



# SERIES SMB SUBMINIATURE CONNECTORS

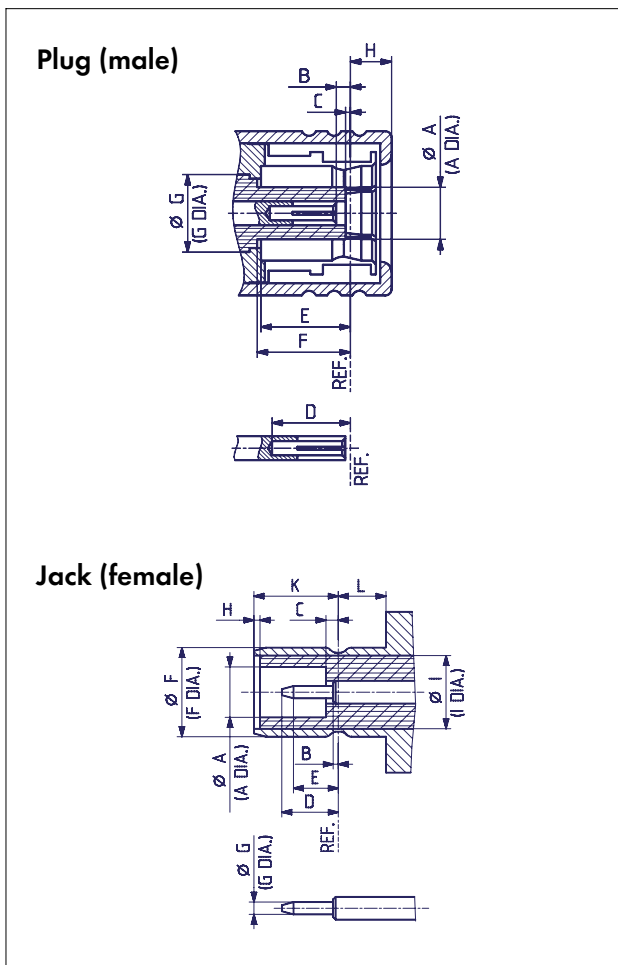
## DESCRIPTION

The HUBER+SUHNER subminiature connectors Series SMB, SMC, SMS have the same basic design. They only differ with regard to their coupling mechanism. HUBER+SUHNER SMB subminiature connectors are suitable for applications from DC up to 4 GHz.

### Coupling mechanism:

The SMB snap-on mechanism provides a fast and reliable connection for applications with high packing density.

## INTERFACE DIMENSIONS



## CONTENTS

## PAGE

Description	91
Interface dimensions	91
Interface dimensions in mm / inches	91
Technical data	92
Cable connectors	94
Receptacles with solder end	97
PCB connectors	99

SMB

## INTERFACE DIMENSIONS (MM / INCHES)

	Plug		Jack	
	min.	max.	min.	max.
A	–	2.06/.081	2.08/.082	–
B	0.18/.007	0.94/.037	–	0.18/.007
C	0.18/.007	–	–	0.18/.007
D	2.97/.117	–	–	2.97/.117
E	3.58/.141	–	1.32/.052	–
F	3.58/.141	–	3.66/.144	3.71/.146
G	3.05/.120 nom.		0.48/.019	0.53/.021
H	–	1.63/.064	0.00/.000	–
I	–	–	3.05/.120 nom.	
K	–	–	3.33/.131	3.58/.141
L	–	–	1.65/.065	–

**Note:** HUBER+SUHNER SMB jacks are interchangeable with HUBER+SUHNER SMS plugs.

### Interface dimensions conformable to the Standards:

International:	<b>IEC 60169-10</b>
Europe:	<b>CECC 22130</b>
USA:	<b>MIL-C-39012 SMB</b> <b>Interface MIL-STD-348A/311</b>
Great Britain:	<b>BS 9210 N 0007 SMB</b>
France:	<b>NFC 93562 series KMC</b>

**IP rating (interface, mated) IP50**

## TECHNICAL DATA

ELECTRICAL DATA	REQUIREMENTS
Impedance	50 $\Omega$
Frequency range	DC ... 4 GHz
Dielectric withstanding voltage (at sea level)	750 V rms, 50 Hz (depending on cable)
Working voltage (at sea level)	250 V rms for cables with 1 mm / 0.039 in. dielectric 335 V rms for cables with 2 mm / 0.078 in. dielectric
Insulation resistance	$\geq 10^4$ M $\Omega$
Contact resistance - centre contact - outer contact	$\leq 5$ m $\Omega$ $\leq 2.5$ m $\Omega$
RF-leakage (measured at 1 GHz)	$\geq 55$ dB

MECHANICAL DATA	REQUIREMENTS
Engagement force	8 N ... 63 N / 1.8 lbs ... 14.2 lbs
Disengagement force	8 N ... 63 N / 1.8 lbs ... 14.2 lbs
Contact captivation	$\geq 18$ N / 4.0 lbs
Cable retention force <sup>1)</sup>	see pages 28 - 34
Durability (matings)	$\geq 500$

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

MATERIAL DATA		
CONNECTOR PARTS	MATERIAL	PLATING
Bodies	brass	gold or SUCOPLATE®
Pin contacts	brass	gold
Socket contacts	copper-beryllium alloy	gold
Crimp ferrules	copper / brass	gold or SUCOPLATE®
Springs and washers	copper-beryllium alloy	gold or SUCOPLATE®
Insulators	PTFE or PFA	

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

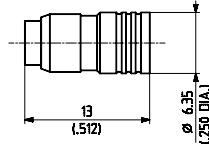
**The products are designed and guaranteed to pass the above mentioned test procedures. Any additional or different requirement arising from specific applications or environmental conditions which is not covered by these test procedures is subject to request.**

## CABLE CONNECTORS

### Straight cable plugs (male)

#### > for semi-rigid cables

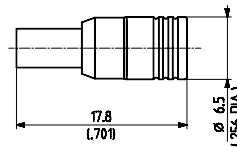
- > open entry
- > cable entry soldered
- > centre contact crimp or soldered



HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Assembly instruction	Crimp insert
11_SMB-50-2-13/111_NH	22658765	Y3, Y11 (EZ 86)	bulk 100 pcs.	9002	1

#### > for flexible cables

- > closed entry
- > HUBER+SUHNER® full crimp
- > taper sleeves see page 406

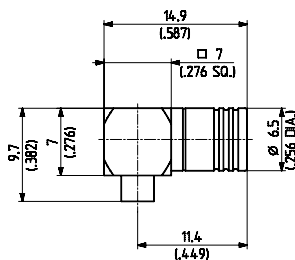


HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Assembly instruction	Crimp insert
11_SMB-50-1-40/111_NH	22650186	U1 (RG 178 B/U)	bulk 100 pcs.	3077	1A
11_SMB-50-2-40/111_NH	23017717	U2 (RG 316/U)	bulk 100 pcs.	3077	1A
11_SMB-50-2-41/111_NH	22650536	U4 (K 02252 D)	bulk 100 pcs.	3077	1A

### Right angle cable plugs (male)

#### > for semi-rigid cables

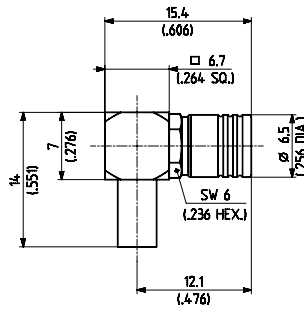
- > closed entry
- > cable entry soldered
- > centre contact soldered



HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Assembly instruction	Notes
16_SMB-50-2-23/111_NE	22644079	Y3, Y11 (EZ 86)	single	9160	

> for flexible cables

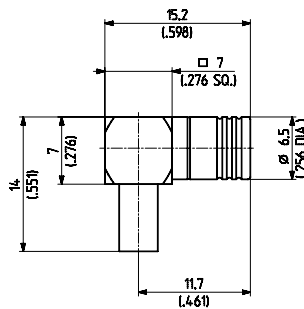
- > closed entry
- > HUBER+SUHNER® full crimp
- > taper sleeves see page 406



HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Assembly instruction	Crimp insert
16_SMB-50-1-40/111_NE	22648053	U1 (RG 178 B/U)	single	3096	1A
16_SMB-50-2-40/111_NH	22650695	U2 (RG 316/U)	bulk 100 pcs.	3096	1A
16_SMB-50-2-41/111_NH	22660335	U4 (K 02252 D)	bulk 100 pcs.	3096	1A

> for flexible cables

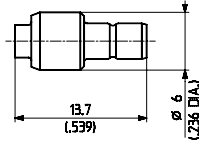
- > closed entry
- > cable entry crimp
- > centre contact soldered
- > taper sleeves see page 406



HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Assembly instruction	Crimp insert
16_SMB-50-1-50/111_NE	22648056	U1 (RG 178 B/U)	single	9157	A
16_SMB-50-2-50/111_NH	23011371	U2 (RG 316/U)	bulk 100 pcs.	9157	A
16_SMB-50-2-51/111_NH	22658985	U4 (K 02252 D)	bulk 100 pcs.	9157	A

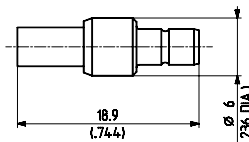
## Straight cable jacks (female)

- > for semi-rigid cables
- > cable entry soldered
- > centre contact crimp or soldered



HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Assembly instruction	Crimp insert
21_SMB-50-2-13/111_NE	22543425	Y3, Y11 (EZ 86)	single	9002	1

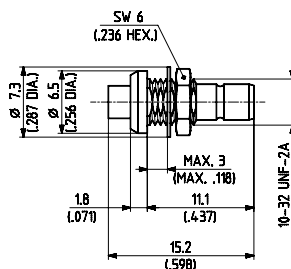
- > for flexible cables
- > HUBER+SUHNER® full crimp
- > taper sleeves see page 406



HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Assembly instruction	Crimp insert
21_SMB-50-1-10/111_NE ☒	22543424	U1 (RG 178 B/U)	single	3077	1A
21_SMB-50-2-10/111_NH	22651810	U2 (RG 316/U)	bulk 100 pcs.	3077	1A
21_SMB-50-2-11/111_NE	22642407	U4 (K 02252 D)	single	3077	1A

## Straight bulkhead cable jacks (female)

- > for semi-rigid cables
- > cable entry soldered
- > centre contact crimp or soldered



HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Assembly instruction/ Mounting hole	Crimp insert
24_SMB-50-2-13/111_NE ☒	22640822	Y3, Y11 (EZ 86)	single	9002 / ML 11	1

☒ centre contact NOT captivated

> for flexible cables

- > HUBER+SUHNER® full crimp
- > rear mounting
- > taper sleeves see page 406

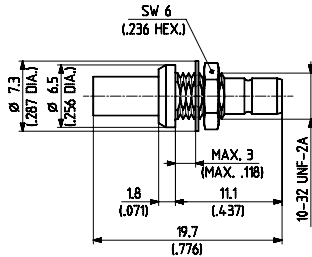


Fig. 1

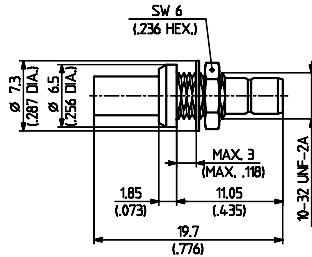


Fig. 2



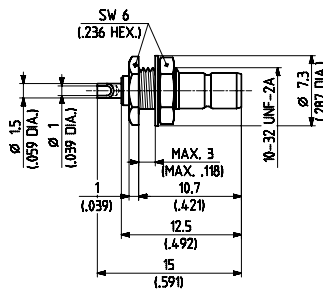
HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Assembly instruction	Crimp insert	Fig.
24_SMB-50-1-10/111_NE	22543631	U1 (RG 178 B/U)	single	3077	1A	1
24_SMB-50-2-110/111_NH	22659126	U2 (RG 316/U)	bulk 100 pcs.	3077	1A	2
24_SMB-50-2-111/111_NH	22659130	U4 (K 02252 D)	bulk 100 pcs.	3077	1A	2

mounting hole ML 11

## RECEPTACLES WITH SOLDER END

### Receptacles, jacks (female)

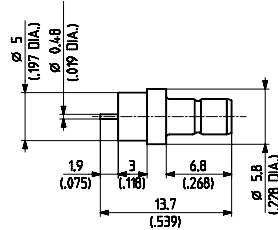
- > bulkhead mounted
- > rear mounting
- > insulating washers see page 408



HUBER+SUHNER type	Item no.	Packaging	Mounting hole
22_SMB-50-0-3/111_NE	22640207	single	ML 11

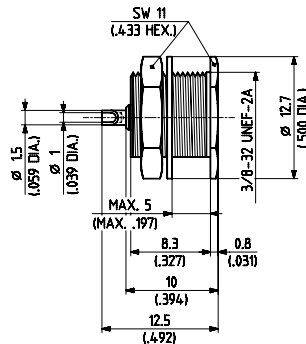
☒ centre contact NOT captivated

- > bulkhead mounted
- > hermetically sealed
- > suited for microstrip-circuits for direct soldering (250 °C / 482 ° F max.)
- > RoHS compliant alternative on request



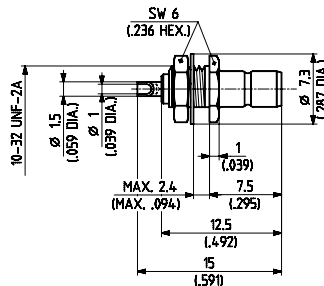
HUBER+SUHNER type	Item no.	Packaging	Mounting hole	VSWR DC...3 GHz	3...4 GHz	Leak rate
22_SMB-50-0-5/111_NE	22640209	single	ML 90	≤ 1.2	≤ 1.4	≤ 10 <sup>-8</sup> Torr. l./sec.(atm cc/s)

- > bulkhead mounted
- > non protrusive
- > front mounting



HUBER+SUHNER type	Item no.	Packaging	Mounting hole
22_SMB-50-0-11/111_NE	22640210	single	ML 2

- > bulkhead mounted
- > front mounting
- > insulating washers see page 408



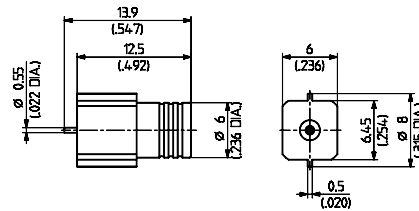
HUBER+SUHNER type	Item no.	Packaging	Mounting hole	Plating body	Notes
22_SMB-50-0-2/133_NH	22651503	bulk 100 pcs.	ML 11	SUCOPLATE®	



## PCB CONNECTORS

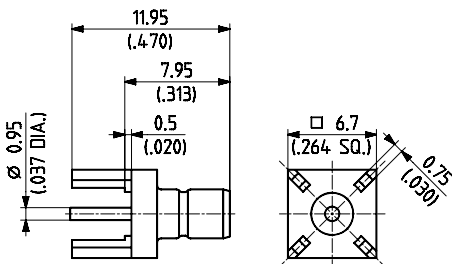
### Straight PCB plugs (male)

- > open entry
- > surface mount type SMT
- > edge mount



HUBER+SUHNER type	Item no.	Packaging	Mounting hole	Notes
81_SMB-S50-0-4/111_NM	23001011	tape and reel	ML 131	

### Straight PCB jacks (female)



> with stand-off

Fig. 1

> with stand-off

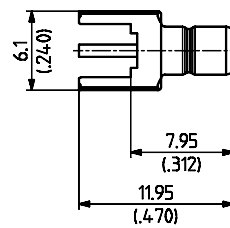


Fig. 2

> without stand-off

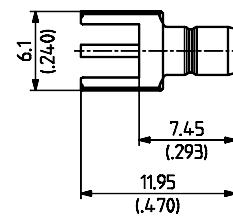
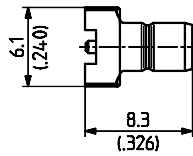


Fig. 3



HUBER+SUHNER type	Item no.	Packaging	Mounting hole	Plating body	Fig.	Notes
82_SMB-50-0-1/111_NH	23017254	bulk 100 pcs.	ML 15	SUCOPRO	1	2.54 mm / .100 in. grid
82_SMB-50-0-17/111_NH	23010991	bulk 100 pcs.	ML 15	SUCOPRO	2	2.54 mm / .100 in. grid
82_SMB-50-0-17/111_NM	23013254	tape and reel	ML 15	SUCOPRO	2	2.54 mm / .100 in. grid
82_SMB-50-0-19/111_NH	23011018	bulk 100 pcs.	ML 15	SUCOPRO	3	2.54 mm / .100 in. grid

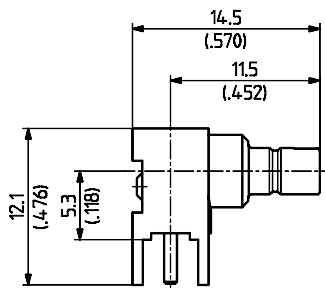
> surface mount type SMT



HUBER+SUHNER type	Item no.	Packaging	Mounting hole	Plating body	Notes
82_SMB-S50-0-18/111_NH	23010995	bulk 100 pcs.	ML 122	SUCOPRO	

### Right angle PCB jacks (female)

> with stand-off



HUBER+SUHNER type	Item no.	Packaging	Mounting hole	Plating body	Notes
85_SMB-Z50-0-19/111_NH	23010999	bulk 100 pcs.	ML 15	SUCOPRO	2.54 mm / .100 in. grid