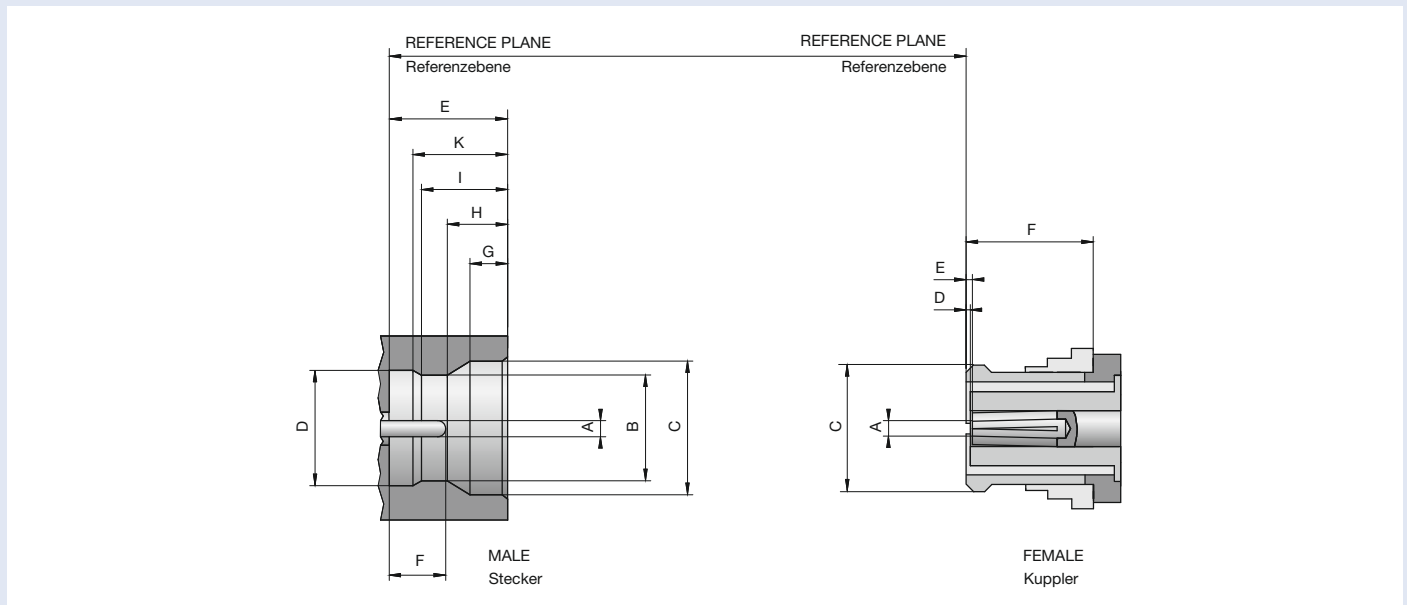


Interface Dimensions SMP

Code 19



SMP

dimension [mm]	Male Stecker						Female Kuppler	
	Smooth bore		Limited detent		Full detent		min.	max.
	min.	max.	min.	max.	min.	max.		
A	0.356	0.406	0.356	0.406	0.356	0.406	1)	
B	3.125	3.225	2.998	3.098	2.896	2.996		
C	3.531	3.683	3.531	3.683	3.531	3.683	1)	3.43
D			3.125	3.225	3.125	3.225	0.00	
E	2.74	2.84	2.74	2.84	2.74	2.84	0.00	0.20
F	1.143	1.397	1.143	1.397	1.143	1.397	3.35	
G	0.839	0.939	0.839	0.939	0.839	0.939		
H			1.397	1.447	1.397	1.447		
I			1.982	2.082	1.982	2.082		
K			2.185	2.285	2.185	2.285		

1) resilient, dimension to meet electrical and mechanical requirements

SMP coaxial connectors are available as smooth bore, catchers mitt, limited detent and full detent versions, they are suitable for a wide range of board-to-board interconnect applications up to 40 GHz - from low up to the highest mechanical loads, e. g. in telecommunication, test & measurement or aerospace applications.

PCB connectors are supplied in blister tapes.

SMP-Koaxial-Steckverbinder werden in den Festhaltevarianten Smooth bore, Catchers mitt, Limited detent und Full detent angeboten und eignen sich für vielseitige Board-to-Board-Verbindungen bis 40 GHz von geringer bis zu höchster mechanischer Beanspruchung, z. B. in Telekom- und Messtechnik-Anwendungen bis zu Anwendungen in Luft- und Raumfahrt.

PCB-Steckverbinder werden in Blistergurt-Verpackungen ausgeliefert.

Features

Interface according to US MIL-STD 348A, Fig. 326
 Frequency range DC to 40 GHz
 Return loss (cable connector straight) ≥ 14 dB (typ.)
 Impedance 50Ω
 Minimum board-to-board distance ≥ 9.05 mm
 Snap-on coupling

Technical Data SMP

Code 19

Applicable standards Anwendbare Normen	
Interface according to <i>Interface gemäß</i>	MIL-STD-348A, Fig. 326
Quality tested according to <i>Qualitätsprüfung gemäß</i>	MIL-STD-202
Electrical data Elektrische Daten	
Impedance <i>Wellenwiderstand</i>	50 Ω
Frequency range <i>Frequenzbereich</i>	DC to 40 GHz
Return loss (cable connector straight) <i>Rückflussdämpfung (Kabelsteckverbinder gerade)</i>	≥ 14 dB (typ.)
Insertion loss <i>Dämpfung</i>	≤ 0.1 x √f (GHz) dB
Insulation resistance <i>Isolationswiderstand</i>	≥ 5 GΩ
Center contact resistance <i>Übergangswiderstand Innenleiter</i>	≤ 6 mΩ
Outer contact resistance <i>Übergangswiderstand Außenleiter</i>	≤ 2 mΩ
Test voltage <i>Prüfspannung</i>	500 V rms
Working voltage <i>Betriebsspannung</i>	335 V rms
Power handling <i>Leistungsbelastbarkeit</i>	65 W @ 2.2 GHz
Contact current <i>Kontaktstrombelastbarkeit</i>	≤ 1.2 A DC
Mechanical data Mechanische Daten	
Mating cycles <i>Steckzyklen</i>	Full detent: ≥ 100 Limited detent: ≥ 500 Smooth bore, Catchers mitt: ≥ 1000
Center contact captivation <i>Innenleiter Haltekraft</i>	axial: ≥ 7 N
Engagement force <i>Steckkraft</i>	Full detent: ≤ 68 N Limited detent: ≤ 45 N Smooth bore, Catchers mitt: ≤ 9 N
Disengagement force <i>Ziehkraft</i>	Full detent: ≥ 22 N Limited detent: ≥ 9 N Smooth bore, Catchers mitt: ≥ 2.2 N
Board-to-board distance (min.) <i>Board-to-Board Abstand (min.)</i>	9.05 mm
Environmental data Umweltdaten	
Temperature range <i>Temperaturbereich</i>	-65 °C to +155 °C
Thermal shock <i>Temperaturzyklen</i>	MIL-STD-202, Method 107, Condition B
Moisture resistance <i>Feuchtigkeitsbeständigkeit</i>	MIL-STD-202, Method 106
Vibration <i>Vibration</i>	MIL-STD-202, Method 204, Condition B
Shock <i>Schock</i>	MIL-STD-202, Method 213, Condition A
Max. soldering temperature (PCB connectors) <i>Max. Löttemperatur (Leiterplattensteckverbinder)</i>	IEC 61760-1, +260 °C for 10 sec.
Materials Materialien	
Spring loaded contact parts <i>Federnde Kontaktteile</i>	CuBe, Au plating
Center contact <i>Innenleiter</i>	CuZn, Au plating
Outer contact <i>Außenleiter</i>	CuZn, Au plating
Crimping ferrule <i>Crimphülse</i>	Copper alloy, Au plating
Dielectric <i>Dielektrikum</i>	PTFE / PEEK / LCP

Rosenberger-connectors fulfill in principle the indicated data of the Technical Data. Individual values of connectors may deviate depending upon application, design, type of cable, assembly method and execution. Specific data sheets for particular products can be provided on request from your Rosenberger sales partner.

Rosenberger-Steckverbinder erfüllen grundsätzlich die in den Technischen Daten angegebenen Daten. Je nach Anwendung, Bauart, Kabeltyp, Montageart und -ausführung können einzelne Werte von Steckverbindern hiervon abweichen. Spezifische Datenblätter zu einzelnen Produkten erhalten Sie auf Anfrage von Ihrem Rosenberger-Ansprechpartner.

Cable Connectors Semi-Rigid Cables

Straight Plug, solder
Panel mount; hexagonal flange

Semi-Rigid Cables

Ordering Number	Version	Remarks	Cable Group	Assembly Instruction	Panel Piercing / PCB Layout	Packing Unit	
19 S 601-271 L5	rear mount	Limited detent	71	19 E4	B 54	100	
19 S 641-271 L5	rear mount	Smooth bore	71	19 E4	B 54	100	
19 S 602-271 L5	Snap-in	Limited detent	71	19 E4	Ø 4.8 + 0.03	100	
19 S 60A-271 L5	front mount	Limited detent stainless steel	71	19 E4	B 279	100	

Straight Jack, solder

Semi-Rigid Cables

Ordering Number	Remarks	Cable Group	Assembly Instruction	Packing Unit	
19 K 101-270 L5	26.5 GHz	70	19 E5	100	
19 K 107-270 L5	40 GHz	70	19 E13	100	
19 K 101-271 L5	26.5 GHz	71	19 E5	100	
19 K 107-271 L5	40 GHz	71	19 E13	100	
19 K 101-272 L5	26.5 GHz	72	19 E4	100	

Right Angle Jack, solder

Semi-Rigid Cables

Ordering Number	Remarks	Cable Group	Assembly Instruction	Packing Unit	
19 K 202-270 L5	26.5 GHz	70	19 E8	250	
19 K 202-271 L5	26.5 GHz	71	19 E8	500	

Cable Connectors - Flexible Cables

Straight Jack, crimp

Flexible Cables

Ordering Number	Remarks	Cable Group	Assembly Instruction	Crimp Inserts	Packing Unit	
19 K 102-101 L5	a = 15.7 mm	01	19 C2	11 W 150-402	100	
19 K 101-102 L5	a = 16.5 mm	02	59 G2	11 W 150-402	100	
19 K 101-103 L5	a = 16.5 mm	03	59 G2	11 W 150-403	100	
19 K 102-1X1 L5	a = 15.7 mm	X1	19 C2	11 W 150-402	100	

Right Angle Jack, solder-crimp

Flexible Cables

Ordering Number	Remarks	Cable Group	Assembly Instruction	Crimp Inserts	Packing Unit	
19 K 202-301 L5	a = \varnothing 4.05 mm	01	19 C1	11 W 150-102	100	
19 K 201-302 L5	a = \varnothing 3.85 mm	02	19 C	11 W 150-102	100	
19 K 201-303 L5	a = \varnothing 4.3 mm	03	19 C	11 W 150-103	100	
19 K 203-3X1 L5		X1	19 C1	11 W 150-102	100	

Panel Connectors - Coaxial End

Panel Plug, hexagonal flange

Coaxial End

Ordering Number	Remarks	Packing Unit	
19 S 601-500 L5	Limited detent Panel feed through	100 blister	

Panel Plug, hermetic sealed

Coaxial End

Ordering Number	Remarks	Assembly Instruction	Packing Unit	
19 S 181-5H0 E4	Full detent	19 G	100	

Panel Jack

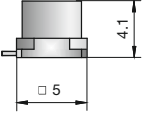
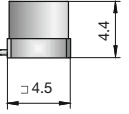
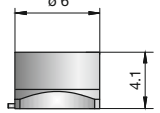
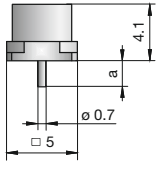
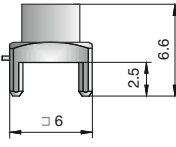
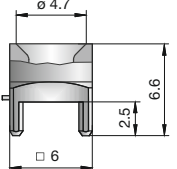
Coaxial End

Ordering Number	Panel Piercing / PCB Layout	Packing Unit	
19 K 101-500 L5	M 4.5 x 0.35	100	

PCB Connectors - SMD

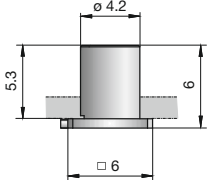
Straight Plug

SMD

Ordering Number	Version	Remarks	Panel Piercing / PCB Layout	Packing	Packing Unit	
19 S 101-40M L5		Limited detent	B 120	VG 01.01M00	100 blister, 1500 tape & reel	
19 S 10H-40M L5		Limited detent removable plastic cap on suction area for tape & reel	B 120	VG 28.01M00	100 blister, 1500 tape & reel	
19 S 141-40M L5		Smooth bore	B 120	VG 01.01M00	100 blister, 1500 tape & reel	
19 S 14H-40M L5		Smooth bore removable plastic cap on suction area for tape & reel	B 120	VG 01.01M00	1500 tape & reel	
19 S 102-40M L5		Limited detent removable plastic cap on suction area for tape & reel Frequency DC to 40 GHz	please request optimized foot- print for your application	VG 01.01M00	100 blister, 1500 tape & reel	
19 S 122-40M L5		Limited detent, stainless steel removable plastic cap on suction area for tape & reel Frequency DC to 40 GHz	please request optimized foot- print for your application		100 blister	
19 S 144-40M L5		Catchers mitt	B 127	VG 23.75000	100 blister, 750 tape & reel	
19 S 14K-40M L5		Catchers mitt removable plastic cap on suction area for tape & reel	B 127	VG 05.75000	750 tape & reel	
19 S 104-40M L5		Limited detent, a = 0 mm	B 126	VG 24.01M00	100 blister, 1500 tape & reel	
19 S 10K-40M L5		Limited detent, a = 0 mm removable plastic cap on suction area for tape & reel	B 126	VG 29.01M00	1500 tape & reel	
19 S 106-500 L5	pin-in-paste	Limited detent, a = 0.8 mm removable plastic cap on suction area for tape & reel	B 123		200 blister	
19 S 103-500 L5	pin-in-paste	Limited detent, a = 2.5 mm	B 123		200 blister	
19 S 103-400 L5	pin-in-paste	Limited detent	B 122	VG 33.01M00	100 blister, 750 tape & reel	
19 S 10A-400 L5	pin-in-paste	Limited detent removable plastic cap on suction area for tape & reel	B 122	VG 05.50000	100 blister, 500 tape & reel	
19 S 143-400 L5	pin-in-paste	Smooth bore	B 122	VG 33.01M00	100 blister, 750 tape & reel	
19 S 147-400 L5	pin-in-paste	Smooth bore	B 122	VG 33.01M00	100 blister, 750 tape & reel	
19 S 14D-400 L5	pin-in-paste	Smooth bore removable plastic cap on suction area for tape & reel	B 122	VG 05.50000	500 tape & reel	

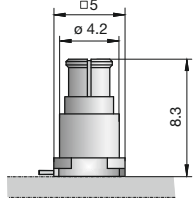
Straight Plug, Panel mount

SMD

Ordering Number	Version	Remarks	Panel Piercing / PCB Layout	Packing	Packing Unit	
19 S 10D-40M L5	rear mount	Limited detent	B 121	VG 19.01M00	100 blister, 1250 tape & reel	
19 S 10N-40M L5	rear mount	Limited detent removable sticker on suction area for tape & reel	B 121	VG 19.01M00	1250 tape & reel	

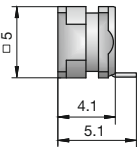
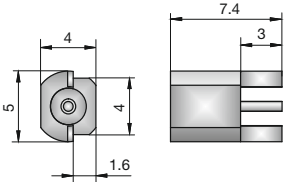
Straight Jack/Plug Pair

SMD

Ordering Number	Remarks	Panel Piercing / PCB Layout	Packing Unit	
19 K 10M-40M G	Limited detent incl. 19S101-40M , 19K102-K00	B 120	100 blister	

Right Angle Plug, PCB

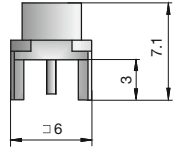
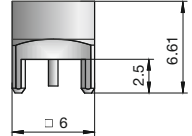
SMD

Ordering Number	Remarks	Panel Piercing / PCB Layout	Packing	Packing Unit	
19 S 201-40M L5	Limited detent removable sticker on suction area for tape & reel	B 124	VG 22.01M00	200 blister, 1500 tape & reel	
19 S 241-40M L5	Smooth bore removable sticker on suction area for tape & reel	B 124	VG 144.01M00	200 blister, 1500 tape & reel	
19 S 202-40M L5	Limited detent	B 125	VG 03.01M00	100 blister, 1500 tape & reel	
19 S 242-40M L5	Smooth bore	B 125	VG 03.01M00	200 blister, 1500 tape & reel	

PCB Connectors - Solder Pin

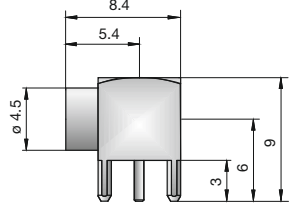
Straight Plug, PCB

Solder Pin

Ordering Number	Remarks	Panel Piercing / PCB Layout	Packing	Packing Unit	
19 S 102-400 L5	Limited detent	B 30	VG 32.01M00	100 blister, 750 tape & reel	
19 S 145-400 L5	Smooth bore	B 30	VG 32.01M00	100 blister, 750 tape & reel	

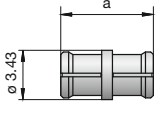
Right Angle Plug, PCB

Solder Pin

Ordering Number	Remarks	Panel Piercing / PCB Layout	Packing Unit	
19 S 201-400 L5	Limited detent	B 30	100 blister	

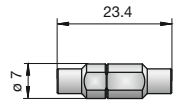
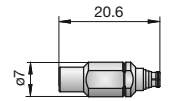
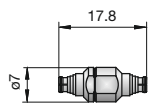
Adaptors

Bullet female-female

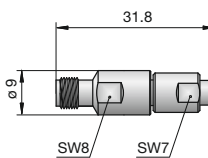
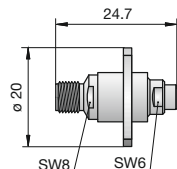
Ordering Number	Nominal Board-to-Board Distance ¹⁾	Bullet Length ²⁾	Minimum Board-to-Board Distance ³⁾	Maximum Radial Tolerance ⁴⁾	Packing Unit	
19 K 101-K00 L5	9.30 mm	a=6.45 mm	9.07 mm	0.45 mm	100	
19 K 102-K00 L5	9.85 mm	a=7.00 mm	9.62 mm	0.49 mm	100	
19 K 110-K00 L5	11.05 mm	a=8.20 mm	10.82 mm	0.57 mm	100	
19 K 106-K00 L5	11.45 mm	a=8.60 mm	11.22 mm	0.60 mm	500	
19 K 109-K00 L5	12.75 mm	a=9.90 mm	12.52 mm	0.69 mm	500	
19 K 108-K00 L5	14.25 mm	a=11.40 mm	14.02 mm	0.80 mm	500	
19 K 114-K00 L5	15.44 mm	a=12.59 mm	15.21 mm	0.88 mm	500	
19 K 104-K00 L5	19.59 mm	a=16.74 mm	19.36 mm	1.17 mm	500	
19 K 115-K00 L5	22.35 mm	a=19.50 mm	22.12 mm	5)	300	
19 K 117-K00 L5	25.24 mm	a=22.39 mm	25.01 mm	5)	300	
19 K 107-K00 L5	26.65 mm	a=23.80 mm	26.42 mm	5)	300	
19 K 116-K00 L5	27.04 mm	a=24.19 mm	26.81 mm	5)	300	

- 1) When standard SMD-connectors are applied (e.g. 19 S 101-40M, 19 S 144-40M, ...).
- 2) Bullets with special lengths on request.
- 3) Applying radial misalignment increases the minimum board-to-board distance in vertical direction by max. 0.2 mm. Please note: Solder paste thickness not included.
- 4) The maximum radial tolerance compensation is calculated by: $\sin(4^\circ) \times$ bullet length. Please note that the maximum possible misalignment of the axes to each other, as well as the maximum capture area of the PCB connectors (smooth bore types) have an impact on the quality and performance of the high frequency connection.
- 5) The maximum radial tolerance is limited to 1.2 mm because of the limited guide in range of the second PCB connector.

Adaptors (In Series)

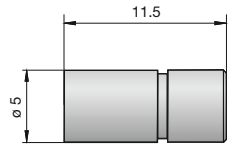
Ordering Number	Version	Remarks	Return Loss	
19 S 101-S20 D3	straight	SMP male - male calibration adaptor	≥ 26 dB @ DC to 4 GHz ≥ 20 dB @ 4 GHz to 18 GHz	
19 S 101-K20 D3	straight	SMP male - female calibration adaptor	≥ 26 dB @ DC to 4 GHz ≥ 20 dB @ 4 GHz to 18 GHz	
19 K 101-K20 D3	straight	SMP female - female calibration adaptor	≥ 26 dB @ DC to 4 GHz ≥ 20 dB @ 4 GHz to 18 GHz	

Adaptors (Inter Series)

Ordering Number	Version	Remarks	Return Loss	
19 S 132-S00 S3	straight	SMP male - SMA male		
19 S 132-K00 S3	straight	SMP male - SMA female		
19 K 132-S00 D3	straight	SMP female - SMA male		
19 K 132-K00 D3	straight	SMP female - SMA female		
02 S 119-S00 E3	straight	RPC-2.92 male - SMP male	≥ 32 dB @ DC to 12 GHz ≥ 26 dB @ 12 GHz to 26.5 GHz ≥ 21 dB @ 26.5 GHz to 40 GHz	
02 S 119-K00 E3	straight	RPC-2.92 male - SMP female	≥ 32 dB @ DC to 12 GHz ≥ 26 dB @ 12 GHz to 26.5 GHz ≥ 21 dB @ 26.5 GHz to 40 GHz	
02 K 119-S00 E3	straight	RPC-2.92 female - SMP male	≥ 32 dB @ DC to 12 GHz ≥ 26 dB @ 12 GHz to 26.5 GHz ≥ 21 dB @ 26.5 GHz to 40 GHz	
02 K 119-K00 E3	straight	RPC-2.92 female - SMP female	≥ 32 dB @ DC to 12 GHz ≥ 26 dB @ 12 GHz to 26.5 GHz ≥ 21 dB @ 26.5 GHz to 40 GHz	
03 K 719-S22 S3	straight panel	RPC-3.50 female - SMP male, full detent, 2-hole flange, floating test adaptor	≥ 30 dB @ DC to 12 GHz ≥ 20 dB @ 12 GHz to 26.5 GHz	

Terminations

Termination Plug

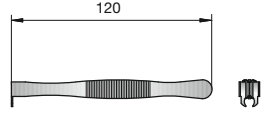
Ordering Number	Remarks	Return Loss	Packing Unit	
19 S 15R-001 E4	1 Watt Frequency: DC to 18 GHz	≥ 28.3 dB @ DC to 1 GHz ≥ 20.1 dB @ 1 GHz to 18 GHz	1	

Termination Jack

Ordering Number	Remarks	Return Loss	Packing Unit	
19 K 15R-001 E4	1 Watt Frequency: DC to 18 GHz	≥ 28.3 dB @ DC to 1 GHz ≥ 20.1 dB @ 1 GHz to 18 GHz	1	

Special Tools

Extraction Tool

Ordering Number	Remarks	Packing Unit	
19 W 002-000	for SMP connectors	1	

Soldering Gauge

Ordering Number	Remarks	Packing Unit	
11 W 115-000	for SMP connectors width of soldering gauge: $a = 0.6$ mm, thickness = 0.5 mm	1	