



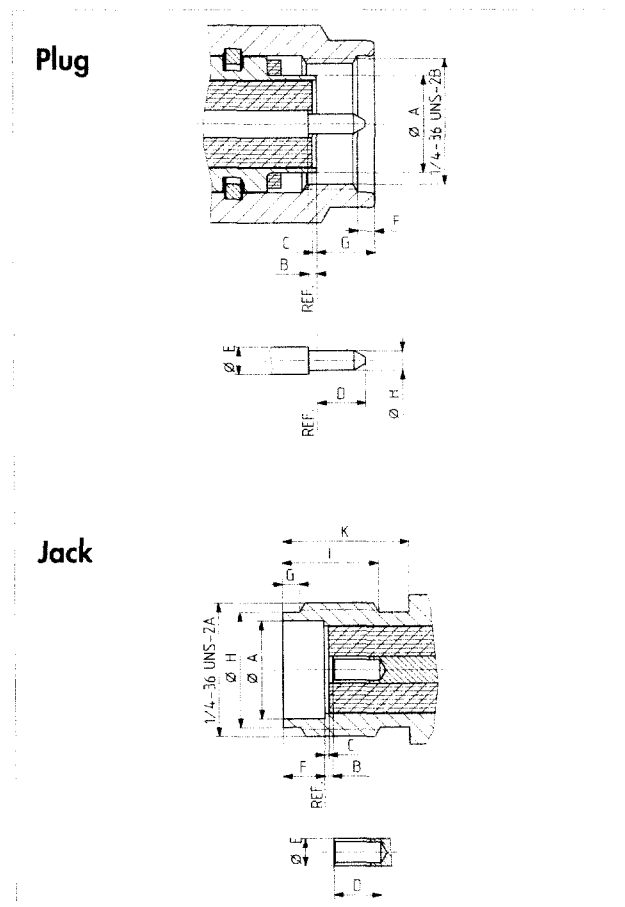
SERIES SMA SUBMINIATURE CONNECTORS

Description

SUHNER SMA connectors are precision connectors for microwave applications up to 18 GHz/ 26.5 GHz. They distinguish themselves through their high mechanical strength, high durability, high reliability and low VSWR.

SMA launchers are the preferred connection element for varied microwave circuits including hermetically sealed designs ¹⁾ (MIC). There is a huge variety of applications for SUHNER SMA connectors, such as test & measurement, mobile communication, avionics, etc.

Interface Dimensions



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Interface Dimensions in mm / inches

	Plug		Jack	
	min.	max.	min.	max.
A	—	4.59/.181	4.59/.181	—
B	0.00/.000	0.25/.010	0.00/.000	0.25/.010
C	0.00/.000	0.25/.010	0.00/.000	0.25/.010
D	—	2.54/.100	2.67/.105	—
E	1.24/.049	1.29/.051	1.24/.049	1.29/.051
F	0.38/.015	1.14/.045	1.88/.074	1.98/.078
G	—	3.43/.135	0.38/.015	1.14/.045
H	0.90/.036	0.94/.037	5.28/.208	5.49/.216
I	—	—	4.32/.170	—
K	—	—	5.54/.218	—

1) field-replaceable receptacles with separate glass bead on request

SMA

Standards

SUHNER SMA connectors conform to
 International: **IEC 169-15**
 Europe: **CECC 22110**
 USA: **MIL-C-39012, SMA**
Interface MIL-STD-348a/310
 GB: **BS 9210 N 0006**
 F: **NF-C-93563 (KMR)**

Approvals

SUHNER SMA connectors are approved in accordance with CECC 22110 and are mentioned in the Qualified Product List CECC 00200 and MUAHAG.

Technical Data

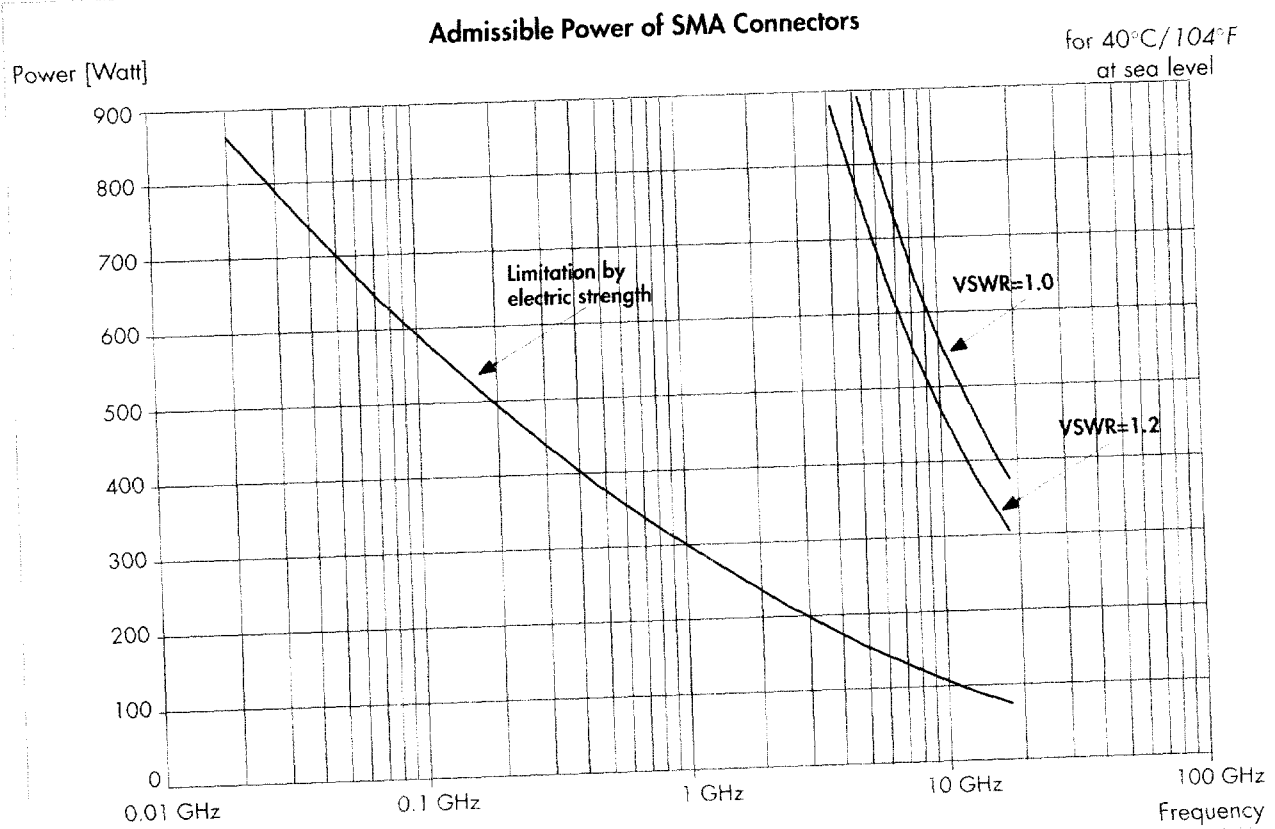
ELECTRICAL DATA	MIL-CL-39012	STRAIGHT CONNECTORS				RIGHT ANGLE CONNECTORS				OTHERS
		semi-rigid		flexible		semi-rigid		flexible		
Cable type										
Cable dielectric diameter (mm/in.)		1.5 .066	3 .117	1.5 .066	3 .117	1.5 .066	3 .117	1.5 .066	3 .117	
Impedance		50 Ω								
Frequency range		DC ... 18 GHz (see also Appendix page 436)								
VSWR specified	3.14	DC – 18 GHz		DC – 5 GHz ²⁾		DC – 12.4 GHz		DC – 5 GHz ²⁾		
VSWR		see table next page								
Insertion loss	3.27	see Appendix page 437								
RF-leakage measured at 3 GHz (f in GHz)	3.26	≥ 100 dB-f		≥ 60 dB		≥ 100 dB-f		≥ 60 dB		≥ 100dB-f
Dielectric withstanding voltage (at sea level, in V rms, 50 Hz)	3.17	1000	1500	750	1000	1000	1500	750	1000	1000
Working voltage (at sea level, in V rms, 50 Hz)		≤ 335	≤ 500	≤ 250	≤ 335	≤ 335	≤ 500	≤ 250	≤ 335	≤ 335
Corona extinction voltage ¹⁾	3.22	250	375	190	250	250	375	190	250	250
Working voltage (at 21 000 m/70 000 ft., in V rms, 50 Hz)		≤ 85	≤ 125	≤ 65	≤ 85	≤ 85	≤ 125	≤ 65	≤ 85	≤ 85
RF high potential withstanding voltage at 5 MHz (V rms)	3.23	670	1000	500	670	670	1000	500	670	670
Insulation resistance	3.11	≥ 5·10 ³ MΩ								
Contact resistance										
– centre contact	3.16	≤ 3mΩ								
– outer contact		≤ 2mΩ								
Admissible power										
– peak power		≤ 10 kW/1μs pulse duration								
– continuous power		see diagram next page								

1) measured at 21 000 m/70 000 ft. altitude, in V rms, 50 Hz

2) limitation due to the frequency range of the cables

TYPICAL VSWR	FREQUENCY RANGE					CABLE GROUP
	1 GHz	2.5 GHz	5 GHz	12.4 GHz	18 GHz	
straight connectors	1.03	1.03	1.03	1.07	1.08	Y3, Y11
	1.03	1.03	1.04	1.07	1.15	Y5, Y12
	1.05	1.07	1.08			U2, U4
	1.04	1.05	1.07			U7, U9
right angle connectors	1.03	1.05	1.10	1.25	—	Y3, Y11
	1.03	1.05	1.08	1.17	—	Y5, Y12
	1.05	1.07	1.11			U2, U4
	1.03	1.05	1.07			U7, U9

Other connectors and cables on request



For detailed information regarding power measurement, please refer to page 437.

MECHANICAL DATA	MIL-C-39012	REQUIREMENTS types: gold/CuBe and stainless steel	ECONOMIC types: SUCOPLATE®/brass
Coupling nut torque		1.7 Nm / 15.0 in. lbs (max. 500 matings)	0.45 Nm / 4.0 in. lbs (max. 500 matings) 0.70 Nm / 6.0 in. lbs (max. 200 matings) 1.00 Nm / 8.8 in. lbs (max. 20 matings) ²⁾
Coupling nut retention force	3.25	≥ 270 N / 60.7 lbs	≥ 270 N / 60.7 lbs
Contact captivation - axial	3.12	≥ 27 N / 6.1 lbs	≥ 27 N / 6.1 lbs
Cable retention force ¹⁾			

see pages 36 - 41

1) value considers maximum load of the cables without irreversible variations of specifications.

2) While fastening the plug coupling nut, prevent the interface from rotating by holding the plug housing by hand.

ENVIRONMENTAL DATA

	MIL-C-39012	EQUIVALENT MIL TEST CONDITIONS			
		Semi-rigid cables	FLEXIBLE CABLES		without cable
Temperature range		- 65°C ... +165°C 85°F ... +329°F	- 65°C ... +165°C 85°F ... +329°F	- 65°C ... +80°C 85°F ... +176°F	- 65°C ... +165°C 85°F ... +329°F
Climatic categ. acc. to IEC		55 / 105 / 21	55 / 155 / 21	55 / 80 / 21	55 / 155 / 21
Thermal shock	3.20	MIL-STD-202, Method 107, Condition B			
Moisture resistance	3.21	MIL-STD-202, Method 106			
Corrosion	3.13	Saltspray test acc. to MIL-STD-202, Method 101, Condition B			
Vibration	3.18	MIL-STD-202, Method 204, Condition D			
Shock	3.19	MIL-STD-202, Method 213, Condition I			
Hermetic seal		permissible pressure ≤ 200 N/cm ² (290 psi) (depending on seal of outer body) leak rate ≤ 10 ⁻⁶ torr l/sec (atm cc/s), with O-ring gasket sealed types leak rate ≤ 10 ⁻⁸ torr l/sec (atm cc/s), with soldered or metal ring sealed types			

MATERIAL DATA

CONNECTOR PART	STANDARDS	MATERIAL	PLATING
Bodies			
- gold/CuBe-type (standard)	QQ-C-530	beryllium-copper, hardened	gold
- stainless steel-type	QQ-S-763	stainless steel	passivated
- economic-type	QQ-B-626	brass	SUCOPLATE®
Pin and socket contact	QQ-0C-530	beryllium-copper, hardened	gold
Crimp ferrules	SUHNER® specification	copper	gold
Insulators	ASTM-D-1457	PTFE	
Gaskets	ASTM-E-1418 PS1	silicone rubber	

Some connectors may have a specification that differs from the above mentioned data.
Special data for specific types on request.

Material selection

Requirements

The pressure applied to the SMA outer contact area is extremely high:

Coupling nut torque	Contact pressure
1.0 Nm / 8.9 in.-lbs recommended torque	550 N/mm ² / $7.98 \cdot 10^4$ psi
1.7 Nm / 15.0 in.-lbs coupling proof torque	980 N/mm ² / $1.42 \cdot 10^5$ psi

Inadequate strength of connector body material will result in a slight deformation of the outer contact. Excessive reflections will occur as a result, above approximately 2 GHz.

Other important requirements are: high electrical conductivity, high thermal conductivity, zero permeability, low thermal expansion coefficient and reliability of plating.

The comparison chart below clearly shows the superior properties of beryllium-copper, which is standard on SUHNER SMA connectors.

COMPARISON OF MATERIALS

PROPERTY	BERYLLIUM-COPPER	STAINLESS STEEL	BRASS
Specification	QQ-C-530/MIL-H-7199	QQ-S-763 Class 303, A	QQ-B-626
Hardness	350 ... 430 HV	170 HV	110 HV
Modulus of elasticity	$127 \cdot 10^3$ N/mm ² / $1.84 \cdot 10^7$ psi	$196 \cdot 10^3$ N/mm ² / $2.84 \cdot 10^7$ psi	$88 \cdot 10^3$ N/mm ² / $1.28 \cdot 10^7$ psi
Tensile strength	1250 N/mm ² / $1.81 \cdot 10^5$ psi	600 N/mm ² / $8.7 \cdot 10^4$ psi	450 N/mm ² / $6.53 \cdot 10^4$ psi
Electrical conductivity	12.5 m/mm ² Ω / $31.75 \cdot 10^2$ s/in	1.4 m/mm ² Ω / $3.56 \cdot 10^2$ s/in	16 m/mm ² Ω / $40.64 \cdot 10^2$ s/in
Thermal expansion	$17.1 \times 10^{-6}/^{\circ}\text{C}$ / $9.5 \cdot 10^{-6}/^{\circ}\text{F}$	$17 \times 10^{-6}/^{\circ}\text{C}$ / $9.44 \cdot 10^{-6}/^{\circ}\text{F}$	$18 \times 10^{-6}/^{\circ}\text{C}$ / $10 \cdot 10^{-6}/^{\circ}\text{F}$
Thermal conductivity	2.1 J/cm s°C / 121.417 Btu (h·°F·ft)	0.15 J/cm s°C / 8.673 Btu (h·°F·ft)	0.92 J/cm s°C / 53.192 Btu (h·°F·ft)
Permeability	none	2.0 maximum	none
Density	8.30 g/cm ³ / $3.00 \cdot 10^{-1}$ lb/in ³	7.90 g/cm ³ / $2.85 \cdot 10^{-1}$ lb/in ³	8.40 g/cm ³ / $3.03 \cdot 10^{-1}$ lb/in ³
Electroplating	no problems, reliable	critical, can cause problems	no problems, reliable

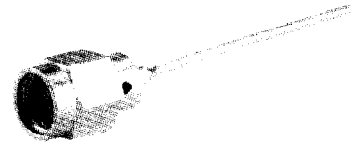
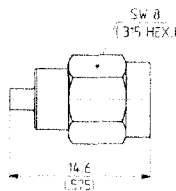
SELECTION GUIDE

VARIANT	STANDARD	STAINLESS STEEL	ECONOMIC
Material	beryllium-copper	stainless steel	brass
Plating/finish	gold	passivated	SUCOPLATE [®]
Features, applications	- highest quality and reliability - suitable for almost any application - outperforms gold plated stainless steel	- suitable for direct mounting on aluminium panels - lower cost	- lowest cost - for commercial applications only
Availability	all types, normally ex stock	broad range, normally ex stock	restricted range, many types on stock

Connectors for Semi-Rigid Cables

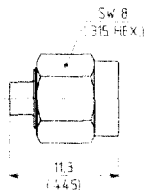
straight plugs

- > with pin and insulator
- > cable entry soldered
- > centre contact soldered
- > 74 Z-0-116 needed (see page 416)



SUHNER TYPE	Ident. no.	Cable group (example)			Assembly instruction	Variant	Weight
11 SMA-50-1-1	• 642387	Y1 (EZ 34)			9118	gold/CuBe	3.50 g/.123 oz.
11 SMA-50-1-2	• 642388	Y2 (EZ 47)			9119	gold/CuBe	3.70 g/.130 oz.

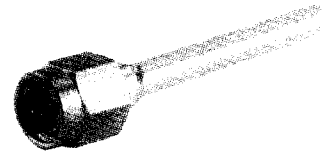
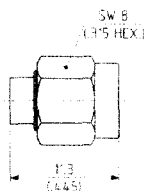
- > with pin and insulator
- > cable entry soldered
- > centre contact soldered



SUHNER TYPE	Ident. no.	Cable group (example)	CECC 22111-	MIL M 39012/	Assembly instruction	Variant	Weight
11 SMA-50-2-15	544545	Y3, Y11 (EZ 86)	802-03	79-4107	9056	gold/CuBe	2.20 g/.077 oz.
11 SMA-50-2-65	642315	Y3, Y11 (EZ 86)	802-04	79-3107	9056	stainless steel ²⁾	2.20 g/.077 oz.

2) cable entry CuBe/gold

- > with pin and insulator
- > cable entry soldered
- > centre contact soldered

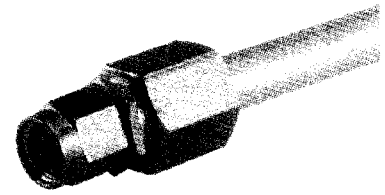
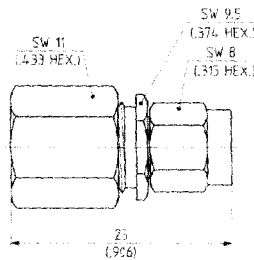


SUHNER TYPE	Ident. no.	Cable group (example)	CECC 22111-	MIL M 39012/	Assembly instruction	Variant	Weight
11 SMA-50-3-15	544547	Y5, Y12 (EZ 141)	802-01	79-4108	9056	gold/CuBe	2.40 g/.084 oz.
11 SMA-50-3-65	641643	Y5, Y12 (EZ 141)	802-02	79-3108	9056	stainless steel ²⁾	2.40 g/.084 oz.

2) cable entry CuBe/gold

- centre contact captivated

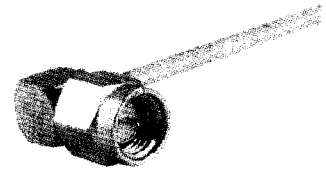
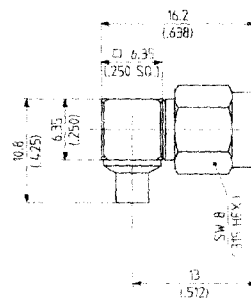
- > with pin and insulator
- > cable entry solderless (clamp)
- > centre contact soldered



SUHNER TYPE	Ident. no.	Cable group (example)			Assembly instruction	Variant	Weight
11 SMA-50-5-2	643253	Y7 (EZ 250)			27045	stainless steel	8.90 g/ .312 oz.

right angle plugs

- > cable entry soldered
- > centre contact soldered

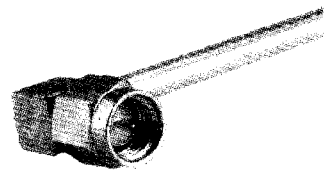
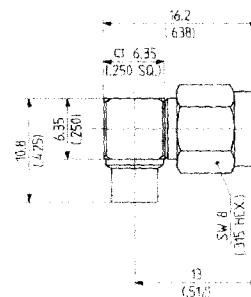


SUHNER TYPE	Ident. no.	Cable group (example)	CECC 22111-		Assembly instruction	Variant	Weight
16 SMA-50-2-3	• 640070	Y3, Y11 (EZ 86)	803-03		3068	gold/CuBe	4.50 g/ .158 oz.
16 SMA-50-2-43	• 641953	Y3, Y11 (EZ 86)			3068	economic ¹⁾	4.50 g/ .158 oz.
16 SMA-50-2-53	• 644242	Y3, Y11 (EZ 86)			3068	stainless steel ²⁾	4.50 g/ .158 oz.

1) use torque wrench 74 Z-0-0-79

2) cable entry CuBe/gold

- > cable entry soldered
- > centre contact soldered



SUHNER TYPE	Ident. no.	Cable group (example)	CECC 22111-		Assembly instruction	Variant	Weight
16 SMA-50-3-3	• 640073	Y5, Y12 (EZ 141)	803-01		3068	gold/CuBe	4.50 g/ .158 oz.
16 SMA-50-3-43	• 642241	Y5, Y12 (EZ 141)			3068	economic ¹⁾	4.50 g/ .158 oz.
16 SMA-50-3-53	• 644243	Y5, Y12 (EZ 141)			3068	stainless steel ²⁾	4.50 g/ .158 oz.

1) use torque wrench 74 Z-0-0-79

2) cable entry CuBe/gold

• centre contact captivated

straight jacks

- > cable entry soldered
- > centre contact soldered

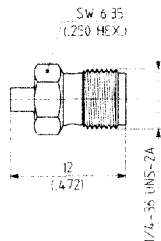
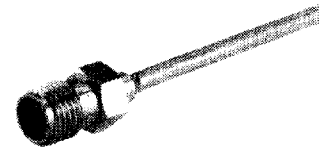


Fig. 1

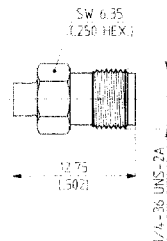


Fig. 2

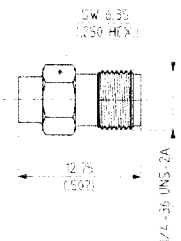
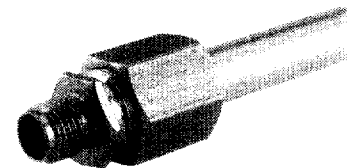
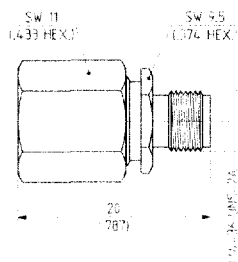


Fig. 3

SUHNER TYPE	Ident. no.	Cable group (example)	CECC 22111-	Assembly instruction	Variant	Weight	Fig.
21 SMA-50-1-1	● 642385	Y1 (EZ 34)		9118	gold/CuBe	2.00 g/.070 oz.	1
21 SMA-50-1-2	● 642386	Y2 (EZ 47)		9119	gold/CuBe	2.20 g/.077 oz.	1
21 SMA-50-2-15	544549	Y3, Y11 (EZ 86)	804-03	9057	gold/CuBe	1.60 g/.056 oz.	2
21 SMA-50-3-15	544550	Y5, Y12 (EZ 141)	804-01	9057	gold/CuBe	1.60 g/.056 oz.	3

- > cable entry solderless (clamp)

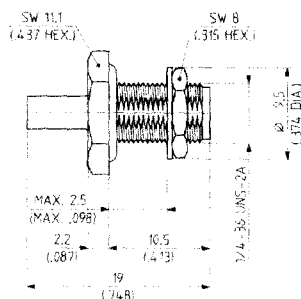


SUHNER TYPE	Ident. no.	Cable group (example)		Assembly instruction	Variant	Weight
21 SMA-50-5-2	643643	Y7 (EZ 250)		27045	stainless steel	8.20 g/.287 oz.

- centre contact captivated

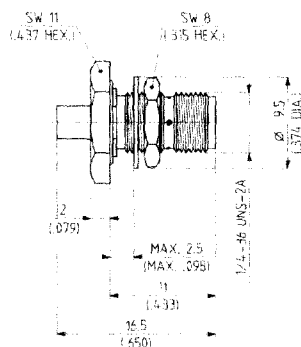
bulkhead jacks

- > cable entry soldered
- > centre contact soldered
- > with panel seal
- > suitable for insulated mounting
- > insulating washers see page 425



SUHNER TYPE	Ident. no.	Cable group (example)	Assembly instruction	Mounting hole	Variant	Weight	Notes
24 SMA-50-2-15	544532	Y3, Y11 (EZ 86)	9057	ML 35	gold/CuBe	3.50 g/.123 oz.	

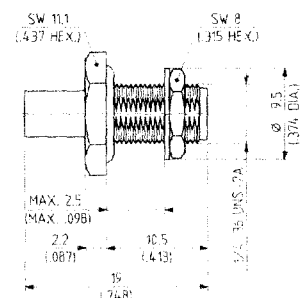
- > cable entry soldered
- > centre contact soldered
- > with panel seal



SUHNER TYPE	Ident. no.	Cable group (example)	Assembly instruction	Mounting hole	Variant	Weight	Notes
24 SMA-50-2-41	641381	Y3, Y11 (EZ 86)	3066	ML 20	economic ¹⁾	3.70 g/.130 oz.	

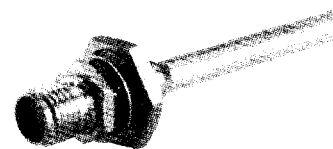
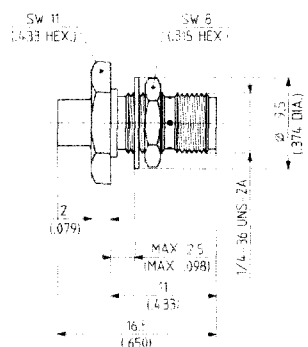
1) use torque wrench 74 Z-0-0-79

- > cable entry soldered
- > centre contact soldered
- > with panel seal
- > suitable for insulated mounting
- > insulating washers see page 425



SUHNER TYPE	Ident. no.	Cable group (example)	Assembly instruction	Mounting hole	Variant	Weight	Notes
24 SMA-50-3-15	641153	Y5, Y12 (EZ 141)	9057	ML 35	gold/CuBe	3.70 g/.130 oz.	

- > cable entry soldered
- > centre contact soldered



SUHNER TYPE	Ident. no.	Cable group (example)	Assembly instruction	Mounting hole	Variant	Weight	Notes
24 SMA-50-3-41	543892	Y5, Y12 (EZ 141)	3066	ML 91	<i>economic¹⁾</i>	3.50 g/. 123 oz.	

1) use torque wrench 74 Z0-0-79

panel jacks

- > cable entry soldered
- > centre contact soldered

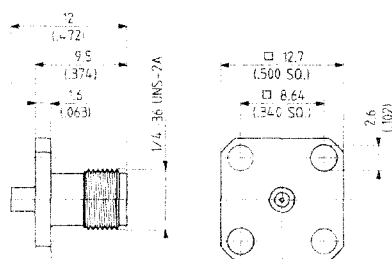


Fig. 1: square flange

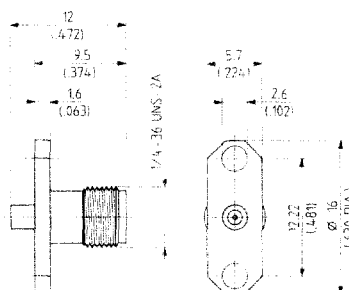
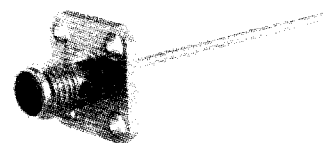


Fig. 2: 2-hole flange



SUHNER TYPE	Ident. no.	Cable group (example)	Assembly instruction	Mounting hole	Variant	Weight	Fig.
25 SMA-50-1-2	● 642390	Y2 (EZ 47)	9119	ML 19		3.30 g/. 116 oz.	1
25 SMA-50-1-4	● 642391	Y2 (EZ 47)	9119		gold/CuBe	1.90 g/. 067 oz.	2

- centre contact captivated

- > cable entry soldered
- > centre contact soldered

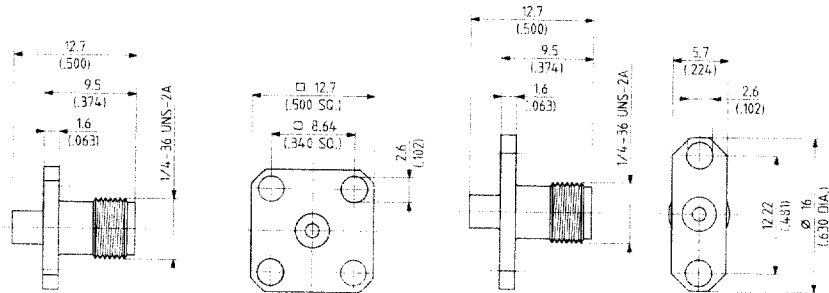


Fig. 1: square flange

Fig. 2: 2-hole flange

SUHNER TYPE	Ident. no.	Cable group (example)	CECC 22111	MIL M 39012/	Assembly instruction	Mounting hole	Weight	Fig.
25 SMA-50-2-15	544551	Y3, Y11 (EZ 86)	805-03	82-4005	9057	ML 19	2.70 g/.095 oz.	1
25 SMA-50-2-25	641493	Y3, Y11 (EZ 86)	806-03		9057		1.60 g/.056 oz.	2

SMA

- > cable entry soldered
- > centre contact soldered

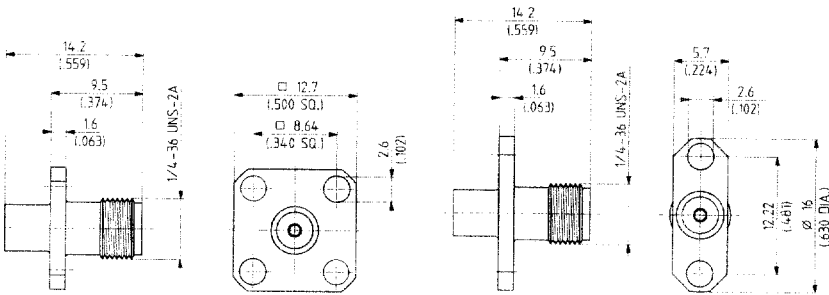


Fig. 1: square flange

Fig. 2: 2-hole flange

SUHNER TYPE	Ident. no.	Cable group (example)	CECC 22111	MIL M 39012/	Assembly instruction	Mounting hole	Weight	Fig.
25 SMA-50-3-15	544552	Y5, Y12 (EZ 141)	805-01	82-4006	9057	ML 19	2.90 g/.102 oz.	1
25 SMA-50-3-25	641410	Y5, Y12 (EZ 141)	806-01		9057		1.80 g/.063 oz.	2

cable feed through

> cable entry soldered

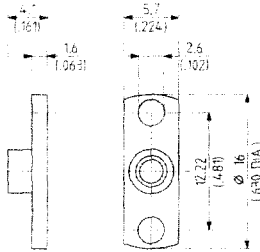


Fig. 1

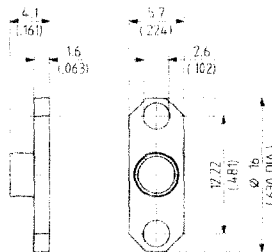
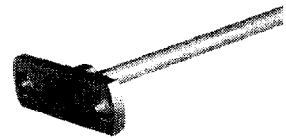


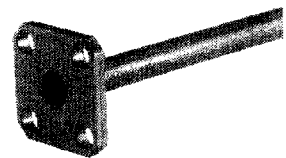
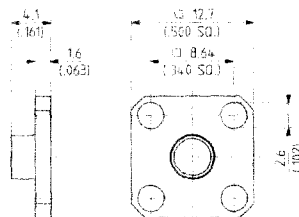
Fig. 2



SUHNER TYPE	Ident. no.	Cable group (example)	Material	Weight	Fig.	Notes
71 Z-0-2-5	641099	Y3, Y11 (EZ 86)	brass, gold plated	1.80 g/.063 oz.	1	2-hole flange
71 Z-0-3-16	542996	Y5, Y12 (EZ 141)	brass, gold plated	0.80 g/.028 oz.	2	2-hole flange

cable feed through

> cable entry soldered

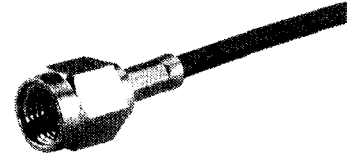
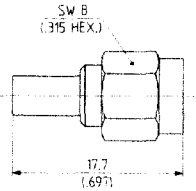


SUHNER TYPE	Ident. no.	Cable group (example)	Material	Weight	Notes
71 Z-0-3-15	543385	Y5, Y12 (EZ 141)	brass, gold plated	1.60 g/.056 oz.	square flange

Connectors for Flexible Cables

straight plugs

- > cable entry crimp
- > centre contact soldered
- > taper sleeves see page 423

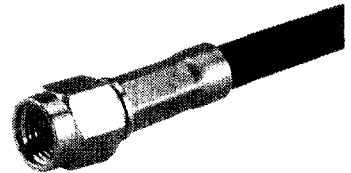
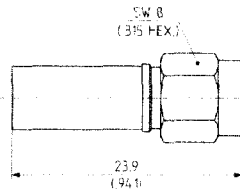


SUHNER TYPE	Ident. no.	Cable group (example)	CECC 22111-	MIL M 39012/	Crimp insert	Variant	Weight
11 SMA-50-2-5	• 640042	U2 (RG 316/U)	809-01	55-4112	A	gold/CuBe	3.50 g/.123 oz.
11 SMA-50-2-42	• 642238	U2 (RG 316/U)			A	economic ¹⁾	3.50 g/.123 oz.
11 SMA-50-2-55	• 641377	U2 (RG 316/U)	809-02	55-3112	A	stainless steel	3.40 g/.119 oz.
11 SMA-50-2-6	• 640043	U4 (K 02252 D)			A	gold/CuBe	3.50 g/.123 oz.
11 SMA-50-2-41	• 543981	U4 (K 02252 D)			A	economic ¹⁾	3.50 g/.123 oz.
11 SMA-50-2-56	• 641376	U4 (K 02252 D)			A	stainless steel	3.40 g/.119 oz.

1) use torque wrench 74 Z-0-0-79

assembly instruction no. 3069

- > cable entry crimp
- > centre contact soldered
- > taper sleeves see page 423



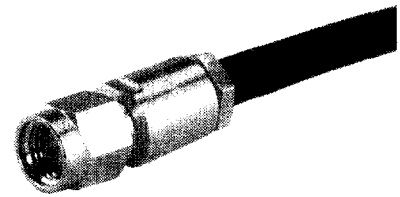
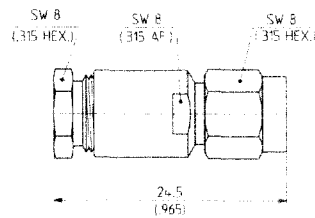
SUHNER TYPE	Ident. no.	Cable group (example)	CECC 22111-	MIL M 39012/	Crimp insert	Variant	Weight
11 SMA-50-3-5	• 640048	U7 (RG 58 C/U)	809-03	55-4114	B	gold/CuBe	4.50 g/.158 oz.
11 SMA-50-3-45	• 642239	U7 (RG 58 C/U)			B	economic ¹⁾	4.50 g/.158 oz.
11 SMA-50-3-55	• 641371	U7 (RG 58 C/U)	809-04	55-3114	B	stainless steel	4.30 g/.151 oz.
11 SMA-50-3-6	• 640049	U9, 11 (RG400/U)	809-05	55-4116	B	gold/CuBe	4.50 g/.158 oz.
11 SMA-50-3-46	• 641200	U9, 11 (RG400/U)			B	economic ¹⁾	4.50 g/.158 oz.
11 SMA-50-3-56	• 543647	U9, 11 (RG400/U)	809-06	55-3116	B	stainless steel	4.30 g/.151 oz.

1) use torque wrench 74 Z-0-0-79

assembly instruction no. 3069

- centre contact captivated

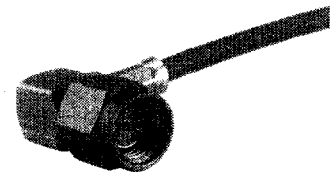
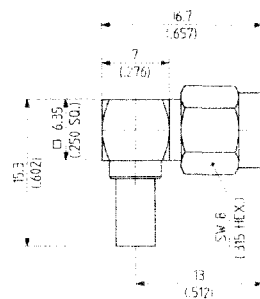
- > cable entry clamp
- > centre contact soldered



SUHNER TYPE	Ident. no.	Cable group (example)	MIL M 39012/	Assembly instruction	Variant	Weight	
11 SMA-50-3-7	• 640050	U7 (RG 58 C/U)		3071	gold/CuBe	6.00 g/.210 oz.	
11 SMA-50-3-8	• 640051	U10 (RG 223/U)	55-4109	3071	gold/CuBe	6.00 g/.210 oz.	
11 SMA-50-3-10	• 640053	U10 (RG 400/U)		3071	gold/CuBe	6.00 g/.210 oz.	

right angle plugs

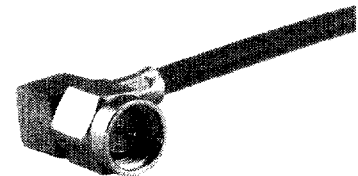
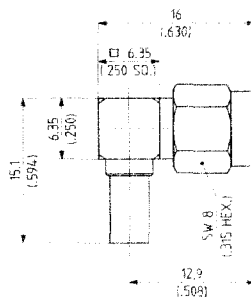
- > cable entry crimp
- > centre contact soldered
- > taper sleeves see page 423



SUHNER TYPE	Ident. no.	Cable group (example)			Crimp insert	Variant	Weight
16 SMA-50-2-55	• 642661	U2 (RG 316/U)			A	stainless steel	5.00 g/.175 oz.
16 SMA-50-2-56	• 642662	U4 (K 02252 D)			A	stainless steel	5.00 g/.175 oz.

assembly instruction 3070

- > cable entry crimp
- > centre contact soldered
- > taper sleeves see page 423



SUHNER TYPE	Ident. no.	Cable group (example)	CECC 22111-	MIL M 39012/	Crimp insert	Variant	Weight
16 SMA-50-2-105	• 651455	U2 (RG 316/U)	801-01	56-4112	A	gold/CuBe	5.00 g/.175 oz.
16 SMA-50-2-145	• 651036	U2 (RG 316/U)			A	economic ¹⁾	5.00 g/.175 oz.
16 SMA-50-2-106	• 651457	U4 (K 02252 D)			A	gold/CuBe	5.00 g/.175 oz.
16 SMA-50-2-141	• 651035	U4 (K 02252 D)			A	economic ¹⁾	5.00 g/.175 oz.

1) use torque wrench 74 Z-0-0-79

assembly instruction no. 3070

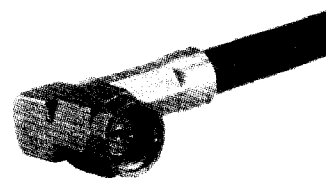
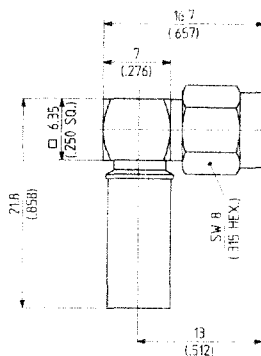
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cable groups see page 36

assembly tools see page 403

mounting holes see page 441

- > cable entry crimp
- > centre contact soldered
- > taper sleeves see page 423

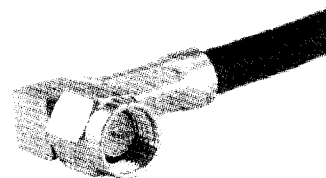
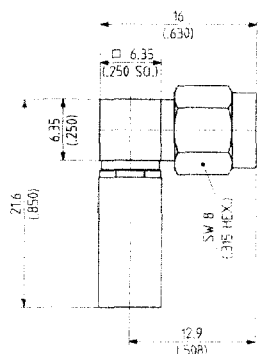


SUHNER TYPE	Ident. no.	Cable group (example)			Crimp insert	Variant	Weight
16 SMA-50-3-55	• 642659	U7 (RG 58 C/U)			B	stainless steel	6.00 g/.210 oz.
16 SMA-50-3-56	• 642660	U9, 11 (RG400/U)			B	stainless steel	6.00 g/.210 oz.

assembly instruction no. 3070

SMA

- > cable entry crimp
- > centre contact soldered
- > taper sleeves see page 423



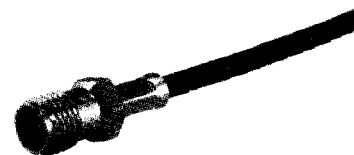
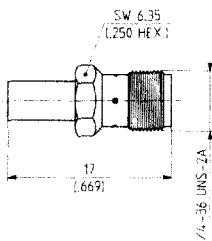
SUHNER TYPE	Ident. no.	Cable group (example)	CECC 22111-	MIL M 39012/	Crimp insert	Variant	Weight
16 SMA-50-3-105	• 651585	U7 (RG 58 C/U)	810-03	56-4114	B	gold/CuBe	6.00 g/.210 oz.
16 SMA-50-3-145	• 651584	U7 (RG 58 C/U)			B	economic ¹⁾	6.00 g/.210 oz.
16 SMA-50-3-106	• 650546	U9, 11 (RG400/U)	810-05	56-4115 56-4116	B	gold/CuBe	6.00 g/.210 oz.
16 SMA-50-3-146	• 649909	U9, 11 (RG400/U)			B	economic ¹⁾	6.00 g/.210 oz.

1) use torque wrench 74 Z-0-79

assembly instruction no. 3070

straight jacks

- > cable entry crimp
- > centre contact soldered
- > taper sleeves see page 423



SUHNER TYPE	Ident. no.	Cable group (example)		MIL M 39012/	Crimp insert	Variant	Weight
21 SMA-50-2-5	• 640077	U2 (RG 316/U)		57-4019	A	gold/CuBe	2.00 g/.070 oz.
21 SMA-50-2-6	• 640078	U4 (K 02252 D)			A	gold/CuBe	2.00 g/.070 oz.

assembly instruction no. 3069

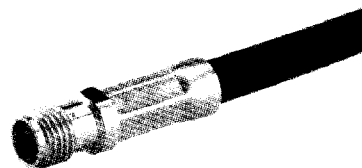
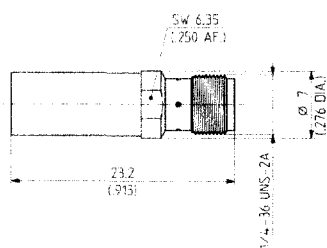
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cable groups see page 36

assembly tools see page 403

mounting holes see page 441

- > cable entry crimp
- > centre contact soldered
- > taper sleeves see page 423

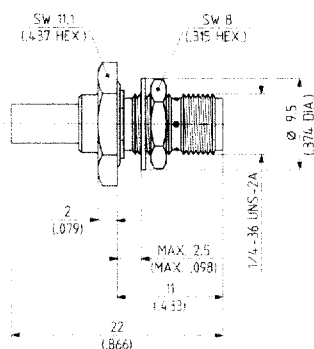


SUHNER TYPE	Ident. no.	Cable group (example)	MIL M 39012/	Crimp insert	Variant	Weight
21 SMA-50-3-5	• 640081	U7 (RG 58 C/U)	57-4021	B	gold/CuBe	3.00 g/. 105 oz.
21 SMA-50-3-6	• 640082	U9, 11 (RG400/U)	57-4022 57-4023	B	gold/CuBe	3.00 g/. 105 oz.

assembly instruction no. 3069

bulkhead jacks

- > cable entry crimp
- > centre contact soldered
- > with panel seal
- > taper sleeves see page 423

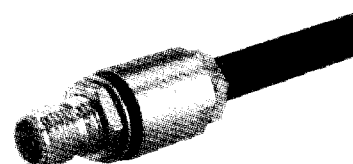
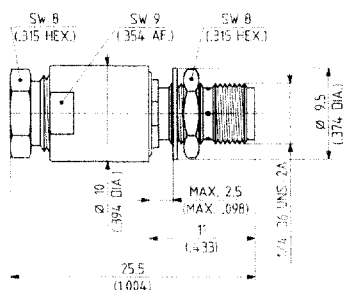


SUHNER TYPE	Ident. no.	Cable group (example)	Mounting hole	Crimp insert	Variant	Weight
24 SMA-50-2-13	• 651767	U4 (K 02252 D)	ML 20	A	gold/CuBe	5.20 g/. 182 oz.
24 SMA-50-2-46	• 644246	U2 (RG 316/U)	ML 20	A	economic ¹⁾	5.20 g/. 182 oz.
24 SMA-50-2-14	• 651748	U2 (RG 316/U)	ML 20	A	gold/CuBe	5.20 g/. 182 oz.
24 SMA-50-2-45	• 644245	U4 (K 02252 D)	ML 20	A	economic ¹⁾	5.20 g/. 182 oz.

1) use torque wrench 74 Z-0-0-79

assembly instruction no. 3069

- > cable entry clamp
- > centre contact soldered
- > with panel seal



SUHNER TYPE	Ident. no.	Cable group (example)	Mounting hole	MIL M 39012/	Assembly instruction	Variant	Weight
24 SMA-50-3-7	• 640108	U7 (RG 58 C/U)	ML 20		3071	gold/CuBe	6.50 g/. 228 oz.
24 SMA-50-3-8	• 640109	U10 (RG 223/U)	ML 20	59-4009	3071	gold/CuBe	6.50 g/. 228 oz.

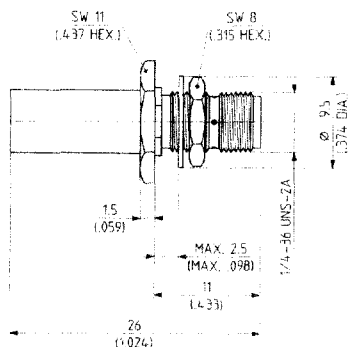
• centre contact captivated

cable groups see page 36

assembly tools see page 403

mounting holes see page 441

- > cable entry crimp
- > centre contact soldered



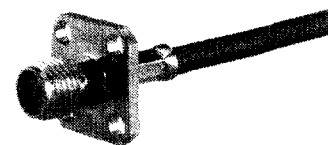
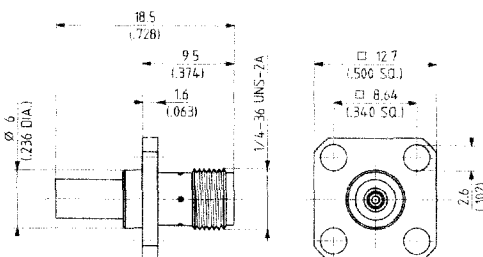
SUHNER TYPE	Ident. no.	Cable group (example)	Mounting hole		Crimp insert	Variant	Weight
24 SMA-50-3-42 •	641358	U9 (RG 223/U)	ML 20		B	economic ¹⁾	4.50 g/.158 oz.

1) use torque wrench 74 Z-0-0-79

assembly instruction no. 3072

panel jacks

- > cable entry crimp
- > centre contact soldered
- > square flange
- > taper sleeves see page 423

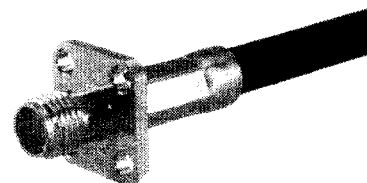
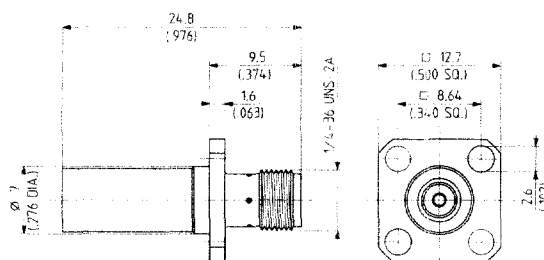


SUHNER TYPE	Ident. no.	Cable group (example)	Mounting hole	MIL M 39012/	Crimp insert	Variant	Weight
25 SMA-50-2-5 •	640112	U2 (RG 316/U)	ML 19	58-4012	A	gold/CuBe	4.00 g/.140 oz.
25 SMA-50-2-6 •	640113	U4 (K 02252 D)	ML 19		A	gold/CuBe	4.00 g/.140 oz.
25 SMA-50-2-46 •	642246	U4 (K 02252 D)	ML 19		A	economic ¹⁾	4.00 g/.140 oz.

1) use torque wrench 74 Z-0-0-79

assembly instruction no. 3072

- > cable entry crimp
- > centre contact soldered
- > square flange
- > taper sleeves see page 423



SUHNER TYPE	Ident. no.	Cable group (example)	Mounting hole	MIL M 39012/	Crimp insert	Variant	Weight
25 SMA-50-3-5 •	640115	U7 (RG 58 C/U)	ML 19	58-4014	B	gold/CuBe	4.50 g/.158 oz.
25 SMA-50-3-6 •	640116	U9, 11 (RG400/U)	ML 19	58-4015 58-4016	B	gold/CuBe	4.50 g/.158 oz.

assembly instruction no. 3072

- centre contact captivated

cable groups see pages 36

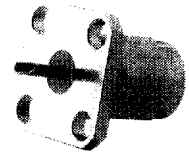
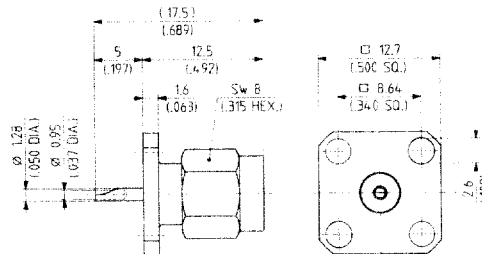
assembly tools see page 403

mounting holes see page 441

Receptacles with Solder End

receptacles, male

> panel mounted

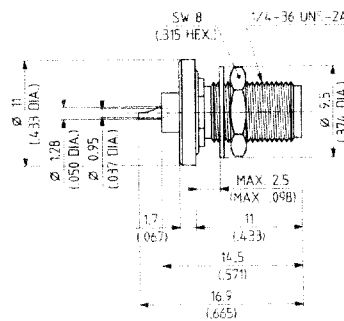


SUHNER TYPE	Ident. no.	Flange type		Variant	Weight	Notes
13 SMA-50-0-1	• 640055	square		gold/CuBe	4.50 g/.158 oz.	
13 SMA-50-0-51	• 544787	square		stainless steel	4.40 g/.154 oz.	

receptacles, female

> bulkhead mounted

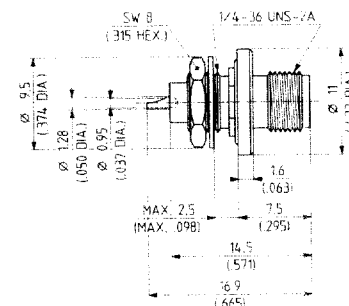
> with panel seal



SUHNER TYPE	Ident. no.	Mounting hole	MIL M 39012/	Variant	Weight	Notes
22 SMA-50-0-1	• 640087	ML 20	61-4001	gold/CuBe	3.00 g/.105 oz.	rear mounting

> bulkhead mounted

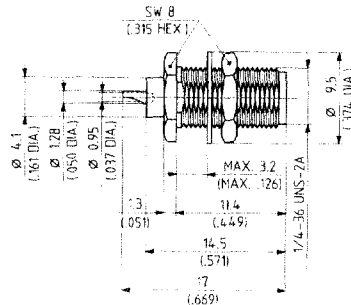
> with panel seal



SUHNER TYPE	Ident. no.	Mounting hole	CECC 22111-	MIL M 39012/	Variant	Weight	Notes
22 SMA-50-0-2	• 640088	ML 20	814-01	61-4002	gold/CuBe	3.00 g/.105 oz.	front mounting

• centre contact captivated

- > rear mounting
- > without panel seal
- > suitable for insulated mounting
- > insulating washers see page 425

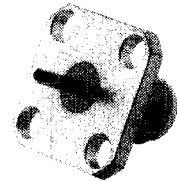
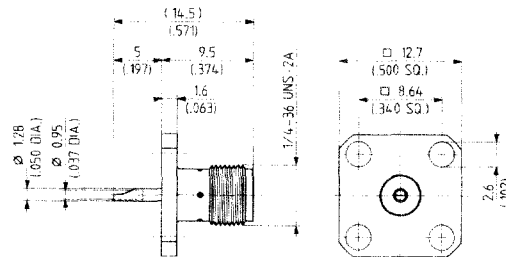


SUHNER TYPE	Ident. no.	Mounting hole	CECC 22111	Variant	Weight	Notes
22 SMA-50-0-4	• 640962	ML 35	813-01	gold/CuBe	2.50 g/.088 oz.	
22 SMA-50-0-44	• 643518	ML 35		economic ¹⁾	2.50 g/.088 oz.	
22 SMA-50-0-54	• 544782	ML 35	813-02	stainless steel	2.50 g/.088 oz.	

1) use torque wrench 74 Z-0-0-79

SMA

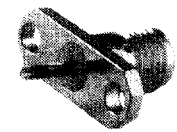
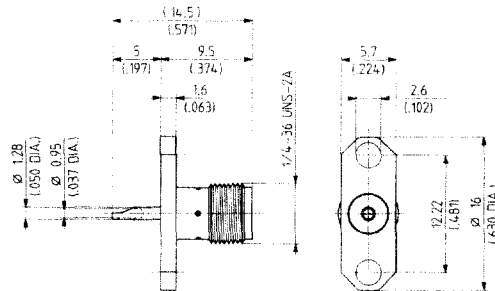
- > panel mounted



SUHNER TYPE	Ident. no.	Flange type	CECC 22111	MIL M 39012/	Variant	Weight	Notes
23 SMA-50-0-1	• 640090	square	807-01	60-4001	gold/CuBe	2.50 g/.088 oz.	
23 SMA-50-0-44	• 642245	square			economic ¹⁾	2.50 g/.088 oz.	
23 SMA-50-0-51	• 543948	square	807-02	60-3001	stainless steel	2.50 g/.088 oz.	

1) use torque wrench 74 Z-0-0-79

- > panel mounted



SUHNER TYPE	Ident. no.	Flange type	CECC 22111	MIL M 39012/	Variant	Weight	Notes
23 SMA-50-0-11	• 640095	2-hole	808-01	60-4002	gold/CuBe	1.80 g/.063 oz.	
23 SMA-50-0-41	• 543984	2-hole			economic ¹⁾	1.80 g/.063 oz.	
23 SMA-50-0-61	• 544796	2-hole	808-02	60-3002	stainless steel	1.80 g/.063 oz.	

1) use torque wrench 74 Z-0-0-79

- centre contact captivated

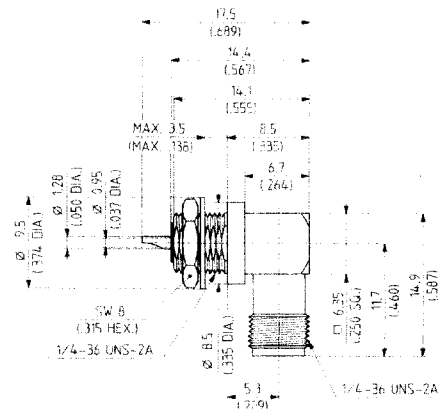
cable groups see pages 36

assembly tools see page 403

mounting holes see page 441

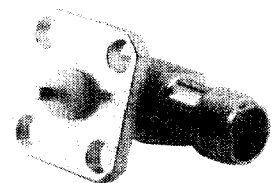
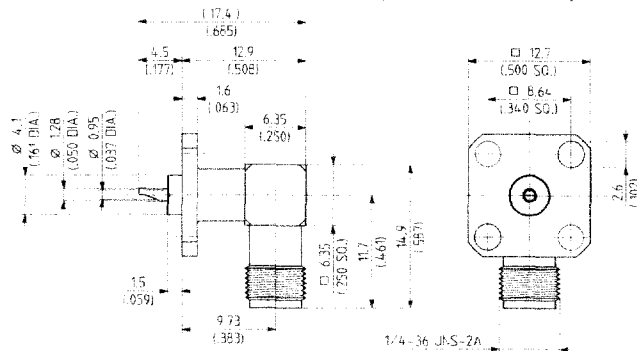
right angle receptacles, female

- > bulkhead mounted
- > suitable for insulated mounting
- > insulating washers see page 425



SUHNER TYPE	Ident. no.	Mounting hole	Variant	Weight	Notes
27 SMA-50-0-1	● 544384	ML 35	gold/CuBe	4.90 g/.172 oz.	

- > panel mounted

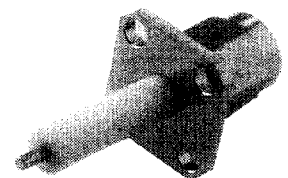
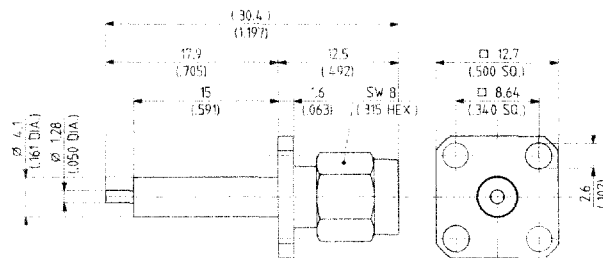


SUHNER TYPE	Ident. no.	Flange type	Variant	Weight	Notes
28 SMA-50-0-1	● 641321	square	gold/CuBe	4.80 g/.168 oz.	
28 SMA-50-0-41	● 543975	square	economic ¹⁾	4.80 g/.168 oz.	1) use torque wrench 74 Z-0-0-79

Receptacles with Coaxial End

receptacles, male

- > panel mounted

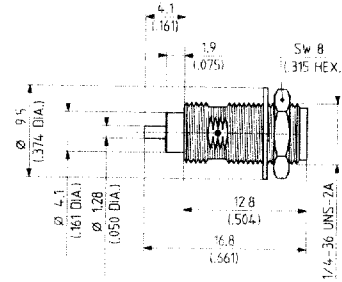


SUHNER TYPE	Ident. no.	Flange type	Variant	Weight	Notes
13 SMA-50-0-3	● 640057	square	gold/CuBe	5.00 g/.175 oz.	extended dielectric
13 SMA-50-0-53	● 544790	square	stainless steel	5.00 g/.175 oz.	extended dielectric

- centre contact captivated

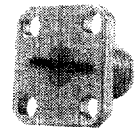
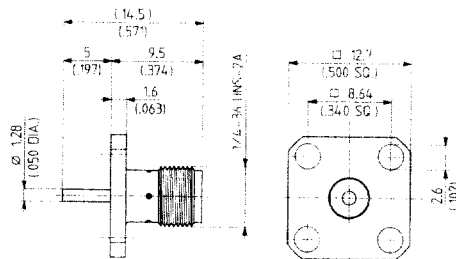
receptacles, female

> bulkhead mounted



SUHNER TYPE	Ident. no.	Mounting hole	Variant	Weight	Notes
22 SMA-50-0-3	• 640089	ML 98	gold/CuBe	2.00 g/.070 oz.	tap drill 74 Z-0-0-24
22 SMA-50-0-53	• 543498	ML 98	stainless steel	2.00 g/.070 oz.	tap drill 74 Z-0-0-24

> panel mounted



SUHNER TYPE	Ident. no.	Flange type	Variant	Weight	Notes
23 SMA-50-0-21	• 640101	square	gold/CuBe	2.50 g/.088 oz.	flush dielectric
23 SMA-50-0-71	• 544778	square	stainless steel	2.50 g/.088 oz.	flush dielectric

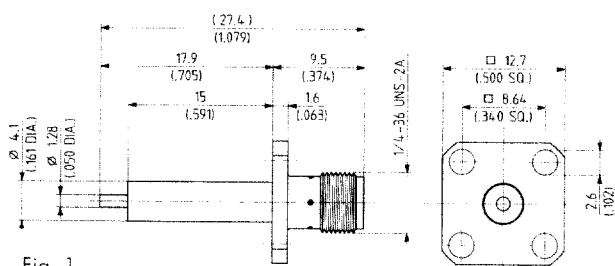


Fig. 1

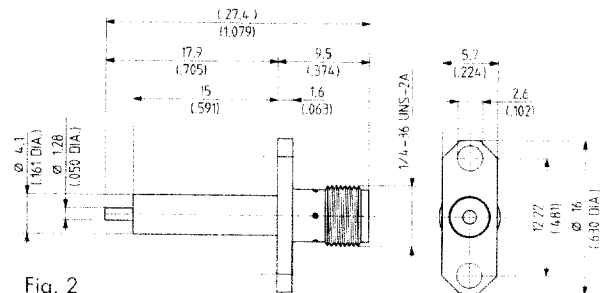


Fig. 2

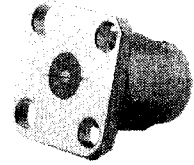
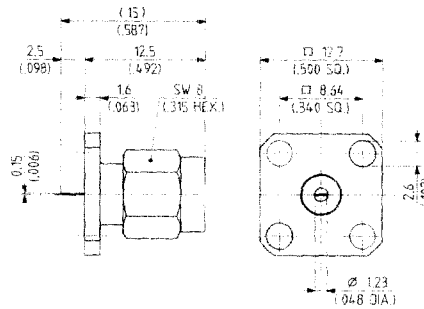
SUHNER TYPE	Ident. no.	Flange type	Variant	Weight	Fig.	Notes
23 SMA-50-0-3	• 640092	square	gold/CuBe	3.00 g/.105 oz.	1	extended dielectric
23 SMA-50-0-13	• 640097	2-hole	gold/CuBe	2.30 g/.081 oz.	2	extended dielectric
23 SMA-50-0-53	• 641394	square	stainless steel	3.00 g/.105 oz.	1	extended dielectric
23 SMA-50-0-63	• 640903	2-hole	stainless steel	2.30 g/.081 oz.	2	extended dielectric

• centre contact captivated

Stripline Launchers

panel launchers, male

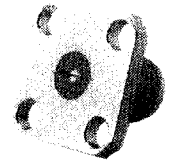
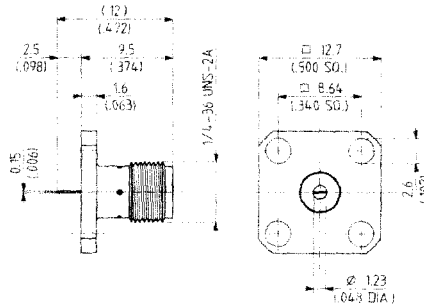
> tab contact



SUHNER TYPE	Ident. no.	Flange type	Variant	Weight	Notes
13 SMA-50-0-2	• 640056	square	gold/CuBe	4.50 g/ .158 oz.	flush dielectric
13 SMA-50-0-52	• 641454	square	stainless steel	4.50 g/ .158 oz.	flush dielectric

panel launchers, female

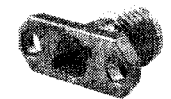
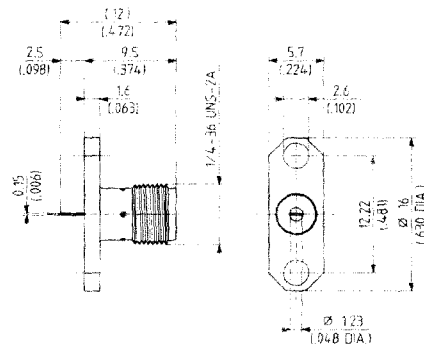
> tab contact



SUHNER TYPE	Ident. no.	Flange type	Variant	Weight	Notes
23 SMA-50-0-2	• 640091	square	gold/CuBe	2.50 g/ .088 oz.	flush dielectric
23 SMA-50-0-46	• 641573	square	economic ¹⁾	2.50 g/ .088 oz.	flush dielectric
23 SMA-50-0-52	• 543487	square	stainless steel	2.50 g/ .088 oz.	flush dielectric

1) use torque wrench 74 Z-0-0-79

> tab contact



SUHNER TYPE	Ident. no.	Flange type	Variant	Weight	Notes
23 SMA-50-0-12	• 640096	2-hole	gold/CuBe	1.80 g/ .063 oz.	flush dielectric
23 SMA-50-0-62	• 544779	2-hole	stainless steel	1.80 g/ .063 oz.	flush dielectric

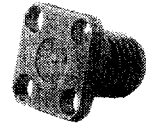
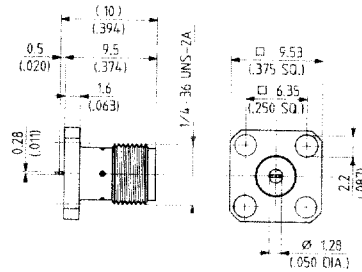
• centre contact captivated

Miniature Flange Launchers, for Stripline and Microstrip

These connectors are manufactured to extremely small tolerances. They are suitable for stripline and microstrip components with low VSWR.

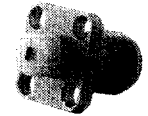
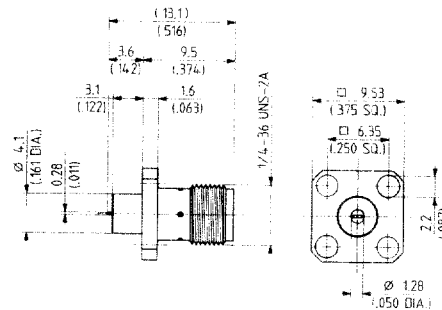
panel launchers, female

> tab contact



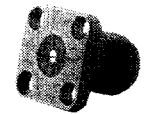
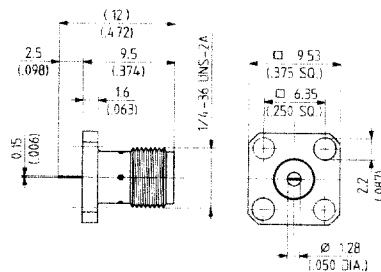
SUHNER TYPE	Ident. no.	Flange type	Variant	Weight	Notes
23 SMA-50-0-152 •	642839	square	stainless steel	1.80 g/.063 oz.	flush dielectric

> tab contact



SUHNER TYPE	Ident. no.	Flange type	Variant	Weight	Notes
23 SMA-50-0-154 •	642840	square	stainless steel	1.90 g/.067 oz.	extended dielectric

> tab contact



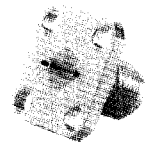
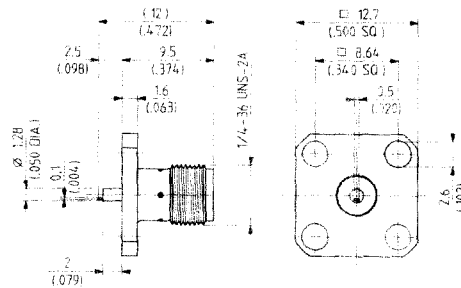
SUHNER TYPE	Ident. no.	Flange type	Variant	Weight	Notes
23 SMA-50-0-174 •	644260	square	stainless steel	1.80 g/.063 oz.	flush dielectric

• centre contact captivated

Microstrip Launchers

panel launchers, female

> tab contact, offset



SUHNER TYPE	Ident. no.	Flange type	Variant	Weight	Notes
23 SMA-50-0-4	• 640093	square	gold/CuBe	2.50 g/.088 oz.	flush dielectric
23 SMA-50-0-54	• 544780	square	stainless steel	2.50 g/.088 oz.	flush dielectric

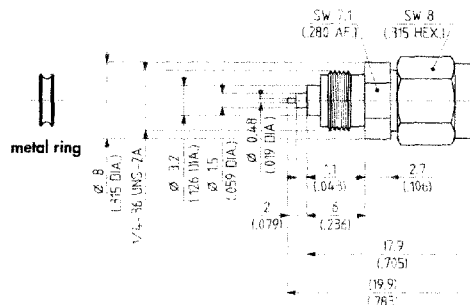
Connectors with Hermetic Seal

All hermetic seal SMA connectors use precision glass to metal seals, which are soldered into the connector body.

Caution: max. soldering temperature for hermetic seal SMA connectors is 250°C / 482°F.

receptacle, male, hermetic seal*

> "Spark Plug"
with metal ring seal



SUHNER TYPE	Ident. no.	Mounting hole	Pressure max.	Variant	Weight	Notes
12 SMA-50-0-110	• 652315	ML 42	200 N/cm ² / 290 psi	gold/CuBe	5.00 g/.175 oz.	

leak rate 10⁻⁸ Torr l/sec. (atm cc/s) max.

* Assembly tool 74 Z-0-0-75 (only necessary with 12 SMA and 22 SMA) and torque wrench 74 Z-0-0-80 are used to install "spark plug" connectors in circuit frames. The specified torque of 200 Ncm / 17.7 in. lbs results in a leak rate of 10⁻⁸ Torr l/sec. (atm cc/s) maximum.

• centre contact captivated

receptacles, male, hermetic seal

- > bulkhead mounted for direct soldering
- > supplied with separate insulating bushing

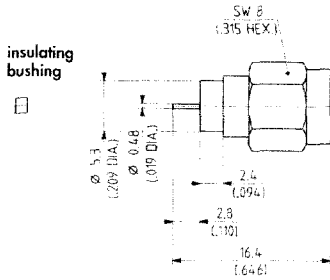


fig. 1

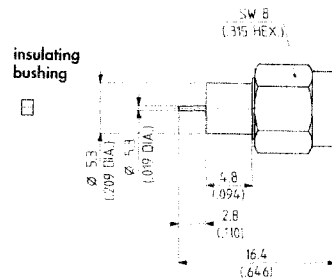


fig. 2

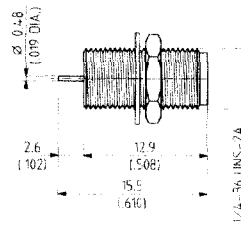


SUHNER TYPE	Ident. no.	Mounting hole	Pressure max.	Variant	Weight	Fig.
12 SMA-50-0-13	• 641287	ML 95	200 N/cm ² /290 psi	gold/CuBe	2.40 g/.084 oz.	1
12 SMA-50-0-15	• 641289	ML 96	200 N/cm ² /290 psi	gold/CuBe	2.40 g/.084 oz.	2

leak rate 10⁻⁸ Torr l/sec. (atm cc/s) max.

receptacle, female, hermetic seal

- > bulkhead mounted
- > without flange



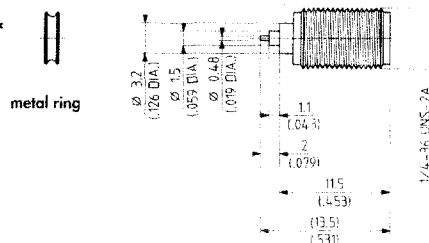
SUHNER TYPE	Ident. no.	Mounting hole	Pressure max.	Variant	Weight	Notes
22 SMA-50-0-6	• 640983	ML 98	200 N/cm ² /290 psi	gold/CuBe	2.10 g/.074 oz.	tap drill 74 Z-0-0-24

leak rate 10⁻⁶ Torr l/sec. (atm cc/s) max.

use Loctite or epoxy resin to seal thread to panel

receptacle, female, hermetic seal*

- > "Spark Plug" with metal ring seal



SUHNER TYPE	Ident. no.	Mounting hole	Pressure max.	Variant	Weight	Notes
22 SMA-50-0-10	• 641291	ML 42	200 N/cm ² /290 psi	gold/CuBe	1.70 g/.060 oz.	

* Assembly tool 74 Z-0-0-75 (only necessary with 12 SMA and 22 SMA) and torque wrench 74 Z-0-0-80 are used to install "spark plug" connectors in circuit frames. The specified torque of 200 Ncm/17.7 in.-lbs results in a leakage rate of 10⁻⁸ Torr l/sec. (atm cc/s) maximum.

• centre contact captivated

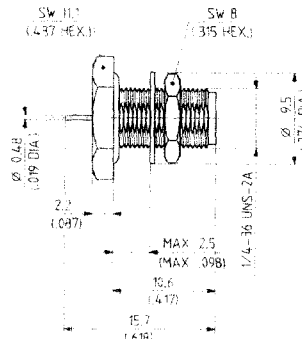
cable groups see pages 36

assembly tools see page 403

mounting holes see page 441

receptacles, female

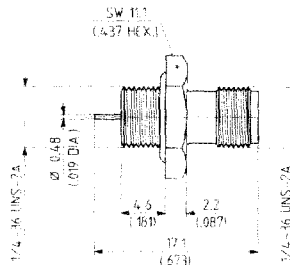
- > bulkhead mounted
- > with panel seal
- > suitable for insulated mounting
- > insulating washers see page 425



SUHNER TYPE	Ident. no.	Mounting hole	Variant	Pressure max.	Weight	Notes
22 SMA-50-0-11	• 641292	ML 35	gold/CuBe	200 N/cm ² /290 psi	3.60 g/.126 oz.	rear mounting

leak rate 10⁻⁶ Torr l/sec.(atm cc/s) max.

- > bulkhead mounted
- > with panel seal



SUHNER TYPE	Ident. no.	Mounting hole	Variant	Pressure max.	Weight	Notes
22 SMA-50-0-12	• 641293	ML 98	gold/CuBe	200 N/cm ² /290 psi	3.00 g/.105 oz.	front mounting

leak rate 10⁻⁶ Torr l/sec.(atm cc/s) max.

tap drill 74 Z-0-0-24

receptacles, female, hermetic seal

- > bulkhead mounted for direct soldering
- > supplied with separate insulating bushing

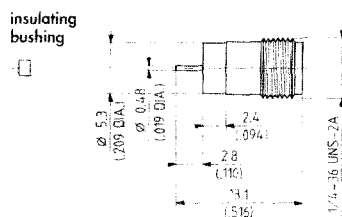


Fig. 1

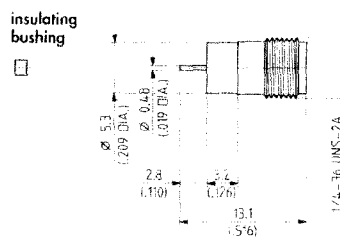


Fig. 2

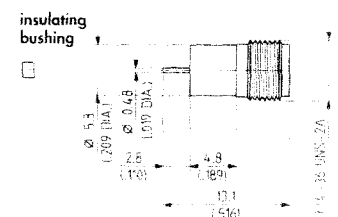


Fig. 3

SUHNER TYPE	Ident. no.	Mounting hole	Variant	Pressure max.	Weight	Fig.
22 SMA-50-0-13	• 641294	ML 95	gold/CuBe	200 N/cm ² /290 psi	1.40 g/.049 oz.	1
22 SMA-50-0-14	• 641295	ML 40	gold/CuBe	200 N/cm ² /290 psi	1.40 g/.049 oz.	2
22 SMA-50-0-15	• 544588	ML 96	gold/CuBe	200 N/cm ² /290 psi	1.40 g/.049 oz.	3

leak rate 10⁻⁸ Torr l/sec.(atm cc/s) max.

soldering temperature 250°C/482°F max.

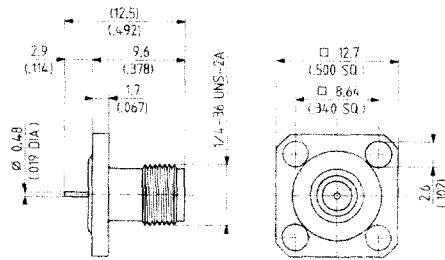
• centre contact captivated

cable groups see page 36

assembly tools see page 403

mounting holes see page 441

- > panel mounted
- > with panel seal



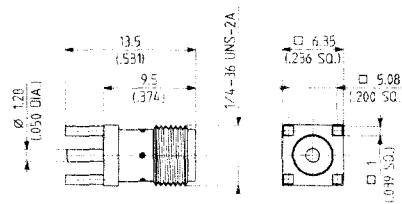
SUHNER TYPE	Ident. no.	Mounting hole	Variant	Pressure max.	Weight	Notes
23 SMA-50-0-6	• 641296		gold/CuBe	200 N/cm ² / 290 psi	2.30 g / .081 oz.	square flange

leak rate 10⁻⁶ Torr l/sec. (atm cc/s) max.

SMA

PCB Connectors

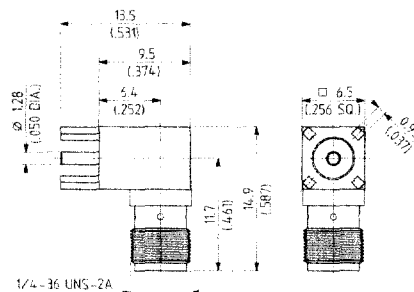
straight PCB jacks



SUHNER TYPE	Ident. no.	Mounting hole	CECC 22111	MIL M 39012/	Variant	Weight	Notes
82 SMA-50-0-1	• 543359	ML 41	811-01	93-4001	gold/CuBe	1.70 g / .060 oz.	
82 SMA-50-0-41	• 642243	ML 41			economic ¹⁾	1.70 g / .060 oz.	

1) use torque wrench 74 Z-0-0-79

right angle PCB jack



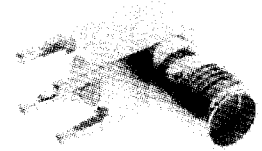
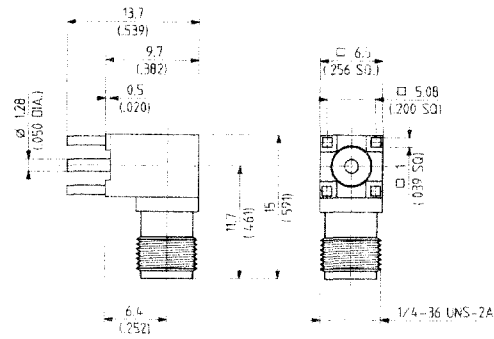
SUHNER TYPE	Ident. no.	Mounting hole	CECC 22111	MIL M 39012/	Variant	Weight	Notes
85 SMA-50-0-101	• 652140	ML 41	812-01	94-4001	gold/CuBe	3.60 g / .126 oz.	5.08 mm / .200 in. grid

- centre contact captivated

cable groups see page 36

assembly tools see page 403

mounting holes see page 441

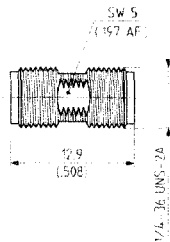


SUHNER TYPE	Ident. no.	Mounting hole			Weight	Notes
85 SMA-50-0-144	• 652171	ML 41			3.60 g/. 126 oz.	

Adaptors Within-Series

straight adaptors

> jack to jack



SUHNER TYPE	Ident. no.	MIL A 55339/	VSWR max.	Variant	Weight
31 SMA-50-0-1	• 640150	31-40001	1.05 + 0.005f/GHz, DC-18 GHz	gold/CuBe	1.50 g/. 0.53 oz.
31 SMA-50-0-51	• 641486		1.05 + 0.005f/GHz, DC-18 GHz	stainless steel	1.50 g/. 0.53 oz.

> plug to plug

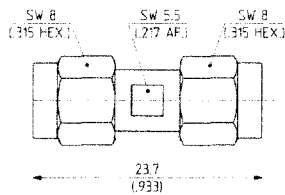


Fig. 1

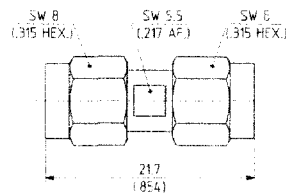
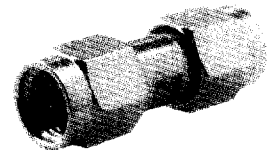


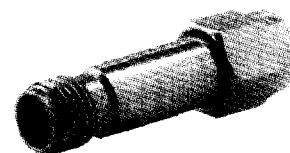
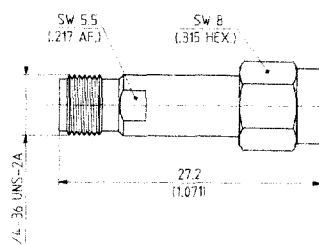
Fig. 2



SUHNER TYPE	Ident. no.	MIL A 55339/	VSWR max.	Variant	Weight	Fig.
32 SMA-50-0-1	• 640151		1.05 + 0.005f/GHz, DC-18 GHz	gold/CuBe	6.00 g/. 210 oz.	1
32 SMA-50-0-52	• 643689	29-30101	1.05 + 0.005f/GHz, DC-18 GHz	stainless steel	6.00 g/. 210 oz.	2

• centre contact captivated

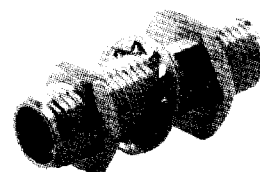
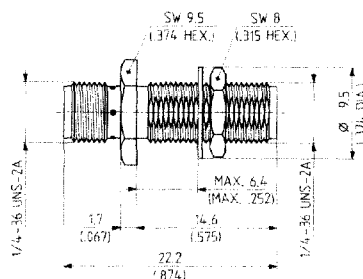
> plug to jack



SUHNER TYPE	Ident. no.	VSWR max.	Variant	Weight
33 SMA-50-0-1	● 641119	1.05 + 0.005f/GHz, DC-18 GHz	gold/CuBe	5.00 g/.175 oz.
33 SMA-50-0-51	● 644253	1.05 + 0.005f/GHz, DC-18 GHz	stainless steel	5.00 g/.175 oz.

> jack to jack

> bulkhead mounted

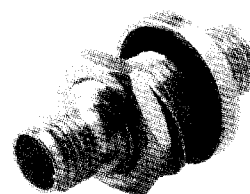
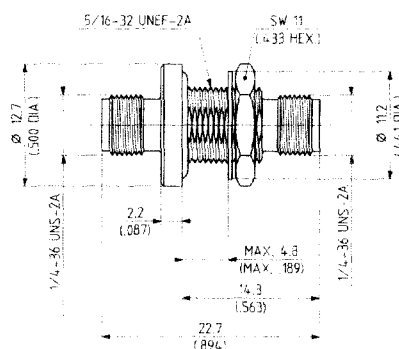


SUHNER TYPE	Ident. no.	Mounting hole	VSWR max.	Variant	Weight
34 SMA-50-0-1	● 649842	ML 35	1.05 + 0.005f/GHz, DC-18 GHz	gold/CuBe	4.00 g/.140 oz.
34 SMA-50-0-4*	● 658752	ML 2	1.05 + 0.005f/GHz, DC-18 GHz	gold/CuBe	4.00 g/.140 oz.
34 SMA-50-0-51	● 544823	ML 35	1.05 + 0.005f/GHz, DC-18 GHz	stainless steel	4.00 g/.140 oz.

* suitable for insulated mounting - insulating washers see page 425

> jack to jack

> hermetically sealed



SUHNER TYPE	Ident. no.	Mounting hole	MIL A 55339/	VSWR max.	Variant	Weight
34 SMA-50-0-3	● 641297	ML 38	28-40001	DC- 3 GHz ≤ 1.1 3 - 7 GHz ≤ 1.2 7 - 18 GHz ≤ 1.3 typ.	gold/CuBe	6.80 g/.238 oz.

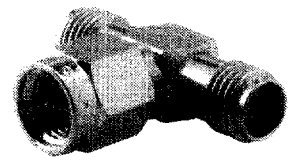
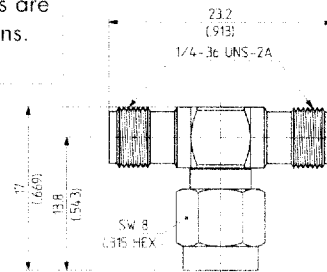
leak rate 10^{-6} Torr l/sec. (atm cc/s) max.

● centre contact captivated

T-adaptors

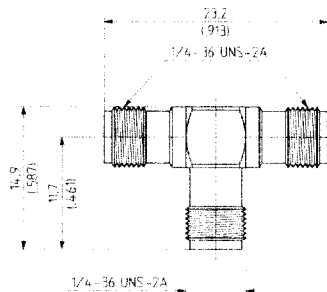
50 Ω nominal impedance. These connectors are non-matched 3 dB dividers for LF applications. VSWR ≥ 2.0 when terminated with 50 Ω .

> 1 plug, 2 jacks



SUHNER TYPE	Ident. no.	MIL M	Variant	Weight
43 SMA-50-0-1	• 543356	55339/ 30-40101	gold/CuBe	6.30 g/.221 oz.

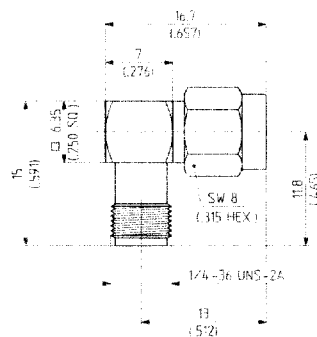
> 3 jacks



SUHNER TYPE	Ident. no.	Variant	Weight
46 SMA-50-0-1	• 543357	gold/CuBe	4.50 g/.158 oz.

right angle adaptors

> plug to jack

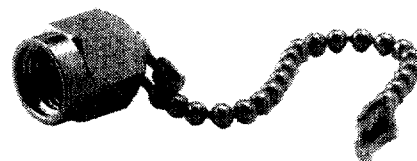
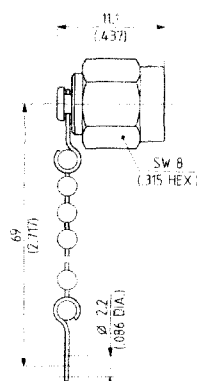


SUHNER TYPE	Ident. no.	VSWR			Variant	Weight
		DC-2 GHz	2-4 GHz	4-6 GHz		
53 SMA-50-0-1	• 640157	≤ 1.05	≤ 1.10	≤ 1.25	gold/CuBe	5.40 g/.189 oz.
53 SMA-50-0-51	• 642655	≤ 1.05	≤ 1.10	≤ 1.25	stainless steel	5.40 g/.189 oz.

• centre contact captivated

Protective Caps and Shorts

cap with chain for jacks



SUHNER TYPE	Ident. no.	Variant	Weight	Notes
62 SMA-0-0-1	640159	gold/CuBe	3.50 g/.123 oz.	non-shorting, humidity sealed

SMA

shorting caps

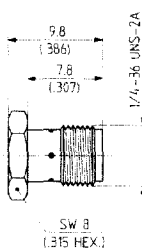


Fig. 1

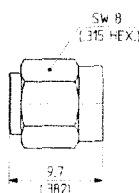


Fig. 2



SUHNER TYPE	Ident. no.	Variant	Weight	Fig.	Notes
63 SMA-50-0-1	• 640160	gold/CuBe	3.00 g/.105 oz.	1	SMA jack
64 SMA-50-0-1	• 640161	gold/CuBe	3.00 g/.105 oz.	2	SMA plug, humidity sealed

Terminations

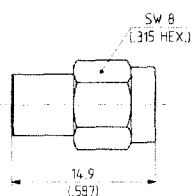


Fig. 1

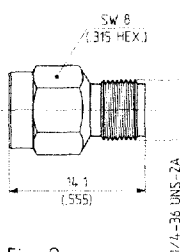
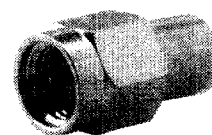


Fig. 2



SUHNER TYPE	Ident. no.	VSWR	DC-4	-10	12.4-14	-18 GHz	Interface	Impedance	Weight	Fig.
65 SMA-50-0-1	• 640162	≤ 1.05	≤ 1.1	≤ 1.15	≤ 1.25	plug	50Ω ± 1Ω	3.30 g/.116 oz.	1	
65 SMA-50-0-31	• 550158	≤ 1.05	≤ 1.1	≤ 1.15	≤ 1.25	jack	50Ω ± 1Ω	3.50 g/.123 oz.	2	

Permissible power: 1 watt at max. 30°C/86°F ambient temperature, derated linearly to zero watt at 130°C/266°F ambient temperature
Variant: gold/CuBe

• centre contact captivated

cable groups see pages 36

assembly tools see page 403

mounting holes see page 441

SMA Launchers with Transition Pins

SMA launchers have interchangeable transition pins and insulators.

This design offers many advantages as:

- connector replacement without disturbing the electronic circuit
- improved mechanical performance
- greater design flexibility (mechanical and electrical)
- reduced inventory costs

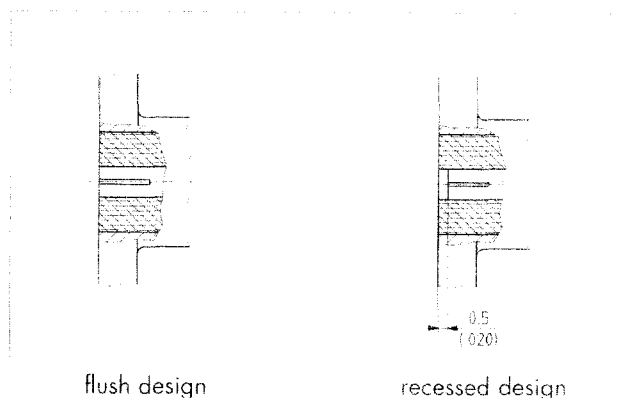
The launchers accept transition pins with a diameter of 0.92 mm/.036 in.

Connectors and pins have to be ordered separately. All parts conform to MIL C-83517.

Material

- connector housing made of stainless steel
- contacts made of beryllium-copper, gold plated

Connector housings are available with recessed or flush rear contact. The PTFE dielectric is always flush with the connector flange back.



Panel jacks

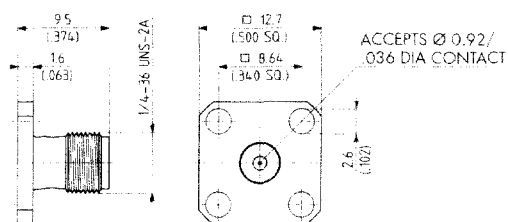


Fig. 1

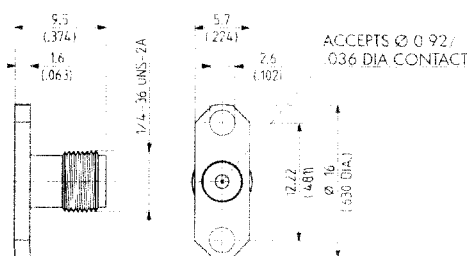


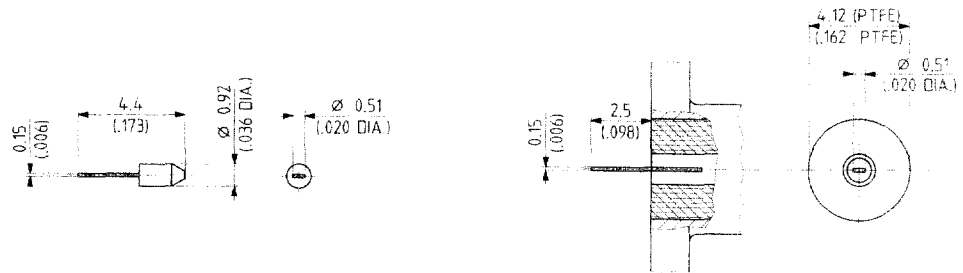
Fig. 2

SUHNER TYPE	Ident. no.	MIL C 83517/	Flange type	Weight	Fig.	Notes
23 SMA-50-0-165	• 644159	10-31003	square	2.30 g/.081 oz.	1	flush design
23 SMA-50-0-166	• 644160	10-31001	2-hole	1.60 g/.056 oz.	2	flush design
23 SMA-50-0-167	• 644155	10-31004	square	2.30 g/.081 oz.	1	recessed design
23 SMA-50-0-168	• 644156	10-31002	2-hole	1.60 g/.056 oz.	2	recessed design

• centre contact captivated

Transition Pins for Flush Launchers

tab contact



SUHNER TYPE	Ident. no.	Notes
73 Z-0-0-138	644145	package containing 10 pins

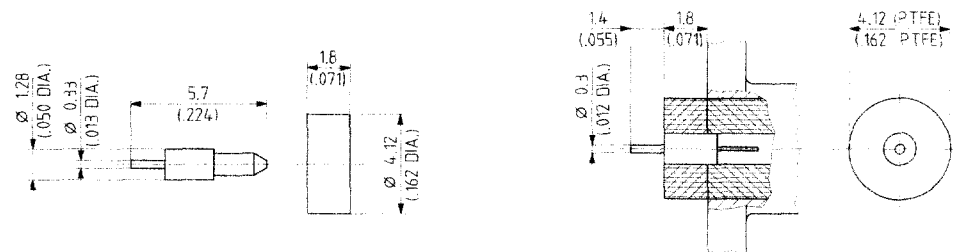
tab contact



SUHNER TYPE	Ident. no.	Notes
73 Z-0-0-139	644146	package containing 10 pins

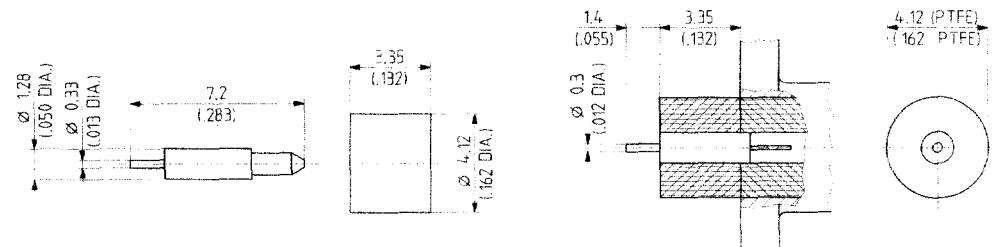
Transition Pins for Recessed Launchers

pin contact + bushing



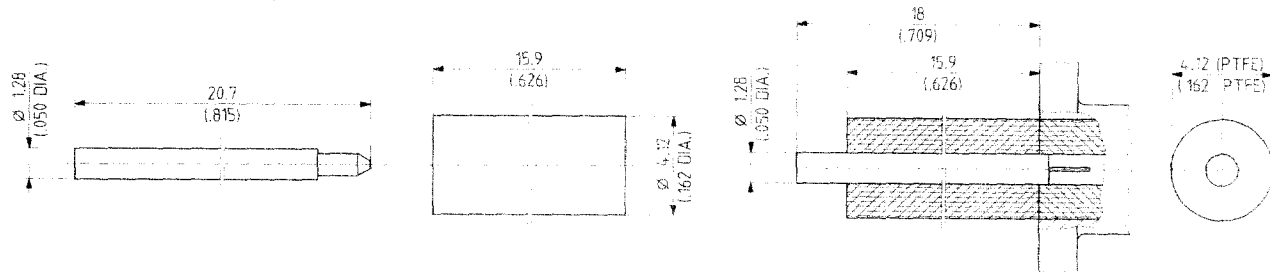
SUHNER TYPE	Ident. no.	Notes
73 Z-0-0-135	644150	package containing 10 pins and bushings

pin contact + bushing



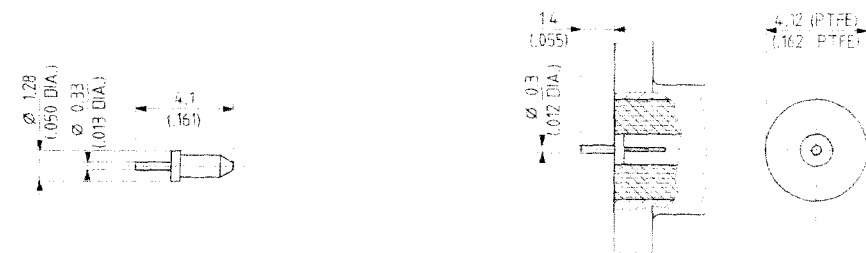
SUHNER TYPE	Ident. no.	Notes
73 Z-0-0-136	644151	package containing 10 pins and bushings

pin contact + bushing



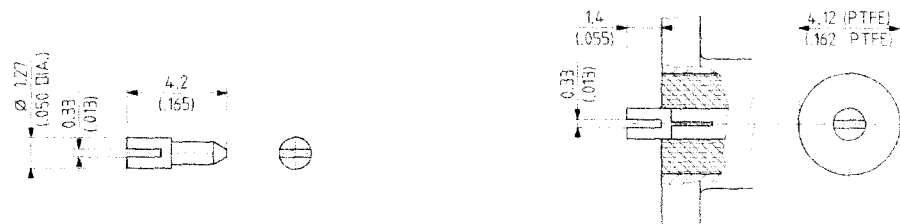
SUHNER TYPE	Ident. no.	Notes
73 Z-0-0-137	644152	package containing 10 pins and bushings

pin contact



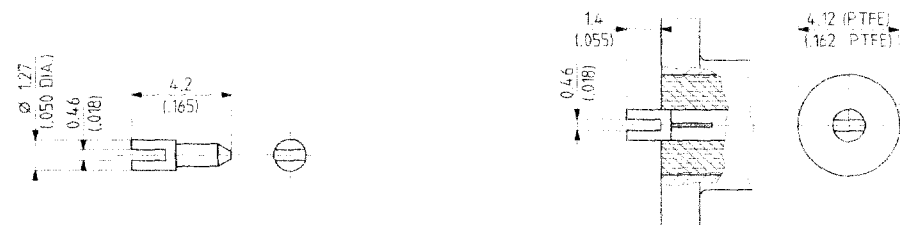
SUHNER TYPE	Ident. no.	Notes
73 Z-0-0-141	644147	package containing 10 pins and bushings

slotted contact



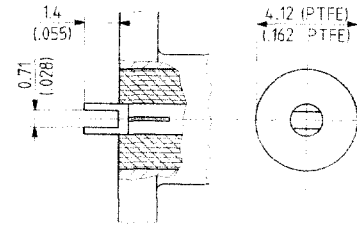
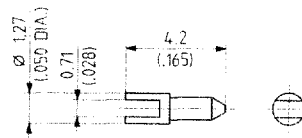
SUHNER TYPE	Ident. no.	Notes
73 Z-0-0-140	644142	package containing 10 pins

slotted contact



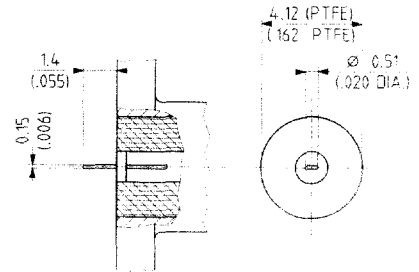
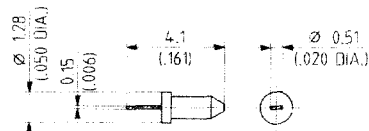
SUHNER TYPE	Ident. no.	Notes
73 Z-0-0-151	644143	package containing 10 pins

slotted contact



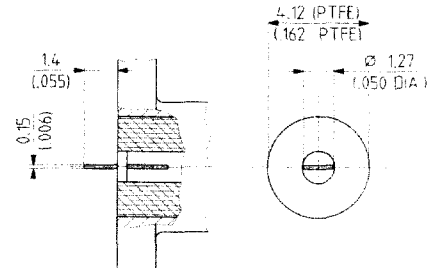
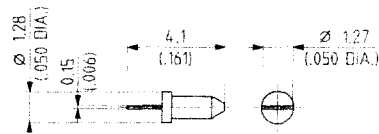
SUHNER TYPE	Ident. no.	Notes
73 Z-0-0-152	644144	package containing 10 pins

tab contact



SUHNER TYPE	Ident. no.	Notes
73 Z-0-0-142	644148	package containing 10 pins

tab contact



SUHNER TYPE	Ident. no.	Notes
73 Z-0-0-143	644149	package containing 10 pins

SMA Crimp-Connectors for Semi-Rigid Cables (SR-Crimp)

Assembly Procedure

Prepare cable



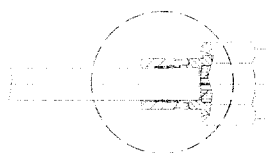
Push prepared cable into preassembled connector



Place cable and connector into crimping tool, squeeze and release



Assembly procedure completed



- ◆ fast and easy to assemble
- ◆ no soldering
- ◆ no heat influence on dielectric
- ◆ completely preassembled connectors (no loose piece parts)
- ◆ high repeatability
- ◆ intermateable with all other SMA connectors



Technical Data: SMA Crimp-Connectors for Semi-Rigid Cables

ELECTRICAL DATA	CABLE EZ 86	CABLE EZ 141
Frequency range	DC - 18 GHz	DC - 18 GHz
Impedance	50 Ω	50 Ω
VSWR (f in GHz)	see table for standard SMA page 121	see table for standard SMA page 121
Dielectric withstanding voltage	1.0 kV rms, 50 Hz	1.5 kV rms, 50 Hz
Working voltage	$\leq$ 335 V rms, 50 Hz	$\leq$ 500 V rms, 50 Hz
Insulation resistance	$\geq$ 5 · 10 ³ M Ω	$\geq$ 5 · 10 ³ M Ω
Contact resistance		
- centre contact	$\leq$ 3 m Ω	$\leq$ 2.5 m Ω
- outer contact	$\leq$ 3 m Ω	$\leq$ 2.5 m Ω

MECHANICAL DATA	CABLE EZ 86	CABLE EZ 141
Coupling nut torque		
- recommended	0.80 Nm ... 1.10 Nm / 7.1 in. lbs ... 9.7 in. lbs	
- proof torque	1.70 Nm / 15.0 in. lbs	
Cable retention force:		
- longitudinal force	$\geq$ 150 N / 33.7 lbs	$\geq$ 300 N / 67.4 lbs
- torque	$\geq$ 0.12 Nm / 1.06 in. lbs	$\geq$ 0.46 Nm / 4.07 in. lbs
Durability (matings)		$\geq$ 500

ENVIRONMENTAL DATA	MIL TEST CONDITIONS
Temperature range	- 65°C ... + 105°C / 85°F ... + 221°F
Vibration	MIL-STD-202, Method 204, Condition D
Corrosion	Saltspray test acc. to MIL-STD-202, Method 101, Condition B
Shock	MIL-STD-202, Method 213, Condition I
Moisture resistance	MIL-STD-202, Method 106

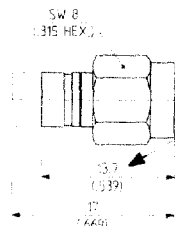
MATERIAL DATA

CONNECTOR PART	MATERIAL
Contact pins	beryllium-copper, gold plated
Connector bodies	stainless steel, passivated
Coupling nuts	stainless steel, passivated
Insulators	PTFE
Gaskets	silicone rubber

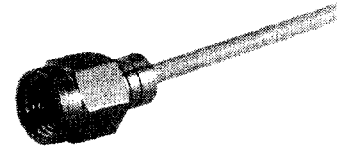
Some connectors may have a specification that differs from the above mentioned data.

straight plugs

- > with pin and insulator
- > outer contact SR-crimp
- > plug-in centre contact

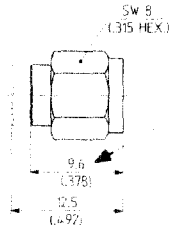


when assembled

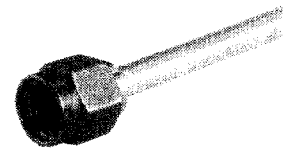


SUHNER TYPE	Ident. no.	Cable group (example)	Crimp insert Cable captivation	Crimp insert Cable positioning	Assembly instruction	Weight
11 SMA-50-2-70	• 645119	Y3 (EZ 86)	76 Z-0-0-68	76 Z-0-0-69	9184	3.80 g/.133 oz.
11 SMA-50-3-70	• 645120	Y5 (EZ 141)	76 Z-0-0-67	67 Z-0-0-69	9184	3.50 g/.123 oz.

- > without pin and dielectric
- > outer contact SR-crimp



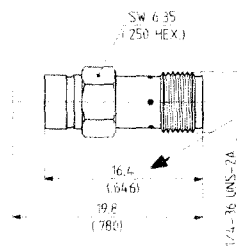
when assembled



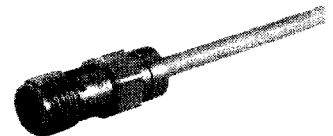
SUHNER TYPE	Ident. no.	Cable group (example)	Crimp insert Cable captivation	Crimp insert Cable positioning	Assembly instruction	Weight
11 SMA-50-3-73	• 646221	Y5 (EZ 141)	76 Z-0-0-67	76 Z-0-0-70	9184	2.10 g/.074 oz.

straight jacks

- > with pin and dielectric
- > outer contact SR-crimp
- > plug-in centre contact



when assembled



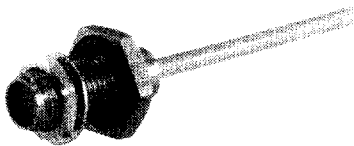
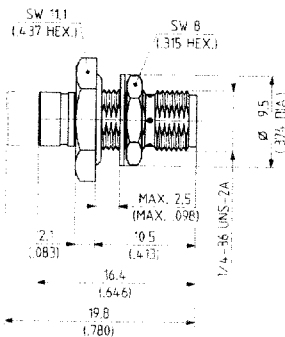
SUHNER TYPE	Ident. no.	Cable group (example)	Crimp insert Cable captivation	Crimp insert Cable positioning	Assembly instruction	Weight
21 SMA-50-2-70	• 646187	Y3 (EZ 86)	76 Z-0-0-68	76 Z-0-0-71	9184	2.40 g/.084 oz.
21 SMA-50-3-70	• 646188	Y5 (EZ 141)	76 Z-0-0-67	76 Z-0-0-71	9184	2.30 g/.081 oz.

- centre contact captivated

Note: Tin plated semi-rigid cables are not suitable for SMA Crimp-Connectors

bulkhead jacks

- > with pin and dielectric
- > with panel seal
- > suitable for insulated mounting
- > insulating washers see page 425



SUHNER TYPE	Ident. no.	Cable group (example)	Crimp insert Cable captivation	Crimp insert Cable positioning	Assembly instruction	Weight
24 SMA-50-2-70	• 646185	Y3 (EZ 86)	76 Z-0-0-68	76 Z-0-0-71	9184	3.70 g/.130 oz.
24 SMA-50-3-70	• 646186	Y5 (EZ 141)	76 Z-0-0-67	76 Z-0-0-71	9184	3.40 g/.119 oz.

mounting hole ML 35

- centre contact captivated

Note: Tin plated semi-rigid cables are not suitable for SMA Crimp-Connectors

SMA