note : to be indicated if connectors are ordered with contacts (no «L» at the end of the P/N) | | | | | | | | | | |
| Residual magnetism NMB : ≤ 200 gamma maximum residual magnetism ; shell plated 1.27 micron gold mini over copper (conform to GSFC) | | | | | | | | | | |
| (*) Without indication : connectors delivered with contacts for wire AWG 20-24 L : connectors delivered without contacts | | | | | | | | | | |
| Special modifier | | | | | | | | | | |

(*) : The codes 0, 11 & L are not marked on the connector. They are only used for the P/N.

Special modifier

| Code | Characteristics |
|------|---|
| 601 | Grommet and compound, non outgassing |
| 604 | Grommet without compound non outgassing |

See layouts p. 17

8635-NMB (Spill)



Applications

Satellite
Launcher
Space station
Shuttle hardware
Probe

Standards

8635-NMB with Spill Contacts



High density D-Sub, Non Removable Contacts (Space Grade)

These 8635-NMB non-magnetic connectors use the same components as the ESA/SCC 3401 001 02B. However they are manufactured in accordance with ESA and NASA specification.

Consequently no traceability information can be delivered for these items. They are used with non removable contacts. This version is suitable for Engineering Models as well as Flight Models.

Part Number / Ordering information

| | | | | | | | |
|---|-------------|----------|-----------|----------|------------|------------|------------|
| Series : 8635 (high density) # 22 contacts layouts | 8635 | F | 26 | P | 0L3 | NMB | *** |
| Mounting style & Grommet Nothing : standard mount F : Floating mount O : UNC 4-40 clinch nuts L : M3 clinch nuts | | | | | | | |
| Contact layout 15 cts - 26 cts - 44 cts - 62 cts - 78 cts | | | | | | | |
| Contact Type P : Pin S : Socket | | | | | | | |
| Termination type (see below) | | | | | | | |
| Residual magnetism NMB : ≤ 200 gamma maximum residual magnetism ; shell plated 1.27 micron gold mini over copper | | | | | | | |
| Special modification | | | | | | | |

Contact termination code

| Termination type | |
|-----------------------|--|
| 1.27 mm shell plating | Contact type |
| 0L3 | Straight spills |
| 1CON | 90°, disposable drilled bar, 15 to 62 contacts, 1.98 pitch |
| 1DON | 90°, disposable drilled bar, 78 contacts (only D size), 2.08 pitch |
| 1CUN | 90°, with brackets, 15 to 62 contacts, 1.98 pitch (1) |
| 1DUN | 90°, with brackets, 78 contacts, 2.08 pitch (1) |
| 1C7N | 90°, with brackets and UNC 4-40 clinch nuts, 15 to 62 contacts, 1.98 pitch |
| 1D7N | 90°, with brackets and UNC 4-40 clinch nuts, 78 contacts, 2.08 pitch |
| 1C9N | 90°, with brackets and M3 clinch nuts, 15 to 62 contacts, 1.98 pitch |
| 1D9N | 90°, with brackets and M3 clinch nuts, 78 contacts, 2.08 pitch |

(1) : no ESA/SCC equivalent version.

See layouts p.18

8635-NMB (Crimp)



Applications

Satellite
 Launcher
 Space station
 Shuttle hardware
 Probe

Standards

8635-NMB with Crimp Contacts



High density D-Sub Removable Contacts (Space Grade)

These 8635-NMB non-magnetic connectors use the same components as the ESA/SCC 3401 002 02B and S311-P-4/07 GSFC connectors. However they are manufactured in accordance with ESA and NASA specification. Consequently no traceability information can be delivered for these items. They are used with removable crimp contacts. This version is suitable for Engineering Models as well as Flight Models.

Part Number / Ordering information

| | | | | | | | | | |
|--|-------------|----------|-----------|----------|----------|-----------|------------|----------|------------|
| Series : 8635 (high density) # 22 contacts layouts | 8635 | F | 26 | P | 0 | 11 | NMB | L | *** |
| Mounting style & Grommet Nothing : standard mount F : Float mount O : UNC 4-40 clinch nuts L : M3 clinch nuts | | | | | | | | | |
| Contact layout Code 15 cts - 26 cts - 44 cts - 62 cts - 78 cts | | | | | | | | | |
| Contact Type P : Pin S : Socket | | | | | | | | | |
| (*) 0 : for wire # 22 to 26 | | | | | | | | | |
| (*) Contact plating 11 : 1.27 micron gold over copper Note : to be modified if connectors are ordered with contacts (no «L» at the end of the P/N) | | | | | | | | | |
| Residual magnetism NMB : ≤ 200 Gamma maximum residual magnetism ; shell plated 1.27 micron gold mini over copper (conform to GSFC) | | | | | | | | | |
| (*) Without indication : connector delivered with contacts for wire AWG 22-26 L : connector delivered without contacts | | | | | | | | | |
| Special modification | | | | | | | | | |

(*) : The codes 011 & L are not marked on the connector. They are only used for the P/N.

Special modifier

| Code | Characteristics |
|------------|---|
| 601 | Grommet and compound, non outgassing |
| 604 | Grommet, without compound, non outgassing |

See layouts p. 18



D*BMA-NMB

Applications

Satellite
 Launcher
 Space station
 Shuttle hardware
 Probe

Standards

D*BMA-NMB



D-Sub savers (Space Grade)

D*BMA-NMB savers connectors are derived from ESA/SCC 3401 020 savers.

However they are manufactured in accordance with ESA.

Consequently no traceability information can be delivered for these items. They are used with removable crimp contacts.

This version is suitable for Engineering Models as well as Flight Models.

Part Number / Ordering information

• Standard density with removable contacts # 20

| | | | | | | | | |
|---|----------|----------|------------|-----------|-----------|------------|------------|----------|
| Series : D*BMA | D | B | BMA | 25 | PS | 011 | NMB | L |
| Shell size E = 9 cts - A = 15 cts - B = 25 cts - C = 37 cts - D = 50 cts | | | | | | | | |
| Contact layout Code 09 cts - 15 cts - 25 cts - 37 cts - 50 cts | | | | | | | | |
| Contact Type PS : Pin - Socket | | | | | | | | |
| Contact plating 011 : 1.27 micron gold over copper | | | | | | | | |
| Residual magnetism NMB : ≤ 200 Gamma maximum residual magnetism, shell plated 1.27 micron gold mini over copper | | | | | | | | |
| Without indication : connectors delivered with contacts L : connectors delivered without contacts | | | | | | | | |

• High density with removable contacts # 22

| | | | | | | | | |
|---|----------|----------|------------|-----------|-----------|------------|------------|----------|
| Series : D*BMA | D | B | BMA | 44 | PS | 011 | NMB | L |
| Shell size E = 15 cts - A = 26 cts - B = 44 cts - C = 62 cts - D = 78 cts | | | | | | | | |
| Contact layout Code 15 cts - 26 cts - 44 cts - 62 cts - 78 cts | | | | | | | | |
| Contact Type PS : Pin - Socket | | | | | | | | |
| Contact plating 011 : 1.27 micron gold over copper | | | | | | | | |
| Residual magnetism NMB : ≤ 200 Gamma maximum residual magnetism, shell plated 1.27 micron gold mini over copper | | | | | | | | |
| Without indication : connectors delivered with contacts L : connectors delivered without contacts | | | | | | | | |

(*) : The codes 011 & L are not marked on the connector. They are only used for the P/N.

See contact layouts for saver connectors p.17 for standard density and p.18 for high density.



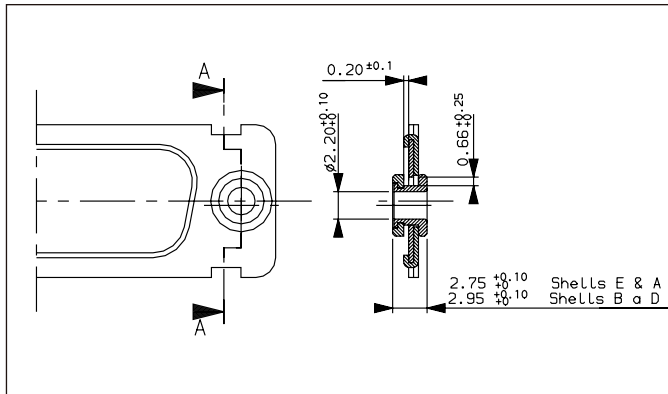
Dimensions

Float mounting (3401 001, 3401 002, D*MF, 8631 & 8635F)

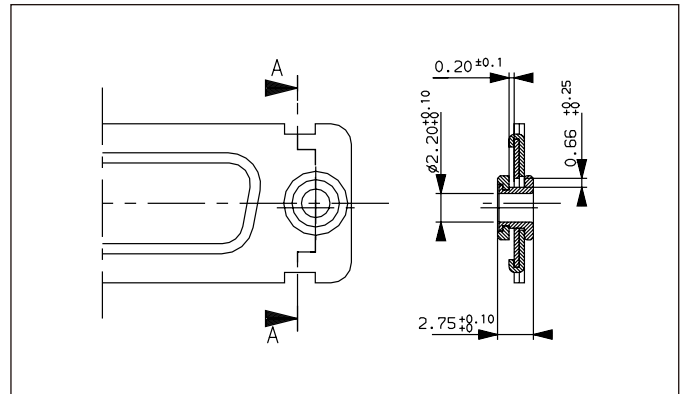
Not available for savers connectors

Engagement view

Male connectors

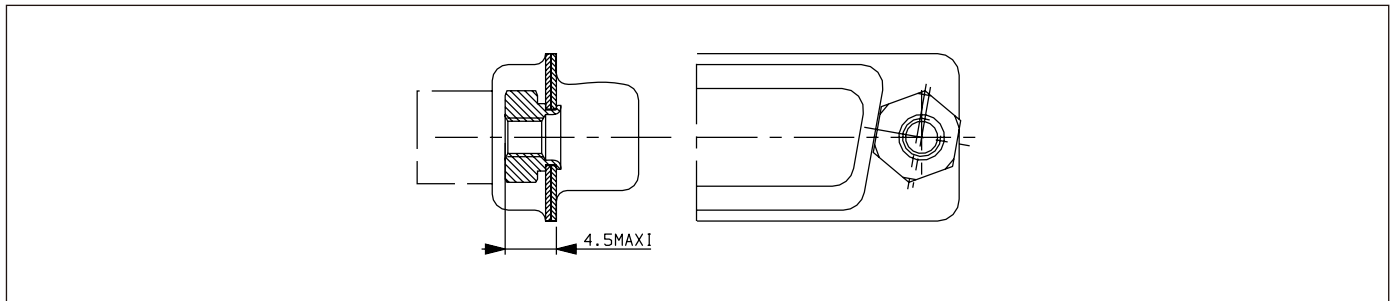


Female connectors



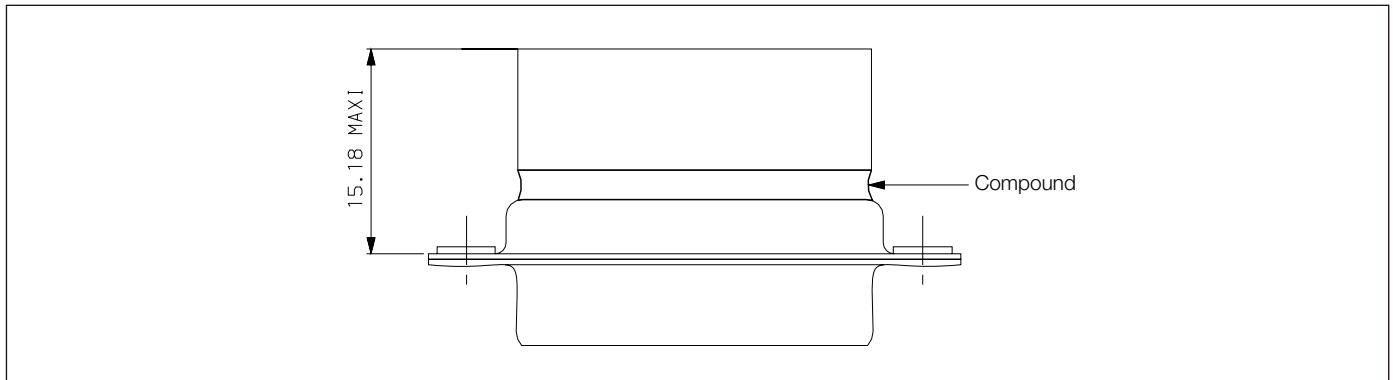
Mounting with clinch nuts (O & L, D*M, 8630 & 8635)

(E for 3401001 and 3401002 series)



Mounting with grommet (8630 & 8635) ; (Code : G for 3401002 series),

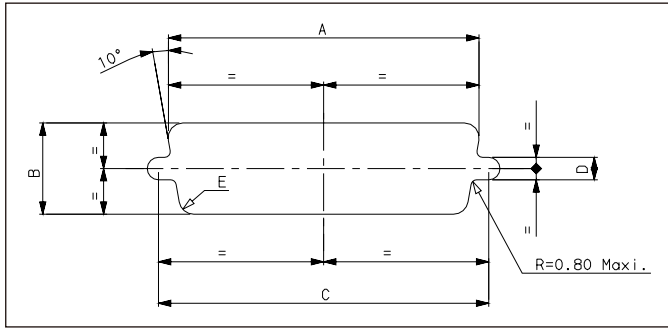
code 601, 604 for 8630 & 8635 Space Grade version



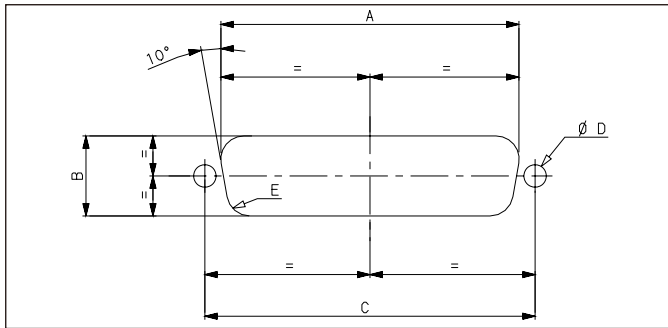


Panel cut-outs (in mm/inch)

Cutout for mounting from front or rear of panel

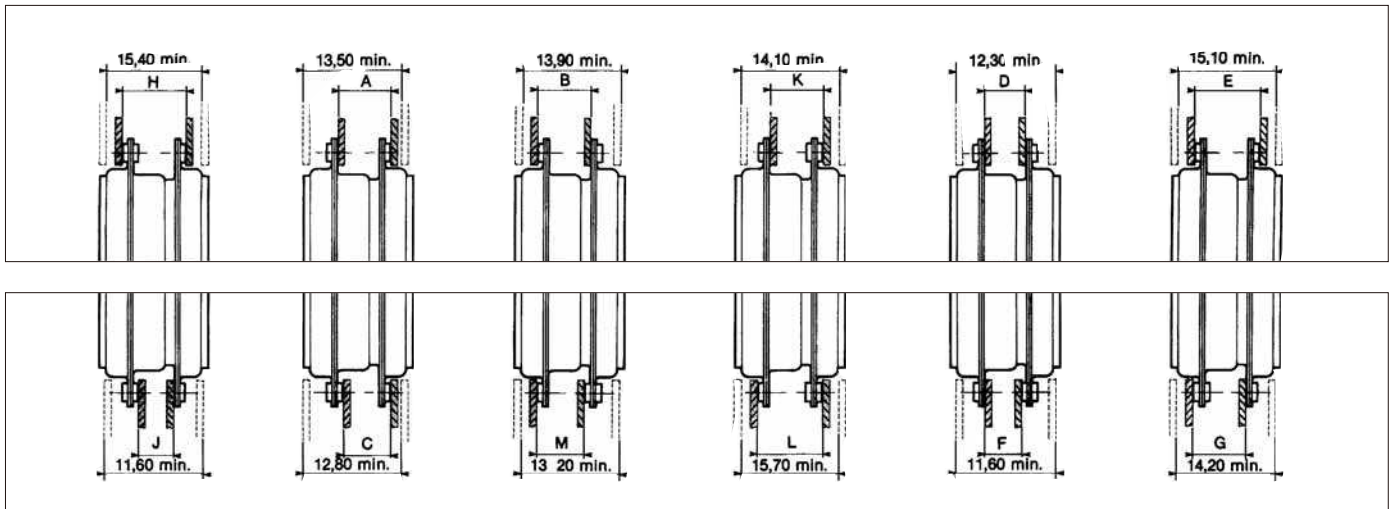


Cutout for mounting from rear of panel only



| Shell size | Type of mounting | Mounting position | A ± 0,1 (± 0.004) | B ± 0,1 (± 0.004) | C ± 0,1 (± 0.004) | D ± 0,05 (± 0.002) | E ± 0,1 (± 0.004) |
|------------|------------------|-------------------|-------------------|-------------------|-------------------|--------------------|-------------------|
| E | Rigid | Front | 22,2 .874 | 13 .512 | 24,99 .984 | 3,2 .126 | 2,1 .083 |
| | | Rear | 20,5 .807 | 11,4 .449 | 24,99 .984 | 3,2 .126 | 3,3 .130 |
| | Float | Front | 23 .906 | 13,8 .543 | 24,99 .984 | 2,2 .087 | 2,1 .083 |
| | | Rear | 21,3 .839 | 12,2 .480 | 24,99 .984 | 2,2 .087 | 3,3 .130 |
| A | Rigid | Front | 30,5 1.201 | 13 .512 | 33,32 1.312 | 3,2 .126 | 2,1 .083 |
| | | Rear | 28,8 1.134 | 11,4 .449 | 33,32 1.312 | 2,2 .087 | 3,3 .130 |
| | Float | Front | 31,3 1.232 | 13,8 .543 | 33,32 1.312 | 2,2 .087 | 2,1 .083 |
| | | Rear | 29,6 1.165 | 12,2 .480 | 33,2 1.307 | 2,2 .087 | 3,3 .130 |
| B | Rigid | Front | 44,3 1.744 | 13 .512 | 47,04 1.852 | 3,2 .126 | 2,1 .083 |
| | | Rear | 42,5 1.673 | 11,4 .449 | 47,04 1.852 | 3,2 .126 | 3,3 .130 |
| | Float | Front | 45,1 1.776 | 13,8 .543 | 47,04 1.852 | 2,2 .087 | 2,1 .083 |
| | | Rear | 43,3 1.705 | 12,2 .480 | 47,04 1.852 | 2,2 .087 | 3,3 .130 |
| C | Rigid | Front | 60,7 2.390 | 13 .512 | 63,5 2.500 | 3,2 .126 | 2,1 .083 |
| | | Rear | 59,1 2.327 | 11,4 .449 | 63,5 2.500 | 3,2 .126 | 3,3 .130 |
| | Float | Front | 61,5 2.421 | 13,8 .543 | 63,5 2.500 | 2,2 .087 | 2,1 .083 |
| | | Rear | 59,8 2.354 | 12,2 .480 | 63,5 2.500 | 2,2 .087 | 3,3 .130 |
| D | Rigid | Front | 58,3 2.295 | 15,8 .622 | 61,11 2.406 | 3,2 .126 | 2,1 .083 |
| | | Rear | 56,3 2.217 | 14,1 .555 | 61,11 2.406 | 3,2 .126 | 3,3 .130 |
| | Float | Front | 59,2 2.331 | 16,6 .654 | 61,11 2.406 | 2,2 .087 | 2,1 .083 |
| | | Rear | 57,2 2.252 | 14,4 .567 | 61,11 2.406 | 2,2 .087 | 3,3 .130 |

Panel mounting (in mm/inch)



| Shell size | A ^{+0,6} ₋₀ | B ^{+0,6} ₋₀ | C ^{+0,6} ₋₀ | D ^{+0,6} ₋₀ | E ^{+0,6} ₋₀ | F ^{+0,6} ₋₀ | G ^{+0,6} ₋₀ | H ^{+0,6} ₋₀ | J ^{+0,6} ₋₀ | K ^{+0,6} ₋₀ | L ^{+0,6} ₋₀ | M ^{+0,6} ₋₀ |
|------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| E | 7,65 .301 | 7,65 .301 | 6,85 .270 | 6,45 .254 | 8,85 .348 | 5,65 .222 | 8,25 .325 | 9,45 .372 | 5,65 .222 | 8,25 .325 | 9,45 .372 | 6,85 .270 |
| A | 7,65 .301 | 7,65 .301 | 6,85 .270 | 6,45 .254 | 8,85 .348 | 5,65 .222 | 8,25 .325 | 9,45 .372 | 5,65 .222 | 8,25 .325 | 9,45 .372 | 6,85 .270 |
| B | 7,55 .297 | 7,55 .297 | 6,75 .266 | 6,35 .250 | 8,85 .348 | 5,55 .219 | 8,15 .321 | 9,35 .368 | 5,55 .219 | 8,15 .321 | 9,35 .368 | 6,75 .266 |
| C | 7,55 .297 | 7,95 .313 | 6,75 .266 | 6,35 .250 | 9,15 .360 | 5,55 .219 | 8,35 .329 | 9,55 .376 | 5,55 .219 | 8,15 .321 | 9,75 .384 | 7,15 .281 |
| D | 7,55 .297 | 7,95 .313 | 6,75 .266 | 6,35 .250 | 9,15 .360 | 5,55 .219 | 8,35 .329 | 9,55 .376 | 5,55 .219 | 8,15 .321 | 9,75 .384 | 7,15 .281 |



Standard density

Viewed from front face of male insulator (dimensions in mm)

| Layout according to | Number of contacts | Drilling dimensions |
|---------------------|-------------------------------|---------------------|
| MS-18273-1 | 9 contacts (shell size E) | |
| MS-18274-1 | 15 contacts (shell size A) | |
| MS-18275-1 | 25 contacts (shell size B) | |
| MS-18276-1 | 37 contacts (shell size C) | |
| MS-18277-1 | 50 contacts (shell size D) | |

- ⇒ Suggest 0,89 Ø hole for contact termination positions, for 0.50 / 0.65 Ø spills
- ⇒ Suggest 1,08 Ø hole for contact termination positions, for 0.69 / 0.84 Ø spills



High density

Viewed from front face of male insulator (dimensions in mm)

| Layout according to | Number of contacts | Drilling dimensions | |
|---------------------|-------------------------------|---------------------|------------------|
| | | Male connector | Female connector |
| MS-18273-2 | 15 contacts (shell size E) | | |
| MS-18274-2 | 26 contacts (shell size A) | | |
| MS-18275-2 | 44 contacts (shell size B) | | |
| MS-18276-2 | 62 contacts (shell size C) | | |
| MS-18277-2 | 78 contacts (shell size D) | | |

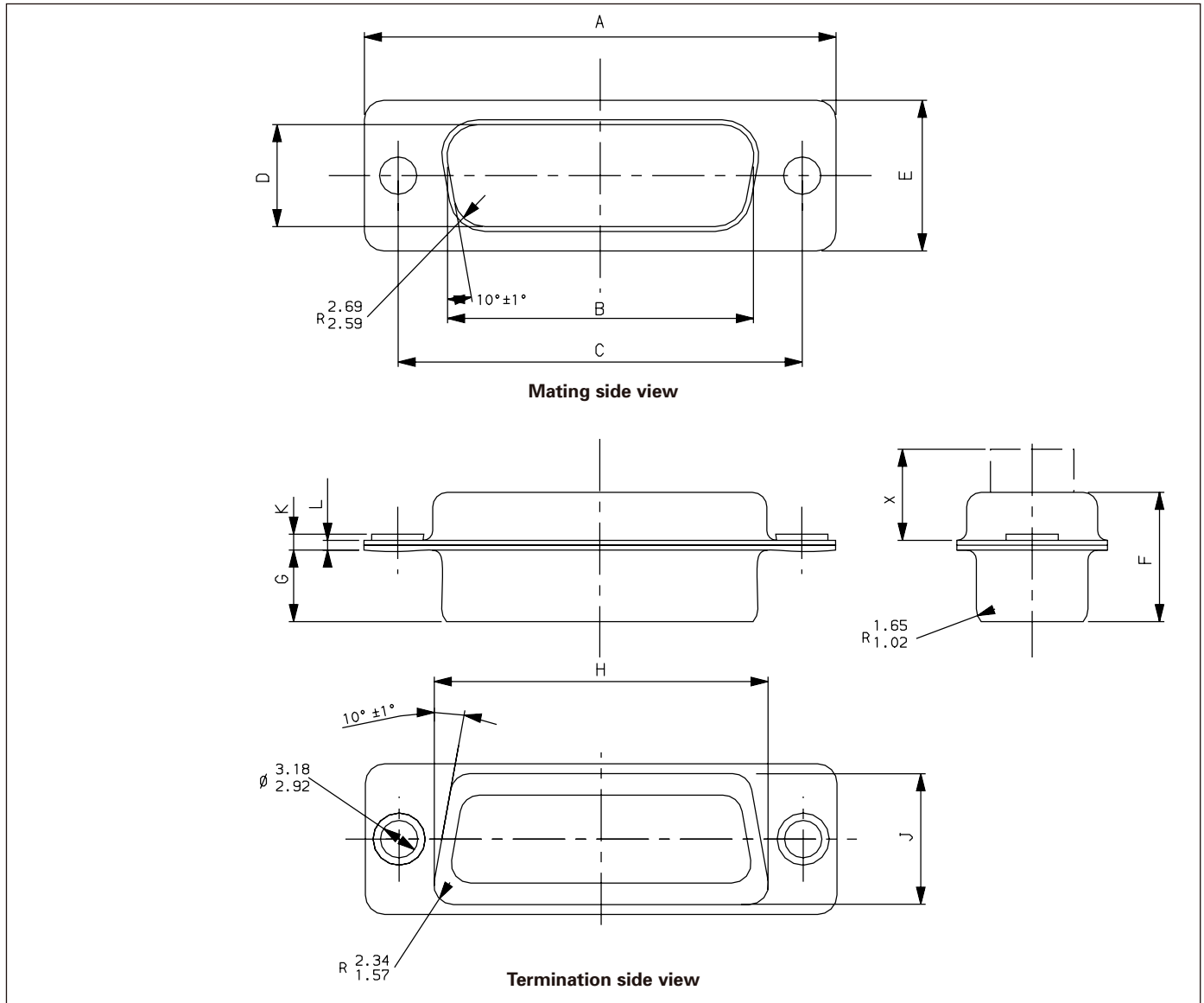
⇒ Suggest 0,89 Ø hole for contact termination positions, for 0,50 / 0,65 Ø spills

⇒ Suggest 1,08 Ø hole for contact termination positions, for 0,69 / 0,84 Ø spills



Physical dimensions

Male connectors



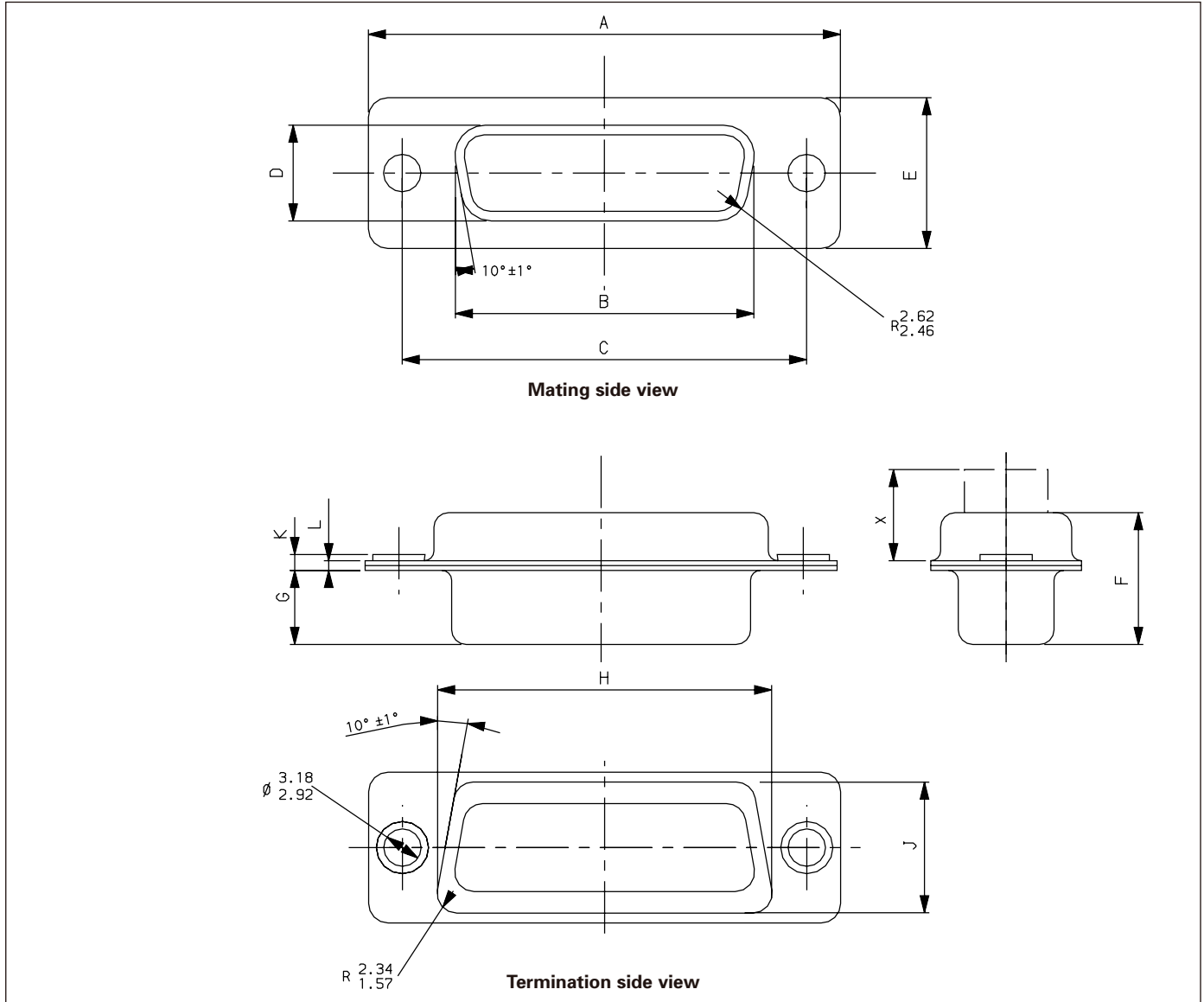
For the dimension X : ↗ 6,38 mm MAXI for **3401 001 01B & D*M**
 ↘ 9,53 mm MAXI for **3401 001 02B, 3401 002, 8630 & 8635**

| Shell size | A | | B | | C | | D | | E | | F | | G | | H | | J | | K | | L | |
|------------|----------------|----------------|----------------|----------------|----------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|--------------|----------------|----------------|---------------|---------------|--------------|--------------|--------------|--------------|
| | min | Max | min | Max | min | Max | min | Max | min | Max | min | Max | min | Max | min | Max | min | Max | min | Max | min | Max |
| E | 30,43 1,198 | 31,19 1,228 | 16,79 .661 | 17,04 .671 | 24,87 .979 | 25,12 .989 | 8,23 .324 | 8,48 .334 | 12,17 .479 | 12,93 .509 | 10,46 .412 | 10,97 .432 | 5,82 .229 | 6,12 .241 | 19,02 .749 | 19,53 .769 | 10,46 .412 | 10,97 .432 | 0,89 .035 | 1,52 .060 | 0,51 .020 | 1,02 .040 |
| A | 38,76 1,526 | 39,52 1,556 | 25,12 .989 | 25,37 .999 | 33,20 1,307 | 33,45 1,317 | 8,23 .324 | 8,48 .334 | 12,17 .479 | 12,93 .509 | 10,46 .412 | 10,97 .432 | 5,82 .229 | 6,12 .241 | 27,25 1,073 | 27,76 1,093 | 10,46 .412 | 10,97 .432 | 0,89 .035 | 1,52 .060 | 0,51 .020 | 1,02 .040 |
| B | 52,65 2,073 | 53,42 2,103 | 38,84 1,529 | 39,09 1,539 | 46,91 1,847 | 47,17 1,857 | 8,23 .324 | 8,48 .334 | 12,17 .479 | 12,93 .509 | 10,57 .416 | 11,07 .436 | 5,69 .224 | 5,99 .236 | 41,02 1,615 | 41,53 1,635 | 10,46 .412 | 10,97 .432 | 1,27 .050 | 1,78 .070 | 0,74 .029 | 1,24 .049 |
| C | 68,94 2,714 | 69,70 2,744 | 55,30 2,177 | 55,55 2,187 | 63,37 2,495 | 63,63 2,505 | 8,23 .324 | 8,48 .334 | 12,17 .479 | 12,93 .509 | 10,57 .416 | 11,07 .436 | 5,69 .224 | 5,99 .236 | 57,45 2,262 | 57,96 2,282 | 10,46 .412 | 10,97 .432 | 1,27 .050 | 1,78 .070 | 0,74 .029 | 1,24 .049 |
| D | 66,55 2,620 | 67,31 2,650 | 52,68 2,074 | 52,93 2,084 | 60,99 2,401 | 61,24 2,411 | 10,95 .431 | 11,20 .441 | 14,99 .590 | 15,75 .620 | 10,57 .416 | 11,07 .436 | 5,69 .224 | 5,99 .236 | 55,07 2,168 | 55,58 2,188 | 13,31 .524 | 13,82 .544 | 1,27 .050 | 1,78 .070 | 0,74 .029 | 1,24 .049 |



Physical dimensions

Female connectors

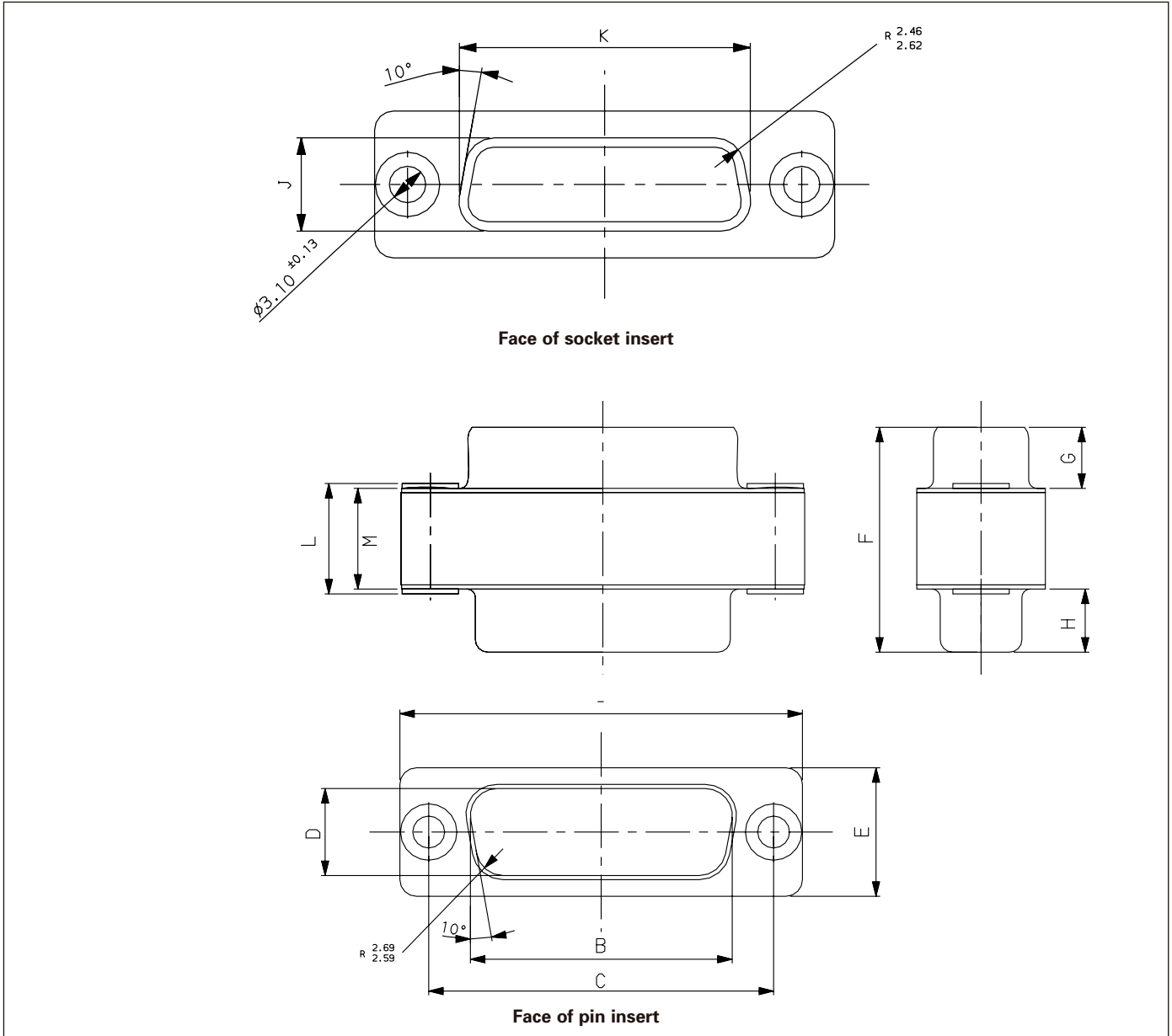


For the dimension X : ↗ 6,38 mm MAXI for **3401 001 01B & D*M**
 ↘ 9,53 mm MAXI for **3401 001 02B, 3401 002, 8630 & 8635**

| Shell size | A | | B | | C | | D | | E | | F | | G | | H | | J | | K | | L | |
|------------|----------------|----------------|----------------|----------------|----------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|--------------|----------------|----------------|---------------|---------------|--------------|--------------|--------------|--------------|
| | min | Max | min | Max | min | Max | min | Max | min | Max | min | Max | min | Max | min | Max | min | Max | min | Max | min | Max |
| E | 30,43 1,198 | 31,19 1,228 | 16,21 .638 | 16,46 0,648 | 24,87 .979 | 25,12 .989 | 7,77 .306 | 8,03 .316 | 12,17 .479 | 12,93 .509 | 10,64 .419 | 11,15 .439 | 6,05 .238 | 6,30 .248 | 19,02 .749 | 19,53 .769 | 10,46 .412 | 10,97 .432 | 0,89 .035 | 1,52 .060 | 0,51 .020 | 1,02 .040 |
| A | 38,76 1,526 | 39,52 1,556 | 24,54 .966 | 24,79 .976 | 33,20 1,307 | 33,45 1,317 | 7,77 .306 | 8,03 .316 | 12,17 .479 | 12,93 .509 | 10,64 .419 | 11,15 .439 | 6,05 .238 | 6,30 .248 | 27,25 1,073 | 27,76 1,093 | 10,46 .412 | 10,97 .432 | 0,89 .035 | 1,52 .060 | 0,51 .020 | 1,02 .040 |
| B | 52,65 2,073 | 53,42 2,103 | 38,25 1,506 | 38,51 1,516 | 46,91 1,847 | 47,17 1,857 | 7,77 .306 | 8,03 .316 | 12,17 .479 | 12,93 .509 | 10,64 .419 | 11,15 .439 | 6,05 .238 | 6,30 .248 | 41,02 1,615 | 41,53 1,635 | 10,46 .412 | 10,97 .432 | 0,89 .035 | 1,52 .060 | 0,51 .020 | 1,02 .040 |
| C | 68,94 2,714 | 69,69 2,744 | 54,71 2,154 | 54,97 2,164 | 63,37 2,495 | 63,63 2,505 | 7,77 .306 | 8,03 .316 | 12,17 .479 | 12,93 .509 | 10,64 .419 | 11,15 .439 | 6,05 .238 | 6,30 .248 | 57,45 2,262 | 57,96 2,282 | 10,46 .412 | 10,97 .432 | 0,89 .035 | 1,52 .060 | 0,51 .020 | 1,02 .040 |
| D | 66,55 2,620 | 67,31 2,650 | 52,30 2,059 | 52,55 2,069 | 60,99 2,401 | 61,24 2,411 | 10,62 .418 | 10,87 .428 | 14,99 .590 | 15,75 .620 | 10,64 .419 | 11,15 .439 | 6,05 .238 | 6,30 .248 | 55,07 2,168 | 55,58 2,188 | 13,31 .524 | 13,82 .544 | 0,89 .035 | 1,52 .060 | 0,51 .020 | 1,02 .040 |



Saver connectors



| Shell size | A | | B | | C | | D | | E | | F | | G | | H | | J | | K | | L | | M | |
|------------|----------------|----------------|----------------|----------------|----------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|--------------|--------------|--------------|---------------|---------------|----------------|----------------|---------------|---------------|--------------|---------------|
| | min | Max | min | Max | min | Max | min | Max | min | Max | min | Max | min | Max | min | Max | min | Max | min | Max | min | Max | min | Max |
| E | 66,55 2,620 | 67,31 2,650 | 52,68 2,074 | 52,93 2,084 | 60,99 2,401 | 61,24 2,411 | 10,95 .431 | 11,20 .441 | 14,99 .590 | 15,75 .620 | 21,72 .855 | 22,22 .875 | 5,69 .224 | 5,99 .236 | 6,05 .238 | 6,30 .248 | 10,62 .418 | 10,87 .428 | 52,30 2,059 | 52,55 2,069 | 10,21 .402 | 10,97 .432 | 9,61 .378 | 10,11 .398 |
| A | 68,94 2,714 | 69,70 2,744 | 55,30 2,177 | 55,55 2,187 | 63,37 2,495 | 63,63 2,505 | 8,23 .324 | 8,48 .334 | 12,17 .479 | 12,93 .509 | 21,72 .855 | 22,22 .875 | 5,69 .224 | 5,99 .236 | 6,05 .238 | 6,30 .248 | 7,77 .306 | 8,03 .316 | 54,71 2,154 | 54,97 2,164 | 10,21 .402 | 10,97 .432 | 9,61 .378 | 10,11 .398 |
| B | 52,65 2,073 | 53,42 2,103 | 38,84 1,529 | 39,09 1,539 | 46,91 1,847 | 47,17 1,857 | 8,23 .324 | 8,48 .334 | 12,17 .479 | 12,93 .509 | 21,72 .855 | 22,22 .875 | 5,69 .224 | 5,99 .236 | 6,05 .238 | 6,30 .248 | 7,77 .306 | 8,03 .316 | 38,25 1,506 | 38,51 1,516 | 10,21 .402 | 10,97 .432 | 9,61 .378 | 10,11 .398 |
| C | 38,76 1,526 | 39,52 1,556 | 25,12 .989 | 25,37 .999 | 33,20 1,307 | 33,45 1,317 | 8,23 .324 | 8,48 .334 | 12,17 .479 | 12,93 .509 | 21,12 .831 | 21,62 .851 | 5,82 .229 | 6,12 .241 | 6,05 .238 | 6,30 .248 | 7,77 .306 | 8,03 .316 | 24,54 .966 | 24,79 .976 | 10,21 .402 | 10,97 .432 | 9,61 .378 | 10,11 .398 |
| D | 30,43 1,198 | 31,19 1,228 | 16,79 .661 | 17,04 .671 | 24,87 .979 | 25,12 .989 | 8,23 .324 | 8,48 .334 | 12,17 .479 | 12,93 .509 | 21,12 .831 | 21,62 .851 | 5,82 .229 | 6,12 .241 | 6,05 .238 | 6,30 .248 | 7,77 .306 | 8,03 .316 | 16,21 .638 | 16,46 .648 | 10,21 .402 | 10,97 .432 | 9,61 .378 | 10,11 .398 |



Crimp contacts

- **3401 005** : crimp contacts for **3401 002** connectors (Flight Models)
- **8949 Series** : crimp contacts for **8630 / 8635** connectors (Engineering Models).

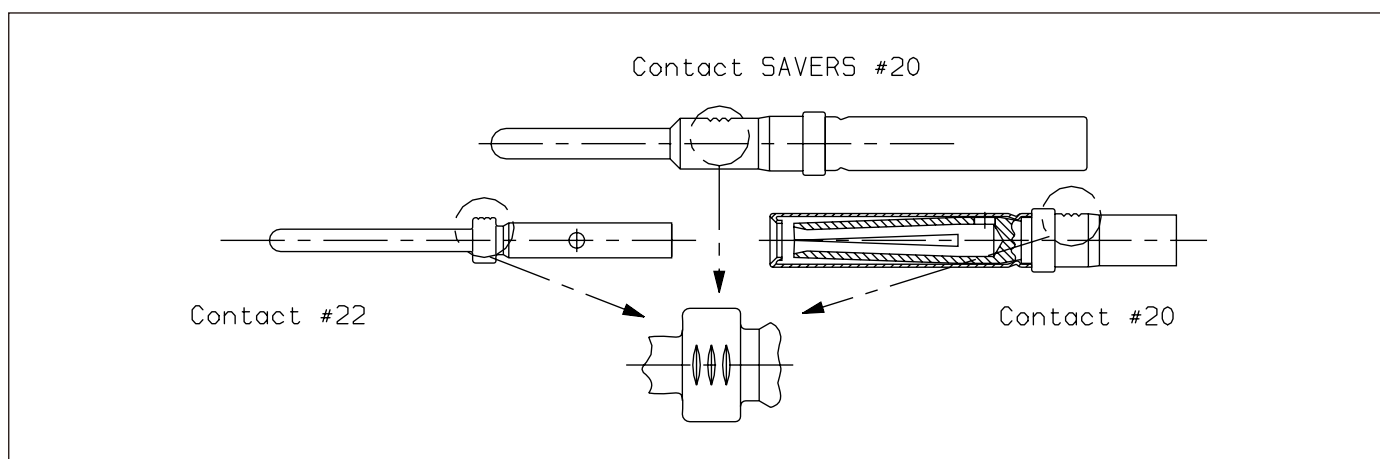
| Contact Size | Designation | | Part number / ordering code (see note) | | |
|--------------|-------------|--------|--|--|--|
| | | | ESA/SCC | NMB / 011 SOURIAU (1.27 microns gold) | NMB / 038 SOURIAU (2.54 microns gold) |
| # 20 | # 20/24 | Pin | 3401 005 01B | 8949 1196 Y7 EL | 8949 1196 UE EL |
| | | Socket | 3401 005 02B | 8949 1198 EL | 8949 407 EL |
| # 20 | # 26/28 | Pin | 3401 005 03B | 8949 1520 Y7 EL | 8949 1520 UE EL |
| | | Socket | 3401 005 04B | 8949 1523 EL | 8949 1521 EL |
| # 20 | # 18 | Pin | 3401 005 05B | 8949 3227 Y7 EL | 8949 3227 UE EL |
| | | Socket | 3401 005 06B | 8949 3352 EL | 8949 3229 EL |
| # 22 | # 22/26 | Pin | 3401 005 07B | 8949 1524 Y7 EL | 8949 1524 UE EL |
| | | Socket | 3401 005 08B | 8949 1525 EL | 8949 1526 EL |

Note : the code EL is not marked on the packaging

Insertion & Extraction tool

| | Part number |
|-----------------------|---------------|
| Plastic tool for # 20 | 8630-06A |
| Plastic tool for # 22 | M 81969-14-01 |

Removable contact identification



Saver contacts

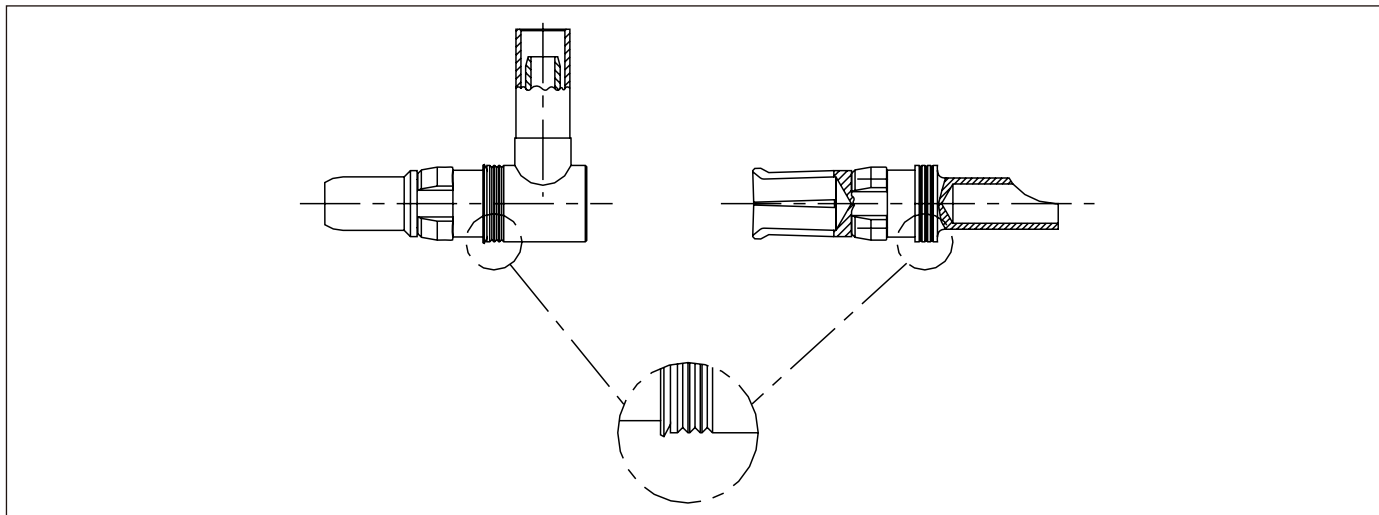
- **3401 021** : crimp contacts for **3401 020** connectors (Flight Models)
- **8949 Series** : crimp contacts for **D*BMA** connectors (Engineering Models).

| Contact Size | Designation | ESA/SCC | Part number | |
|--------------|--------------|--------------|----------------------------------|----------------------------------|
| | | | NMB / 011 (1.27 microns gold) | NMB / 038 (2.54 microns gold) |
| # 20 | Pin - Socket | 3401 021 01B | 8949 975 EL | 8949 3030 EL |
| # 22 | Pin - Socket | 3401 021 02B | 8949 3362 EL | 8949 3373 EL |



Coaxial contacts

3401 004/8949-004 & 3401 040/8949-040 Contact identification



SOURIAU's contacts are identified by 3 engraved stripes.

Part Numbers

| Version | ESA Part Number system (Flight Models) | SOURIAU Part Number system (Engineering Models) | Type | Shape | Wire type |
|--|---|--|--------|-------------------------------|--|
| Solder buckets | 3401 004 01B | 8949 004 01NMB | Male | straight | RG 178 BU RG 196 AU KX 21 A |
| | 3401 004 02B | 8949 004 02NMB | Female | straight | |
| | 3401 004 03B | 8949 004 03NMB | Male | 90° | |
| | 3401 004 04B | 8949 004 04NMB | Female | 90° | |
| | 3401 004 05B | 8949 004 05NMB | Male | straight | KX 22 A RG 179 BU RG 316 U RG 188 AU & 50 CIS |
| | 3401 004 06B | 8949 004 06NMB | Female | straight | |
| | 3401 004 07B | 8949 004 07NMB | Male | 90° | |
| | 3401 004 08B | 8949 004 08NMB | Female | 90° | |
| | 3401 004 09B | 8949 004 09NMB | Male | straight | RG 180 BU |
| | 3401 004 10B | 8949 004 10NMB | Female | straight | |
| Crimp contacts | 3401 004 11B | 8949 004 11NMB | Male | straight | RG 178 BU RG 196 AU KX 21 A |
| | 3401 004 12B | 8949 004 12NMB | Female | straight | |
| | 3401 004 13B | 8949 004 13NMB | Male | 90° | |
| | 3401 004 14B | 8949 004 14NMB | Female | 90° | |
| | 3401 004 15B | 8949 004 15NMB | Male | straight | KX 22 A RG 179 BU RG 316 U RG 188 AU & 50 CIS |
| | 3401 004 16B | 8949 004 16NMB | Female | straight | |
| | 3401 004 17B | 8949 004 17NMB | Male | 90° | |
| | 3401 004 18B | 8949 004 18NMB | Female | 90° | |
| | 3401 004 19B | 8949 004 19NMB | Male | straight | RG 180 BU |
| | 3401 004 20B | 8949 004 20NMB | Female | straight | |
| 50 CIS | | | | according to ESA/SCC 3902 001 | |
| RG 176 B/U, RG 178 B/U, RG 179 B/U, RG 180 B/U, RG 196 A/U, RG 316 U, RG 188 A/U | | | | according to MIL-C-17 | |
| KX 21 A / 22 A | | | | according to NFC 93550 | |

Extraction tool

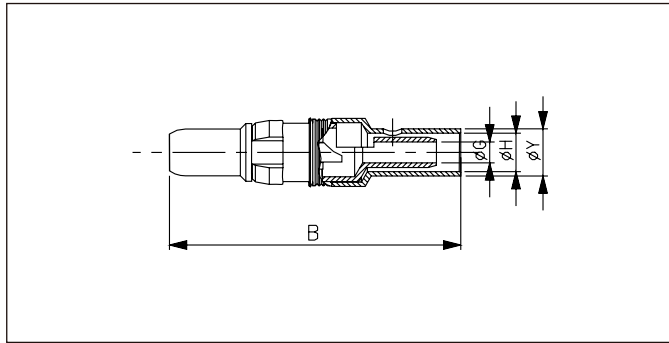
| | Part number |
|-----------------|-------------|
| Extraction tool | 8630-07A |



Coaxial contacts

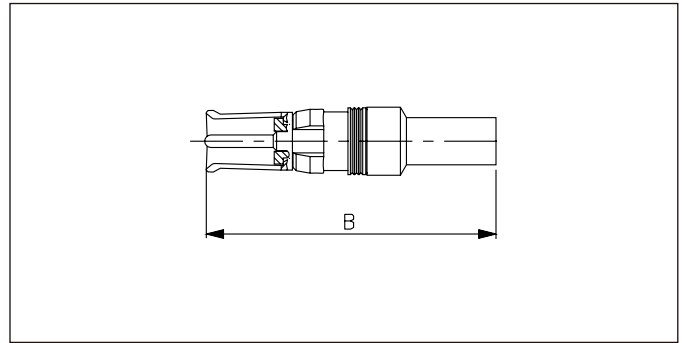
Dimensions (in mm/inch)

Pin coaxial contact

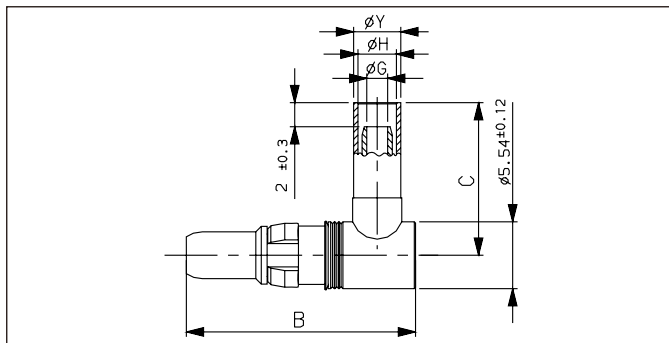


01, 05, 11 & 15 variants

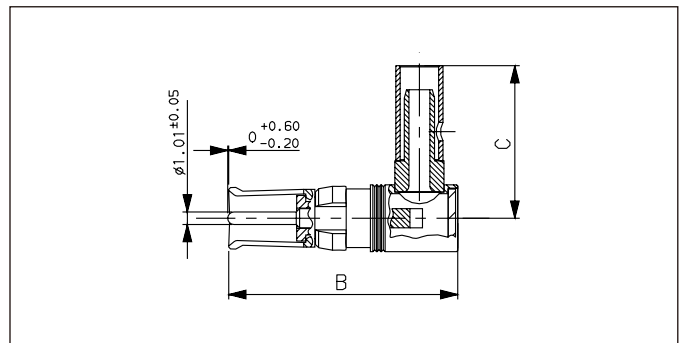
Socket coaxial contact



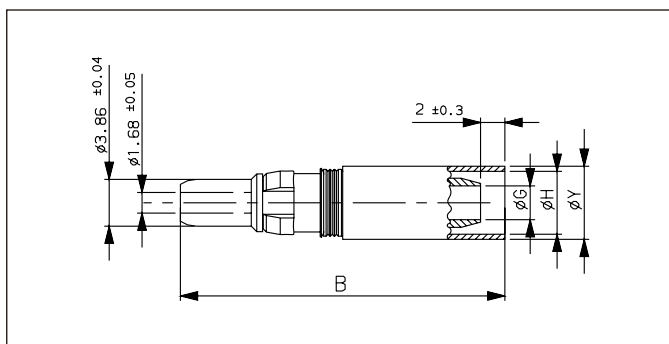
02, 06, 12 & 16 variants



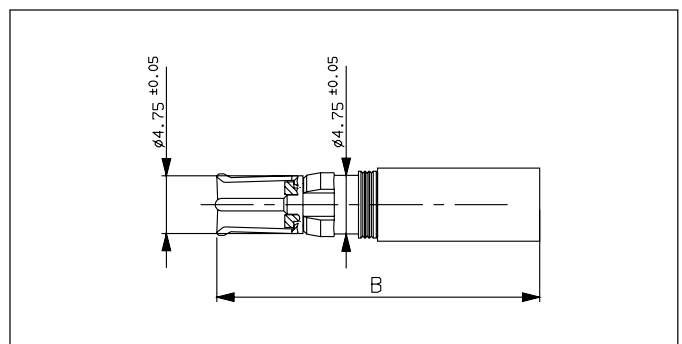
03, 07, 13 & 17 variants



04, 08, 14 & 18 variants



09 & 19 variants



10 and 20 variants

| Variant | B Ref. | C Ref. | Ø G min | Ø H min | X Max. | Ø Y Max. |
|---------|------------|-----------|-----------|----------|-----------|-----------|
| 01 - 11 | 23,6 .929 | - | 0,9 .035 | 2,3 .091 | 18,8 .74 | 3,25 .128 |
| 02 - 12 | 23,6 .929 | - | 0,9 .035 | 2,3 .091 | 18,8 .74 | 3,25 .128 |
| 03 - 13 | 18,64 .734 | 12,5 .492 | 0,9 .035 | 2,3 .091 | 13,46 .53 | 3,25 .128 |
| 04 - 14 | 18,64 .734 | 12,5 .492 | 0,9 .035 | 2,3 .091 | 13,46 .53 | 3,25 .128 |
| 05 - 15 | 23,6 .929 | - | 1,55 .061 | 3,1 .122 | 18,8 .74 | 4,1 .161 |
| 06 - 16 | 23,6 .929 | - | 1,55 .061 | 3,1 .122 | 18,8 .74 | 4,1 .161 |
| 07 - 17 | 18,64 .734 | 12,5 .492 | 1,55 .061 | 3,1 .122 | 13,46 .53 | 4,1 .161 |
| 08 - 18 | 18,64 .734 | 12,5 .492 | 1,55 .061 | 3,1 .122 | 13,46 .53 | 4,1 .161 |
| 09 - 19 | 26,3 1.035 | - | 2,55 .1 | 5,1 .201 | 21,5 .846 | 6,2 .244 |
| 10 - 20 | 26,3 1.035 | - | 2,55 .1 | 5,1 .201 | 21,5 .846 | 6,2 .244 |

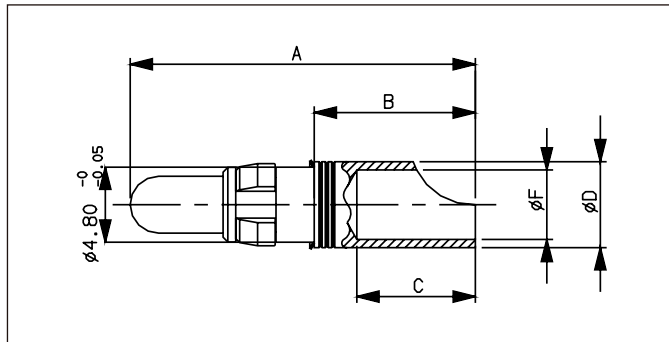


Power solder contacts

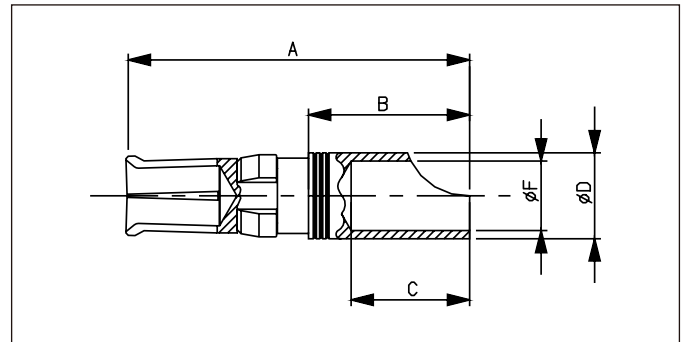
Part Numbers

| Version | ESA part number (Flight Models) | SOURIAU part number (Engineering Models) | Type | Wire Size (AWG) |
|-------------------|------------------------------------|---|--------|-----------------|
| Solder buckets | 3401 040 01B | 8949 040 01NMB | Male | 8 |
| | 3401 040 02B | 8949 040 02NMB | Female | 8 |
| | 3401 040 03B | 8949 040 03NMB | Male | 12 |
| | 3401 040 04B | 8949 040 04NMB | Female | 12 |
| | 3401 040 05B | 8949 040 05NMB | Male | 16 |
| | 3401 040 06B | 8949 040 06NMB | Female | 16 |

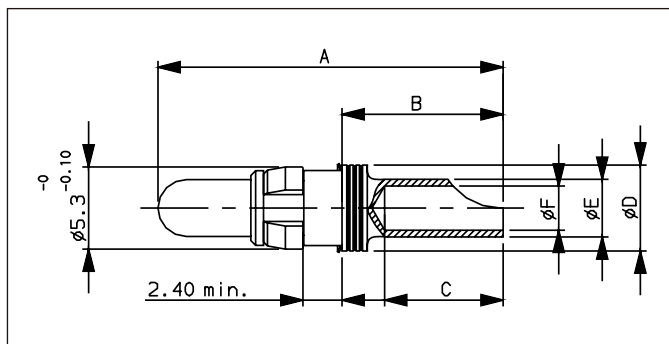
Dimensions (in mm/inch)



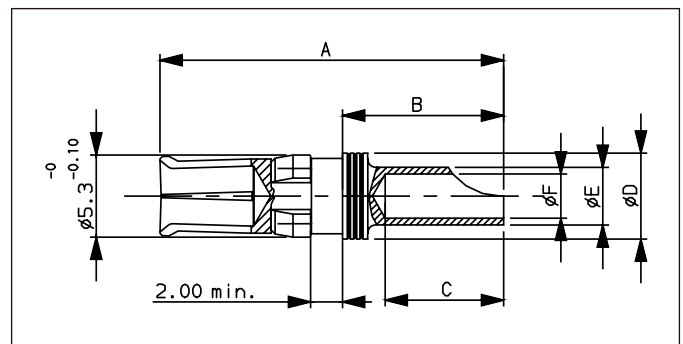
Variant 01



Variant 02



Variants 03-05



Variants 04-06

| Variant | Type | A Max. | B Max. | C Max. | Ø D Max. | Ø E Max. | Ø F Max. |
|---------|--------|-----------|-----------|----------|-----------|-----------|----------|
| 01 | Pin | 22,1 .87 | 10,8 .425 | 8,13 .32 | 5,66 .223 | - | 4,9 .193 |
| 02 | Socket | 21,8 .858 | 10,8 .425 | 8,13 .32 | 5,66 .223 | - | 4,9 .193 |
| 03 | Pin | 22,1 .87 | 10,8 .425 | 8,13 .32 | 5,66 .223 | 3,76 .148 | 3 .118 |
| 04 | Socket | 21,8 .858 | 10,8 .425 | 8,13 .32 | 5,66 .223 | 3,76 .148 | 3 .118 |
| 05 | Pin | 22,1 .87 | 10,8 .425 | 8,13 .32 | 5,66 .223 | 2,67 .105 | 1,9 .075 |
| 06 | Socket | 21,8 .858 | 10,8 .425 | 8,13 .32 | 5,66 .223 | 2,67 .105 | 1,9 .075 |

Tooling of extraction

| | Part number |
|-----------------|-------------|
| Extraction tool | 8630-07 |

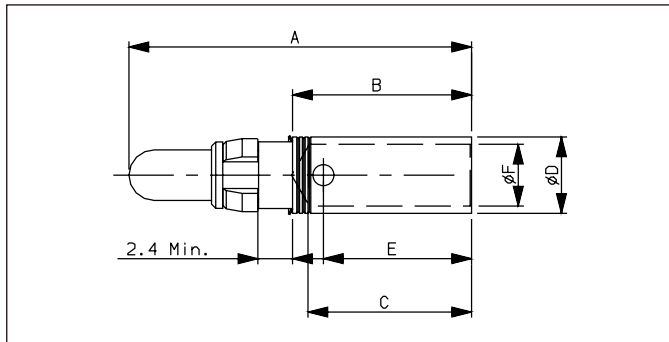


Power crimp contacts

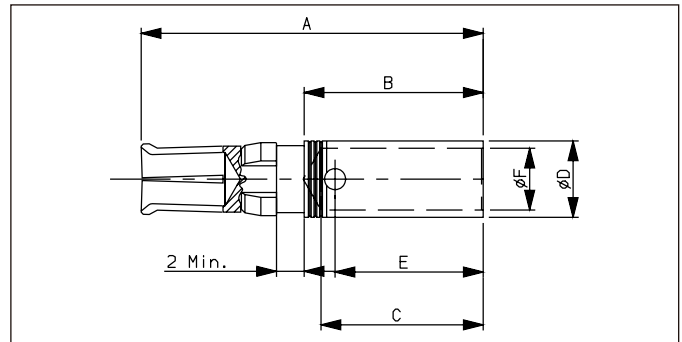
Part Numbers

| Version | ESA part number (Flight Models) | SOURIAU part number (Engineering Models) | Type | Wire Size (AWG) |
|----------------|------------------------------------|---|--------|-----------------|
| Crimp contacts | 3401 040 07B | 8949 040 07NMB | Male | 8 |
| | 3401 040 08B | 8949 040 08NMB | Female | 8 |
| | 3401 040 09B | 8949 040 09NMB | Male | 10 |
| | 3401 040 10B | 8949 040 10NMB | Female | 10 |
| | 3401 040 11B | 8949 040 11NMB | Male | 12-14 |
| | 3401 040 12B | 8949 040 12NMB | Female | 12-14 |

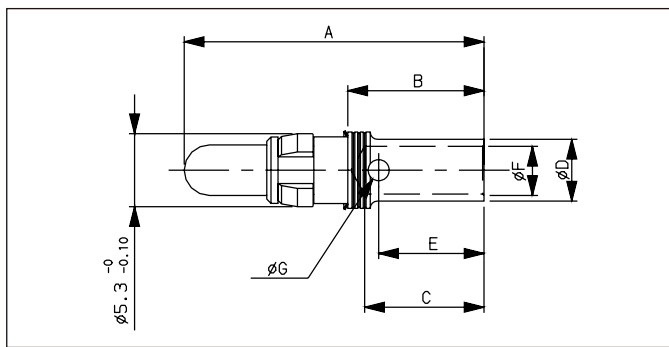
Dimensions (in mm/inch)



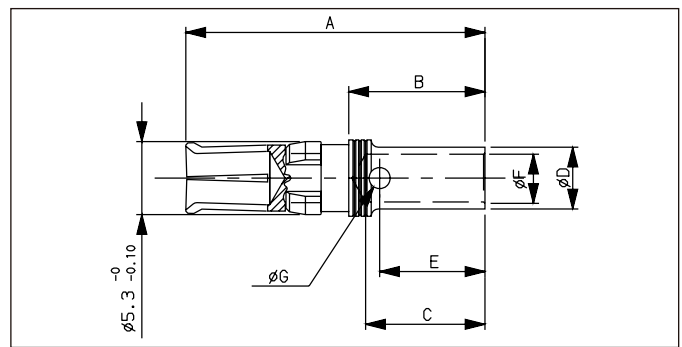
Variant 07



Variant 08



Variants 09-11



Variants 10-12

| Variant | Type | A Max. | B Max. | C min | Ø D Max. | E Ref | Ø F min | Ø G Ref |
|---------|--------|-----------|-----------|----------|----------|----------|-----------|----------|
| 07 | Pin | 24,7 .972 | 12,9 .508 | 11 .433 | 5,8 .228 | 10 .394 | 4,2 .165 | 1,7 .067 |
| 08 | Socket | 24,6 .969 | 12,9 .508 | 11 .433 | 5,8 .228 | 10 .394 | 4,2 .165 | 1,7 .067 |
| 09 | Pin | 21,6 .850 | 10 .394 | 8,4 .331 | 4,7 .185 | 7,5 .295 | 3,25 .128 | 1,3 .051 |
| 10 | Socket | 21,5 .846 | 10 .394 | 8,4 .331 | 4,7 .185 | 7,5 .295 | 3,25 .128 | 1,3 .051 |
| 11 | Pin | 19,3 .760 | 7,7 .303 | 6,4 .252 | 3,8 .15 | 6 .236 | 2,5 .098 | 1 .039 |
| 12 | Socket | 19,2 .756 | 7,7 .303 | 6,4 .252 | 3,8 .15 | 6 .236 | 2,5 .098 | 1 .039 |

Extraction tool

| | Part number |
|-----------------|-------------|
| Extraction tool | 8630-07 |



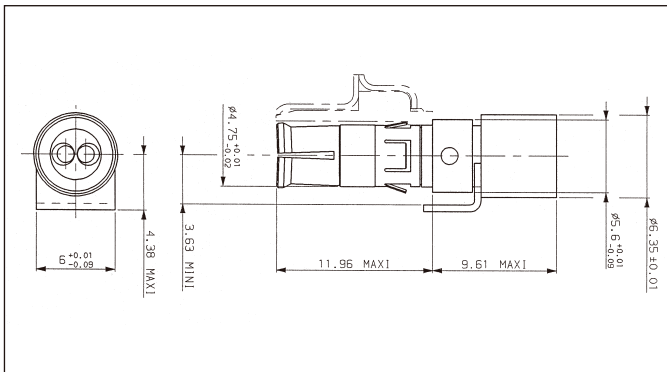
Twinax contacts

These D-Sub Twinax contact size # 8 compatible and designed for GORE Ref. GSC-05-80583-00 A or AXON Ref. P5 12806 double braiding cable and for AXON P5 12296 single braiding cable are crimping or soldering type contacts straight or 90°, male and female.

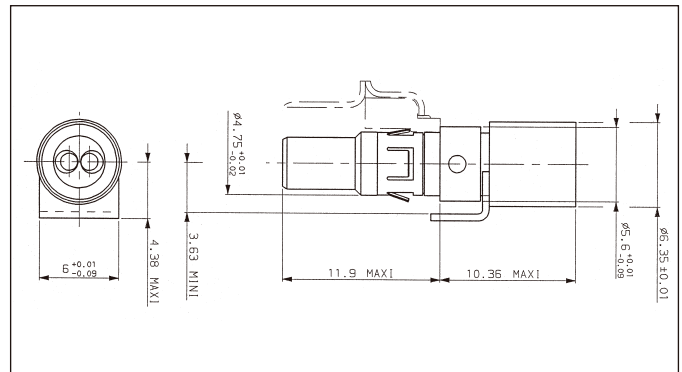
Part Numbers

| Contact type | P/N for double braiding cable | | P/N for simple braiding cable | |
|-----------------------------|-------------------------------|------------------------|-------------------------------|-------------------------|
| | ESA/SCC P/N | SOURIAU P/N | ESA/SCC P/N | SOURIAU P/N |
| Female straight termination | 3401 069 02B | 8949 004 51 NMB | 3401 069 06B | 8949 0045 55 NMB |
| Male straight termination | 3401 069 01B | 8949 004 50 NMB | 3401 069 05B | 8949 0045 54 NMB |
| Female 90° termination | 3401 069 04B | 8949 004 53 NMB | 3401 069 08B | 8949 0045 57 NMB |
| Male 90° termination | 3401 069 03B | 8949 004 51 NMB | 3401 069 07B | 8949 0045 56 NMB |

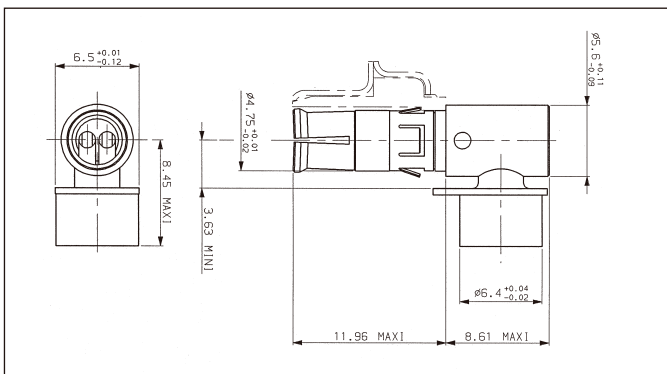
Dimensions (in mm)



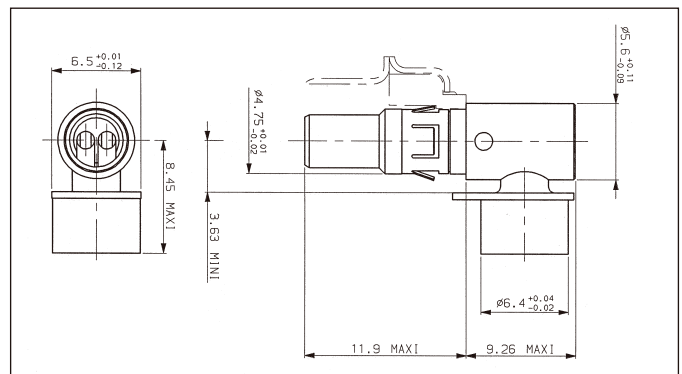
Female straight termination



Male straight termination



Female 90° termination

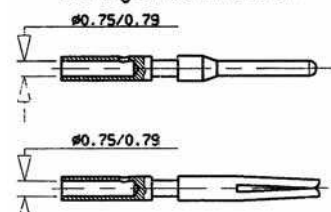


Male 90° termination

Wiring tool

| | Inner pin and socket Straight termination | Inner socket 90° termination | Ext. pin and socket |
|-------------------|--|---------------------------------|------------------------|
| Crimp tool | M 22520/2-01 | Solder | M 22520/5-01 |
| Locator | SN 1908 K 101 | | M 22520/5-45 Hex. B |

Inner pin and socket contact Straight termination



Extraction tool

| | Part number |
|------------------------|-------------|
| Extraction tool | 8630-07A |

For more wiring explanations SOURIAU document NC 8949-A-068 is available upon request to our Customer Service.

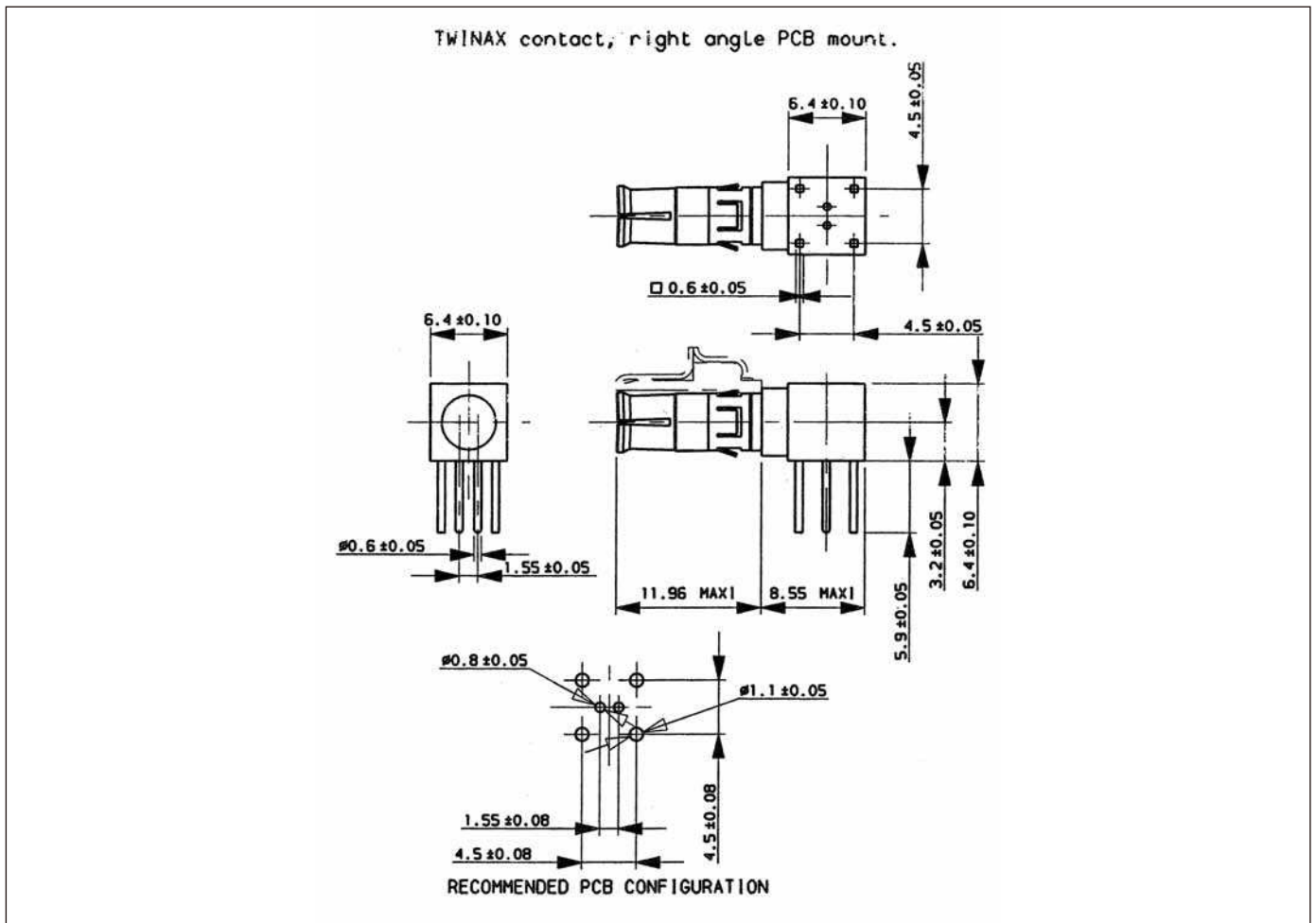
PCB Contact



Part Numbers

| Contact type | P/N for twinax PCB mount. | |
|----------------|---------------------------|----------------|
| | ESA/SCC P/N | SOURIAU P/N |
| Female contact | - | 8949 00458 NMB |

Dimensions (in mm)

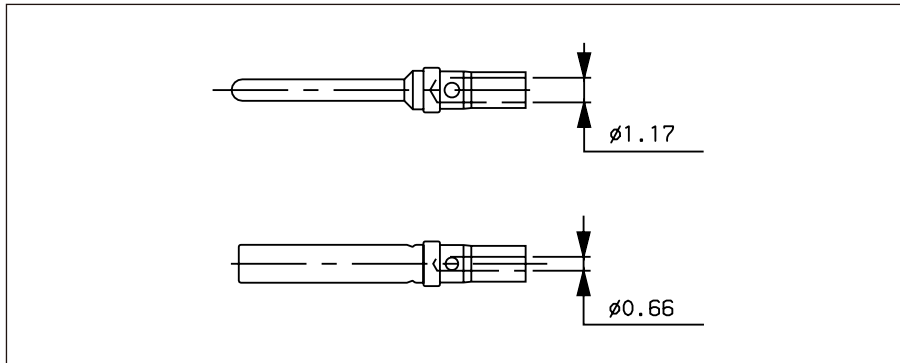


Notes



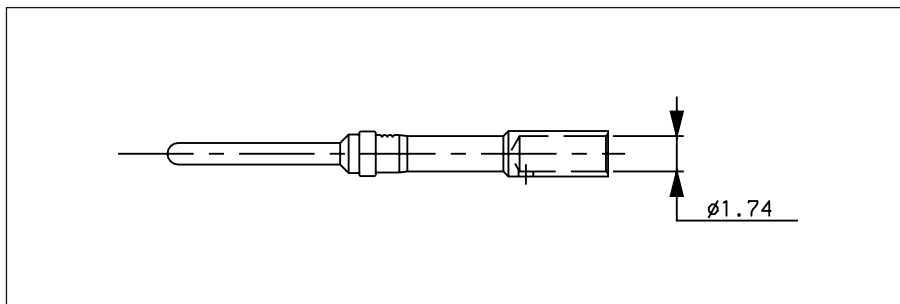
Contact # 20

Wire AWG 20/24 & 26/28*



| ESA part number | Souriau part number |
|------------------------------|---------------------|
| Crimp tool | |
| M 22520/2-01 | 8476-01 |
| Locator | |
| M 22520/2-08 (*) Mark n°6 | 8476-08 |

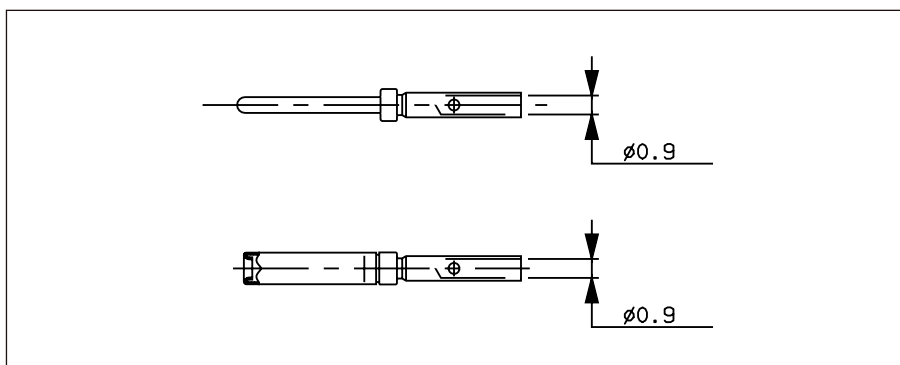
Wire AWG 18/20



| ESA part number | Souriau part number |
|-----------------|---------------------|
| Crimp tool | |
| M 22520/1-01 | 8365 |
| Locator | |
| TP 1003 | 8949-1808 |

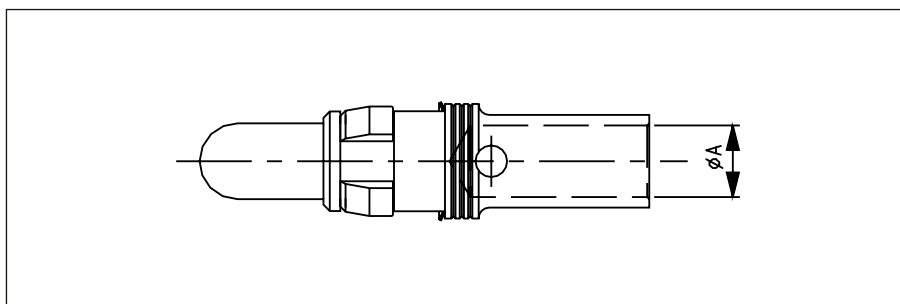
Contact # 22

Wire AWG 22/26



| ESA part number | Souriau part number |
|-----------------|---------------------|
| Crimp tool | |
| M 22520/2-01 | 8476-01 |
| Pin locator | |
| M 22520/2-09 | 8476-09 |
| Socket locator | |
| M 22520/2-06 | 8476-06 |

Power contact # 8



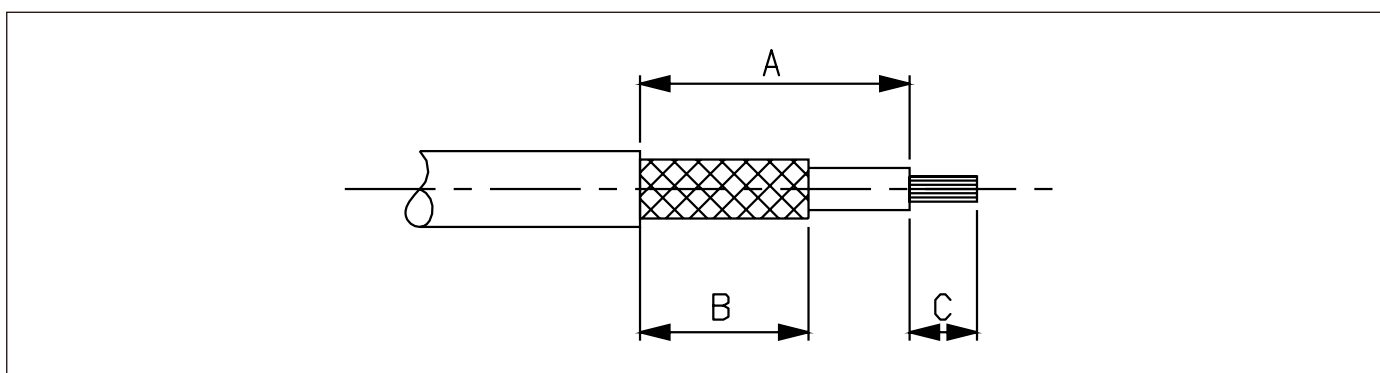
| DANIELS part number | Souriau part number |
|---------------------|---------------------|
| Crimp tool | |
| M300BT | 8476-200 |
| Pin locator | |
| TH558 | 8949-1745 |

| AWG | 8 | 10 | 12/14 |
|----------|-----------|-----------|----------|
| ϕA | 4,2 1.653 | 3,25 .128 | 2,5 .098 |



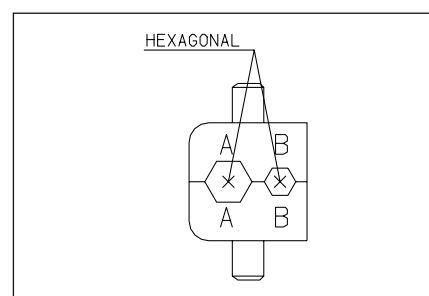
Stripping

| Coaxial contacts ESA/SCC part number | | Wire type | | | Stripping dimensions (in mm/inch) | | |
|--------------------------------------|---------------|--------------------------------------|-----------|--------------|--------------------------------------|-----------|-----------|
| Solder contact | Crimp contact | MIL-C-17 | NFC 93550 | ESA 3902 001 | A ± 0.25 | B ± 0.25 | C ± 0.25 |
| 3401 004 01B | 3401 004 11B | RG 178 B/U RG 196 A/U | KX 21 A | | 7,92 .312 | 6,35 .250 | 1,98 .078 |
| 3401 004 02B | 3401 004 12B | | | | 9,52 .375 | 5,94 .234 | 1,57 .062 |
| 3401 004 03B | 3401 004 13B | | | | | | |
| 3401 004 04B | 3401 004 14B | | | | | | |
| 3401 004 05B | 3401 004 15B | RG 179 B/U RG 316 U RG 188 A/U | KX 22 A | 50 CIS | 7,92 .312 | 6,35 .250 | 1,98 .078 |
| 3401 004 06B | 3401 004 16B | | | | 9,52 .375 | 5,94 .234 | 1,57 .062 |
| 3401 004 07B | 3401 004 17B | | | | | | |
| 3401 004 08B | 3401 004 18B | | | | | | |
| 3401 004 09B | 3401 004 19B | RG 180 B/U | | | 9,52 .375 | 7,92 .312 | 1,92 .076 |
| 3401 004 10B | 3401 004 20B | | | | | | |

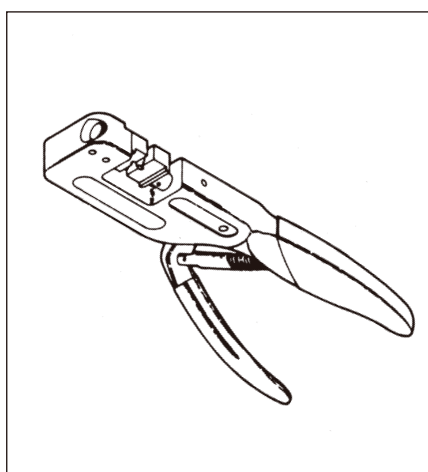


Crimping

| Wire | Crimp tool | Jaws | Hex |
|--|-------------|-------------|-----|
| RG 178 B/U RG 196 A/U KX 21 A | M22520/5-01 | M22520/5-03 | B |
| RG 179 B/U RG 316 U RG 188 A/U KX 22 A - 50 CIS | M22520/5-01 | M22520/5-03 | A |
| RG 180 B/U | M22520/5-01 | M22520/5-43 | B |



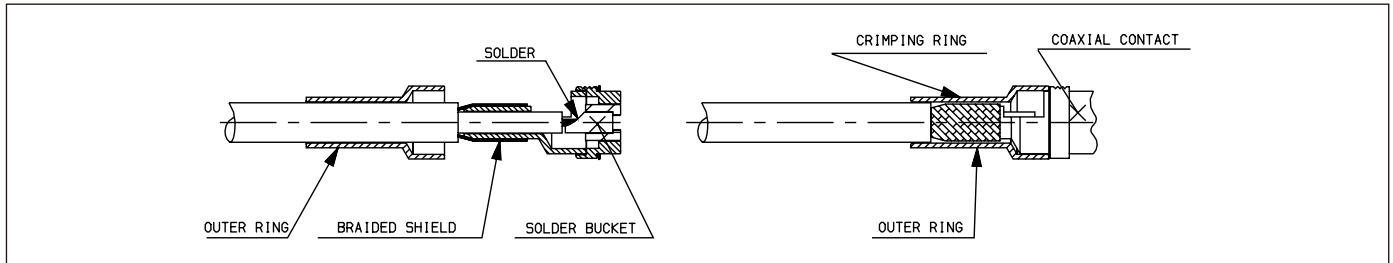
M 22520/5-01



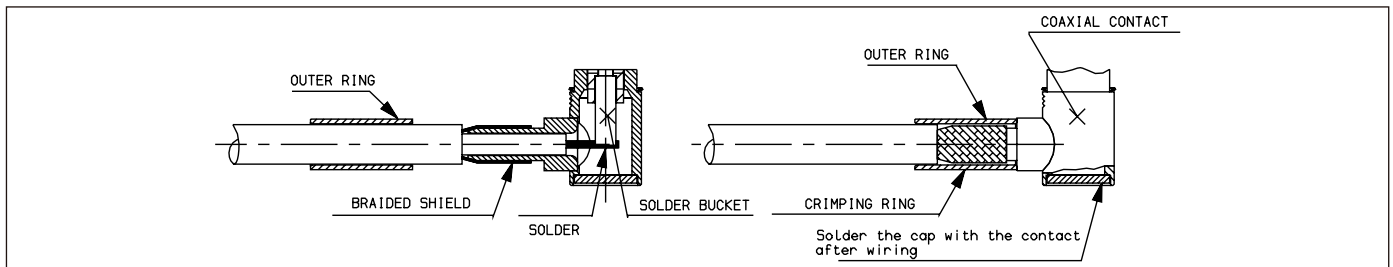


Crimp coaxial contacts

Straight outlet



90° outlet

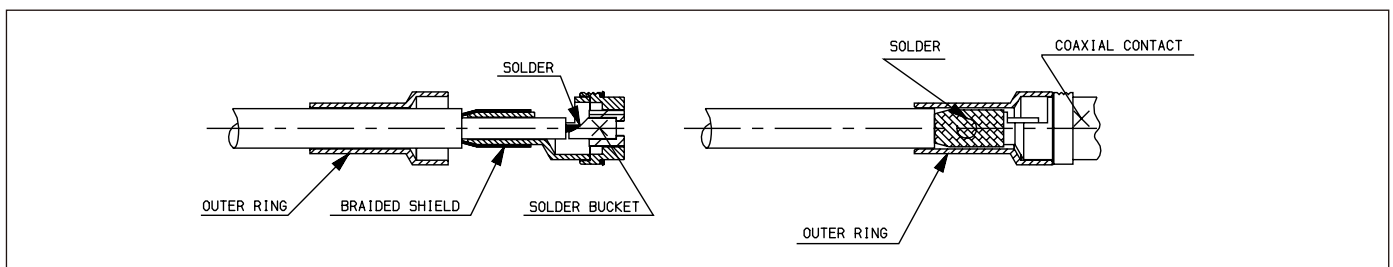


Wiring instructions

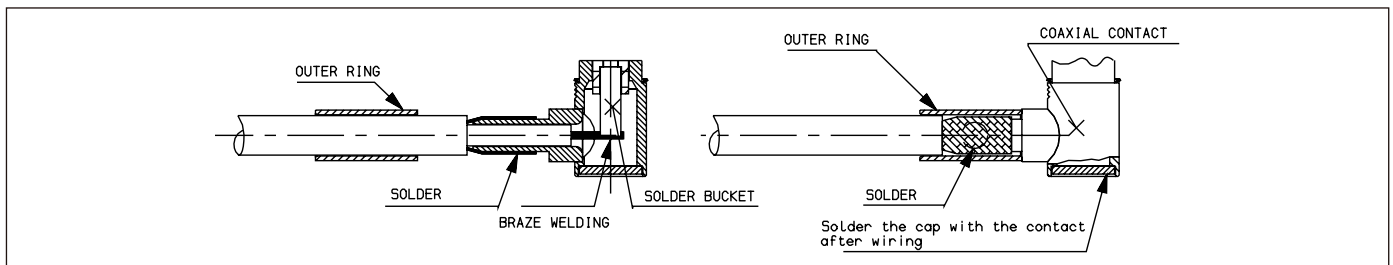
- Slide the outer ring over the cable jacket.
- Trim the cable as specified.
- Insert the cable dielectric and center conductor into the inside diameter of the inner sleeve.
- Solder the center conductor to the coax center contact.
- Cover the braided shield with the outer ring.
- Crimp with the appropriate tool.

Solder coaxial contacts

Straight outlet



90° outlet



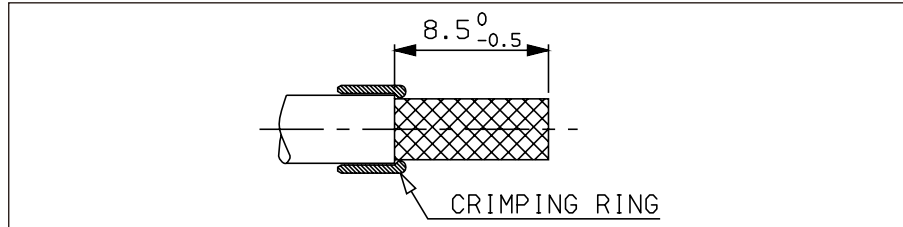
Wiring instructions

- Slide the outer ring over the cable jacket.
- Trim the cable as specified.
- Insert the cable dielectric and center conductor into the inside diameter of the inner sleeve.
- Solder the center conductor to the coax center contact.
- Place the sleeve against the shell contact.
- Solder the outer ring to the assembly through the cross-drilled solder hold.

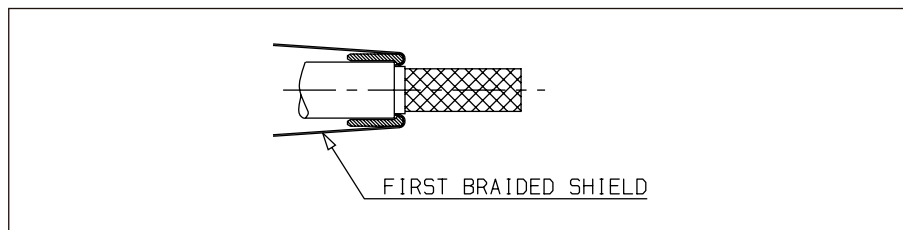


Twinax contacts

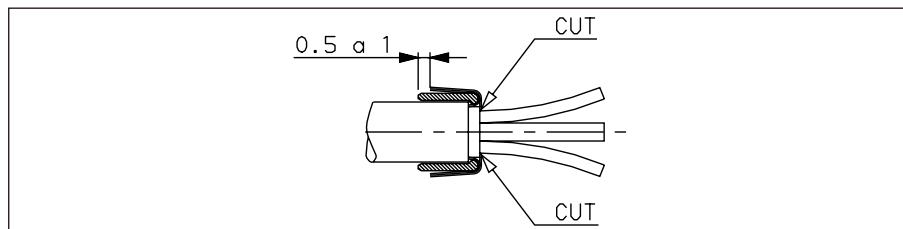
• Straight rear-end female and male



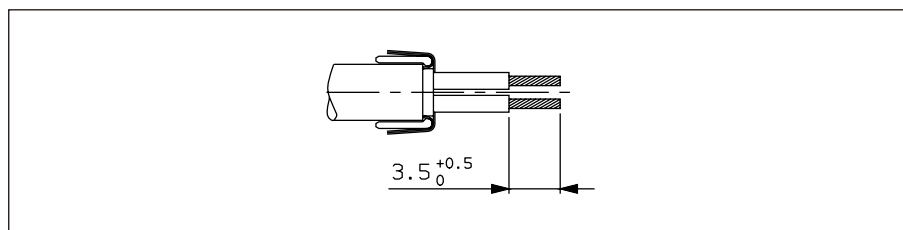
- Strip jacket at appropriate dimension
- Slide crimping ring on cable



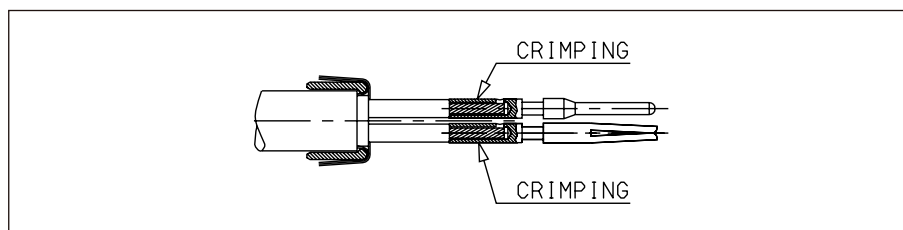
- Cover crimping ring with the first braided shield
- Strip the second braided shield



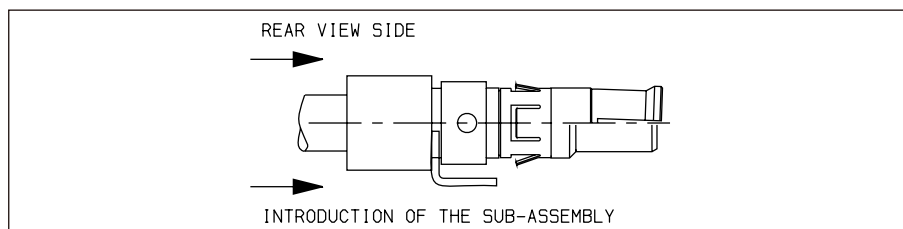
- Cover the first braided shield with the second one
- Cut the two braided shield at appropriate dimension
- Cut the filers



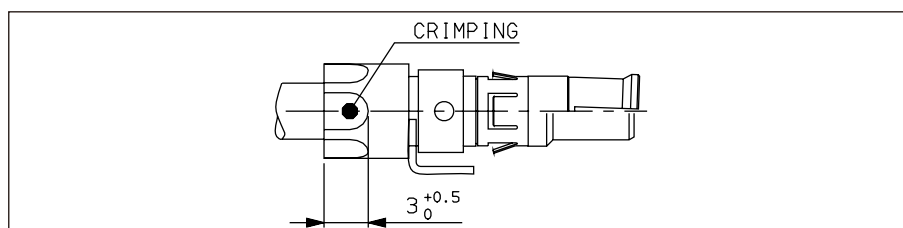
- Strip the two internal wires at appropriate dimension



- Crimping the two signal contacts
- Used tools :
 - **Locator** : SN1908K101
 - **Crimping tool** : M22520/2-01



- Mount cabled sub-assembly into the external contact :
 - Blue wire on the right for female contact (rear view side)
 - Blue wire on the left for male contact (rear view side)

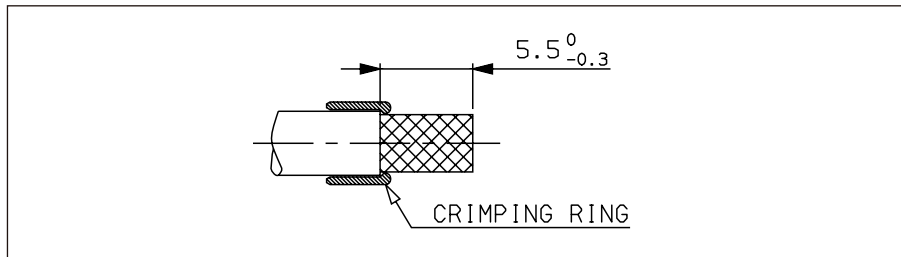


- Crimping the external contact at appropriate dimension
- Used tools :
 - **Dies** : M22520/5-45 (Mark B)
 - **Crimping tool** : M22520/5-01

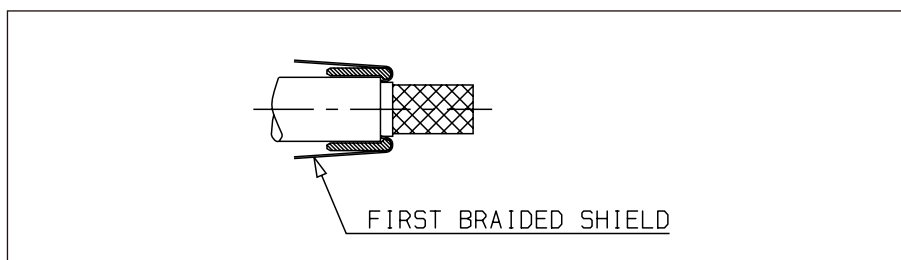


Twinax contacts

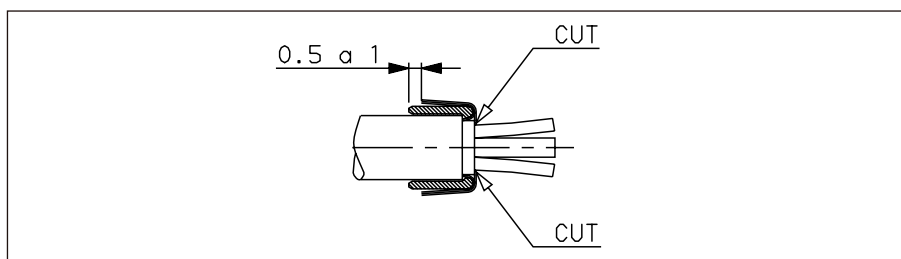
• 90° rear-end female and male



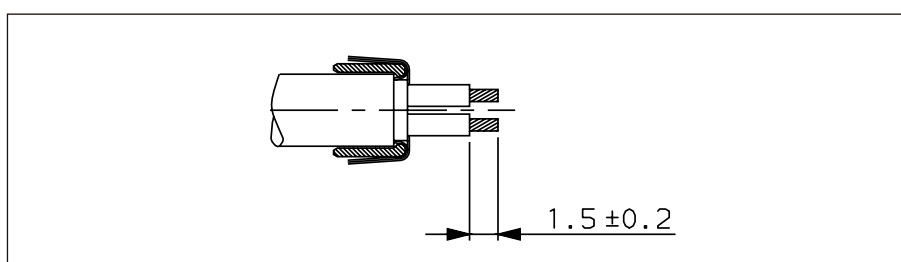
- Strip jacket at appropriate dimension
- Slide crimping ring on cable



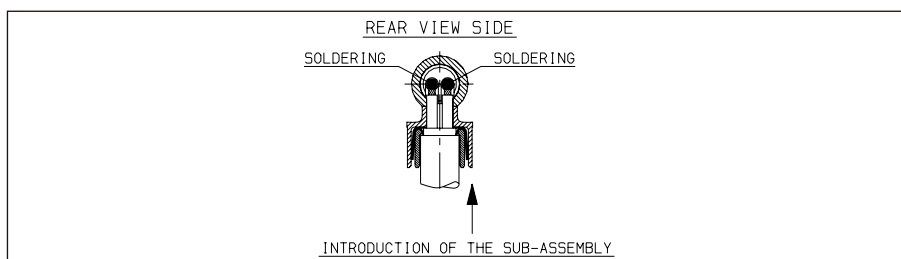
- Cover crimping ring with the first braided shield
- Strip the second braided shield



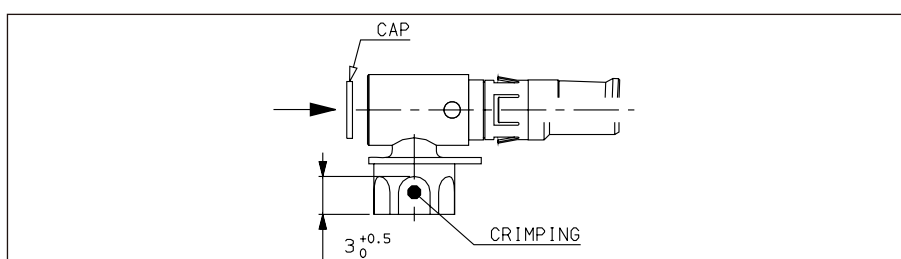
- Cover the first braided shield with the second one
- Cut the two braided shield at appropriate dimension
- Cut the filers



- Strip the two internal wires at appropriate dimension



- Mount cabled sub-assembly into the external contact :
 - Blue wire on the right for female contact (rear view side)
 - Blue wire on the left for male contact (rear view side)
- Solder the two conductors to the two contacts using appropriate solder iron

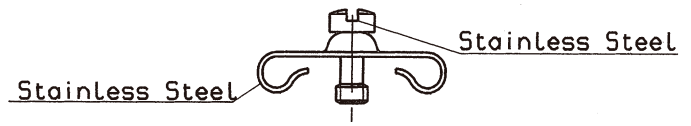
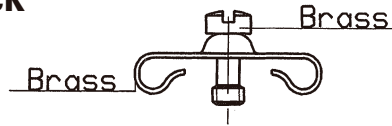


- Crimping the external contact at appropriate dimension
- Used tools :
 - **Dies** : M22520/5-45 (Mark B)
 - **Crimping tool** : M22520/5-01
- Fit the cap and solder it

ESA/SCC 3401 022 & Space grade



Male screw lock

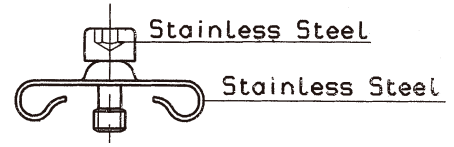
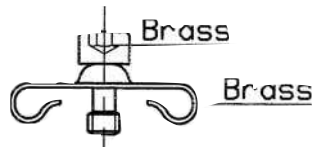


| | Shell size | ESA/SCC P/N | SOURIAU P/N |
|-------------------|-------------------------|-----------------|---------------|
| WITHOUT BACKSHELL | B, C : S E, A : P, S | 3401 022 02BNMB | D8949 P102 NM |
| | B, C : P | 3401 022 03BNMB | D8949 P103 NM |
| | D : S | 3401 022 04BNMB | D8949 P104 NM |
| | D : P | 3401 022 05BNMB | D8949 P105 NM |

| | Shell size | ESA/SCC P/N | SOURIAU P/N |
|-------------------|-------------------------|--------------|---------------|
| WITHOUT BACKSHELL | B, C : S E, A : P, S | 3401 022 49B | D8949 P149 NM |
| | B, C : P | 3401 022 50B | D8949 P150 NM |
| | D : S | 3401 022 51B | D8949 P151 NM |
| | D : P | 3401 022 52B | D8949 P152 NM |

| | Shell size | ESA/SCC P/N | SOURIAU P/N |
|----------------|-------------------------|-----------------|---------------|
| WITH BACKSHELL | B, C : S E, A : P, S | 3401 022 44BNMB | D8949 P144 NM |
| | B, C : P | 3401 022 45BNMB | D8949 P145 NM |
| | D : S | 3401 022 45BNMB | D8949 P146 NM |
| | D : P | 3401 022 47BNMB | D8949 P147 NM |

| | Shell size | ESA/SCC P/N | SOURIAU P/N |
|----------------|-------------------------|--------------|---------------|
| WITH BACKSHELL | B, C : S E, A : P, S | 3401 022 54B | D8949 P154 NM |
| | B, C : P | 3401 022 55B | D8949 P155 NM |
| | D : S | 3401 022 56B | D8949 P156 NM |
| | D : P | 3401 022 57B | D8949 P157 NM |



| | Shell size | ESA/SCC P/N | SOURIAU P/N |
|-------------------|-------------------------|-----------------|---------------|
| WITHOUT BACKSHELL | B, C : S E, A : P, S | 3401 022 65BNMB | D8949 P165 NM |
| | B, C : P | 3401 022 66BNMB | D8949 P166 NM |
| | D : S | 3401 022 67BNMB | D8949 P167 NM |
| | D : P | 3401 022 68BNMB | D8949 P168 NM |

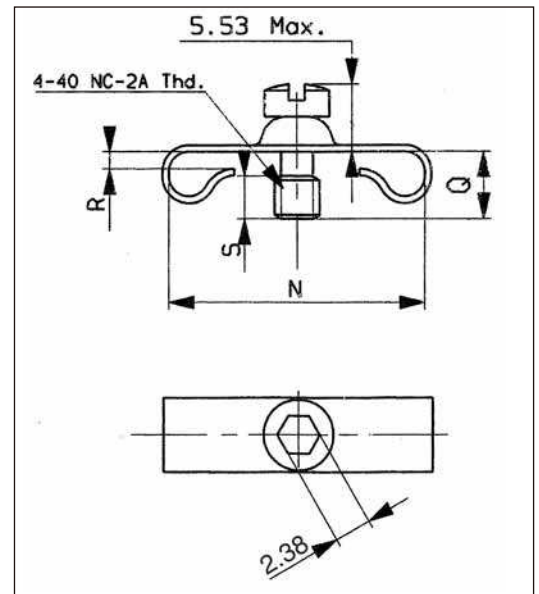
| | Shell size | ESA/SCC P/N | SOURIAU P/N |
|-------------------|-------------------------|--------------|---------------|
| WITHOUT BACKSHELL | B, C : S E, A : P, S | 3401 022 73B | D8949 P349 NM |
| | B, C : P | 3401 022 74B | D8949 P350 NM |
| | D : S | 3401 022 75B | D8949 P351 NM |
| | D : P | 3401 022 76B | D8949 P352 NM |

| | Shell size | ESA/SCC P/N | SOURIAU P/N |
|----------------|-------------------------|-----------------|---------------|
| WITH BACKSHELL | B, C : S E, A : P, S | 3401 022 69BNMB | D8949 P265 NM |
| | B, C : P | 3401 022 70BNMB | D8949 P266 NM |
| | D : S | 3401 022 71BNMB | D8949 P267 NM |
| | D : P | 3401 022 72BNMB | D8949 P268 NM |

| | Shell size | ESA/SCC P/N | SOURIAU P/N |
|----------------|-------------------------|--------------|---------------|
| WITH BACKSHELL | B, C : S E, A : P, S | 3401 022 77B | D8949 P354 NM |
| | B, C : P | 3401 022 78B | D8949 P355 NM |
| | D : S | 3401 022 79B | D8949 P356 NM |
| | D : P | 3401 022 80B | D8949 P357 NM |

Dimensions (in mm/inch)

| Use with shell size | N | | Q | | R | | S |
|--------------------------|-------|-------|------|------|------|------|-----------|
| | min | Max. | min | Max. | min | Max. | |
| Without backshell | | | | | | | |
| A, E : (P or S) B, C : S | 12.96 | 13.72 | 3.22 | 3.98 | 0.75 | 0.95 | 2.80 mini |
| B, C : P | 12.96 | 13.72 | 3.22 | 3.98 | 0.95 | 1.15 | 2.80 mini |
| D : S | 15.75 | 16.26 | 3.22 | 3.98 | 0.95 | 0.95 | 2.80 mini |
| D : P | 15.75 | 16.26 | 3.22 | 3.98 | 0.95 | 1.15 | 2.80 mini |
| With backshell | | | | | | | |
| A, E : (P or S) B, C : S | 12.96 | 13.72 | 4.22 | 4.98 | 0.75 | 1.95 | 2.80 mini |
| B, C : P | 12.96 | 13.72 | 4.22 | 4.98 | 0.95 | 2.20 | 2.80 mini |
| D : S | 15.75 | 16.26 | 4.22 | 4.98 | 0.95 | 1.95 | 2.80 mini |
| D : P | 15.75 | 16.26 | 4.22 | 4.98 | 0.95 | 2.20 | 2.80 mini |



ESA/SCC 3401 022 & Space grade



Female screw lock

Part Number

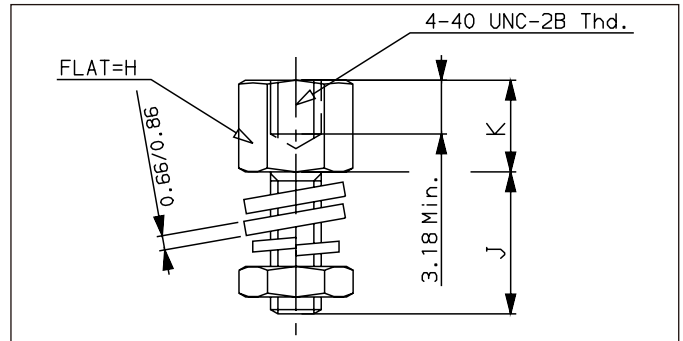
ESA/SCC 3401 022 (Flight models)

NM : Space Grade (Engineering models)

| ESA/SCC P/N | | Materials | SOURIAU P/N | |
|-------------|-----------------|-----------------|-------------|--------------|
| Standard | 3401 022 01BNMB | | Brass | Standard |
| For savers | 3401 022 06BNMB | For savers | | D8949 S61 NM |
| Standard | 3401 022 48B | Stainless steel | Standard | D8949 S70 NM |
| For savers | 3401 022 53B | | For savers | D8949 S71 NM |

Dimensions (in mm/inch)

| Variant | H | | J | | K | |
|--------------------|--------------|--------------|---------------|---------------|-------------|-------------|
| | min | Max. | min | Max. | min | Max. |
| 01 & 48 | 4,37 .172 | 5,13 .202 | 7,54 .297 | 8,3 .327 | 4,6 .181 | 5,1 .201 |
| 06 & 53 | 4,37 .172 | 5,13 .202 | 14,35 .565 | 14,65 .577 | 4,6 .181 | 5,1 .201 |



Male screw lock assemblies for lightweight back shell

| Use with shell size with lightweight back shell | | ESA/SCC P/N | SOURIAU P/N |
|--|-----------------|-----------------|---------------|
| E to C : (P or S) | Brass | 3401 072 01BNMB | D8949 P112 NM |
| | Stainless steel | 3401 072 03B | D8949 P114 NM |
| D : (P or S) | Brass | 3401 072 02BNMB | D8949 P113 NM |
| | Stainless steel | 3401 072 04B | D8949 P115 NM |

| Use with shell size with lightweight back shell | N | | Q | | R | | S |
|--|-------|-------|------|------|------|------|-----------|
| | min | Max. | min | Max. | min | Max. | |
| E to C : (P or S) | 12.96 | 13.72 | 4.40 | 5.16 | 2.25 | 2.45 | 2.80 mini |
| E : (P or S) | 15.75 | 16.26 | 4.40 | 5.16 | 2.25 | 2.45 | 2.80 mini |





ESA/SCC 3401 022 & Space grade

Dust cap

Part Number

ESA/SCC 3401 022 (Flight models)

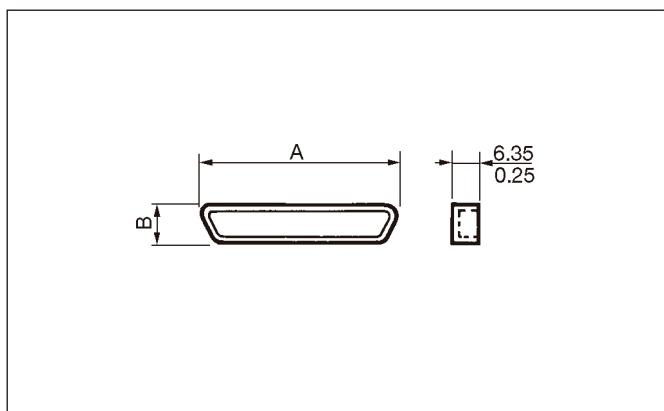
| Shell size | For male connectors | For female connectors |
|------------|---------------------|-----------------------|
| E | 3401 022 08B | 3401 022 07B |
| A | 3401 022 10B | 3401 022 09B |
| B | 3401 022 12B | 3401 022 11B |
| C | 3401 022 14B | 3401 022 13B |
| D | 3401 022 16B | 3401 022 15B |

NM : Space Grade (Engineering models)

| Shell size | For male connectors | For female connectors |
|------------|---------------------|-----------------------|
| E | 70508 | 70513 |
| A | 70509 | 70514 |
| B | 70510 | 70515 |
| C | 70511 | 70516 |
| D | 70512 | 70517 |

Dimensions (in mm/inch)

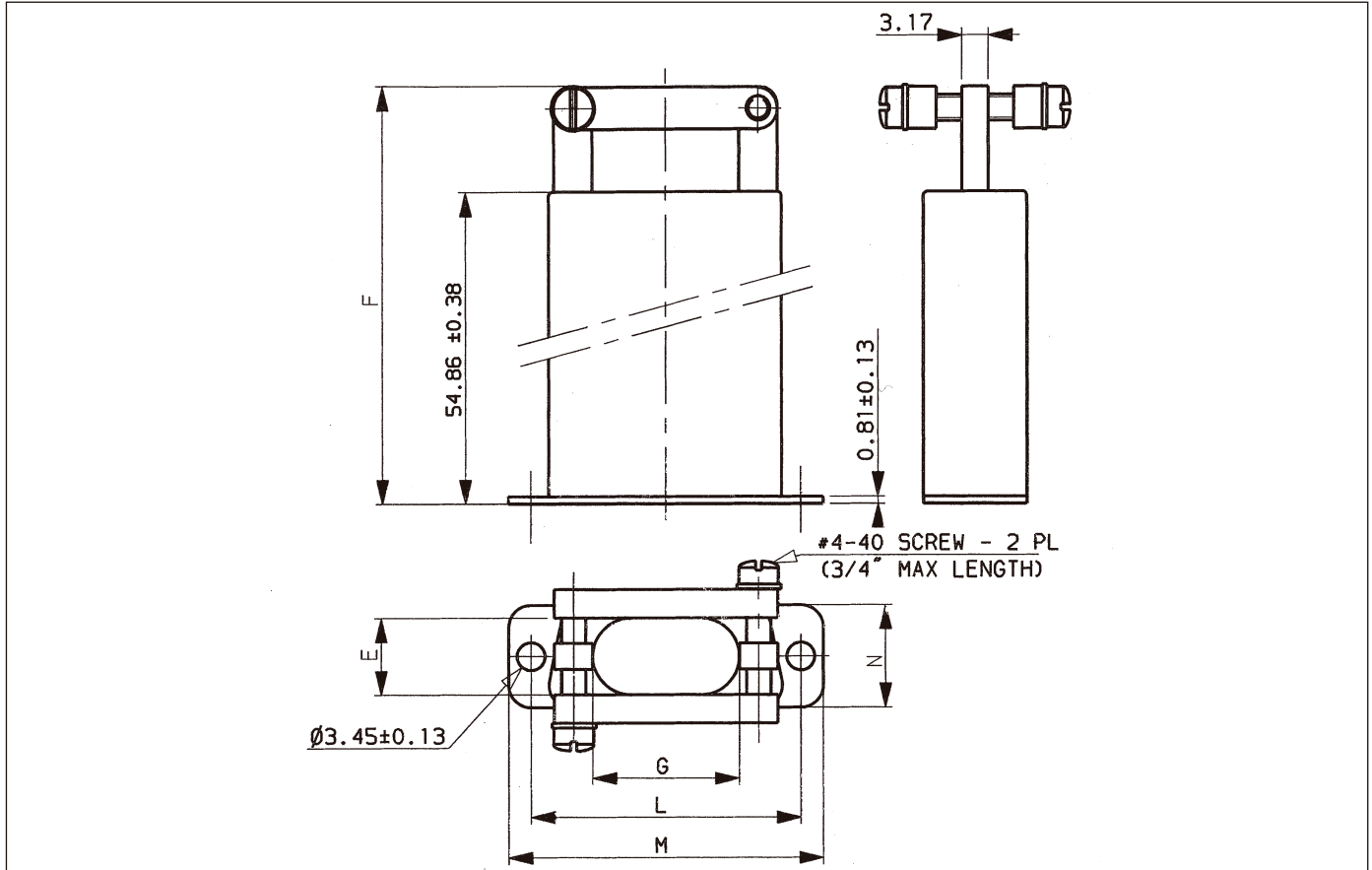
| Shell size | Male connectors | | Female connectors | |
|------------|-----------------|--------------|-------------------|--------------|
| | A | B | A | B |
| E | 19,2 .756 | 10,3 .406 | 17,8 .701 | 9 .354 |
| A | 27,5 1.083 | 10,3 .406 | 26,1 1.028 | 9 .354 |
| B | 41,7 1.642 | 10,7 .421 | 39,8 1.567 | 9 .354 |
| C | 58,1 2.287 | 10,7 .421 | 56,3 2.217 | 9 .354 |
| D | 55,5 2.185 | 13,4 .528 | 53,9 2.122 | 11,9 .469 |



ESA/SCC 3401 072 & Space Grade



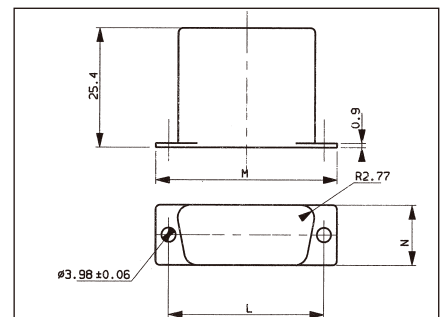
Lightweight design with saddle clamps for strain relief



| Shell size | E±0,38 | F±0,60 | G±0,38 | M±0,38 | N±0,14 | L±0,25 | ESA/SCC P/M | SOURIAU P/N |
|------------|--------|--------|--------|--------|--------|--------|------------------|-----------------|
| E | 9,52 | 67,56 | 8,89 | 30,56 | 13,05 | 24,99 | 3401 072 05B NMB | DE 8949 014 NMB |
| A | 9,52 | 67,56 | 12,06 | 38,89 | 13,05 | 33,32 | 3401 072 06B NMB | DA 8949 014 NMB |
| B | 9,52 | 69,16 | 12,70 | 52,78 | 13,05 | 47,04 | 3401 072 07B NMB | DB 8949 014 NMB |
| C | 9,52 | 69,16 | 12,70 | 69,04 | 13,05 | 63,50 | 3401 072 08B NMB | DC 8949 014 NMB |
| D | 11,88 | 69,16 | 15,46 | 66,67 | 15,82 | 61,11 | 3401 072 09B NMB | DD 8949 014 NMB |

Lightweight D-Sub shorting can

| Shell size | M±0,38 | N±0,38 | L±0,25 | ESA/SCC P/M | SOURIAU P/N |
|------------|--------|--------|--------|------------------|-----------------|
| E | 30,56 | 12,70 | 24,99 | 3401 072 10B NMB | DE 8949 301 NMB |
| A | 38,89 | 12,70 | 33,32 | 3401 072 11B NMB | DA 8949 301 NMB |
| B | 52,78 | 12,70 | 47,04 | 3401 072 12B NMB | DB 8949 301 NMB |
| C | 69,04 | 12,70 | 63,50 | 3401 072 13B NMB | DC 8949 301 NMB |
| D | 66,67 | 15,47 | 61,11 | 3401 072 14B NMB | DD 8949 301 NMB |



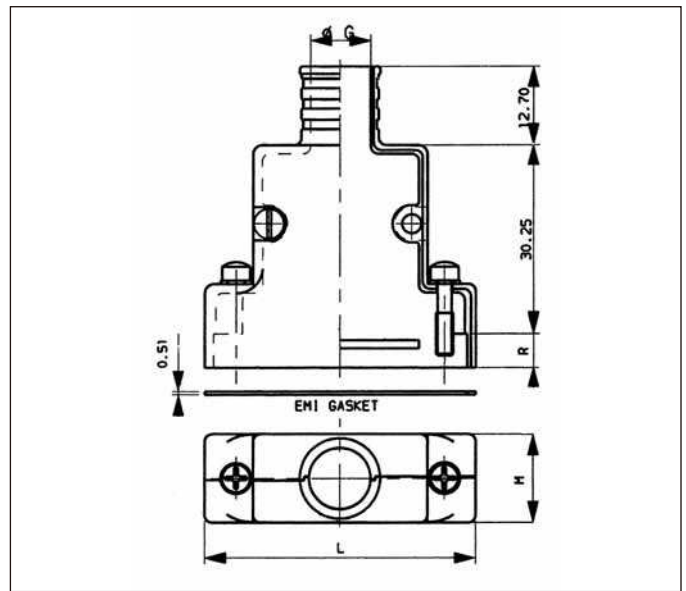
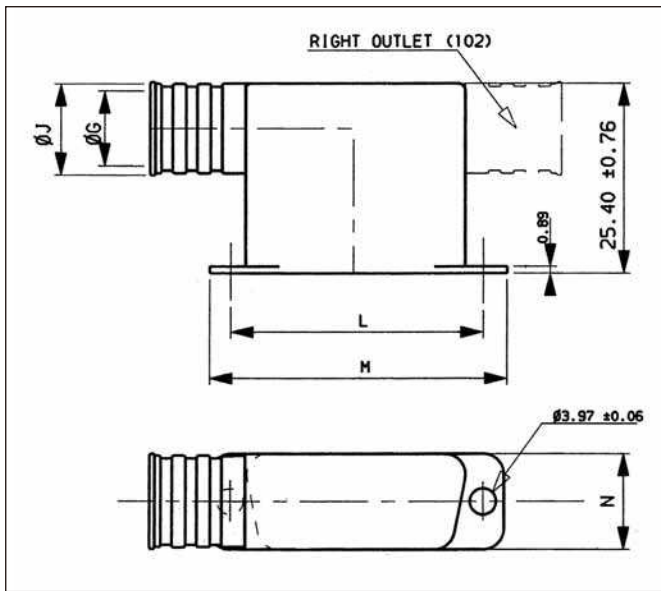
ESA/SCC 3401 072 & Space Grade



EMI shielded backshell-straight cable outlet

| Shell size | ESA/SCC P/N Front/mount | SOURIAU P/N Front/mount | $\varnothing G_{\pm 0,25}$ | $M_{\pm 0,25}$ | $L_{\pm 0,25}$ | $R_{\pm 0,13}$ | |
|------------|----------------------------|----------------------------|----------------------------|----------------|----------------|----------------|--|
| | | | | | | Front/mount | |
| E | 3401 072 15B NMB | DE 8949 405 1NMB | 6,73 | 15,98 | 35,03 | 7,74 | |
| A | 3401 072 16B NMB | DA 8949 405 1NMB | 9,90 | 15,98 | 43,36 | 7,74 | |
| B | 3401 072 17B NMB | DB 8949 405 1NMB | 10,54 | 15,98 | 57,25 | 7,74 | |
| C | 3401 072 18B NMB | DC 8949 405 1NMB | 10,54 | 15,98 | 73,53 | 7,74 | |
| D | 3401 072 19B NMB | DD 8949 405 1NMB | 13,33 | 18,79 | 71,14 | 7,74 | |

| Shell size | ESA/SCC P/N Rear/mount | SOURIAU P/N Rear/mount | $\varnothing G_{\pm 0,25}$ | $M_{\pm 0,25}$ | $L_{\pm 0,25}$ | $R_{\pm 0,13}$ | |
|------------|---------------------------|---------------------------|----------------------------|----------------|----------------|----------------|------------|
| | | | | | | | Rear/mount |
| E | 3401 072 20B NMB | DE 8949 405 2NMB | 6,73 | 15,98 | 35,03 | | 6,32 |
| A | 3401 072 21B NMB | DA 8949 405 2NMB | 9,90 | 15,98 | 43,36 | | 6,32 |
| B | 3401 072 22B NMB | DB 8949 405 2NMB | 10,54 | 15,98 | 57,25 | | 6,32 |
| C | 3401 072 23B NMB | DC 8949 405 2NMB | 10,54 | 15,98 | 73,53 | | 6,32 |
| D | 3401 072 24B NMB | DD 8949 405 2NMB | 13,33 | 18,79 | 71,14 | | 6,32 |



Light shielded backshell-90° longitudinal cable outlet

| Shell size | Right outlet | | $\varnothing G_{\pm 0,25}$ | $J_{\pm 0,38}$ | $M_{\pm 0,36}$ | $N_{\pm 0,38}$ | $L_{\pm 0,13}$ |
|------------|------------------|------------------|----------------------------|----------------|----------------|----------------|----------------|
| | ESA/SCC P/N | SOURIAU P/N | | | | | |
| E | 3401 072 25B NMB | DE 8949 102K NMB | 6,85 | 8,89 | 30,56 | 12,70 | 24,99 |
| A | 3401 072 26B NMB | DA 8949 102E NMB | 10,03 | 12,06 | 38,89 | 12,70 | 33,32 |
| B | 3401 072 27B NMB | DB 8949 102F NMB | 10,66 | 12,70 | 52,78 | 12,70 | 47,04 |
| C | 3401 072 28B NMB | DC 8949 102F NMB | 10,66 | 12,70 | 69,04 | 12,70 | 63,50 |
| D | 3401 072 29B NMB | DD 8949 102H NMB | 13,43 | 15,46 | 66,67 | 15,47 | 61,11 |

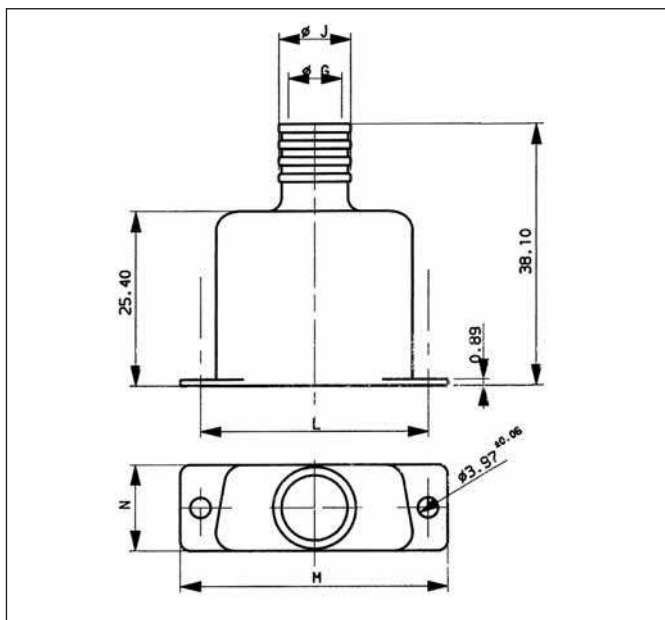
| Shell size | Left outlet | | $\varnothing G_{\pm 0,25}$ | $J_{\pm 0,38}$ | $M_{\pm 0,36}$ | $N_{\pm 0,38}$ | $L_{\pm 0,13}$ |
|------------|------------------|------------------|----------------------------|----------------|----------------|----------------|----------------|
| | ESA/SCC P/N | SOURIAU P/N | | | | | |
| E | 3401 072 30B NMB | DE 8949 101K NMB | 6,85 | 8,89 | 30,56 | 12,70 | 24,99 |
| A | 3401 072 31B NMB | DA 8949 101E NMB | 10,03 | 12,06 | 38,89 | 12,70 | 33,32 |
| B | 3401 072 32B NMB | DB 8949 101F NMB | 10,66 | 12,70 | 52,78 | 12,70 | 47,04 |
| C | 3401 072 33B NMB | DC 8949 101F NMB | 10,66 | 12,70 | 69,04 | 12,70 | 63,50 |
| D | 3401 072 34B NMB | DD 8949 101H NMB | 13,43 | 15,46 | 66,67 | 15,47 | 61,11 |

ESA/SCC 3401 072 & Space Grade



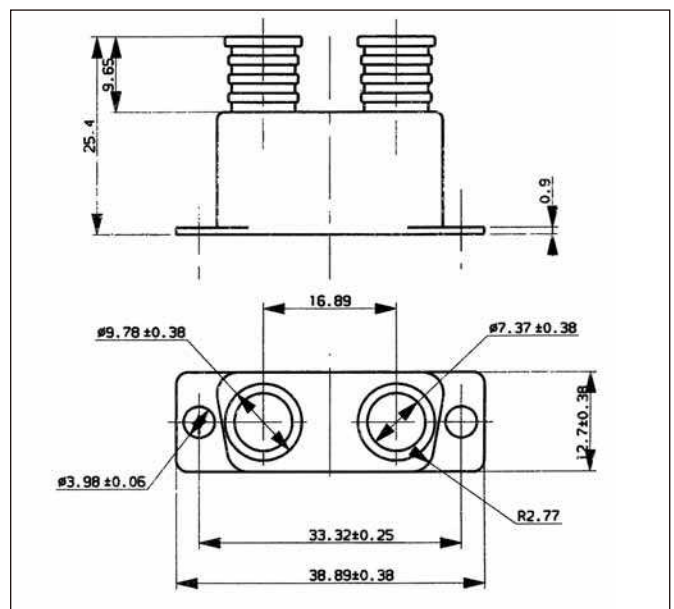
Lightweight shielded backshell-straight cable outlet

| Shell size | ESA/SCC P/N | SOURIAU P/N | $\varnothing G \pm 0,25$ | $J \pm 0,38$ | $M \pm 0,38$ | $N \pm 0,38$ | $L \pm 0,13$ |
|------------|------------------|-----------------|--------------------------|--------------|--------------|--------------|--------------|
| E | 3401 072 35B NMB | DE 8949 001 NMB | 6,85 | 8,89 | 30,56 | 12,70 | 24,99 |
| A | 3401 072 36B NMB | DA 8949 001 NMB | 10,03 | 12,06 | 38,89 | 12,70 | 33,32 |
| B | 3401 072 37B NMB | DB 8949 001 NMB | 10,66 | 12,70 | 52,78 | 12,70 | 47,04 |
| C | 3401 072 38B NMB | DC 8949 001 NMB | 10,66 | 12,70 | 69,04 | 12,70 | 63,50 |
| D | 3401 072 39B NMB | DD 8949 001 NMB | 13,43 | 15,46 | 66,67 | 15,47 | 61,11 |



Lightweight backshell dual entry band termination, 15 pin

| Shell size | ESA/SCC P/N | SOURIAU P/N |
|------------|------------------|-----------------|
| A | 3401 072 40B NMB | DA 8949 020 NMB |



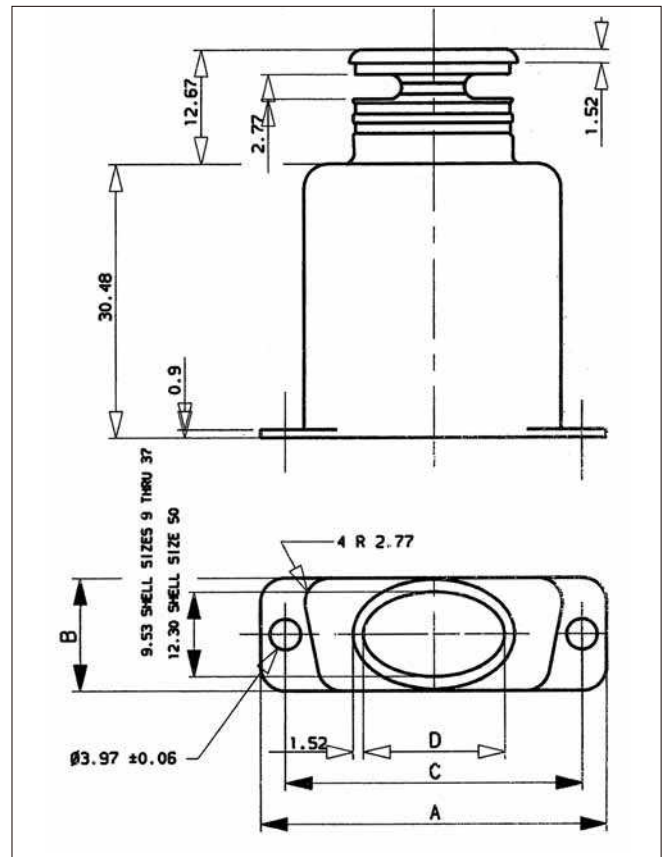
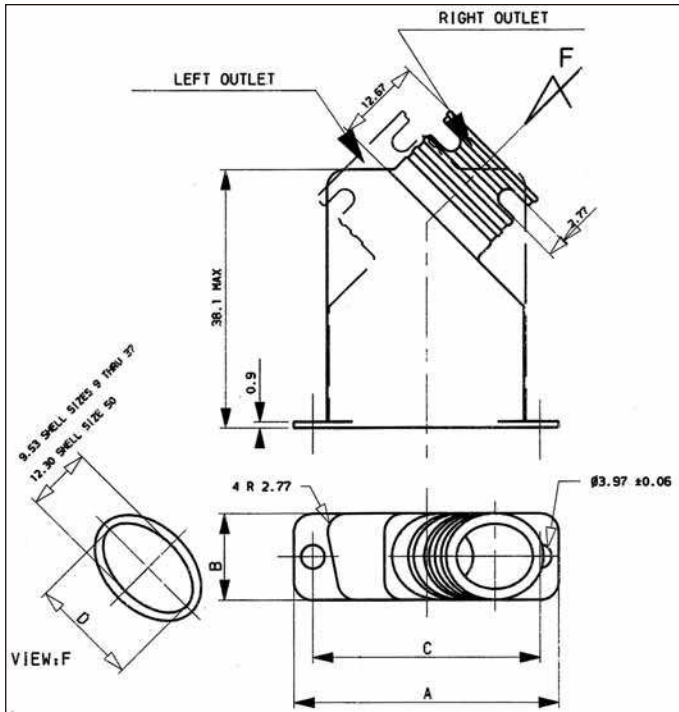
ESA/SCC 3401 072 & Space Grade



Straight lightweight backshell ultra elliptical band-termination

| Shell size | ESA SCC P/N | SOURIAU P/N | A±0,38 | B±0,38 | C±0,13 | D±0,38 |
|------------|------------------|--------------------|--------|--------|--------|--------|
| E | 3401 072 46B NMB | DE 8949 009A-1 NMB | 30,56 | 12,70 | 24,99 | 12,70 |
| A | 3401 072 47B NMB | DA 8949 009B-1 NMB | 38,89 | 12,70 | 33,32 | 15,87 |
| B | 3401 072 48B NMB | DB 8949 009C-1 NMB | 52,78 | 12,70 | 47,04 | 19,05 |
| C | 3401 072 49B NMB | DC 8949 009E-1 NMB | 69,04 | 12,70 | 63,50 | 25,40 |
| D | 3401 072 50B NMB | DD 8949 009D-1 NMB | 66,67 | 15,46 | 61,11 | 22,22 |

45° lightweight backshell ultra elliptical band-termination



| Shell size | Right outlet | | A±0,38 | B±0,38 | C±0,13 | D±0,38 |
|------------|------------------|--------------------|--------|--------|--------|--------|
| | ESA SCC P/N | SOURIAU P/N | | | | |
| E | 3401 072 51B NMB | DE 8949 107A-1 NMB | 30,56 | 12,70 | 24,99 | 12,70 |
| A | 3401 072 52B NMB | DA 8949 107B-1 NMB | 38,89 | 12,70 | 33,32 | 15,87 |
| B | 3401 072 53B NMB | DB 8949 107C-1 NMB | 52,78 | 12,70 | 47,04 | 19,05 |
| C | 3401 072 54B NMB | DC 8949 107E-1 NMB | 69,04 | 12,70 | 63,50 | 25,40 |
| D | 3401 072 55B NMB | DD 8949 107D-1 NMB | 66,67 | 15,46 | 61,11 | 22,22 |

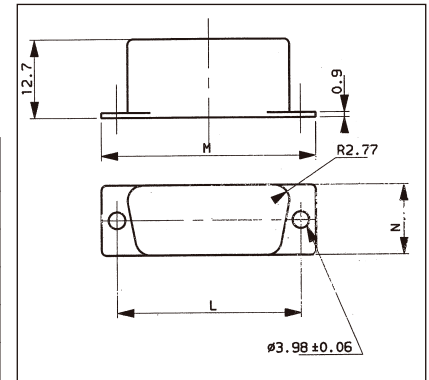
| Shell size | Left outlet | | A±0,38 | B±0,38 | C±0,13 | D±0,38 |
|------------|------------------|--------------------|--------|--------|--------|--------|
| | ESA SCC P/N | SOURIAU P/N | | | | |
| E | 3401 072 56B NMB | DE 8949 108A-1 NMB | 30,56 | 12,70 | 24,99 | 12,70 |
| A | 3401 072 57B NMB | DA 8949 108B-1 NMB | 38,89 | 12,70 | 33,32 | 15,87 |
| B | 3401 072 58B NMB | DB 8949 108C-1 NMB | 52,78 | 12,70 | 47,04 | 19,05 |
| C | 3401 072 59B NMB | DC 8949 108E-1 NMB | 69,04 | 12,70 | 63,50 | 25,40 |
| D | 3401 072 60B NMB | DD 8949 108D-1 NMB | 66,67 | 15,46 | 61,11 | 22,22 |

ESA/SCC 3401 072 & Space Grade

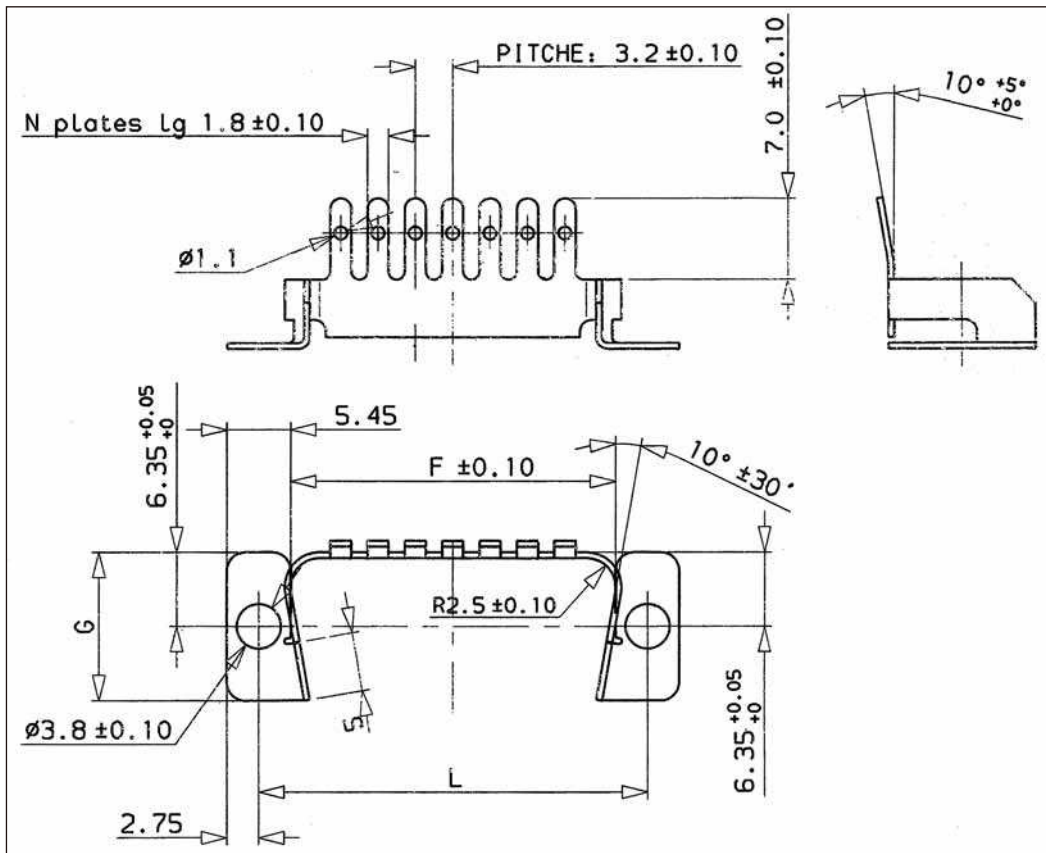


Lightweight D-SUB extra-shorting can

| Shell size | ESA/SCC P/N | SOURIAU P/N | M±0,38 | N±0,38 | L±0,25 |
|------------|------------------|-----------------|--------|--------|--------|
| E | 3401 072 61B NMB | DE 8949 305 NMB | 30,56 | 12,70 | 24,99 |
| A | 3401 072 62B NMB | DA 8949 305 NMB | 38,89 | 12,70 | 33,32 |
| B | 3401 072 63B NMB | DB 8949 305 NMB | 52,78 | 12,70 | 47,04 |
| C | 3401 072 64B NMB | DC 8949 305 NMB | 69,04 | 12,70 | 63,50 |
| D | 3401 072 65B NMB | DD 8949 305 NMB | 66,67 | 15,47 | 61,11 |



Castellated backshell



| Shell size | SOURIAU P/N | | F±0,10 | G±0,10 | L±0,13 | N |
|------------|----------------|----------------|--------|--------|--------|----|
| | Silver plating | Gold plating | | | | |
| E | DE 8949 XH NMS | DE 8949 XH NMB | 19,60 | 12,70 | 24,99 | 5 |
| A | DA 8949 XH NMS | DA 8949 XH NMB | 27,85 | 12,70 | 33,32 | 7 |
| B | DB 8949 XH NMS | DB 8949 XH NMB | 41,50 | 12,70 | 47,04 | 11 |
| C | DC 8949 XH NMS | DC 8949 XH NMB | 58,10 | 12,70 | 63,50 | 16 |
| D | DD 8949 XH NMS | DD 8949 XH NMB | 55,75 | 15,40 | 61,11 | 15 |



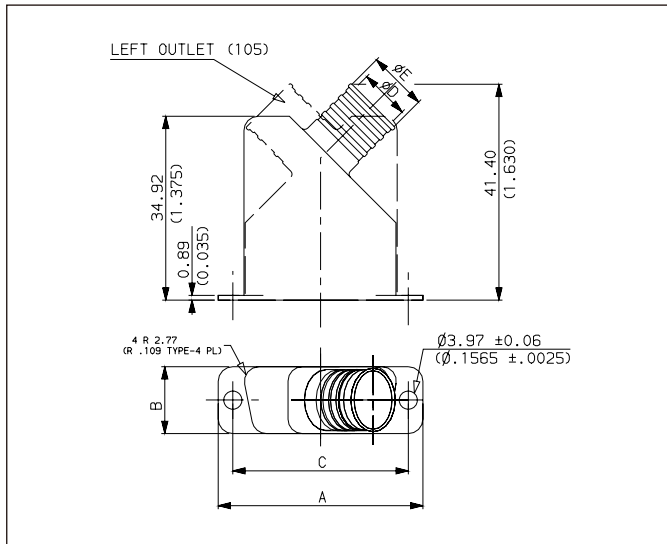
Lightweight shielded backshells - 45° & 90° Longitudinal cable outlets

| | | | | | | | | |
|----------------------------|--|-------------|-------------|------------|----------|----------|-----------|----------|
| Accessories | D | E | 8949 | 101 | K | 1 | NM | J |
| Shell size | E - A - B - C - D | | | | | | | |
| Cable outlet option | 45° cable outlet 105 : left 106 : right | | | | | | | |
| | 90° cable outlet 101 : left 102 : right | | | | | | | |
| Cable outlet type | (see below ★) | | | | | | | |
| Height code | (only for 90° outlet) | | | | | | | |
| | mm | inch | | | | | | |
| Blank | 25,40 | 1,00 | | | | | | |
| - 1 | 31,75 | 1,25 | | | | | | |
| - 2 | 38,10 | 1,50 | | | | | | |
| - 3 | 44,45 | 1,75 | | | | | | |
| - 4 | 50,80 | 2,00 | | | | | | |
| Non magnetic | | | | | | | | |
| Finish code | | | | | | | | |
| B | : 0,8 µm gold | | | | | | | |
| J | : 12,7 µm nickel (per MIL-C-26074 grade B) | | | | | | | |

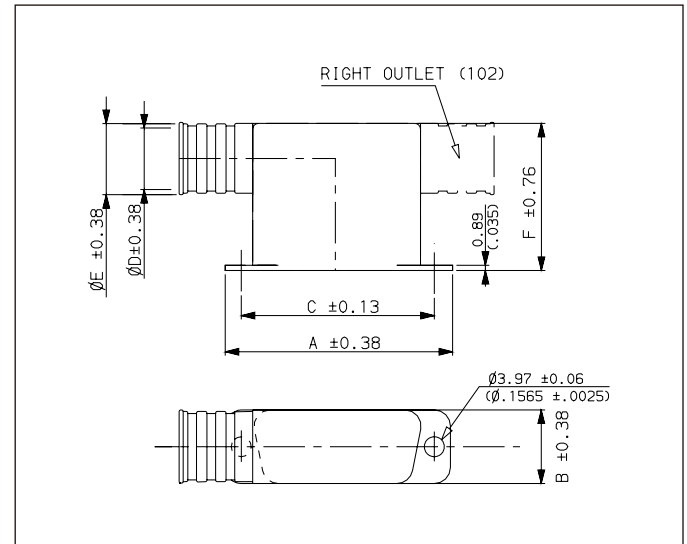
Characteristics

- For use with MIL-DTL-24308 connectors space or MIL-C grade
- Solid fully machined aluminium alloy
- Cable outlet for banded clamp termination system
- 45° and 90° longitudinal cable outlet various type by shell (left or right)
- Non magnetic D-Sub backshells

45° longitudinal cable outlet



90° longitudinal cable outlet



| Shell size | A | B | C | Standard cable outlet size | | | Specific cable outlet size | | |
|------------|----------------|---------------|----------------|----------------------------|---------------|---------------|----------------------------|---------------|---------------|
| | | | | Ø D | Ø E | ★ Outlet type | Ø D | Ø E | ★ Outlet type |
| E | 30,56 1.203 | 12,7 .500 | 24,99 .984 | 6,86 .270 | 8,89 .350 | K | 3,17 .125 | 5,21 .205 | A |
| A | 38,89 1.531 | 12,7 .500 | 33,32 1.312 | 10,03 .395 | 12,06 .475 | E | 4,75 .187 | 6,78 .267 | B |
| B | 52,78 2.078 | 12,7 .500 | 47,04 1.852 | 10,66 .420 | 12,7 .500 | F | 7,92 .312 | 9,96 .392 | D |
| C | 69,04 2.718 | 12,7 .500 | 63,5 2.500 | 10,66 .420 | 12,7 .500 | F | 7,92 .312 | 9,96 .392 | D |
| D | 66,67 2.625 | 15,47 .609 | 61,11 2.406 | 13,43 .529 | 15,46 .609 | H | 10,03 .395 | 12,06 .475 | E |



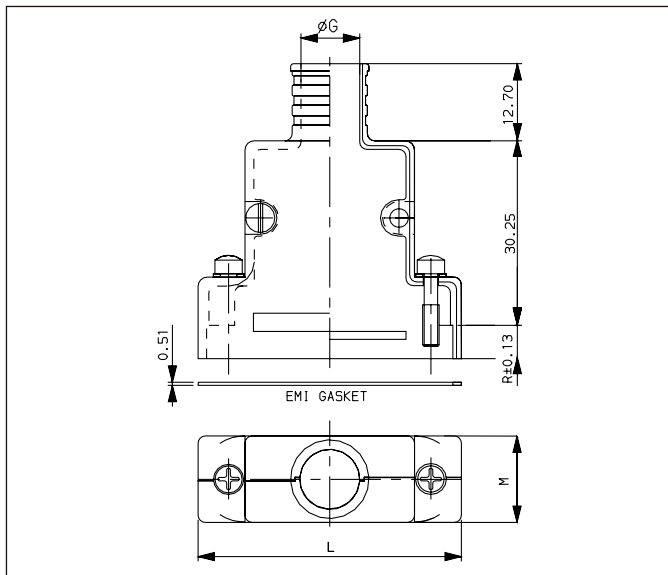
EMI/RFI Shielded backshells Straight & Low profile outlet banded clamp termination

| | | | | | | | | |
|---|--|------|-------|-----|---|---|----|---|
| Accessories | D | E | 8949 | 405 | K | 1 | NM | J |
| Shell size E - A - B - C - D | | | | | | | | |
| Cable outlet option | | | | | | | | |
| Straight outlet | 405 | | | | | | | |
| Low profile outlet | 401 | | | | | | | |
| Cable outlet type (only for low profile outlet) (see below ★) | | | | | | | | |
| Height code | | | | | | | | |
| Front mount | Rear mount | mm | inch | | | | | |
| 1 | - | 7,74 | 0.305 | | | | | |
| - | 2 | 6,32 | 0.249 | | | | | |
| - | 3 | 5,53 | 0.218 | | | | | |
| - | 4 | 4,74 | 0.187 | | | | | |
| - | 5 | 3,93 | 0.155 | | | | | |
| Non magnetic | | | | | | | | |
| Finish code | | | | | | | | |
| B | : 0,8 µm gold | | | | | | | |
| J | : 12,7 µm nickel (per MIL-C-26074 grade B) | | | | | | | |

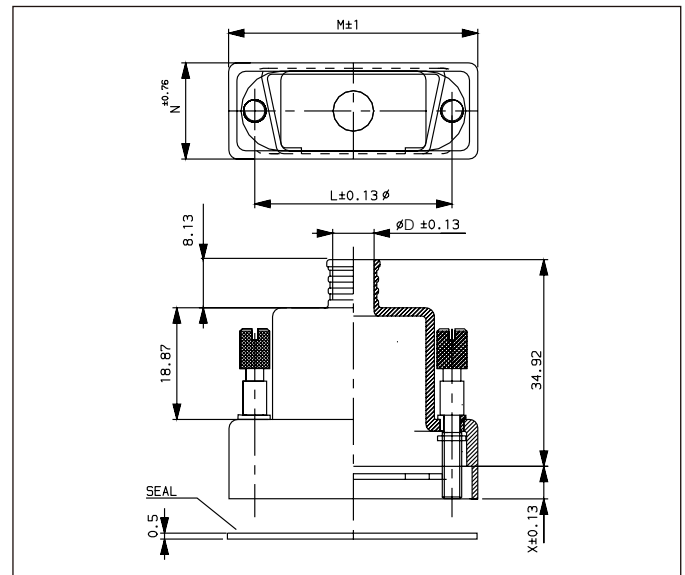
Characteristics

- Solid fully machined aluminium alloy
- Cable outlet for banded clamp termination system
- For front or rear mount with EMI gasket
- Non magnetic D-Sub backshells

Straight cable outlet : 405



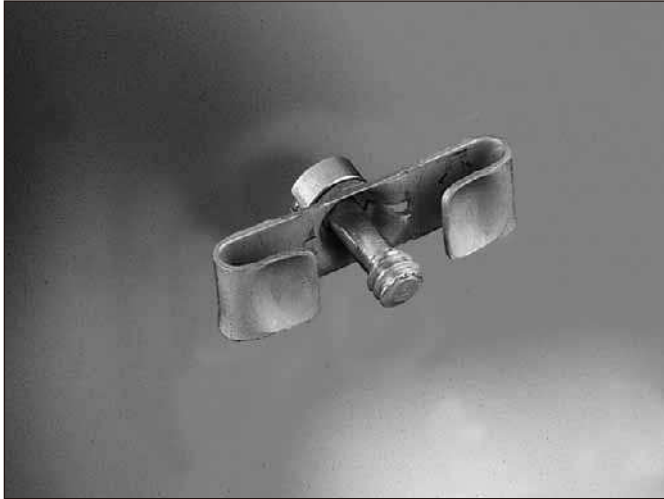
Low profile cable outlet : 401



| Shell size | M | L | Ø G | Shell size | M | N | L | Standard | | Specific | |
|------------|---------------|----------------|---------------|------------|----------------|---------------|----------------|---------------------|--------------|---------------------|---------------|
| | | | | | | | | ★ Cable outlet size | Ø D | ★ Cable outlet size | Ø D |
| E | 15,98 .629 | 35,03 1.379 | 6,73 .265 | E | 34,69 1.366 | 16,25 .640 | 24,99 .984 | B | 4,83 .190 | C | 5,59 .220 |
| A | 15,98 .629 | 43,36 1.707 | 9,9 .390 | A | 43,03 1.694 | 16,25 .640 | 33,32 1.312 | B | 4,83 .190 | E | 6,98 .275 |
| B | 15,98 .629 | 57,25 2.254 | 10,54 .415 | B | 56,92 2.241 | 16,25 .640 | 47,04 1.852 | D | 6,6 .260 | F | 7,24 .285 |
| C | 15,98 .629 | 73,53 2.895 | 10,54 .415 | C | 73,2 2.882 | 16,25 .640 | 63,5 2.500 | D | 6,6 .260 | G | 8,89 .350 |
| D | 18,79 .740 | 71,14 2.801 | 13,33 .525 | D | 70,56 2.778 | 19,05 .750 | 61,11 2.406 | G | 8,89 .350 | H | 12,45 .490 |



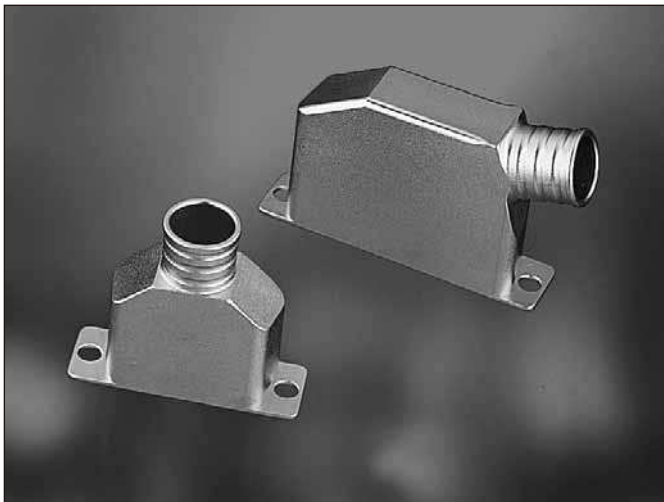
Accessories



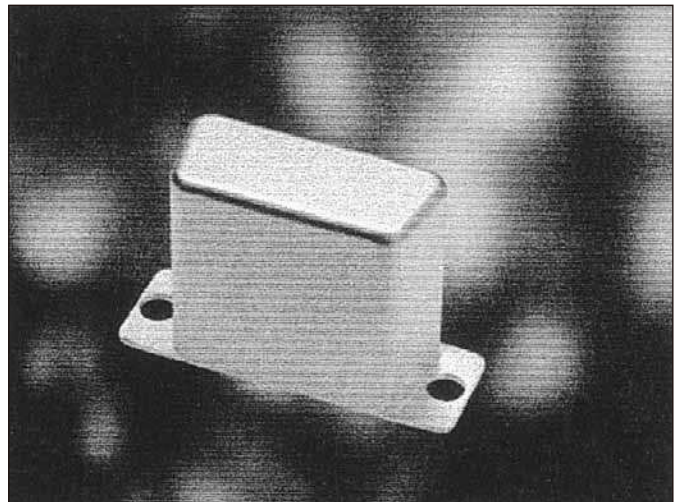
Screw lock



EMI/RFI shielded backshell



Lightweight shielded backshell



Shorting can

GSFC/ESA-SCC/SOURIAU part number



D-SUB Connectors standard density with solder contacts # 20

| PIN CONTACTS | | | SOCKET CONTACTS | | |
|-----------------|--------------------------------|-------------------------------------|-----------------|--------------------------------|-------------------------------------|
| GSFC P/N | ESA/SCC P/N (Flight Models) | SOURIAU P/N (Engineering Models) | GSFC P/N | ESA/SCC P/N (Flight Models) | SOURIAU P/N (Engineering Models) |
| 311P10-1P-B-12 | 340100101BDEM9PNMB | DEM 09P 011NMB | 311P10-1S-B-12 | 340100101BDEM9SNMB | DEM 09S 011NMB |
| 311P10-6P-B-12 | 340100101BDEM5W1PNMB | DEM 5W1P 011NMB | 311P10-6S-B-12 | 340100101BDEM5W1SNMB | DEM 5W1S 011NMB |
| 311P10-2P-B-12 | 340100101BDAM15PNMB | DAM 15P 011NMB | 311P10-2S-B-12 | 340100101BDAM15SNMB | DAM 15S 011NMB |
| 311P10-7P-B-12 | 340100101BDAM3W3PNMB | DAM 3W3P 011NMB | 311P10-7S-B-12 | 340100101BDAM3W3SNMB | DAM 3W3S 011NMB |
| 311P10-8P-B-12 | 340100101BDAM7W2PNMB | DAM 7W2P 011NMB | 311P10-8S-B-12 | 340100101BDAM7W2SNMB | DAM 7W2S 011NMB |
| 311P10-9P-B-12 | 340100101BDAM11W1PNMB | DAM 11W1P 011NMB | 311P10-9S-B-12 | 340100101BDAM11W1SNMB | DAM 11W1S 011NMB |
| 311P10-3P-B-12 | 340100101BDBM25PNMB | DBM 25P 011NMB | 311P10-3S-B-12 | 340100101BDBM25SNMB | DBM 25S 011NMB |
| 311P10-10P-B-12 | 340100101BDBM5W5PNMB | DBM 5W5P 011NMB | 311P10-10S-B-12 | 340100101BDBM5W5SNMB | DBM 5W5S 011NMB |
| 311P10-11P-B-12 | 340100101BDBM9W4PNMB | DBM 9W4P 011NMB | 311P10-11S-B-12 | 340100101BDBM9W4SNMB | DBM 9W4S 011NMB |
| 311P10-12P-B-12 | 340100101BDBM13W3PNMB | DBM 13W3P 011NMB | 311P10-12S-B-12 | 340100101BDBM13W3SNMB | DBM 13W3S 011NMB |
| 311P10-13P-B-12 | 340100101BDBM17W2PNMB | DBM 17W2P 011NMB | 311P10-13S-B-12 | 340100101BDBM17W2SNMB | DBM 17W2S 011NMB |
| 311P10-4P-B-12 | 340100101BDCM37PNMB | DCM 37P 011NMB | 311P10-4S-B-12 | 340100101BDCM37SNMB | DCM 37S 011NMB |
| 311P10-15P-B-12 | 340100101BDCM8W8PNMB | DCM 8W8P 011NMB | 311P10-15S-B-12 | 340100101BDCM8W8SNMB | DCM 8W8S 011NMB |
| 311P10-17P-B-12 | 340100101BDCM17W5PNMB | DCM 17W5P 011NMB | 311P10-17S-B-12 | 340100101BDCM17W5SNMB | DCM 17W5S 011NMB |
| 311P10-18P-B-12 | 340100101BDCM21WA4PNMB | DCM 21WA4P 011NMB | 311P10-18S-B-12 | 340100101BDCM21WA4SNMB | DCM 21WA4S 011NMB |
| 311P10-20P-B-12 | 340100101BDCM25W3PNMB | DCM 25W3P 011NMB | 311P10-20S-B-12 | 340100101BDCM25W3SNMB | DCM 25W3S 011NMB |
| 311P10-21P-B-12 | 340100101BDCM27W2PNMB | DCM 27W2P 011NMB | 311P10-21S-B-12 | 340100101BDCM27W2SNMB | DCM 27W2S 011NMB |
| 311P10-5P-B-12 | 340100101BDDM50PNMB | DDM 50P 011NMB | 311P10-5S-B-12 | 340100101BDDM50SNMB | DDM 50S 011NMB |
| 311P10-22P-B-12 | 340100101BDDM24W7PNMB | DDM 24W7P 011NMB | 311P10-22S-B-12 | 340100101BDDM24W7SNMB | DDM 24W7S 011NMB |
| 311P10-23P-B-12 | 340100101BDDM36W4PNMB | DDM 36W4P 011NMB | 311P10-23S-B-12 | 340100101BDDM36W4SNMB | DDM 36W4S 011NMB |

D-SUB Connectors standard density with crimp contacts # 20

D-SUB Connectors high density with crimp contacts # 22

| PIN CONTACTS | | | PIN CONTACTS | | |
|-----------------|--------------------------------|-------------------------------------|-----------------|--------------------------------|-------------------------------------|
| GSFC P/N | ESA/SCC P/N (Flight Models) | SOURIAU P/N (Engineering Models) | GSFC P/N | ESA/SCC P/N (Flight Models) | SOURIAU P/N (Engineering Models) |
| 311P409-1P-B-12 | 340100201BDEMA9PNMBFO | 8630 09P NMBL | 311P407-1P-B-12 | 340100202BDEMA15PNMBFO | 8635 15P NMBL |
| 311P409-2P-B-12 | 340100201BDAMA15PNMBFO | 8630 15P NMBL | 311P407-2P-B-12 | 340100202BDAMA26PNMBFO | 8635 26P NMBL |
| 311P409-3P-B-12 | 340100201BDBMA25PNMBFO | 8630 25P NMBL | 311P407-3P-B-12 | 340100202BDBMA44PNMBFO | 8635 44P NMBL |
| 311P409-4P-B-12 | 340100201BDCMA37PNMBFO | 8630 37P NMBL | 311P407-4P-B-12 | 340100202BDCMA62PNMBFO | 8635 62P NMBL |
| 311P409-5P-B-12 | 340100201BDDMA50PNMBFO | 8630 50P NMBL | 311P407-5P-B-12 | 340100202BDDMA78PNMBFO | 8635 78P NMBL |
| SOCKET CONTACTS | | | SOCKET CONTACTS | | |
| 311P409-1S-B-12 | 340100201BDEMA9SNMBFO | 8630 09S NMBL | 311P407-1S-B-12 | 340100202BDEMA15SNMBFO | 8635 15S NMBL |
| 311P409-2S-B-12 | 340100201BDAMA15SNMBFO | 8630 15S NMBL | 311P407-2S-B-12 | 340100202BDAMA26SNMBFO | 8635 26S NMBL |
| 311P409-3S-B-12 | 340100201BDBMA25SNMBFO | 8630 25S NMBL | 311P407-3S-B-12 | 340100202BDBMA44SNMBFO | 8635 44S NMBL |
| 311P409-4S-B-12 | 340100201BDCMA37SNMBFO | 8630 37S NMBL | 311P407-4S-B-12 | 340100202BDCMA62SNMBFO | 8635 62S NMBL |
| 311P409-5S-B-12 | 340100201BDDMA50SNMBFO | 8630 50S NMBL | 311P407-5S-B-12 | 340100202BDDMA78SNMBFO | 8635 78S NMBL |

Crimp contacts # 20, rear insertable and rear removable

| GSFC P/N | ESA/SCC P/N (Flight Models) | SOURIAU P/N (Engineering Models) |
|----------|-----------------------------|----------------------------------|
| G10P1 | 340100501B | 8949 1196 Y7 EL |
| G10S1 | 340100502B | 8949 1198 EL |
| - | 340100503B | 8949 1520 Y7 EL |
| - | 340100504B | 8949 1523 EL |
| - | 340100505B | 8949 3227 Y7 EL |
| - | 340100506B | 8949 3352 EL |

Crimp contacts # 22, rear insertable and rear removable

| GSFC P/N | ESA/SCC P/N (Flight Models) | SOURIAU P/N (Engineering Models) |
|----------|-----------------------------|----------------------------------|
| G08P1 | 340100507B | 8949 1524 Y7 EL |
| G08S1 | 340100508B | 8949 1525 EL |

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