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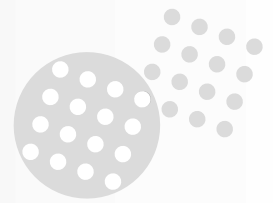
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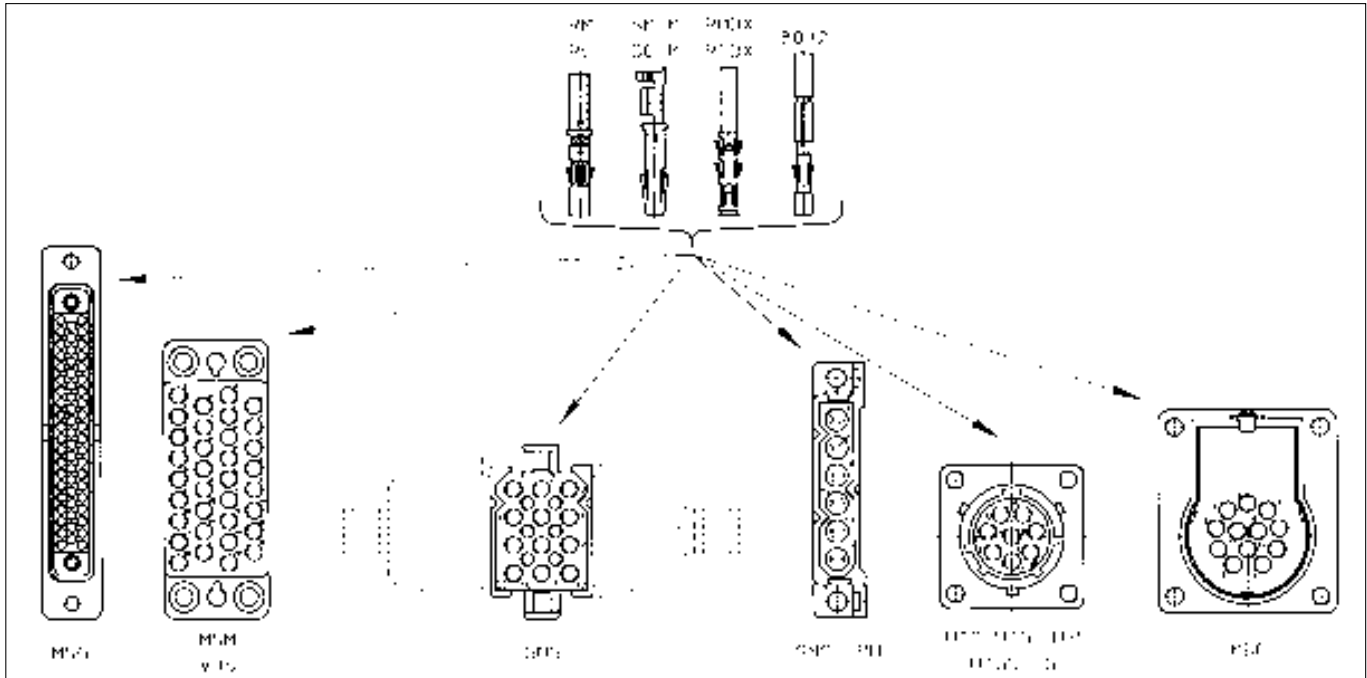
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# Introduction



## TRIM TRIO - The principle



The TRIM TRIO interconnection system is a fully integrated system, in which 4 contact types can be used in a variety of connector styles and sizes, ranging from 1 to 104 contact positions.

This interchangeability offers boundless design possibilities with a large commonality throughout the entire range.

The commonality in the system is established in:

- contact performance and wire range.
- configuration of contact cavities in the housings.
- crimp tooling
- assembly procedures.
- quality assurance procedures.
- field service and maintenance.
- personnel training.

### Products

The contacts, both male and female, accommodate a wire range of AWG14 up to AWG30. The 4 contact families are:

- Machined contacts for high performance (up to 13 Amp current rating), with gold or tin plating.
- Stamped and formed two-piece contacts, for more cost effective applications (up to 13 Amp current rating).
- Subminiature coaxial contacts, in a multi-piece and a mono-crimp version, for coaxial or twisted-pair cables.
- Fibre optic contacts to accommodate 1000µ plastic fibres with a cable diameter of 2.2 mm.

The housings offer many options in contact cavities and backshell possibilities

The main version are:

- circular connectors:
  - full metal
  - plastic with metal coupling system
  - full plastic
  - metallised plastic for shielding
  - plastic with quick mating feature
- rectangular, high performance, rack and panel and printed circuit board versions.
- rectangular, low cost, rack and panel and printed circuit board versions.
- rectangular connectors for V.35 applications.
- rectangular connectors for I/O applications.

(See TRIM TRIO selection matrix on the next page)

*The beauty of the TRIM TRIO system means that the 4 contact types can be combined (both male and female) in any TRIM TRIO connector type of any geometry.*

The keywords in the TRIM TRIO interconnection system are standardisation, versatility, reliability and economy.

These words explain why the TRIM TRIO name is so well known, and its connectors are used all over the world.

### Standardisation

- The same contact cavity for each type of housing
- identical crimp tooling for all types of contacts except fibre optics

- reduced manufacturing methods
- standardised operator training
- international acceptance

### Versatility

- wide range in current capability
- various contact platings
- wire and cable accommodations
- housings accommodate pin and socket (male and female) contacts
- variety of terminations
- variations in mounting
- number of sizes
- discrimination keying
- broad range of installation tooling
- variety of possible applications

### Reliability

- proven materials
- guaranteed quality assurance per ISO 9001 certification
- rigid inspection procedures
- positive polarisation
- pin protection
- rugged mouldings
- restricted entry contacts

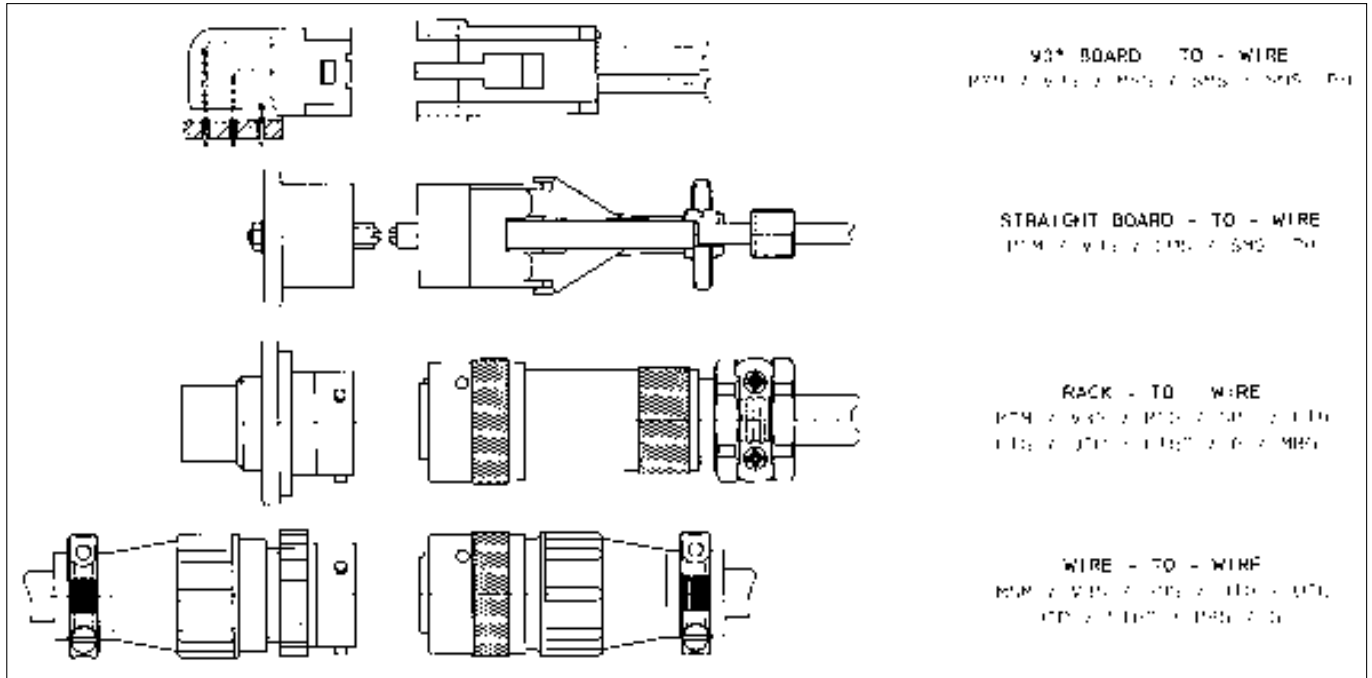
### Economy

- low assembly cost
- minimal tooling downtime
- easy connecting and disconnecting
- low wiring cost
- simplified personnel education
- low inspection cost
- removable contacts
- reduced number of components
- low installed cost

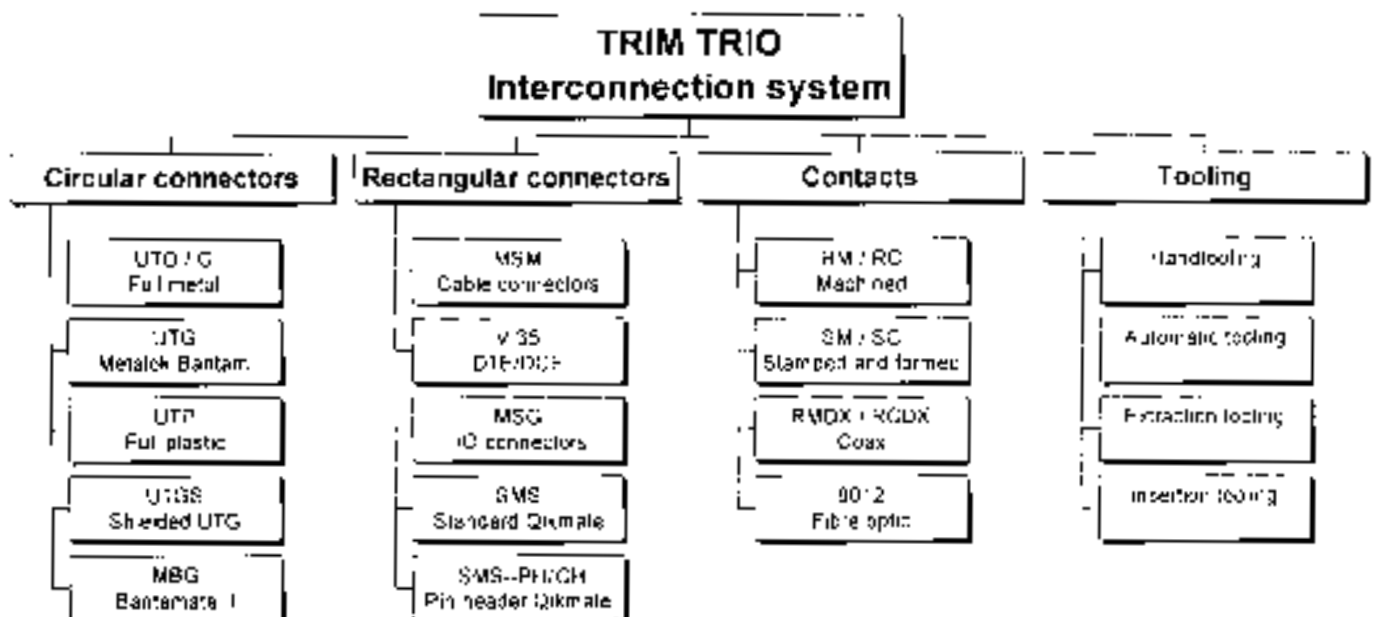
# Introduction



## Versatility



## TRIM TRIO selection matrix





## Description

The TRIM TRIO circular connectors are an integrated group of economical, reliable, versatile standardised connectors for a broad spectrum of interconnection applications.

Being derived from MIL-C-26482, input and output connections can be made with a large number of sizes ranging from:

- 3 to 48 contact positions in TRIM TRIO
- 4 to 46 contact positions in MBG Bantamate II

## What are the links and differences between TRIM TRIO circular, and MBG Bantamate II

To avoid misunderstandings on the circular connector ranges, it has to be clearly understood that there are inevitable links and differences between all the circular product ranges (see fig).



## Intermateability

- TRIM TRIO circular connectors are available in UTO, UTG, UTP and UTGS and are fully intermateable, interchangeable and intermountable.
- MBG Bantamate II with the unique quick mating feature plus high number of mating cycles is not mateable with other TRIM TRIO circular connectors.

## Contacts

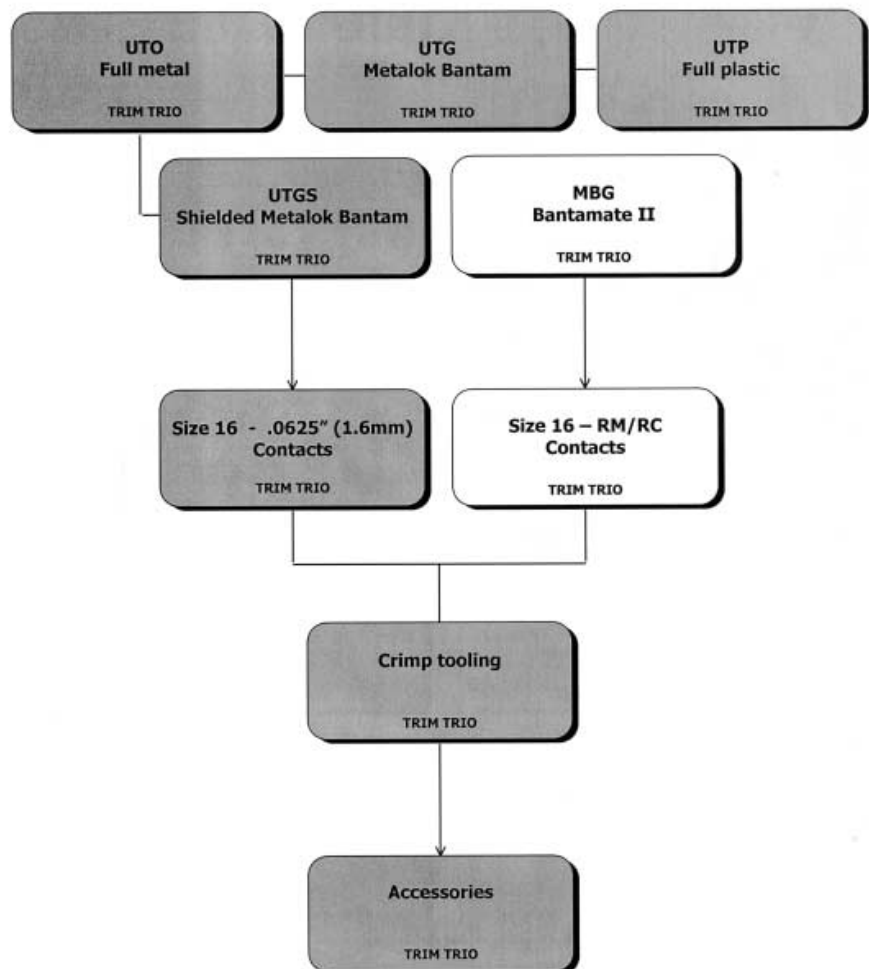
- TRIM TRIO and MBG Bantamate II circular connectors use the size 16 TRIM TRIO contacts available in machined, stamped and formed, coax and fibre optic versions.

## Accessories

- TRIM TRIO use the same accessories such as backshells and dustcaps.
- MBG Bantamate II has his own backshell

## Tooling

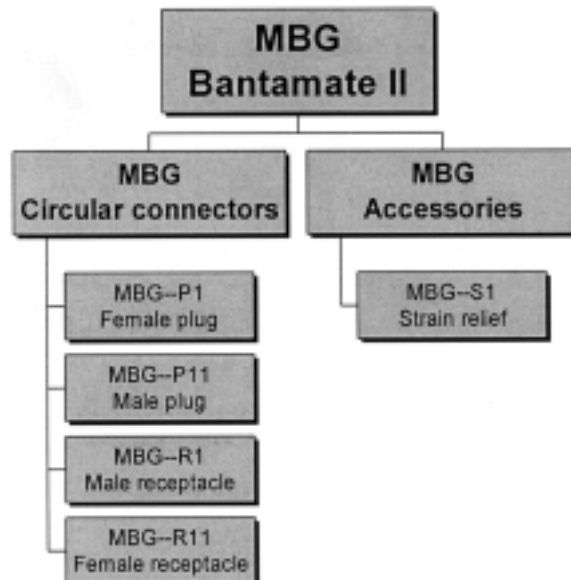
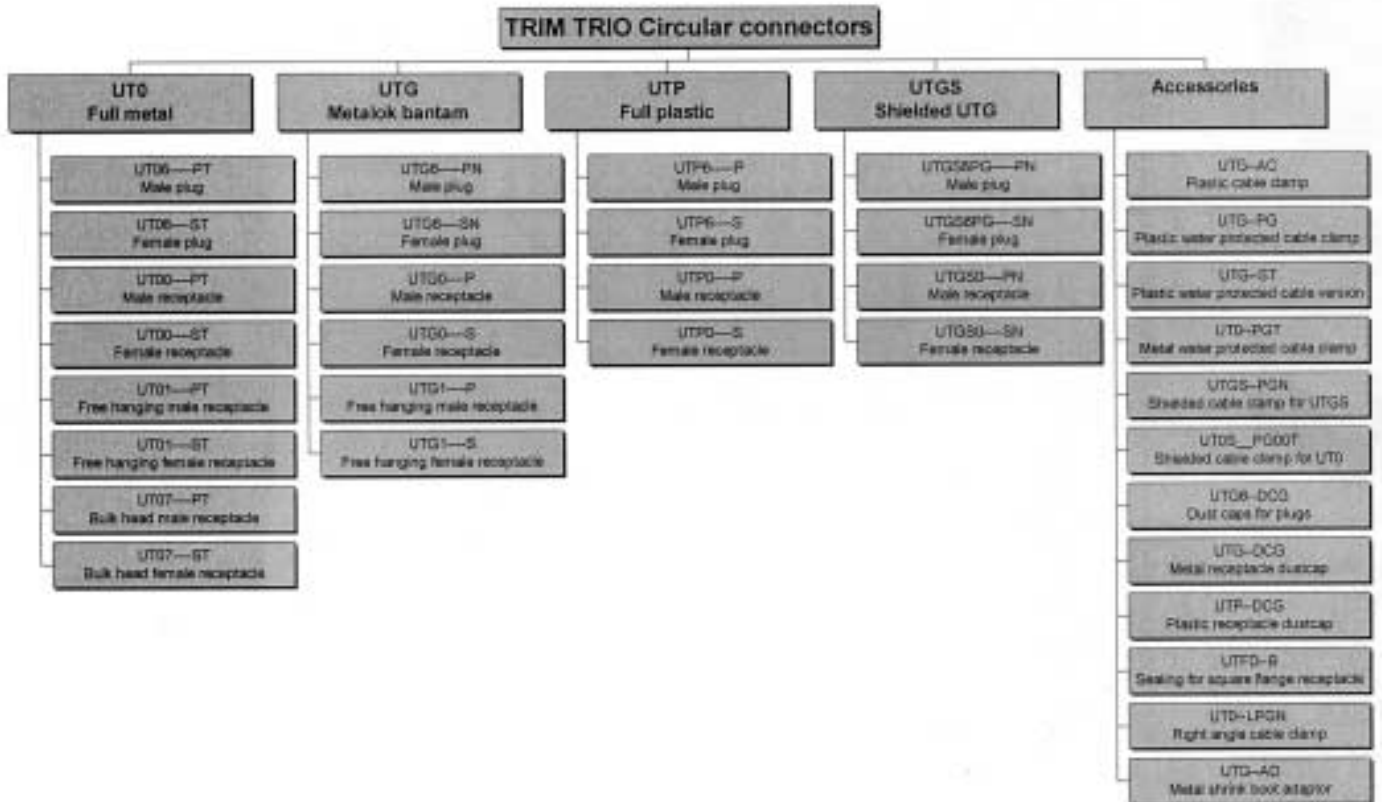
- TRIM TRIO and MBG Bantamate II use all the same crimp barrels per wire size and the same crimp tooling.



# Circular



## Selection matrix Circular connectors

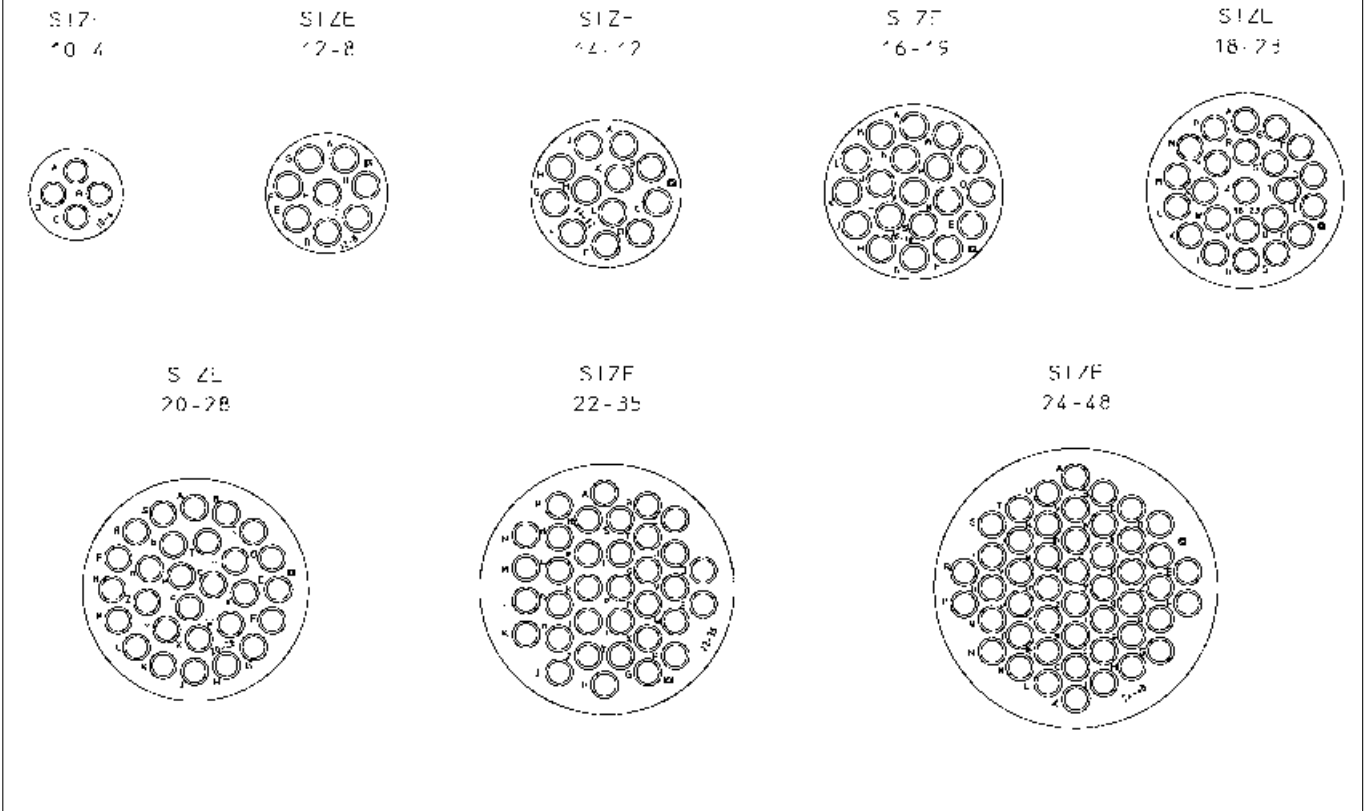


# Circular

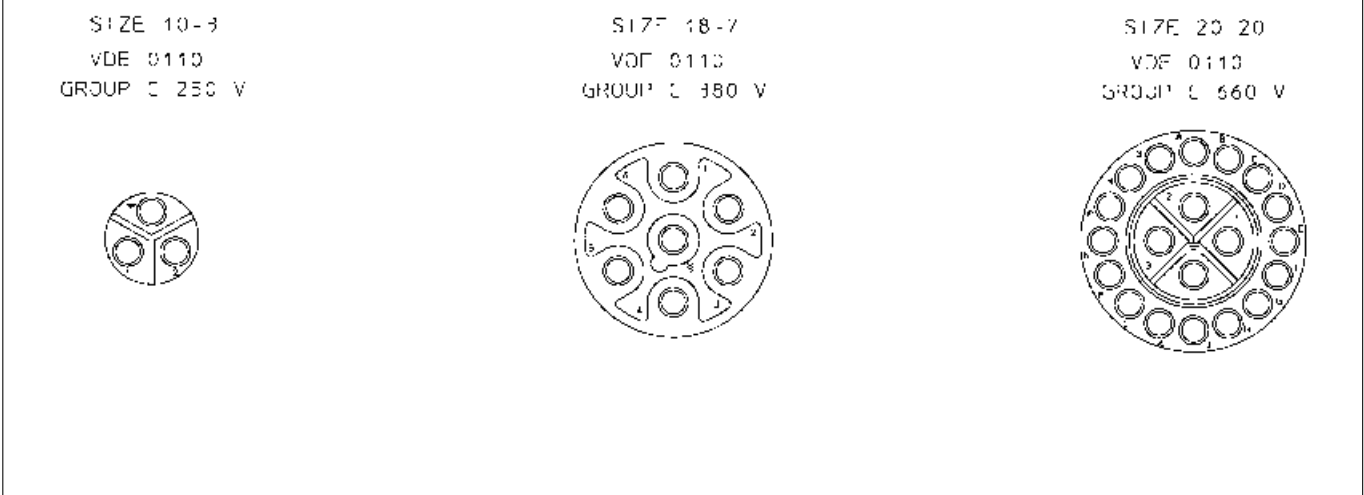


## TRIM TRIO Insert arrangements and moulded-in contact identification

TRIM TRIO arrangements only available for UT0, UTG, UTGS and UTP



TRIM TRIO additional arrangements only available for UTG, UTGS and UTP

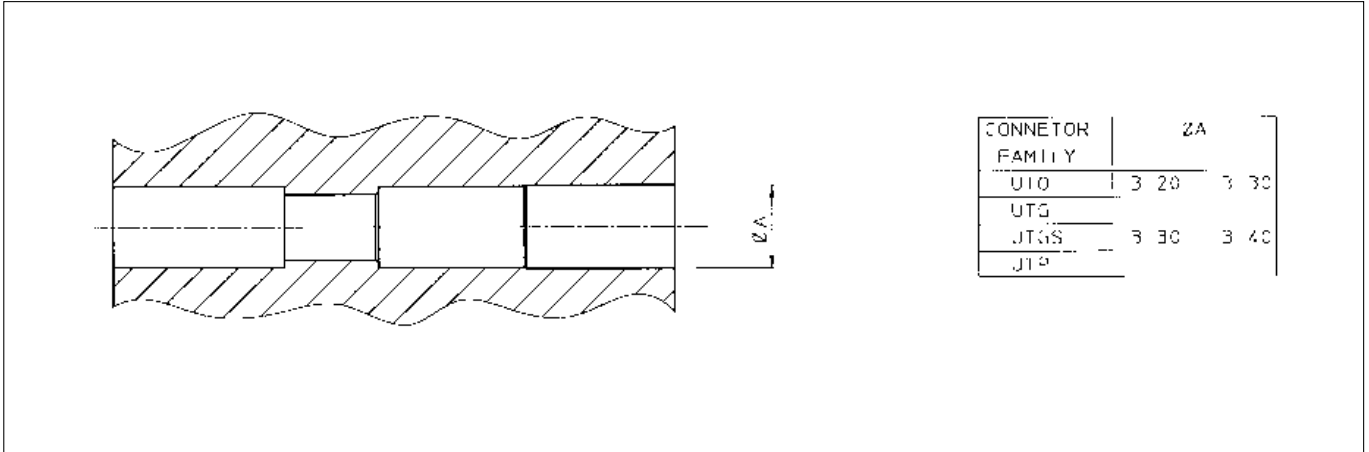


Contact identification positions shown are for mating face of pin contact connectors and wire face of socket contact connectors.

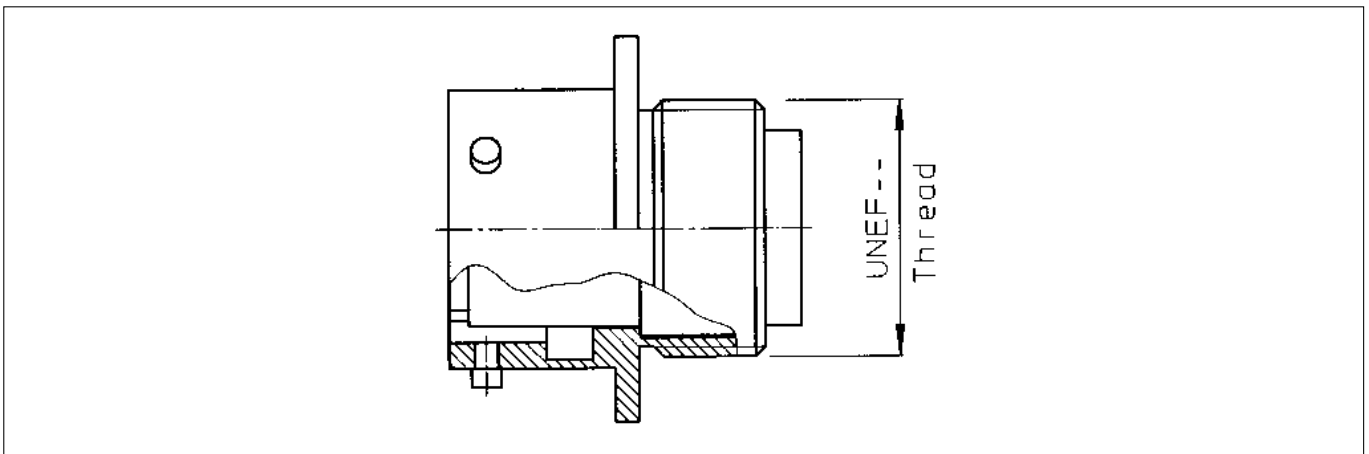
# Circular



## TRIM TRIO cavity dimensions on wire face



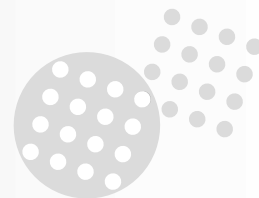
## TRIM TRIO back shell threading



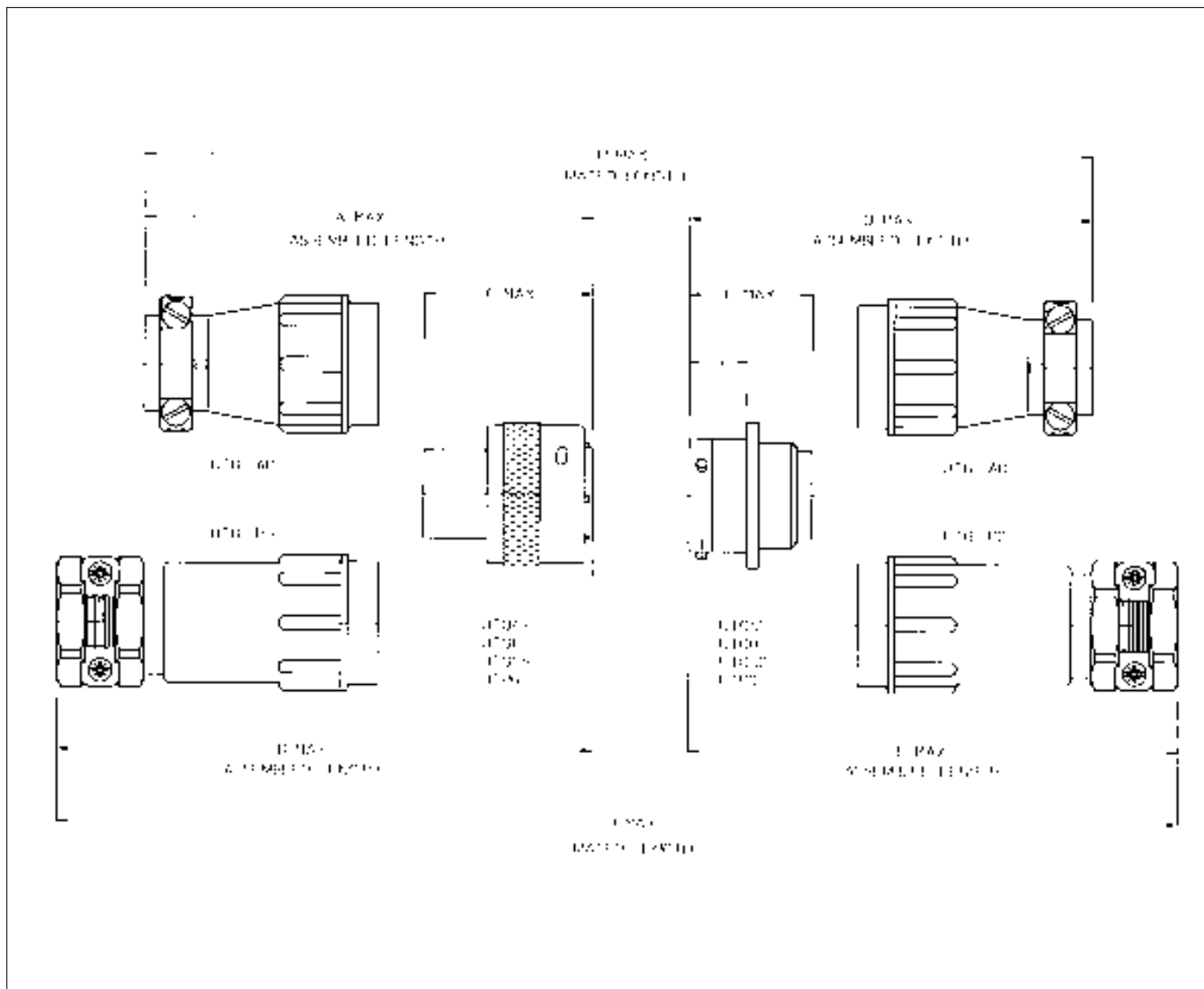
## TRIM TRIO threading dimensions

| Shell size | Shell thread size for backshells | PG - thread on PG cable clamp |
|------------|----------------------------------|-------------------------------|
| 10         | 9/16 - 24 UNEF                   | PG9                           |
| 12         | 11/16 - 24 UNEF                  | PG11                          |
| 14         | 13/16 - 20 UNEF                  | PG13.5                        |
| 16         | 15/16 - 20 UNEF                  | PG16                          |
| 18         | 1-1/16 - 18 UNEF                 | PG21                          |
| 20         | 1-3/16 - 18 UNEF                 |                               |
| 22         | 1-5/16 - 18 UNEF                 |                               |
| 24         | 1-7/16 - 18 UNEF                 | PG29                          |

# Circular



## Mating Dimensions TRIM TRIO



| Shell size | Dimensions in mm |        |        |        |        |        |             |        |        |      |     |     |
|------------|------------------|--------|--------|--------|--------|--------|-------------|--------|--------|------|-----|-----|
|            | A max.           | B max. | C max. | D max. | E max. | F max. | G $\pm 0.2$ | H max. | J max. |      |     |     |
| 10         | 57               | 72     | 31.8   | 57.5   | 72.5   | 24.3   | 11.4        | 106    | 136    |      |     |     |
| 12         |                  | 74     |        |        | 74.0   |        |             |        | 139    |      |     |     |
| 14         | 63               | 81     |        |        | 63.5   |        |             | 81     | 26     | 14.6 | 118 | 153 |
| 16         |                  | 85     |        |        |        |        |             | 85     |        |      |     | 161 |
| 18         | 67               | 88     |        | 67.5   | 89     | 14.6   | 15.4        | 126    | 168    |      |     |     |
| 20         | 74               | 101    |        | 76     | 103    |        |             | 140    | 191    |      |     |     |
| 22         | 79               | 117    |        | 82     | 110    | 15.4   | 162         | 151    | 207    |      |     |     |
| 24         | 84               | 123    |        | 88     | 127    |        |             | 162    | 240    |      |     |     |
| 10-3VDE    | 57               | 72     |        | 57.5   | 72.5   | 31.7   | 11.4        | 106    | 136    |      |     |     |
| 18-7 VDE   | 73.5             | 94,5   | 33     | 74     | 95.5   | 34     | 17.9        | 133    | 175    |      |     |     |
| 20-20VDE   | 74               | 101    | 31.8   | 76     | 103    | 26     | 14.6        | 140    | 191    |      |     |     |





## Plastic connector with metal coupling system

### Description

“UTG” Metalok Bantam plastic industrial circular connectors with metal coupling are a range of multiway connectors to provide the complete answer to the need for lightweight, robust circular connectors. They are available in 8 shell sizes, 11 insert arrangements **all interchangeable, interchangeable and intermountable** with the Trim-Trio “UT0” and “UTP industrial connector families.



### Features and benefits

- Available in 8 shell sizes and 11 insert arrangements incl. 3 VDE versions.
- Available in plug and receptacle versions for both male and female contacts.
- Connectors and accessories are moulded from highly durable glass-filled thermoplastic.
- Flammability rating: UL94-V0.
- UL approved-file Nr.: E31151
- Metal bayonet ring:
  - Metal wave spring loaded.
  - Locks with audible positive “click”
  - Assures 500 matings and unmatings

### Performance characteristics

|  |                            |
|--|----------------------------|
| Operating temperature:   | -55°C to +125°C            |
| Insulation resistance:   | 5000 MΩ min.               |
| Test potential:  | 2000 VAC                   |
| Durability:  | 500 matings and unmatings. |
| Vibration resistance:  | Per MIL-STD202 method 204  |
| Thermal shock:   | Per MIL-STD202 method 207  |
| Degree of protection per DIN 40050: IP67 in mated condition. “H” version used with UTG —ST cable clamp |                            |

### Construction

|                  |                                  |
|------------------|----------------------------------|
| Connector body   | Glass filled thermoplast UL94-V0 |
|                  | Colour: black                    |
| Coupling ring:   | Nickel plated brass              |
| Tri-lock pins:   | Stainless steel                  |
| Coupling spring: | Spring steel                     |

### Contact accommodation

- “UTG” connectors accept Trim-Trio removable snap-lock contacts (see contact section)
- Contacts to be ordered separately.

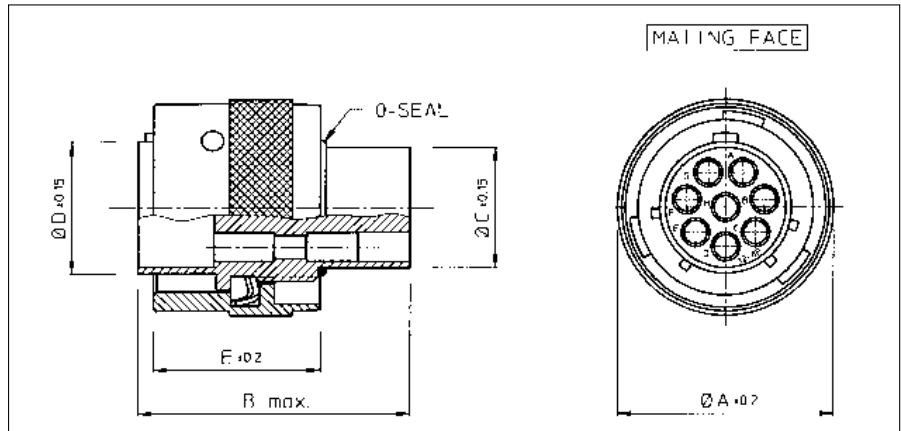
### How to order

|                            |   |          |           |           |          |          |          |           |
|----------------------------|---|----------|-----------|-----------|----------|----------|----------|-----------|
| <b>Connector family :</b>  | <b>UTG</b>  | <b>0</b> | <b>14</b> | <b>12</b> | <b>P</b> |          | <b>H</b> | <b>--</b> |
|                            | <b>UTG</b>  | <b>6</b> | <b>14</b> | <b>12</b> | <b>S</b> | <b>N</b> |          | <b>--</b> |
| <b>Body variation:</b>     | <b>0</b> : Wall mounting receptacle<br><b>6</b> : Cable plug<br><b>1</b> : Free hanging receptacle    |          |           |           |          |          |          |           |
| <b>Shell size:</b>         |   |          |           |           |          |          |          |           |
| <b>Insert arrangement:</b> |   |          |           |           |          |          |          |           |
| <b>Type of contacts:</b>   | <b>P</b> : Pin contacts<br><b>S</b> : Socket contacts   |          |           |           |          |          |          |           |
| <b>Plating</b>             | <b>N</b> : Nickelplated bayonet ring  |          |           |           |          |          |          |           |
| <b>Application</b>         | <b>No letter</b> : Standard version<br><b>H</b> : Water protected version (only receptacle)           |          |           |           |          |          |          |           |
| <b>Design variation</b>    | <b>No letter</b> : Moulded-in contact marking (standard version)<br><b>Others</b> : Specials versions |          |           |           |          |          |          |           |

# UTG - Metalok Bantam

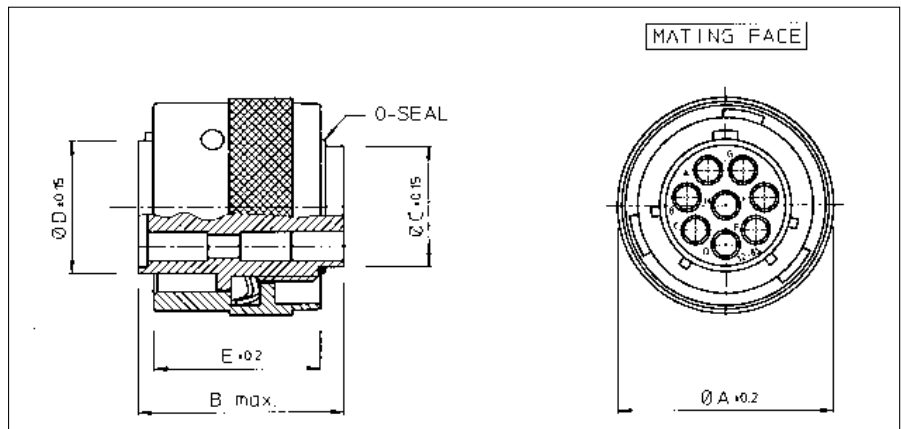


## Cable plug for pin contacts (UTG6- - - -PN)



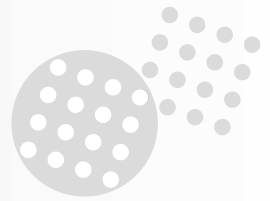
| Part number                | Shell size | Ø A ±0.2 | B max.      | Ø C ±0.15 | Ø D ±0.15 | E ±0.2 |
|----------------------------|------------|----------|-------------|-----------|-----------|--------|
| UTG6104PN / UTG6103PNVDE   | 10         | 21.6     | 31.8        | 10.9      | 12.2      | 19.1   |
| UTG6128PN                  | 12         | 24.8     |             | 13.8      | 15.1      |        |
| UTG61412PN                 | 14         | 28.0     |             | 17.0      | 18.3      |        |
| UTG61619PN                 | 16         | 31.2     |             | 19.9      | 21.5      |        |
| UTG61823PN / UTG6187PNVDEU | 18         | 34.3     | 31.8 / 33.0 | 22.4      | 24.0      |        |
| UTG62028PN / UTG62020PN    | 20         | 37.5     | 31.8 / 35.3 | 25.6      | 27.2      |        |
| UTG62235PN                 | 22         | 40.7     | 31.8        | 26.5      | 30.4      |        |
| UTG62448PN                 | 24         | 43.9     |             | 31.7      | 33.5      |        |

## Cable plug for socket contacts (UTG6- - - -SN)

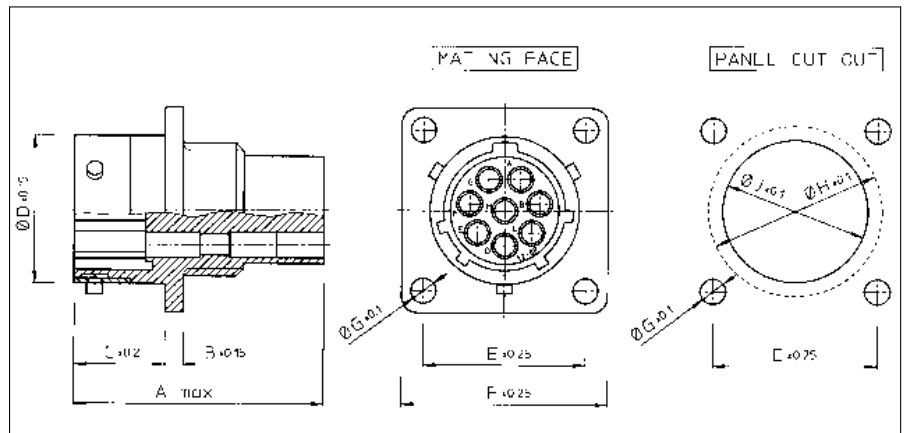


| Part number                | Shell size | Ø A ±0.2 | B max.       | Ø C ±0.15 | Ø D ±0.15 | E ±0.2 |
|----------------------------|------------|----------|--------------|-----------|-----------|--------|
| UTG6104SN / UTG6103SNVDE   | 10         | 21.6     | 23.9 / 26.75 | 10.9      | 12.2      | 19.1   |
| UTG6128SN                  | 12         | 24.8     | 23.9         | 13.8      | 15.1      |        |
| UTG61412SN                 | 14         | 28.0     |              | 17.0      | 18.3      |        |
| UTG61619SN                 | 16         | 31.2     | 19.9         | 21.5      |           |        |
| UTG61823SN / UTG6187SNVDEU | 18         | 34.3     | 23.9 / 29.0  | 22.4      | 24.0      |        |
| UTG62028SN / UTG62020SN    | 20         | 37.5     | 24.9         | 25.6      | 27.2      |        |
| UTG62235SN                 | 22         | 40.7     |              | 28.5      | 30.4      |        |
| UTG62448SN                 | 24         | 43.9     | 26.2         | 31.7      | 33.5      |        |

# UTG - Metalok Bantam



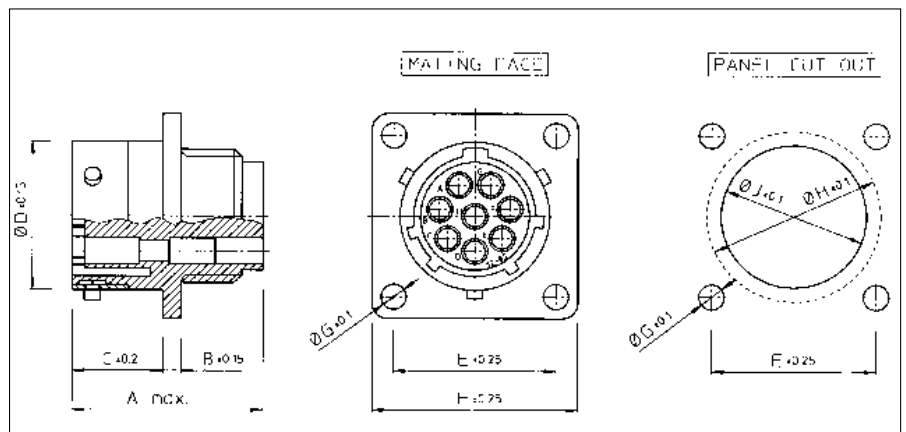
## Wall mounting receptacle for pin contacts (UTG0- - - -P)



| Part number              | Shell size | A max.    | B ±0.15 | C ±0.2    | Ø D ±0.15 | E ±0.25 | F ±0.25 | Ø G ±0.1 | Ø H ±0.1 | Ø J ±0.1 |
|--------------------------|------------|-----------|---------|-----------|-----------|---------|---------|----------|----------|----------|
| UTG0104P / UTG0103PVDE   | 10         | 31.7      | 2.3     | 11.3      | 15.0      | 18.3    | 23.8    | 3.2      | 17.3     | 15.1     |
| UTG0128P                 | 12         |           |         |           | 19.0      | 20.6    | 26.2    |          | 21.8     | 18.2     |
| UTG01412P                | 14         |           |         |           | 22.2      | 23.0    | 28.6    |          | 25.0     | 21.4     |
| UTG01619P                | 16         |           |         |           | 25.3      | 24.6    | 31.0    |          | 28.1     | 24.6     |
| UTG01823P / UTG0187PVDEU | 18         | 31.7/34.0 | 2.5     | 11.3/17.9 | 28.5      | 27.0    | 33.3    | 3.9      | 31.3     | 27.8     |
| UTG02028P / UTG02020P    | 20         | 33.3/34.3 |         |           | 14.5      | 31.7    | 29.4    |          | 36.5     | 34.5     |
| UTG02235P                | 22         | 33.3      | 3.5     | 15.3      | 34.9      | 31.8    | 39.7    | 3.9      | 37.7     | 34.1     |
| UTG02448P                | 24         |           |         |           | 38.0      | 34.9    | 42.9    |          | 40.9     | 37.3     |

For waterprotected version add "H" behind "P" e.g. UTG01412PH

## Wall mounting receptacle for socket contacts (UTG0- - - -S)



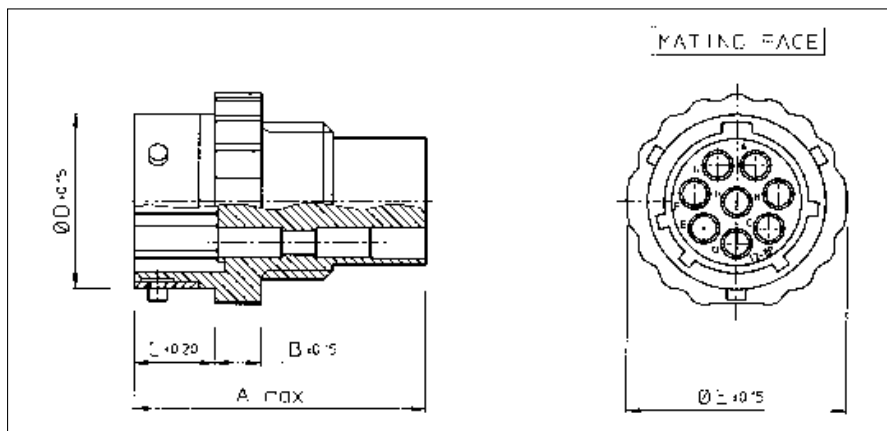
| Part number              | Shell size | A max.    | B ±0.15 | C ±0.2    | Ø D ±0.15 | E ±0.25 | F ±0.25 | Ø G ±0.1 | Ø H ±0.1 | Ø J ±0.1 |
|--------------------------|------------|-----------|---------|-----------|-----------|---------|---------|----------|----------|----------|
| UTG0104S / UTG0103SVDE   | 10         | 24.3/27.6 | 2.3     | 11.3      | 15.0      | 18.3    | 23.8    | 3.2      | 17.3     | 15.1     |
| UTG0128S                 | 12         | 24.3      |         |           | 19.0      | 20.6    | 26.2    |          | 21.8     | 18.2     |
| UTG01412S                | 14         |           |         |           | 22.2      | 23.0    | 28.6    |          | 25.0     | 21.4     |
| UTG01619S                | 16         | 25.3      |         |           | 24.6      | 31.0    | 28.1    |          | 24.6     |          |
| UTG01823S / UTG0187SVDEU | 18         | 24.3/30.4 | 2.5     | 11.3/17.9 | 28.5      | 27.0    | 33.3    | 3.9      | 31.3     | 27.8     |
| UTG02028S / UTG02020S    | 20         | 27.0      |         |           | 14.5      | 31.7    | 29.4    |          | 36.5     | 34.5     |
| UTG02235S                | 22         | 28.0      | 3.5     | 15.3      | 34.9      | 31.8    | 39.7    | 3.9      | 37.7     | 34.1     |
| UTG02448S                | 24         |           |         |           | 30.4      | 38.0    | 34.9    |          | 42.9     | 40.9     |

For waterprotected version add "H" behind "S" e.g. UTG01412SH

# UTG - Metalok Bantam



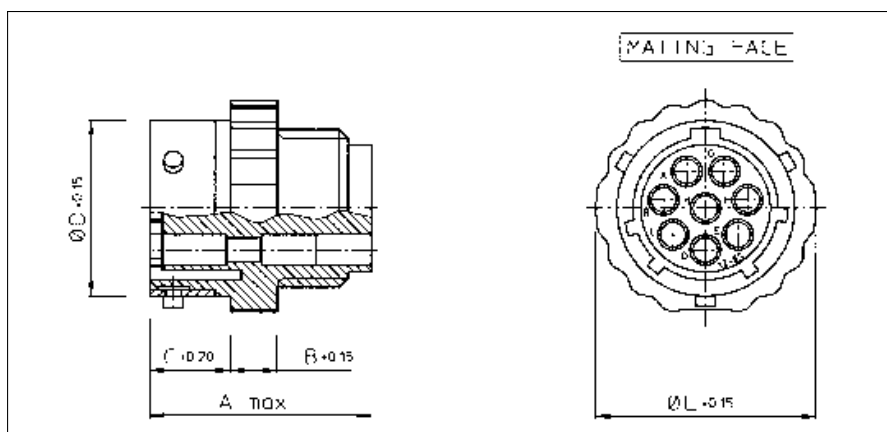
## Free hanging receptacle for pin contacts (UTG1- - - -P)



| Part number              | Shell size | A max.    | B $\pm 0.15$ | C $\pm 0.2$ | $\varnothing D \pm 0.15$ | $\varnothing E \pm 0.15$ |
|--------------------------|------------|-----------|--------------|-------------|--------------------------|--------------------------|
| UTG1104P / UTG1103PVDE   | 10         | 31.7      | 5.0          | 8.65        | 15.0                     | 19.5                     |
| UTG1128P                 | 12         |           |              |             | 19.0                     | 23.5                     |
| UTG11412P                | 14         |           |              |             | 22.2                     | 27.0                     |
| UTG11619P                | 16         |           |              |             | 25.3                     | 30.0                     |
| UTG11823P / UTG1187PVDEU | 18         | 31.7/34.0 | 5.0          | 8.65/15.35  | 28.5                     | 33.0                     |
| UTG12028P / UTG12020P    | 20         | 33.3/34.3 |              | 12.05       | 31.7                     | 36.5                     |
| UTG12235P                | 22         | 33.3      |              | 34.9        | 39.5                     |                          |
| UTG12448P                | 24         |           |              | 13.85       | 38.0                     | 42.5                     |

For waterprotected version add "H" behind "P" e.g. UTG11412PH

## Free hanging receptacle for socket contacts (UTG1- - - -S)



| Part number              | Shell size | A max.    | B $\pm 0.15$ | C $\pm 0.2$ | $\varnothing D \pm 0.15$ | $\varnothing E \pm 0.15$ |
|--------------------------|------------|-----------|--------------|-------------|--------------------------|--------------------------|
| UTG1104S / UTG1103SVDE   | 10         | 24.3/27.6 | 5.0          | 8.65        | 15.0                     | 19.5                     |
| UTG1128S                 | 12         | 24.3      |              |             | 19.0                     | 23.5                     |
| UTG11412S                | 14         |           |              |             | 22.2                     | 27.0                     |
| UTG11619S                | 16         |           |              |             | 25.3                     | 30.0                     |
| UTG11823S / UTG1187SVDEU | 18         | 24.3/30.4 | 5.0          | 8.65/15.35  | 28.5                     | 33.0                     |
| UTG12028S / UTG12020S    | 20         | 25.9      |              | 12.05       | 31.7                     | 36.5                     |
| UTG12235S                | 22         |           |              | 34.9        | 39.5                     |                          |
| UTG12448S                | 24         |           |              | 13.85       | 38.0                     | 42.5                     |

For waterprotected version add "H" behind "S" e.g. UTG11412SH

# UTP - Full plastic Bantam



## Full plastic circular Trim Trio connector

### Description

“UTP” full plastic industrial circular connectors are a range of multiway connectors.

“UTP” provides the complete answer to the need for economical lightweight, robust circular connectors and is unique in offering a plastic bayonet coupling ring incorporating a metal wave spring, which locks with an audible positive “click”. It is available in 8 shell sizes, 10 insert arrangements all intermateable, interchangeable and intermountable with the Trim-Trio “UT0” (full metal) and “UTG” (plastic with metal coupling ring) industrial connector families.

### Features and benefits

- Available in 8 shell sizes and 10 insert arrangements incl. 2 VDE versions.
- Available in plug and receptacle versions for both male and female contacts.
- Connectors and accessories are moulded from highly durable glass-filled thermoplastic.
- Flammability rating: UL94-V0.
- Plastic bayonet ring:
  - Vibration proof thermoplast
  - Metal wave spring loaded.
  - Locks with audible positive “click”



### Performance characteristics

Operating temperature: -55°C to +125°C

Insulation resistance: 5000 MΩ min.

Test potential: 2000 VAC

Durability: 250 matings and unmatings.

Degree of protection per DIN 40050: IP67 in mated condition. “H” version used with UTG--ST cable clamp

### Construction

Connector, Bayonet ring and accessories  
Glass filled thermoplast UL94-V0

Colour: black

Coupling spring: Spring steel

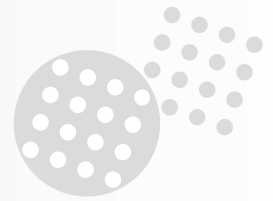
### Contact accommodation

- “UTP” connectors accept Trim-Trio removable snap-lock contacts (see contacts section)
- Contacts to be ordered separately.

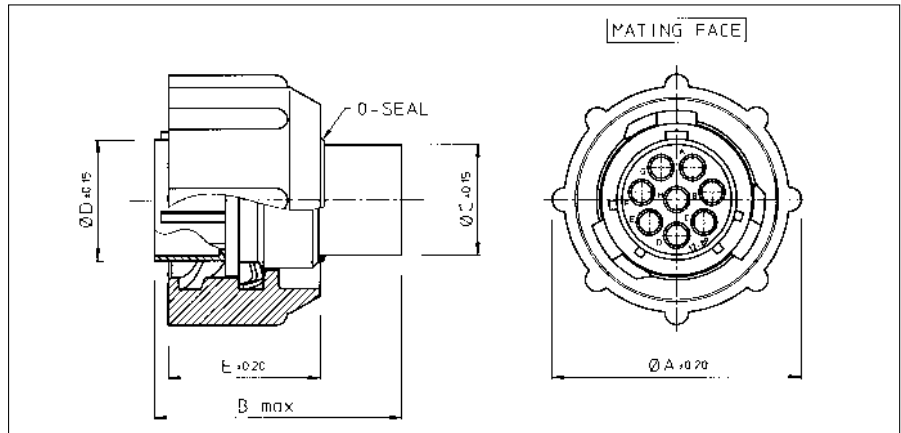
## How to order

|                            |   |          |           |           |          |          |           |
|----------------------------|---|----------|-----------|-----------|----------|----------|-----------|
| <b>Connector family :</b>  | <b>UTP</b>  | <b>0</b> | <b>14</b> | <b>12</b> | <b>P</b> | <b>H</b> | <b>--</b> |
|                            | <b>UTP</b>  | <b>6</b> | <b>14</b> | <b>12</b> | <b>S</b> |          | <b>--</b> |
| <b>Body variation:</b>     | 0 : Wall mounting receptacle<br>6 : Cable plug  |          |           |           |          |          |           |
| <b>Shell size:</b>         |   |          |           |           |          |          |           |
| <b>Insert arrangement:</b> |   |          |           |           |          |          |           |
| <b>Type of contacts:</b>   | P : Pin contacts<br>S : Socket contacts   |          |           |           |          |          |           |
| <b>Application</b>         | No letter : Standard version<br>H : Water protected version (only receptacle)           |          |           |           |          |          |           |
| <b>Design variation</b>    | No letter : Moulded-in contact marking (standard version)<br>Others : Specials versions |          |           |           |          |          |           |

# UTP - Full plastic Bantam

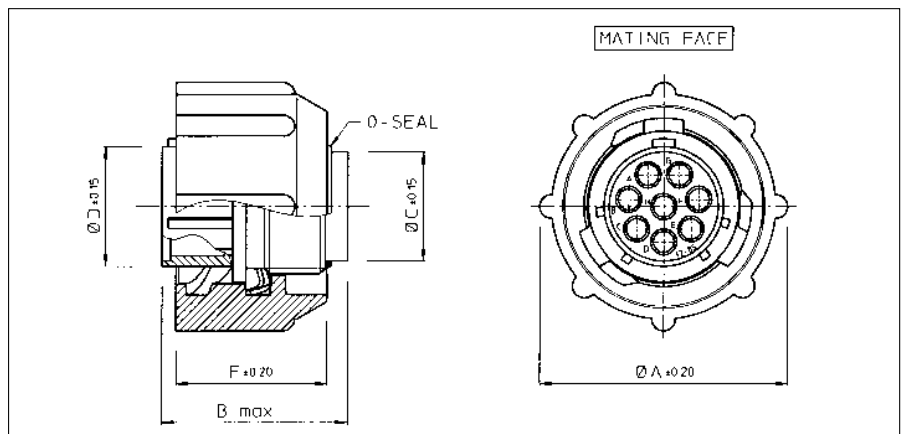


## Cable plug for pin contacts (UTP6- - - -P)



| Part number              | Shell size | Ø A ±0.2 | B max.      | Ø C ±0.15 | Ø D ±0.15 | Ø E ±0.2 |
|--------------------------|------------|----------|-------------|-----------|-----------|----------|
| UTP6104P / UTP6103PVDE   | 10         | 26.7     | 31.8        | 10.9      | 12.2      | 19.1     |
| UTP6128P                 | 12         | 31.4     |             | 13.8      | 15.1      |          |
| UTP61412P                | 14         | 34.5     |             | 17.0      | 18.3      |          |
| UTP61619P                | 16         | 37.8     |             | 19.9      | 21.5      |          |
| UTP61823P / UTP6187PVDEU | 18         | 40.8     | 31.8 / 33.0 | 22.4      | 24.0      |          |
| UTP62028P                | 20         | 43.9     | 31.8        | 25.6      | 27.2      |          |
| UTP62235P                | 22         | 47.0     |             | 28.5      | 30.4      |          |
| UTP62448P                | 24         | 50.1     |             | 31.7      | 33.5      |          |

## Cable plug for socket contacts (UTP6- - - -S)

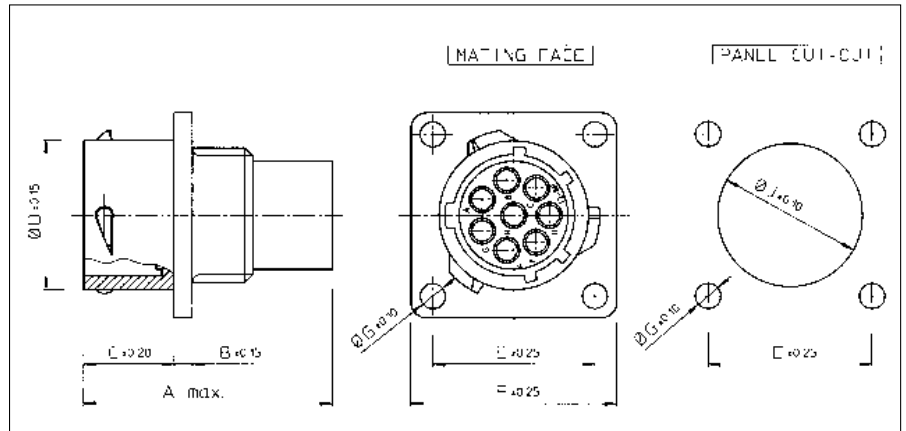


| Part number              | Shell size | Ø A ±0.2 | B max.       | Ø C ±0.15 | Ø D ±0.15 | Ø E ±0.2 |
|--------------------------|------------|----------|--------------|-----------|-----------|----------|
| UTP6104S / UTP6103SVDE   | 10         | 26.7     | 23.9 / 26.75 | 10.9      | 12.2      | 19.1     |
| UTP6128S                 | 12         | 31.4     | 23.9         | 13.8      | 15.1      |          |
| UTP61412S                | 14         | 34.5     |              | 17.0      | 18.3      |          |
| UTP61619S                | 16         | 37.8     | 19.9         | 21.5      |           |          |
| UTP61823S / UTP6187SVDEU | 18         | 40.8     | 23.9 / 29.0  | 22.4      | 24.0      |          |
| UTP62028S                | 20         | 43.9     | 24.9         | 25.6      | 27.2      |          |
| UTP62235S                | 22         | 47.0     | 26.2         | 28.5      | 30.4      |          |
| UTP62448S                | 24         | 50.1     |              | 31.7      | 33.5      |          |

# UTP - Full plastic Bantam



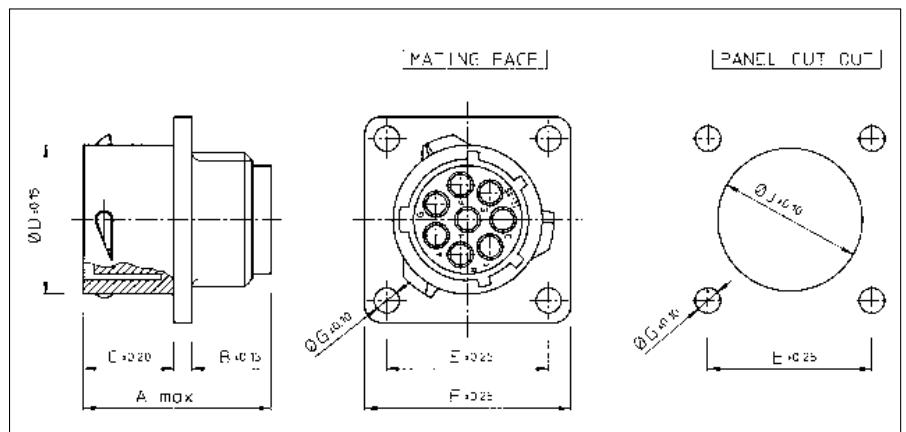
## Wall mounting receptacle for pin contacts (UTP0- - -P)



| Part number              | Shell size | A max.    | B ±0.15 | C ±0.2    | Ø D ±0.15 | E ±0.25 | F ±0.25 | Ø G ±0.1 | Ø J ±0.1 |
|--------------------------|------------|-----------|---------|-----------|-----------|---------|---------|----------|----------|
| UTP0104P / UTP0103PVDE   | 10         | 31.7      | 2.3     | 11.3      | 15.0      | 18.3    | 23.8    | 3.2      | 15.1     |
| UTP0128P                 | 12         |           |         |           | 19.0      | 20.6    | 26.2    |          | 18.2     |
| UTP01412P                | 14         |           |         |           | 22.2      | 23.0    | 28.6    |          | 21.4     |
| UTP01619P                | 16         |           |         |           | 25.3      | 24.6    | 31.0    |          | 24.6     |
| UTP01823P / UTP0187PVDEU | 18         | 31.7/34.0 | 2.5     | 11.3/17.9 | 28.5      | 27.0    | 33.3    | 3.2      | 27.8     |
| UTP02028P                | 20         | 33.3      |         |           | 3.5       | 14.5    | 31.7    |          | 29.4     |
| UTP02235P                | 22         |           | 34.9    | 31.8      |           | 39.7    | 34.1    |          |          |
| UTP02448P                | 24         |           | 15.3    | 38.0      |           | 34.9    | 42.9    | 3.9      | 37.3     |

For waterprotected version add "H" behind "P" e.g. UTP01412PH

## Wall mounting receptacle for socket contacts (UTP0- - -S)



| Part number              | Shell size | A max.    | B ±0.15 | C ±0.2    | Ø D ±0.15 | E ±0.25 | F ±0.25 | Ø G ±0.1 | Ø J ±0.1 |
|--------------------------|------------|-----------|---------|-----------|-----------|---------|---------|----------|----------|
| UTP0104S / UTP0103SVDE   | 10         | 24.3/27.6 | 2.3     | 11.3      | 15.0      | 18.3    | 23.8    | 3.2      | 15.1     |
| UTP0128S                 | 12         | 24.3      |         |           | 19.0      | 20.6    | 26.2    |          | 18.2     |
| UTP01412S                | 14         |           |         |           | 22.2      | 23.0    | 28.6    |          | 21.4     |
| UTP01619S                | 16         |           |         |           | 25.3      | 24.6    | 31.0    |          | 24.6     |
| UTP01823S / UTP0187SVDEU | 18         | 24.3/30.4 | 2.5     | 11.3/17.9 | 28.5      | 27.0    | 33.3    | 3.2      | 27.8     |
| UTP02028S                | 20         | 27.0      |         |           | 14.5      | 31.7    | 29.4    |          | 36.5     |
| UTP02235S                | 22         | 28.0      | 3.5     | 15.3      | 34.9      | 31.8    | 39.7    | 3.9      | 34.1     |
| UTP02448S                | 24         | 30.4      |         |           | 38.0      | 34.9    | 42.9    |          | 37.3     |

For waterprotected version add "H" behind "S" e.g. UTP01412SH

# Shielded connectors



## Shielded circular TRIM TRIO connectors UT0 and UTGS

### Description

With the increasing coverage of the electromagnetic spectra and the constantly increasing use of electronic hardware, the need for control on electronic equipment to operate in electromagnetically noisier environments and greater control is one of the main issues.

More and more electronic equipment will be required to meet an EMC (Electro Magnetic Compatibility) specification which controls the level of EM emissions being upset by interfering RF (Radio Frequency) and EM (Electro Magnetic) fields.

A full solution to the problem consists in the consideration of each and every aspect within a design, starting at the board level and working outwards through the connector to the enclosure and then on to the power supply and signal cabling.

As a result, UT0 and UTGS are available with shielded backshells including a “two conical ferrule shielding system”.

Shielding effectiveness is a functional method to characterise the shield leakage, since it offers us the relation between the measured power progression from shielding leakage and the reference power delivered to the test-cell.

### Test set-up

The measurements are performed with the triaxial setup.

The connectors are embedded in a rectangular testcell (see picture)

For the circular connectors an inner conductor is constructed to obtain a 50Ω coaxial transmission line, to which a power level  $P_{in}$  is delivered. The shield of the connector and the walls from the triaxial cell form the second coaxial transmission line. The output power

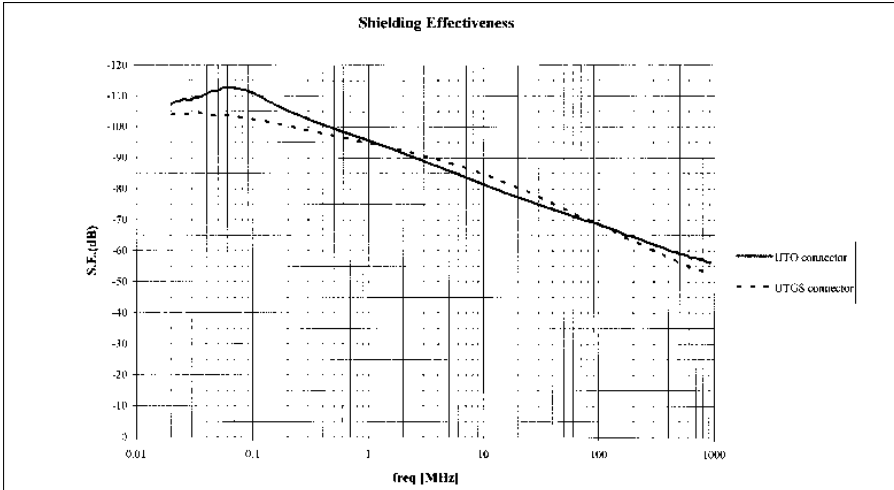
$P_{out}$  at one end of the short-circuited second transmission line is measured with a spectrum analyser. From the average of these quantities, the shielding effectiveness is calculated (see formula and resulting chart).



### Formula: Shielding effectiveness in dB

$$S. E. \text{ (dB)} = 10 \times \text{Log} \left( \frac{P_{in}}{P_{out}} \right)$$

### Shielding effectiveness chart for UT0 and UTGS

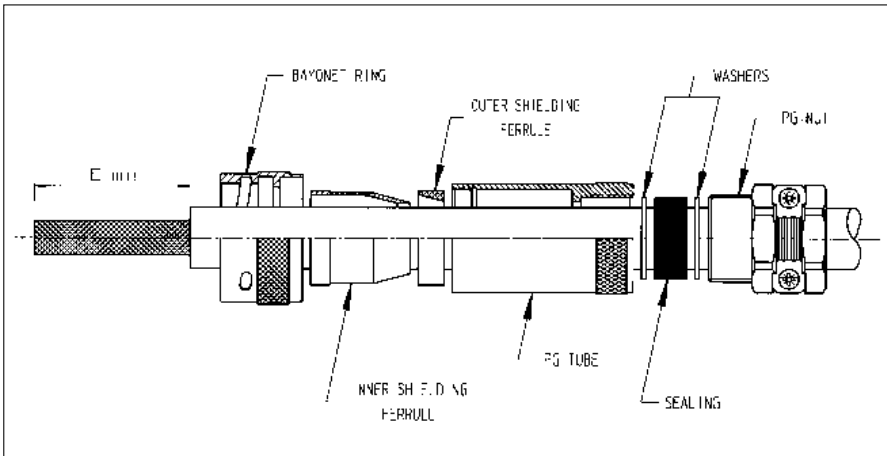




# Shielded connectors



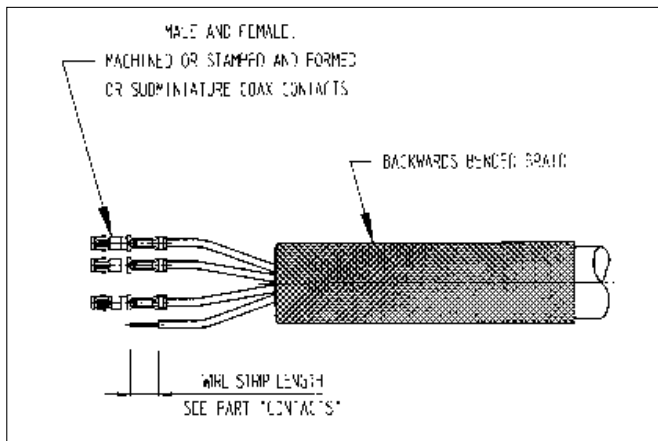
## How to assemble shielded connectors ...



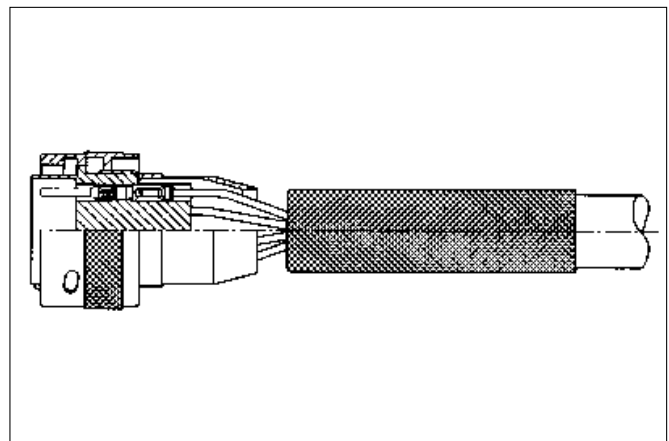
| SIZE-NR. | POS. | DIM E |
|----------|------|-------|
| 10       | - 4  | 22.3  |
| 12       | - 8  | 22.3  |
| 14       | - 12 | 26.2  |
| 16       | - 19 | 28.1  |
| 18       | - 23 | 31.7  |
| 20       | - 28 | 35.3  |
| 22       | - 35 | 40.5  |
| 24       | - 48 | 44.4  |

Put all parts over the cable, including the coupling ring, as mentioned on the picture. Strip the outer jacket with the dimensions given in the table.

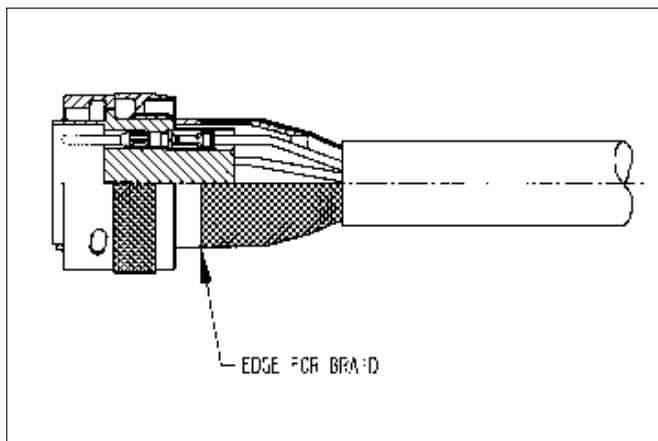
Recommended cable strip dimensions



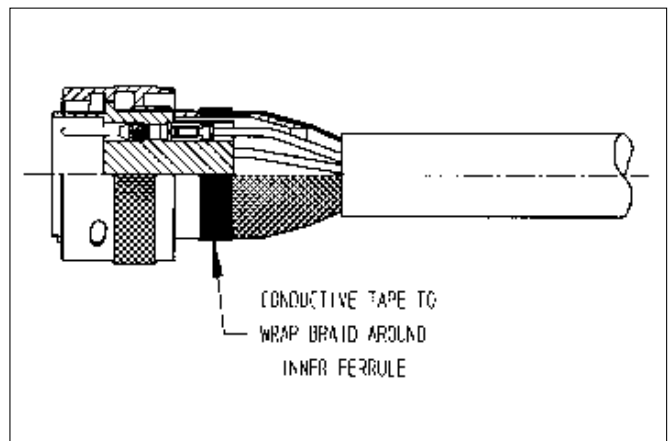
Bend the braid backwards over the cable jacket. Strip the wires (refer to contact section). Crimp the contacts.



Insert contact into connector. Slide inner shielding ferrule over the connector.



Bend the braid back over the conical part of the inner shielding ferrule. Cut the shield so that it does not pass the front edge as shown

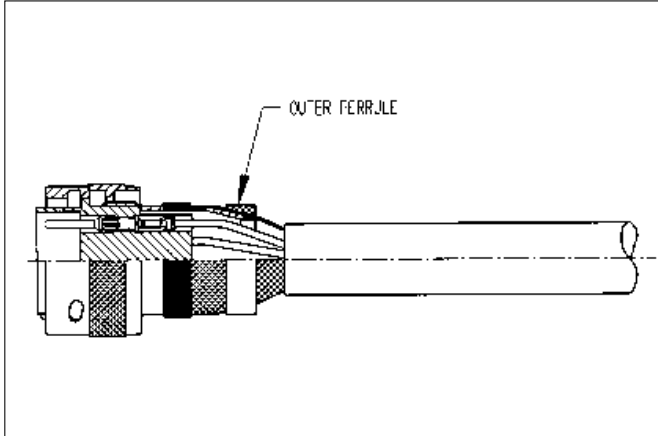


Wrap shielding around inner shielding ferrule using a conductive tape. Make sure that the braid is wrapped equally around the ferrule to avoid misalignment when assembled.

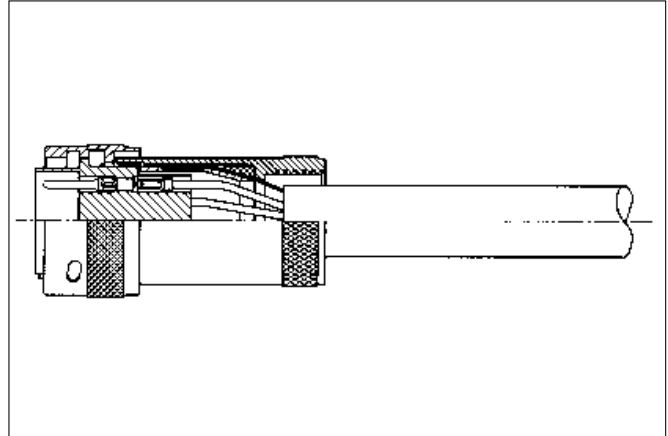
# Shielded connectors



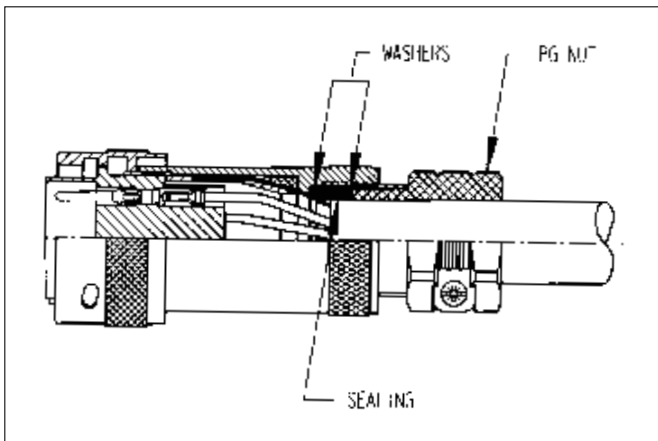
## How to assemble shielded connectors ... (cont.)



Slide coupling ring forwards over the connector.  
Slide outer shielding ferrule over the shield.  
Push the cable a little forward to avoid stress on wires, contact and braid after tightening the PG-tube.



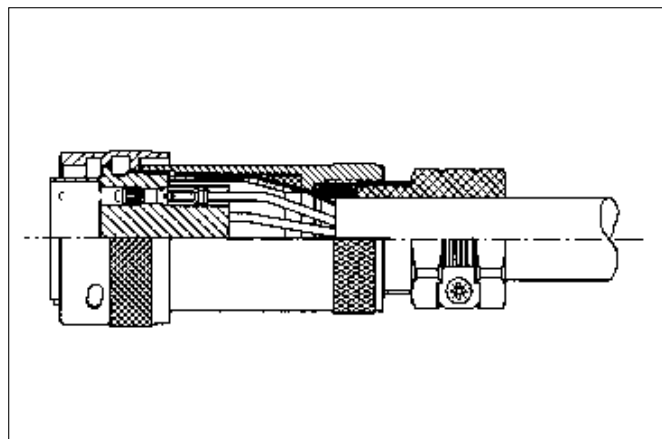
Screw the PG-tube onto the connector using a strap wrench.  
Put the plug in an empty receptacle and fix the receptacle in a bench.  
Tighten the PG-tube with the recommended torque moments given in table and prevent the cable of twisting.  
For Strap wrench and torque meters consult factory.



Screw the sealing and the PG-nut into the PG-tube to achieve sealing.  
Tighten up cable clamp.  
**Note:** Tightening the PG-tube with its PG-nut and sealing might twist the braid.

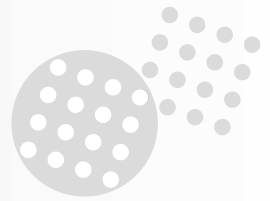
| SIZE-NR. | POS. | TORQUE PG-TUBE |
|----------|------|----------------|
| 10       | - 4  | 4 Nm max.      |
| 12       | - 8  | 6 Nm max.      |
| 14       | - 12 | 10 Nm max.     |
| 16       | - 19 | 10 Nm max.     |
| 18       | - 23 | 10 Nm max.     |
| 20       | - 28 | 15 Nm max.     |
| 22       | - 35 | 15 Nm max.     |
| 24       | - 48 | 15 Nm max.     |

Recommended torque moments to tighten PG-tube onto connector.



Shielded connector in assembled condition.

# UTGS - Shielded Bantam



## Metallised plastic connector for EMC requirements

### Description

“UTGS” Shielded Bantam are a range of industrial circular connectors suitable for EMC requirements.

It is a range of multiway connectors available in 8 shell sizes and 11 insert arrangements all intermateable, interchangeable and intermountable with the Trim-Trio “UT0” metal connector families.

Finding its origin in the “UTG” range, “UTGS” keeps the metal locking system, whilst the connectors are selectively metallised.

This together with a new shielded backshell offers a competent, reliable, user friendly and cost effective solution .



### Features and benefits

- Suitable for EMC requirements.
- Shielded backshell is independent from the cable diameter and its shielding.
- Available in 8 shell sizes and 13 insert arrangements incl. 3 VDE versions and one power version.
- Available in plug and receptacle versions for both male and female contacts.
- Connectors are moulded from highly durable glass-filled thermoplastic. Selectively nickel plated
- Flammability rating: UL94-V0.
- Metal bayonet ring:
  - Metal wave spring loaded.
  - Locks with audible positive “click”
  - Assures 500 matings and unmatings

### Performance characteristics

|   |                                       |
|---|---------------------------------------|
| Operating temperature:  | -55°C to +125°C                       |
| Insulation resistance:  | 5000 MΩ min.                          |
| Test potential:   | 2000 VAC                              |
| Durability:   | 500 matings and unmatings.            |
| Vibration resistance:   | Per MIL-STD202 method 204             |
| Thermal shock:  | Per MIL-STD202 method 207             |
| Corrosion:  | Salt spray per MIL-STD 202 method 101 |
| Shielding effectiveness: 95 dB at 1 Mhz (See shielded connectors section) |                                       |
| Degree of protection per DIN 40050: IP67 in mated condition. “H” version  |                                       |

### Construction

|                      |                                  |
|----------------------|----------------------------------|
| Connector body       | Glass filled thermoplast UL94-V0 |
|                      | Colour: black                    |
|                      | Selectively nickel plated        |
| Coupling ring:       | Nickel plated brass              |
| Tri-lock pins:       | Stainless steel                  |
| Coupling spring:     | Spring steel                     |
| Shielded backshell : | Nickel plated Aluminium alloy.   |

### Contact accommodation

- “UTGS” connectors accept Trim-Trio removable snap-lock contacts (see contact section)
- Contacts to be ordered separately.

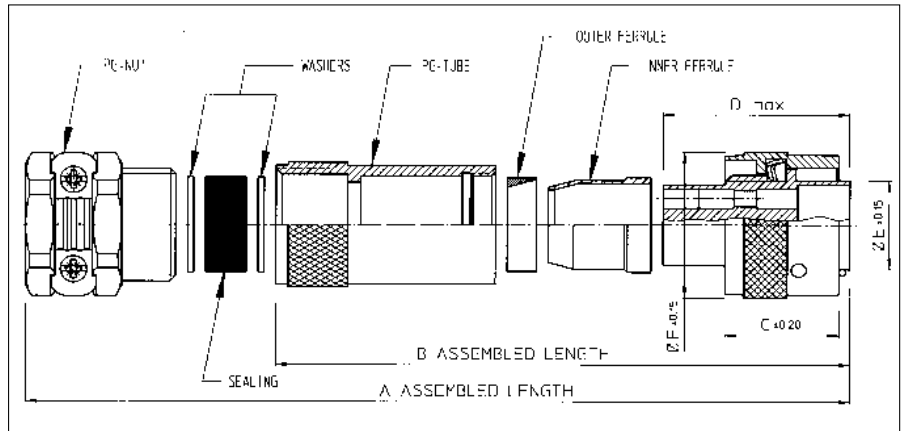
### How to order

|                            |   |          |           |           |           |          |          |          |          |
|----------------------------|---|----------|-----------|-----------|-----------|----------|----------|----------|----------|
| <b>Connector family:</b>   | <b>UTGS</b>   | <b>6</b> | <b>PG</b> | <b>14</b> | <b>12</b> | <b>P</b> | <b>H</b> | <b>-</b> | <b>N</b> |
|                            | <b>UTGS</b>   | <b>0</b> |           | <b>14</b> | <b>12</b> | <b>S</b> |          | <b>-</b> | <b>N</b> |
| <b>Body variation:</b>     | <b>0</b> : Wall mounting receptacle<br><b>6</b> : Cable plug<br><b>1</b> : Free hanging receptacle    |          |           |           |           |          |          |          |          |
| <b>Shielded backshell:</b> |   |          |           |           |           |          |          |          |          |
| <b>Shell size:</b>         |   |          |           |           |           |          |          |          |          |
| <b>Insert arrangement:</b> |   |          |           |           |           |          |          |          |          |
| <b>Type of contacts:</b>   | <b>P</b> : Pin contacts<br><b>S</b> : Socket contacts   |          |           |           |           |          |          |          |          |
| <b>Application:</b>        | <b>No letter</b> : Standard version<br><b>H</b> : Water protected version (only receptacle)           |          |           |           |           |          |          |          |          |
| <b>Design variation:</b>   | <b>No letter</b> : Moulded-in contact marking ( standard version)<br><b>others</b> : Special versions |          |           |           |           |          |          |          |          |
| <b>Plating:</b>            | <b>N</b> : Nickel plated  |          |           |           |           |          |          |          |          |

# UTGS - Shielded Bantam



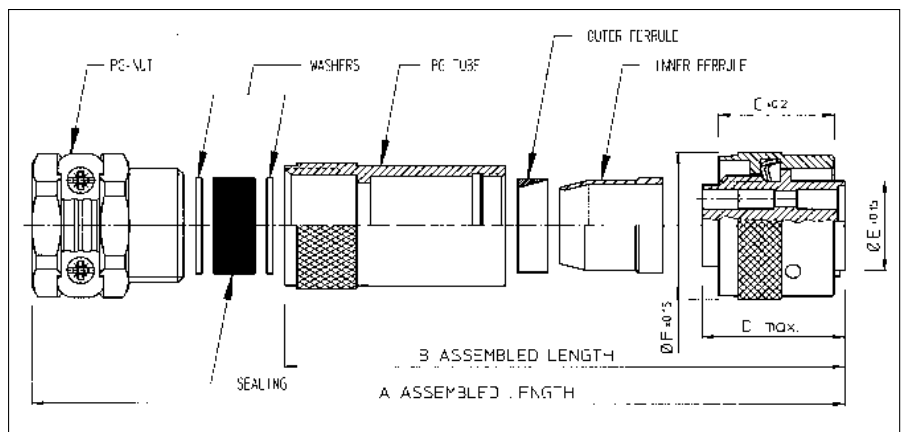
## Shielded cable plug for pin contacts (UTGS6PG- - - -PN)



| Part number                      | Shell size | A       | B         | C<br>±0.2 | D<br>Max. | Ø E<br>±0.15 | F<br>±0.15 | Max<br>cable Ø |
|----------------------------------|------------|---------|-----------|-----------|-----------|--------------|------------|----------------|
| UTGS6PG104PN / UTGS6PG103PNVDE   | 10         | 70/74.1 | 52.2/56.3 | 19.1      | 31.8      | 12.2         | 21.6       | 11.0           |
| UTGS6PG128PN                     | 12         | 74      | 53.2      |           |           | 15.1         | 24.8       | 13.5           |
| UTGS6PG1412PN                    | 14         | 81      | 58.2      |           |           | 18.3         | 28.0       | 14.5           |
| UTGS6PG1619PN                    | 16         | 84      | 61.2      |           |           | 21.5         | 31.2       | 16.5           |
| UTGS6PG1823PN / UTGS6PG187PNVDEU | 18         | 88/94.4 | 65.2/71.6 |           | 31.8/33.0 | 24.0         | 34.3       | 16.5           |
| UTGS6PG2028PN / UTGS6PG2020PN    | 20         | 101     | 70.9      |           | 31.8/35.3 | 27.2         | 37.5       | 22.0           |
| UTGS6PG2235PN                    | 22         | 107     | 76.9      |           | 31.8      | 30.4         | 40.7       | 22.0           |
| UTGS6PG2448PN                    | 24         | 120     | 81.9      |           | 33.5      | 43.9         | 29.5       |                |

- For ass'y procedure see shielded connectors section

## Shielded cable plug for socket contacts (UTGS6PG- - - -SN)



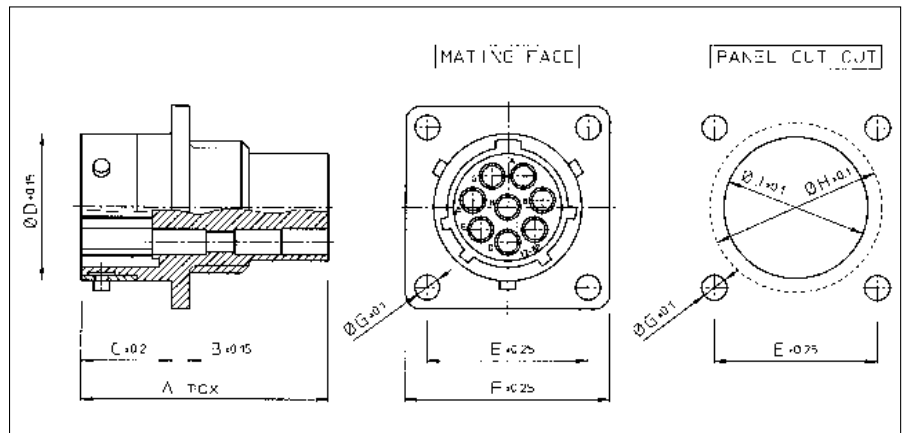
| Part number                      | Shell size | A       | B         | C<br>±0.2 | D<br>Max. | Ø E<br>±0.15 | F<br>±0.15 | Max<br>cable Ø |
|----------------------------------|------------|---------|-----------|-----------|-----------|--------------|------------|----------------|
| UTGS6PG104SN / UTGS6PG103SNVDE   | 10         | 70/74.1 | 52.2/56.3 | 19.1      | 23.9/26.8 | 12.2         | 21.6       | 11.0           |
| UTGS6PG128SN                     | 12         | 74      | 53.2      |           | 23.9      | 15.1         | 24.8       | 13.5           |
| UTGS6PG1412SN                    | 14         | 81      | 58.2      |           |           | 18.3         | 28.0       | 14.5           |
| UTGS6PG1619SN                    | 16         | 84      | 61.2      |           | 21.5      | 31.2         | 16.5       |                |
| UTGS6PG1823SN / UTGS6PG187SNVDEU | 18         | 88/94.4 | 65.2/71.6 |           | 23.9/29.0 | 24.0         | 34.3       | 16.5           |
| UTGS6PG2028SN / UTGS6PG2020SN    | 20         | 101     | 70.9      |           | 24.9      | 27.2         | 37.5       | 22.0           |
| UTGS6PG2235SN                    | 22         | 107     | 76.9      |           | 30.4      | 40.7         | 22.0       |                |
| UTGS6PG2448SN                    | 24         | 120     | 81.9      |           | 26.2      | 33.5         | 43.9       | 29.5           |

- For ass'y procedure see shielded connectors section

# UTGS - Shielded Bantam



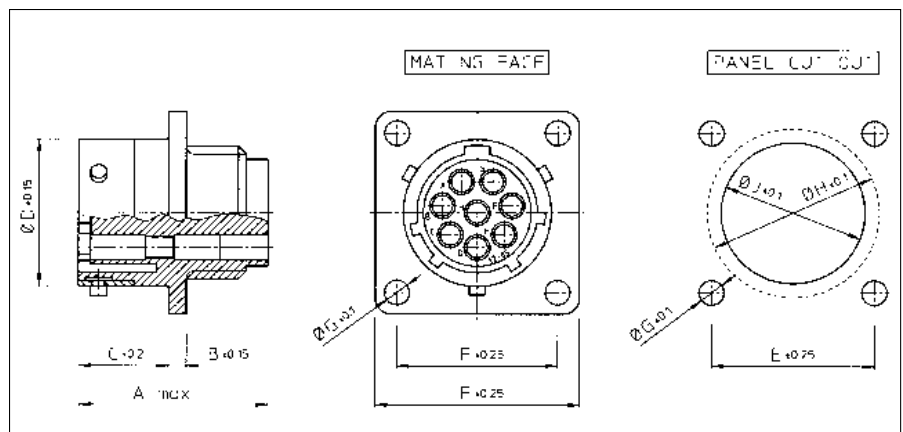
## Shielded wall mounting receptacle for pin contacts (UTGS0- - - -PN)



| Part number                  | Shell size | A max.    | B ±0.15 | C ±0.2    | Ø D ±0.15 | E ±0.25 | F ±0.25 | Ø G ±0.1 | Ø H ±0.1 | Ø J ±0.1 |
|------------------------------|------------|-----------|---------|-----------|-----------|---------|---------|----------|----------|----------|
| UTGS0104PN / UTGS0103PNVDE   | 10         | 31.7      | 2.3     | 11.3      | 15.0      | 18.3    | 23.8    | 3.2      | 17.3     | 15.1     |
| UTGS0128PN                   | 12         |           |         |           | 19.0      | 20.6    | 26.2    |          | 21.8     | 18.2     |
| UTGS01412PN                  | 14         |           |         |           | 22.2      | 23.0    | 28.6    |          | 25.0     | 21.4     |
| UTGS01619PN                  | 16         |           |         |           | 25.3      | 24.6    | 31.0    |          | 28.1     | 24.6     |
| UTGS01823PN / UTGS0187PNVDEU | 18         | 31.7/34.0 | 2.5     | 11.3/17.9 | 28.5      | 27.0    | 33.3    | 3.9      | 31.3     | 27.8     |
| UTGS02028PN / UTGS02020PN    | 20         | 33.3/34.3 | 3.5     | 14.5      | 31.7      | 29.4    | 36.5    |          | 34.5     | 30.9     |
| UTGS02235PN                  | 22         | 33.3      |         | 34.9      | 31.8      | 39.7    | 37.7    |          | 34.1     |          |
| UTGS02448PN                  | 24         | 15.3      |         | 38.0      | 34.9      | 42.9    | 40.9    |          | 37.3     |          |

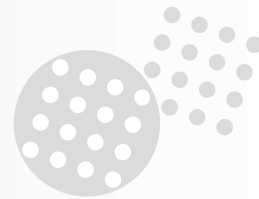
For waterprotected version add "H" behind "P" e.g. UTGS01412PHN

## Shielded wall mounting receptacle for socket contacts (UTGS0- - - -SN)



| Part number                  | Shell size | A max.    | B ±0.15 | C ±0.2    | Ø D ±0.15 | E ±0.25 | F ±0.25 | Ø G ±0.1 | Ø H ±0.1 | Ø J ±0.1 |
|------------------------------|------------|-----------|---------|-----------|-----------|---------|---------|----------|----------|----------|
| UTGS0104SN / UTGS0103SNVDE   | 10         | 24.3/27.6 | 2.3     | 11.3      | 15.0      | 18.3    | 23.8    | 3.2      | 17.3     | 15.1     |
| UTGS0128SN                   | 12         | 24.3      |         |           | 19.0      | 20.6    | 26.2    |          | 21.8     | 18.2     |
| UTGS01412SN                  | 14         |           |         |           | 22.2      | 23.0    | 28.6    |          | 25.0     | 21.4     |
| UTGS01619SN                  | 16         |           |         |           | 25.3      | 24.6    | 31.0    |          | 28.1     | 24.6     |
| UTGS01823SN / UTGS0187SNVDEU | 18         | 24.3/30.4 | 2.5     | 11.3/17.9 | 28.5      | 27.0    | 33.3    | 3.9      | 31.3     | 27.8     |
| UTGS02028SN / UTGS02020SN    | 20         | 27.0      | 3.5     | 14.5      | 31.7      | 29.4    | 36.5    |          | 34.5     | 30.9     |
| UTGS02235SN                  | 22         | 28.0      |         | 34.9      | 31.8      | 39.7    | 37.7    |          | 34.1     |          |
| UTGS02448SN                  | 24         | 30.4      |         | 15.3      | 38.0      | 34.9    | 42.9    |          | 40.9     | 37.3     |

For waterprotected version add "H" behind "S" e.g. UTGS01412SHN



## Metal circular connector

(Suitable for EMC requirements)

### Description

“UTO” Bantam industrial circular connectors are a range of multiway connectors available in 8 shell sizes and 8 insert arrangements all intermateable, interchangeable and intermountable with the Trim-Trio “UTG”, “UTGS” and “UTP” industrial connector families. “UTO” is equipped with identical shells from military connectors complying to MIL-C-26482 spec. Strong and rugged built to resist every environmental and mechanical requirement for indoor and outdoor applications. In combination with the shielded backshell, “UTO” offers the perfect solution to EMC requirements.

### Features and benefits

- Suitable for EMC requirements.
- Shielded backshell is independent of the cable diameter and its shielding.
- Available in 8 shell sizes and 8 insert arrangements.
- Available in plug and receptacle version for both male and female contacts.
- Shells and accessories are made from tin plated corrosion resistant Aluminium.
- Plastic inserts with flammability rating: UL94-V0.
- Alu. bayonet ring:
  - Metal wave spring loaded.
  - Locks with audible positive “click”
  - Assures 500 matings and unmatings



### Performance characteristics

|                                     |   |
|-------------------------------------|---|
| Operating temperature:              | -55°C to +125°C   |
| Insulation resistance:              | 5000 MΩ min.  |
| Test potential:                     | 2000 VAC  |
| Durability:                         | 500 matings and unmatings.  |
| Vibration resistance:               | Per MIL-STD202 method 204   |
| Thermal shock:                      | Per MIL-STD202 method 207   |
| Corrosion:                          | Salt spray per MIL-STD 202 method 101                             |
| Shielding effectiveness:            | 95 dB at 1 Mhz (see shielded connectors section)                  |
| Degree of protection per DIN 40050: | IP65 in mated condition. “H” version used with UTG-PG cable clamp |

### Construction

|                         |                                  |
|-------------------------|----------------------------------|
| Shells and accessories: | Aluminium alloy                  |
| Coupling ring:          | Aluminium alloy                  |
| Tri-lock pins:          | Stainless steel                  |
| Coupling spring:        | Spring steel                     |
| Insert:                 | Glass-filled thermoplast UL94-V0 |
| Finish:                 | Bright tin (standard)            |

### Contact accommodation

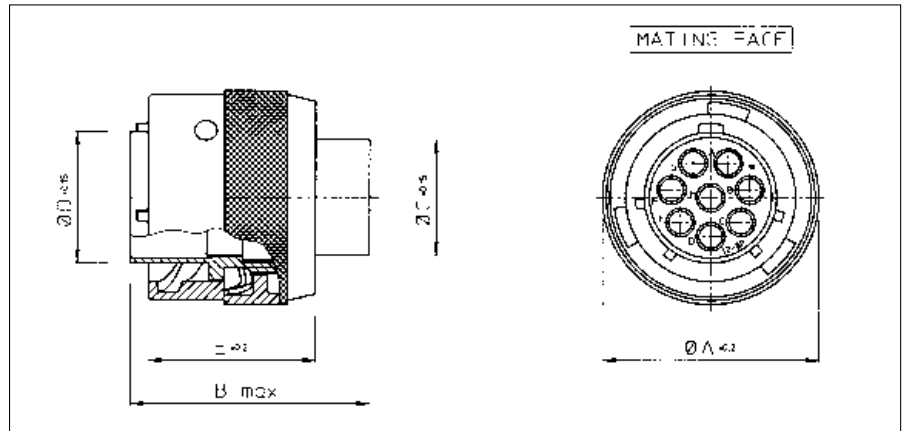
- “UTO” connectors accept Trim-Trio removable snap-lock contacts (see contacts section)
- Contacts to be ordered separately.

### How to order

|                             | UTO   | 0   | 14 | 12 | P | - | H | -- | T |
|-----------------------------|---|---|----|----|---|---|---|----|---|
|                             | UTO   | 6   | 14 | 12 | S | - |   |    |   |
| <b>Body variation:</b>      |   | 0 : Wall mounting receptacle<br>6 : Cable plug<br>1 : Free hanging receptacle<br>7 : Bulk head receptacle for rear panel mounting |    |    |   |   |   |    |   |
| <b>Shell size:</b>          |   |   |    |    |   |   |   |    |   |
| <b>Insert arrangement:</b>  |   |   |    |    |   |   |   |    |   |
| <b>Type of contacts:</b>    | P : Pin contacts<br>S : Socket contacts                                       |   |    |    |   |   |   |    |   |
| <b>Insert polarisation:</b> | No letter : Standard version  |   |    |    |   |   |   |    |   |
| <b>Application:</b>         | No letter : Standard version<br>H : Water protected version (only receptacle) |   |    |    |   |   |   |    |   |
| <b>Design variation:</b>    | No letter : Standard version<br>Others : Special versions                     |   |    |    |   |   |   |    |   |
| <b>Plating:</b>             | T : Bright tin (Standard version)   |   |    |    |   |   |   |    |   |

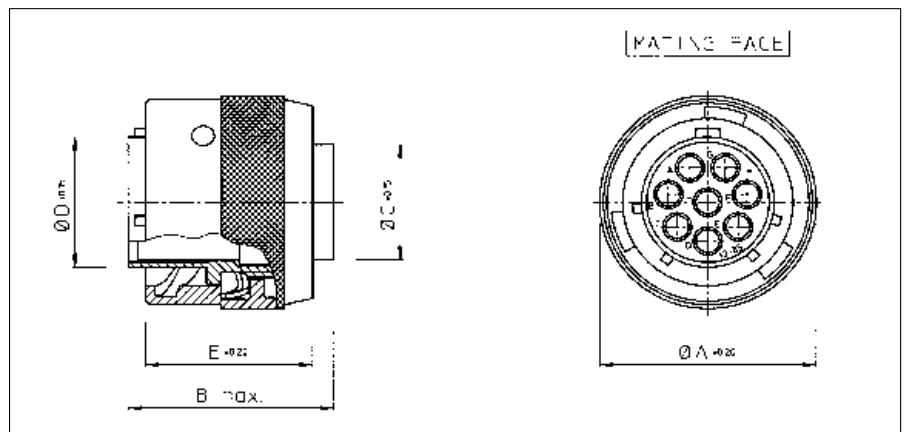


## Cable plug for pin contacts (UT06- - -PT)



| Part number | Shell size | Ø A $\pm 0.2$ | B max. | Ø C $\pm 0.15$ | Ø D $\pm 0.15$ | E $\pm 0.2$ |
|-------------|------------|---------------|--------|----------------|----------------|-------------|
| UT06104PT   | 10         | 21.6          | 31.8   | 10.2           | 12.3           | 19.1        |
| UT06128PT   | 12         | 24.8          |        | 13.4           | 15.1           |             |
| UT061412PT  | 14         | 28.0          |        | 16.7           | 18.3           |             |
| UT061619PT  | 16         | 31.2          |        | 19.7           | 21.5           |             |
| UT061823PT  | 18         | 34.3          |        | 21.7           | 24.0           |             |
| UT062028PT  | 20         | 37.5          |        | 24.9           | 27.2           |             |
| UT062235PT  | 22         | 40.7          |        | 28.1           | 30.4           |             |
| UT062448PT  | 24         | 43.9          | 31.2   | 33.5           |                |             |

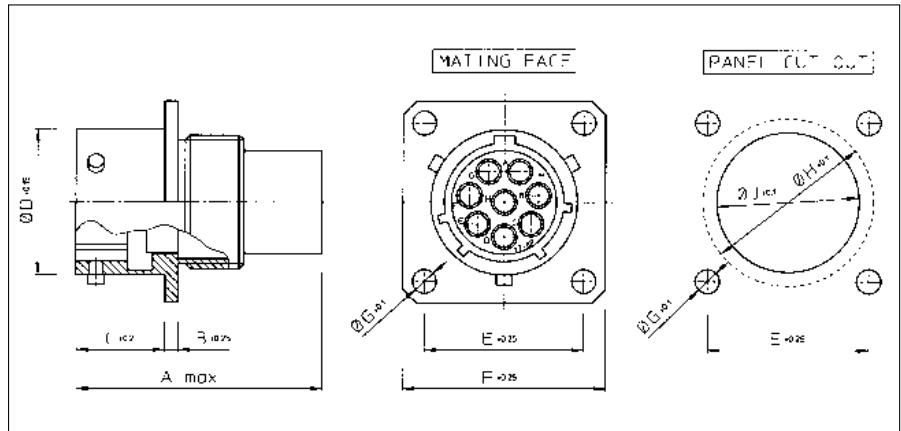
## Cable plug for socket contacts (UT06- - -ST)



| Part number | Shell size | Ø A $\pm 0.2$ | B max. | Ø C $\pm 0.15$ | Ø D $\pm 0.15$ | E $\pm 0.2$ |
|-------------|------------|---------------|--------|----------------|----------------|-------------|
| UT06104ST   | 10         | 21.6          | 31.8   | 10.2           | 12.3           | 19.1        |
| UT06128ST   | 12         | 24.8          |        | 13.4           | 15.1           |             |
| UT061412ST  | 14         | 28.0          |        | 16.7           | 18.3           |             |
| UT061619ST  | 16         | 31.2          |        | 19.7           | 21.5           |             |
| UT061823ST  | 18         | 34.3          | 24.9   | 21.7           | 24.0           | 19.1        |
| UT062028ST  | 20         | 37.5          |        | 24.9           | 27.2           |             |
| UT062235ST  | 22         | 40.7          | 26.2   | 28.1           | 30.4           | 19.1        |
| UT062448ST  | 24         | 43.9          |        | 31.2           | 33.5           |             |



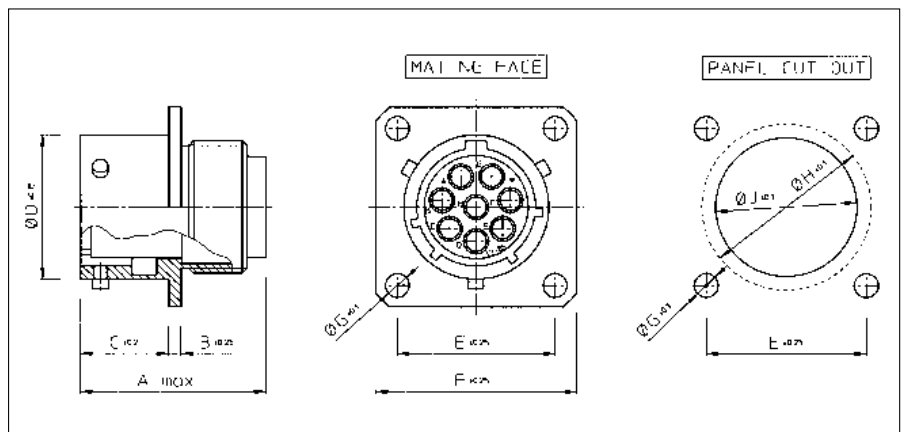
## Wall mounting receptacle for pin contacts (UT00- - -PT)



| Part number | Shell size | A max. | B ±0.25 | C ±0.2 | Ø D ±0.15 | E ±0.25 | F ±0.25 | Ø G ±0.1 | Ø H ±0.1 | Ø J ±0.1 |      |
|-------------|------------|--------|---------|--------|-----------|---------|---------|----------|----------|----------|------|
| UT00104PT   | 10         | 31.7   | 1.6     | 11.3   | 15.0      | 18.3    | 23.8    | 3.2      | 17.3     | 15.1     |      |
| UT00128PT   | 12         |        |         |        | 19.0      | 20.6    | 26.2    |          | 21.8     | 18.2     |      |
| UT001412PT  | 14         |        |         |        | 22.2      | 23.0    | 28.6    |          | 25.0     | 21.4     |      |
| UT001619PT  | 16         |        |         |        | 25.3      | 24.6    | 31.0    |          | 28.1     | 24.6     |      |
| UT001823PT  | 18         |        |         |        | 28.5      | 26.9    | 33.3    |          | 31.3     | 27.8     |      |
| UT002028PT  | 20         | 33.3   | 2.4     | 14.5   | 31.7      | 29.4    | 36.5    | 34.5     | 30.9     |          |      |
| UT002235PT  | 22         |        |         |        | 34.9      | 31.8    | 39.7    | 37.7     | 34.1     |          |      |
| UT002448PT  | 24         |        |         |        | 15.3      | 38.0    | 34.9    | 42.9     | 3.9      | 40.9     | 37.3 |

For waterprotected version add "H" behind "P" e.g. UT001412PHT

## Wall mounting receptacle for socket contacts (UT00- - -ST)



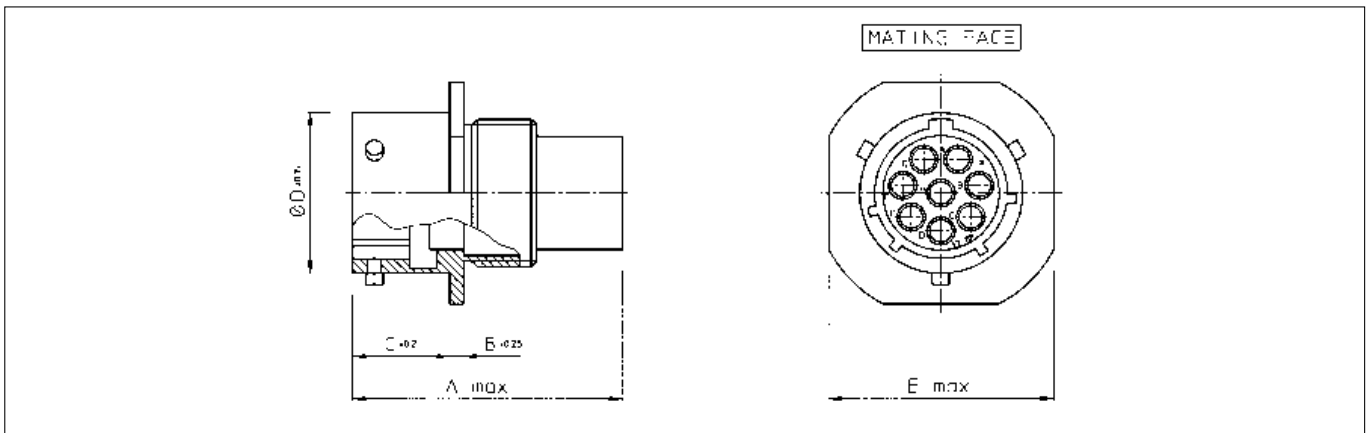
| Part number | Shell size | A max. | B ±0.25 | C ±0.2 | Ø D ±0.15 | E ±0.25 | F ±0.25 | Ø G ±0.1 | Ø H ±0.1 | Ø J ±0.1 |      |
|-------------|------------|--------|---------|--------|-----------|---------|---------|----------|----------|----------|------|
| UT00104ST   | 10         | 24.3   | 1.6     | 11.3   | 15.0      | 18.3    | 23.8    | 3.2      | 17.3     | 15.1     |      |
| UT00128ST   | 12         |        |         |        | 19.0      | 20.6    | 26.2    |          | 21.8     | 18.2     |      |
| UT001412ST  | 14         |        |         |        | 22.2      | 23.0    | 28.6    |          | 25.0     | 21.4     |      |
| UT001619ST  | 16         |        |         |        | 25.3      | 24.6    | 31.0    |          | 28.1     | 24.6     |      |
| UT001823ST  | 18         |        |         |        | 28.5      | 26.9    | 33.3    |          | 31.3     | 27.8     |      |
| UT002028ST  | 20         | 25.9   | 2.4     | 14.5   | 31.7      | 29.4    | 36.5    | 34.5     | 30.9     |          |      |
| UT002235ST  | 22         |        |         |        | 34.9      | 31.8    | 39.7    | 37.7     | 34.1     |          |      |
| UT002448ST  | 24         |        |         |        | 15.3      | 38.0    | 34.9    | 42.9     | 3.9      | 40.9     | 37.3 |

For waterprotected version add "H" behind "S" e.g. UT001412SHT





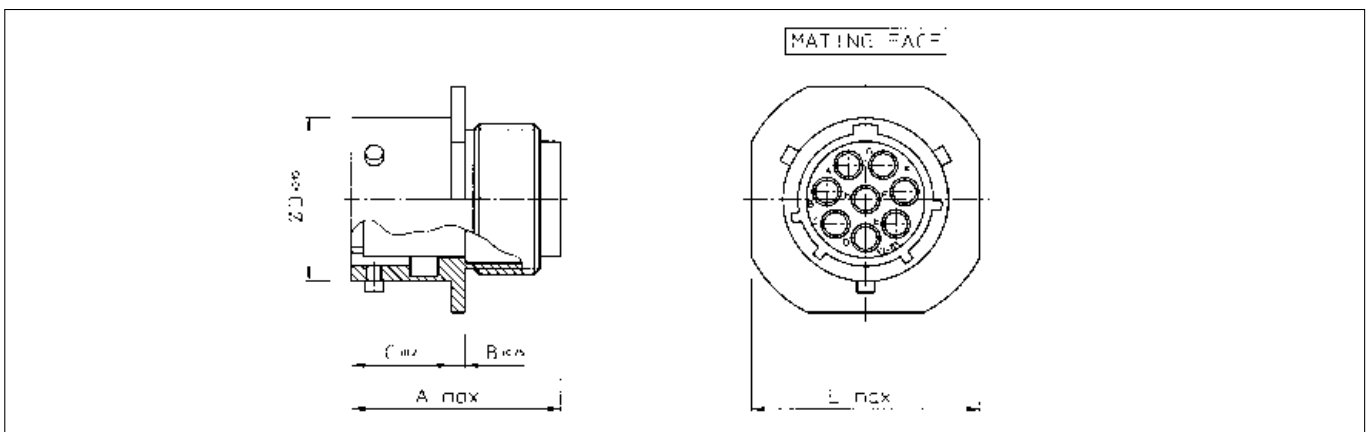
## Free hanging receptacle for pin contacts (UT01- - - -PT) - suitable for cable to cable applications



| Part number | Shell size | A max. | B $\pm 0.25$ | C $\pm 0.2$ | $\varnothing D \pm 0.15$ | $\varnothing E$ max. |
|-------------|------------|--------|--------------|-------------|--------------------------|----------------------|
| UT01104PT   | 10         | 31.7   | 1.6          | 11.3        | 14.9                     | 24.1                 |
| UT01128PT   | 12         |        |              |             | 19.0                     | 26.4                 |
| UT011412PT  | 14         |        |              |             | 22.2                     | 28.8                 |
| UT011619PT  | 16         |        |              |             | 25.3                     | 31.2                 |
| UT011823PT  | 18         |        |              |             | 28.5                     | 33.6                 |
| UT012028PT  | 20         | 33.3   | 2.4          | 14.5        | 31.7                     | 36.8                 |
| UT012235PT  | 22         |        |              | 34.9        | 39.9                     |                      |
| UT012448PT  | 24         |        |              | 15.3        | 38.0                     | 43.1                 |

For waterprotected version add "H" behind "P" e.g. UT011412PHT

## Free hanging receptacle for socket contacts (UT01- - - -ST) - suitable for cable to cable applications

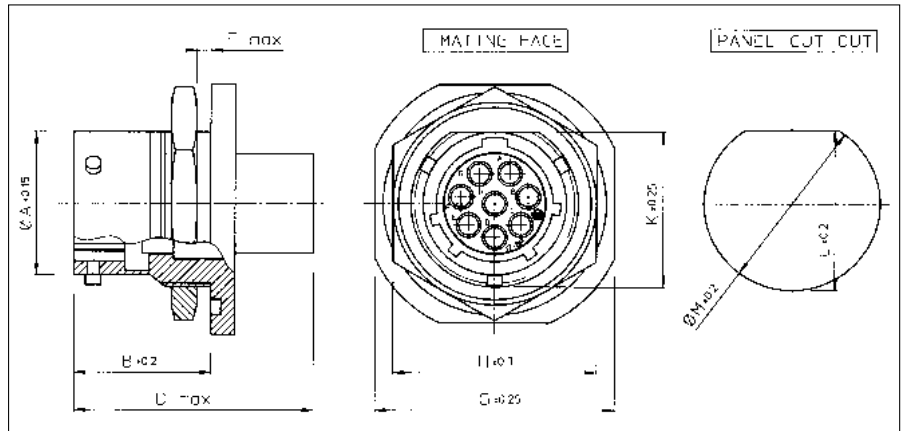


| Part number | Shell size | A max. | B $\pm 0.25$ | C $\pm 0.2$ | $\varnothing D \pm 0.15$ | $\varnothing E$ max. |
|-------------|------------|--------|--------------|-------------|--------------------------|----------------------|
| UT01104ST   | 10         | 24.3   | 1.6          | 11.3        | 14.9                     | 24.1                 |
| UT01128ST   | 12         |        |              |             | 19.0                     | 26.4                 |
| UT011412ST  | 14         |        |              |             | 22.2                     | 28.8                 |
| UT011619ST  | 16         |        |              |             | 25.3                     | 31.2                 |
| UT011823ST  | 18         |        |              |             | 28.5                     | 33.6                 |
| UT012028ST  | 20         | 25.9   | 2.4          | 14.5        | 31.7                     | 36.8                 |
| UT012235ST  | 22         |        |              | 34.9        | 39.9                     |                      |
| UT012448ST  | 24         |        |              | 15.3        | 38.0                     | 43.1                 |

For waterprotected version add "H" behind "S" e.g. UT011412SHT



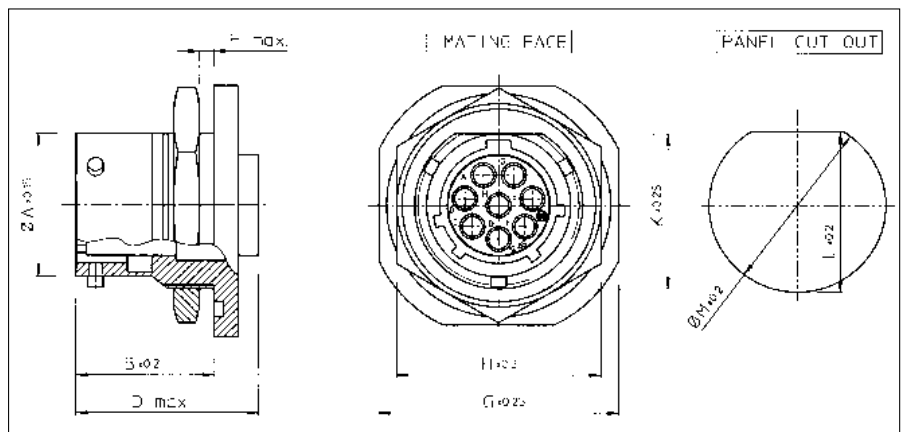
## Bulk head receptacle for pin contacts (UT07- - -PT) - suitable for rear panel mounting



| Part number | Shell size | A<br>±0.15 | B<br>±0.2 | D<br>max. | F<br>max. | G<br>±0.25 | H<br>±0.2 | K<br>±0.2 | L<br>±0.12 | Ø M<br>±0.2 |
|-------------|------------|------------|-----------|-----------|-----------|------------|-----------|-----------|------------|-------------|
| UT07104PT   | 10         | 14.9       | 18.0      | 31.7      | 3.2       | 27.0       | 22.2      | 16.6      | 17.0       | 17.7        |
| UT07128PT   | 12         | 19.0       |           |           |           | 31.8       | 27.0      | 20.8      | 21.2       | 22.5        |
| UT071412PT  | 14         | 22.2       |           |           |           | 34.9       | 30.2      | 23.9      | 24.3       | 25.7        |
| UT071619PT  | 16         | 25.3       |           |           |           | 38.1       | 33.3      | 27.1      | 27.5       | 28.7        |
| UT071823PT  | 18         | 28.5       | 22.7      | 33.3      | 6.4       | 41.3       | 36.5      | 30.3      | 30.6       | 32.0        |
| UT072028PT  | 20         | 31.7       |           |           |           | 46.1       | 39.7      | 33.4      | 33.8       | 35.2        |
| UT072235PT  | 22         | 34.9       |           |           |           | 49.2       | 42.9      | 36.6      | 37.0       | 38.4        |
| UT072448PT  | 24         | 38.0       |           |           |           | 52.4       | 46.0      | 39.8      | 40.1       | 41.5        |

For waterprotected version add "H" behind "P" e.g. UT071412PHT

## Bulk head receptacle for socket contacts (UT07- - -ST) - suitable for rear panel mounting



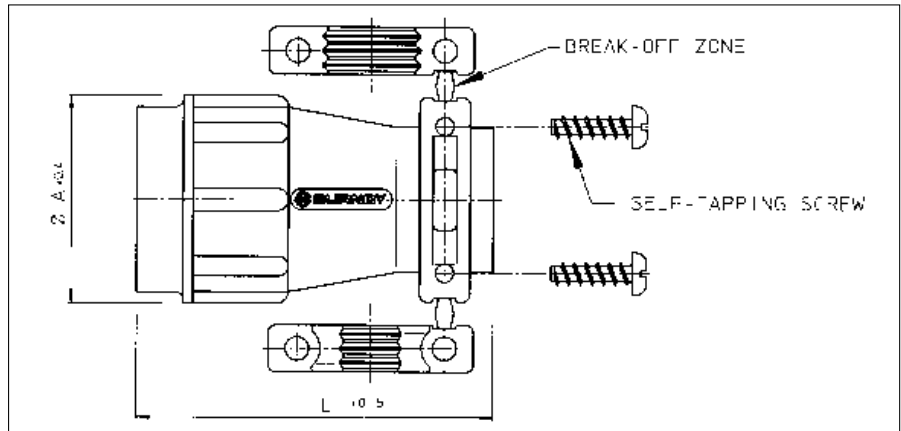
| Part number | Shell size | A<br>±0.15 | B<br>±0.2 | D<br>max. | F<br>max. | G<br>±0.25 | H<br>±0.2 | K<br>±0.2 | L<br>±0.12 | Ø M<br>±0.2 |
|-------------|------------|------------|-----------|-----------|-----------|------------|-----------|-----------|------------|-------------|
| UT07104ST   | 10         | 14.9       | 18.0      | 24.3      | 3.2       | 27.0       | 22.2      | 16.6      | 17.0       | 17.7        |
| UT07128ST   | 12         | 19.0       |           |           |           | 31.8       | 27.0      | 20.8      | 21.2       | 22.5        |
| UT071412ST  | 14         | 22.2       |           |           |           | 34.9       | 30.2      | 23.9      | 24.3       | 25.7        |
| UT071619ST  | 16         | 25.3       |           |           |           | 38.1       | 33.3      | 27.1      | 27.5       | 28.7        |
| UT071823ST  | 18         | 28.5       | 22.7      | 25.9      | 6.4       | 41.3       | 36.5      | 30.3      | 30.6       | 32.0        |
| UT072028ST  | 20         | 31.7       |           |           |           | 46.1       | 39.7      | 33.4      | 33.8       | 35.2        |
| UT072235ST  | 22         | 34.9       |           |           |           | 49.2       | 42.9      | 36.6      | 37.0       | 38.4        |
| UT072448ST  | 24         | 38.0       |           |           |           | 52.4       | 46.0      | 39.8      | 40.1       | 41.5        |

For waterprotected version add "H" behind "S" e.g. UT071412SHT



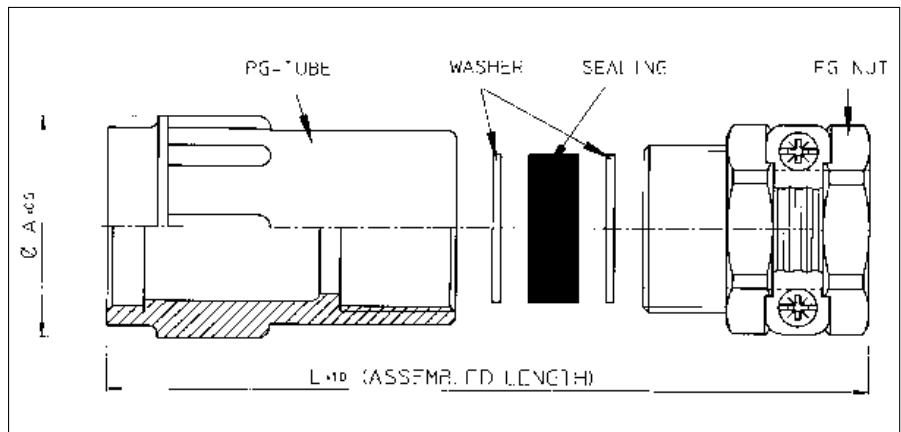


## Plastic cable clamp with strain relief (UTG--AC)



| Part number | Shell size | Cable range $\varnothing$ | $\varnothing A_{\pm 0.4}$ | $L_{\pm 0.5}$ |
|-------------|------------|---------------------------|---------------------------|---------------|
| UTG10AC     | 10         | 3.0 - 8.7                 | 21.0                      | 40.0          |
| UTG12AC     | 12         | 3.0 - 12.8                | 24.0                      | 40.0          |
| UTG14AC     | 14         | 4.0 - 13.8                | 27.0                      | 46.0          |
| UTG16AC     | 16         | 5.0 - 17.0                | 30.2                      | 46.0          |
| UTG18AC     | 18         | 5.0 - 19.0                | 33.3                      | 50.0          |
| UTG20AC     | 20         | 5.0 - 21.0                | 36.5                      | 55.0          |
| UTG22AC     | 22         | 5.0 - 23.0                | 39.7                      | 60.0          |
| UTG24AC     | 24         | 8.0 - 27.0                | 42.9                      | 65.0          |

## Plastic cable clamp with strain relief nut for waterprotected (IP65) applications (UTG--PG)

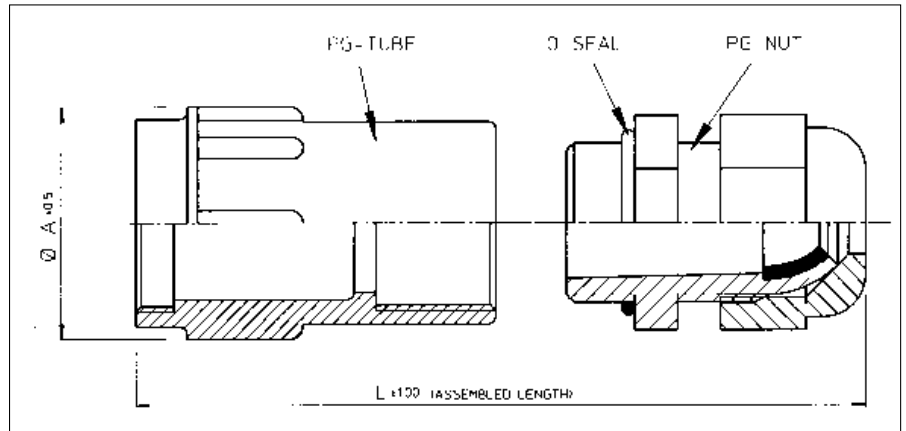


| Part number | Shell size | Sealing*<br>outer dia x inner dia's | $L_{\pm 1}$ | $A_{\pm 0.5}$ |
|-------------|------------|-------------------------------------|-------------|---------------|
| UTG10PG     | 10         | 13.5 x 5 x 8                        | 54          | 21.0          |
| UTG12PG     | 12         | 16 x 7 x 10.5 x 13 x 16             | 57          | 24.0          |
| UTG14PG     | 14         | 18.5 x 7 x 10.5 x 13 x 16           | 62          | 27.0          |
| UTG16PG     | 16         | 20.5 x 8 x 10.5 x 13 x 16           | 68          | 30.2          |
| UTG18PG     | 18         | 20.5 x 8 x 10.5 x 13 x 16           | 71          | 33.3          |
| UTG20PG     | 20         | 26 x 11 x 15 x 18 x 22              | 82          | 36.5          |
| UTG22PG     | 22         | 26 x 11 x 15 x 18 x 22              | 88          | 39.7          |
| UTG24PG     | 24         | 35 x 19 x 23 x 27 x 31              | 103         | 42.9          |

\*In order to accommodate different cable dia's, the sealing exists of different layers which can be pulled out easily.

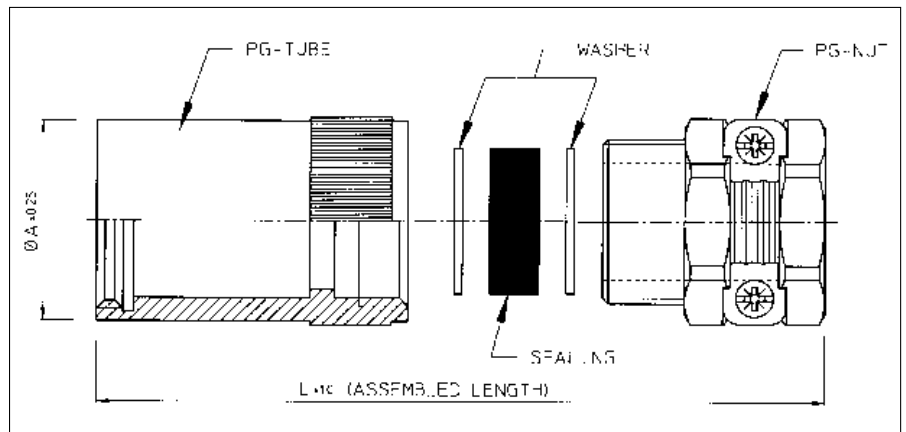


## Plastic cable clamp with strain relief nut for waterprotected (IP67) applications (UTG--ST)



| Part number | Shell size | Cable range | Dia. A $\pm 0.5$ | L $\pm 1$ |
|-------------|------------|-------------|------------------|-----------|
| UTG10ST     | 10         | 2 - 6       | 21.0             | 64        |
| UTG12ST     | 12         | 3 - 7       | 24.0             | 64        |
| UTG14ST     | 14         | 6 - 9       | 27.0             | 69        |
| UTG16ST     | 16         | 7 - 12      | 30.2             | 72        |
| UTG18ST     | 18         |             | 33.3             | 76        |
| UTG20ST     | 20         | 9 - 16      | 36.5             | 80        |
| UTG22ST     | 22         |             | 39.7             | 86        |
| UTG24ST     | 24         | 13 - 20     | 42.9             | 91        |

## Metal cable clamp with strain relief nut for waterprotected applications (UT0--PGT)



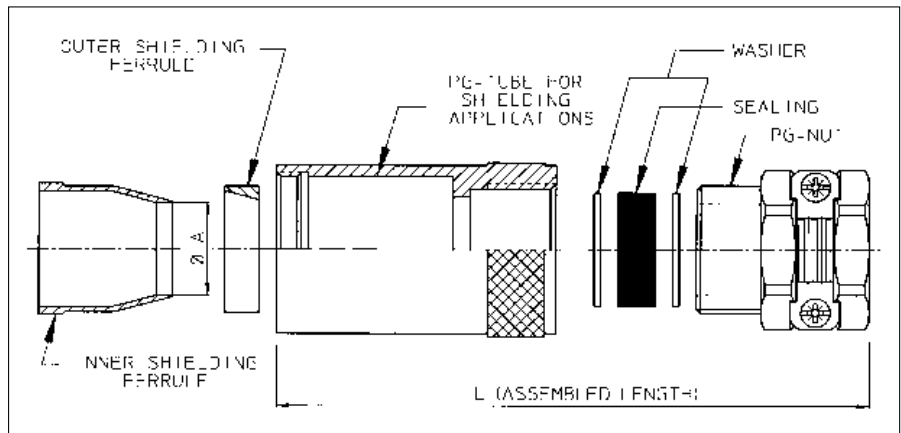
| Part number | Shell size | Sealing*<br>outer dia x inner dia's | L $\pm 1$ | A $\pm 0.25$ |
|-------------|------------|-------------------------------------|-----------|--------------|
| UT010PGT    | 10         | 13.5 x 5 x 8                        | 53        | 16.7         |
| UT012PGT    | 12         | 16 x 7 x 10.5 x 13 x 16             | 57        | 20.1         |
| UT014PGT    | 14         | 18.5 x 7 x 10.5 x 13 x 16           | 62        | 23.0         |
| UT016PGT    | 16         | 20.5 x 8 x 10.5 x 13 x 16           | 68        | 26.2         |
| UT018PGT    | 18         | 20.5 x 8 x 10.5 x 13 x 16           | 71        | 29.6         |
| UT020PGT    | 20         | 26 x 11 x 15 x 18 x 22              | 82        | 32.5         |
| UT022PGT    | 22         | 26 x 11 x 15 x 18 x 22              | 88        | 35.7         |
| UT024PGT    | 24         | 35 x 19 x 23 x 27 x 31              | 103       | 39.2         |

\*In order to accommodate different cable dia's, the sealing exists of different layers which can be pulled out easily.

# Circular - accessories



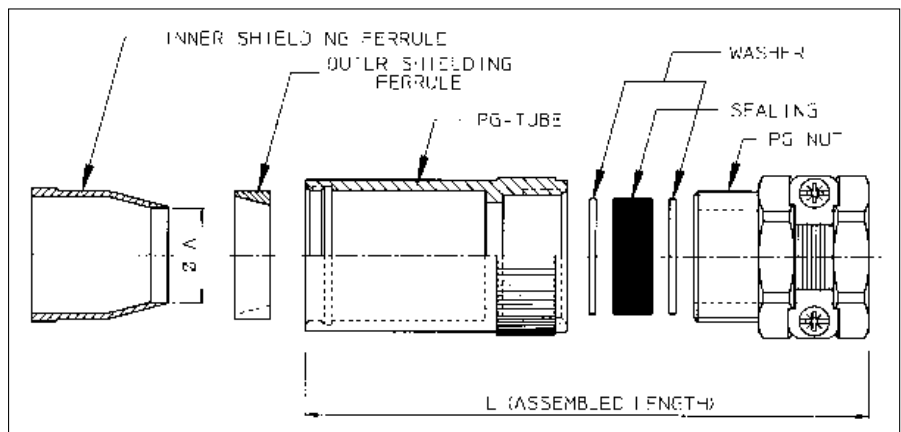
## Shielded cable clamp only suitable for UTGS connectors (UTGS----PGN)



| Part number      |                     | Shell size | Ø A  | L   | Sealing*<br>outer dia x inner dia's |
|------------------|---------------------|------------|------|-----|-------------------------------------|
| For pin contacts | For socket contacts |            |      |     |                                     |
|                  | UTGS10PGN           | 10         | 8.8  | 54  | 13.5 x 5 x 8                        |
|                  | UTGS12PGN           | 12         | 12.0 | 57  | 16 x 7 x 10.5 x 13                  |
|                  | UTGS14PGN           | 14         | 14.4 | 62  | 18.5 x 7 x 10.5 x 13 x 16           |
|                  | UTGS16PGN           | 16         | 16.4 | 68  | 20.5 x 8 x 10.5 x 13 x 16           |
|                  | UTGS18PGN           | 18         | 16.8 | 71  | 20.5 x 8 x 10.5 x 13 x 16           |
| UTGS20PGPN       | UTGS20PGSN          | 20         | 22.3 | 82  | 26 x 11 x 15 x 18 x 22              |
| UTGS22PGPN       | UTGS22PGSN          | 22         | 22.3 | 88  | 26 x 11 x 15 x 18 x 22              |
| UTGS24PGPN       | UTGS24PGSN          | 24         | 30.0 | 103 | 35 x 19 x 23 x 27 x 31              |

\*In order to accommodate different cable dia's, the sealing exists of different layers which can be pulled out easily.

## Shielded cable clamp only suitable for UT0 connectors (UT0S----PG00T)

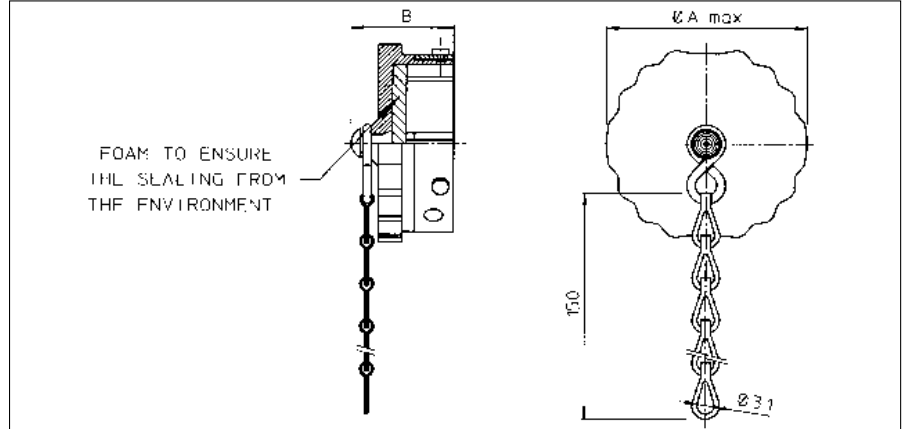


| Part number      |                     | Shell size | Ø A  | L   | Sealing*<br>outer dia x inner dia's |
|------------------|---------------------|------------|------|-----|-------------------------------------|
| For pin contacts | For socket contacts |            |      |     |                                     |
|                  | UT0S10PG00T         | 10         | 8.8  | 54  | 13.5 x 5 x 8                        |
|                  | UT0S12PG00T         | 12         | 12.0 | 57  | 16 x 7 x 10.5 x 13 x 16             |
|                  | UT0S14PG00T         | 14         | 14.4 | 62  | 18.5 x 7 x 10.5 x 13 x 16           |
|                  | UT0S16PG00T         | 16         | 16.4 | 68  | 20.5 x 8 x 10.5 x 13 x 16           |
|                  | UT0S18PG00T         | 18         | 16.8 | 71  | 20.5 x 8 x 10.5 x 13 x 16           |
| UT0S20PGP00T     | UT0S20PGS00T        | 20         | 22.3 | 82  | 26 x 11 x 15 x 18 x 22              |
| UT0S22PGP00T     | UT0S22PGS00T        | 22         | 22.3 | 88  | 26 x 11 x 15 x 18 x 22              |
| UT0S24PGP00T     | UT0S24PGS00T        | 24         | 30.0 | 103 | 35 x 19 x 23 x 27 x 31              |

\*In order to accommodate different cable dia's, the sealing exists of different layers which can be pulled out easily.



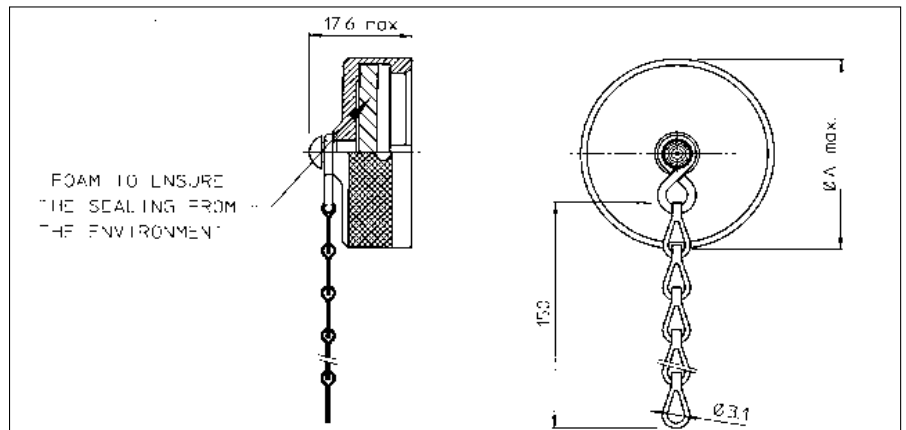
## Environmental dustcap for plugs (UTG6--DCG)



| Part number | Shell size | A max. | B    |
|-------------|------------|--------|------|
| UTG610DCG   | 10         | 20.0   | 20.8 |
| UTG612DCG   | 12         | 24.0   |      |
| UTG614DCG   | 14         | 27.5   |      |
| UTG616DCG   | 16         | 30.5   |      |
| UTG618DCG   | 18         | 33.5   |      |
| UTG620DCG   | 20         | 36.5   | 22.5 |
| UTG622DCG   | 22         | 40.0   |      |
| UTG624DCG   | 24         | 43.0   |      |

For dustcap without chain skip "G" e.g. UTG612DC

## Metal environmental dustcap for receptacles (UTG--DCG)



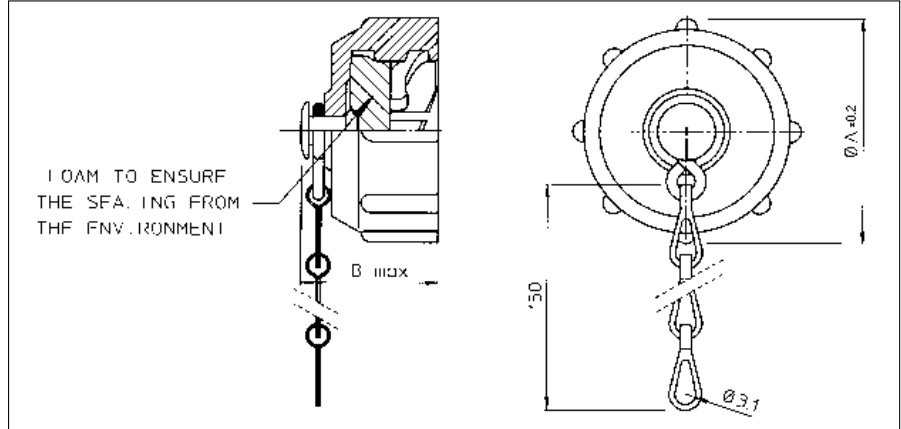
| Part number | Shell size | A max. |
|-------------|------------|--------|
| UTG10DCG    | 10         | 20.8   |
| UTG12DCG    | 12         | 24.9   |
| UTG14DCG    | 14         | 28.1   |
| UTG16DCG    | 16         | 31.3   |
| UTG18DCG    | 18         | 34.4   |
| UTG20DCG    | 20         | 37.6   |
| UTG22DCG    | 22         | 40.8   |
| UTG24DCG    | 24         | 43.9   |

For dustcap without chain skip "G" e.g. UTG12DC

# Circular - accessories



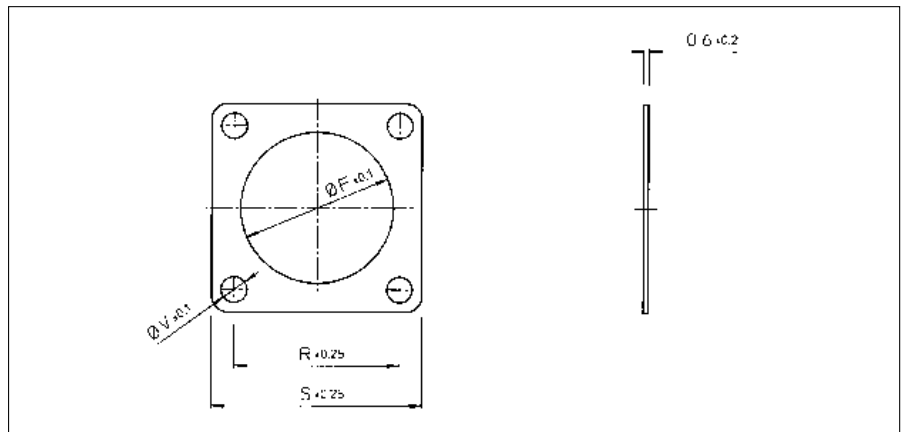
## Plastic environmental dustcap for receptacles (UTP--DCG)



| Part number | Shell size | Ø A ±0.2 | B max. |
|-------------|------------|----------|--------|
| UTP10DCG    | 10         | 26.7     | 19.3   |
| UTP12DCG    | 12         | 31.4     | 20.0   |
| UTP14DCG    | 14         | 34.5     | 20.2   |
| UTP16DCG    | 16         | 37.8     |        |
| UTP18DCG    | 18         | 40.8     |        |
| UTP20DCG    | 20         | 43.9     | 21.8   |
| UTP22DCG    | 22         | 47.0     |        |
| UTP24DCG    | 24         | 50.1     |        |

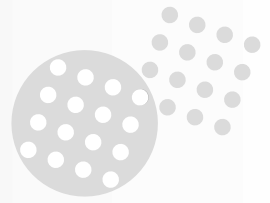
For dustcap without chain skip "G" e.g. UTP12DC

## Sealing for square flange receptacle (UTFD1-B)

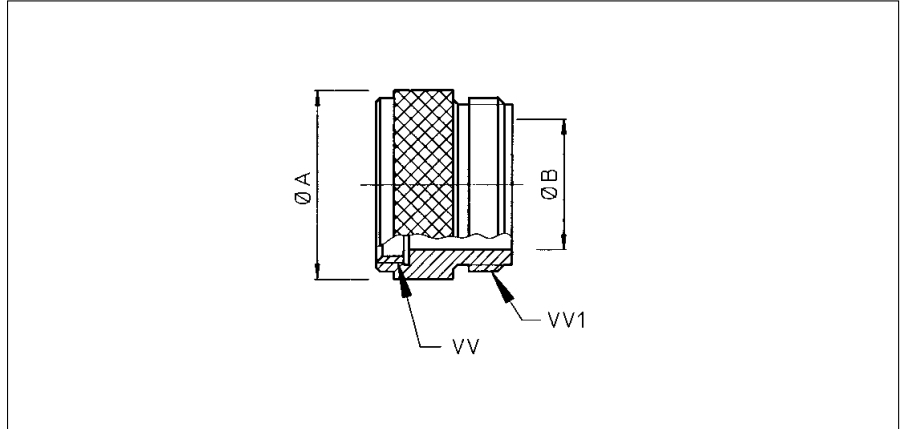


| Part number | Shell size | Ø F ±0.1 | R ±0.25 | S ±0.25 | Ø V |
|-------------|------------|----------|---------|---------|-----|
| UTFD12B     | 10         | 15.9     | 18.3    | 23.8    | 3.3 |
| UTFD13B     | 12         | 19.0     | 20.6    | 26.2    |     |
| UTFD14B     | 14         | 22.2     | 23.0    | 28.6    |     |
| UTFD15B     | 16         | 25.4     | 24.6    | 31.0    |     |
| UTFD16B     | 18         | 28.6     | 27.0    | 33.3    |     |
| UTFD17B     | 20         | 31.8     | 29.4    | 36.5    |     |
| UTFD18B     | 22         | 34.9     | 31.8    | 39.7    |     |
| UTFD19B     | 24         | 38.1     | 34.9    | 42.9    | 4.0 |



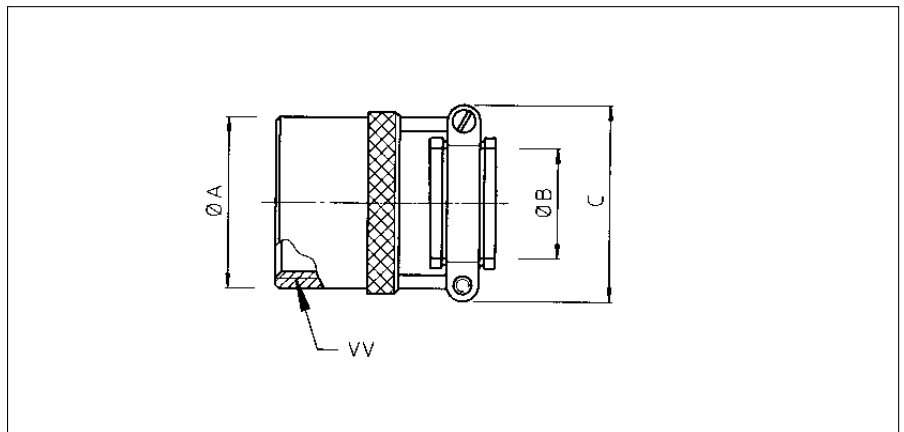


## A – General duty Termination



| Part number | Shell size | Ø A  | Ø B  | VV - Thread UNEF | VV1 - Thread UNEF |
|-------------|------------|------|------|------------------|-------------------|
| B10P36E     | 10         | 18,2 | 11,3 | 9/16-24          | 5/8-24            |
| B12P36E     | 12         | 21,1 | 14,2 | 11/16-24         | 3/8-20            |
| B14P36E     | 14         | 24,6 | 17,4 | 13/16-20         | 7/8-20            |
| B16P36E     | 16         | 27,6 | 20,6 | 15/16-20         | 1-20              |
| B18P36E     | 18         | 30,8 | 22,9 | 1 1/16-18        | 1 3/8-18          |
| B20P36E     | 20         | 33,8 | 26,1 | 1 3/16-18        | 1 3/8-18          |
| B22P36E     | 22         | 37,0 | 29,3 | 1 5/16-18        | 1 7/16-18         |
| B24P36E     | 24         | 40,3 | 32,4 | 1 7/16-18        | 1 7/16-18         |

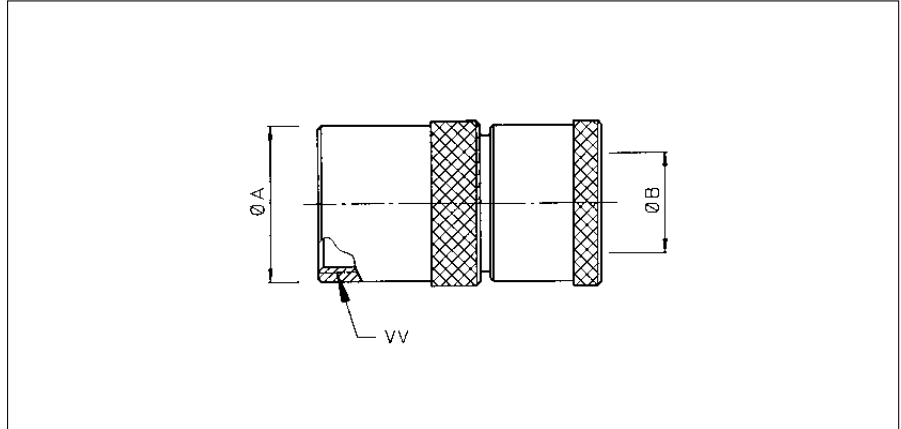
## F – Strain Relief Clamp Termination



| Part number | Shell size | Ø A  | Ø B  | C    | VV - Thread UNEF |
|-------------|------------|------|------|------|------------------|
| B10SRE      | 10         | 18,2 | 4,8  | 22,6 | 9/16-24          |
| B12SRE      | 12         | 21,1 | 7,9  | 25,8 | 11/16-24         |
| B14SRE      | 14         | 24,6 | 9,7  | 29,0 | 13/16-20         |
| B16SRE      | 16         | 27,6 | 12,7 | 30,6 | 15/16-20         |
| B18SRE      | 18         | 30,8 | 15,9 | 35,6 | 1 1/16-18        |
| B20SRE      | 20         | 33,8 | 15,9 | 35,6 | 1 3/16-18        |
| B20SRE      | 22         | 37,0 | 19,1 | 40,4 | 1 5/16-18        |
| B24SRE      | 24         | 40,3 | 20,3 | 41,9 | 1 7/16-18        |

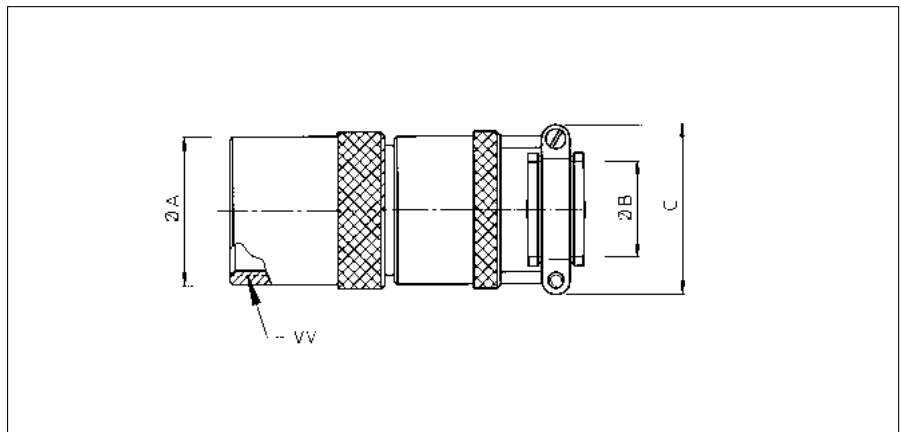


## J – Gland Seal Termination



| Part number | Shell size | Ø A  | Ø max | VV - Thread<br>UNEF |
|-------------|------------|------|-------|---------------------|
| B10P442E    | 10         | 18.6 | 7.9   | 9/16-24             |
| B12P442E    | 12         | 21.8 | 11.2  | 11/16-24            |
| B14P164E    | 14         | 25.0 | 13.7  | 13/16-20            |
| B16P164E    | 16         | 28.2 | 15.6  | 15/16-20            |
| B18P164E    | 18         | 31.3 | 17.1  | 1 1/16-18           |
| B20P164E    | 20         | 34.5 | 19.0  | 1 3/16-18           |
| B22P164E    | 22         | 37.7 | 21.5  | 1 5/16-18           |
| B24P164E    | 24         | 40.9 | 22.7  | 1 7/16-18           |

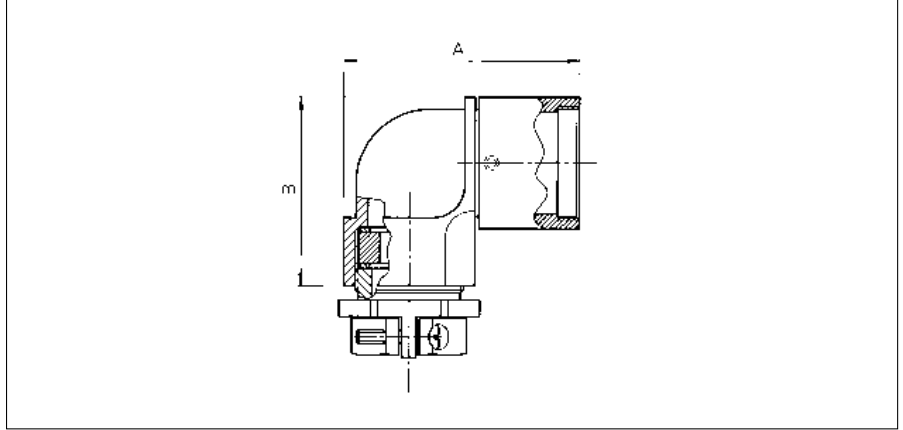
## JF – Gland Seal Termination with Strain Relief



| Part number | Shell size | Ø A  | Ø B  | C    | VV - Thread<br>UNEF |
|-------------|------------|------|------|------|---------------------|
| B10P443E    | 10         | 18.6 | 7.9  | 22.6 | 9/16-24             |
| B12P443E    | 12         | 21.8 | 11.2 | 25.8 | 11/16-24            |
| B14P184E    | 14         | 25.0 | 13.7 | 29.0 | 13/16-20            |
| B16P184E    | 16         | 28.2 | 15.6 | 30.6 | 15/16-20            |
| B18P184E    | 18         | 31.3 | 17.1 | 37.3 | 1 1/16-18           |
| B20P184E    | 20         | 34.5 | 19.0 | 37.3 | 1 3/16-18           |
| B20P184E    | 22         | 37.7 | 21.5 | 42.1 | 1 5/16-18           |
| B24P184E    | 24         | 40.9 | 22.7 | 44.4 | 1 7/16-18           |

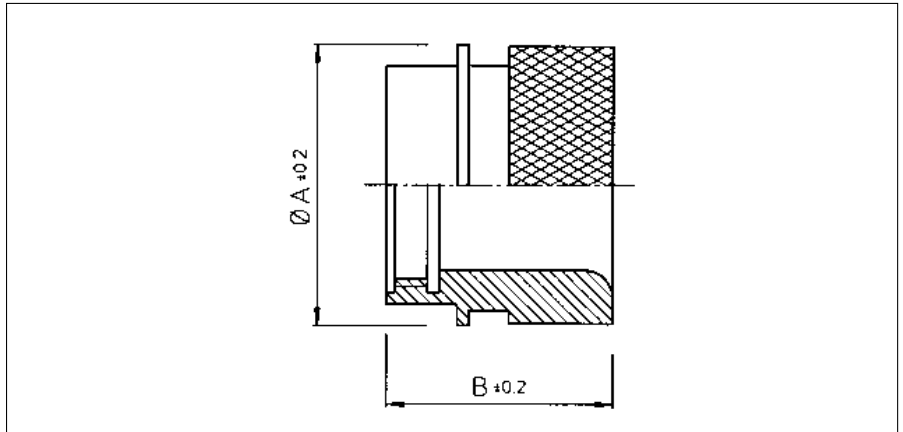


## Metal right angle cable clamp with strain relief nut (UTO--LPGN)



| Part number | Shell size | A max | B max | Cable range               |
|-------------|------------|-------|-------|---------------------------|
| UTO10LPGN   | 10         | 42.5  | 29.5  | 13.5 x 5 x 8              |
| UTO12LPGN   | 12         | 43.5  | 31.5  | 16 x 7 x 10.5 x 13        |
| UTO14LPGN   | 14         | 46.5  | 35.5  | 18.5 x 7 x 10.5 x 13 x 16 |
| UTO16LPGN   | 16         | 53.0  | 39.5  | 20.5 x 8 x 10.5 x 13 x 16 |
| UTO18LPGN   | 18         | 57.0  | 45.5  | 20.5 x 8 x 10.5 x 13 x 16 |
| UTO20LPGN   | 20         | 58.0  | 46.5  | 26 x 11 x 15 x 18 x 22    |
| UTO22LPGN   | 22         | 58.0  | 48.0  | 26 x 11 x 15 x 18 x 22    |
| UTO24LPGN   | 24         | 67.0  | 54.0  | 35 x 19 x 23 x 27 x 31    |

## Metal shrink boot adaptor (UTG--AD)



| Part number | Shell size | Ø A +0.2 | B    |
|-------------|------------|----------|------|
| UTG10AD     | 10         | 21.0     | 19.2 |
| UTG12AD     | 12         | 24.0     |      |
| UTG14AD     | 14         | 27.0     |      |
| UTG16AD     | 16         | 30.0     | 21.5 |
| UTG18AD     | 18         | 33.3     | 22.8 |
| UTG20AD     | 20         | 36.5     |      |
| UTG22AD     | 22         | 39.7     |      |
| UTG24AD     | 24         | 42.9     | 21.9 |

Standard plating is anodised black. For tin plating add "T" at the end of the part number e.g. UTG12ADT

# MBG - Bantamate II 5000



## Plastic connector with quick mating feature

### Description

The BANTAMATE II cylindrical plastic connector has been designed for use in applications requiring a high number of mating cycles and rapid connections and disconnections.

BANTAMATE II meets minimum durability requirements of **5000 mating/unmating cycles** by using a unique contact wiping system consisting of a lubricant saturated foam pad bonded to a spring loaded stripper plate within the receptacle or plug. On mating, the stripper plate is pushed deep into the connector wiping a thin film of lubricant onto the male contacts. A distinctive shape provides mating ease in blind or difficult to reach applications. Some typical applications would include test equipment, medical diagnostic equipment, or any of the hardware interconnections found in the modern electronic office.

### Features and benefits

- 5000 mating / unmating cycles
- Lubricated male contacts with spring actuated foam plate
- Quick and easy installation with latching mechanism
- Easy mating due to the positive polarisation, even in blind spots
- Unmated male contacts are protected by the spring actuated plate
- Available with 4, 12, 19, 30, and 46 contact positions.
- Applicable for front or rear panel mounting as well as free hanging applications
- UL recognised File number E31151
- CSA certified LR54977



### Performance characteristics

|                        |                              |
|------------------------|------------------------------|
| Operating temperature: | -55°C to +125°C              |
| Insulation resistance: | 5000 MΩ min.                 |
| Test potential:        | 2000 VAC                     |
| Durability:            | Min. 5000 matings cycles     |
| Vibration resistance:  | 5-50Hz, 0,5 dA; 8 hours axis |
| Thermal shock:         | 5 cycles -55°C to +105°C     |
| Humidity:              | 10 days at 85% RH, +85°C     |

### Construction

|                                   |                                  |
|-----------------------------------|----------------------------------|
| Connector body and strain relief: | Glass filled thermoplast UL94-V0 |
|                                   | Colour: black                    |
| Locking latch and hook:           | Stainless steel, passivated      |
| Compression Spring:               | Music wire, Nickel plated        |
| Lubricating pad:                  | Polyurethane foam                |
| Rivet:                            | Brass, Tin plated                |
| Strain relief screws:             | Steel, Cadmium plated            |

### Contact accommodation

- "MBG" connectors accept Trim-Trio removable snap-lock contacts (see contact section)
- Contacts to be ordered separately.

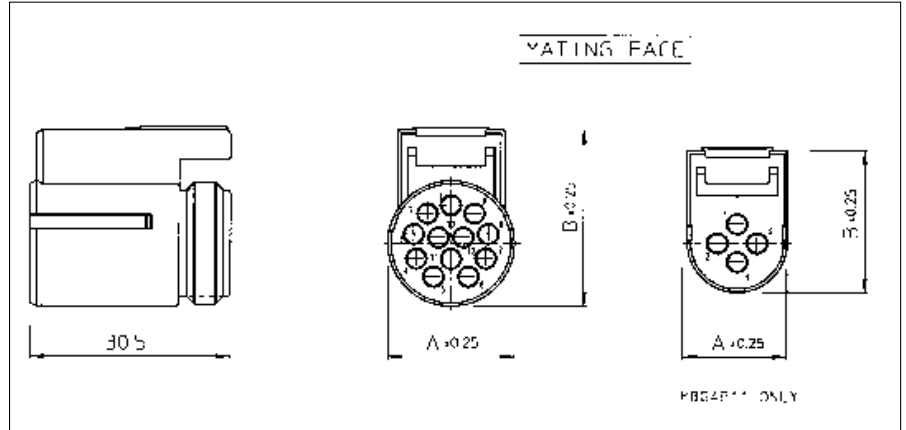
## How to order

|                     |   |    |   |   |
|---------------------|---|----|---|---|
| Connector family    | MBG   | 12 | P | 1 |
| Insert arrangement: | 4, 12, 19, 30, 46 positions   |    |   |   |
| Body variation:     | <b>P:</b> Plug body<br><b>R:</b> Receptacle body<br><b>S:</b> Strain relief   |    |   |   |
| Design variation:   | <b>1:</b> Standard version with male contacts in receptacle<br><b>11:</b> Reversed version with male contacts in plug |    |   |   |

# MBG - Bantamate II 5000

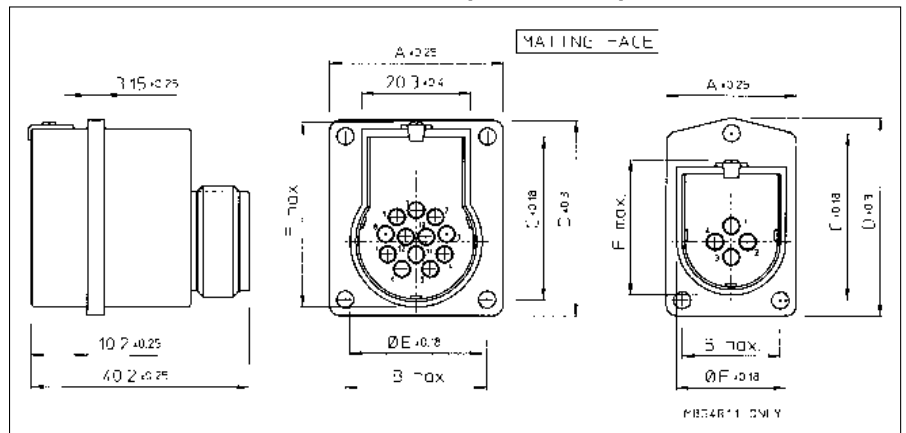


Female plug connector for socket contacts (MBG--P1) - Standard version  
 Male plug connector for pin contacts (MBG--P11) - Reversed version



| Female plug | Part number | Male plug | $\varnothing A \pm 0.25$ | $B \pm 0.25$ |
|-------------|-------------|-----------|--------------------------|--------------|
| MBG4P1      |             | MBG4P11   | 15.08                    | 21.90        |
| MBG12P1     |             | MBG12P11  | 19.43                    | 27.25        |
| MBG19P1     |             | MBG19P11  | 22.83                    | 30.53        |
| MBG30P1     |             | MBG30P11  | 27.94                    | 35.51        |
| MBG46P1     |             | MBG46P11  | 34.42                    | 41.91        |

Panel mounting male receptacle connector for pin contacts (MBG--R1) - Standard version  
 Panel mounting female receptacle connector for socket contacts (MBG--R11) - Reversed version

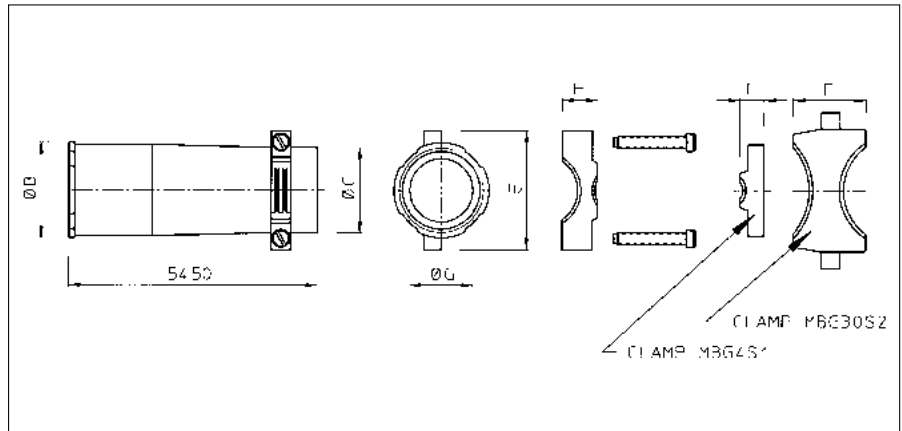


| Female plug | Part number | Male plug | $\varnothing A \pm 0.25$ | B max. | $C \pm 0.18$ | $D \pm 0.30$ | $\varnothing E \pm 0.18$ | F max. |
|-------------|-------------|-----------|--------------------------|--------|--------------|--------------|--------------------------|--------|
| MBG4R1      |             | MBG4R11   | 23.90                    | 18.08  | 31.45        | 37.36        | 20.07                    | 29.46  |
| MBG12R1     |             | MBG12R11  | 32.49                    | 26.54  | 30.76        | 36.86        | 24.64                    | 34.93  |
| MBG19R1     |             | MBG19R11  | 32.44                    | 26.54  | 34.04        | 40.13        | 27.86                    | 38.10  |
| MBG30R1     |             | MBG30R11  | 35.61                    | 28.65  | 38.00        | 44.91        | 33.10                    | 43.31  |
| MBG46R1     |             | MBG46R11  | 42.24                    | 35.13  | 46.94        | 54.05        | 39.70                    | 49.61  |

# MBG - Bantamate II 5000

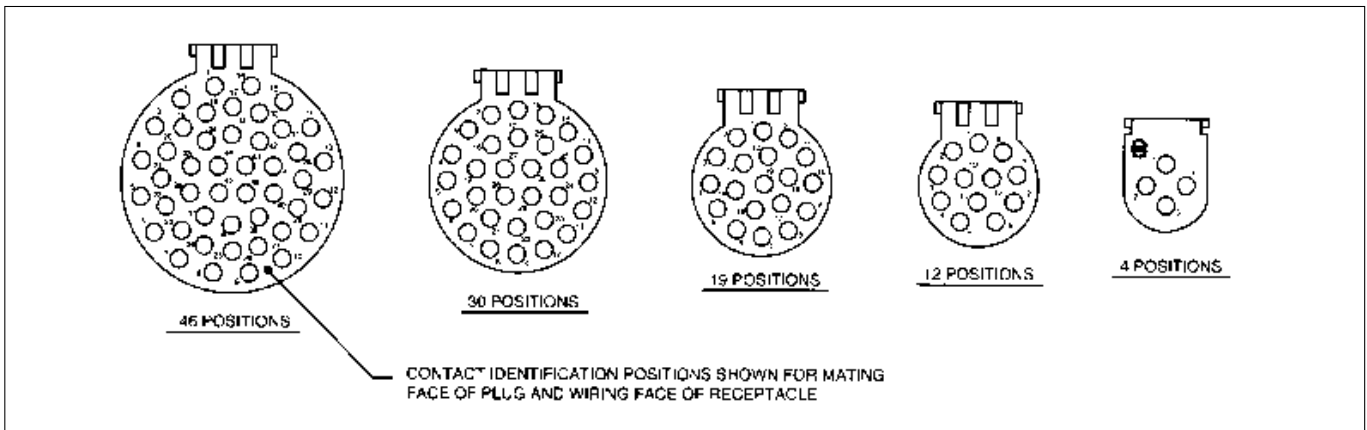


## Strain relief (MBG--S1)



| Part number | Ø C           | Ø D  | E    | F    | Cable range Ø G side A | Cable range Ø G side B |
|-------------|---------------|------|------|------|------------------------|------------------------|
| MBG4S1      | 12.2          | 15.0 | 20.1 | 5.3  | 8.51/6.35              | –                      |
| MBG12S1     | 18.8          | 21.1 | 26.4 | 7.9  | 11.30/7.65             | 14.99/11.38            |
| MBG19S1     | 21.3          | 24.4 | 29.0 | 9.4  | 13.08/8.66             | 17.53/13.12            |
| MBG30S1     | 26.7          | 29.0 | 34.5 | 16.3 | 19.02/15.88            | 22.86/19.05            |
| MBG30S2     | 26.7          | 29.0 | 34.5 | 15.9 | 12.67/10.01            | 15.85/12.70            |
| MBG46S1     | Not available |      |      |      |                        |                        |

## Insert arrangements and moulded-in contact identification

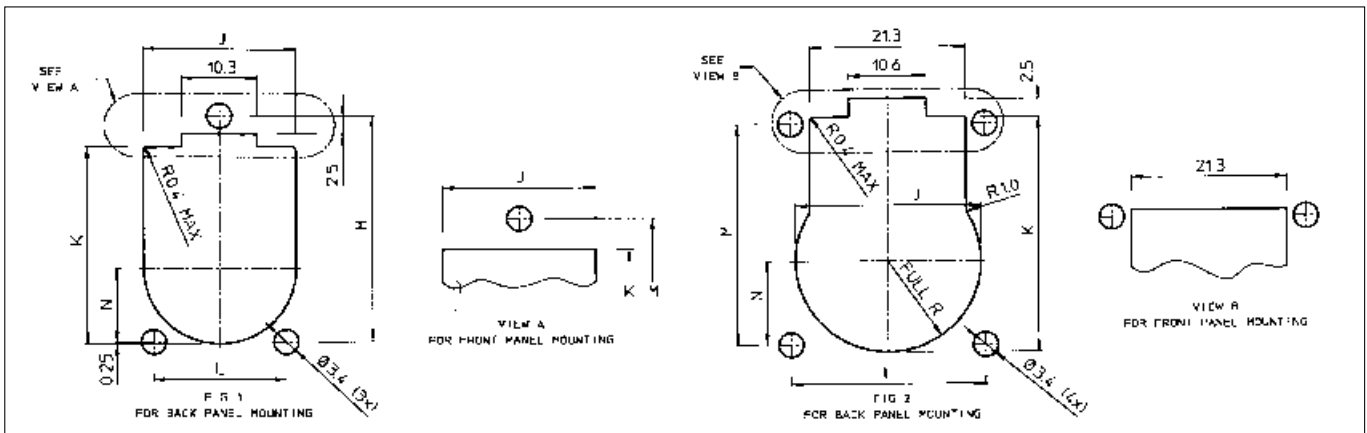


Contact identification positions shown are for mating face of plug and wiring face of receptacle.

# MBG - Bantamate II 5000

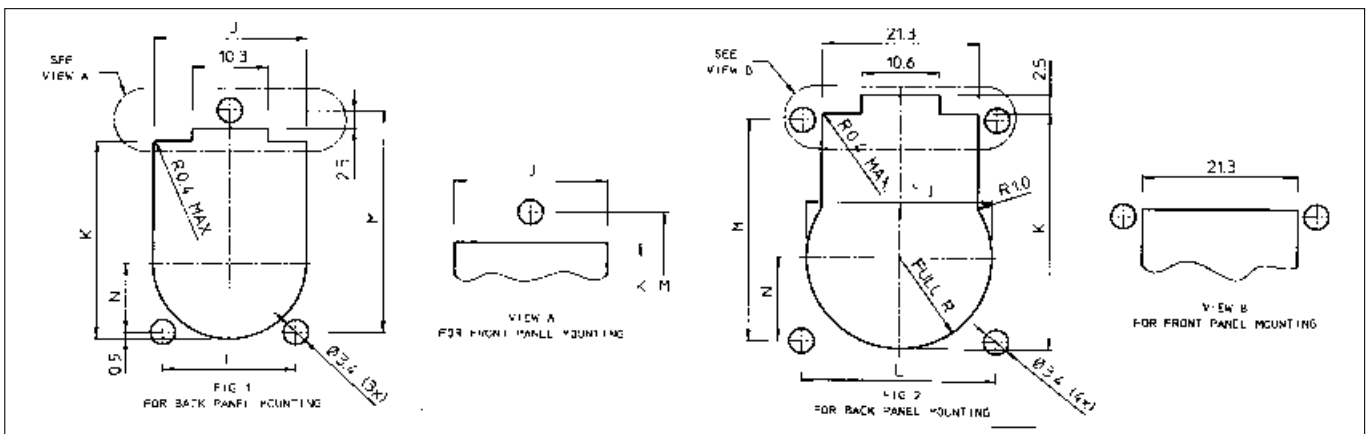


## Panel cut-out dimensions for receptacle - Standard version (MBG--R1)



| Part number | Fig. | J     | K     | L     | M     | N     |
|-------------|------|-------|-------|-------|-------|-------|
| MBG4R1      | 1    | 20.86 | 27.41 | 18.08 | 31.45 | 10.16 |
| MBG12R1     | 2    | 25.30 | 32.74 | 26.54 | 30.76 | 11.65 |
| MBG19R1     | 2    | 28.50 | 35.89 |       | 34.04 | 13.32 |
| MBG30R1     | 2    | 33.73 | 40.97 | 28.65 | 38.00 | 15.49 |
| MBG46R1     | 2    | 40.36 | 47.22 | 35.13 | 46.94 | 18.85 |

## Panel cut-out dimensions for receptacle - Reversed version (MBG--R11)



| Part number | Fig. | J     | K     | L     | M     | N     |
|-------------|------|-------|-------|-------|-------|-------|
| MBG4R11     | 1    | 20.86 | 27.41 | 18.08 | 31.45 | 10.16 |
| MBG12R11    | 2    | 25.30 | 32.74 | 26.54 | 30.76 | 11.65 |
| MBG19R11    | 2    | 28.50 | 35.89 |       | 34.04 | 13.32 |
| MBG30R11    | 2    | 33.73 | 40.97 | 28.65 | 38.00 | 15.49 |
| MBG46R11    | 2    | 40.36 | 47.22 | 35.13 | 46.94 | 18.85 |

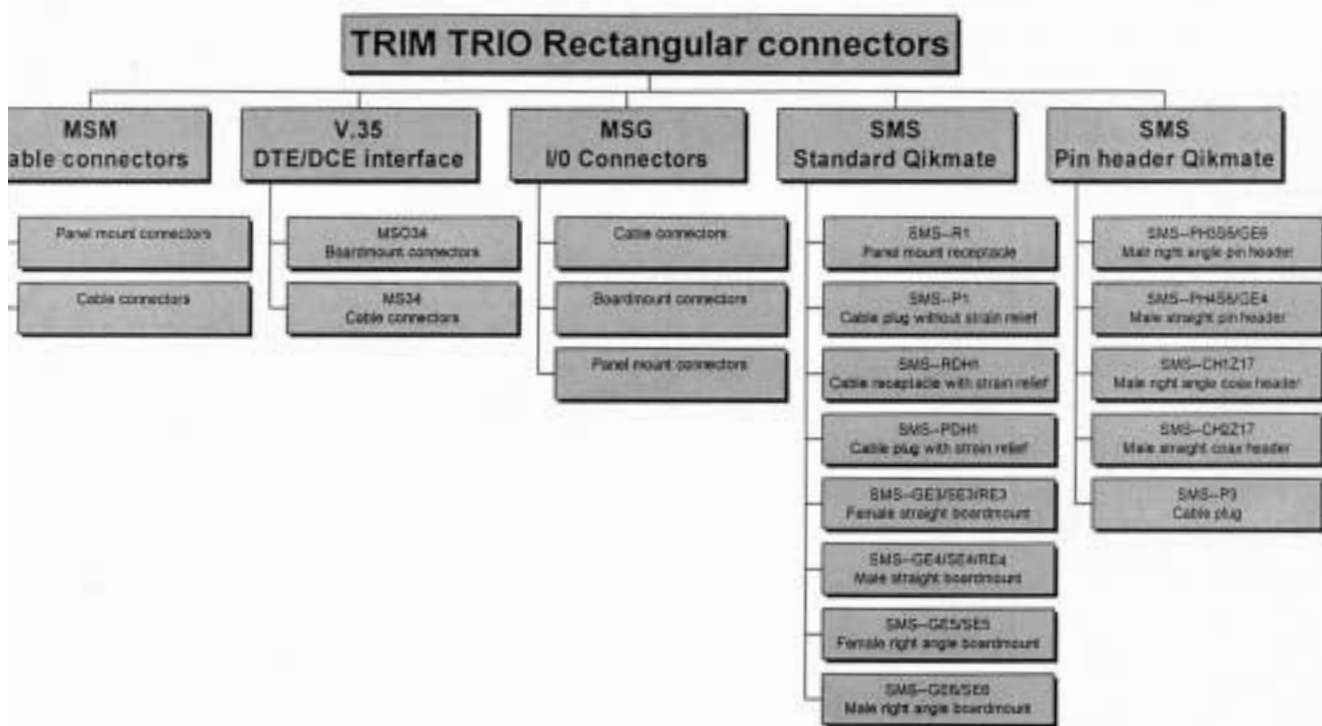
# Rectangular



## Overview rectangular TRIM TRIO connectors



## Selection matrix Rectangular connectors





# MS-M - Hyfen rectangular



## High performance hyfen rectangular cable connectors

### Description

MSM rectangular connectors offers an extremely reliable, rugged, and versatile connection system .

They are a range of multiway connectors available in 8 sizes from 14 to 104 positions.

MS-M cable connectors can be offered with a full range of hardware and accessories. Guiding pins and sockets, turnable jackscrews, a variety of cable hoods, pin protection shrouds and discrimination pins make this connector range a truly versatile system.



### Features and benefits

- Connectors supplied pre-assembled except for panel mount versions.
- Available in 14-20-26-34-42-50-75 and 104 positions.
- **34 contact positions suitable for V.35 applications (see V.35 section)**
- Full range of accessories available including hoods, strain relief clamps, guide pins, jackscrews and pin protection shrouds.
- MS-M hyfen complies with NFC 93426 - HE 621-622 and MIL-C-28748 specifications.

### Performance characteristics

|                        |                              |
|------------------------|------------------------------|
| Operating temperature: | -55°C to +125°C              |
| Insulation resistance: | 5000 MΩ min.                 |
| Test potential:        | 2000 VAC                     |
| Durability:            | 500 matings and unmatings.   |
| Vibration resistance:  | Per MIL-STD 202 method 204   |
| Shock:                 | Per MIL-C-STD 202 method 207 |

### Construction

|                       |   |
|-----------------------|---|
| Connector Material :  | Glass filled Phenolic   |
| Flammability rating : | UL94-V0   |
| Hoods:                | Aluminium alloy<br>gold chromate or anodized<br>Polyamide 6.6 - black - UL94-V2 |
| Cable clamps:         | Stainless steel   |
| Polarizing hardware:  | Brass nickel plated   |
| Shrouds:              | Aluminium alloy<br>gold chromate or anodized                                    |

### Contact accommodation

- “MS-M” Hyfen connectors accept Trim-Trio removable snap-lock contacts (see contact section)
- Contacts to be ordered separately.

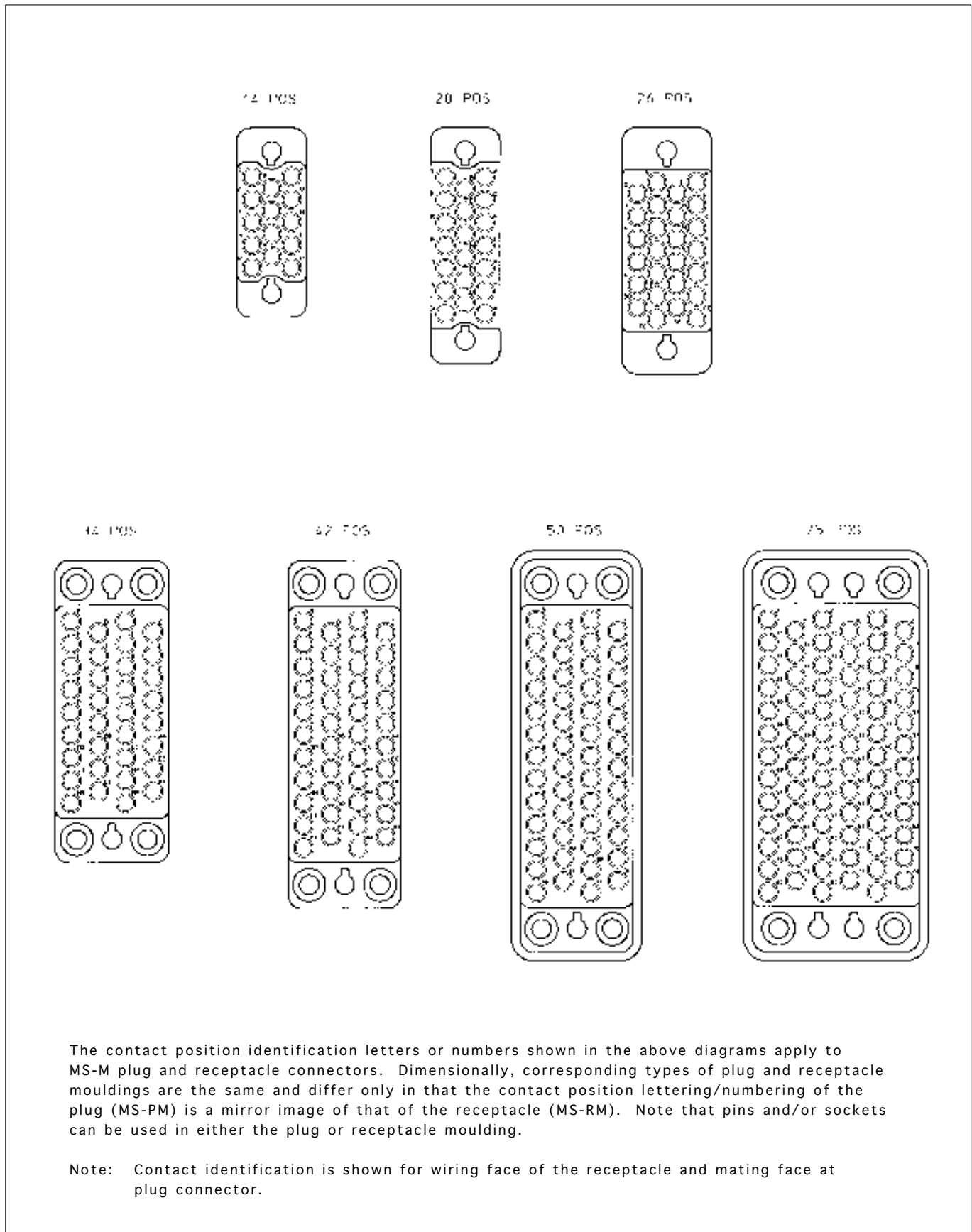
### How to order

|                                    |   |    |   |   |     |    |    |    |
|------------------------------------|---|----|---|---|-----|----|----|----|
| Connector family                   | MS  | 34 | P | M | 124 | S  | GE | 16 |
|                                    | MS  | 34 | P | M | 120 | S- | -- | -- |
| <b>Contact arrangement</b>         |   |    |   |   |     |    |    |    |
| Type of housing:                   | P: plug body for male contacts<br>S: Receptacle housing for female contacts |    |   |   |     |    |    |    |
| N° 16 contact                      |   |    |   |   |     |    |    |    |
| <b>Design variation</b>            |   |    |   |   |     |    |    |    |
| <b>Pin protection shroud</b>       |   |    |   |   |     |    |    |    |
| GE = plastic turnable jackscrews   |   |    |   |   |     |    |    |    |
| <b>Code for special variations</b> |   |    |   |   |     |    |    |    |

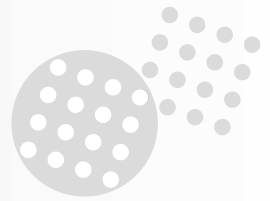
# MS-M - Hyfen rectangular



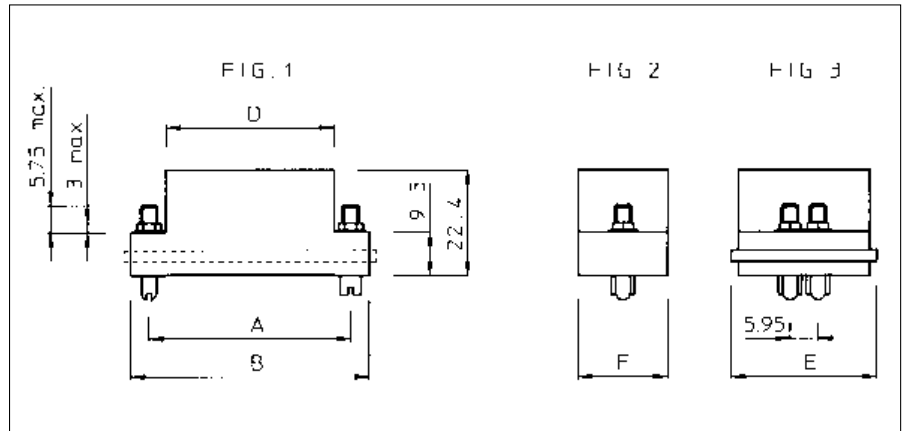
## Contact arrangement



# MS-M - Hyfen rectangular

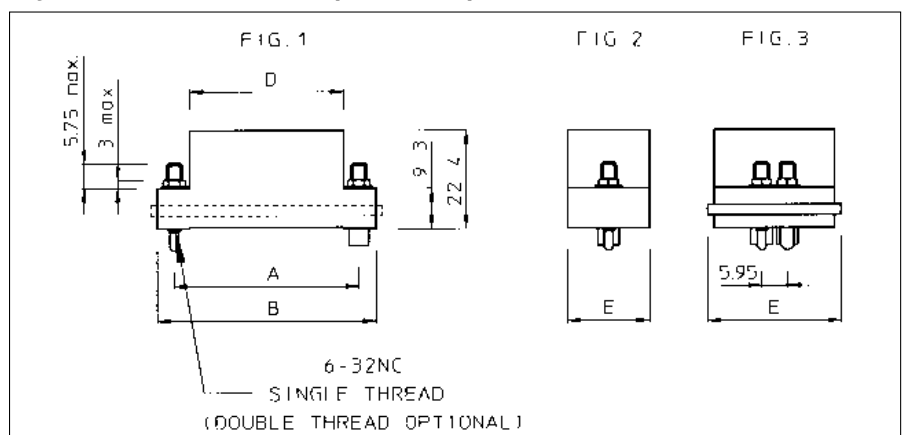


## Panel mount connectors with guiding hardware (MS--M1)



| Connector size | Part number                    |  | A     | B     | D     | E    | Fig. |
|----------------|--------------------------------|--|-------|-------|-------|------|------|
|                | Plug version for male contacts | Receptacle version for female contacts |       |       |       |      |      |
| 14             | MS14PM1                        | MS14RM1                                | 23.8  | 31.8  | 20.1  | 11.7 | 1-2  |
| 20             | MS20PM1                        | MS20RM1                                | 31.75 | 39.65 | 27.95 |      |      |
| 26             | MS26PM1                        | MS26RM1                                | 33.3  | 41.3  | 27.2  |      |      |
| 34             | MS34PM1                        | MS34RM1                                | 42.8  | 50.8  | 35.7  |      |      |
| 42             | MS42PM1                        | MS42RM1                                | 50.55 | 58.65 | 42.95 |      |      |
| 50             | MS50PM1                        | MS50RM1                                | 57.95 | 69.1  | 50.85 | 22.1 | 1-3  |
| 75             | MS75PM1                        | MS75RM1                                |       |       |       | 31.2 |      |

## Panel mount connectors with fixed jackscrew hardware (MS--M58)

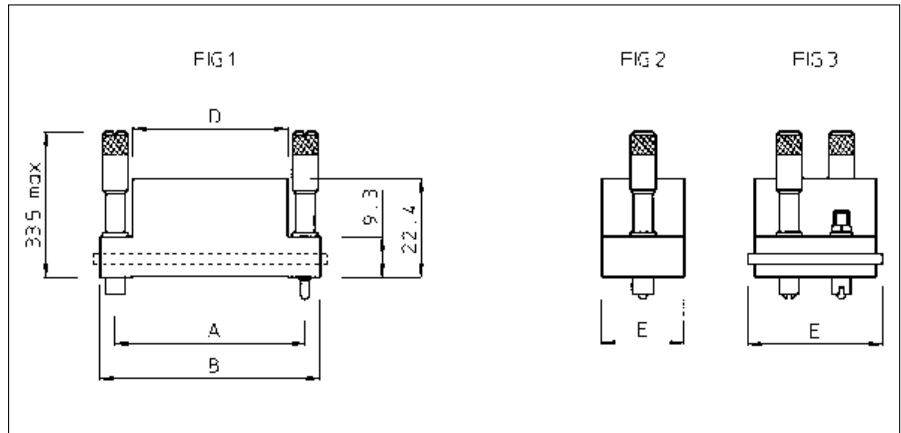


| Connector size | Part number                    |  | A     | B     | D     | E    | Fig. |
|----------------|--------------------------------|--|-------|-------|-------|------|------|
|                | Plug version for male contacts | Receptacle version for female contacts |       |       |       |      |      |
| 14             | MS14PM58                       | MS14RM58                               | 23.8  | 31.8  | 20.1  | 11.7 | 1-2  |
| 20             | MS20PM58                       | MS20RM58                               | 31.75 | 39.65 | 27.95 |      |      |
| 26             | MS26PM58                       | MS26RM58                               | 33.3  | 41.3  | 27.2  |      |      |
| 34             | MS34PM58                       | MS34RM58                               | 42.8  | 50.8  | 35.7  |      |      |
| 42             | MS42PM58                       | MS42RM58                               | 50.55 | 58.65 | 42.95 |      |      |
| 50             | MS50PM58                       | MS50RM58                               | 57.95 | 69.1  | 50.85 | 22.1 | 1-3  |
| 75             | MS75PM58                       | MS75RM58                               |       |       |       | 31.2 |      |

# MS-M - Hyfen rectangular

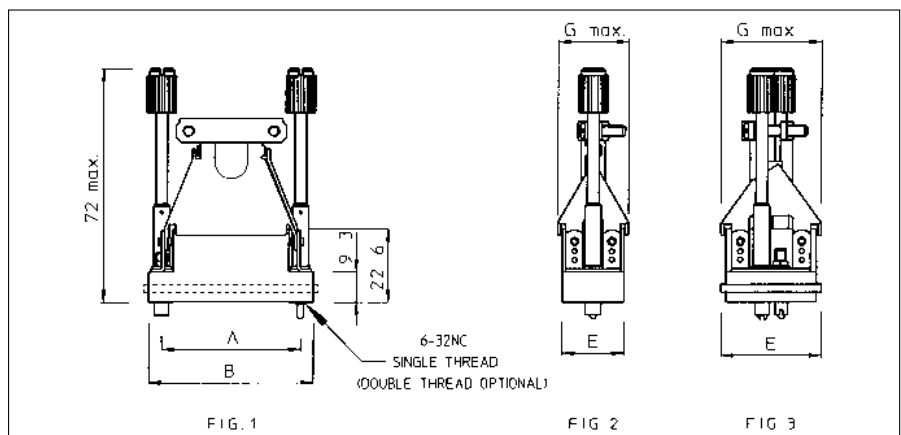
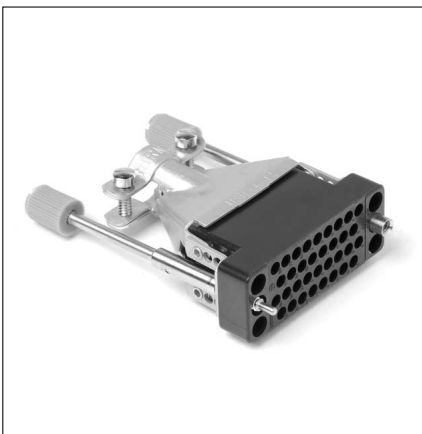


## Cable connector without strain relief and turnable jackscrew hardware (MS—M57)



| Connector size | Part number                    |  | A     | B     | D     | E    | Fig. |
|----------------|--------------------------------|--|-------|-------|-------|------|------|
|                | Plug version for male contacts | Receptacle version for female contacts |       |       |       |      |      |
| 14             | MS14PM57                       | MS14RM57                               | 23.8  | 31.8  | 20.1  | 11.7 | 1-2  |
| 20             | MS20PM57                       | MS20RM57                               | 31.75 | 39.65 | 27.95 |      |      |
| 26             | MS26PM57                       | MS26RM57                               | 33.3  | 41.3  | 27.2  |      |      |
| 34             | MS34PM57                       | MS34RM57                               | 42.8  | 50.8  | 35.7  |      |      |
| 42             | MS42PM57                       | MS42RM57                               | 50.55 | 58.65 | 42.95 |      |      |
| 50             | MS50PM57                       | MS50RM57                               | 57.95 | 69.1  | 50.85 | 22.1 | 1-3  |
| 75             | MS75PM57                       | MS75RM57                               |       |       |       | 31.2 |      |

## Cable connector with metal butterfly hood and turnable jackscrew hardware (MS--M124K)

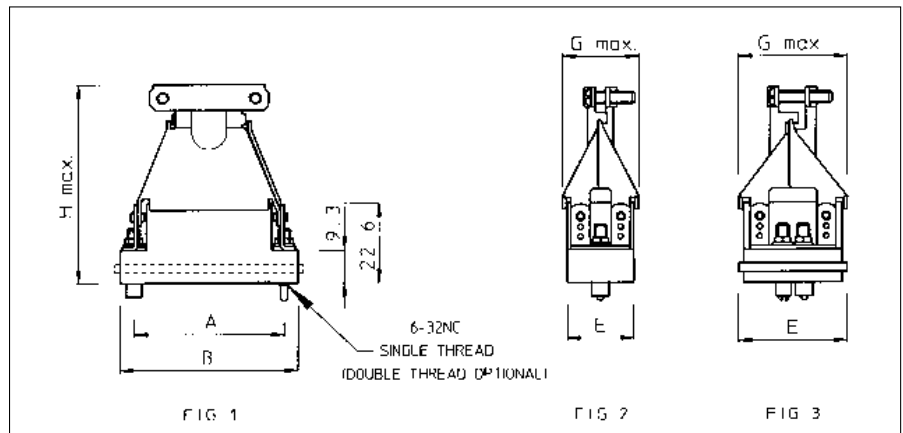


| Connector size | Part number                    |  | A     | B     | E    | G max | Fig. |
|----------------|--------------------------------|--|-------|-------|------|-------|------|
|                | Plug version for male contacts | Receptacle version for female contacts |       |       |      |       |      |
| 14             | MS14PM124K                     | MS14RM124K                             | 23.8  | 31.8  | 11.7 | 14.7  | 1-2  |
| 20             | MS20PM124K                     | MS20RM124K                             | 31.75 | 39.65 |      |       |      |
| 26             | MS26PM124K                     | MS26RM124K                             | 33.3  | 41.3  |      |       |      |
| 34             | MS34PM124K                     | MS34RM124K                             | 42.8  | 50.8  |      |       |      |
| 42             | MS42PM124K                     | MS42RM124K                             | 50.55 | 58.65 |      |       |      |
| 50             | MS50PM124K                     | MS50RM124K                             | 57.95 | 69.1  | 22.1 | 31.8  | 1-3  |
| 75             | MS75PM124K                     | MS75RM124K                             |       |       | 31.2 |       |      |

# MS-M - Hyfen rectangular

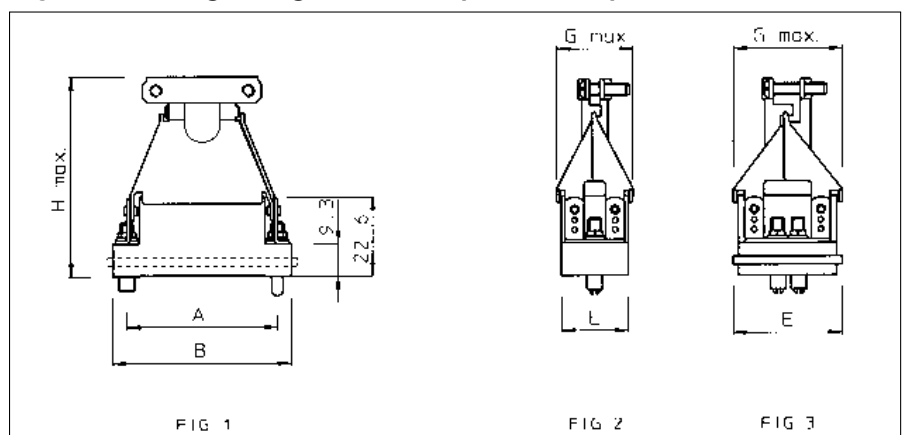


## Cable connector with metal butterfly hood and fixed jackscrew hardware (MS--M140)



| Connector size | Part number                    |                                    | A     | B     | E    | G max | H    | Fig. |
|----------------|--------------------------------|------------------------------------|-------|-------|------|-------|------|------|
|                | Plug version for male contacts | Receptacle version female contacts |       |       |      |       |      |      |
| 14             | MS14PM140                      | MS14RM140                          | 23.8  | 31.8  | 11.7 | 14.7  | 48.7 | 1-2  |
| 20             | MS20PM140                      | MS20RM140                          | 31.75 | 39.65 |      |       |      |      |
| 26             | MS26PM140                      | MS26RM140                          | 33.3  | 41.3  | 15.0 | 18    |      |      |
| 34             | MS34PM140                      | MS34RM140                          | 42.8  | 50.8  | 19.1 | 22.2  | 56.7 |      |
| 42             | MS42PM140                      | MS42RM140                          | 50.55 | 58.65 |      |       |      |      |
| 50             | MS50PM140                      | MS50RM140                          | 57.95 | 69.1  | 22.1 | 31.8  |      |      |
| 75             | MS75PM140                      | MS75RM140                          |       |       | 31.2 |       |      | 1-3  |

## Cable connector with metal butterfly hood and guiding hardware (MS--M120)

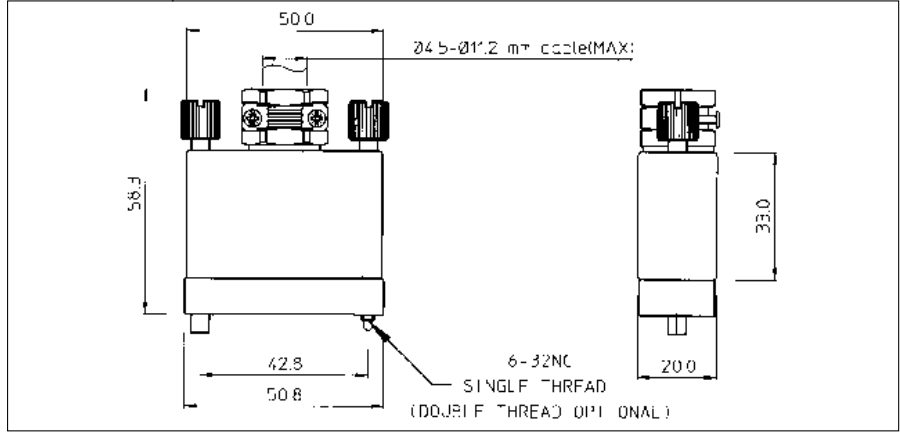


| Connector size | Part number                    |                                    | A     | B     | E    | G max | H    | Fig. |
|----------------|--------------------------------|------------------------------------|-------|-------|------|-------|------|------|
|                | Plug version for male contacts | Receptacle version female contacts |       |       |      |       |      |      |
| 14             | MS14PM120                      | MS14RM120                          | 23.8  | 31.8  | 11.7 | 14.7  | 48.7 | 1-2  |
| 20             | MS20PM120                      | MS20RM120                          | 31.75 | 39.65 |      |       |      |      |
| 26             | MS26PM120                      | MS26RM120                          | 33.3  | 41.3  | 15.0 | 18    |      |      |
| 34             | MS34PM120                      | MS34RM120                          | 42.8  | 50.8  | 19.1 | 22.2  | 56.7 |      |
| 42             | MS42PM120                      | MS42RM120                          | 50.55 | 58.65 |      |       |      |      |
| 50             | MS50PM120                      | MS50RM120                          | 57.95 | 69.1  | 22.1 | 31.8  |      |      |
| 75             | MS75PM120                      | MS75RM120                          |       |       | 31.2 |       |      | 1-3  |

# MS-M - Hyfen rectangular

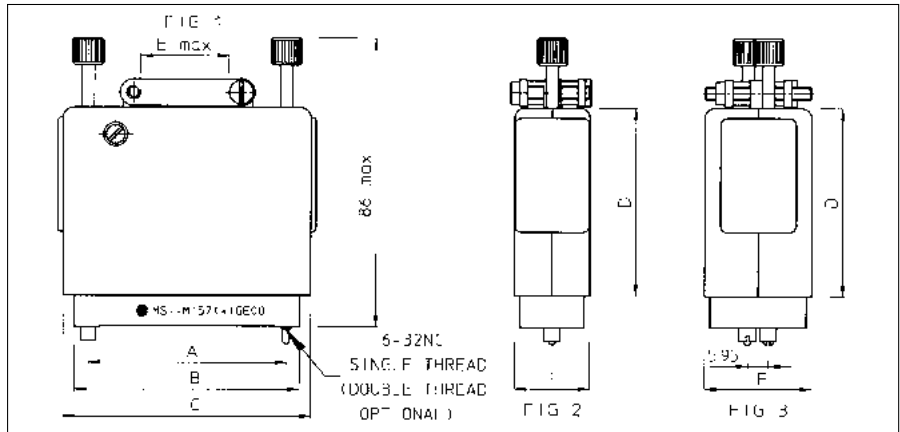


## MS34 Cable connector with 1 piece metal suitcase hood (MS34--MEHM)



| Part number                    |  | Description   |
|--------------------------------|--|---|
| Plug version for male contacts | Receptacle version for female contacts |   |
| MS34PMEHM                      | MS34RMEHM                              | Anodised hood, plastic strain relief and turnable hardware.                         |
| MS34PMSEHM                     | MS34RMSEHM                             | Shielded version with nickel plated hood, metal strain relief and turnable hardware |

## Cable connector with Alu die cast hood (MS-M157GE00)

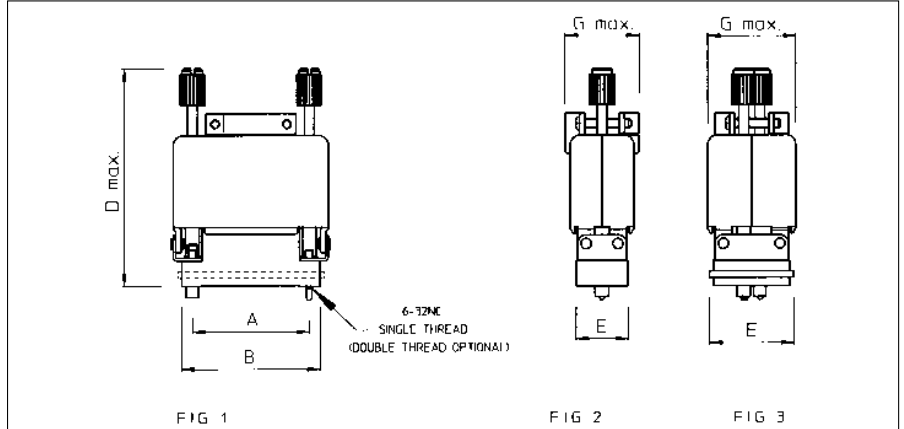


| Connector size | Part number                    |  | A     | B     | C    | D    | E max. | F    | Fig. |
|----------------|--------------------------------|--|-------|-------|------|------|--------|------|------|
|                | Plug version for male contacts | Receptacle version for female contacts |       |       |      |      |        |      |      |
| 50             | MS50PM157GE00                  | MS50RM157GE00                          | 57.95 | 65.85 | 73.0 | 56.0 | 20.0   | 22.2 | 1-2  |
| 75             | MS75PM157GE00                  | MS75RM157GE00                          | 57.95 | 65.85 | 73.0 | 56.0 | 25.0   | 31.2 | 1-3  |

# MS-M - Hyfen rectangular

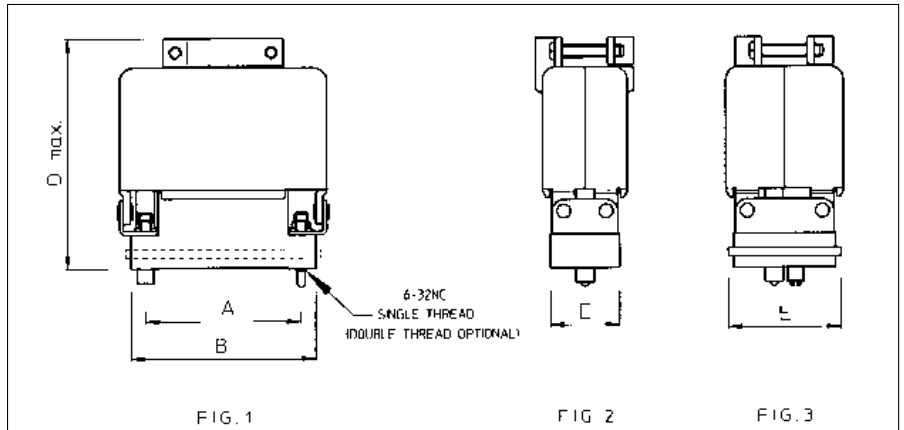


## Cable connector with die cast hood and turnable jackscrew hardware (MS—MJD10)



| Connector size | Part number                    |                                    | A     | B     | C    | D max | E    | G max | Fig. |
|----------------|--------------------------------|------------------------------------|-------|-------|------|-------|------|-------|------|
|                | Plug version for male contacts | Receptacle version female contacts |       |       |      |       |      |       |      |
| 20             | MS20PMJD10                     | MS20RMJD10                         | 31.75 | 39.65 | 44.3 | 71    | 11.7 | 22    | 1-2  |
| 26             | MS26PMJD10                     | MS26RMJD10                         | 33.3  | 41.3  |      |       | 15   |       |      |
| 34             | MS34PMJD10                     | MS34RMJD10                         | 42.8  | 50.8  | 61.5 | 80    | 19.1 | 26.5  |      |
| 42             | MS42PMJD10                     | MS42RMJD10                         | 50.55 | 58.65 |      |       | 22.1 |       |      |
| 50             | MS50PMJD10                     | MS50RMJD10                         | 57.95 | 69.1  | 69   | 31.2  | 33   | 1-3   |      |
| 75             | MS75PMJD10                     | MS75RMJD10                         |       |       | 72   |       |      |       |      |

## Cable connector with diecast hood and fixed jackscrew hardware (MS—MJD58)

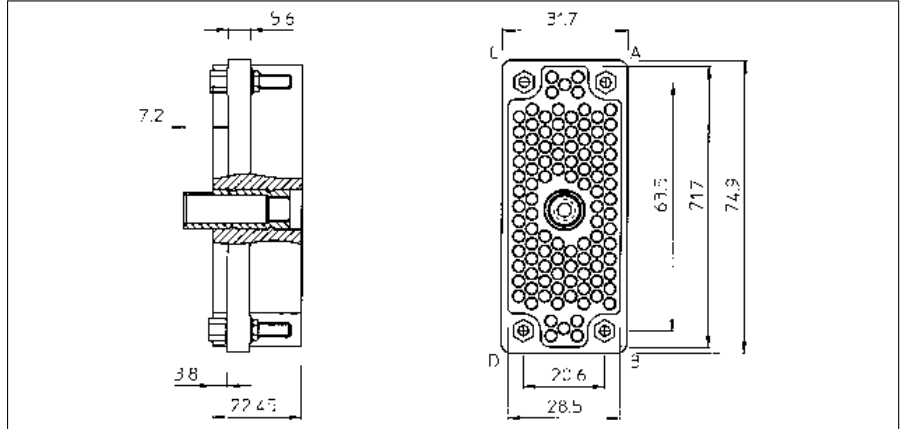


| Connector size | Part number                    |                                    | A     | B     | C    | D max | E    | G max | Fig. |
|----------------|--------------------------------|------------------------------------|-------|-------|------|-------|------|-------|------|
|                | Plug version for male contacts | Receptacle version female contacts |       |       |      |       |      |       |      |
| 20             | MS20PMJD58                     | MS20RMJD58                         | 31.75 | 39.65 | 44,3 | 55    | 11.7 | 22    | 1-2  |
| 34             | MS34PMJD58                     | MS34RMJD58                         | 42.8  | 50.8  | 61,5 |       | 19.1 |       |      |
| 42             | MS42PMJD58                     | MS42RMJD58                         | 50.55 | 58.65 | 69   | 63    | 22.1 | 27.5  |      |
| 50             | MS50PMJD58                     | MS50RMJD58                         | 57.95 | 69.1  |      |       | 72   |       |      |
| 75             | MS75PMJD58                     | MS75RMJD58                         |       |       |      | 65    |      |       | 1-3  |

# MS-M - Hyfen rectangular

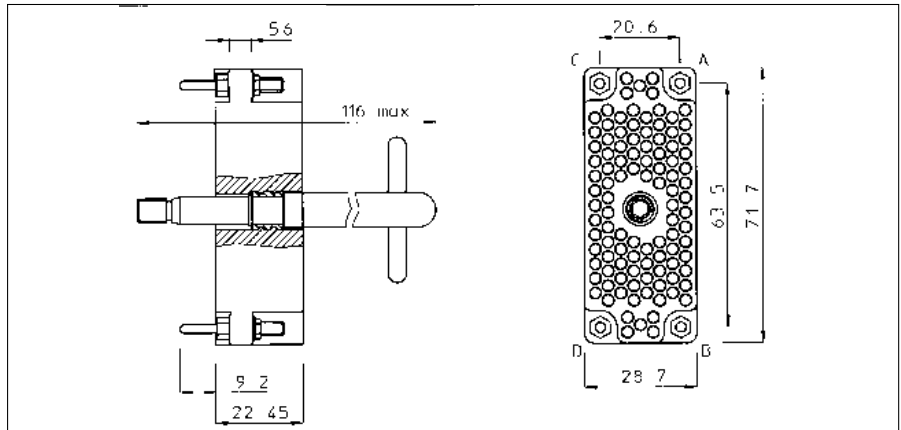
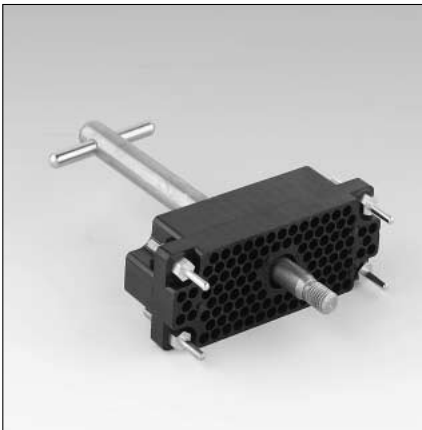


## MSD104 receptacle cable connector with central jackscrew (MSD104RM)



| Connector size | Part number | Orientation of guide sockets |
|----------------|-------------|------------------------------|
| 104            | MSD104RM489 | A, B, C, D                   |

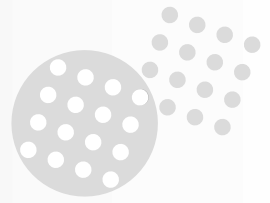
## MSD104 plug cable connector without cable clamp (MSD104PM)



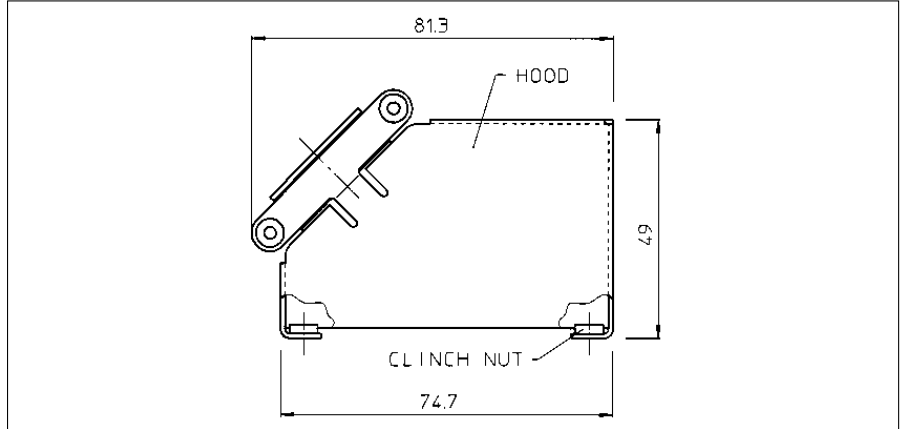
| Connector size | Part number | Orientation of guide sockets |
|----------------|-------------|------------------------------|
| 104            | MSD104PM494 | A, B, C, D                   |



# MS-M - Hyfen rectangular

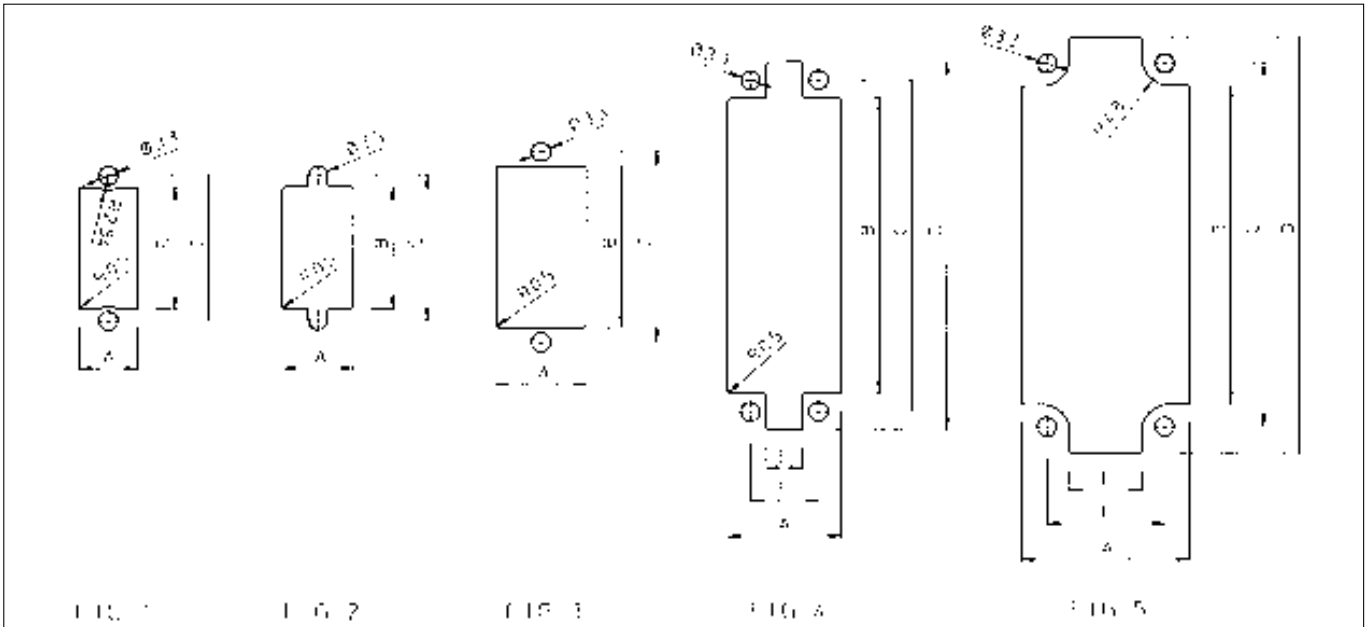


## MSD104 cable hood with cable clamp (MSH104M1)



| Connector size | Part number | Orientation of guide sockets   |
|----------------|-------------|--|
| 104            | MSH104M1    | A combination hood and cable clamp assembly which can be used on MSD104 receptacle or cable plug connector |

## MS-M panel cut-out dimensions



| Connector size | Fig.   | A     | B     | C     | D     | E     | F     |
|----------------|--------|-------|-------|-------|-------|-------|-------|
| 14             | 1 or 2 | 12.45 | 20.83 | 23.80 | ---   | ---   | ---   |
| 20             | 1 or 2 | 12.45 | 28.70 | 31.75 |       |       |       |
| 26             | 2 or 3 | 15.75 | 28.20 | 33.30 |       |       |       |
| 34             | 4      | 19.80 | 36.60 | 42.80 | 49.30 | 6.35  | 11.90 |
| 42             | 4      |       | 43.70 | 50.55 | 56.90 |       |       |
| 50             | 4      |       | 51.60 | 57.95 | 64.30 |       |       |
| 75             | 4      | 29.10 | 55.60 | 63.50 | 72.64 | 14.20 | 19.40 |
| 104            | 5      | 29.50 |       |       |       | 12.70 | 20.62 |

# V.35 - Interface connectors



## V.35 DTE/DCE Interface connectors

### Description

The Telecommunications Standardization Sector TSS V.35, formerly CCITT V.35 is the international standard termed "Data Transmission at 48 Kbps using 60-108 Khz Group-Band Circuits. It makes use of a 34 contact connection system specially designed to be used for DTE/DCE that interface to high speed digital carriers found in computer, modem and telecommunication industries.

Being part of the TRIM TRIO wide range of high reliable rectangular connectors, **MSO34** (boardmount connectors) and **MS34** (cable connectors) are in complete compliance to this specification.

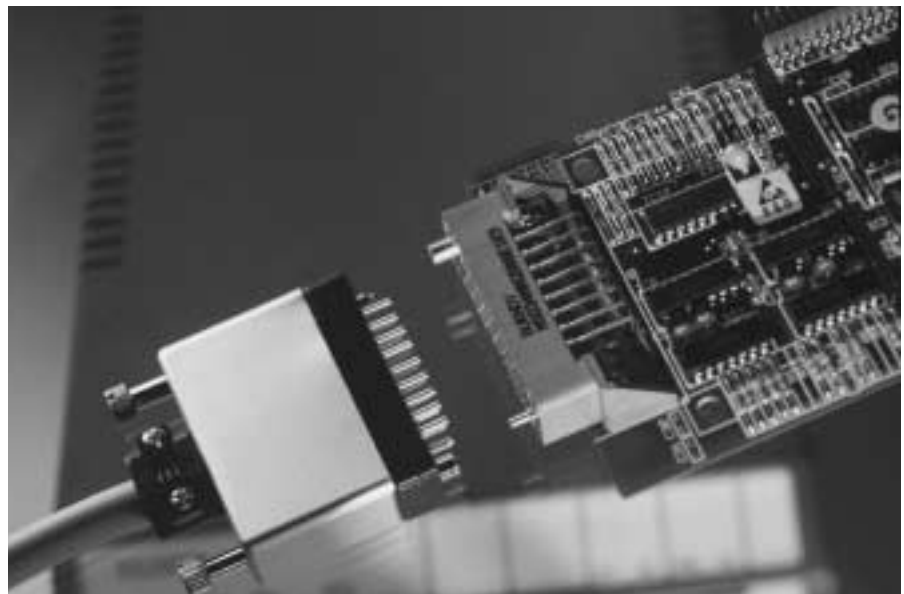
To meet this specification, insulators have been manufactured with 34 contact positions which can be loaded with the international accepted N $\infty$  16 TRIM TRIO .0625" (1.6mm) diameter contacts.

The boardmount connectors (**MSO34**) are available in straight and right angle versions equipped with either solid machined or stamped and formed male / female contacts.

The cable connectors (**MS34**) can be offered with a full range of hardware and accessories. Guiding pins and sockets, turnable jackscrew system, different cable hoods with strain relief, pin protection shrouds and discrimination pins make this connector range as complete as possible.

### Features and benefits

- Complete compliance with International Standards of ISO 2593 for TTS V.35 (formerly CCITT V.35) interfacing.
- In compliance with NFC 93426 - HE621-622 and MIL-C-28748 specifications.
- UL recognised.
- UL94-V0 rated thermoplastic
- Boardmount connectors supplied pre-assembled with dipsolder contacts in either:
  - Male or female contacts.
  - Machined or stamped and formed contacts
  - Straight or right angle
- Stamped and formed contacts have selective tin plating on solder tails, thus eliminating extra flux operations.
- Selective loading possible on request.
- Right angle version equipped with true position location wafer.
- Hold-down feature available



### Intermateability

All the references mentioned are perfectly intermateable, provided that 1 mated pair exists out of a plug half and a receptacle half.

Mated pairs can be made for following applications:

- Cable to cable
- Cable to panel
- Cable to straight or right-angled boardmount

*Technical data on MSO34  
PC-Boardmount connectors*

### Performance characteristics

|                        |                 |
|------------------------|-----------------|
| Operating temperature: | -55°C to +125°C |
| Current rating:        | 7.5 Amp         |
| Contact resistance:    | ≤ 3mΩ           |

|                        |                            |
|------------------------|----------------------------|
| Insulation resistance: | 5000 MΩ min.               |
| Test potential:        | 2000 VAC                   |
| Durability:            | 500 matings and unmatings. |

### Plating table

Plating for solid machined contacts:

**No digit (std)** = Min. 0.4μ Gold all over, over Nickel.

T = 3 - 5μ Tin all over

Plating for Stamped and formed contacts :

**K9 (std)** = Min. 0.4μ Gold in contact area, 3 - 5μ SnPb on solder tail.

T = 3 - 5μ Tin all over

### Construction

Material : Glass-reinforced thermoplastic  
 Flammability rating : UL94-V0  
 Polarising hardware: Brass nickel plated  
 Contacts: High conductive copper alloy

*Technical data on MS34  
Cable connectors*

### Performance characteristics

|                        |                            |
|------------------------|----------------------------|
| Operating temperature: | -55°C to +125°C            |
| Insulation resistance: | 5000 MΩ min.               |
| Test potential:        | 2000 VAC                   |
| Durability:            | 500 matings and unmatings. |
| Vibration resistance:  | Per MIL-STD 202 method 204 |
| Shock:                 | Per MIL-STD 202 method 207 |

### Contact accommodation

- "MS" Cable connectors accept Trim Trio removable snap-lock contacts (see contact section)
- Contacts to be ordered separately

### Construction

Connector body: Glass-reinforced Phenolic  
 Flammability rating : UL94-V0  
 Cable hoods: Aluminium alloy or Polyamide 6.6  
 Cable clamps: Stainless steel  
 Protection Shrouds: Aluminium alloy  
 Polarising hardware: Brass nickel plated

# V.35 - Interface connectors

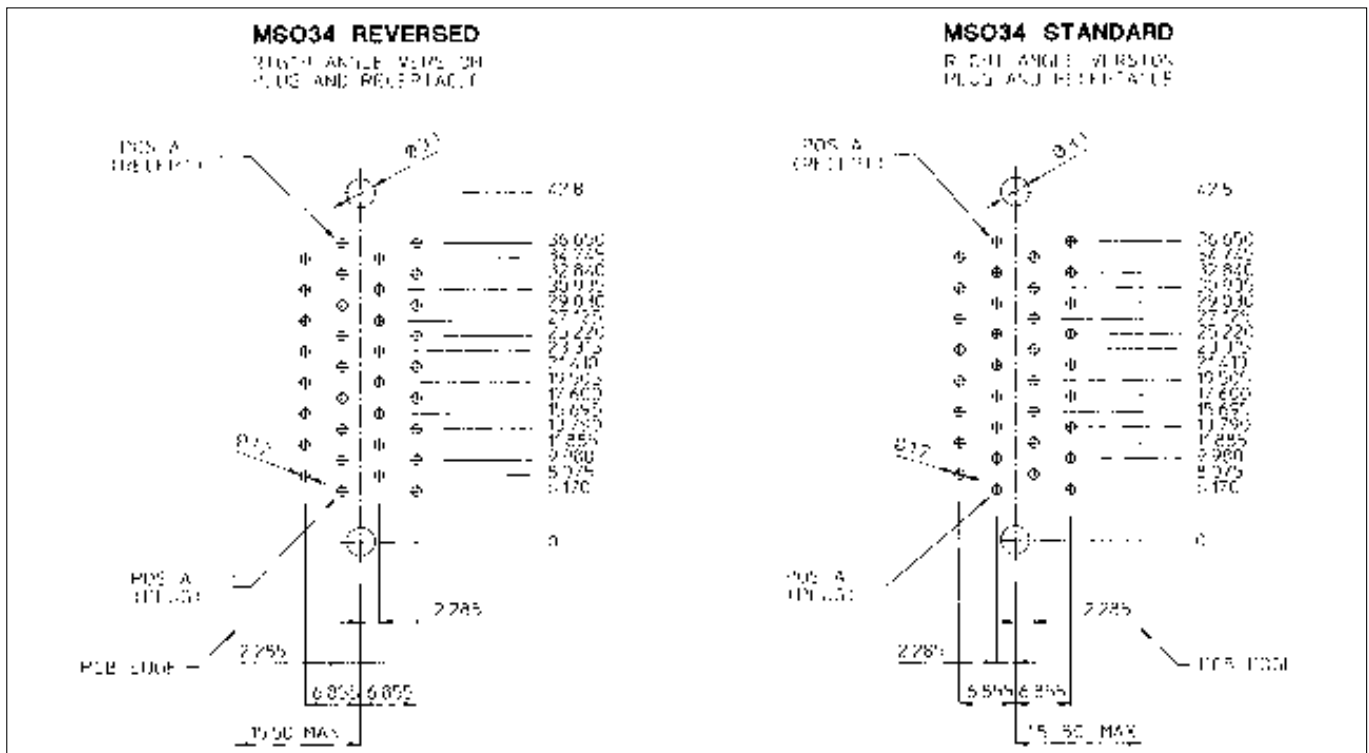


## How to order

|                     |   |    |   |   |   |    |     |    |
|---------------------|---|----|---|---|---|----|-----|----|
| Connector family    | MSO   | 34 | M | R | G | 58 | SE1 | K9 |
| Contact arrangement |   |    |   |   |   |    |     |    |
| N° 16 contacts      |   |    |   |   |   |    |     |    |
| Type of housing     | <b>P:</b> Plug body with male contacts<br><b>R:</b> Receptacle body with female contacts  |    |   |   |   |    |     |    |
| Contact termination | <b>K:</b> straight dipsolder<br><b>G:</b> Right angle dipsolder<br><b>H:</b> Reversed version   |    |   |   |   |    |     |    |
| Type of hardware    | <b>1:</b> Guide pin and socket<br><b>58:</b> Threaded jackscrew pin and socket  |    |   |   |   |    |     |    |
| Design variation    | <b>E1:</b> Solid machined contacts<br><b>SE1:</b> Stamped and formed contacts<br><b>SL1:</b> Metal bracket<br><b>SEH1:</b> Hold down rivets |    |   |   |   |    |     |    |
| Plating indication  |   |    |   |   |   |    |     |    |

## MS034 recommended drilling hole pattern

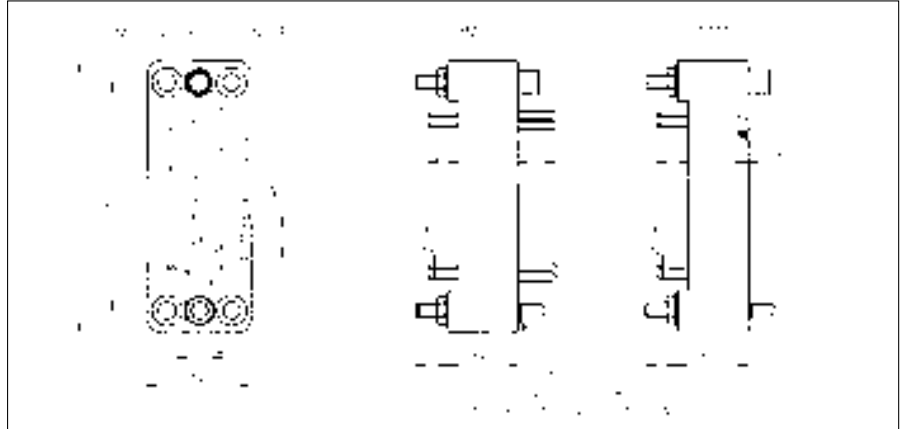
### Size 34



# V.35 - Interface connectors



## MSO34 Straight boardmount connectors



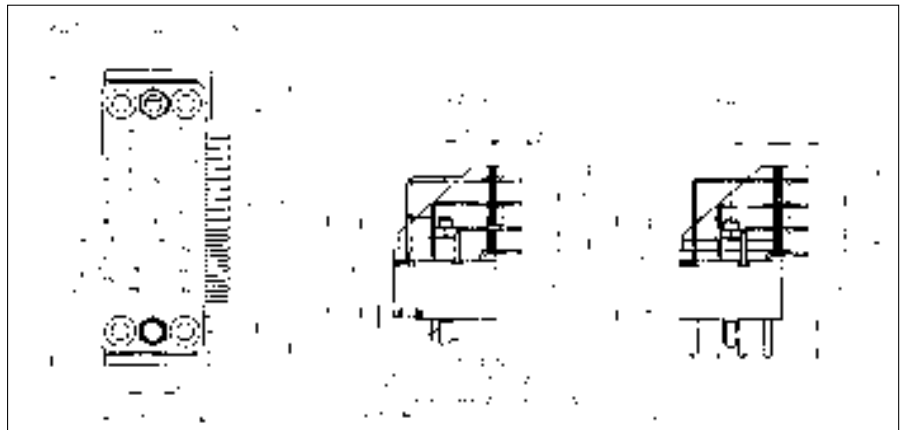
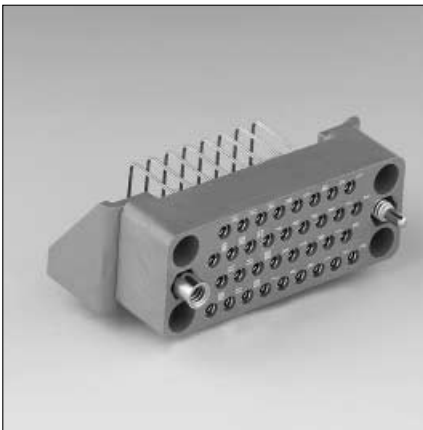
| Part number                          |  | Description   |
|--------------------------------------|--|---|
| Version with solid machined contacts | Version with stamped and formed contacts |   |
| MSO34MPK1E1                          | MSO34MPK1SE1K9                           | Guide pin, guide socket and male contacts           |
| MSO34MRK1E1                          | MSO34MRK1SE1K9                           | Guide pin, guide socket and female contacts         |
| MSO34MPK58E1                         | MSO34MPK58SE1K9                          | Jackscrew pin, jackscrew socket and male contacts   |
| MSO34MRK58E1                         | MSO34MRK58SE1K9                          | Jackscrew pin, jackscrew socket and female contacts |

For other platings: See plating table

Other solder tail lengths on request

Selective loading on request

## MSO34 Right-angled boardmount connectors



| Part number                          |  | Description   |
|--------------------------------------|--|---|
| Version with solid machined contacts | Version with stamped and formed contacts |   |
| MSO34MPG1E(*)1                       | MSO34MPG1SE(*)1K9                        | Guide pin, guide socket and male contacts           |
| MSO34MRG1E(*)1                       | MSO34MRG1SE(*)1K9                        | Guide pin, guide socket and female contacts         |
| MSO34MPG58E(*)1                      | MSO34MPG58SE(*)1K9                       | Jackscrew pin, jackscrew socket and male contacts   |
| MSO34MRG58E(*)1                      | MSO34MRG58SE(*)1K9                       | Jackscrew pin, jackscrew socket and female contacts |

For other platings: See plating table

Other solder tail lengths on request

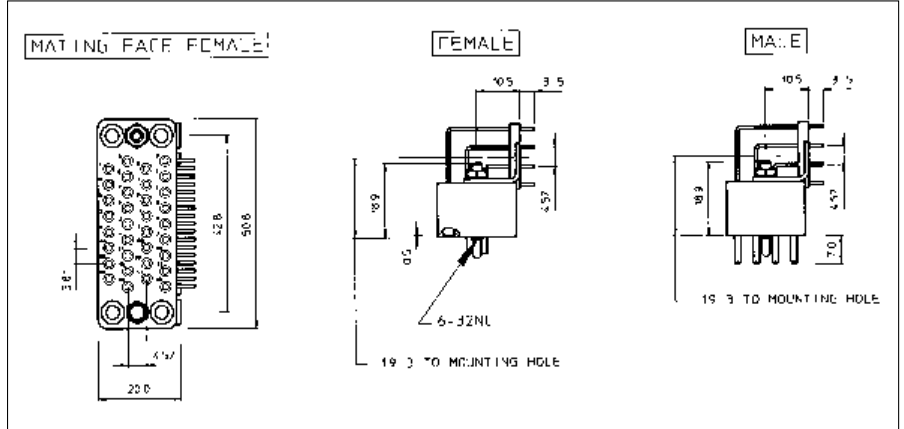
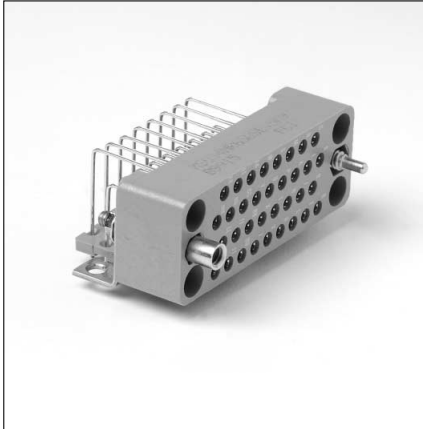
Selective loading on request

(\*) Complete part number with "H" for connector with hold down rivets

# V.35 - Interface connectors



## MSO34 Right-angled boardmount connectors – Standard version with metal brackets



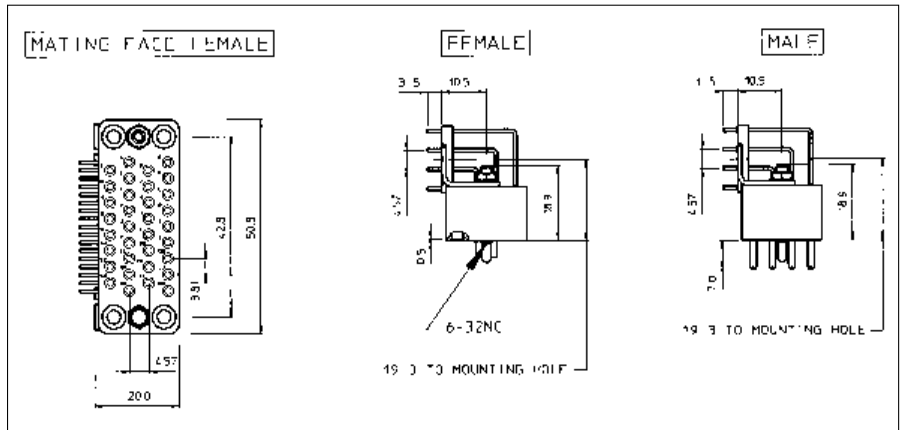
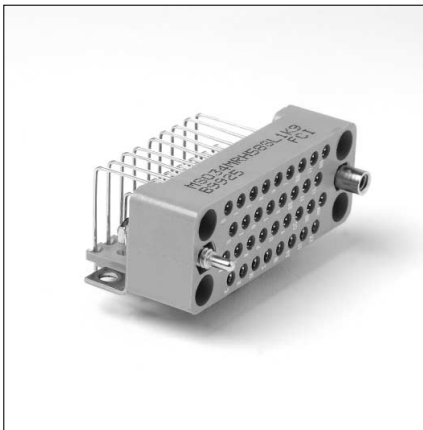
| Part number<br>Version with<br>stamped and formed contacts | Description   |
|--|---|
| MSO34MPG1SL1K9   | Guide pin, guide socket and male contacts           |
| MSO34MRG1SL1K9   | Guide pin, guide socket and female contacts         |
| MSO34MPG58SL1K9  | Jackscrew pin, jackscrew socket and male contacts   |
| MSO34MRG58SL1K9  | Jackscrew pin, jackscrew socket and female contacts |

For other platings: See plating table

Other solder tail lengths on request

Selective loading on request

## MSO34 Right-angled boardmount connectors – Reversed version with metal brackets



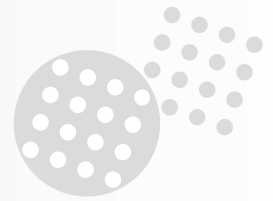
| Part number<br>Version with<br>stamped and formed contacts | Description   |
|--|---|
| MSO34MPH1SL1K9   | Guide pin, guide socket and male contacts           |
| MSO34MRH1SL1K9   | Guide pin, guide socket and female contacts         |
| MSO34MPH58SL1K9  | Jackscrew pin, jackscrew socket and male contacts   |
| MSO34MRH58SL1K9  | Jackscrew pin, jackscrew socket and female contacts |

For other platings: See plating table

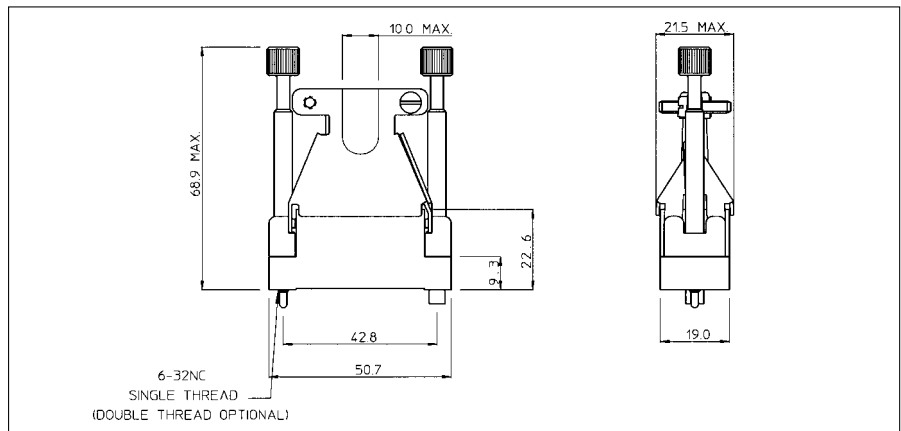
Other solder tail lengths on request

Selective loading on request

# V.35 - Interface connectors



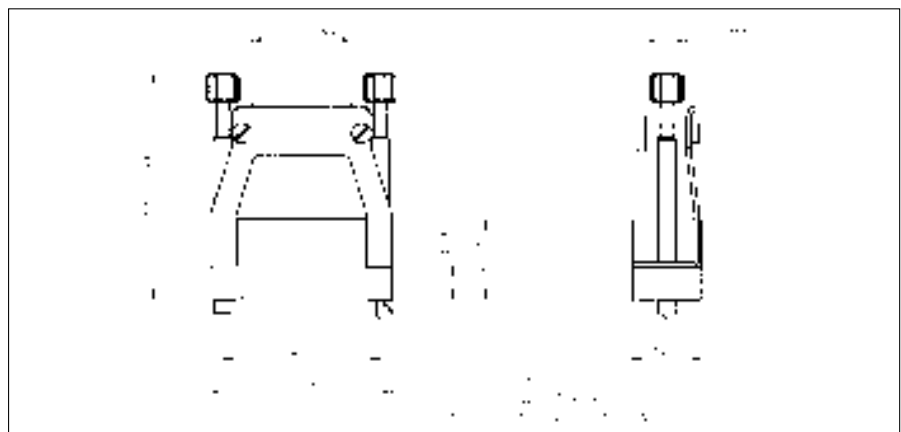
## MS34 Cable connectors with metal butterfly hood



| Part number                |                              | Description  |
|----------------------------|------------------------------|--|
| Version with male contacts | Version with female contacts |  |
| MS34PM120(*)GE00           | MS34RM120(*)GE00             | Guide pin, guide socket and butterfly hood.                                  |
| MS34PM140(*)GE00           | MS34RM140(*)GE00             | Jackscrew pin , jackscrew socket and butterfly hood.                         |
| MS34PM124(*)GE00           | MS34RM124(*)GE00             | Turnable jackscrew pin, turnable jackscrew socket and butterfly hood.        |
| MS34PM1(*)GE00             | MS34RM1(*)GE00               | Guide pin and guide socket. No strain relief hood                            |
| MS34PM58(*)GE00            | MS34RM58(*)GE00              | Jackscrew pin and jackscrew socket. No strain relief hood.                   |
| MS34PM007(*)GE00           | MS34RM007(*)GE00             | Turnable jackscrew pin and turnable jackscrew socket. No strain relief hood. |

(\*) Complete catalogue number with " S " for connector with protective shroud.

## MS34 Cable connectors with cable clamp



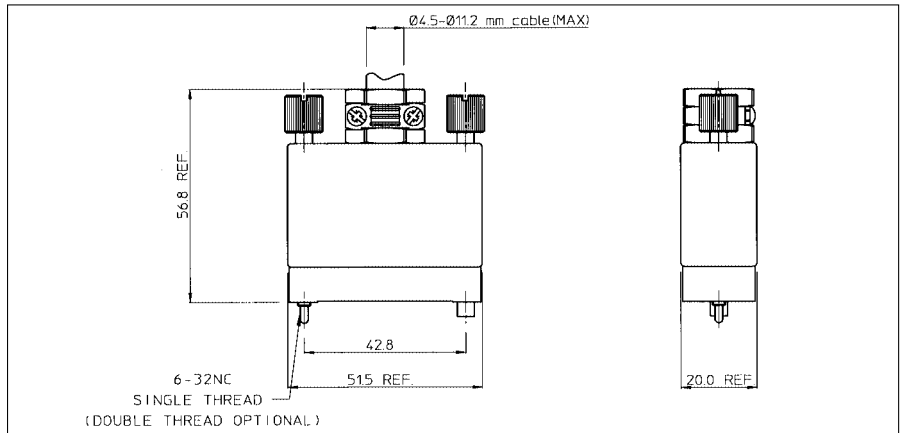
| Part number                |                              | Description  |
|----------------------------|------------------------------|--|
| Version with male contacts | Version with female contacts |  |
| MS34PM117(*)GE00           | MS34RM117(*)GE00             | Guide pin, guide socket and cable clamp                            |
| MS34PM127(*)GE00           | MS34RM127(*)GE00             | Jackscrew pin, jackscrew socket and cable clamp                    |
| MS34PM107(*)GE10           | MS34RM107(*)GE10             | Turnable jackscrew pin, turnable jackscrew socket and cable clamp. |

(\*) Complete catalogue number with "S" for connector with protective shroud.

# V.35 - Interface connectors



## MS34 Cable connectors with metal suitcase hood

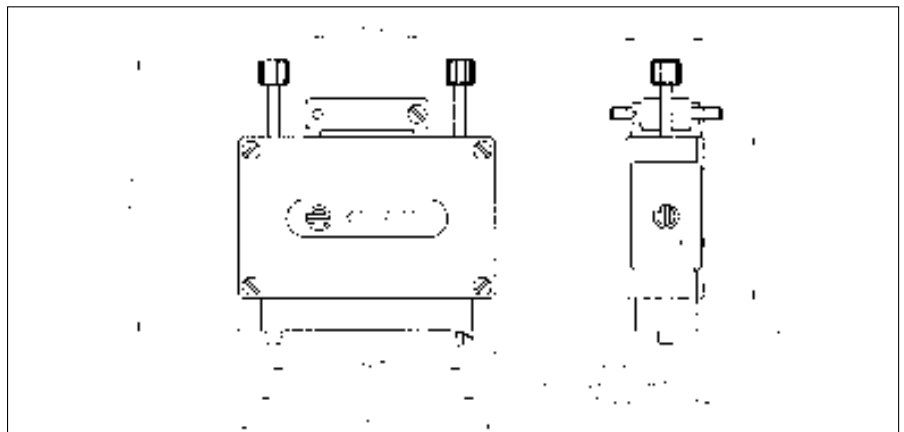


| Part number                |                              | Description  |
|----------------------------|------------------------------|--|
| Version with male contacts | Version with female contacts |  |
| MS34PMEHM(*)               | MS34RMEHM(*)                 | Anodised hood, plastic strain relief and turnable hardware.                          |
| MS34PMSEHM(*)              | MS34RMSEHM(*)                | Shielded version with nickel plated hood, metal strain relief and turnable hardware. |

(\*) Complete catalogue number with "S" for connector with protective shroud.

V.35

## MS34 Cable connectors with plastic suitcase hood



| Part number                |                              | Description  |
|----------------------------|------------------------------|--|
| Version with male contacts | Version with female contacts |  |
| MS34PMEH2(*)               | MS34RMEH2(*)                 | Guide pin, guide socket and plastic suitcase hood.                           |
| MS34PMEH3(*)               | MS34RMEH3(*)                 | Jackscrew pin, jackscrew socket and plastic suitcase hood.                   |
| MS34PMEH0(*)               | MS34RMEH0(*)                 | Turnable jackscrew pin, turnable jackscrew socket and plastic suitcase hood. |

(\*) Complete catalogue number with "S" for connector with protective shroud.

# MSG - rectangular



## High performance Low profile rectangular MSG connectors

### Description

MSG Series connectors is a 59 position low profile, compact design rectangular I/O connector.

MSG has been developed for industrial control equipments which require a easy handling and high density connector.

In addition to its panel mount version, a PCB mount version has been especially designed to fit 19 inch Euro-rack system.



### Features and benefits

- Connectors supplied pre-assembled.
- Available in 59 positions only.
- PCB mount version fully equipped with male contacts. Selective contact loading optional.
- Accessories : polarizing screws (receptacle)  
polarizing plate (plug)  
dust cap (plug)

### Performance characteristics

|                        |                            |
|------------------------|----------------------------|
| Operating temperature: | -55°C to +85°C             |
| Insulation resistance: | 5000 MΩ min.               |
| Test potential:        | 2000 VAC                   |
| Durability:            | 500 matings and unmatings. |
| Vibration              | Per JIS-C STD 0040         |
| Salt Spray:            | Per JIS-C STD 0023         |

### Construction

|                       |                           |
|-----------------------|---------------------------|
| Connector Material :  | Glass filled thermoplast  |
| Flammability rating : | UL94-V0                   |
| Hoods, skirts :       | Steel, nickel plated      |
| Cable clamps:         | Steel, nickel plated      |
| Guiding hardware:     | Stainless steel           |
| Contacts receptacle : | Copper alloy (Au over Ni) |

### Contact accommodation

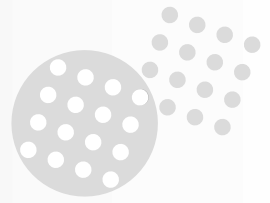
- “MSG” Rectangular connectors accept Trim-Trio removable RM/RC contacts (see contact section)
- For the plug connector and the panel mount receptacle, contacts have to be ordered separately.

### How to order

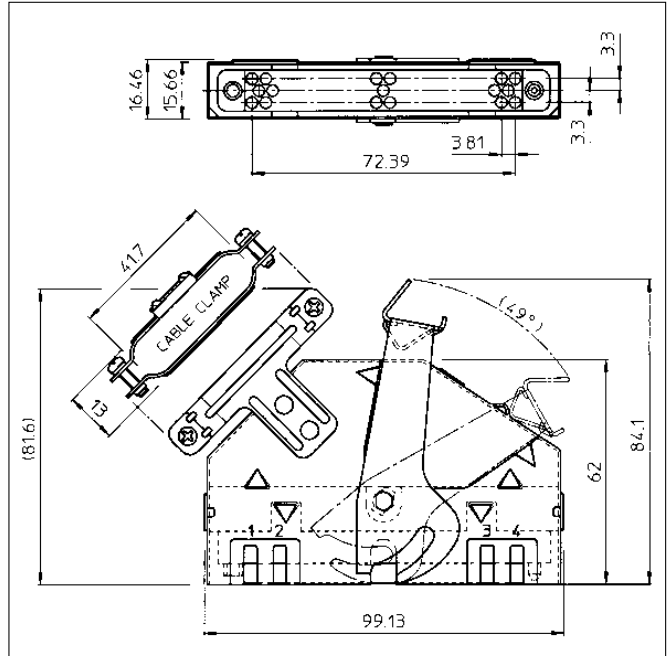
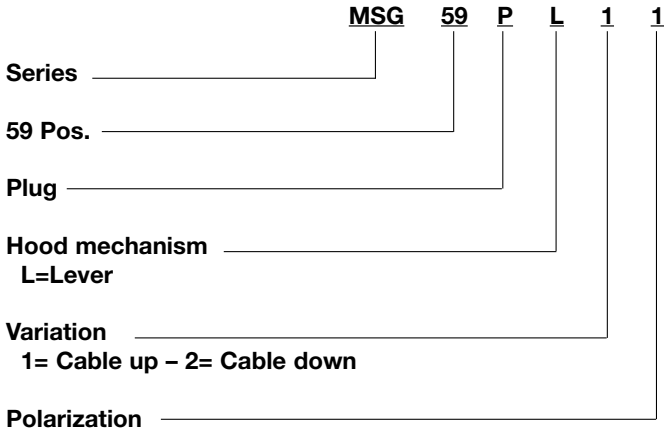
| Part number  | Description                                     |
|--------------|---|
| MSG59P-L11   | Plug for cable up                               |
| MSG59P-L21   | Plug for cable down                             |
| MSG59R-PL110 | Panel mount receptacle                          |
| MSG59R-RL111 | Right angle PCB mount receptacle without flange |
| MSG59R-FL111 | Right angle PCB mount receptacle with flange    |
| MSG-PK1      | Polarizing plate                                |
| MSG-PK2      | Polarizing screw                                |
| MSG59R-FC    | Dust cap  |



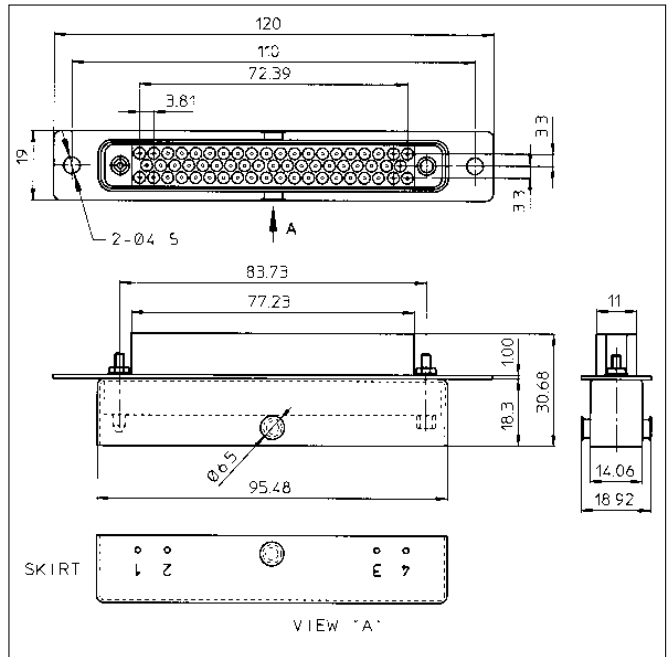
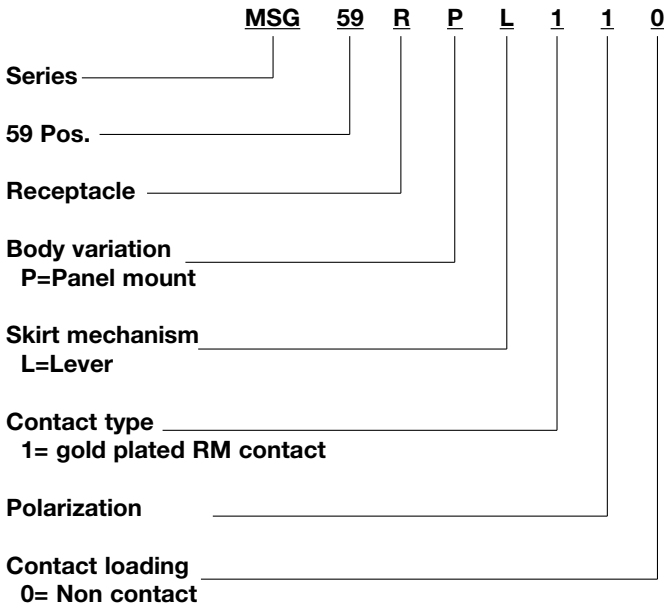
# MSG - rectangular



## Plug connector with metal hood



## Panel mount Receptacle connector

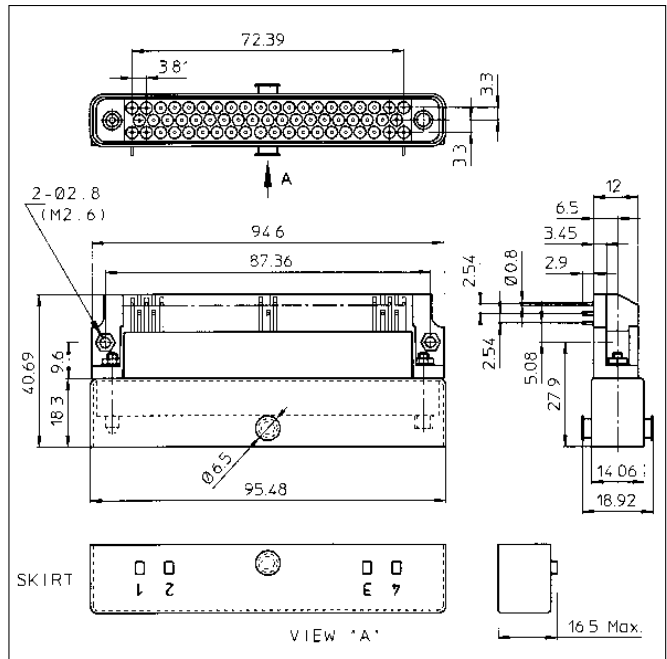
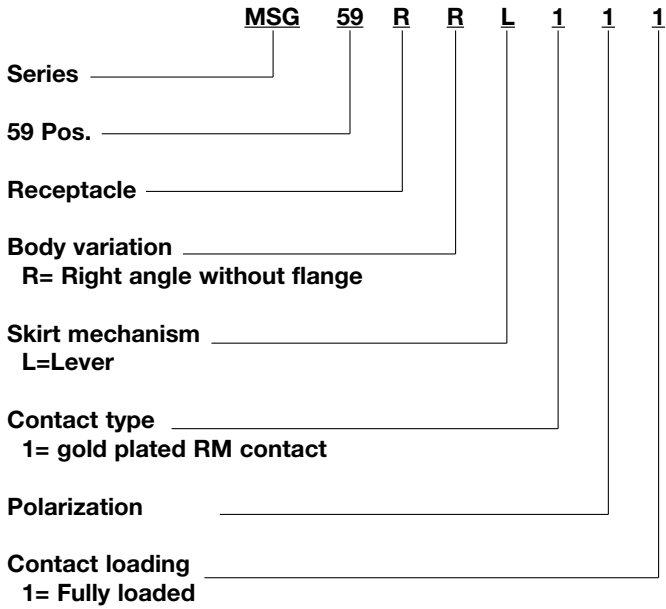


MSG

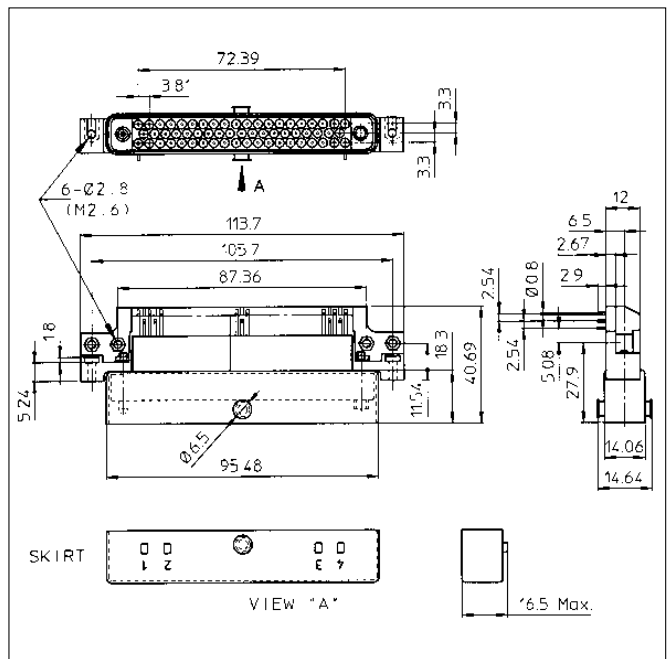
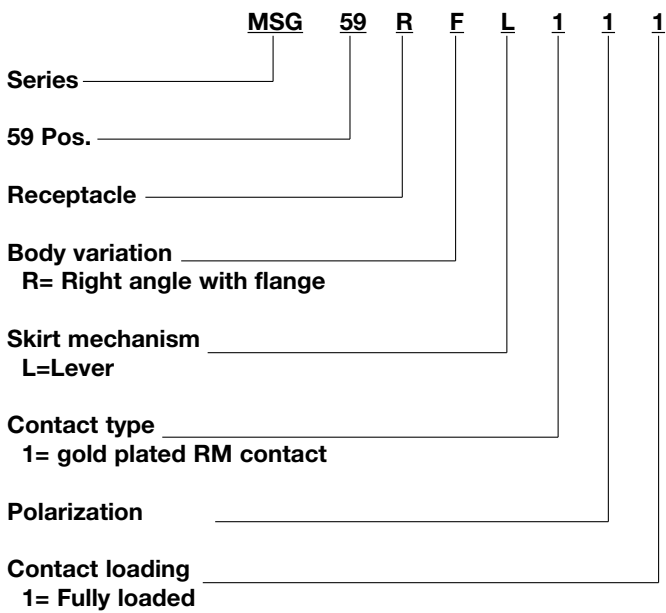
# MSG - rectangular



## Right angle PCB mount receptacle without flange



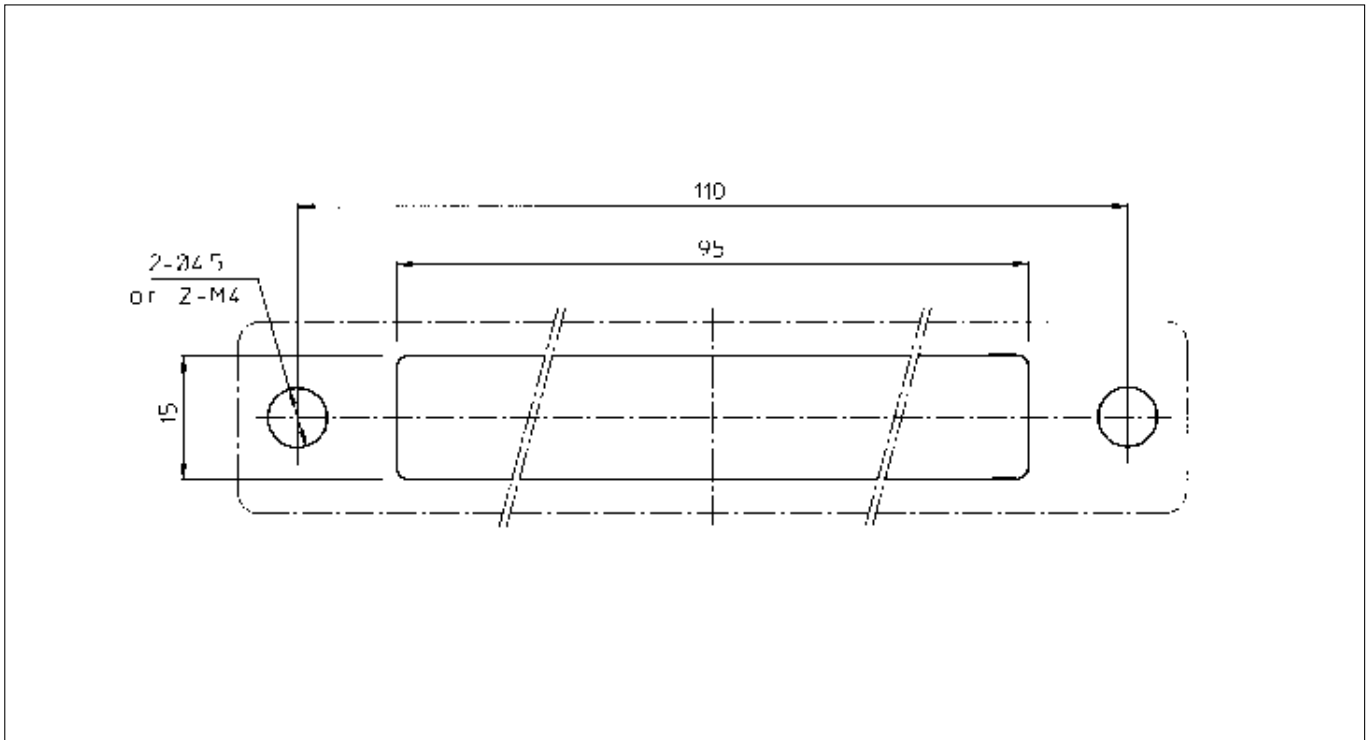
## Right angle PCB mount receptacle with flange



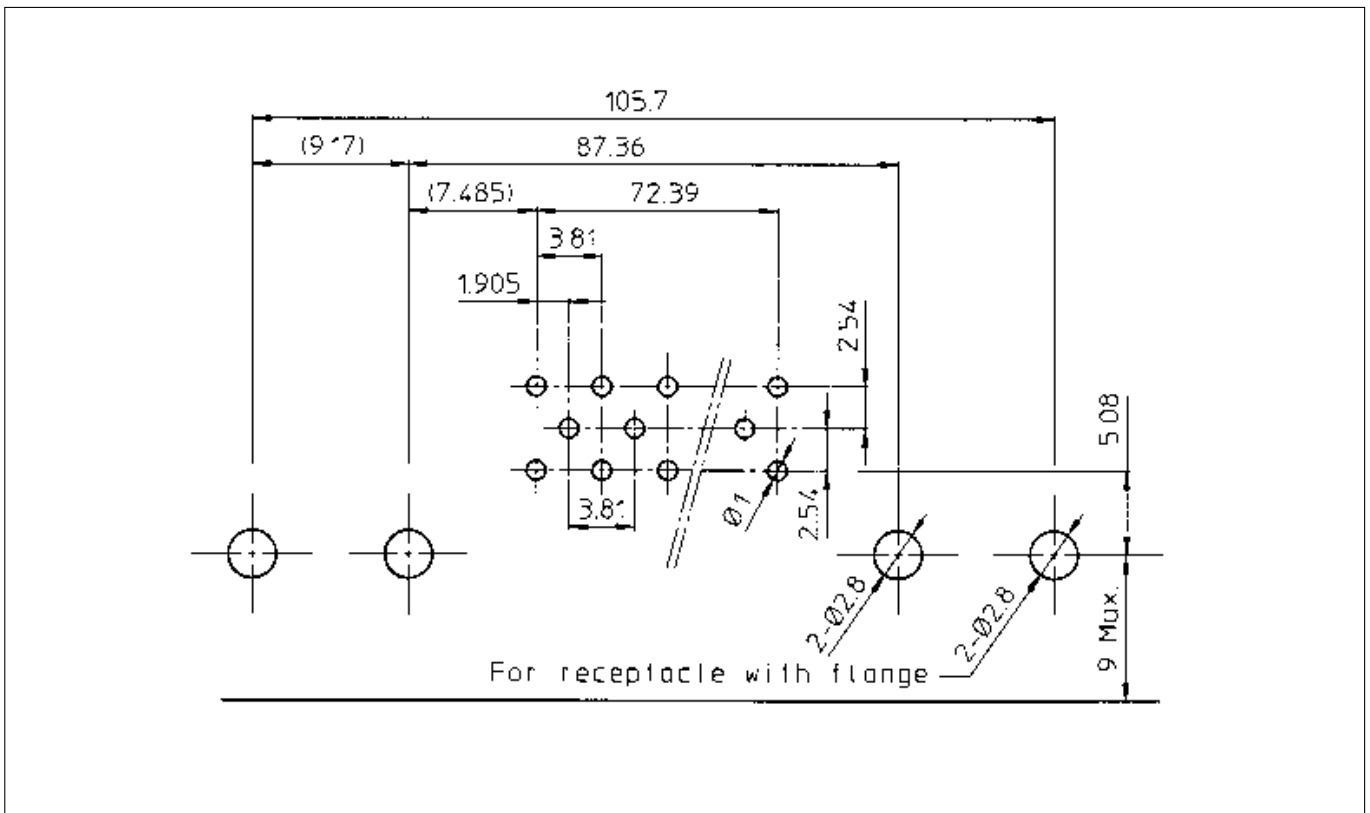
# MSG - rectangular



MSG recommended panel cut pattern (for panel mount receptacle, front mounting)



MSG recommended drilling hole pattern (for PCB right angle receptacle with flange)



MSG



## Qikmate panel and cable connectors

### Description

The versatile “SMS” Qikmate panel and cable connectors are a highly cost-effective system approach to solving the constant demand for more cost effective interconnection techniques.

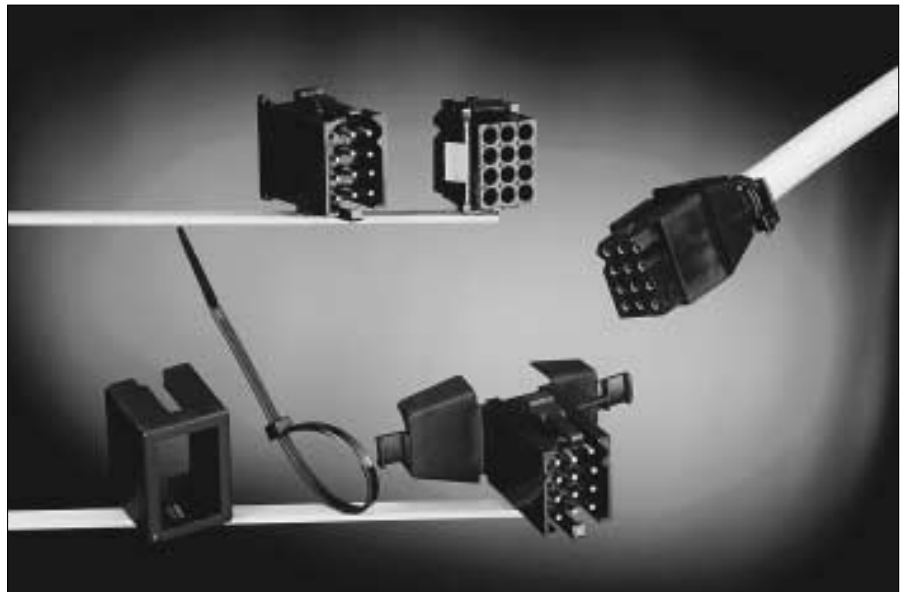
It is a range of multiway connectors using N° 16 TRIM TRIO .0625” (1.6mm) diameter contacts and available in 10 contact arrangements from 2 to 36 positions. Having no additional hardware, Panel receptacle connectors snap and lock into panel cutouts and cable plugs quick connect and disconnect with positive retention locks.

Cable plug connectors also feature pin-protection skirts, positive polarisation and can be supplied with or without integrated strain relief hoods.

Cable receptacle connectors (only with integrated strain relief hoods) are developed to mate with cable plug connectors thus offering solutions for cable to cable applications.

### Features and benefits

- Available in 10 contact arrangements.
- Self mountable panel receptacle with positive housing retention.
- Cable plugs with retaining latches for positive locking.
- Cable plug has pin protection skirt to prevent damage of male contacts
- Positive polarization keys prevent mismatching.
- Cable plug and receptacle have integrated strain relief hood which can take a wide range of cables.
- Cable plug and receptacle have discrimination cavities in between contact cavities, thus offering discrimination without contact loss.



### Performance characteristics

|                        |                            |
|------------------------|----------------------------|
| Operating temperature: | -55°C to +105°C            |
| Insulation resistance: | 5000 MΩ min.               |
| Test potential:        | 2000 VAC                   |
| Durability:            | 500 matings and unmatings. |

### Construction

|                       |               |
|-----------------------|---------------|
| Material :            | Polyamide 6.6 |
| Flammability rating : | UL94-V2       |

### Contact accommodation

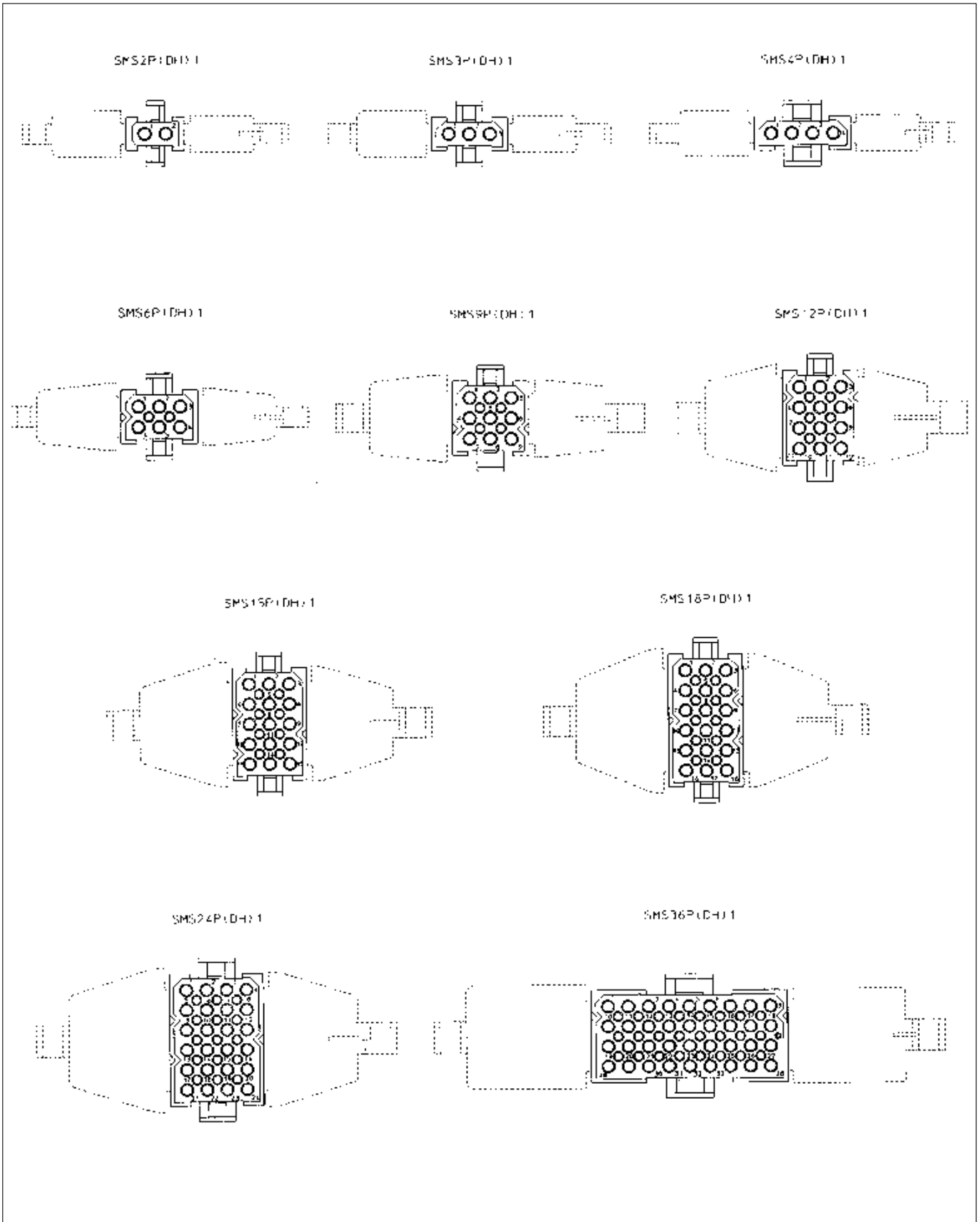
- “SMS” Qikmate connectors accept Trim-Trio removable snap-lock contacts (see contact section)
- Contacts to be ordered separately.

## How to order

|                            |   |          |            |
|----------------------------|---|----------|------------|
| <b>Connector family</b>    | SMS<br>SMS  | 12<br>12 | PDH1<br>P1 |
| <b>Contact arrangement</b> |   |          |            |
| <b>Body variation:</b>     | <b>R1:</b> Panel mount receptacle<br><b>P1:</b> Cable plug without strain relief hood<br><b>PDH1:</b> Cable plug with integrated strain relief hood<br><b>RDH1:</b> Cable receptacle with integrated strain relief hood |          |            |



## Contact arrangements for cable plug connectors (SMS--P1 and SMS--PDH1)

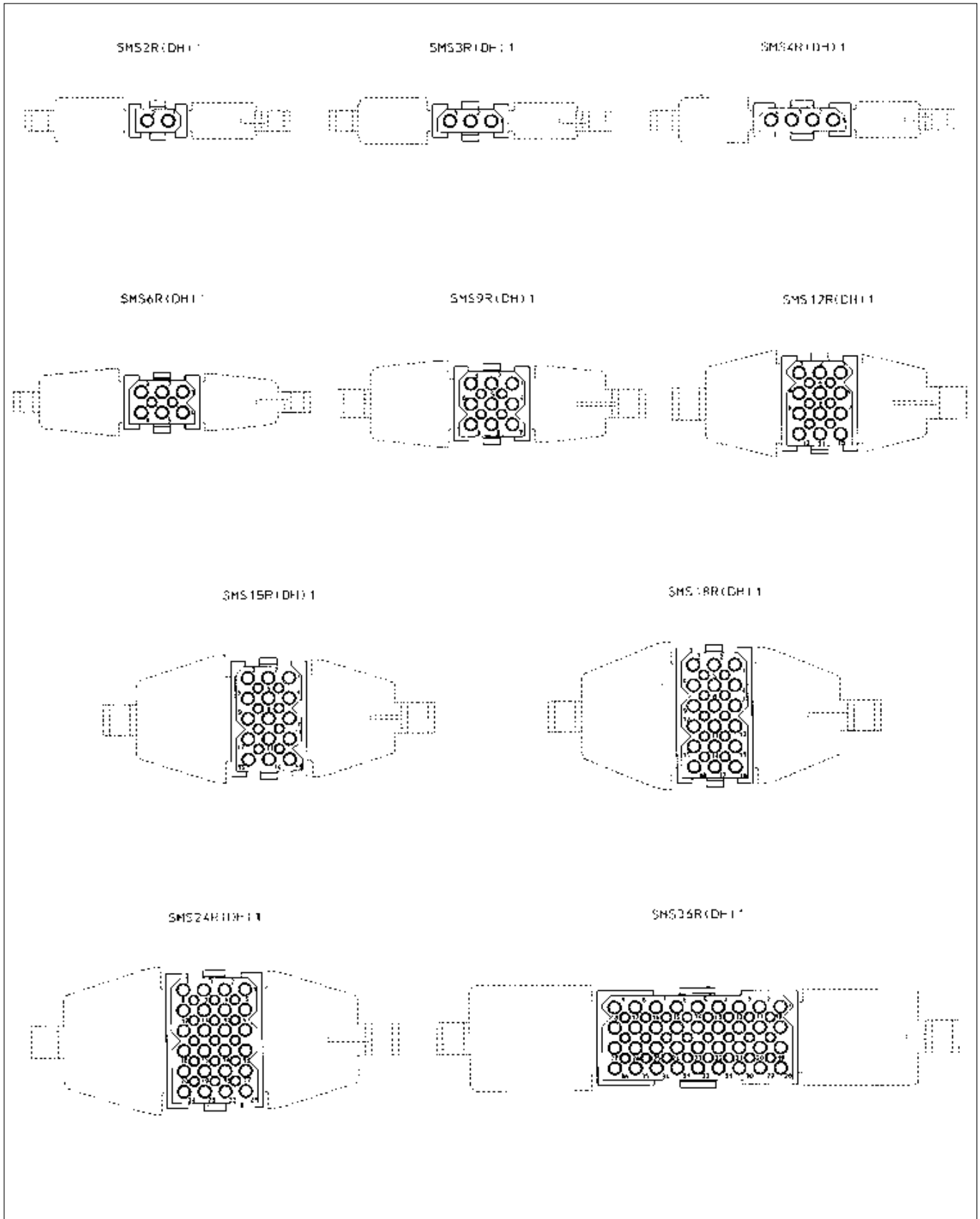


SMS

Contact identifications shown are for mating face. Contact identifications of wiring face are identical as shown on the receptacle arrangements



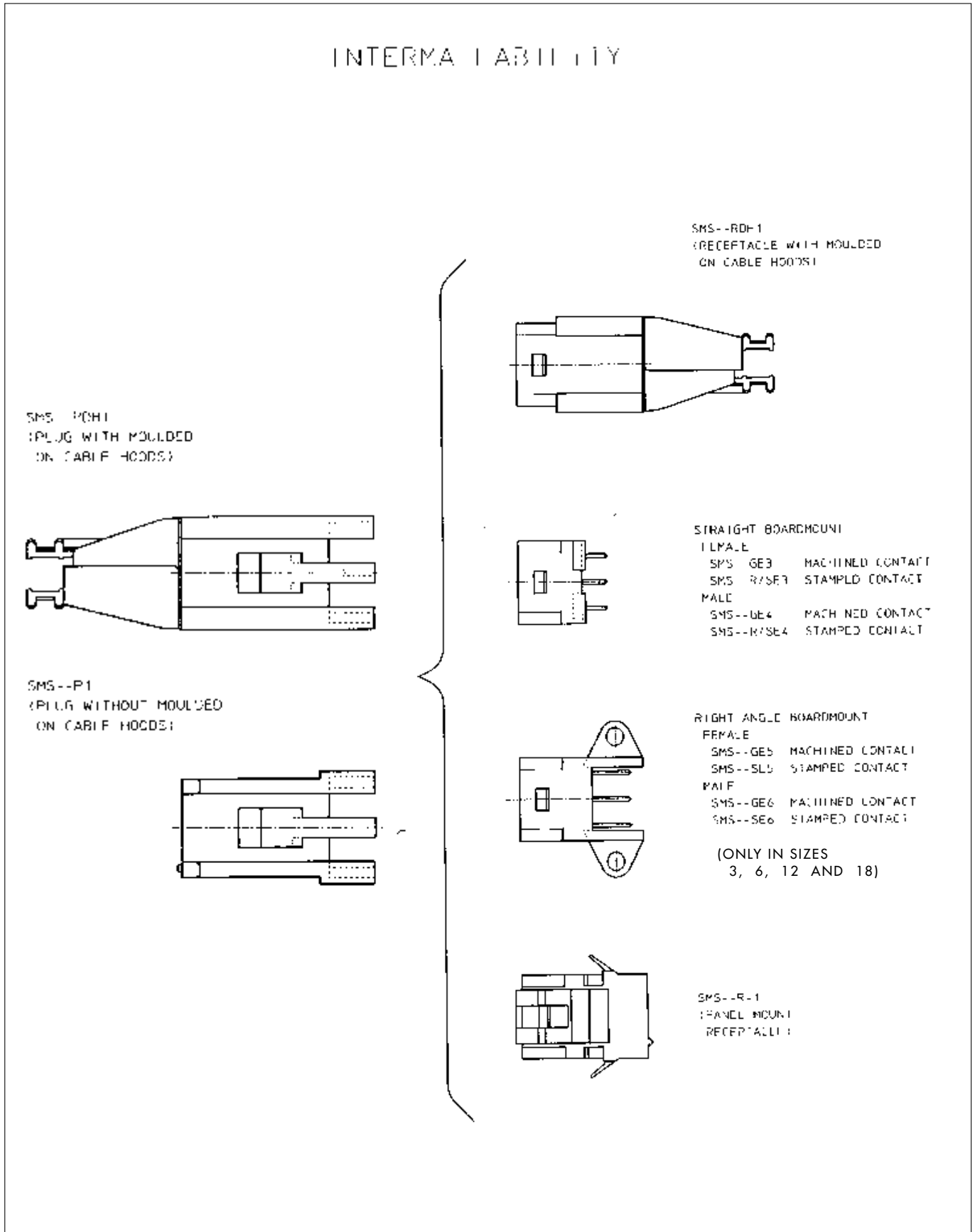
## Contact arrangements for cable and panel mount receptacle connectors (SMS--R1 and SMS--RDH1)



Contact identifications shown are for mating face. Contact identifications of wiring face are identical as shown on the plug arrangements

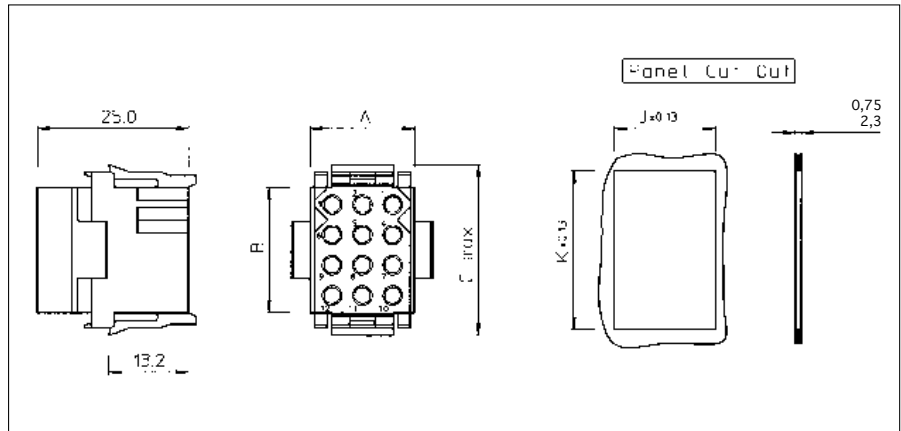
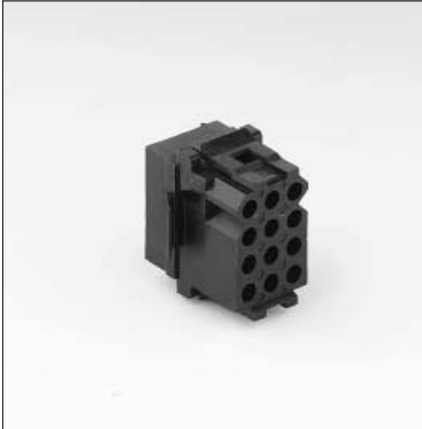


## SMS - Standard Qikmate intermateability chart



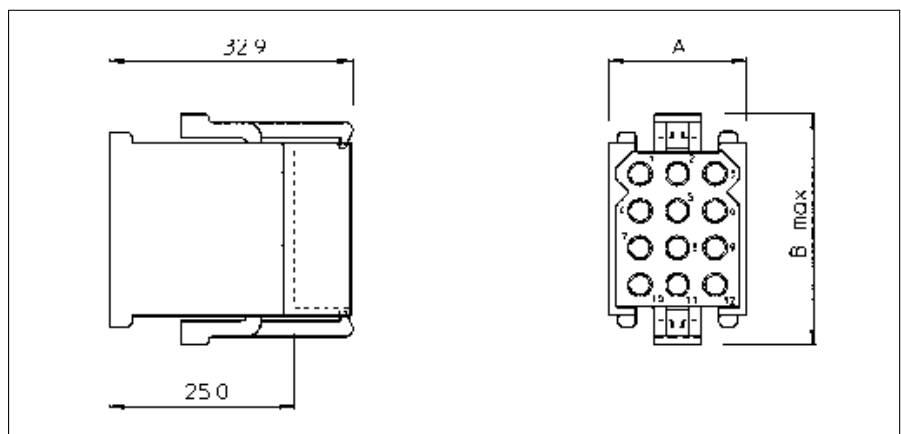


## Panel mount receptacle (SMS--R1)



| Part number | Number of contact pos. | A    | B    | C max. | J $\pm 0.13$ | K $\pm 0.13$ |
|-------------|------------------------|------|------|--------|--------------|--------------|
| SMS2R1      | 2                      | 11.0 | 5.8  | 15.2   | 11.4         | 11.6         |
| SMS3R1      | 3                      | 16.2 |      |        | 16.5         |              |
| SMS4R1      | 4                      | 21.2 |      |        | 21.7         |              |
| SMS6R1      | 6                      | 16.2 | 10.9 | 20.3   | 16.5         | 16.7         |
| SMS9R1      | 9                      |      | 16.0 | 25.4   | 16.7         | 21.6         |
| SMS12R1     | 12                     |      | 21.1 | 30.5   |              | 26.7         |
| SMS15R1     | 15                     |      | 26.2 | 35.6   |              | 31.8         |
| SMS18R1     | 18                     |      | 31.2 | 40.6   | 36.9         |              |
| SMS24R1     | 24                     | 21.2 | 21.1 | 30.5   | 21.7         | 26.7         |
| SMS36R1     | 36                     | 46.6 |      |        | 47.1         |              |

## Cable plug without strain relief hood (SMS--P1)

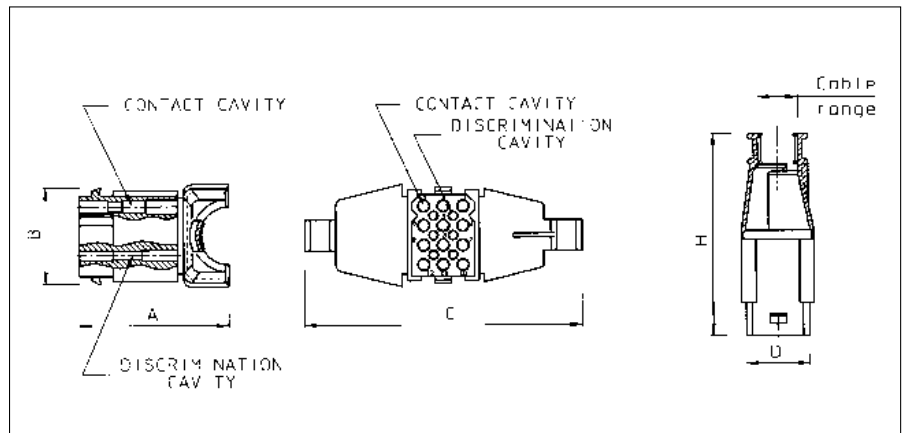


| Part number | Number of contact pos. | A    | C max. |
|-------------|------------------------|------|--------|
| SMS2P1      | 2                      | 15.0 | 17.8   |
| SMS3P1      | 3                      | 18.6 |        |
| SMS4P1      | 4                      | 23.7 |        |
| SMS6P1      | 6                      | 18.6 | 22.9   |
| SMS9P1      | 9                      |      | 27.9   |
| SMS12P1     | 12                     |      | 33.0   |
| SMS15P1     | 15                     |      | 38.1   |
| SMS18P1     | 18                     |      | 43.2   |
| SMS24P1     | 24                     | 23.7 | 33.0   |
| SMS36P1     | 36                     | 49.1 |        |



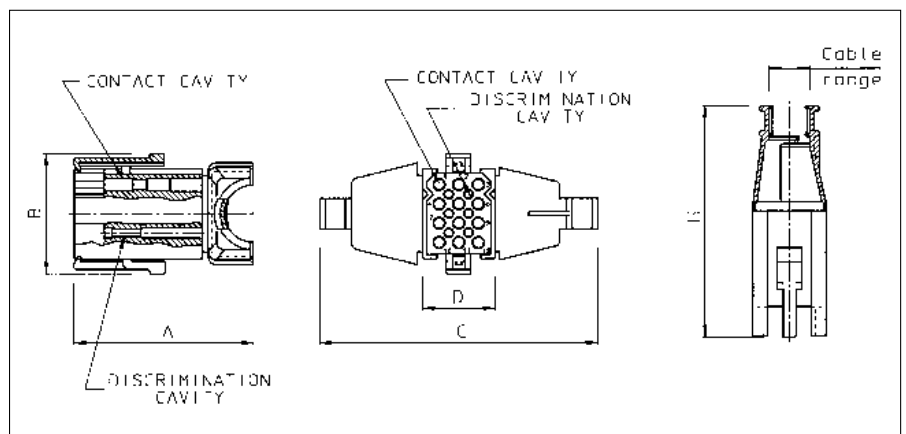


## Cable receptacle with integrated strain relief hood ( SMS--RDH1 )



| Part number | Number of contact pos. | Number of discrimination pos. | A    | B    | C     | D    | H     | Cable range | Recommended unipolar cable type |
|-------------|------------------------|-------------------------------|------|------|-------|------|-------|-------------|---------------------------------|
| SMS2RDH1    | 2                      | 0                             | 31.6 | 9.9  | 64.8  | 11.1 | 49.2  | 0.5 - 8.4   | TF4D                            |
| SMS3RDH1    | 3                      | 0                             | 35.1 |      | 69.0  | 16.2 |       | 0.8 - 7.3   |                                 |
| SMS4RDH1    | 4                      | 0                             | 38.2 |      | 74.4  | 21.2 |       | 1.5 - 10.0  |                                 |
| SMS6RDH1    | 6                      | 2                             | 34.6 | 15.0 | 72.6  | 16.2 | 50.9  | 1.7 - 9.2   | TF5D                            |
| SMS9RDH1    | 9                      | 4                             | 35.8 | 20.0 | 75.3  |      | 52.2  | 3.9 - 14.3  |                                 |
| SMS12RDH1   | 12                     | 6                             | 38.1 | 25.1 | 72.0  |      | 52.7  | 4.0 - 15.0  |                                 |
| SMS15RDH1   | 15                     | 8                             | 35.9 | 30.2 | 81.3  | 21.2 | 55.2  | 5.0 - 16.2  | TF5D                            |
| SMS18RDH1   | 18                     | 10                            | 36.1 | 35.3 | 90.4  |      | 57.2  | 5.8 - 20.3  |                                 |
| SMS24RDH1   | 24                     | 15                            | 39.7 | 25.1 |       |      | 128.0 | 63.3        |                                 |
| SMS36RDH1   | 36                     | 24                            | 54.6 | 25.1 | 128.0 | 46.6 | 63.3  | 8.8 - 24.5  |                                 |

## Cable plug with integrated strain relief hood ( SMS--PDH1 )

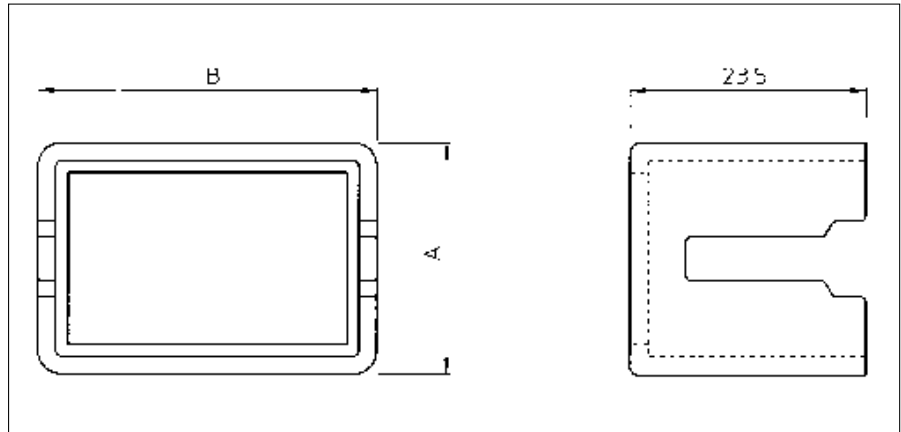


| Part number | Number of contact pos. | Number of discrimination pos. | A    | B    | C     | D    | H     | Cable range | Recommended unipolar cable type |
|-------------|------------------------|-------------------------------|------|------|-------|------|-------|-------------|---------------------------------|
| SMS2PDH1    | 2                      | 0                             | 39.5 | 16.4 | 64.8  | 14.1 | 57.1  | 0.5 - 8.4   | TF4D                            |
| SMS3PDH1    | 3                      | 0                             | 43.0 |      | 69.0  | 18.6 |       | 0.8 - 7.3   |                                 |
| SMS4PDH1    | 4                      | 0                             | 46.1 |      | 74.4  | 23.7 |       | 1.5 - 10.0  |                                 |
| SMS6PDH1    | 6                      | 2                             | 42.5 | 21.5 | 72.6  | 18.6 | 58.8  | 1.7 - 9.2   | TF5D                            |
| SMS9PDH1    | 9                      | 4                             | 43.7 | 26.7 | 75.3  |      | 60.1  | 3.9 - 14.3  |                                 |
| SMS12PDH1   | 12                     | 6                             | 46.0 | 31.7 | 72.0  |      | 60.6  | 4.0 - 15.0  |                                 |
| SMS15PDH1   | 15                     | 8                             | 43.8 | 36.7 | 81.3  | 23.7 | 63.1  | 5.0 - 16.2  | TF5D                            |
| SMS18PDH1   | 18                     | 10                            | 44.0 | 41.8 | 90.4  |      | 65.1  | 5.8 - 20.3  |                                 |
| SMS24PDH1   | 24                     | 15                            | 47.6 | 31.7 |       |      | 128.0 | 71.2        |                                 |
| SMS36PDH1   | 36                     | 24                            | 62.5 | 31.7 | 128.0 | 49.1 | 71.2  | 8.8 - 24.5  |                                 |



## Accessories for standard Qikmate connectors

### Pin protection shroud for panel mount receptacle (SMS--CSB1)



When pins are inserted into the panelmount receptacle half (SMS--R1) of the QIKMATE connector, an optional pin protection shroud can be installed.

The shroud is mounted at the same time as the receptacle by holding the shroud against the mating side of the panel with both cutouts lined up. The receptacle is then inserted in place, trapping the shroud between the receptacle and panel. The use of the pin protection shroud reduces the allowable thickness of the panel from 2.3 to 1.6 mm max.

| Part number | Number of contact positions | A    | B    |
|-------------|-----------------------------|------|------|
| SMS2CSB1    | 2                           | 19.8 | 18.8 |
| SMS3CSB1    | 3                           | 23.4 |      |
| SMS4CSB1    | 4                           | 28.4 |      |
| SMS6CSB1    | 6                           | 23.4 | 23.9 |
| SMS9CSB1    | 9                           |      | 29.0 |
| SMS12CSB1   | 12                          |      | 34.0 |
| SMS15CSB1   | 15                          |      | 39.1 |
| SMS18CSB1   | 18                          |      | 44.2 |
| SMS24CSB1   | 24                          | 28.4 |      |
| SMS36CSB1   | 36                          | 54.1 | 34.0 |

### Strain relief hoods (SMS—H1)



Separate strain relief hoods are available for all standard plugs SMS—P1.

The hoods consist of identical halves that snap into position on the plug and are secured in place with the cable tie drawn tightly around the cable entry collar.

Catalog numbers designate a complete hood (2 halves) SMS—H1

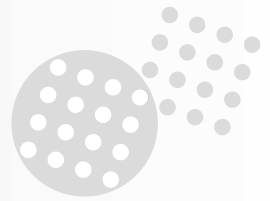
The cable tie is not included (TF4D – TF5D)

Two three and four position hoods are single piece units

### Discrimination pins

For discrimination pins on both standard Qikmate and Qikmate Pin Headers cable and boardmount: See accessories section.

# SMS - Boardmount Qikmate



## Qikmate PC-boardmount connectors

### Description

These PC boardmount connectors enable QIKMATE and preassembled TRIM TRIO contacts to be PC board mounted, using conventional solder production techniques. They will then mate and latch with the standard QIKMATE plugs. Straight boardmount QIKMATE is available in 10 insert arrangements from 2 to 36 positions. Right-angled boardmount QIKMATE is available in 3, 6, 12 and 18 positions. All boardmount connectors are supplied fully loaded with pin or socket contacts, either in solid machined or stamped and formed contacts. Stamped and formed contact have selective tin plating on the solder tails, thus eliminating flux operations.

### Features and benefits

- Straight versions available in 10 contact arrangements from 2 to 36 positions
- Right-angled versions available in 3, 6, 12 and 18 positions.
- All versions are available with:
  - Pin or socket contacts
  - Stamped and formed or solid machined contacts.
- Some boardmount connectors have discrimination cavities in between contact cavities, thus offering discrimination without contact loss.



### Performance characteristics

|                        |                            |
|------------------------|----------------------------|
| Operating temperature: | -55°C to +125°C            |
| Insulation resistance: | 5000 MΩ min.               |
| Test potential:        | 2000 VAC                   |
| Current rating:        | 5 Amp                      |
| Durability:            | 500 matings and unmatings. |

### Construction

|                 |                                  |
|-----------------|----------------------------------|
| Connector body: | Glass filled thermoplast UL94-V0 |
| Contacts:       | High conductive copper alloy     |

### Plating table

|  |
|--|
| Plating for solid machined contacts:   |
| <b>No digit (std)</b> = Min. 0.4μ Gold all over, over Nickel.                |
| T = 3 - 5μ Tin all over  |
| Plating for Stamped and formed contacts :                                    |
| <b>K9 (std)</b> = Min. 0.4μ Gold in contact area, 3 - 5μ Tin on solder tail. |
| T = 3 - 5μ Tin all over  |

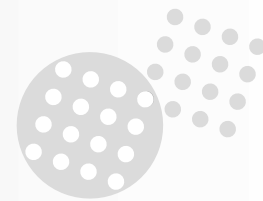
### Intermateability

- “SMS” Qikmate boardmount connectors with preassembled TRIM TRIO boardmount contacts are intermateable only with the “SMS” Qikmate cable plug connectors equipped with TRIM TRIO crimp type removable snap-lock contacts (see contact section)

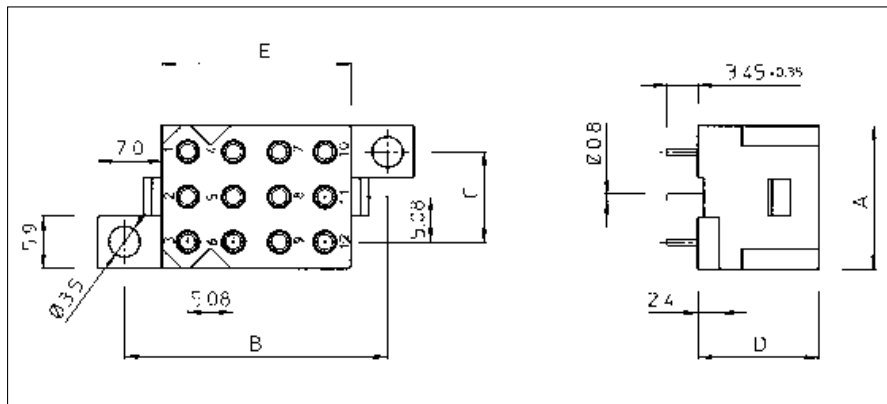
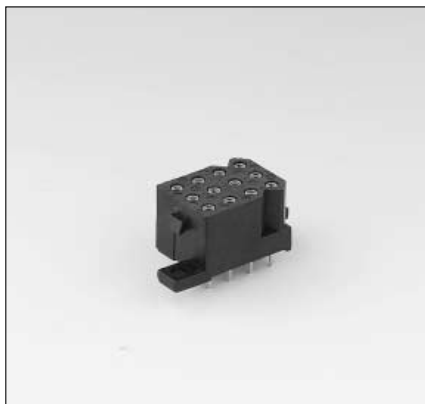
## How to order

|                     |  |          |          |        |         |
|---------------------|--|----------|----------|--------|---------|
| Connector family    | SMS<br>SMS   | 12<br>12 | GE<br>SE | 3<br>3 | -<br>K9 |
| Contact arrangement |  |          |          |        |         |
| Contact type:       | GE: Solid machined contacts<br>SE: Stamped and formed contacts   |          |          |        |         |
| Design variation:   | 3: Straight boardmount with female contacts<br>4: Straight boardmount with male contacts<br>5: Right angle boardmount with female contacts<br>6: Right angle boardmount with male contacts |          |          |        |         |
| Plating indication  |  |          |          |        |         |

# SMS - Boardmount Qikmate



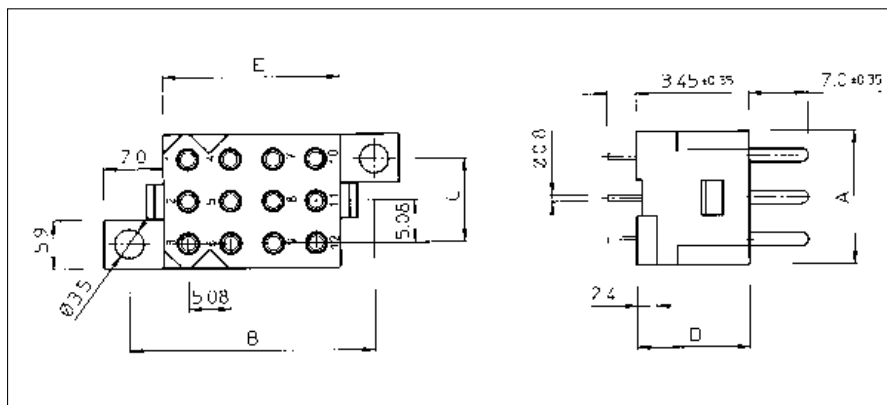
## Straight boardmount with female contacts (SMS--GE3 / SMS--SE3K9)



| Part number Solid machined contacts | Part number Stamped and formed contacts | Number of contact pos. | Number of discrimination pos. | A    | B    | C    | D    | E    |
|-------------------------------------|---|------------------------|-------------------------------|------|------|------|------|------|
| SMS2GE3                             | SMS2SE3K9                               | 2                      | 0                             | 11.0 | -    | 19.1 | 13.4 | 5.9  |
| SMS3GE3                             | SMS3SE3K9                               | 3                      | 0                             | 16.2 | 14.0 | 10.2 |      |      |
| SMS4GE3                             | SMS4SE3K9                               | 4                      | 0                             | 21.3 |      | 15.2 |      |      |
| SMS6GE3                             | SMS6SE3K9                               | 6                      | 0                             | 16.2 | 19.2 | 10.2 |      | 10.9 |
| SMS9GE3                             | SMS9SE3K9                               | 9                      | 4                             |      | 24.2 |      |      | 16.0 |
| SMS12GE3                            | SMS12SE3K9                              | 12                     | 0                             |      | 29.2 |      |      | 21.1 |
| SMS15GE3                            | SMS15SE3K9                              | 15                     | 8                             |      | 34.3 |      |      | 26.1 |
| SMS18GE3                            | SMS18SE3K9                              | 18                     | 10                            |      | 39.4 |      |      | 31.2 |
| SMS24GE3                            | SMS24SE3K9                              | 24                     | 0                             | 21.2 |      | 15.2 |      | 20.9 |
| SMS36GE3                            | SMS36SE3K9                              | 36                     | 0                             | 46.5 | 15.2 | 54.6 |      |      |

For other platings: see plating table

## Straight boardmount with male contacts (SMS--GE4 / SMS--SE4K9)



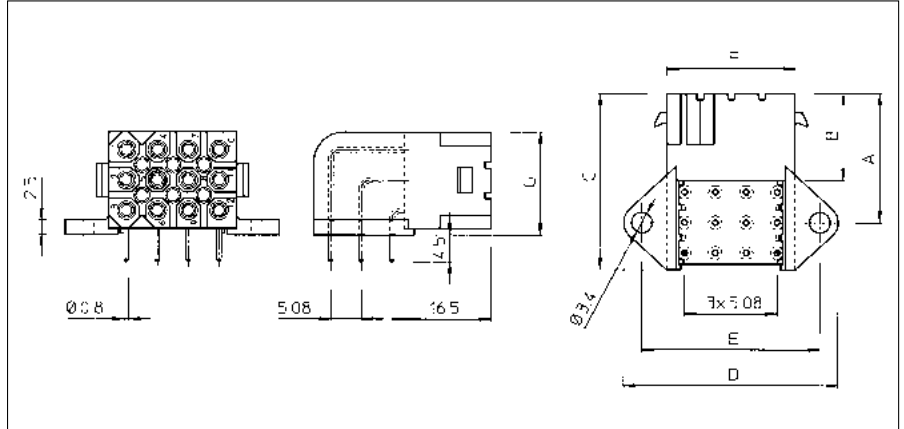
| Part number Solid machined contacts | Part number Stamped and formed contacts | Number of contact pos. | Number of discrimination pos. | A    | B    | C    | D    | E    |
|-------------------------------------|---|------------------------|-------------------------------|------|------|------|------|------|
| SMS2GE4                             | SMS2SE4K9                               | 2                      | 0                             | 11.1 | -    | 19.1 | 13.4 | 5.9  |
| SMS3GE4                             | SMS3SE4K9                               | 3                      | 0                             | 16.2 | 14.0 | 10.2 |      |      |
| SMS4GE4                             | SMS4SE4K9                               | 4                      | 0                             | 21.3 |      | 15.2 |      |      |
| SMS6GE4                             | SMS6SE4K9                               | 6                      | 0                             | 16.2 | 19.2 | 10.2 |      | 10.9 |
| SMS9GE4                             | SMS9SE4K9                               | 9                      | 4                             |      | 24.2 |      |      | 16.0 |
| SMS12GE4                            | SMS12SE4K9                              | 12                     | 0                             |      | 29.2 |      |      | 21.1 |
| SMS15GE4                            | SMS15SE4K9                              | 15                     | 8                             |      | 34.3 |      |      | 26.1 |
| SMS18GE4                            | SMS18SE4K9                              | 18                     | 10                            |      | 39.4 |      |      | 31.2 |
| SMS24GE4                            | SMS24SE4K9                              | 24                     | 0                             | 21.2 |      | 15.2 |      | 20.9 |
| SMS36GE4                            | SMS36SE4K9                              | 36                     | 0                             | 46.5 | 15.2 | 54.6 |      |      |

For other platings: see plating table

# SMS - Boardmount Qikmate



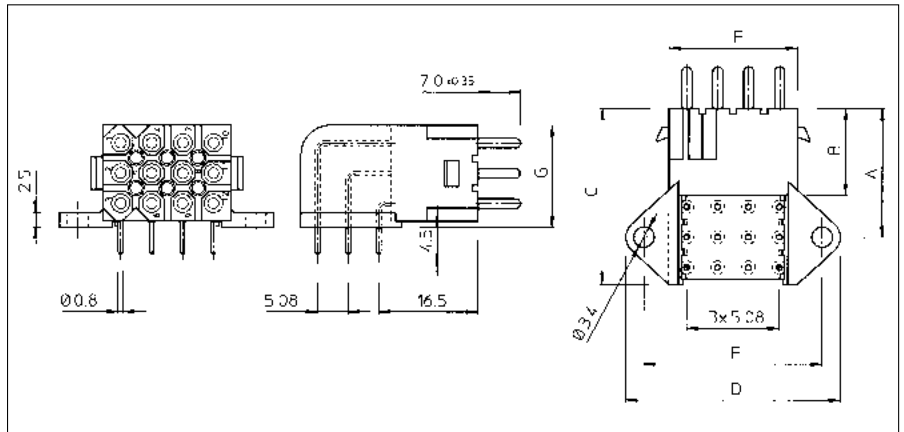
## Right angle boardmount with female contacts (SMS--GE5 / SMS--SE5K9)



| Part number<br>Solid machined<br>contacts | Part number<br>Stamped and<br>formed contacts | Number of<br>contact pos. | Number of<br>discrimination<br>pos. | A    | B    | C    | D    | E    | F    | G    |
|---|---|---------------------------|-------------------------------------|------|------|------|------|------|------|------|
| SMS3GE5                                   | SMS3SE5K9                                     | 3                         | 0                                   | 16.5 | 14.4 | 20.5 | 30.2 | 24.2 | 16.2 | 6.8  |
| SMS6GE5                                   | SMS6SE5K9                                     | 6                         | 0                                   | 19.0 |      | 24.5 | 35.2 | 29.2 | 21.2 | 11.9 |
| SMS12GE5                                  | SMS12SE5K9                                    | 12                        | 6                                   | 21.6 |      | 29.5 |      |      |      | 17.2 |
| SMS18GE5                                  | SMS18SE5K9                                    | 18                        | 10                                  |      |      | 45.4 | 39.4 | 31.2 |      |      |

For other platings: see plating table

## Right angle boardmount with male contacts (SMS--GE6 / SMS--SE6K9)



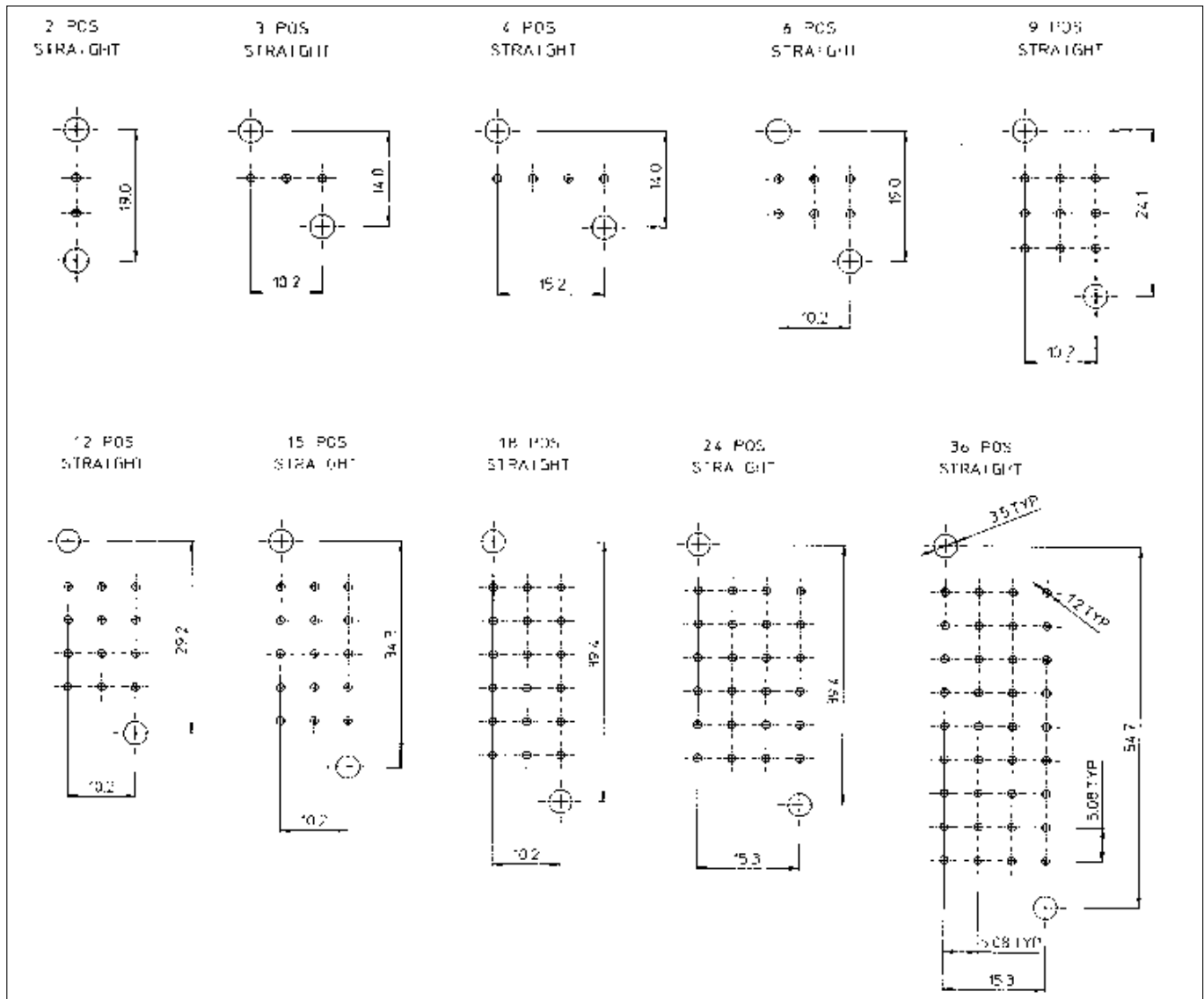
| Part number<br>Solid machined<br>contacts | Part number<br>Stamped and<br>formed contacts | Number of<br>contact pos. | Number of<br>discrimination<br>pos. | A    | B    | C    | D    | E    | F    | G    |
|---|---|---------------------------|-------------------------------------|------|------|------|------|------|------|------|
| SMS3GE6                                   | SMS3SE6K9                                     | 3                         | 0                                   | 16.5 | 14.4 | 20.5 | 30.2 | 24.2 | 16.2 | 6.8  |
| SMS6GE6                                   | SMS6SE6K9                                     | 6                         | 0                                   | 19.0 |      | 24.5 | 35.2 | 29.2 | 21.2 | 11.9 |
| SMS12GE6                                  | SMS12SE6K9                                    | 12                        | 6                                   | 21.6 |      | 29.5 |      |      |      | 17.2 |
| SMS18GE6                                  | SMS18SE6K9                                    | 18                        | 10                                  |      |      | 45.4 | 39.4 | 31.2 |      |      |

For other platings: see plating table

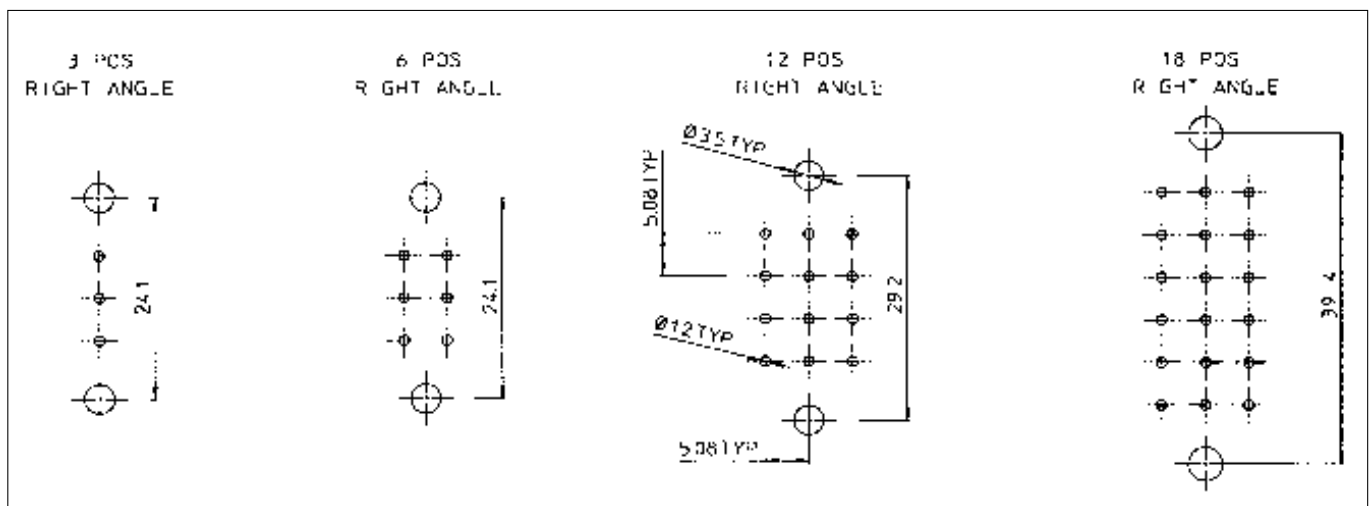
# SMS - Boardmount Qikmate



## Recommended PC-Board hole lay out for straight male and female boardmount connectors



## Recommended PC-Board hole lay out for right-angled male and female boardmount connectors



# SMS - Qikmate Pin Header



## Qikmate PC boardmount Pin Headers and plugs

### Description

Qikmate Pin Header, available in 3, 4, 6, 9 and 10 positions, provides the additional versatility of straight and right angle board mounting.

Offered as an alternative to stacked connectors, the in-line contact design of the pin header provides the user with significant PC board space savings.

The boardmount receptacle features positive polarization and a moulded on pin protection skirt and is supplied preassembled with straight or right angled:

- Solid machined or stamped and formed PC board pin contacts.
- Coax PC board pin contacts.

The socket cable plug features positive quick connect / disconnect latches and is designed to accept N° 16 TRIM TRIO .0625" (1.6mm) diameter socket contacts for maximum contact protection.

### Features and benefits

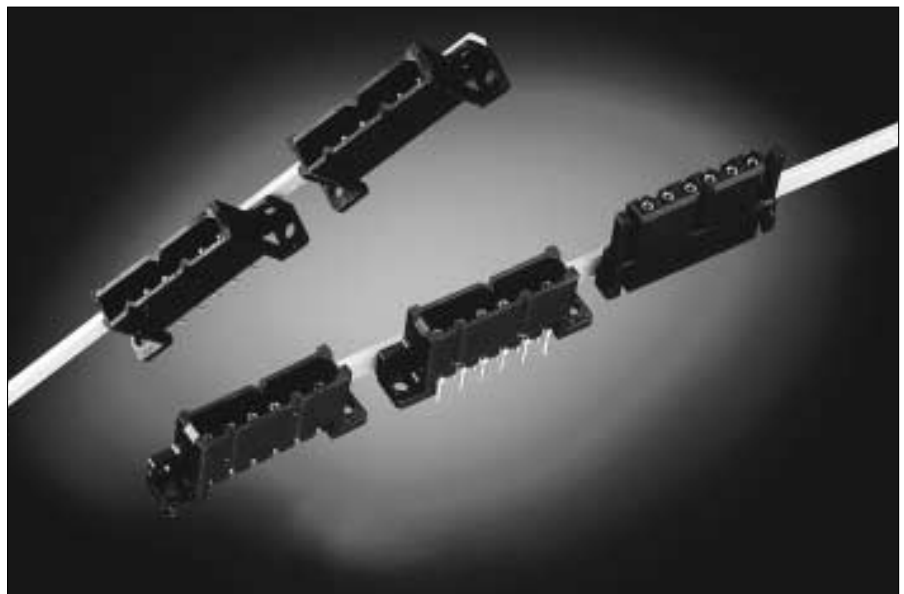
- Available in 3, 4, 6, 9 and 10 positions.
- In-line contact design, offering significant PC board space savings.
- Boardmount connectors available in straight and right-angled version preassembled with:
  - Solid machined or stamped and formed pin contacts.
  - Coax pin contacts.

### Construction

Connector body:

Glass filled thermoplast UL94-V0  
Colour: Black

Contacts: High conductive copper alloy



### Performance characteristics

Operating temperature: -55°C to +125°C

Insulation resistance: 5000 MΩ min.

Test potential: 2000 VAC

Current rating: 5 AMP

Durability: 500 matings and unmatings.

### Intermateability

- "SMS" Socket plugs accept Trim-Trio removable snap-lock contacts (see contact section)
- Contacts to be ordered separately.

### Plating table

Plating for solid machined contacts:

**No digit (std)** = Min. 0.4μ Gold all over, over Nickel.

T = 3 - 5μ Tin all over

Plating for Stamped and formed contacts :

D28 = Min. 0.75μ Au over nickel.

D70 = Gold flash all over

TR29 = 1.2μ Pre-plated Tin all over.

Plating for coax contacts:

Z17 = Min. 0.75μ Au in contact area,

Flash on solder tail (inner)

Min 0.75μ Au in contact area,

Tin on solder tail (outer)

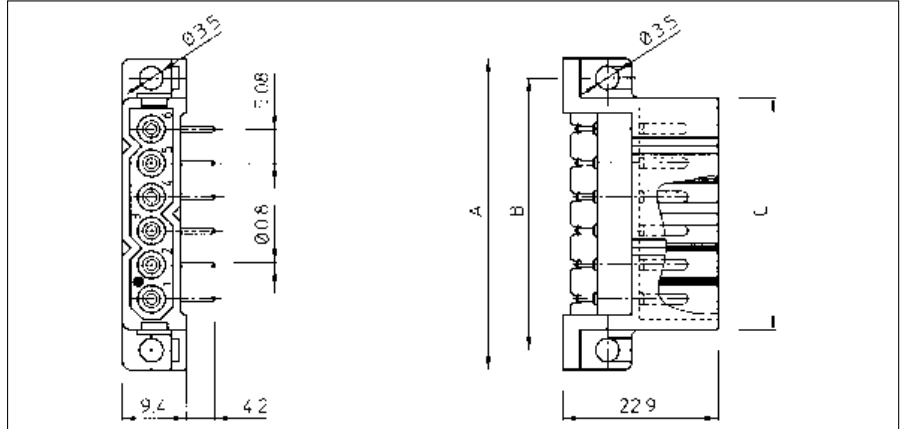
## How to order

| Connector family    | SMS         | 9   | PH | 3 | TR29 |
|---------------------|-------------|---|----|---|------|
|                     | SMS         | 9   | CH | 1 | Z17  |
|                     | SMS         | 9   | P3 | - | -    |
| Contact arrangement |             |   |    |   |      |
| Contact type:       | <b>PH:</b>  | Pin header boardmount.  |    |   |      |
|                     | <b>CH:</b>  | Coax header boardmount.                                       |    |   |      |
|                     | <b>P3:</b>  | Socket cable plug for pin and coax boardmount header.         |    |   |      |
| Design variation:   | <b>1:</b>   | Right angle coax header boardmount with male contacts.        |    |   |      |
|                     | <b>2:</b>   | Straight coax header boardmount with male contacts            |    |   |      |
|                     | <b>3:</b>   | Right angle pin header boardmount with stamped male contacts  |    |   |      |
|                     | <b>4:</b>   | Straight pin header boardmount with stamped male contacts     |    |   |      |
|                     | <b>GE6:</b> | Right angle pin header boardmount with machined male contacts |    |   |      |
|                     | <b>GE4:</b> | Straight pin header boardmount with machined male contacts    |    |   |      |
| Plating indication  |             |   |    |   |      |

# SMS - Qikmate Pin Header



## Right angle pin header boardmount with male contacts (SMS--PH3 / SMS--PHGE6)

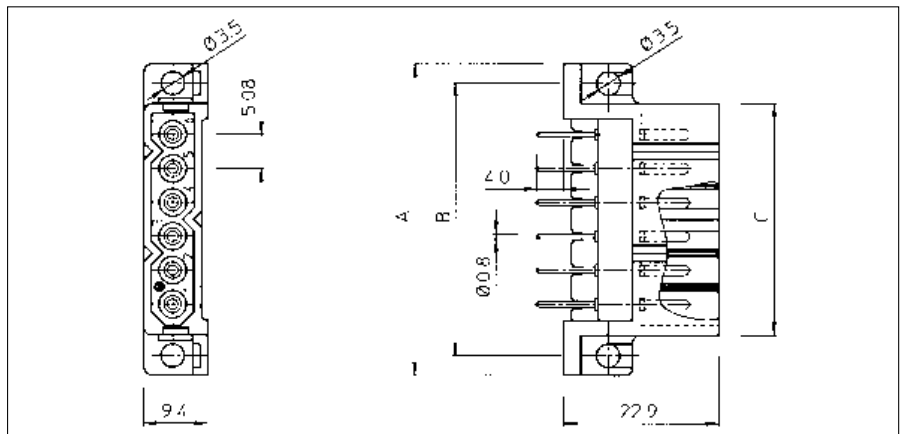


| Part number<br>Stamped and<br>formed contacts | Part number<br>Solid machined<br>contacts | Number of<br>contact<br>positions | A    | B    | C    |
|---|---|-----------------------------------|------|------|------|
| SMS3PH3TR29                                   | SMS3PHGE6                                 | 3                                 | 31.2 | 25.4 | 19.3 |
| SMS4PH3TR29                                   | SMS4PHGE6                                 | 4                                 | 36.3 | 30.4 | 24.4 |
| SMS6PH3TR29                                   | SMS6PHGE6                                 | 6                                 | 46.5 | 40.6 | 34.5 |
| SMS9PH3TR29                                   | SMS9PHGE6                                 | 9                                 | 61.7 | 55.9 | 49.8 |
| SMS10PH3TR29                                  | SMS10PHGE6                                | 10                                | 66.8 | 61.0 | 54.9 |

For other platings: see plating table.

Other solder tail lengths on request

## Straight pin header boardmount with male contacts (SMS--PH4 / SMS--PHGE4)



| Part number<br>Stamped and<br>formed contacts | Part number<br>Solid machined<br>contacts | Number of<br>contact<br>positions | A    | B    | C    |
|---|---|-----------------------------------|------|------|------|
| SMS3PH4TR29                                   | SMS3PHGE4                                 | 3                                 | 31.2 | 25.4 | 19.3 |
| SMS4PH4TR29                                   | SMS4PHGE4                                 | 4                                 | 36.3 | 30.4 | 24.4 |
| SMS6PH4TR29                                   | SMS6PHGE4                                 | 6                                 | 46.5 | 40.6 | 34.5 |
| SMS9PH4TR29                                   | SMS9PHGE4                                 | 9                                 | 61.7 | 55.9 | 49.8 |
| SMS10PH4TR29                                  | SMS10PHGE4                                | 10                                | 66.8 | 61.0 | 54.9 |

For other platings: see plating table.

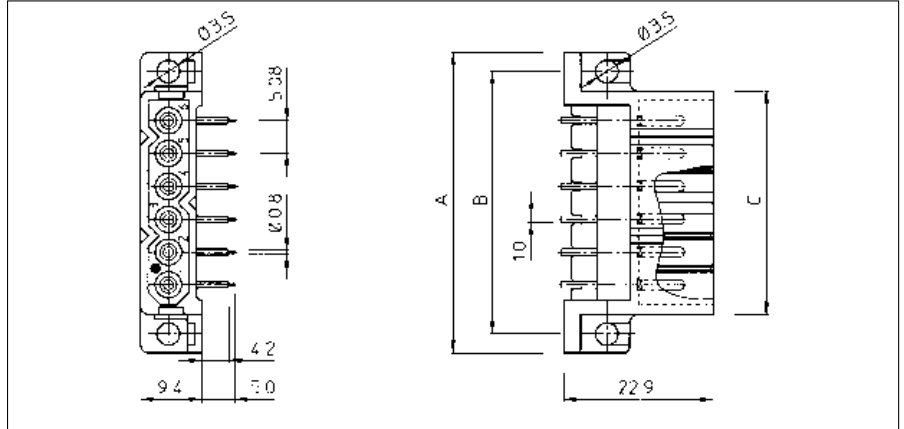
Other solder tail lengths on request



# SMS - Qikmate Pin Header



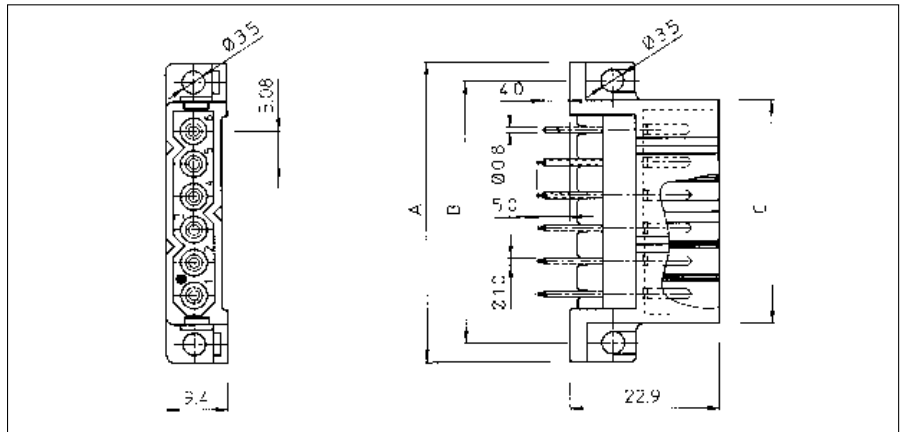
## Right angle coax header boardmount with male contacts (SMS--CH1Z17)



| Part number positions | Number of contact | A    | B    | C    |
|-----------------------|-------------------|------|------|------|
| SMS3CH1Z17            | 3                 | 31.2 | 25.4 | 19.3 |
| SMS4CH1Z17            | 4                 | 36.3 | 30.4 | 24.4 |
| SMS6CH1Z17            | 6                 | 46.5 | 40.6 | 34.5 |
| SMS9CH1Z17            | 9                 | 61.7 | 55.9 | 49.8 |
| SMS10CH1Z17           | 10                | 66.8 | 61.0 | 54.9 |

For plating spec.: see plating table.

## Straight coax header boardmount with male contacts (SMS--CH2Z17)



| Part number positions | Number of contact | A    | B    | C    |
|-----------------------|-------------------|------|------|------|
| SMS3CH2Z17            | 3                 | 31.2 | 25.4 | 19.3 |
| SMS4CH2Z17            | 4                 | 36.3 | 30.4 | 24.4 |
| SMS6CH2Z17            | 6                 | 46.5 | 40.6 | 34.5 |
| SMS9CH2Z17            | 9                 | 61.7 | 55.9 | 49.8 |
| SMS10CH2Z17           | 10                | 66.8 | 61.0 | 54.9 |

For plating spec.: see plating table.

# SMS - Qikmate Pin Header

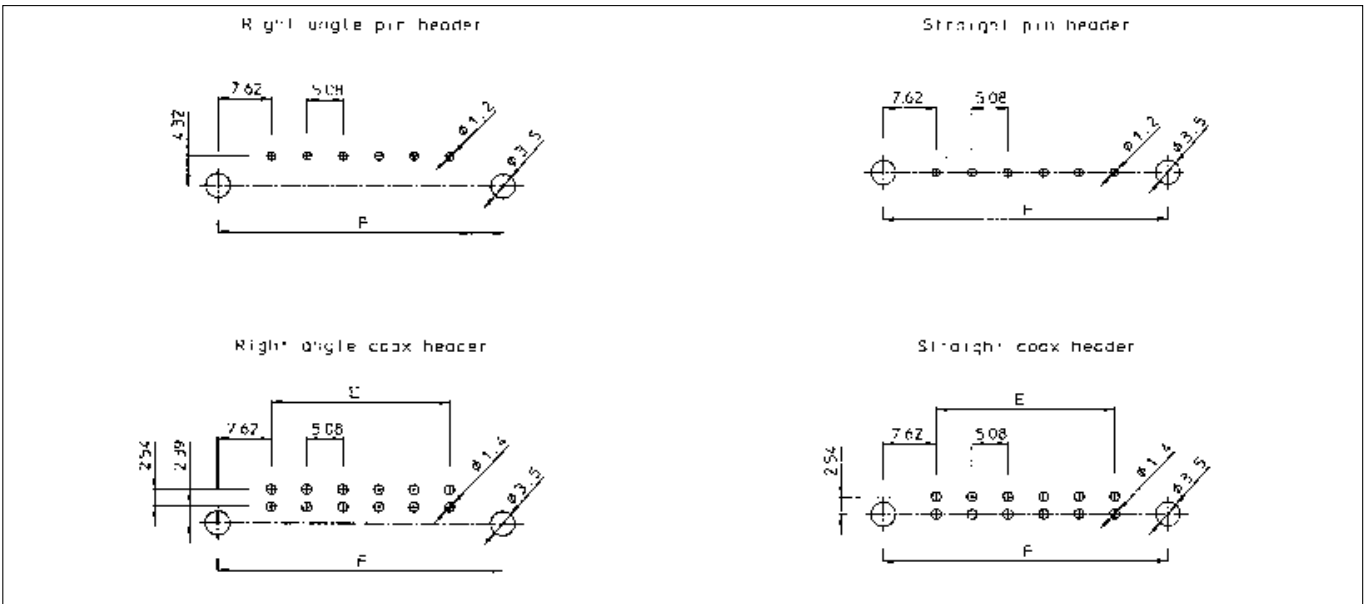


## Socket cable plug for pin and coax boardmount header (SMS--P3)



| Part number | Number of contact positions | D    |
|-------------|-----------------------------|------|
| SMS3P3      | 3                           | 16.0 |
| SMS4P3      | 4                           | 21.1 |
| SMS6P3      | 6                           | 31.2 |
| SMS9P3      | 9                           | 46.5 |
| SMS10P3     | 10                          | 51.6 |

## Recommended PC-board hole layouts

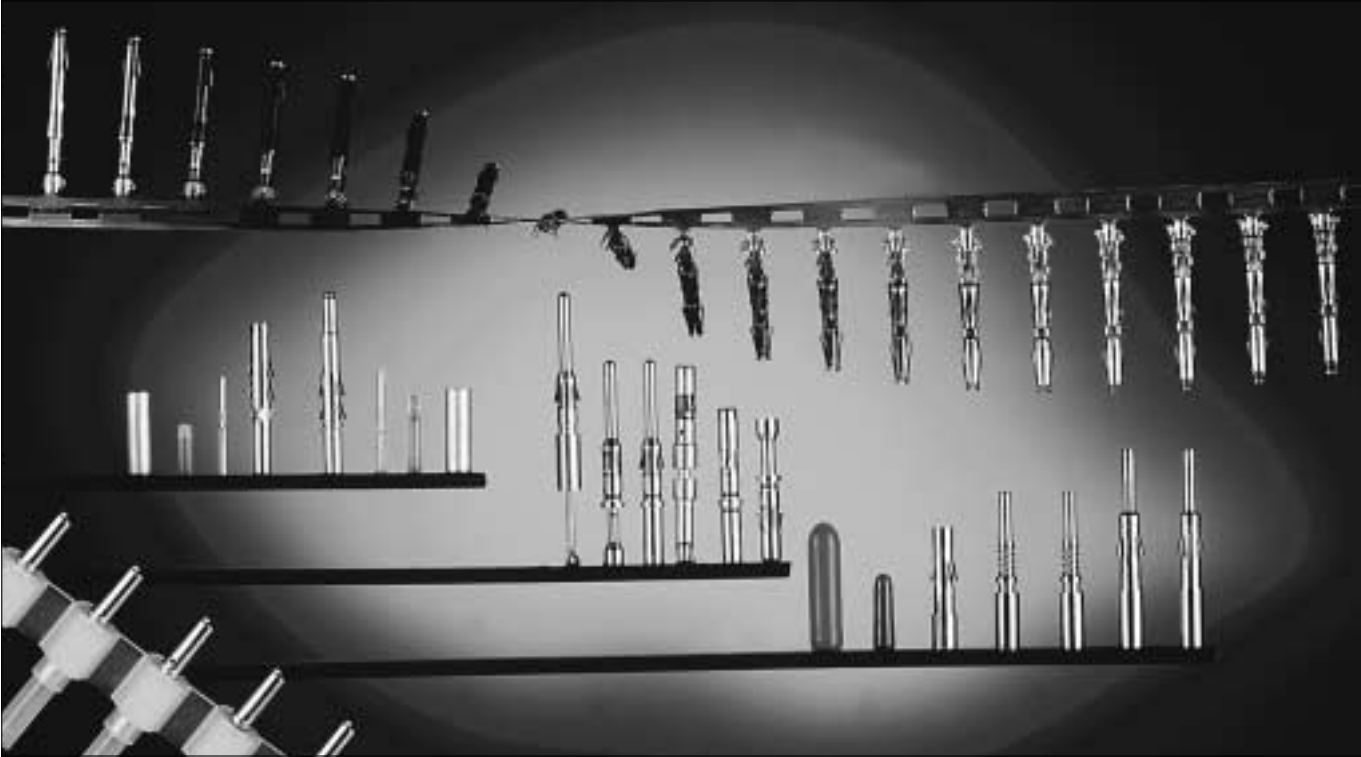


| Part number of contact positions | E     | F     |
|----------------------------------|-------|-------|
| 3                                | 10.18 | 25.40 |
| 4                                | 15.24 | 30.48 |
| 6                                | 25.40 | 40.64 |
| 9                                | 40.64 | 55.88 |
| 10                               | 45.72 | 60.96 |

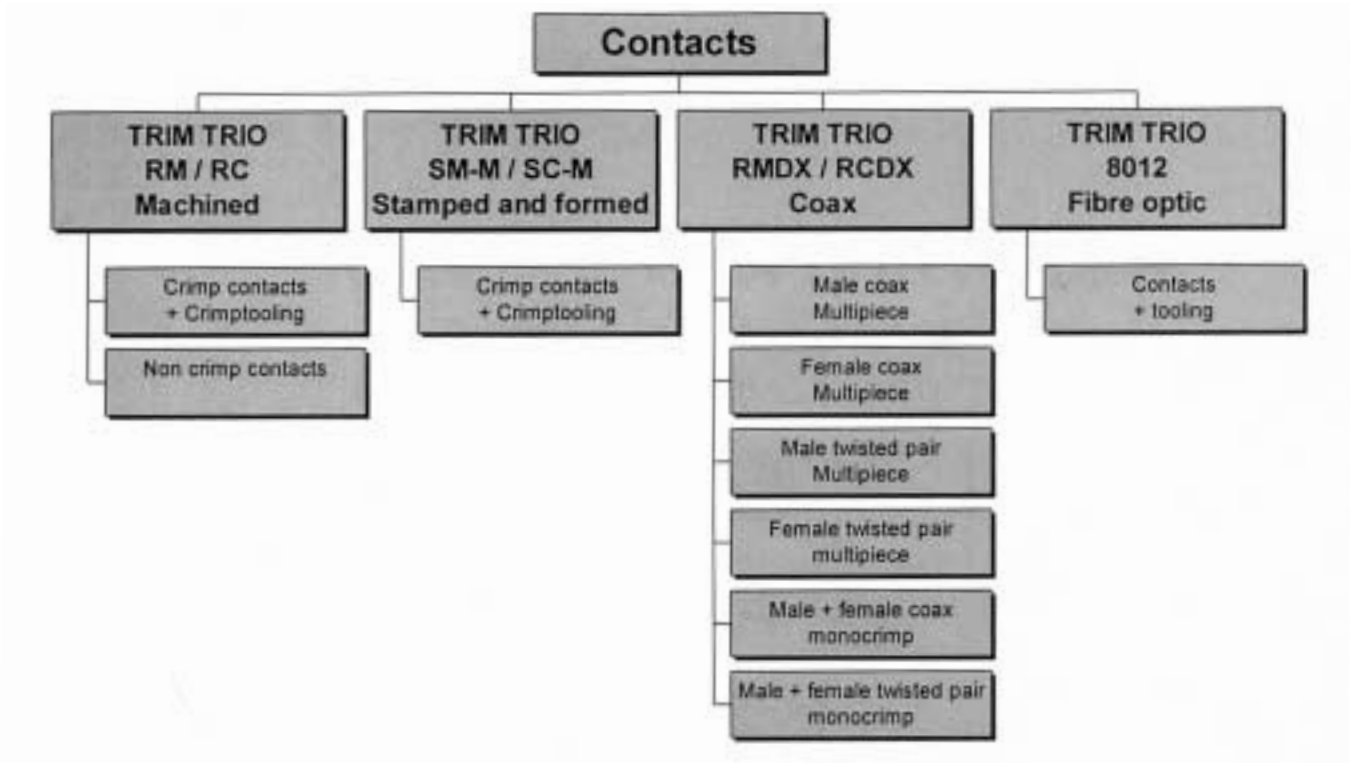
# Contacts - intro



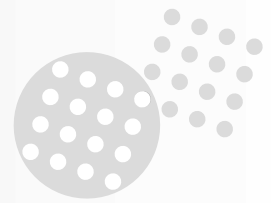
## Overview TRIM TRIO contacts



## Selection matrix TRIM TRIO contacts



CONTACTS



## Current ratings for multi-contact connectors

### Choice of right connector - contact combination.

The choice of a Trim Trio connector in combination with a Trim Trio contact is essential and different for any application. There is considerable misunderstanding in the field on current carrying capabilities for the various contacts in the TrimTrio programme.

The intention of this part is to give guidance how to interpret the given current ratings in general and how to calculate them for particular applications.

The information given is based upon existing MIL specifications such as: MIL-C-26482, MIL-C-8384, MIL-T-7928, MIL-W-5086, MIL-W-5088, MIL-W-16878, etc. and in conjunction with long field practice.

### Current carrying capabilities

Trim Trio contacts are designed to carry a specific current, in accordance with the applicable specification.

This specification will be defined by following variables:

- **Connector size**

The more contacts in a connector, the less current per contact can be loaded.

- **Wire size** (see table 1)

The cross section will determine the internal resistance and temperature rise for a given current.

-Table 1 gives the current ratings for the various wire sizes commonly used with Trim Trio contacts.

- **Current rating** (see table 2)

The current load for a given application will generate heat.

- Table 2 gives the *maximum current carrying capacity* of most of the Trim Trio contacts, the *maximum operating current* and the *recommended continuous current*.

- **Ambient temperature**

The combination of the connector size, the wire size and the current rating will generate a temperature rise.

This temperature rise + a given ambient temperature may not exceed the maximum operating temperature of the connector material (see performance characteristics for each connector family).

Table 1 - Current carrying capabilities per wire size

| AWG | wire size mm <sup>2</sup> | wire dia. mm | max.curr. carrying Amp. | max.operating curr. Amp. | recomm. cont. curr. |
|-----|---------------------------|--------------|-------------------------|--------------------------|---------------------|
| 26  | 0.13                      | 0.40         | 3                       | 2                        | 1                   |
| 24  | 0.20                      | 0.51         | 4.5                     | 3                        | 2                   |
| 22  | 0.32                      | 0.64         | 9                       | 5                        | 3                   |
| 20  | 0.52                      | 0.81         | 11                      | 7.5                      | 5                   |
| 18  | 0.82                      | 1.02         | 16                      | 10                       | 7.5                 |
| 16  | 1.30                      | 1.29         | 22                      | 13                       | 10                  |
| 14  | 2.10                      | 1.63         | 32                      | 17                       | 13                  |

Table 2 - Current carrying capabilities per contact type

| size | pin dia.        | type                           | max. curr. carrying Amp. | max. operating curr. Amp. | recomm. cont. curr. Amp. |
|------|-----------------|--------------------------------|--------------------------|---------------------------|--------------------------|
| 16   | .062*<br>1.6 mm | RM / RC machined               | 22                       | 13                        | 10                       |
|      |                 | SM / SC<br>2 piece stamped     | 22                       | 13                        | 10                       |
| 20   | .040*<br>1.0 mm | SM-W / SC-W<br>2 piece stamped | 11                       | 7.5                       | 5                        |

- *Max. current carrying capacity*

- *Max. operating current*

- *Recommended continuous current*

#### What do these values mean in practice ?

- *Max current carrying capacity*

of a contact is defined by the conducting section of the contact in its smallest area. The listed values are obtained from several tests in laboratories under room conditions (21°C). The contact is considered to be in free air.

- *Max operating current*

is the current with which the contacts can be energized during a longer or shorter period, without deteriorating and depending on working conditions.

These are dissipated heat, cooling provisions, ambient temperature, insulation material, etc.

- *Recommended continuous current*

can be applied for all normal cases and working conditions. The values include a safety margin. However, there are restrictions in the application of the given values. The most important restriction is the used wire, its sectional area, insulation temperature range, as well as wires in bundles.

Military specifications require that for a cable bundle of 15 conductors or more, the bundle shall not carry more than 20% of the total carrying capacity of the bundle.

In smaller bundles, the allowable percentage of total current may be increased as the bundle approaches the single wire condition.

This percentage of increase in total current carrying capacity of the bundle is 6% for each conductor less than 15 in a bundle.

# Contacts



From simple calculations, one can see that the closer the bundle approaches the single wire condition, the higher the allowable current per conductor becomes, to even such an extent, that it exceeds the recommended continuous current value. In that case, the recommended continuous value should have preference. In order to make this clear, we will give some typical examples.

• **Example 1**

Cable bundle, 48 conductors AWG20 (0.5mm<sup>2</sup>) used with circular TrimTrio connector with insert arrangement 24-48 and machined size 16 contacts RM/RC20.

- Total operating current capacity of bundle 48 x 7.5 A ( table I) = 360 A
- Total allowable capacity for bundles of more than 15 wires is 20% = 72 A
- When all conductors are energized equally, this gives:  
72 : 48 = 1.5 A per conductor

When for instance 5 conductors are energized to the recommended continuous current of 5 A (see table 1) resulting in 25 A consumption, the other conductors may not take more than 72 - 25 = 47 A all together, or 1 A per conductor. Any other combination can of course also be taken as long as the total capacity of 72 A is not exceeded and the recommended continuous current is respected.

Remark

Please note that contacts used are of the size 16 type with maximum operating current of 13 A (table 2). The maximum operating current of the bundle is however restricted to 7.5 A per conductor due to the wire size of AWG20 (see table 1).

• **Example 2**

Cable bundle, 14 conductors AWG22 (0.32 mm<sup>2</sup>) used with rectangular Trim Trio connector with insert arrangement for 14 contacts, and machined size 16 contacts RM / RC20.

- Total operating current capacity of bundle 14 x 5 (table I) = 70 A
- Total allowable for wire bundle of 15 wires less 1 is 20% + 6% = 26% gives 18.2 A.
- All conductors energized equally, gives:  
18.2 : 14 = 1.3 A per conductor

This value is within the recommended rating of 3 A so that it can be applied. See also remark under example 1.

• **Example 3**

Cable bundle, 4 conductors AWG16 (1.3mm<sup>2</sup>) used with circular Trim Trio connector with insert arrangement 10-4 and stamped 2 piece contacts SM /SC.

- Total operating current capacity of bundle 4 x 13 A (table I) = 52 A
- Total allowable for wire bundle of 15 wires less 11 is 20% + 66% = 86% gives 44.7 A.
- All conductors energized equally, gives:  
44.7 : 4 = 11.2 A per conductor

Since the recommended continuous current is 10 A, the conductor should not carry more than 10 A individually.

As said before, the recommended ratings are valid for most common wiring systems and under normal working conditions. For extreme conditions, the given values should be lowered. The percentage of current reduction should be investigated from case to case.  
A rule-of thumb which can be used for such cases is:  
4 Amp. per mm<sup>2</sup> wire section  
It gives us for common used wire sizes the values listed in table 3.

**Table 3 - Recommended continuous current for extreme working conditions**

| AWG | wire size mm <sup>2</sup> | recommended continuous current Amp. |
|-----|---------------------------|-------------------------------------|
| 26  | 0.13                      | 0.5                                 |
| 24  | 0.20                      | 0.8                                 |
| 22  | 0.32                      | 1.3                                 |
| 20  | 0.52                      | 2.0                                 |
| 18  | 0.82                      | 3.3                                 |
| 16  | 1.30                      | 5.2                                 |
| 14  | 2.10                      | 8.4                                 |



## Crimping instructions

### The conductor and insulation crimp section

Are designed to accommodate wire-conductor and insulation diameters, expressed in AWG (American Wire Gauge) or mm<sup>2</sup>.

For each wire gauge, a correct crimp requires a crimp height that offers the highest performance.

This performance is defined as the highest tensile strength force.

A good conductor crimp can be guaranteed if the tensile strength force is equal or higher as indicated on the graph below. E.g. a conductor of AWG20 (0.52 mm<sup>2</sup>) has a good crimp if the tensile strength is min 84N.

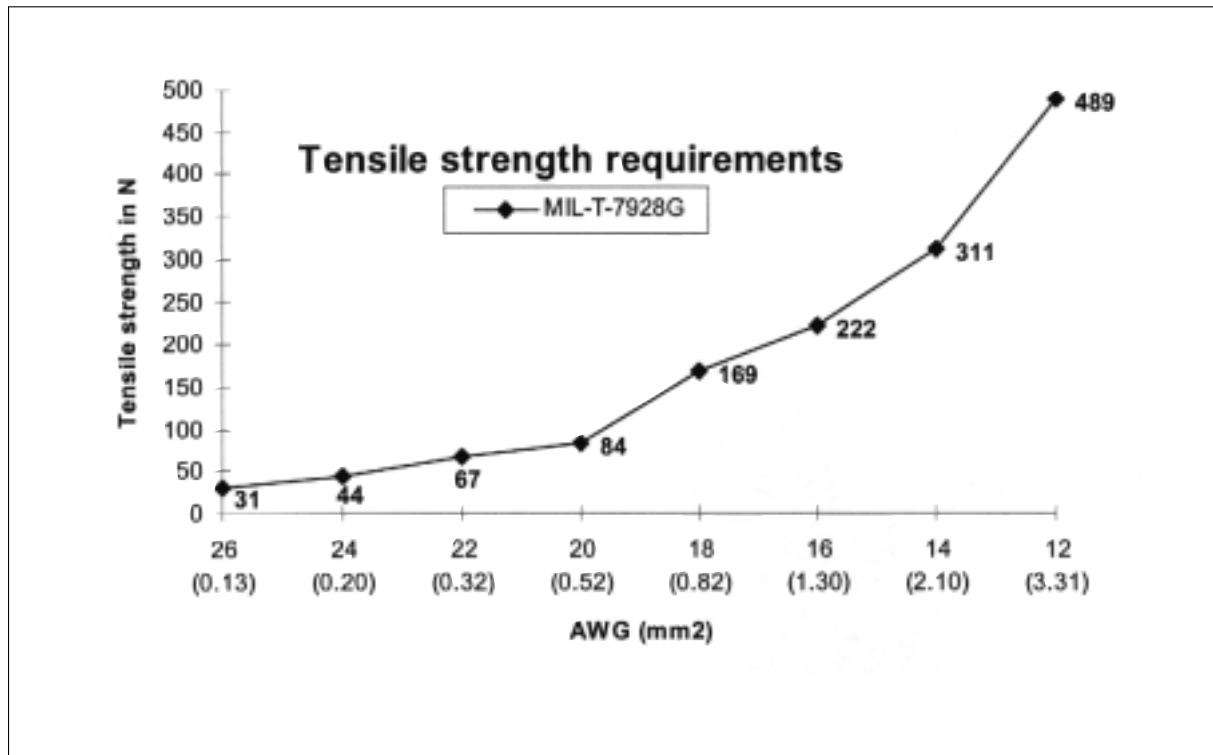
The tensile strength force is measured in Newtons and is the wire-to-contact connection that will withstand when a straight axial load is applied to the terminated wire. This is however a destructive test and is therefore inappropriate as a 100% inspection method.

An alternative method is to measure crimp height. The crimp height is measured at the conductor-crimp section.

- **If the dimension is too small**, then the conductor is over-crimped and the wire strands could be damaged, which results in a lower tensile strength force.

- **If the dimension is too large**, then the conductor is under-crimped and the wire strands will not be deformed enough to assure that the crimp will pass the tensile strength test.

In both cases, the application tooling's crimp height should be adjusted. In order to have the right tooling's crimp height go and no-go gauges can be obtained and are defined in function of the type of crimp tooling and the wire gauge. For further information consult factory.



# RM/RC - Machined contacts



## Size 16 solid machined contacts for TRIM TRIO connectors

### Description

Size 16 RM/RC .063" (1.6mm) diameter contacts are precision solid machined crimp snap-in pin and sockets for heavy duty top performance requirements. Springs on both contacts are made of spring-tempered, heat-treated, beryllium copper.

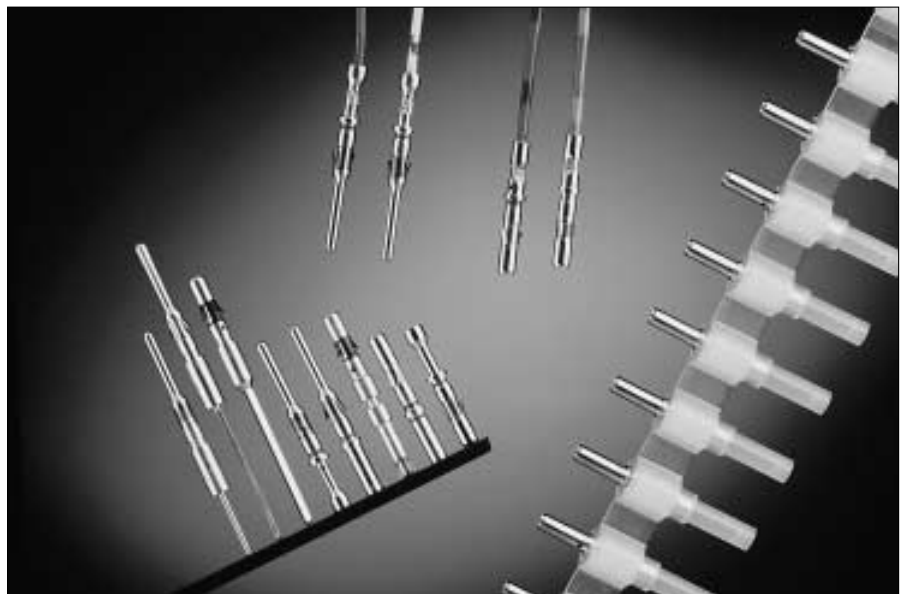
The socket inner spring supplies high contact pressure to ensure low-resistance contact between pin and socket. The socket contact features closed entry to prevent probe damage. Crimp barrels have insulation grips for vibration support and are provided with a cable stop and inspection hole.

### Features and benefits

- Made from high conductive copper alloy with gold or tin over nickel plate finish.
- Heat-treated beryllium copper locking springs assure proper locking and alignment of contacts in the housing.
- Closed entry design on RC socket contact to prevent probe damage.
- Special "RCS" contacts with large lead-in design
- Contacts available in bulk packing

### Performance characteristics

|                              |             |
|------------------------------|-------------|
| Current rating:              | 13 Amp      |
| Contact resistance:          | ≤ 3 mΩ      |
| Contact retention in body:   | 110 N min.  |
| Individual insertion force:  | 3.5 N max.  |
| Individual withdrawal force: | 0.55 N min. |



### Construction

Contact body: High conductive copper alloy.

Outer spring: Tempered, heat-treated, beryllium copper.

Inner spring socket: Tempered, heat-treated, plated beryllium copper.

### Plating table

|                |   |
|----------------|---|
| <b>K (std)</b> | = Min. 0.4 μ Gold all over, over Nickel |
| <b>T</b>       | = 3 - 5 μ Tin all over, over Nickel     |
| <b>D28</b>     | = Min. 0.75 μ Gold over Nickel          |
| <b>T3</b>      | = 7,5μ - 12,5 μ Tin all over            |

### Connector accommodation

Any TRIM TRIO contact can be used in any contact position in any connector in the TRIM TRIO interconnection system.

- MS-M / MSG Rectangular connectors
- SMS Qikmate
- G - Bantamate
- UT-Bantam
- UTG Metalok bantam
- UTP Full plastic bantam
- UTGS Shielded bantam
- MBG Bantamate II

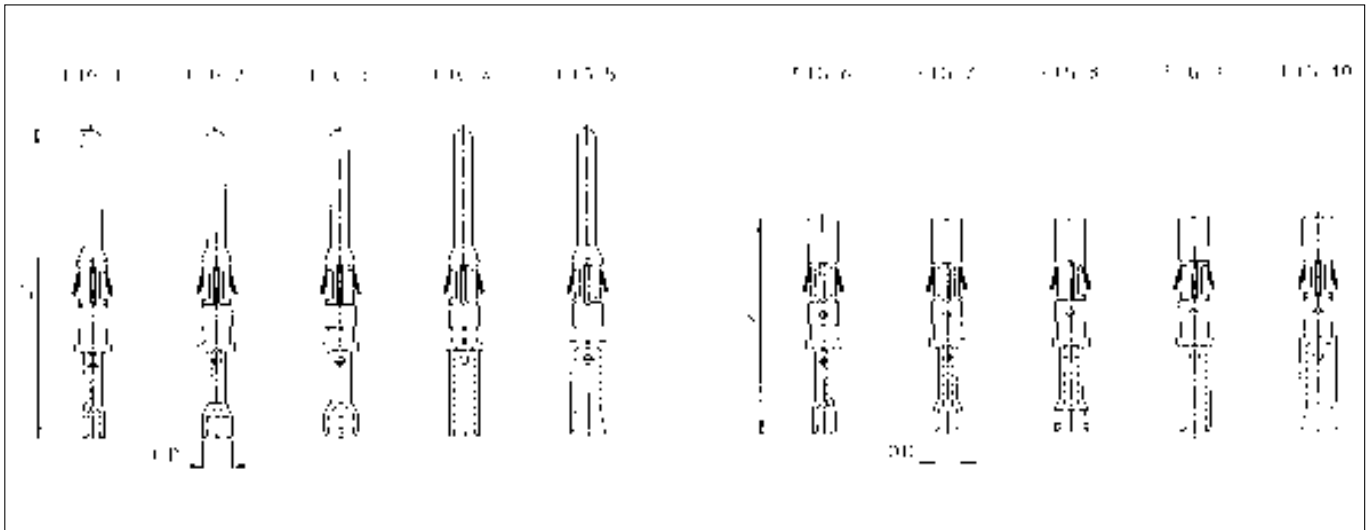
### How to order

|                            |                                 |  |           |          |           |              |          |          |
|----------------------------|---------------------------------|--|-----------|----------|-----------|--------------|----------|----------|
|                            |                                 | <b>(K) RM</b>  | <b>16</b> | <b>M</b> | <b>23</b> | <b>(GE1)</b> | <b>K</b> | <b>-</b> |
|                            |                                 | <b>(K) RC</b>  | <b>16</b> | <b>M</b> | <b>23</b> | <b>(GE1)</b> | <b>K</b> | <b>-</b> |
| <b>Contact type:</b>       | <b>RM:</b>                      | Male contact bulk packing                                      |           |          |           |              |          |          |
|                            | <b>RC:</b>                      | Female contact bulk packing                                    |           |          |           |              |          |          |
|                            | <b>KRM:</b>                     | Male contact on plastic carrier strip                          |           |          |           |              |          |          |
|                            | <b>KRC:</b>                     | Female contact on plastic carrier strip                        |           |          |           |              |          |          |
| <b>AWG Size:</b>           | 16, 20, 24, 28                  |  |           |          |           |              |          |          |
| <b>Size 16:</b>            | .063" (1.6mm) Diameter contacts |  |           |          |           |              |          |          |
| <b>Design variation:</b>   | Crimp barrel                    |  |           |          |           |              |          |          |
| <b>Grounding contact:</b>  |                                 |  |           |          |           |              |          |          |
| <b>Plating indication:</b> | See plating table               |  |           |          |           |              |          |          |
| <b>Packing quantity:</b>   | <b>No digit (std)</b>           | : 50 pcs. bulk packing (RM/RC)<br>: 2000 pcs on reel (KRM/KRC) |           |          |           |              |          |          |
|                            | <b>1000</b>                     | : 1000 pcs bulk packing (RM/RC)                                |           |          |           |              |          |          |

# RM/RC - Machined contacts



## Standard RM/RC crimp contacts: Contact size 16 - Pin diameter 1.6mm (.063")



### Dimensional table

| Pin contacts  | Part number |                 | Fig.        | Wire size |                 | Max. wire dia. | Max. insul. dia. | Wire strip length | O.D. | L1   | L2   |      |
|---------------|-------------|-----------------|-------------|-----------|-----------------|----------------|------------------|-------------------|------|------|------|------|
|               | Fig.        | Socket contacts |             | AWG       | mm <sup>2</sup> |                |                  |                   |      |      |      |      |
|               |             | Standard        | RCS-Type    |           |                 |                |                  |                   |      |      |      |      |
| RM28M1(*)     | 1           | RC28M1(*)       | --          | 6         | 30-28           | 0.05-0.08      | 0.55             | 1.1               | 1.90 |      |      |      |
| RM24M9(*)     | 2           | RC24M9(*)       | RCS24M9(*)  | 7         | 26-24           | 0.13-0.20      | 0.8              | 1.6               | 2.55 |      |      |      |
| RM20M14(*)    | 3           | RC20M14(*)      | RCS20M14(*) | 8         | 22-20           | 0.32-0.52      | 1.18             | 4.8               | 3.10 | 26.2 | 18.2 |      |
| RM20M13(*)    |             | RC20M13(*)      | RCS20M13(*) |           |                 |                |                  |                   | 2.92 |      |      |      |
| RM20M12(*)    |             | RC20M12(*)      | RCS20M12(*) |           |                 |                |                  |                   | 2.92 |      |      |      |
| RM16M23(*)    | 4           | RC16M23(*)      | RCS16M23(*) | 9         | 20-16           | 0.52-1.50      | 1.80             | 3.2               | 7.1  | 2.55 | 27.2 | 19.7 |
| RM16M23GE1(*) |             | RC16M23GE1(*)   | --          | 9         |                 |                |                  |                   |      |      | 28.4 | --   |
| RM16M31(*)    |             | --              | --          | --        |                 |                |                  |                   |      |      | --   | --   |
| RM14M50(*)    | 5           | RC14M50(*)      | RCS14M50(*) | 10        | 14              | 2              | 2.05             |                   | 3.10 |      |      |      |
| RM14M30(*)    | 5           | RC14M30(*)      | --          | 10        | --              | 2,5            | 2.28             |                   | 3.10 | 26.2 | 18.2 |      |

(\*) Plating indication : See plating table

For machined contact reeled on plastic carrier: put "K" in front of part number e.g. KRM16M23K

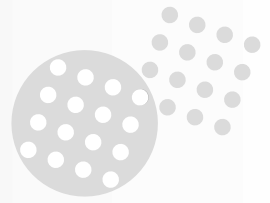
### Crimptooling table

| Size     | Hand crimp tooling for loose contacts |             |                 |             |              |             | Automatic crimp tooling for contacts on strip |                           | Extraction tools                    |
|----------|---------------------------------------|-------------|-----------------|-------------|--------------|-------------|---|---------------------------|-------------------------------------|
|          | Hand tools die set included           | MH860       |                 | M10S1       |              | M8ND        | P100MAN (Press)                               |                           |                                     |
|          |                                       | Positioner  | Locator setting | Die set     | Stop bushing | Die set     | Left side applicator KRM/KRC (not incl.)      | Stripper unit (not incl.) |                                     |
|          |                                       | (not incl.) |                 | (not incl.) | (not incl.)  | (not incl.) |   |                           |                                     |
| 28-1     | Y16RCM                                | MH86164G    | 4/6             | S9          | SL40         | N24RT10     | --  | Consult Factory           | RX2025GE1 or RX2025GE2 or RX16D11D1 |
| 24-9     |                                       |             | 5/6             |             |              |             |   |                           |                                     |
| 20-12/13 |                                       |             | 5/7             | S10         | N20RT30      | MLSP2764    |   |                           |                                     |
| 16-23    |                                       |             | 6/8             | S3D1        | SL39         | N16RT21     | MLSP2765                                      |                           |                                     |
| 16-GE1   |                                       | MH86186     | SL115           |             | N16RT25      |             |   |                           |                                     |
| 16-31    | --                                    | --          | --              | --          | --           | --          | --  |                           |                                     |
| 20-14    | --                                    | MH86164G    | 5/7             | S10J        | SL40J        | N20RT30J    | --  |                           |                                     |
| 14-50    | --                                    | --          | --              | S3-14       | SL39         | --          | --  |                           |                                     |
| 14-30    | AF8 + TP120                           | --          | --              | --          | --           | --          | --  |                           |                                     |

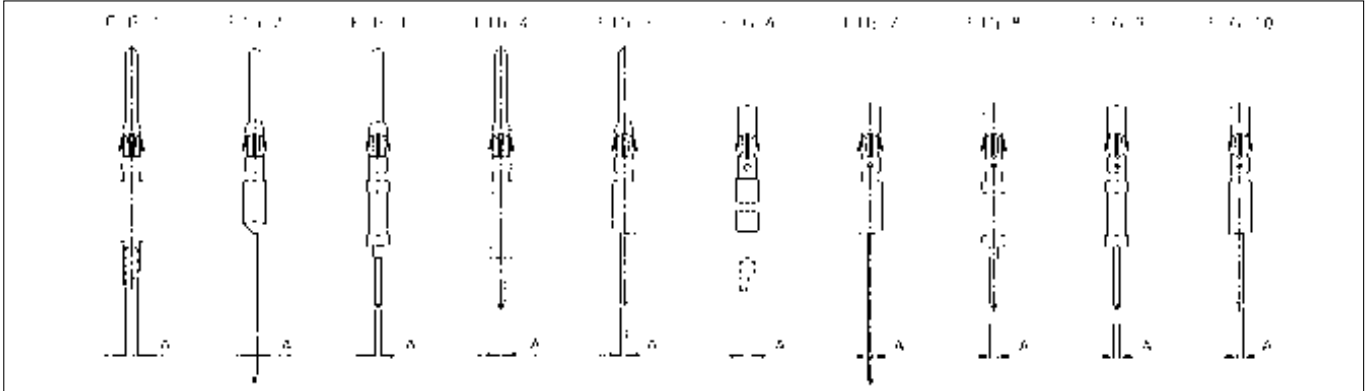
For detailed information on crimp tooling : See crimp tooling section



# RM/RC - Machined contacts



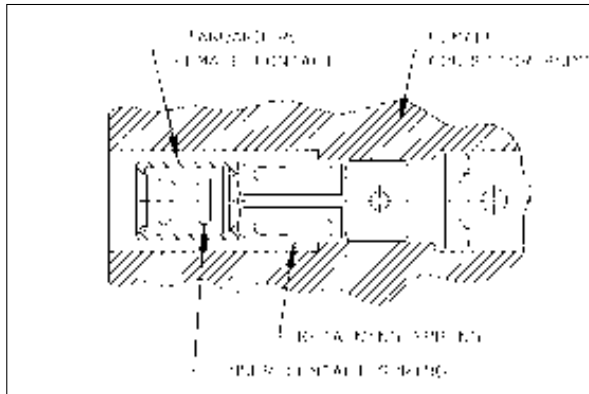
## Special RM / RC contacts: Contact size 16 - Pin diameter 1.6mm (.063")



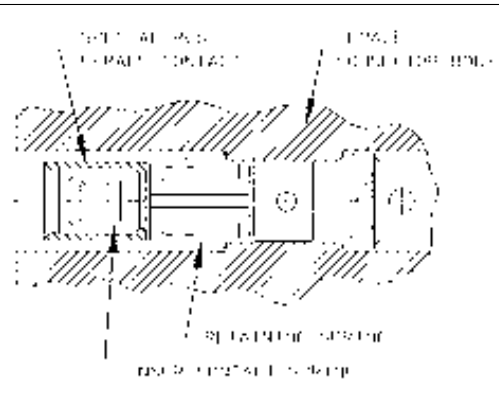
| Pin contacts  | Part number |                 | Fig. | Type        | Wire size |                 | Post cross section A | Length out of TRIM TRIO cavity | Anti-rotating bushing part number |
|---------------|-------------|-----------------|------|-------------|-----------|-----------------|----------------------|--------------------------------|-----------------------------------|
|               | Fig.        | Socket contacts |      |             | AWG       | mm <sup>2</sup> |                      |                                |                                   |
| RM16MSC(*)    | 1           | RC16MSC(*)      | 6    | Handsolder  | 16 - 20   | 1,50 - 0,52     | ø1.7                 | --                             | -                                 |
| RM16SEO(*)    | 1           | RC16SE4(*)      | 6    | Handsolder  | 16 - 20   | 1.50 - 0.52     | ø1.7                 | 3.5                            | -                                 |
| RM20M12G4(*)  | 2           | RC20M12G4(*)    | 7    | Mini - wrap | 28 - 30   | 0.08 - 0.05     | ∅.636                | 16.0                           | J1661                             |
| RM20M12E8(*)  | 5           | RC20M12E8(*)    | 10   | Dipsolder   | -         | -               | ø 0.9                | 5.2                            | -                                 |
|               |             | RC20M12E83(*)   |      | Dipsolder   | -         | -               | ø 0.9                | 10.4                           | -                                 |
|               |             | RC20M12E84(*)   |      | Dipsolder   | -         | -               | ø 0.9                | 13.9                           | -                                 |
| RM20M12G50(*) | 4           | RC20M12G50(*)   | 9    | Dipsolder   | -         | -               | ø 0.8                | 6                              | -                                 |
| RM20M12G60(*) | 3           | RC20M12G60(*)   | 8    | Dipsolder   | -         | -               | ø 0.8                | 6                              | -                                 |

(\*) Plating indication : See plating table.

### The RC contact principle



### The RCS contact principle



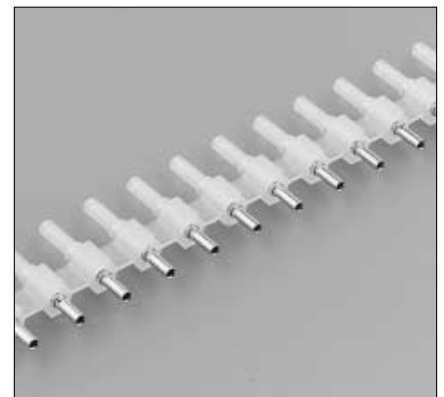
### The RM/RC contact packing



50 pcs bulk packing (standard)



1000 pcs bulk packing



Reeled contacts on plastic carrier (qty 2000 pcs)

# SM/SC-M Stamped contacts



## Size 16 stamped and formed contacts for TRIM TRIO connectors

### Description

Size 16 SM/SC .063" (1.6mm) diameter contacts are two piece strip formed crimp snap-in pin and sockets.

These contacts consist of a crimp body made of high conductive copper alloy, and a stainless steel retaining spring featuring retention in the housing cavity and a closed entry socket to prevent probe damage.

The contact with its open barrel is standard available on strip and packaged with 3000 pcs on reel. This reel packaging combined with semi or even full automatic crimp tooling provides the added advantage of a lower installed cost.

### Features and benefits

- Made from high conductive copper alloy with gold or tin over nickel plate finish.
- Two piece construction with dual purpose spring which serves for contact retention and protects the body against damage.
- Contacts available on reel (standard) and in bulk packing (100 pcs).
- Suitable for high volumes and lower installation cost.

### Performance characteristics

|                     |        |
|---------------------|--------|
| Current rating:     | 13 Amp |
| Contact resistance: | ≤ 6 mΩ |

|                              |             |
|------------------------------|-------------|
| Contact retention in body:   | 65 N min.   |
| Individual insertion force:  | 3.5 N max.  |
| Individual withdrawal force: | 0.55 N min. |



### Construction

Contact body: High conductive copper alloy.

Outer spring: Stainless steel

### Plating table

S6 = 0.75m Gold min. in contact area, flash on crimp barrel over Nickel.

D70 = Gold flash all over, over Nickel.

TK6 = Preplated Tin all over.

### Connector accommodation

Any TRIM TRIO contact can be used in any contact position in any connector in the TRIM TRIO interconnection system.

- MS-M / MSG Rectangular connectors
- SMS Qikmate
- G - Bantamate
- UT-Bantam
- UTG Metalok bantam
- UTP Full plastic bantam
- UTGS Shielded bantam
- MBG Bantamate II

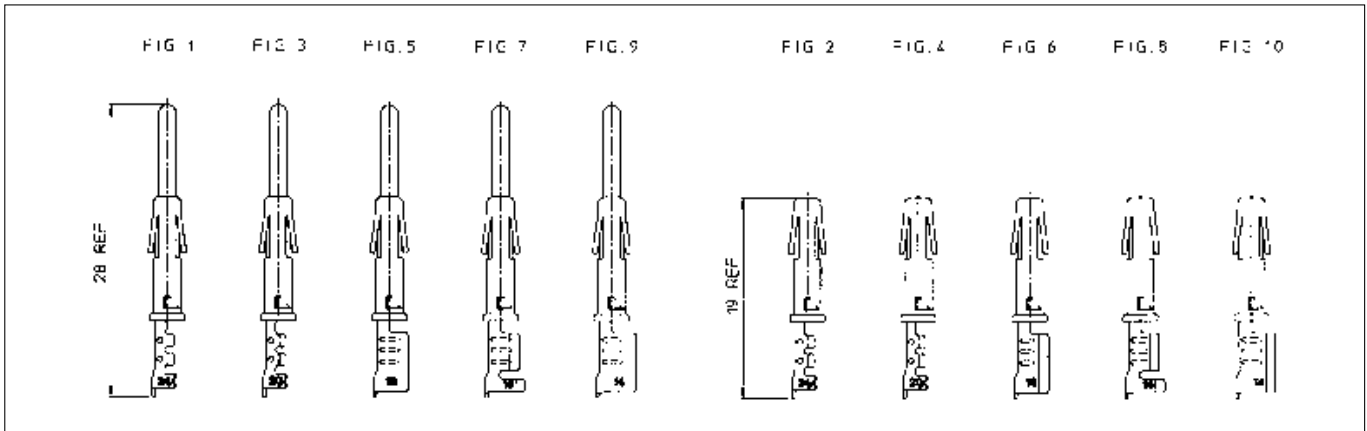
## How to order

|                              | SM  | 16 | M | (L) | 1 | S6 |
|------------------------------|---|----|---|-----|---|----|
|                              | SC  | 16 | M | (L) | 1 | S6 |
| <b>Contact type:</b>         | <b>SM:</b> Male contact<br><b>SC:</b> Female contact  |    |   |     |   |    |
| <b>AWG Size:</b>             | 14, 16, 20, 24  |    |   |     |   |    |
| <b>Type of crimp barrel:</b> | American open crimp barrel  |    |   |     |   |    |
| <b>Packing:</b>              | <b>No digit:</b> Contacts on strip (qty 3000 per reel)<br><b>L:</b> Preformed loose piece contacts  |    |   |     |   |    |
| <b>Design variation</b>      | <b>1</b> : Only wire crimp for size 14 and 16<br>: Wire + insulation crimp for sizes 20 and 24<br><b>11</b> : Wire + insulation crimp for size 16 |    |   |     |   |    |
| <b>Plating indication:</b>   | See plating table   |    |   |     |   |    |

# SM/SC-M Stamped contacts



## Standard SM/SC crimp contacts: Contact size 16 - Pin diameter 1.6mm (.063")



### Dimensional table

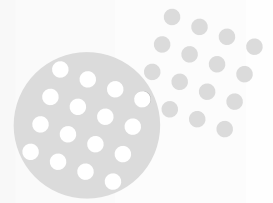
| Part number: contacts on strip<br>Loose pieces |      |                         |      | Wire size |                 | Insulation diameter | Wire strip length |
|--|------|-------------------------|------|-----------|-----------------|---------------------|-------------------|
| Pin contacts                                   | Fig. | Socket contacts         | Fig. | AWG       | mm <sup>2</sup> |                     |                   |
| SM24M1S6<br>SM24ML1S6                          | 1    | SC24M1S6<br>SC24ML1S6   | 2    | 26 - 24   | 0.13 - 0.25     | 0.89 - 1.58         | 4.0               |
| SM20M1S6<br>SM20ML1S6                          | 3    | SC20M1S6<br>SC20ML1S6   | 4    | 22 - 20   | 0.35 - 0.50     | 1.17 - 2.08         | 4.0               |
| SM16M1S6<br>SM16ML1S6                          | 5    | SC16M1S6<br>SC16ML1S6   | 6    | 18 - 16   | 0.80 - 1.50     | 3.0                 | 6.35              |
| SM16M11S6<br>SM16ML11S6                        | 7    | SC16M11S6<br>SC16ML11S6 | 8    | 18 - 16   | 0.80 - 1.50     | 2.0 - 3.0           | 4.65              |
| SM14M1S6<br>SM14ML1S6                          | 9    | SC14M1S6<br>SC14ML1S6   | 10   | 14        | 2.0             | 3.2                 | 6.35              |

For other platings: See plating table.

### Crimptooling table

| Size     | Hand crimp tooling for loose contacts |                             | Automatic crimp tooling for contacts on strip |  | Extraction tooling                              |
|----------|---------------------------------------|-----------------------------|---|--|---|
|          | Hand tools die set included           | M8ND Die set (not included) | P100 MAN Mini Applicator (not included)       | K750 ASC (Stripper - crimper) Mini Applicator (not included) |   |
| 24       | Y16SCM2 (ratchet)<br>Y14MTV (ratchet) | N24RT11                     | MLS0318B                                      | MLS20M1  | RX2025GE1<br>or<br>RX2025GE2<br>or<br>RX16D11D1 |
| 20       |                                       | N20RT29                     | MLS0555A                                      |  |   |
| 16M(L)11 | Y16SCM2 (ratchet)                     | N16RT26                     | MLS0356A                                      | MLS16M11   |   |
| 16M(L)1  | Y14SCM (ratchet)<br>Y14MTV (ratchet)  | N16RT24                     | MLS1579                                       | MLS16M1  |   |
| 14       | Y14SCM (ratchet)<br>Y14MTV (ratchet)  | N14RT13                     | MLS1047                                       | MLS14M1  |   |

For detailed information on crimp tooling : See crimp tooling section



## Size 16 MULTIPIECE coaxial contacts for TRIM TRIO connectors

### Description

Size 16 RMDX/RCDX Multipiece .063" (1.6mm) diameter contacts are subminiature coaxial contacts to cover a wide range of subminiature coaxial and twisted pair cables.

They are suitable in applications where a mix of signal, power and coaxial cable terminations for low frequency, shielded signal and high frequency applications are needed.

The contact consists of an inner pin/socket and an outer male/female body.

The thermoplastic insulating bushing in the outer body is designed to accept and permanently retain the inner contact.

The outer ferrule holds the outer braid to the outer contact and acts as an insulating support to ensure against bending and vibrating stresses.

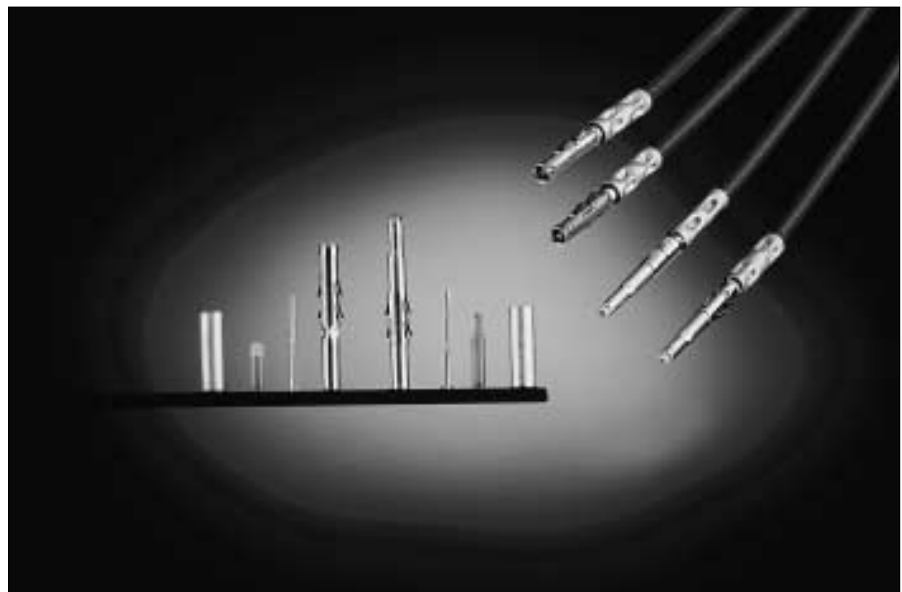
The inner and the outer conductor are crimped individually, thereby enabling inspection of both critical crimp points.

### Features and benefits

- The inner and outer conductors are crimped individually
- The thermoplastic insulating bushing in the outer body is designed to accept and permanently retain the inner contact.
- Outer ferrule holds the outer braid to the outer contact and acts as an insulating support to ensure against bending and vibration.

### Performance characteristics

|  |                 |
|--|-----------------|
| Operating voltage between inner / outer contact: | 230 VDC         |
| Test potential between inner / outer contact     | 750 VAC 1 min.  |
| Operating temperature:                           | -55°C to +125°C |
| Contact retention in body:                       | 65 N min.       |
| Contact voltage drop at 1A:                      | 25m V max.      |
| Isolation at 30 MHz:                             | 140 db.         |



### Construction

Inner and outer contacts: High conductive copper alloy

Retaining spring: beryllium copper

Insulating bushing: Polyamide 6.6

### Plating table

Retaining spring: Nickel plated

Inner and outer contacts:

D28: 0.75 µ Gold min. over Nickel

### Connector accommodation

Any TRIM TRIO contact can be used in any contact position in any connector in the TRIM TRIO interconnection system.

- MS-M/ MSG Rectangular connectors
- SMS Qikmate
- G - Bantamate
- UT-Bantam
- UTG Metalok bantam
- UTP Full plastic bantam
- UTGS Shielded bantam
- MBG Bantamate II

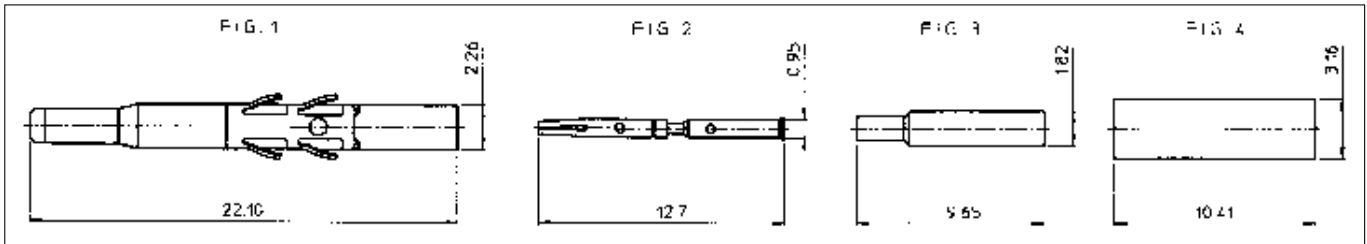
### How to order

|                            | RMDX<br>RCDX   | K10<br>K1 | D28<br>D28 |
|----------------------------|--|-----------|------------|
| <b>Contact type:</b>       | RMDX = Male subminiature coax.<br>RCDX = Female subminiature coax. |           |            |
| <b>Multipiece coax kit</b> | K10 = Kit male coax.<br>K1 = Kit female coax                       |           |            |
| <b>Plating indication</b>  |  |           |            |

# RMDX/RCDX



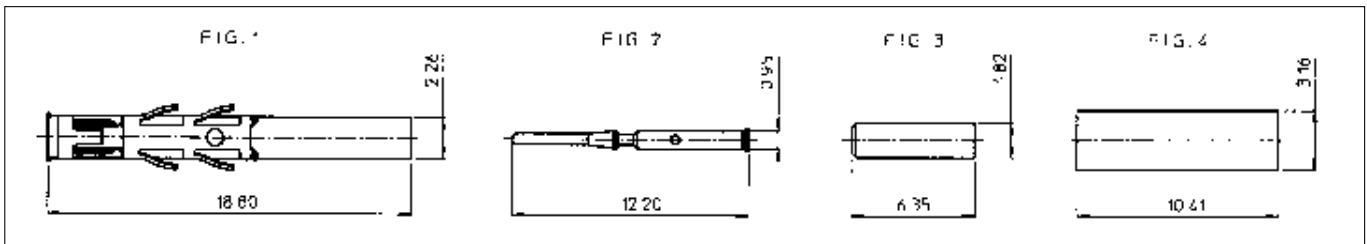
## MULTIPIECE Subminiature coax - Male contact for coaxial cable



| Type of coaxial cable                    | Contact for inner conductor |      |                  |              | Contact for outer braid |     |             |     |                  |              | Extrac tool   |
|--|-----------------------------|------|------------------|--------------|-------------------------|-----|-------------|-----|------------------|--------------|---------------|
|  | Inner female contact        |      | Crimp tool M10S1 |              | Outer male contact      |     | Hyring      |     | Crimp tool M10S1 |              |               |
|  | Part number                 | Fig. | Die Set          | Stop Bushing | Part number             | Fig | Part number | Fig | Die Set          | Stop Bushing |               |
| RG161U<br>RG179A/U<br>RG179B/U<br>RG187U | RFD26L1D28                  | 2    | S23D2            | SL46D2       | RMDX602D28              | 1   | YOC074      | 4   | S22-1            | SL47-1       | RX2025<br>GE1 |
| S26D2                                    |                             |      | YOC074           |              |                         |     | 4           |     |                  |              |               |
| YOC074<br>+<br>RMDXB0553                 |                             |      | 4<br>3           |              |                         |     |             |     |                  |              |               |

Kit reference RMDXK10D28 includes RMDX602D28 + RFD26L1D28 + YOC074 + RMDXB0553 and are packed in plastic bag.

## MULTIPIECE Subminiature coax - Female contact for coaxial cable



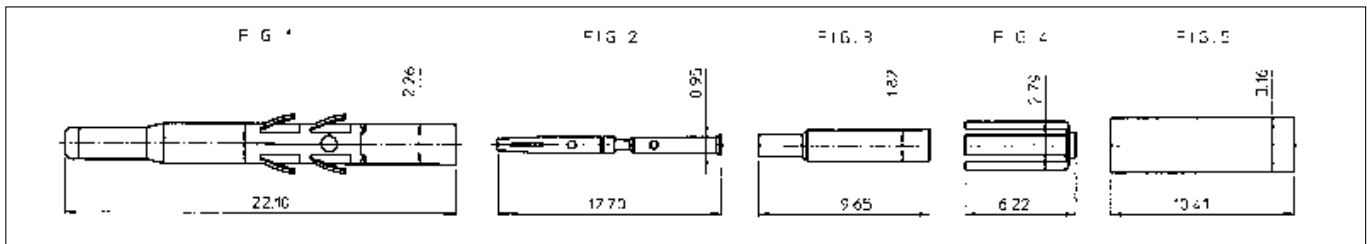
| Type of coaxial cable                    | Contact for inner conductor |      |                          |              | Contact for outer braid |     |             |     |                  |              | Extrac tool                              |
|--|-----------------------------|------|--------------------------|--------------|-------------------------|-----|-------------|-----|------------------|--------------|--|
|  | Inner male contact          |      | Crimp tool M10S1         |              | Outer female contact    |     | Hyring      |     | Crimp tool M10S1 |              |  |
|  | Part number                 | Fig. | Die Set                  | Stop Bushing | Part number             | Fig | Part number | Fig | Die Set          | Stop Bushing |  |
| RG161U<br>RG179A/U<br>RG179B/U<br>RG187U | RMD26L1D28                  | 2    | S23D2                    | SL46D2       | RCDX602D28              | 1   | YOC074      | 4   | S22-1            | SL47-1       | RX2025<br>GE1<br><br>or<br>RX16D11<br>D1 |
| S26D2                                    |                             |      | YOC074                   |              |                         |     | 4           |     |                  |              |  |
| S23D2                                    |                             |      | YOC074<br>+<br>RCDXB0551 |              |                         |     | 4<br>3      |     |                  |              |  |

Kit reference RCDXK1D28 includes RCDX602D28 + RMD26L1D28 + YOC074 + RCDXB0551 and are packed in plastic bag.

# RMDX/RCDX

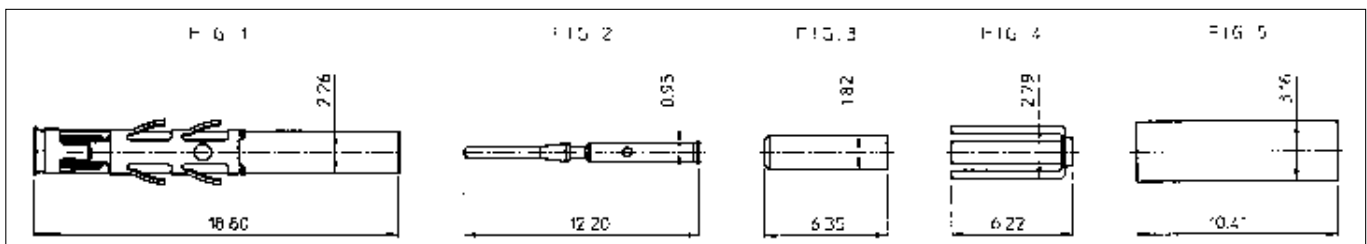


## MULTIPIECE Subminiature coax - Male contact for twisted pair cable



| Type of coaxial cable  | Contact for inner conductor |      |                  |              | Contact for outer braid |     |             |     |                  |              | Extrac tool                          |                                      |
|--|-----------------------------|------|------------------|--------------|-------------------------|-----|-------------|-----|------------------|--------------|--------------------------------------|--------------------------------------|
|  | Inner female contact        |      | Crimp tool M10S1 |              | Outer male contact      |     | Hyring      |     | Crimp tool M10S1 |              |                                      |                                      |
|  | Part number                 | Fig. | Die set          | Stop bushing | Part number             | Fig | Part number | Fig | Die set          | Stop bushing |                                      |                                      |
| 2 #24 solid or stranded<br>2 #26 str                         | RFD26L1D28                  | 2    | S26D2            | SL46D2       | RMDX602D28              | 1   | YORX090     | 4   | S221             | SL471        | RX2025<br>GE1<br><br>or<br>RX16D11D1 |                                      |
| YOC074   |                             |      |                  |              |                         |     | 5           |     |                  |              |                                      |                                      |
| RMDXB0553  |                             |      |                  |              |                         |     | 3           |     |                  |              |                                      |                                      |
| 2 #24<br>7/0,20 str.<br>MIL-W-76 or<br>MIL-W-16878<br>type B | RMD26L1D28                  | 2    | S26D2            | SL46D2       | RMDX602D28              | 1   | YORX090     | 4   | S221             | SL471        |                                      | RX2025<br>GE1<br><br>or<br>RX16D11D1 |
| YOC074   |                             |      |                  |              |                         |     | 5           |     |                  |              |                                      |                                      |
| RMDXB0554  |                             |      |                  |              |                         |     | 3           |     |                  |              |                                      |                                      |
| #28 per<br>MIL-W-<br>81822/3                                 | RMD26L1D28                  | 2    | S26D2            | SL46D2       | RMDX602D28              | 1   | YORX090     | 4   | S221             | SL471        | RX2025<br>GE1<br><br>or<br>RX16D11D1 |                                      |
| YOC074   |                             |      |                  |              |                         |     | 5           |     |                  |              |                                      |                                      |
| RMDXB0553  |                             |      |                  |              |                         |     | 3           |     |                  |              |                                      |                                      |

## MULTIPIECE Subminiature coax - Female contact for twisted pair cable



| Type of coaxial cable  | Contact for inner conductor |      |                  |              | Contact for outer braid |     |             |     |                  |              | Extrac tool                          |                                      |
|--|-----------------------------|------|------------------|--------------|-------------------------|-----|-------------|-----|------------------|--------------|--------------------------------------|--------------------------------------|
|  | Inner male contact          |      | Crimp tool M10S1 |              | Outer female contact    |     | Hyring      |     | Crimp tool M10S1 |              |                                      |                                      |
|  | Part number                 | Fig. | Die set          | Stop bushing | Part number             | Fig | Part number | Fig | Die set          | Stop bushing |                                      |                                      |
| 2 #24 solid or stranded<br>2 #26 str                         | RMD26L1D28                  | 2    | S26D2            | SL46D2       | RCDX602D28              | 1   | YORX090     | 4   | S221             | SL471        | RX2025<br>GE1<br><br>or<br>RX16D11D1 |                                      |
| YOC074   |                             |      |                  |              |                         |     | 5           |     |                  |              |                                      |                                      |
| RCDXB0551  |                             |      |                  |              |                         |     | 3           |     |                  |              |                                      |                                      |
| 2 #24<br>7/0,20 str.<br>MIL-W-76 or<br>MIL-W-16878<br>type B | RMD26L1D28                  | 2    | S26D2            | SL46D2       | RCDX602D28              | 1   | YORX090     | 4   | S221             | SL471        |                                      | RX2025<br>GE1<br><br>or<br>RX16D11D1 |
| YOC074   |                             |      |                  |              |                         |     | 5           |     |                  |              |                                      |                                      |
| RCDXB0552  |                             |      |                  |              |                         |     | 3           |     |                  |              |                                      |                                      |
| #28 per<br>MIL-W-<br>81822/3                                 | RMD26L1D28                  | 2    | S26D2            | SL46D2       | RCDX602D28              | 1   | YORX090     | 4   | S221             | SL471        | RX2025<br>GE1<br><br>or<br>RX16D11D1 |                                      |
| YOC074   |                             |      |                  |              |                         |     | 5           |     |                  |              |                                      |                                      |
| RCDXB0551  |                             |      |                  |              |                         |     | 3           |     |                  |              |                                      |                                      |



## Size 16 monocrimp coaxial contacts for TRIM TRIO connectors

### Description

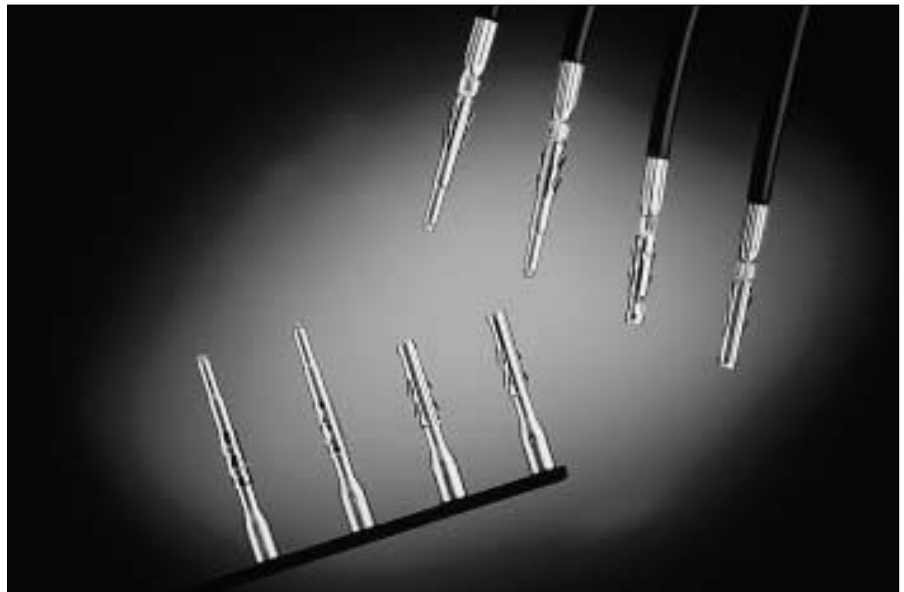
Size 16 RMDX/RCDX Monocrimp .063" (1.6mm) diameter contacts are one-piece monocrimp subminiature coaxial contacts to cover a wide range of subminiature coaxial and twisted pair cables. They provide cost effective solutions in applications where a mix of signal, power and coaxial cable terminations for low frequency, shielded signal and high frequency applications are needed. Monocrimp one piece coaxial contacts offer high reliability plus the economic advantage of a 95% reduction in installation time over conventional assembly methods currently in use.

### Features and benefits

- The monocrimp one-piece coaxial contacts offer high reliability plus the economic advantage of a 95% reduction in installation time over conventional assembly methods.
- This economy is achieved by simultaneously crimping of both the inner and outer conductor

### Performance characteristics

|  |                 |
|--|-----------------|
| Operating voltage between inner / outer contact: | 230 VDC         |
| Test potential between inner / outer contact     | 450 VAC 1 min.  |
| Operating temperature:                           | -55°C to +125°C |
| Contact retention in body:                       | 65 N min.       |
| Contact voltage drop a 1A:                       | 30m V max.      |
| Isolation at 30 MHZ:                             | 140 db.         |



### Construction

Inner and outer contacts: High conductive copper alloy

Retaining spring: beryllium copper

Insulating bushing: Polyamide 6.6

### Plating table

Retaining spring: Nickel plated

Inner and outer contacts:

D28: 0.75µ Gold min. over Nickel

### Connector accommodation

Any TRIM TRIO contact can be used in any contact position in any connector in the TRIM TRIO interconnection system.

- MS-M/MSG Rectangular connectors
- SMS Qikmate
- G - Bantamate
- UT-Bantam
- UTG Metalok bantam
- UTP Full plastic bantam
- UTGS Shielded bantam
- MBG Bantamate II

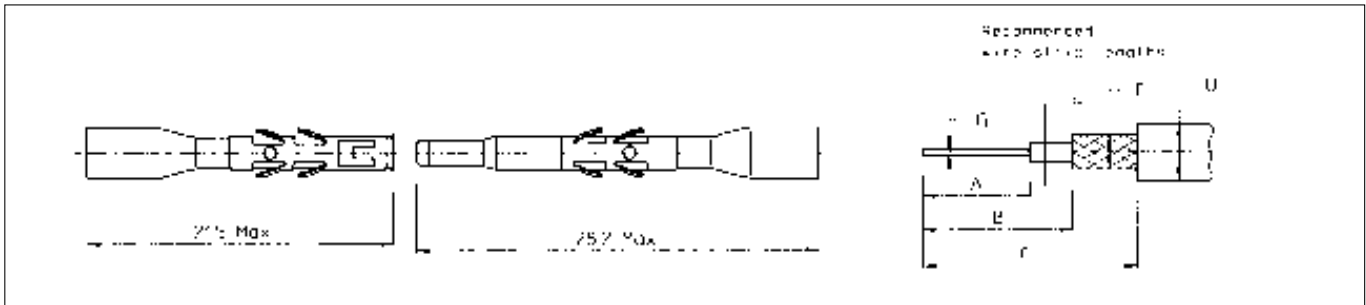
### How to order

|                                   |  |          |            |
|-----------------------------------|--|----------|------------|
|                                   | RMDX60<br>RCDX60   | 36<br>36 | D28<br>D28 |
| <b>Contact type:</b>              | RMDX = Male subminiature coax.<br>RCDX = Female subminiature coax. |          |            |
| <b>Monocrimp design variation</b> |  |          |            |
| <b>Plating indication</b>         |  |          |            |

# RMDX/RCDX

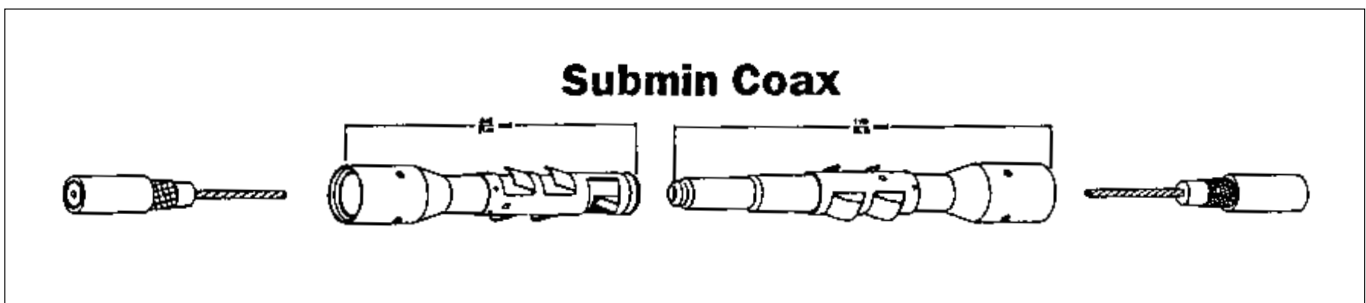


## MONOCRIMP Subminiature coax



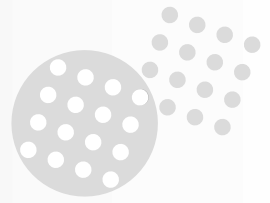
| Part number                | AWG inner conduct. | Cable type | Coax dimensions |      |      |                      | Coax strip lengths |      |      | Crimp tool M10S1  |                        | Extraction tool                  |     |
|----------------------------|--------------------|------------|-----------------|------|------|----------------------|--------------------|------|------|-------------------|------------------------|----------------------------------|-----|
|                            |                    |            | D max           | E    | F    | G                    | A                  | B    | C    | Die set not incl. | stop bushing not incl. |                                  |     |
| RMDX6050D28<br>RCDX6050D28 | 30                 | -          | 2.64            | 2.11 | 1.70 | 0.30                 | 5.1                | 6.35 | 8.9  | S80               | SL105                  | RX2025GE1<br><br>OR<br>RX16D11D1 |     |
| RMDX6050D28<br>RCDX6050D28 |                    | -          | 2.29            | 1.63 | 1.22 | 4.2                  | 8.5                |      | S87  |                   |                        |                                  |     |
| RMDX6032D28<br>RCDX6032D28 | 28                 | -          | 2.90            | 2.29 | 1.91 | 0.38                 | 5.1                |      | 11.7 | S80               |                        |                                  | S82 |
| RMDX6024D28<br>RCDX6024D28 | -                  | 1.78       | 1.37            | 0.97 | 0.48 | 8.9                  |                    |      | S80  |                   |                        |                                  |     |
| RMDX6032D28<br>RCDX6032D28 | 26                 | RG174/U    | 2.92            | 2.24 | 1.52 | 0.48                 | 5.1                |      | 11.7 | S80               |                        |                                  | S82 |
| RMDX6026D28<br>RCDX6026D28 |                    | -          | 3.05            | 2.44 | 1.96 | 0.41                 |                    |      |      | S80               |                        |                                  |     |
| RMDX6036D28<br>RCDX6036D28 |                    | RG188A/U   | 2.79            | 1.98 | 1.52 | 0.51                 |                    |      |      | S80               |                        |                                  |     |
| RMDX6036D28<br>RCDX6036D28 |                    | RG316/U    | 2.72            |      |      |                      |                    |      |      | S80               |                        |                                  |     |
| RMDX6018D28<br>RCDX6018D28 |                    |            | 2.62            | 0.53 | 8.9  | M10SG8* crimping kit |                    |      |      |                   |                        |                                  |     |
| RMDX6018D28<br>RCDX6018D28 |                    | 26         | 2.34            | 1.70 | 1.27 |                      |                    |      |      | 0.64              |                        |                                  |     |

\* M10SG8 consists of die set, stop bushing and M10S1 tool

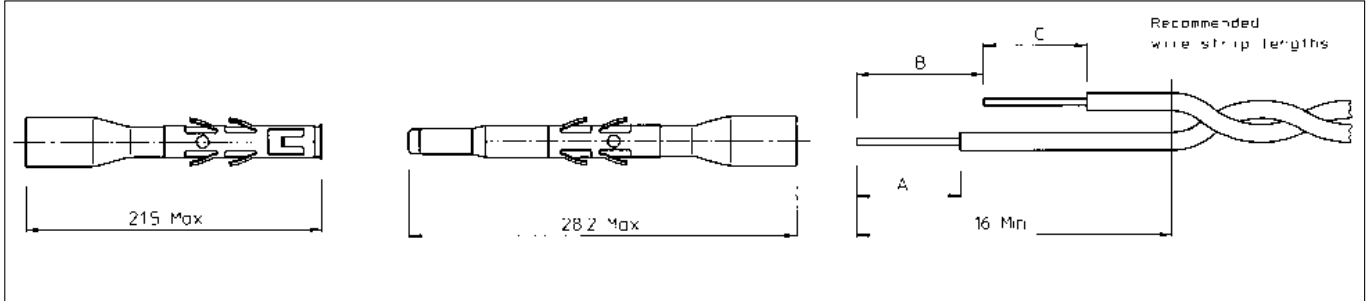




# RMDX/RCDX

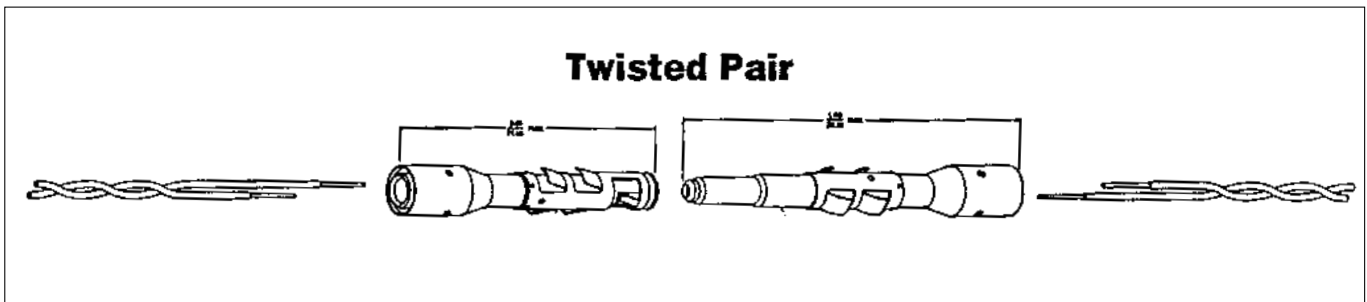


## MONOCRIMP Twisted pair



| Part number |        | AWG<br>inner conduct. | Dia. outer<br>jacket<br>(single wire) | Cable strip lengths |     |     | Crimp tool<br>M10S1  |                               | Extraction<br>tool           |
|-------------|--------|-----------------------|---------------------------------------|---------------------|-----|-----|----------------------|-------------------------------|------------------------------|
| Male        | Female |                       |                                       | A                   | B   | C   | Die set<br>not incl. | Stop<br>bushing<br>not. incl. |                              |
| RMDX6019D28 |        | 26 (19 x 0.10)        | 1.25                                  | 4.7                 | 6.0 | 4.0 | M10SG8*              |                               | RX2025GE1<br>or<br>RX16D11D1 |
| RCDX6019D28 |        | 24 (7 x 0.20)         | 1.25                                  |                     |     |     |                      |                               |                              |
|             |        | 24 (19 x 0.13)        | 1.45                                  |                     |     |     | S80                  | SL105                         |                              |
| RMDX6031D28 |        | 26 (7 x 0.16)         | 0.70                                  |                     |     |     |                      |                               |                              |
| RCDX6031D28 |        |                       |                                       |                     |     |     |                      |                               |                              |

\* M10SG8 consist of die set, stop bushing and M10S1 tool.





## Size 16 Fibre optic contacts for TRIM TRIO connectors

### Description

Size 16 (1.6mm) Fibre optic contacts series 8012 are optical contacts designed for the integration of optical links in all TRIM TRIO cable connectors.

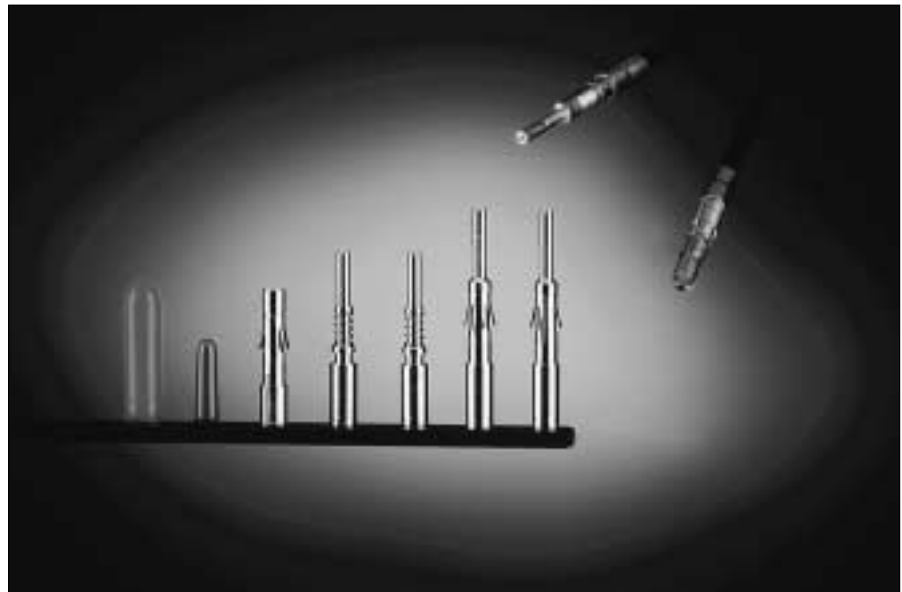
The F.O. contacts are designed to accommodate 1000µm plastic fibres with a cable diameter of 2.2 mm.

### Features and benefits

- Socket contact is spring loaded to avoid any air gap between the two optical faces.
- Low insertion loss is provided by high precision pieces.
- Single jumpers, multiway harness and active device housings can be supplied according customer requirement.

### Performance characteristics for plastic fibre (depends on supplier)

|                                     |                  |
|-------------------------------------|------------------|
| Temperatur range:                   | -20°C to + 70°C  |
| Attenuation at 0.660 µm (at +20°C): | < 200 db/Km      |
| Min radius:                         | 25 mm            |
| Tensile strength                    | 5 daN            |
| Weight:                             | 5 daN/Km         |
| Cable retention:                    | 25 N             |
| Typical insertion loss              | 1.5 dB at 650 nm |



### Construction

Contact body: Arcap (rustproof)

Outer spring: Stainless steel

### Connector accommodation

Fibre optic contacts can be used in any contact position in any connector in the TRIM TRIO interconnection system.

- MS-M / MSGRectangular connectors
- SMS Qikmate
- G - Bantamate
- UT-Bantam
- UTG Metalok bantam
- UTP Full plastic bantam
- UTGS Shielded bantam

## How to order

### Contacts

Male contact: 8012P14J262

Female contact: 8012S14J262

### Tool kit

#### Crimping / polishing technic

The tool kit contains all necessary tools to terminate contacts for plastic fibre, such as

- Stripping plier
- Crimping plier
- Polishing plate and tool
- Miscellaneous

Part number tool kit: 80MS0004

### Separate tools

|                             |           |
|-----------------------------|-----------|
| • Cutting tool              | 80WD0005  |
| • Stripping plier           | 80WD0025  |
| • Crimping plier            | 80WS0002  |
| • Polishing plate           | 80WP0005  |
| • Polishing tool            | 80WP0018  |
| • 10 polishing discks 30 µm | 80WP0019  |
| • 10 polishing discks 9 µm  | 80WP0014  |
| • Extraction tool           | RX2025GE1 |

For other fibres consult factory.



## Discrimination keys for TRIM TRIO connectors

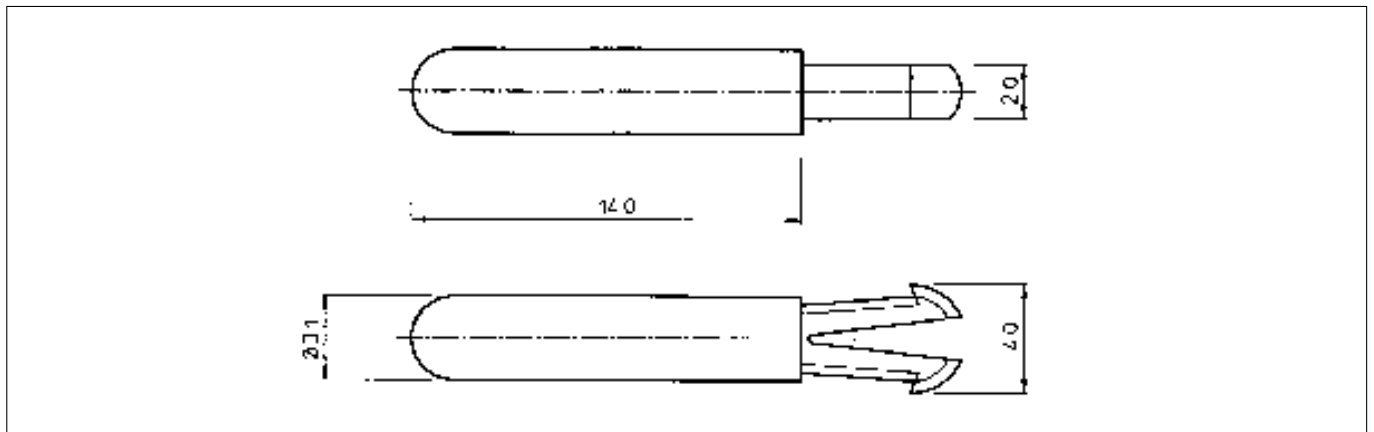
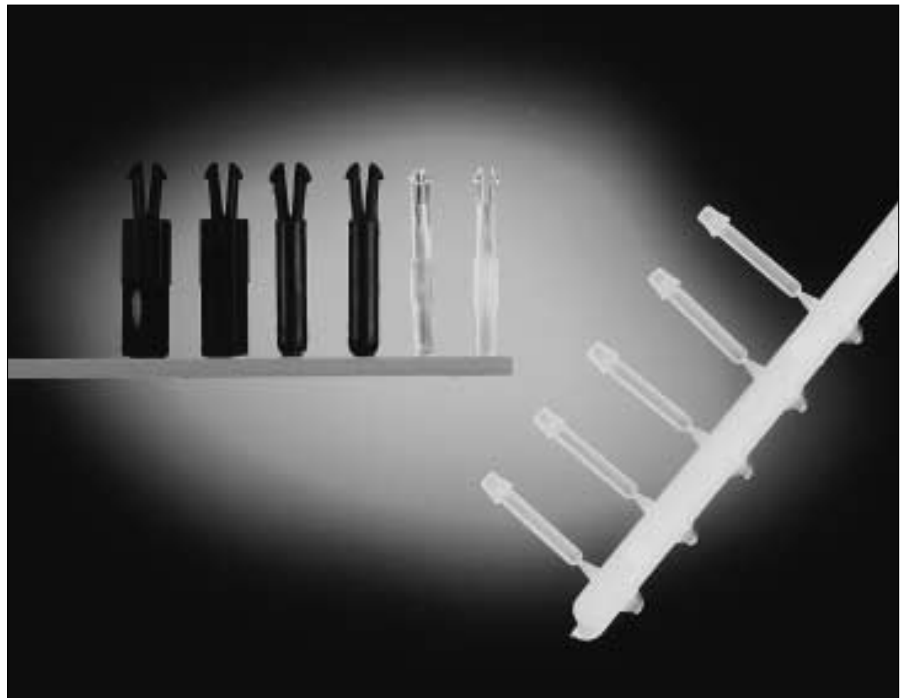
### Description

In applications where similar connectors are used next to each other, mismatching can be a reason for disturbances, system failure or even danger to operating personnel. To eliminate mismatching, all TRIM TRIO connectors can be equipped with discrimination keys, which offer unlimited possibilities for a "fool - proof" interconnection system.

When one of these discrimination keys is used, the TRIM TRIO connector will only mate with a connector which has a vacant contact or discrimination cavity at the corresponding position.

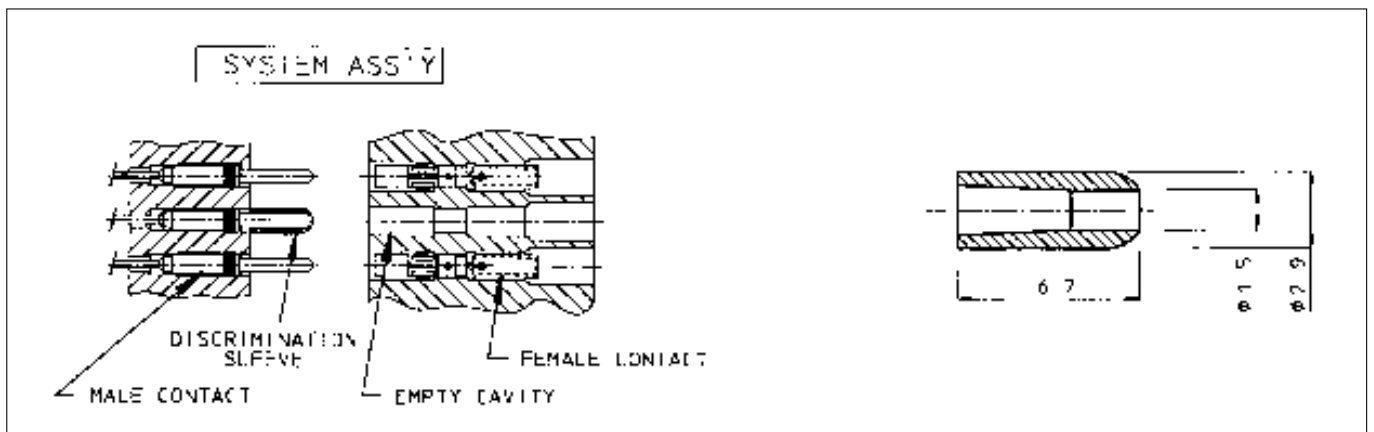
This system offers boundless opportunities for all applications which involve several identical TRIM TRIO connectors.

The material used is polyamide 6.6



### SMSPKE0

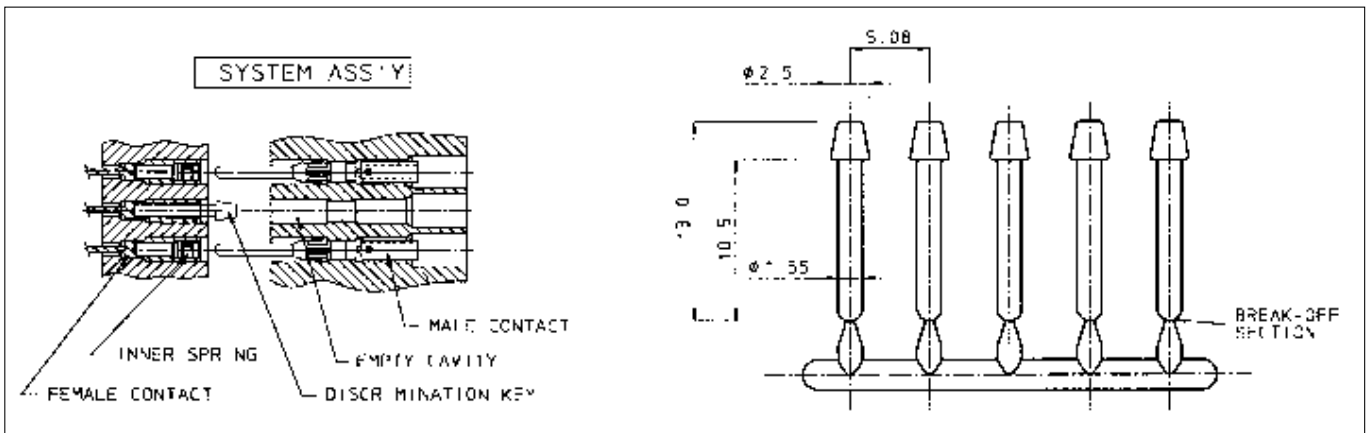
A dummy contact, which can be inserted into an empty contact cavity in any of the TRIM TRIO connectors.



### SMSPKB2

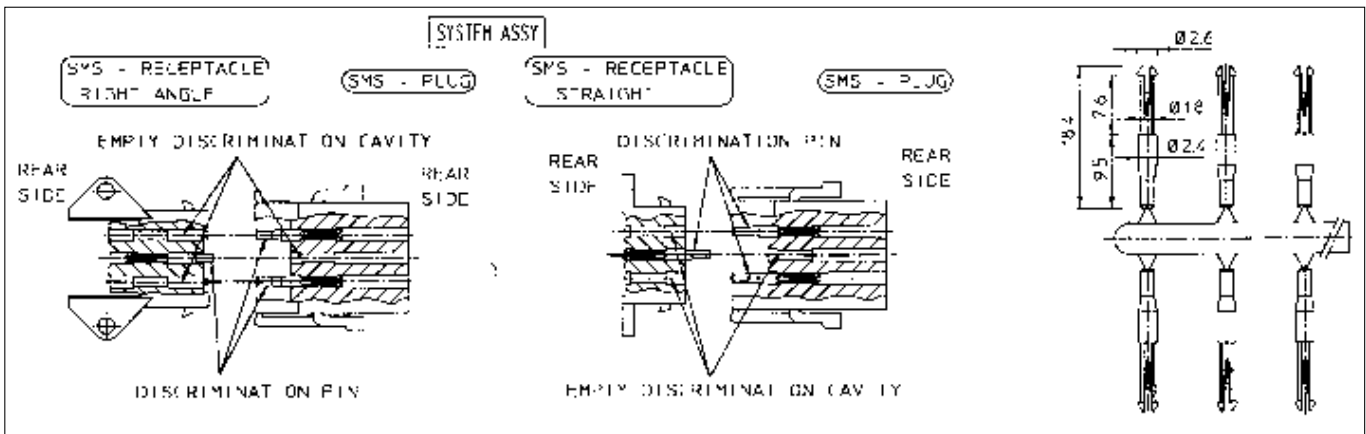
A tube, which can be fitted over a preassembled male contact in all TRIM TRIO male boardmount connectors MSO, SMS, MSG.

# Accessories



## SMSPK2V1

A pin, which can be inserted into a preassembled female contact in all TRIM TRIO female boardmount connectors MSO, SMS.



## SMSPK3

A pin, which can be inserted in the discrimination cavities of the SMS Qikmate cable and boardmount connectors. The discrimination cavities are in between of the contact cavities and offer the advantage that no contact cavities are lost due to discrimination.

As extraction tool, the RX2025GE1 without the "extraction tool tip" can be used.

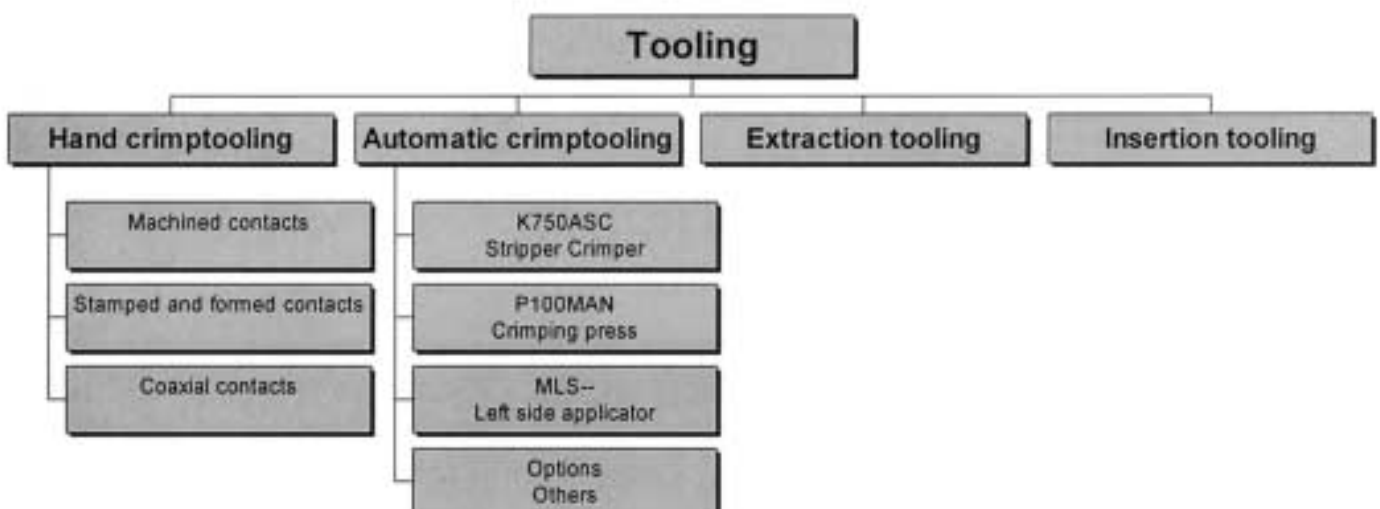
To unlock the discrimination pin, insert the extraction tool in the discrimination cavity at the rear side of the connector. Meanwhile, the pin can be extracted manually at the mating side.



## Overview TRIM TRIO tooling



## Selection matrix TRIM TRIO tooling



# Crimptooling



## Crimptooling for TRIM TRIO contacts

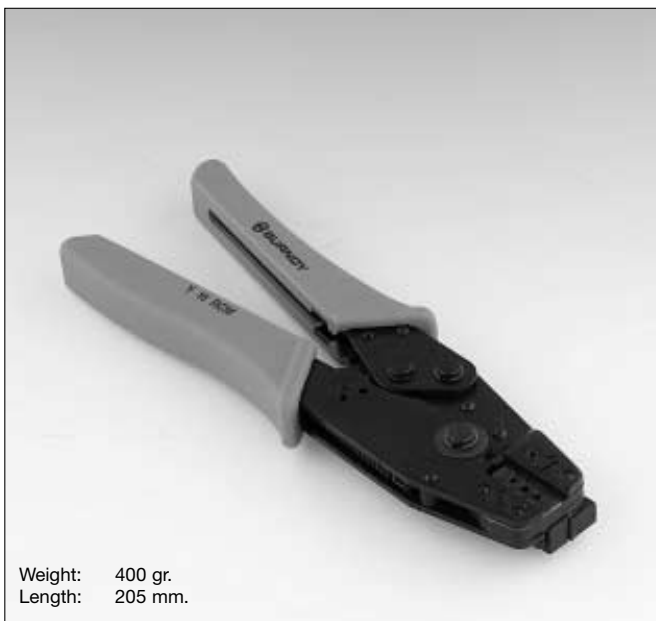
The TRIM TRIO connection system not only offers versatility in connectors but production versatility in tooling as well. All information needed on tooling ranges from simple handtools for small production, over semi-automatic to full automatic strip-and-crimp machines can be found on the hereafter paragraphs. All the TRIM TRIO tooling and this for machined, stamped and formed and coax contacts, is specially designed for this system to make reliable, trouble-free connections.



### M10S1 - for machined contacts

A robust, versatile, full cycling handtool which is fully qualified to the requirements of MIL-C-22520. Interchangeable 4-indent die sets are available for a wide range of machined contacts and gives a simultaneous crimp on both wire and insulation.

**This tool is suitable for application of RM/RC machined contacts and coaxial from the TRIM TRIO range.**



### Y16RCM - for machined contacts

A light weight, low cost crimping tool with fixed, 3-groove die set to crimp **Size 16 TRIM TRIO RM/RC loose piece machined contacts.**

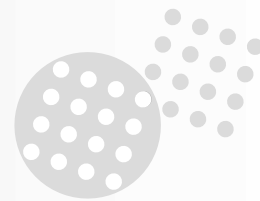
The tool is ratchet controlled to guarantee a complete crimp cycle. Each crimping tool is supplied with a locator to guarantee a perfect crimp indent positioning.



### MH860 - for machined contacts

A light weight crimping tool Qualified to MIL-C-22520/7 that gives an 8 impression crimp with a precision cycle-controlled ratcheting mechanism. It features an 8 step crimp-depth selector knob and is designed to crimp **Size 16 TRIM TRIO RM/RC loose piece machined contacts.** The tool can be provided with different locator heads to crimp different contact types.

# Crimptooling



Weight: 800 gr.  
Length: 275 mm.

## M8ND - for machined and formed contacts

A robust full cycling hand ratchet tool which utilises interchangeable "N" die sets to crimp

**Size 16 TRIM TRIO RM/RC loose piece machined contacts.**

**Size 16 TRIM TRIO SM-M/SC-M loose piece formed contacts.**

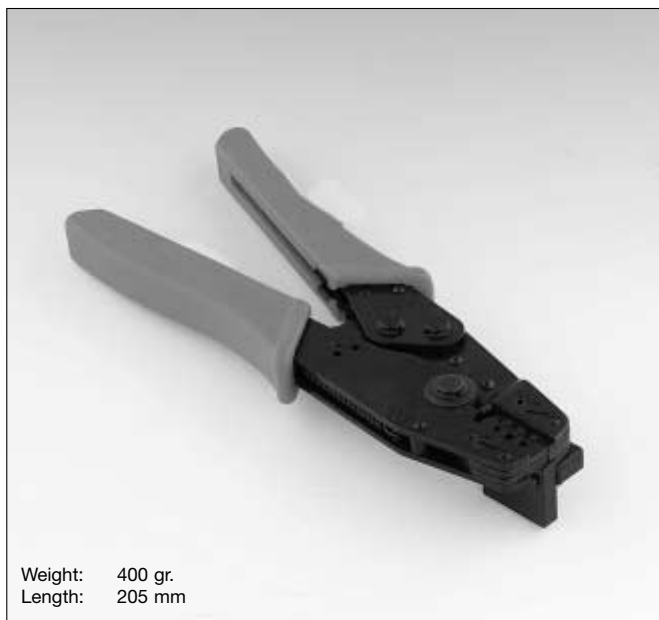


Weight: 400 gr.  
Length: 230 mm.

## Y14MTV - for formed contact

A light weight crimping tool with fixed 3-groove die set for AWG26 to 14 for: **Size 16 TRIM TRIO SM-M/SC-M loose piece formed contacts.**

Ratchet controlled to guarantee a complete crimp cycle.



Weight: 400 gr.  
Length: 205 mm.

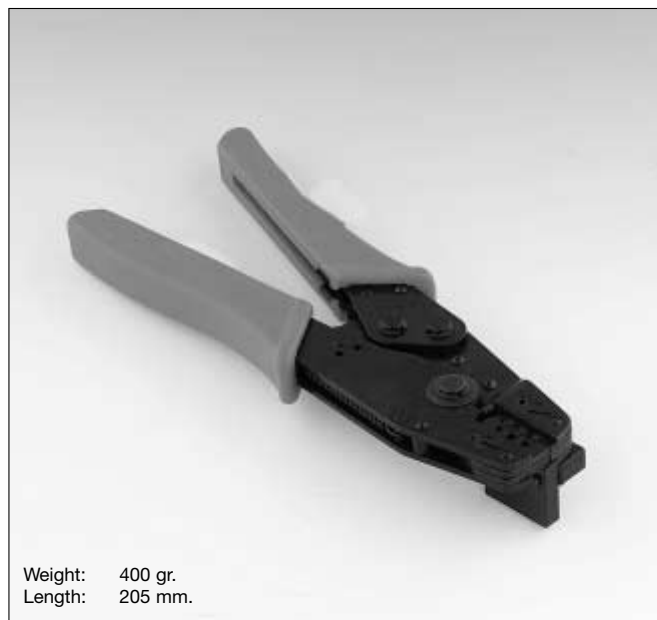
## Y16SCM2 - for formed contacts

A light weight crimping tool with fixed 3-groove die set for AWG26 to 16 for:

**Size 16 TRIM TRIO SM-M/SC-M loose piece formed contacts.**

Ratchet controlled to guarantee a complete crimp cycle.

Each crimping tool is supplied with a locator to guarantee a perfect crimp indent positioning.



Weight: 400 gr.  
Length: 205 mm.

## Y14SCM - for formed contacts

A light weight crimping tool with fixed 3-groove die set for AWG18 to 14 for:

**Size 16 TRIM TRIO SM-M/SC-M loose piece formed contacts.**

Ratchet controlled to guarantee a complete crimp cycle.

Each crimping tool is supplied with a locator to guarantee a perfect crimp indent positioning.



## K750ASC Stripper / Crimper machine for Trim Trio contacts.

### Description

The Strip Crimp 750 processes all banded contacts with cross sections from 0.05 – 4.0 mm<sup>2</sup>.

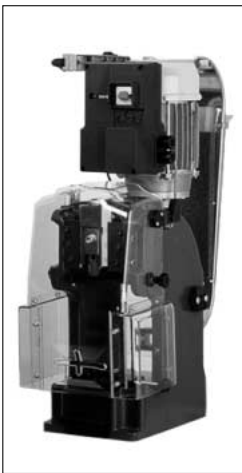
The press has a 40mm stroke and can be used with all UNI-C applicators as well as side-feed mini-style applicators.

Built with well proven precision mechanics and state of the art electronics, the machine is extremely user friendly. One example is the graphic display from which all stripping parameters can be set and called up digitally.

Up to 254 different wire programs can be stored in the memory.

Precision stripping and gas tight crimps guarantee maximum processing quality.

Ref.: K750ASC  
Power: 0.37 kWatt  
Weight: 85 kg  
Dimensions: 350x460x485



### P100MAN (TT Press)

This electromechanical high speed full automatic crimping press is specially designed for mass production and is realised totally in assembled steel parts.

The available force consents the crimping of a wire section up to 2.5mm<sup>2</sup>.

The press has a 40mm stroke and can be used together with side feed mini-style applicators.

The noise level of the press is less than 70dB.

There is a safety mechanism that stops the press if the working speed is too high or the press does not complete its cycle. This protects the press or equipment mounted on board from damage.

Ref.: P100MAN  
Power: 0.75 kWatt  
Weight: 41 kg  
Dimensions: 200x300x580



### MLS--- Left side miniapplicator

Miniapplicators to crimp machined or stamped and formed TRIM TRIO contacts.

All the adjustments requested to make tool correctly functioning (crimp feeding pitch, crimp height...) can be simply made.

Resolution of 0.03mm. Regulation range from 0 to 2.7 mm.

Ref.: See contact sections  
Stroke: 40 mm  
Weight: 4.5 kg  
Dimensions: 145x107x150

### Options

#### 1 - Quality assurance for crimping technology...

A crimping force sensor continuously checks the quality of each individual crimp and records it without impairing the processing speed. The sensor detects bad crimp connections, eliminating the high subsequent costs otherwise caused by them.

For ordering consult factory



# Crimptooling



## Extraction tooling



### RX2025GE1

A spring loaded extraction tool **for the full range of TRIM TRIO contacts**. This tool ensures that the contact locking louvres are fully retracted before any pressure is applied to extract a contact.



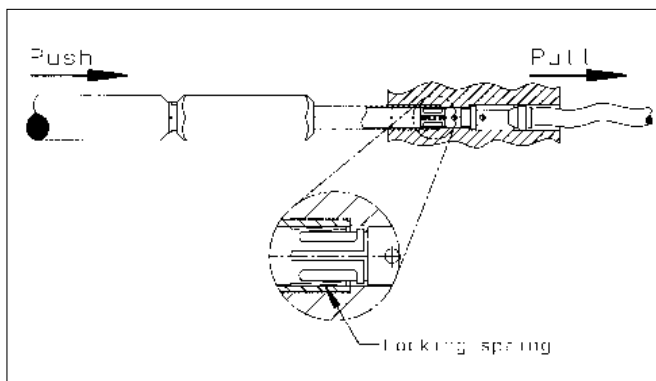
### RX2025GE2

A low cost spring loaded extraction tool for the full range of **TRIM TRIO contacts**.



### RX16D11D1

A spring loaded extraction tool **for the full range of TRIM TRIO contacts**. This tool ensures that the contact locking louvres are fully retracted before any pressure is applied to extract a contact. It is especially suitable for applications where the integrity of the assemblies are of the utmost importance.



### How to extract a contact out of its cavity?

Slide the extraction tip over contact from mating side till the locking spring from the contact is depressed. Push on handle to push out the contact with the spring loaded inner plunger.

## Insertion tooling



### RTM205

This tool is especially designed to ease insertion of **any TRIM TRIO contact** crimped on very flexible or small wire sizes. Simply position the insertion tool so that the tip of the tool bears against the back of the wire barrel, retaining the wire with thumb in the groove of the tool. Push the contact slowly into the connector until it snaps into position.



## TRIM TRIO Special connectors :

- Mixed power / signal
- VDE versions
- Boardmount versions
- Drawer connectors
- High temperatures
- Special applications
- Customised connectors



### Description

Special connectors are connectors to meet application-specific requirements. Based upon design-in projects, this range of special connectors is an extension of the long established and popular TRIM TRIO connector series shown in this catalog, but with the advantage of offering a number of additional features.

### Features and benefits

- TRIM TRIO connectors suitable for mixed power / signal application.
- TRIM TRIO connectors with preloaded stamped and formed contacts for boardmount application
- TRIM TRIO connectors for drawer applications and high temperature.
- Design-in flexibility of TRIM TRIO

The next page lists some of the Special TRIM TRIO connector configurations.

It is intended to give you a general idea of our design capabilities.

As the creation of Special TRIM TRIO connectors is an ongoing process, we advise you to contact our nearest FCI sales office if you have specific connector needs.

Our design flexibility is virtually unlimited, so we are always willing to consider any customised design. Separate data sheets with more detailed technical info of the listed TRIM TRIO Specials are available.

# Specials - TRIM TRIO



- UTG 24-7 mixed power with 7 power and 2 std. Trim Trio contacts – up to 44 Amps



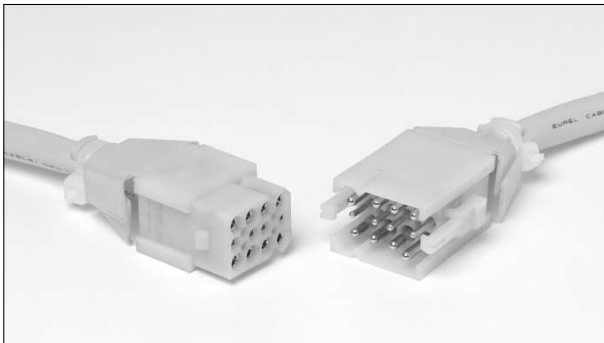
- UTG 12-3 with 3 power contacts up to 26 Amps



- UTG 24-11 with 4 power and 7 standard Trim Trio contacts – up to 44 Amps



- UTG 14-8 with 4 power and 4 standard Trim Trio contacts – up to 26 Amps



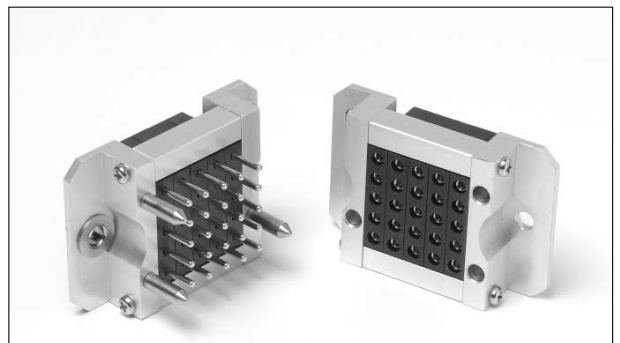
- SMS12 with 8 power and 4 standard Trim Trio contacts - Up to 26 Amps



- Power crimp contacts
  - dia 2,4 - up to 26 Amps
  - dia 3,6 - up to 44 Amps



- MS75 with die cast hood and integrated shroud, for standard Trim Trio contacts



- QIKRACK Modular drawer connector  
For standard and RCS Trim Trio contacts



## Notes

A series of horizontal dotted lines for writing notes.

## AUSTRALIA

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Smithfield NSW 2164  
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e-mail : fciaus\_sales@fciconnect.com

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