

SUCOFLEX® 104

Variations

SUCOFLEX_104, 104_P(E) cables that can be universally applied with the widest range of connector types, are available with most ruggedisations. In applications in which flexibility is the critical factor, the cable type SUCOFLEX_104_PE must be applied. In conjunction with the Q adaptor, which is a simple system for exchanging the connectors as well as the special connections for Agilent Technologies analysers, the two types constitute the ideal choice for use as test cables on network analysers. For assemblies used in EMC-critical applications, the M ruggedisation is available. This results in yet another considerable improvement of the high screening effectiveness below 100 MHz.

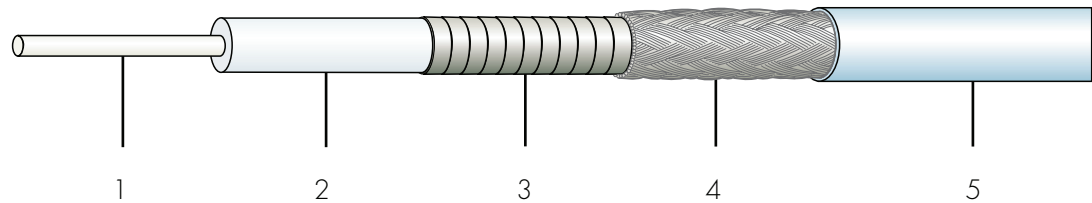
Mechanical and general data

HUBER+SUHNER cable type	Cable	Rugge- disation	Temperature		Weight kg/100m	Outer diame- ter (mm)	Bending radii	
			min. (°C)	max. (°C)			static (mm)	dyn. (mm)
SUCOFLEX_104	104	-	-55	+125	8.4	5.50	16	25
SUCOFLEX_104_A	104	A	-40	+85	17.3	10.30	30	50
SUCOFLEX_104_E	104_E	-	-40	+85	8.3	5.50	16	25
SUCOFLEX_104_EA	104_E	A	-40	+85	17.2	10.30	30	50
SUCOFLEX_104_EM	104_E	M	-40	+85	12.1	7.70	40	80
SUCOFLEX_104_B	104	B	-55	+125	18.9	10.00	45	45
SUCOFLEX_104_C	104	C	-25	+125	19.3	10.30	30	50
SUCOFLEX_104_D	104	D	-55	+125	9.6	6.10	20	30
SUCOFLEX_104_G	104	G	-50	+100	22.6	13.70	60	100
SUCOFLEX_104_P	104_P	-	-55	+125	6.9	5.50	16	25
SUCOFLEX_104_PE	104_PE	-	-40	+85	6.8	5.50	16	25
SUCOFLEX_104_PEA	104_PE	A	-40	+85	17.1	10.30	30	50
SUCOFLEX_104_PB	104_P	B	-55	+125	18.7	10.00	45	45
SUCOFLEX_104_PEM	104_PE	M	-40	+85	13.6	7.70	40	80

Further information about ruggedisation see pages 126 ff.

SUCOFLEX_104

Cable design



	Description	Diameter
1. Centre conductor	Solid silver-plated copper wire	
2. Dielectric	Low density PTFE	
3. 1st outer conductor	Silver-plated copper tape, wrapped	
4. 2nd outer conductor	Silver-plated copper braid	
5. Jacket	Fluoroethylenepropylene, blue	5.50 mm

Electrical cable data

Impedance	50 Ohm
Operating frequency	26.5 GHz
Capacitance	87 pF/m
Velocity of propagation	77 %
Time delay	4.3 ns/m
Nom. attenuation*	coefficient a 0.2291 coefficient b 0.0071
Max. attenuation*	coefficient a 0.2520 coefficient b 0.0078
Max. operating voltage	2.6 kVrms
Min. screening effectiveness up to 18 GHz	90 dB

*Attenuation calculation $\alpha_{25} = a \cdot \sqrt{f} \text{ (GHz)} + b \cdot f \text{ (GHz)} \text{ (dB/m)}$

General cable data

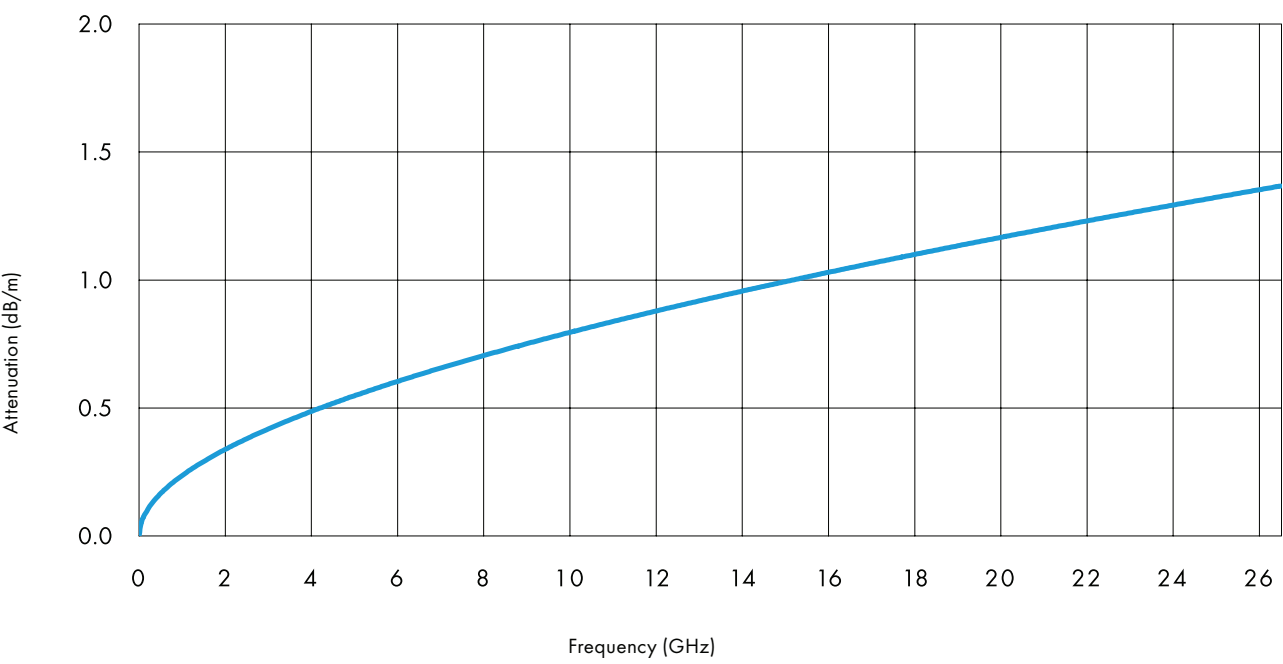
Temperature range	-55...+125 °C
Weight	8.4 kg/100m
Min. bending radius static	16 mm
Min. bending radius dynamic	25 mm

Suitable connectors

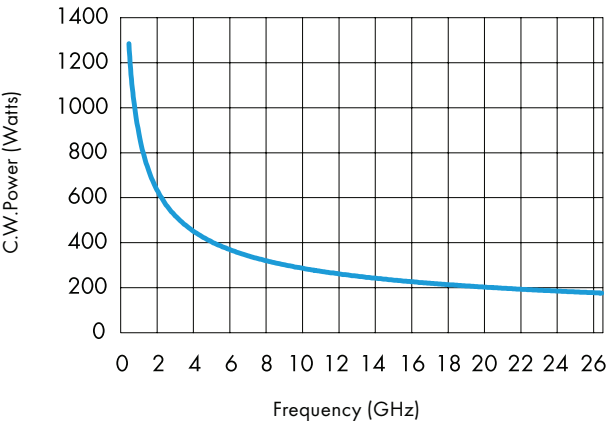
Please refer to pages 116 ff

SUCOFLEX_104

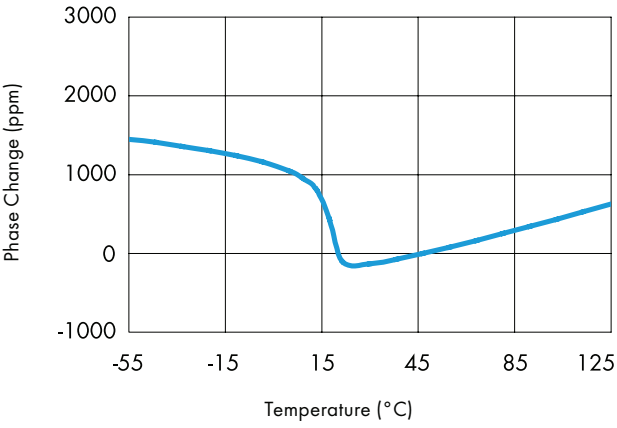
Cable attenuation
Nominal values @ +25 °C ambient temperature



Power handling
Maximum values @ +40 °C ambient temperature and sea level

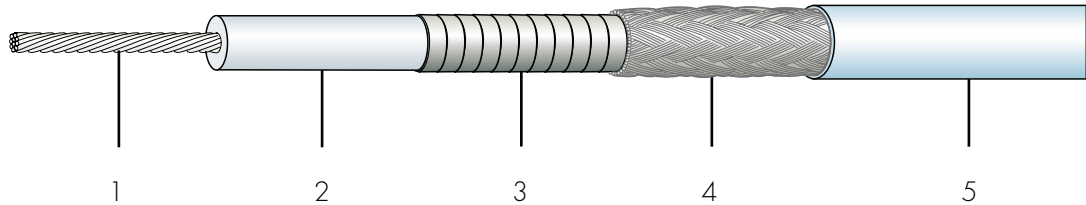


Phase change vs. temperature



SUCOFLEX_104_P

Cable design



	Description	Diameter
1. Centre conductor	Stranded silver-plated copper wire	
2. Dielectric	Low density PTFE	
3. 1st outer conductor	Silver-plated copper tape, wrapped	
4. 2nd outer conductor	Silver-plated copper braid	
5. Jacket	Fluoroethylenepropylene, blue	5.50 mm

Electrical cable data

Impedance	50 Ohm			
Operating frequency	26.5 GHz			
Capacitance	87 pF/m			
Velocity of propagation	77 %			
Time delay	4.3 ns/m			
Nom. attenuation*	coefficient a	0.2930	coefficient b	0.0175
Max. attenuation*	coefficient a	0.3223	coefficient b	0.0192
Max. operating voltage	2.4 kVrms			
Min. Screening effectiveness up to 18 GHz	90 dB			

*Attenuation calculation $\alpha_{25} = a \cdot \sqrt{f} \text{ (GHz)} + b \cdot f \text{ (GHz)} \text{ (dB/m)}$

General cable data

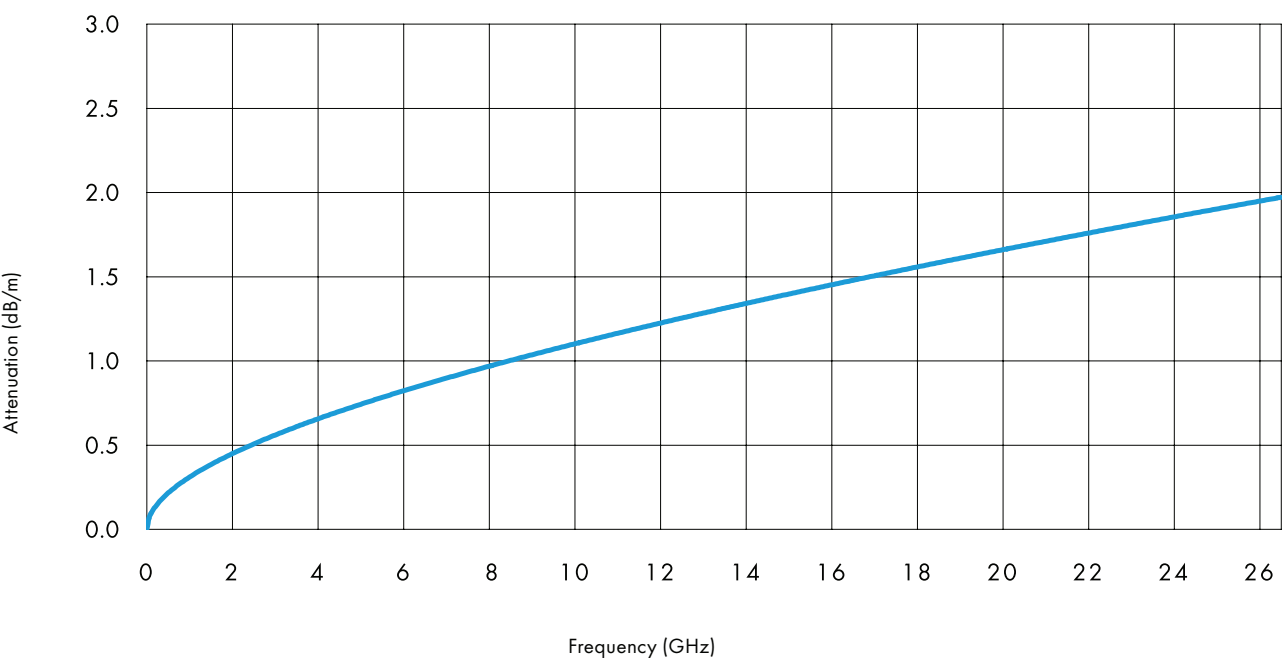
Temperature range	-55...+125 °C
Weight	6.9 kg/100m
Min. bending radius static	16 mm
Min. bending radius dynamic	25 mm

Suitable connectors

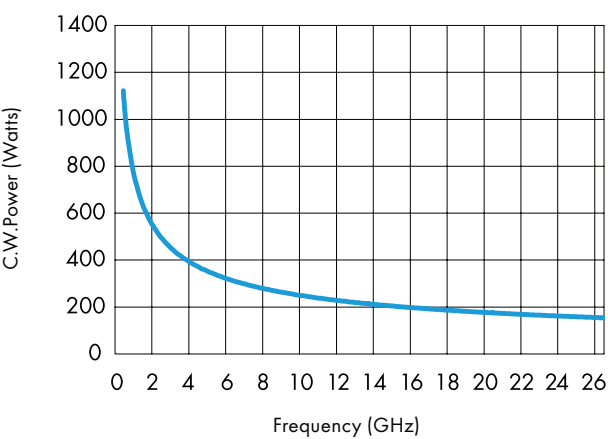
Please refer to pages 116 ff

SUCOFLEX_104_P

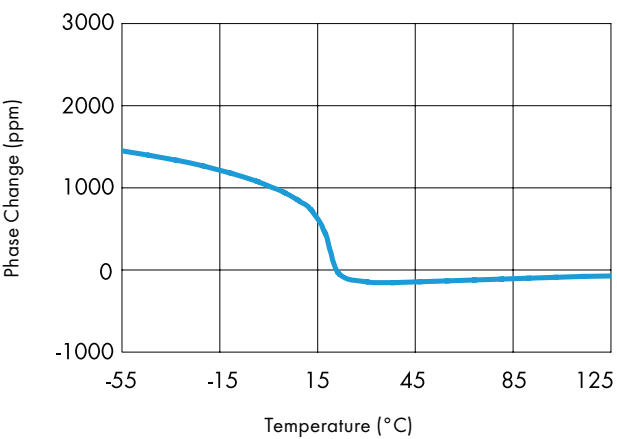
Cable attenuation
Nominal values @ +25 °C ambient temperature



Power handling
Maximum values @ +40 °C ambient temperature and sea level

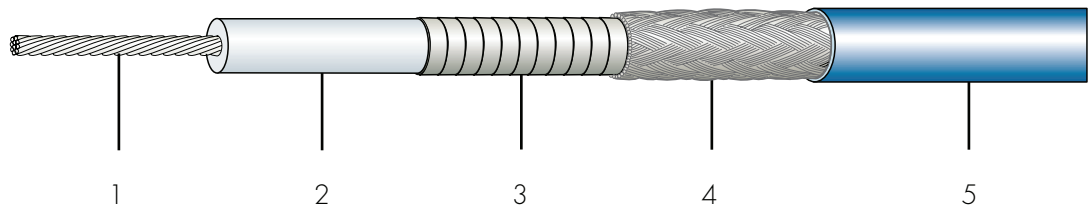


Phase change vs. temperature



SUCOFLEX_104_PE

Cable design



	Description	Diameter
1. Centre conductor	Stranded silver-plated copper wire	
2. Dielectric	Low density PTFE	
3. 1st outer conductor	Silver-plated copper tape, wrapped	
4. 2nd outer conductor	Silver-plated copper braid	
5. Jacket	Polyurethane, blue	5.50 mm

Electrical cable data

Impedance	50 Ohm
Operating frequency	26.5 GHz
Capacitance	87 pF/m
Velocity of propagation	77 %
Time delay	4.3 ns/m
Nom. attenuation*	coefficient a 0.2930 coefficient b 0.0175
Max. attenuation*	coefficient a 0.3223 coefficient b 0.0192
Max. operating voltage	2.4 kVrms
Min. screening effectiveness up to 18 GHz	90 dB

*Attenuation calculation $\alpha_{25} = a \cdot \sqrt{f} \text{ (GHz)} + b \cdot f \text{ (GHz)} \text{ (dB/m)}$

General cable data

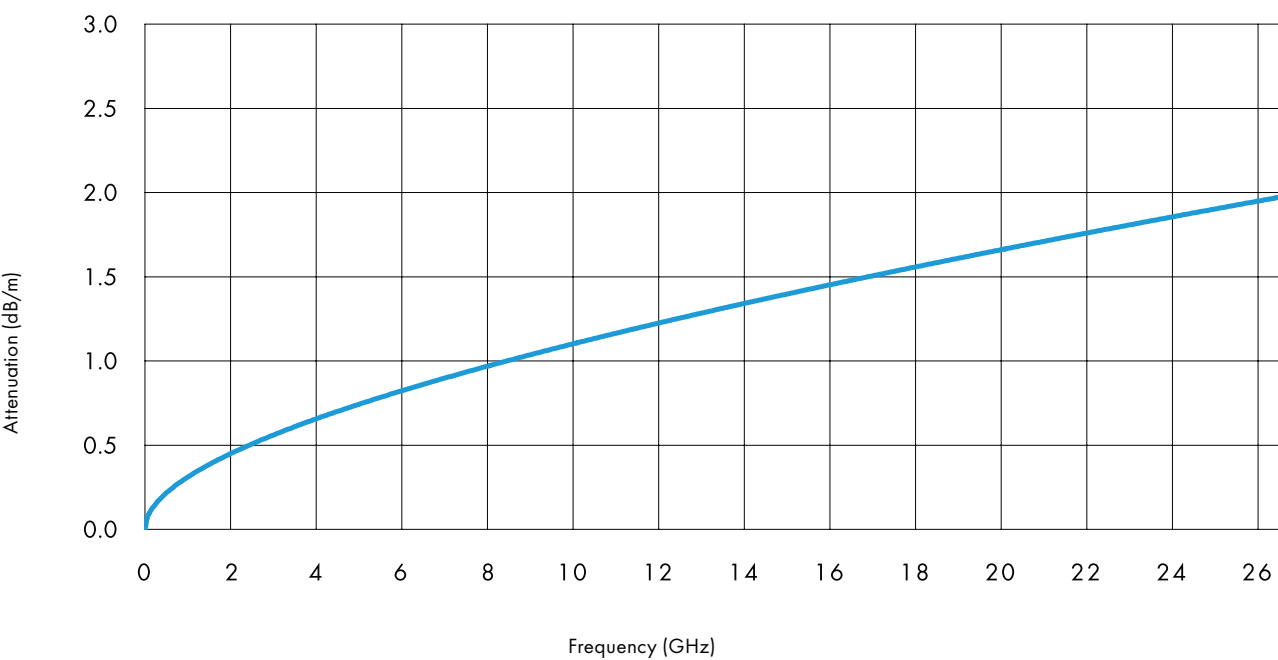
Temperature range	-40...+85 °C
Weight	6.8 kg/100m
Min. bending radius static	16 mm
Min. bending radius dynamic	25 mm

Suitable connectors

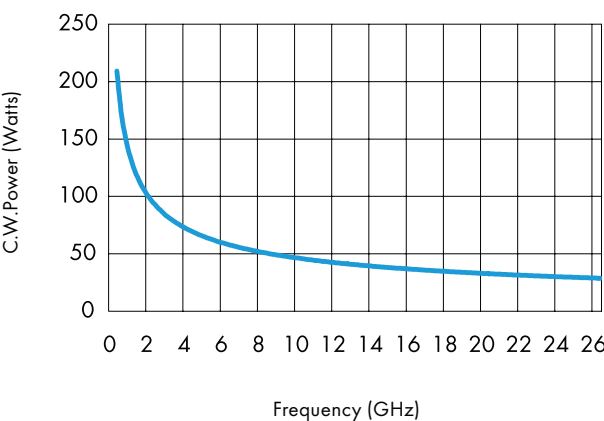
Please refer to pages 116 ff

SUCOFLEX_104_PE

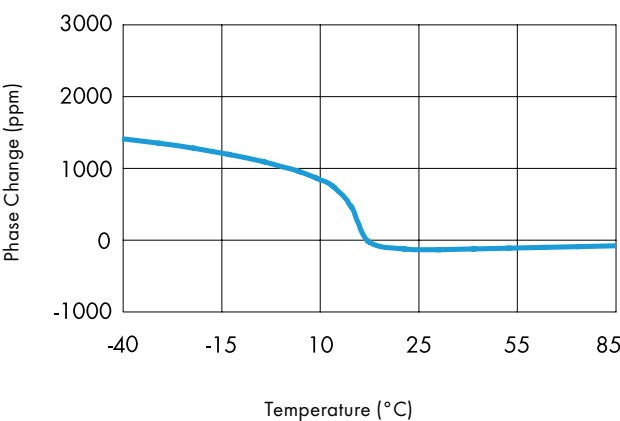
Cable attenuation
Nominal values @ +25 °C ambient temperature



Power handling
Maximum values @ +40 °C ambient temperature and sea level



Phase change vs. temperature



SUCOFLEX® 104

Suitable connectors

HUBER+SUHNER connector type	SF_104_(E)	SF_104_A(EA)	SF_104_B	SF_104_C	SF_104_D	SF_104_EM	SF_104_G	SF_104_I	SF_104_P(PE)	SF_104_PA(PEA)	SF_104_PB	SF_104_PEM	Remarks	Weight (g)	Operating frequency (GHz)	VSWR ¹⁾	Fig.
11_BNC-451	•	•	•	•	•	•	•	•						30.0	4.0	1.14	101
11_BNC-452									•	•	•	•		30.0	4.0	1.14	101
11_DV-41									•	•	•		HP3.5	37.0	26.5	1.16	105
11_DV-42	•	•	•	•	•	•	•	•					HP3.5	37.0	26.5	1.16	105
11_N-47	•	•	•	•	•	•	•	•	•	•	•	•		31.0	15.0 18.0	1.12 1.16	121
11_N-451	•	•	•	•	•	•	•	•						40.0	18.0	1.12	122
11_N-452									•	•	•	•		41.0	18.0	1.12	122
11_N-453									•	•	•		PM	37.0	18.0	1.16	125
11_N-454	•	•	•	•	•	•	•	•	•	•	•	•	MIL	32.0	15.0 18.0	1.12 1.16	120
11_N-456	•	•	•	•	•	•	•	•					MIL	40.0	18.0	1.12	123
11_N-457									•	•	•	•	MIL	41.0	18.0	1.12	123
11_N-459	•	•	•	•	•			•	•	•	•		QL	32.0 18.0	15.0 1.16	1.12 1.26	
11_N-461									•	•	•	•	SUCOTRIM	57.0	18.0	1.15	127
16_N-44	•	•	•	•	•	•	•	•					connector with combi nut	37.0	12.4 18.0	1.14 1.18	129
16_N-45	•	•	•	•	•	•	•	•					MIL	37.0 18.0	12.4 1.18	1.14 1.30	
16_N-457									•	•	•	•	connector with combi nut	87.0	12.4 18.0	1.14 1.18	129
21_N-47	•	•	•	•	•	•	•	•						30.0	11.0 15.0	1.12 1.16	133
21_N-451	•	•	•	•	•	•	•	•						32.0	18.0	1.12	134
21_N-452									•	•	•	•		32.0	18.0	1.12	134
24_N-47	•	•	•	•	•	•	•	•					ML 12	37.0	11.0 15.0	1.12 1.16	136
24_N-451	•	•	•	•	•	•	•	•					ML 12	43.0	18.0	1.12	135
24_N-452									•	•	•	•	ML 12	43.0	18.0	1.12	135
11_PC3.5-42	•	•	•	•	•	•	•	•						13.0	18.0 26.5	1.12 1.16	160
11_PC3.5-43									•	•	•	•		13.0	18.0 26.5	1.12 1.16	160

SUCOFLEX® 104

Suitable connectors

HUBER+SUHNER connector type	SF_104_(E)	SF_104_A(EA)	SF_104_B	SF_104_C	SF_104_D	SF_104_EM	SF_104_G	SF_104_I	SF_104_P(PE)	SF_104_PA(PEA)	SF_104_PB	SF_104_PEM	Remarks	Weight (g)	Operating frequency (GHz)	VSWR1)	Fig.
21_PC3.5-42	•	•	•	•	•	•	•	•	•					12.0	18.0 26.5	1.12 1.16	161
21_PC3.5-43									•	•	•	•		12.0	18.0 26.5	1.12 1.16	161
11_PC7-41	•	•	•	•	•	•	•	•						40.0	18.0	1.10	165
11_PC7-42									•	•	•			41.0	18.0	1.10	165
Q	•	•	•	•				•						40.0	n/a	n/a	n/a
PQ									•	•	•			41.0	n/a	n/a	n/a
11_SMA-451	•	•	•	•	•	•	•	•	•	•	•	•		8.2	18.0	1.12	170
11_SMA-452									•	•	•		PM	12.0	18.0	1.16	172
11_SMA-456	•	•	•	•	•	•	•	•	•	•	•	•	MIL	8.2	18.0	1.12	170
11_SMA-457									•	•	•	•	SUCOTRIM	32.0	18.0	1.15	173
11_SMA-468	•	•	•	•	•			•	•	•	•		QL	8.2	18.0	1.12	171
16_SMA-451	•	•	•	•	•	•	•	•						8.8	18.0	1.12	174
16_SMA-452									•	•	•	•		11.0	18.0	1.12	174
16_SMA-456	•	•	•	•	•	•	•	•					MIL	8.7	18.0	1.12	174
21_SMA-451	•	•	•	•	•	•	•	•	•	•	•	•		6.8	18.0	1.12	175
24_SMA-451	•	•	•	•	•	•	•	•	•	•	•	•	ML35	7.9	18.0	1.12	177
11_TNC-417									•	•	•		QL	19.0	12.4 18.0	1.14 1.18	195
11_TNC-418	•	•	•	•	•			•					QL	19.0	12.4 18.0	1.14 1.18	195
11_TNC-456									•	•	•	•		19.0	18.0	1.12	191
11_TNC-457	•	•	•	•	•	•	•	•						19.0	18.0	1.12	191
11_TNC-458	•	•	•					•	•	•	•			22.0	18.0	1.16	193
11_TNC-459								•	•	•			SUCOTRIM	36.0	18.0	1.15	194
16_TNC-454	•	•	•	•	•	•	•	•						23.0	18.0	1.14	196
24_TNC-456									•	•	•	•	ML 4	37.0	18.0	1.12	199
24_TNC-457	•	•	•	•	•	•	•	•					ML 4	19.0	18.0	1.12	198
25_TNC-452	•	•	•	•	•	•	•	•					ML 8	22.0	18.0	1.12	200

SUCOFLEX® 104

Suitable connectors

HUBER+SUHNER connector type	104_(E)	104_A(EA)	104_B	104_C	SF 104_D	104EM	104_G	104_I	104_P(PE)	104_PA(PEA)	104_PB	104_PEM	Remarks	Weight (g)	Operating frequency (GHz)	VSWR ¹⁾	Fig.
11_4195-41	•	•	•	•	•	•	•	•						55.0	7.5	1.12	210
24_4195-41	•	•	•	•	•	•	•	•						64.0	7.5	1.12	211
11_716-401	•	•		•	•			•						113.0	7.5	1.12	220
11_716-402									•	•				118.0	7.5	1.12	220
21_716-401	•	•		•	•			•						105.0	7.5	1.12	222
21_716-402								•	•					111.0	7.5	1.12	222
25_716-401	•	•	•	•	•	•	•	•						116.0	7.5	1.12	224

Connector patterns

11 Straight cable plug

16 Right angle cable plug

21 Straight cable jack

24 Straight panel bulkhead cable jack

25 Straight panel cable jack, flange mount

1) VSWR per connector

ML xx: Mounting hole size xx refer to section "connector drawings", page 161

MIL: Connector with safety holes and hex nut for military and airframe applications

QL: Quick lock refer to section "special solutions", page 128

PM: Phase matching connector

HP3.5: 3.5 mm connection for Agilent Technologies equipment

SUCOTRIM: with integrated phase trimmer refer to section "special solutions", page 129

Note: For dimensioned sketches of connectors, please refer to pages 136 ff.

Other connector types are available on request. Please contact your local HUBER+SUHNER partner.