



SERIES PC 3.5

PRECISION SUBMINIATURE CONNECTORS

Description

SUHNER PC 3.5 connectors are precision connectors for use in microwave applications up to 33 GHz. They are especially suitable for use with semi-rigid cables and microwave components. They are intermateable with SMA and K connectors. Due to an air dielectric interface and the more durable construction a superior repeatability further enhances the performance.

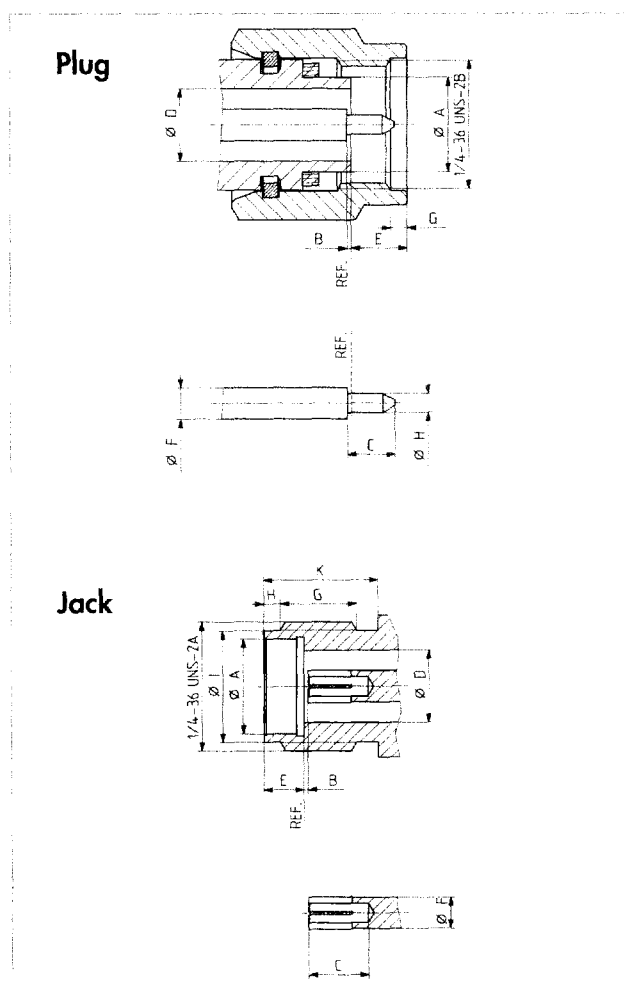
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PC3.5
K

Interface Dimensions



Interface Dimensions in mm / inches

	Plug		Jack	
	min.	max.	min.	max.
A	4.55/.179	4.58/.180	4.60/.181	4.63/.182
B	0.00/.000	0.08/.003	0.00/.000	0.08/.003
C	2.03/.080	2.29/.090	2.79/.110	3.18/.125
D	3.49/.138	3.51/.138	3.49/.138	3.51/.138
E	2.36/.093	3.56/.135	1.88/.074	1.98/.078
F	1.51/.060	1.52/.060	1.51/.060	1.524.060
G	0.38/.015	1.14/.045	3.35/.132	4.62/.182
H	0.92/.036	0.93/.037	0.38/.015	1.14/.045
I	—	—	5.30/.209	5.40/.213
K	—	—	5.54/.218	—

Standards

Line sizes conform to
IEC 169-23

Technical Data

ELECTRICAL DATA

REQUIREMENTS

Impedance	50 Ω
Frequency range	DC ... 33 GHz (IEC 169-23, cut-off frequency 38.8 GHz) (see also Appendix page 436)
VSWR	
– RG 405/U	≤ 1.13 DC ... 26.5 GHz
– RG 402/U	≤ 1.10 DC ... 26.5 GHz
– adaptors	≤ 1.08 up to 18 GHz / ≤ 1.15 up to 26.5 GHz / ≤ 1.18 up to 33 GHz
RF-leakage	≥ 100 dB – f (GHz) dB
Dielectric withstanding voltage (at sea level)	
– RG 405/U	750 V rms, 50 Hz
– RG 402/U	1000 V rms, 50 Hz
Working voltage (at sea level)	
– RG 405/U	≤ 250 V rms, 50 Hz
– RG 402/U	≤ 335 V rms, 50 Hz
Insulation resistance	$\geq 5 \cdot 10^3$ M Ω
Contact resistance	
– centre contact	≤ 3 m Ω
– outer contact	≤ 2 m Ω

MECHANICAL DATA

REQUIREMENTS

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
Coupling nut retention force	≥ 270 N / 60.7 lbs
Contact captivation	≥ 27 N / 6.1 lbs
Cable retention force ¹⁾	see pages 36 – 41
Durability (matings)	≥ 500

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

ENVIRONMENTAL DATA

TEST CONDITIONS

Temperature range	– 65°C ... + 90°C / – 85°F ... + 194°F
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	STANDARDS	MATERIAL	PLATING
Bodies, outer contacts	QQ-S-764	stainless steel	passivated
Cable entries	QQ-B-626	brass	gold
Centre contacts	QQ-C-530	beryllium-copper, hardened	gold
Support beads		polystyrene, crosslinked	
Gaskets	ASTM-E-1418 PS 1	silicone rubber	

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

Connectors for Semi-Rigid Cables

straight plugs

- > cable entry soldered
- > plug-in centre contact

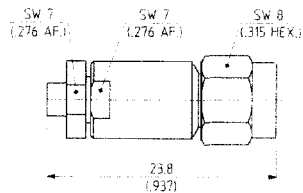


fig. 1

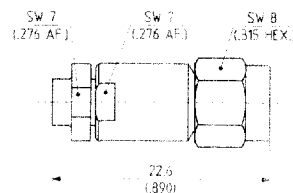
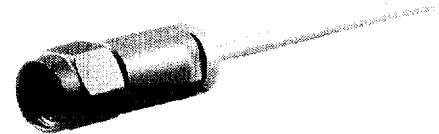


fig. 2



SUHNER TYPE	Ident. no.	Cable group (example)	Assembly instruction	Weight	Fig.	Notes
11 PC3.5-50-2-2	● 644969	Y3, Y11 (EZ 86)	9165	6.50 g/ .228 oz.	1	
11 PC3.5-50-3-2	● 644968	Y5, Y12 (EZ 141)	9165	6.30 g/ .221 oz.	2	

straight jacks

- > cable entry soldered
- > plug-in centre contact

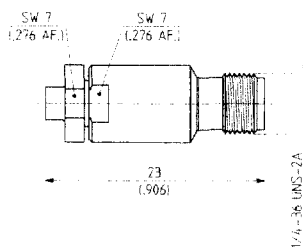


fig. 1

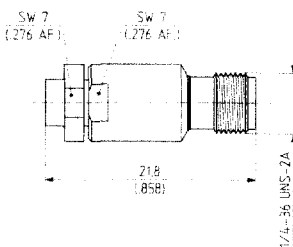
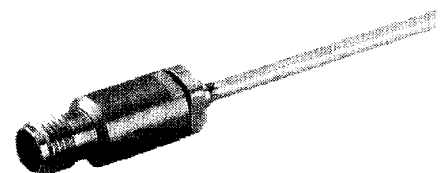


fig. 2



SUHNER TYPE	Ident. no.	Cable group (example)	Assembly instruction	Weight	Fig.	Notes
21 PC3.5-50-2-2	● 644971	Y3, Y11 (EZ 86)	9165	5.50 g/ .193 oz.	1	
21 PC3.5-50-3-2	● 644970	Y5, Y12 (EZ 141)	9165	6.30 g/ .221 oz.	2	

- centre contact captivated

panel jacks

- > bulkhead mounted
- > cable entry soldered
- > plug-in centre contact
- > with panel seal

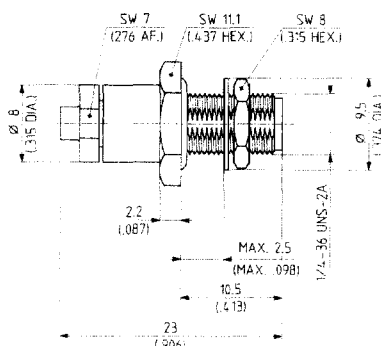


Fig. 1

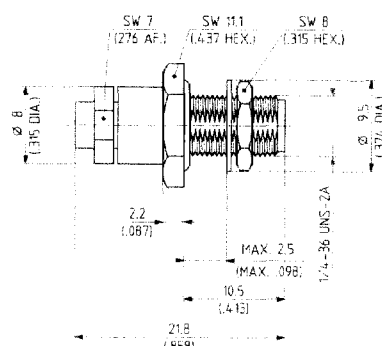


Fig. 2



SUHNER TYPE	Ident. no.	Cable group (example)	Assembly instruction	Mounting hole	Weight	Fig.	Notes
24 PC3.5-50-2-1	● 644523	Y3, Y11 (EZ 86)	9165	ML 35	6.10 g/.214 oz.	1	
24 PC3.5-50-3-1	● 644522	Y5, Y12 (EZ 141)	9165	ML 35	5.90 g/.207 oz.	2	

Connectors with Interchangeable Transition Pins

jacks

- > panel mounted

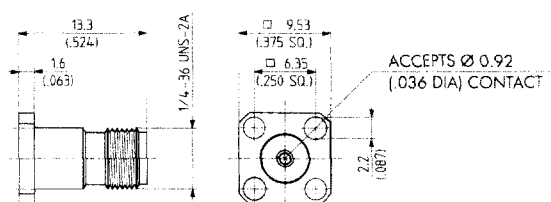
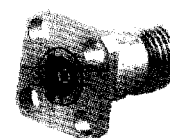
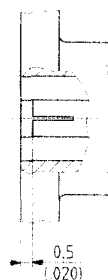


Fig. 1

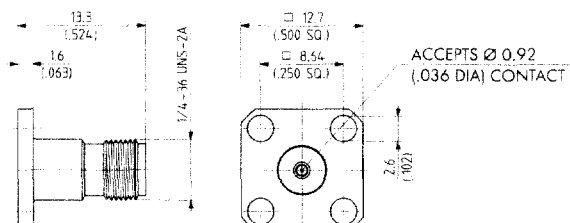


Fig. 2

SUHNER TYPE	Ident. no.	Flange type	Weight	Fig.	Notes
23 PC3.5-50-0-51	● 644918	square	2.80 g/.098 oz.	1	
23 PC3.5-50-0-53	● 644910	square	3.50 g/.123 oz.	2	

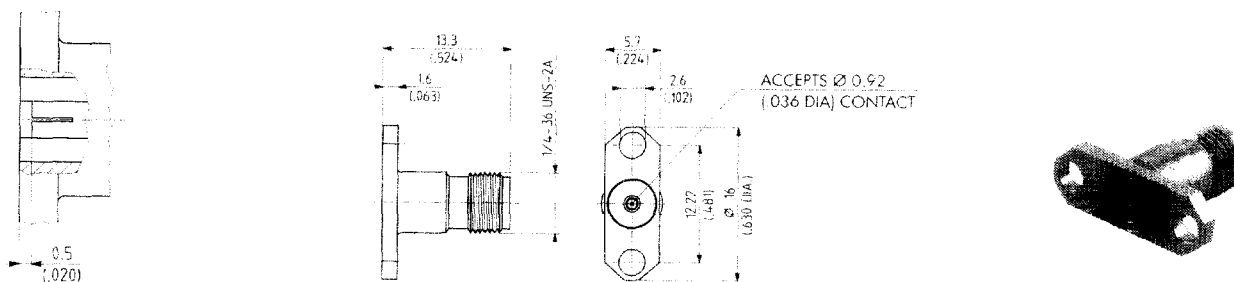
- centre contact captivated

cable groups see page 36

assembly tools see page 403

mounting holes see page 441

> panel mounted



SUHNER TYPE	Ident. no.	Flange type	Weight	Notes
23 PC3.5-50-0-54	644911	2-hole	2.80 g/.098 oz.	

Transition Pins

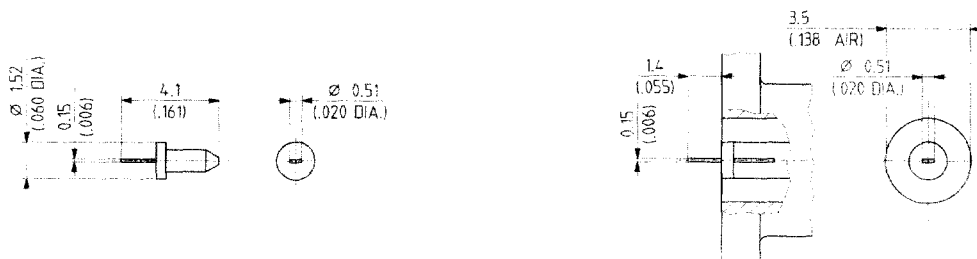
for PC 3.5 connectors with interchangeable contact pins

pin contact



SUHNER TYPE	Ident. no.	Notes
73 Z-0-0-168	644927	package containing 10 pins

tab contact



SUHNER TYPE	Ident. no.	Notes
73 Z-0-0-169	644931	package containing 10 pins

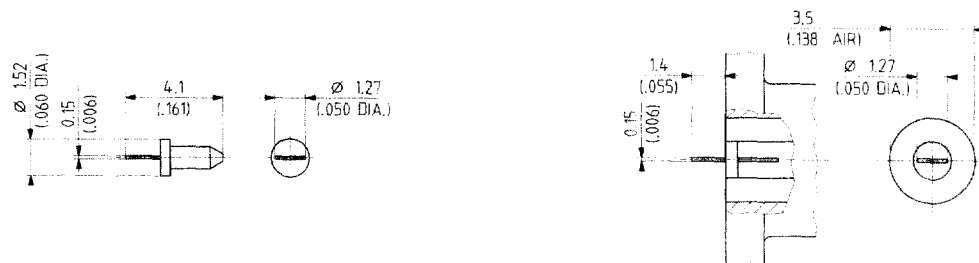
• centre contact captivated

cable groups see page 36

assembly tools see page 403

mounting holes see page 441

tab contact



SUHNER TYPE	Ident. no.	Notes
73 Z-0-0-170	644932	package containing 10 pins

Adaptors Within-Series

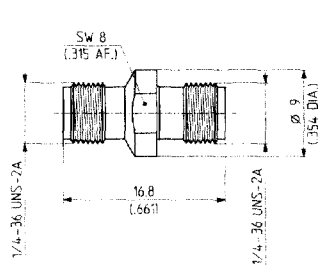


Fig. 1

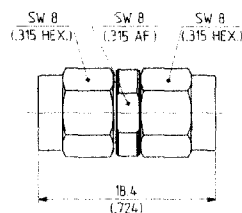


Fig. 2

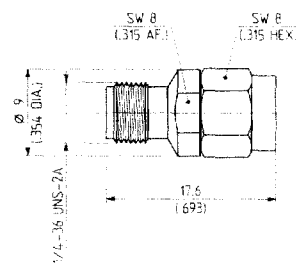


Fig. 3

SUHNER TYPE	Ident. no.	VSWR			Weight	Fig.	Notes
		DC-18 GHz	18-26.5 GHz	26.5-34 GHz			
31 PC3.5-50-0-1 •	644360	≤ 1.08	≤ 1.15	≤ 1.18	3.20 g/.112 oz.	1	jack to jack
32 PC3.5-50-0-1 •	644361	≤ 1.08	≤ 1.15	≤ 1.18	5.30 g/.186 oz.	2	plug to plug
33 PC3.5-50-0-1 •	644362	≤ 1.08	≤ 1.15	≤ 1.18	4.20 g/.147 oz.	3	plug to jack

electrical lenght = 14.1 mm / .555 in.

- centre contact captivated