



# SERIES MHV (H4) HIGH VOLTAGE CONNECTORS

## DESCRIPTION

HUBER+SUHNER MHV connectors are coaxial miniature high voltage (MHV = Miniature High Voltage) connectors with 5 kV rms test voltage (mated pairs). The MHV connectors have a working voltage up to 1.6 kV rms in mated condition and are suitable for applications up to 300 MHz. MHV connectors are of similar design to BNC connectors but the insulators protrude over the outer contacts to give a degree of contact-voltage proof when unmated.

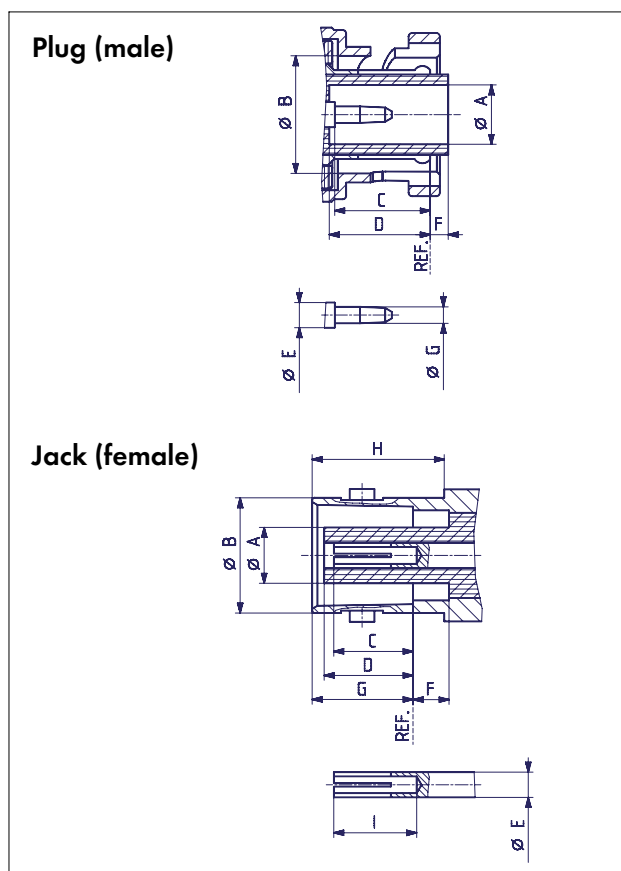
However, if a high degree of protection in the unmated condition is required, use of series SHV is recommended.

## CONTENTS

## PAGE

Description . . . . .	267
Interface dimensions . . . . .	267
Interface dimensions in mm / inches . . . . .	267
Technical data . . . . .	268
Cable connectors . . . . .	270
Receptacles with solder end . . . . .	271

## INTERFACE DIMENSIONS



## INTERFACE DIMENSIONS (MM / INCHES)

	Plug		Jack	
	min.	max.	min.	max.
A	4.83/.190	—	—	4.72/.186
B	9.78/.385	9.91/.390	9.60/.378	9.70/.382
C	7.18/.283	—	—	7.11/.280
D	8.10/.319	—	—	8.05/.317
E	—	2.31/.091	2.06/.081	2.31/.091
F	—	2.18/.086	2.18/.086	—
G	1.32/.052	1.37/.054	8.31/.327	8.51/.335
H	—	—	10.52/.414	—
I	—	—	6.86/.270	—

IP rating (interface, mated) IP64

## TECHNICAL DATA

ELECTRICAL DATA	REQUIREMENTS
Impedance	50 $\Omega$
Frequency range	DC ... 300 MHz
Dielectric withstanding voltage (at sea level)	5.0 kV rms, 50 Hz (depending on cable)
Working voltage (at sea level)	1.6 V rms, 50 Hz (depending on cable)
Insulation resistance	$\geq 5 \cdot 10^6$ M $\Omega$
Contact resistance - centre contact - outer contact	$\leq 2$ m $\Omega$ $\leq 1$ m $\Omega$
Corona extinction voltage (at 21000 m)	$\geq 300$ V rms, 50 Hz (depending on cable)
Current rating, continuous	$\leq 10$ A

MECHANICAL DATA	REQUIREMENTS
Coupling nut torque	7 Ncm ... 28 Ncm / 0.6 in. lbs ... 2.5 in. lbs
Coupling nut retention force	$\geq 450$ N / 101.2 lbs
Contact captivation	$\geq 15$ N / 6.1 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 B

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

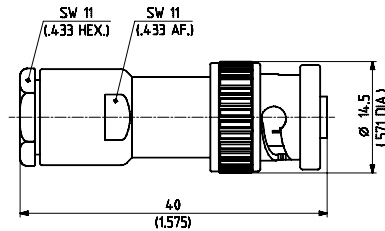
Some connectors may have a specification that differs from the above mentioned data.

**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)

> cable entry clamp



HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Assembly instruction	Notes
11_H4-50-3-1/133_NE	☒ 22541732	U7 (RG 58 C/U)	single	3012	
11_H4-50-4-1/133_NE	☒ 22541742	U15 (RG 59 B/U)	single	3012	

> cable entry crimp

> taper sleeves see page 406

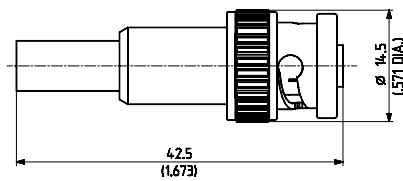


Fig. 1

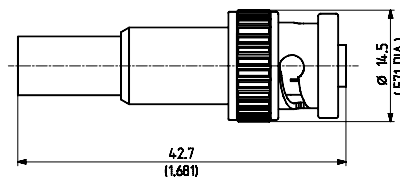


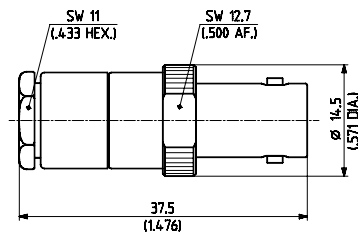
Fig. 2



HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Assembly instruction	Crimp insert	Fig.
11_H4-50-3-3/133_NE	☒ 22541737	U7 (RG 58 C/U)	single	3078	B	1
11_H4-50-4-4/133_NE	☒ 22543809	U16 (RG 59 B/U)	single	3078	C	2

### Straight cable jacks (female)

> cable entry clamp

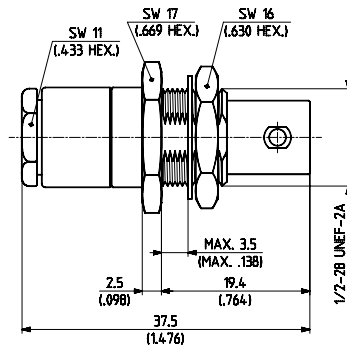


HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Assembly instruction	Notes
21_H4-50-3-1/133_NE	☒ 22541756	U7 (RG 58 C/U)	single	3012	

☒ centre contact NOT captivated

## Straight bulkhead cable jacks (female)

- > cable entry clamp
- > with panel seal

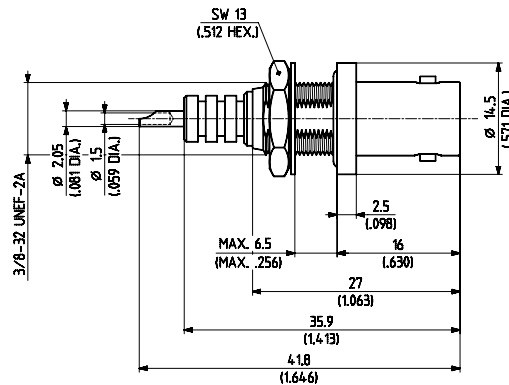


HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Assembly instruction/ Mounting hole
24_H4-50-3-1/133_NE	22541784	U7 (RG 58 C/U)	single	3012 / ML 4

## RECEPTACLES WITH SOLDER END

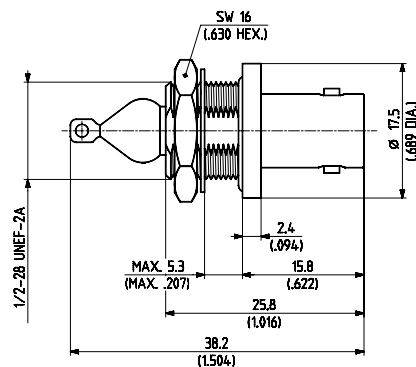
### Receptacles, jacks (female)

- > bulkhead mounted
- > with panel seal



HUBER+SUHNER type	Item no.	Packaging	Mounting hole	Notes
22_H4-50-0-1/133_NE	22652095	single	ML 1	

- > bulkhead mounted
- > hermetically sealed



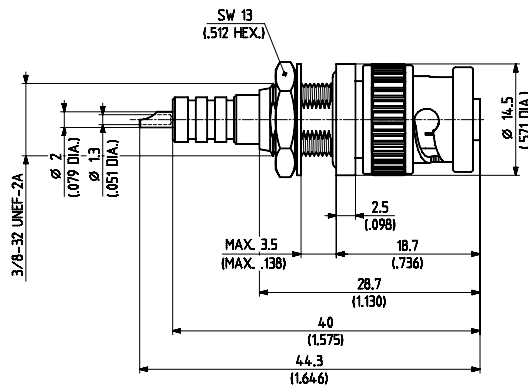
HUBER+SUHNER type	Item no.	Packaging	Mounting hole	Plating body	Notes
22_H4-50-0-6/100_NE *	22541764	single	ML 4	silver	leak rate 10 <sup>-6</sup> Torr l/sec.(atm cc/s) max.

☒ centre contact NOT captivated

\* RoHs compliant alternative on request

## Receptacles, plugs (male)

> bulkhead mounted



HUBER+SUHNER type	Item no.	Packaging	Mounting hole	Notes
12_H4-50-0-1/133_NE	22543467	single	ML 2	with panel seal

## Flange mount, jacks (female)

> panel mounted

> fastening screws see page 407

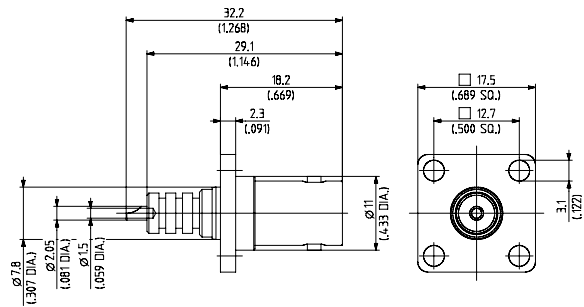
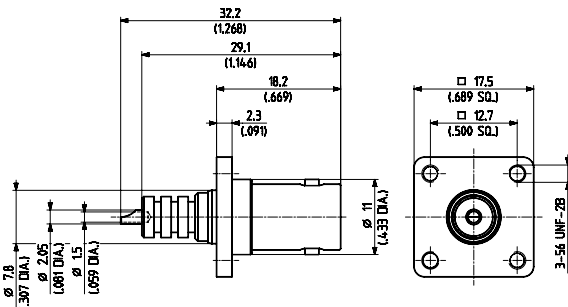


Fig. 1

Fig. 2

HUBER+SUHNER type	Item no.	Packaging	Mounting hole	Notes	Fig.
23_H4-50-0-7/133_NE	22541776	single	ML 6	mounting also possible with screws ISO M 2.5	1
23_H4-50-0-8/133_NE	22541779	single	ML 6		2