SERIES SMA, SUBMINIATURE CONNECTORS

DESCRIPTION

HUBER+SUHNER SMA connectors are precision connectors for microwave applications up to 18 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. There is a huge variety of applications for HUBER+SUHNER SMA connectors, such as mobile communication, test & measurement, instruments, avionics, etc.

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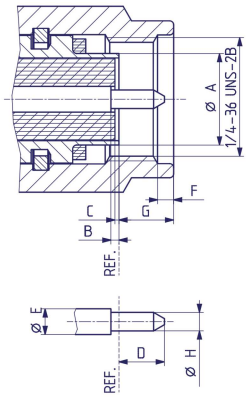
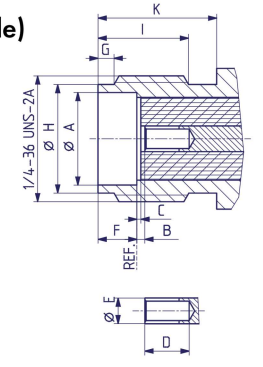
INTERFACE DIMENSIONS

Plug (male)



Jack (female)



INTERFACE DIMENSIONS (*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*	–

IP rating (interface, mated) IP68

Interface dimensions conformable to the Standards:

International:	**IEC 60169-15**	GB:	**BS 9210 N 0006**
Europe:	**CECC 22110**	F:	**NF-C-93563 (KMR)**
USA:	**MIL-C-39012, SMA**		
	Interface MIL-STD-348a/310		

TECHNICAL DATA

ELECTRICAL DATA	**MIL-C-39012**				
Cable type		semi-rigid		flexible	
Cable dielectric diameter (mm/*in.*)		1.5 / .066	3 / .117	1.5 / .066	3 / .117
Impedance		50 Ω			
Frequency range for interface		DC ... 18 GHz			
VSWR (typical value)		see table below			
RF-leakage measured at 3 GHz (f in GHz)	3.26	≥ 100 dB-f		≥ 60 dB	
Dielectric withstanding voltage (at sea level, in V rms, 50 Hz)	3.17	1000	1500	750	1000
Working voltage (at sea level, in V rms, 50 Hz)		335	500	250	335
Corona extinction voltage (at 21 000 m/*70 000 ft.*, in V rms, 50 Hz)	3.22	250	375	190	250
Working voltage (at 21 000 m/*70 000 ft.*, in V rms, 50 Hz)		85	125	65	85
RF withstanding voltage at 5 MHz (V rms)	3.23	670	1000	500	670
Insulation resistance	3.11	≥ $5 \cdot 10^3$ MΩ			
Contact resistance - centre contact - outer contact	3.16	≤ 3mΩ ≤ 2.5 mΩ			

TYPICAL VSWR	**FREQUENCY RANGE**					
CONNECTOR TYPE	**1 GHz**	**2.5 GHz**	**5 GHz**	**12.4 GHz**	**18 GHz**	**CABLE GROUP**
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

MECHANICAL DATA	MIL-C-39012	
Recommended coupling nut torque		standard: 0.8 Nm ... 1.1 Nm / *7.1 in. lbs. ... 9.7 in. lbs* brass: 0.45 Nm / *4.0 in. lbs*
Coupling nut retention force	3.25	≥ 270 N / *60.7 lbs*
Contact captivation - axial	3.12	≥ 27 N / *6.1 lbs*
Cable retention force[1)]		see pages 28 – 34
Durability (matings)		≤ 500

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

ENVIRONMENTAL DATA	TEST CONDITIONS
Temperature range	– 65°C ... + 165°C / – 85 °F ... + 329 °F
Climatic category	IEC → 55/155/21
Thermal shock	MIL-STD-202, Method 107, Condition B
Moisture resistance	MIL-STD-202, Method 106
Corrosion	Saltspray test acc. to MIL-STD-202, Method 101, Condition B
Vibration	MIL-STD-202, Method 204, Condition D
Shock	MIL-STD-202, Method 213, Condition I

MATERIAL DATA		
CONNECTOR PART	**MATERIAL**	**PLATING**
Bodies, outer contacts	copper-beryllium alloy stainless steel brass spring bronze	gold passivated SUCOPLATE®, gold gold
Pin contacts	copper-beryllium alloy, brass	gold
Socket contacts	copper-beryllium alloy spring bronze	gold
Crimp ferrules	copper, brass	gold
Insulators	PTFE or PFA	
Gaskets	silicone rubber	

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

The products are designed and guaranteed to pass the above mentioned test procedures. Any additional or different requirement arising from specific applications or environmental conditions which is not covered by these test procedures is subject to request.

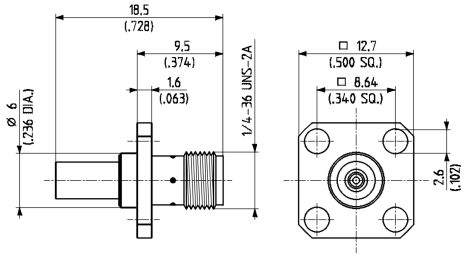
> for flexible cables

> cable entry crimp

> centre contact soldered

> square flange

> taper sleeves see page 406



HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Assembly instruction/ Mounting hole	Plating body	Crimp insert
25_SMA-50-2-5/111_NH	**22650755**	U2 (RG 316/U)	bulk 100 pcs.	3072 / ML 19	gold	A
25_SMA-50-2-6/111_NE	**22640113**	U4 (K 02252 D)	single	3072 / ML 19	gold	A
25_SMA-50-2-46/133_NE	**22642246**	U4 (K 02252 D)	single	3072 / ML 19	SUCOPLATE®1)	A

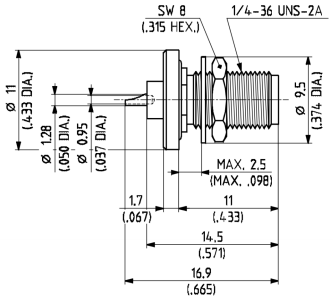
1) use torque wrench 74_Z-0-0-79

RECEPTACLES WITH SOLDER END

Receptacles, jacks (female)

> bulkhead mounted

> with panel seal



HUBER+SUHNER type	Item no.	Packaging	Plating body	Mounting hole	Notes
22_SMA-50-0-1/111_NE	**22640087**	single	gold	ML 20	rear mounting

Cable groups see page 28 | Assembly tools see page 385 | Mounting holes see page 412