



# SERIES MMCX

## MINIATURE MICROAX CONNECTORS

MMCX

### Description

SUHNER® MMCX connectors are intended for use in applications where the smallest dimensions have to be achieved. MMCX connectors can be used in applications from DC to 6 GHz.

The reliable "snap-on" coupling mechanism ensures that the electrical parameters are consistently reproduced.

Due to its non-slotted outer contact, the MMCX series provides a low RF-leakage.

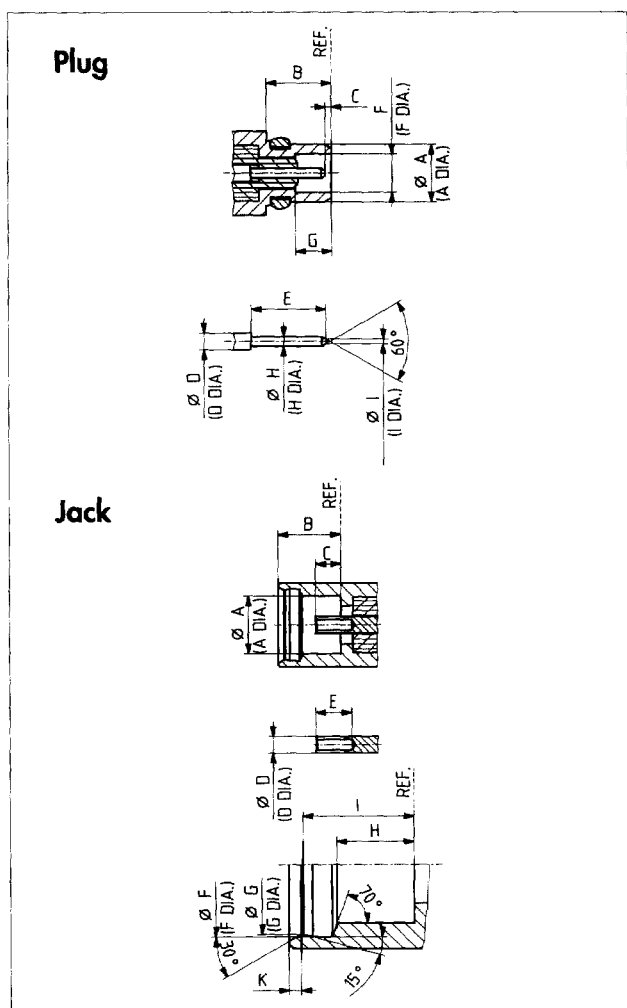
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### Interface Dimensions

### Interface Dimensions in mm / inches



	Plug		Jack	
	min.	max.	min.	max.
A	—	2.40/.094	2.41/.095	—
B	2.70/.106	—	2.60/.102	—
C	0.00/.000	0.25/.010	0.90/.035	1.20/.047
D	0.70/.028 nom.		0.70/.028 nom.	
E	—	3.15/.124	1.40/.055	—
F	1.58/.062	1.62/.064	3.00/.118	3.04/.120
G	1.45/.057	—	2.88/.113	2.90/.114
H	0.38/.015	0.42/.017	1.57/.062	1.63/.064
I	—	0.20/.008	2.30/.091	2.34/.092
K	—	—	—	0.23/.009

## Technical Data

ELECTRICAL DATA	CECC 22000	TEST REQUIREMENTS
Impedance		50 $\Omega$
Frequency range		DC ... 6 GHz (see also Appendix page 436)
VSWR	4.4.1	see table below
RF leakage (measured at 1 GHz) – connectors for flexible cables – connectors for semi-rigid cables	4.4.8	$\geq 60$ dB $\geq 70$ dB
Dielectric withstanding voltage (at sea level)	4.4.5	500 V rms, 50 Hz
Working voltage (at sea level)		$\leq 170$ V rms, 50 Hz
Insulation resistance	4.4.4	$\geq 10^3$ M $\Omega$
Contact resistance – centre contact – outer contact	4.4.2 4.4.3	$\leq 5.0$ m $\Omega$ $\leq 2.5$ m $\Omega$

TYPICAL VSWR	FREQUENCY RANGE			CABLE GROUP
	1 GHz	2.5 GHz	6 GHz	
straight connectors	1.03	1.08	1.12	Y3, Y11
	1.04	1.08	1.12	U1
right angle connectors	1.03	1.08	1.13	Y3, Y11
	1.07	1.12	1.25	U1

Other connectors and cables on request

MECHANICAL DATA	CECC 22000	TEST REQUIREMENTS
Engagement force	4.5.4	$\leq 15$ N / 3.4 lbs
Disengagement force	4.5.4	6 N ... 15 N / 1.4 lbs ... 3.4 lbs
Contact captivation	4.5.2	$\geq 10$ N / 2.3 lbs
Cable retention forces <sup>1)</sup>	4.5.5	see pages 36 – 41
Durability (matings)	4.7.1	$\geq 500$

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

ENVIRONMENTAL DATA	CECC 2300 TEST CONDITIONS	EQUIVALENT MIL TEST CONDITIONS
Temperature range		- 55°C ... + 155°C / - 67°F ... + 311°F
Climatic category acc. to IEC	4.6.5 → 55 / 155 / 21	
Thermal shock	4.6.7 → IEC 68-2-14 Na	MIL-STD-202, Method 107, Condition F
Moisture resistance	4.6.6 → IEC 68-2-3 Ca	MIL-STD-202, Method 106
Corrosion	4.6.10 → IEC 68-2-11 Ka	Saltspray test acc. to MIL-STD-202, Method 101, Condition B
Vibration	4.6.3 → IEC 68-2-6 Fc	MIL-STD-202, Method 204, Condition C

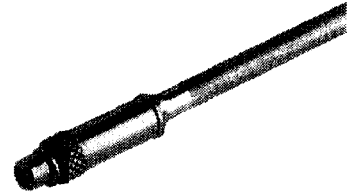
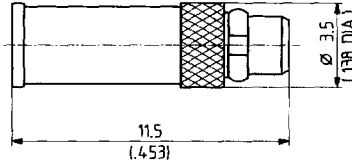
MATERIAL DATA			
CONNECTOR PART	STANDARDS	MATERIAL	PLATING
Bodies, Crimp ferrules	QQ-B-626	brass	gold
Centre contacts	QQ-C-530	beryllium-copper, hardened	gold
Insulators	ASTM-D-1457, BS 4271 Grade B	PTFE	

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

# Cable Connectors for Semi-Rigid Cables

## straight plugs

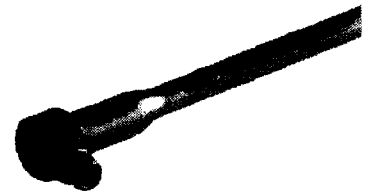
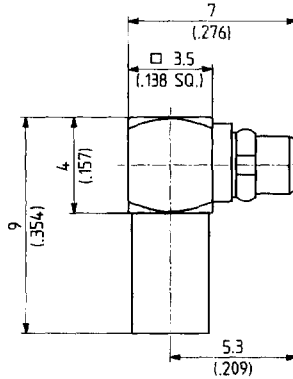
- > cable entry soldered
- > centre contact crimped



SUHNER TYPE	Ident. no.	Cable group (example)	Crimp size	Assembly instruction	Weight	Notes
11 MMCX-50-1-3	648893	Y2 (EZ 47)	1	9078	0.50 g/.018 oz.	crimp insert 76 Z-0-2-53
11 MMCX-50-2-1	645297	Y3, Y11 (EZ 86)	1	9170	0.50 g/.018 oz.	crimp insert 76 Z-0-2-53

## right angle plugs

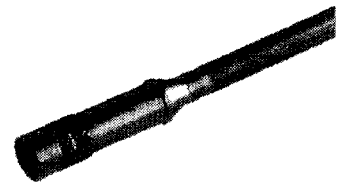
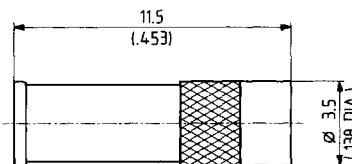
- > cable entry soldered
- > centre contact soldered



SUHNER TYPE	Ident. no.	Cable group (example)	Assembly instruction	Weight	Notes
16 MMCX-50-1-4	649182	Y2 (EZ 47)	9077	0.65 g/.023 oz.	
16 MMCX-50-2-1	645957	Y3, Y11 (EZ 86)	9176	0.65 g/.023 oz.	

## straight jack

- > cable entry soldered
- > centre contact crimped

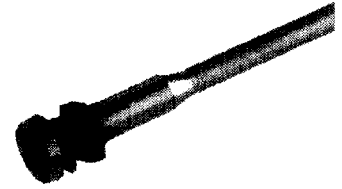
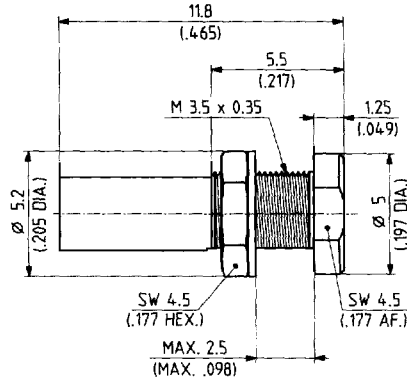


SUHNER TYPE	Ident. no.	Cable group (example)	Crimp size	Assembly instruction	Weight	Notes
21 MMCX-50-2-1	645290	Y3, Y11 (EZ 86)	1	9170	0.50 g/.018 oz.	crimp insert 76 Z-0-2-53

- centre contact captivated

## straight bulkhead jacks

- > cable entry soldered
- > centre contact crimped



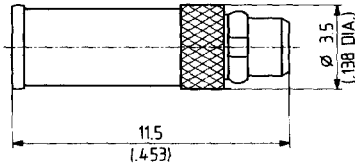
MMCX

SUHNER TYPE	Ident. no.	Cable group (example)	Crimp size	Assembly instruction	Weight	Notes
24 MMCX-50-2-1	645954	Y3, Y11 (EZ 86)	1	9170	0.60 g/.021 oz.	crimp insert 76 Z-0-2-53 mounting hole ML 68

## Cable Connectors for Flexible Cables

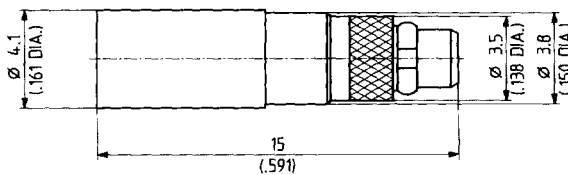
### straight plugs

- > SUHNER® full crimp



SUHNER TYPE	Ident. no.	Cable group (example)	Crimp size	Assembly instruction	Weight	Notes
11 MMCX-50-1-1	645298	U1 (RG 178 B/U)	1 / 2.67	9169	0.50 g/.018 oz.	

- > SUHNER® full crimp

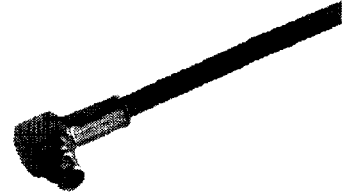
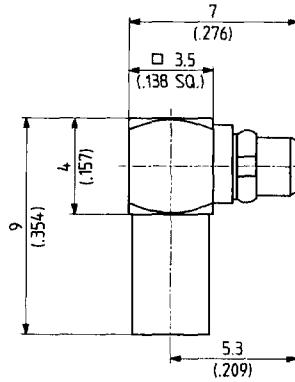


SUHNER TYPE	Ident. no.	Cable group (example)	Crimp size	Assembly instruction	Weight	Notes
11 MMCX-50-2-3	649899	U2 (RG 316/U)	1A	9110	0.83 g/.029 oz.	
11 MMCX-50-2-4	649901	U4 (K 02252 D)	1A	9110	0.83 g/.029 oz.	

- centre contact captivated

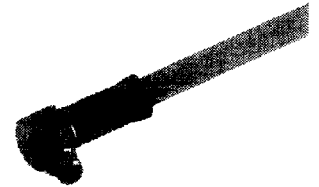
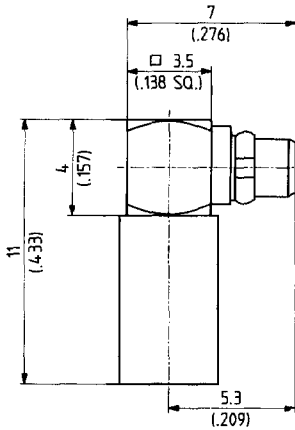
## right angle plug

- > cable entry crimp
- > centre contact soldered



SUHNER TYPE	Ident. no.	Cable group (example)	Crimp size	Assembly instruction	Weight	Notes
16 MMCX-50-1-1	645955	U1 (RG 178 B/U)	2.67	9175	0.65 g/.023 oz.	

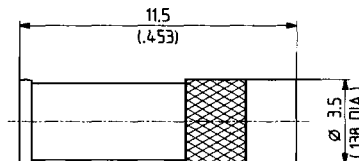
- > cable entry crimp
- > centre contact soldered



SUHNER TYPE	Ident. no.	Cable group (example)	Crimp size	Assembly instruction	Weight	Notes
16 MMCX-50-2-2	649374	U4 (K 02252 D)	A	9128	0.86 g/.030 oz.	
16 MMCX-50-2-4	649433	U5 (RG 187 A/U)	A	9128	0.86 g/.030 oz.	

## straight jack

- > SUHNER® full crimp

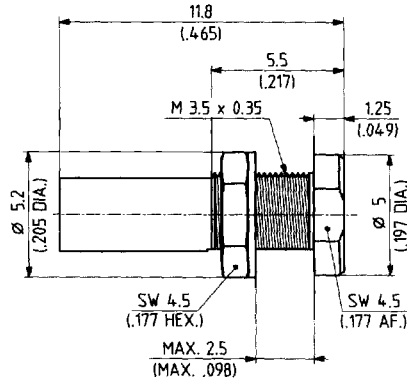


SUHNER TYPE	Ident. no.	Cable group (example)	Crimp size	Assembly instruction	Weight	Notes
21 MMCX-50-1-1	645288	U1 (RG 178 B/U)	1 / 2.67	9169	0.50 g/.018 oz.	

- centre contact captivated

## straight bulkhead jack

- > SUHNER® full crimp
- > front mounting



MMCX

SUHNER TYPE	Ident. no.	Cable group (example)	Crimp size	Assembly instruction	Weight	Notes
24 MMCX-50-1-1	645952	U1 (RG 178 B/U)	1 / 2.67	9169	0.60 g / .021 oz.	mounting hole ML 68

- > SUHNER® full crimp
- > rear mounting

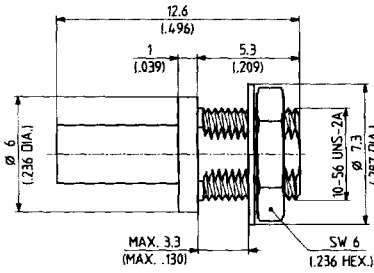


Fig. 1

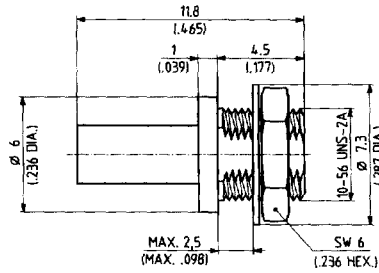


Fig. 2



SUHNER TYPE	Ident. no.	Cable group (example)	Crimp size	Assembly instruction	Weight	Fig.	Notes
24 MMCX-50-1-6	652041	U1 (RG 178 B/U)	1 / 2.67	6169	0.60 g / .021 oz.	1	mounting hole ML 11
24 MMCX-50-2-6	650605	Y3, Y11 (EZ 86)	1*	9170	0.60 g / .021 oz.	2	mounting hole ML 11

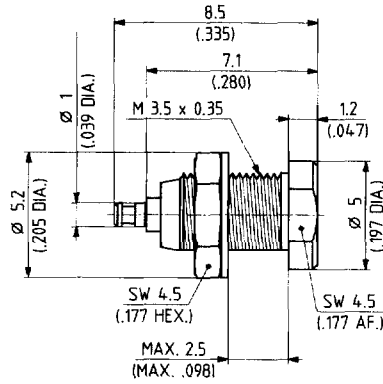
\* crimp insert 76 Z-0-2-53

- centre contact captivated

## Receptacle with Solder Ends

receptacle, female

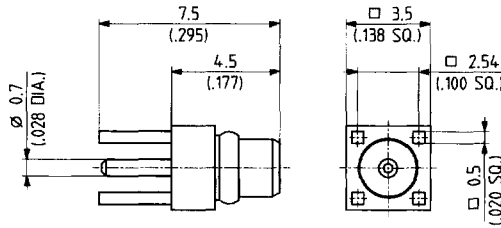
> bulkhead mounted



SUHNER TYPE	Ident. no.	Mounting hole	Weight	Notes
22 MMCX-50-0-1	645951	ML 68	0.45 g/.016 oz.	

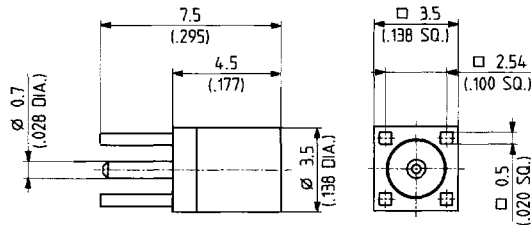
## PCB Connectors

straight PCB plug



SUHNER TYPE	Ident. no.	Mounting hole	Weight	Notes
81 MMCX-50-0-1	646298	ML 44	0.25 g/.009 oz.	without stand-offs

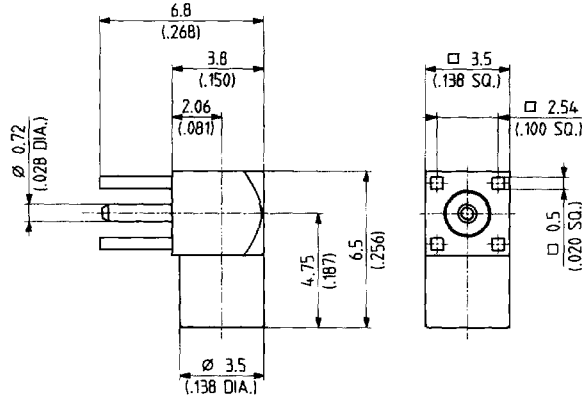
straight PCB jack



SUHNER TYPE	Ident. no.	Mounting hole	Weight	Notes
82 MMCX-50-0-1	645958	ML 44	0.25 g/.009 oz.	without stand-offs

• centre contact captivated

## right angle PCB jack

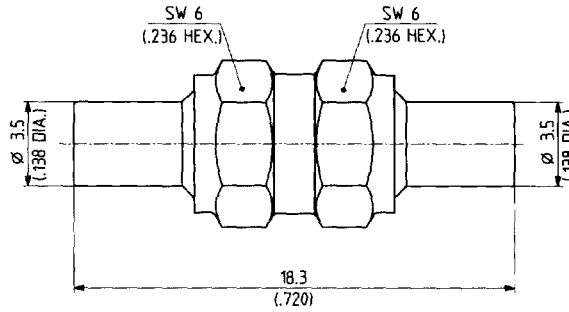


SUHNER TYPE	Ident. no.	Mounting hole	Weight	Notes
85 MMCX-50-0-1 •	645968	ML 44	0.45 g/.016 oz.	without stand-offs

## Adaptors Within-Series

### straight adaptor

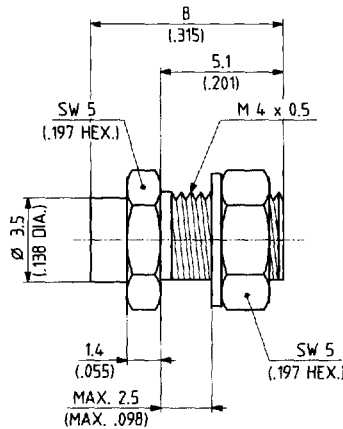
> jack to jack



SUHNER TYPE	Ident. no.	Weight	Notes
31 MMCX-50-0-1 •	645960	2.10 g/.074 oz.	DC - 6 GHz: ≤ 1.10

### bulkhead adaptor

> jack to jack



SUHNER TYPE	Ident. no.	Mounting hole	Weight	Notes
34 MMCX-50-0-1 •	650516	ML 88	0.67 g/.023 oz.	DC - 1.5 GHz: ≤ 1.06; 1.5 - 6 GHz: ≤ 1.22

• centre contact captivated

cable groups see pages 36

assembly tools see page 403

mounting holes see page 441