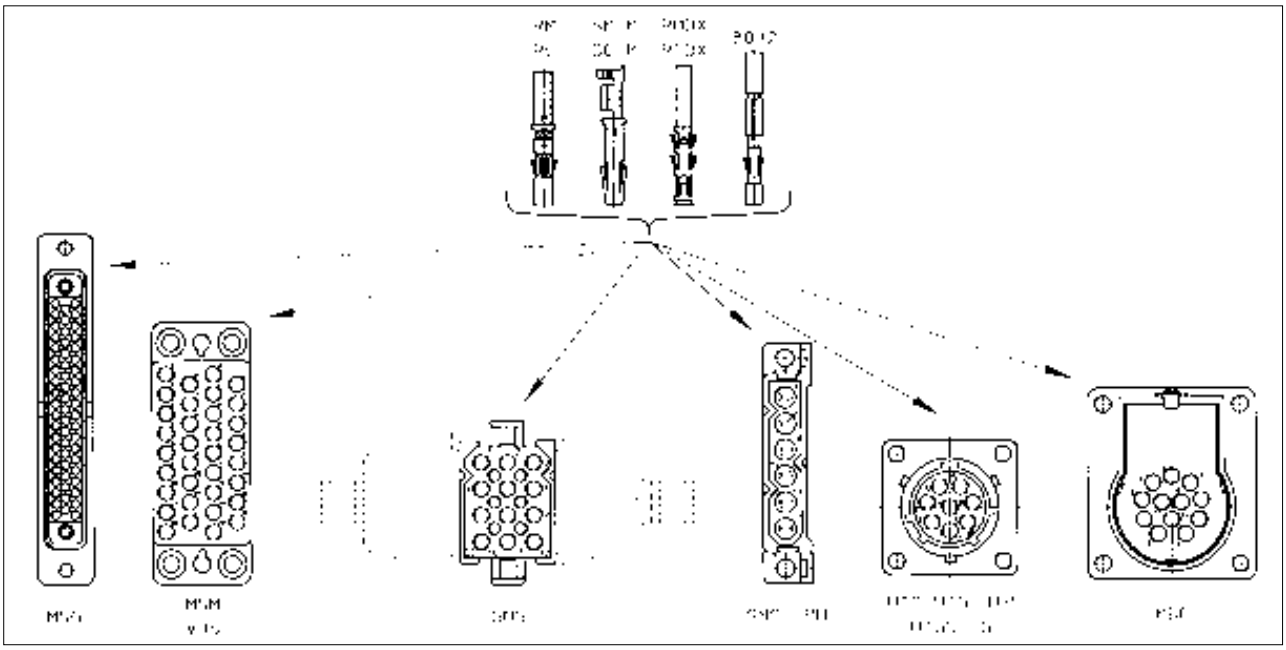
Index

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

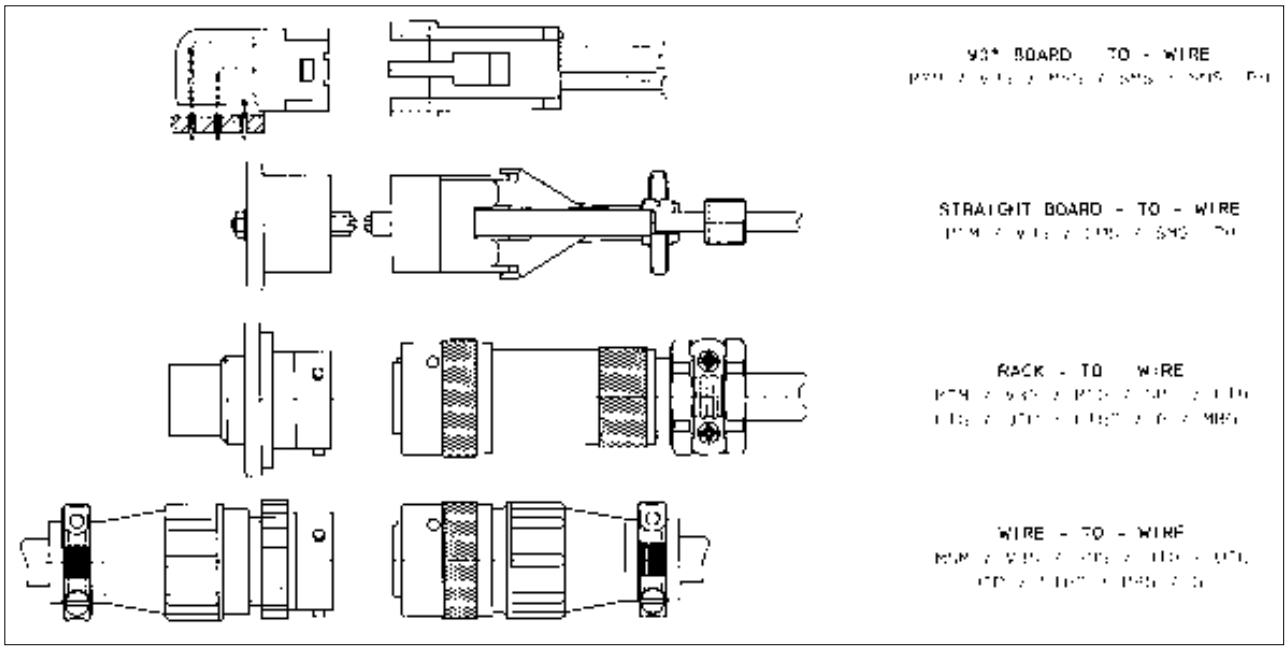
- proven materials
- guaranteed quality assurance per ISO 9001 certification
- rigid inspection procedures
- positive polarisation
- pin protection
- rugged mouldings
- restricted entry contacts

Economy

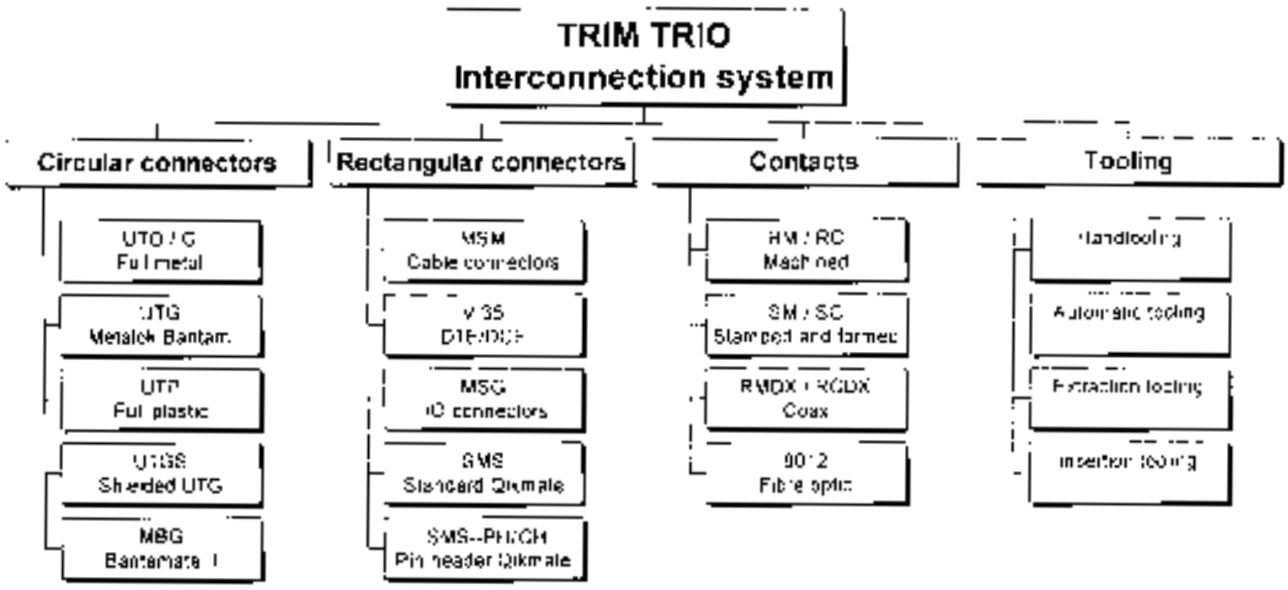
- low assembly cost
- minimal tooling downtime
- easy connecting and disconnecting
- low wiring cost
- simplified personnel education
- low inspection cost
- removable contacts
- reduced number of components
- low installed cost

Introduction

Versatility



TRIM TRIO selection matrix

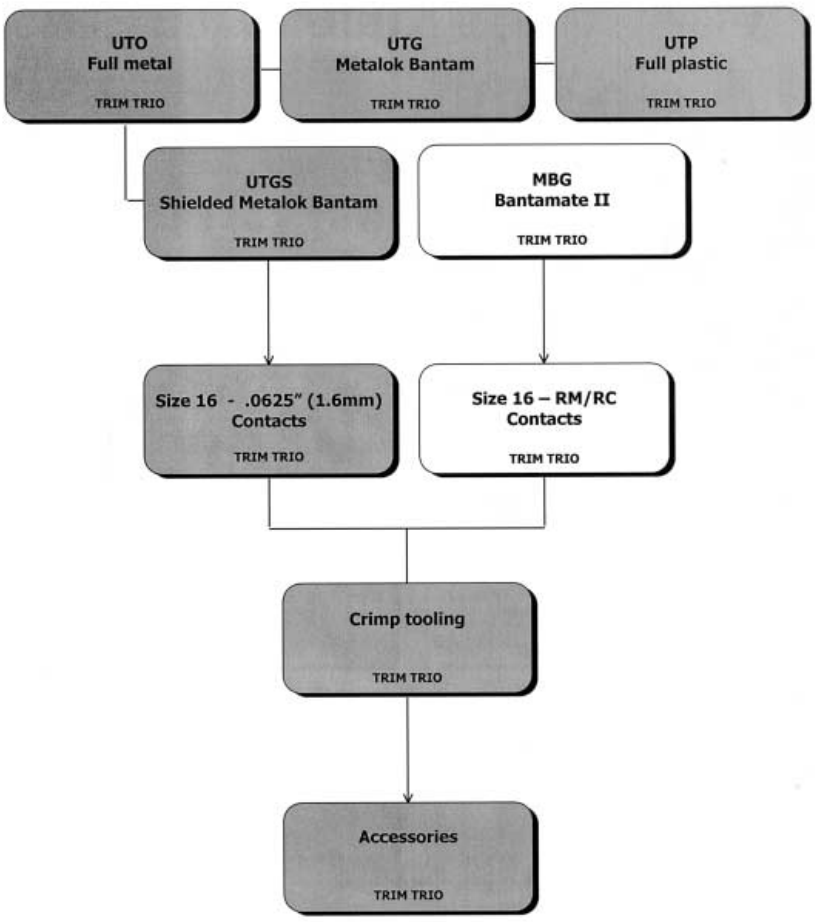


Description

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 UT0, 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.

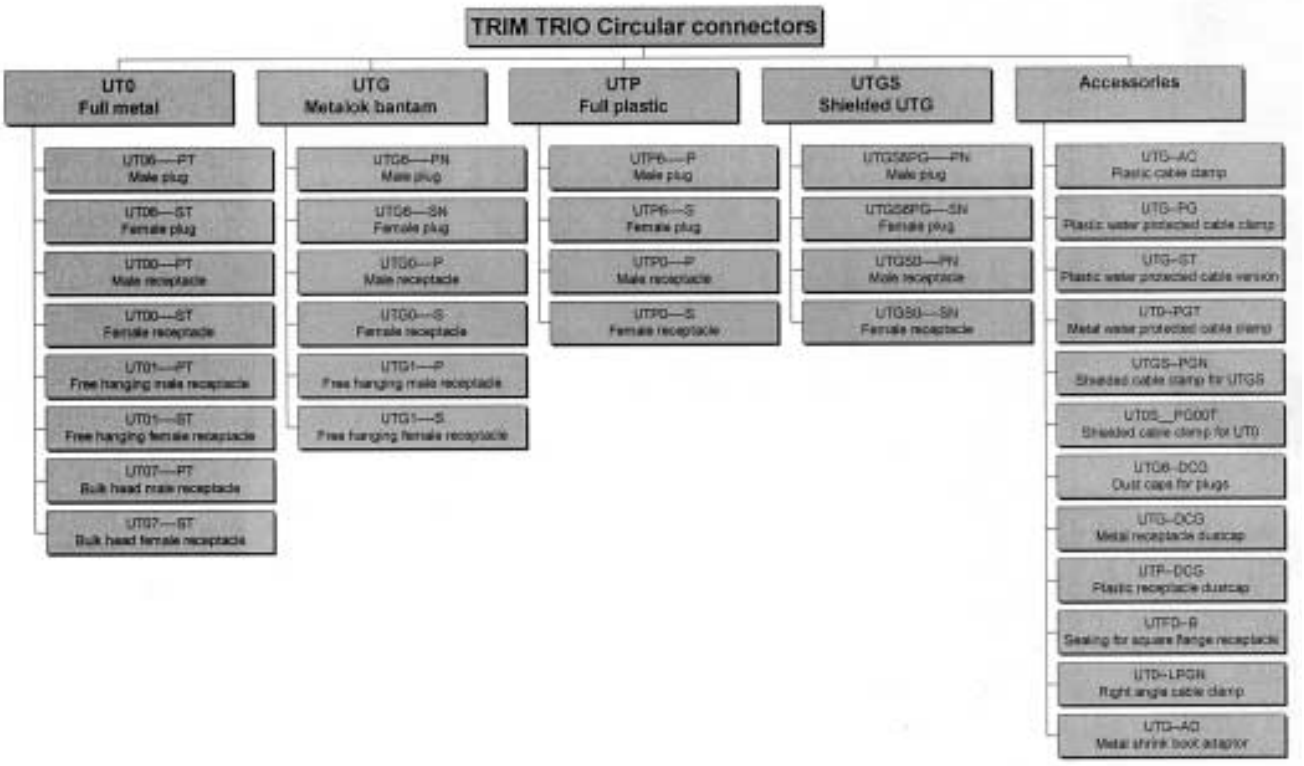
Accessories

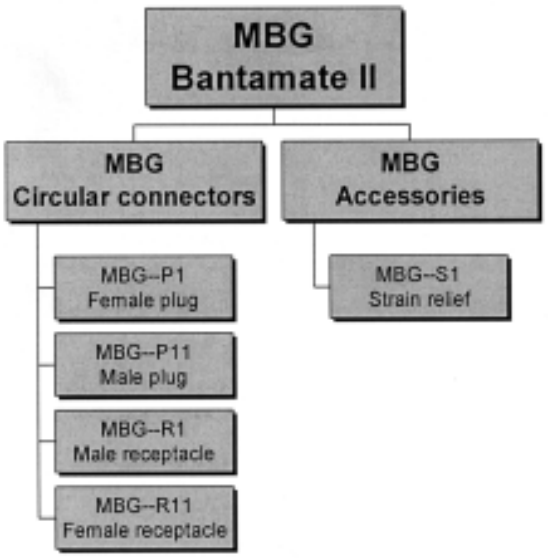
- TRIM TRIO use the same accessories such as backshells and dustcaps.
- MBG Bantamate II has his own backshell

Tooling

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

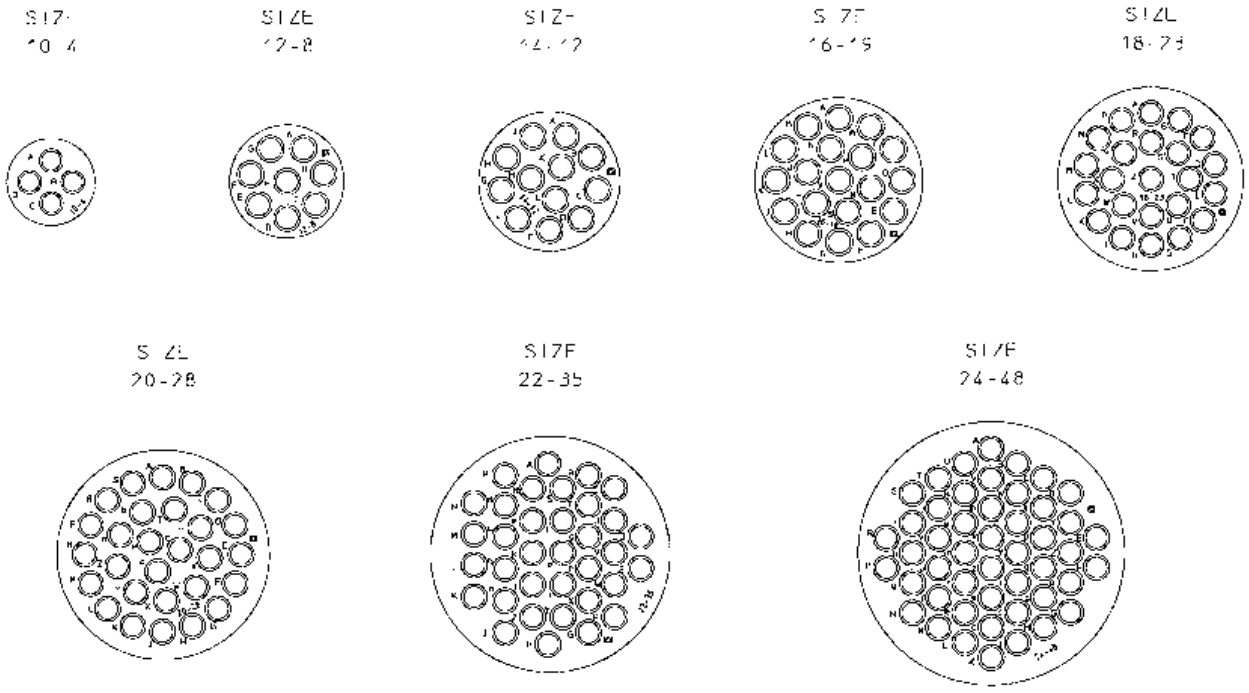
Selection matrix Circular connectors



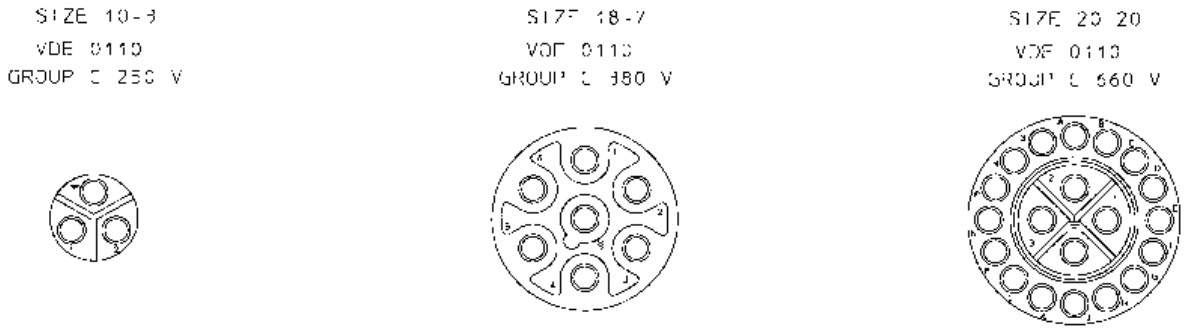


TRIM TRIO Insert arrangements and moulded-in contact identification

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

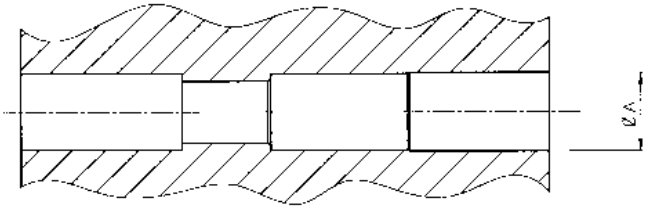


TRIM TRIO additional arrangements only available for UTG, UTGS and UTP



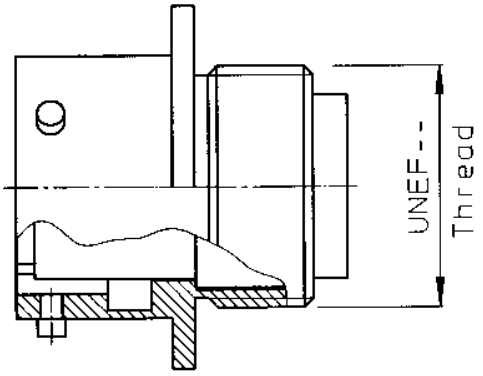
Contact identification positions shown are for mating face of pin contact connectors and wire face of socket contact connectors.

TRIM TRIO cavity dimensions on wire face



CONNETOR FAMILY	ØA	
UIO	3.20	3.30
UTG		
UTGS	3.30	3.40
UTP		

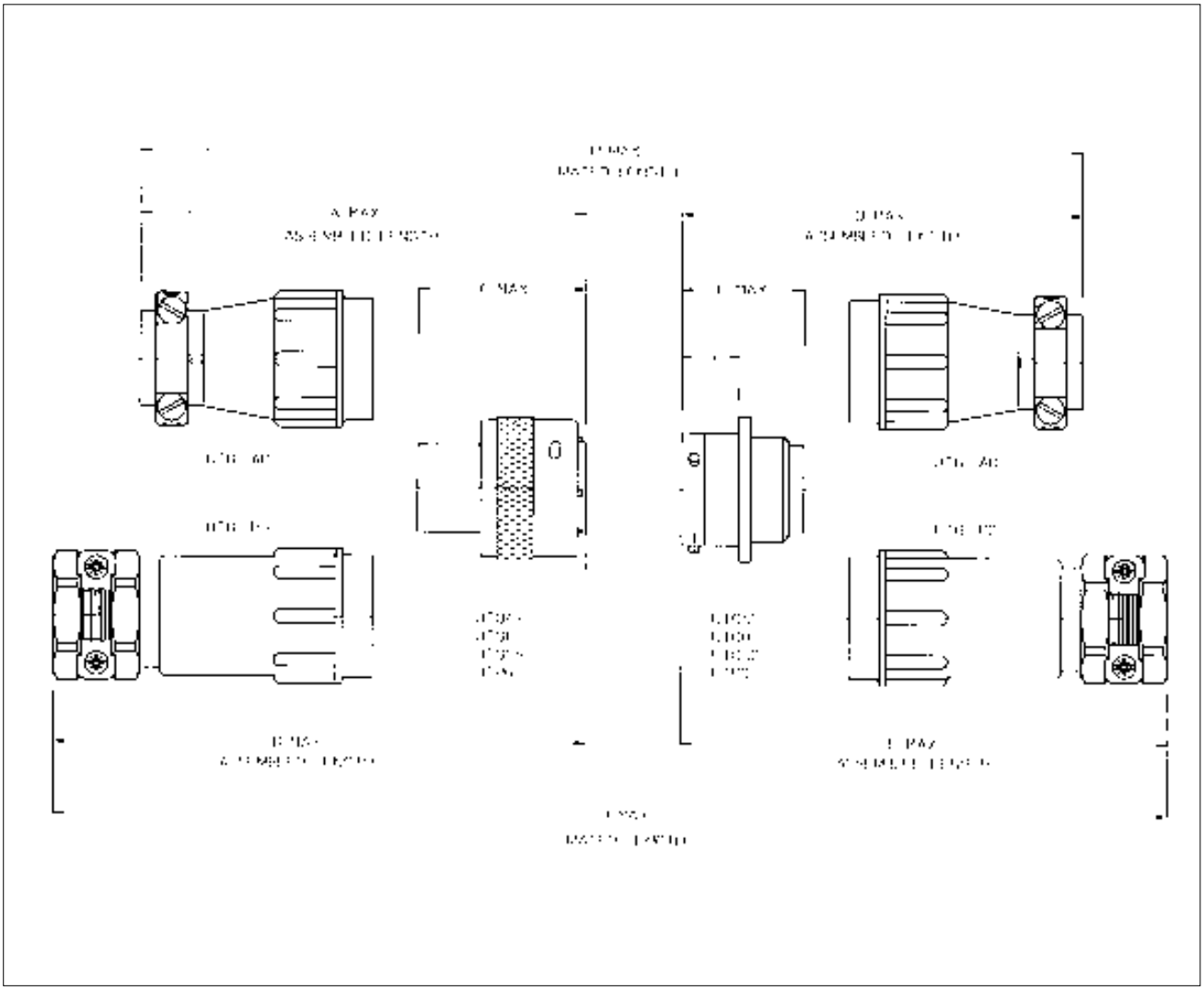
TRIM TRIO back shell threading



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	
20	1-3/16 - 18 UNEF	PG21
22	1-5/16 - 18 UNEF	
24	1-7/16 - 18 UNEF	PG29

Mating Dimensions TRIM TRIO



Shell size	Dimensions in mm								
	A max.	B max.	C max.	D max.	E max.	F max.	G ±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			118	153
16		85			85				161
18	67	88		67.5	89			126	168
20	74	101		76	103	26	14.6	140	191
22	79	117		82	110			151	207
24	84	123		88	127		15.4	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 leightweight, robust circular connectors. They are available in 8 shell sizes, 11 insert arrangements **all intermateable, 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

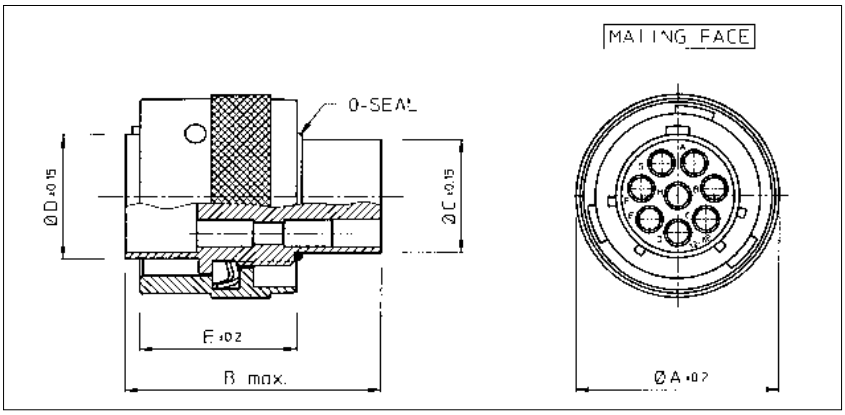
- "UTG" connectors accept Trim-Trio removable snap-lock contacts (see contact section)
- Contacts to be ordered seperately.

How to order

Connector family :	**UTG**	**0**	**14**	**12**	**P**		**H**	**- -**
	UTG	**6**	**14**	**12**	**S**	**N**		**- -**

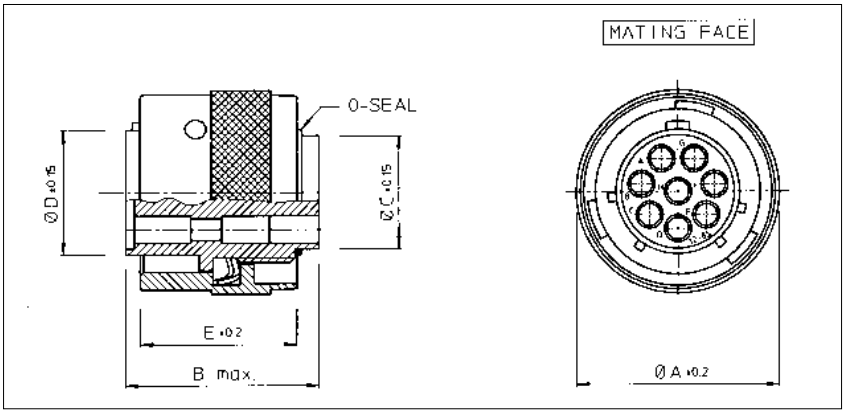
Body variation:	**0 :** Wall mounting receptacle **6 :** Cable plug **1 :** Free hanging receptacle
Shell size:	
Insert arrangement:	
Type of contacts:	**P :** Pin contacts **S :** Socket contacts
Plating	**N :** Nickelplated bayonet ring
Application	**No letter :** Standard version **H :** Water protected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

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



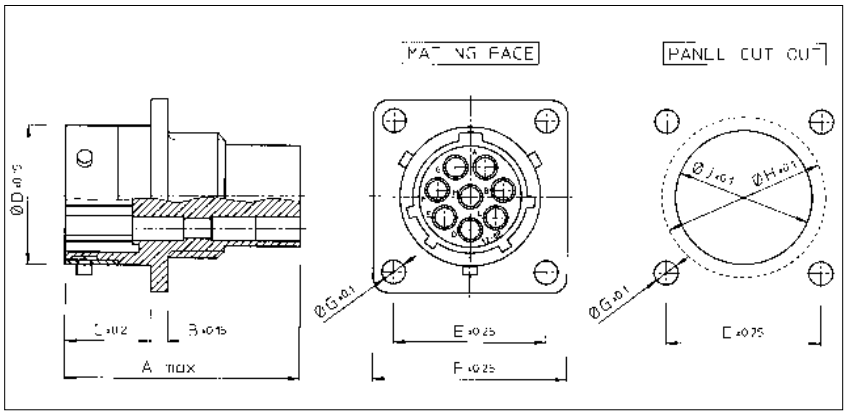
Part number	Shell size	Ø A ±0.2	B max.	Ø C ±0.15	Ø D ±0.15	E ±0.2
UTG6104PN / UTG6103PNVDE	10	21.6		10.9	12.2	
UTG6128PN	12	24.8		13.8	15.1	
UTG61412PN	14	28.0	31.8	17.0	18.3	
UTG61619PN	16	31.2		19.9	21.5	19.1
UTG61823PN / UTG6187PNVDEU	18	34.3	31.8 / 33.0	22.4	24.0	
UTG62028PN / UTG62020PN	20	37.5	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	
UTG6128SN	12	24.8		13.8	15.1	
UTG61412SN	14	28.0	23.9	17.0	18.3	
UTG61619SN	16	31.2		19.9	21.5	19.1
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	

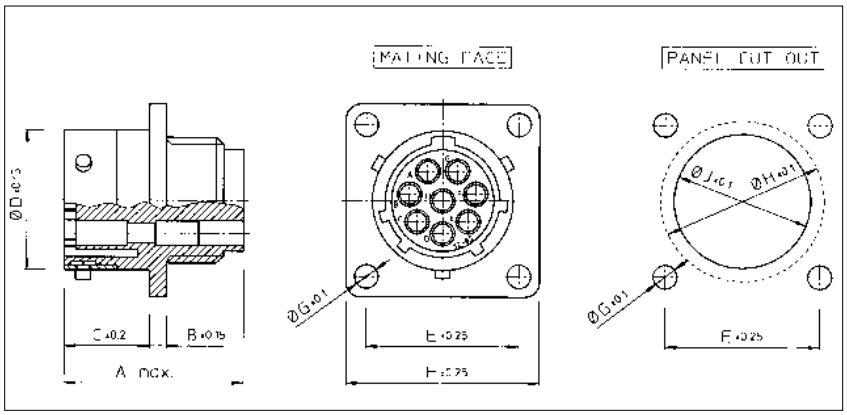
Wall mounting receptacle for pin contacts (UTG0- - - -P)



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		31.3	27.8
UTG02028P / UTG02020P	20	33.3/34.3		14.5	31.7	29.4	36.5		34.5	30.9
UTG02235P	22	33.3	3.5		34.9	31.8	39.7		37.7	34.1
UTG02448P	24			15.3	38.0	34.9	42.9	3.9	40.9	37.3

For waterprotected version add “H” behind “P” e.g. UTG01412PH

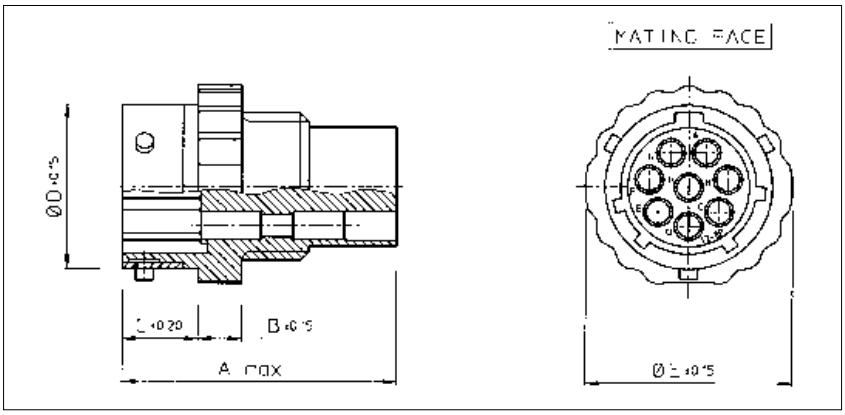
Wall mounting receptacle for socket contacts (UTG0- - - -S)



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		31.3	27.8
UTG02028S / UTG02020S	20	27.0		14.5	31.7	29.4	36.5		34.5	30.9
UTG02235S	22	28.0	3.5		34.9	31.8	39.7		37.7	34.1
UTG02448S	24	30.4		15.3	38.0	34.9	42.9	3.9	40.9	37.3

For waterprotected version add “H” behind “S” e.g. UTG01412SH

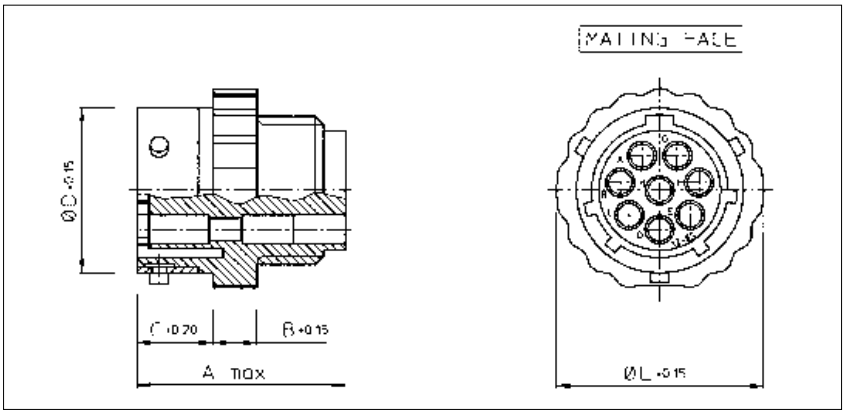
Free hanging receptacle for pin contacts (UTG1- - - -P)



Part number	Shell size	A max.	B ±0.15	C ±0.2	Ø D ±0.15	Ø E ±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		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 ±0.15	C ±0.2	Ø D ±0.15	Ø E ±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		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

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
Gass filled thermoplast UL94-V0
Colour: black
Coupling spring: Spring steel

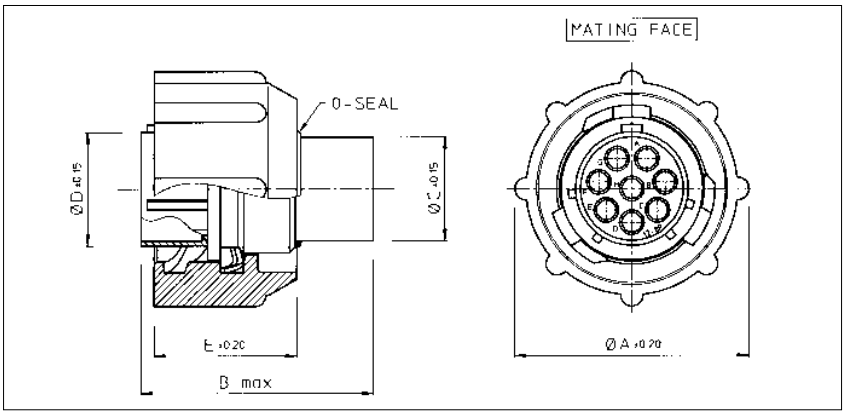
Contact accommodation

- "UTP" connectors accept Trim-Trio removable snap-lock contacts (see contacts section)
- Contacts to be ordered seperately.

How to order

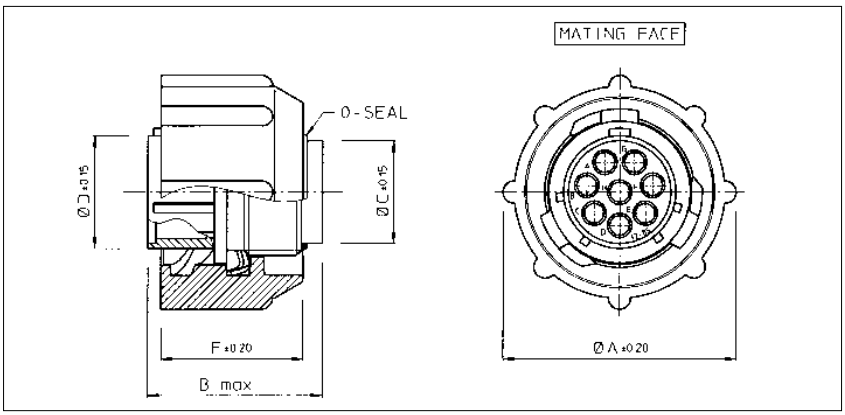
Connector family :		**UTP** **UTP**	**0** **6**	**14** **14**	**12** **12**	**P** **S**	**H**	**- -** **- -**
Body variation:	0 : Wall mounting receptacle 6 : Cable plug							
Shell size:								
Insert arrangement:								
Type of contacts:	P : Pin contacts S : Socket contacts							
Application	No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

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



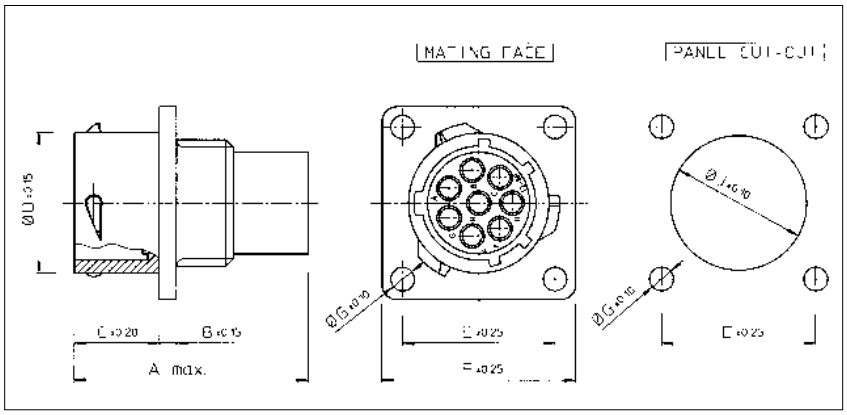
Part number	Shell size	Ø A ±0.2	B max.	Ø C ±0.15	Ø D ±0.15	Ø E ±0.2
UTP6104P / UTP6103PVDE	10	26.7		10.9	12.2	
UTP6128P	12	31.4		13.8	15.1	
UTP61412P	14	34.5	31.8	17.0	18.3	
UTP61619P	16	37.8		19.9	21.5	19.1
UTP61823P / UTP6187PVDEU	18	40.8	31.8 / 33.0	22.4	24.0	
UTP62028P	20	43.9		25.6	27.2	
UTP62235P	22	47.0	31.8	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	
UTP6128S	12	31.4		13.8	15.1	
UTP61412S	14	34.5	23.9	17.0	18.3	
UTP61619S	16	37.8		19.9	21.5	19.1
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		28.5	30.4	
UTP62448S	24	50.1	26.2	31.7	33.5	

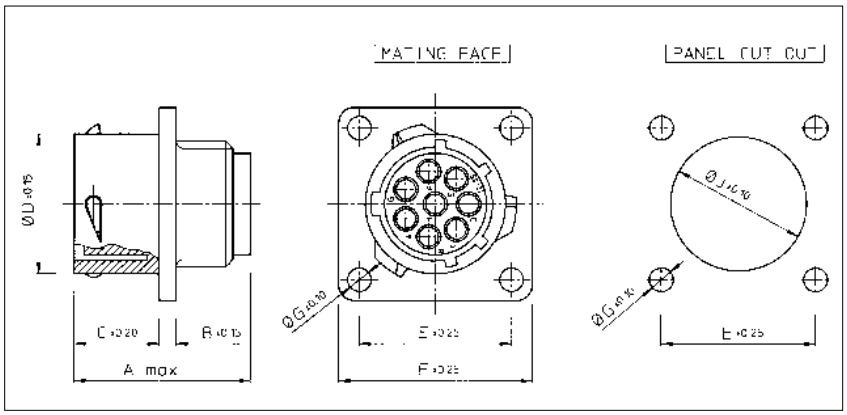
Wall mounting receptacle for pin contacts (UTP0- - - -P)



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				15.0	18.3	23.8		15.1
UTP0128P	12		2.3		19.0	20.6	26.2		18.2
UTP01412P	14	31.7		11.3	22.2	23.0	28.6		21.4
UTP01619P	16				25.3	24.6	31.0	3.2	24.6
UTP01823P / UTP0187PVDEU	18	31.7/34.0	2.5	11.3/17.9	28.5	27.0	33.3		27.8
UTP02028P	20			14.5	31.7	29.4	36.5		30.9
UTP02235P	22	33.3	3.5		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			15.0	18.3	23.8		15.1
UTP0128S	12		2.3		19.0	20.6	26.2		18.2
UTP01412S	14	24.3		11.3	22.2	23.0	28.6		21.4
UTP01619S	16				25.3	24.6	31.0	3.2	24.6
UTP01823S / UTP0187SVDEU	18	24.3/30.4	2.5	11.3/17.9	28.5	27.0	33.3		27.8
UTP02028S	20	27.0		14.5	31.7	29.4	36.5		30.9
UTP02235S	22	28.0	3.5		34.9	31.8	39.7		34.1
UTP02448S	24	30.4		15.3	38.0	34.9	42.9	3.9	37.3

For waterprotected version add “H” behind “S” e.g. UTP01412SH

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 emmisions 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-cel.

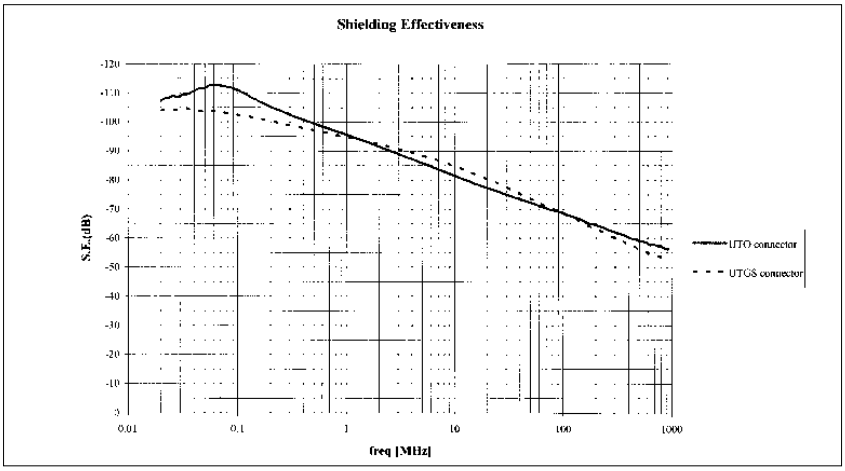
Test set-up

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 contructed to obtain a 50Ω coaxial transmission line, to which a power level Pin is delivered. The shield of the connector and the walls from the triaxial cell form the second coaxial transmission line. The output power
Pout 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).

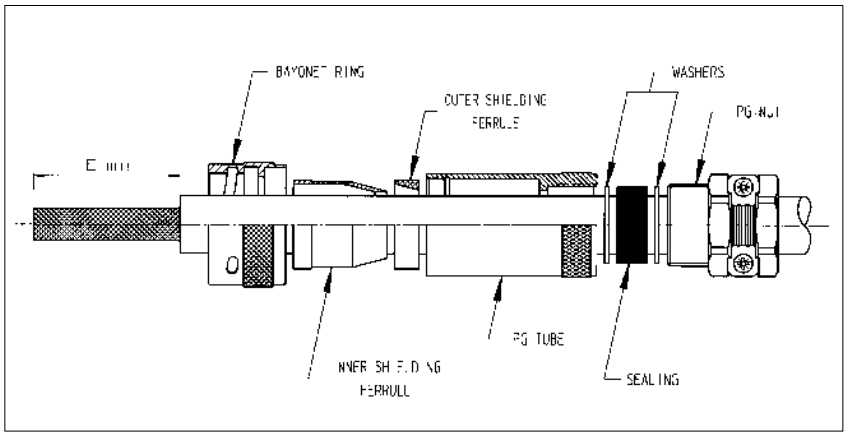
Formula: Shielding effectiveness in dB

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

Shielding effectiveness chart for UT0 and UTGS



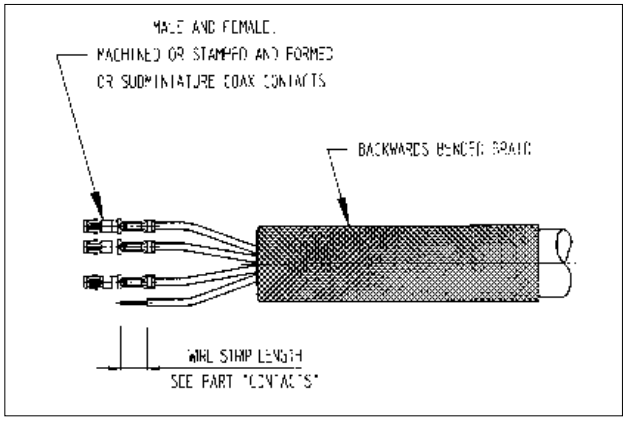
How to assemble shielded connectors ...



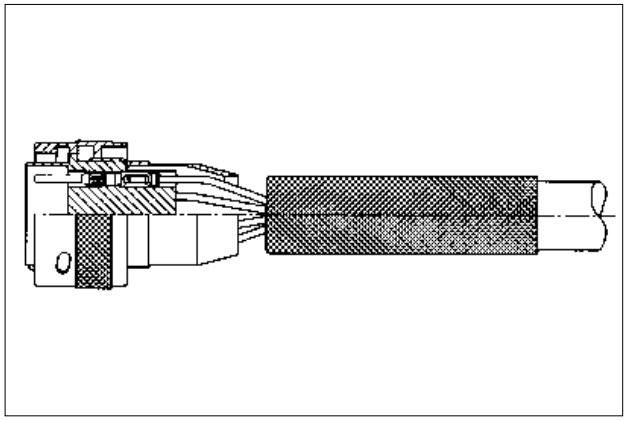
Put all parts over the cable, including the coupling ring, as mentioned on the picture.
Strip the outer jacket with the dimensions given in the table.

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

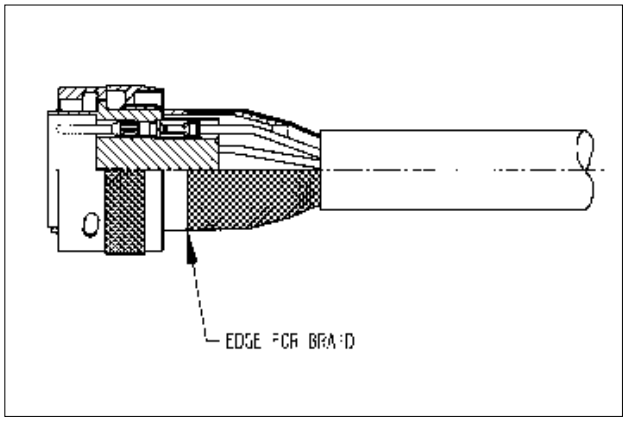
Recommended cable strip dimensions



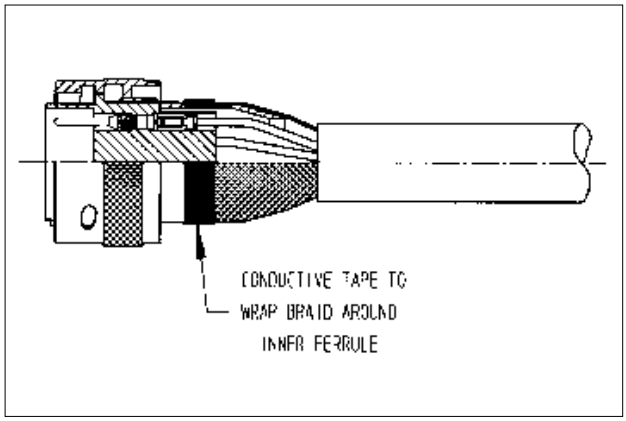
Bend the braid backwards over the cable jacket.
Strip the wires (refer to contact section).
Crimp the contacts.



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

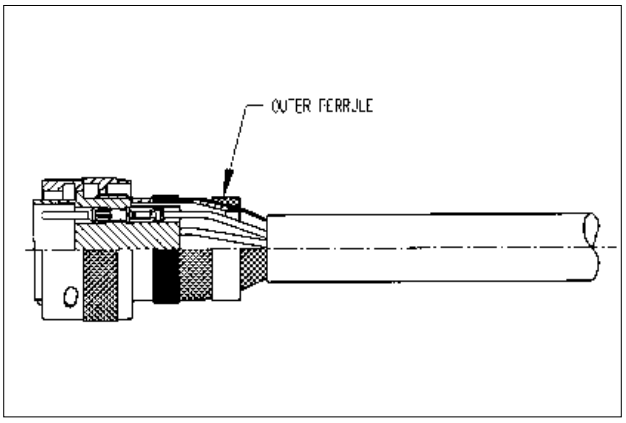


Bend the braid back over the conical part of the inner shielding ferrule.
Cut the shield so that it does not pass the front edge as shown

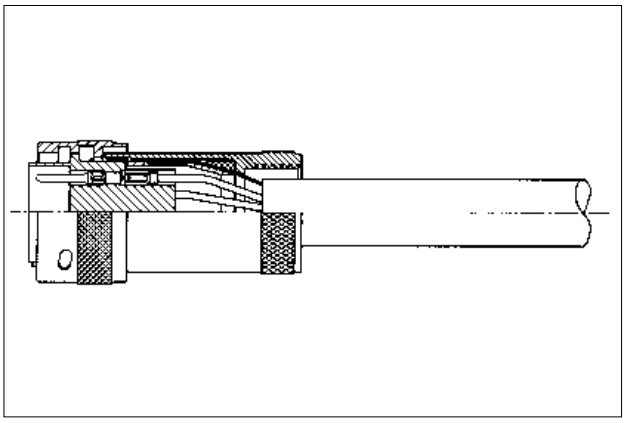


Wrap shielding around inner shielding ferrule using a conductive tape.
.Make sure that the braid is wrapped equally around the ferrule to avoid misalignment when assembled.

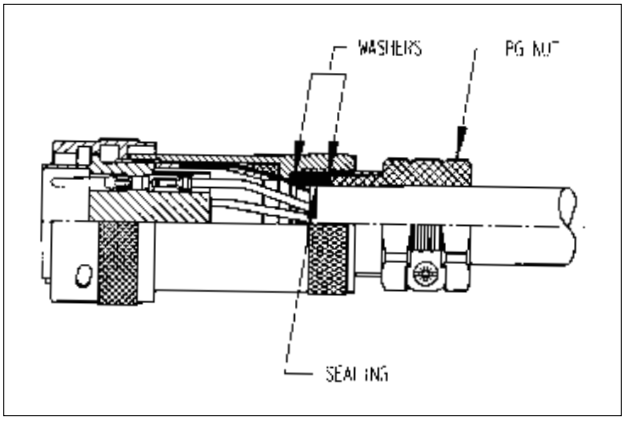
How to assemble shielded connectors ... (cont.)



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



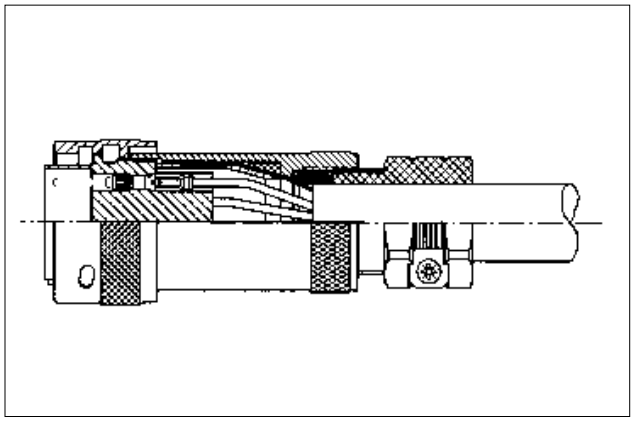
Screw the PG-tube onto the connector using a strap wrench.
Put the plug in an empty receptacle and fix the receptacle in a bench.
Tighten the PG-tube with the recommended torque moments given in table and prevent the cable of twisting.
For Strap wrench and torque meters cosult factory.



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.

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: unmatings.	500 matings and
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.

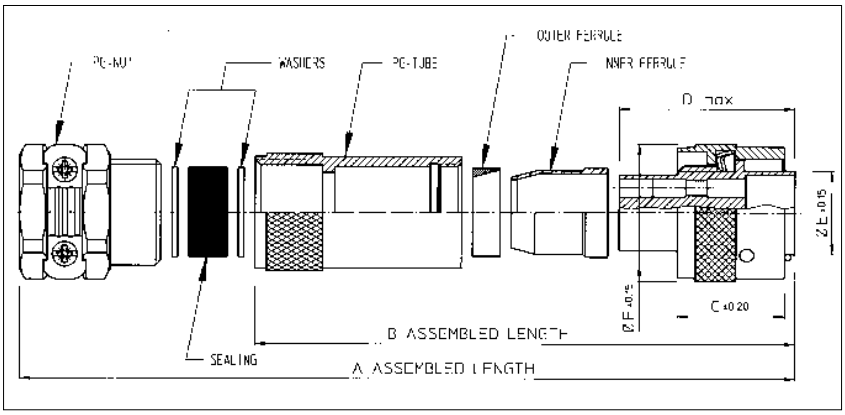
Contact accommodation

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

How to order

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

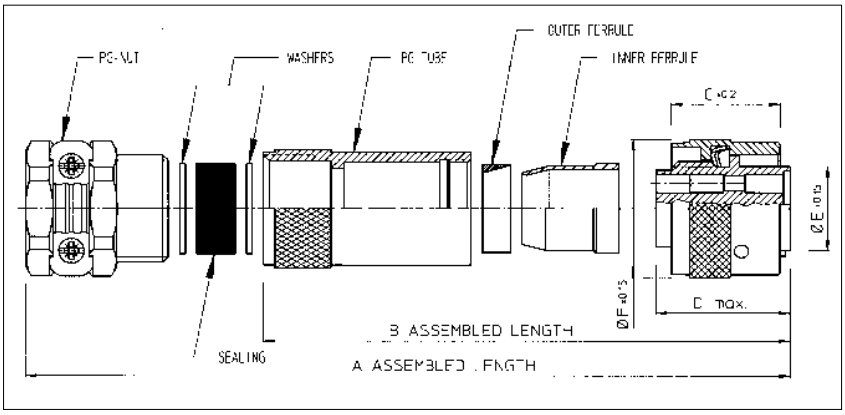
Shielded cable plug for pin contacts (UTGS6PG- - - -PN)



Part number	Shell size	A	B	C ±0.2	D Max.	Ø E ±0.15	F ±0.15	Max 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

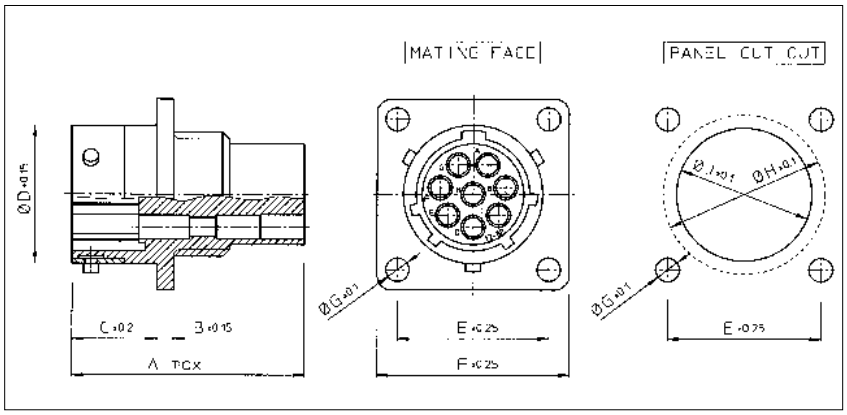
Shielded cable plug for socket contacts (UTGS6PG- - - -SN)



Part number	Shell size	A	B	C ±0.2	D Max.	Ø E ±0.15	F ±0.15	Max 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

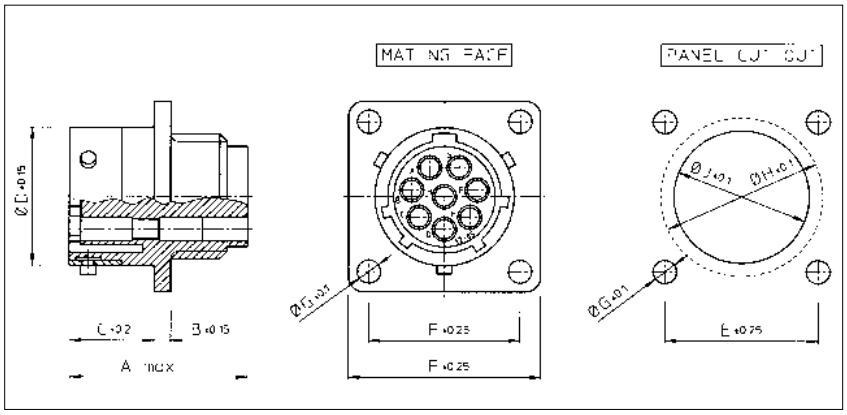
Shielded wall mounting receptacle for pin contacts (UTGS0- - - -PN)



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**				15.0	18.3	23.8		17.3	15.1
UTGS0128PN	**12**		2.3		19.0	20.6	26.2		21.8	18.2
UTGS01412PN	**14**	31.7		11.3	22.2	23.0	28.6		25.0	21.4
UTGS01619PN	**16**				25.3	24.6	31.0	3.2	28.1	24.6
UTGS01823PN / UTGS0187PNVDEU	**18**	31.7/34.0	2.5	11.3/17.9	28.5	27.0	33.3		31.3	27.8
UTGS02028PN / UTGS02020PN	**20**	33.3/34.3		14.5	31.7	29.4	36.5		34.5	30.9
UTGS02235PN	**22**	33.3	3.5		34.9	31.8	39.7		37.7	34.1
UTGS02448PN	**24**			15.3	38.0	34.9	42.9	3.9	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			15.0	18.3	23.8		17.3	15.1
UTGS0128SN	**12**		2.3		19.0	20.6	26.2		21.8	18.2
UTGS01412SN	**14**	24.3		11.3	22.2	23.0	28.6		25.0	21.4
UTGS01619SN	**16**				25.3	24.6	31.0	3.2	28.1	24.6
UTGS01823SN / UTGS0187SNVDEU	**18**	24.3/30.4	2.5	11.3/17.9	28.5	27.0	33.3		31.3	27.8
UTGS02028SN / UTGS02020SN	**20**	27.0		14.5	31.7	29.4	36.5		34.5	30.9
UTGS02235SN	**22**	28.0	3.5		34.9	31.8	39.7		37.7	34.1
UTGS02448SN	**24**	30.4		15.3	38.0	34.9	42.9	3.9	40.9	37.3

For waterprotected version add “H” behind “S” e.g. UTGS01412SHN

UTO - Bantam

Metal circular connector

(Suitable for EMC requirements)

Description

"UT0" 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.
"UT0" 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 , "UT0" 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: Alumimium alloy
Coupling ring: Aluminium alloy
Tri-lock pins: Stainless steel
Coupling spring: Spring steel
Insert: Glass-filled thermoplast UL94-V0
Finish: Bright tin (standard)

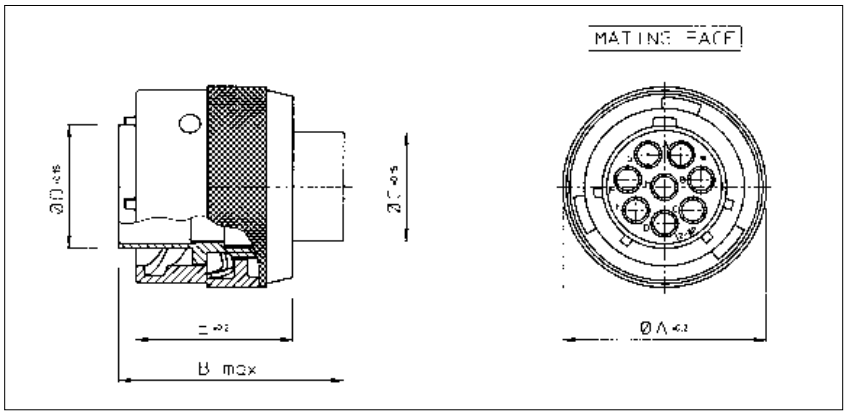
Contact accommodation

- "UT0" connectors accept Trim-Trio removable snap-lock contacts (see contacts section)
- Contacts to be ordered seperately.

How to order

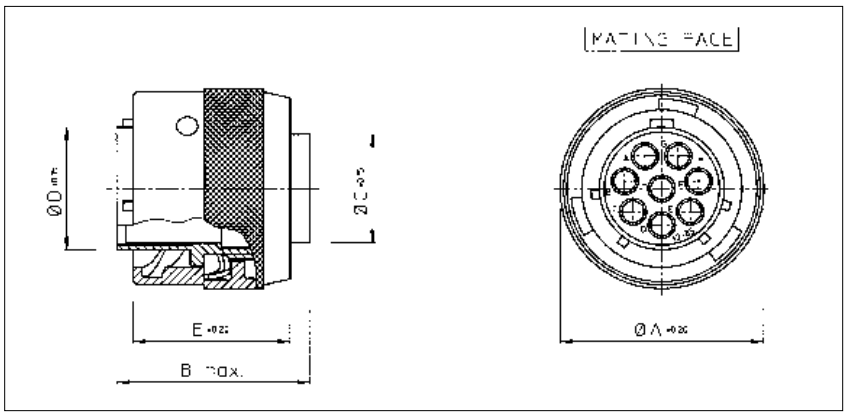
		UT0	**0**	**14**	**12**	**P**	**–**	**H**	**– –**	**T**
		UT0	**6**	**14**	**12**	**S**	**–**			
Body variation:	**0 :** Wall mounting receptacle **6 :** Cable plug **1 :** Free hanging receptacle **7 :** Bulk head receptacle for rear panel mounting									
Shell size:										
Insert arrangement:										
Type of contacts:	**P :** Pin contacts **S :** Socket contacts									
Insert polarisation:	**No letter :** Standard version									
Application:	**No letter :** Standard version **H :** Water protected version (only receptacle)									
Design variation:	**No letter :** Standard version **Others :** Special versions									
Plating:	**T :** Bright tin (Standard version)									

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



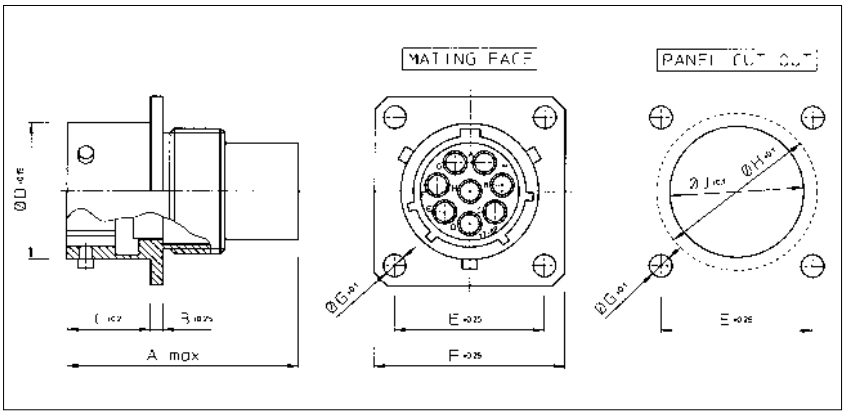
Part number	Shell size	Ø A ±0.2	B max.	Ø C ±0.15	Ø D ±0.15	E ±0.2
UT06104PT	10	21.6	31.8	10.2	12.3	19.1
UT06128PT	12	24.8		13.4	15.1	
UT061412PT	14	28.0		16.7	18.3	
UT061619PT	16	31.2		19.7	21.5	
UT061823PT	18	34.3		21.7	24.0	
UT062028PT	20	37.5		24.9	27.2	
UT062235PT	22	40.7		28.1	30.4	
UT062448PT	24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

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



Part number	Shell size	Ø A ±0.2	B max.	Ø C ±0.15	Ø D ±0.15	E ±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		21.7	24.0	
UT062028ST	20	37.5	24.9	24.9	27.2	
UT062235ST	22	40.7		28.1	30.4	
UT062448ST	24	43.9	26.2	31.2	33.5	

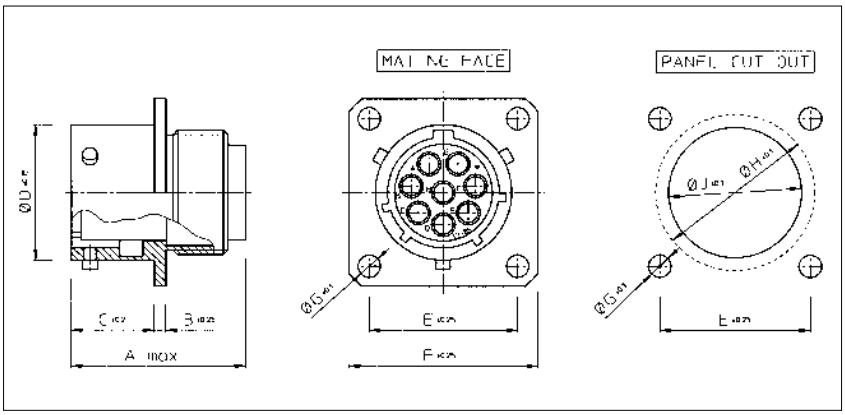
Wall mounting receptacle for pin contacts (UT00- - - -PT)



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

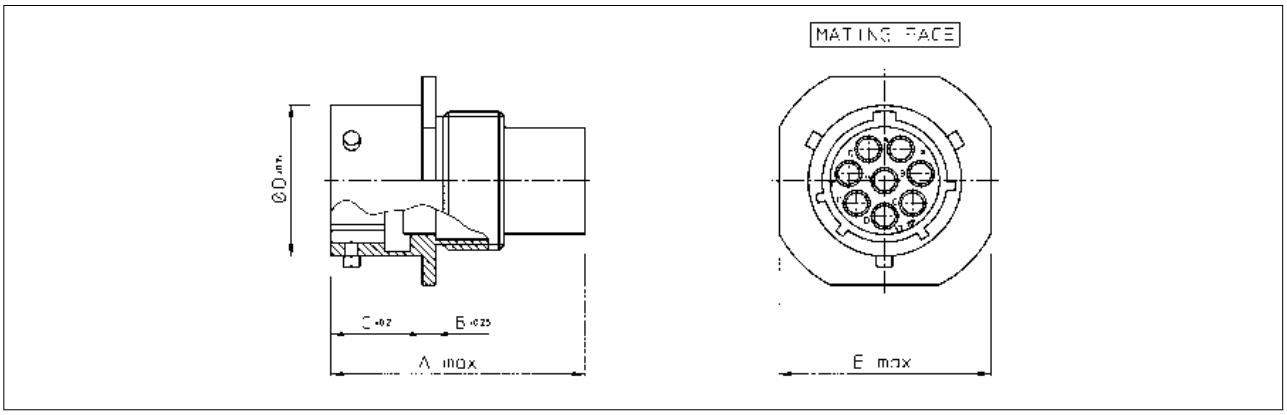
Wall mounting receptacle for socket contacts (UT00- - - -ST)



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

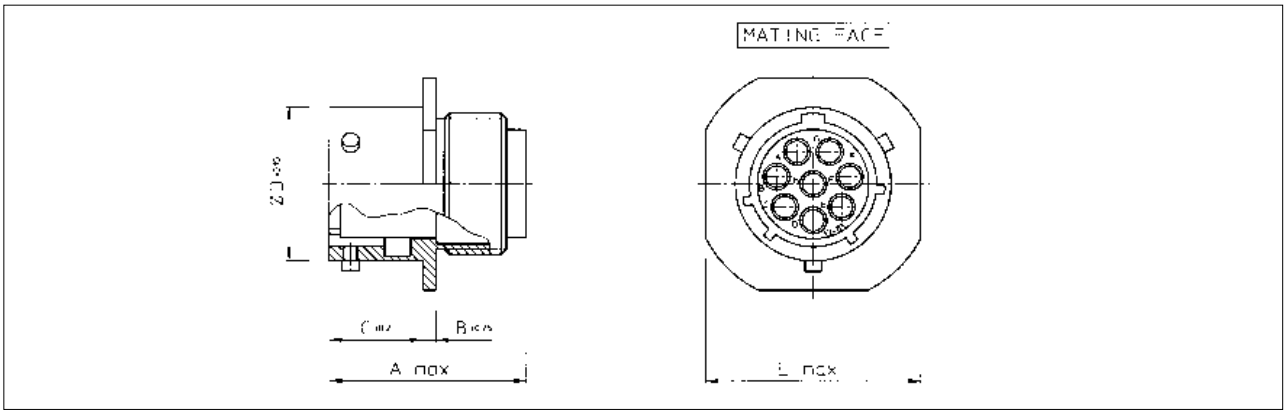
Free hanging receptacle for pin contacts (UT01- - - -PT) - suitable for cable to cable applications



Part number	Shell size	A max.	B ±0.25	C ±0.2	Ø D ±0.15	Ø 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

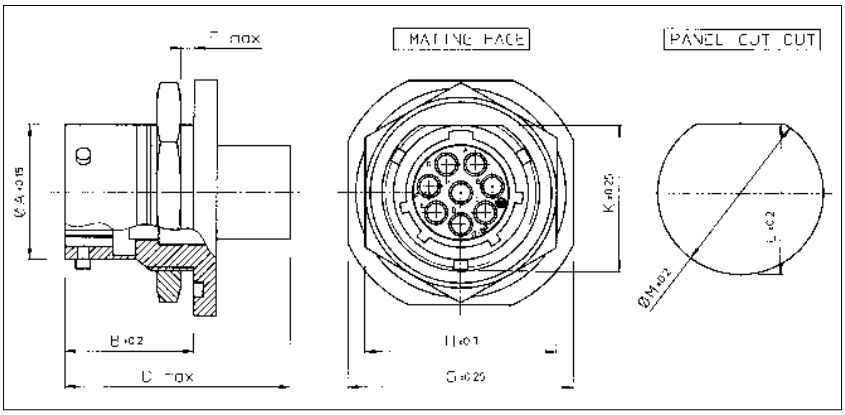
Free hanging receptacle for socket contacts (UT01- - - -ST) - suitable for cable to cable applications



Part number	Shell size	A max.	B ±0.25	C ±0.2	Ø D ±0.15	Ø 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

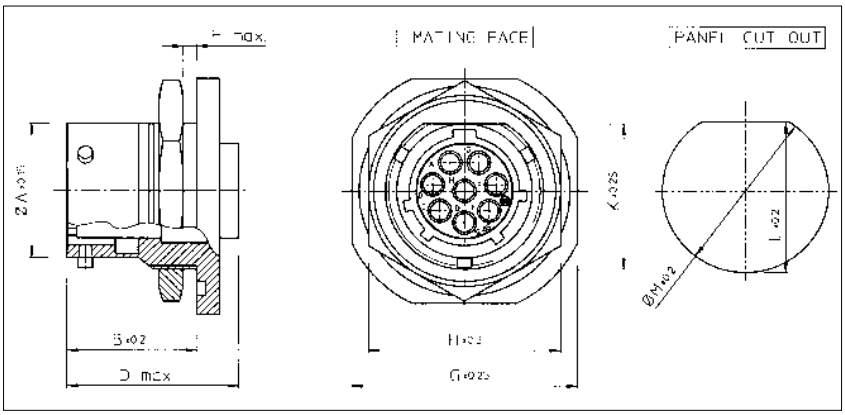
Bulk head receptacle for pin contacts (UT07- - - -PT) - suitable for rear panel mounting



Part number	Shell size	A ±0.15	B ±0.2	D max.	F max.	G ±0.25	H ±0.2	K ±0.2	L ±0.12	Ø M ±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				41.3	36.5	30.3	30.6	32.0
UT072028PT	**20**	31.7	22.7	33.3	6.4	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	23.6			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

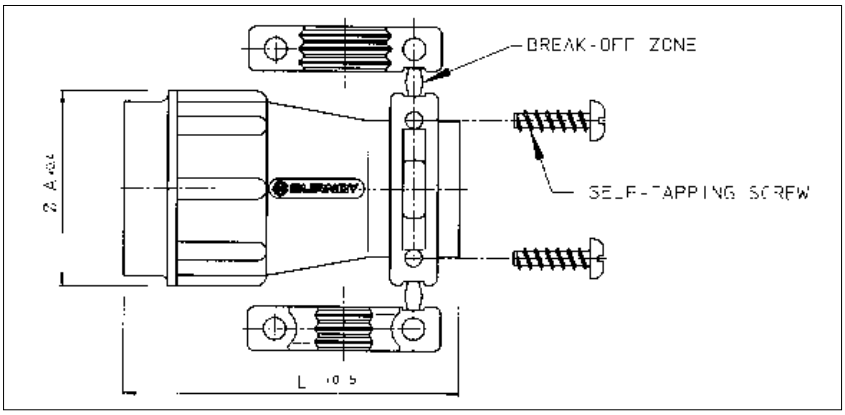


Part number	Shell size	A ±0.15	B ±0.2	D max.	F max.	G ±0.25	H ±0.2	K ±0.2	L ±0.12	Ø M ±0.2
UT07104ST	**10**	14.9	18.0	24.3	3.2	27.0	22.2	16.6	17.0	17.7
UT07128ST	**12**	19.0				31.8	27.0	20.8	21.2	22.5
UT071412ST	**14**	22.2				34.9	30.2	23.9	24.3	25.7
UT071619ST	**16**	25.3				38.1	33.3	27.1	27.5	28.7
UT071823ST	**18**	28.5				41.3	36.5	30.3	30.6	32.0
UT072028ST	**20**	31.7	22.7	25.9	6.4	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	23.6			52.4	46.0	39.8	40.1	41.5

For waterprotected version add “H” behind “S” e.g. UT071412SHT

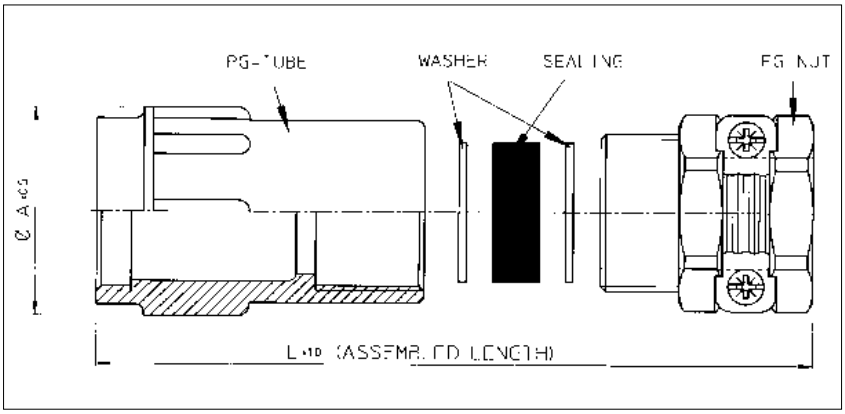
Notes

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



Part number	Shell size	Cable range Ø	Ø A ±0.4	L ±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

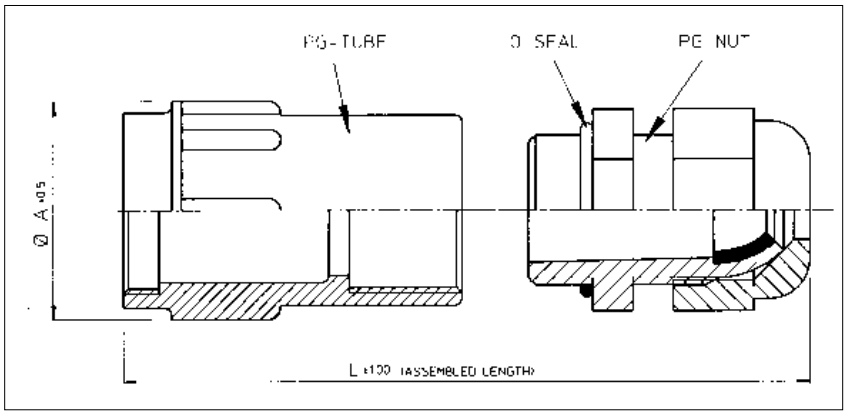
Plastic cable clamp with strain relief nut for waterprotected (IP65) applications (UTG--PG)



Part number	Shell size	Sealing* outer dia x inner dia's	L ±1	A ±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 105 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

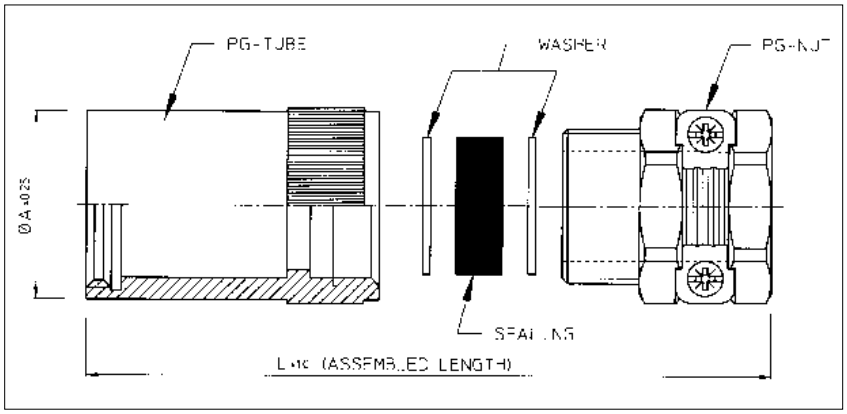
*In order to accommodate different cable dia's, the sealing exisits of different layers which can be pulled out easily.

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



Part number	Shell size	Cable range	Dia. A ±0.5	L ±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

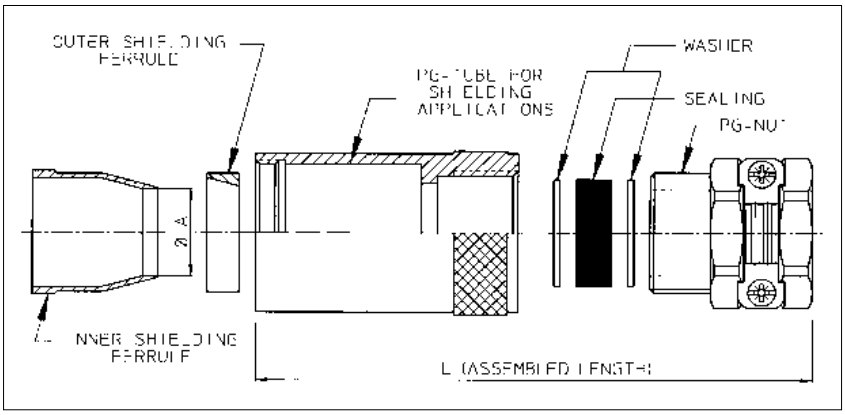
Metal cable clamp with strain relief nut for waterprotected applications (UT0--PGT)



Part number	Shell size	Sealing* outer dia x inner dia's	L ±1	A ±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 105 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 exisits of different layers which can be pulled out easily.

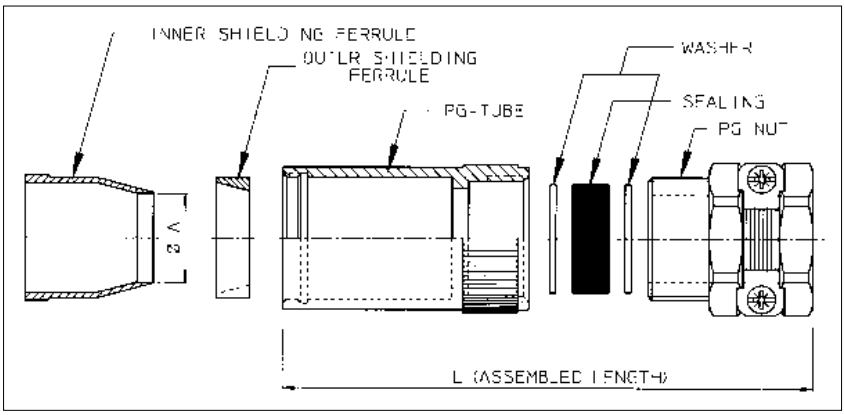
Shielded cable clamp only suitable for UTGS connectors (UTGS----PGN)



Part number		Shell			Sealing*
For pin contacts	For socket contacts	size	Ø A	L	outer dia x inner dia's
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 105 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 exisits of different layers which can be pulled out easily.

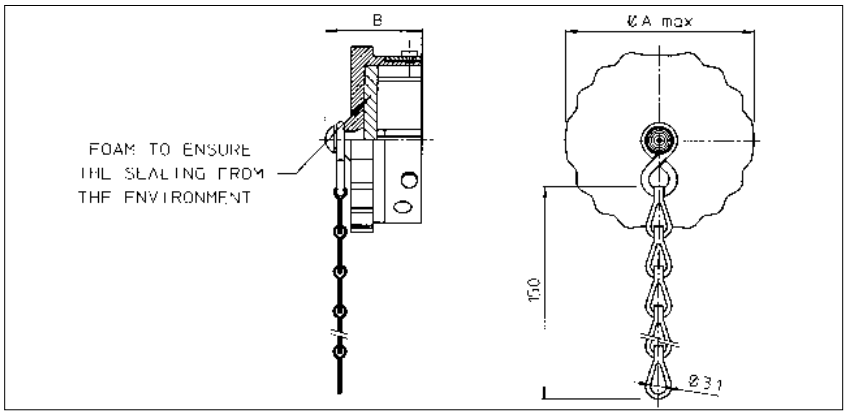
Shielded cable clamp only suitable for UT0 connectors (UT0S----PG00T)



Part number		Shell			Sealing*
For pin contacts	For socket contacts	size	Ø A	L	outer dia x inner dia's
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 105 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 exisits of different layers which can be pulled out easily.

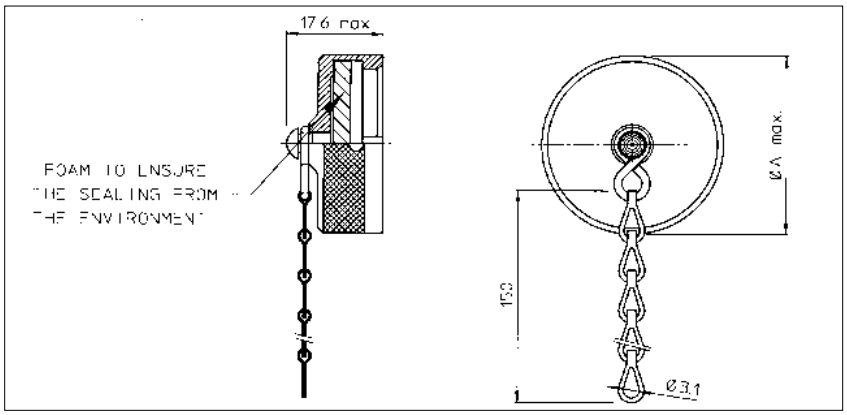
Environmental dustcap for plugs (UTG6--DCG)



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

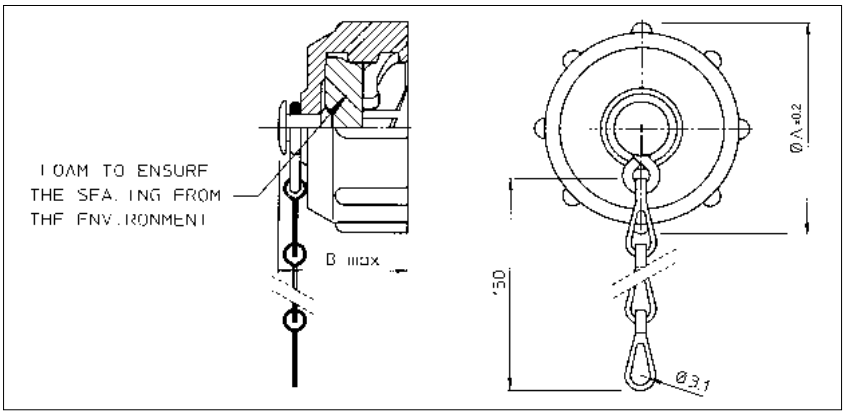
Metal environmental dustcap for receptacles (UTG--DCG)



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

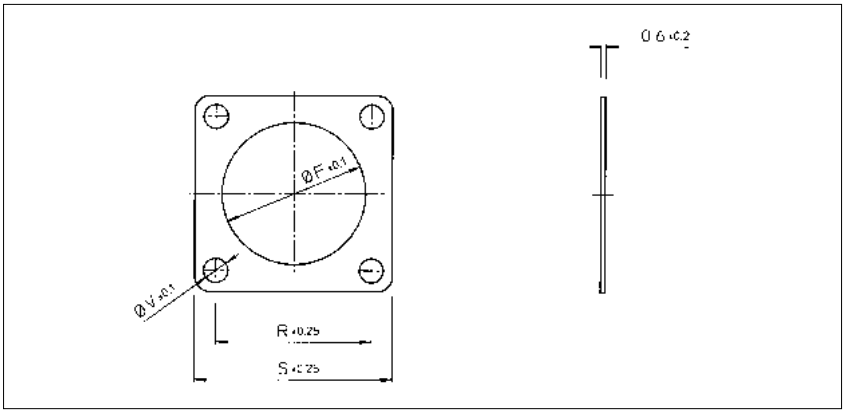
Plastic environmental dustcap for receptacles (UTP--DCG)



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	

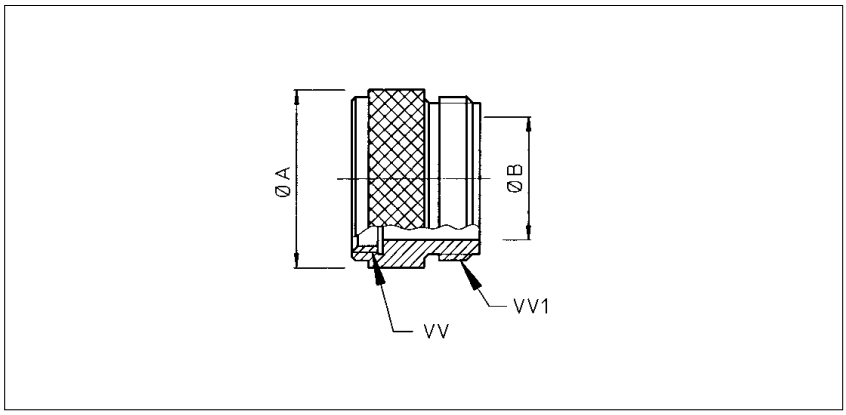
For dustcap without chain skip “G” e.g. UTP12DC

Sealing for square flange receptacle (UTFD1-B)



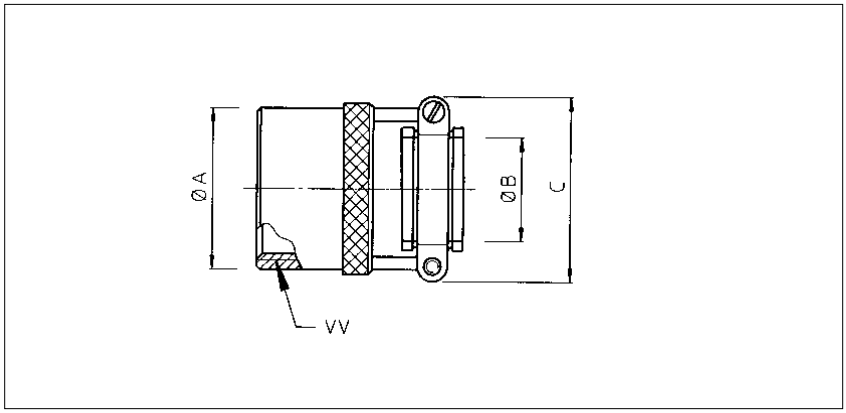
Part number	Shell size	Ø F ±0.1	R ±0.25	S ±0.25	Ø V
UTFD12B	10	15.9	18.3	23.8	3.3
UTFD13B	12	19.0	20.6	26.2	
UTFD14B	14	22.2	23.0	28.6	
UTFD15B	16	25.4	24.6	31.0	
UTFD16B	18	28.6	27.0	33.3	
UTFD17B	20	31.8	29.4	36.5	
UTFD18B	22	34.9	31.8	39.7	
UTFD19B	24	38.1	34.9	42.9	4.0

A – General duty Termination



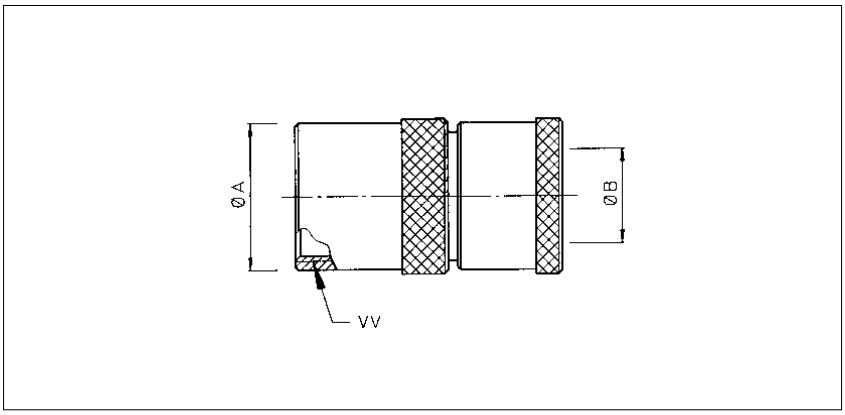
Part number	Shell size	Ø A	Ø B	VV - Thread UNEF	VV1 - Thread UNEF
B10P36E	**10**	18,2	11,3	9/16-24	5/8-24
B12P36E	**12**	21,1	14,2	11/16-24	3/8-20
B14P36E	**14**	24,6	17,4	13/16-20	7/8-20
B16P36E	**16**	27,6	20,6	15/16-20	1-20
B18P36E	**18**	30,8	22,9	1 1/16-18	1 3/8-18
B20P36E	**20**	33,8	26,1	1 3/16-18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



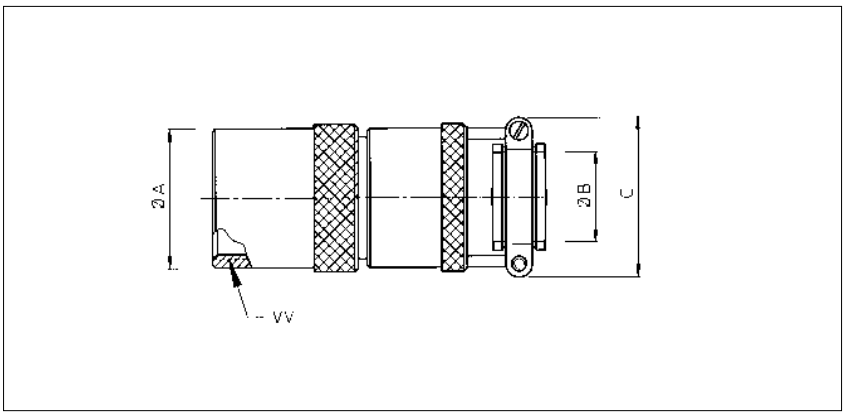
Part number	Shell size	Ø A	Ø B	C	VV - Thread UNEF
B10SRE	**10**	18,2	4,8	22,6	9/16-24
B12SRE	**12**	21,1	7,9	25,8	11/16-24
B14SRE	**14**	24,6	9,7	29,0	13/16-20
B16SRE	**16**	27,6	12,7	30,6	15/16-20
B18SRE	**18**	30,8	15,9	35,6	1 1/16-18
B20SRE	**20**	33,8	15,9	35,6	1 3/16-18
B20SRE	**22**	37,0	19,1	40,4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

J – Gland Seal Termination



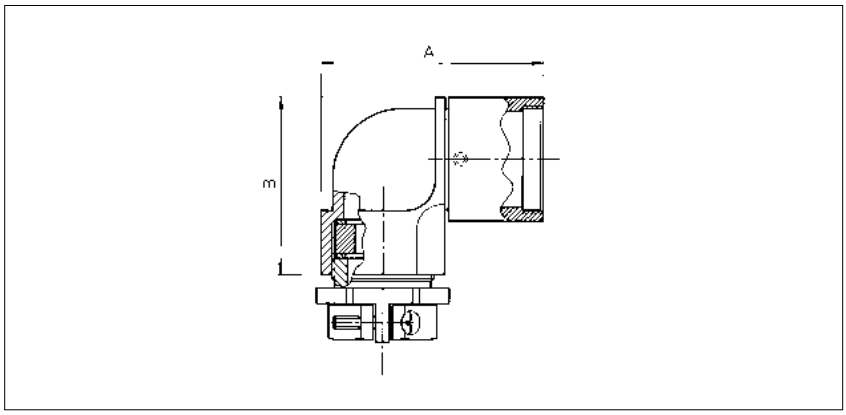
Part number	Shell size	Ø A	Ø max	VV - Thread UNEF	
B10P442E	**10**	18.6	7.9	9/16-24	
B12P442E	**12**	21.8	11.2	11/16-24	
B14P164E	**14**	25.0	13.7	13/16-20	
B16P164E	**16**	28.2	15.6	15/16-20	
B18P164E	**18**	31.3	17.1	1 1/16-18	
B20P164E	**20**	34.5	19.0	1 3/16-18	
B22P164E	**22**	37.7	21.5	1 5/16-18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

JF – Gland Seal Termination with Strain Relief



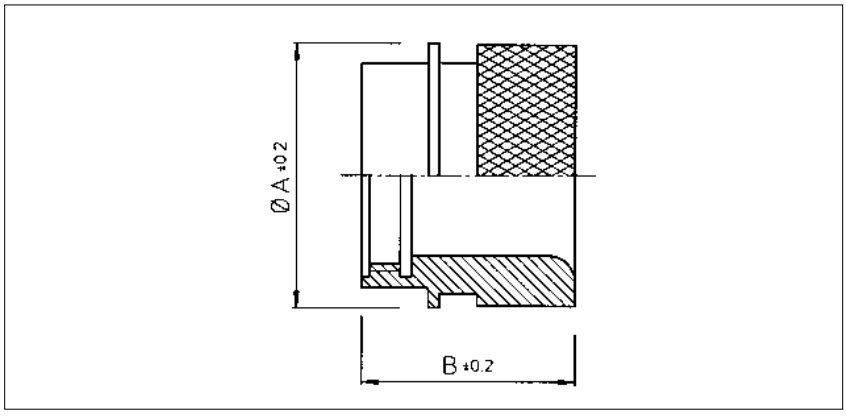
Part number	Shell size	Ø A	Ø B	C	VV - Thread UNEF
B10P443E	**10**	18.6	7.9	22.6	9/16-24
B12P443E	**12**	21.8	11.2	25.8	11/16-24
B14P184E	**14**	25.0	13.7	29.0	13/16-20
B16P184E	**16**	28.2	15.6	30.6	15/16-20
B18P184E	**18**	31.3	17.1	37.3	1 1/16-18
B20P184E	**20**	34.5	19.0	37.3	1 3/16-18
B20P184E	**22**	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	455.	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$^{\pm 0.2}$	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	
UTG20AD	**20**	36.5	22.8
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

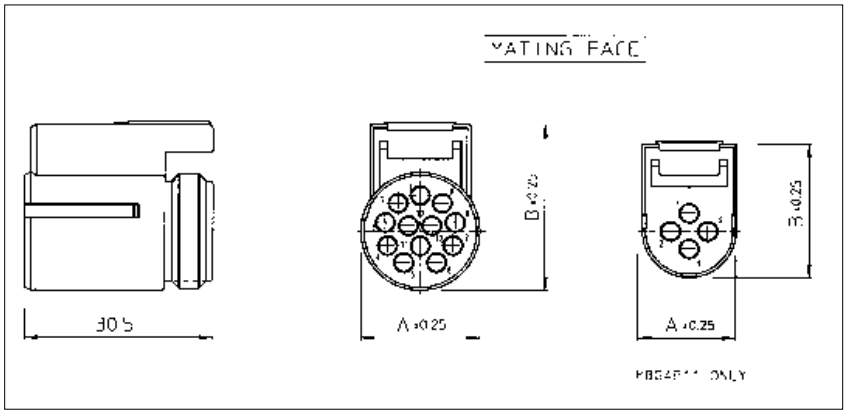
Contact accommodation

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

How to order

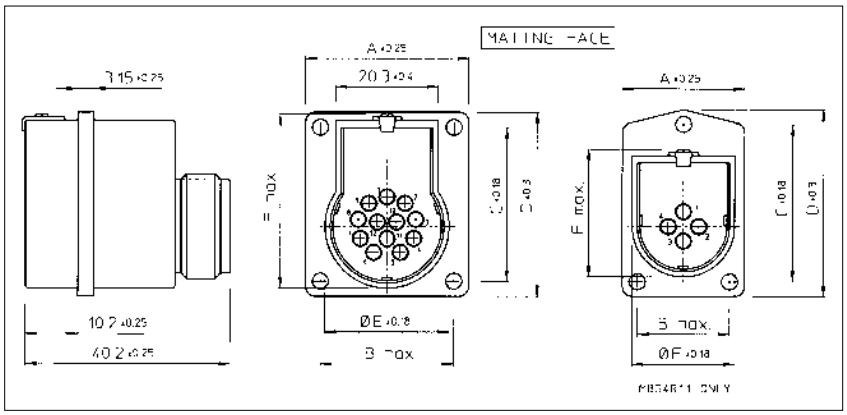
Connector family		**MBG**	**12**	**P**	**1**
Insert arrangement:	4, 12, 19, 30, 46 positions				
Body variation:	**P:** Plug body **R:** Receptacle body **S:** Strain relief				
Design variation:	**1:** Standard version with male contacts in receptacle **11:** Reversed version with male contacts in plug				

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



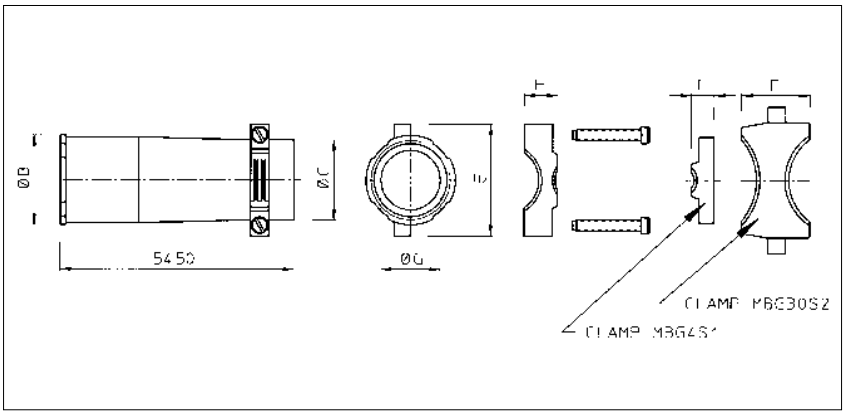
Female plug / Male plug	Ø A ±0.25	B ±0.25
MBG4P1 / MBG4P11	15.08	21.90
MBG12P1 / MBG12P11	19.43	27.25
MBG19P1 / MBG19P11	22.83	30.53
MBG30P1 / MBG30P11	27.94	35.51
MBG46P1 / MBG46P1	34.42	41.91

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



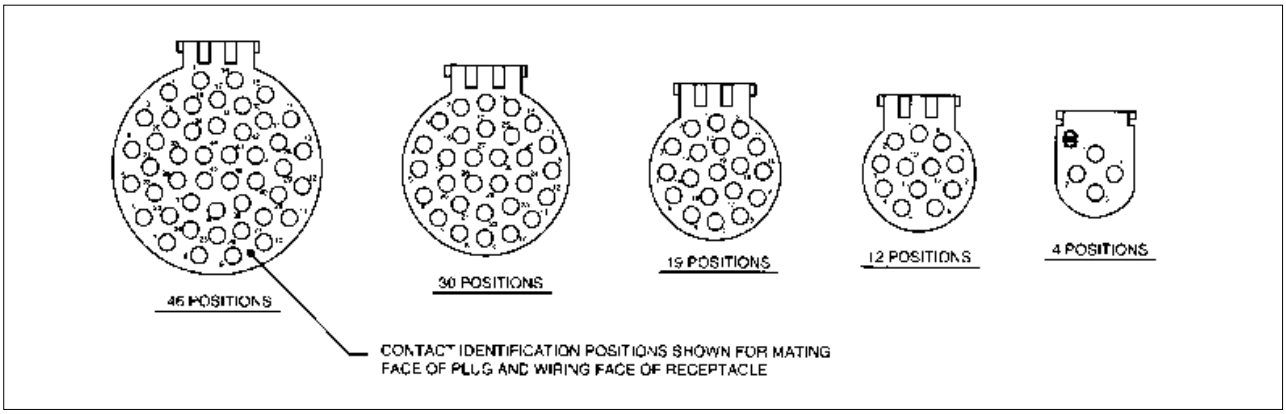
Female plug / Male plug	Ø A ±0.25	B max.	C ±0.18	D ±0.30	Ø E ±0.18	F max.
MBG4R1 / MBG4R11	23.90	18.08	31.45	37.36	20.07	29.46
MBG12R1 / MBG12R11	32.49	26.54	30.76	36.86	24.64	34.93
MBG19R1 / MBG19R11	32.44	26.54	34.04	40.13	27.86	38.10
MBG30R1 / MBG30R11	35.61	28.65	38.00	44.91	33.10	43.31
MBG46R1 /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

Strain relief (MBG--S1)



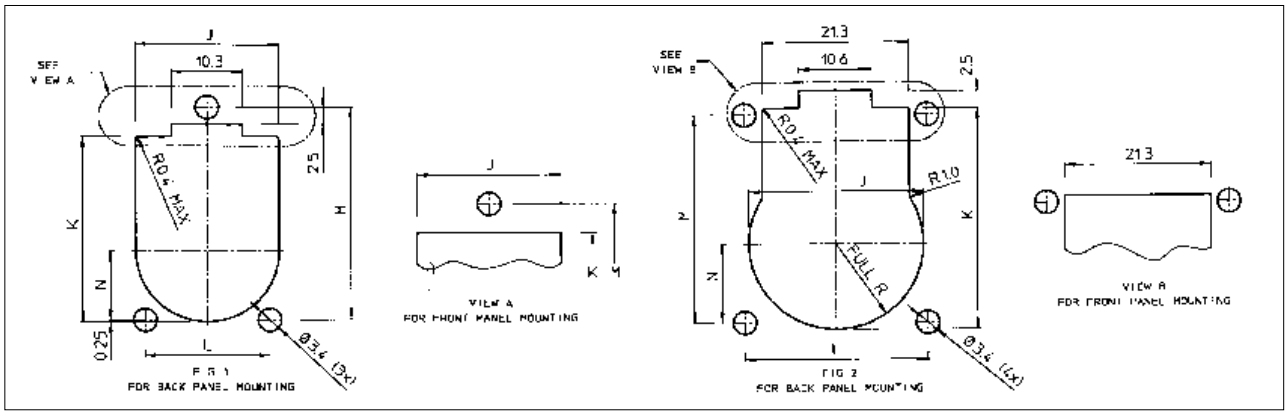
Part number	Ø C	Ø D	E	F	Cable range Ø G side A	Cable range Ø G side B
MBG4S1	12.2	15.0	20.1	5.3	8.51/6.35	–
MBG12S1	18.8	21.1	26.4	7.9	11.30/7.65	14.99/11.38
MBG19S1	21.3	24.4	29.0	9.4	13.08/8.66	17.53/13.12
MBG30S1	26.7	29.0	34.5	16.3	19.02/15.88	22.86/19.05
MBG30S2	26.7	29.0	34.5	15.9	12.67/10.01	15.85/12.70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

Insert arrangements and moulded-in contact identification



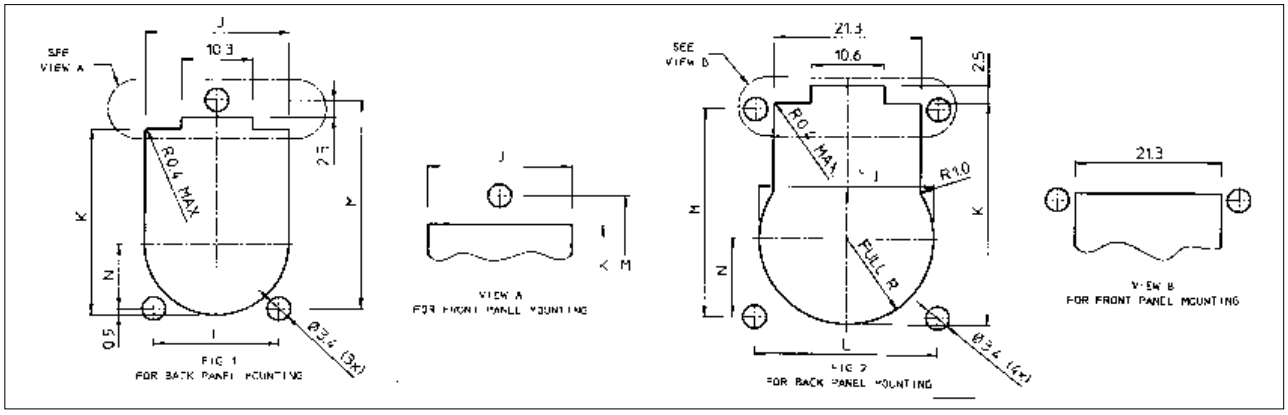
Contact identification positions shown are for mating face of plug and wiring face of receptacle.

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

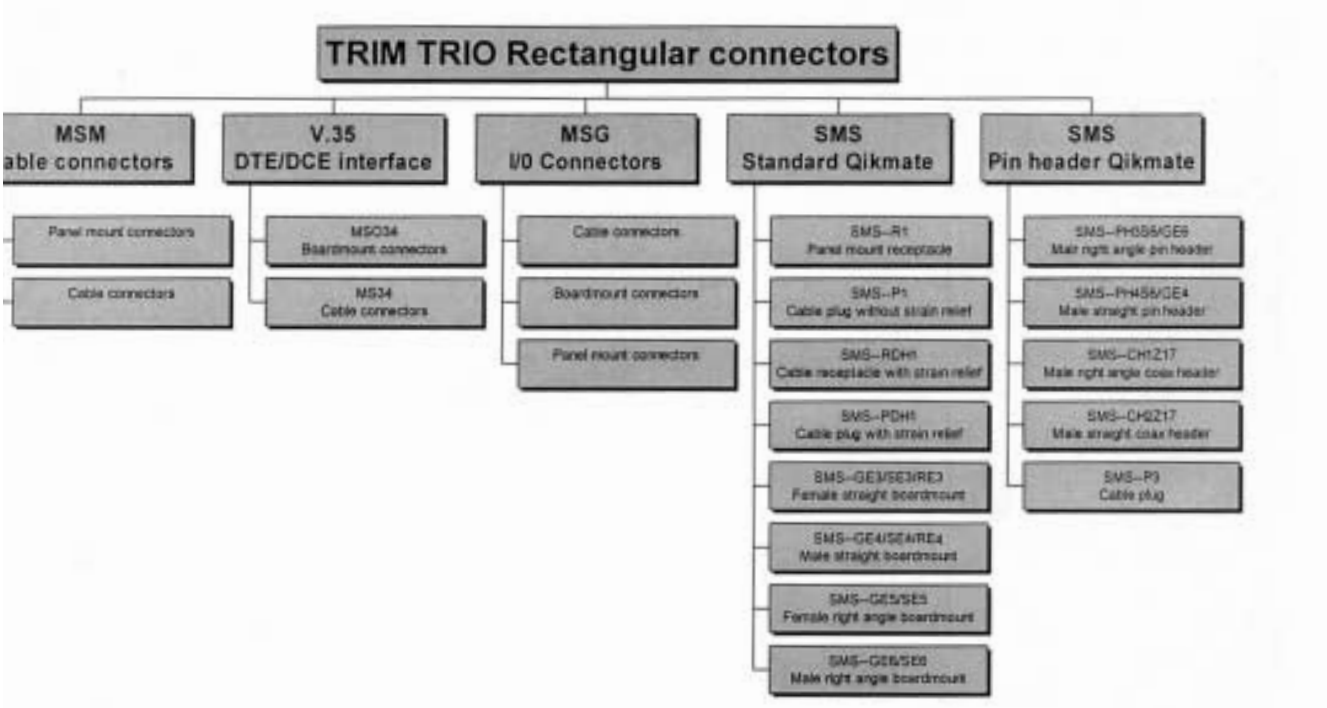
Panel cut-out dimensions for receptacle - Reversed version (MBG--R11)



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

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
gold chromate or anodized
Polyamide 6.6 - black - UL94-V2
Cable clamps: Stainless steel
Polarizing hardware: Brass nickel plated
Shrouds: Aluminium alloy
gold chromate or anodized

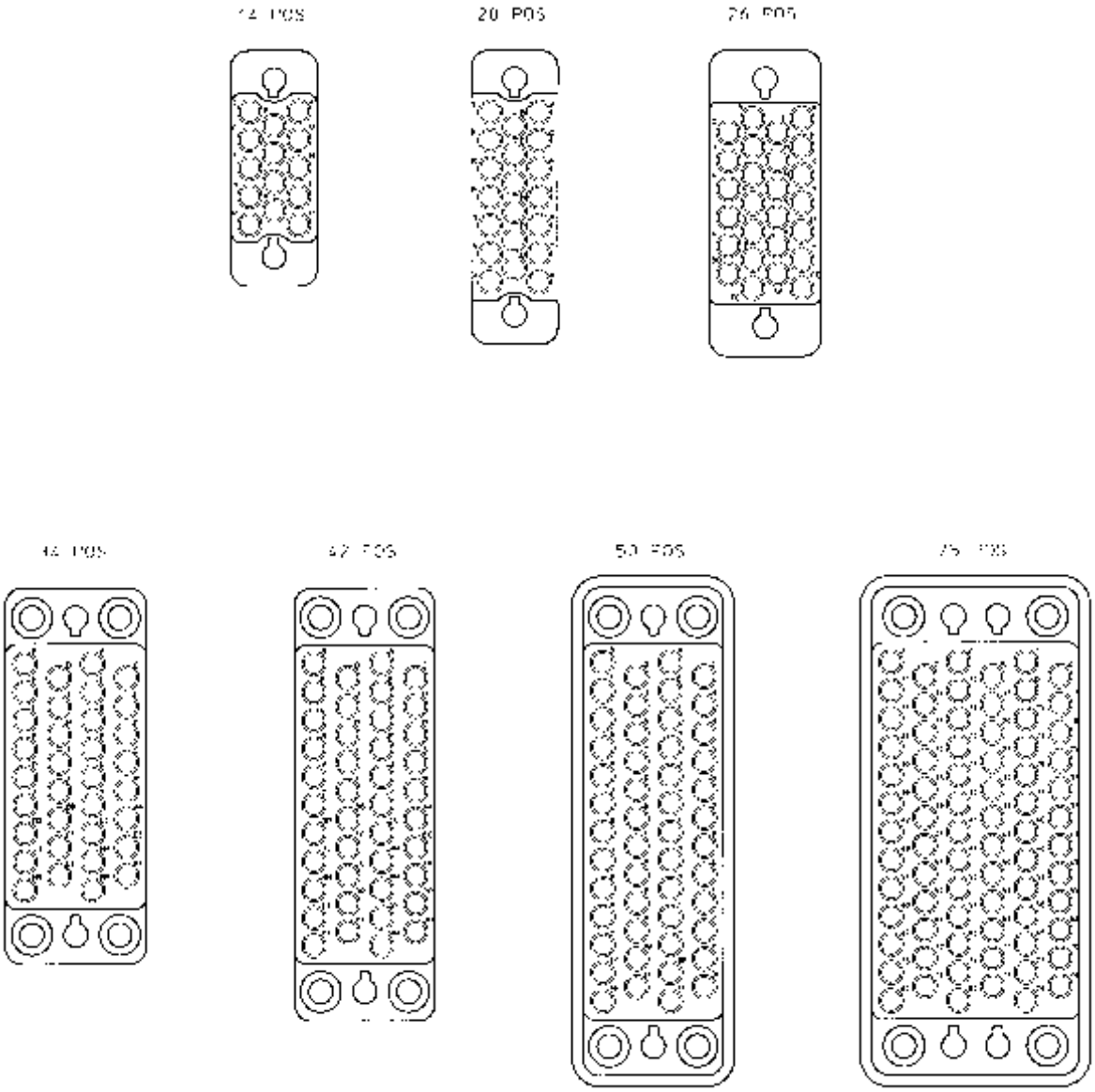
Contact accommodation

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

How to order

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

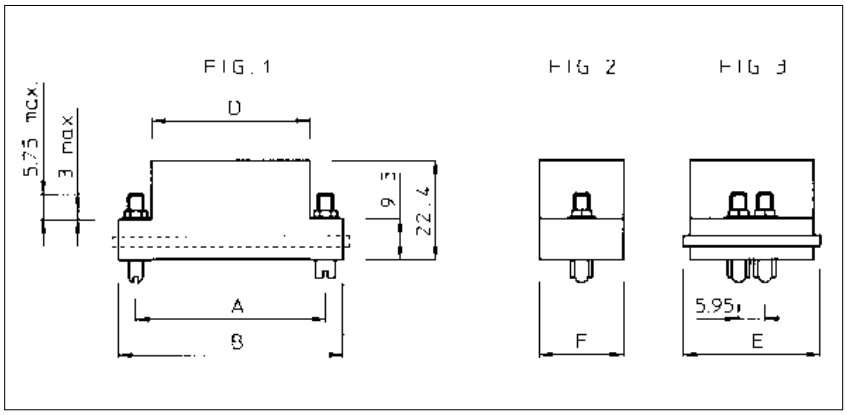
Contact arrangement



The contact position identification letters or numbers shown in the above diagrams apply to MS-M plug and receptacle connectors. Dimensionally, corresponding types of plug and receptacle mouldings are the same and differ only in that the contact position lettering/numbering of the plug (MS-PM) is a mirror image of that of the receptacle (MS-RM). Note that pins and/or sockets can be used in either the plug or receptacle moulding.

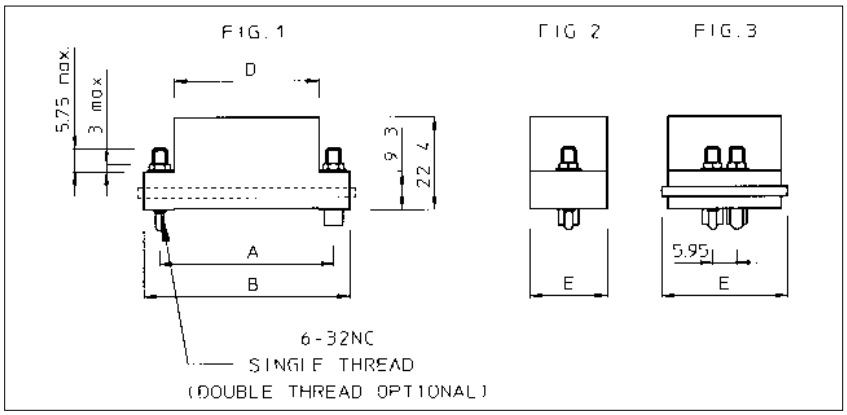
Note: Contact identification is shown for wiring face of the receptacle and mating face at plug connector.

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



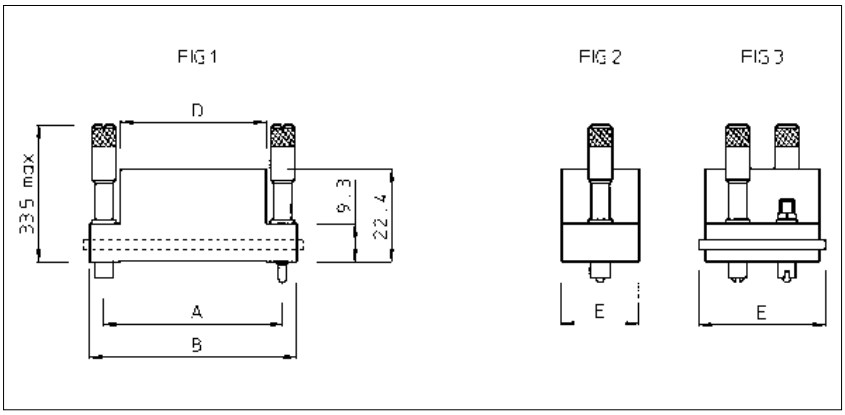
Connector size	Part number Plug version for male contacts	Part number Receptacle version for female contacts	A	B	D	E	Fig.
14	MS14PM1	MS14RM1	23.8	31.8	20.1		
20	MS20PM1	MS20RM1	31.75	39.65	27.95	11.7	1-2
26	MS26PM1	MS26RM1	33.3	41.3	27.2	15.0	
34	MS34PM1	MS34RM1	42.8	50.8	35.7	19.1	
42	MS42PM1	MS42RM1	50.55	58.65	42.95		
50	MS50PM1	MS50RM1	57.95	69.1	50.85	22.1	
75	MS75PM1	MS75RM1				31.2	1-3

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



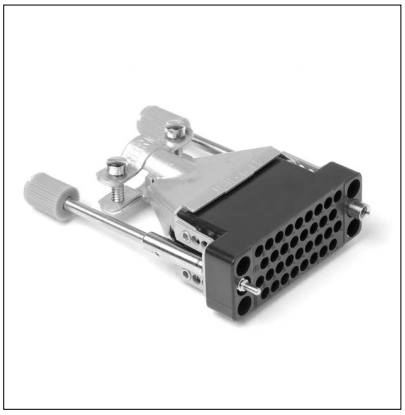
Connector size	Part number Plug version for male contacts	Part number Receptacle version for female contacts	A	B	D	E	Fig.
14	MS14PM58	MS14RM58	23.8	31.8	20.1		
20	MS20PM58	MS20RM58	31.75	39.65	27.95	11.7	1-2
26	MS26PM58	MS26RM58	33.3	41.3	27.2	15.0	
34	MS34PM58	MS34RM58	42.8	50.8	35.7	19.1	
42	MS42PM58	MS42RM58	50.55	58.65	42.95		
50	MS50PM58	MS50RM58	57.95	69.1	50.85	22.1	
75	MS75PM58	MS75RM58				31.2	1-3

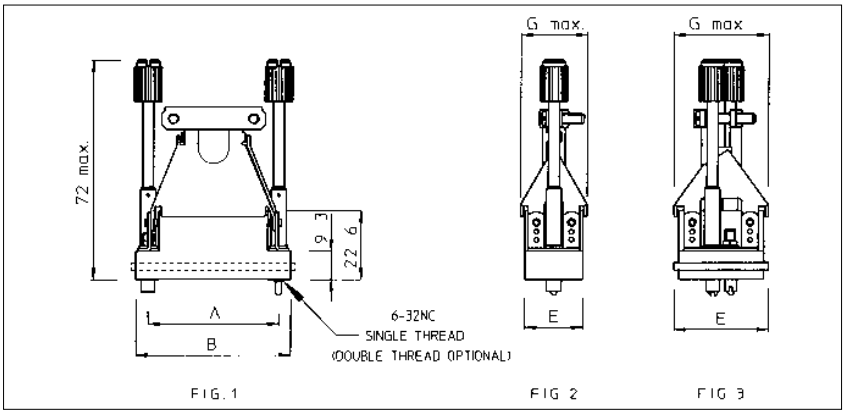
Cable connector without strain relief and turnable jackscrew hardware (MS—M57)



Connector size	Part number Plug version for male contacts	Part number Receptacle version for female contacts	A	B	D	E	Fig.
14	MS14PM57	MS14RM57	23.8	31.8	20.1		
20	MS20PM57	MS20RM57	31.75	39.65	27.95	11.7	1-2
26	MS26PM57	MS26RM57	33.3	41.3	27.2	15.0	
34	MS34PM57	MS34RM57	42.8	50.8	35.7	19.1	
42	MS42PM57	MS42RM57	50.55	58.65	42.95		
50	MS50PM57	MS50RM57	57.95	69.1	50.85	22.1	
75	MS75PM57	MS75RM57				31.2	1-3

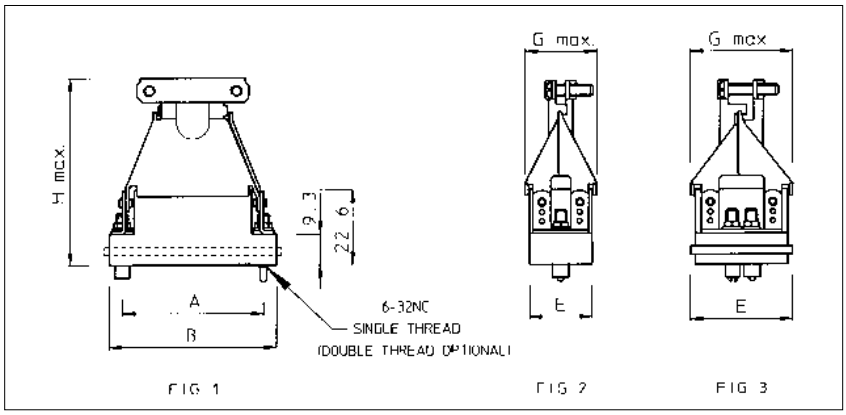
Cable connector with metal butterfly hood and turnable jackscrew hardware (MS--M124K)





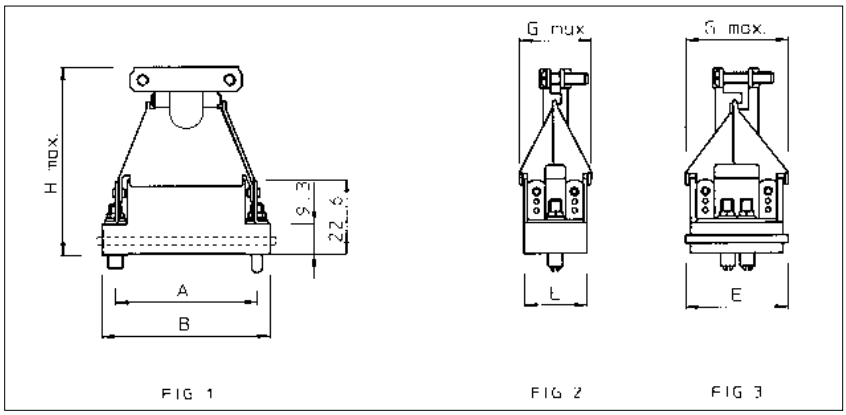
Connector size	Part number Plug version for male contacts	Part number Receptacle version for female contacts	A	B	E	G max	Fig.
14	MS14PM124K	MS14RM124K	23.8	31.8	11.7	14.7	
20	MS20PM124K	MS20RM124K	31.75	39.65			
26	MS26PM124K	MS26RM124K	33.3	41.3	15.0	18	1-2
34	MS34PM124K	MS34RM124K	42.8	50.8	19.1		
42	MS42PM124K	MS42RM124K	50.55	58.65		22.2	
50	MS50PM124K	MS50RM124K	57.95	69.1	22.1		
75	MS75PM124K	MS75RM124K			31.2	31.8	1-3

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



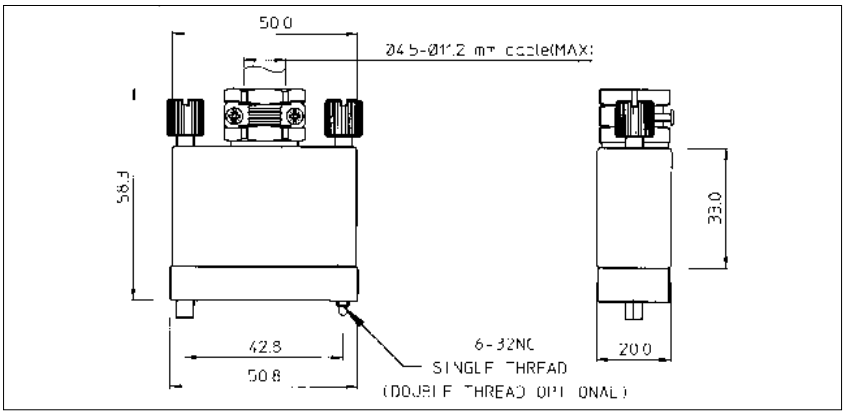
Connector size	Part number Plug version for male contacts	Part number Receptacle version female contacts	A	B	E	G max	H	Fig.
14	MS14PM140	MS14RM140	23.8	31.8	11.7	14.7	48.7	1-2
20	MS20PM140	MS20RM140	31.75	39.65				
26	MS26PM140	MS26RM140	33.3	41.3	15.0	18		
34	MS34PM140	MS34RM140	42.8	50.8	19.1	22.2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

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



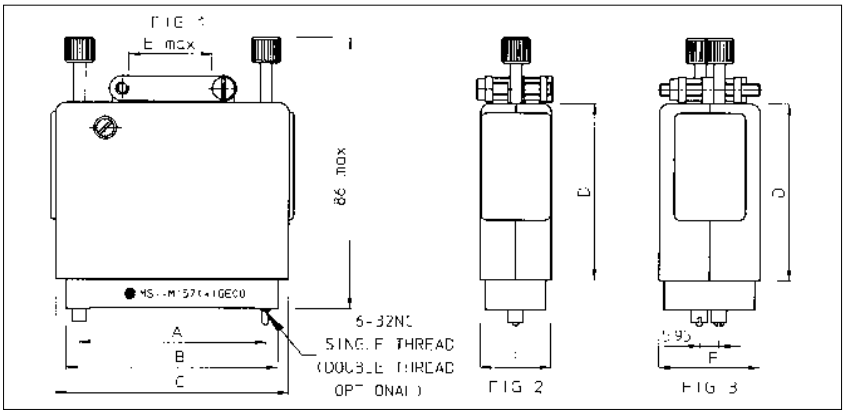
Connector size	Part number Plug version for male contacts	Part number Receptacle version female contacts	A	B	E	G max	H	Fig.
14	MS14PM120	MS14RM120	23.8	31.8	11.7	14.7	48.7	1-2
20	MS20PM120	MS20RM120	31.75	39.65				
26	MS26PM120	MS26RM120	33.3	41.3	15.0	18		
34	MS34PM120	MS34RM120	42.8	50.8	19.1	22.2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

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



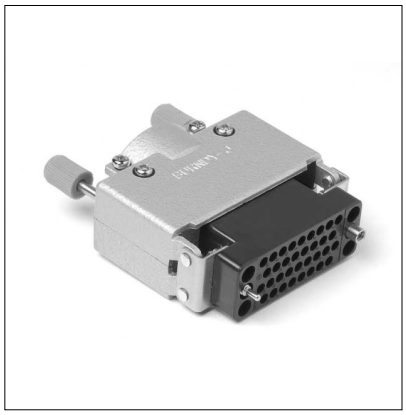
Part number		Description
Plug version for male contacts	Receptacle version for female contacts	
MS34PMEHM	MS34RMEHM	Anodised hood, plastic strain relief and turnable hardware.
MS34PMSEHM	MS34RMSEHM	Shielded version with nickel plated hood, metal strain relief and turnable hardware

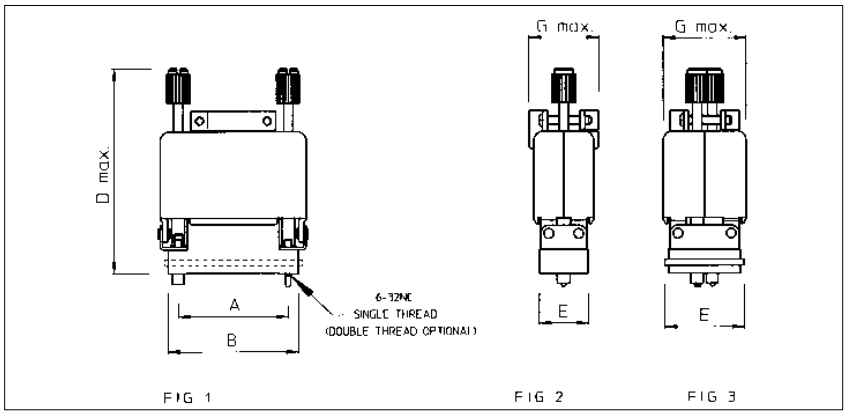
Cable connector with Alu die cast hood (MS-M157GE00)



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

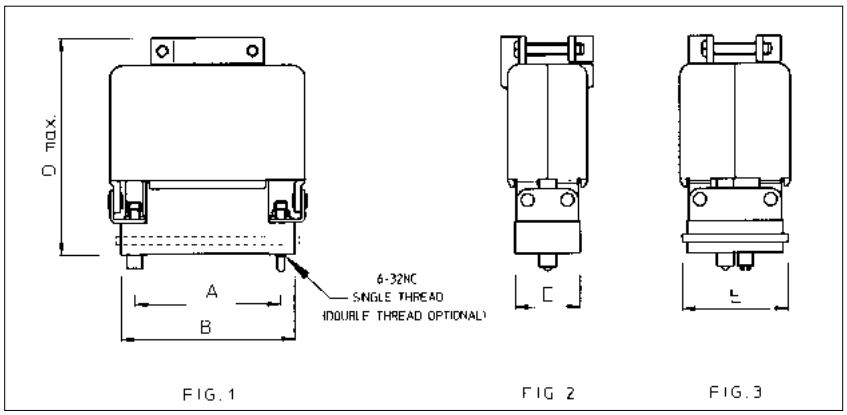
Cable connector with die cast hood and turnable jackscrew hardware (MS—MJD10)





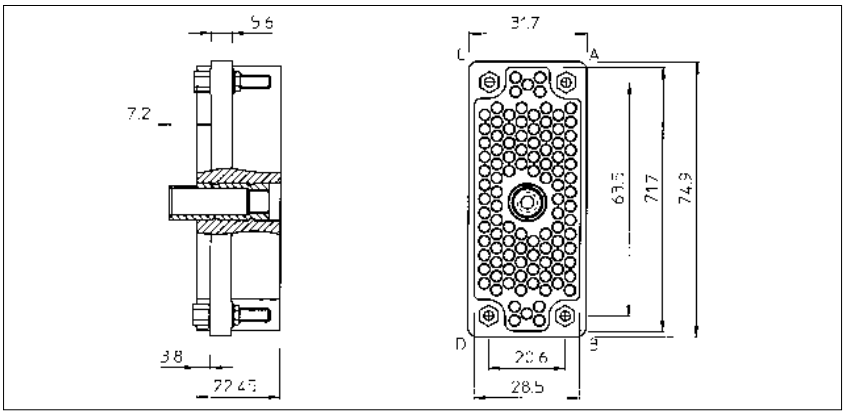
Connector size	Part number Plug version for male contacts	Part number Receptacle version female contacts	A	B	C	D max	E	G max	Fig.
20	MS20PMJD10	MS20RMJD10	31.75	39.65			11.7	22	
26	MS26PMJD10	MS26RMJD10	33.3	41.3	44.3	71	15		
34	MS34PMJD10	MS34RMJD10	42.8	50.8					1-2
42	MS42PMJD10	MS42RMJD10	50.55	58.65	61,5	80	19.1	26.5	
50	MS50PMJD10	MS50RMJD10	57.95	69.1	69		22.1	27.5	
75	MS75PMJD10	MS75RMJD10			72		31.2	33	1-3

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



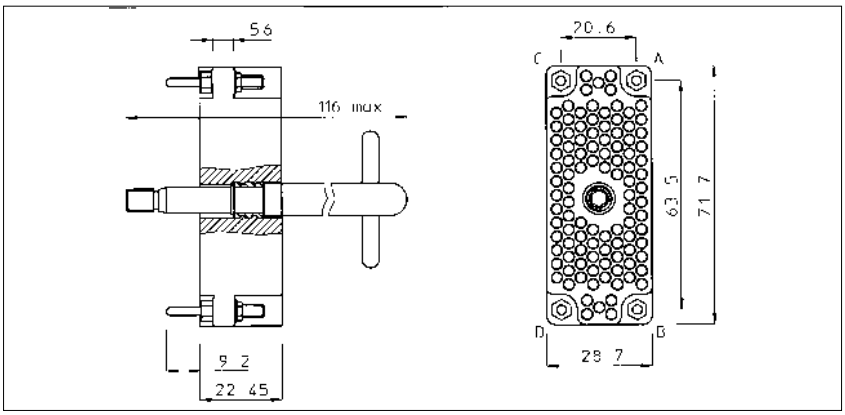
Connector size	Part number Plug version for male contacts	Part number Receptacle version female contacts	A	B	C	D max	E	G max	Fig.
20	MS20PMJD58	MS20RMJD58	31.75	39.65	44,3	55	11.7	22	
34	MS34PMJD58	MS34RMJD58	42.8	50.8	61,5				1-2
42	MS42PMJD58	MS42RMJD58	50.55	58.65		63	19.1	26.5	
50	MS50PMJD58	MS50RMJD58	57.95	69.1	69		22.1	27.5	
75	MS75PMJD58	MS75RMJD58			72	65	31.2	33	1-3

MSD104 receptacle cable connector with central jackscrew (MSD104RM)



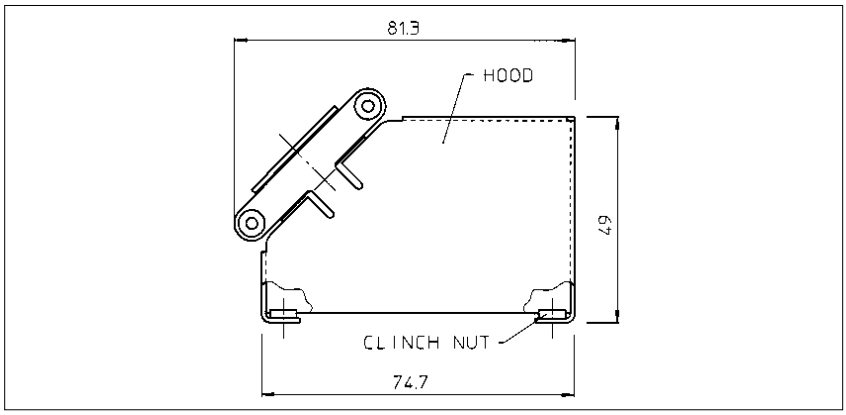
Connector size	Part number	Orientation of guide sockets
104	MSD104RM489	A, B, C, D

MSD104 plug cable connector without cable clamp (MSD104PM)



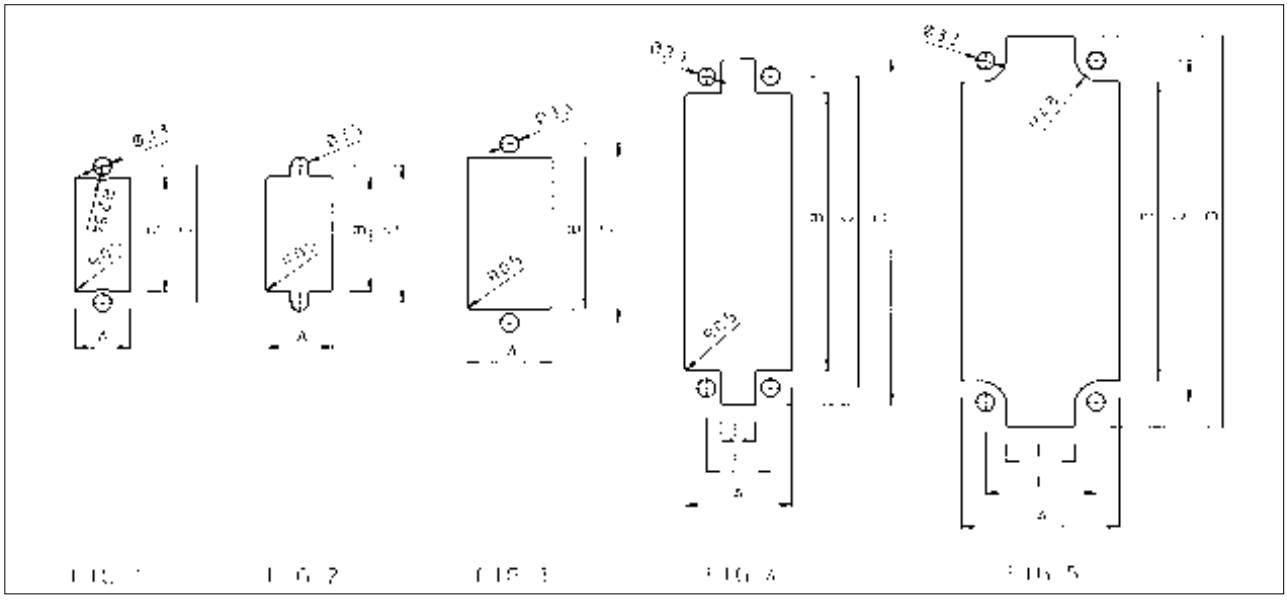
Connector size	Part number	Orientation of guide sockets
104	MSD104PM494	A, B, C, D

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				14.20	19.40
104	5	29.50	55.60	63.50	72.64	12.70	20.62

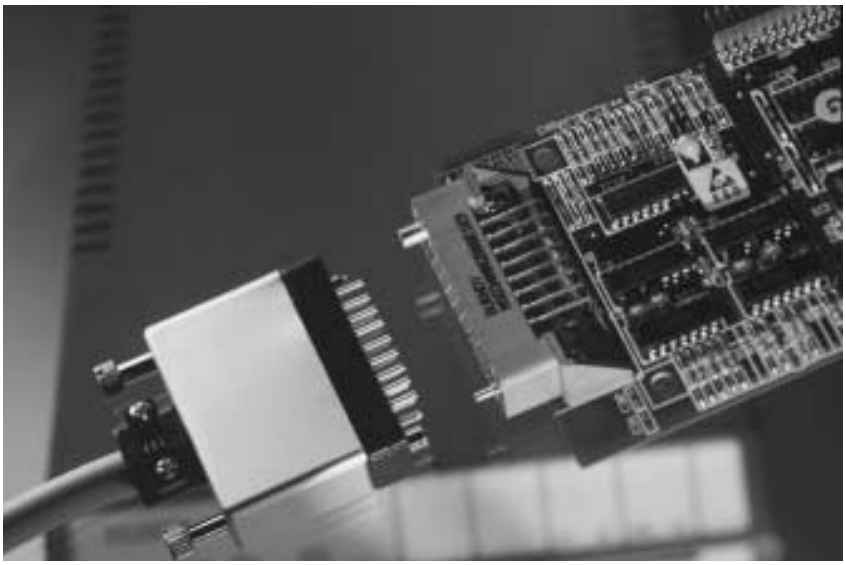
V.35 DTE/DCE Interface connectors

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∞ 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 resistatance:	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

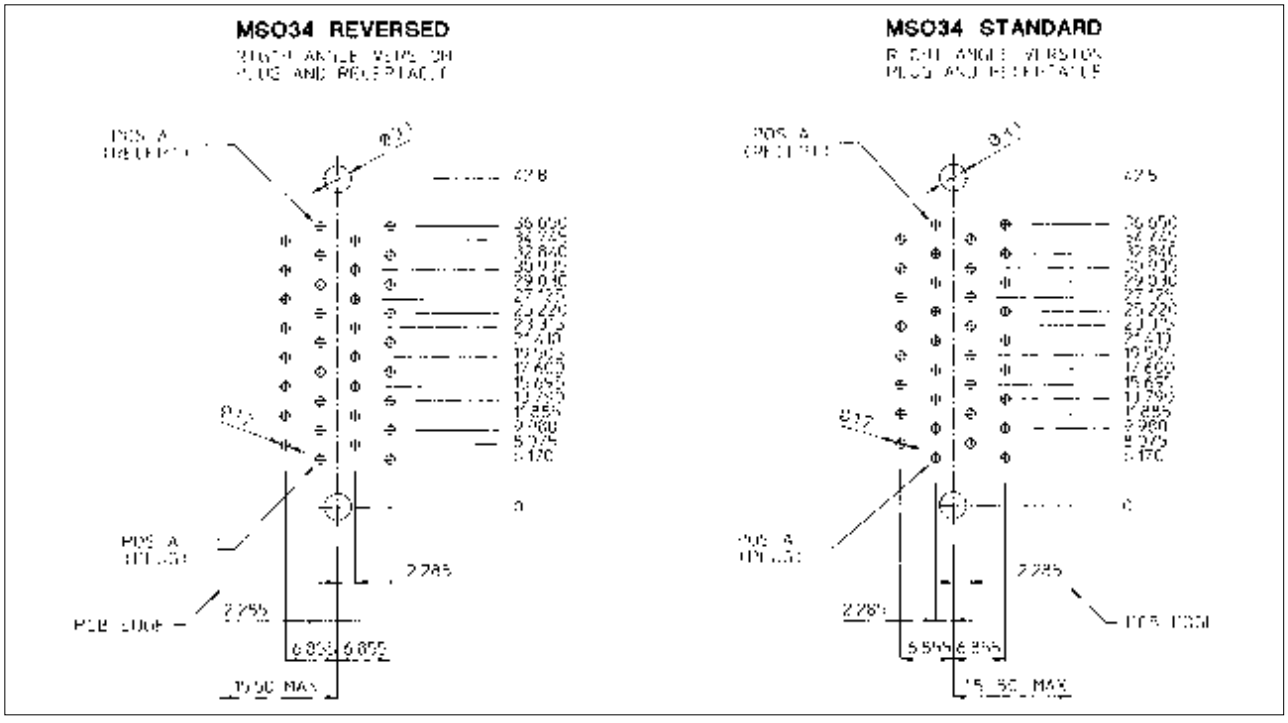
Connector body: Glass-reinforced Phenolic
Flammability rating : UL94-V0
Cable hoods: Aluminium alloy or Polyamide 6.6
Cable clamps: Stainless steel
Protection Shrouds: Aluminium alloy
Polarising hardware: Brass nickel plated

How to order

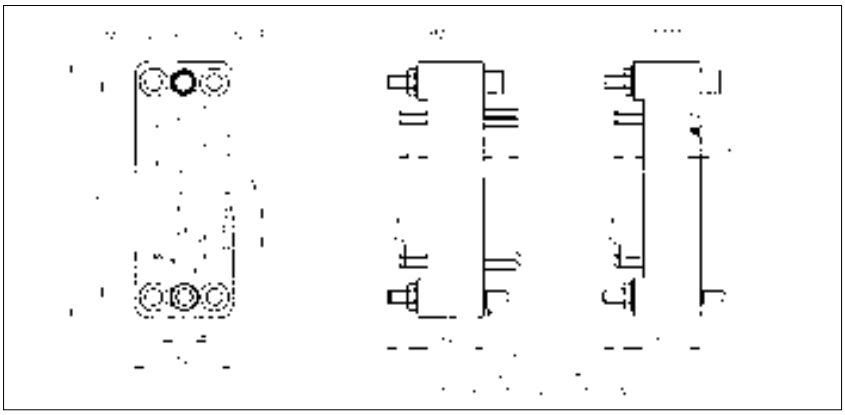
Connector family		**MSO**	**34**	**M**	**R**	**G**	**58**	**SE1**	**K9**
Contact arrangement									
N° 16 contacts									
Type of housing	**P:** Plug body with male contacts **R:** Receptacle body with female contacts								
Contact termination	**K:** straight dipsolder **G:** Right angle dipsolder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

MS034 recommended drilling hole pattern

Size 34



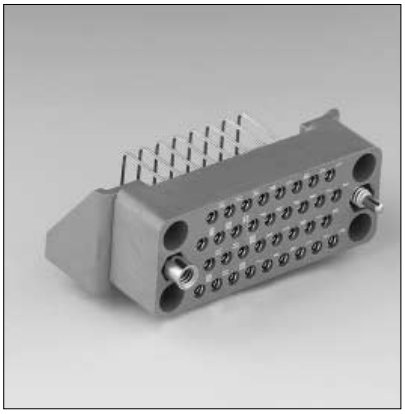
MSO34 Straight boardmount connectors

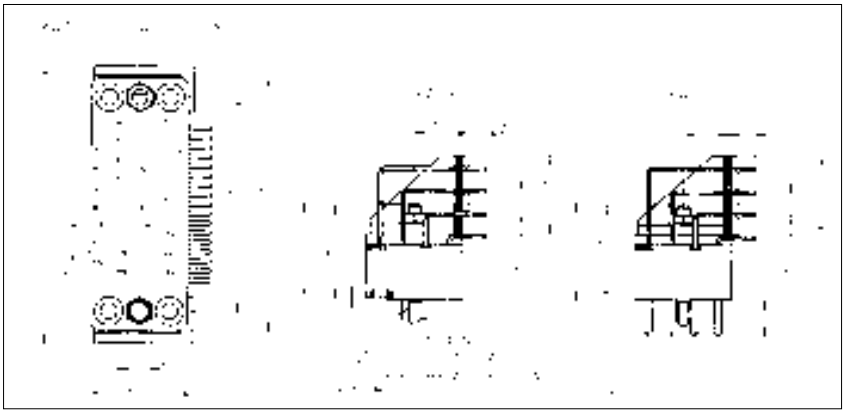


Part number		Description
Version with solid machined contacts	Version with stamped and formed contacts	
MSO34MPK1E1	**MSO34MPK1SE1K9**	Guide pin, guide socket and male contacts
MSO34MRK1E1	**MSO34MRK1SE1K9**	Guide pin, guide socket and female contacts
MSO34MPK58E1	**MSO34MPK58SE1K9**	Jackscrew pin, jackscrew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

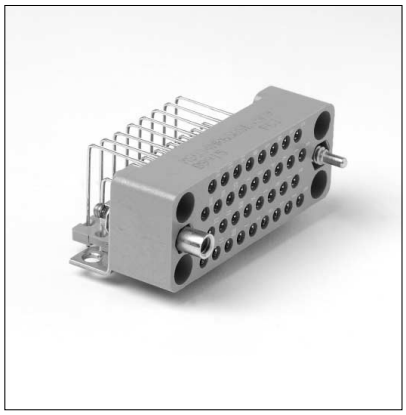


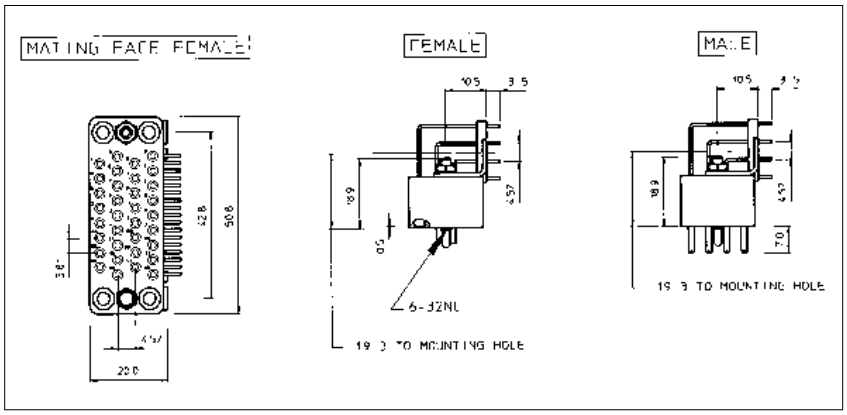


Part number		Description
Version with solid machined contacts	Version with stamped and formed contacts	
MSO34MPG1E(*)1	**MSO34MPG1SE(*)1K9**	Guide pin, guide socket and male contacts
MSO34MRG1E(*)1	**MSO34MRG1SE(*)1K9**	Guide pin, guide socket and female contacts
MSO34MPG58E(*)1	**MSO34MPG58SE(*)1K9**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

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

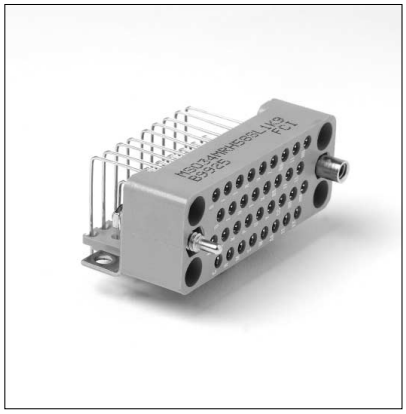


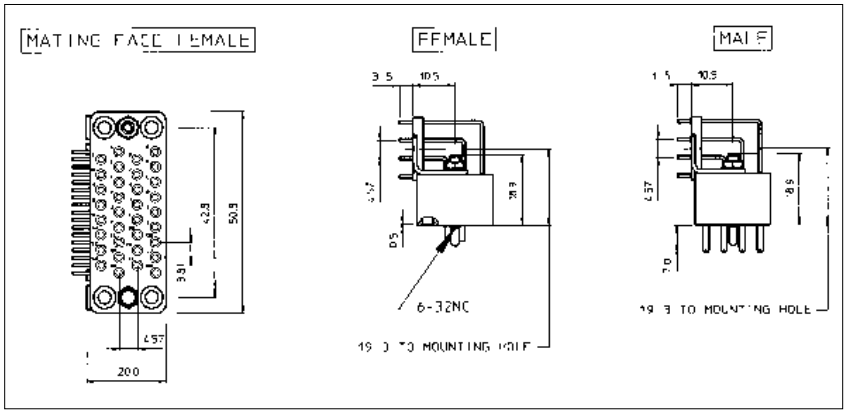


Part number Version with stamped and formed contacts	Description
MSO34MPG1SL1K9	Guide pin, guide socket and male contacts
MSO34MRG1SL1K9	Guide pin, guide socket and female contacts
MSO34MPG58SL1K9	Jackscrew pin, jackscrew socket and male contacts
MSO34MRG58SL1K9	Jackscrew pin, jackscrew socket and female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

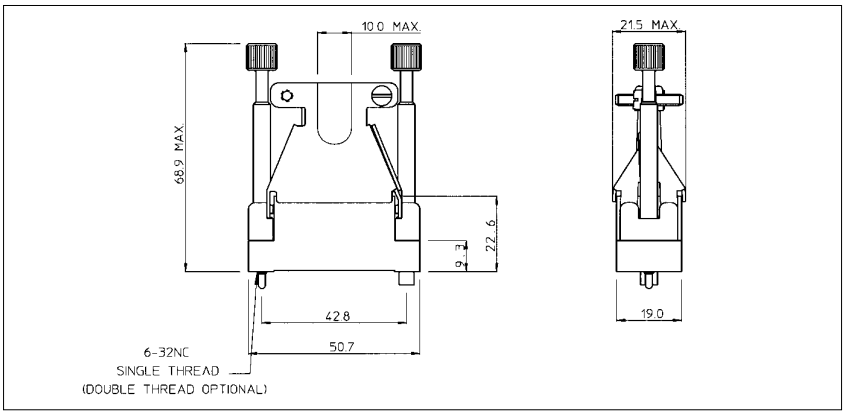




Part number Version with stamped and formed contacts	Description
MSO34MPH1SL1K9	Guide pin, guide socket and male contacts
MSO34MRH1SL1K9	Guide pin, guide socket and female contacts
MSO34MPH58SL1K9	Jackscrew pin, jackscrew socket and male contacts
MSO34MRH58SL1K9	Jackscrew pin, jackscrew socket and female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

For other platings: See plating table Other solder tail lengths on request Selective loading on request

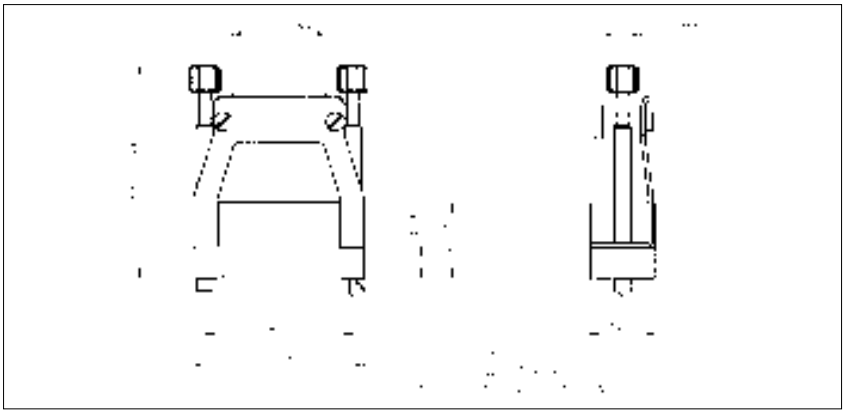
MS34 Cable connectors with metal butterfly hood



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.

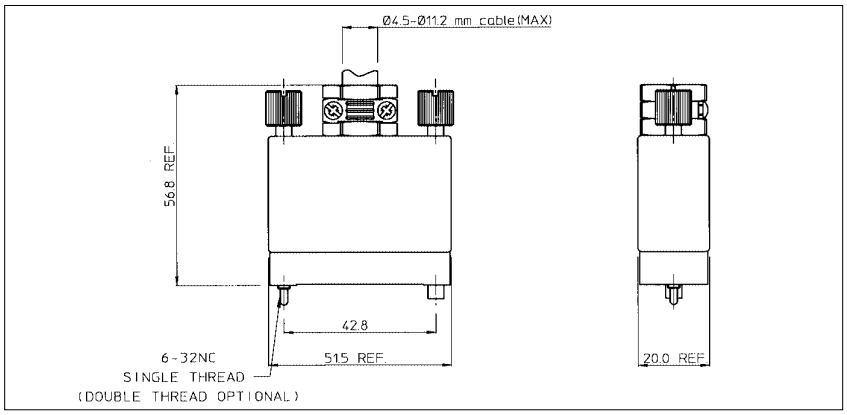
MS34 Cable connectors with cable clamp



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.

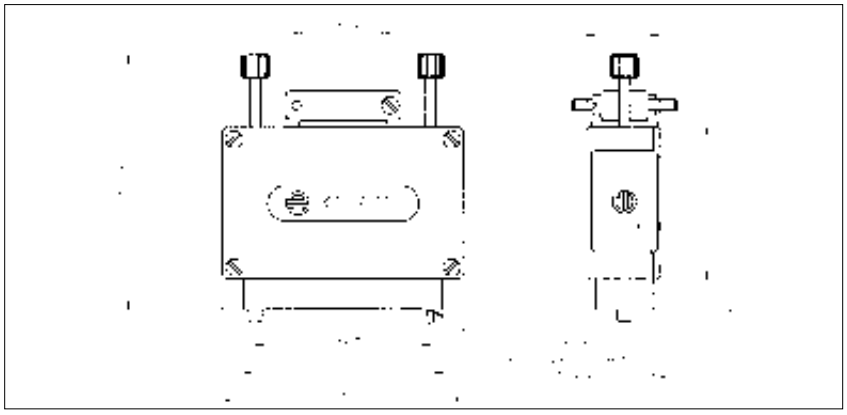
MS34 Cable connectors with metal suitcase hood



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.

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.

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.

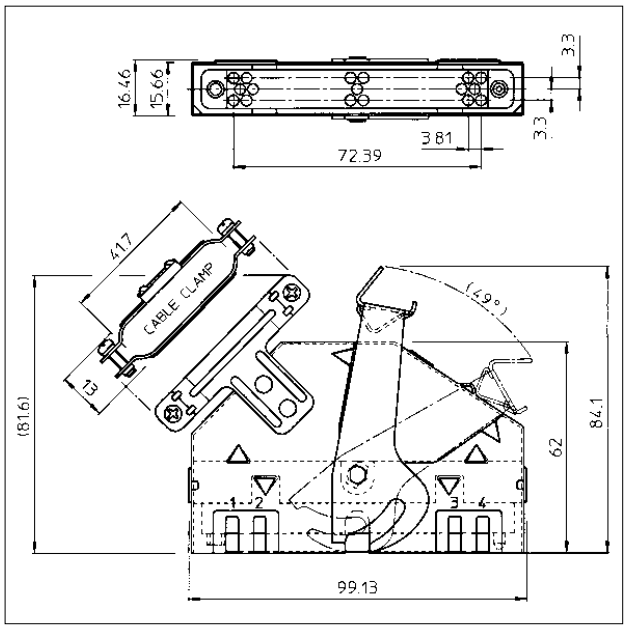
How to order

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**

Plug connector with metal hood

MSG 59 P L 1 1

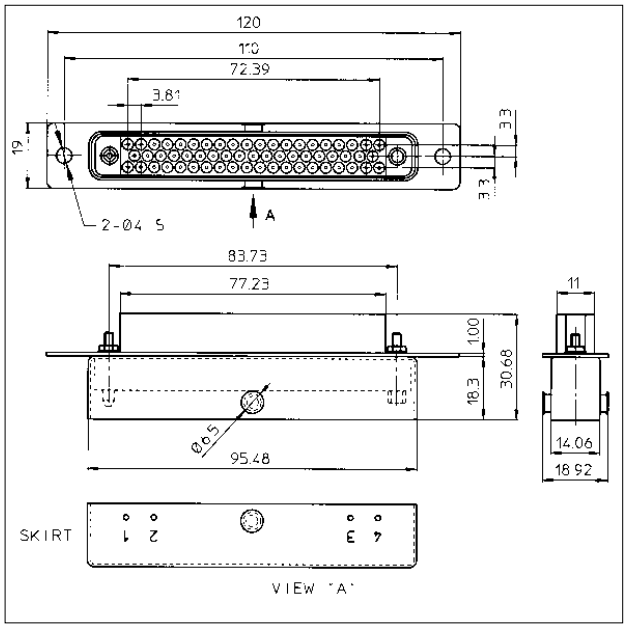
- Series
- 59 Pos.
- Plug
- Hood mechanism
  L=Lever
- Variation
  1= Cable up – 2= Cable down
- Polarization



Panel mount Receptacle connector

MSG 59 R P L 1 1 0

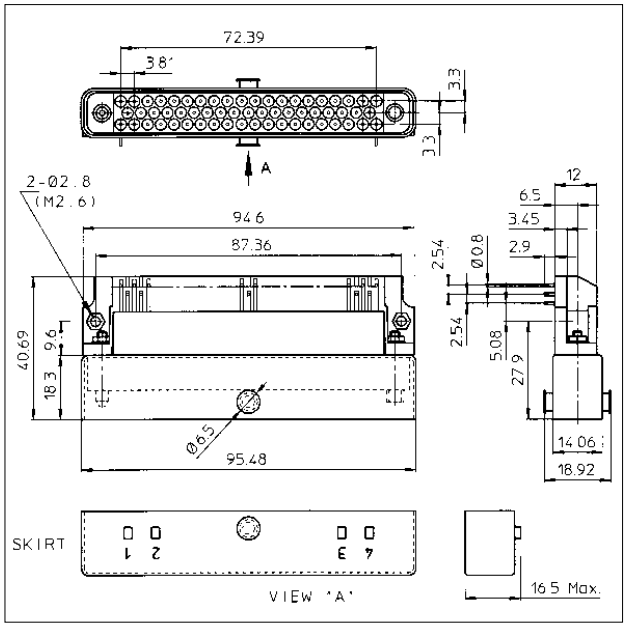
- Series
- 59 Pos.
- Receptacle
- Body variation
  P=Panel mount
- Skirt mechanism
  L=Lever
- Contact type
  1= gold plated RM contact
- Polarization
- Contact loading
  0= Non contact



Right angle PCB mount receptacle without flange

MSG 59 R R L 1 1 1

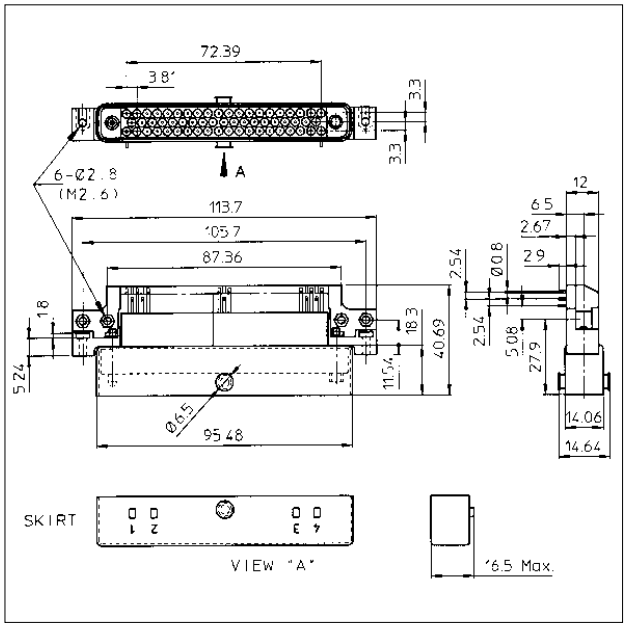
- Series
- 59 Pos.
- Receptacle
- Body variation
  R= Right angle without flange
- Skirt mechanism
  L=Lever
- Contact type
  1= gold plated RM contact
- Polarization
- Contact loading
  1= Fully loaded



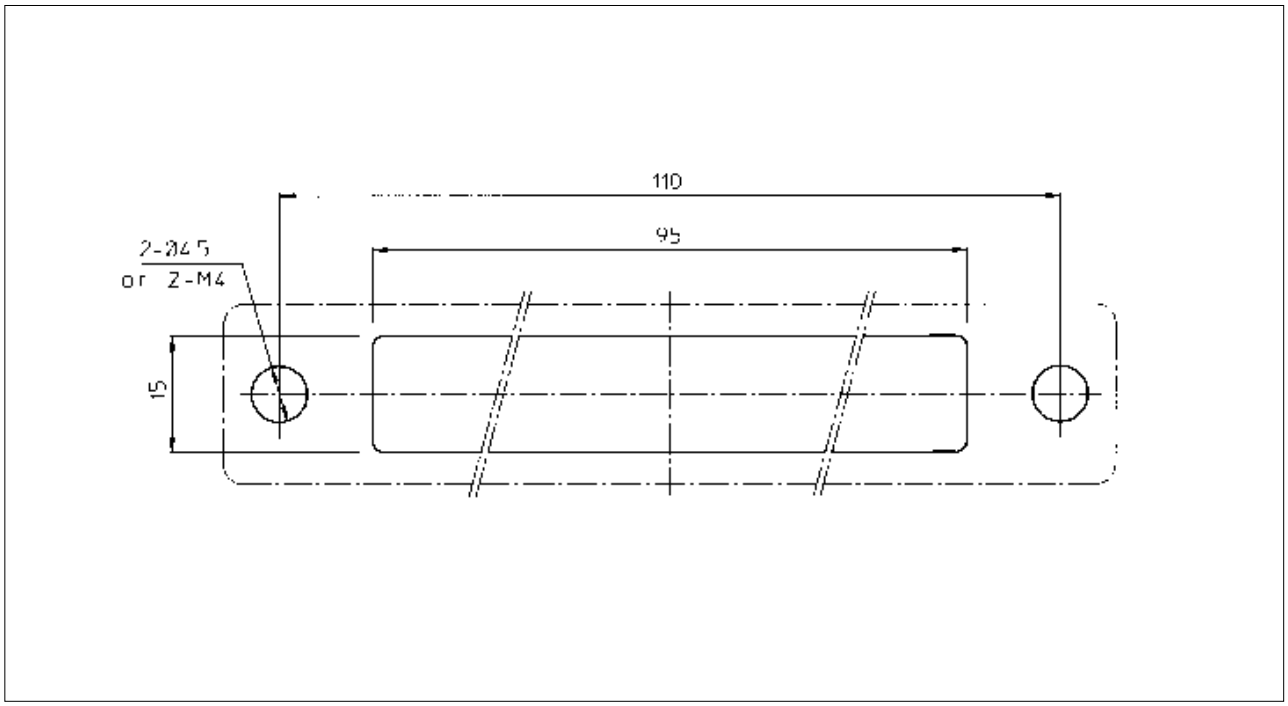
Right angle PCB mount receptacle with flange

MSG 59 R F L 1 1 1

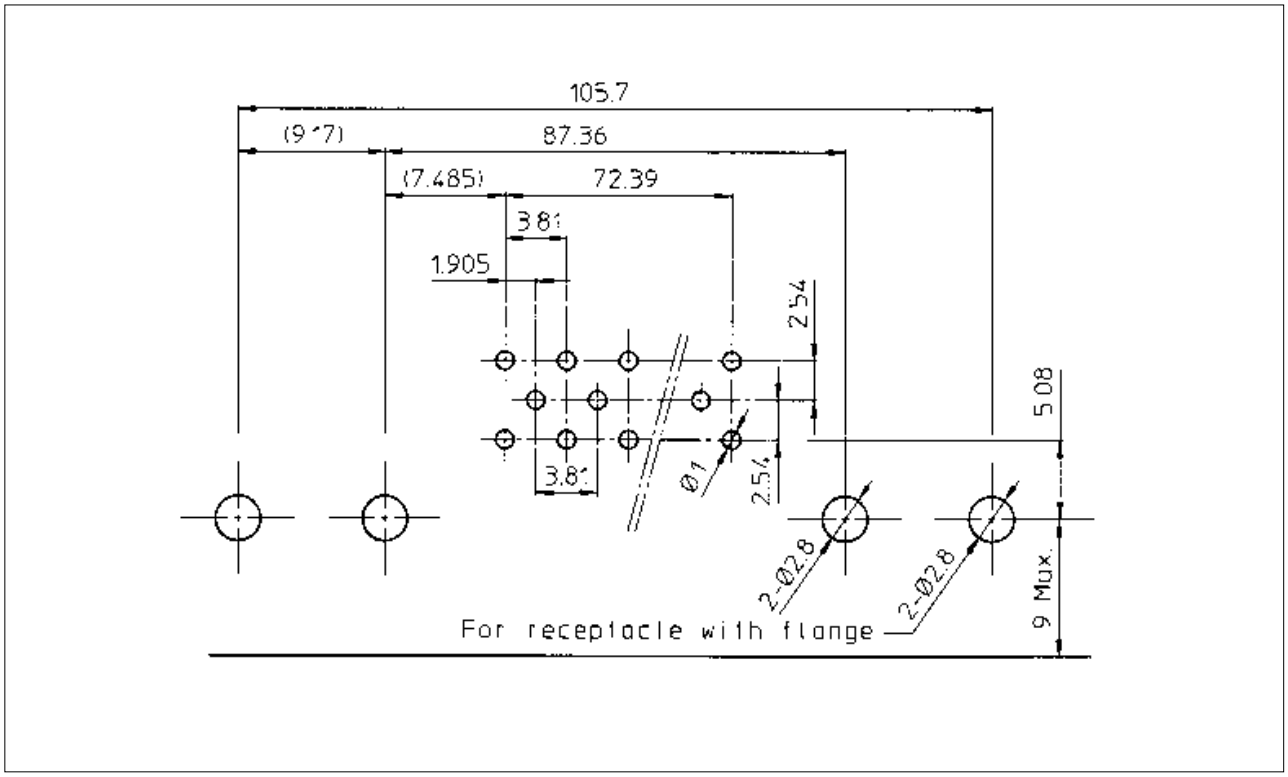
- Series
- 59 Pos.
- Receptacle
- Body variation
  R= Right angle with flange
- Skirt mechanism
  L=Lever
- Contact type
  1= gold plated RM contact
- Polarization
- Contact loading
  1= Fully loaded



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



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



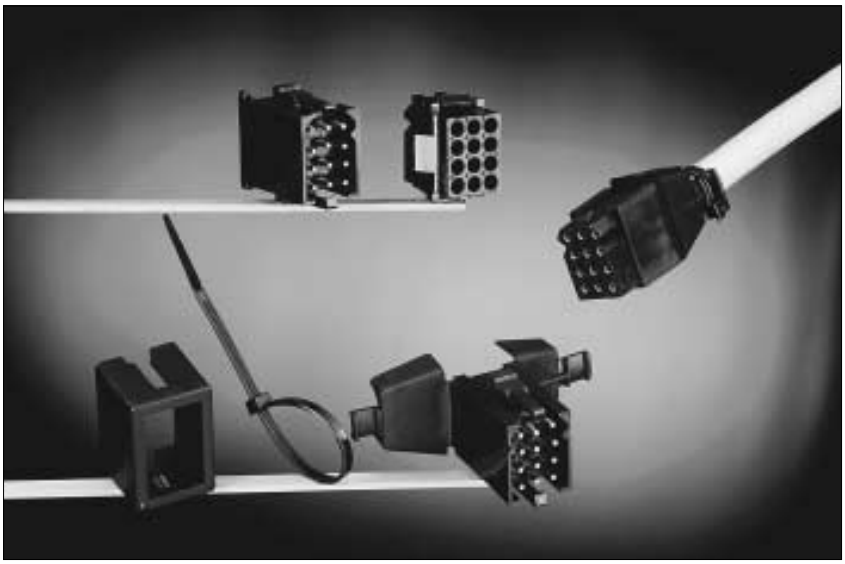
Qikmate panel and cable connectors

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 mismating.
- 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

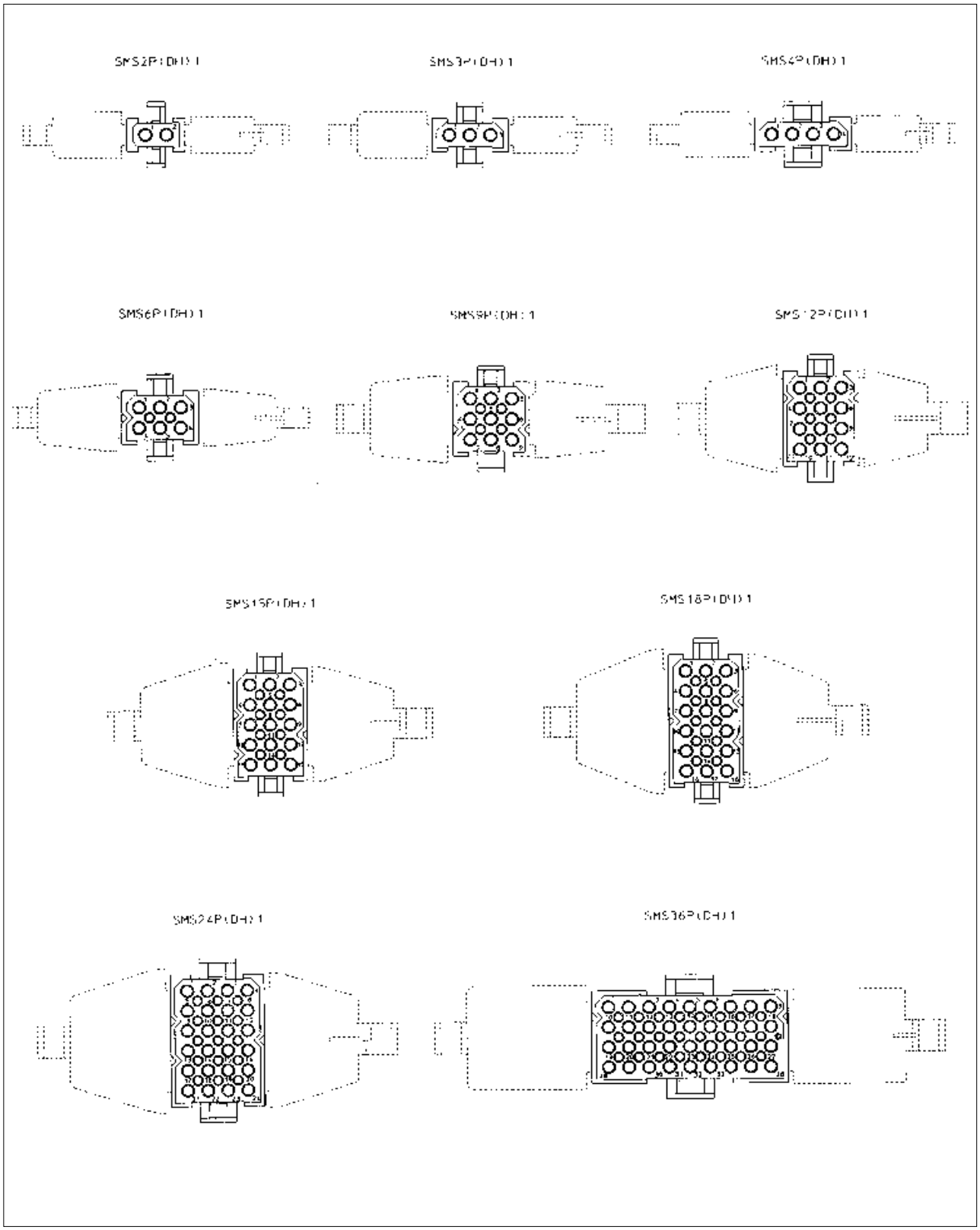
Contact accommodation

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

How to order

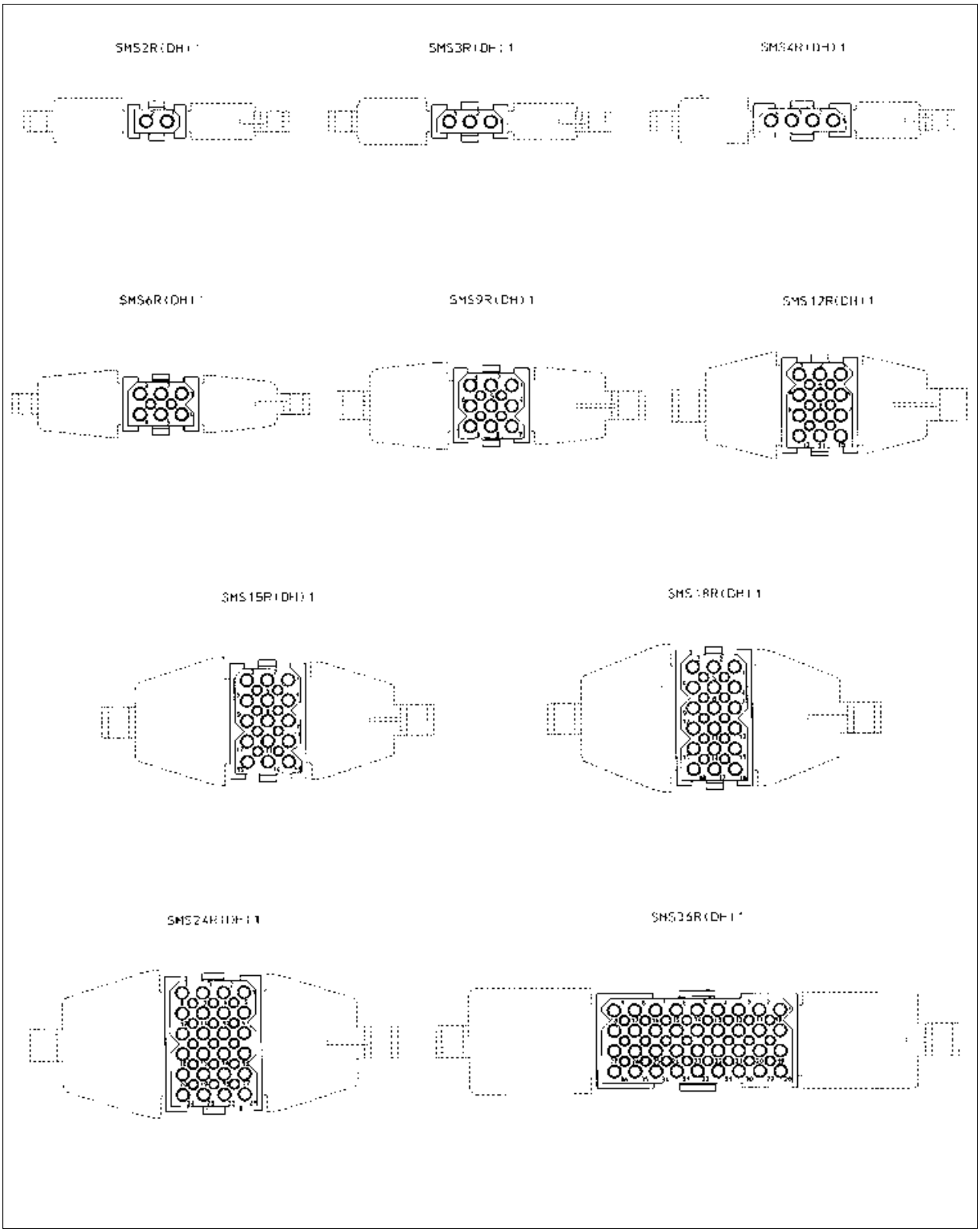
Connector family		**SMS** **SMS**	**12** **12**	**PDH1** **P1**
Contact arrangement				
Body variation:	**R1:** Panel mount receptacle **P1:** Cable plug without strain relief hood **PDH1:** Cable plug with integrated strain relief hood **RDH1:** Cable receptacle with integrated strain relief hood			

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



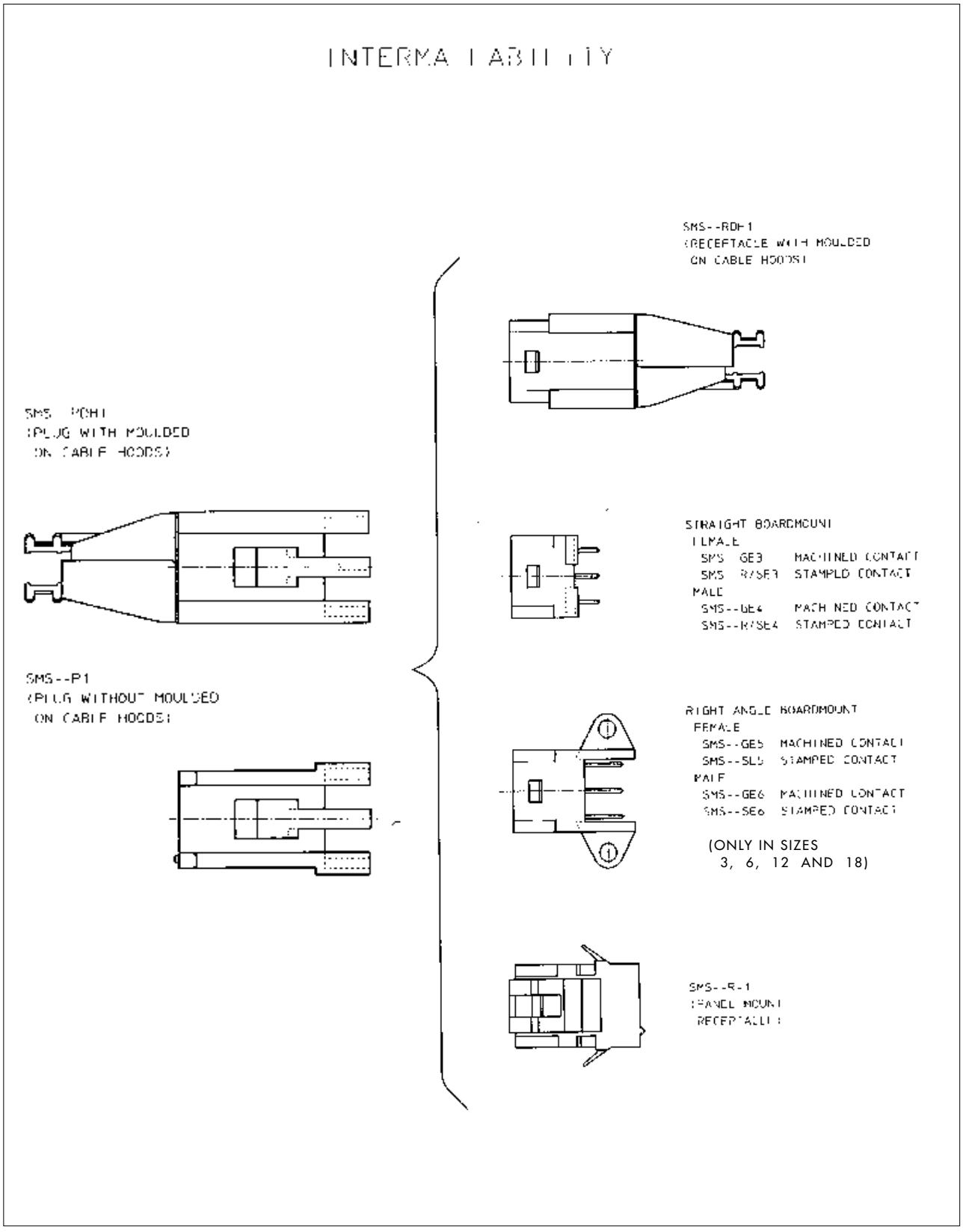
Contact identifications shown are for mating face. Contact identifications of wiring face are identical as shown on the receptacle arrangements

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

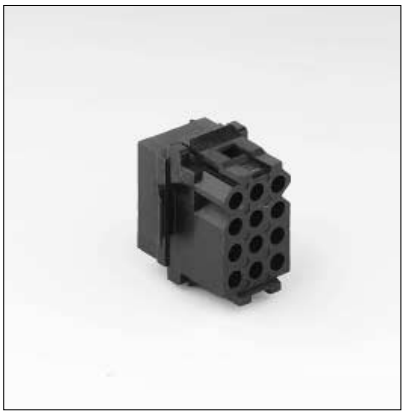


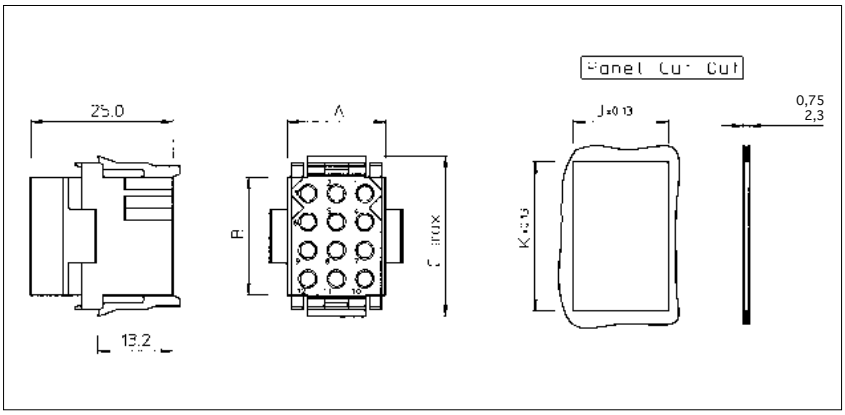
Contact identifications shown are for mating face. Contact identifications of wiring face are identical as shown on the plug arrangements

SMS - Standard Qikmate intermateability chart



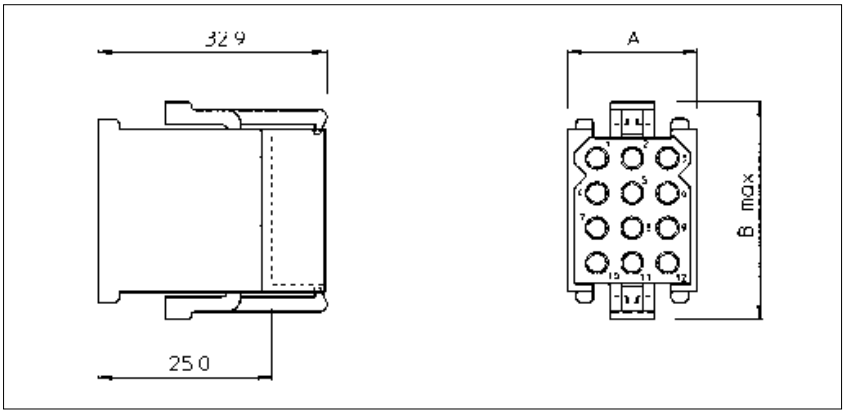
Panel mount receptacle (SMS--R1)





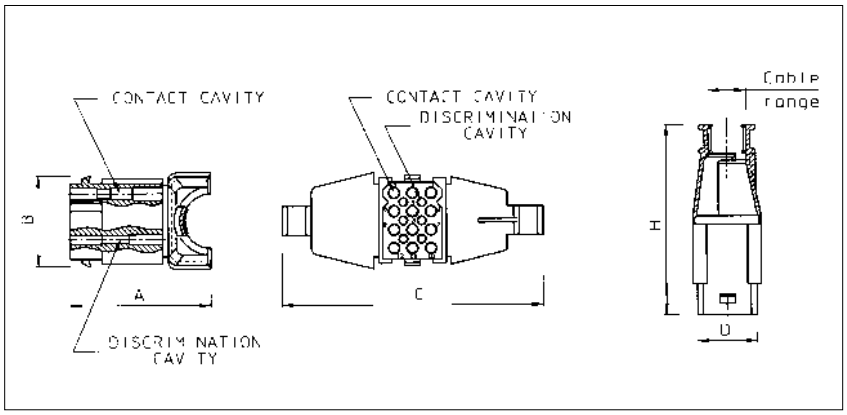
Part number	Number of contact pos.	A	B	C max.	J ±0.13	K ±0.13
SMS2R1	2	11.0	5.8	15.2	11.4	11.6
SMS3R1	3	16.2			16.5	
SMS4R1	4	21.2			21.7	
SMS6R1	6	16.2	10.9	20.3	16.5	16.7
SMS9R1	9		16.0	25.4		21.6
SMS12R1	12		21.1	30.5	16.7	26.7
SMS15R1	15		26.2	35.6		31.8
SMS18R1	18		31.2	40.6		36.9
SMS24R1	24	21.2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

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



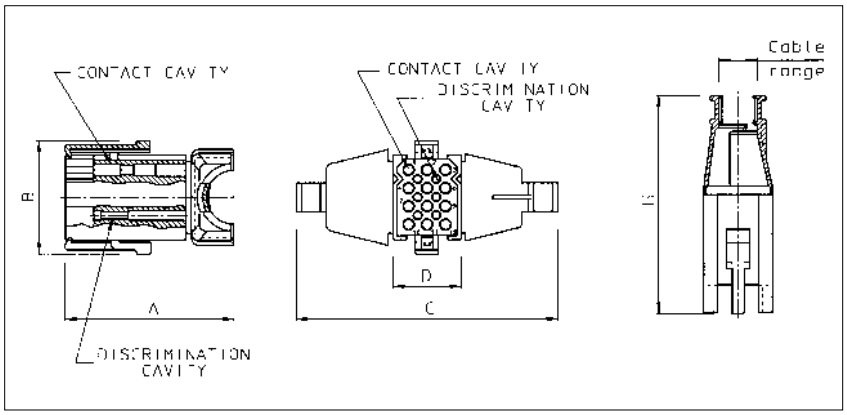
Part number	Number of contact pos.	A	C max.
SMS2P1	2	15.0	17.8
SMS3P1	3	18.6	
SMS4P1	4	23.7	
SMS6P1	6	18.6	22.9
SMS9P1	9		27.9
SMS12P1	12		33.0
SMS15P1	15		38.1
SMS18P1	18		43.2
SMS24P1	24	23.7	
SMS36P1	36	49.1	33.0

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



Part number	Number of contact pos.	Number of disrimination pos.	A	B	C	D	H	Cable range	Recommended unirap cable te
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	
SMS9RDH1	9	4	35.8	20.0	75.3		52.2	3.9 - 14.3	TF5D
SMS12RDH1	12	6	38.1	25.1	72.0		52.7	4.0 - 15.0	
SMS15RDH1	15	8	35.9	30.2	81.3		55.2	5.0 - 16.2	
SMS18RDH1	18	10	36.1	35.3				5.8 - 20.3	
SMS24RDH1	24	15	39.7		90.4	21.2	57.2	7.1 - 20.4	
SMS36RDH1	36	24	54.6	25.1	128.0	46.6	63.3	8.8 - 24.5	

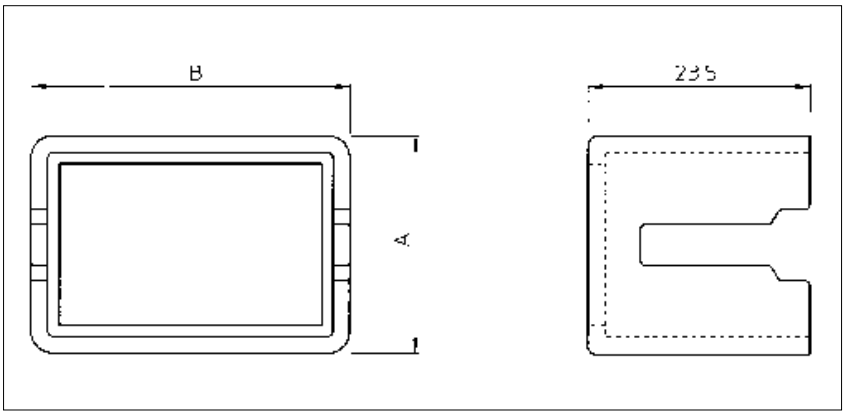
Cable plug with integrated strain relief hood (SMS--PDH1)



Part number	Number of contact pos.	Number of disrimination pos.	A	B	C	D	H	Cable range	Recommended unirap cable te
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	
SMS9PDH1	9	4	43.7	26.7	75.3		60.1	3.9 - 14.3	TF5D
SMS12PDH1	12	6	46.0	31.7	72.0		60.6	4.0 - 15.0	
SMS15PDH1	15	8	43.8	36.7	81.3		63.1	5.0 - 16.2	
SMS18PDH1	18	10	44.0	41.8				5.8 - 20.3	
SMS24PDH1	24	15	47.6		90.4	23.7	65.1	7.1 - 20.4	
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 cabe 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.

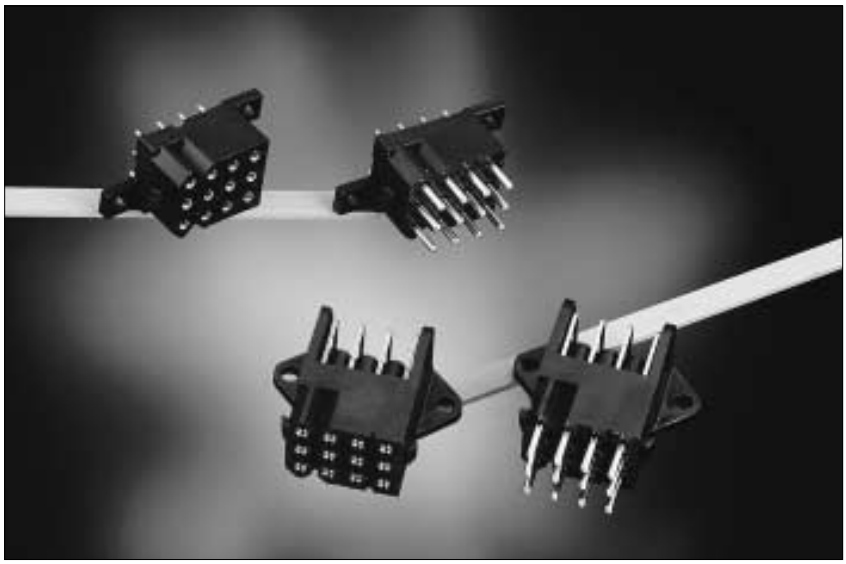
Qikmate PC-boardmount connectors

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:
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 Tin on solder tail.
T = 3 - 5µ Tin all over

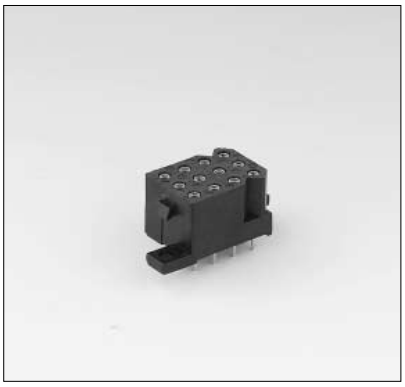
Intermateability

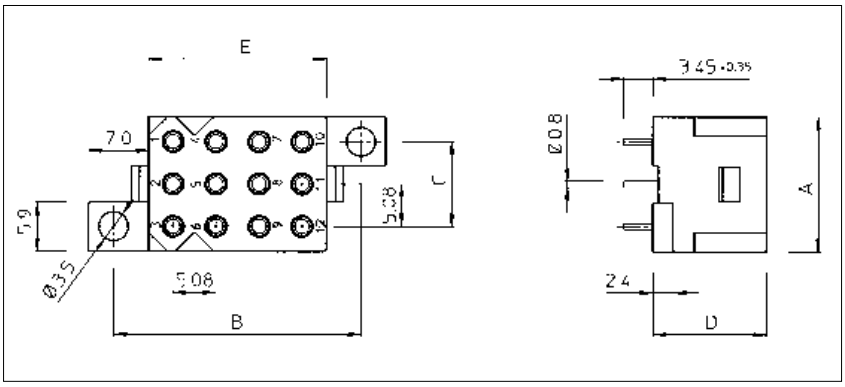
- "SMS" Qikmate boardmount connectors with preassembled TRIM TRIO boarmount contacts are intermateable only with the "SMS" Qikmate cable plug connectors equipped with TRIM TRIO crimp type removable snap-lock contacts (see contact section)

How to order

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

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

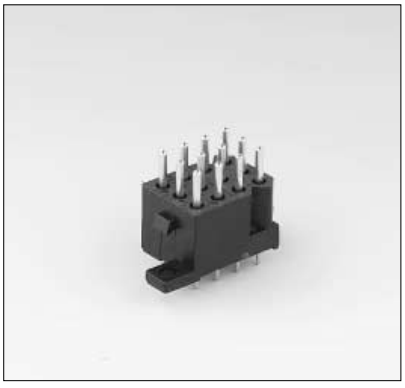


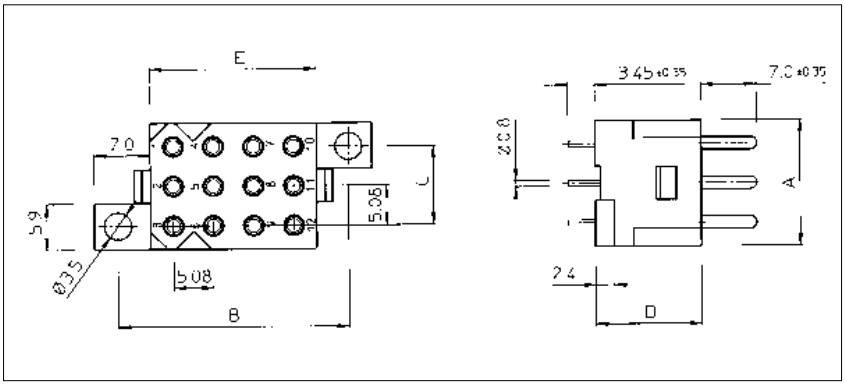


Part number Solid machined contacts	Part number Stamped and formed contacts	Number of contact pos.	Number of discrimination pos.	A	B	C	D	E
SMS2GE3	SMS2SE3K9	2	0	11.0	-	19.1	13.4	5.9
SMS3GE3	SMS3SE3K9	3	0	16.2	14.0	10.2		
SMS4GE3	SMS4SE3K9	4	0	21.3		15.2		
SMS6GE3	SMS6SE3K9	6	0	16.2	19.2	10.2		10.9
SMS9GE3	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		
SMS36GE3	SMS36SE3K9	36	0	46.5	15.2	54.6		20.9

For other platings: see plating table

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

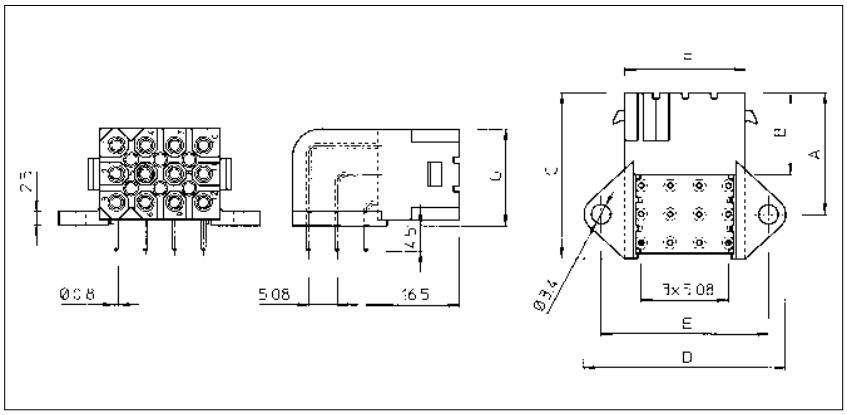




Part number Solid machined contacts	Part number Stamped and formed contacts	Number of contact pos.	Number of discrimination pos.	A	B	C	D	E
SMS2GE4	SMS2SE4K9	2	0	11.1	-	19.1	13.4	5.9
SMS3GE4	SMS3SE4K9	3	0	16.2	14.0	10.2		
SMS4GE4	SMS4SE4K9	4	0	21.3		15.2		
SMS6GE4	SMS6SE4K9	6	0	16.2	19.2	10.2		10.9
SMS9GE4	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		
SMS36GE4	SMS36SE4K9	36	0	46.5	15.2	54.6		20.9

For other platings: see plating table

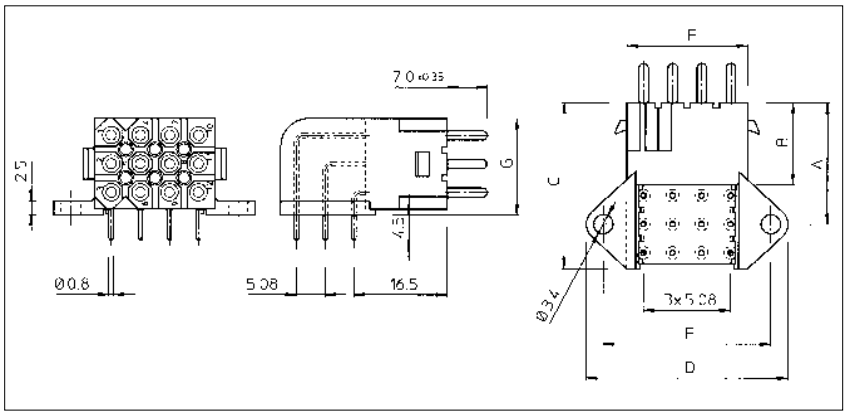
Right angle boardmount with female contacts (SMS--GE5 / SMS--SE5K9)



Part number Solid machined contacts	Part number Stamped and formed contacts	Number of contact pos.	Number of discrimination 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				11.9
SMS12GE5	SMS12SE5K9	12	6	21.6		29.5	35.2	29.2	21.2	17.2
SMS18GE5	SMS18SE5K9	18	10				45.4	39.4	31.2	

For other platings: see plating table

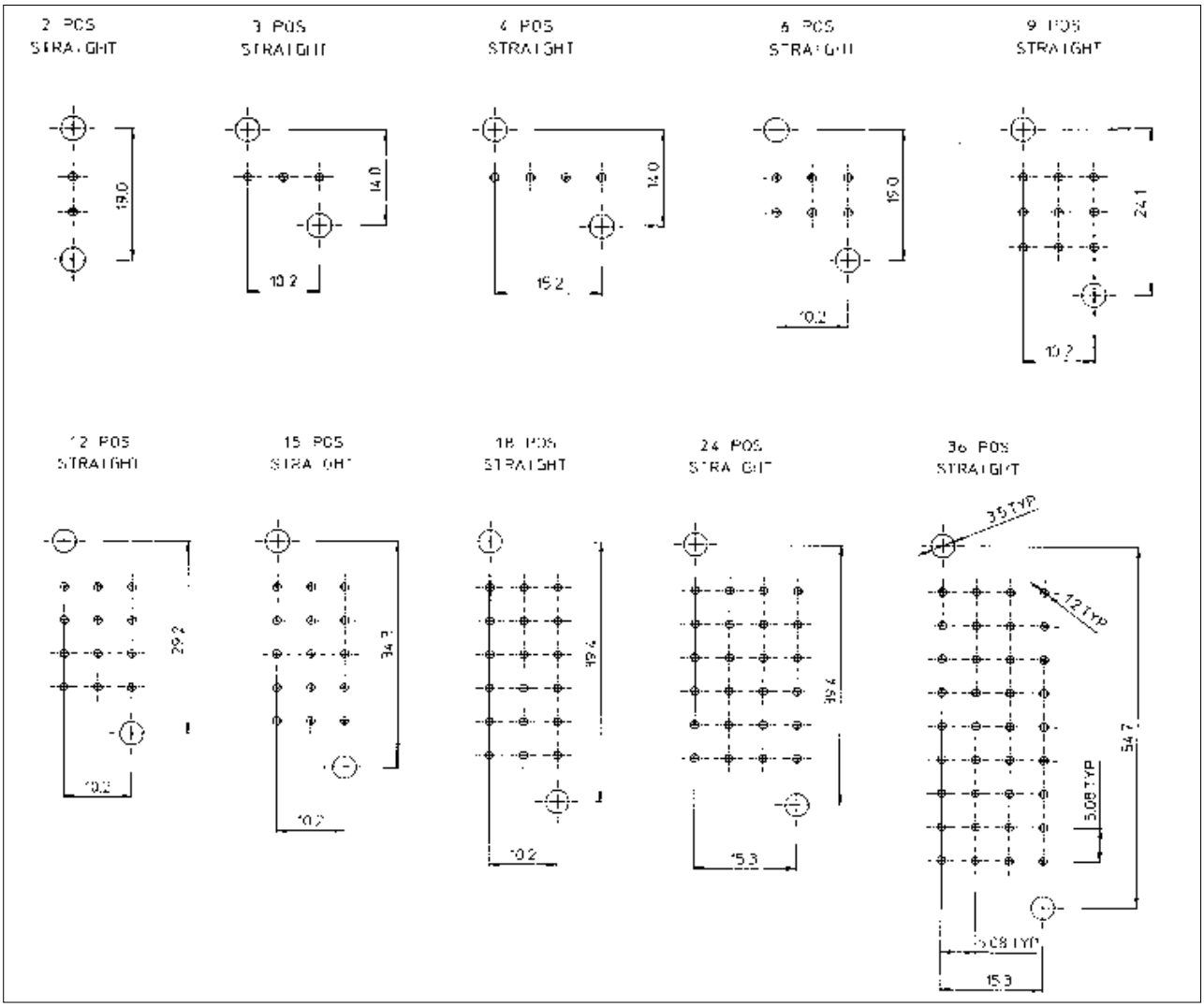
Right angle boardmount with male contacts (SMS--GE6 / SMS--SE6K9)



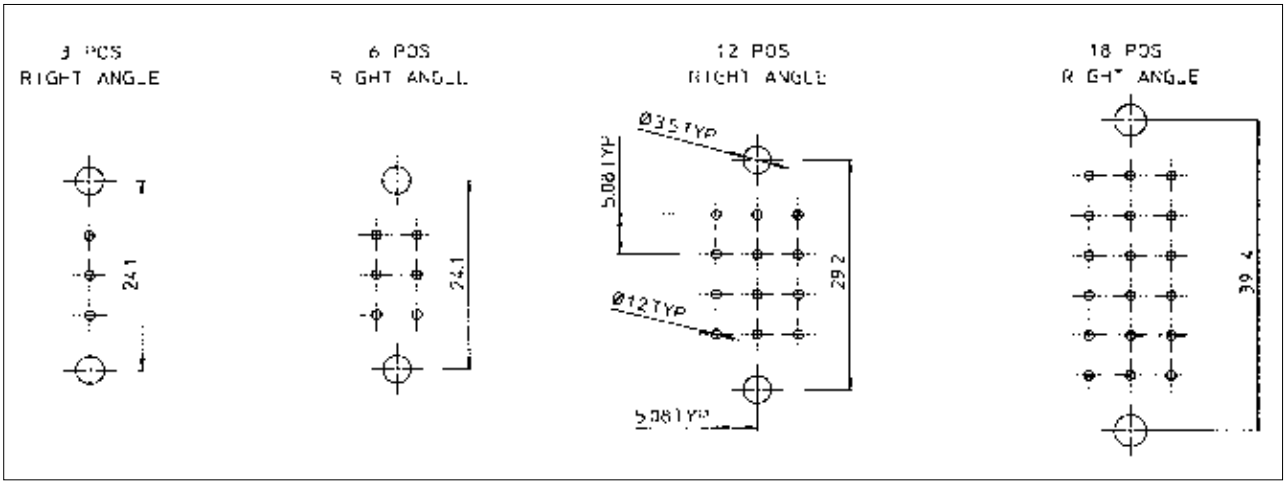
Part number Solid machined contacts	Part number Stamped and formed contacts	Number of contact pos.	Number of discrimination pos.	A	B	C	D	E	F	G
SMS3GE6	SMS3SE6K9	3	0	16.5	14.4	20.5	30.2	24.2	16.2	6.8
SMS6GE6	SMS6SE6K9	6	0	19.0		24.5				11.9
SMS12GE6	SMS12SE6K9	12	6	21.6		29.5	35.2	29.2	21.2	17.2
SMS18GE6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

For other platings: see plating table

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



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 positieve 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.

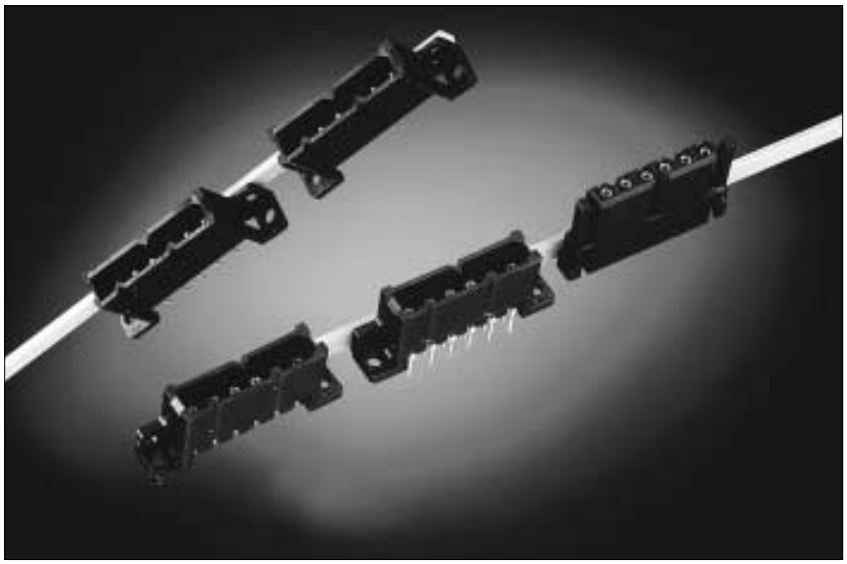
Features and benefits

- 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 seperately.

Plating table

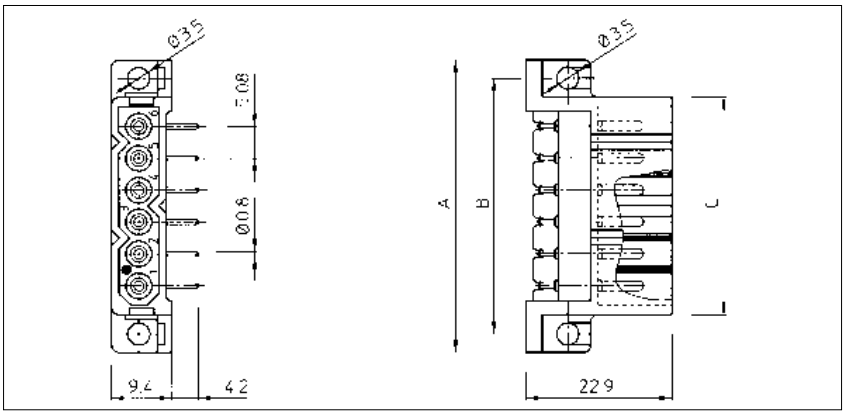
Plating for solid machined contacts:
No digit (std) = Min. 0.4µ Gold all over, over Nickel.
T = 3 - 5µ Tin all over
Plating for Stamped and formed contacts :
D28 = Min. 0.75µ Au over nickel.
D70 = Gold flash all over
TR29 = 1.2µ Pre-plated Tin all over.
Plating for coax contacts:
Z17 = Min. 0.75µ Au 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:	**PH:** Pin header boardmount.					
	CH: Coax header boardmount.					
	P3: Socket cable plug for pin and coax boardmount header.					
Design variation:	**1:** Right angle coax header boardmount with male contacts.					
	2: Straight coax header boardmount with male contacts					
	3: Right angle pin header boardmount with stamped male contacts					
	4: Straight pin header boardmount with stamped male contacts					
	GE6: Right angle pin header boardmount with machined male contacts					
	GE4: 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)

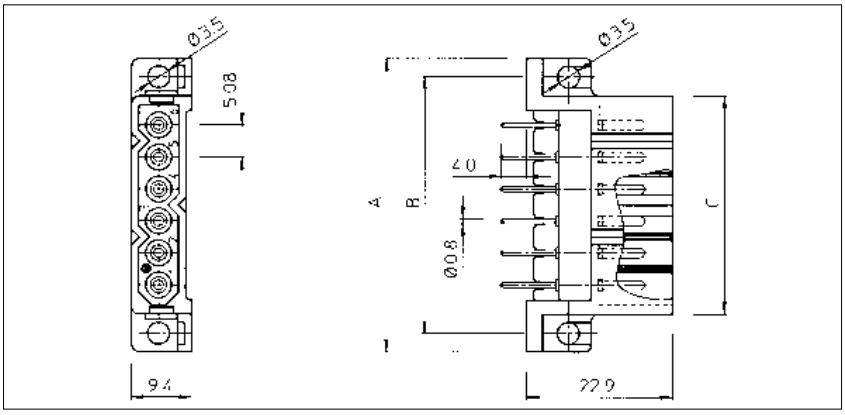


Part number Stamped and formed contacts	Part number Solid machined contacts	Number of contact positions	A	B	C
SMS3PH3TR29	SMS3PHGE6	3	31.2	25.4	19.3
SMS4PH3TR29	SMS4PHGE6	4	36.3	30.4	24.4
SMS6PH3TR29	SMS6PHGE6	6	46.5	40.6	34.5
SMS9PH3TR29	SMS9PHGE6	9	61.7	55.9	49.8
SMS10PH3TR29	SMS10PHGE6	10	66.8	61.0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

For other platings: see plating table.

Other solder tail lenghts on request

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

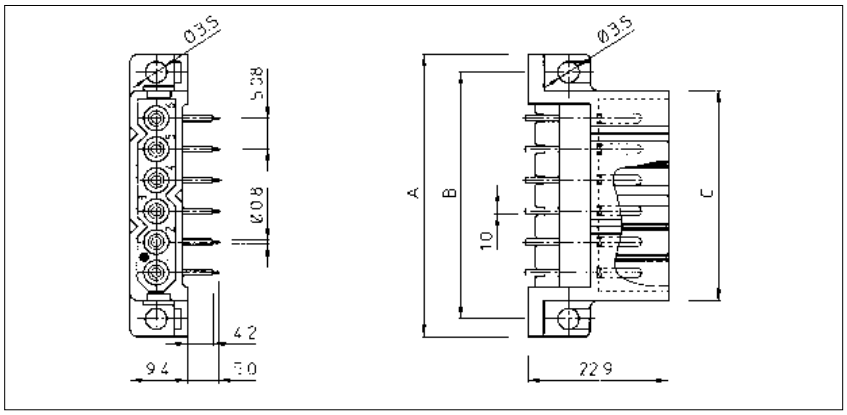


Part number Stamped and formed contacts	Part number Solid machined contacts	Number of contact positions	A	B	C
SMS3PH4TR29	SMS3PHGE4	3	31.2	25.4	19.3
SMS4PH4TR29	SMS4PHGE4	4	36.3	30.4	24.4
SMS6PH4TR29	SMS6PHGE4	6	46.5	40.6	34.5
SMS9PH4TR29	SMS9PHGE4	9	61.7	55.9	49.8
SMS10PH4TR29	SMS10PHGE4	10	66.8	61.0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

For other platings: see plating table.

Other solder tail lenghts on request

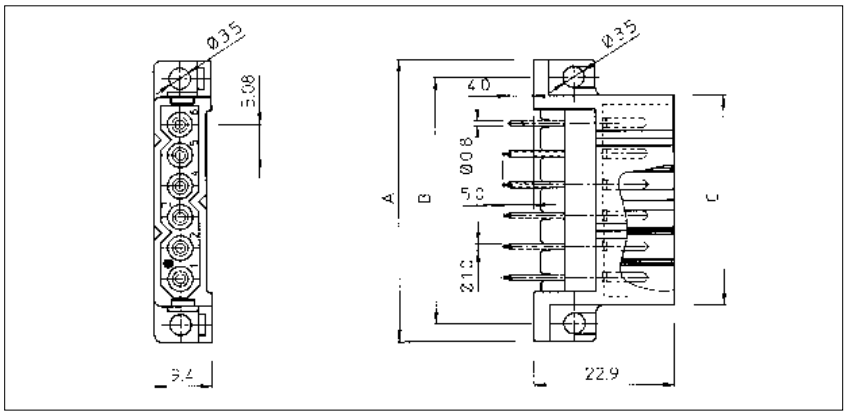
Right angle coax header boardmount with male contacts (SMS--CH1Z17)



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.

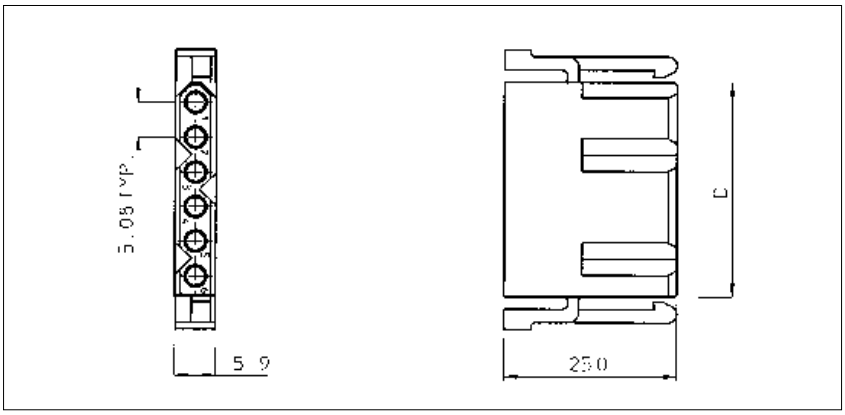
Straight coax header boardmount with male contacts (SMS--CH2Z17)



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

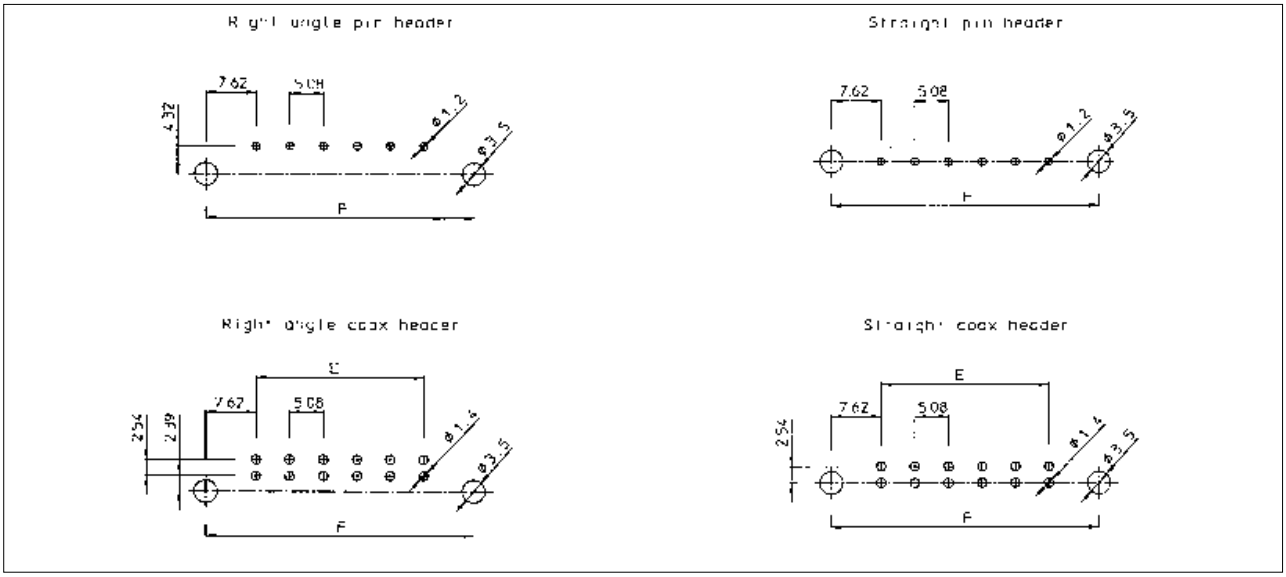
For plating spec.: see plating table.

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

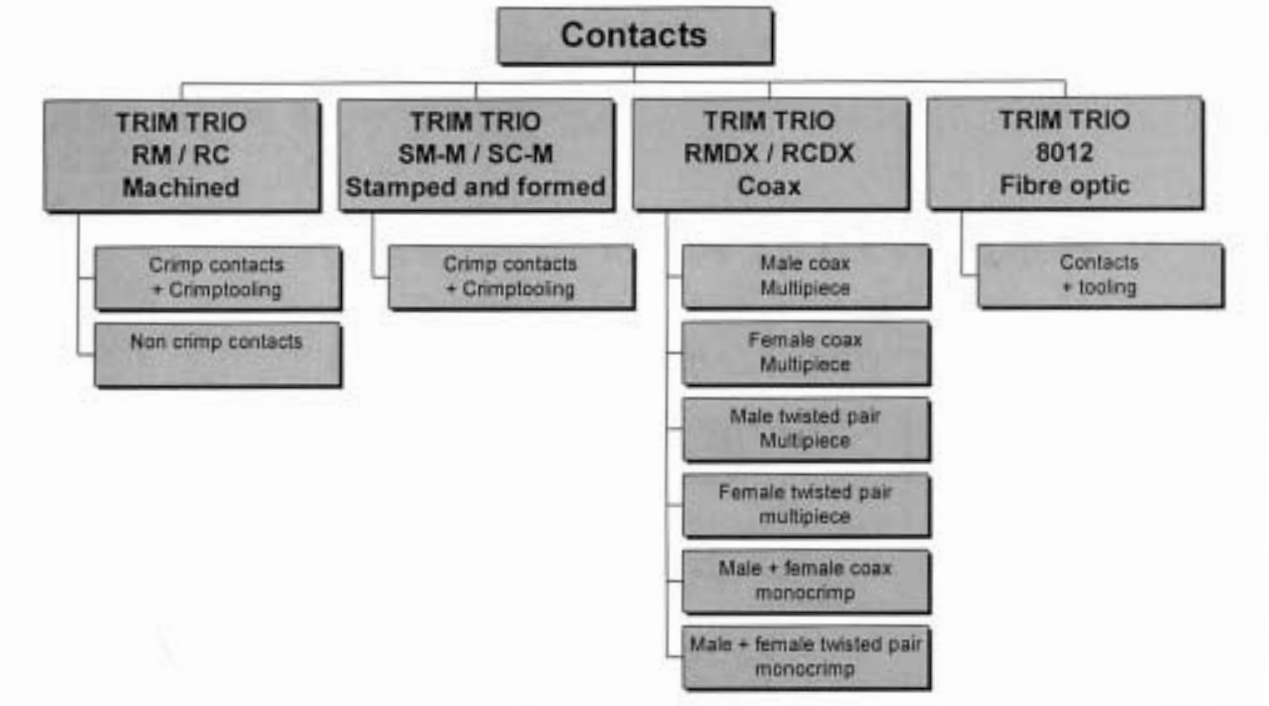
Recommended PC-board hole layouts



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

Overview TRIM TRIO contacts

Selection matrix TRIM TRIO 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 interprete 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 exeed 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 mm²	wire dia. mm	max.curr. carrying Amp.	max.oper-ating 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. carying Amp.	max. oper-ating curr. Amp.	recomm. cont. curr. Amp.
		RM / RC machined	22	13	10
16	**.062* 1.6 mm**	**SM / SC 2 piece stamped**	22	13	10
20	**.040* 1.0 mm**	**SM-W / SC-W 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.

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 (0.5mm2) 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 mm2) 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 (1.3mm2) 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 individiually.

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:

$$\frac{\text{4 Amp. per mm}^2}{\text{wire section}}$$

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 mm2	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

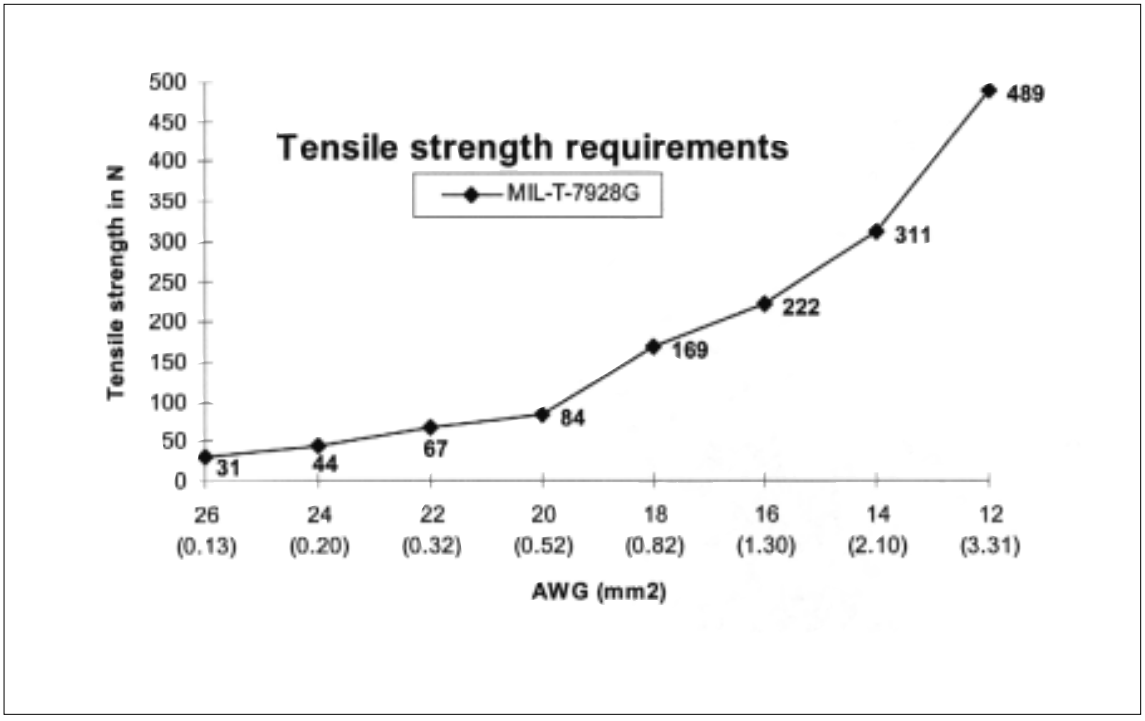
The conductor and insulation crimp section
Are designed to accommodate wire-conductor and insulation diameters, expressed in AWG (American Wire Gauge) or mm^2.
For each wire gauge, a correct crimp requires a crimp height that offers the highest performance.
This performance is defined as the highest tensile strength force.
A good conductor crimp can be guaranteed if the tensile stength force is equal or higher as indicated on the graph below. E.g. a conductor of AWG20 (0.52 mm^2) 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.



Size 16 solid machined contacts for TRIM TRIO connectors

Description

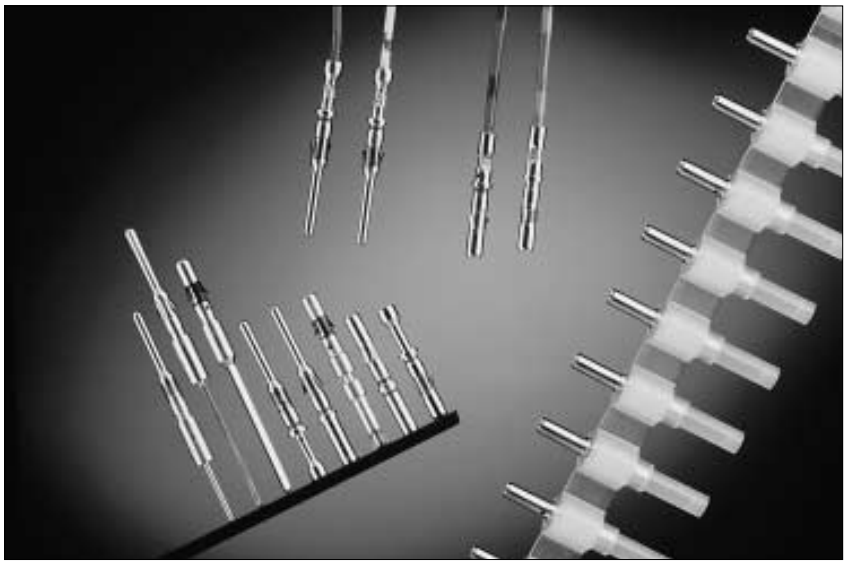
Size 16 RM/RC .063" (1.6mm) diameter contacts are precision solid machined crimp snap-in pin and sockets for heavy duty top performance requirements. Springs on both contacts are made of spring-tempered, heat-treated, berylium copper.
The socket inner spring supplies high contact pressure to ensure low-resistance 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

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

Connector accommodation

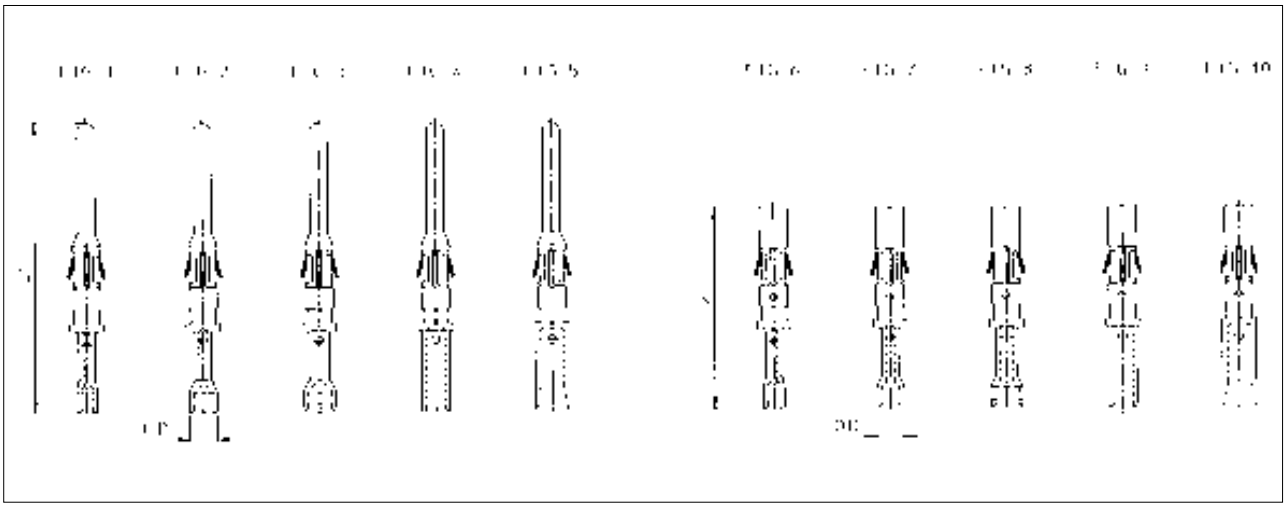
Any TRIM TRIO contact can be used in any contact position in any connector in the TRIM TRIO interconnection system.

- 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

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

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



Dimensional table

Pin contacts	Part number Fig.	Socket contacts Standard	Socket contacts RCS-Type	Fig.	Wire size AWG	Wire size mm²	Max. wire dia.	Max. insul. dia.	Wire strip length	O.D.	L1	L2
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(*)		RC20M14(*)	RCS20M14(*)					2.6	4.8	3.10		
RM20M13(*)	3	RC20M13(*)	RCS20M13(*)	8	22-20	0.32-0.52	1.18	1.8		2.92	26.2	18.2
RM20M12(*)		RC20M12(*)	RCS20M12(*)					2.2		2.92		
RM16M23(*)		RC16M23(*)	RCS16M23(*)	9								
RM16M23GE1(*)	4	RC16M23GE1(*)	--	9	20-16	0.52-1.50	1.80			2.55	27.2	19.7
RM16M31(*)		--	--	-				3.2	7.1		28.4	--
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

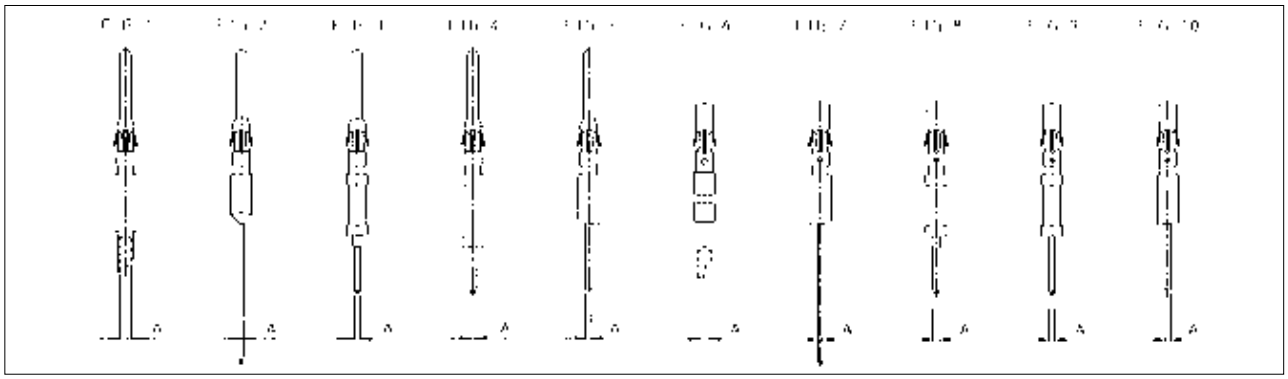
(*) Plating indication : See plating table
For machined contact reeled on plastic carrier: put "K" in front of part number e.g. KRM16M23K

Crimptooling table

Size	Hand crimp tooling for loose contacts: Hand tools die set included	MH860 Positioner (not incl.)	MH860 Locator setting	M10S1 Die set (not incl.)	M10S1 Stop bushing (not incl.)	M8ND Die set (not incl.)	Automatic crimp tooling for contacts on strip: P100MAN (Press) Left side applicator KRM/KRC (not incl.)	P100MAN (Press) Stripper unit (not incl.)	Extraction tools
28-1			4/6	S9		N24RT10	--		
24-9		MH86164G	5/6		SL40		MLSP2763	Consult Factory	
20-12/13	Y16RCM		5/7	S10		N20RT30	MLSP2764		RX2025GE1 or RX2025GE2 or RX16D11D1
16-23			6/8		SL39	N16RT21			
16-GE1		MH86186		S3D1	SL115	N16RT25	MLSP2765		
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

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

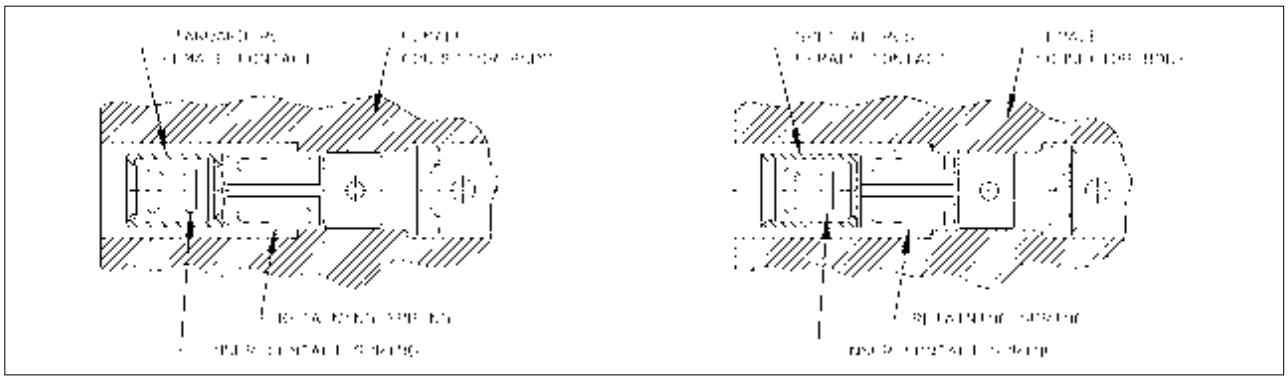


Part number				Type	Wire size		Post cross section A	Length out of TRIM TRIO cavity	Anti-rotating bushing part number
Pin contacts	Fig.	Socket contacts	Fig.		AWG	mm²			
RM16MSC(*)	**1**	**RC16MSC(*)**	**6**	Handsolder	16 - 20	1,50 - 0,52	ø1.7	--	-
RM16SEO(*)	**1**	**RC16SE4(*)**	**6**	Handsolder	16 - 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

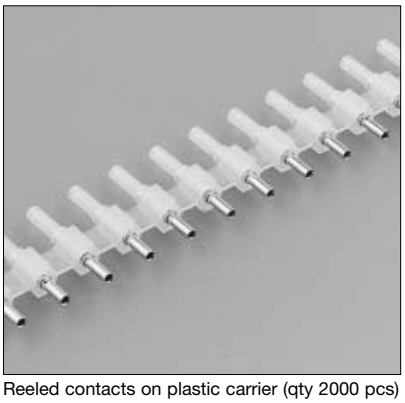
The RCS contact principle



The RM/RC contact packing

50 pcs bulk packing (standard)

1000 pcs bulk packing



Reeled contacts on plastic carrier (qty 2000 pcs)

Size 16 stamped and formed contacts for TRIM TRIO connectors

Description

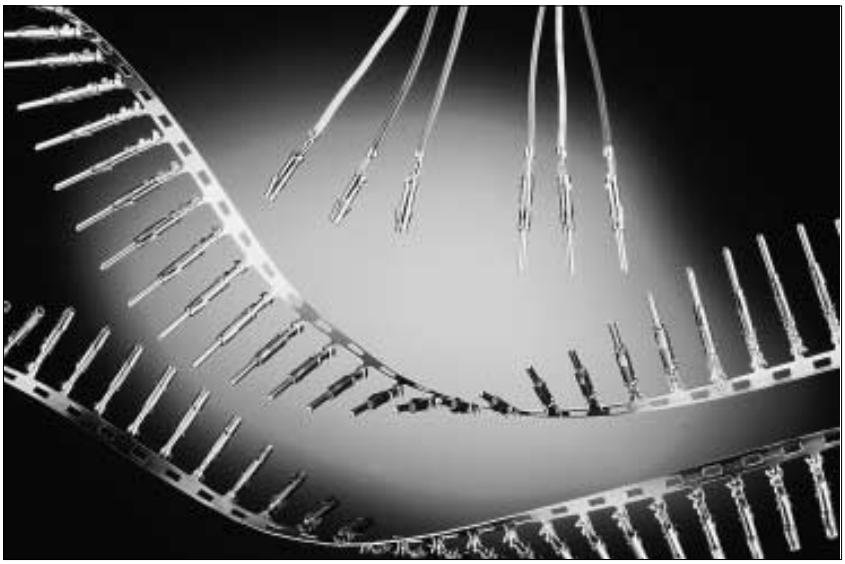
Size 16 SM/SC .063" (1.6mm) diameter contacts are two piece strip formed crimp snap-in pin and sockets.
These contacts consist of a crimp body made of high conductive copper alloy, and a stainless steel retaining spring featuring retention in the housing cavity and a closed entry socket to prevent probe damage.
The contact with its open barrel is standard available on srtip 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 construcion 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

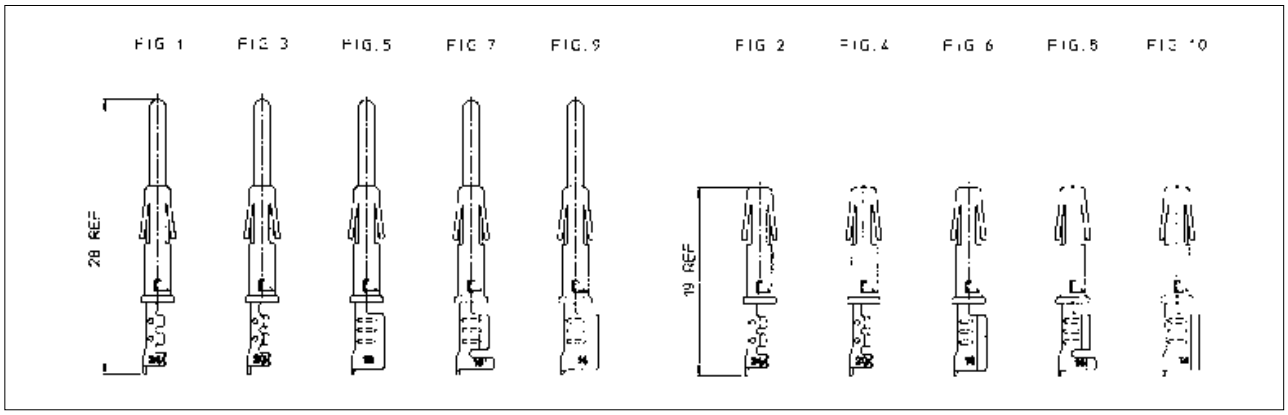
Any TRIM TRIO contact can be used in any contact position in any connector in the TRIM TRIO interconnection system.

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

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



Dimensional table

Part number: contacts on strip Loose pieces				Wire size		Insulation diameter	Wire strip length
Pin contacts	Fig.	Socket contacts	Fig.	AWG	mm²		
SM24M1S6 **SM24ML1S6**	**1**	**SC24M1S6** **SC24ML1S6**	**2**	26 - 24	0.13 - 0.25	0.89 - 1.58	4.0
SM20M1S6 **SM20ML1S6**	**3**	**SC20M1S6** **SC20ML1S6**	**4**	22 - 20	0.35 - 0.50	1.17 - 2.08	4.0
SM16M1S6 **SM16ML1S6**	**5**	**SC16M1S6** **SC16ML1S6**	**6**	18 - 16	0.80 - 1.50	3.0	6.35
SM16M11S6 **SM16ML11S6**	**7**	**SC16M11S6** **SC16ML11S6**	**8**	18 - 16	0.80 - 1.50	2.0 - 3.0	4.65
SM14M1S6 **SM14ML1S6**	**9**	**SC14M1S6** **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)	N24RT11	MLS0318B	MLS20M1	RX2025GE1 or RX2025GE2 or RX16D11D1
20	Y14MTV (ratchet)	N20RT29	MLS0555A		
16M(L)11	Y16SCM2 (ratchet)	N16RT26	MLS0356A	MLS16M11	
16M(L)1	Y14SCM (ratchet) Y14MTV (ratchet)	N16RT24	MLS1579	MLS16M1	
14	Y14SCM (ratchet) 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

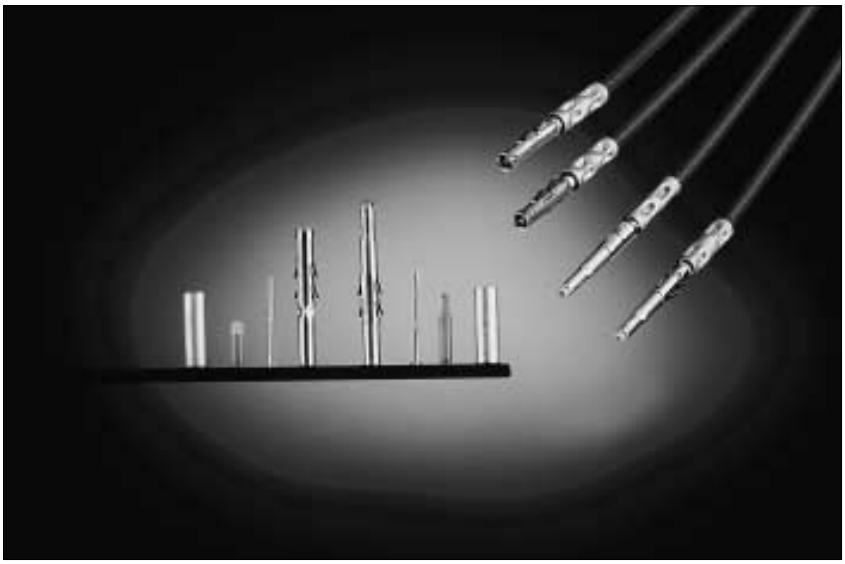
Size 16 RMDX/RCDX Multipiece .063" (1.6mm) diameter contacts are subminiature coaxial contacts to cover a wide range of subminiature coaxial and twisted pair cables.
They are suitable in applications where a mix of signal, power and coaxial cable terminations for low frequency, shielded signal and high frequency applications are needed.
The contact consist 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 hold the outer braid to the outer contact and act 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 hold the outer braid to the outer contact and act 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 t0 + 125°C
Contact retention in body:	65 N min.
Contact voltage drop a 1A:	25m V max.
Isolation at 30 MHZ:	140 db.



Construction

Inner and outer contacts: High conductive copper alloy
Retaining spring: berylium 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

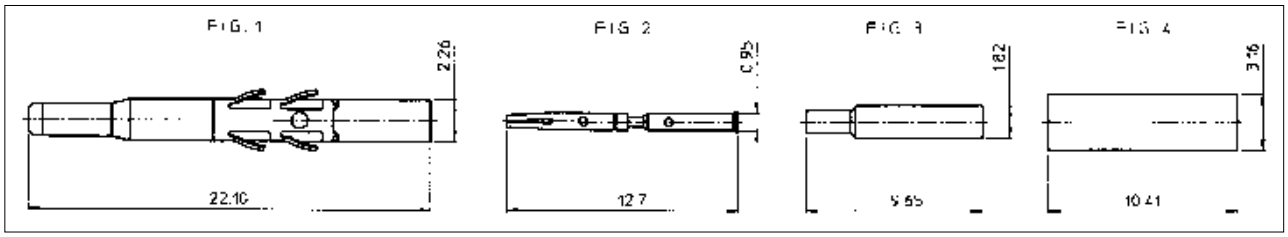
Any TRIM TRIO contact can be used in any contact position in any connector in the TRIM TRIO interconnection system.

- 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 RCDX	K10 K1	D28 D28
Contact type:	**RMDX** = Male subminiature coax. **RCDX** = Female subminiature coax.			
Multipiece coax kit	**K10** = Kit male coax. **K1** = Kit female coax			
Plating indication				

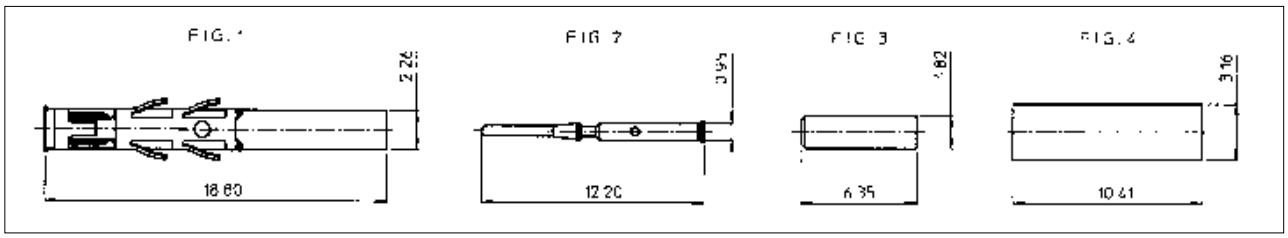
MULTIPIECE Subminiature coax - Male contact for coaxial cable



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 RG179A/U RG179B/U RG187U	RFD26L1D28	2	S23D2	SL46D2	RMDX602D28	1	YOC074	4	S22-1	SL47-1	RX2025 GE1
RG174/U RG188/U Amphenol 21-598			S26D2				YOC074	4			RX16D11 D1
RG178A/U RG196U			S23D2				YOC074 + RMDXB0553	4 3			

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

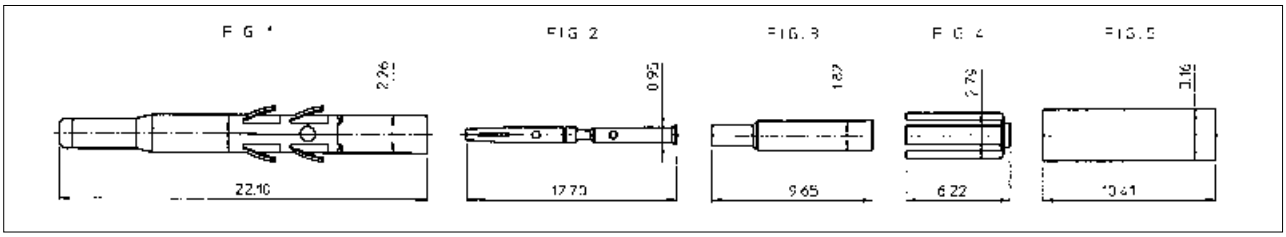
MULTIPIECE Subminiature coax - Female contact for coaxial cable



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 RG179A/U RG179B/U RG187U	RMD26L1D28	2	S23D2	SL46D2	RCDX602D28	1	YOC074	4	S22-1	SL47-1	RX2025 GE1
RG174/U RG188/U Amphenol 21-598			S26D2				YOC074	4			or RX16D11 D1
RG178A/U RG196U			S23D2				YOC074 + RCDXB0551	4 3			

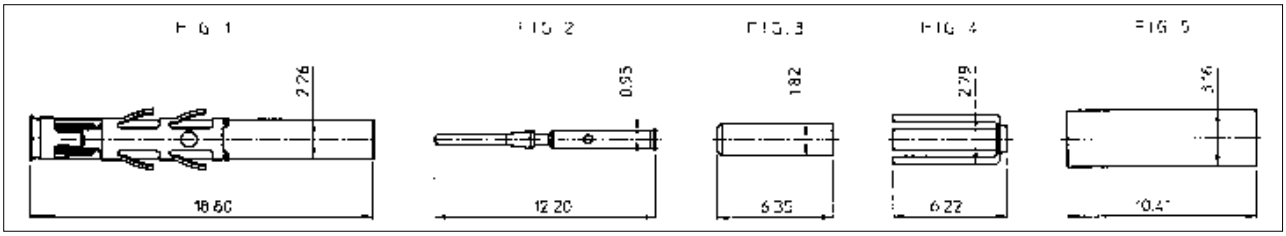
Kit reference RCDXK1D28 includes RCDX602D28 + RMD26L1D28 + YOC074 + RCDXB0551 and are packed in plastic bag.

MULTIPIECE Subminiature coax - Male contact for twisted pair cable



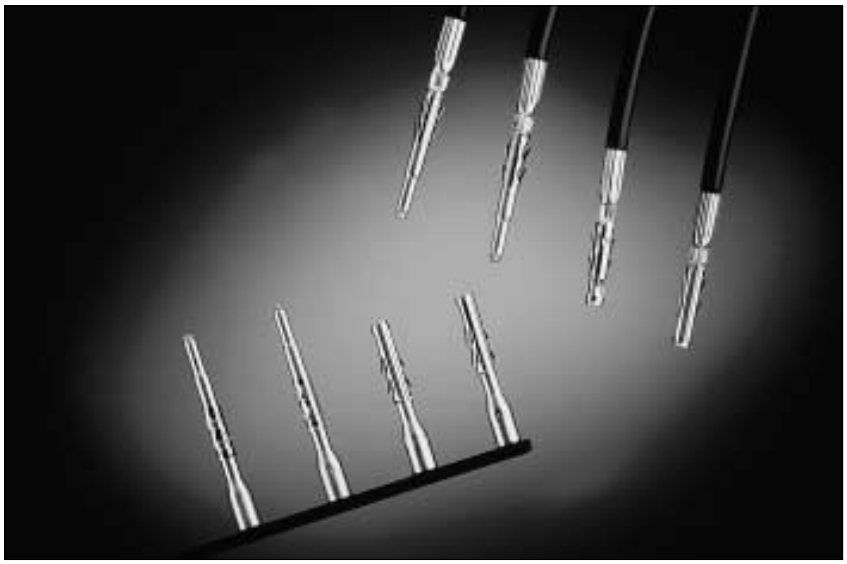
Type of coaxial cable	Contact for inner conductor				Contact for outer braid						Extrac tool
	Inner female contact		Crimp tool M10S1		Outer male contact		Hyring		Crimp tool M10S1		
	Part number	Fig.	Die set	Stop bushing	Part number	Fig	Part number	Fig	Die set	Stop bushing	
2 #24 solid or stranded 2 #26 str	RFD26L1D28	2	S26D2	SL46D2	RMDX602D28	1	YORX090 YOC074 RMDXB0553	4 5 3	S221	SL471	RX2025 GE1
2 #24 7/0,20 str. MIL-W-76 or MIL-W-16878 type B							YORX090 YOC074 RMDXB0554	4 5 3			or RX16D11D1
#28 per MIL-W-81822/3							YORX090 YOC074 RMDXB0553	4 5 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 2 #26 str	RMD26L1D28	2	S26D2	SL46D2	RCDX602D28	1	YORX090 YOC074 RCDXB0551	4 5 3	S221	SL471	RX2025 GE1
2 #24 7/0,20 str. MIL-W-76 or MIL-W-16878 type B							YORX090 YOC074 RCDXB0552	4 5 3			or RX16D11D1
#28 per MIL-W-81822/3							YORX090 YOC074 RCDXB0551	4 5 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: berylium 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

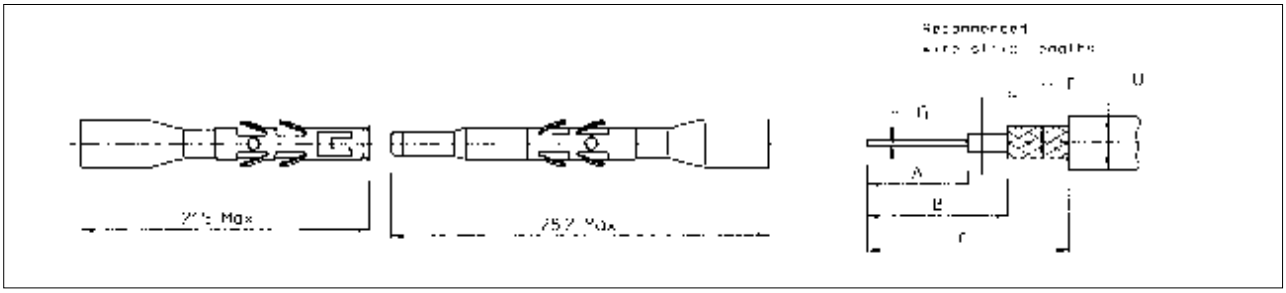
Any TRIM TRIO contact can be used in any contact position in any connector in the TRIM TRIO interconnection system.

- 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

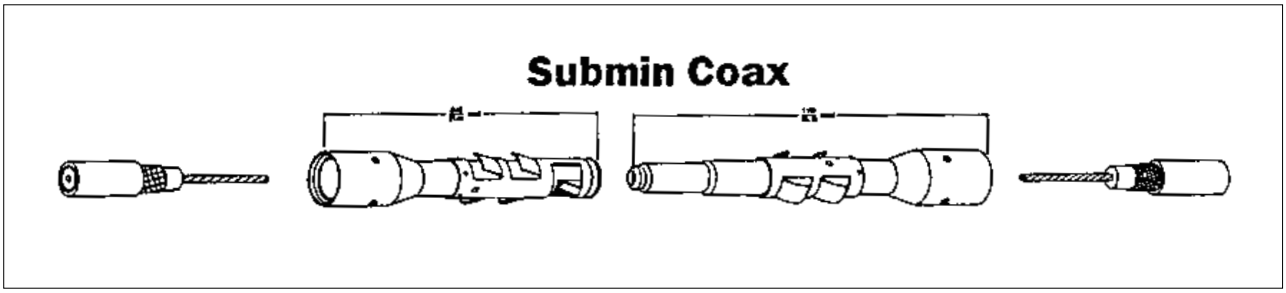
		RMDX60 **RCDX60**	**36** **36**	**D28** **D28**
Contact type:	**RMDX** = Male subminiature coax. **RCDX** = Female subminiature coax.			
Monocrimp design variation				
Plating indication				

MONOCRIMP Subminiature coax

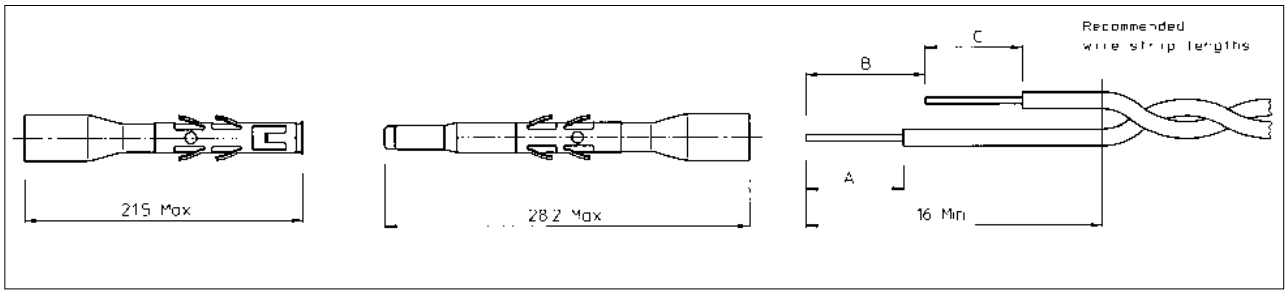


Part number Male / Female	AWG inner conduct.	Cable type	Coax dimensions D max	E	F	G	Coax strip lengths A	B	C	Crimp tool M10S1 Die set not incl.	stop bushing not incl.	Extraction tool
RMDX6050D28 **RCDX6050D28**	30	-	2.64	2.11	1.70	0.30	5.1		8.9	S80		
RMDX6050D28 **RCDX6050D28**		-	2.29	1.63	1.22		4.2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

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

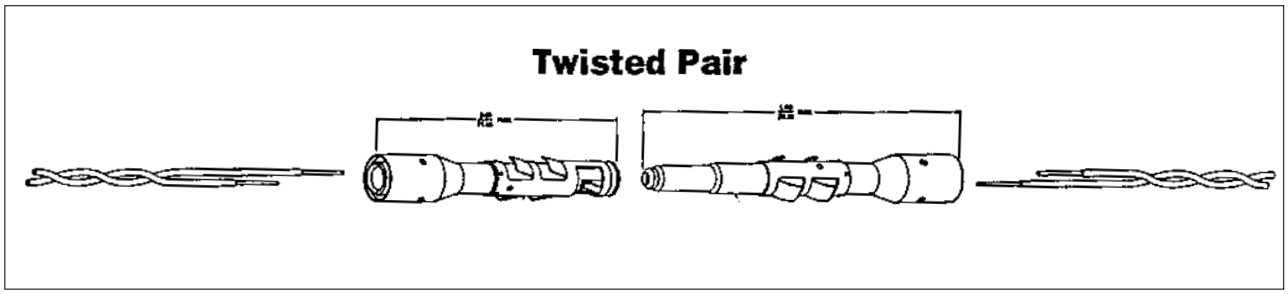


MONOCRIMP Twisted pair



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

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



Size 16 Fibre optic contacts for TRIM TRIO connectors

Description

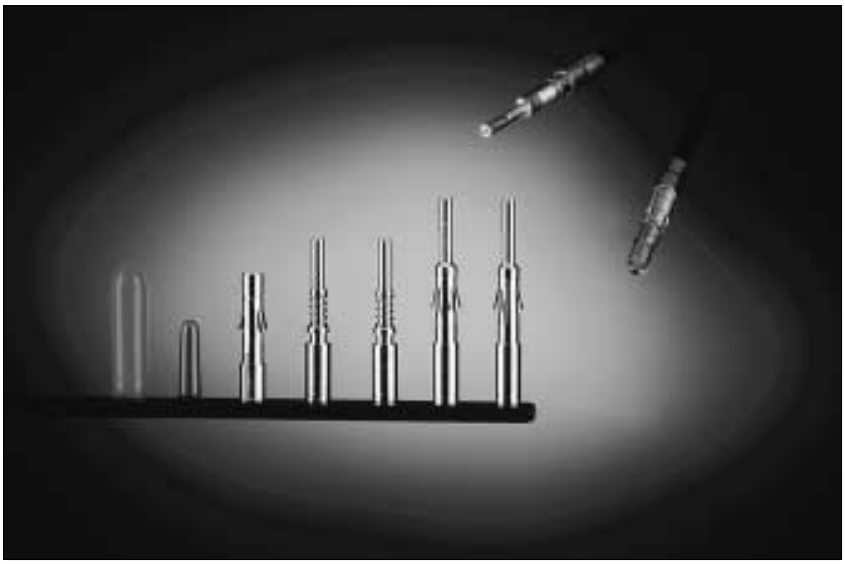
Size 16 (1.6mm) Fibre optic contacts series 8012 are optical contacts designed for the integration of optical links in all TRIM TRIO cable connectors.
The F.O. contacts are designed to accomodate 1000m plastic fibres with a cable diameter of 2.2 mm.

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
- Miscallaneous

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

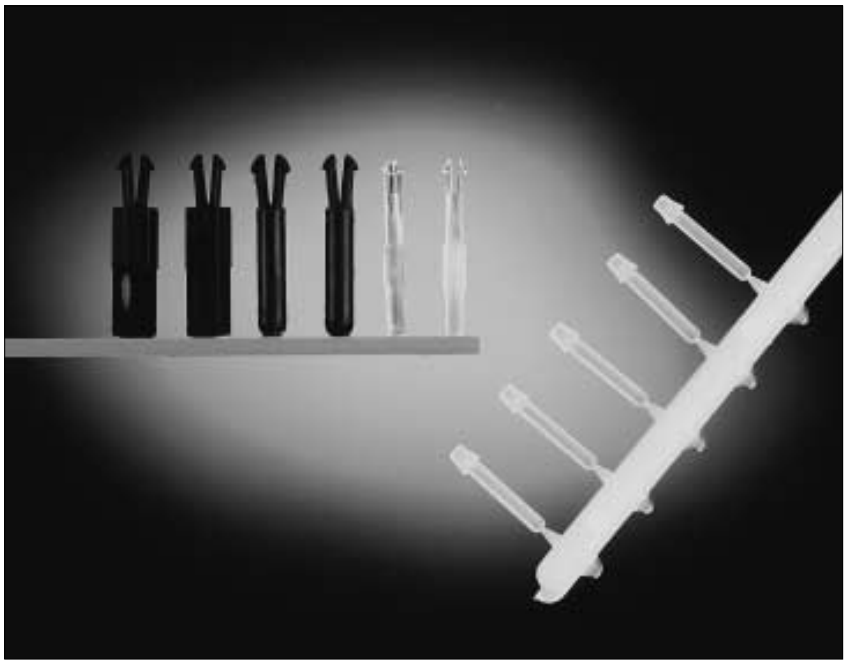
Description

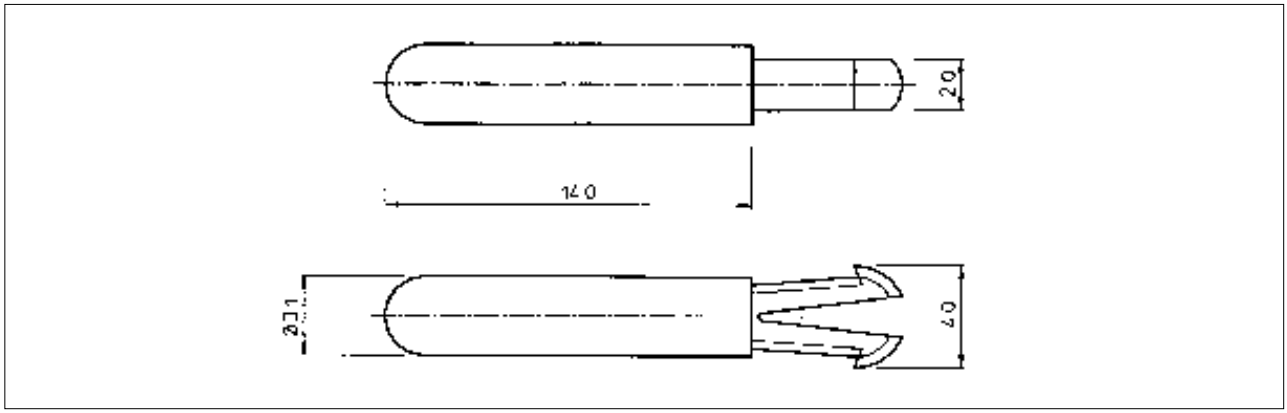
In applications where similar connectors are used next to each other, mismatching can be a reason for disturbances, system failure or even danger to operating personnel.
To eliminate mismatching, all TRIM TRIO connectors can be equipped with discrimination keys, which offer unlimited possibilities for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

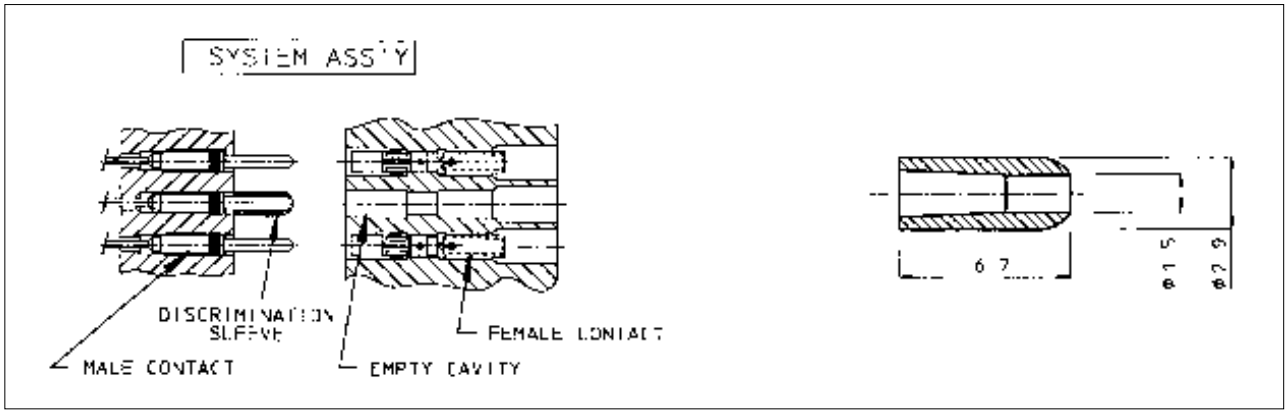
The material used is polyamide 6.6





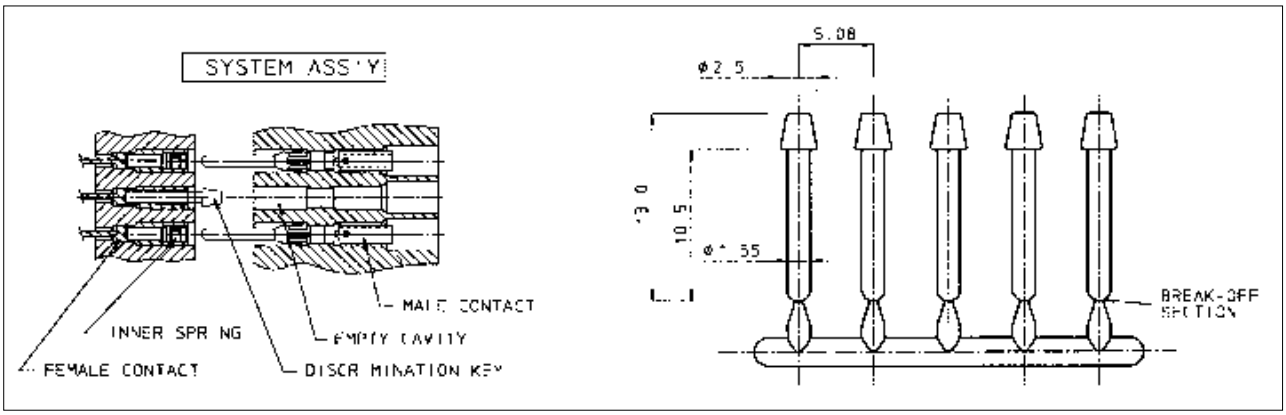
SMSPKE0

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



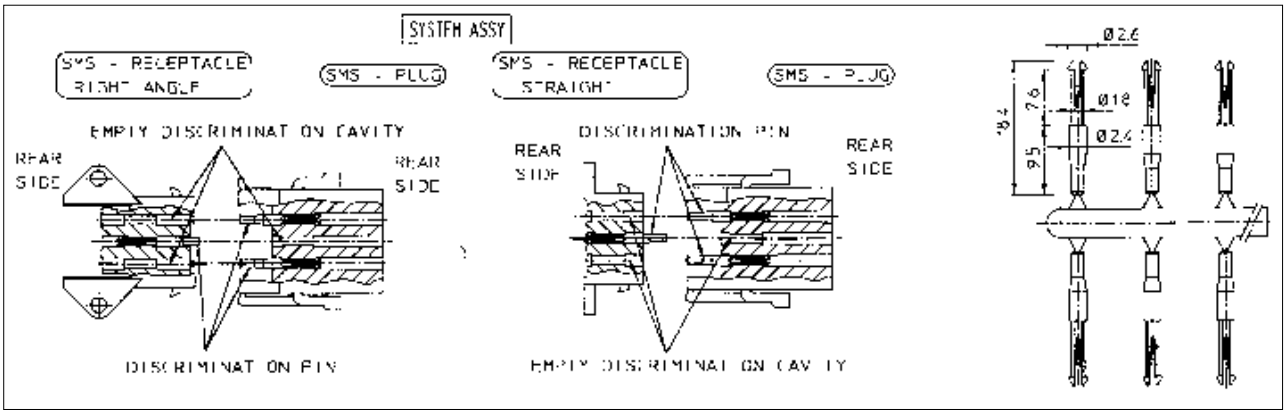
SMSPKB2

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



SMSPKE2V1

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

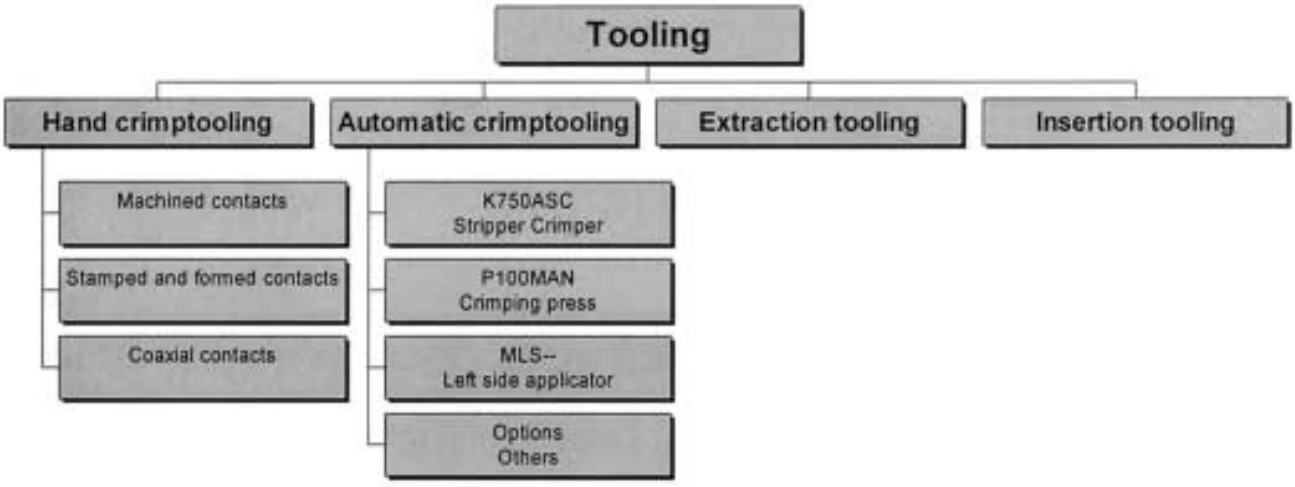


SMSPKE3

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



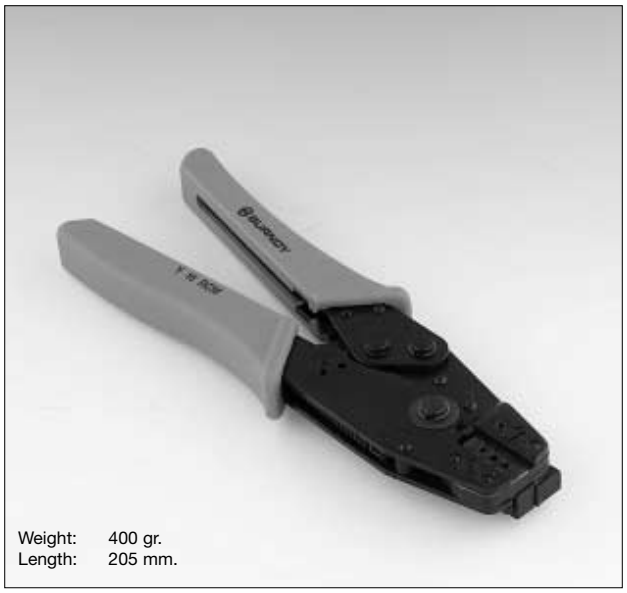
Crimptooling for TRIM TRIO contacts

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.

Weight: 425 gr.
Length: 250 mm.

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.



Weight: 400 gr.
Length: 205 mm.

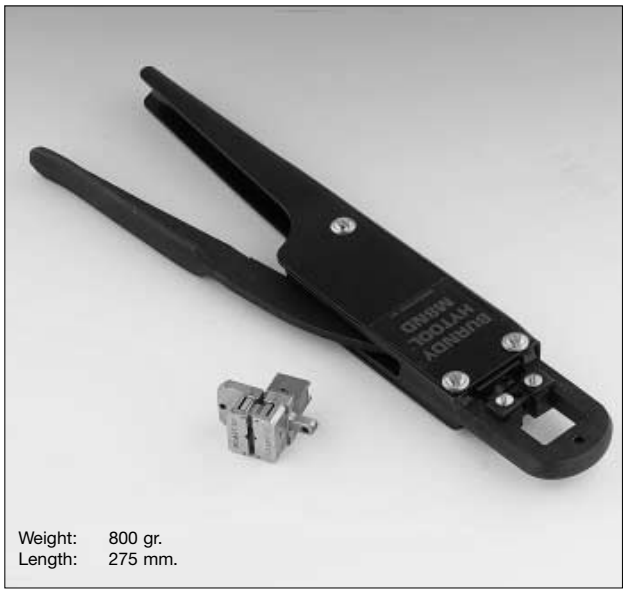
Y16RCM - for machined contacts

A light weight, low cost crimptool 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 crimptool is supplied with a locator to guarantee a perfect crimp indent positioning.

Weight: 300 gr.
Length: 170 mm.

MH860 - for machined contacts

A light weight crimptool 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 locators heads to crimp different contact types.



Weight: 800 gr.
Length: 275 mm.

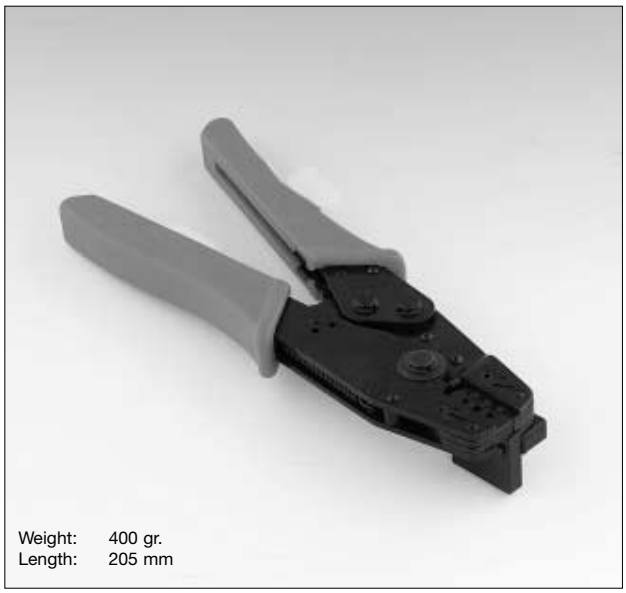
M8ND - for machined and formed contacts

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

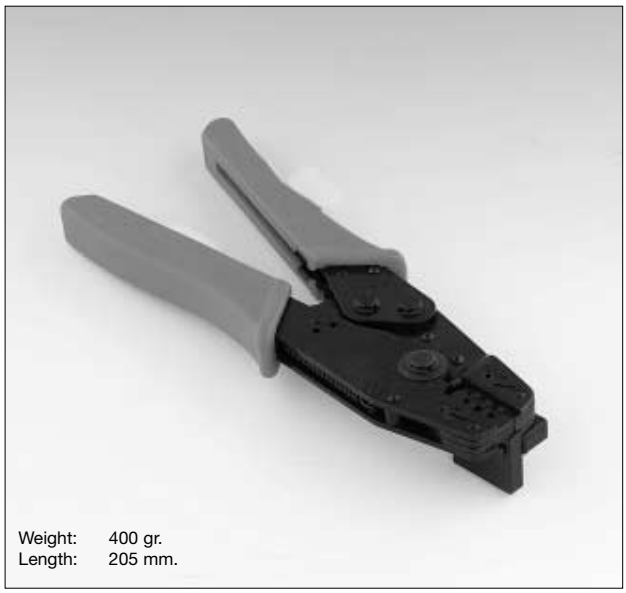
A light weight crimptool with fixed 3-groove die set for AWG26 to 14 for: **Size 16 TRIM TRIO SM-M/SC-M loose piece formed contacts.**
Ratchet controlled to guarantee a complete crimp cycle.



Weight: 400 gr.
Length: 205 mm

Y16SCM2 - for formed contacts

A light weight crimptool 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 crimptool is supplied with a locator to guarantee a perfect crimp indent
positioning.



Weight: 400 gr.
Length: 205 mm.

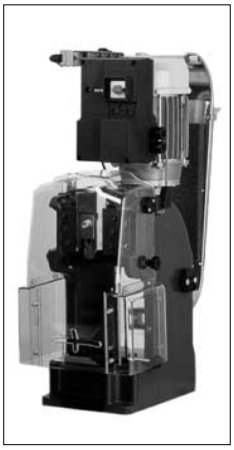
Y14SCM - for formed contacts

A light weight crimptool 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 crimptool is supplied with a locator to guarantee a perfect crimp indent positioning.

K750ASC
Stripper / Crimper machine for Trim Trio contacts.

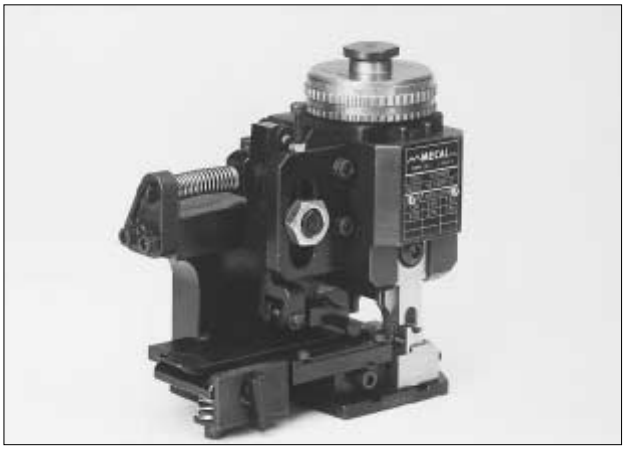
Description
The Strip Crimp 750 processes all banded contacts with cross sections from 0.05 – 4.0 mm².
The press has a 40mm stroke and can be used with all UNI-C applicators as well as side-feed mini-style applicators.
Built with well proven precision mechanics and state of the art electronics, the machine 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 2.5mm².
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
Miniapplicatorsn 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

Extraction tooling

RX2025GE1

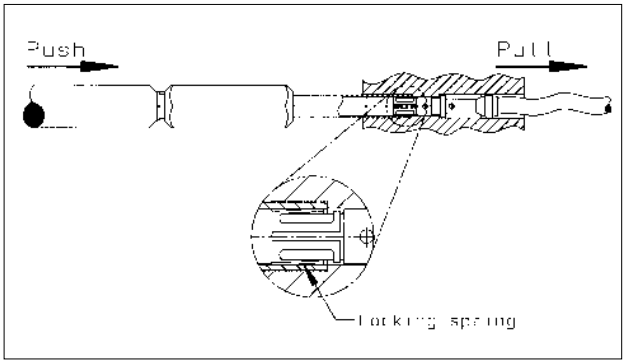
A spring loaded extraction tool **for the full range of TRIM TRIO contacts**. This tool ensures that the contact locking louvres are fully retracted before any pressure is applied to extract a contact.

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.

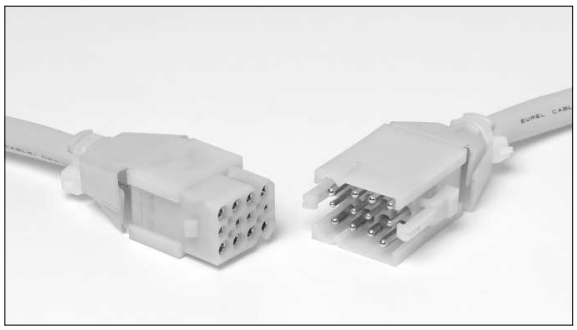
Specials - TRIM TRIO

• 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

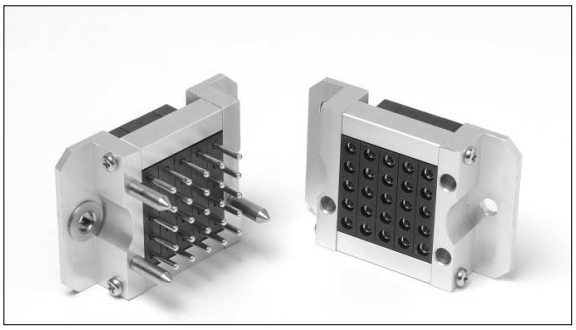
• UTG 14-8 with 4 power and 4 standard Trim Trio contacts – up to 26 Amps



• 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

AUSTRALIA
FCI Connectors Australia
5 Tarlington Place
Smithfield NSW 2164
Tel. : 61 - 2 9725 5288
Fax : 61 - 2 9725 5204
e-mail : fciaus_sales@fciconnect.com

BELGIUM
FCI Belgium
48 A rue Stroobants
B-1140 Brussels
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