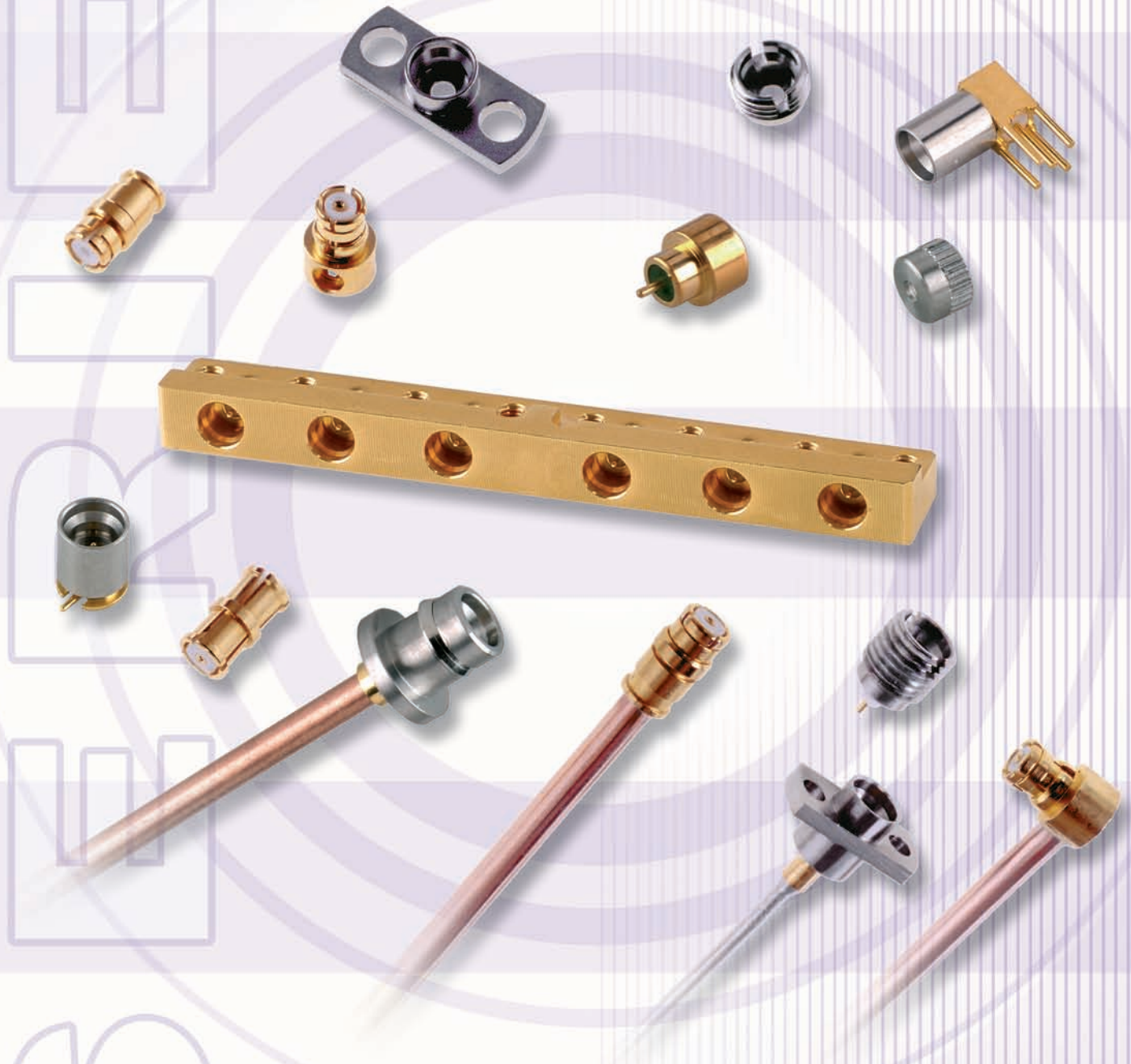


SMP/SMP COM series

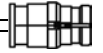
R222

6





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50 Ω

DC - 40 GHz

GENERAL

- Ultra miniature
- Blindmate
- Excellent vibration and shock performances
- Allows axial and radial misalignments

APPLICATIONS

- High density packaging
- Phased array antenna
- Satellite
- Airborne/Shipborne/Ground radar
- Communication equipment

The SMP series offers 3 levels of retention provided by the connectors with male center contact :

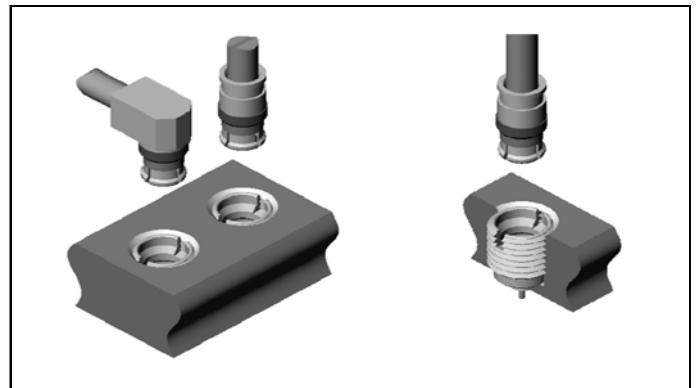
- **full detent** for a positive locking with a maximum retention
- **limited detent** for a positive locking with a medium retention
- **smooth bore** for the lowest retention.

The SMP series meets MIL STD 348 specifications the **DESC** specifications 94007 & 94008.

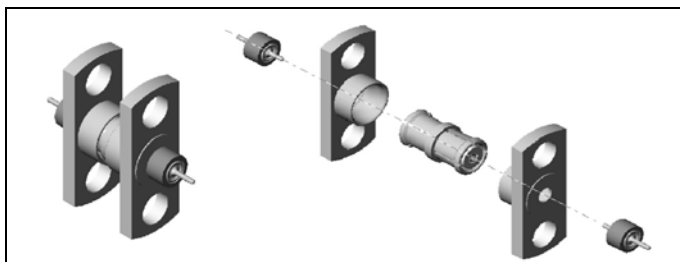
Their small size permits connector center-to-center spacing as low as 4.8 mm.

Radial also offers multi-way connectors with SMP interface to optimize the positioning of connectors, increasing density and misalignment tolerances through the design of a metal bar. The metal bar, in which connectors are already inserted, permits the design engineer to connect several SMP connectors while at the same time maintain reasonable retention.

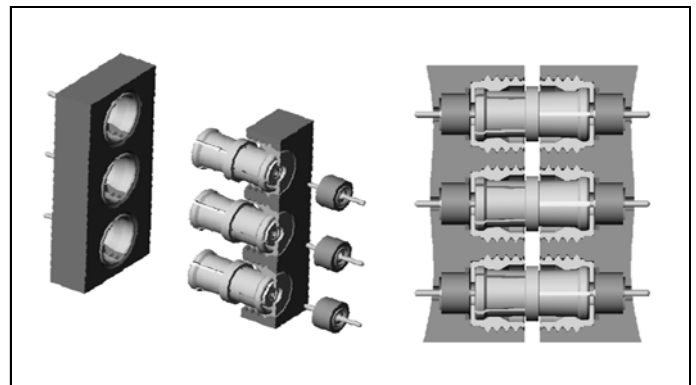
Typical combinations of SMP connectors :



Cable to module



Module to module (2 hole flange shroud)



Thread-in shroud for limited space



ELECTRICAL CHARACTERISTICS

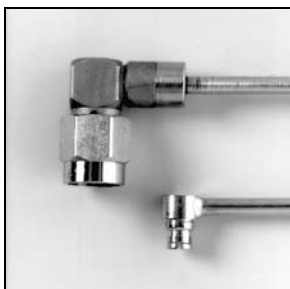
Impedance	50 Ω		
Frequency range	DC - 40 GHz		
Typical V.S.W.R.	DC-12 GHz	12-26.5 GHz	26.5-40 GHz
<ul style="list-style-type: none"> • <i>Straight styles</i> • <i>Right angle styles</i> • <i>Adapters</i> • <i>Receptacles</i> 	1.15 1.25 1.10 1.30	1.15 1.35 1.15 -	1.5 - 1.5 -
Insertion loss (dB)	0,12 √F (F in GHz)		
Insulation resistance (MΩ)	5 000		
Voltage rating (V.R.M.S.)	335		
Dielectric withstanding voltage (V.R.M.S.)	500		
RF leakage	-80 dB to 3 GHz -65 dB from 3 to 26.5 GHz		

ENVIRONMENTAL and MECHANICAL CHARACTERISTICS

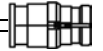
Operating temperature	-65°C / +165°C		
	smooth bore	limited detent	full detent
Mechanical endurance (<i>matings</i>)	1000	500	100
Engagement and separation force (<i>N</i>)	9 max. - 2.2 min.	45 max. - 9 min.	68 max. - 22 min.
Radial misalignment Axial misalignment	± 0.25 mm 0, + 0.25 mm		
Vibration	MIL-STD-202 method 204, test condition D		
Shock	MIL-STD-202 method 213, test condition I		
Thermal shock	MIL-STD-202 method 107, test condition B		
Cable retention (<i>N</i>)	.047" .085"	45 200	
Contact captivation axial (<i>N</i>)	6.8		

MATERIALS and PLATING

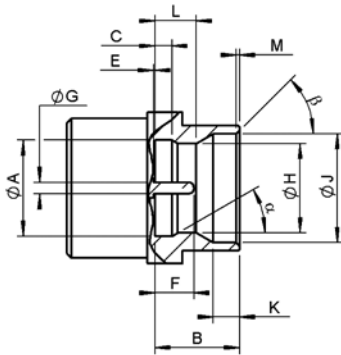
	MATERIALS	PLATING
Cable connector with female center contact	Beryllium copper	Gold
Cable connector with male center contact	Bodies Soldering part	Passivated Gold
Receptacles, shrouds	Stainless steel	Passivated
In series adapters	Beryllium copper	Gold
Center contacts	Beryllium copper	Gold
Center contacts for glass seal	Iron nickel cobalt sealing alloy	Gold
Insulators	PTFE	



The **SMP** small size dramatically increases the packaging density of 40 GHz connections (see picture: **SMA 2.9/SMP**).

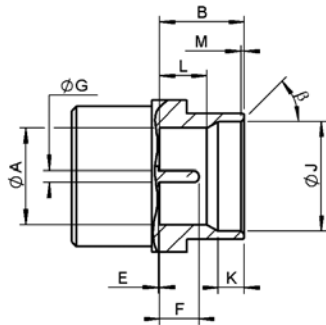


CONNECTOR WITH MALE CENTER CONTACT (Full Detent or Limited Detent)



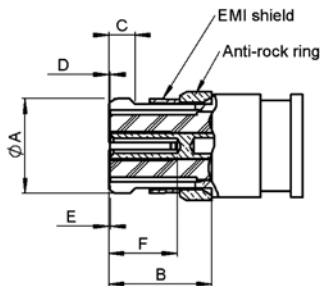
LETTER	mm		inch		Note
	min.	max.	min.	max.	
A	3.15	3.20	.124	.126	Dia
B	2.74	2.84	.108	.112	
C	0.52	0.60	.0205	.0235	
E	0.00		0		Center contact recession
F	1.14	1.40	.045	.055	
G	0.36	0.41	.014	.016	Dia
H	2.90	3.00	.114	.118	Dia: Full Detent
	3.00	3.10	.118	.122	Dia: Limited Detent
J	3.53	3.68	.139	.145	Dia
K	0.84	0.94	.033	.037	
L	1.30	1.45	.051	.057	Full Detent
	1.37	1.52	.054	.060	Limited Detent
M	0.08	0.20	.003	.008	
α	30				Degree (nom.)
β	40	50	40	50	Degree

CONNECTOR WITH MALE CENTER CONTACT (Smooth Bore)



LETTER	mm		inch		Note
	min.	max.	min.	max.	
A	3.12	3.23	.123	.127	Dia
B	2.74	2.84	.108	.112	
E	0.00		0		Center contact recession
F	1.14	1.40	.045	.055	
G	0.36	0.41	.014	.016	
J	3.53	3.68	.139	.145	Dia
K	0.84	0.94	.033	.037	
L	1.50	1.65	.059	.065	
M	0.08	0.20	.003	.008	
β	40	50	40	50	Degree

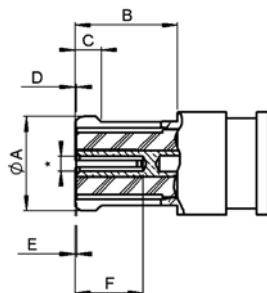
CONNECTOR WITH FEMALE CENTER CONTACT AND EMI SHIELD (Cabled connection)



* Accept .015 ±.001 dia pin

LETTER	mm		inch		Note
	min.	max.	min.	max.	
A		3.43		.135	Dia
B	2.84		.112		
C	0.46	0.64	.018	.025	
D		0.00		0	Dielectric projection
E	0.00	0.20	0	.008	Center contact recession
F	1.78		.070		

CONNECTOR WITH FEMALE CENTER CONTACT (Cabled connection)

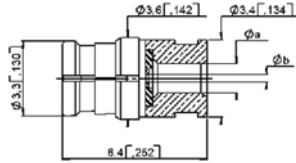


* Accept .015 ±.001 dia pin

LETTER	mm		inch		Note
	min.	max.	min.	max.	
A		3.43		.135	Dia
B	2.84		.112		
C	0.46	0.64	.018	.025	
D		0.00		0	Dielectric projection
E	0.00	0.20	0	.008	Center contact recession
F	1.78		.070		

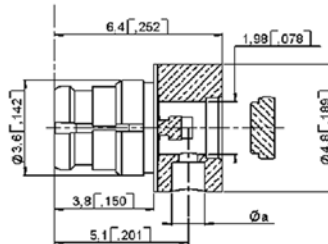
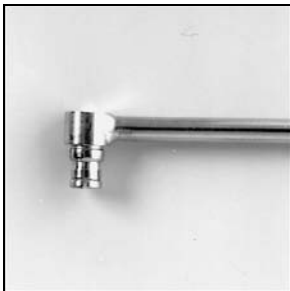


STRAIGHT PLUG, SOLDER TYPE FOR SEMI-RIGID CABLES (with female center contact)



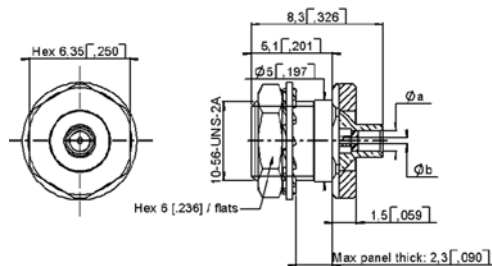
Cable group	Part number	Dimensions mm (inch)		Captive center contact	Assembly instructions	Finish
		∅ a	∅ b			
.047"	R222 051 000	1.30 (.050)	0.30 (.012)	no	M01	gold
.085"	R222 052 000	2.30 (.091)	0.53 (.021)			
.085" foam	R222 052 300		0.70 (.028)			

RIGHT ANGLE PLUG, SOLDER TYPE FOR SEMI RIGID CABLES (with female center contact)

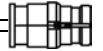


Cable group	Part number	Dimensions ∅ a mm (inch)	Captive center contact	Assembly instructions	Finish
.047"	R222 151 000	1.30 (.050)	yes	M02	gold
.085"	R222 152 000	2.30 (.091)			
.085" foam	R222 152 300				

BULKHEAD FEEDTHROUGH JACK, SOLDER TYPE FOR SEMI RIGID CABLES (with male center contact)



Cable group	Part number	Retention	Dimensions mm (inch)		Panel drilling	Captive center contact	Assembly instructions	Finish
			∅ a	∅ b				
.047"	R222 301 002	Full detent	1.30 (.050)	0.30 (.012)	P09	no	M03	passivated + gold (soldering part)
	R222 301 302	Limited detent						
	R222 301 702	Smooth bore						
.085"	R222 302 002	Full detent	2.30 (.091)	0.55 (.022)		no	M03	
	R222 302 302	Limited detent						
	R222 302 702	Smooth bore						



TWO HOLE FLANGE JACK SOLDER TYPE FOR SEMI RIGID CABLES (with male center contact)

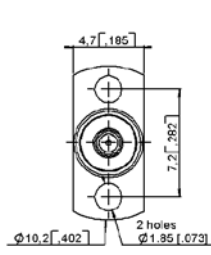
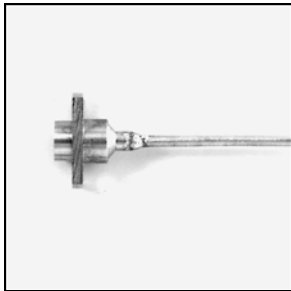


Fig. 1

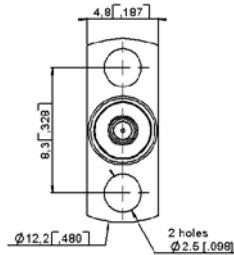


Fig. 2

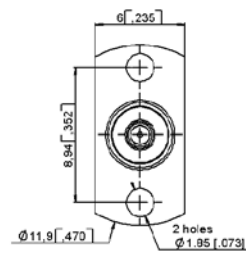


Fig. 3

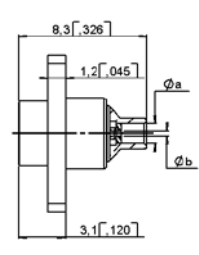
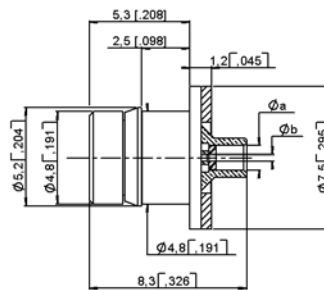


Fig. 4

Cable group	Part number	Retention	Fig.	Dimensions mm (inch)		Panel drilling	Captive center contact	Assembly instructions	Finish
				Ø a	Ø b				
.047"	R222 251 000	Full detent	1	1.30 (.050)	0.30 (.012)	P01	no	M03	passivated + gold (soldering part)
	R222 251 302	Limited detent							
	R222 251 702	Smooth bore							
	R222 251 022	Full detent	2			P02			
	R222 251 322	Limited detent							
	R222 251 722	Smooth bore							
	R222 251 032	Full detent	3			P03			
	R222 251 332	Limited detent							
R222 251 732	Smooth bore								
.085"	R222 252 001	Full detent	1	2.30 (.091)	0.60 (.024)	P01	no	M03	passivated + gold (soldering part)
	R222 252 301	Limited detent							
	R222 252 702	Smooth bore							
	R222 252 022	Full detent	2			P02			
	R222 252 322	Limited detent							
	R222 252 722	Smooth bore							
	R222 252 032	Full detent	3			P03			
	R222 252 332	Limited detent							
R222 252 732	Smooth bore								

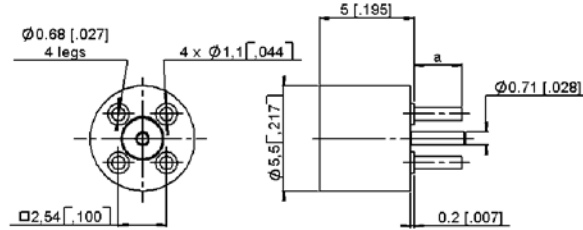
SNAP-IN JACK, SOLDER TYPE FOR SEMI RIGID CABLES (with male center contact)



Cable group	Part number	Retention	Dimensions mm (inch)		Panel drilling	Captive center contact	Assembly instructions	Finish
			Ø a	Ø b				
.047"	R222 221 002	Full detent	1.30 (.050)	0.30 (.012)	P10	no	M03	passivated + gold (soldering part)
	R222 221 302	Limited detent						
	R222 221 702	Smooth bore						
.085"	R222 223 002	Full detent	2.30 (.091)	0.60 (.024)		no	M03	passivated + gold (soldering part)
	R222 223 302	Limited detent						
	R222 223 702	Smooth bore						

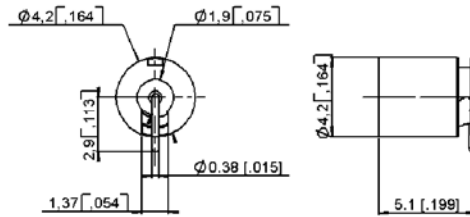


PCB STRAIGHT RECEPTACLE, 4 SOLDER LEGS (with male center contact)



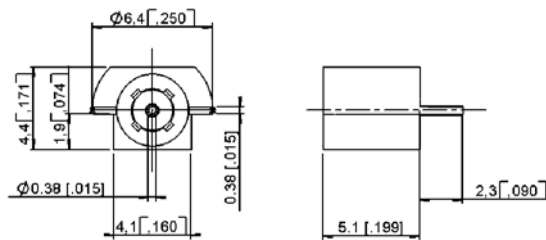
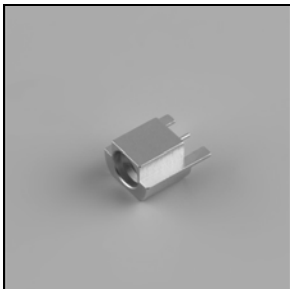
Part number	Retention	Dimensions a mm (inch)	PCB mounting	Assembly instructions	Finish
R222 426 000	Full detent	2.5 (.098)	P07	M10	gold
R222 426 300	Limited detent				
R222 426 700	Smooth bore				
R222 426 020	Full detent	3.6 (.142)			gold
R222 426 320	Limited detent				
R222 426 720	Smooth bore				

PCB STRAIGHT RECEPTACLE, SURFACE MOUNT (with male center contact)



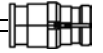
Part number	Retention	Assembly instructions	Finish	Packaging
R222 508 000	Full detent	M13	passivated + gold (soldering part)	Tape & reel 500 pieces
R222 508 300	Limited detent			
R222 508 700	Smooth bore			

PCB RECEPTACLE, EDGE CARD MOUNT (with male center contact)

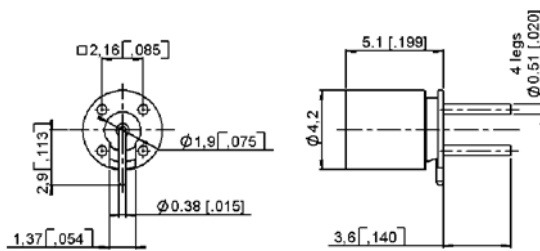
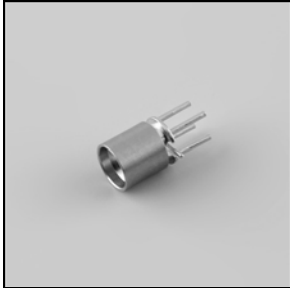


Part number	Retention	Assembly instructions	Finish	Packaging
R222 423 023	Full detent	M11	gold	Tape & reel 100 pieces
R222 423 320	Limited detent			
R222 423 720	Smooth bore			

SMP

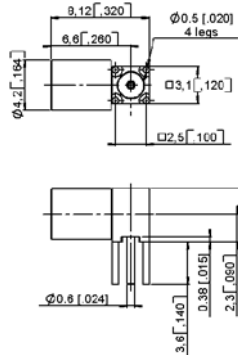


PCB STRAIGHT RECEPTACLE, PIN & PASTE MOUNT (with male center contact)



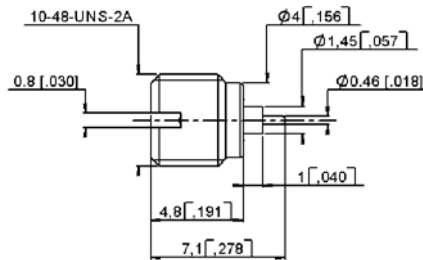
Part number	Retention	Assembly instructions	Finish
R222 428 000	Full detent	M12	passivated + gold (soldering part)
R222 428 300	Limited detent		
R222 428 700	Smooth bore		

PCB RIGHT ANGLE RECEPTACLE, 4 SOLDER LEGS (with male center contact)



Part number	Retention	PCB mounting	Assembly instructions	Finish
R222 680 000	Full detent	P08	M10	passivated + gold (soldering part)
R222 680 300	Limited detent			
R222 680 700	Smooth bore			

THREAD-IN RECEPTACLE (with male center contact)



Part number	Retention	Assembly instructions	Finish
R222 561 001	Full detent	M08	passivated
R222 561 301	Limited detent		
R222 561 701	Smooth bore		



PANEL STRAIGHT HERMETIC RECEPTACLE, SOLDER MOUNT (with male center contact)

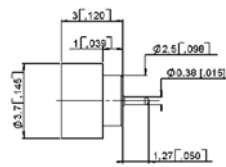


Fig. 1

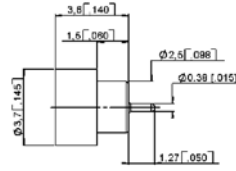


Fig. 2

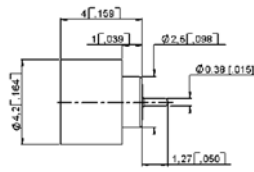


Fig. 3

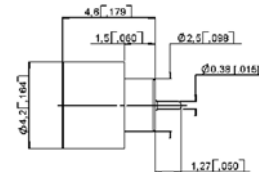


Fig. 4

Part number	Retention	Fig.	Assembly instructions	Finish	Notes
R222 645 020	Full detent	1	M07	gold	Short body 1 mm glass seal
R222 645 320	Limited detent				
R222 645 720	Smooth bore				
R222 645 000	Full detent	2	M07	gold	1.5 mm glass seal
R222 645 300	Limited detent				
R222 645 700	Smooth bore				
R222 645 030	Full detent	3	M06	gold	Short body 1 mm glass seal
R222 645 330	Limited detent				
R222 645 730	Smooth bore				
R222 645 040	Full detent	4	M06	gold	1.5 mm glass seal
R222 645 340	Limited detent				
R222 645 740	Smooth bore				

PANEL SHROUD, PRESS-IN MOUNT (no center contact)

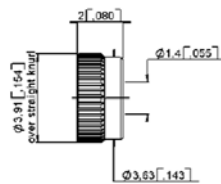


Fig. 1

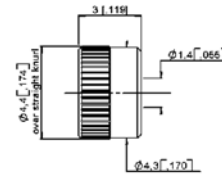
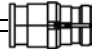


Fig. 2

Part number	Retention	Fig.	Panel drilling	Finish	Notes
R222 402 031	Full detent	1	P11	passivated	Short body
R222 402 331	Limited detent				
R222 402 731	Smooth bore				
R222 402 021	Full detent	2	P12	passivated	-
R222 402 321	Limited detent				
R222 402 721	Smooth bore				

This shroud is designed to be used with hermetic glass seal **R280 752 000** (see page 11)



PANEL SHROUD, 2 HOLES FLANGE MOUNT (no center contact)

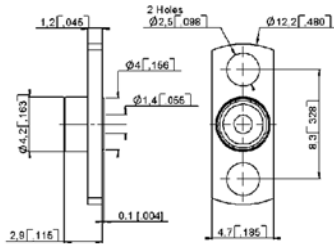
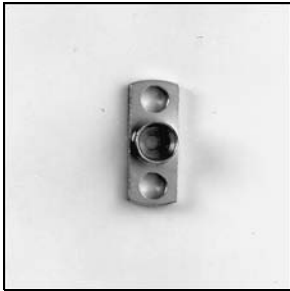


Fig. 1

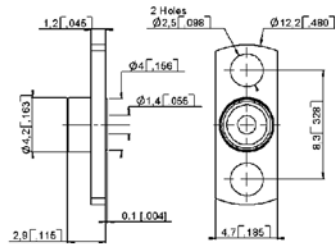


Fig. 2

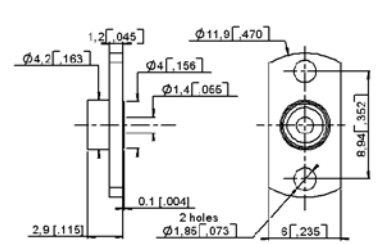
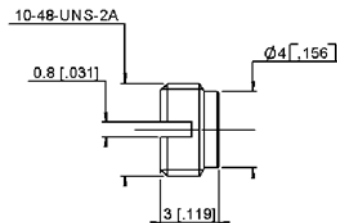


Fig. 3

Part number	Retention	Fig	Panel drilling	Assembly instructions	Finish
R222 450 021	Full detent	1	P04	M04	passivated
R222 450 321	Limited detent				
R222 450 721	Smooth bore				
R222 450 001	Full detent	2	P05	M04	passivated
R222 450 301	Limited detent				
R222 450 701	Smooth bore				
R222 450 031	Full detent	3	P06	M04	passivated
R222 450 331	Limited detent				
R222 450 731	Smooth bore				

This shroud is designed to be used with hermetic glass seal **R280 752 000** (see page 11)

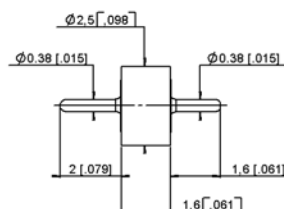
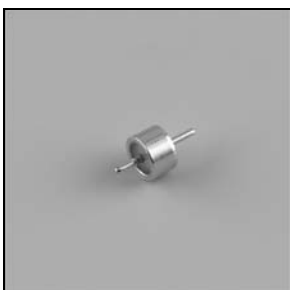
PANEL SHROUD, THREAD-IN MOUNT (no center contact)



Part number	Retention	Assembly instructions	Finish
R222 550 001	Full detent	M09	passivated
R222 550 301	Limited detent		
R222 550 701	Smooth bore		

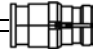
This shroud is designed to be used with hermetic glass seal **R280 752 000** (see page 11)

HERMETIC GLASS BEAD



Part number
R280 752 000

This hermetic glass bead is designed to be used with the above shrouds



IN SERIES ADAPTERS (female to female center contact)

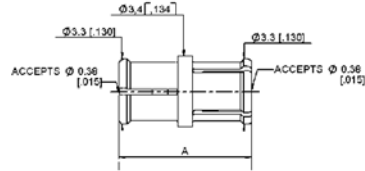


Fig. 1

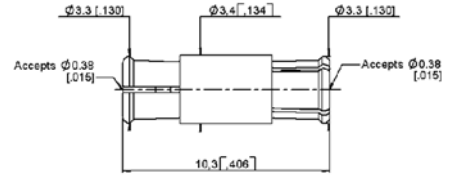


Fig. 2

Part number	Fig.	Dimensions A mm (inch)	Assembly instructions	Finish
R222 705 000	1	6.45 (.254)	M05	gold
R222 705 200•	1	5.69 (.224)		
R222 705 220•	2			

BETWEEN SERIES ADAPTERS

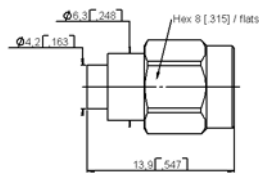


Fig. 1

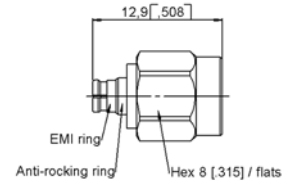


Fig. 2

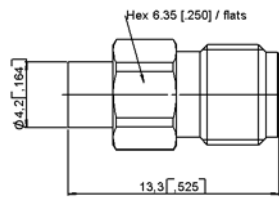


Fig. 3

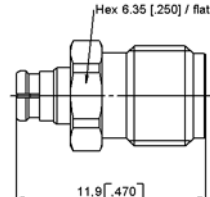


Fig. 4

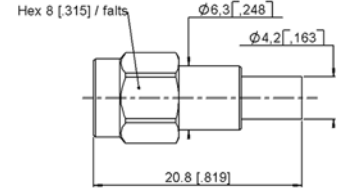


Fig. 5

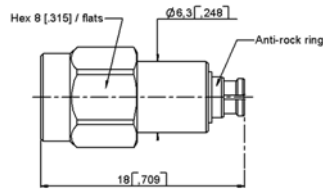


Fig. 6

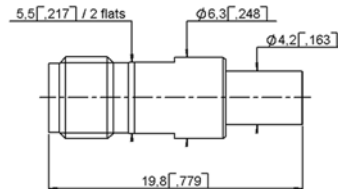


Fig. 7

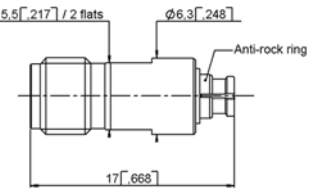
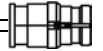


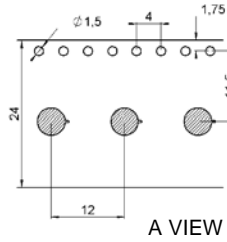
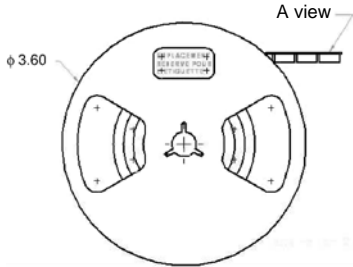
Fig. 8

Part number	Fig.	Description	Captive center contact	Finish	Packaging
R191 841 001	1	SMA male/SMP male full detent	Yes	passivated	100
R191 842 002	2	SMA male/SMP female		passivated/gold	
R191 843 001	3	SMA female/SMP male full detent		passivated	
R191 844 002	4	SMA female/SMP female		passivated/gold	
R191 966 001	5	SMA 2.9 male/SMP male full detent		passivated	
R191 967 002	6	SMA 2.9 male/SMP female		passivated/gold	
R191 968 001	7	SMA 2.9 female/SMP male full detent		passivated	
R191 969 002	8	SMA 2.9 female/SMP female		passivated/gold	

• Upon request



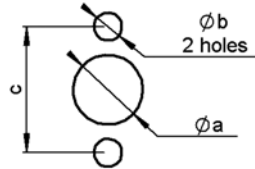
PACKAGING



Connectors	Packaging
R222 508 000	Tape & reel 500 pieces
R222 508 300	
R222 508 700	

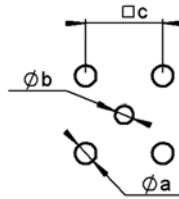
PANEL DRILLING AND PCB MOUNTING

Panel drilling



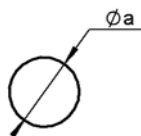
	P01	P02	P03	P04	P05	P06
a	4.7 - 4.8 (.185 - .189)			4.05 - 4.15 (.159 - .163)		
b	1.8 - 1.9 (.071 - .075)	2.5 - 2.6 (.098 - .102)	1.8 - 1.9 (.071 - .075)		2.5 - 2.6 (.098 - .102)	1.8 - 1.9 (.071 - .075)
c	7.11 - 7.21 (.280 - .284)	8.28 - 8.38 (.326 - .330)	8.89 - 8.99 (.350 - .354)	7.11 - 7.21 (.280 - .284)	8.28 - 8.38 (.326 - .330)	8.89 - 8.99 (.350 - .354)

PCB mounting hole pattern



	P07	P08
a	0.94 - 0.98 (.037 - .039)	0.71 - 0.81
b	0.79 - 0.86 (.031 - .034)	0.79 - 0.86 (.031 - .034)
c	2.49 - 2.59 (.098 - .102)	2.49 - 2.59 (.098 - .102)

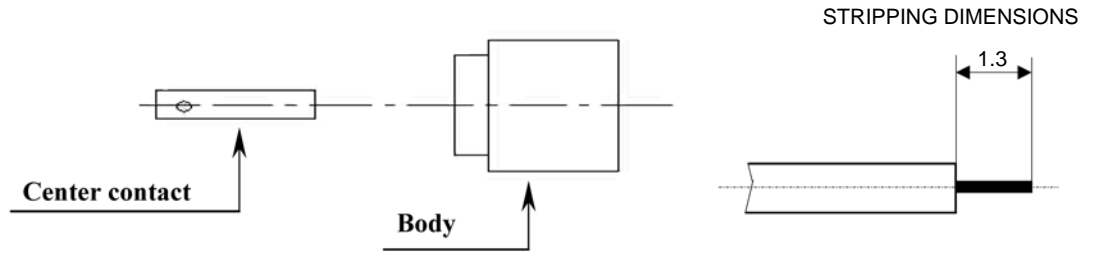
Panel drilling



	P09	P10	P11	P12
a	5.20 - 5.30 (.205 - .209)	4.90 - 4.95 (.193 - .195)	3.85 - 3.87 (.1516 - .1524)	4.37 - 4.39 (.172 - .173)



M 01



We recommend a thermal preconditioning cable

Connectors	Stripping tool	Pointer gauge	Soldering mounting	Soldering positioner	Solder gauge thick .012
R222 051 000			R282 740 030	R282 743 120 & R282 744 253	R282 862 050
R222 052 000 R222 052 300	R282 051 000	R282 062 010			

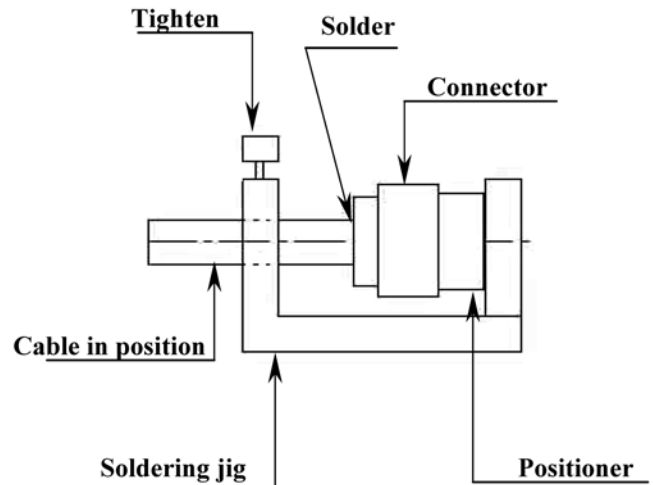
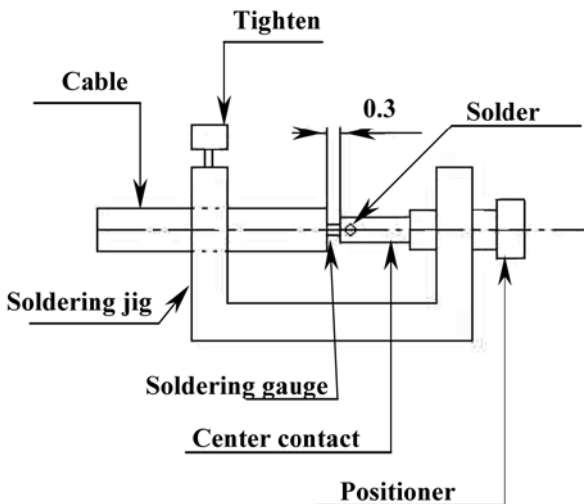
- 1**

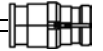
 - Strip the dielectric of the cable.
 - Trim the cable.
 - Clean the cable.
 - Iron temperature not exceed 250°C.

3

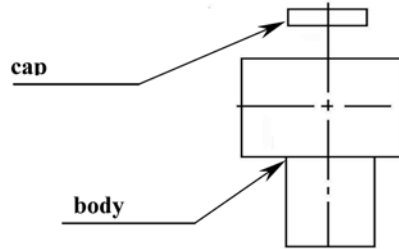
 - After cooling remove cable assembly from the jig.
 - Slide body into positioner.
 - Slide cable into the connector until it bottoms against the positioner.
 - Tighten.
 - Solder the body onto the cable.
 - After cooling remove cable assembly from the jig.

- 2**
- Screw the positioner onto the soldering jig.
 - Slide center contact into positioner.
 - Insert solder gauge between contact and cable .
 - Tighten and solder the contact.

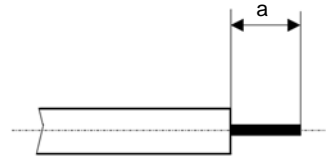




M 02



STRIPPING DIMENSIONS



We recommend a thermal preconditioning cable

Connectors	Stripping tool	Pointer gauge	Soldering mounting	Soldering positioner
R222 151 000			R282 740 030	R282 743 120
R222 152 000	R282 051 000	R282 062 010		
R222 152 300				

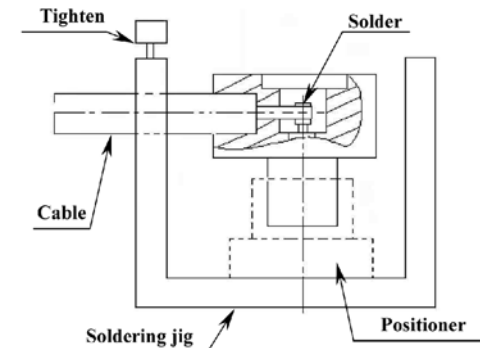
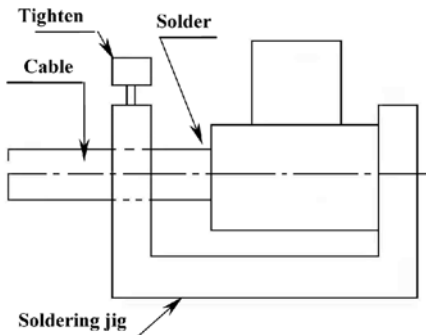
- 1**

 - Strip the cable.
 - $a=1.3$ mm for .047 and .085 cable.
 - $a=2.0$ mm for .085 microporous cable used with R222 152 300.
 - Clean the cable.
 - Slide the insulator onto the cable (only for R222 152 300).
 - The iron temperature shall not exceed 250°C max.

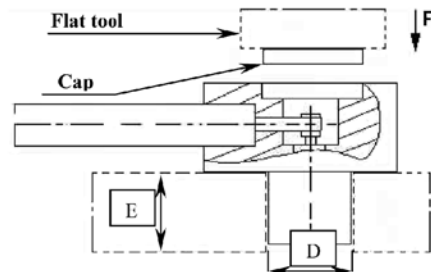
3

 - After cooling remove cable assembly from the jig.
 - Slide body into positioner until it bottoms against the positioner.
 - Slide cable assembly onto the jig.
 - Tighten and solder the contact.
 - After cooling remove cable assembly from the jig.

- 2**
- Slide the body in the soldering jig.
 - Slide cable into connector until it bottoms against the body and tighten.
 - Solder the body onto the cable.

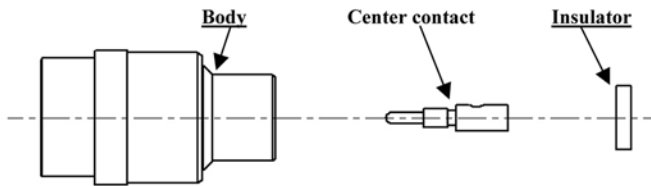


- 4**
- Place cable assembly into a dia $D = 3.8 \pm 0.1$ and thickness $E = 4 \pm 0.1$.
 - Place cable assembly below a flat pressing tool.
 - Press-fit the cap until it bottoms against the body (direction F).

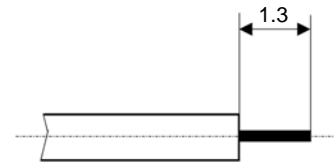




M 03



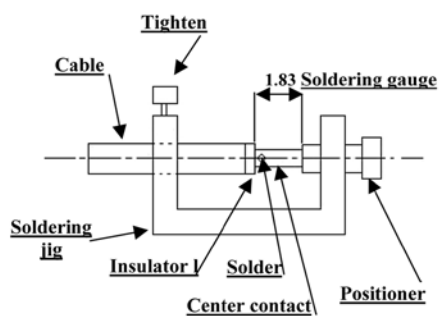
STRIPPING DIMENSIONS



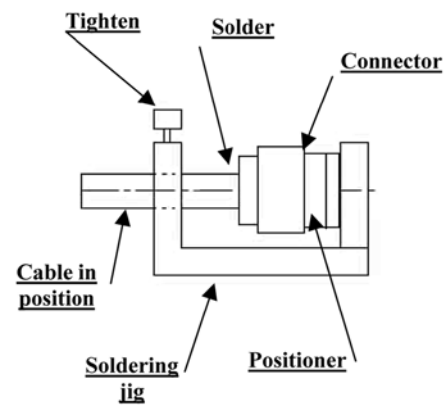
We recommend a thermal preconditioning cable

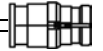
Connectors	Stripping tool	Pointer gauge	Soldering mounting	Soldering positioner	Solder gauge thck 1.83
R222 221 002 R222 221 302 R222 221 702 R222 251 000 R222 251 022 R222 251 032 R222 251 302 R222 251 322					
R222 251 332 R222 251 702 R222 251 722 R222 251 732 R222 301 002 R222 301 302 R222 301 702					
R222 223 002 R222 223 302 R222 223 702 R222 252 001 R222 252 022 R222 252 032 R222 252 301 R222 252 322	R282 051 000	R282 062 010	R282 740 030	R282 743 100 & R282 744 254	R282 862 120
R222 252 332 R222 252 702 R222 252 722 R222 252 732 R222 302 002 R222 302 302 R222 302 702					

- 1**
- Strip the dielectric of the cable.
 - Clean the cable.
 - Soldering 180°C.
 - Temperature stoking do not exceeded 250°C.
- 2**
- Screw the positioner onto the soldering jig.
 - Slide the center contact onto the cable inner conductor against insulator.
 - Slide the cable assembly in the soldering jig and tighten.
 - Insert the soldering gauge.
 - Tighten.
 - Take off the soldering gauge and solder the contact.



- 3**
- After cooling remove cable assembly from the jig.
 - Insert cable+centre contact in the connector.
 - Slide the positioner in the connector interface.
 - Slide cable into the connector body until it bottoms against.
 - Slide positioner into the assembly.
 - Tighten.
 - Solder the body onto the cable.
 - After cooling remove cable assembly from the jig.



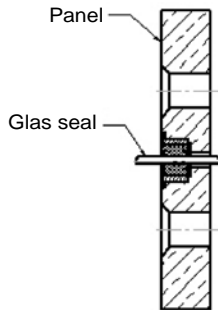


M 04

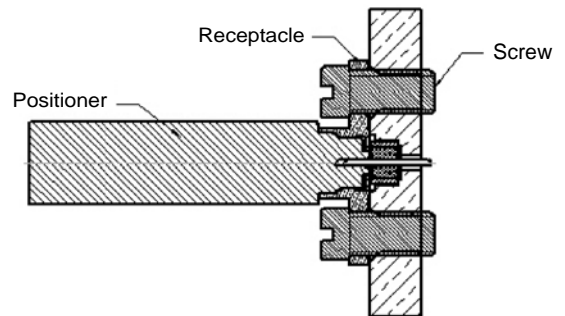
Mount the receptacle with R280 752 000 glass bead for hermetic application

Connectors	Aligning positioner
R222 450 001 R222 450 021 R222 450 031	R282 860 020
R222 450 301 R222 450 321 R222 450 331	R282 860 022
R222 450 701 R222 450 721 R222 450 731	R282 860 024

- 1** - Check the quality of the soldering, as well as the position of the glass seal in the package.



- 2** - Place the receptacle and pre-assemble screw on the package.
 - Mount the aligning positioner into the flange to ensure a good concentricity.
 - Screw the receptacle on the package.
 - Remove the aligning positioner.



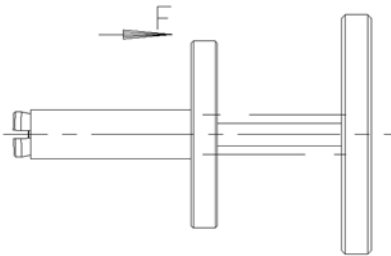


M 05

Adaptor must be mounted or removed with tooling R282 918 100

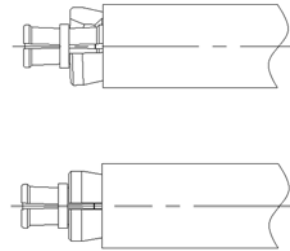
Connectors
R222 705 000 R222 705 200 R222 705 220

- 1** - Push in F direction to open the tool.

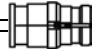


- 2** - Place the adaptor into the tool until it bottoms against.

- 3** - Push on the adaptor and release the smallest tool diameter. The force to fix the adaptor is applied by a spring.

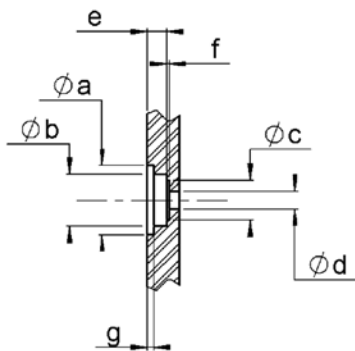


- 4** - Push on the biggest tool diameter to place the adaptor. To remove the adaptor, pull off on the biggest tool diameter.



M 06

Connectors	
R222 645 030 R222 645 330 R222 645 730	Panel mounting hole 1
R222 645 040 R222 645 340 R222 645 740	Panel mounting hole 2

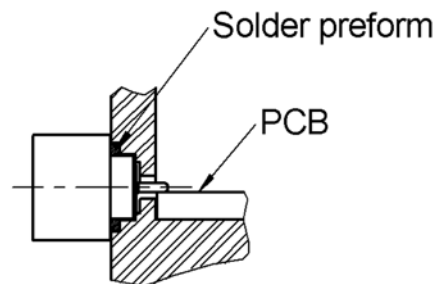


Panel mounting hole 1

a	3.43 - 3.47
b	2.59 - 2.61
c	1.95 - 2.05
d	0.87 - 0.91
e	0.94 - 0.99
f	0.13 - 0.17
g	0.28 - 0.38

Panel mounting hole 2

a	3.43 - 3.47
b	2.59 - 2.61
c	1.95 - 2.05
d	0.87 - 0.91
e	1.45 - 1.50
f	0.13 - 0.17
g	0.28 - 0.38

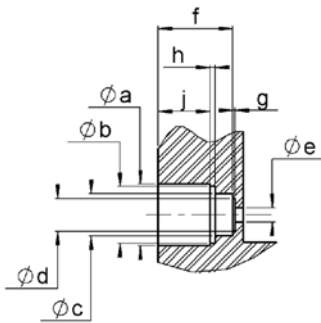


- 1** - Clean connector and box, make sure it is free of oil.
- 2** - Solder the connector on the panel.
- We advise SnAg4Cu0.5, we recommend a low residue flux. Preheating at 100°C. Take care not to exceed 260°C during solder operation.
- 3** - Solder the pin on the track.
- We advise SnAg4Cu0.5, we recommend a low residue flux. Preheating at 100°C. Take care not to exceed 260°C during solder operation.



M 07

Connectors	
R222 645 000 R222 645 300 R222 645 700	Panel mounting hole 1
R222 645 020 R222 645 320 R222 645 720	Panel mounting hole 2

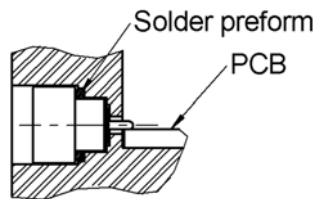


Panel mounting hole 1

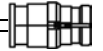
a	3.76 - 3.78
b	3.43 - 3.55
c	2.59 - 2.61
d	1.95 - 2.05
e	0.87 - 0.91
f	4.55 - 4.59
g	0.13 - 0.17
h	0.28 - 0.38
j	3.15 - 3.19

Panel mounting hole 2

a	3.76 - 3.78
b	3.43 - 3.55
c	2.59 - 2.61
d	1.95 - 2.05
e	0.87 - 0.91
f	4.04 - 4.09
g	0.13 - 0.17
h	0.28 - 0.38
j	3.15 - 3.19



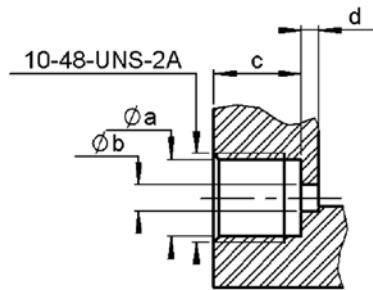
- | | |
|---|--|
| <p>1</p> <ul style="list-style-type: none"> - Clean connector and box, make sure it is free of oil.
<p>2</p> <ul style="list-style-type: none"> - Solder the connector on the panel. - We advise SnAg4Cu0.5, we recommend a low residue flux. Preheating at 100°C. Take care not to exceed 260°C during solder operation. | <p>3</p> <ul style="list-style-type: none"> - Solder the pin on the track. - We advise SnAg4Cu0.5, we recommend a low residue flux. Preheating at 100°C. Take care not to exceed 260°C during solder operation. |
|---|--|



M 08

Centre contact temperature stocking do not exceed 250°C (soldering 180°C)

Connectors	Tool
R222 561 001	R282 339 001
R222 561 301	R282 339 002
R222 561 701	R282 339 003



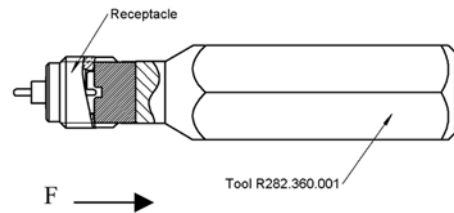
Panel mounting hole

a	4.32
b	1.45 - 1.50
c	4.95
d	1.00

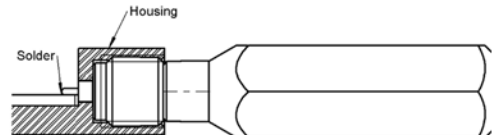
- 1** - Connector must be screwed or unscrewed with adapted torque driver (recommended coupling torque: 90 Ncm).

- 2** - Slide the connector in F direction until it stops against the tool.

- 3** - Screw the whole into the housing until activation of the torque driver.



- 4** - Withdraw the tool and solder the center contact.



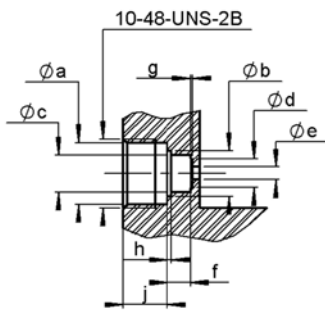


M 09

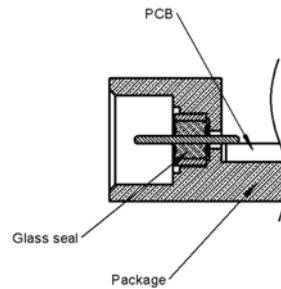
Mount thread-in shroud with R280 752 000 glass bead for hermetic application

Connectors	Tool
R222 550 001	R282 339 001
R222 550 301	R282 339 002
R222 550 701	R282 339 003

Panel mounting hole

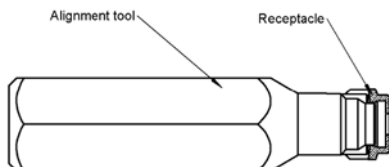


a	4.32 - 4.37
b	3.21 - 3.25
c	2.56 - 2.58
d	1.95 - 2.05
e	0.86 - 0.89
f	1.61 - 1.65
g	0.13 - 0.18
h	0.28 - 0.35
j	3.10 - 3.15



- 1** - Connector must be screwed or unscrewed with adapted torque driver (recommended coupling torque 90 Ncm).

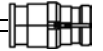
- 2** - Slide the receptacle until it bottoms against tooling.



- 3** - Screw the receptacle into the package housing until activation of the torque driver.



- 4** - Withdraw the alignment tool.



M 10

Connectors	
R222 426 000	R222 426 720
R222 426 020	R222 680 000
R222 426 300	R222 680 300
R222 426 320	R222 680 700
R222 426 700	

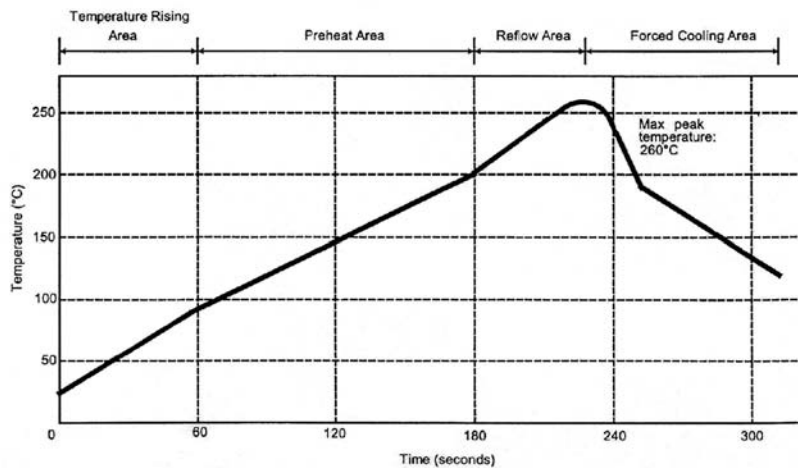
- 1**
- Deposition of solder paste "Sn Ag4 Cu0.5" on mounting zone by screen printing application. We recommend a low residue flux.
 - We advise a thickness of 150 microns (5.85 microinch). Verify that the edges of the zone are clean

- 2**
- Placement of the receptacle on the mounting zone with an automatic machine of "pick and place" type.
 - Video camera is recommended for the positioning of the component. Adhesive agents must not be used on the receptacle.

- 3**
- Soldering by infrared reflow.
 - Below, please find the typical profile to use.

- 4**
- Cleaning of printed circuit boards.

- 5**
- Checking of solder joints and position of the component by visual inspection.

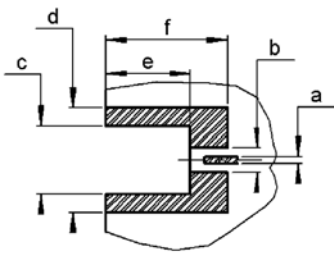


Parameter	Value	Unit
Temperature rising Area	1 - 4	°C/sec
Max Peak Temperature	260	°C
Max dwell time @260°C	10	sec
Min dwell time @235°C	20	sec
Max dwell time @235°C	60	sec
Temperature drop in cooling Area	-1 to - 4	°C/sec
Max dwell time above 100°C	420	sec



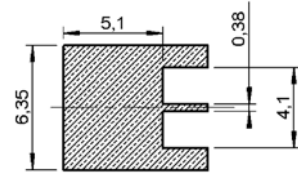
M 11

Connectors
R222 423 023 R222 423 320 R222 423 720



PCB mounting pattern

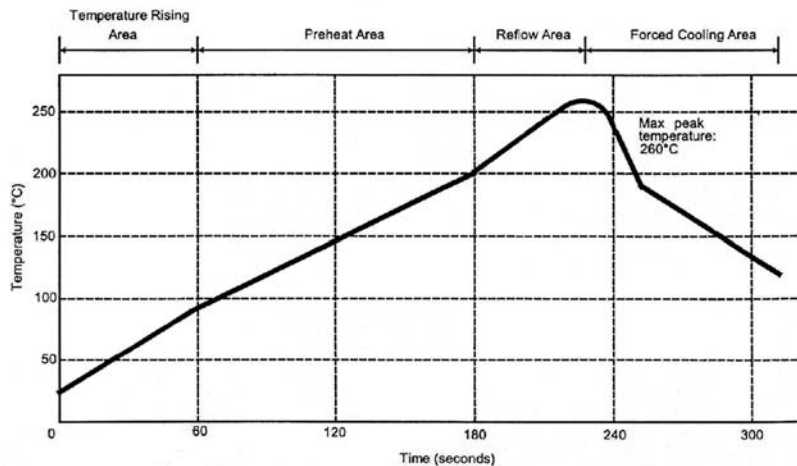
a	0.48
b	1.5
c	4.18 - 4.32
d	6.5
e	4.95 - 5.45
f	7.52



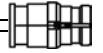
Shadow of receptacle for video camera

- 1** - Deposition of solder paste "Sn Ag4 Cu0.5" on mounting zone by screen printing application. We recommend a low residue flux.
- We advise a thickness of 150 micrometers (.0059 inches). Verify that the edges of the zone are clean.
- 2** - Placement of the receptacle on the mounting zone with an automatic machine of "pick and place" type.
- Video camera is preferred to check the positioning of the component. Adhesive agents are forbidden on the receptacle.

- 3** - Soldering by infrared reflow.
- 4** - Clean printed circuit boards.
- 5** - Checking of solder joints and position of the component by visual inspection.

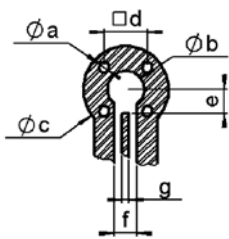


Parameter	Value	Unit
Temperature rising Area	1 - 4	°C/sec
Max Peak Temperature	260	°C
Max dwell time @260°C	10	sec
Min dwell time @235°C	20	sec
Max dwell time @235°C	60	sec
Temperature drop in cooling Area	-1 to -4	°C/sec
Max dwell time above 100°C	420	sec



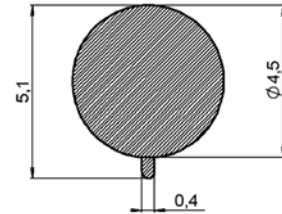
M 12

Connectors
R222 428 000 R222 428 300 R222 428 700



PCB mounting pattern

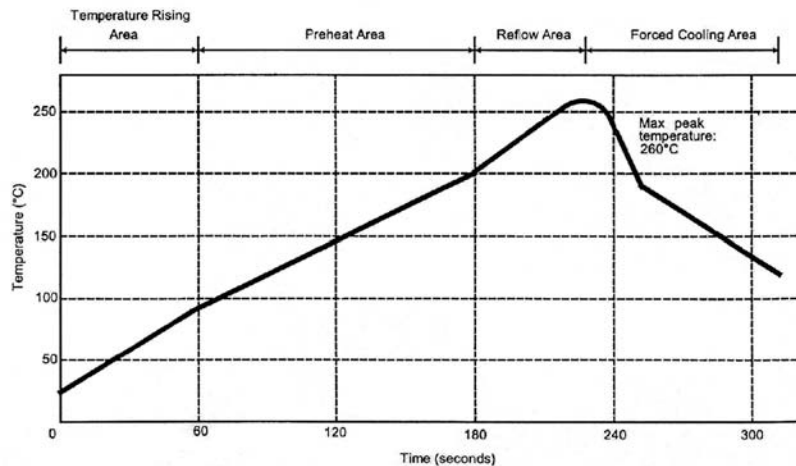
a	0.63
b	1.90
c	4.45 min.
d	2.16
e	2.29 max.
f	1.52 max.
g	0.45 min.



Shadow of receptacle for video camera

- 1** - Deposition of solder paste "Sn Ag4 Cu0.5" on mounting zone by screen printing application. We recommend a low residue flux.
 - We advise a thickness of 150 microns (5.85 microinch). Verify that the edges of the zone are clean.
- 2** - Placement of the receptacle on the mounting zone with an automatic machine of "pick and place" type.
 - Video camera is recommended for the positioning of the component. Adhesive agents must not be used on the receptacle.

- 3** - Soldering by infrared reflow.
 - Below, please find the typical profile to use.
- 4** - Cleaning of printed circuit boards.
- 5** - Checking of solder joints and position of the component by visual inspection.

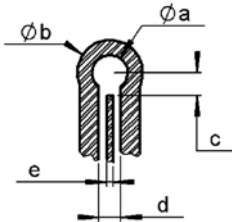


Parameter	Value	Unit
Temperature rising Area	1 - 4	°C/sec
Max Peak Temperature	260	°C
Max dwell time @260°C	10	sec
Min dwell time @235°C	20	sec
Max dwell time @235°C	60	sec
Temperature drop in cooling Area	-1 to -4	°C/sec
Max dwell time above 100°C	420	sec



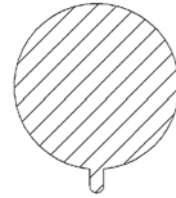
M 13

Connectors
R222 508 000 R222 508 300 R222 508 700



PCB mounting pattern

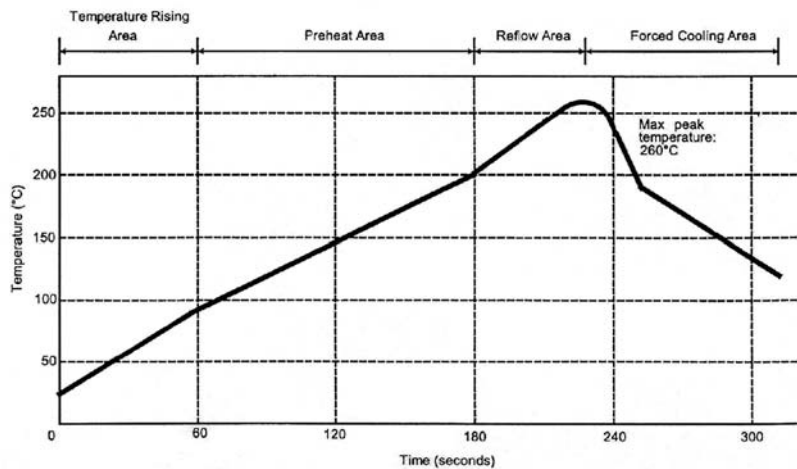
a	1.91
b	4.45 min.
c	2.29 min.
d	1.52
e	0.38 max.



Shadow of receptacle for video camera

- 1** - Deposition of solder paste "Sn Ag4 Cu0.5" on mounting zone by screen printing application. We recommend a low residue flux.
 - We advise a thickness of 150 microns (5.85 microinch). Verify that the edges of the zone are clean.
- 2** - Placement of the receptacle on the mounting zone with an automatic machine of "pick and place" type.
 - Video camera is recommended for the positioning of the component. Adhesive agents must not be used on the receptacle.

- 3** - Soldering by infrared reflow.
 - Below, please find the typical profile to use.
- 4** - Cleaning of printed circuit boards.
- 5** - Checking of solder joints and position of the component by visual inspection.



Parameter	Value	Unit
Temperature rising Area	1 - 4	°C/sec
Max Peak Temperature	260	°C
Max dwell time @260°C	10	sec
Min dwell time @235°C	20	sec
Max dwell time @235°C	60	sec
Temperature drop in cooling Area	-1 to -4	°C/sec
Max dwell time above 100°C	420	sec



50 Ω

DC - 12.4 GHz

GENERAL

- Ultra miniature
- Allows axial and radial misalignments

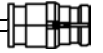
APPLICATIONS

- Board to board applications
- High density packaging
- Telecommunications

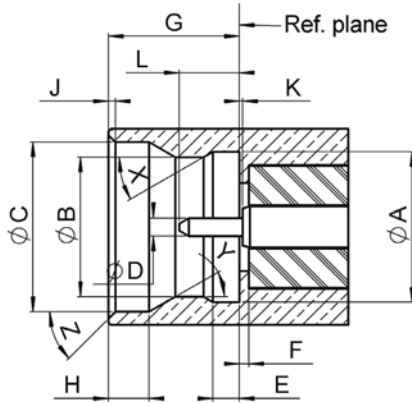
As the standard SMP, the SMP COM series offers 3 levels of retention provided by the male connectors :

- **full detent** for a maximum retention,
- **limited detent** for a medium retention,
- **smooth bore** for the lowest retention.

SMP COM is fully intermateable with the standard SMP and has been optimized up to 12.4 GHz meeting the telecommunication applications needs.

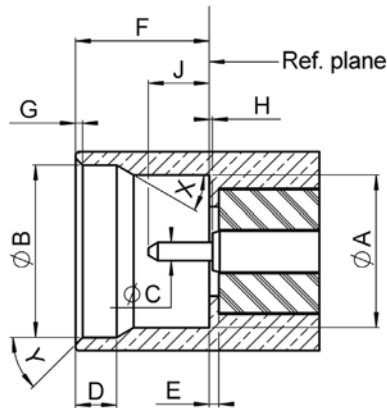


MALE CONNECTOR (Full detent or Limited detent)



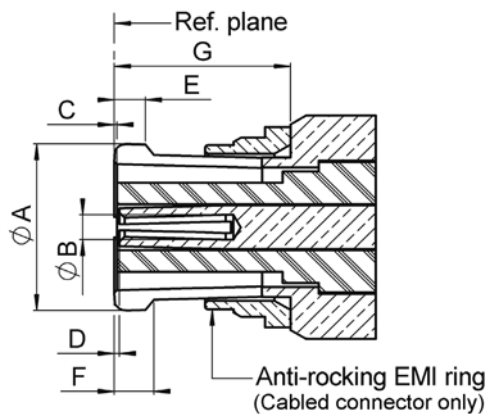
Dia A	3.18+/-0.02
Dia B (Full detent)	2.95+/-0.02
Dia B (Limited detent)	3.05+/-0.02
Dia C	3.59 +/- 0.02
Dia D	0.38+/-0.02
E	0.56+/-0.03
F	0.2+/-0.025
G (Full detent)	2.79+/-0.02
G (Limited detent)	2.77+/-0.02
H	0.86+/-0.02
J	0.15+/-0.05
K	0.07+/-0.07
L	1.27+/-0.12
X	30°+/-0.5°
Y	30°+/-0.5°
Z	45° nom

MALE CONNECTOR (Smooth bore)

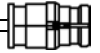


Dia A	3.18+/-0.02
Dia B	3.59+/-0.02
Dia C	0.38+/- 0.02
D	0.86+/-0.02
E	0.2+/-0.025
F	2.79+/-0.02
G	0.15+/-0.05
H	0.07+/-0.07
J	1.27+/-0.12
X	30°+/-0.5°
Y	45° nom

FEMALE CONNECTOR



Dia A	3.275+/-0.025
Dia B	0.49+/-0.02
C	0.05+/- 0.05
D	0.05+/-0.05
E	0.59+/-0.02
F	0.76+/-0.1
G	3.4+/-0.03



TEST / CHARACTERISTICS	VALUES / REMARKS
------------------------	------------------

GENERAL

Impedance	50 Ω								
Frequency range	DC - 6 GHz (optimized) DC - 12.4 GHz (working range)								
Typical V.S.W.R. <ul style="list-style-type: none"> • <i>Straight styles</i> • <i>Right angle styles</i> • <i>Receptacles</i> 	<table border="1"> <thead> <tr> <th>DC - 2.5 GHz</th> <th>2.5 - 6 GHz</th> </tr> </thead> <tbody> <tr> <td>1.10</td> <td>1.15</td> </tr> <tr> <td>1.15</td> <td>1.25</td> </tr> <tr> <td>1.06</td> <td>1.10</td> </tr> </tbody> </table>	DC - 2.5 GHz	2.5 - 6 GHz	1.10	1.15	1.15	1.25	1.06	1.10
DC - 2.5 GHz	2.5 - 6 GHz								
1.10	1.15								
1.15	1.25								
1.06	1.10								
Insertion loss (dB)	$0,12 \sqrt{F}$ (F in GHz)								
Insulation resistance (MΩ)	5000								
Voltage rating (VRMS)	750								
RF leakage	- 55 dB from 0 to 3 GHz - 40 dB from 3 to 6 GHz								

ENVIRONMENTAL AND MECHANICAL CHARACTERISTICS

Operating temperature <ul style="list-style-type: none"> • <i>Standard</i> • <i>Semi-rigid</i> 	-55°C / + 125°C -55°C / + 105°C
	smooth bore limited detent full detent
Mechanical endurance (matings)	100
Engagement and separation force (N)	9 max. - 2.2 min. 45 max. - 9 min. 68 max. - 22 min.
Radial misalignment Axial misalignment	± 0.25 mm 0, + 0.25 mm
Moisture resistance	MIL - STD - 202 method 106
Cable retention (N) <ul style="list-style-type: none"> • <i>.085" semi-rigid</i> • <i>2/50/S</i> • <i>2.6/50/S</i> 	200 35 58
Contact captivation axial (N)	6.8

MATERIALS

Cable connectors	Beryllium copper or brass
Receptacles	Brass
In series adapters	Beryllium copper
Center contacts	Beryllium copper / brass
Insulators	PTFE / PEEK

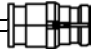
PLATING

Cable connectors	NPGR*
Receptacles	NPGR*
In series adapters	NPGR*
Center contacts	NPGR*

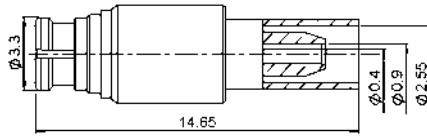
* NPGR : Nickel Phosphorous Gold Radial

Standard packaging = 100 pieces. For unit packaging add «W» after the P/N

All dimensions are given in mm

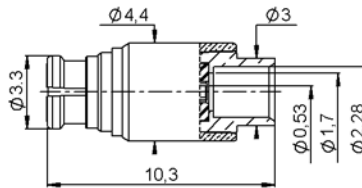


STRAIGHT PLUG, FULL CRIMP TYPE FOR FLEXIBLE CABLE (female center contact)



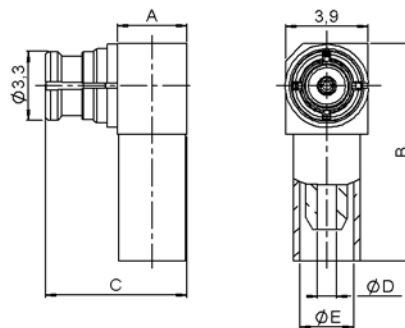
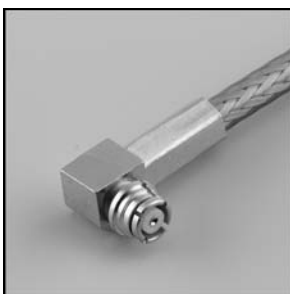
Cable group	Part number	Captive center contact	Assembly instructions
2/50/S	R222 900 100	yes	M01

STRAIGHT PLUG, SOLDER TYPE (female center contact)

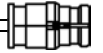


Cable group	Part number	Captive center contact	Assembly instructions
.085"	R222 900 200	no	M02

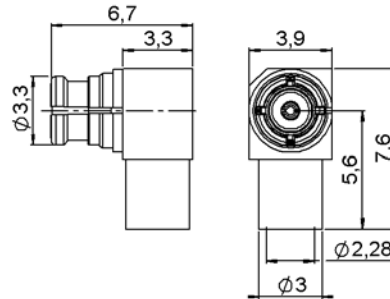
RIGHT ANGLE PLUGS, CRIMP TYPE FOR FLEXIBLE CABLE (female center contact)



Cable group	Part number	Dimensions (mm)					Captive center contact	Assembly instructions
		A	B	C	D	E		
2/50/S	R222 900 310	3.3	10.3	6.7	0.9	2.55	yes	M03
2.6/50/S	R222 900 320	3.7	11.3	7.1	1.58	3.25		
2.6/50/D	R222 900 330		13.3	7.4		3.50		

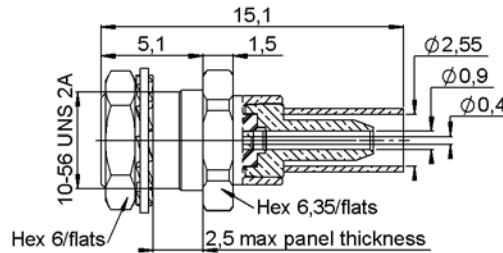


RIGHT ANGLE PLUG, SOLDER TYPE (female center contact)



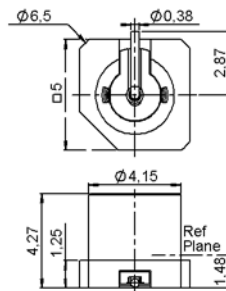
Cable group	Part number	Captive center contact	Assembly instructions
.085"	R222 900 340	yes	M04

STRAIGHT BULKHEAD JACK, FULL CRIMP TYPE (male center contact)

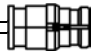


Cable group	Part number	Retention	Captive center contact	Assembly instructions	Panel drilling
2/50/S	R222 920 300	Limited detent	yes	M01	P01

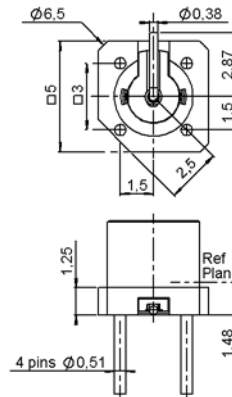
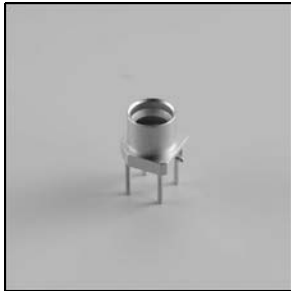
STRAIGHT SMT RECEPTACLE (male center contact)



Part number	Retention	Captive center contact	Assembly instructions	Packaging
R222 941 100	Full detent	yes	M05	Tape & reel 500 pieces
R222 941 300	Limited detent			Tape & reel 1400 pieces
R222 941 310				Tape & reel 500 pieces
R222 941 700	Smooth bore			

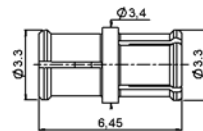


STRAIGHT RECEPTACLES, PIN & PASTE MOUNT (male center contact)



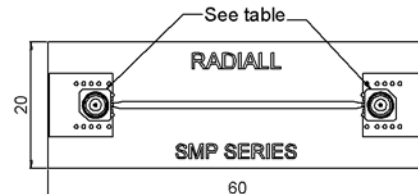
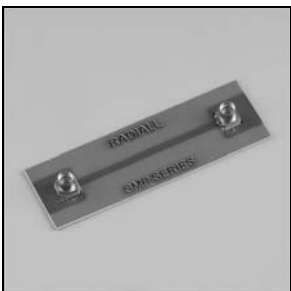
Part number	Retention	Captive center contact	Assembly instructions	Packaging
R222 940 100	Full detent	yes	M05	Tape & reel 500 pieces
R222 940 300	Limited detent			
R222 940 700	Smooth bore			

IN SERIES ADAPTER (female to female center contact)

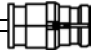


Part number	Finish	Packaging
R222 970 000	NPGR	100 pieces

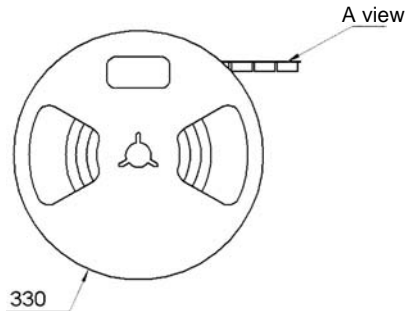
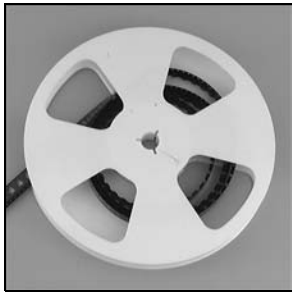
MEASUREMENT PCB WITH SMT RECEPTACLE



Part number	Packaging	Connector
R222 995 320	Unit	2 x R222 941 300
R222 995 330		2 x R222 940 300

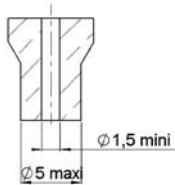


PACKAGING

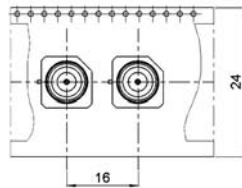


Part Number		Packaging
R222 940 100	R222 941 100	Tape & reel 500 pieces
R222 940 300	R222 941 300	
R222 940 700	R222 941 700	
R222 941 310		Tape & reel 1400 pieces

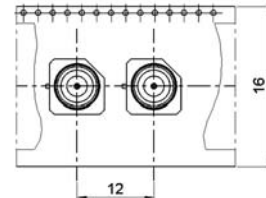
AIR SUNCTION



R222 940 100
R222 940 300
R222 940 700



R222 941 100
R222 941 300
R222 941 310
R222 941 700

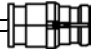


PANEL DRILLING

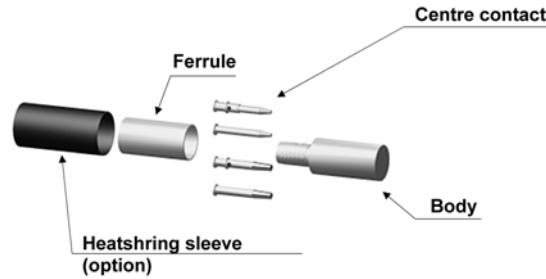
P01



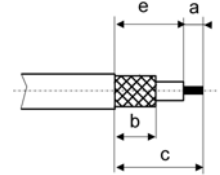
	MM		INCH	
	maxi	mini	maxi	mini
A	5.3	5.2	0.209	0.205



M 01

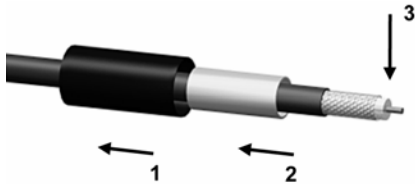


STRIPPING DIMENSIONS



Part number	Stripping length (mm)				Hex	Ferrule crimp tool		Center contact crimp tool
	a	b	c	e		MIL standard R282 293 000 + dies	Dies included	MIL standard R282 281 000 (M22520/2-01) position 2 + positioner
R222 900 100	2.5	5	9	6.5	2.67	R282 235 003 (M22520/5-03)	R282 211 000	R282 967 091
R222 920 300								R282 967 090

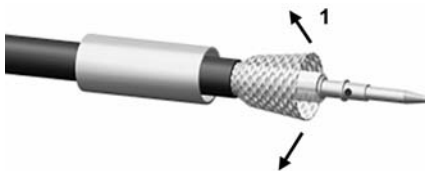
- 1**
- Slide the heatshrink sleeve onto the cable (Option).
 - Slide the ferrule onto the cable.
 - Strip the cable.



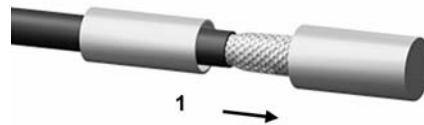
- 2**
- Slide the centre contact on until it bottoms against the cable dielectric.
 - Crimp the centre contact with crimping tool (see table).



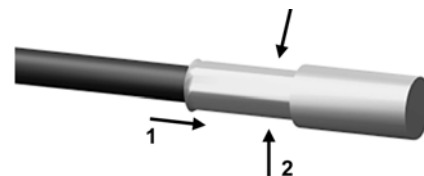
- 3**
- Fan the braid.



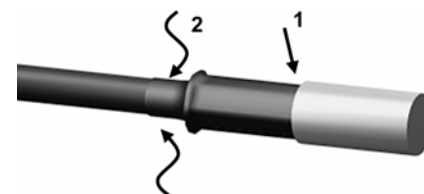
- 4**
- Slide the cable into the body until it bottoms against insulator.

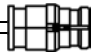


- 5**
- Slide the ferrule over the braid.
 - Crimp the ferrule with crimping tool (see table).

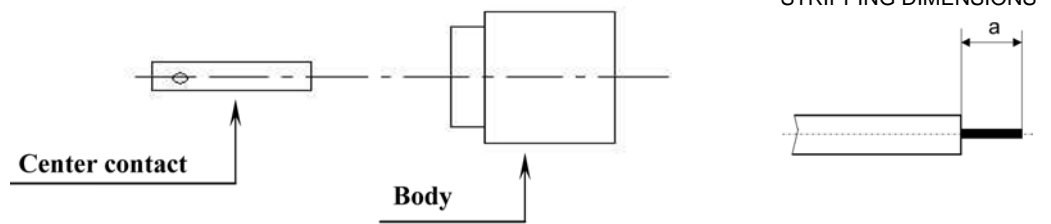


- 6**
- Cut the excess of braid if necessary.
 - Slide the sleeve over the ferrule and heatshrink it in place (Option).





M 02



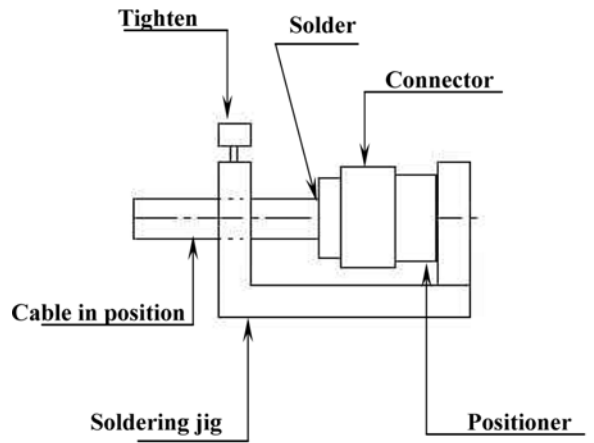
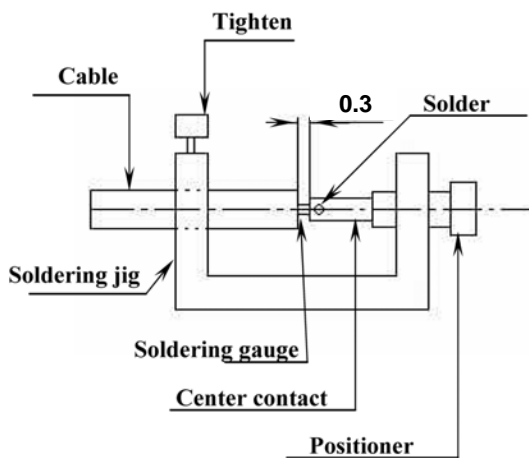
We recommend a thermal preconditioning cable

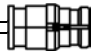
Part number	Stripping length a (mm)	Stripping tool	Pointer gauge	Soldering mounting	Positioner	Solder gauge thickness 012
R222 900 200	1.3	R282 051 000	R282 062 010	R282 740 030	R282 743 120 R282 744 253	R282 862 050

- 1**
- Strip the dielectric of the cable .
 - Trim the cable.
 - Clean the cable.
 - Iron temperature not exceed 250°C.

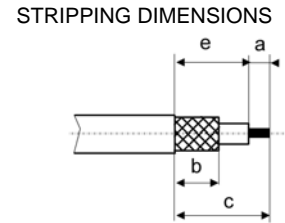
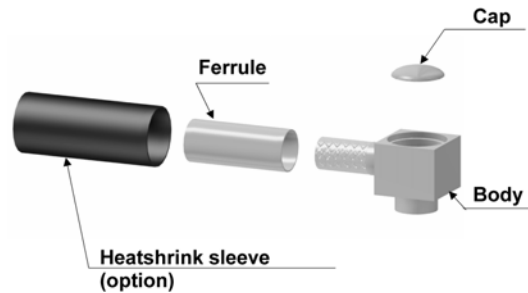
- 3**
- After cooling remove cable assembly from the jig.
 - Slide body into positoner.
 - Slide cable into the connector until it bottoms against the positoner.
 - Tighten.
 - Solder the body onto the cable.
 - After cooling remove cable assembly from the jig.

- 2**
- Screw the positoner onto the soldering jig.
 - Slide center contact into positoner.
 - Insert solder gauge between contact and cable .
 - Tighten and solder the contact.



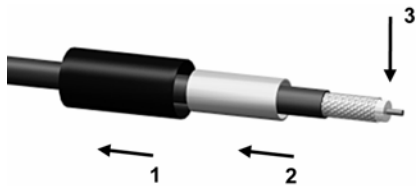


M 03



Part number	Stripping length (mm)				Hex	Ferrule crimp tool	
	a	b	c	e		MIL standard R282 293 000 + dies	Dies included
R222 900 310	1.3	5.0	7.8	6.5	2.67	R282 235 003 (M22520/5-03)	R282 211 000
R222 900 320	1.4		7.9		3.65		
R222 900 330	1.3		7.8		2.67		

- 1**
- Slide the heatshrink sleeve onto the cable (Option).
 - Slide the ferrule onto the cable.
 - Strip the cable.



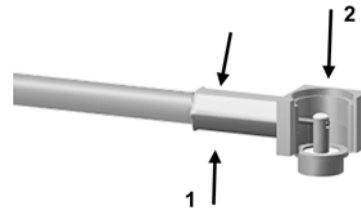
- 2**
- Fan the braid.



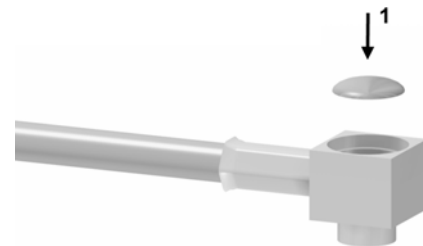
- 3**
- Push the connector body under the braid.
 - Slide the ferrule over the braid.



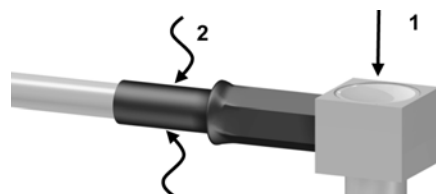
- 4**
- Crimp the ferrule with crimping tool (see table).
 - Solder the inner conductor.

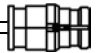


- 5**
- Place the cap into the body.

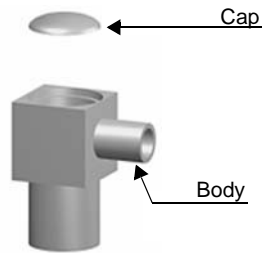


- 6**
- Press on the cap flush or slightly below the surface of the body assembly.
 - Slide the sleeve over the ferrule and heatshrink it in place (option).

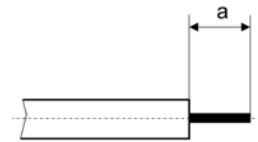




M 04



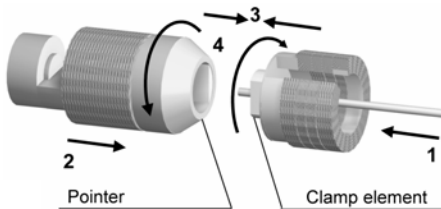
STRIPPING DIMENSIONS



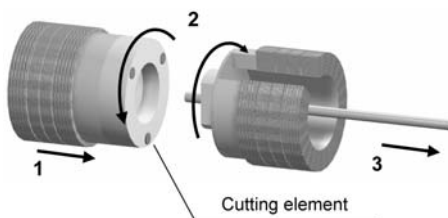
We recommend a cable thermal preconditioning before assembly

Part number	stripping length a (mm)	Stripping tool	Pointer gauge	Soldering mounting	Positioner
R222 900 340	3.17	R282 051 000	R282 063 000	R282 740 030	R282 743 120

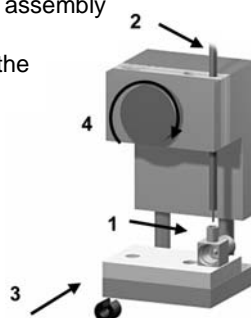
- Insert the cable into the clamping element.
 - Present the pointer in front of the clamping element.
 - Push the cable until it stops, while holding the clamping element pushed on the hollow part of the pointer.
 - Turn the clamping part until the release of the pointer.



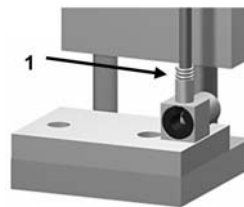
- Present the cutting element in front of the cutting element.
 - Push and turn both elements, back part opposite to the front part.
 - Once they reach the stop, pull without revolving.



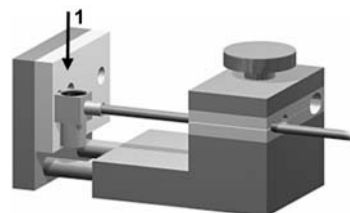
- Insert the cable into the body.
 - Secure the positioner into the assembly jig.
 - Place the sub-assembly into the assembly jig.
 - Tighten.



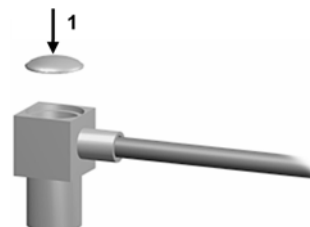
- Put three rings of solder around the cable.
 - Solder the body onto the cable

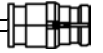


- After cooling, remove the assembly from the jig.
 - Remove the positioner.
 - Solder the inner conductor.



- Place the cap into the body.
 - Press on the cap flush or slightly below the surface of the body assembly.



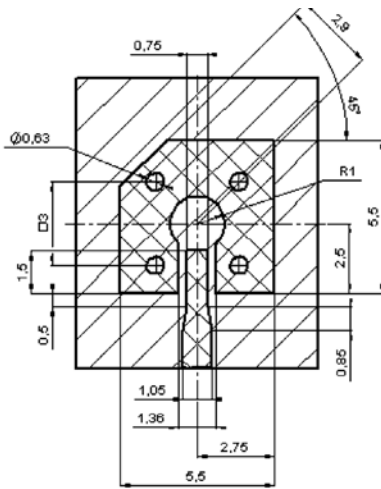


M 05

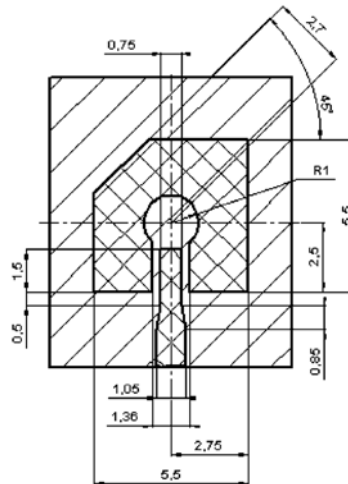
Part number		
R222 940 100 R222 940 300	R222 940 700 R222 941 100	R222 941 300 R222 941 310 R222 941 700

SOLDERING PATTERN

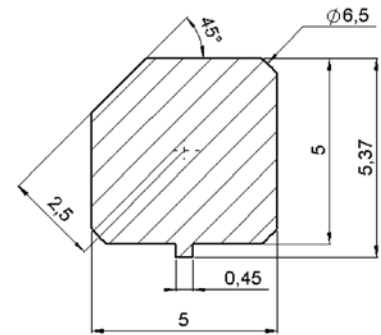
R222 940 100
R222 940 300
R222 940 700



R222 941 100
R222 941 300
R222 941 310
R222 941 700



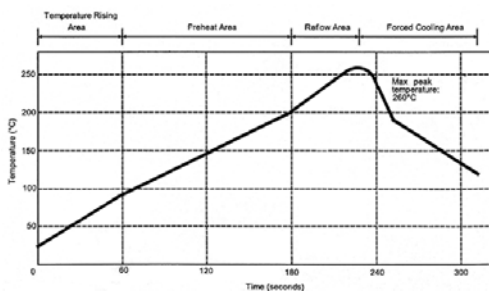
VIDEO SHADOW



SOLDER PROCEDURE

- 1 - Deposition of solder paste "Sn Ag4 Cu0.5" on mounting zone by screen printing application. We recommend a low residue flux. We advise a thickness of 150 microns (5.850 microinch). Verify that the edges of the zone are clean.
- 2 - Placement of the receptacle on the mounting zone with an automatic machine of "pick and place" type. Video camera is recommended for the positioning of the component. Adhesive agents must not be used on the receptacle.
- 3 - Soldering by infra-red reflow. Below, please find the typical profile to use.
- 4 - Cleaning of printed circuit boards.
- 5 - Checking of solder joints and position of the component by visual inspection.

TEMPERATURE PROFILE



Parameter	Value	Unit
Temperature rising Area	1 - 4	°C/sec
Max Peak Temperature	260	°C
Max dwell time @260°C	10	sec
Min dwell time @235°C	20	sec
Max dwell time @235°C	60	sec
Temperature drop in cooling Area	- 1 to - 4	°C/sec
Max dwell time above 100°C	420	sec