

Microwave cables and assemblies

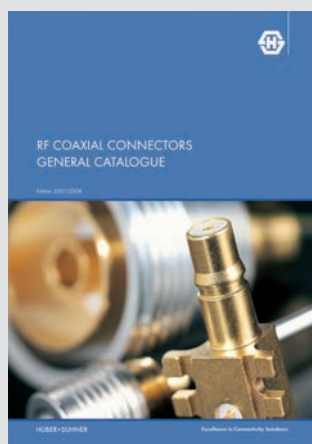
Edition 2008/2009



FURTHER CATALOGUES



Test+Measurement
components
Item no. 23012791



RF coaxial connectors
Item no. 644802

Introduction

General Assembly Information

Applications

**Form stable microwave
SEMI-RIGID cables**

**Handformable microwave
SUCOFORM cables**

**Flexible semi-rigid microwave
MULTIFLEX cables**

**Flexible, low loss microwave
S-SERIES cables**

**Test leads
SUCOTEST cable assemblies**

**High performance microwave
SUCOFLEX 100 cable assemblies**

**Light weight
SUCOFLEX 300 cable assemblies**



HUBER+SUHNER

The Swiss Group HUBER+SUHNER AG was founded in 1969 resulting from a merger between Suhner + Co. (established in 1864) and Huber + Co. (established in 1881). As well as the main plants based in Herisau/AR and Pfäffikon/ZH the group is located world wide, directly near you, with affiliated companies and distributors. Today HUBER+SUHNER is an international leader in the supply of innovative components and systems in the fields of telecommunications and technically sophisticated polymer systems. The group's core competencies include radio-frequency (RF) and fibre optic technology plus the compounding and upgrading of polymeric materials.

Coaxial cables

HUBER+SUHNER AG has been developing and producing coaxial cables for over 40 years for almost every conceivable application and in accordance with the main international standards. The specialists working in our development and application departments are capable of meeting the most complex cable design requirements specified by customers. The fact that our group also offers customers other related products and services such as coaxial connectors and microwave system components makes us your ideal partners for covering any need you may have in the field of coaxial system components.

State-of-the-art manufacturing methods, computer-controlled production facilities, analyzing procedures during the manufacturing process and continuous electronic quality testing are some of the keywords characterizing our modern cable factory. Our high-performance electron beam cross-linking installation and our in-house-developed jacket materials enable us to achieve a significant improvement in the temperature resistance of finished products, which in addition are halogen-free and flame-resistant.

Cable assemblies

By developing and producing our own RF connectors and cables in-house, we have gained extensive know-how in the field of coaxial cable assembly technology. Our customers benefit from a balanced range of connectors and cables and perfect cable assembly techniques. All assembly shops both at headquarters and in the affiliated companies are based on identical organisational procedures and comply with the same stringent quality standards. A clean room is available at Group headquarters in Herisau for manufacturing assemblies which must meet the most exacting quality standards as required in the Space industry. Each month, tens of thousands of ready-to-use cable assemblies are produced according to customers' specifications. In other words, we are the users of our own products, allowing our range of products to be continuously improved.

So, why not take advantage of our carefully matched line of connectors and cables and the years of practical experience accumulated by our cable assembly shops!







EXCELLENCE IN CONNECTIVITY SOLUTIONS GROUP SITE

HOME CONTACTS REQUESTS DOWNLOADS SEARCH NEWSLETTER

PRODUCTS ABOUT US VISIONS NEWS SALES CONTACTS JOBS MEDIA CENTRE



Search

10-News-2004

News HSP CD fiber optic printing machine, printer and printer.

10

10-COUNTRY SELECTOR

Please choose

WELCOME TO HUBER+SUHR

The HUBER+SUHR Group is a leading global supplier of components and systems for electrical and optical connectivity for the markets communications, transportation and industrial. We offer technical expertise in radio frequency, fiber optics, cables and polymers under one roof, thus providing a unique basis for continual innovation focused on the needs of our customers all over the world.

PRODUCTS

Select product group

Select brand

RF product search

POLYMER SOLUTIONS

• Radial

• Composite

• Composite

• Polymer and plastic components

• Waterproof Systems

COMMUNICATION

Communications Networks

Communications Equipment

TRANSPORTATION

Railway

Railway

INDUSTRIAL

Microwave cable assemblies

For over 20 years now, HUBER+SUHNER AG has been manufacturing microwave assemblies offering outstanding electrical and mechanical characteristics. Our carefully balanced range of cables and connectors covers the frequency range up to 50 GHz. A large number of variations and ruggedisations are available for applications involving a wide spectrum of requirements, be it flexibility, increased mechanical strength or protection against abrasion. Our patented connector assembly system ensures a reliable connection between the connector and the cable in any situation.

Benefit from our vast expertise in the production of ready-to-use microwave cable assemblies. Professional assembly work based on soldering and crimping techniques, the supply of test data and the guarantee that cable assemblies are made strictly according to your specific needs give you the assurance of having settled for nothing less than the best. Vector and scalar network analyzer set-ups are available in our assembly shop for testing finished cable assemblies.

Our quality philosophy

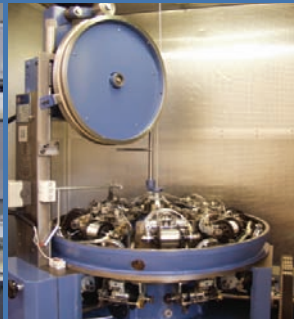
Our Group's core corporate quality philosophy is to focus all our activities towards the needs of the marketplace. We see the term 'quality' to be the degree to which market needs are satisfied. This is reflected in our quality assurance zeal which is directed towards optimising our market oriented activities. For us quality in the monitoring of activities like delivery dates, after-sales service, and technology are just as important as quality in the products themselves. Our Quality System which is certified by the Swiss Association for Quality Assurance Certificates SQS (based on ISO 9001, EN 29001 and ISO 14001 standard), covers all the activities throughout the entire Group. This catalogue contains the most up-to-date and precise information available at the time of printing. Nevertheless because of the continuous technical refinement of our products some details may get outdated in the course of time, or the range of products described may undergo changes. Therefore please note that the information contained in this catalogue is subject to change without prior notice. Where you have queries regarding critical parameters, or if you are unable to find specific information during the specification phase, please contact your local subsidiary or representative or our Customer Support Service.



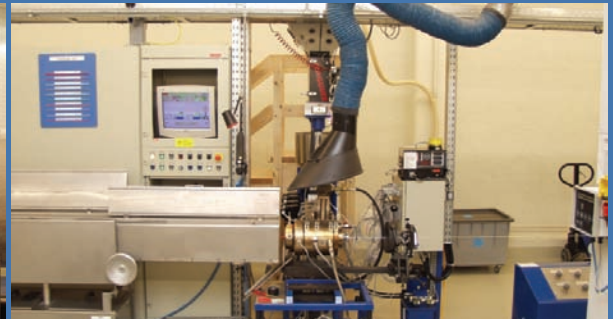
PTFE extrusion



Tape wrapping



Braiding



FEP extrusion

GENERAL ASSEMBLY INFORMATION

Cables and connectors from the same manufacturer!

HUBER+SUHNER develops and manufactures coaxial cables and connectors for most applications and in a multitude of versions. The connector series comprise over 1'700 different types which prove their qualities daily world wide. Demanding customers trust the reliability and quality of HUBER+SUHNER products. These products have been tested to IEC, MIL, CECC and other standards. Our extensive know-how in RF technology enables reliable and competent technical consulting and support. You stand to benefit from a well matched cable and connector range as well as many years vast experience of our engineers.

Microwave cable assemblies to your specifications

Make use of the HUBER+SUHNER custom design service. Increase efficiency and productivity in your company by ordering ready-to-use microwave cable assemblies from the specialists. Expert assembly by soldering, clamp or crimp technique and inspection records according to your specifications enable you to order with confidence.



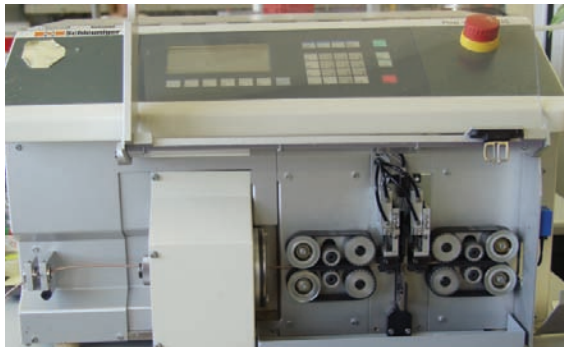
Advantages of microwave cable assemblies

Purchasing of ready-made microwave cable assembly lines provides important benefits:

- perfect assembly, no rejects
- no need for training assembly personnel
- no capital investment for assembly provisions
- precisely matched cables and connectors from the same manufacturer
- HUBER+SUHNER guarantees quality

GENERAL ASSEMBLY INFORMATION

Assembly shop capability



Automatic cutting and stripping



Automatic bending



Automatic soldering



Clean room class 10'000 environment for space flight manufacturing

RF testing (up to 50 GHz)

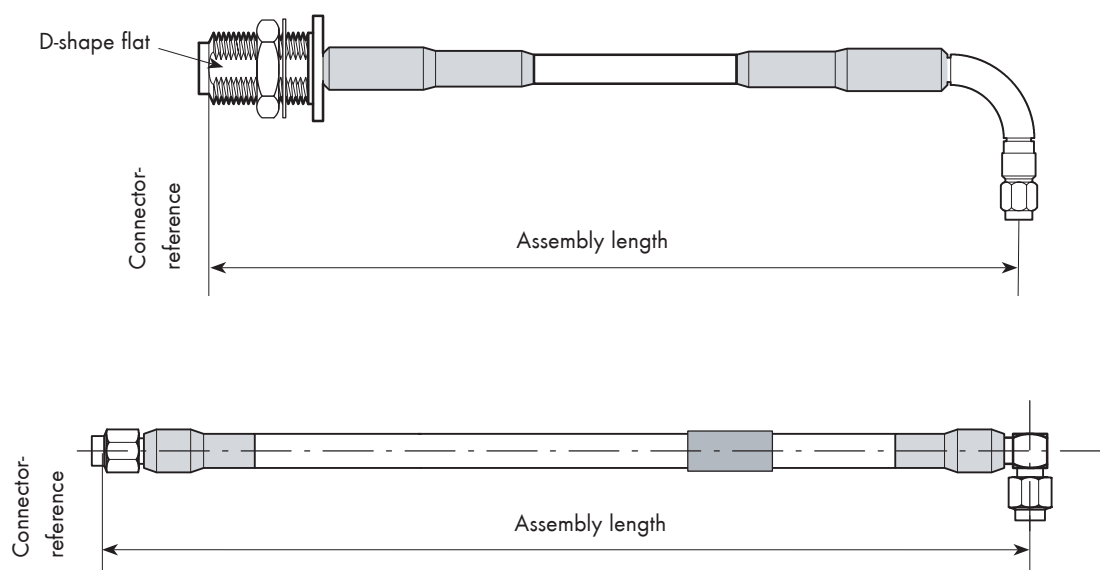


- Insertion loss
- Return loss
- Phase length
- Delay time
- Intermodulation

GENERAL ASSEMBLY INFORMATION

Length definition and assembly design

The assembly lengths are measured using the connector reference plane of straight plug and jack connectors, and the pin centerline of right-angle connectors.



Standard assembly length tolerances

SEMI RIGID

≤ 500 mm	± 2.0 mm
≤ 1'000 mm	± 3.0 mm
≤ 2'000 mm	± 5.0 mm
> 2'000 mm	± 0.3 %

SUCOFORM®

≤ 500 mm	± 3.0 mm
≤ 1'000 mm	± 5.0 mm
≤ 2'000 mm	± 8.0 mm
> 2'000 mm	± 0.4 %

MULTIFLEX and S-SERIES

≤ 500 mm	± 5.0 mm
≤ 1'000 mm	± 7.0 mm
≤ 2'000 mm	± 12.0 mm
> 2'000 mm	± 0.6 %

SUCOFLEX® 100 + 300

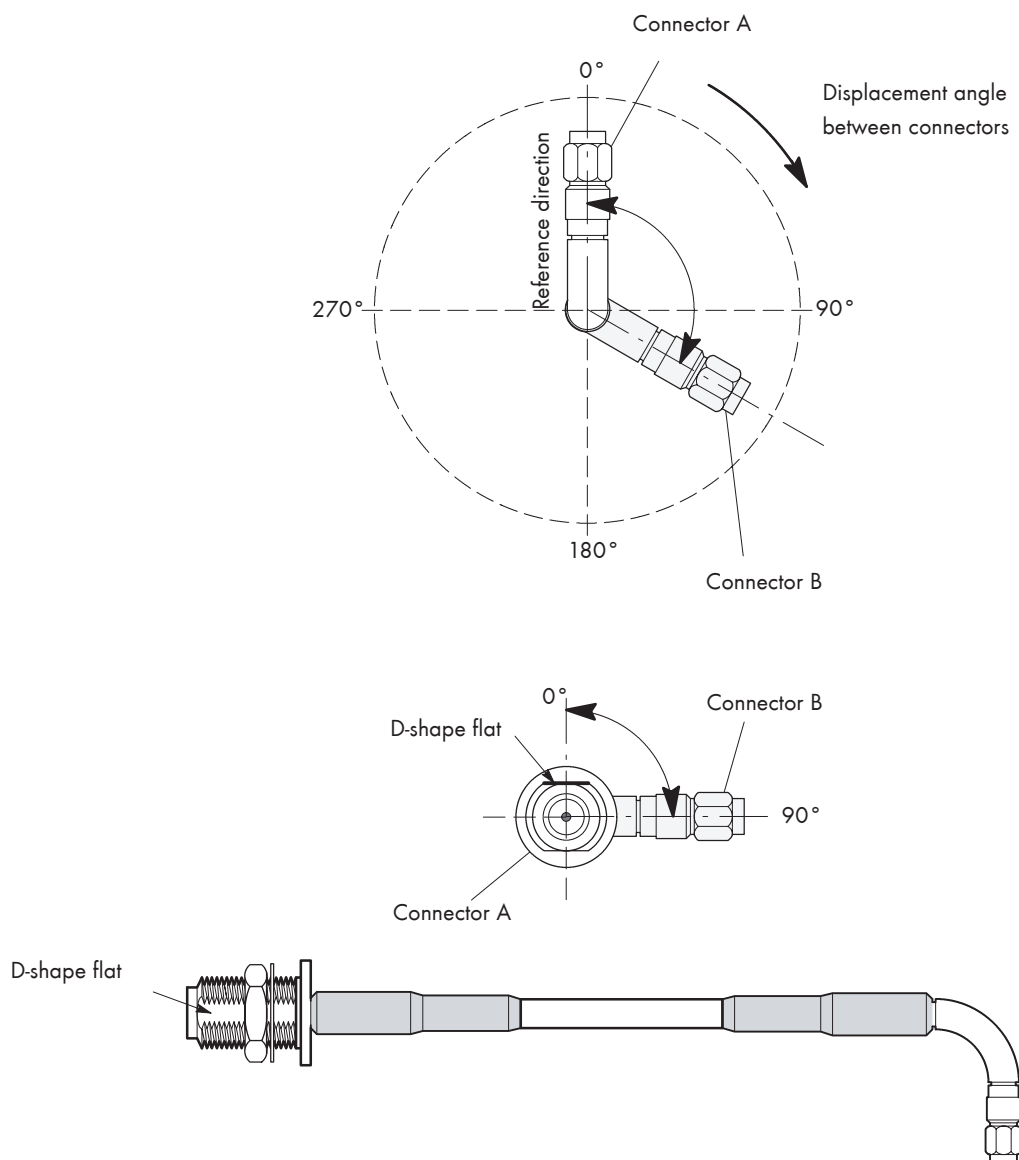
≤ 200 mm	± 1.0 mm
> 200 mm	± 0.5 %

Tighter assembly tolerances are available on special request. Please ask your local HUBER+SUHNER partner.

GENERAL ASSEMBLY INFORMATION

Angular displacement and D-shape flat of connectors

With HUBER+SUHNER microwave cable assemblies that have two right-angle or right-angle and bulkhead connectors, the relative angular displacement must be specified as shown in the following sketches



GENERAL ASSEMBLY INFORMATION

Moulded anti-buckling bushings type SUCOMELT for MULTIFLEX and SUCOFORM cable types with jacket

In applications where MULTIFLEX and SUCOFORM with (PE or FEP jackets) are utilised, the SUCOMELT anti-buckling bushings offer you a convincing solution. By means of an injection moulding process, the anti-buckling protection is injection moulded onto the cable behind the connector. This offers you the following benefits.



- Wide assembly temperature range (-40 °C ... +125 °C)
- Small dimensions (less than 17 mm long)
- Excellent characteristics under mechanical and thermal stresses
- Protects the cable entry against water and moisture
- Attractive design and appearance

An extensive test programme has demonstrated that the SUCOMELT anti-buckling bushings meet the requirements. The following tests were performed on SUCOFORM assemblies.

Test	Test specification	Parameters	Result
Stress crack resistance	MIL-C-17	+80 °C, 96 h	passed
Cold bend test	MIL-C-17	-20 °C, 4h	passed
Bend test	IEC 966-1	±90°, 50 bends	passed
Water tightness	IEC 529 - IP64	acc. requirements	passed

If SUCOMELT is not available, or the assemblies are to be made in the field then HUBER+SUHNER recommend hot melt adhesive lined heatshrink as anti buckling strain relief.

GENERAL ASSEMBLY INFORMATION

Care and handling instructions

HUBER+SUHNER microwave cable assemblies of all types offer a long service life providing they are treated with the appropriate care and attention. Microwave cable assemblies are high precision system components and require proper handling in order to ensure that measured performance values are maintained.

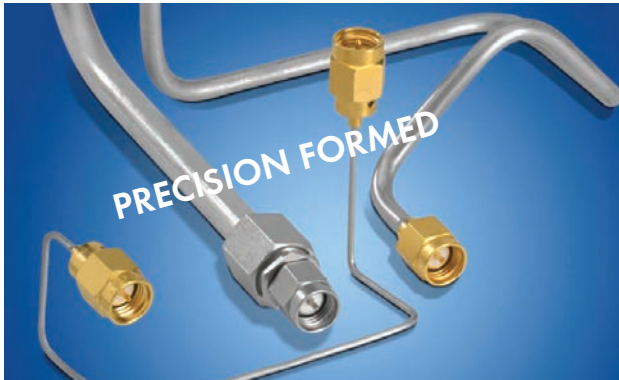
To achieve the maximum installed performance the following guidelines should be followed

1. Assemblies should remain in their original packaging for delivery and storage. Storage temperature should be between $-50\text{ }^{\circ}\text{C}$ and $+80\text{ }^{\circ}\text{C}$ and the relative humidity should not exceed 85%.
2. Carefully unpack assemblies before installation. Avoid kinking cables when straightening from a coil or reel.
3. Ensure that the surroundings are clean and free of dust, dirt and any other particles that could enter unsealed connector interfaces.
4. Use protective caps to prevent contamination whenever connectors are unmated.
5. Where interfaces are contaminated, particles can be removed with dry, oil-free compressed air. Please use eye-protection. Interfaces can be cleaned with dry cotton swabs. Do not use hard handtools or solvents. Do not blow into interfaces or use normal compressed-air.
6. Choose the installation routing using the largest bend radii possible. Small bend radii may affect electrical performance. Exceeding the specified limits during the installation process could cause a permanent degradation.
7. Avoid twisting microwave cable assemblies. Torsion of this type of assembly can alter the relative diameters of cable layers and affects the electrical characteristics. Exceeding the limit of 10° per metre during installation process could cause a permanent degradation.

GENERAL ASSEMBLY INFORMATION

8. Assemblies should be fixed in place without excess pressure. The use of cable ties should be avoided where possible, as they can easily exert more force than this. If cable ties must be used then they should be as wide as possible and still allow movement of the cable. Avoid placing fixings at regular intervals.
9. Examine interfaces for damage and/or contamination before mating.
10. Discharge connectors before mating or ensure that they are connected to a suitable ground.
11. When mating connectors with a screwed interface always hold the connector bodies and turn only the coupling nut. This avoids twisting the cable and ensures minimum wear on the connector pins.
12. Do not exceed the specified torque.

APPLICATIONS



SEMI-RIGID
The form-stable microwave cable



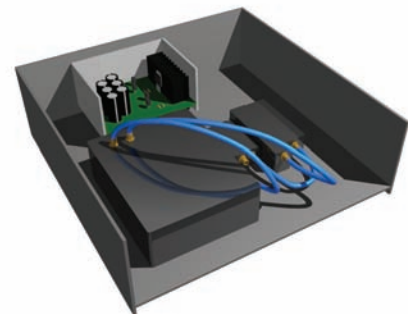
S-SERIES
The economical, low loss microwave cable



SUCOFORM
The handformable alternative to semi-rigid



MULTIFLEX
The flexible alternative to semi-rigid



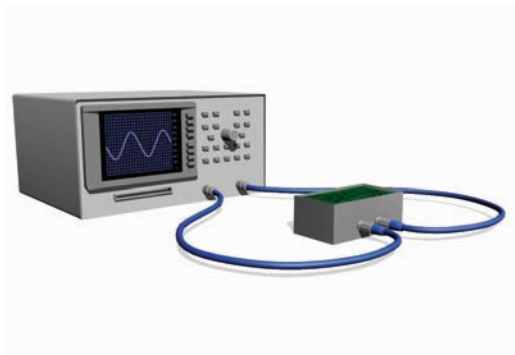
APPLICATIONS



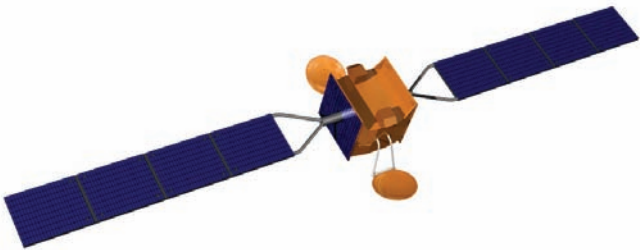
SUCOTEST 18 and SUCOTEST 18A
For the highest standard of measurement



SUCOFLEX® 100
The high performance microwave cable assembly



SUCOFLEX® 300
The lightweight, high performance microwave cable assembly



Additional notes

SEMI-RIGID

The form-stable microwave cable

Content

Product description	19
Features and benefits	19
Overview of common semi-rigid cable types	19
Product specification of	
EZ_47_TP_M17	20
EZ_47_AL_TP	22
EZ_86_TP_M17	24
EZ_86_AL_TP_M17	26
EZ_118_TP	28
EZ_141_TP_M17	30
EZ_141_AL_TP_M17	32
EZ_250_TP_M17	34
EZ_250_AL_TP	36
Further available semi-rigid products	38
Suitable connectors	39



SEMI-RIGID

The form-stable microwave cable

Product description

The semi-rigid cable is unique in that it is easily bent to finished shape and still maintains its set after bending. This property makes it ideal for use with automated bending equipment as well as hand forming by bending tools.

There are hundreds of proven applications which include: low-noise amplifiers, a full range of microwave components, aeronautical and space applications and a variety of high-performance laboratory instrumentation.

The semi-rigid cables provide greatly extended environmental parameters. The cables exhibit highly favourable electrical characteristics, particularly an impedance tolerance as low as 0.5 Ohm for a .141" diameter cable with nominal impedance of 50 Ohm.



Features and benefits

- Excellent electrical performance: impedance tolerance as low as 0.5 Ohm; minimum VSWR, smooth attenuation vs. frequency curve; minimum change in impedance and attenuation
- Easy to form, strip and solder, making for convenient installation
- Small sizes permit use in high-density areas
- MIL-C-17 qualified

HUBER+SUHNER cable type	Item no.	Operating frequency (GHz)	Temperature range		Outer dia. (mm)	Nom. attenuation 18 GHz, 25 °C (dB/m)	Bending radii		More information see page
			minimum (°C)	maximum (°C)			static (mm)	dyn. (mm)	
EZ_47_TP_M17	22810504	40	-40	+100	1.19	5.1	3.18	n/a	20
EZ_47_AL_TP	22810510	40	-40	+100	1.19	5.4	1.27	n/a	22
EZ_86_TP_M17	22810175	40	-40	+125	2.20	3.2	3.18	n/a	24
EZ_86_AL_TP_M17	22810167	40	-40	+125	2.20	3.3	1.78	n/a	26
EZ_118_TP	22810073	40	-40	+125	2.95	1.8	9.53	n/a	28
EZ_141_TP_M17	22810043	33	-40	+125	3.58	2.1	6.35	n/a	30
EZ_141_AL_TP_M17	22810015	33	-40	+125	3.58	2.2	3.18	n/a	32
EZ_250_TP_M17	22810705	18	-40	+90	6.35	1.5	19.0	n/a	34
EZ_250_AL_TP	22810708	18	-40	+90	6.35	1.5	19.0	n/a	36

SEMI-RIGID EZ_47_TP_M17 (M17/151-00002)

Item no. 22810504

Cable design



	Description	Diameter
1. Centre conductor	Solid silver-plated copper clad-steel wire	0.29 mm
2. Dielectric	Solid PTFE	0.94 mm
3. Outer conductor	Seamless copper tubing, tin-plated	1.19 mm

Electrical cable data

Impedance	50 Ohm		
Operating frequency	40 GHz		
Capacitance	105 pF/m		
Velocity of propagation	69.5 %		
Time delay	4.8 ns/m		
Nom. attenuation*	coefficient a	1.04044	coefficient b 0.03967
Max. attenuation*	coefficient a	1.24853	coefficient b 0.04760
Max. operating voltage	1.0 kVrms		
Min. screening effectiveness up to 18 GHz	120 dB		

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

General cable data

Temperature range	-40...+100 °C
Weight	0.71 kg/100m
Min. bending radius static	3.18 mm
Min. bending radius dynamic	n/a

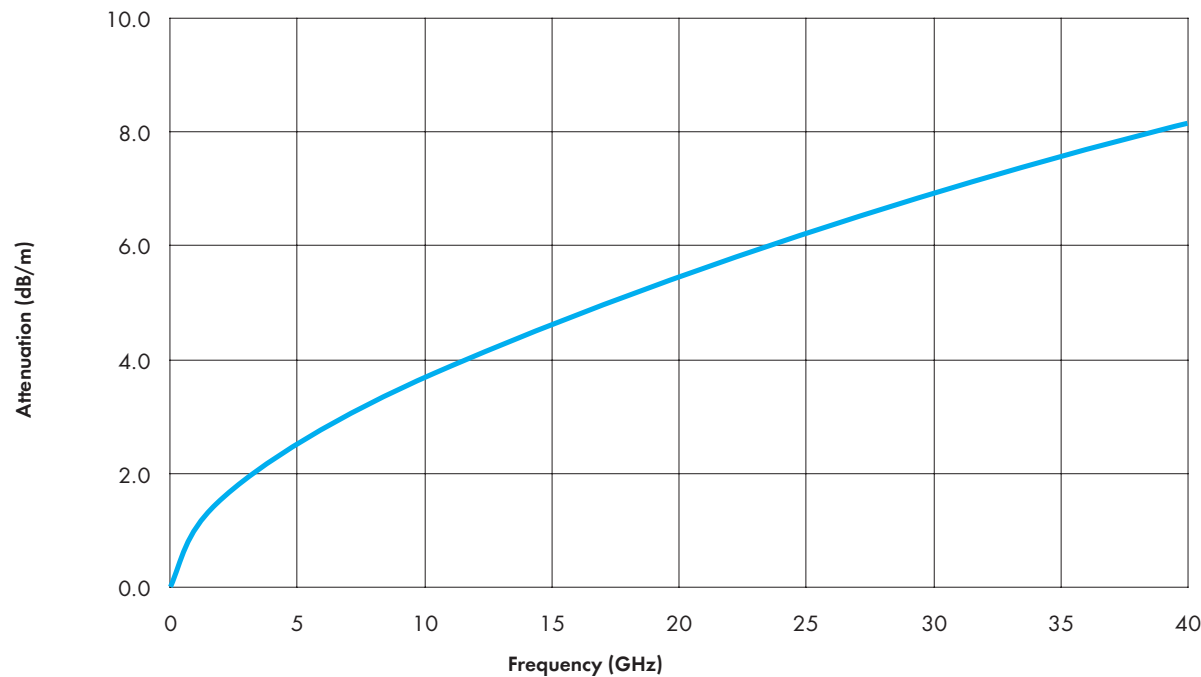
Suitable connectors

Cable group (please refer to pages 39 ff)	Y2
---	----

SEMI-RIGID EZ_47_TP_M17

Cable attenuation

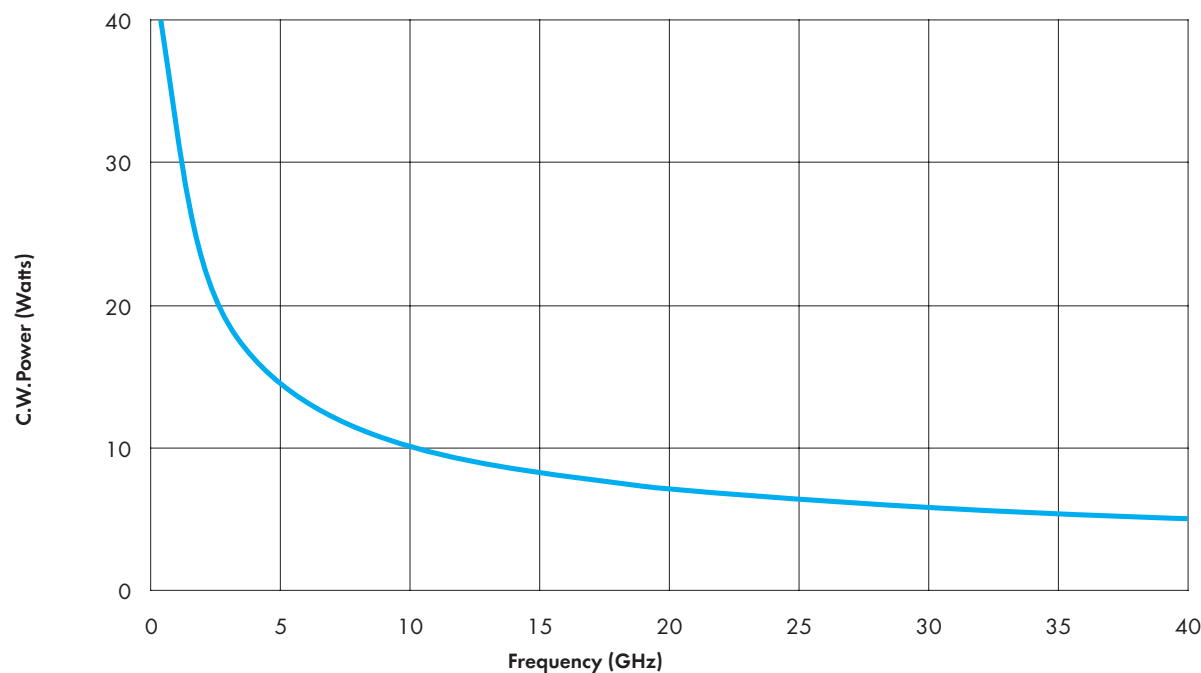
Nominal values @ +25 °C ambient temperature



SEMI-RIGID

Power handling

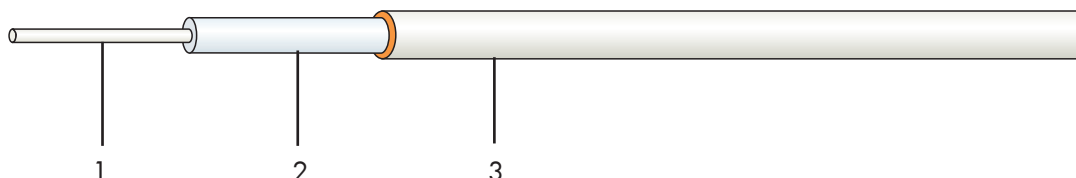
Maximum values @ +40 °C ambient temperature and sea level



SEMI-RIGID EZ_47_AL_TP

Item no. 22810510

Cable design



	Description	Diameter
1. Centre conductor	Solid silver-plated copper clad-steel wire	0.29 mm
2. Dielectric	Solid PTFE	0.94 mm
3. Outer conductor	Seamless aluminium tubing, tin-plated	1.19 mm

Electrical cable data

Impedance	50 Ohm		
Operating frequency	40 GHz		
Capacitance	105 pF/m		
Velocity of propagation	69.5 %		
Time delay	4.8 ns/m		
Nom. attenuation*	coefficient a	1.10366	coefficient b 0.03967
Max. attenuation*	coefficient a	1.24853	coefficient b 0.04760
Max. operating voltage	1.0 kVrms		
Min. screening effectiveness up to 18 GHz	120 dB		

*Attenuation calculation

$$a_{25} = a \cdot \sqrt{f(\text{GHz})} + b \cdot f(\text{GHz}) \quad (\text{dB/m})$$

General cable data

Temperature range	-40...+100 °C
Weight	0.31 kg/100m
Min. bending radius static	1.27 mm
Min. bending radius dynamic	n/a

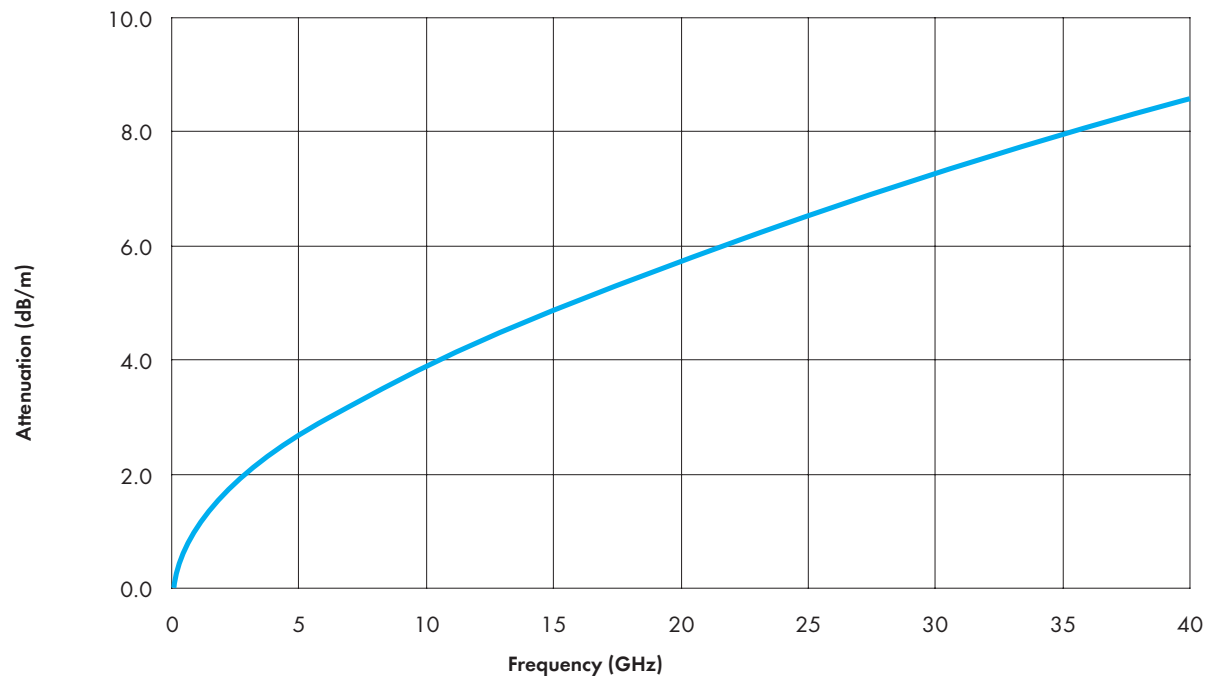
Suitable connectors

Cable group (please refer to pages 39 ff)	Y2
---	----

SEMI-RIGID EZ_47_AL_TP

Cable attenuation

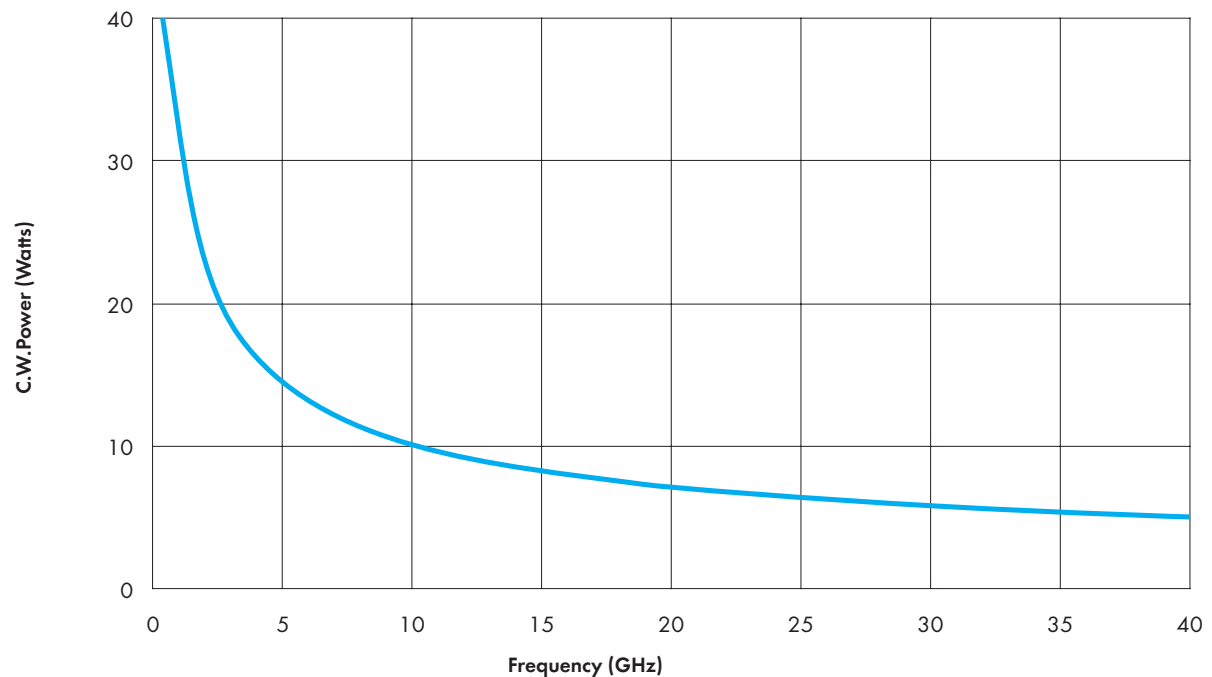
Nominal values @ +25 °C ambient temperature



SEMI-RIGID

Power handling

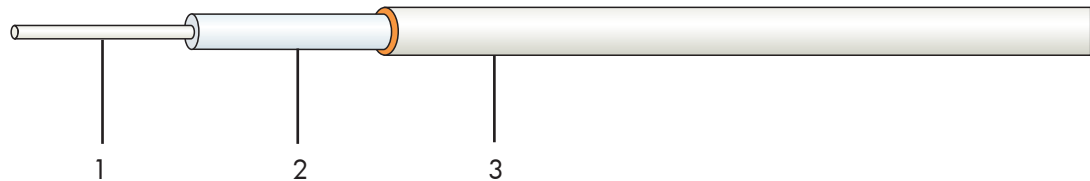
Maximum values @ +40 °C ambient temperature and sea level



SEMI-RIGID EZ_86_TP_M17 (M17/133-00001)

Item no. 22810175

Cable design



	Description	Diameter
1. Centre conductor	Solid silver-plated copper clad-steel wire	0.51 mm
2. Dielectric	Solid PTFE	1.68 mm
3. Outer conductor	Seamless copper tubing, tin-plated	2.20 mm

Electrical cable data

Impedance	50 Ohm		
Operating frequency	40 GHz		
Capacitance	105 pF/m		
Velocity of propagation	69.5 %		
Time delay	4.8 ns/m		
Nom. attenuation*	coefficient a	0.58454	coefficient b 0.03967
Max. attenuation*	coefficient a	0.70145	coefficient b 0.04760
Max. operating voltage	1.5 kVrms		
Min. screening effectiveness up to 18 GHz	120 dB		

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

General cable data

Temperature range	-40...+125 °C
Weight	2.35 kg/100m
Min. bending radius static	3.18 mm
Min. bending radius dynamic	n/a

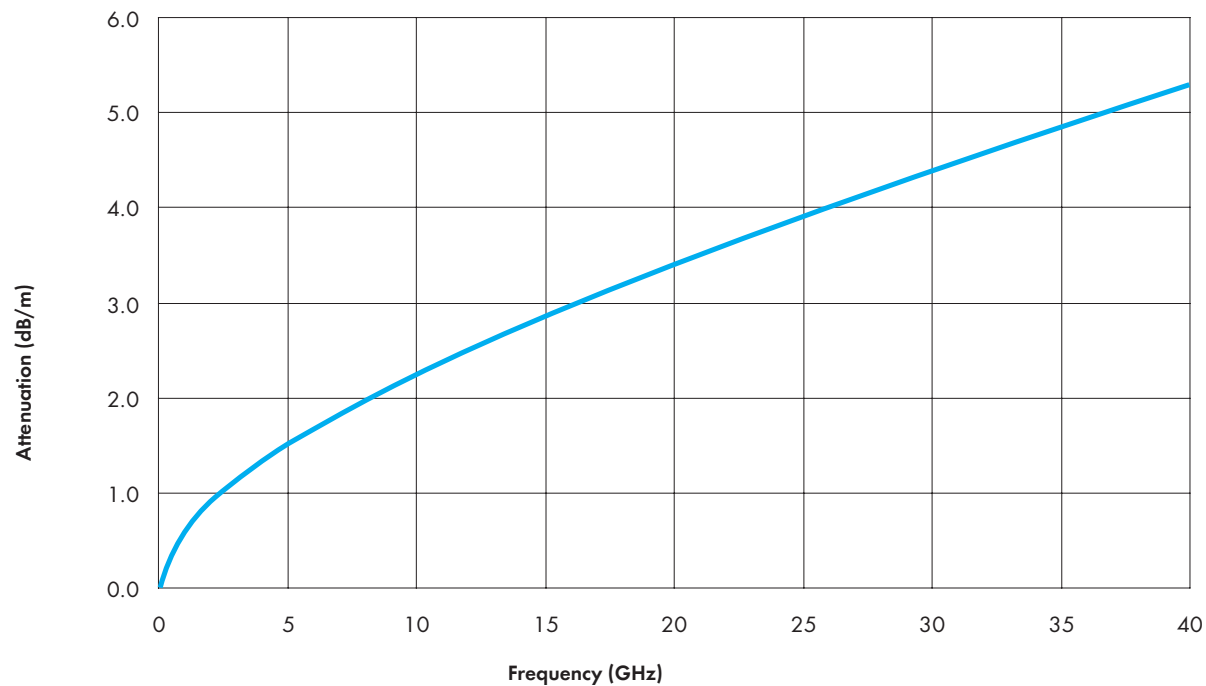
Suitable Connectors

Cable group (please refer to pages 39 ff)	Y3
---	----

SEMI-RIGID EZ_86_TP_M17

Cable attenuation

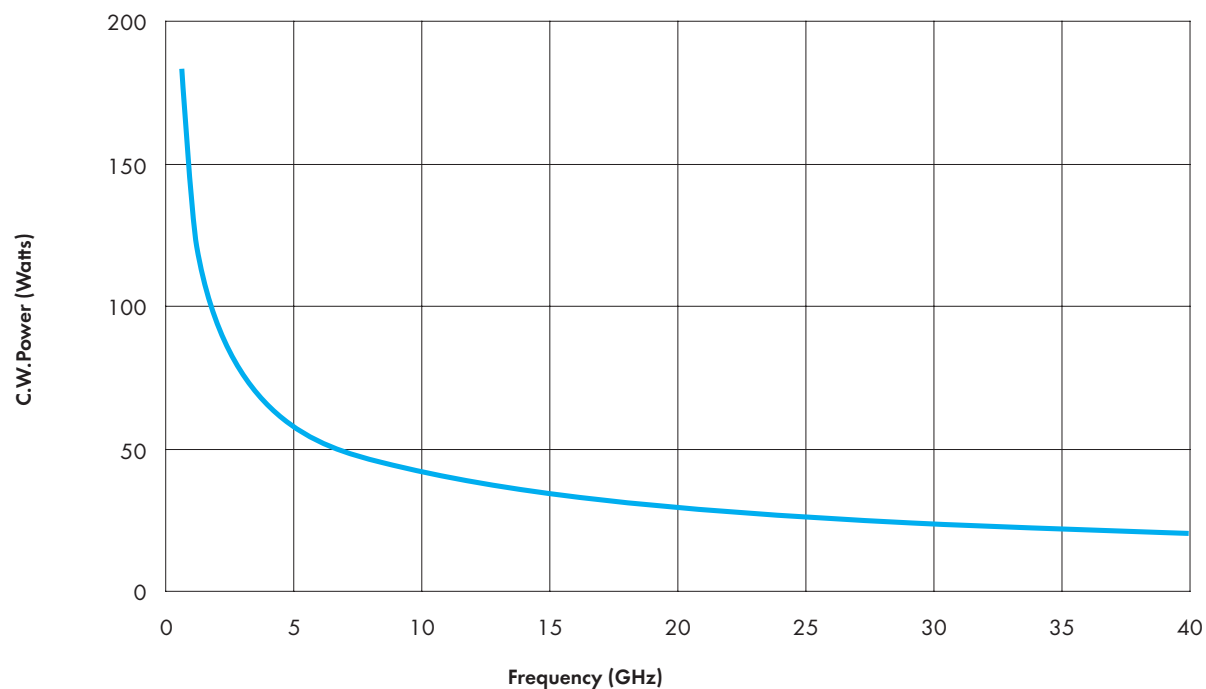
Nominal values @ +25 °C ambient temperature



SEMI-RIGID

Power handling

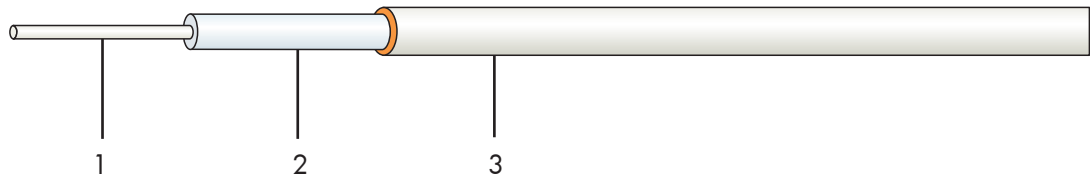
Maximum values @ +40 °C ambient temperature and sea level



SEMI-RIGID EZ_86_AL_TP_M17 (M17/133-00013)

Item no. 22810167

Cable design



	Description	Diameter
1. Centre conductor	Solid silver-plated copper clad-steel wire	0.51 mm
2. Dielectric	Solid PTFE	1.68 mm
3. Outer conductor	Seamless aluminium tubing, tin-plated	2.20 mm

Electrical cable data

Impedance	50 Ohm		
Operating frequency	40 GHz		
Capacitance	105 pF/m		
Velocity of propagation	69.5 %		
Time delay	4.8 ns/m		
Nom. attenuation*	coefficient a	0.61998	coefficient b 0.03967
Max. attenuation*	coefficient a	0.70145	coefficient b 0.04760
Max. operating voltage	1.5 kVrms		
Min. screening effectiveness up to 18 GHz	120 dB		

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

General cable data

Temperature range	-40...+125 °C
Weight	1.19 kg/100m
Min. bending radius static	1.78 mm
Min. bending radius dynamic	n/a

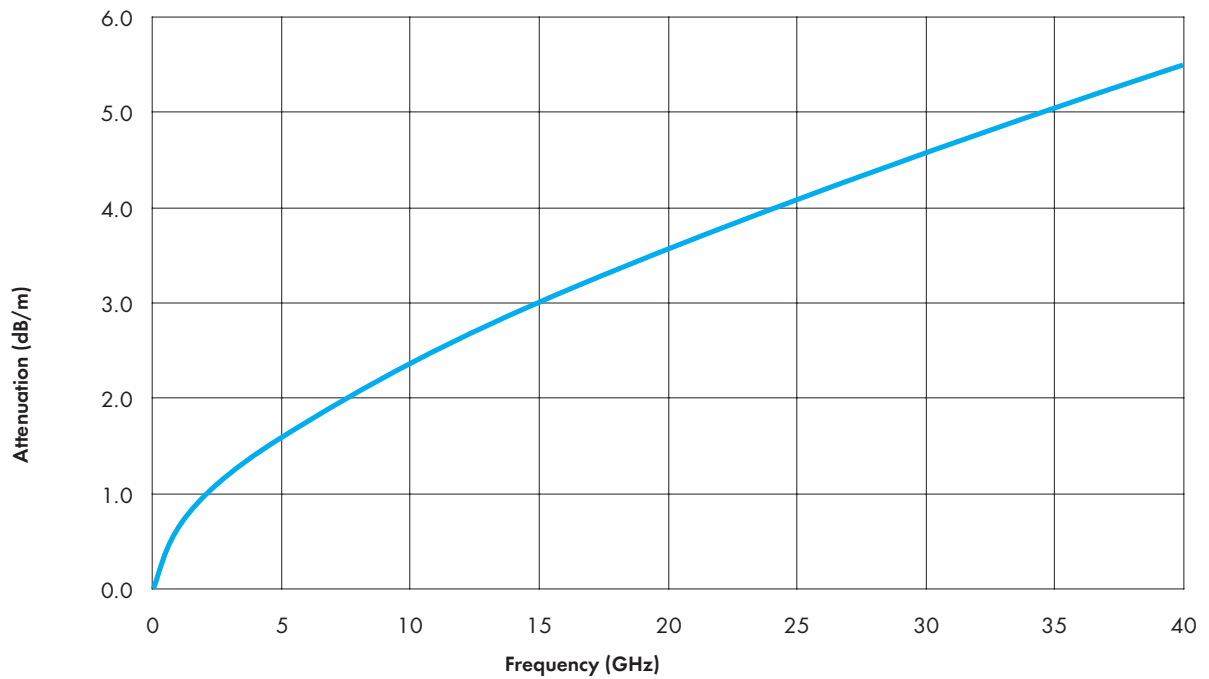
Suitable connectors

Cable group (please refer to pages 39 ff)	Y3
---	----

SEMI-RIGID EZ_86_AL_TP_M17

Cable attenuation

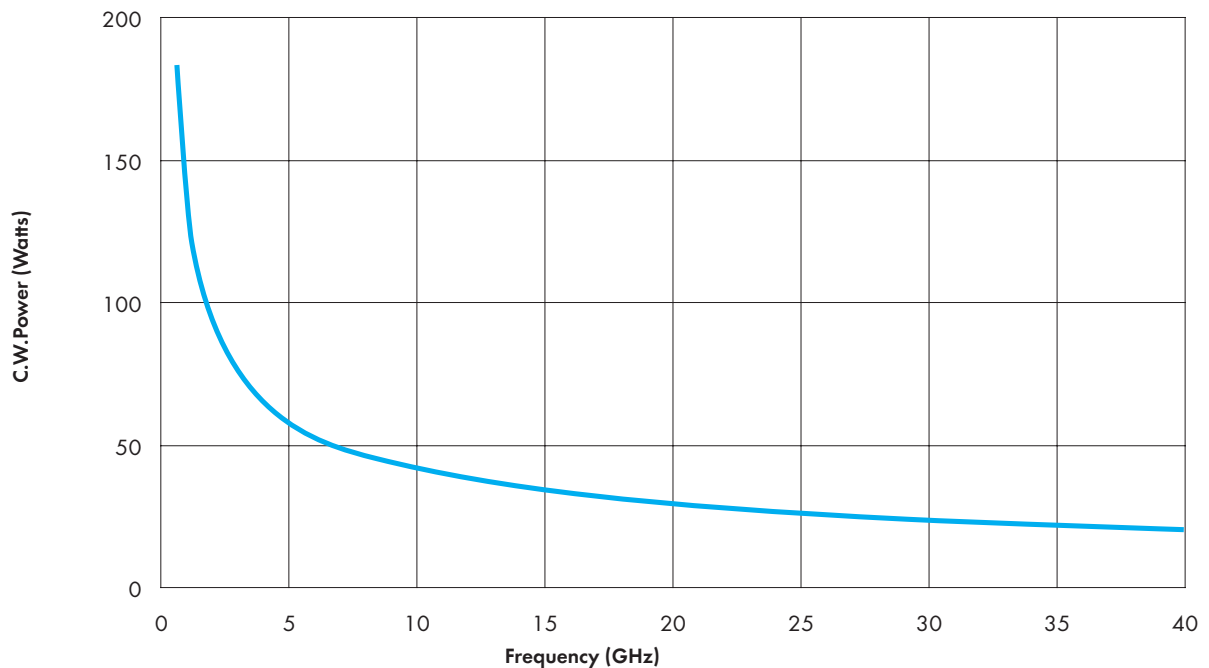
Nominal values @ +25 °C ambient temperature



SEMI-RIGID

Power handling

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



SEMI-RIGID EZ_118_TP

Item no. 22810073

Cable design



	Description	Diameter
1. Centre conductor	Solid silver-plated copper wire	0.81 mm
2. Dielectric	Low loss PTFE	2.41 mm
3. Outer conductor	Seamless copper tubing, tin-plated	2.95 mm

Electrical cable data

Impedance	50 Ohm		
Operating frequency	40 GHz		
Capacitance	98 pF/m		
Velocity of propagation	80 %		
Time delay	4.2 ns/m		
Nom. attenuation*	coefficient a	0.38040	coefficient b 0.00791
Max. attenuation*	coefficient a	0.45648	coefficient b 0.00949
Max. operating voltage	1.5 kVrms		
Min. screening effectiveness up to 18 GHz	120 dB		

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

General cable data

Temperature range	-40...+125 °C
Weight	3.4 kg/100m
Min. bending radius static	9.53 mm
Min. bending radius dynamic	n/a

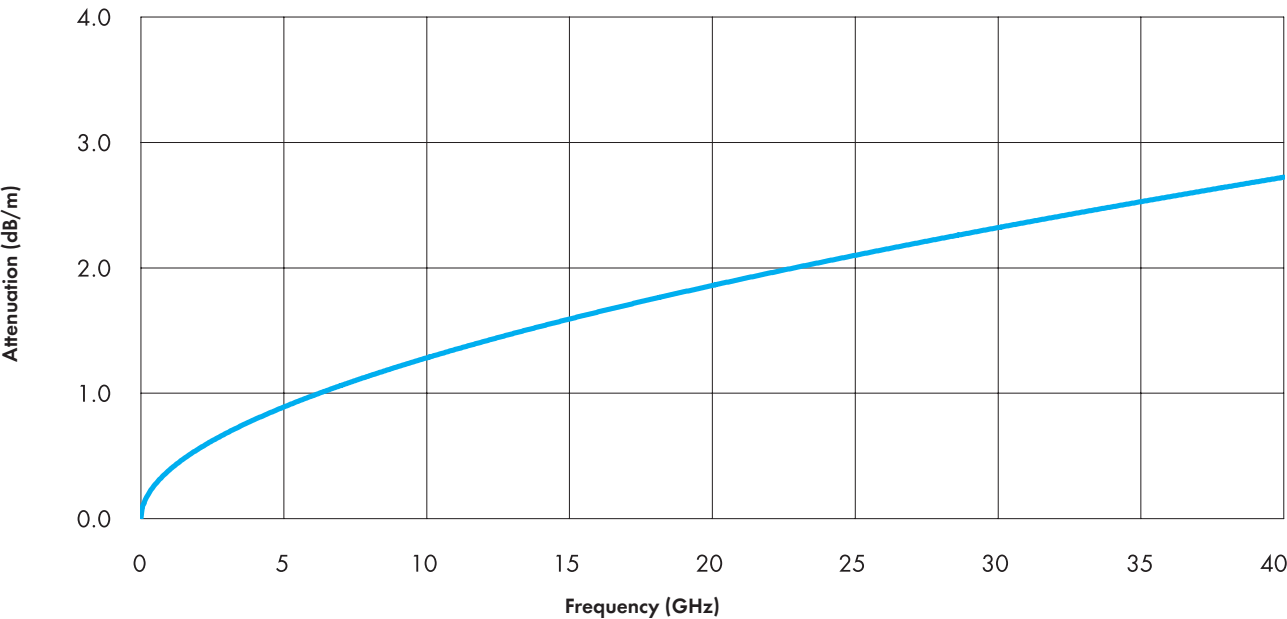
Suitable connectors

Cable group (please refer to pages 39 ff)	Y10
---	-----

SEMI-RIGID EZ_118_TP

Cable attenuation

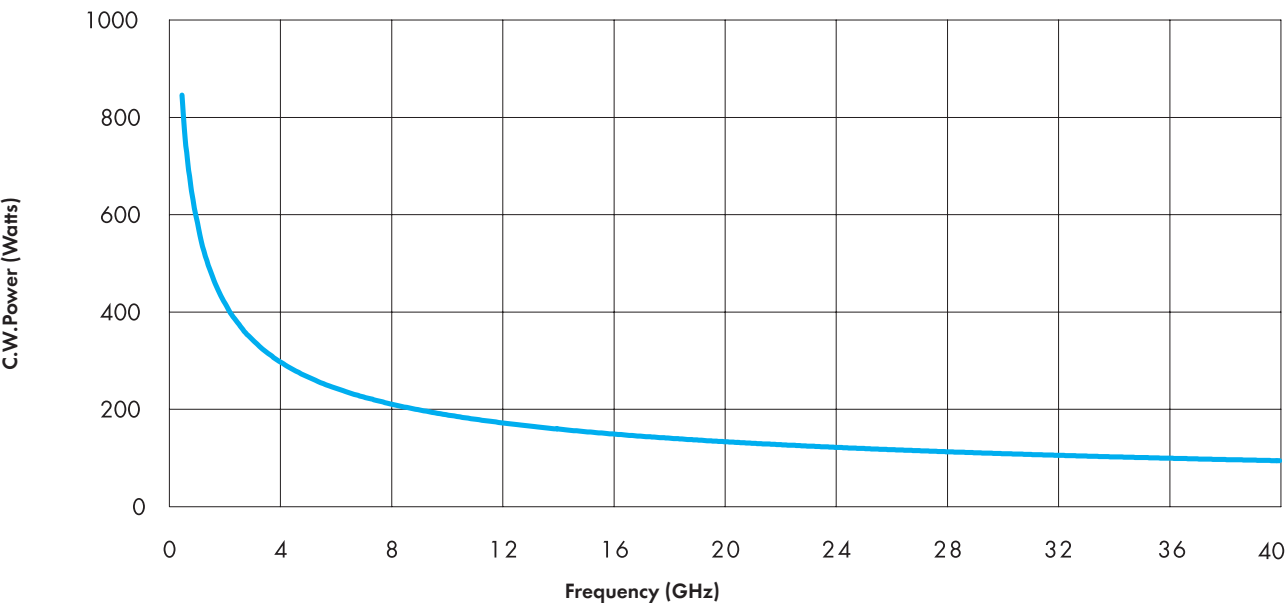
Nominal values @ +25 °C ambient temperature



SEMI-RIGID

Power handling

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



SEMI-RIGID EZ_141_TP_M17 (M17/130-00001)

Item no. 22810043

Cable design



	Description	Diameter
1. Centre conductor	Solid silver-plated copper clad-steel wire	0.92 mm
2. Dielectric	Solid PTFE	2.98 mm
3. Outer conductor	Seamless copper tubing, tin-plated	3.58 mm

Electrical cable data

Impedance	50 Ohm		
Operating frequency	33 GHz		
Capacitance	98 pF/m		
Velocity of propagation	69.5 %		
Time delay	4.8 ns/m		
Nom. attenuation*	coefficient a	0.32544	coefficient b 0.03967
Max. attenuation*	coefficient a	0.39053	coefficient b 0.04760
Max. operating voltage	1.9 kVrms		
Min. screening effectiveness up to 18 GHz	120 dB		

*Attenuation calculation

$$a_{25} = a \cdot \sqrt{f}(\text{GHz}) + b \cdot f(\text{GHz}) \quad (\text{dB/m})$$

General cable data

Temperature range	-40...+125 °C
Weight	5.22 kg/100m
Min. bending radius static	6.35 mm
Min. bending radius dynamic	n/a

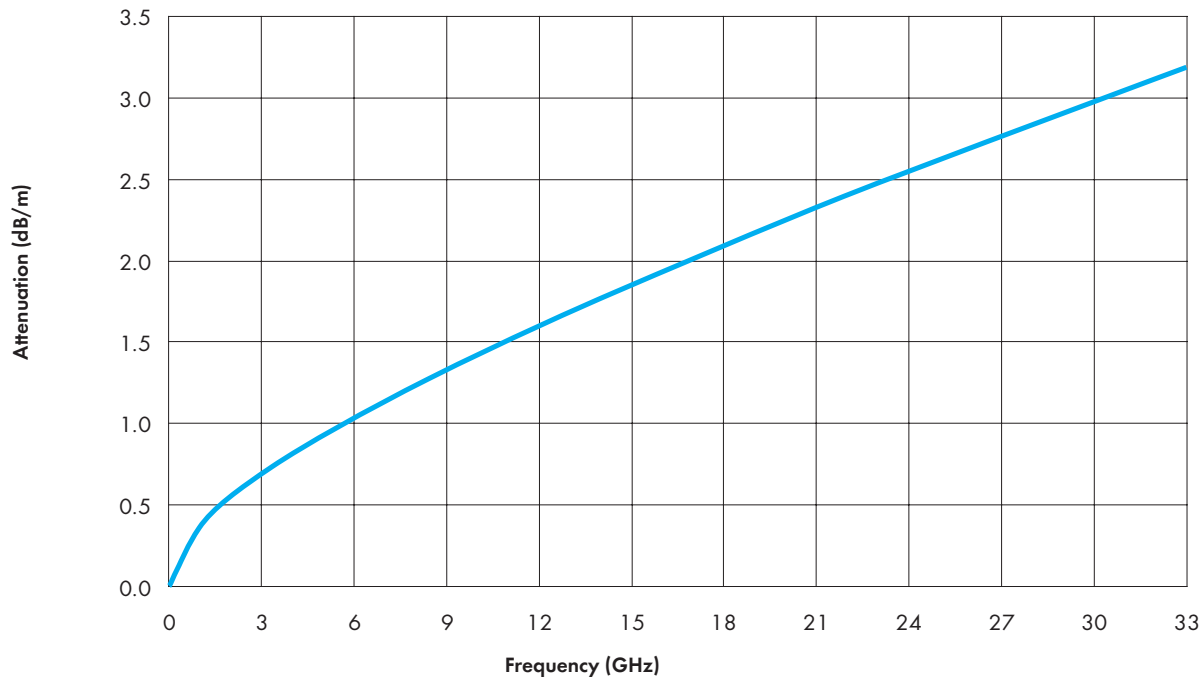
Suitable connectors

Cable group (please refer to pages 39 ff)	Y5
---	----

SEMI-RIGID EZ_141_TP_M17

Cable attenuation

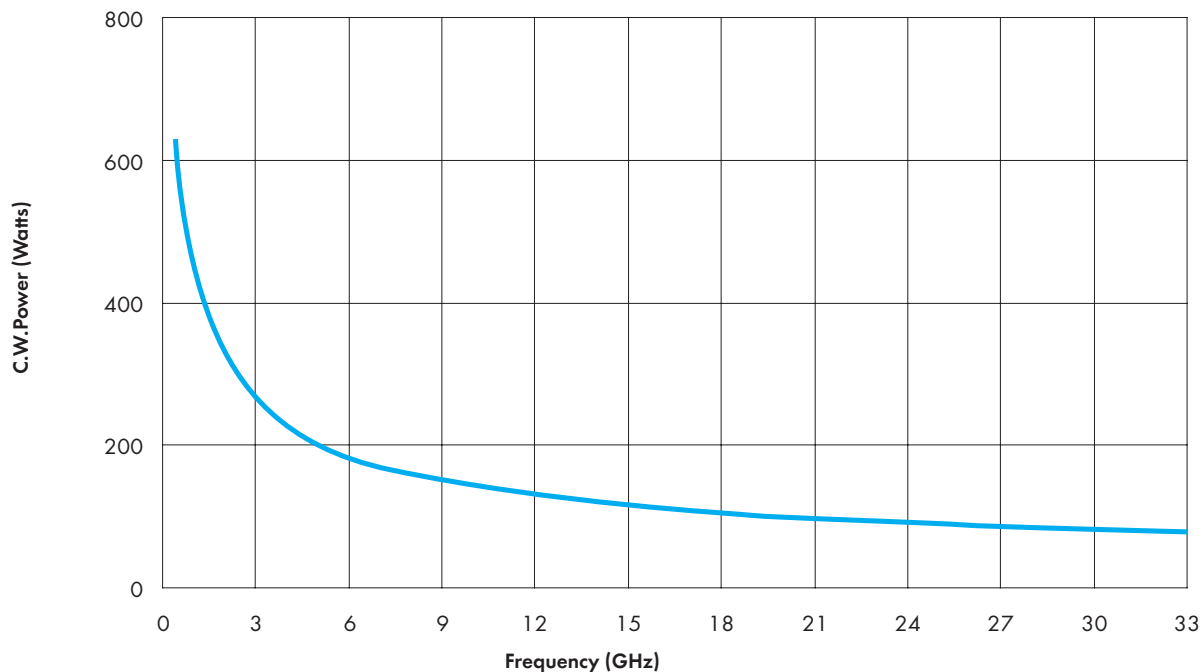
Nominal values @ +25 °C ambient temperature



SEMI-RIGID

Power handling

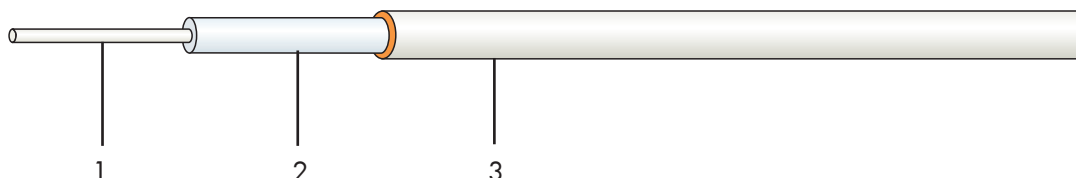
Maximum values @ +40 °C ambient temperature and sea level



SEMI-RIGID EZ_141_AL_TP_M17 (M17/130-00009)

Item no. 22810015

Cable design



	Description	Diameter
1. Centre conductor	Solid silver-plated copper clad-steel wire	0.92 mm
2. Dielectric	Solid PTFE	2.98 mm
3. Outer conductor	Seamless aluminium tubing, tin-plated	3.58 mm

Electrical cable data

Impedance	50 Ohm		
Operating frequency	33 GHz		
Capacitance	98 pF/m		
Velocity of propagation	69.5 %		
Time delay	4.8 ns/m		
Nom. attenuation*	coefficient a	0.34536	coefficient b 0.03967
Max. attenuation*	coefficient a	0.39053	coefficient b 0.04760
Max. operating voltage	1.9 kVrms		
Min. screening effectiveness up to 18 GHz	120 dB		

*Attenuation calculation

$$a_{25} = a \cdot \sqrt{f}(\text{GHz}) + b \cdot f(\text{GHz}) \quad (\text{dB/m})$$

General cable data

Temperature range	-40...+125 °C
Weight	3.05 kg/100m
Min. bending radius static	3.18 mm
Min. bending radius dynamic	n/a

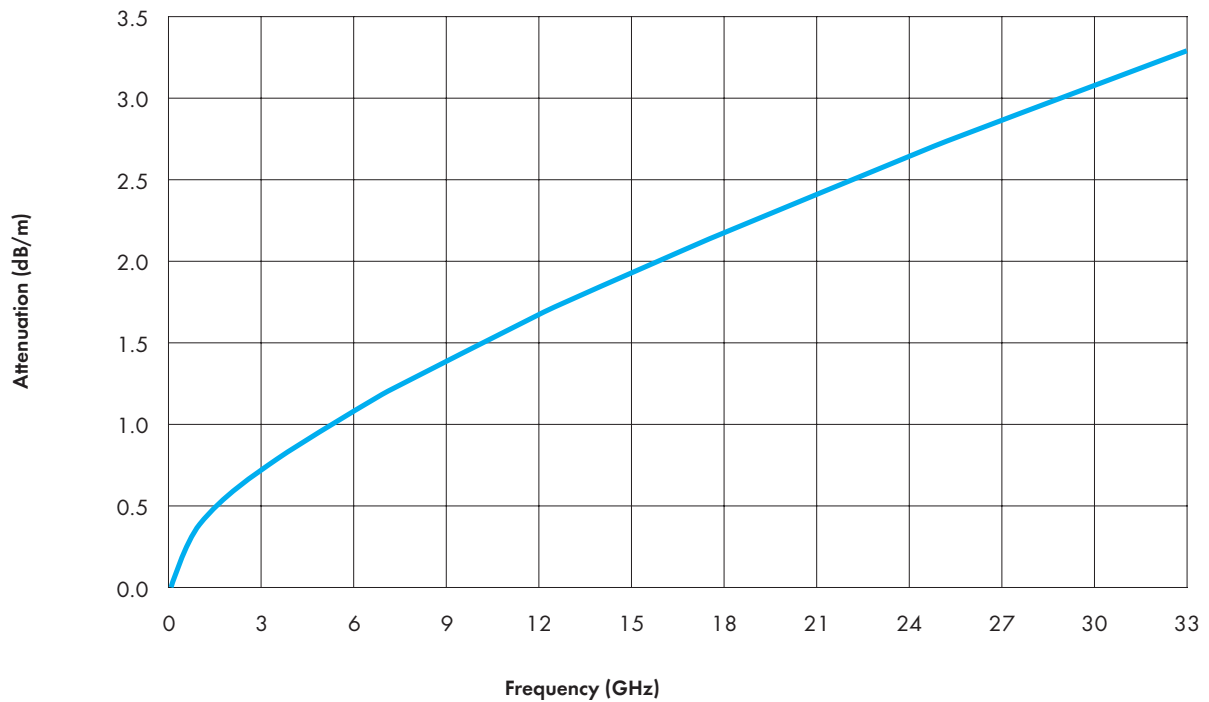
Suitable connectors

Cable group (please refer to pages 39 ff)	Y5
---	----

SEMI-RIGID EZ_141_AL_TP_M17

Cable attenuation

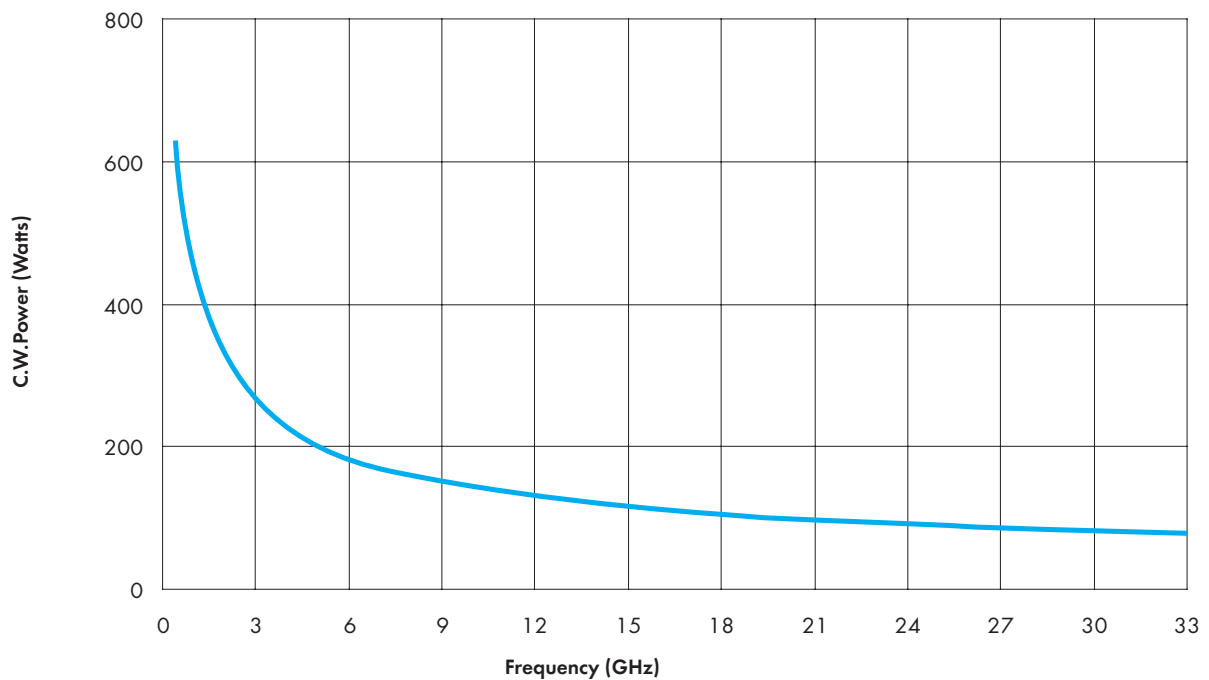
Nominal values @ +25 °C ambient temperature



SEMI-RIGID

Power handling

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



SEMI RIGID EZ_250_TP_M17 (M17/129-00001)

Item no. 22810705

Cable design



	Description	Diameter
1. Centre conductor	Solid silver-plated copper wire	1.63 mm
2. Dielectric	Solid PTFE	5.31 mm
3. Outer conductor	Seamless copper tubing, tin-plated	6.35 mm

Electrical cable data

Impedance	50 Ohm		
Operating frequency	18 GHz		
Capacitance	97 pF/m		
Velocity of propagation	69.5 %		
Time delay	4.8 ns/m		
Nom. attenuation*	coefficient a	0.18630	coefficient b 0.03967
Max. attenuation*	coefficient a	0.22032	coefficient b 0.04760
Max. operating voltage	3.0 kVrms		
Min. screening effectiveness up to 18 GHz	120 dB		

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

General cable data

Temperature range	-40...+90 °C
Weight	15.8 kg/100m
Min. bending radius static	19 mm
Min. bending radius dynamic	n/a

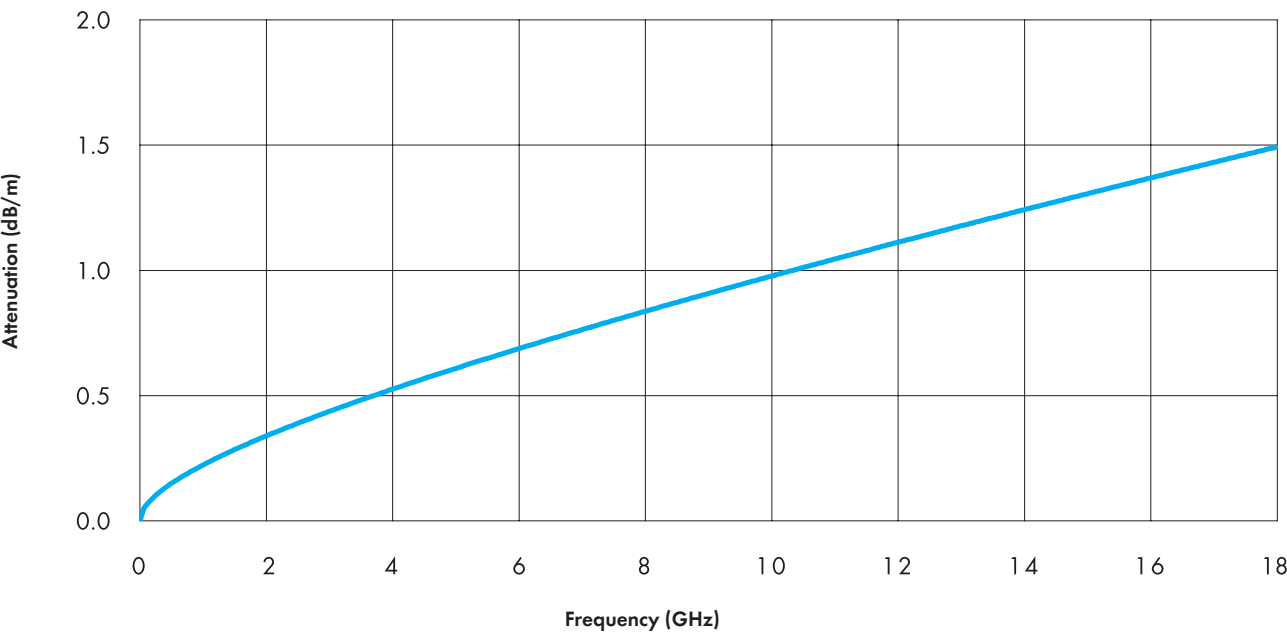
Suitable connectors

Cable group (please refer to pages 39 ff)	Y7
---	----

SEMI RIGID EZ_250_TP_M17

Cable attenuation

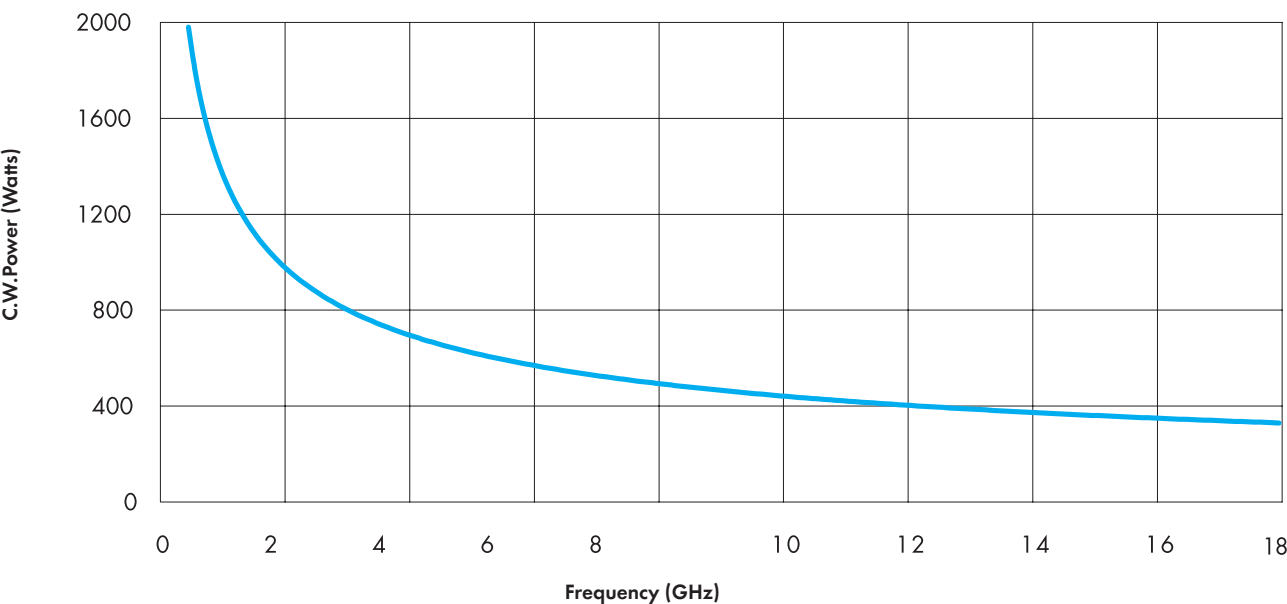
Nominal values @ +25 °C ambient temperature



SEMI-RIGID

Power handling

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



SEMI RIGID EZ_250_AL_TP

Item no. 22810708

Cable design



	Description	Diameter
1. Centre conductor	Solid silver-plated copper wire	1.63 mm
2. Dielectric	Solid PTFE	5.31 mm
3. Outer conductor	Seamless aluminium tubing, tin-plated	6.35 mm

Electrical cable data

Impedance	50 Ohm		
Operating frequency	18 GHz		
Capacitance	97 pF/m		
Velocity of propagation	69.5 %		
Time delay	4.8 ns/m		
Nom. attenuation*	coefficient a	0.19630	coefficient b 0.03967
Max. attenuation*	coefficient a	0.22032	coefficient b 0.04760
Max. operating voltage	3.0 kVrms		
Min. screening effectiveness up to 18 GHz	120 dB		

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

General cable data

Temperature range	-40...+90 °C
Weight	8.86 kg/100m
Min. bending radius static	19 mm
Min. bending radius dynamic	n/a

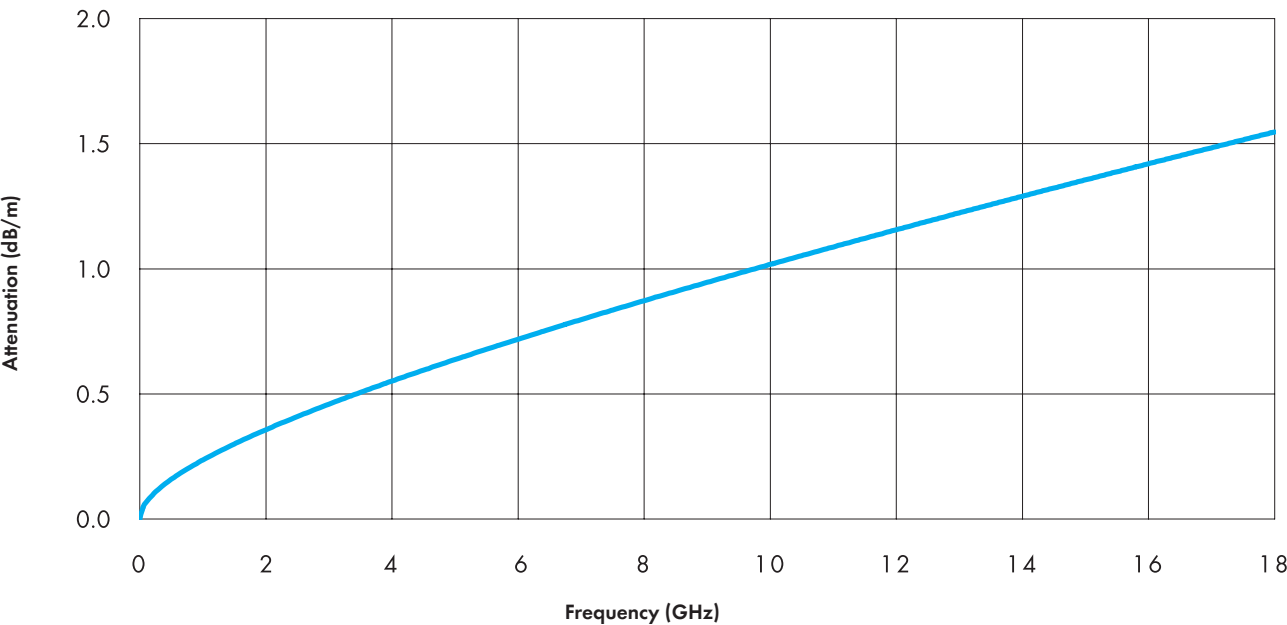
Suitable connectors

Cable group (please refer to pages 39 ff)	Y7
---	----

SEMI RIGID EZ_250_AL_TP

Cable attenuation

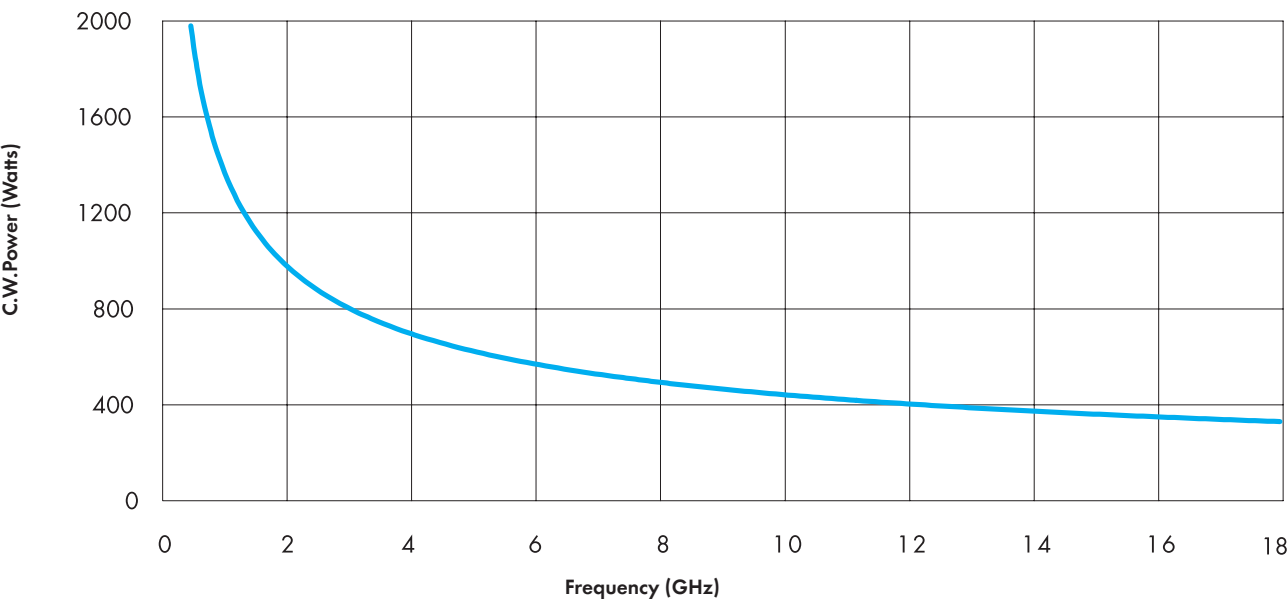
Nominal values @ +25 °C ambient temperature



SEMI-RIGID

Power handling

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



SEMI-RIGID

Further available semi-rigid products

50 Ohm

HUBER+SUHNER cable type	Item no.	Centre conductor	Outer conductor	Jacket material	Outer diameter (mm)	Nom. attenuation dB/m @ 18 GHz
EZ_34_TP_M17	22810404	StCuAg	Cu-TP	n/a	0.86	7.0
EZ_47_M17	22810500	StCuAg	Cu	n/a	1.19	5.1
EZ_47_CU_TP	22810505	CuAg	Cu-TP	n/a	1.19	5.1
EZ_86_M17	22810173	StCuAg	Cu	n/a	2.20	3.2
EZ_86_CU_TP_M17	22810182	CuAg	Cu-TP	n/a	2.20	3.2
EZ_141_M17	22810041	StCuAg	Cu	n/a	3.58	2.1
EZ_141_CU_TP	22810050	CuAg	Cu-TP	n/a	3.58	2.1
EZ_250_M17	22810701	CuAg	Cu	n/a	6.35	1.5

75 Ohm

HUBER+SUHNER cable type	Item no.	Centre conductor	Outer conductor	Jacket material	Outer diameter (mm)	Nom. attenuation dB/m @ 18 GHz
EZ_86_75_TP	22810164	StCuAg	Cu-TP	n/a	2.20	0.7
EZ_141_75_TP	22810034	StCuAg	Cu-TP	n/a	3.58	0.4

Other impedances

HUBER+SUHNER cable type	Item no.	Impedance (Ohm)	Centre conductor	Outer conductor	Jacket material	Outer diameter mm)	Nom. attenuation dB/m @ 1 GHz
EZ_34_25_TP	22810396	25	StCuAg	Cu-TP	n/a	0.86	2.0
EZ_90_25_TP	22810075	25	CuAg	Cu-TP	n/a	2.29	0.8
EZ_141_70_TP	22810039	70	StCuAg	Cu-TP	n/a	3.58	0.4

Other cable types are available on request. Please contact your local HUBER+SUHNER partner for more information.

CuAg Silver plated copper
 StCuAG Silver plated copper clad steel
 CuSn Tin soaked copper braid
 Cu Seamless copper tubing
 Cu-TP Seamless copper tubing, tin-plated
 Al-TP Seamless aluminium tubing, tin-plated
 M17 Qualified to MIL-C-17

PE Polyethylene
 SPE Foam polyethylene
 PTFE Polytetrafluethylene
 LDPTFE Low density polytetrafluorethylene
 PUR Polyurethane
 LSFH Low Smoke Free of Halogen polyethylene
 FEP Fluoroethylenepropylene copolymer

SEMI-RIGID

A wide range of standard connectors is available for semi-rigid microwave cables. In addition, HUBER+SUHNER offers a fast delivery service for RF tested ready-to-use cable assemblies.

Suitable connectors

HUBER+SUHNER cable type	Series, pattern	HUBER+SUHNER connector type	Item no.	Operating frequency (GHz)
EZ_47_TP_M17 EZ_47_AL_TP Cable group Y2	MCX			
	Straight cable plug	11_MCX-50-1-14/111_NE	23032081	6
	Right angle cable plug	16_MCX-50-1-11/111_NE	23024700	6
	Right angle cable plug	16_MCX-50-1-11/111_NH	23032063	6
	MMCX			
	Straight cable plug	11_MMCX-50-1-3/111_OE	22648893	6
	Right angle cable plug	16_MMCX-50-1-4/111_OH	23003641	6
	Right angle cable plug	16_MMCX-50-1-4/111_OE	22649182	6
	SK			
	Straight cable plug	11_SK-50-1-2/119_NE	84013232	40
	SMA			
	Straight cable plug	11_SMA-50-1-53/119_NH	23013327	18
	Right angle cable plug	16_SMA-50-1-97/19_NE	23024708	18
	Straight cable jack	21_SMA-50-1-2/111_NE	22642386	18
EZ_86_TP_M17 EZ_86_AL_TP_M17 Cable group Y3				
	MCX			
	Straight cable plug	11_MCX-50-2-19/111_NH	23032147	6
	Straight cable plug	11_MCX-50-2-19/111_NE	23024699	6
	Right angle cable plug	16_MCX-50-2-104/111_NH-1	23032067	6
	Right angle cable plug	16_MCX-50-2-104/111_NH	22658277	6
	Straight panel bulkhead cable jack	24_MCX-50-2-3/111_NE	22543580	6
	MMCX			
	Straight cable plug	11_MMCX-50-2-1/111_OH	22649039	6
	Straight cable plug	11_MMCX-50-2-1/111_OE	22645297	6
	Right angle cable plug	16_MMCX-50-2-1/111_OH	22649044	6
	Right angle cable plug	16_MMCX-50-2-1/111_OE	22645957	6
	Straight cable jack	21_MMCX-50-2-1/111_OE	22645290	6
	Straight panel bulkhead cable jack	24_MMCX-50-2-1/111_OE	22645954	6

SEMI-RIGID

Suitable connectors

HUBER+SUHNER cable type	Series, pattern	HUBER+SUHNER connector type	Item no.	Operating frequency (GHz)
EZ_86_TP_M17 EZ_86_AL_TP_M17 Cable group Y3	N			
	Straight cable plug	11_N-50-2-15/113_UE	22660315	18
	Right angle cable plug	16_N-50-2-9/13_UH	23013729	11
	Straight cable jack	21_N-50-2-14/133_NE	22642666	18
	Straight panel bulkhead cable jack	24_N-50-2-14/133_NE	22544637	18
	Straight panel cable jack, flange mount	25_N-50-2-14/133_NE	22641303	18
	PC3.5			
	Straight cable plug	11_PC35-50-2-4/199_UE	84009440	33
	Straight cable jack	21_PC35-50-2-4/199_UE	84009419	33
	Straight panel bulkhead cable jack	24_PC35-50-2-2/199_UE	84009405	33
	QMA			
	Straight cable plug	11_QMA-50-2-3/133_NE	23017704	6
	Straight cable plug	11_QMA-50-2-3/133_NH	23017705	6
	Right angle cable plug	16_QMA-50-2-3/133_NE	23017666	6
	Right angle cable plug	16_QMA-50-2-3/133_NH	23017667	6
	Straight panel bulkhead cable jack	24_QMA-50-2-1/111_NE	23017742	6
	Straight panel bulkhead cable jack	24_QMA-50-2-1/111_NH	23017743	6
	SK			
	Straight cable plug	11_SK-50-2-56/119_NE	84013230	40
	SMA			
	Straight cable plug	11_SMA-50-2-15/111_NE	22544545	18
	Straight cable plug	11_SMA-50-2-15/111_NH	22645898	18
	Right angle cable plug	16_SMA-50-2-100/199_NH	23018813	26.5
	Straight cable jack	21_SMA-50-2-15/111_NE	22544549	18
	Straight cable jack	21_SMA-50-2-15/111_NH	22652141	18
	Straight panel bulkhead cable jack	24_SMA-50-2-15/111_NE	22544532	18
	Straight panel bulkhead cable jack	24_SMA-50-2-15/111_NH	22645490	18
	SMB			
	Straight cable plug	11_SMB-50-2-13/111_NE	22543362	4
	Straight cable plug	11_SMB-50-2-13/111_NH	22658765	4
	Right angle cable plug	16_SMB-50-2-23/111_NE	22644079	4
	Straight cable jack	21_SMB-50-2-13/111_NE	22543425	4
	Straight panel bulkhead cable jack	24_SMB-50-2-13/111_NE	22640822	4

SEMI-RIGID

Suitable connectors

HUBER+SUHNER cable type	Series, pattern	HUBER+SUHNER connector type	Item no.	Operating frequency (GHz)
EZ_86_TP_M17 EZ_86_AL_TP_M17 Cable group Y3	SMC			
	Straight cable plug	11_SMC-50-2-13/111_NE	22543363	10
	Straight cable plug	11_SMC-50-2-13/111_NH	22650675	10
	Right angle cable plug	16_SMC-50-2-25/111_NE	22644126	10
	Right angle cable plug	16_SMC-50-2-25/111_NH	23003713	10
	Straight panel bulkhead cable jack	24_SMC-50-2-13/111_NE	22640297	10
	Straight panel bulkhead cable jack	24_SMC-50-2-13/111_NH	22650209	10
	SMPX			
	Straight cable plug	11_SMPX-50-2-1/111_NE	23021825	40
	Right angle cable plug	16_SMPX-50-2-1/111_NE	23022715	40
	Right angle cable plug	16_SMPX-50-2-2/111_NE	23022716	40
	Straight panel cable jack, flange mount	25_SMPX-50-2-1/111_NE	23025359	40
EZ_118_TP Cable group Y10	TNC			
	Straight cable plug	11_TNC-50-2-20/103_NE	22642519	11
	Straight panel bulkhead cable jack	24_TNC-50-2-31/133_NE	23001721	11
	SK			
	Straight cable plug	11_SK-50-2-51/119_NE	22645972	40
	Straight cable jack	21_SK-50-2-51/199_NE	22645973	40
	Straight panel bulkhead cable jack	24_SK-50-2-54/1..NE	23011557	40
	N			
EZ_141_TP_M17 EZ_141_AL_TP_M17 Cable group Y5	Straight cable plug	11_N-50-3-13/113_NE	22542083	11
	Straight cable plug	11_N-50-3-51/133_NE	22543919	18
	Right angle cable plug	16_N-50-3-15/133_NE	22648832	11
	Straight cable jack	21_N-50-3-11/133_NE	22543921	18
	Straight cable jack	21_N-50-3-51/19_NE	22543922	18
	Straight panel bulkhead cable jack	24_N-50-3-14/133_NE	22542300	18
	Straight panel bulkhead cable jack	24_N-50-3-51/19_NE	22642344	18
	Straight panel cable jack, flange mount	25_N-50-3-9/133_NE	22543952	11
	PC3.5			
	Straight cable plug	11_PC35-50-3-4/199_UE	84009380	33
	Straight cable jack	21_PC35-50-3-3/199_UE	84009382	33
	Straight panel bulkhead cable jack	24_PC35-50-3-2/199_UE	84009383	33

SEMI-RIGID

Suitable connectors

HUBER+SUHNER cable type	Series, pattern	HUBER+SUHNER connector type	Item no.	Operating frequency (GHz)
EZ_141_TP_M17 EZ_141_AL_TP_M17 Cable group Y5	QMA			
	Straight cable plug	11_QMA-50-3-3/133_NE	23017695	6
	Straight cable plug	11_QMA-50-3-3/133_NH	23017696	6
	Right angle cable plug	16_QMA-50-3-3/133_NE	23017693	6
	Right angle cable plug	16_QMA-50-3-3/133_NH	23017694	6
	Straight panel bulkhead cable jack	24_QMA-50-3-3/111_NE	23017683	6
	Straight panel bulkhead cable jack	24_QMA-50-3-3/111_NH	23017684	6
	QN			
	Straight cable plug	11_QN-50-3-3/113_NE	23033393	11
	Right angle cable plug	16_QN-50-3-3/13_NE	23033268	11
	Straight panel bulkhead cable jack	24_QN-50-3-3/13_NE	23033423	11
	SMA			
	Straight cable plug	11_SMA-50-3-77/119_NH	84005524	18
	Right angle cable plug	16_SMA-50-3-3/111_NE	22640073	18
	Right angle cable plug	16_SMA-50-3-3/111_NH	22646569	18
	Straight panel bulkhead cable jack	24_SMA-50-3-15/111_NE	22641153	18
	Straight panel bulkhead cable jack	24_SMA-50-3-15/111_NH	22645259	18
	TNC			
	Straight cable plug	11_TNC-50-3-29/103_NE	22641997	11
	Straight panel bulkhead cable jack	24_TNC-50-3-30/133_NH	23001723	11
EZ_250_TP_M17 EZ_250_AL_TP Cable group Y7				
	716			
	Straight cable plug	11_716-50-5-6/003_Y	84008435	7.5
	Straight panel cable jack, flange mount	25_716-50-5-17/000_Y	84008881	7.5
	N			
	Straight cable plug	11_N-50-5-18/103_NH	84008445	11
	Straight cable plug	11_N-50-5-39/133_NE	22642481	18
	Straight cable jack	21_N-50-5-52/193_NE	22641531	18
	SMA			
	Straight cable plug	11_SMA-50-5-2/199_NE	22643253	18

For connector dimensions and additional information please refer to the corresponding connector type in the HUBER+SUHNER Coaxial Connectors General Catalogue or contact your local HUBER+SUHNER partner.

SUCOFORM

The handformable alternative to SEMI-RIGID

Content

Product description.....	45
Features and benefits.....	45
Overview of common SUCOFORM cable types.....	45
Product specification of	
SUCOFORM_47_CU	46
SUCOFORM_86 / _86_PE / _86_FEP.....	48
SUCOFORM_141 / _141_PE / _141_FEP	50
SUCOFORM_141_CU / _141_CU_PE	52
SUCOFORM_141_CU_FEP / _141_CU_LSFH-01.....	54
SUCOFORM_250-01 / _250-01_FEP.....	56
Further available SUCOFORM products	58
Suitable connectors	59



SUCOFORM

The handformable alternative to SEMI-RIGID

Product description

SUCOFORM microwave coaxial cables offer distinct mechanical advantages over semi-rigid cables. They are based on the same design as the standard PTFE-insulated semi-rigid cables, but have a tin-soaked copper braid for the outer conductor, giving them outstanding hand-formability. These cables combine the excellent characteristics of semi-rigid cables with those of flexible coaxial cables. Thanks to their small bending radii, they allow space-saving routing and packaging.



Features and benefits

- Excellent properties: low loss, high screening effectiveness, high operating frequency, high temperature range
- Due to the high phase stability over every production run, SUCOFORM is especially suitable for delay lines
- Good flexibility: easy hand forming without tooling; fits into the smallest systems
- Comprehensive connector range; use of standard semi-rigid connectors
- Quick and easy assembly
- Available in long lengths and various versions

HUBER+SUHNER cable type	Operating frequency (GHz)	Temperature range		Outer dia. (mm)	Nominal attenuation 18 GHz, 25 °C (dB/m)	Bending radii		More information see page
		minimum (°C)	maximum (°C)			static (mm)	repeat. (mm)	
SUCOFORM_47_CU	40	-65	+165	1.20	5.4	3.18	-	46
SUCOFORM_86	40	-65	+165	2.10	3.4	6	20	48
SUCOFORM_141	33	-65	+165	3.58	2.2	8	40	50
SUCOFORM_141_CU	33	-65	+165	3.58	2.2	8	40	52
SUCOFORM_250-01	18	-65	+165	6.35	1.4	30	120	56

SUCOFORM_47_CU / _47_CU_LSFH

Cable design

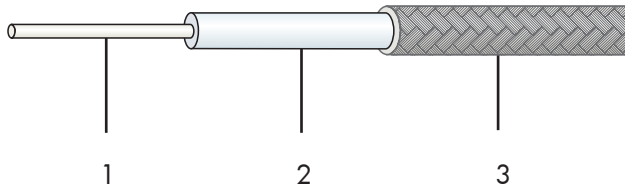


Fig. 1: SUCOFORM_47_CU

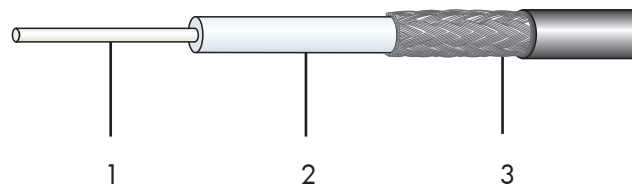


Fig. 2: SUCOFORM_47_CU_LSFH

	Description	Diameter
1. Centre conductor	Solid silver-plated copper wire	0.31 mm
2. Dielectric	Solid PTFE	0.94 mm
3. Outer conductor	Tin soaked copper braid	1.20 mm

Electrical cable data

Impedance	50 Ohm		
Operating frequency	40 GHz		
Capacitance	95 pF/m		
Velocity of propagation	71 %		
Time delay	4.7 ns/m		
Nom. attenuation*	coefficient a	1.117	coefficient b 0.03891
Max. attenuation*	coefficient a	1.2287	coefficient b 0.0438
Max. operating voltage	1.0 kVrms		
Min. screening effectiveness up to 18 GHz	100 dB		

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

General cable data

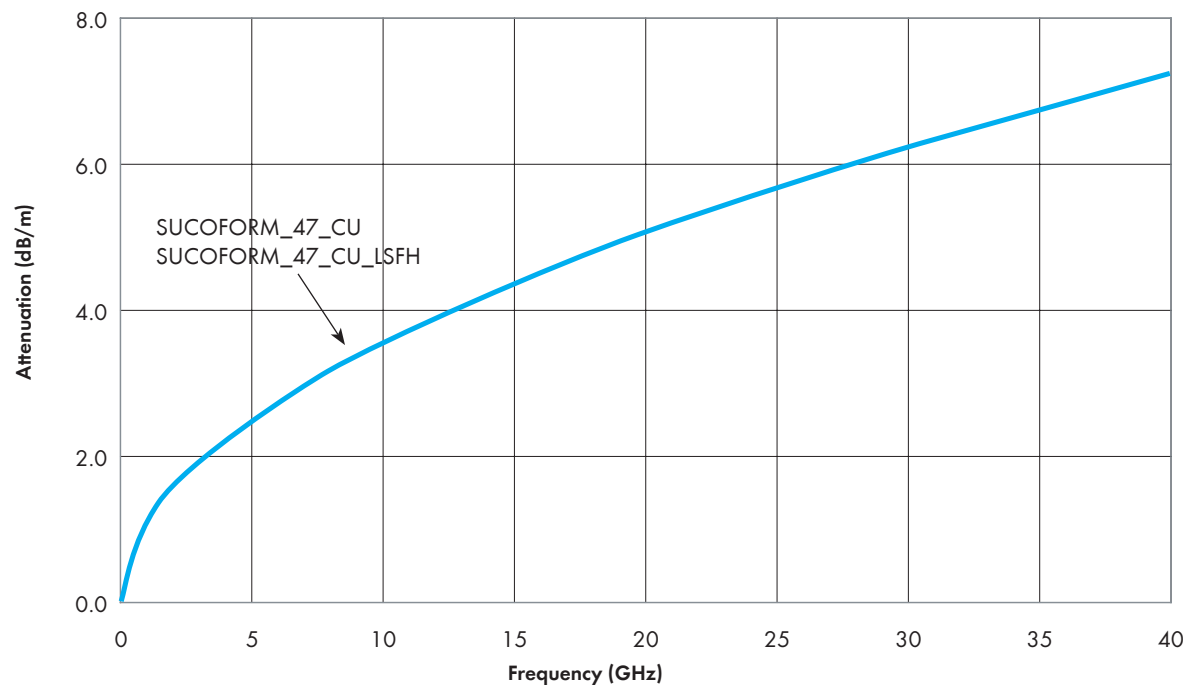
	SUCOFORM_47_CU	SUCOFORM_47_CU_LSFH
Item number	23033515	23035506
Additional jacket	—	LSFH (Low Smoke, Free of Halogen)
Colour	—	black
Diameter	1.20 mm	1.70 mm
Weight	0.6 kg/100 m	0.75 kg/100 m
Temperature range	- 65 ... + 165 °C	- 40 ... + 85 °C
Flammability, passed	—	—
Min. bending radius, static	3.18 mm	3.18 mm
Min. bending radius, repeated	—	—
Suitable connectors, cable group	Y2	Y2
Drawing	see Fig. 1	see Fig. 2

Suitable connectors see cable group Y2 (please refer to page 59)

SUCOFORM_47_CU / _47_CU_LSFH

Cable attenuation

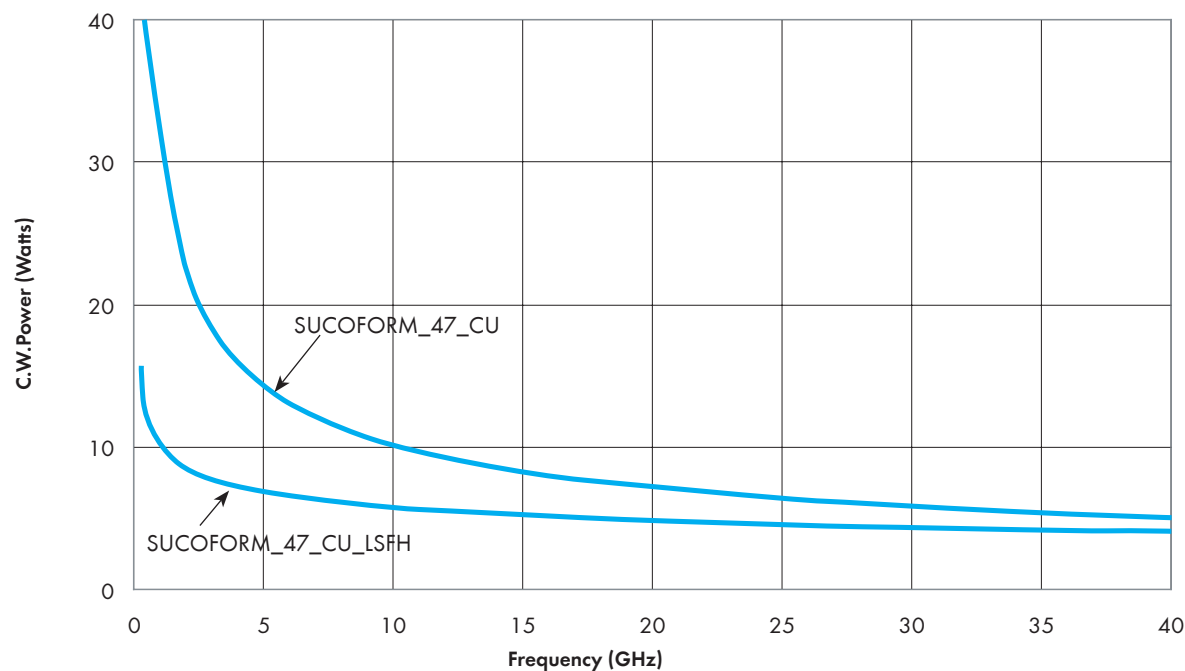
Nominal values @ +25 °C ambient temperature



SUCOFORM

Power handling

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



SUCOFORM_86 / _86_PE / _86_FEP

Cable design

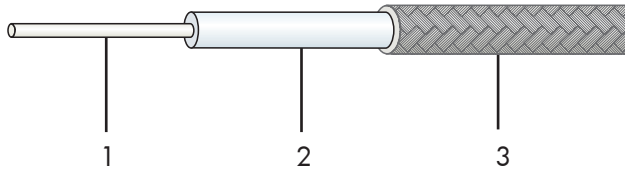


Fig. 1: SUCOFORM_86

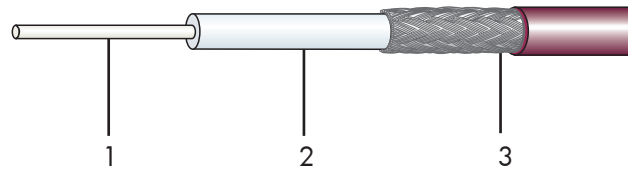


Fig. 2: SUCOFORM_86_PE / _86_FEP

	Description	Diameter
1. Centre conductor	Solid silver-plated copper clad-steel wire	0.53 mm
2. Dielectric	Solid PTFE	1.65 mm
3. Outer conductor	Tin soaked copper braid	2.10 mm

Electrical cable data

Impedance	50 Ohm		
Operating frequency	40 GHz		
Capacitance	95 pF/m		
Velocity of propagation	71 %		
Time delay	4.7 ns/m		
Nom. attenuation*	coefficient a	0.6283	coefficient b 0.0400
Max. attenuation*	coefficient a	0.6912	coefficient b 0.0440
Max. operating voltage	1.5 kVrms		
Min. screening effectiveness up to 18 GHz	100 dB		

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

General cable data

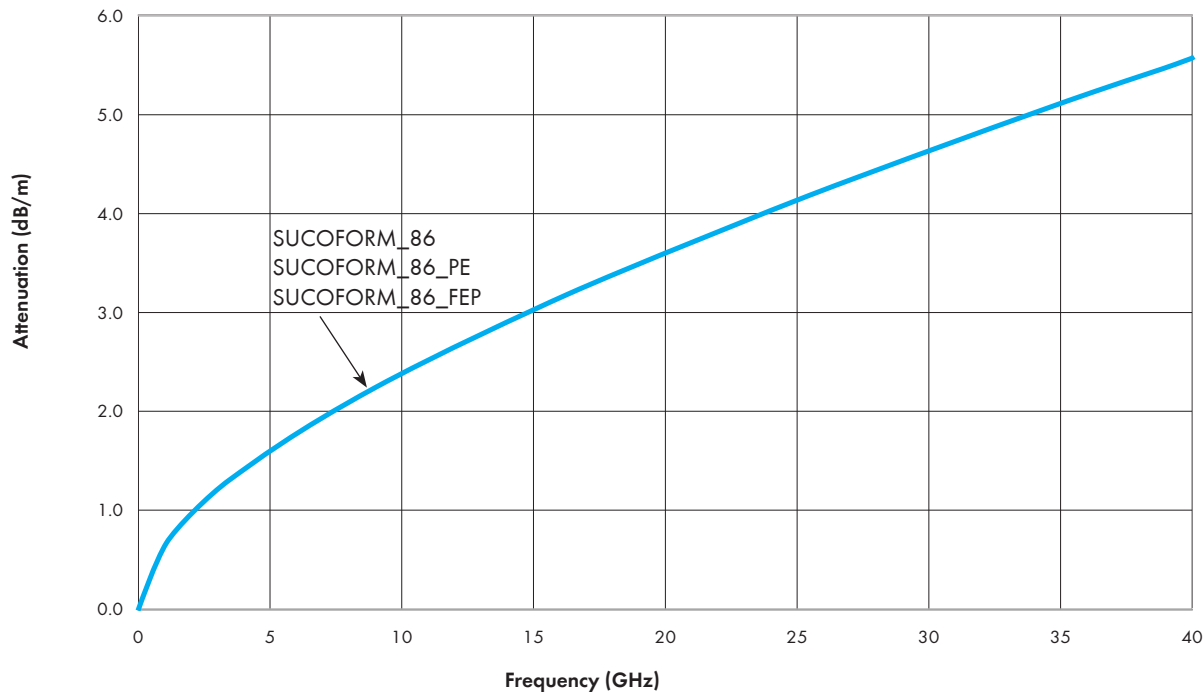
	SUCOFORM_86	SUCOFORM_86_PE	SUCOFORM_86_FEP
Item number	22511613	22511631	22511942
Additional jacket	—	PE	FEP
Colour	—	red	red
Diameter	2.10 mm	3.20 mm	2.50 mm
Weight	1.5 kg/100 m	1.7 kg/100 m	1.8 kg/100 m
Temperature range	- 65 ... + 165 °C	- 40 ... + 85 °C	- 65 ... + 165 °C
Flammability, passed	IEC 60332-1, UL 1581-§1080 (VW-1)	—	IEC 60332-1, UL 1581-§1080 (VW-1)
Min. bending radius, static	6 mm	6 mm	6 mm
Min. bending radius, repeated	20 mm	20 mm	20 mm
Suitable connectors, cable group	Y11	Y11	Y11
Drawing	see Fig. 1	see Fig. 2	see Fig. 2

Suitable connectors see cable group Y11 (please refer to page 59 ff)

SUCOFORM_86 / _86_PE / _86_FEP

Cable attenuation

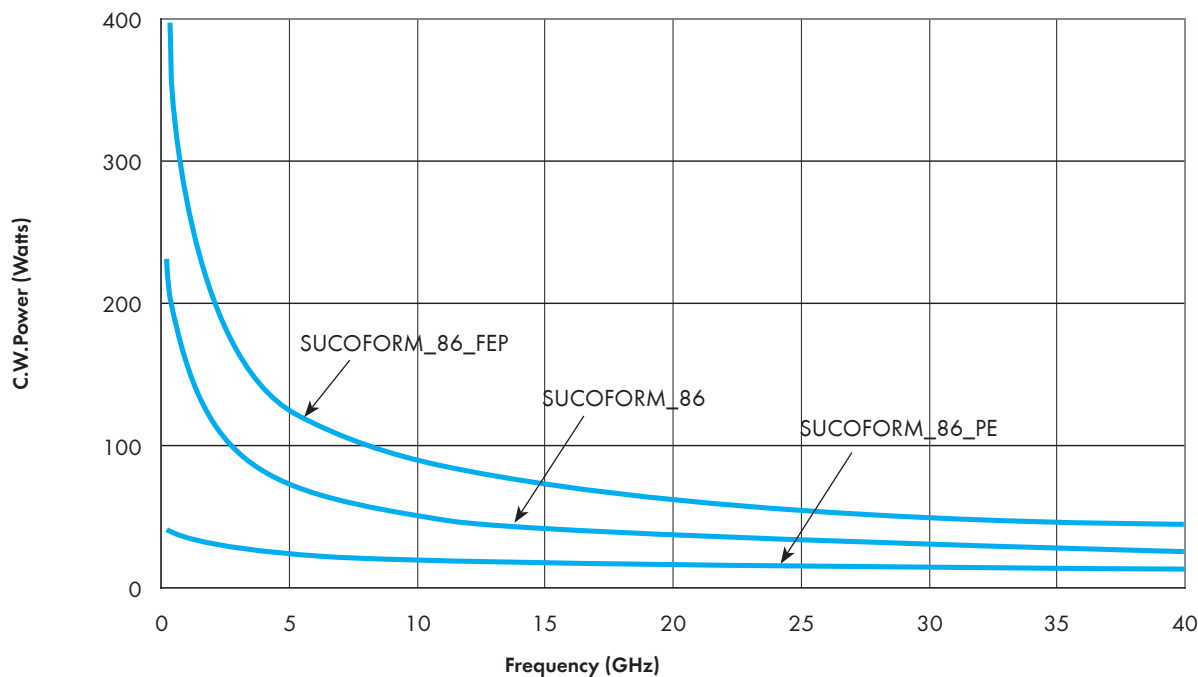
Nominal values @ +25 °C ambient temperature



SUCOFORM

Power handling

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



SUCOFORM_141 / _141_PE / 141_FEP

Cable design

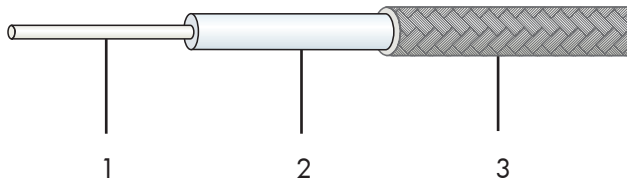


Fig. 1: SUCOFORM_141

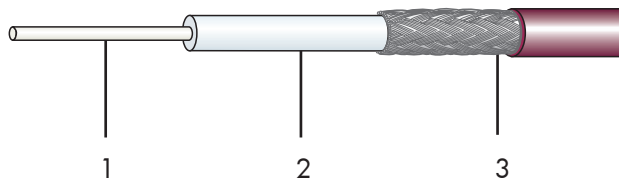


Fig. 2: SUCOFORM_141_PE / _141_FEP

	Description	Diameter
1. Centre conductor	Solid silver-plated copper clad-steel wire	0.95 mm
2. Dielectric	Solid PTFE	2.95 mm
3. Outer conductor	Tin soaked copper braid	3.58 mm

Electrical cable data

Impedance	50 Ohm		
Operating frequency	33 GHz		
Capacitance	92 pF/m		
Velocity of propagation	71 %		
Time delay	4.7 ns/m		
Nom. attenuation*	coefficient a	0.3631	coefficient b 0.0377
Max. attenuation*	coefficient a	0.3995	coefficient b 0.0415
Max. operating voltage	1.9 kVrms		
Min. screening effectiveness up to 18 GHz	100 dB		

*Attenuation calculation

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

General cable data

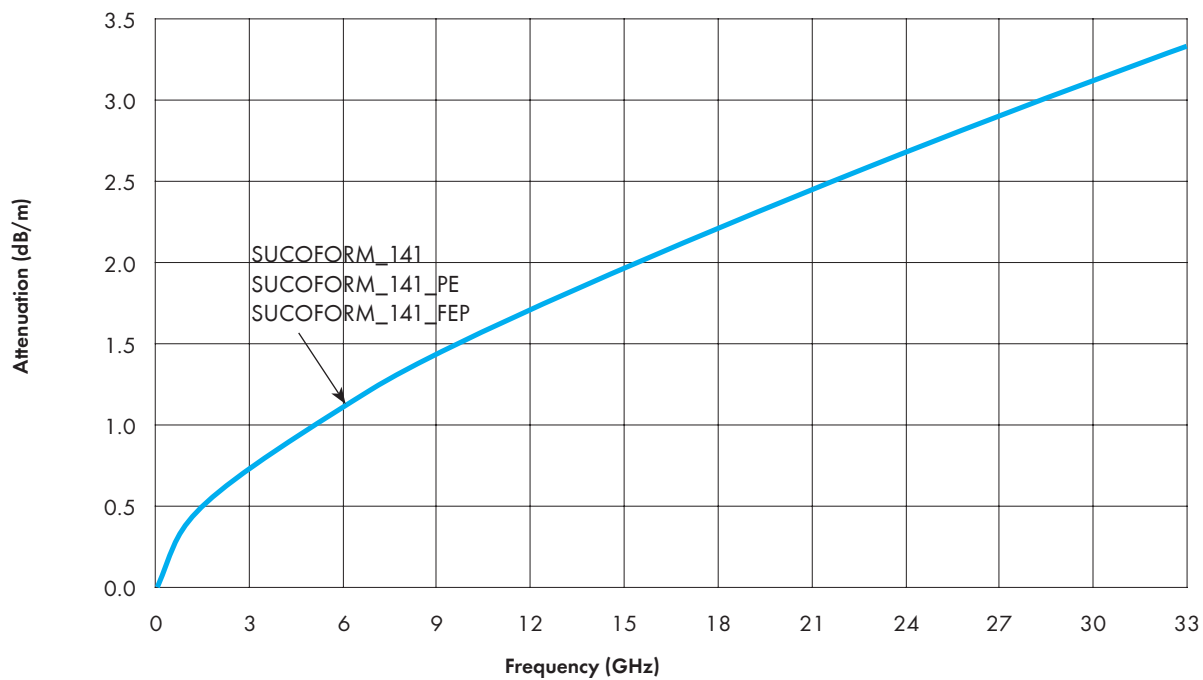
	SUCOFORM_141	SUCOFORM_141_PE	SUCOFORM_141_FEP
Item number	22511925	22511632	22511944
Additional jacket	—	PE	FEP
Colour	—	red	red
Diameter	3.58 mm	4.60 mm	4.10 mm
Weight	3.8 kg/100 m	4.7 kg/100 m	4.7 kg/100 m
Temperature range	- 65 ... + 165 °C	- 40 ... + 85 °C	- 65 ... + 165 °C
Flammability, passed	IEC 60332-1, UL 1581-§1080 (VW-1)	—	IEC 60332-1, UL 1581-§1080 (VW-1)
Min. bending radius, static	8 mm	8 mm	8 mm
Min. bending radius, repeated	40 mm	40 mm	40 mm
Suitable connectors, cable group	Y12	Y12	Y12
Drawing	see Fig. 1	see Fig. 2	see Fig. 2

Suitable connectors see cable group Y12 (please refer to page 61 ff)

SUCOFORM_141 / _141_PE / _141_FEP

Cable attenuation

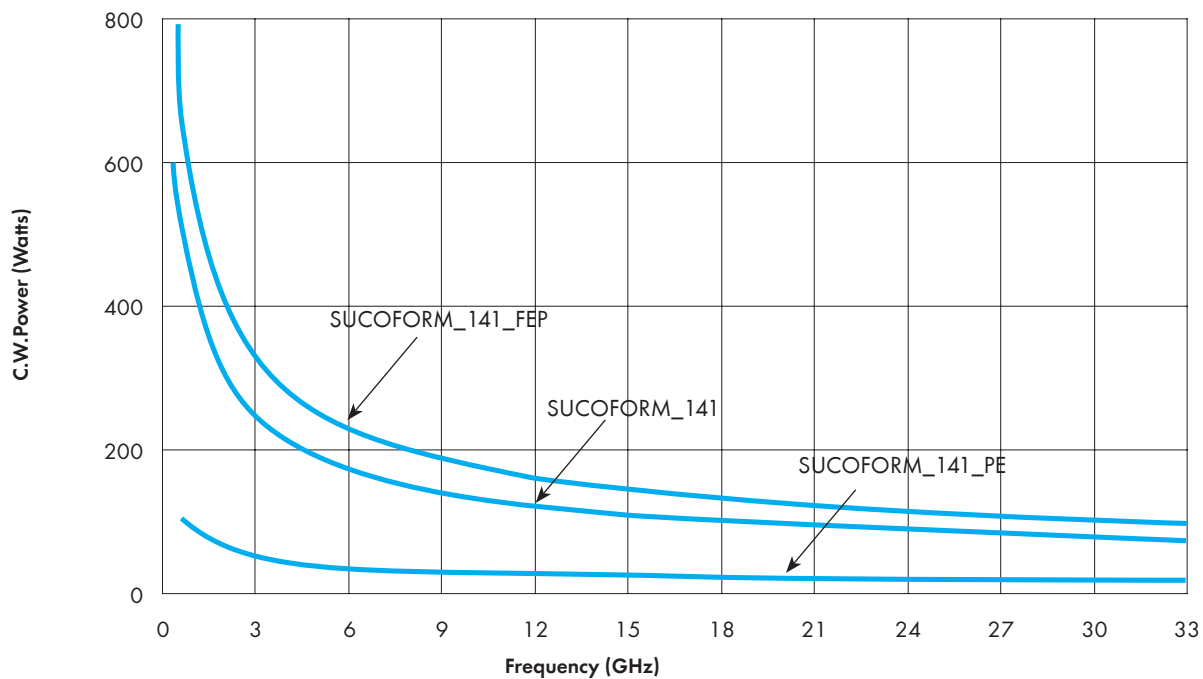
Nominal values @ +25 °C ambient temperature



SUCOFORM

Power Handling

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



SUCOFORM_141_CU / _141_CU_PE

Cable design

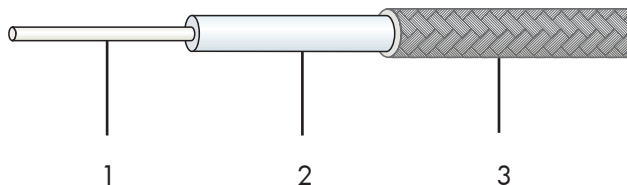


Fig. 1: SUCOFORM_141_CU

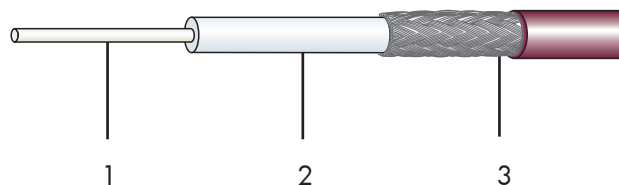


Fig. 2: SUCOFORM_141_CU_PE

	Description	Diameter
1. Centre conductor	Solid silver-plated copper wire	0.95 mm
2. Dielectric	Solid PTFE	2.95 mm
3. Outer conductor	Tin soaked copper braid	3.58 mm

Electrical cable data

Impedance	50 Ohm		
Operating frequency	33 GHz		
Capacitance	92 pF/m		
Velocity of propagation	71 %		
Time delay	4.7 ns/m		
Nom. attenuation*	coefficient a	0.3631	coefficient b 0.0377
Max. attenuation*	coefficient a	0.3995	coefficient b 0.0415
Max. operating voltage	1.9 kVrms		
Min. screening effectiveness up to 18 GHz	100 dB		

*Attenuation calculation

$$a_{25} = a \cdot \sqrt{f}(\text{GHz}) + b \cdot f(\text{GHz})$$

(dB/m)

General cable data

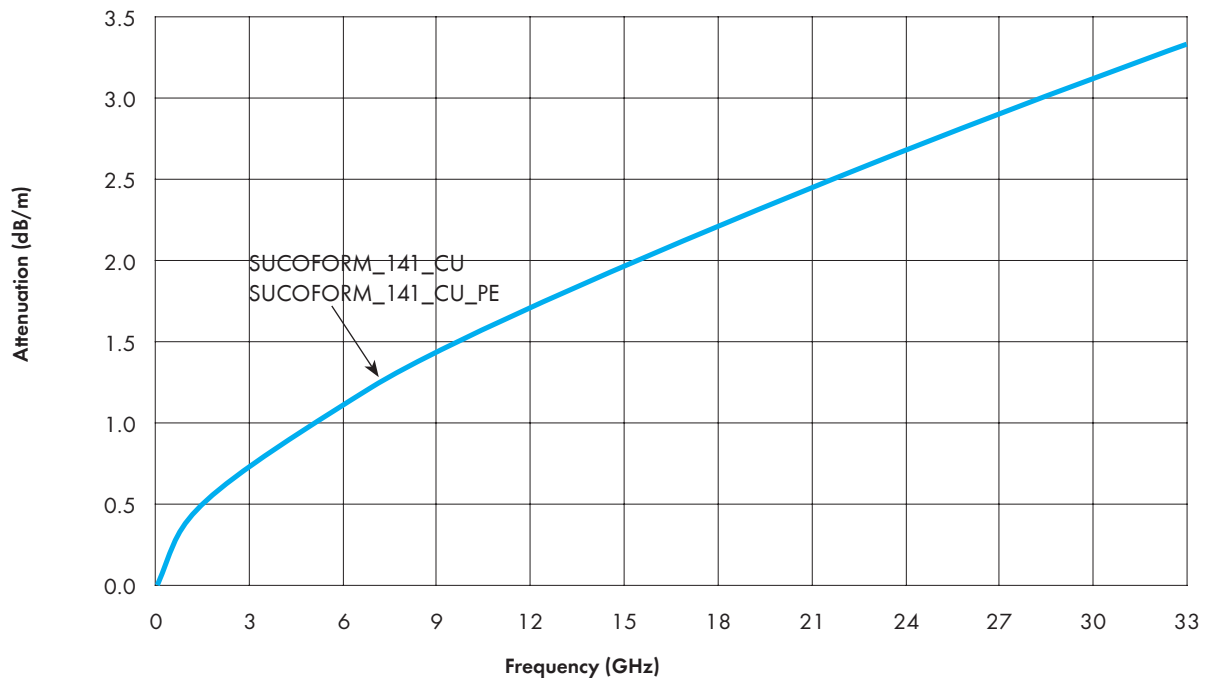
	SUCOFORM_141_CU	SUCOFORM_141_CU_PE
Item number	22511635	22511639
Additional jacket	—	PE
Colour	—	red
Diameter	3.58 mm	4.60 mm
Weight	4.0 kg/100m	4.7 kg/100m
Temperature range	- 65 ... + 165 °C	- 40 ... + 85 °C
Flammability, passed	IEC 60332-1, UL 1581-§1080 (VW-1)	—
Min. bending radius, static	8 mm	8 mm
Min. bending radius, repeated	40 mm	40 mm
Suitable connectors, cable group	Y12	Y12
Drawing	see Fig. 1	see Fig. 2

Suitable connectors see cable group Y12 (please refer to page 61 ff)

SUCOFORM_141_CU / _141_CU_PE

Cable attenuation

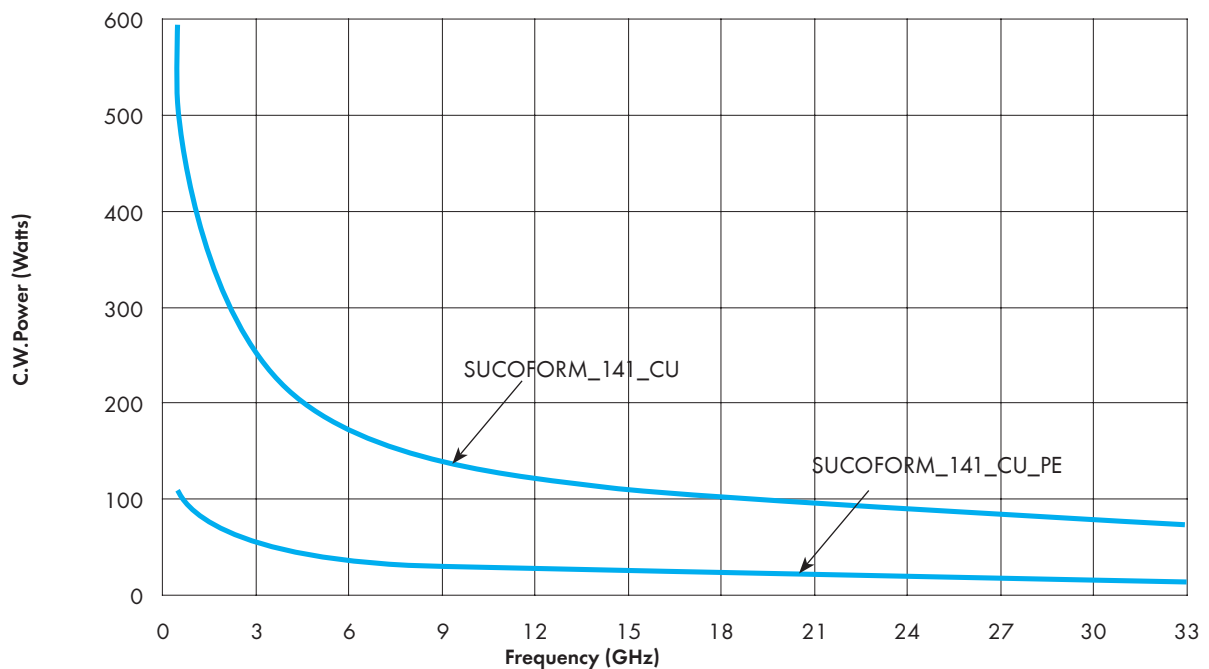
Nominal values @ +25 °C ambient temperature



SUCOFORM

Power Handling

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



SUCOFORM_141_CU_FEP / _141_CU_LSFH-01

Cable design

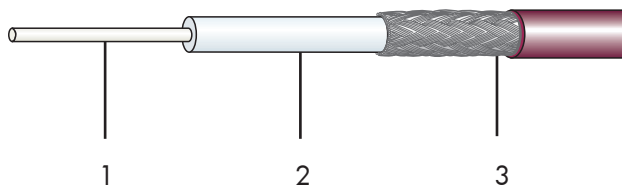


Fig. 2: SUCOFORM_141_CU_FEP

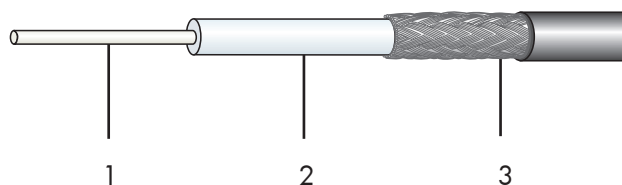


Fig. 2: SUCOFORM_141_CU_LSFH-01

	Description	Diameter
1. Centre conductor	Solid silver-plated copper wire	0.95 mm
2. Dielectric	Solid PTFE	2.95 mm
3. Outer conductor	Tin soaked copper braid	3.58 mm

Electrical cable data

Impedance	50 Ohm		
Operating frequency	33 GHz		
Capacitance	92 pF/m		
Velocity of propagation	71 %		
Time delay	4.7 ns/m		
Nom. attenuation*	coefficient a	0.3631	coefficient b 0.0377
Max. attenuation*	coefficient a	0.3995	coefficient b 0.0415
Max. operating voltage	1.9 kVrms		
Min. screening effectiveness up to 18 GHz	100 dB		

*Attenuation calculation

$$a_{25} = a \cdot \sqrt{f}(\text{GHz}) + b \cdot f(\text{GHz}) \quad (\text{dB/m})$$

General cable data

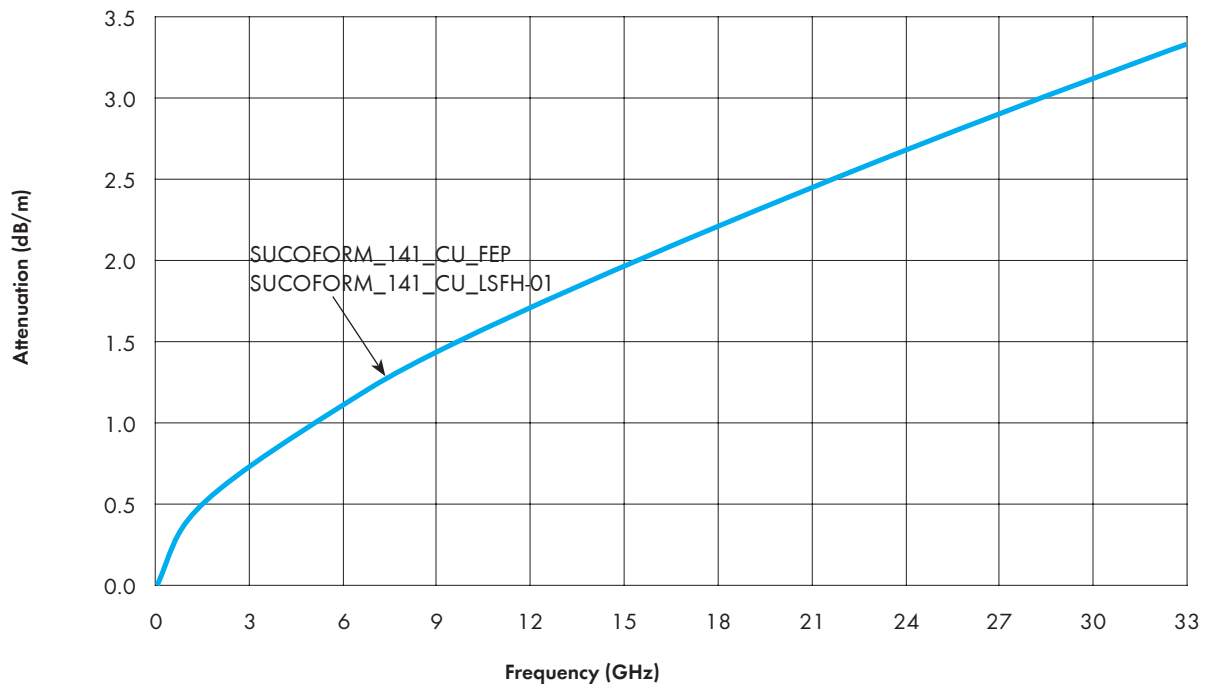
	SUCOFORM_141_CU_FEP	SUCOFORM_141_CU_LSFH-01
Item number	22512256	84003502
Additional jacket	FEP	LSFH (Low Smoke, Free of Halogen)
Colour	red	orange
Diameter	4.10 mm	4.60 mm
Weight	4.7 kg/100m	5.5 kg/100m
Temperature range	- 65 ... + 165 °C	- 40 ... + 85 °C
Flammability, passed	IEC 60332-1, UL 1581-§1080 (VW-1)	IEC 60332-2 UL 1581-§ 1100
Min. bending radius, static	8 mm	8 mm
Min. bending radius, repeated	40 mm	40 mm
Suitable connectors, cable group	Y12	Y12
Drawing	see Fig. 1	see Fig. 2

Suitable connectors see cable group Y12 (please refer to page 61 ff)

SUCOFORM_141_CU_FEP / _141_CU_LSFH-01

Cable attenuation

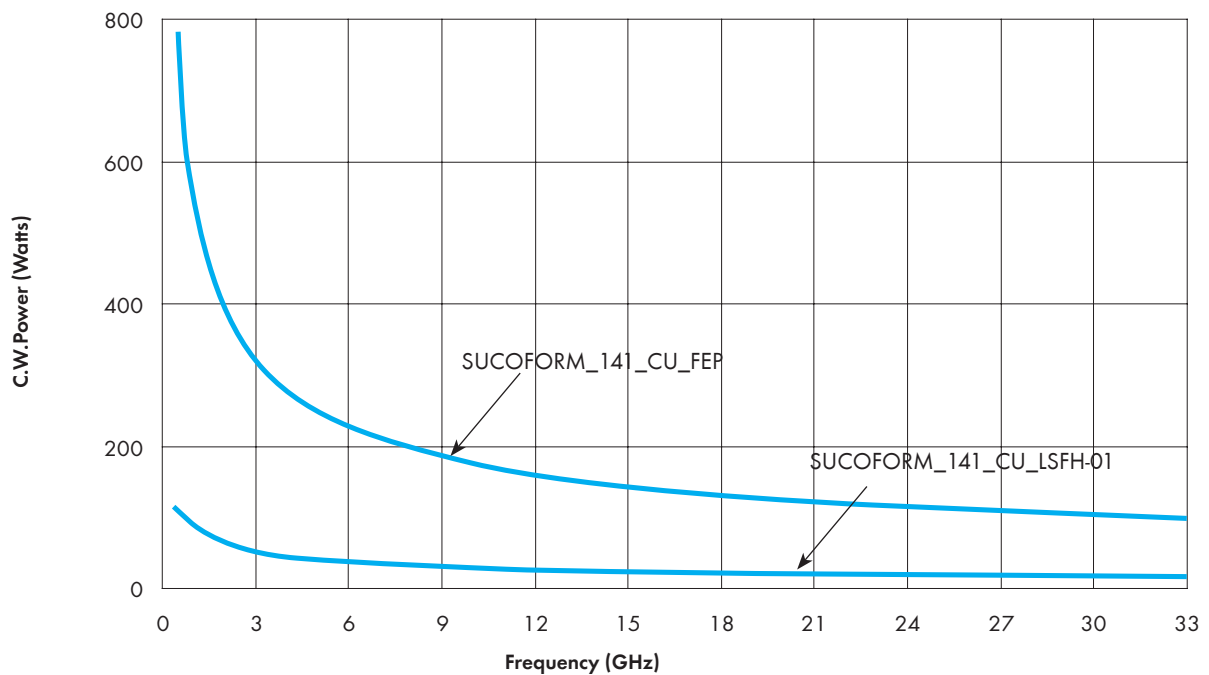
Nominal values @ +25 °C ambient temperature



SUCOFORM

Power Handling

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



SUCOFORM_250-01 / _250-01_FEP

Cable design

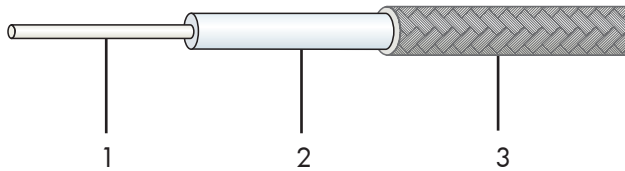


Fig. 1: SUCOFORM_250-01

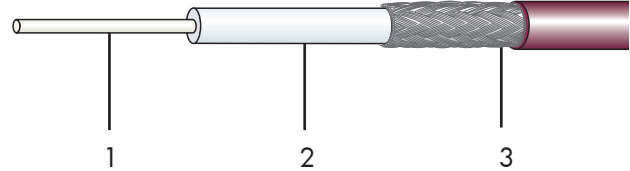


Fig. 2: SUCOFORM_250-01_FEP

	Description	Diameter
1. Centre conductor	Solid silver-plated copper wire	1.67 mm
2. Dielectric	Solid PTFE	5.24 mm
3. Outer conductor	Tin soaked copper braid	6.35 mm

Electrical cable data

Impedance	50 Ohm		
Operating frequency	18 GHz		
Capacitance	95 pF/m		
Velocity of Propagation	71 %		
Time Delay	4.7 ns/m		
Nom. attenuation*	coefficient a	0.2100	coefficient b 0.0310
Max. attenuation*	coefficient a	0.2310	coefficient b 0.0340
Max. operating voltage	3.5 kVrms		
Min. screening effectiveness up to 18 GHz	100 dB		

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

General cable data

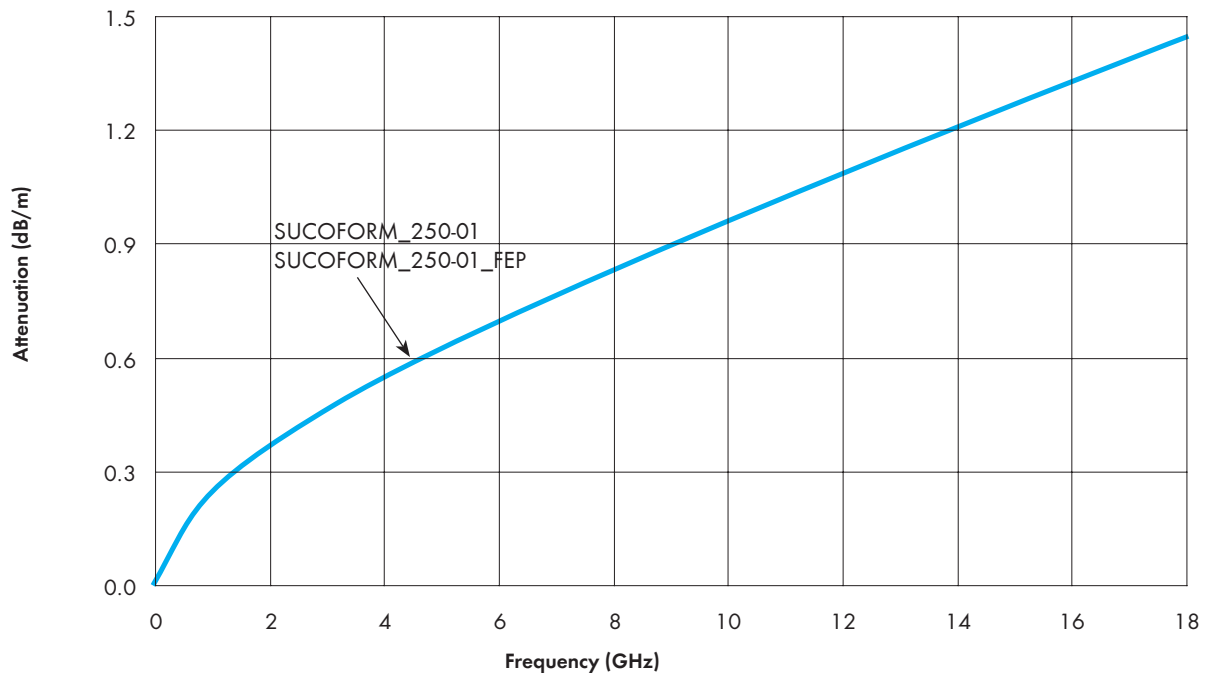
	SUCOFORM_250-01	SUCOFORM_250-01_FEP
Item number	84007938	84007941
Additional jacket	—	FEP
Colour	—	red
Diameter	6.35 mm	6.80 mm
Weight	13 kg/100 m	14 kg/100 m
Temperature range	- 65 ... + 165 °C	- 65 ... + 165 °C
Flammability, passed	IEC 60332-1, UL 1581-§1080 (VW-1)	IEC 60332-1, UL 1581-§1080 (VW-1)
Min. bending radius, static	30 mm	30 mm
Min. bending radius, repeated	120 mm	120 mm
Suitable connectors, cable group	Y7	Y7
Drawing	see Fig. 1	see Fig. 2

Suitable connectors see cable group Y7 (please refer to page 62)

SUCOFORM 250-01 / _250-01_FEP

Cable attenuation

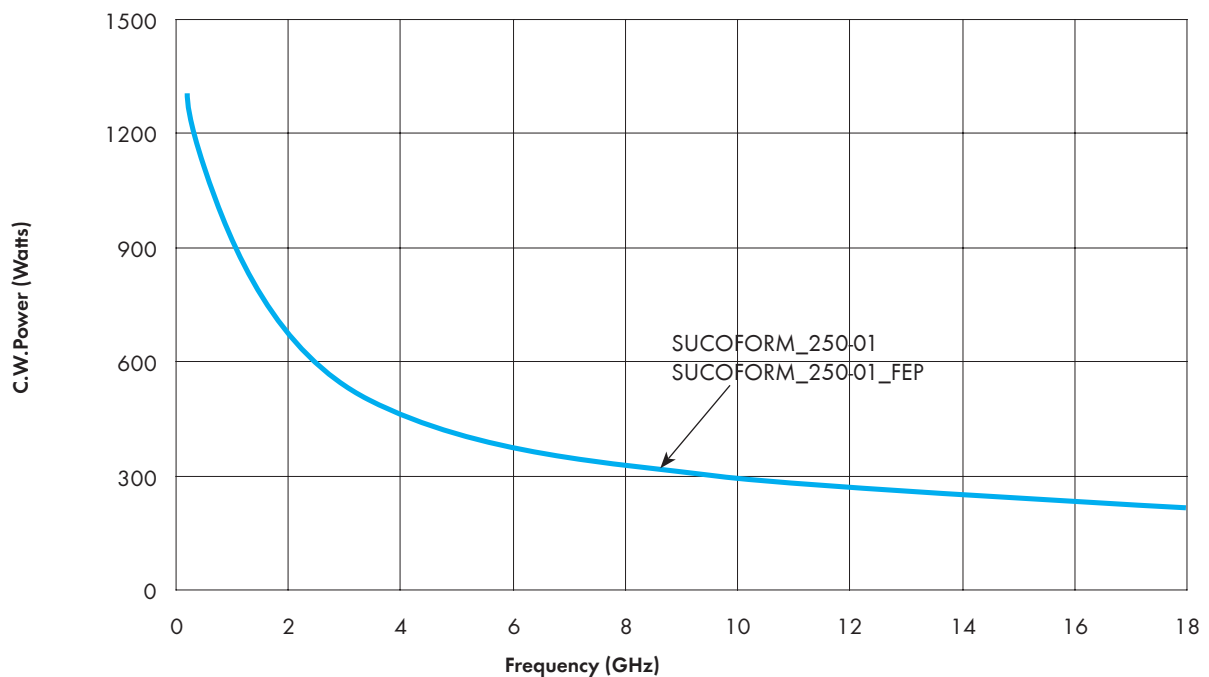
Nominal values @ +25 °C ambient temperature



SUCOFORM

Power handling

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



SUCOFORM

Further available SUCOFORM products

75 Ohm

HUBER+SUHNER cable type	Item no.	Centre conductor	Outer conductor	Jacket material	Outer diameter (mm)	Nom. attenuation dB/m @ 1 GHz
SUCOFORM_86_75	22511720	StCuAg	CuSn	n/a	2.10	0.8
SUCOFORM_86_75_FEP	22511970	StCuAg	CuSn	FEP	2.50	0.8
SUCOFORM_141_75	22511721	StCuAg	CuSn	n/a	3.58	0.5
SUCOFORM_141_75_FEP	22512290	StCuAg	CuSn	FEP	4.10	0.5

Other impedances

HUBER+SUHNER cable type	Item no.	Impedance (Ohm)	Centre conductor	Outer conductor	Jacket material	Outer diameter (mm)	Nom. attenuation dB/m @ 1 GHz
SUCOFORM_141_35	22512104	35	CuAg	CuSn	n/a	3.58	0.5
SUCOFORM_141_35 FEP	22512291	35	CuAg	CuSn	FEP	4.10	0.5
SUCOFORM_141_60	22512161	60	StCuAg	CuSn	n/a	3.58	0.4
SUCOFORM_141_60 FEP	22512288	60	StCuAg	CuSn	FEP	4.10	0.4
SUCOFORM_141_100	22512081	100	StCuAg	CuSn	n/a	3.58	0.6
SUCOFORM_141_100 FEP	22512289	100	StCuAg	CuSn	FEP	4.10	0.6

CuAg Silver plated copper
 StCuAG Silver plated copper clad steel
 CuSn Tin soaked copper braid
 PE Polyethylene

PTFE Polytetrafluethylene
 LSFH Low Smoke Free of Halogen polyethylene
 FEP Fluoroethylenepropylene copolymer

SUCOFORM

A wide range of standard connectors is available for SUCOFORM microwave cables. In addition, HUBER+SUHNER offers a fast delivery service for RF tested ready-to-use cable assemblies.

Suitable connectors

HUBER+SUHNER cable type	Series, pattern	HUBER+SUHNER connector type	Item no.	Operating frequency (GHz)
SUCOFORM_47_CU Cable group Y2	MCX			
	Straight cable plug	11_MCX-50-1-14/111_NE	23032081	6
	Right angle cable plug	16_MCX-50-1-12/111_NE	23024694	6
	Right angle cable plug	16_MCX-50-1-11/111_NH	23032063	6
	MMCX			
	Straight cable plug	11_MMCX-50-1-3/111_OE	22648893	6
	Right angle cable plug	16_MMCX-50-1-4/111_OH	23003641	6
	Right angle cable plug	16_MMCX-50-1-4/111_OE	22649182	6
	SK			
	Straight cable plug	11_SK-50-1-2/119_NE	84013232	40
	SMA			
	Straight cable plug	11_SMA-50-1-53/119_NH	23013327	18
	Straight cable jack	16_SMA-50-1-97/19_NE	23024708	18
	Straight cable jack	21_SMA-50-1-2/111_NE	22642386	18
SUCOFORM_86 Cable group Y11				
	MCX			
	Straight cable plug	11_MCX-50-2-19/111_NE	23024699	6
	Straight cable plug	11_MCX-50-2-19/111_NH	23032147	6
	Right angle cable plug	16_MCX-50-2-104/111_NH-1	23032067	6
	Right angle cable plug	16_MCX-50-2-104/111_NH	22658277	6
	Straight panel bulkhead cable jack	24_MCX-50-2-3/111_NE	22543580	6
	MMBX			
	Straight cable plug	11_MMBX-50-2-4/111_NH	23033280	12.4
	Right angle cable plug	16_MMBX-50-2-4/111_NH	23033281	12.4
	Straight panel bulkhead cable jack	24_MMBX-50-2-2/111_NH	23037876	12.4

SUCOFORM

Suitable connectors

HUBER+SUHNER cable type	Series, pattern	HUBER+SUHNER connector type	Item no.	Operating frequency (GHz)
SUCOFORM_86 Cable group Y11	MMCX			
	Straight cable plug	11_MMCX-50-2-1/111_OH	22649039	6
	Straight cable plug	11_MMCX-50-2-1/111_OE	22645297	6
	Right angle cable plug	16_MMCX-50-2-1/111_OH	22649044	6
	Right angle cable plug	16_MMCX-50-2-1/111_OE	22645957	6
	Straight cable jack	21_MMCX-50-2-1/111_OE	22645290	6
	Straight panel bulkhead cable jack	24_MMCX-50-2-1/111_OE	22645954	6
	N			
	Straight cable plug	11_N-50-2-15/113_UE	22660315	18
	Right angle cable plug	16_N-50-2-9/13_UH	23013729	11
	Straight cable jack	21_N-50-2-14/133_NE	22642666	18
	Straight panel bulkhead cable jack	24_N-50-2-14/133_NE	22544637	18
	Straight panel cable jack, flange mount	25_N-50-2-14/133_NE	22641303	18
	PC3.5			
	Straight cable plug	11_PC35-50-2-4/199_UE	84009440	33
	Straight cable jack	21_PC35-50-2-4/199_UE	84009419	33
	Straight panel bulkhead cable jack	24_PC35-50-2-2/199_UE	84009405	33
	QMA			
	Straight cable plug	11_QMA-50-2-3/133_NE	23017704	6
	Straight cable plug	11_QMA-50-2-3/133_NH	23017705	6
	Right angle cable plug	16_QMA-50-2-3/133_NE	23017666	6
	Right angle cable plug	16_QMA-50-2-3/133_NH	23017667	6
	Straight panel bulkhead cable jack	24_QMA-50-2-1/111_NE	23017742	6
	Straight panel bulkhead cable jack	24_QMA-50-2-1/111_NH	23017743	6
	SK			
	Straight cable plug	11_SK-50-2-57/119_NE	84013239	40
	SMA			
	Straight cable plug	11_SMA-50-2-29/119_NH	22660366	18
	Straight cable jack	21_SMA-50-2-15/111_NE	22544549	18
	Straight cable jack	21_SMA-50-2-15/111_NH	22652141	18
	Straight panel bulkhead cable jack	24_SMA-50-2-15/111_NE	22544532	18
	Straight panel bulkhead cable jack	24_SMA-50-2-15/111_NH	22645490	18

SUCOFORM

Suitable connectors

HUBER+SUHNER cable type	Series, pattern	HUBER+SUHNER connector type	Item no.	Operating frequency (GHz)
SUCOFORM_86 Cable group Y11	SMB			
	Straight cable plug	11_SMB-50-2-13/111_NE	22543362	4
	Straight cable plug	11_SMB-50-2-13/111_NH	22658765	4
	Right angle cable plug	16_SMB-50-2-23/111_NE	22644079	4
	Straight cable jack	21_SMB-50-2-13/111_NE	22543425	4
	Straight panel bulkhead cable jack	24_SMB-50-2-13/111_NE	22640822	4
	SMC			
	Straight cable plug	11_SMC-50-2-13/111_NE	22543363	10
	Straight cable plug	11_SMC-50-2-13/111_NH	22650675	10
	Right angle cable plug	16_SMC-50-2-25/111_NE	22644126	10
	Right angle cable plug	16_SMC-50-2-25/111_NH	23003713	10
	Straight panel bulkhead cable jack	24_SMC-50-2-13/111_NE	22640297	10
	Straight panel bulkhead cable jack	24_SMC-50-2-13/111_NH	22650209	10
	SMPX			
	Straight cable plug	11_SMPX-50-2-1/111_NE	23021825	40
	Right angle cable plug	16_SMPX-50-2-1/111_NE	23022715	40
	Right angle cable plug	16_SMPX-50-2-2/111_NE	23022716	40
	Straight panel cable jack, flange mount	25_SMPX-50-2-1/111_NE	23025359	40
	TNC			
	Straight cable plug	11_TNC-50-2-20/103_NE	22642519	11
	Straight panel bulkhead cable jack	24_TNC-50-2-31/133_NE	23001721	11
SUCOFORM_141 SUCOFORM_141_CU Cable group Y12				
	N			
	Straight cable plug	11_N-50-3-13/113_NE	22542083	11
	Straight cable plug	11_N-50-3-51/133_NE	22543919	18
	Right angle cable plug	16_N-50-3-15/133_NE	22648832	11
	Straight cable jack	21_N-50-3-11/133_NE	22543921	18
	Straight cable jack	21_N-50-3-51/19_NE	22543922	18
	Straight panel bulkhead cable jack	24_N-50-3-14/133_NE	22542300	18
	Straight panel bulkhead cable jack	24_N-50-3-51/19_NE	22642344	18
	Straight panel cable jack, flange mount	25_N-50-3-9/133_NE	22543952	11
	PC3.5			
	Straight cable plug	11_PC35-50-3-4/199_UE	84009380	33
	Straight cable jack	21_PC35-50-3-3/199_UE	84009382	33
	Straight panel bulkhead cable jack	24_PC35-50-3-2/199_UE	84009383	33

SUCOFORM

Suitable connectors

HUBER+SUHNER cable type	Series, pattern	HUBER+SUHNER connector type	Item no.	Operating frequency (GHz)
SUCOFORM_141 SUCOFORM_141_CU Cable group Y12	QMA			
	Straight cable plug	11_QMA-50-3-3/133_NE	23017695	6
	Straight cable plug	11_QMA-50-3-3/133_NH	23017696	6
	Right angle cable plug	16_QMA-50-3-3/133_NE	23017693	6
	Right angle cable plug	16_QMA-50-3-3/133_NH	23017694	6
	Straight panel bulkhead cable jack	24_QMA-50-3-3/111_NE	23017683	6
	Straight panel bulkhead cable jack	24_QMA-50-3-3/111_NH	23017684	6
	QN			
	Straight cable plug	11_QN-50-3-3/113_NE	23033393	11
	Right angle cable plug	16_QN-50-3-3/13-_NE	23033268	11
	Straight panel bulkhead cable jack	24_QN-50-3-3/13-_NE	23033423	11
	SMA			
	Straight cable plug	11_SMA-50-3-77/119_NH	84005524	18
	Right angle cable plug	16_SMA-50-3-3/111_NE	22640073	18
	Right angle cable plug	16_SMA-50-3-3/111_NH	22646569	18
	Straight panel bulkhead cable jack	24_SMA-50-3-15/111_NE	22641153	18
	Straight panel bulkhead cable jack	24_SMA-50-3-15/111_NH	22645259	18
	TNC			
	Straight cable plug	11_TNC-50-3-29/103_NE	22641997	11
	Straight panel bulkhead cable jack	24_TNC-50-3-30/133_NH	23001723	11
SUCOFORM_250-01 Cable group Y7				
	716			
	Straight cable plug	11_716-50-5-6/003_Y	84008435	7.5
	Straight panel cable jack, flange mount	25_716-50-5-17/000_Y	84008881	7.5
	N			
	Straight cable plug	11_N-50-5-18/103_NH	84008445	11
	Straight cable plug	11_N-50-5-39/133_NE	22642481	18
	Straight cable jack	21_N-50-5-52/193_NE	22641531	18

Connector dimensions and additional information

For connector dimensions and additional information please refer to the corresponding connector type in the HUBER+SUHNER Coaxial Connectors General Catalogue or contact your local HUBER+SUHNER partner.

MULTIFLEX

The flexible alternative to SEMI-RIGID

Content

Product description.....	65
Features and benefits.....	65
Overview of available MULTIFLEX cable types.....	65
Product specification of	
MULTIFLEX_86.....	66
MULTIFLEX_141.....	68
Suitable connectors.....	70



MULTIFLEX

The flexible alternative to SEMI-RIGID

Product description

MULTIFLEX microwave cables are the flexible alternative to semi-rigid cables. They are used in commercial and military RF and microwave airborne systems, communications systems, cellular base stations, satellite ground systems - in brief: anywhere a "flexible semi-rigid-cable" is required.



Features and benefits

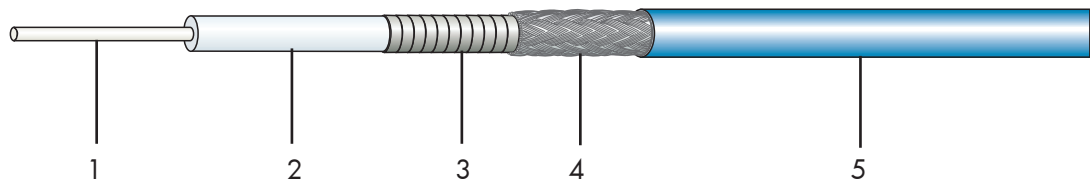
- Comparable electrical performance as corresponding semi-rigid cable types; high screening
- High flexibility: no 3D drawings required for design and manufacture
- Semi-rigid connectors can be used; quick and easy assembly
- Resistant to chemicals, oils, lubricants, humidity, etc.

HUBER+SUHNER cable type	Item no.	Operating frequency (GHz)	Temperature range		Outer dia. (mm)	Nom. attenuation 18 GHz, 25 °C (dB/m)	Bending radii		More information see page
			minimum (°C)	maximum (°C)			static (mm)	dyn. (mm)	
MULTIFLEX_86	22511965	40	-65	+165	2.65	3.6	6	20	66
MULTIFLEX_141	22511964	33	-65	+165	4.14	2.1	10	40	68

MULTIFLEX_86

Item no. 22511965

Cable design



	Description	Diameter
1. Centre conductor	Solid silver-plated copper wire	0.47 mm
2. Dielectric	Solid PTFE	1.48 mm
3. 1st outer conductor	Silver-plated copper tape	1.71 mm
4. 2nd outer conductor	Silver-plated copper braid	2.11 mm
5. Jacket	Fluoroethylenepropylene, blue	2.65 mm

Electrical cable data

Impedance	50 Ohm		
Operating frequency	40 GHz		
Capacitance	95 pF/m		
Velocity of propagation	71 %		
Time Delay	4.7 ns/m		
Nom. attenuation*	coefficient a	0.71702	coefficient b 0.02892
Max. attenuation*	coefficient a	0.75288	coefficient b 0.03037
Max. operating voltage	1.5 kVrms		
Min. screening effectiveness up to 18 GHz	90 dB		

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

General cable data

Temperature range	-65...+165 °C
Weight	2.1 kg/100m
Min bending radius static	6 mm
Min bending radius dynamic	20 mm
Flammability, passed	IEC 60332-1, UL 1581-§1080 (VW-1)

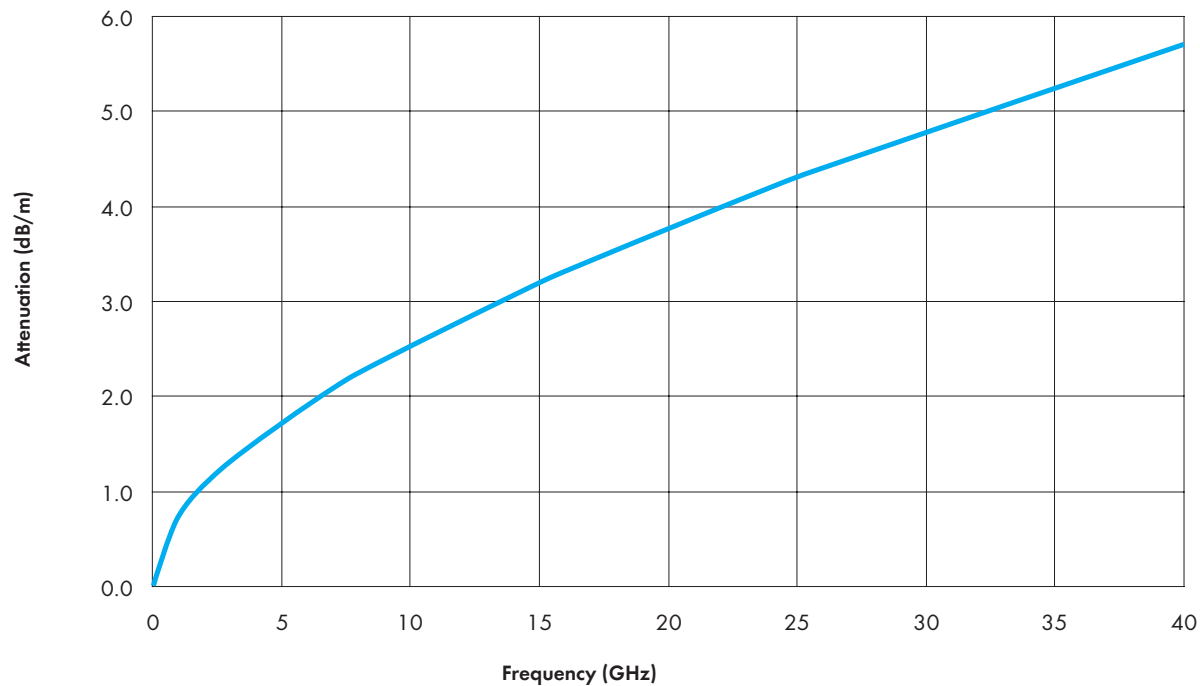
Suitable Connectors

Cable group (please refer to pages 70 ff)	Y11
---	-----

MULTIFLEX₈₆

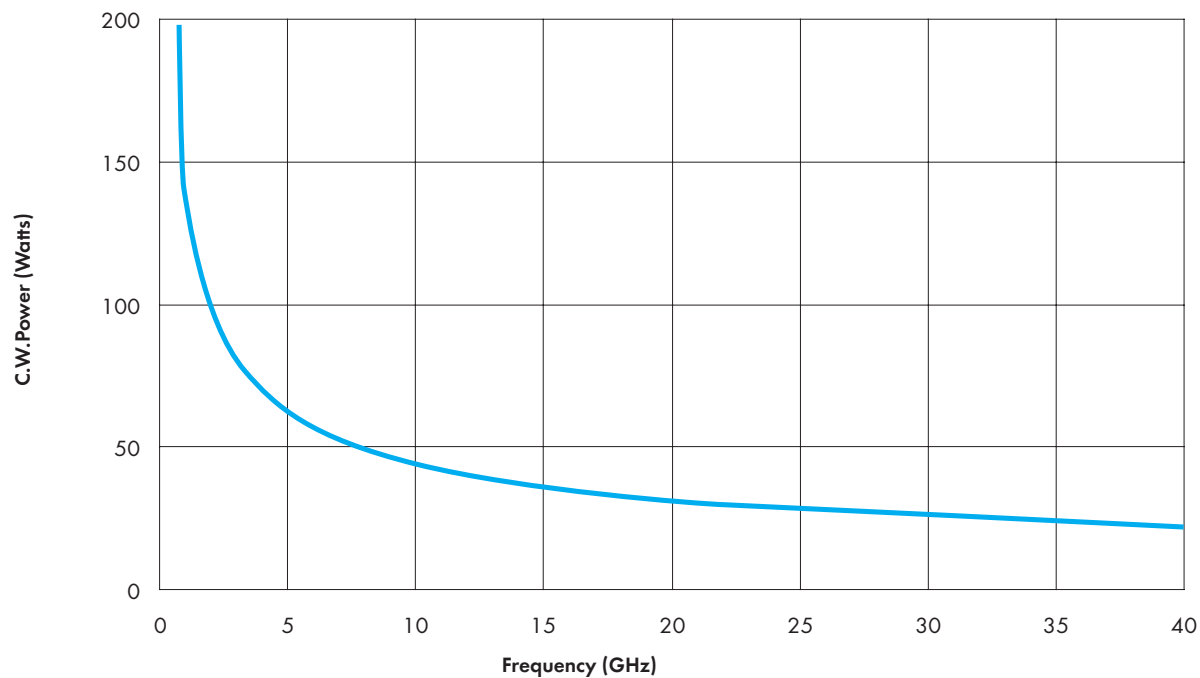
Cable attenuation

Nominal values @ +25 °C ambient temperature



Power handling

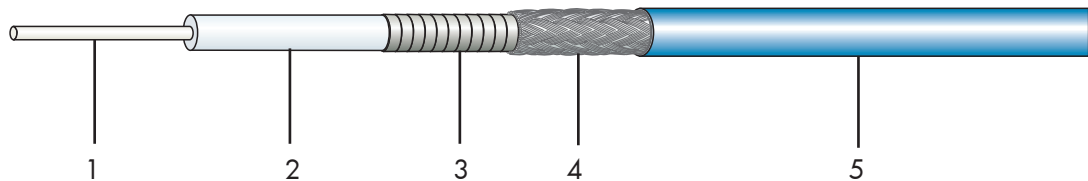
Maximum values @ +40 °C ambient temperature and sea level



MULTIFLEX_141

Item no. 22511964

Cable design



	Description	Diameter
1. Centre conductor	Solid silver-plated copper wire	0.92 mm
2. Dielectric	Solid PTFE	2.93 mm
3. 1st outer conductor	Silver-plated copper tape	3.21 mm
4. 2nd outer conductor	Silver-plated copper braid	3.53 mm
5. Jacket	Fluoroethylenepropylene, blue	4.14 mm

Electrical cable data

Impedance	50 Ohm		
Operating frequency	33 GHz		
Capacitance	95 pF/m		
Velocity of propagation	71 %		
Time delay	4.7 ns/m		
Nom. attenuation*	coefficient a	0.37320	coefficient b 0.02790
Max. attenuation*	coefficient a	0.41052	coefficient b 0.03069
Operating voltage	1.9 kVrms		
Min. screening effectiveness up to 18 GHz	90 dB		

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

General cable data

Temperature range	-65...+165 °C
Weight	4.5 kg/100m
Min. bending radius static	10 mm
Min. bending radius dynamic	40 mm
Flammability, passed	IEC 60332-1, UL 1581-§1080 (VW-1)

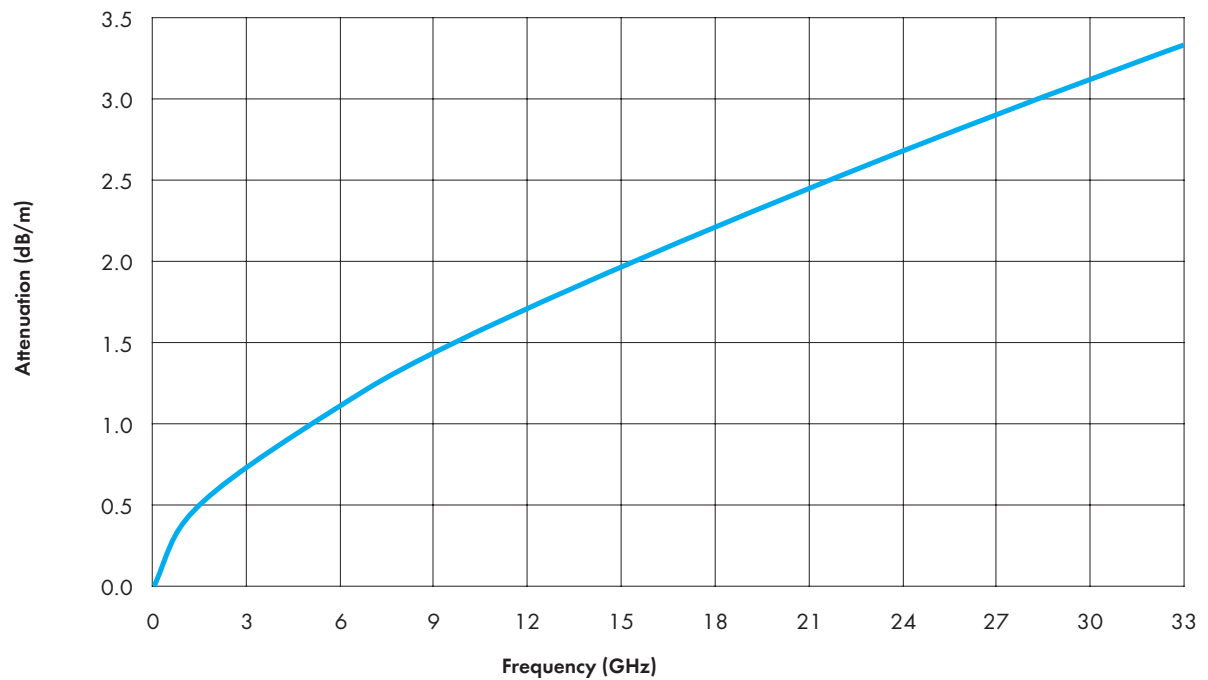
Suitable connectors

Cable group (please refer to pages 70 ff)	Y12
---	-----

MULTIFLEX_141

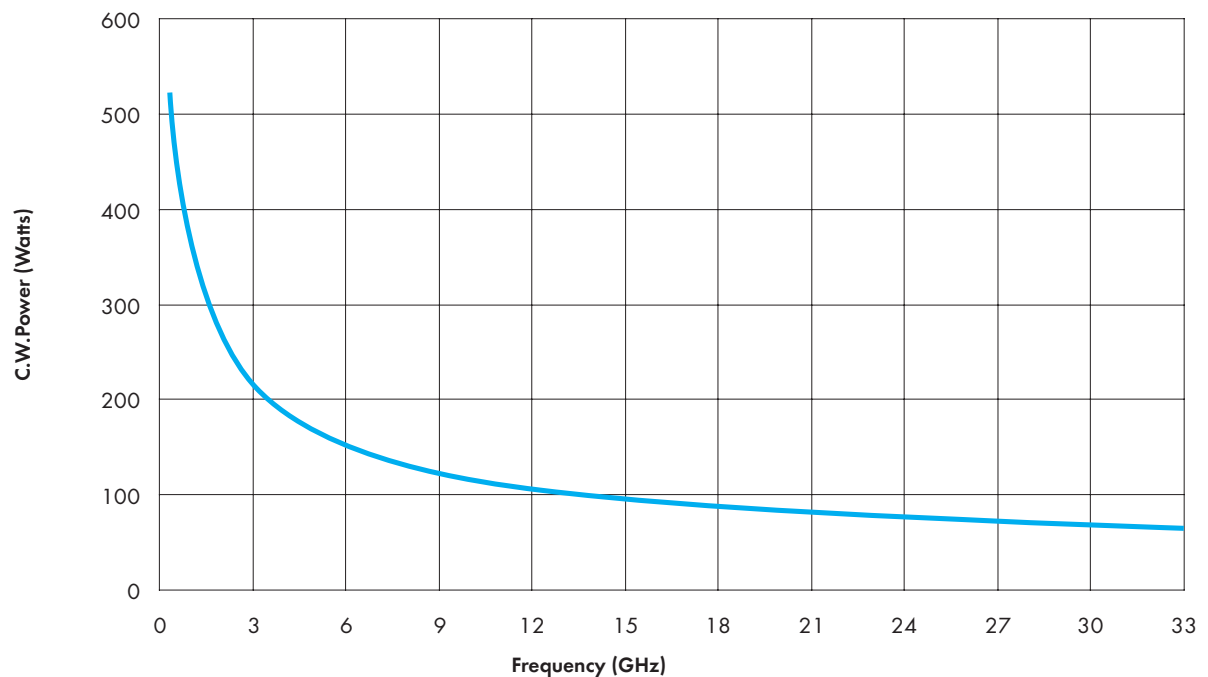
Cable attenuation

Nominal values @ +25 °C ambient temperature



Power handling

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



MULTIFLEX

A wide range of standard connectors is available for MULTIFLEX microwave cables. In addition, HUBER+SUHNER offers a fast delivery service for RF tested ready-to-use cable assemblies.

Suitable connectors

HUBER+SUHNER cable type	Series, pattern	HUBER+SUHNER connector type	Item no.	Operating frequency (GHz)
MULTIFLEX_86 Cable group Y11	MCX			
	Straight cable plug	11_MCX-50-2-19/111_NE	23024699	6
	Straight cable plug	11_MCX-50-2-19/111_NH	23032147	6
	Right angle cable plug	16_MCX-50-2-104/111_NH-1	23032067	6
	Right angle cable plug	16_MCX-50-2-104/111_NH	22658277	6
	Straight panel bulkhead cable jack	24_MCX-50-2-3/111_NE	22543580	6
	MMBX			
	Straight cable plug	11_MMBX-50-2-4/111_NH	23033280	12.4
	Right angle cable plug	16_MMBX-50-2-4/111_NH	23033281	12.4
	Straight panel bulkhead cable jack	24_MMBX-50-2-2/111_NH	23037876	12.4
	MMCX			
	Straight cable plug	11_MMCX-50-2-1/111_OH	22649039	6
	Straight cable plug	11_MMCX-50-2-1/111_OE	22645297	6
	Right angle cable plug	16_MMCX-50-2-1/111_OH	22649044	6
	Right angle cable plug	16_MMCX-50-2-1/111_OE	22645957	6
	Straight cable jack	21_MMCX-50-2-1/111_OE	22645290	6
	Straight panel bulkhead cable jack	24_MMCX-50-2-1/111_OE	22645954	6
	N			
	Straight cable plug	11_N-50-2-15/113_UE	22660315	18
	Right angle cable plug	16_N-50-2-9/13_UH	23013729	11
	Straight cable jack	21_N-50-2-14/133_NE	22642666	18
	Straight panel bulkhead cable jack	24_N-50-2-14/133_NE	22544637	18
	Straight panel cable jack, flange mount	25_N-50-2-14/133_NE	22641303	18
	PC3.5			
	Straight cable plug	11_PC35-50-2-4/199_UE	84009440	33
	Straight cable jack	21_PC35-50-2-4/199_UE	84009419	33
	Straight panel bulkhead cable jack	24_PC35-50-2-2/199_UE	84009405	33
	QMA			
	Straight cable plug	11_QMA-50-2-3/133_NE	23017704	6
	Straight cable plug	11_QMA-50-2-3/133_NH	23017705	6
	Right angle cable plug	16_QMA-50-2-3/133_NE	23017666	6
	Right angle cable plug	16_QMA-50-2-3/133_NH	23017667	6
	Straight panel bulkhead cable jack	24_QMA-50-2-1/111_NE	23017742	6
	Straight panel bulkhead cable jack	24_QMA-50-2-1/111_NH	23017743	6

MULTIFLEX

Suitable connectors

HUBER+SUHNER cable type	Series, pattern	HUBER+SUHNER connector type	Item no.	Operating frequency (GHz)
MULTIFLEX_86 Cable group Y11	SK			
	Straight cable plug	11_SK-50-2-57/119_NE	84013239	40
	SMA			
	Straight cable plug	11_SMA-50-2-29/119_NH	22660366	18
	Straight cable jack	21_SMA-50-2-15/111_NE	22544549	18
	Straight panel bulkhead cable jack	21_SMA-50-2-15/111_NH	22652141	18
	Straight panel bulkhead cable jack	24_SMA-50-2-15/111_NE	22544532	18
	Straight panel bulkhead cable jack	24_SMA-50-2-15/111_NH	22645490	18
	SMB			
	Straight cable plug	11_SMB-50-2-13/111_NE	22543362	4
	Straight cable plug	11_SMB-50-2-13/111_NH	22658765	4
	Right angle cable plug	16_SMB-50-2-23/111_NE	22644079	4
	Straight cable jack	21_SMB-50-2-13/111_NE	22543425	4
	Straight panel bulkhead cable jack	24_SMB-50-2-13/111_NE	22640822	4
	SMC			
	Straight cable plug	11_SMC-50-2-13/111_NE	22543363	10
	Straight cable plug	11_SMC-50-2-13/111_NH	22650675	10
	Right angle cable plug	16_SMC-50-2-25/111_NE	22644126	10
	Right angle cable plug	16_SMC-50-2-25/111_NH	23003713	10
	Straight panel bulkhead cable jack	24_SMC-50-2-13/111_NE	22640297	10
	Straight panel bulkhead cable jack	24_SMC-50-2-13/111_NH	22650209	10
	SMPX			
	Straight cable plug	11_SMPX-50-2-1/111_NE	23021825	40
	Right angle cable plug	16_SMPX-50-2-1/111_NE	23022715	40
	Right angle cable plug	16_SMPX-50-2-2/111_NE	23022716	40
	Straight panel cable jack, flange mount	25_SMPX-50-2-1/119_NE	23025359	40
	TNC			
	Straight cable plug	11_TNC-50-2-20/103_NE	22642519	11
	Straight panel bulkhead cable jack	24_TNC-50-2-31/133_NE	23001721	11
MULTIFLEX_141 Cable group Y12	N			
	Straight cable plug	11_N-50-3-13/113_NE	22542083	11
	Straight cable plug	11_N-50-3-51/133_NE	22543919	18
	Right angle cable plug	16_N-50-3-15/133_NE	22648832	11
	Straight cable jack	21_N-50-3-11/133_NE	22543921	18
	Straight cable jack	21_N-50-3-51/19_NE	22543922	18
	Straight panel bulkhead cable jack	24_N-50-3-14/133_NE	22542300	18

MULTIFLEX

Suitable connectors

HUBER+SUHNER cable type	Series, pattern	HUBER+SUHNER connector type	Item no.	Operating frequency (GHz)
MULTIFLEX_141 Cable group Y12	N			
	Straight panel bulkhead cable jack	24_N-50-3-51/19_NE	22642344	18
	Straight panel cable jack, flange mount	25_N-50-3-9/133_NE	22543952	11
	PC3.5			
	Straight cable plug	11_PC35-50-3-4/199_UE	84009380	33
	Straight cable jack	21_PC35-50-3-3/199_UE	84009382	33
	Straight panel bulkhead cable jack	24_PC35-50-3-2/199_UE	84009383	33
	QMA			
	Straight cable plug	11_QMA-50-3-3/133_NE	23017695	6
	Straight cable plug	11_QMA-50-3-3/133_NH	23017696	6
	Right angle cable plug	16_QMA-50-3-3/133_NE	23017693	6
	Right angle cable plug	16_QMA-50-3-3/133_NH	23017694	6
	Straight panel bulkhead cable jack	24_QMA-50-3-3/111_NE	23017683	6
	Straight panel bulkhead cable jack	24_QMA-50-3-3/111_NH	23017684	6
	QN			
	Straight cable plug	11_QN-50-3-3/113_NE	23033393	11
	Right angle cable plug	16_QN-50-3-3/13_NE	23033268	11
	Straight panel bulkhead cable jack	24_QN-50-3-3/13_NE	23033423	11
	SMA			
	Straight cable plug	11_SMA-50-3-77/119_NH	84005524	18
	Right angle cable plug	16_SMA-50-3-3/111_NE	22640073	18
	Right angle cable plug	16_SMA-50-3-3/111_NH	22646569	18
	Straight panel bulkhead cable jack	24_SMA-50-3-15/111_NE	22641153	18
	Straight panel bulkhead cable jack	24_SMA-50-3-15/111_NH	22645259	18
	TNC			
	Straight cable plug	11_TNC-50-3-29/103_NE	22641997	11
	Straight panel bulkhead cable jack	24_TNC-50-3-30/133_NH	23001723	11

Connector dimensions and additional information

For connector dimensions and additional information please refer to the corresponding connector type in the HUBER+SUHNER Coaxial Connectors General Catalogue or contact your local HUBER+SUHNER partner.

S-SERIES

The economical, low loss microwave cable

Content

Product description.....	75
Features and benefits.....	75
Overview of available S-SERIES cable types.....	75
Product specification of	
S 04272_B.....	76
S 04212_B.....	78
S-04262_B-01	80
Suitable connectors	82



S-SERIES

The economical, low loss microwave cable

Product description

The S-SERIES is a line of cost-efficient, low-loss microwave cables. It covers technically demanding requirements in a wide range of applications, preferably in fixed installations. These versatile cables are characterised by their very low insertion loss across a wide frequency range.

S-SERIES cables are easy to assemble and are made of environmentally friendly, halogen free materials.



Features and benefits

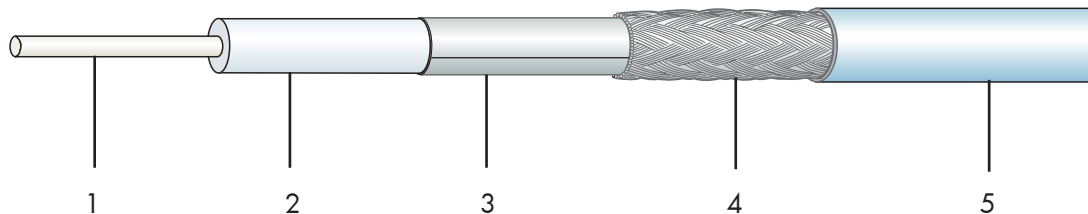
- Low insertion loss
- Excellent screening effectiveness
- Wide frequency range
- Quick and easy to assemble
- Halogen free
- Comprehensive connector range
- Cost-efficient, environmentally friendly solution for a wide range of applications
- Low Smoke Free of Halogen (LSFH) version available (S04262_B-01)

HUBER+SUHNER cable type	Item no.	Operating frequency (GHz)	Temperature range		Outer dia. (mm)	Nom. attenuation 18 GHz, 25 °C (dB/m)	Bending radii		More information see page
			minimum (°C)	maximum (°C)			static (mm)	dyn. (mm)	
S_04272_B	22511622	18	-40	+85	5.50	1.6	25	90	76
S_04212_B	22511855	18	-40	+85	5.30	1.6	25	90	78
S_04262_B-01	84000918	18	-40	+85	5.50	1.6	25	90	80

S-SERIES S_04272_B

Item no. 22511622

Cable design



	Description	Diameter
1. Centre conductor	Solid silver-plated copper wire	1.40 mm
2. Dielectric	Foamed polyethylene	3.82 mm
3. 1st outer conductor	Longitudinal aluminium foil	3.96 mm
4. 2nd outer conductor	Tin-plated copper braid	4.48 mm
5. Jacket	Polyethylene, blue	5.50 mm

Electrical cable data

Impedance	50 Ohm		
Operating frequency	18 GHz		
Capacitance	82 pF/m		
Velocity of propagation	82 %		
Time delay	4.1 ns/m		
Nom. attenuation*	coefficient a	0.1970	coefficient b 0.0450
Max. attenuation*	coefficient a	0.2167	coefficient b 0.0495
Max. operating voltage	0.5 kVrms		
Min. screening effectiveness up to 18 GHz	90 dB		

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

General cable data

Temperature range	-40...+85 °C
Weight	4.4 kg/100m
Min. bending radius static	25 mm
Min. bending radius dynamic	90 mm

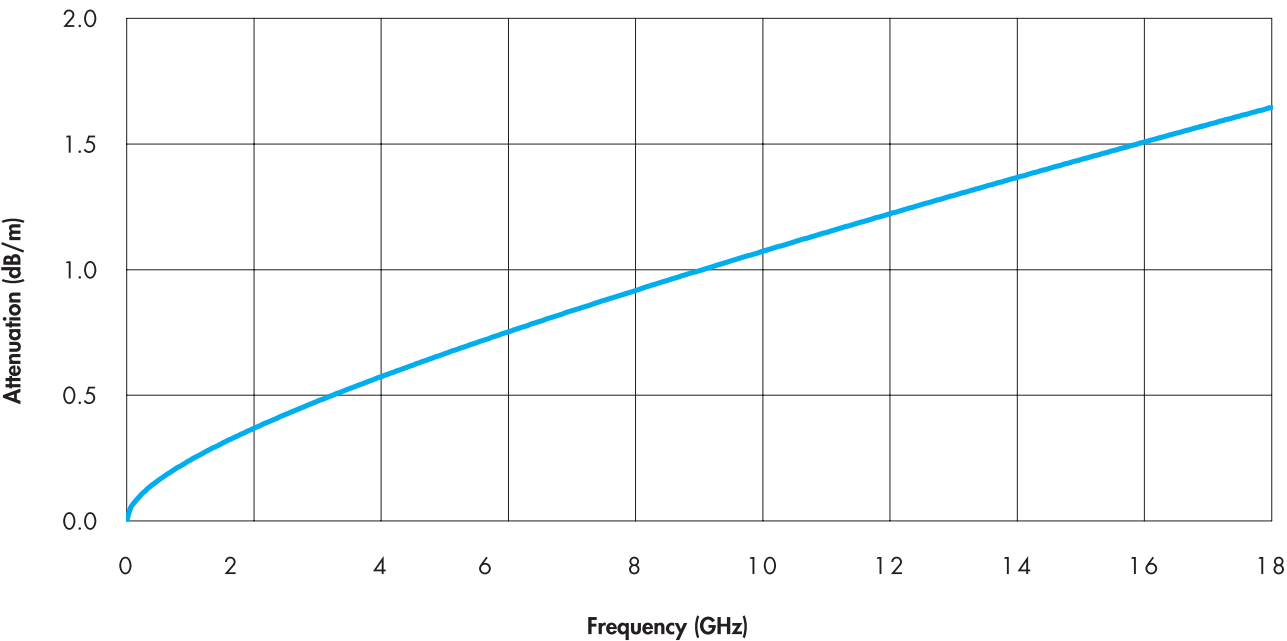
Suitable connectors

Please refer to page 82

S-SERIES S_04272_B

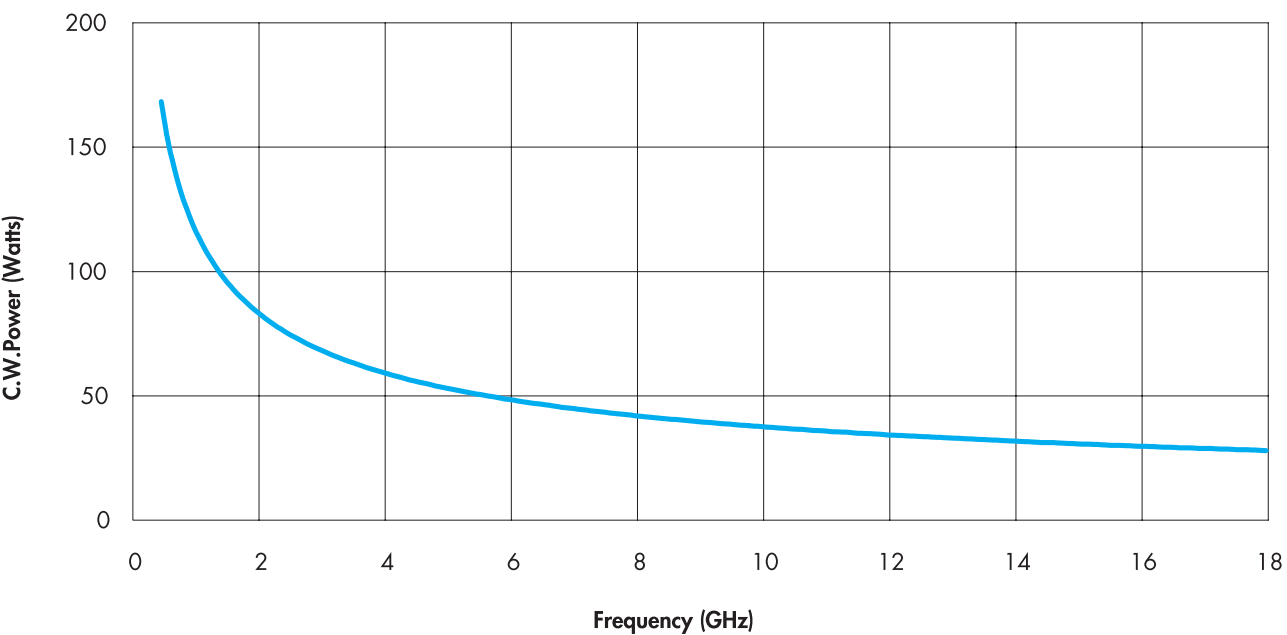
Cable attenuation

Nominal values @ +25 °C ambient temperature



Power handling

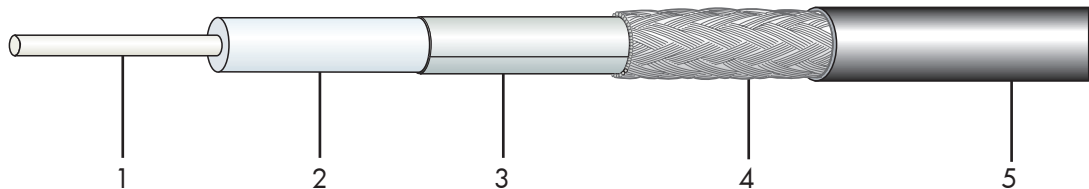
Maximum values @ +40 °C ambient temperature and sea level



S-SERIES S_04212_B

Item no. 22511855

Cable design



	Description	Diameter
1. Centre conductor	Solid silver-plated copper wire	1.40 mm
2. Dielectric	Foamed polyethylene	3.82 mm
3. 1st outer conductor	Longitudinal aluminium foil	3.96 mm
4. 2nd outer conductor	Tin-plated copper braid	4.48 mm
5. Jacket	Polyurethane, black	5.30 mm

Electrical cable data

Impedance	50 Ohm		
Operating frequency	18 GHz		
Capacitance	82 pF/m		
Velocity of propagation	82 %		
Time delay	4.1 ns/m		
Nom. attenuation*	coefficient a	0.1970	coefficient b 0.0450
Max. attenuation*	coefficient a	0.2167	coefficient b 0.0495
Max. operating voltage	0.5 kVrms		
Min. screening effectiveness up to 18 GHz	90 dB		

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

General cable data

Temperature range	-40...+85 °C
Weight	4.1 kg/100m
Min. bending radius static	25 mm
Min. bending radius dynamic	90 mm

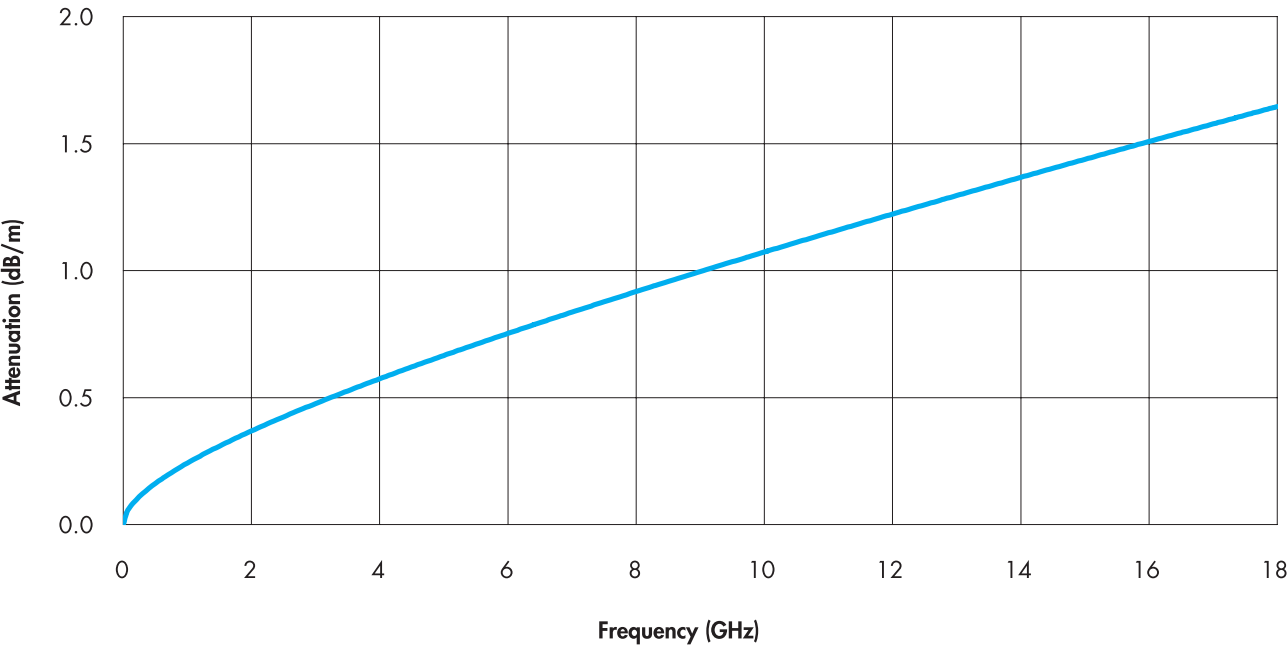
Suitable connectors

Please refer to page 82

S-SERIES S_04212_B

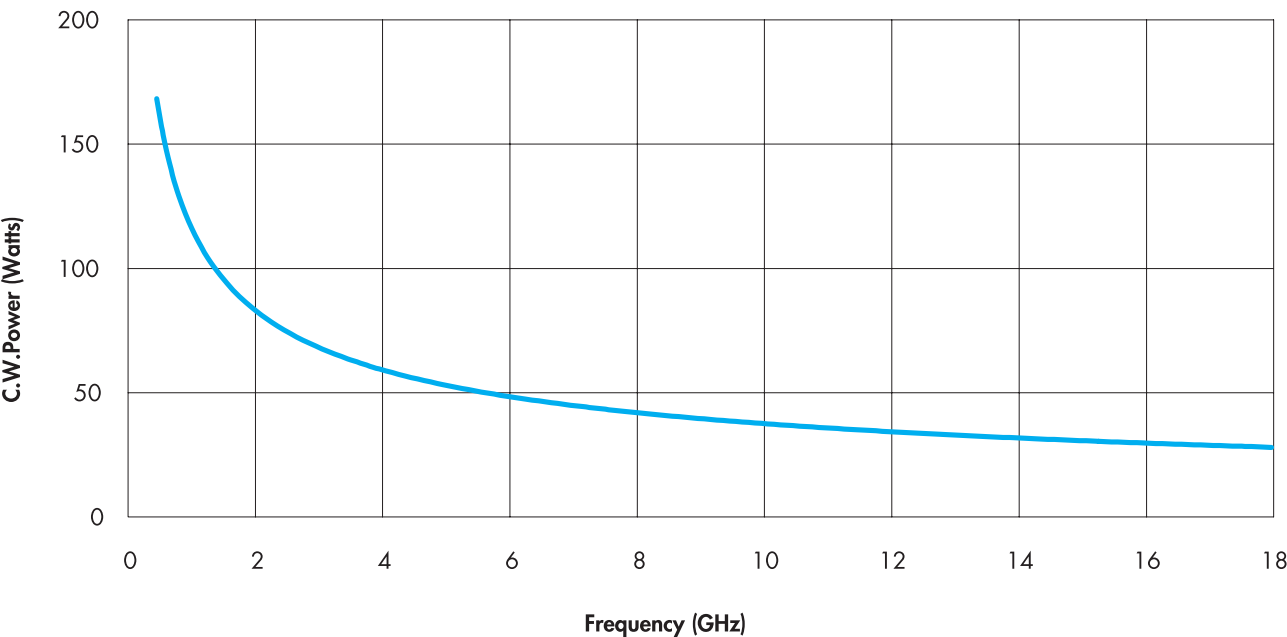
Cable attenuation

Nominal values @ +25 °C ambient temperature



Power handling

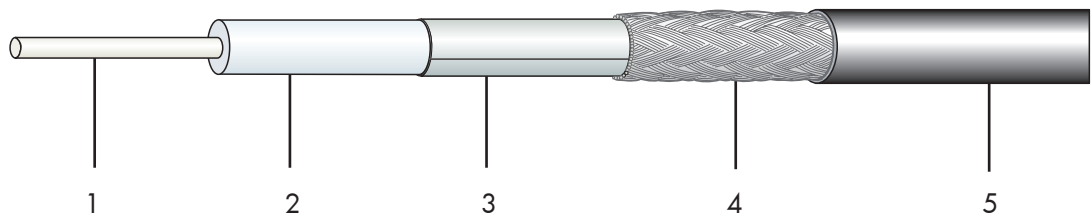
Maximum values @ +40 °C ambient temperature and sea level



S-SERIES S_04262_B-01

Item no. 84000918

Cable design



	Description	Diameter
1. Centre conductor	Solid silver-plated copper wire	1.40 mm
2. Dielectric	Foamed polyethylene	3.82 mm
3. 1st outer conductor	Longitudinal aluminium foil	3.96 mm
4. 2nd outer conductor	Tin-plated copper braid	4.48 mm
5. Jacket	LSFH (Low Smoke, Free of Halogen) , black	5.50 mm

Electrical cable data

Impedance	50 Ohm		
Operating frequency	18 GHz		
Capacitance	82 pF/m		
Velocity of propagation	82 %		
Time delay	4.1 ns/m		
Nom. attenuation*	coefficient a	0.1970	coefficient b 0.0450
Max. attenuation*	coefficient a	0.2167	coefficient b 0.0495
Max. operating voltage	0.5 kVrms		
Min. Screening effectiveness up to 18 GHz	90 dB		

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

General cable data

Temperature range	-40...+85 °C
Weight	4.1 kg/100m
Min. bending radius static	25 mm
Min. bending radius dynamic	90 mm

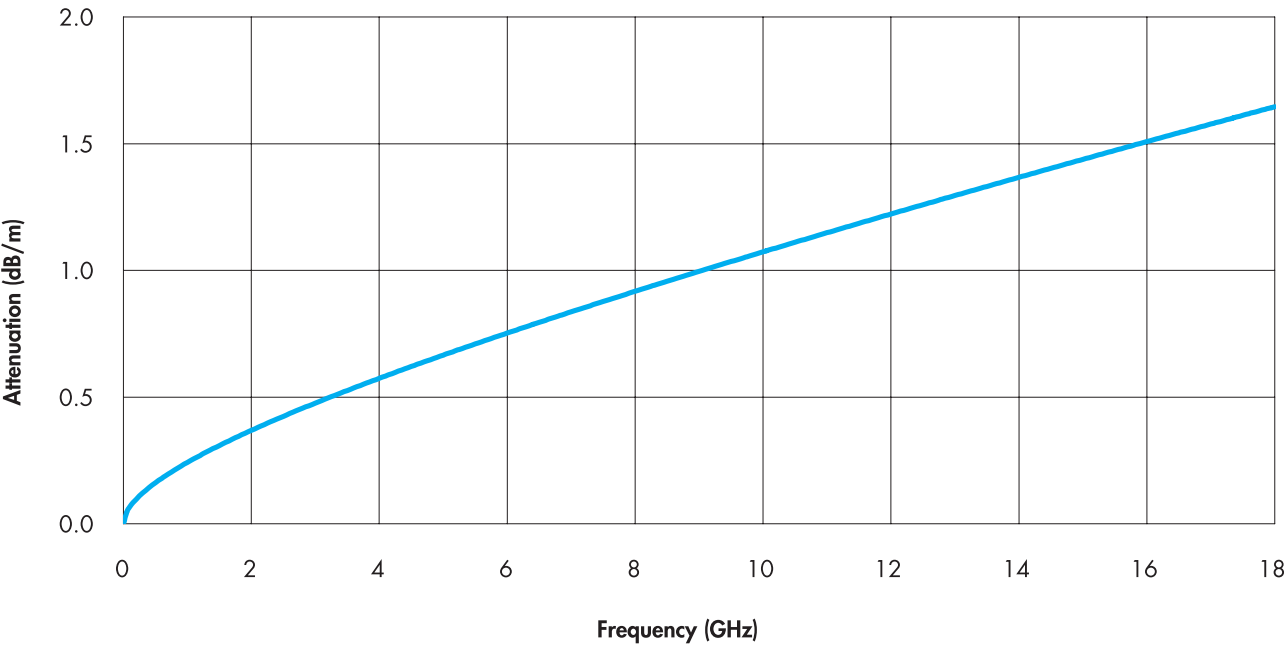
Suitable connectors

Please refer to page 82

S-SERIES S_04262_B-01

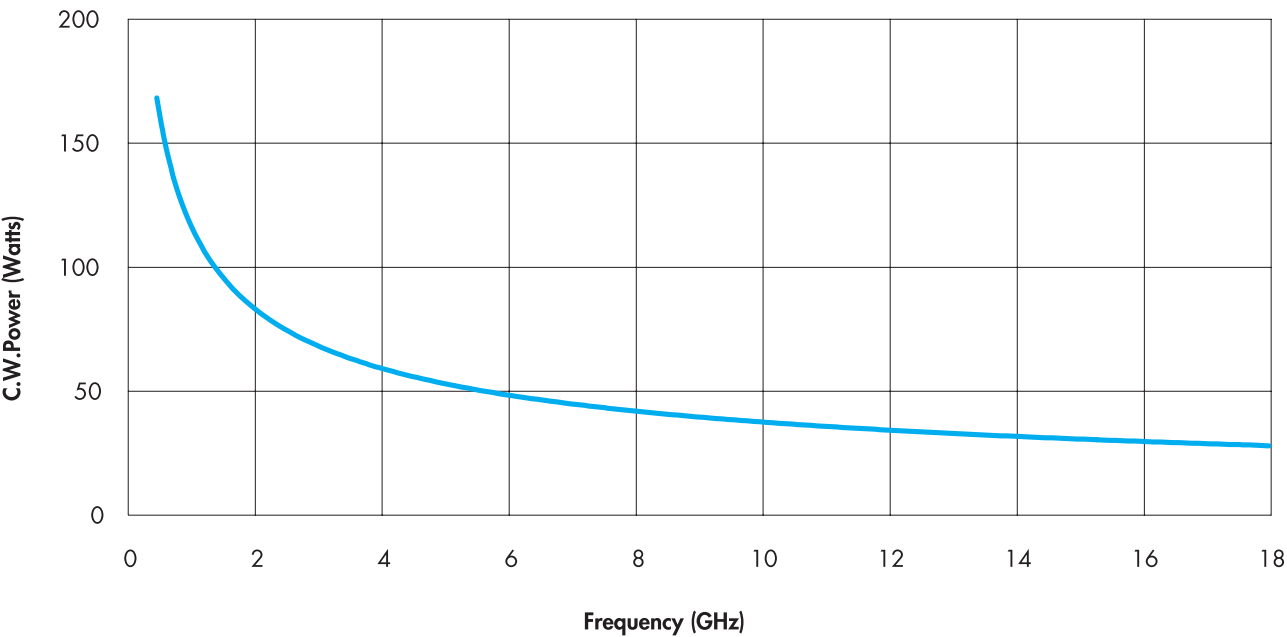
Cable attenuation

Nominal values @ +25 °C ambient temperature



Power handling

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



S-SERIES

Suitable connectors

A wide range of standard connectors is available for S-SERIES microwave cables. In addition, HUBER+SUHNER offers a fast delivery service for RF tested ready-to-use cable assemblies.

HUBER+SUHNER cable type	Series, pattern	HUBER+SUHNER connector type	Item no.	Operating frequency (GHz)
S_04272_B S_04212_B S_04262_B-01	N			
	Straight cable plug	11_N-50-4-55/133_NE	22645935	18
	Right angle cable plug	16_N-50-4-53/199_NE	22645021	18
	Straight panel bulkhead cable jack	24_N-50-4-53/133_NE	22644946	18
	PC3.5			
	Straight cable plug	11_PC35-50-4-4/199_UE	22644936	26.5
	Straight cable jack	21_PC35-50-4-4/199_UE	22644937	26.5
	SMA			
	Straight cable plug	11_SMA-50-4-53/139_NE	22644342	18
	Right angle cable plug	16_SMA-50-4-55/199_NE	22644654	18
	Straight cable jack	21_SMA-50-4-52/133_NE	22644409	18
	TNC			
	Straight cable plug	11_TNC-50-4-52/133_NE	22644434	18
	Straight panel bulkhead cable jack	24_TNC-50-4-52/133_NE	22644938	18

Connector dimensions and additional information

For connector dimensions and additional information please refer to the corresponding connector type in the HUBER+SUHNER Coaxial Connectors General Catalogue or contact your local HUBER+SUHNER partner.

SUCOTEST

For the highest standard of measurement

Content

Product description SUCOTEST 18	85
Product assortment SUCOTEST 18	85
Outstanding features SUCOTEST 18.....	85
Technical data SUCOTEST 18	86
Product description SUCOTEST 18A.....	87
Product assortment SUCOTEST 18A.....	87
Outstanding features SUCOTEST 18A	87
Technical data SUCOTEST 18A	88

SUCOTEST™

be precise.



SUCOTEST_18

For the highest standard of measurement

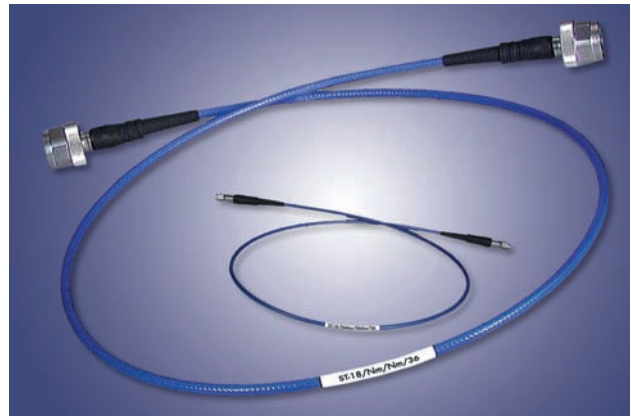
Product description

SUCOTEST_18 cable assemblies feature excellent electrical performance (low insertion loss combined with unique loss stability and excellent return loss). SUCOTEST_18 is ideal for daily use in components and assembly shops, test labs and automatic test equipment applications.

Product assortment

Item no.

SUCOTEST_18/SMAm/SMAm/36"	84002061
SUCOTEST_18/Nm/Nm/36"	84002060
SUCOTEST_18/SMAm/Nm/36"	84004594
SUCOTEST_18/SMAm/SMAm/48"	84003373
SUCOTEST_18/Nm/Nm/48"	84003372
SUCOTEST_18/SMAm/Nm/48"	84004006
SUCOTEST_18/SMAm/SMAm/72"	84004007
SUCOTEST_18/Nm/Nm/72"	84004070
SUCOTEST_18/SMAm/Nm/72"	84004595



Outstanding Features

- Applicable up to 18.0 GHz
- Low insertion loss
- Excellent VSWR
- Unique loss stability
- There is no cable spring back during measurement procedures; the assembly stays in position.

SUCOTEST 18 - specifications

Electrical specifications	
Impedance	50 Ohm
Operating frequency	18 GHz
Velocity of propagation	77 %
Capacitance	87 pF/m / 26.5 pF/ft
Time delay	4.3 ns/m / 1.31 ns/ft
Insulation resistance	> 5 x 10 ³ Mega Ohm
Dielectric withstand voltage	2500 V rms

Frequency range	up to 2.0 GHz	2.01 - 4.0 GHz	4.01 - 6.0 GHz	6.01 - 12.0 GHz	12.01-18.0 GHz
Power handling, 25 °C, sea level (W)	> 391	> 277	> 225	> 160	> 131
Return loss (dB)	> 30	> 28	> 25	> 21	> 19
Insertion loss (dB)	see table below	see table below	see table below	see table below	see table below
Insertion loss stability vs. shaking (dB)	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Insertion loss stability vs. bending (dB)	< 0.03	< 0.04	< 0.04	< 0.05	< 0.05
Insertion loss stability vs. torsion (dB)	< 0.03	< 0.04	< 0.04	< 0.05	< 0.05

General specifications			
Assembly length	see table below	Materials and finishes	
Cable diameter	4.6 mm / 0.181 inch	Cable jacket	FP, blue
Temperature range	-55...+105 °C	Cable dielectric	low density PTFE
Preferred bending radius	100 mm / 4.0 inch	Taper sleeve	Santoprene / black
Connector retention force	> 200 N	Marking sleeve	Crosslinked polyolefin / white
Recommended mating torque SMA	0.8 ... 1.1 Nm / 7.1 ... 9.7 in.lbs	Connector contacts	Beryllium - copper, gold plated
Recommended mating torque N	0.68 ... 1.13 Nm / 6.0 ... 10.0 in.lbs	Connector insulations	PTFE
Durability	> 500 matings	Connector body	Stainless steel, passivated
Connector interface SMA	MIL-STD-348A/310	Connector nut	Stainless steel, passivated
Connector interface N	MIL-STD-348A/304	Gasket	Silicon rubber
Weight	see table below		

Product specific data							
HUBER+SUHNER cable type	Assembly length (ref.plane to ref. plane)	Weight	Insertion loss				
			up to 2.0 GHz	2.01 - 4.0 GHz	4.01 - 6.0 GHz	6.01 - 12.0 GHz	12.01 - 18.0 GHz
ST-18/SMAM/SMAM/36	914 mm / 36 inch	68 gram	< 0.48 dB	< 0.68 dB	< 0.84 dB	< 1.21 dB	< 1.51 dB
ST-18/Nm/Nm/36	914 mm / 36 inch	110 gram	< 0.48 dB	< 0.68 dB	< 0.84 dB	< 1.21 dB	< 1.51 dB
ST-18/SMAM/Nm/36	914 mm / 36 inch	90 gram	< 0.48 dB	< 0.68 dB	< 0.84 dB	< 1.21 dB	< 1.51 dB
ST-18/SMAM/SMAM/48	1219 mm / 48 inch	80 gram	< 0.61 dB	< 0.88 dB	< 1.09 dB	< 1.57 dB	< 1.95 dB
ST-18/Nm/Nm/48	1219 mm / 48 inch	122 gram	< 0.61 dB	< 0.88 dB	< 1.09 dB	< 1.57 dB	< 1.95 dB
ST-18/SMAM/Nm/48	1219 mm / 48 inch	101 gram	< 0.61 dB	< 0.88 dB	< 1.09 dB	< 1.57 dB	< 1.95 dB
ST-18/SMAM/SMAM/72	1829 mm / 72 inch	108 gram	< 0.89 dB	< 1.28 dB	< 1.58 dB	< 2.29 dB	< 2.85 dB
ST-18/Nm/Nm/72	1829 mm / 72 inch	157 gram	< 0.89 dB	< 1.28 dB	< 1.58 dB	< 2.29 dB	< 2.85 dB
ST-18/SMAM/Nm/72	1829 mm / 72 inch	134 gram	< 0.89 dB	< 1.28 dB	< 1.58 dB	< 2.29 dB	< 2.85 dB

SUCOTEST_18A

Precision at a constant high level

Product description

SUCOTEST_18A armoured test assemblies offer excellent electrical performance (low insertion loss combined with unique stability and excellent return loss) for heavy-duty, outdoor and harsh environment measurements up to 18 GHz. SUCOTEST 18A armoured test assemblies are ideal for testing wireless communication infrastructures, defence and ground systems and in daily use in components and assembly shops



Product assortment

Item no.

ST18A/11N468/11N468/1500 mm	84013029
ST18A/11N468/21N409/1500 mm	84013030
ST18A/11N468/11N468/3000 mm	84013031
ST18A/11N468/21N409/3000 mm	84013032
ST18A/11N468/11716403/1500 mm	84013033
ST18A/11N468/21716403/1500 mm	84013034
ST18A/11N468/11716403/3000 mm	84013035
ST18A/11N468/21716403/3000 mm	84013036

Outstanding Features

- High flexibility in spite of armouring
- Phase and loss stability with flexure
- Crush-, torque- and kink-resistant
- Waterproof IP68
- Knurl/hex coupling nut

Available connector types

Connector series	Connector type	Connector series	
11716403	7/16 straight cable plug (male)	21716403	7/16 straight cable jack (female)
11N468	N straight cable plug (male)	21N409	N straight cable jack (female)
11TNC419	TNC straight cable plug (male)	21TNC413	TNC straight cable jack (female)

SUCOTEST 18A - specifications

Assembly design		
Cable	Description	Diameter
Centre conductor	Stranded silver-plated copper wire	
Dielectric	Low density PTFE	
1st outer conductor	Silver-plated copper tape wrapped	
2nd outer conductor	Silver-plated copper braid	
Jacket	Fluorethylenpropylene, blue	
Armour	Steel wire spring, steel braid, PUR jacket	10,3 mm (0.41")
Connector	Description	
	N-TNC	7/16
Contacts	Copper alloy, gold plated	Copper alloy, silver plated
Insulation	PTFE	PTFE
Body	Stainless steel, passivated	Brass, SUCOPLATE®
Knurl/hex coupling nut	Stainless steel, passivated	Brass, SUCOPLATE®

Electrical Specification			
Cable data			
Impedance	50 Ohm		
Operating frequency	18 GHz		
Capacitance	87 pF/m (26.5 pF/ft)		
Velocity of propagation	77 %		
Time delay	4.3 ns/m (1.31 ns/ft)		
Nom. attenuation*	coefficient a 0.2930	coefficient b 0.0175	* Attenuation calculation: $\alpha_{25} = a \cdot \sqrt{f(\text{GHz})} + b \cdot f(\text{GHz})$ (dB/m)
Max. attenuation*	coefficient a 0.3223	coefficient b 0.0192	

Assemblies data		Up to 2 GHz	2 - 4 GHz	4 - 6 GHz	6 - 7.5 GHz	7.5 - 12 GHz	12 - 18 GHz		
Insertion loss stability**		< 0.03 dB	< 0.04 dB	< 0.04 dB	< 0.04 dB	< 0.05 dB	< 0.05 dB		
Phase stability**		± 2° el	± 4° el	± 4° el	± 6° el	± 6° el	± 6° el		
Min. return loss***	N-N	> 30 dB	> 28 dB	> 25 dB	> 21 dB	> 21 dB	> 19 dB		
	N-7/16	> 21 dB	> 18 dB	> 18 dB	> 18 dB				
Max. insertion loss @ +25 °C (+77 °F)	Assembly length	f (GHz)	1	2	4	6	7.5	12	18
	1500 mm (59.06")	dB	0.55	0.80	1.16	1.45	1.65	2.16	2.74
	3000 mm (118.11")	dB	1.06	1.53	2.24	2.80	3.18	4.17	5.30

** One wrap (360 °) around a 50 mm (2.0") radius mandrel

*** Return loss of on stock assemblies, for customized lengths and configurations please contact HUBER+SUHNER.

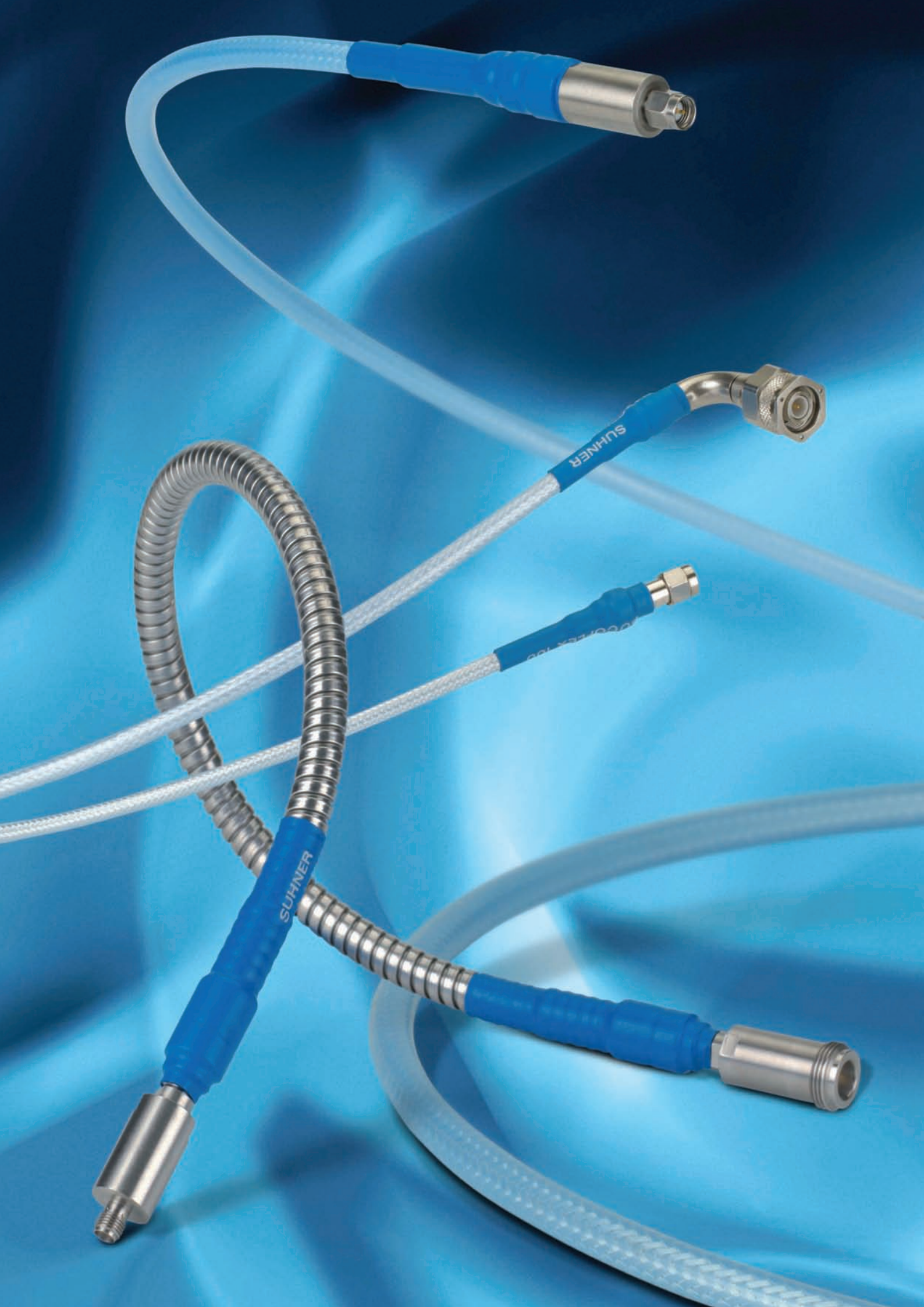
Mechanical Specifications	
Waterproof	IP 68
Temperature range	-55...+85 °C (-67...+185 °F)
Min. bending radius dynamic	50 mm (2.0")
Flex life (cycles)	100'000
Connector retention force	> 230 N

SUCOFLEX® 100

The high performance microwave cable assembly

Content

Product description.....	91	Variations of SUCOFLEX–106.....	121
Features and benefits.....	91	Product specification of	
		SUCOFLEX_106.....	122
		SUCOFLEX_106_P.....	124
		Suitable connectors for SUCOFLEX–106 ...	126
Overview of SUCOFLEX cable types	91	Variations of ruggedisation.....	128
Cross references within product range	92	Special solutions	
Variations of SUCOFLEX_101	93	Quick-lock connectors	130
Product specification of		Phase trimmer SUCOTRIM.....	131
SUCOFLEX_101	94	Electrical length and phase matching	132
SUCOFLEX_101_P.....	96		
SUCOFLEX_101_PE.....	98	SUCOFLEX–100 stock assemblies.....	135
Suitable connectors for SUCOFLEX_101 ...	100	Connector drawings.....	138
Variations of SUCOFLEX_102	101	Mounting holes.....	163
Product specification of			
SUCOFLEX_102.....	102		
Suitable connectors for SUCOFLEX–102 ...	104		
Variations of SUCOFLEX_103	107		
Product specification of			
SUCOFLEX_103.....	108		
Suitable connectors for SUCOFLEX–103 ...	110		
Variations of SUCOFLEX_104	111		
Product specification of			
SUCOFLEX_104.....	112		
SUCOFLEX_104_P.....	114		
SUCOFLEX_104_PE.....	116		
Suitable connectors for SUCOFLEX–104 ...	118		



SUCOFLEX® 100

The high performance microwave cable assembly

Product description

SUCOFLEX_100 series flexible microwave cable assemblies offer superior electrical and mechanical performance for static and dynamic applications. This series is a high-end product designed to provide optimal performance up to 50 GHz, where stringent electrical requirements – in particular stability and low loss – are important. Their mechanical and climate resistance properties surpass those of standard flexible cables. This cable type is ideally suited to test and measurement applications (as test leads) and used in aerospace and defence systems.



Features and benefits

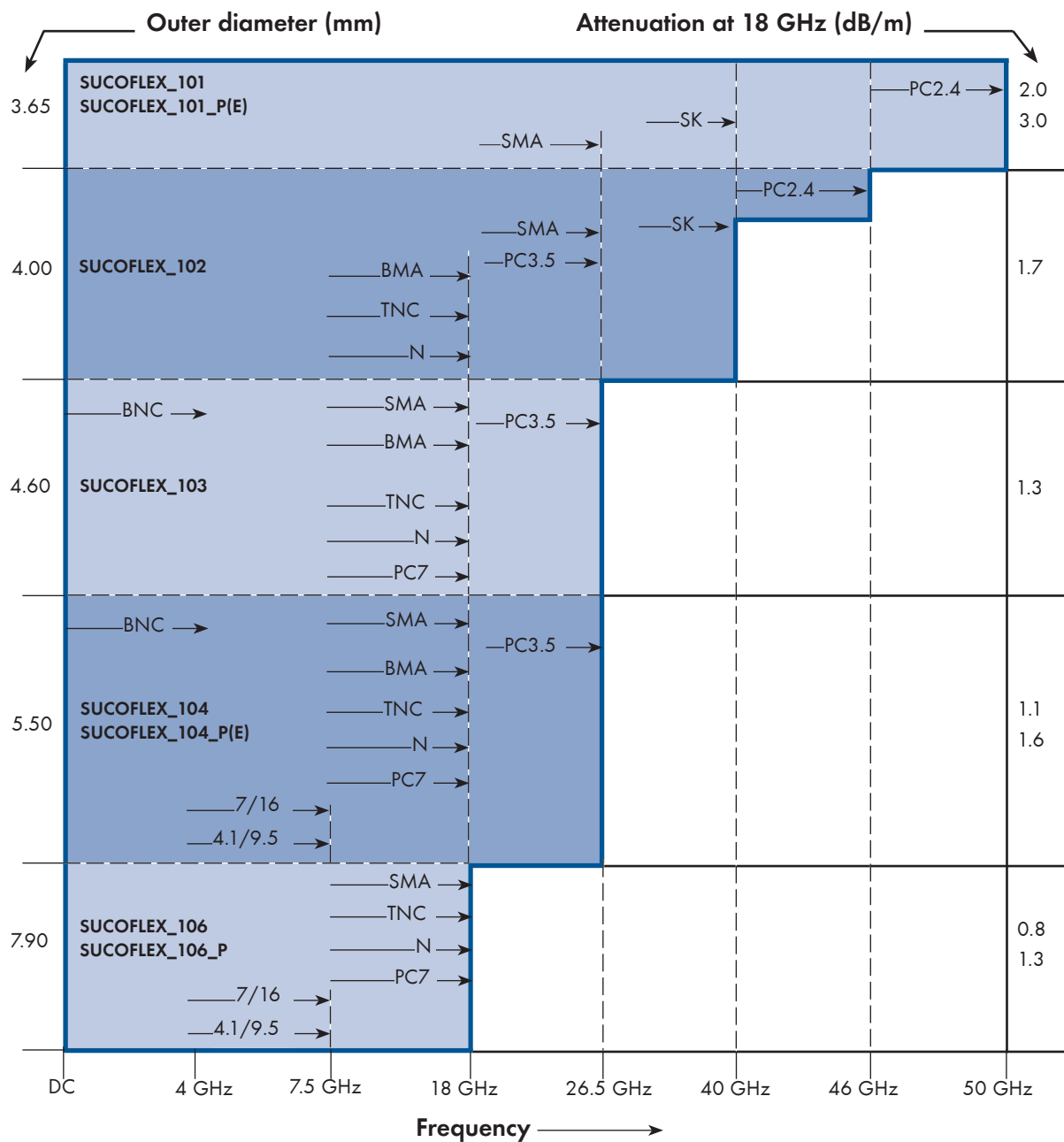
- The cable maintains stable electrical characteristics when exposed to bending and temperature, enabling reliable test results
- A balanced range of connectors is available, including types which feature NWA-specific interfaces
- Can be provided with various ruggedisations to protect the assembly against different environmental influences
- Available as assembly only

HUBER+SUHNER cable type	Operating frequency (GHz)	Temperature range		Outer dia. (mm)	Nominal atten- uation 18 GHz, 25 °C (dB/m)	Bending radii		More information see page
		minimum (°C)	maximum (°C)			static (mm)	dyn. (mm)	
SUCOFLEX_101	50	-55	+125	3.65	2.0	11	20	94
SUCOFLEX_101_P	50	-55	+125	3.65	3.0	11	20	96
SUCOFLEX_101_PE	50	-40	+85	3.65	3.0	11	20	98
SUCOFLEX_102	46	-55	+125	4.00	1.7	12	20	102
SUCOFLEX_103	33	-55	+125	4.60	1.3	13	22	108
SUCOFLEX_104	26.5	-55	+125	5.50	1.1	16	25	112
SUCOFLEX_104_P	26.5	-55	+125	5.50	1.6	16	25	114
SUCOFLEX_104_PE	26.5	-40	+85	5.50	1.6	16	25	116
SUCOFLEX_106	18	-55	+125	7.90	0.8	24	40	122
SUCOFLEX_106_P	18	-55	+125	7.90	1.3	24	40	124

SUCOFLEX® 100

The high performance microwave cable assembly

Cross references within product range



⇒ The number of available connector types may be limited in the case of the version featuring a stranded inner conductor (types SUCOFLEX_101_P(E), 104_P(E), 106_P).

SUCOFLEX 101

Variations

SUCOFLEX_101 and 101_P(E) for applications up to 50 GHz (K and lower L band). SUCOFLEX_101 as standard cable in fixed installations, for internal cabling of equipment and similar uses; SUCOFLEX_101_PE with PUR jacket in applications in which the cable is continuously moved, that is, where maximum flexibility is demanded. Additionally protected by an A ruggedisation, the SUCOFLEX_101_PE becomes a flexible measurement and test cable up to 50 GHz! Suitable connectors for most applications include PC2.4 or SK. A direct connection for test and measurement cables to Agilent Technologies analysers is also available.

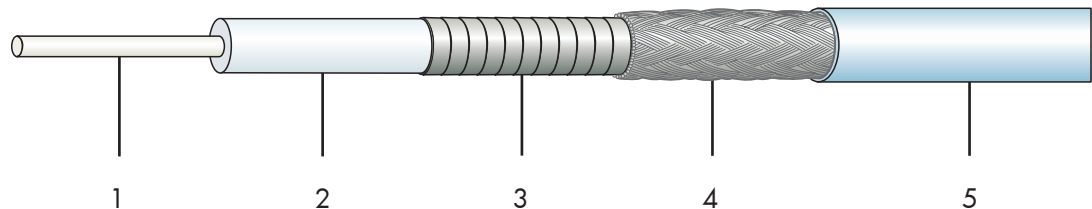
Mechanical and general data

HUBER+SUHNER cable type	Cable	Rugge- disation	Temperature		Weight kg/100m	Outer diameter (mm)	Bending radii	
			min. (°C)	max. (°C)			static (mm)	dyn. (mm)
SUCOFLEX_101	101	-	-55	+125	3.6	3.65	11	20
SUCOFLEX_101_E	101_E	-	-40	+85	3.3	3.65	11	20
SUCOFLEX_101_EA	101_E	A	-40	+85	11.4	7.70	20	40
SUCOFLEX_101_P	101_P	-	-55	+125	3.3	3.65	11	20
SUCOFLEX_101_PE	101_PE	-	-40	+85	3.0	3.65	11	20
SUCOFLEX_101_PEA	101_PE	A	-40	+85	11.1	7.70	20	40

Further information about ruggedisation see pages 128 ff.

SUCOFLEX_101

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	3.65 mm

Electrical cable data

Impedance	50 Ohm
Operating frequency	50 GHz
Capacitance	87 pF/m
Velocity of propagation	77 %
Time delay	4.3 ns/m
Nom. attenuation*	coefficient a 0.4255 coefficient b 0.0100
Max. attenuation*	coefficient a 0.4680 coefficient b 0.0110
Max. operating voltage	1.2 kVrms
Min. screening effectiveness up to 18 GHz	90 dB

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

General cable data

Temperature range	-55...+125 °C
Weight	3.6 kg/100m
Min. bending radius static	11 mm
Min. bending radius dynamic	20 mm

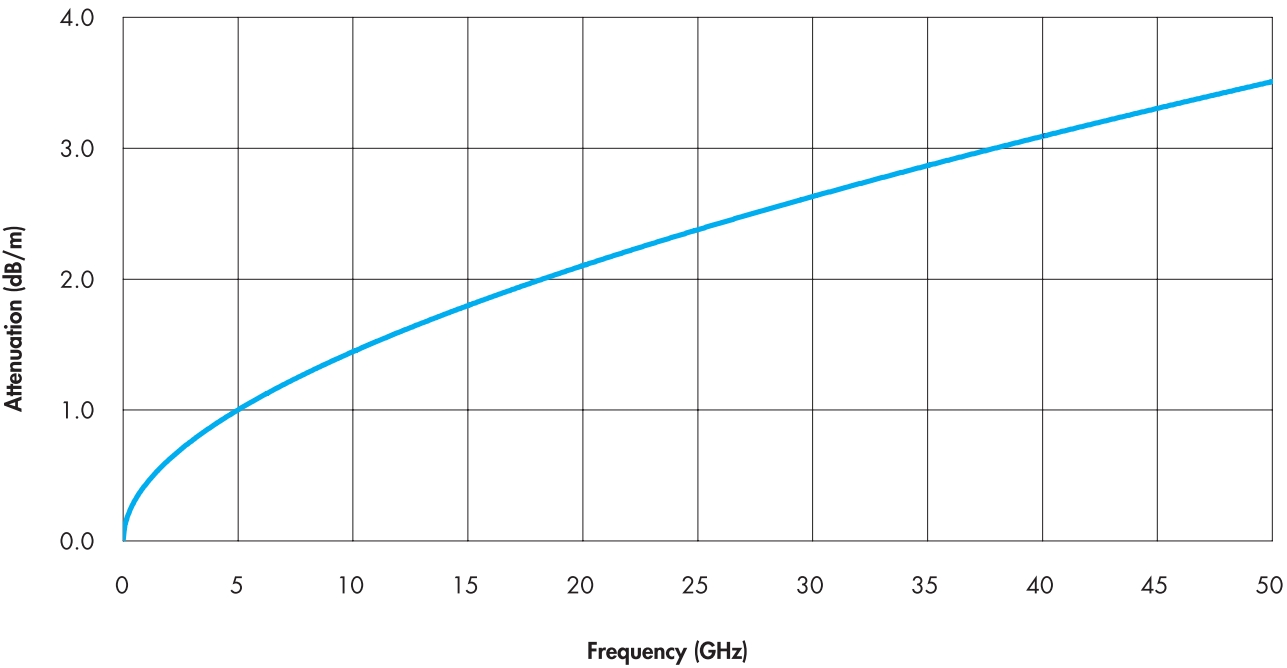
Suitable connectors

Please refer to page 100

SUCOFLEX_101

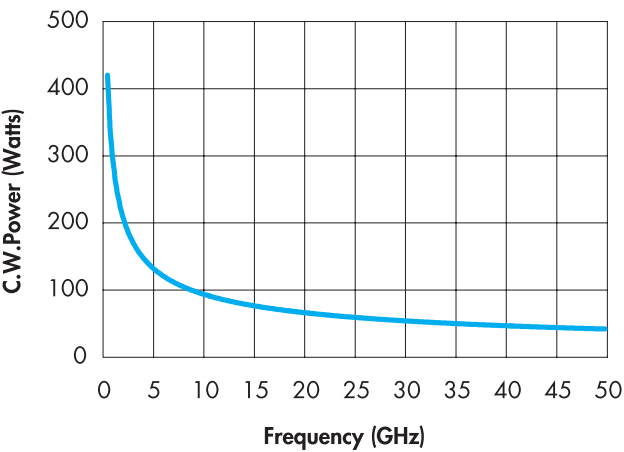
Cable attenuation

Nominal values @ +25 °C ambient temperature

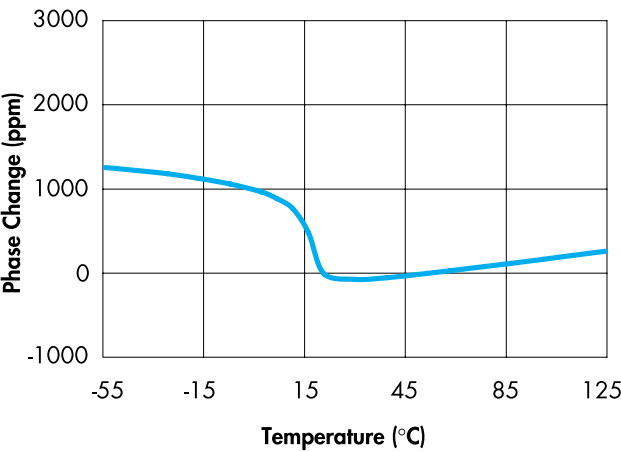


Power handling

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

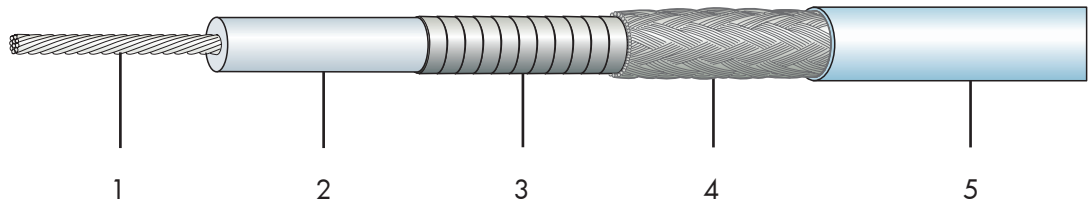


Phase change vs. temperature



SUCOFLEX_101_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	3.65 mm

Electrical cable data

Impedance	50 Ohm		
Operating frequency	50 GHz		
Capacitance	87 pF/m		
Velocity of propagation	77 %		
Time delay	4.3 ns/m		
Nom. attenuation*	coefficient a	0.5758	coefficient b 0.0285
Max. attenuation*	coefficient a	0.6334	coefficient b 0.0313
Max operating voltage	1.2 kVrms		
Min. screening effectiveness up to 18 GHz	90 dB		

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

General cable data

Temperature range	-55...+125 °C
Weight	3.3 kg/100m
Min. bending radius static	11 mm
Min. bending radius dynamic	20 mm

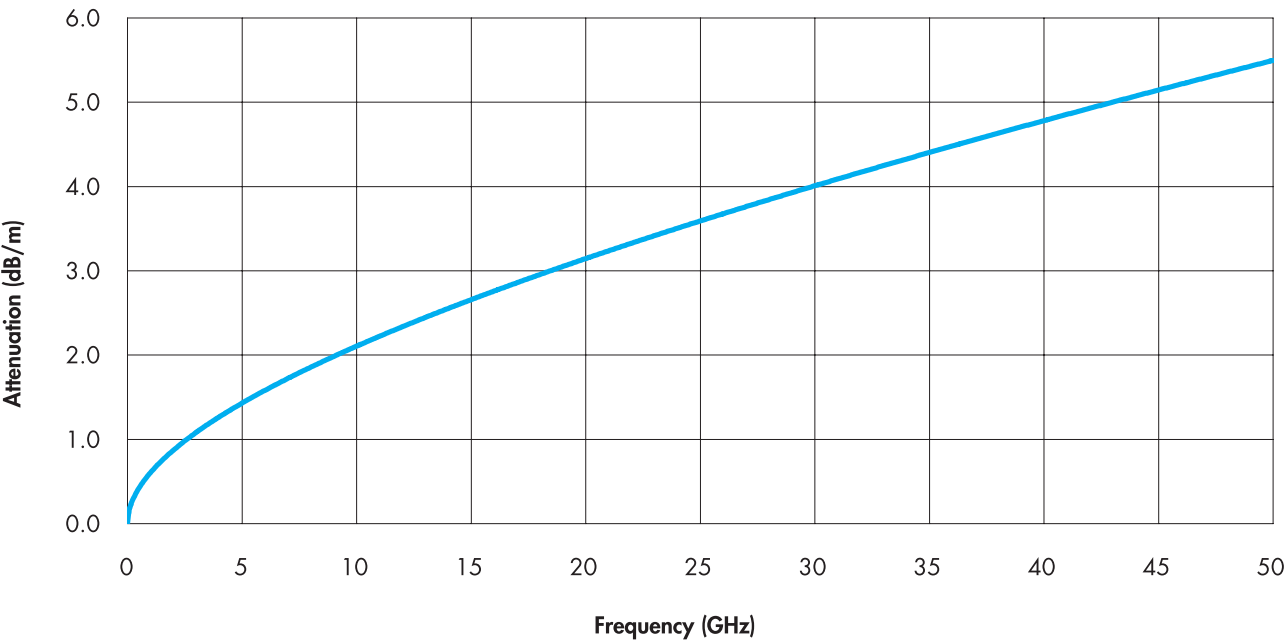
Suitable connectors

Please refer to page 100

SUCOFLEX_101_P

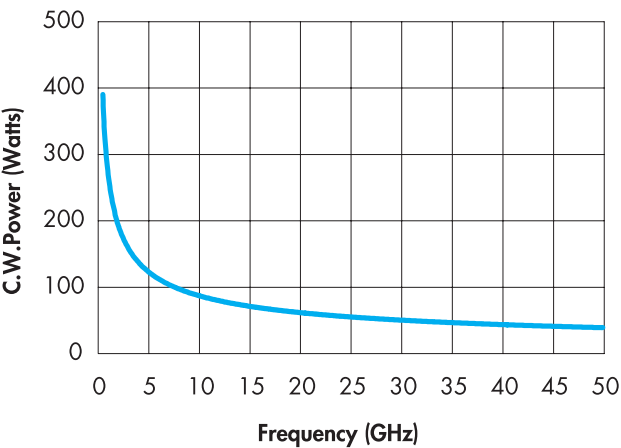
Cable attenuation

Nominal values @ +25 °C ambient temperature

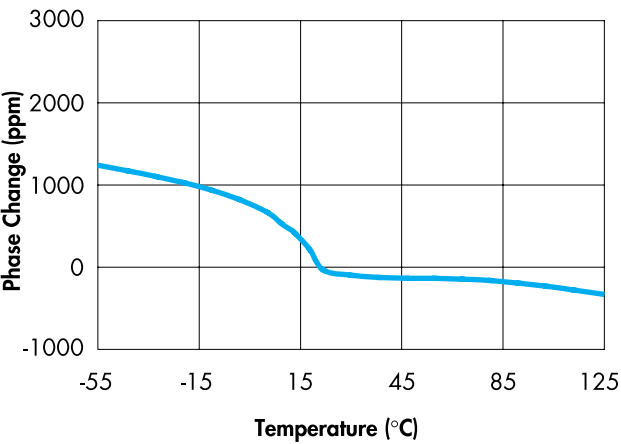


Power handling

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

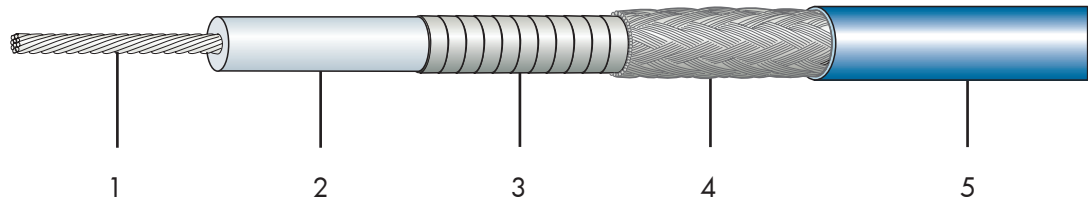


Phase change vs. temperature



SUCOFLEX_101_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	3.65 mm

Electrical cable data

Impedance	50 Ohm		
Operating frequency	50 GHz		
Capacitance	87 pF/m		
Velocity of propagation	77 %		
Time delay	4.3 ns/m		
Nom. attenuation*	coefficient a	0.5758	coefficient b 0.0285
Max. attenuation*	coefficient a	0.6334	coefficient b 0.0313
Max operating voltage	1.2 kVrms		
Min. screening effectiveness up to 18 GHz	90 dB		

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

General cable data

Temperature range	-40...+85 °C
Weight	3.0 kg/100m
Min. bending radius static	11 mm
Min. bending radius dynamic	20 mm

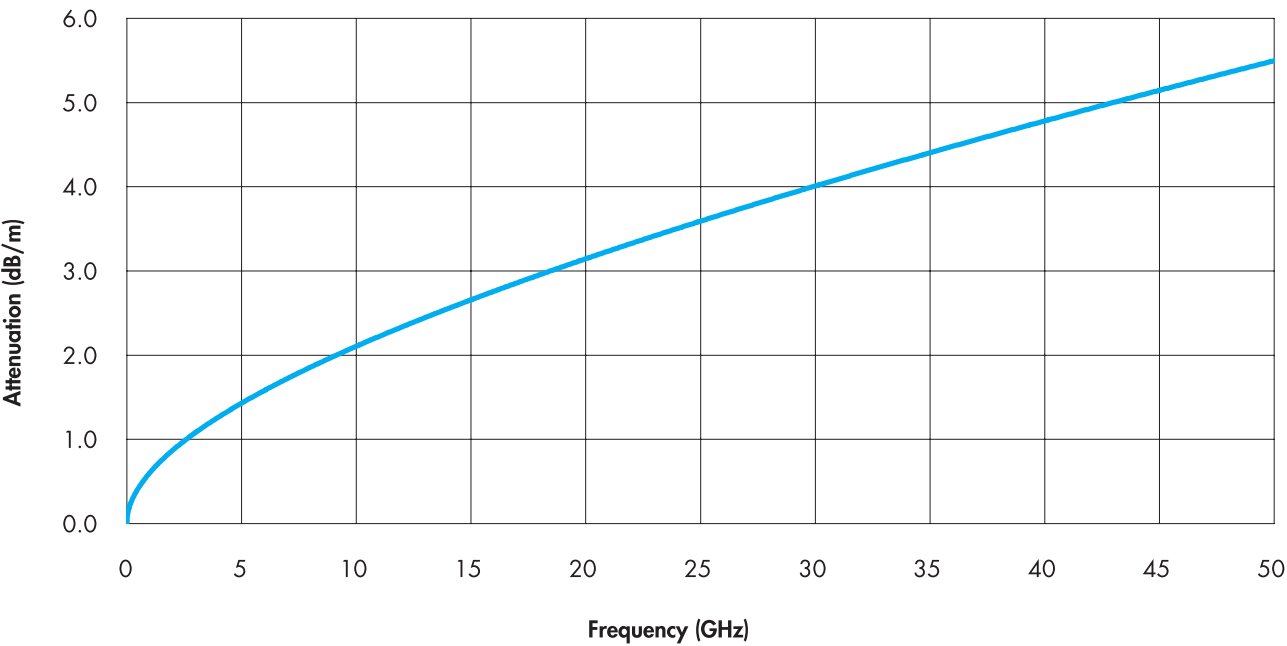
Suitable connectors

Please refer to page 100

SUCOFLEX_101_PE

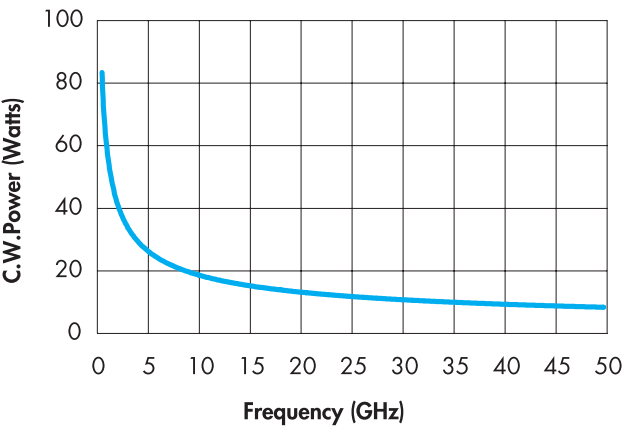
Cable attenuation

Nominal values @ +25 °C ambient temperature

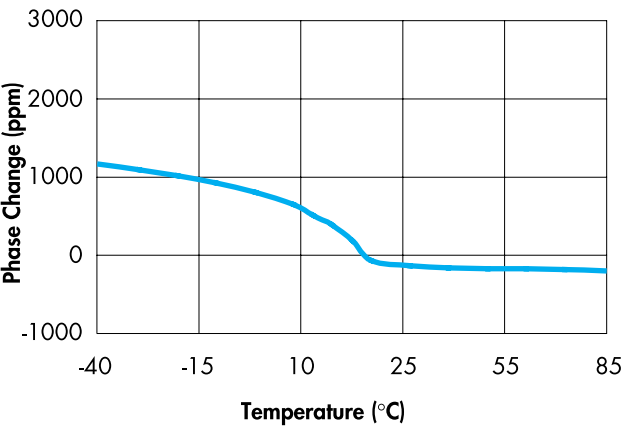


Power handling

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



Phase change vs. temperature



SUCOFLEX 101

Suitable connectors

HUBER+SUHNER connector type	SF 101(E)	SF 101EA	SF 101P(E)	SF 101PEA	Remarks	Weight (g)	Operating frequency (GHz)	VSWR ¹⁾	Fig.
11_DV-112				•	HP2.4	39.0	50.0	1.20	105
11_SK-110				•		16.0	40.0	1.20	110
21_SK-110				•		15.0	40.0	1.20	112
11_PC2.4-104	•					5.5	50.0	1.20	150
11_PC2.4-109		•				15.0	50.0	1.20	150
11_PC2.4-110				•		15.0	50.0	1.20	150
21_PC2.4-104	•					4.7	50.0	1.20	151
21_PC2.4-109		•				15.0	50.0	1.20	151
21_PC2.4-110				•		15.0	50.0	1.20	151
24_PC2.4-102	•				ML 38	4.1	50.0	1.20	152
11_SMA-153			•			5.7	18.0 26.5	1.12 1.20	170

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 refer to section "connector drawings", page 163

HP2.4: 2.4 mm connector for Agilent Technologies equipment

Note: For dimensioned sketches of connectors, please refer to pages 138 ff.

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

SUCOFLEX 102

Variations

SUCOFLEX_102 are ideal for applications up to 46 GHz or wherever the weight or the diameter are the critical factors to be taken into account. The connectors mainly used here are PC2.4 and SK, for "low frequency" applications also SMA, N and TNC. Typical applications include test laboratories and aircraft manufacture. The available ruggedisations are matched to the particular applications.

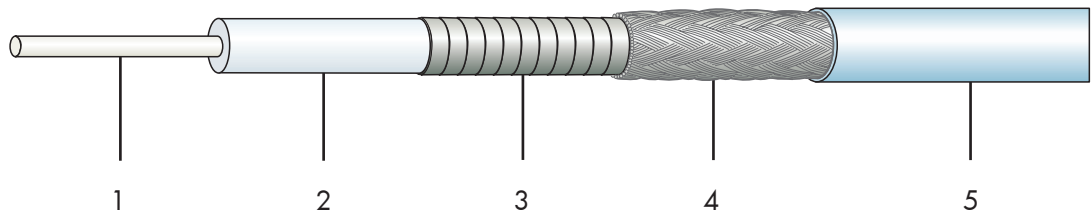
Mechanical and general data

HUBER+SUHNER cable type	Cable	Rugge- disation	Temperature		Weight kg/100m	Outer diameter (mm)	Bending radii	
			min. (°C)	max. (°C)			static (mm)	dyn. (mm)
SUCOFLEX_102	102	-	-55	+125	4.0	4.00	12	20
SUCOFLEX_102_E	102_E	-	-40	+85	3.7	4.00	12	20
SUCOFLEX_102_EA	102_E	A	-40	+85	12.0	7.70	20	40
SUCOFLEX_102_D	102	D	-55	+125	4.5	4.75	15	30

Further information about ruggedisation see pages 128 ff.

SUCOFLEX_102

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	4.00 mm

Electrical cable data

Impedance	50 Ohm		
Operating frequency	46 GHz		
Capacitance	87 pF/m		
Velocity of propagation	77 %		
Time delay	4.3 ns/m		
Nom. attenuation*	coefficient a	0.3700	coefficient b 0.0071
Max. attenuation*	coefficient a	0.4070	coefficient b 0.0078
Max. operating voltage	1.4 kVrms		
Min. screening effectiveness up to 18 GHz	90 dB		

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

General cable data

Temperature range	-55...+125 °C
Weight	4.0 kg/100m
Min. bending radius static	12 mm
Min. bending radius dynamic	20 mm

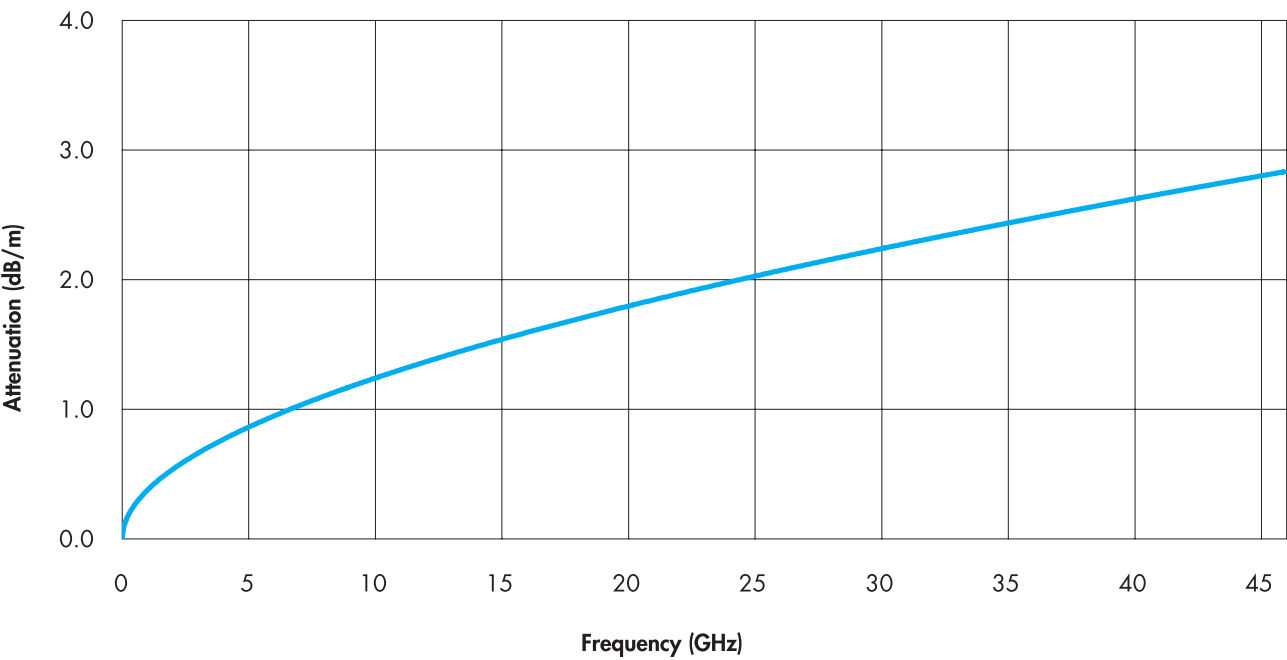
Suitable connectors

Please refer to pages 104 ff

SUCOFLEX_102

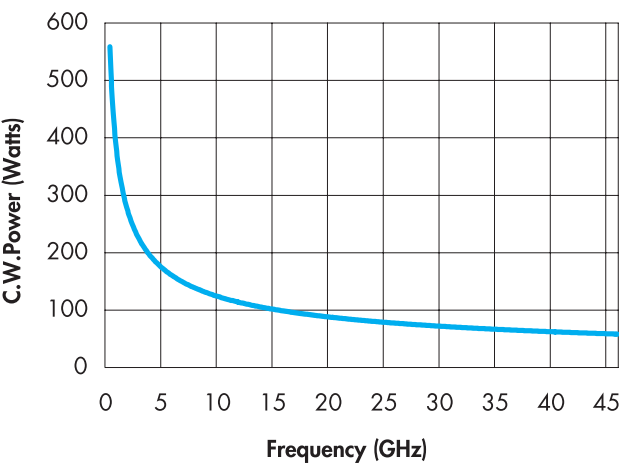
Cable attenuation

Nominal values @ +25 °C ambient temperature

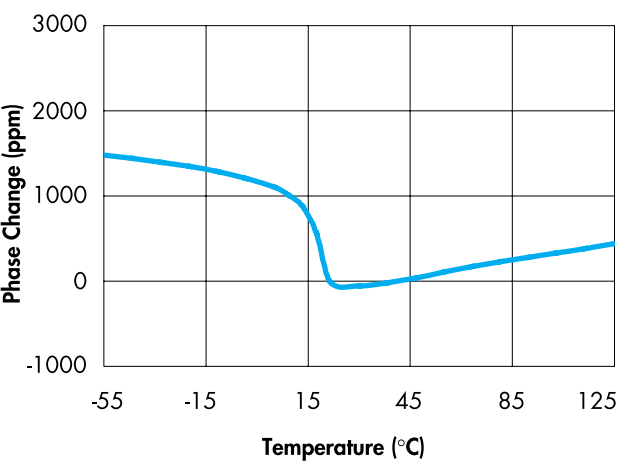


Power handling

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



Phase change vs. temperature



SUCOFLEX 102

Suitable connectors

HUBER+SUHNER connector type	102_(E)	102_EA	102_D	Remarks	Weight (g)	Operating frequency (GHz)	VSWR ¹⁾	Fig.
11_SK-252	•		•		6.8	40.0	1.20	110
11_SK-258		•			15.0	40.0	1.20	110
16_SK-252	•		•		8.0	40.0	1.20	111
16_SK-255		•			15.0	40.0	1.20	111
21_SK-252	•		•		5.6	40.0	1.20	112
21_SK-257		•			14.0	40.0	1.20	112
24_SK-251	•		•	ML 35	6.9	40.0	1.20	113
11_N-206	•		•		29.0	18.0	1.12	120
11_N-207	•		•	connector with combi nut	30.0	18.0	1.12	121
11_PC2.4-201	•		•		5.8	46.0	1.20	150
11_PC2.4-210		•			14.0	46.0	1.20	150
21_PC2.4-201	•		•		4.7	46.0	1.20	151
21_PC2.4-210		•			14.0	46.0	1.20	151
24_PC2.4-201	•		•	ML 38	7.2	46.0	1.20	152
11_PC3.5-203	•		•		6.5	26.5	1.16	160
21_PC3.5-203	•		•		5.4	26.5	1.16	161
11_SMA-218	•		•		5.4	18.0 26.5	1.12 1.20	170
11_SMA-262		•			15.0	18.0 26.5	1.12 1.20	170
16_SMA-254	•		•		7.8	18.0	1.12	174
21_SMA-204	•		•		4.0	18.0 26.5	1.12 1.20	175
24_SMA-210	•		•	ML 20	5.5	18.0 26.5	1.12 1.20	176
11_TNC-222	•		•		17.0	18.0	1.12	190
24_TNC-222	•		•	ML 4	24.0	18.0	1.12	198

SUCOFLEX 102

Suitable connectors

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 refer to section "connector drawings", page 163

Note: For dimensioned sketches of connectors, please refer to pages 138 ff.

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

SUCOFLEX 103

Variations

SUCOFLEX_103 is the ideal solution for systems in which the attenuation to weight ratio is very important. Most ruggedisations and a large number of the common connector types complete this range.

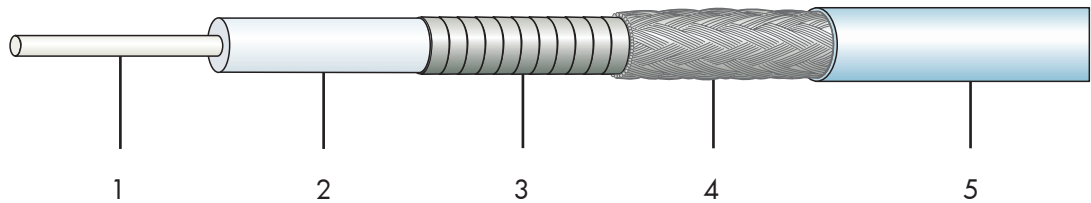
Mechanical and general data

HUBER+SUHNER cable type	Cable	Rugge- disation	Temperature		Weight kg/100m	Outer diameter (mm)	Bending radii	
			min. (°C)	max. (°C)			static (mm)	dyn. (mm)
SUCOFLEX_103	103	-	-55	+125	5.3	4.60	13	22
SUCOFLEX_103_E	103_E	-	-40	+85	5.2	4.60	13	22
SUCOFLEX_103_EA	103_E	A	-40	+85	14.2	10.30	30	50
SUCOFLEX_103_B	103	B	-55	+125	16.0	10.00	45	45
SUCOFLEX_103_C	103	C	-25	+125	16.2	10.30	30	50
SUCOFLEX_103_D	103	D	-55	+125	6.3	5.10	20	30

Further information about ruggedisation see pages 128 ff.

SUCOFLEX_103

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	4.60 mm

Electrical cable data

Impedance	50 Ohm		
Operating frequency	33 GHz		
Capacitance	87 pF/m		
Velocity of propagation	77 %		
Time delay	4.3 ns/m		
Nom. attenuation*	coefficient a	0.2836	coefficient b 0.0071
Max. attenuation*	coefficient a	0.3112	coefficient b 0.0078
Max. operating voltage	2.0 kVrms		
Min. screening effectiveness up to 18 GHz	90 dB		

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

General cable data

Temperature range	-55...+125 °C
Weight	5.3 kg/100m
Min. bending radius static	13 mm
Min. bending radius dynamic	22 mm

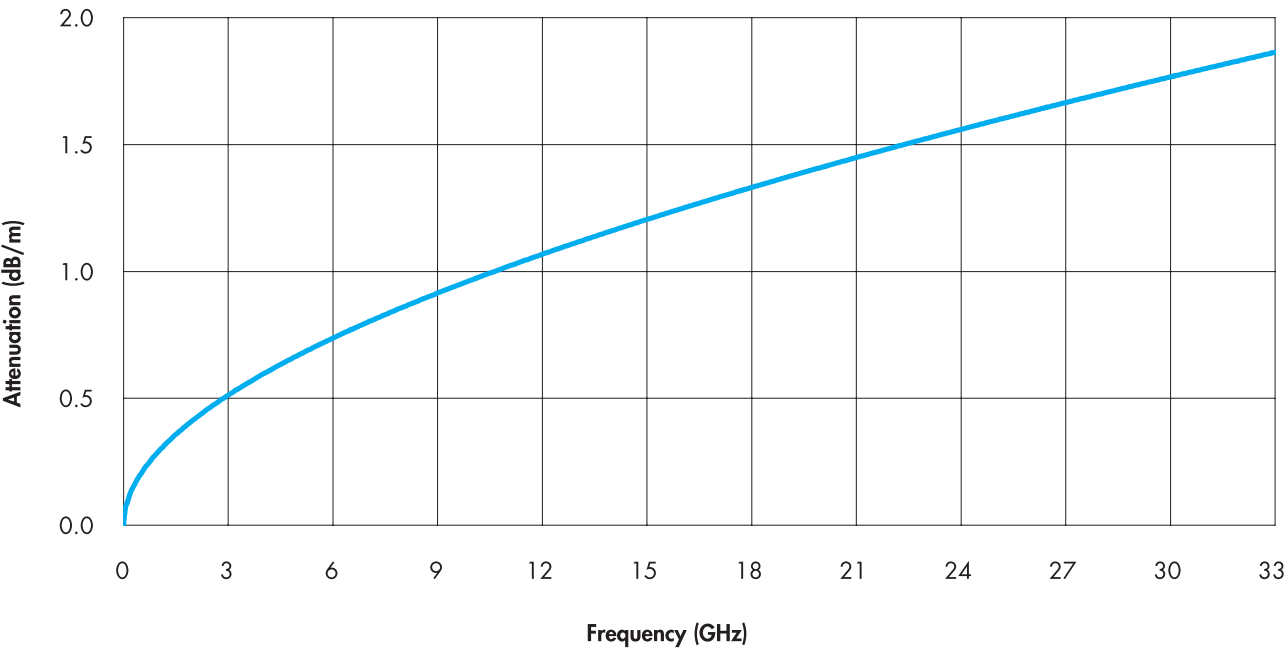
Suitable connectors

Please refer to page 110

SUCOFLEX_103

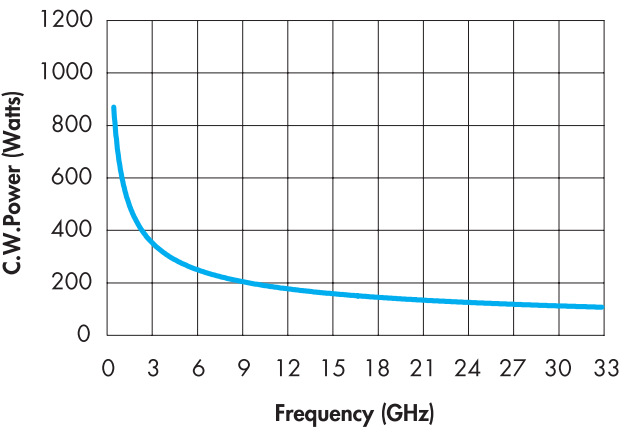
Cable attenuation

Nominal values @ +25 °C ambient temperature

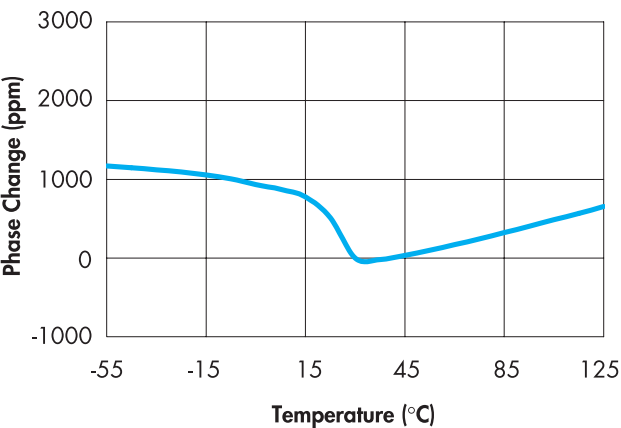


Power handling

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



Phase change vs. temperature



SUCOFLEX 103

Suitable connectors

HUBER+SUHNER connector type	103_(E)	103_EA	103_B	103_C	103_D	Remarks	Weight (g)	Operating frequency (GHz)	VSWR ¹⁾	Fig.
11_BNC-373	•	•	•	•	•		30.0	4.0	1.14	101
11_N-371	•	•	•	•	•		32.0	18.0	1.12	121
16_N-372	•	•	•	•	•	swept	40.0	18.0	1.12	128
24_N-352	•	•	•	•	•	ML 12	43.0	18.0	1.12	135
11_PC3.5-31	•	•	•	•	•		13.0	26.5	1.16	160
21_PC3.5-31	•	•	•	•	•		12.0	26.5	1.16	161
11_PC7-31	•	•	•	•	•		41.0	18.0	1.10	165
11_SMA-367	•	•	•	•	•	QL	8.1	18.0	1.12	171
11_SMA-371	•	•	•	•	•		8.3	18.0	1.12	170
16_SMA-371	•	•	•	•	•		9.4	18.0	1.12	174
21_SMA-371	•	•	•	•	•		6.9	18.0	1.12	175
24_SMA-371	•	•	•	•	•	ML 35	8.0	18.0	1.12	177
11_TNC-353	•	•	•	•	•		19.0	18.0	1.12	191
24_TNC-353	•	•	•	•	•	ML 4	31.0	18.0	1.12	198

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 refer to section "connector drawings", page 163

swept: swept cable entry (cable-connector junction)

QL: Quick Lock refer to section "special solution", page 130

Note: For dimensioned sketches of connectors, please refer to pages 138 ff.

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

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.

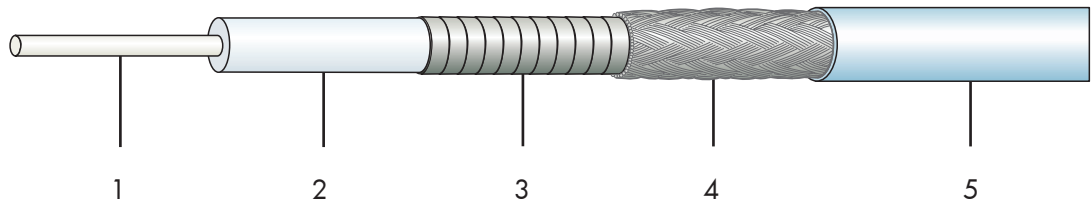
Mechanical and general data

HUBER+SUHNER cable type	Cable	Rugge- disation	Temperature		Weight kg/100m	Outer diameter (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 128 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 $a_{25} = a \cdot \sqrt{f}(\text{GHz}) + b \cdot f(\text{GHz})$ (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

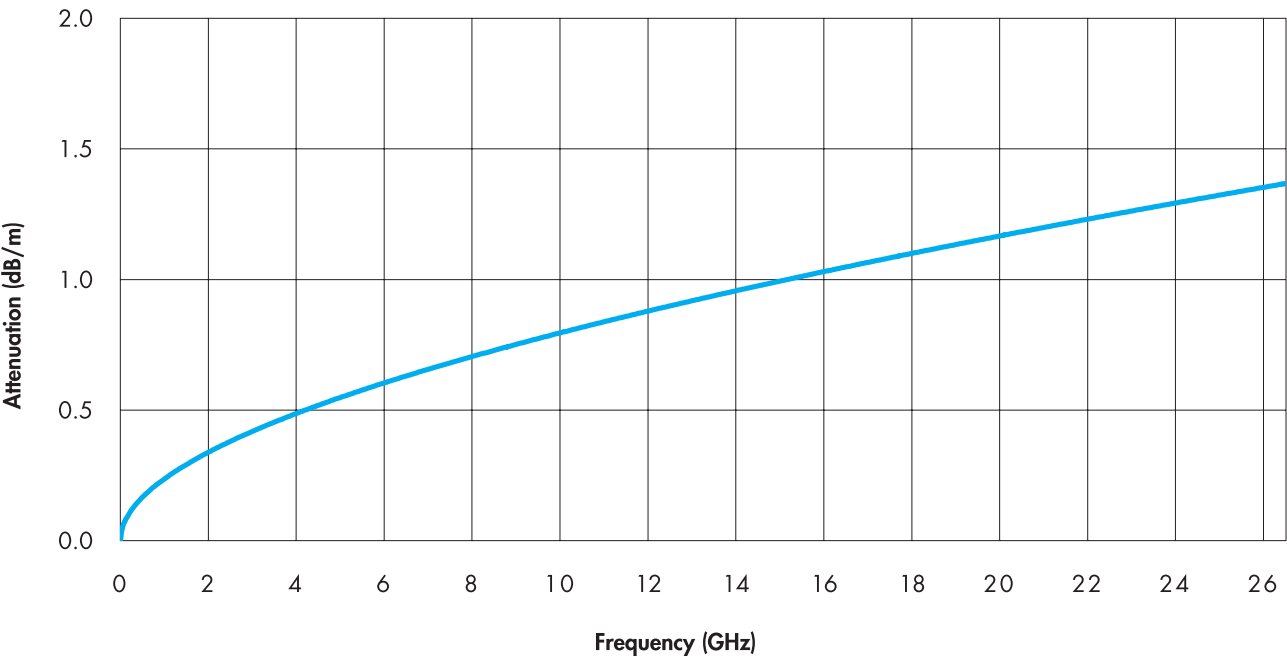
Suitable connectors

Please refer to pages 118 ff

SUCOFLEX_104

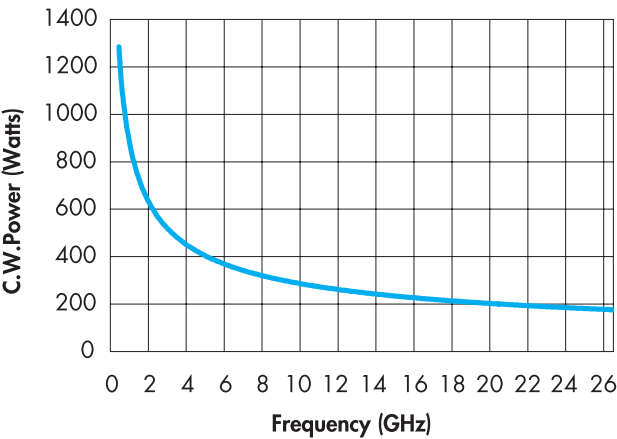
Cable attenuation

Nominal values @ +25 °C ambient temperature

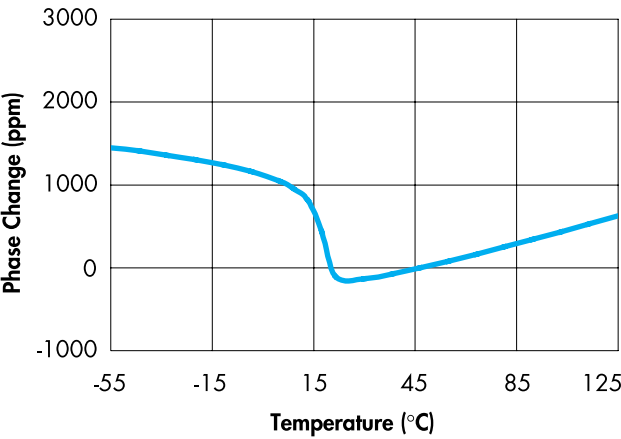


Power handling

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

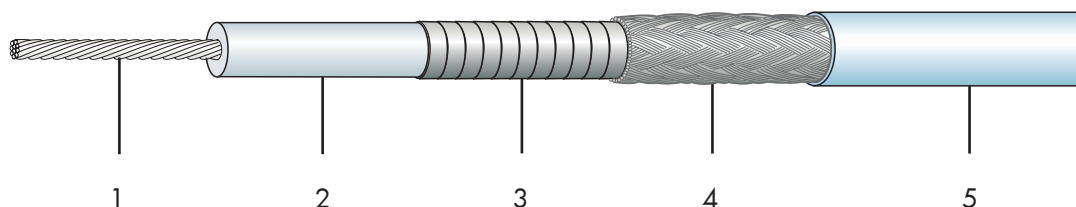


Phase change vs. temperature



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

$$a_{25} = a \cdot \sqrt{f}(\text{GHz}) + b \cdot f(\text{GHz}) \quad (\text{dB/m})$$

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

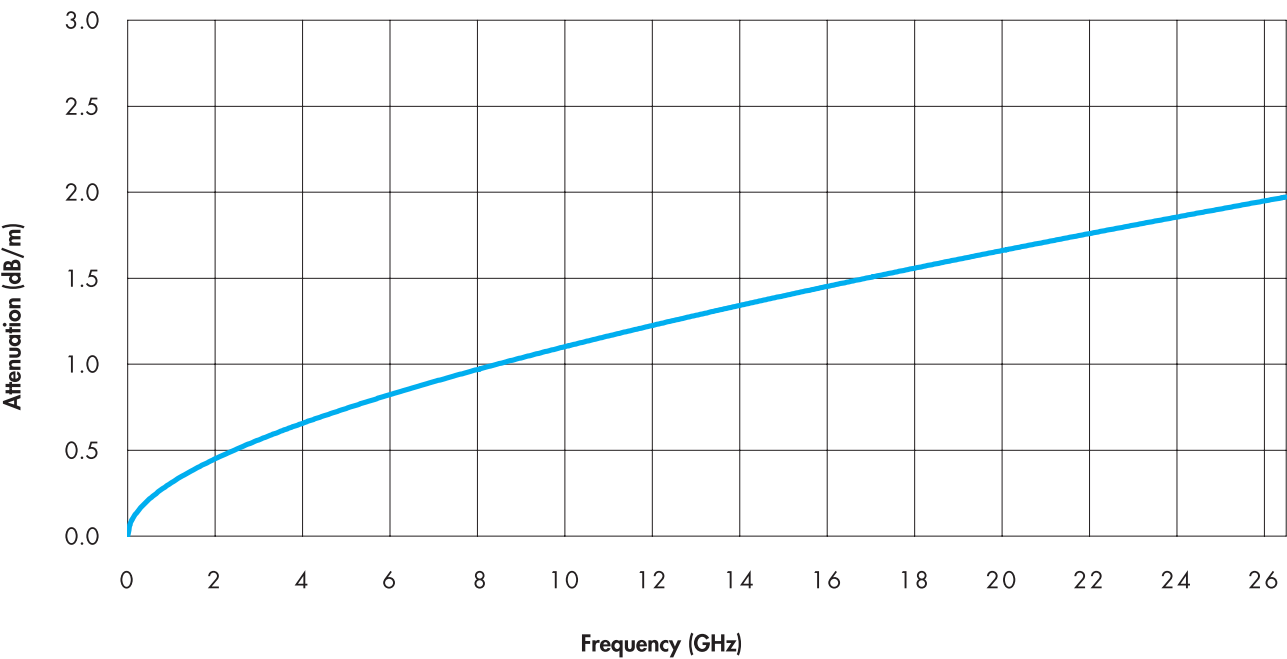
Suitable connectors

Please refer to pages 118 ff

SUCOFLEX_104_P

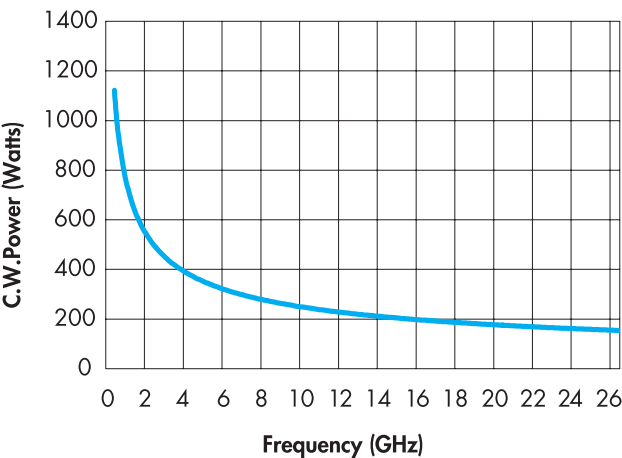
Cable attenuation

Nominal values @ +25 °C ambient temperature

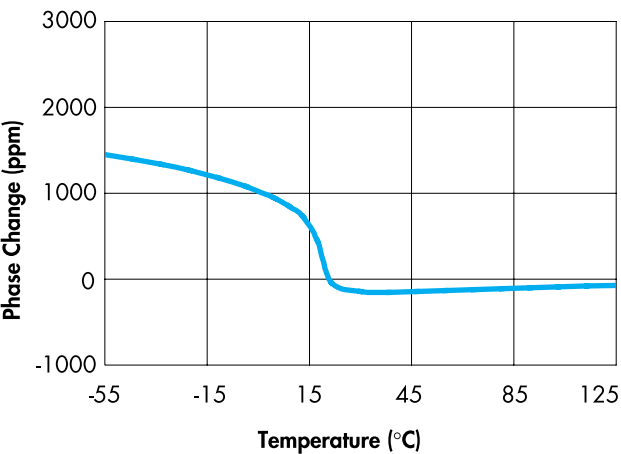


Power handling

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

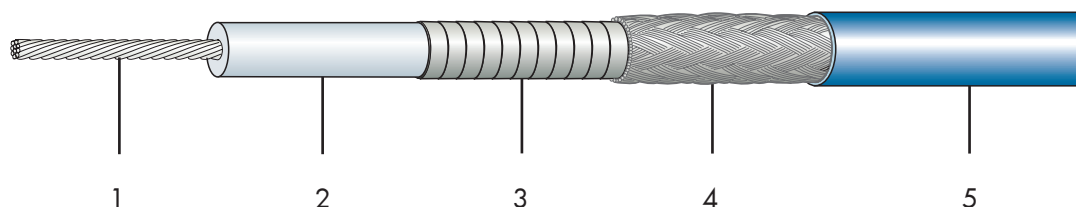


Phase change vs. temperature



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

$$a_{25} = a \cdot \sqrt{f}(\text{GHz}) + b \cdot f(\text{GHz}) \quad (\text{dB/m})$$

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

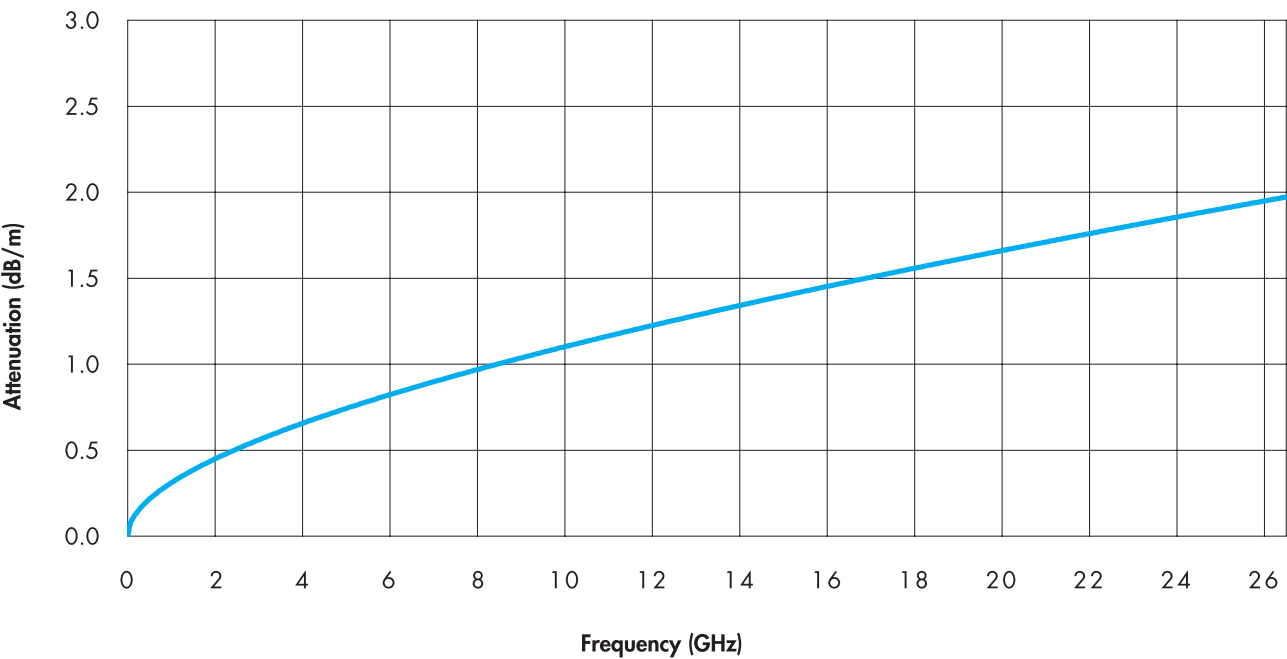
Suitable connectors

Please refer to pages 118 ff

SUCOFLEX_104_PE

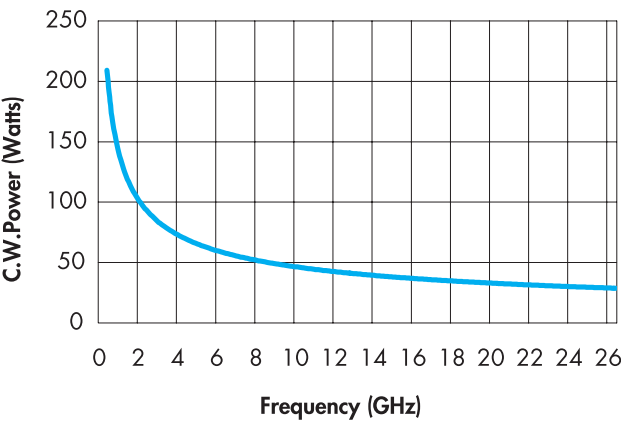
Cable attenuation

Nominal values @ +25 °C ambient temperature

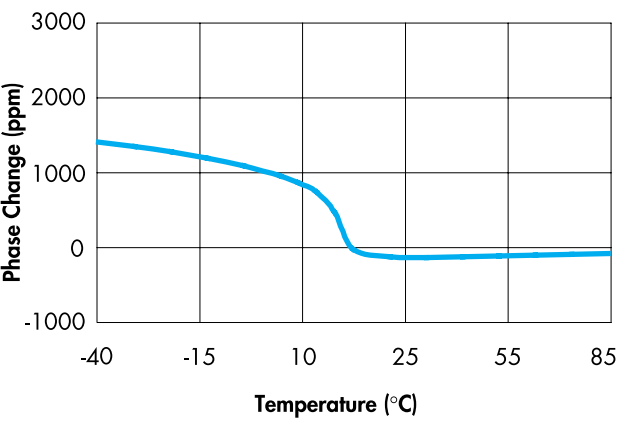


Power handling

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_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	15.0 18.0	1.12 1.16	126
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	12.4 18.0	1.14 1.18	130
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_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	1.12	
														26.5	1.16	161
21_PC3.5-43								•	•	•	•		12.0	18.0	1.12	
														26.5	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	•	•	•	•	•	•	•	•	•	•	•	ML 35	7.9	18.0	1.12	177
11_TNC-417								•	•	•		QL	19.0	12.4	1.14	
														18.0	1.18	195
11_TNC-418	•	•	•	•	•							QL	19.0	12.4	1.14	
														18.0	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_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 163
MIL: Connector with safety holes and hex nut for military and airframe applications
QL: Quick lock refer to section "special solutions", page 130
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 131

Note: For dimensioned sketches of connectors, please refer to pages 138 ff.

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

SUCOFLEX 106

Variations

SUCOFLEX_106 and 106_P are used in applications where special consideration must be given to low attenuation or high power handling capacity. Wherever phase stability is additionally demanded, the only suitable type that remains is the SUCOFLEX_106_P. Most ruggedisations can be used in conjunction with these cables, and also the main connector series. Connectors of the DIN 716 series are available for SUCOFLEX_106 especially for high-performance mobile radio applications.

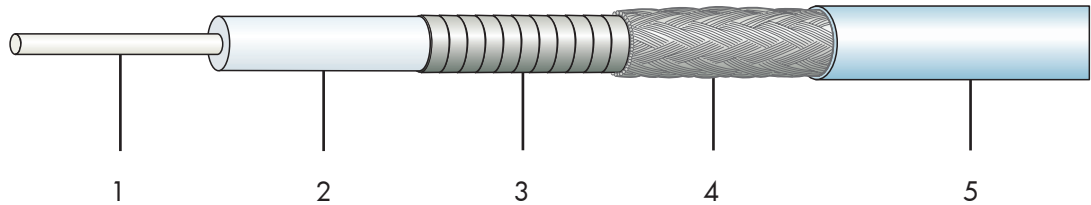
Mechanical and general data

HUBER+SUHNER cable type	Cable	Rugge- disation	Temperature		Weight kg/100m	Outer diameter (mm)	Bending radii	
			min. (°C)	max. (°C)			static (mm)	dyn. (mm)
SUCOFLEX_106	106	–	–55	+125	15.7	7.90	24	40
SUCOFLEX_106_A	106	A	–40	+85	21.5	13.20	50	70
SUCOFLEX_106_B	106	B	–55	+125	26.2	12.80	60	60
SUCOFLEX_106_C	106	C	–25	+125	21.5	13.20	50	70
SUCOFLEX_106_D	106	D	–55	+125	17.5	8.30	26	45
SUCOFLEX_106_G	106	G	–50	+100	34.2	16.70	60	100
SUCOFLEX_106_P	106_P	–	–55	+125	15.8	7.90	24	40
SUCOFLEX_106_PA	106_P	A	–40	+85	21.6	13.20	50	70
SUCOFLEX_106_PB	106_P	B	–55	+125	26.3	12.80	60	60
SUCOFLEX_106_PD	106_P	D	–55	+125	17.6	8.30	26	45
SUCOFLEX_106_PG	106_P	G	–50	+100	34.3	16.70	60	100

Further information about ruggedisation see pages 128 ff.

SUCOFLEX_106

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	7.90 mm

Electrical cable data

Impedance	50 Ohm		
Operating frequency	18 GHz		
Capacitance	87 pF/m		
Velocity of propagation	77 %		
Time delay	4.3 ns/m		
Nom. attenuation*	coefficient a	0.1500	coefficient b 0.0071
Max. attenuation*	coefficient a	0.1650	coefficient b 0.0078
Max. operating voltage	3.8 kVrms		
Min. screening effectiveness up to 18 GHz	90 dB		

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

General cable data

Temperature range	-55...+125 °C
Weight	15.7 kg/100m
Min. bending radius static	24 mm
Min. bending radius dynamic	40 mm

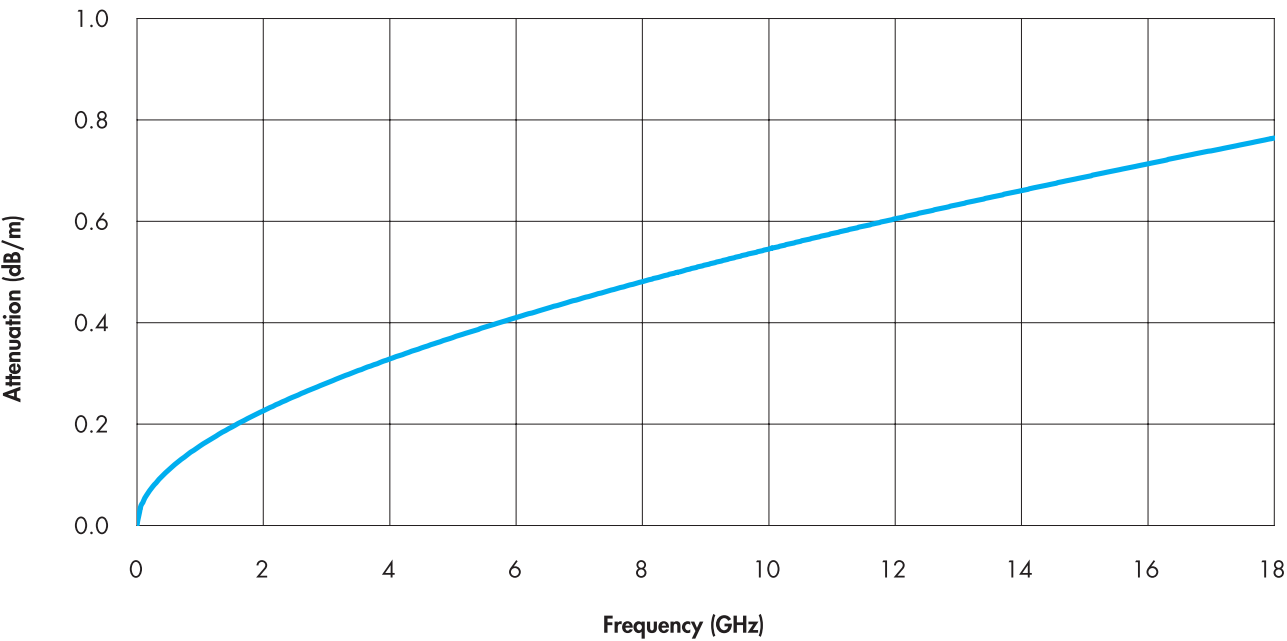
Suitable connectors

Please refer to pages 126 ff

SUCOFLEX_106

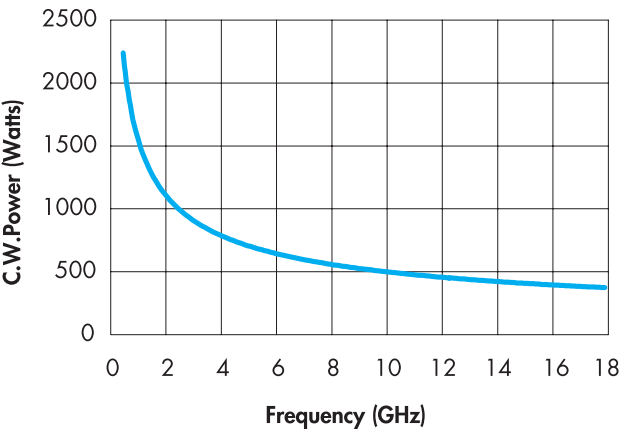
Cable attenuation

Nominal values @ +25 °C ambient temperature

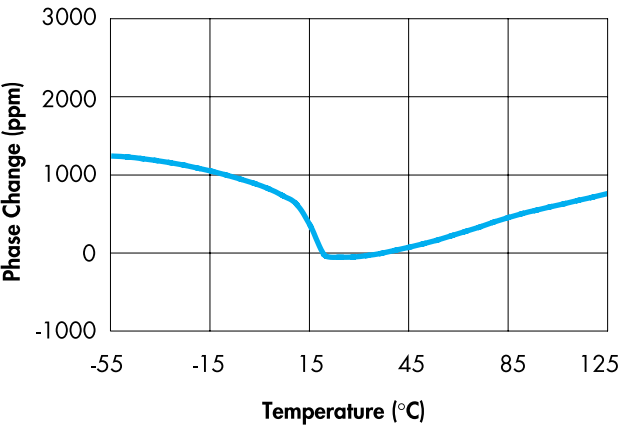


Power handling

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

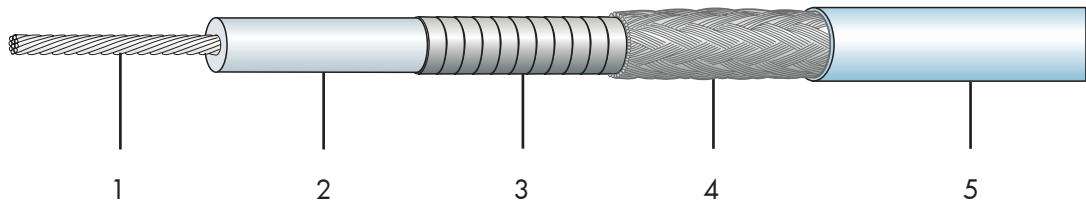


Phase change vs. temperature



SUCOFLEX_106_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	7.90 mm

Electrical cable data

Impedance	50 Ohm		
Operating frequency	18 GHz		
Capacitance	87 pF/m		
Velocity of propagation	77 %		
Time delay	4.3 ns/m		
Nom. attenuation*	coefficient a	0.1910	coefficient b 0.0255
Max. attenuation*	coefficient a	0.2101	coefficient b 0.0280
Max. operating voltage	3.2 kVrms		
Min. screening effectiveness up to 18 GHz	90 dB		

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

General cable data

Temperature range	-55...+125 °C
Weight	15.8 kg/100m
Min. bending radius static	24 mm
Min. bending radius dynamic	40 mm

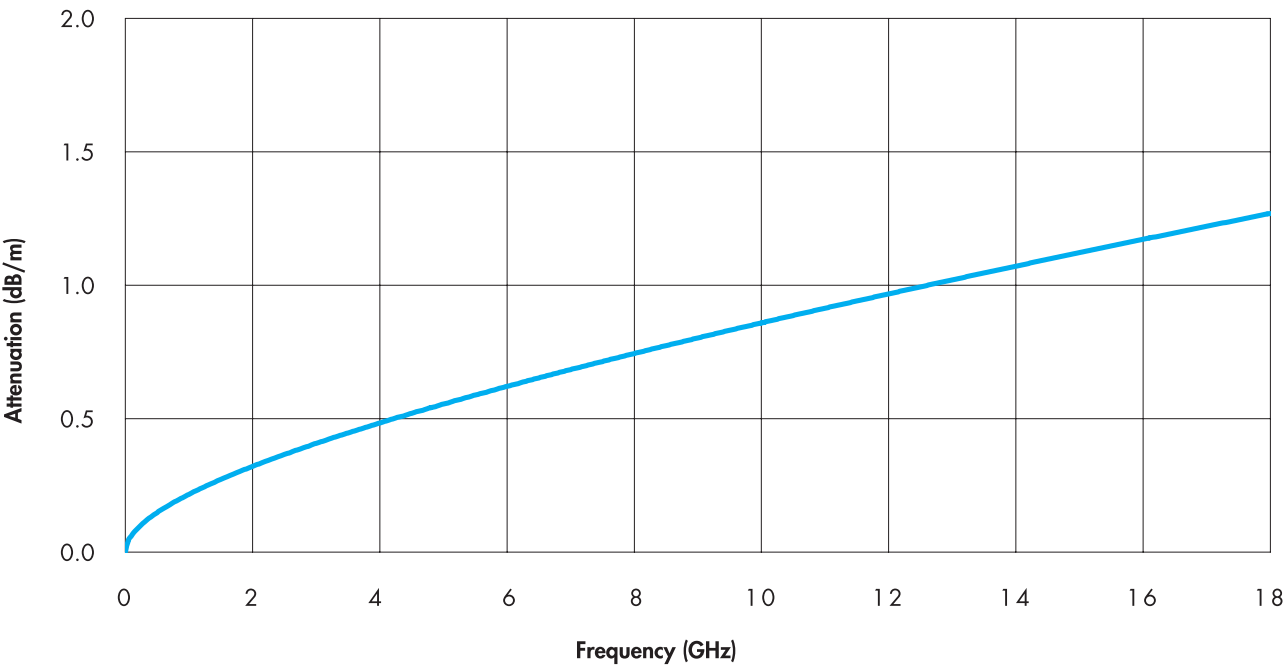
Suitable connectors

Please refer to pages 126 ff

SUCOFLEX_106_P

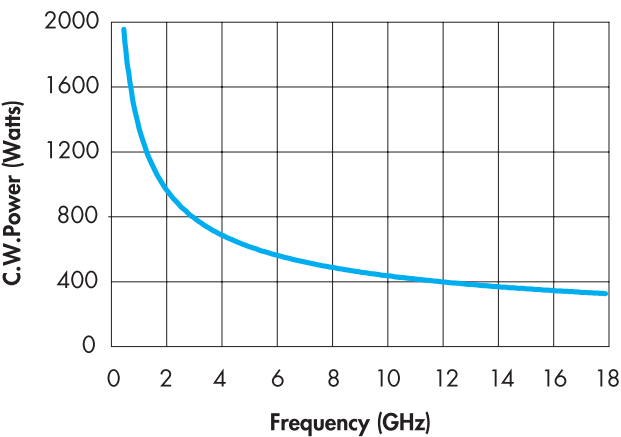
Cable attenuation

Nominal values @ +25 °C ambient temperature

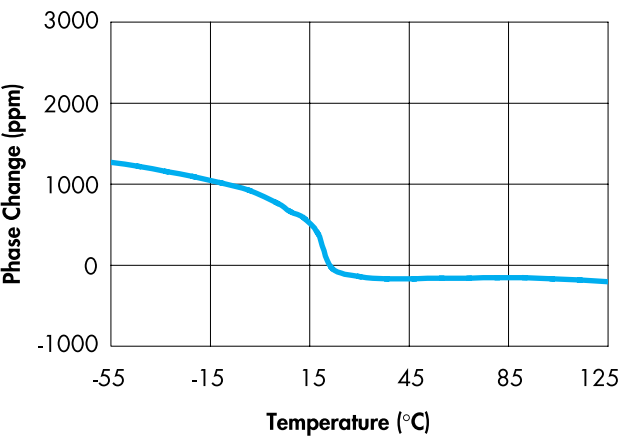


Power handling

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



Phase change vs. temperature



SUCOFLEX 106

Suitable connectors

HUBER+SUHNER connector type	106	106_A	106_B	106_C	106_D	106_G	106_P	106_PA	106_PB	106_PD	106_PG	Remarks	Weight (g)	Operating frequency (GHz)	VSWR ¹⁾	Fig.
11_N-651	•	•	•	•	•	•							52.0	18.0	1.12	122
11_N-654							•		•	•	•	SUCOTRIM	68.0	18.0	1.15	127
11_N-656							•	•	•	•	•		52.0	18.0	1.12	122
16_N-651	•		•		•	•							87.0	11.0	1.12	
														18.0	1.16	131
16_N-653		•		•									93.0	11.0	1.12	
														18.0	1.16	131
16_N-656							•		•	•	•	MIL	87.0	11.0	1.12	
														18.0	1.16	132
24_N-651	•	•	•	•	•	•						ML 12	55.0	18.0	1.12	135
24_N-652							•		•		•	ML 12	58.0	18.0	1.12	135
11_PC7-651	•	•	•	•	•	•							51.0	18.0	1.12	165
11_PC7-652							•	•	•	•	•		51.0	18.0	1.12	165
11_SMA-652	•	•	•	•	•	•							38.0	18.0	1.12	170
11_SMA-653							•		•	•	•		40.0	18.0	1.12	170
11_SMA-654							•		•	•	•	SUCOTRIM	42.0	18.0	1.15	173
16_SMA-652	•		•		•	•							18.0	18.0	1.18	174
21_SMA-651	•	•	•	•	•	•							37.0	18.0	1.12	175
21_SMA-652							•		•		•		23.0	18.0	1.12	175
24_SMA-651							•			•	•	ML 35	48.0	18.0	1.12	177
11_TNC-651		•		•									49.0	18.0	1.16	192
11_TNC-653	•		•		•								28.0	18.0	1.12	191
11_TNC-654							•		•	•	•		32.0	18.0	1.12	191
11_TNC-655							•		•	•	•	SUCOTRIM	57.0	18.0	1.15	194
16_TNC-651	•		•		•	•							76.0	18.0	1.18	197
16_TNC-653		•		•									80.0	18.0	1.18	197
16_TNC-655							•		•	•	•		78.0	18.0	1.22	197
24_TNC-651		•		•								ML 4	47.0	18.0	1.16	199
24_TNC-653	•		•		•	•						ML 4	24.0	18.0	1.12	199
24_TNC-654							•		•	•	•	ML 4	26.0	18.0	1.12	199
11_716-61	•	•	•	•	•	•							115.0	7.5	1.12	221
21_716-61	•	•	•	•	•	•							105.0	7.5	1.12	223
11_4195-602	•	•	•	•	•	•							57.0	2.0	1.10	
														14.0	1.12	210

SUCOFLEX 106

Suitable connectors

Connector patterns

11 Straight cable plug	24 Straight panel bulkhead cable jack
16 Right angle cable plug	25 Straight panel cable jack, flange mount
21 Straight cable jack	

1)	VSWR per connector
ML xx:	Mounting hole size xx refer to section "Connector drawings", page 163
MIL:	Connector with safety holes and hex nut for military and airframe applications
SUCOTRIM:	with integrated phase trimmer refer to section Special solutions, page 131

Note: For dimensioned sketches of connectors, please refer to pages 138 ff.

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

SUCOFLEX 100

Variations of ruggedisation

Type	for SUCOFLEX ...	Description
A	101(E), 101_P(E), 102(E) 	Consists of steel coil (flat wire), steel braid and polyurethane (PUR) jacket. Up to +85 °C, this ruggedisation offers excellent protection against compression, tension, torsion, abrasion and other mechanical forces acting upon the cable. <i>Typical applications</i> • Test and measurement cables • Laboratory cables • Protected line replaceable units (LRU)
	103(E), 104(E), 104_P(E), 106, 106P 	Consists of steel spring (round wire), steel braid and polyurethane (PUR) jacket. Up to +85 °C, this ruggedisation offers excellent protection against compression, tension, abrasion and other mechanical forces acting upon the cable. <i>Typical applications</i> • Laboratory cables • Protected line replaceable units (LRU)
B	103, 104, 104_P, 106 	Consists of a flexible hose of stainless steel. The ruggedisation protects the cable against compression, abrasion, mechanical injuries and open fire and hot objects (e.g. soldering irons). The continuous temperature is limited by the cable to +165 °C, and in the immediate proximity of the connectors to the maximum connector temperature. <i>Typical applications</i> • Test and measurement cables in industrial environments
C	103, 104, 104_P, 106 	Is identical to the ruggedisation A except for the jacket, which consists of RADOX® instead of PUR. RADOX® is flame resistant up to +135 °C, but low abrasion resistant. <i>Typical applications:</i> • Test and measurement cables

SUCOFLEX 100

Variations of ruggedisation

Type	for SUCOFLEX ...	Description
D	102, 103, 104, 106, 106_P, 302, 304 	Consists of an aramid yarn braid impregnated with silicon varnish. The ruggedisation protects the cable against abrasion and brief high temperatures. Typical applications • Aircraft cabling • Ship cabling • Antenna feeders
G	104, 106 	Consists of a flexible, double-layer rubber hose with textile ply (NEOPRENE). High resistance to abrasion, torsion, chemicals and oils characterises this ruggedisation. Provided with water tight cable entries, this is the ideal ruggedisation for outdoor applications. Applicable up to +100 °C. Typical application • Antenna cables in rough environments e.g. on shipborne applications
M	104E, 104_PE 	Consists of an additional soft magnetic band (μ -metal), braiding and an LSFH jacket (Low Smoke Free of Halogen). The ruggedisation protects the cable against electromagnetic radiation for EMC applications up to max. +85 °C. Typical applications • Test and measurement cables in low frequency applications

Technical data		Ruggedisation					
		A	B	C	D	G	M
Surface material		PUR	Stainless steel	RADOX	*)	NEOPREN	LSFH
Colour		blue, black	natural	blue	blue	black	black
Max. crush resistance	kN/m	80	80	80	—	10	—
Torsional stiffness	Nm ² /°	8.5x10 ⁻⁴	3.2x10 ⁻⁵	1.7x10 ⁻³	—	2.2x10 ⁻³	—
Max. tensile force							
Ruggedisation	N	1500	1000	1500	—	400	—
Cable-connector junction	N	400	500	400	—	400	—

*) Aramid yarn braiding impregnated with silicon varnish.

SUCOFLEX 100 - Special solutions

Quick-lock screw connectors for microwave test cables

On test panels and in test laboratories, test cables are increasingly used which must meet high RF requirements and allow quick connection with the object to be tested.

A specially designed nut ensures that a perfect RF connection is established after a three-quarter turn. This enormously reduces the testing time when a large number of objects must be tested.

In order to avoid confusions, the nut of Quick-Lock screw connectors has a special design. In addition, these connectors are provided with a yellow sleeve with a black marking.

The connector nuts are made of steel. This guarantees over 1000 mating cycles.



Technical connector data

HUBER+SUHNER connector type	103_E	103_EA	103_B	103_C	104_E	104_EA	104_B	104_C	104_PE	104_PEA	104_PB	Frequency (GHz)	VSWR
11_SMA-367	•	•	•	•								18.0	1.12
11_SMA-468					•	•	•	•	•	•	•	18.0	1.12
11_TNC-417									•	•	•	12.4 18.0	1.14 1.18
11_TNC-418					•	•	•	•				12.4 18.0	1.14 1.18
11_N-459					•	•	•	•	•	•	•	15.0 18.0	1.12 1.16

SUCOFLEX 100 - Special solutions

Phase trimmer "SUCOTRIM"

In phase sensitive applications, the need may arise after installation to match the phase position of pre-matched assemblies a second time by a very easy method.

SUCOTRIM phase trimmer allows the phase to be adjusted to suit the requirements by simple turning of a screw. Adjustment is possible across a wide range and virtually without affecting the insertion- and return loss of the assembly. The phase trimmer is not an additional adaptor that is included in the signal transmission chain, but an integral constituent of a connector.

No additional special tools are required for adjusting the phase. Upon adjustment, the trimmer is locked by means of a jam nut to prevent it from working loose as a result of vibration or other influences. This counternut can be tightened and loosened by means of two off-the-shelf open-end spanners. The compact design of the SUCOTRIM phase trimmer ensures easy and reliable handling. The SUCOTRIM is available for special phase stable cable types SUCOFLEX_104_P(E) and SUCOFLEX_106_P.



Phase trimmer types

SUCOFLEX_104_P(E)	11_SMA-457, 11_TNC-459, 11_N-461
SUCOFLEX_106_P	11_SMA-654, 11_TNC-655, 11_N-654

Electrical data

Max. operating frequency	18.0 GHz
Min. phase variation	64° @ 18 GHz (3.55° x f (GHz))
Phase variation per turn	10.8° @ 18 GHz (0.6° x f (GHz))

Mechanical data

Type of phase variation	Continuous by fine-pitch thread
Locking method	Jam nut (counternut)
Locking tools	Two open end-spanners, AF.14 and AF.15
Nom. possible length variation	± 2 mm
Available ruggedisation	All types for SF 104P(E) and SF 106P

Ambient conditions

Temperature range	-55 °C +125 °C
Humidity	max. 85%, non-condensating

SUCOFLEX 100

Electrical length and phase matching

General

Basically, a distinction must be made between the following terms

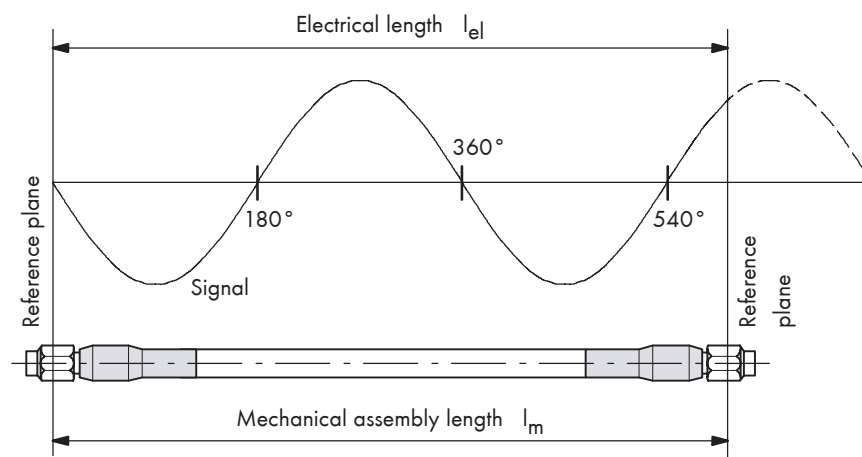
Electrical length
Phase matching

Phase change
Time delay

Electrical length

Definition

The term "electrical length" refers to the length of an assembly stated in wavelength or preferably in electrical degrees. In this connection, the term "absolute phase" is sometimes also used.



Determination

The electrical length l_{el} is calculated in the following way

$$\phi_{25} = 1.2 \cdot f \cdot l_m \cdot \sqrt{\epsilon_r}$$

where f must be entered in GHz and l_m in mm. The nominal value of ϵ_r is 1.68.

Example

Assembly SUCOFLEX_104, 1000 mm length, operating frequency range 10 GHz. Thus, the electrical length amounts to

$$\phi_{25} = 1.2 \cdot f \cdot l_m \cdot \sqrt{\epsilon_r} = 1.2 \cdot 10 \cdot 1000 \cdot \sqrt{1.68} = 15553.7 \text{ deg}$$

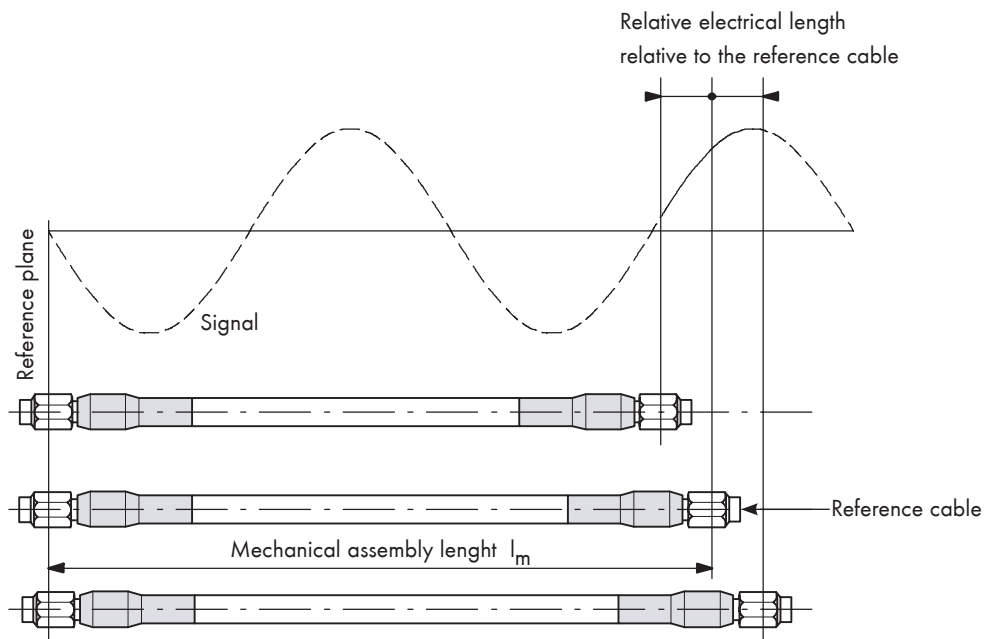
This calculation does not take the connectors into account; merely an approximation is supplied.

SUCOFLEX 100

Phase matching

Definition

The term "phase matching" refers to the relative electrical length of an assembly compared with a reference cable or a given electrical length.



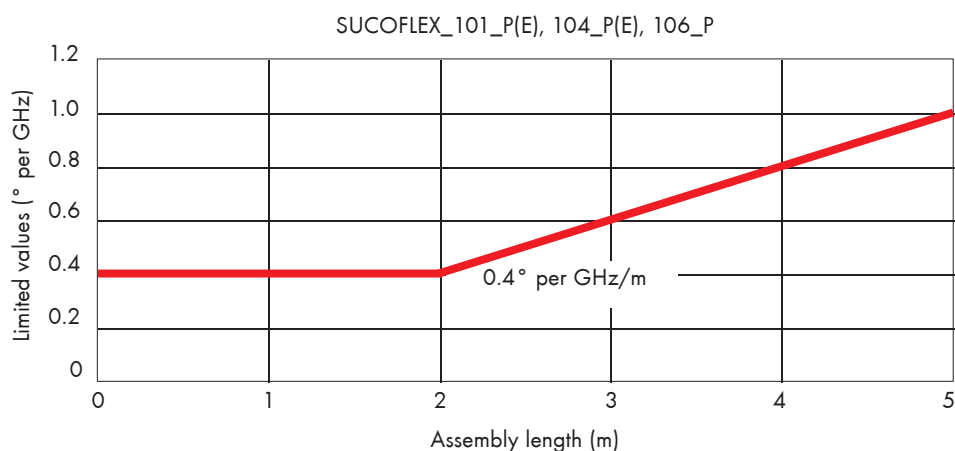
Availability

All SUCOFLEX P-type microwave cable assemblies are available as phase-matched sets. Their outstanding thermal and mechanical phase stability makes them the ideal choice for applications requiring high stability. Any required matching values are available on request, although they are limited. The reproducibility of the electrical characteristics of the connectors in addition to thermal and mechanical influences limit the matching range attainable in practice to $\pm 0.2^\circ$ per GHz/m, equivalent to a mechanical length of ± 0.13 mm. In long assemblies, the thermal and mechanical influencing factors have a greater impact, resulting in a rise of the lower limit of matchability as the length increases (see graph next page). In day-to-day practice, we find that it is better to speak of a specification window than of a tolerance. As a consequence, a statement such as "within 0.4° per GHz/m" makes more sense than " $\pm 0.2^\circ$ per GHz/m". This applies in particular to assembly sets consisting of more than two individual assemblies.

SUCOFLEX 100

Limiting values for phase matching

The best guaranteeable values for SUCOFLEX_101_P(E), 104_P(E) and 106_P are within 0.4° per GHz/m ($\pm 0.2^\circ$ per GHz/m). For detailed information, see the following graph:



Important note

For obtaining matching values better than 1° per GHz/m ($\pm 0.5^\circ$ per GHz/m), a special connector 11_SMA-372, 11_SMA-452, 11_N-453 or 11_TNC-458 should be used for each cable. For applications where the phase during or after the installation process should be changed, special connectors with integrated phase trimmer SUCOTRIM are available for cable types SUCOFLEX_104_P(E) and SUCOFLEX_106_P (types 11_N-461, 11_N-654, 11_SMA-457, 11_SMA-654, 11_TNC-459 or 11_TNC-655).

Phase change vs. bending

HUBER+SUHNER cable type	Phase change @ 18 GHz	Diameter mandrel
SUCOFLEX_101_P(E)	5°	35 mm
SUCOFLEX_104_P(E)	10°	55 mm
SUCOFLEX_106_P	10°	79 mm

Test method (IEC 60966-1, para. 8.6.2.1)

The cable assembly which is of a "U" shape is connected to the NWA. During recording of the phase of the transmitting signal, the cable is wound around a mandrel for 180°, unwound to the starting position, wound counter-clockwise for 180° around the mandrel and again unwound to its starting position. The initial position of the mandrel is chosen so that only the straight parts of the "U" will be bent during the test.

In case of questions or critical applications, please contact your local HUBER+SUHNER partner.

SUCOFLEX 100 - stock assemblies

SUCOFLEX_101_PEA (armoured)

HUBER+SUHNER assembly type	Item no.	Length (mm)	Max. frequency GHz	Nom. insertion loss dB @ 25 °C	Max. insertion loss dB @ 25 °C	VSWR ≤
SUCOFLEX_101_PEA/HP2.4/11_SK-155	23005075	570	46.0	3.24	3.54	1.44
SUCOFLEX_101_PEA/HP2.4/21_SK-155	23005076	570	46.0	3.24	3.54	1.44
SUCOFLEX_101_PEA/HP2.4/11_PC2.4-106	23005073	570	50.0	3.42	3.73	1.44
SUCOFLEX_101_PEA/HP2.4/21_PC2.4-106	23005074	570	50.0	3.42	3.73	1.44
SUCOFLEX_101_PEA/2x11_SK-155	23005069	570	46.0	3.24	3.54	1.44
SUCOFLEX_101_PEA/2x21_SK-155	23005066	570	46.0	3.24	3.54	1.44
SUCOFLEX_101_PEA/11_SK-155/21_SK-155	23005070	570	46.0	3.24	3.54	1.44
SUCOFLEX_101_PEA/21_SK-155/11_PC2.4-106	23005071	570	46.0	3.24	3.54	1.44
SUCOFLEX_101_PEA/21_SK-155/21_PC2.4-106	23005072	570	46.0	3.24	3.54	1.44

SUCOFLEX_102

HUBER+SUHNER assembly type	Item no.	Length (mm)	Max. frequency GHz	Nom. insertion loss dB @ 25 °C	Max. insertion loss dB @ 25 °C	VSWR ≤
SUCOFLEX_102/2x11_SK-252	22649802	500	46.0	1.69	1.83	1.44
SUCOFLEX_102/2x11_SK-252	22649803	1000	46.0	3.11	3.39	1.44

SUCOFLEX_103

HUBER+SUHNER assembly type	Item no.	Length (mm)	Max. frequency GHz	Nom. insertion loss dB @ 25 °C	Max. insertion loss dB @ 25 °C	VSWR ≤
SUCOFLEX_103/2x11_SMA-371	22648908	500	18.0	0.84	0.90	1.25
SUCOFLEX_103/2x11_SMA-371	22648909	1000	18.0	1.50	1.63	1.25

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

SUCOFLEX 100 - stock assemblies

SUCOFLEX_104

HUBER+SUHNER assembly type	Item no.	Length (mm)	Max. frequency GHz	Nom. insertion loss dB @ 25 °C	Max. insertion loss dB @ 25 °C	VSWR ≤
SUCOFLEX_104/2×11_N-47	22648912	500	18.0	0.72	0.77	1.35
SUCOFLEX_104/2×11_SMA-451	22642642	500	18.0	0.72	0.77	1.25
SUCOFLEX_104/2×11_PC3.5-42	22648910	500	26.5	0.89	0.96	1.35
SUCOFLEX_104/ 11_SMA-451/11_N-47	22648916	1000	18.0	1.27	1.38	1.30
SUCOFLEX_104/2×11_N-47	22642645	1000	18.0	1.27	1.38	1.35
SUCOFLEX_104/2×11_SMA-451	22642590	1000	18.0	1.27	1.38	1.25
SUCOFLEX_104/2×11_PC3.5-42	22648911	1000	26.5	1.57	1.71	1.35
SUCOFLEX_104/2×11_N-47	22648913	1500	18.0	1.82	1.98	1.35
SUCOFLEX_104/2×11_SMA-451	22642643	1500	18.0	1.82	1.98	1.25
SUCOFLEX_104/ 11_SMA-451/11_N-47	22648917	2000	18.0	2.37	2.59	1.30
SUCOFLEX_104/2×11_N-47	22648914	2000	18.0	2.37	2.59	1.35
SUCOFLEX_104/2×11_SMA-451	22642644	2000	18.0	2.37	2.59	1.25
SUCOFLEX_104/2×11_N-47	22648915	3000	18.0	3.47	3.80	1.35
SUCOFLEX_104/2×11_N-47	22654052	5000	18.0	5.67	6.22	1.35
SUCOFLEX_104/2×11_SMA-451	23016200	570	18.0	0.80	0.86	1.25
SUCOFLEX_104/2×11_SMA-451	23032336	5000	18.0	5.67	6.16	1.25
SUCOFLEX_104/11_SMA-451/ 16_SMA-451	23016199	570	18.0	0.82	0.88	1.25

SUCOFLEX_104_P

HUBER+SUHNER assembly type	Item no.	Length (mm)	Max. frequency GHz	Nom. insertion loss dB @ 25 °C	Max. insertion loss dB @ 25 °C	VSWR ≤
SUCOFLEX_104_P/2×11_SMA-451	23015797	500	18.0	0.95	1.03	1.25
SUCOFLEX_104_P/2×11_SMA-451	22644134	1000	18.0	1.73	1.88	1.25
SUCOFLEX_104_P/2×11_SMA-451	22644135	2000	18.0	3.29	3.60	1.25

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

SUCOFLEX 100 - stock assemblies

SUCOFLEX_104_A (armoured)

HUBER+SUHNER assembly type	Item no.	Length (mm)	Max. frequency GHz	Nom. insertion loss dB @ 25 °C	Max. insertion loss dB @ 25 °C	VSWR ≤
SUCOFLEX_104_A/2×11_N-47	22644089	1000	18.0	1.27	1.38	1.35
SUCOFLEX_104_A/2×11_SMA-451	22644087	1000	18.0	1.27	1.38	1.25
SUCOFLEX_104_A/2×Q/1000	22644137	1000	18.0	1.27	1.38	n/a
SUCOFLEX_104_A/11_N-47/ 11_716-401	22654044	1500	7.5	1.13	1.23	1.25
SUCOFLEX_104_A/11_N-47/ 21_716-401	22654047	1500	7.5	1.13	1.23	1.25
SUCOFLEX_104_A/11_N-47/ 21_N-47	22655933	1500	15.0	1.65	1.79	1.25
SUCOFLEX_104_A/11_N-47/ 24_N-47	22654038	1500	15.0	1.65	1.79	1.25
SUCOFLEX_104_A/2×11_N-47	22654041	1500	18.0	1.82	1.98	1.35
SUCOFLEX_104_A/2×Q/2000	22644138	2000	18.0	2.37	2.59	n/a
SUCOFLEX_104_A/11_N-47/ 21_716-401	22654048	3000	7.5	2.15	2.36	1.25
SUCOFLEX_104_A/11_N-47/ 21_N-47	22655934	3000	15.0	3.14	3.43	1.25
SUCOFLEX_104_A/2×11_N-47	22654042	3000	18.0	3.47	3.80	1.35

SUCOFLEX_104_PEA (armoured)

HUBER+SUHNER assembly type	Item no.	Length (mm)	Max. frequency GHz	Nom. insertion loss dB @ 25 °C	Max. insertion loss dB @ 25 °C	VSWR ≤
SUCOFLEX_104_PEA/ 2×11_N-452	23005059	1000	18.0	1.73	1.88	1.25
SUCOFLEX_104_PEA/ 11_N-452/21_716-402	23005084	1500	7.5	1.51	1.65	1.25
SUCOFLEX_104_PEA/ 11_N-452/21_N-452	23005077	1500	18.0	2.51	2.74	1.25
SUCOFLEX_104_PEA/ 2×11_N-452	23005080	1500	18.0	2.51	2.74	1.25

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

SUCOFLEX 100

Connector drawings

BNC/DV

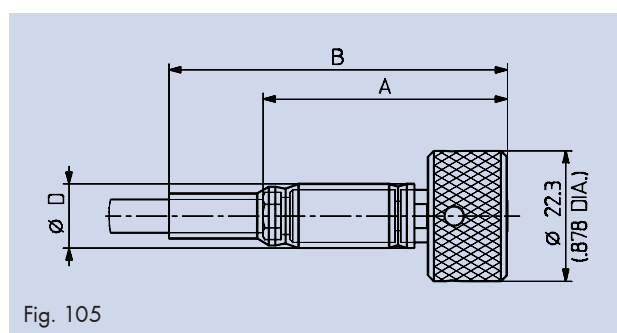
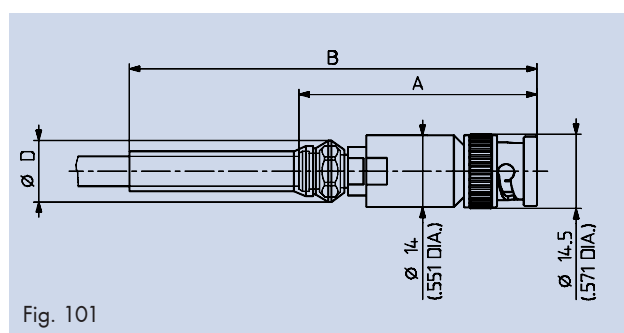
Depending on the particular cable entry or the selected ruggedisation, the connectors may have a different visual appearance as shown here!

The connectors are shown to the correct scale relative to one another so that their basic versions can be easily compared. The basic version is the appropriate connector for a given cable type without any ruggedisation.

It is not possible to derive a matching connector type from the cable type stated in the following tables. For this purpose, please compare the tables for the individual cable types in the "Variation" sections on pages 93 ff. Mounting holes are specified on page 163.

Dimensioned sketches - connector drawings

HUBER+SUHNER connector type	Cable SUCOFLEX	Rugge- disation	A mm inches	B mm inches	C mm inches	D mm inches	Fig.
11_BNC-373	103(E)		46.5 1.831	80.0 3.150		10.0 0.394	101
	103(E)	A/C	72.5 2.854	84.0 3.307		14.5 0.571	
	103	B	64.0 2.520	84.0 3.307		15.0 0.591	
	103	D	46.5 1.831	80.0 3.150		10.0 0.394	
11_BNC-451	104(E),104P(E)		46.5 1.831	80.0 3.150		11.0 0.433	
11_BNC-452	104(E),104P(E)	A/C	62.0 2.441	74.0 2.913		14.5 0.571	
	104, 104P	B	64.0 2.520	84.0 3.307		15.0 0.591	
	104, 104P	D	46.5 1.831	80.0 3.150		11.0 0.433	
	104(E),104P(E)	M	71.0 2.795	75.0 2.953		14.0 0.551	105
	104, 104P	G	77.0 3.031	84.0 3.307		17.5 0.689	
11_DV-112	101P(E)	A	36.5 1.437	74.0 2.913		12.0 0.472	
11_DV-41	104P(E)		42.0 1.654	60.0 2.362		10.0 0.394	
	104P(E)	A/C	62.5 2.461	78.0 3.071		14.5 0.571	
	104P	B	64.5 2.539	108.0 4.252		15.0 0.591	
11_DV-42	104(E)		37.0 1.457	60.0 2.362		10.0 0.394	
	104(E)	A/C	57.5 2.264	78.0 3.071		14.5 0.571	
	104	B	60.0 2.362	108.0 4.252		15.0 0.591	
	104	D	42.0 1.654	60.0 2.362		11.0 0.433	
	104	G	66.5 2.618	88.0 3.456		17.5 0.689	



SUCOFLEX 100

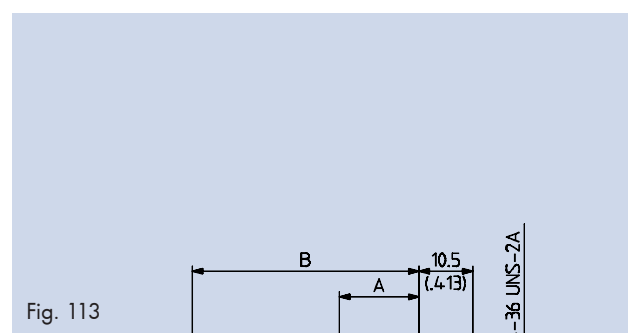
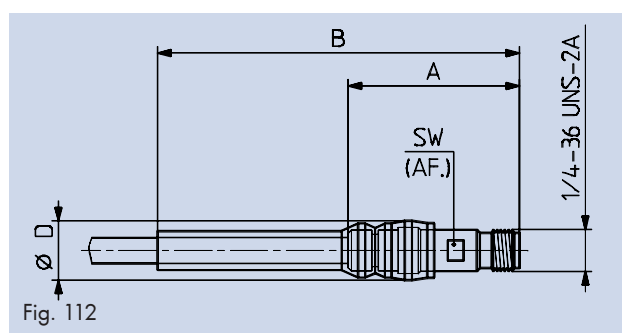
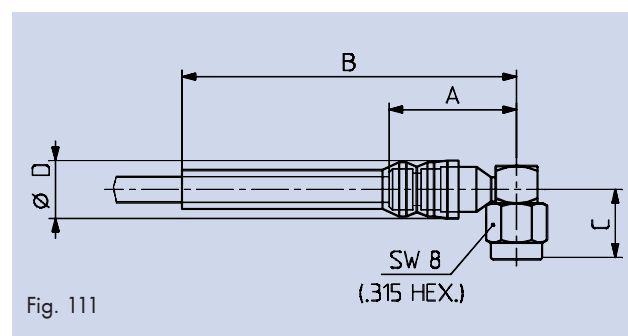
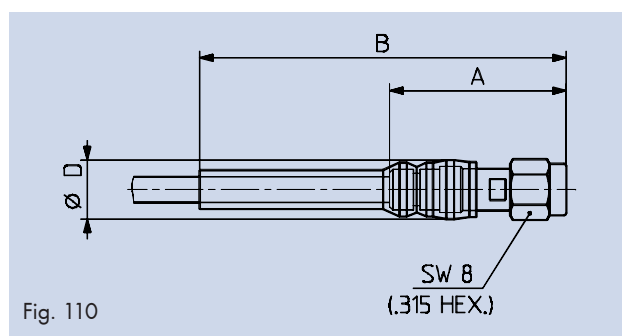
Dimensioned sketches - connector drawings

SK

HUBER+SUHNER connector type	Cable SUCOFLEX	Rugge- disation	A mm inches	B mm inches	C mm inches	D mm inches	Fig.
11_SK-110	101P(E)	A	36.5 1.437	74.0 2.913		12.0 0.472	110
11_SK-252	102(E)		27.0 1.063	56.0 2.205		9.5 0.374	
	102	D	27.0 1.063	56.0 2.205		9.5 0.374	
11_SK-258	102(E)	A	36.5 1.437	72.0 2.835		12.0 0.472	111
16_SK-252	102		19.5 0.768	52.0 2.047	10.7 0.421	9.5 0.374	
	102	D	19.5 0.768	52.0 2.047	10.7 0.421	9.5 0.374	
16_SK-255	102(E)	A	32.0 1.260	70.0 2.756	12.2 0.480	12.0 0.472	113
24_SK-251	102(E)		15.5 0.610	46.0 1.811		9.5 0.374	
	102	D	15.5 0.610	46.0 1.811		9.5 0.374	

HUBER+SUHNER connector type	Cable SUCOFLEX	Rugge- disation	A mm inches	B mm inches	D mm inches	SW (AF.) mm inches	Fig.
21_SK-110	101P(E)	A	35.5 1.398	73.0 2.874	12.0 0.472	8.0 0.315	112
21_SK-252	102(E)		26.0 1.024	54.0 2.126	9.5 0.374	5.5 0.217	
	102	D	26.0 1.024	54.0 2.126	9.5 0.374	5.5 0.217	
21_SK-257	102(E)	A	36.5 1.437	72.0 2.835	12.0 0.472	8.0 0.315	

Mechanical compatibility: SK connectors can be mated with the connectors of the PC3.5 and SMA series even if they are not fully compatible.



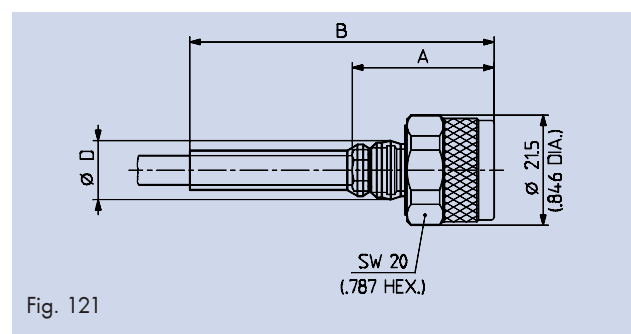
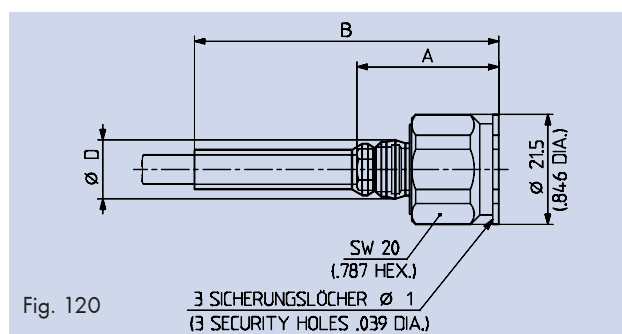
SUCOFLEX 100

SUCOFLEX 100

Dimensioned sketches - connector drawings

N

HUBER+SUHNER connector type	Cable SUCOFLEX	Rugge- disation	A mm inches	B mm inches	C mm inches	D mm inches	Fig.
11_N-206	102(E)		28.5 1.122	61.0 2.402		9.5 0.374	120
	102	D	28.5 1.122	61.0 2.402		9.5 0.374	
11_N-207	102(E)		28.5 1.122	61.0 2.402		9.5 0.374	120
	102	D	28.5 1.122	61.0 2.402		9.5 0.374	
11_N-371	103(E)		27.5 1.083	60.0 2.362		10.5 0.413	121
	103(E)	A/C	51.0 2.008	88.0 3.465		13.5 0.531	
	103	B	50.0 1.969	88.0 3.465		15.0 0.591	
	103	D	32.5 1.280	65.0 2.559		10.0 0.394	
11_N-47	104(E),104P(E)		28.0 1.102	59.0 2.323		10.5 0.413	121
	104(E),104P(E)	A/C	48.5 1.909	77.0 3.031		14.5 0.571	
	104, 104P	B	50.5 1.988	87.0 3.425		15.0 0.591	
	104, 104P	D	33.0 1.299	59.0 2.323		11.0 0.433	
	104(E),104P(E)	M	78.0 3.071	77.0 3.031		14.0 0.551	
	104, 104P	G	63.5 2.500	87.0 3.425		17.5 0.689	
11_N-451	104(E)		45.0 1.772	78.0 3.071		11.0 0.433	122
	104(E)	A/C	60.5 2.382	87.0 3.425		14.5 0.571	
	104	B	62.5 2.461	99.0 3.898		15.0 0.591	
	104	D	45.0 1.772	78.0 3.071		11.0 0.433	
	104(E)	M	69.0 2.717	89.0 3.504		14.0 0.551	
	104	G	75.5 2.972	99.0 3.898		17.5 0.689	
11_N-452	104P(E)		46.5 1.831	74.0 2.913		11.0 0.433	122
	104P(E)	A/C	62.0 2.441	92.0 3.622		14.5 0.571	
	104P	B	64.0 2.520	102.0 4.016		15.0 0.591	
	104P	D	46.5 1.831	74.0 2.913		11.0 0.433	
	104P(E)	M	71.0 2.795	92.0 3.622		14.0 0.551	
	104P	G	77.0 3.031	102.0 4.016		17.5 0.689	
11_N-454	104(E),104P(E)		28.0 1.102	59.0 2.323		10.5 0.413	120
	104(E), 104P	A/C	48.5 1.909	77.0 3.031		14.5 0.571	
	104, 104P	B	50.5 1.988	87.0 3.425		15.0 0.591	
	104, 104P	D	33.0 1.299	59.0 2.323		11.0 0.433	
	104(E),104P(E)	M	78.0 3.071	77.0 3.031		14.0 0.551	
	104, 104P	G	63.5 2.500	87.0 3.425		17.5 0.689	

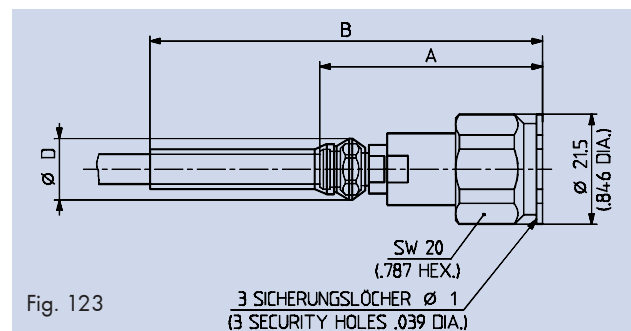
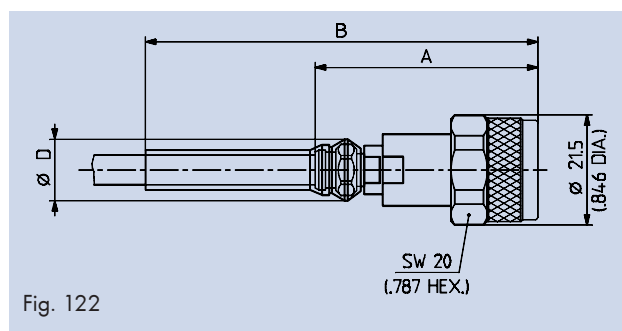


SUCOFLEX 100

Dimensioned sketches - connector drawings

N

HUBER+SUHNER connector type	Cable SUCOFLEX	Rugge- disation	A mm inches	B mm inches	C mm inches	D mm inches	Fig.
11_N-456	104(E)		45.0 1.772	78.0 3.071		11.0 0.433	123
	104(E)	A/C	60.5 2.382	87.0 3.425		14.5 0.571	
	104	B	62.5 2.461	99.0 3.898		15.0 0.591	
	104	D	45.0 1.772	78.0 3.071		11.0 0.433	
	104(E)	EM	69.0 2.717	89.0 3.504		14.0 0.551	
	104	G	75.5 2.972	99.0 3.898		17.5 0.689	
11_N-457	104P(E)		46.5 1.831	74.0 2.913		11.0 0.433	123
	104P(E)	A/C	62.0 2.441	92.0 3.622		14.5 0.571	
	104P	B	64.0 2.520	102.0 4.016		15.0 0.591	
	104P	D	46.5 1.831	74.0 2.913		11.0 0.433	
	104P(E)	M	71.0 2.795	92.0 3.622		14.0 0.551	
	104P	G	77.0 3.031	102.0 4.016		17.5 0.689	
11_N-651	106		57.5 2.264	95.0 3.740		14.5 0.571	122
	106	A/C	71.5 2.815	115.0 4.528		21.0 0.827	
	106	B	44.5 1.752	105.0 4.134		19.0 0.748	
	106	D	57.5 2.264	95.0 3.740		14.5 0.571	
	106	G	83.5 3.287	100.0 3.937		21.5 0.846	
11_N-656	106		57.5 2.264	95.0 3.740		14.5 0.571	
	106	A/C	71.5 2.815	115.0 4.528		21.0 0.827	
	106	B	76.5 3.012	105.0 4.134		19.0 0.748	
	106	D	57.5 2.264	95.0 3.740		14.5 0.571	
	106	G	80.5 3.169	100.0 3.937		21.5 0.846	



SUCOFLEX 100

SUCOFLEX 100

Dimensioned sketches - connector drawings

N

HUBER+SUHNER connector type	Cable SUCOFLEX	Rugge- disation	A mm inches	B mm inches	C mm inches	D mm inches	Fig.
11_N-453 ¹⁾	104P(E)		48.5 1.909	72.0 2.835		10.0 0.394	125
	104P(E)	A/C	69.0 2.717	90.0 3.543		14.5 0.571	
	104P	B	71.0 2.795	100.0 3.937		15.0 0.571	
	104P	G	84.0 3.307	100.0 3.937		17.5 0.689	
11_N-459	104, 104P(E)		28.0 1.102	59.0 2.323		10.5 0.413	126
	104, 104P(E)	A/C	48.5 1.909	77.0 3.031		14.5 0.571	
	104, 104P	B	50.5 1.988	87.0 3.425		15.0 0.591	
	104, 104P	D	33.0 1.299	60.0 2.362		11.0 0.433	
11_N-461 ²⁾	104P(E)		59.5 2.343	92.0 3.622		11.0 0.433	127
	104P(E)	A/C	75.0 2.953	110.0 4.330		14.5 0.571	
	104P	B	77.0 3.031	120.0 4.724		15.0 0.591	
	104P	D	59.5 2.343	92.0 3.622		11.0 0.433	
	104P	G	90.0 3.543	120.0 4.724		18.5 0.728	
11_N-654 ²⁾	106P		67.5 2.657	120.0 4.724		14.5 0.571	128
	106P	B	86.5 3.406	130.0 5.118		19.0 0.748	
	106P	D	67.5 2.657	120.0 4.724		14.5 0.571	
	106P	G	90.5 3.563	125.0 4.921		21.5 0.846	
16_N-372	103(E)		29.5 1.161	55.0 2.165	45.0 1.772	9.0 0.354	128
	103(E)	A/C	39.0 1.535	75.0 2.953	45.0 1.772	14.5 0.571	
	103	B	39.0 1.535	74.0 2.913	45.0 1.772	14.0 0.551	
	103	D	29.5 1.161	55.0 2.165	45.0 1.772	9.0 0.354	

1) Note: In case of phase matching, dimensions A and B can be maximal 3.85 mm longer.

2) Note: In case of phase matching, dimensions A and B can be maximal ± 2 mm longer.

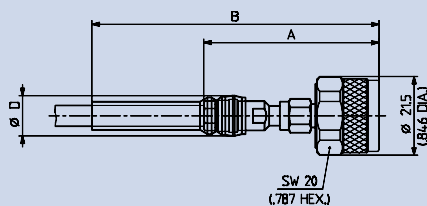


Fig. 125

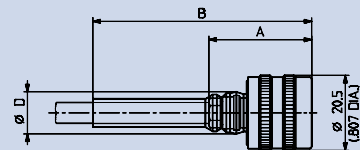


Fig. 126

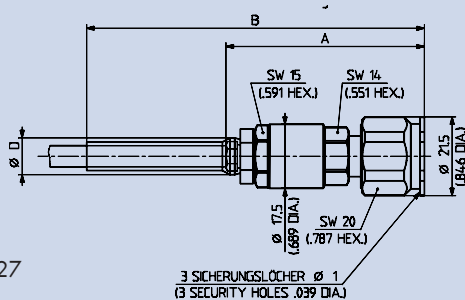


Fig. 127

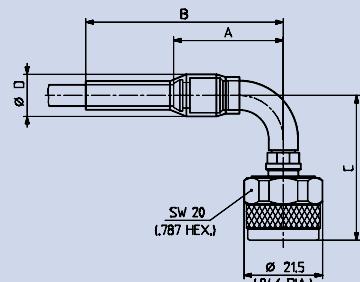


Fig. 128

SUCOFLEX 100

Dimensioned sketches - connector drawings

N

HUBER+SUHNER connector type	Cable SUCOFLEX	Rugge- disation	A mm inches	B mm inches	C mm inches	D mm inches	Fig.
16_N-44	104(E)		19.0 0.748	45.0 1.772	24.5 0.965	9.5 0.374	129
	104(E)	A/C	39.5 1.555	63.0 2.480	24.5 0.965	14.5 0.571	
	104	B	41.5 1.634	82.0 3.228	24.5 0.965	15.0 0.591	
	104	D	23.5 0.925	57.0 2.244	24.5 0.965	11.0 0.433	
	104(E)	M	48.0 1.890	63.0 2.480	24.5 0.965	14.0 0.551	
	104	G	54.5 2.146	86.0 3.386	24.5 0.965	17.5 0.689	
16_N-457	104P(E)		25.0 0.984	47.0 1.850	24.5 0.965	9.5 0.374	130
	104P(E)	A/C	45.5 1.791	69.0 2.717	24.5 0.965	14.5 0.571	
	104P	B	47.5 1.870	88.0 3.465	24.5 0.965	14.5 0.571	
	104P	D	30.0 1.181	63.0 2.480	24.5 0.965	11.0 0.433	
	104P(E)	M	54.0 2.126	69.0 2.717	24.5 0.965	14.0 0.551	
	104P	G	60.5 2.382	91.0 3.583	24.5 0.965	18.5 0.728	
16_N-45	104(E)		19.0 0.748	45.0 1.772	24.5 0.965	9.5 0.374	130
	104(E)	A/C	39.5 1.555	63.0 2.480	24.5 0.965	14.5 0.571	
	104	B	41.5 1.634	82.0 3.228	24.5 0.965	15.0 0.591	
	104	D	23.5 0.925	57.0 2.244	24.5 0.965	11.0 0.433	
	104	M	48.0 1.890	63.0 2.480	24.5 0.965	14.0 0.551	
	104(E)	G	54.5 2.146	86.0 3.386	24.5 0.965	17.5 0.689	

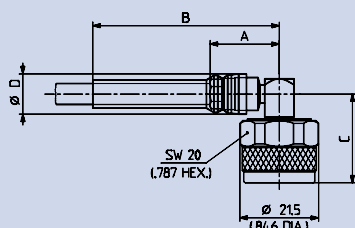


Fig. 129

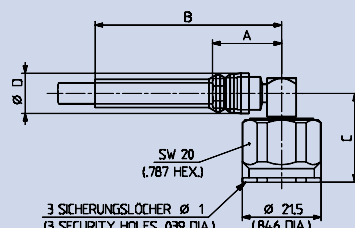


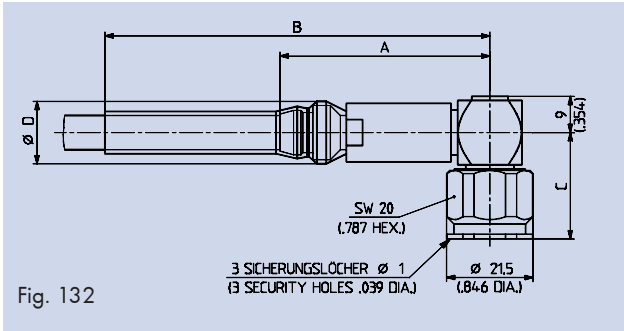
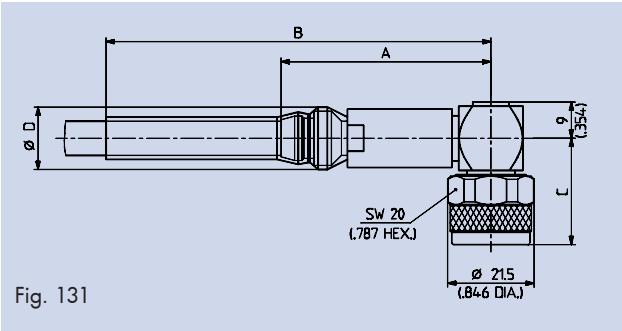
Fig. 130

SUCOFLEX 100

Dimensioned sketches - connector drawings

N

HUBER+SUHNER connector type	Cable SUCOFLEX	Rugge- disation	A		B		C		D		Fig.
			mm	inches	mm	inches	mm	inches	mm	inches	
16_N-651	106		52.2	2.067	92.0	3.622	26.5	1.043	14.5	0.571	131
	106	B	66.0	2.598	112.0	4.409	26.5	1.043	19.0	0.748	
	106	D	52.5	2.067	92.0	3.622	26.5	1.043	14.5	0.571	
	106	G	75.5	2.972	107.0	4.213	26.5	1.043	21.5	0.846	
16_N-653	106	A/C	66.0	2.598	97.0	3.819	26.5	1.043	20.0	0.787	132
16_N-656	106P		52.5	2.067	92.0	3.622	26.5	1.043	14.5	0.571	
	106P	B	66.0	2.598	112.0	4.409	26.5	1.043	19.0	0.748	
	106P	D	52.5	2.067	92.0	3.622	26.5	1.043	14.5	0.571	

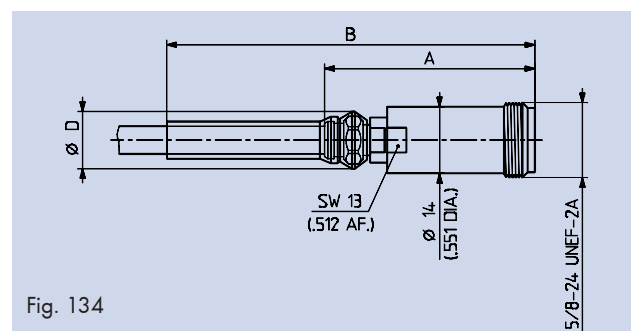
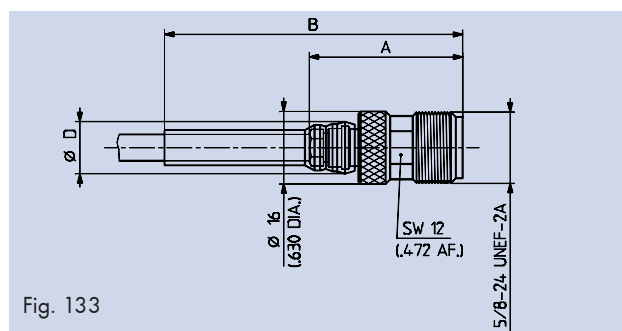


SUCOFLEX 100

Dimensioned sketches - connector drawings

N

HUBER+SUHNER connector type	Cable SUCOFLEX	Rugge- disation	A mm inches	B mm inches	C mm inches	D mm inches	Fig.
21_N-47	104(E)		33.5 1.319	67.0 2.638		10.0 0.394	133
	104(E)	A/C	54.0 2.126	85.0 3.346		14.5 0.571	
	104	B	56.0 2.205	95.0 3.740		15.0 0.591	
	104	D	38.5 1.516	70.0 2.756		11.0 0.433	
	104	M	36.0 1.417	85.0 3.346		14.0 0.551	
	104(E)	G	69.0 2.717	101.0 3.976		17.5 0.689	
21_N-451	104(E)		44.0 1.732	76.0 2.992		11.0 0.433	134
	104(E)	A/C	59.5 2.343	87.0 3.425		14.5 0.571	
	104	B	61.5 2.421	96.0 3.780		14.5 0.571	
	104	D	44.0 1.732	76.0 2.992		11.0 0.433	
	104(E)	M	68.5 2.697	91.0 3.583		14.0 0.551	
	104	G	74.5 2.933	100.0 3.937		18.5 0.728	
21_N-452	104P(E)		45.0 1.772	77.0 3.031		11.0 0.433	134
	104P(E)	A/C	60.5 2.382	88.0 3.465		14.5 0.571	
	104P	B	62.5 2.461	97.0 3.819		14.5 0.571	
	104P	D	45.0 1.772	77.0 3.031		11.0 0.433	
	104P(E)	M	69.5 2.736	91.0 3.583		14.0 0.551	
	104P	G	75.5 2.972	101.0 3.976		18.5 0.728	



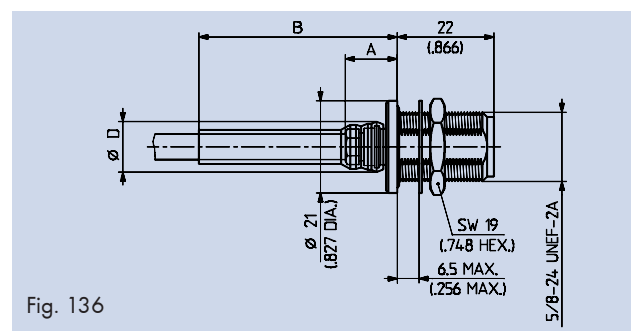
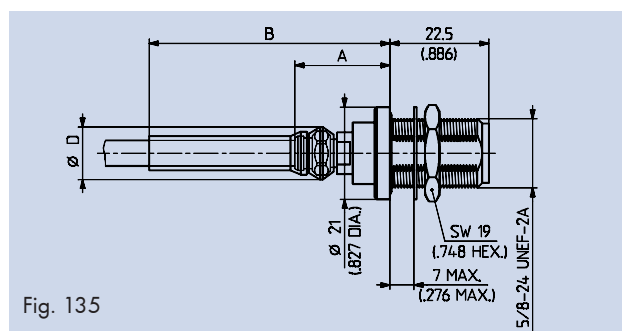
SUCOFLEX 100

SUCOFLEX 100

Dimensioned sketches - connector drawings

N

HUBER+SUHNER connector type	Cable SUCOFLEX	Rugge- disation	A mm inches	B mm inches	C mm inches	D mm inches	Fig.
24_N-352	103(E)		21.0 0.827	53.5 2.106		11.0 0.433	135
	103(E)	A/C	38.0 1.496	79.5 3.130		14.5 0.571	
	103	B	39.0 1.535	79.5 3.130		15.0 0.591	
	103	D	21.0 0.827	53.5 2.106		11.0 0.433	
24_N-47	104(E)		11.5 0.453	46.5 1.831		9.0 0.354	136
	104(E)	A/C	32.0 1.260	55.0 2.165		14.5 0.571	
	104	B	34.0 1.339	74.0 2.913		15.0 0.591	
	104	D	16.5 0.650	46.0 1.811		11.0 0.433	
	104(E)	M	40.5 1.594	64.0 2.520		14.0 0.551	
24_N-451	104(E)		21.5 0.846	54.0 2.126		11.0 0.433	135
	104(E)	A/C	37.0 1.457	68.0 2.677		14.5 0.571	
	104	B	39.0 1.535	78.0 3.071		15.0 0.591	
	104	D	21.5 0.846	54.0 2.126		11.0 0.433	
	104(E)	M	46.0 1.811	68.0 2.677		14.0 0.551	
	104	G	52.0 2.047	78.0 3.071		17.5 0.689	
24_N-452	104P(E)		22.5 0.886	50.0 1.969		11.0 0.433	
	104P(E)	A/C	38.0 1.496	68.0 2.677		14.5 0.571	
	104P	B	40.0 1.575	78.0 3.071		15.0 0.591	
	104P	D	22.5 0.886	50.0 1.969		11.0 0.433	
	104P(E)	M	47.0 1.850	68.0 2.677		14.0 0.551	
	104P	G	53.0 2.087	78.0 3.071		18.5 0.728	
24_N-651	106		35.5 1.398	77.5 3.051		14.5 0.571	135
	106	A/C	49.5 1.949	107.5 4.232		21.0 0.827	
	106	B	54.5 2.146	87.5 3.445		19.0 0.748	
	106	D	35.5 1.398	77.5 3.051		14.5 0.571	
	106	G	58.5 2.303	89.5 3.524		21.5 0.846	
24_N-652	106P		24.0 0.945	77.5 3.051		14.5 0.571	135
	106P	B	43.0 1.693	87.5 3.445		19.0 0.748	
	106P	G	47.0 1.850	82.5 3.248		21.5 0.846	



SUCOFLEX 100

Dimensioned sketches - connector drawings

PC2.4

HUBER+SUHNER connector type	Cable SUCOFLEX	Rugge- disation	A mm inches	B mm inches	C mm inches	D mm inches	Fig.
11_PC2.4-104	101(E)		23.0 0.906	55.0 2.165		9.5 0.374	150
11_PC2.4-109	101(E)	A	36.0 1.417	72.0 2.835		12.0 0.472	
11_PC2.4-110	101P(E)	A	36.0 1.417	72.0 2.835		12.0 0.472	
11_PC2.4-201	102(E)		23.0 0.906	55.0 2.165		9.5 0.374	
	102	D	23.0 0.906	55.0 2.165		9.5 0.374	
11_PC2.4-210	102(E)	A	36.0 1.417	72.0 2.835		12.0 0.472	

HUBER+SUHNER connector type	Cable SUCOFLEX	Rugge- disation	A mm inches	B mm inches	D mm inches	SW (AF.) mm inches	Fig.
21_PC2.4-104	101(E)		24.0 0.945	56.0 2.205	9.5 0.374	6.0 0.236	151
21_PC2.4-109	101(E)	A	37.0 1.457	72.0 2.835	12.0 0.472	8.0 0.315	
21_PC2.4-110	101P(E)	A	36.5 1.437	74.0 2.913	12.0 0.472	8.0 0.315	
21_PC2.4-201	102(E)		24.0 0.945	56.0 2.205	9.5 0.374	6.0 0.236	
	102	D	24.0 0.945	56.0 2.205	9.5 0.374	6.0 0.236	
21_PC2.4-210	102(E)	A	37.0 1.457	72.0 2.835	12.0 0.472	8.0 0.315	

HUBER+SUHNER connector type	Cable SUCOFLEX	Rugge- disation	A mm inches	B mm inches	C mm inches	D mm inches	Fig.
24_PC2.4-102	101(E)		24.0 0.945	56.0 2.205		9.5 0.374	152
24_PC2.4-201	102(E)		24.0 0.945	56.0 2.205		9.5 0.374	
	102	D	24.0 0.945	56.0 2.205		9.5 0.374	

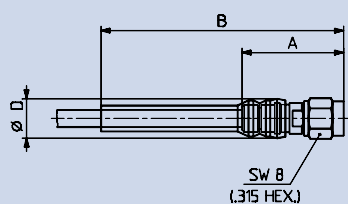


Fig. 150

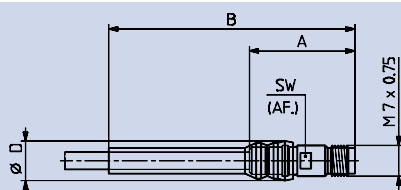


Fig. 151

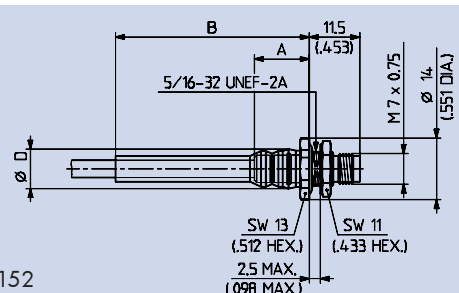


Fig. 152

SUCOFLEX 100

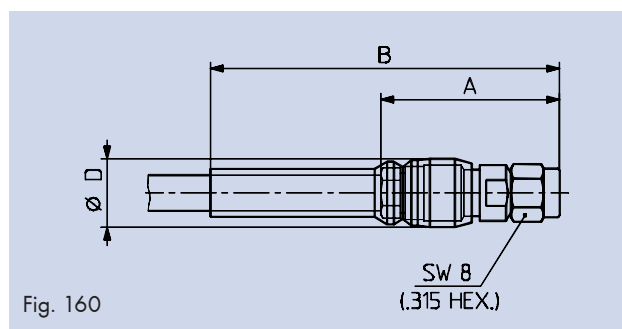
Dimensioned sketches - connector drawings

PC3.5

HUBER+SUHNER connector type	Cable SUCOFLEX	Rugge- disation	A		B		C		D		Fig.
			mm	inches	mm	inches	mm	inches	mm	inches	
11_PC3.5-203	102(E)		26.0	1.024	58.0	2.283			9.5	0.374	
	102	D	26.0	1.024	58.0	2.283			9.5	0.374	
11_PC3.5-31	103(E)		28.5	1.122	61.0	2.402			10.0	0.394	
	103(E)	A/C	52.0	2.047	89.0	3.504			13.5	0.531	
	103	B	51.0	2.008	89.0	3.504			15.0	0.591	
	103	D	33.5	1.319	61.0	2.402			11.0	0.433	
11_PC3.5-42	104(E)		28.5	1.122	56.0	2.205			10.5	0.413	160
	104(E)	A/C	49.0	1.929	74.0	2.913			14.5	0.571	
	104	B	51.0	2.008	84.0	3.307			15.0	0.591	
	104	D	33.5	1.319	56.0	2.205			11.0	0.433	
	104(E)	M	58.0	2.283	74.0	2.913			14.0	0.551	
	104	G	64.0	2.520	84.0	3.307			17.5	0.689	
11_PC3.5-43	104P(E)		31.0	1.220	59.0	2.323			10.5	0.413	
	104P(E)	A/C	51.5	2.028	77.0	3.031			14.5	0.571	
	104P	B	53.0	2.087	87.0	3.425			15.0	0.591	
	104P	D	36.0	1.417	59.0	2.323			11.0	0.433	
	104P(E)	M	60.5	2.382	77.0	3.031			14.0	0.551	
	104P	G	58.0	2.283	84.0	3.307			17.5	0.689	

Mechanical compatibility:

PC3.5 connectors can be mated with the connectors of the SK and SMA series even if they are not fully compatible.



SUCOFLEX 100

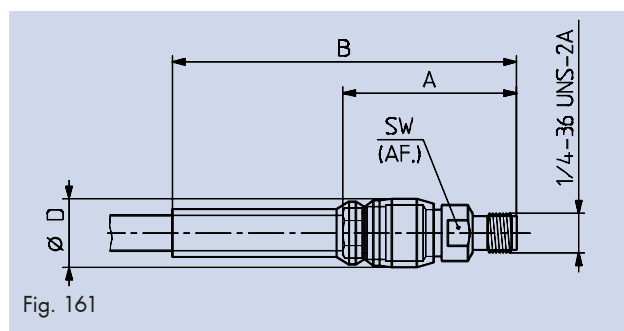
Dimensioned sketches - connector drawings

PC3.5

HUBER+SUHNER connector type	Cable SUCOFLEX	Rugge- disation	A mm inches	B mm inches	D mm inches	SW (AF.) mm inches	Fig.
21_PC3.5-203	102(E)		26.0 1.024	58.0 2.283	9.5 0.374	7.0 0.276	161
	102	D	26.0 1.024	58.0 2.283	9.5 0.374	7.0 0.276	
21_PC3.5-31	103(E)		28.0 1.102	60.0 2.362	10.0 0.394	8.0 0.315	
	103(E)	A/C	51.0 2.008	88.0 3.465	13.5 0.531	8.0 0.315	
	103	B	50.5 1.988	88.0 3.465	15.0 0.591	8.0 0.315	
	103	D	33.0 1.299	60.0 2.362	11.0 0.433	8.0 0.315	
21_PC3.5-42	104(E)		28.0 1.102	60.0 2.362	10.0 0.394	8.0 0.315	
	104(E)	A/C	48.5 1.909	78.0 3.071	14.5 0.571	8.0 0.315	
	104	B	50.5 1.988	88.0 3.465	15.0 0.591	8.0 0.315	
	104	D	33.0 1.299	60.0 2.362	11.0 0.433	8.0 0.315	
	104(E)	M	57.5 2.264	78.0 3.071	14.0 0.551	8.0 0.315	
	104	G	63.5 2.500	88.0 3.465	17.5 0.689	8.0 0.315	
21_PC3.5-43	104P(E)		31.0 1.220	59.0 2.323	10.0 0.394	8.0 0.315	
	104P(E)	A/C	51.5 2.028	77.0 3.031	14.5 0.571	8.0 0.315	
	104P	B	53.5 2.106	87.0 3.425	15.0 0.591	8.0 0.315	
	104P	D	36.0 1.417	59.0 2.323	11.0 0.433	8.0 0.315	
	104P(E)	M	60.5 2.382	77.0 3.031	14.0 0.551	8.0 0.315	
	104P	G	66.5 2.618	87.0 3.425	17.5 0.689	8.0 0.315	

Mechanical compatibility:

PC3.5 connectors can be mated with the connectors of the SK and SMA series even if they are not fully compatible.

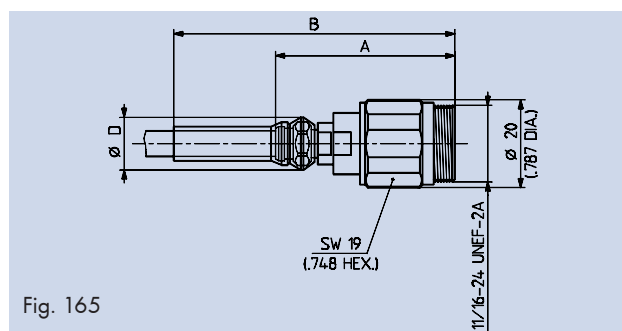


SUCOFLEX 100

Dimensioned sketches - connector drawings

PC7

HUBER+SUHNER connector type	Cable SUCOFLEX	Rugge- disation	A mm inches	B mm inches	C mm inches	D mm inches	Fig.
11_PC7-31	103(E)		41.0 1.614	79.0 3.110		10.5 0.413	165
	103(E)	A/C	59.0 2.323	98.0 3.858		14.5 0.571	
	103	B	58.5 2.303	98.0 3.858		14.5 0.571	
	103	D	41.0 1.614	79.0 3.110		10.5 0.413	
11_PC7-41	104(E)		41.0 1.614	70.0 2.756		11.0 0.433	
	104(E)	A/C	56.5 2.224	88.0 3.465		14.5 0.571	
	104	B	58.5 2.303	98.0 3.858		15.0 0.591	
	104	D	41.0 1.614	70.0 2.756		11.0 0.433	
	104(E)	M	65.0 2.559	88.0 3.465		14.0 0.551	
	104	G	65.5 2.579	98.0 3.858		17.5 0.689	
11_PC7-42	104P(E)		42.0 1.654	71.0 2.795		11.0 0.433	
	104P(E)	A/C	57.5 2.264	89.0 3.504		14.5 0.571	
	104P	B	59.5 2.343	99.0 3.898		15.0 0.591	
	104P	D	42.0 1.654	71.0 2.795		11.0 0.433	
	104P(E)	M	66.0 2.598	89.0 3.504		14.0 0.551	
	104P	G	66.5 2.618	99.0 3.898		17.5 0.689	
11_PC7-651	106		54.0 2.126	107.0 4.213		14.5 0.571	
	106	A/C	68.0 2.677	117.0 4.606		21.0 0.827	
	106	B	73.0 2.874	117.0 4.606		19.0 0.748	
	106	D	54.0 2.126	107.0 4.213		14.5 0.571	
	106	G	77.0 3.031	112.0 4.409		21.5 0.846	
11_PC7-652	106P		54.0 2.126	107.0 4.213		14.5 0.571	
	106P	A/C	68.0 2.677	117.0 4.606		21.0 0.827	
	106P	B	73.0 2.874	117.0 4.606		19.0 0.748	
	106P	D	54.0 2.126	107.0 4.213		14.5 0.571	
	106P	G	77.0 3.031	112.0 4.409		21.5 0.846	



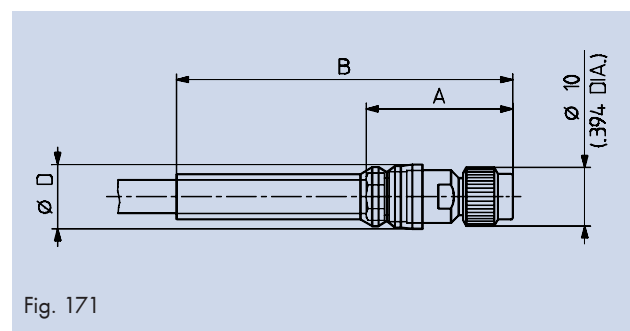
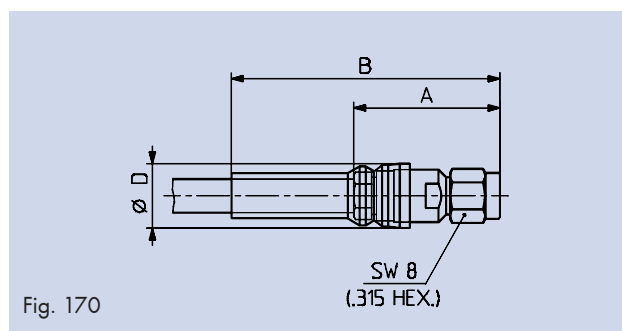
SUCOFLEX 100

Dimensioned sketches - connector drawings

SMA

HUBER+SUHNER connector type	Cable SUCOFLEX	Rugge- disation	A mm inches	B mm inches	C mm inches	D mm inches	Fig.
11_SMA-153	101P(E)		27.0 1.063	58.0 2.283		10.0 0.394	170
11_SMA-218	102(E)		26.0 1.024	55.0 2.165		8.0 0.315	
	102	D	26.0 1.024	55.0 2.165		8.0 0.315	
11_SMA-262	102(E)	A	36.0 1.417	74.0 2.913		12.0 0.472	171
11_SMA-367	103(E)		25.0 0.984	51.0 2.008		10.0 0.394	
	103(E)	A/C	51.0 2.008	78.0 3.071		13.5 0.531	
	103	B	48.0 1.890	78.0 3.071		15.0 0.591	
	103	D	25.0 0.984	51.0 2.008		10.0 0.394	170
11_SMA-371	103(E)		25.0 0.984	51.0 2.008		10.0 0.394	
	103	A/C	51.0 2.008	78.0 3.071		13.5 0.531	
	103	B	48.0 1.890	78.0 3.071		15.0 0.591	
	103	D	30.0 1.181	51.0 2.008		11.0 0.433	170
11_SMA-451	104(E),104P(E)		25.0 0.984	51.0 2.008		10.0 0.394	
11_SMA-456 ¹⁾	104(E),104P(E)	A/C	45.5 1.791	69.5 2.736		14.5 0.571	
	104, 104P	B	47.5 1.870	88.0 3.465		15.0 0.591	
	104, 104P	D	30.0 1.181	51.0 2.008		11.0 0.433	
	104(E),104P(E)	M	54.5 2.146	69.5 2.736		14.0 0.551	171
	104, 104P	G	66.5 2.618	94.0 3.701		17.5 0.689	
11_SMA-652	106, 106P		58.5 2.303	102.0 4.016		15.0 0.591	
11_SMA-653	106	A/C	73.0 2.874	122.0 4.803		22.0 0.866	
	106	B	72.0 2.835	112.0 4.409		19.0 0.748	
	106, 106P	D	58.5 2.303	102.0 4.016		15.0 0.591	171
	106	G	81.5 3.209	107.0 4.213		22.5 0.886	
11_SMA-468	104(E)		25.0 0.984	51.0 2.008		10.0 0.394	
	104(E)	A/C	45.5 1.791	69.5 2.736		14.5 0.571	
	104	B	47.5 1.870	88.0 3.465		15.0 0.591	171
	104	D	25.0 0.984	51.0 2.008		10.0 0.394	

1) Note: Connector 11_SMA-456 with 3 safety holes (Ø 1 mm)



SUCOFLEX 100

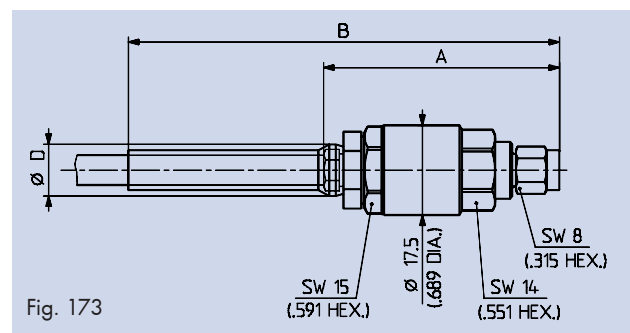
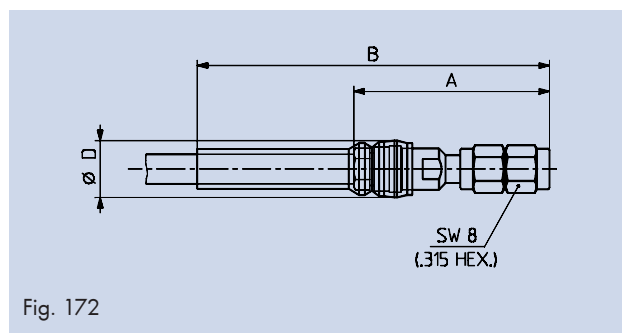
Dimensioned sketches - connector drawings

SMA

HUBER+SUHNER connector type	Cable SUCOFLEX	Rugge- disaiton	A mm inches	B mm inches	C mm inches	D mm inches	Fig.
11_SMA-452 ¹⁾	104P(E)		30.0 1.181	58.0 2.283		11.0 0.433	172
	104P(E)	A/C	46.0 1.811	67.5 2.657		14.5 0.571	
	104P	B	48.0 1.890	88.5 3.484		15.0 0.591	
	104P	D	30.0 1.181	58.0 2.283		11.0 0.433	
	104P	G	66.0 2.598	94.5 3.720		17.5 0.689	
11_SMA-457 ²⁾	104P(E)		51.0 2.008	84.0 3.307		11.0 0.433	173
	104P(E)	A/C	66.5 2.618	102.0 4.016		14.5 0.571	
	104P	B	68.5 2.697	112.0 4.409		15.0 0.591	
	104P	D	51.0 2.008	84.0 3.307		11.0 0.433	
	104P	G	81.5 3.209	112.0 4.409		18.5 0.728	
11_SMA-654 ²⁾	106P		59.0 2.323	112.0 4.409		14.5 0.571	
	106P	B	78.0 3.071	122.0 4.803		19.0 0.748	
	106P	D	59.0 2.323	112.0 4.409		14.5 0.571	
	106P	G	82.0 3.229	117.0 4.606		21.5 0.846	

1) Note: In case of phase matching, dimensions A and B can be maximal 8.35 mm longer.

2) Note: In case of phase matching, dimensions A and B can be maximal ± 2 mm.



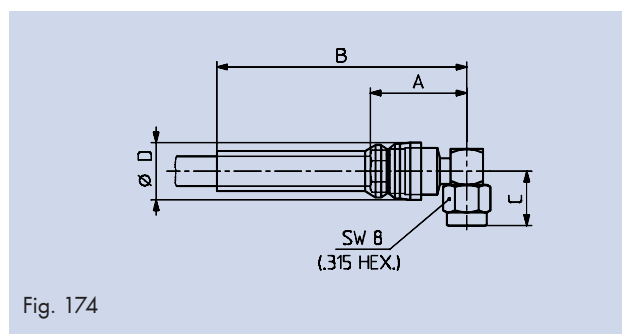
SUCOFLEX 100

Dimensioned sketches - connector drawings

SMA

HUBER+SUHNER connector type	Cable SUCOFLEX	Rugge- disation	A mm inches	B mm inches	C mm inches	D mm inches	Fig.
16_SMA-254	102(E)		21.5 0.846	53.0 2.087	10.5 0.413	9.5 0.374	174
	102	D	21.5 0.846	53.0 2.087	10.5 0.413	9.5 0.374	
16_SMA-371	103(E)		20.0 0.787	46.0 1.811	10.5 0.413	10.0 0.394	
	103(E)	A/C	23.0 0.906	74.0 2.913	10.5 0.413	13.5 0.531	
	103	B	43.0 1.693	74.0 2.913	10.5 0.413	15.0 0.591	
	103	D	25.5 1.004	46.0 1.811	10.5 0.413	10.0 0.394	
16_SMA-451	104(E)		19.0 0.748	47.0 1.850	10.5 0.413	10.0 0.394	
16_SMA-456 ¹⁾	104(E)	A/C	39.5 1.555	65.0 2.559	10.5 0.413	14.5 0.571	
	104	B	41.5 1.634	75.0 2.953	10.5 0.413	15.0 0.591	
	104	D	24.0 0.945	47.0 1.850	10.5 0.413	11.0 0.433	
	104(E)	M	48.0 1.890	65.0 2.559	10.5 0.413	14.0 0.551	
	104	G	54.5 2.146	86.0 3.386	10.5 0.413	17.5 0.689	
16_SMA-452	104P(E)		25.0 0.984	58.0 2.283	10.5 0.413	9.5 0.374	
	104P(E)	A/C	45.5 1.791	76.0 2.992	10.5 0.413	14.5 0.571	
	104P	B	47.5 1.870	86.0 3.386	10.5 0.413	15.0 0.591	
	104P	D	30.0 1.181	58.0 2.283	10.5 0.413	11.0 0.433	
	104P(E)	M	54.5 2.146	76.0 2.992	10.5 0.413	14.0 0.551	
16_SMA-652	106		39.5 1.555	83.0 3.268	10.5 0.413	14.5 0.571	
	106	B	58.5 2.303	104.0 4.094	10.5 0.413	15.0 0.591	
	106	D	39.5 1.555	84.0 3.307	10.5 0.413	15.0 0.591	
	106	G	57.5 2.264	99.0 3.898	10.5 0.413	15.0 0.591	

1) Note: Connector 16_SMA-456 with 3 safety holes (Ø 1 mm).

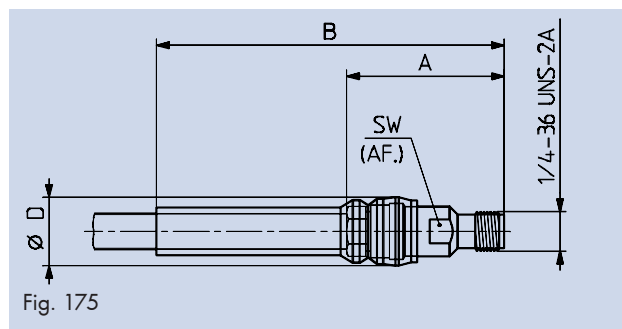


SUCOFLEX 100

Dimensioned sketches - connector drawings

SMA

HUBER+SUHNER connector type	Cable SUCOFLEX	Rugge- disation	A mm inches	B mm inches	D mm inches	SW (AF.) mm inches	Fig.
21_SMA-204	102(E)		24.5 0.965	56.0 2.205	9.0 0.354	5.5 0.217	175
	102	D	24.5 0.965	56.0 2.205	9.0 0.354	5.5 0.217	
21_SMA-371	103(E)		25.5 1.004	56.0 2.205	10.0 0.394	7.0 0.276	
	103(E)	A/C	48.5 1.909	84.0 3.307	13.5 0.531	7.0 0.276	
	103	B	48.0 1.890	83.0 3.268	15.0 0.591	7.0 0.276	
	103	D	30.5 1.201	56.0 2.205	10.0 0.394	7.0 0.276	
21_SMA-451	104(E),104P(E)		25.5 1.004	49.0 1.929	10.0 0.394	7.0 0.276	
	104(E),104P(E)	A/C	46.0 1.811	67.0 2.638	14.5 0.571	7.0 0.276	
	104, 104P	B	48.0 1.890	77.0 3.031	15.0 0.591	7.0 0.276	
	104, 104P	D	30.5 1.201	49.0 1.929	11.0 0.433	7.0 0.276	
	104(E),104P(E)	M	54.5 2.146	67.0 2.638	14.0 0.551	7.0 0.276	
	104, 104P	G	61.0 2.402	77.0 3.031	17.5 0.689	7.0 0.276	
21_SMA-651	106		57.5 2.264	96.0 3.780	15.0 0.591	13.0 0.512	
	106	A/C	71.5 2.815	117.0 4.606	21.0 0.827	13.0 0.512	
	106	B	76.5 3.012	107.0 4.213	19.0 0.748	13.0 0.512	
	106	D	57.5 2.264	96.0 3.780	15.0 0.591	13.0 0.512	
	106	G	80.5 3.169	102.0 4.016	21.5 0.846	13.0 0.512	
21_SMA-652	106P		48.5 1.909	93.0 3.661	14.5 0.571	11.0 0.433	
	106P	B	67.5 2.657	103.0 4.055	18.5 0.728	11.0 0.433	
	106P	G	72.0 2.835	98.0 3.858	21.5 0.846	11.0 0.433	

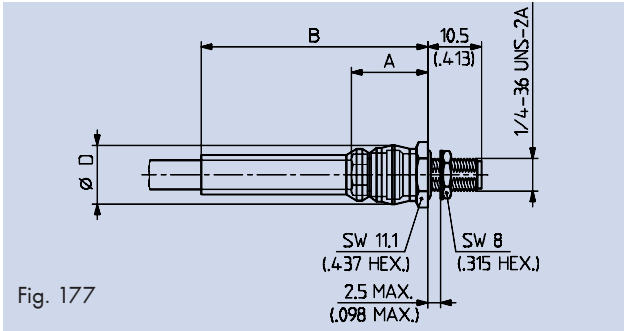
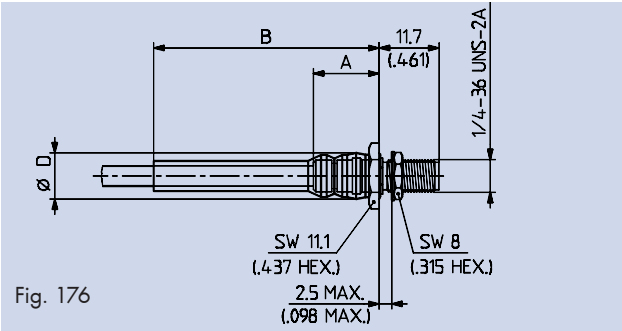


SUCOFLEX 100

Dimensioned sketches - connector drawings

SMA

HUBER+SUHNER connector type	Cable SUCOFLEX	Rugge- disation	A		B		C		D		Fig.
			mm	inches	mm	inches	mm	inches	mm	inches	
24_SMA-210	102(E)		13.0	0.512	44.0	1.732			9.0	0.354	176
	102	D	13.0	0.512	44.0	1.732			9.0	0.354	
24_SMA-371	103(E)		15.0	0.591	44.0	1.732			10.5	0.413	177
	103(E)	A/C	38.0	1.496	72.0	2.835			13.5	0.531	
	103	B	37.5	1.476	72.0	2.835			15.0	0.591	
	103	D	20.0	0.787	44.0	1.732			11.0	0.433	
24_SMA-451	104(E),104P(E)		15.0	0.591	46.0	1.811			10.5	0.413	
	104(E),104P(E)	A/C	35.5	1.398	64.0	2.520			14.5	0.571	
	104, 104P	B	37.5	1.476	74.0	2.913			15.0	0.591	
	104, 104P	D	20.0	0.787	46.0	1.811			11.0	0.433	
	104(E),104P(E)	M	54.5	2.146	75.0	2.953			14.0	0.551	
	104, 104P	G	50.5	1.988	74.0	2.913			17.5	0.689	
24_SMA-651	106P		49.0	1.929	120.0	4.724			14.5	0.571	
	106P	D	49.0	1.929	120.0	4.724			14.5	0.571	



SUCOFLEX 100

SUCOFLEX 100

Dimensioned sketches - connector drawings

TNC

HUBER+SUHNER connector type	Cable SUCOFLEX	Rugge- disation	A mm inches	B mm inches	C mm inches	D mm inches	Fig.
11_TNC-222	102(E)		27.0 1.063	61.0 2.402		9.5 0.374	190
	102	D	27.0 1.063	61.0 2.402		9.5 0.374	
11_TNC-353	103(E)		28.0 1.102	30.0 1.181		10.5 0.413	191
	103(E)	A/C	51.5 2.028	88.0 3.456		13.5 0.531	
	103	B	50.0 1.969	88.0 3.456		15.0 0.591	
	103	D	33.0 1.299	60.0 2.362		11.0 0.433	
11_TNC-456	104(E),104P(E)		28.0 1.102	62.0 2.441		9.0 0.354	
11_TNC-457	104(E),104P(E)	A/C	48.5 1.909	80.0 3.150		14.5 0.571	191
	104, 104P	B	50.5 1.988	90.0 3.543		15.0 0.591	
	104, 104P	D	33.0 1.299	62.0 2.441		11.0 0.433	
	104(E),104P(E)	M	57.5 2.264	80.0 3.150		14.0 0.551	
	104, 104P	G	63.5 2.500	90.0 3.543		17.5 0.689	
11_TNC-651	106	A/C	80.0 3.150	126.0 4.961		21.0 0.827	192
11_TNC-653	106, 106P		44.5 1.752	92.0 3.622		14.5 0.571	191
11_TNC-654	106, 106P	B	58.0 2.283	102.0 4.016		19.0 0.748	
	106	D	44.5 1.752	92.0 3.622		14.5 0.571	
	106, 106P	G	67.5 2.657	97.0 3.819		21.5 0.846	

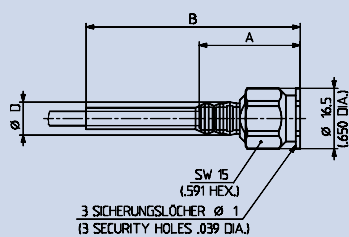


Fig. 190

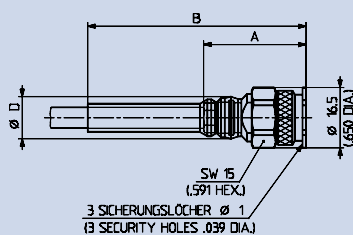


Fig. 191

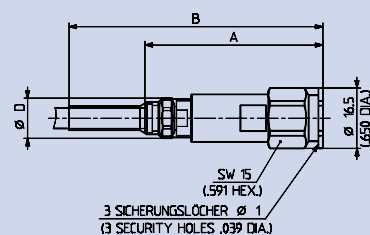


Fig. 192

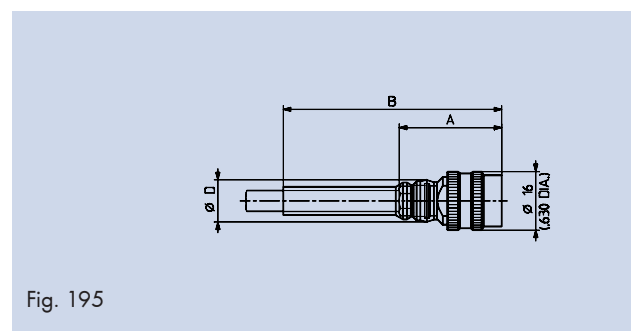
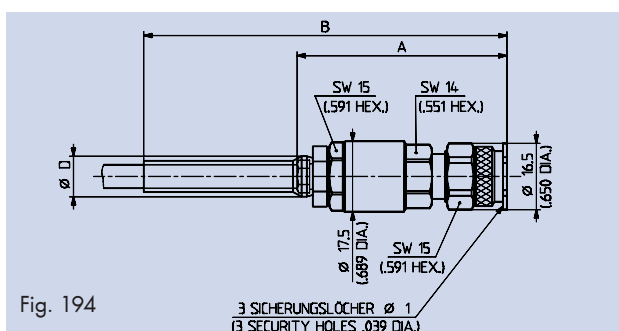
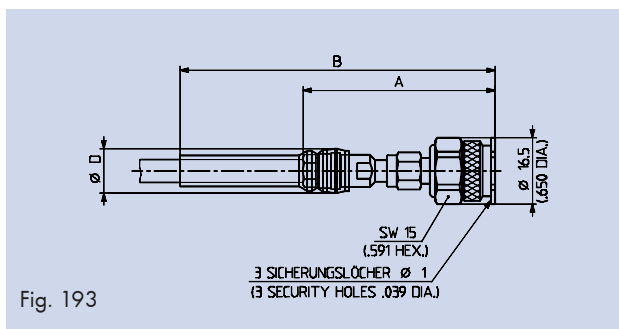
SUCOFLEX 100

Dimensioned sketches - connector drawings

TNC

HUBER+SUHNER connector type	Cable SUCOFLEX	Rugge- disation	A mm inches	B mm inches	C mm inches	D mm inches	Fig.
11 TNC-458 ¹⁾	104P(E)		48.0 1.890	80.0 3.150		9.0 0.354	193
	104P(E)	A/C	68.0 2.677	98.0 3.858		14.5 0.571	
	104P	B	70.0 2.756	108.0 4.252		15.0 0.591	
	104P	G	83.0 3.268	108.0 4.252		17.5 0.689	
11 TNC-459 ²⁾	104P(E)		57.5 2.264	90.0 3.543		11.0 0.433	194
	104P(E)	A/C	73.0 2.874	108.0 4.252		14.5 0.571	
	104P	B	75.0 2.953	118.0 4.646		15.0 0.591	
	104P	D	57.5 2.264	90.0 3.543		11.0 0.433	
	104P	G	88.0 3.465	118.0 4.646		18.5 0.728	
11 TNC-655 ²⁾	106P		65.5 2.579	118.0 4.646		14.5 0.571	195
	106P	B	84.5 3.327	128.0 5.040		19.0 0.748	
	106P	D	65.5 2.579	118.0 4.646		14.5 0.571	
	106P	G	88.5 3.484	123.0 4.843		21.5 0.846	
11 TNC-417	104(E),104P(E)		28.0 1.102	62.0 2.441		9.0 0.354	195
11 TNC-418	104(E),104P(E)	A/C	48.5 1.909	80.0 3.150		14.5 0.571	
	104, 104P	B	50.5 1.988	90.0 3.543		15.0 0.591	
	104, 104P	D	28.0 1.102	62.0 2.441		9.0 0.354	

- 1) Note: In case of phase matching, dimensions A and B can be maximal 0.85 mm longer.
2) Note: In case of phase matching, dimensions A and B can be maximal ± 2 mm.



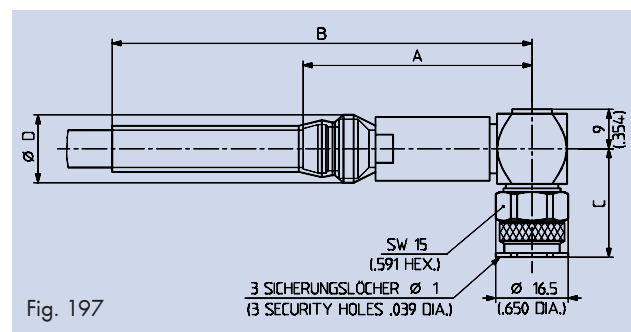
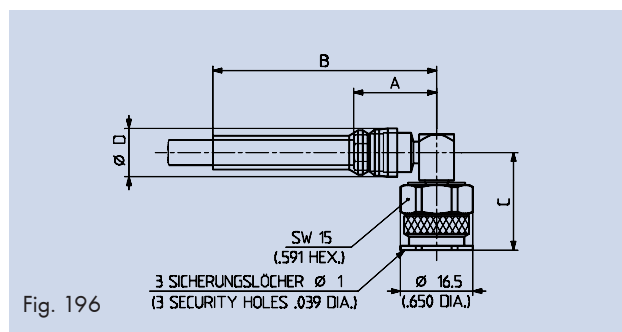
SUCOFLEX 100

SUCOFLEX 100

Dimensioned sketches - connector drawings

TNC

HUBER+SUHNER connector type	Cable SUCOFLEX	Rugge- disation	A mm inches	B mm inches	C mm inches	D mm inches	Fig.
16_TNC-454	104(E)		19.0 0.748	45.0 1.772	22.5 0.886	9.5 0.374	196
	104(E)	A/C	39.5 1.555	63.0 2.480	22.5 0.886	14.5 0.571	
	104	B	41.5 1.634	82.0 3.228	22.5 0.886	15.0 0.591	
	104	D	23.5 0.925	57.0 2.244	22.5 0.886	11.0 0.433	
	104(E)	M	48.0 1.890	63.0 2.480	22.5 0.886	14.0 0.551	
	104	G	54.5 2.146	86.0 3.386	22.5 0.886	17.5 0.689	
16_TNC-651	106		52.5 2.067	92.0 3.622	25.0 0.984	14.5 0.571	197
	106	B	66.0 2.598	112.0 4.409	25.0 0.984	19.0 0.748	
	106	D	52.5 2.067	92.0 3.622	25.0 0.984	14.5 0.571	
	106	G	75.5 2.972	107.0 4.213	25.0 0.984	21.5 0.846	
16_TNC-655	106P		52.5 2.067	92.0 3.622	25.0 0.984	14.5 0.571	
	106P	B	66.0 2.598	112.0 4.409	25.0 0.984	19.0 0.748	
	106P	D	52.5 2.067	92.0 3.622	25.0 0.984	14.5 0.571	197
	106P	G	75.5 2.972	107.0 4.213	25.0 0.984	21.5 0.846	
16_TNC-653	106	A/C	66.0 2.598	97.0 3.819	25.0 0.984	20.0 0.787	

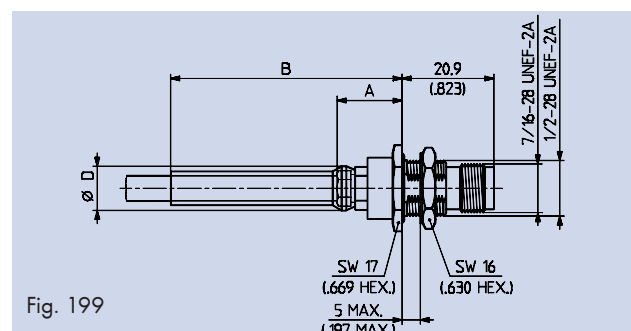
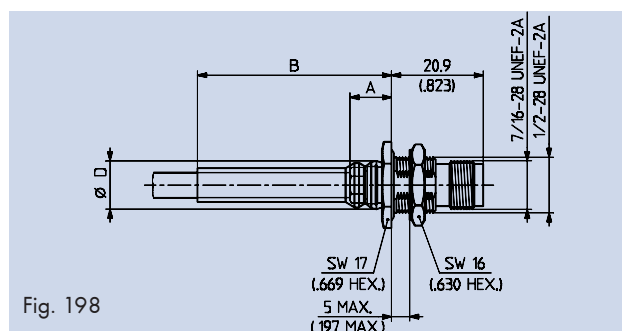


SUCOFLEX 100

Dimensioned sketches - connector drawings

TNC

HUBER+SUHNER connector type	Cable SUCOFLEX	Rugge- disation	A mm inches	B mm inches	C mm inches	D mm inches	Fig.
24_TNC-222	102(E)		35.5 1.398	66.0 2.598		9.5 0.374	198
	102	D	34.0 1.339	66.0 2.598		9.5 0.374	
24_TNC-353	103(E)		11.5 0.453	44.0 1.732		10.5 0.413	
	103(E)	A/C	35.0 1.378	72.0 2.835		13.5 0.531	
	103	B	34.0 1.339	72.0 2.835		15.0 0.591	
	103	D	16.5 0.650	44.0 1.732		10.0 0.394	199
24_TNC-456	104P(E)		15.0 0.591	52.0 2.047		9.5 0.374	
	104P(E)	A/C	35.5 1.398	70.0 2.756		14.5 0.571	
	104P	B	37.5 1.476	80.0 3.150		15.0 0.591	
	104P(E)	M	44.0 1.732	70.0 2.756		14.0 0.551	
	104P	G	50.5 1.988	80.0 3.150		17.5 0.689	
24_TNC-457	104(E)		9.5 0.374	40.0 1.575		9.0 0.374	198
	104(E)	A/C	30.5 1.201	58.0 2.283		14.5 0.571	
	104	B	32.0 1.260	68.0 2.677		15.0 0.591	
	104	D	14.5 0.571	40.0 1.575		13.0 0.512	
	104(E)	M	39.0 1.535	58.0 2.283		14.0 0.551	
	104	G	45.0 1.772	68.0 2.677		17.5 0.689	199
24_TNC-651	106	A/C	61.0 2.402	110.0 4.331		21.0 0.827	
24_TNC-653	106		24.5 0.965	74.0 2.913		14.5 0.571	
	106	B	38.0 1.496	84.0 3.307		19.0 0.748	
	106	D	24.5 0.965	74.0 2.913		14.5 0.571	
	106	G	47.5 1.870	79.0 3.110		21.5 0.846	199
24_TNC-654	106P		24.5 0.965	74.0 2.913		14.5 0.571	
	106P	D	24.5 0.965	74.0 2.913		14.5 0.571	
	106P	G	47.5 1.870	79.0 3.110		21.5 0.846	



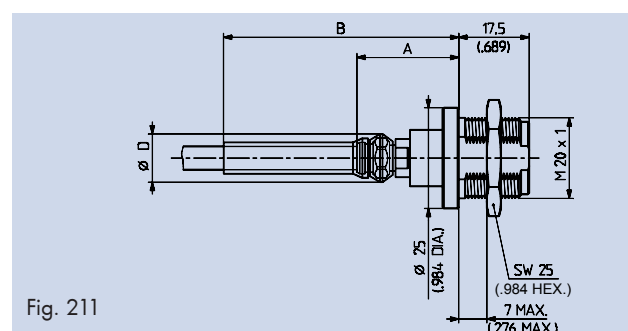
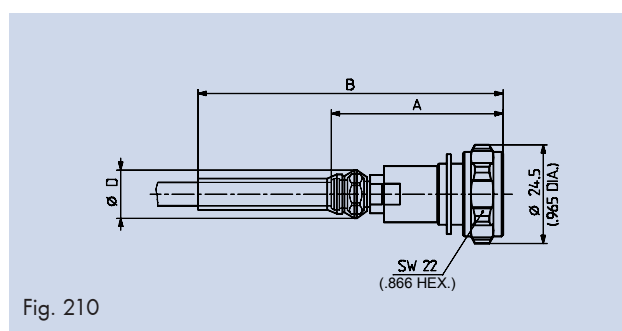
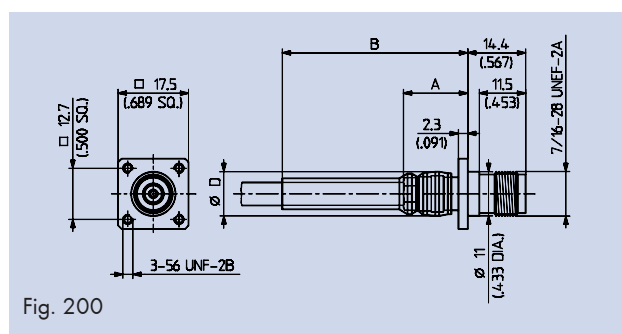
SUCOFLEX 100

SUCOFLEX 100

Dimensioned sketches - connector drawings

TNC/4195

HUBER+SUHNER connector type	Cable SUCOFLEX	Rugge- disation	A mm inches	B mm inches	C mm inches	D mm inches	Fig.
25_TNC-452	104(E)		16.0 0.630	49.0 1.929		10.5 0.413	200
	104(E)	A/C	36.5 1.437	67.0 2.638		14.5 0.571	
	104	B	38.5 1.516	77.0 3.031		15.0 0.591	
	104	D	21.0 0.827	49.0 1.929		11.0 0.433	
	104(E)	M	45.5 1.791	67.0 2.638		14.0 0.551	
	104	G	51.5 2.028	77.0 3.031		17.5 0.689	
11_4195-41	104(E)		42.5 1.673	75.0 2.953		11.0 0.433	210
	104(E)	A/C	58.0 2.283	93.0 3.661		14.5 0.571	
	104	B	60.0 2.362	103.0 4.055		15.0 0.591	
	104	D	42.5 1.673	75.0 2.953		11.0 0.433	
	104(E)	M	66.5 2.618	93.0 3.661		14.0 0.551	
	104	G	73.0 2.874	103.0 4.055		17.5 0.689	
11_4195-602	106		59.0 2.323	113.0 4.448		14.5 0.571	210
	106	A/C	87.0 3.426	133.0 5.236		21.0 0.827	
	106	B	72.5 2.855	133.0 5.236		19.0 0.748	
	106	D	59.0 2.323	113.0 4.448		14.5 0.571	
	106	G	82.0 3.229	118.0 4.645		21.5 0.846	
24_4195-41	104(E)		25.5 1.004	57.0 2.244		11.0 0.433	211
	104(E)	A/C	41.0 1.614	75.0 2.953		14.5 0.571	
	104	B	43.0 1.693	85.0 3.346		15.0 0.591	
	104	D	25.5 1.004	57.0 2.244		11.0 0.433	
	104(E)	M	49.5 1.949	75.0 2.953		14.0 0.551	
	104	G	56.0 2.205	85.0 3.346		17.5 0.689	

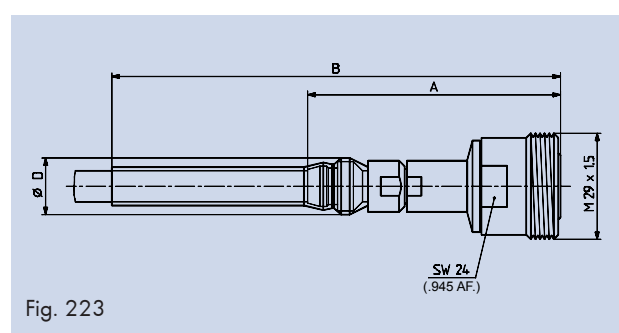
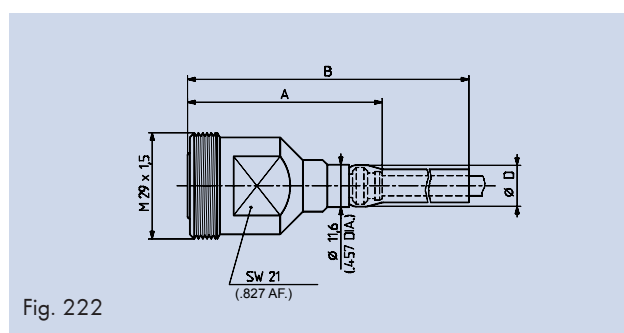
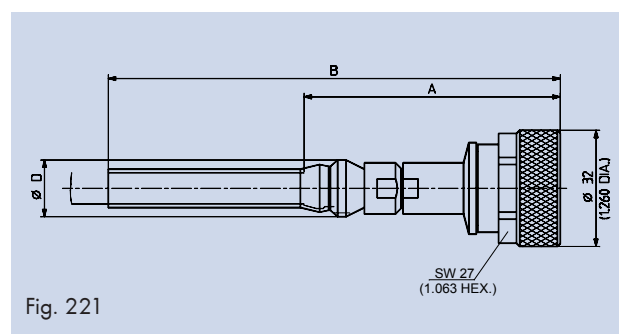
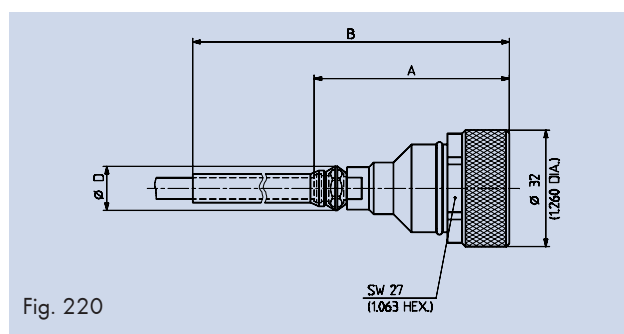


SUCOFLEX 100

Dimensioned sketches - connector drawings

716

HUBER+SUHNER connector type	Cable SUCOFLEX	Rugge- disation	A mm inches	B mm inches	C mm inches	D mm inches	Fig.
11_716-401	104(E)		53.5 2.106	86.0 3.386		11.0 0.433	220
	104	A/C	69.0 2.717	104.0 4.094		14.5 0.571	
	104	D	53.5 2.106	86.0 3.386		11.0 0.433	
11_716-402	104P(E)		57.5 2.264	90.0 3.543		11.0 0.433	220
	104P	A/C	73.0 2.874	108.0 4.252		14.5 0.571	
	104P	D	57.5 2.264	90.0 3.543		11.0 0.433	
11_716-61	106		70.0 2.756	123.0 4.843		14.5 0.571	221
	106	A/C	84.0 3.307	143.0 5.630		21.0 0.827	
	106	B	83.5 3.287	133.0 5.236		19.0 0.748	
	106	D	70.0 2.756	123.0 4.843		14.5 0.571	
	106	G	93.0 3.661	128.0 5.039		21.5 0.846	
21_716-401	104(E)		53.0 2.087	86.0 3.386		11.0 0.433	222
	104	A/C	68.5 2.697	104.0 4.094		14.5 0.571	
	104	D	53.0 2.087	86.0 3.386		11.0 0.433	
21_716-402	104P(E)		57.0 2.244	90.0 3.543		11.0 0.433	222
	104P	A/C	72.5 2.854	108.0 4.252		14.5 0.571	
	104P	D	57.0 2.244	90.0 3.543		11.0 0.433	
21_716-61	106		69.5 2.736	122.0 4.803		14.5 0.571	223
	106	A/C	83.5 3.287	142.0 5.591		21.0 0.827	
	106	B	83.0 3.268	132.0 5.157		19.0 0.748	
	106	D	69.5 2.736	122.0 4.803		14.5 0.571	
	106	G	92.5 3.462	127.0 5.000		21.5 0.846	



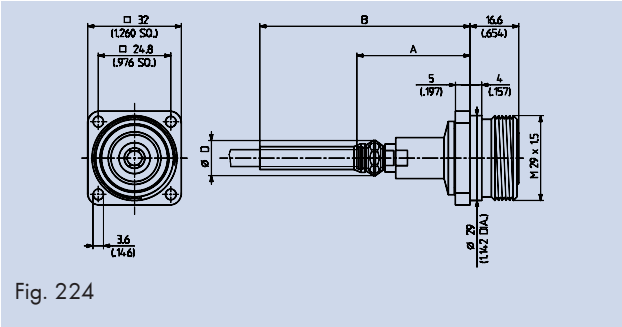
SUCOFLEX 100

SUCOFLEX 100

Dimensioned sketches - connector drawings

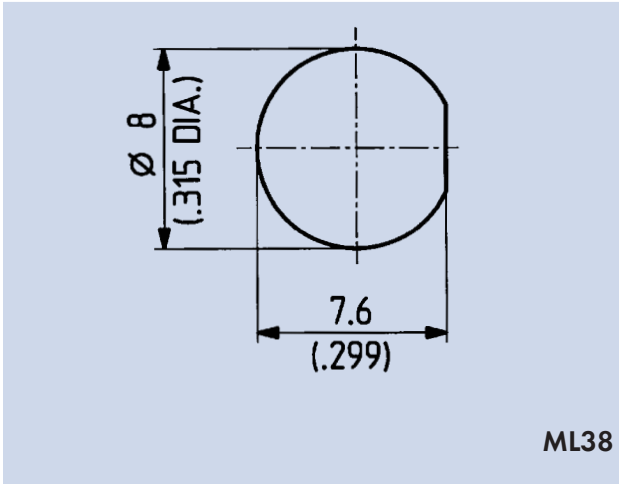
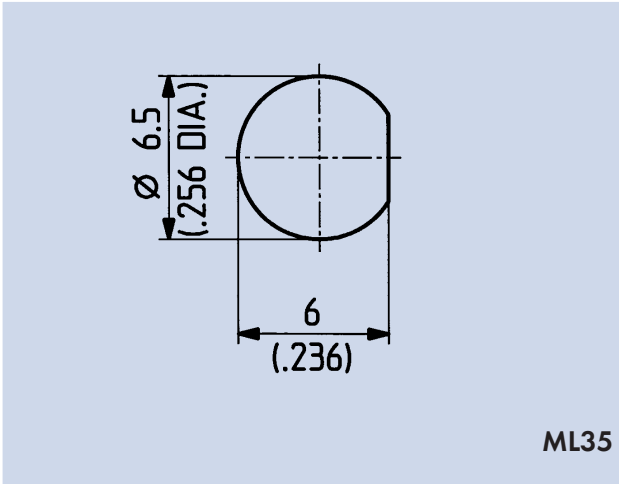
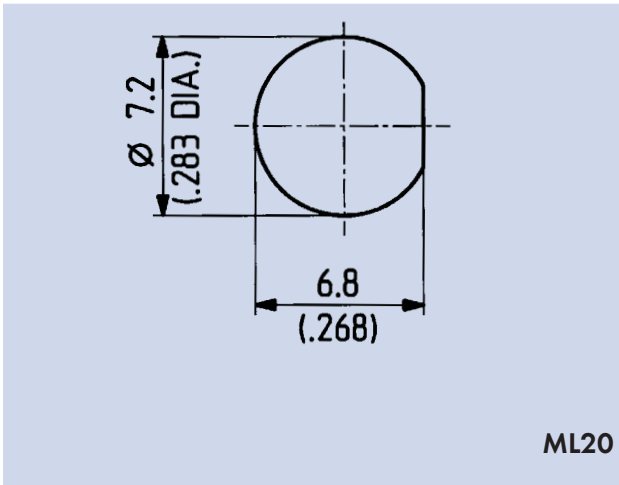
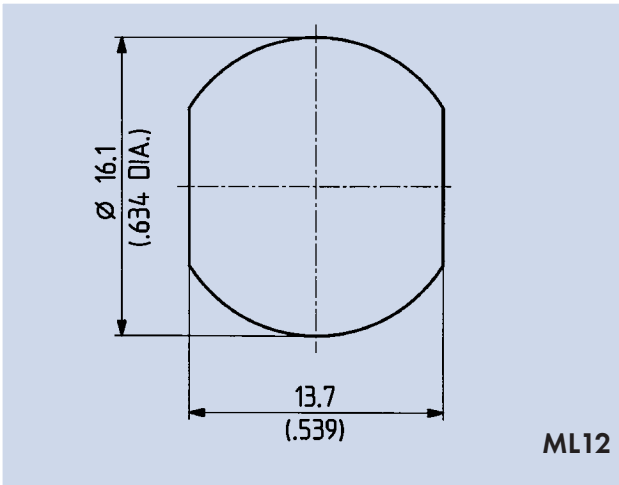
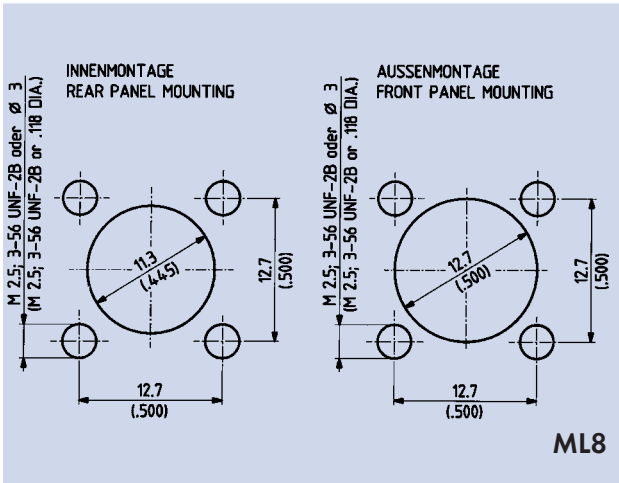
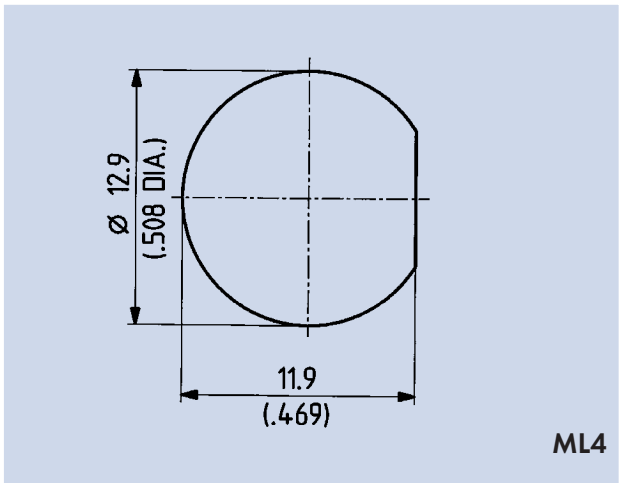
716

HUBER+SUHNER connector type	Cable SUCOFLEX	Rugge- disation	A		B		C		D		Fig.
			mm	inches	mm	inches	mm	inches	mm	inches	
25_716-401	104(E)		39.0	1.535	70.0	2.756			11.0	0.433	224
	104(E)	A/C	54.5	2.146	88.0	3.465			14.5	0.571	
	104	B	56.5	2.224	98.0	3.858			15.0	0.591	
	104	D	39.0	1.535	70.0	2.756			11.0	0.433	
	104(E)	M	63.0	2.480	88.0	3.465			14.0	0.551	
	104	G	69.5	2.736	98.0	3.858			17.5	0.689	



SUCOFLEX 100

Mounting holes



Additional notes

SUCOFLEX® 300

The light weight, high performance cable assembly

Content

Product description.....	167
Features and benefits.....	167
Overview of available SUCOFLEX 300 cable types.....	167
Cable assembly design	168
Cable attenuation.....	168
Assembly insertion loss	169
Assembly VSWR.....	169
Cable assembly identification	169
Spaceflight requirements.....	169
Mounting holes.....	170
Technical Data	
SUCOFLEX 301	171
SUCOFLEX 302 / 302D	174
SUCOFLEX 304 / 304D	176



SUCOFLEX® 300

The lightweight, high performance microwave cable assembly

Product description

The SUCOFLEX 300 lightweight, low-loss flexible microwave cable assemblies are high-end products designed to meet the stringent needs of space flights systems (e.g. satellites) and aerospace systems (aircraft, helicopters, missiles), which are subjected to extremely severe operating conditions.

The 300 series offers a consistently outstanding mechanical and electrical performance, stability and reliability up to 18 GHz. The added feature of this SUCOFLEX type is a weight reduction of up to 40% compared to our conventional products.



Features and benefits

For space applications

- Assemblies produced in a clean environment room
- Specifically designed lightweight connectors
- Extensive testing of assemblies
- High-end assemblies approved by Europe's leading satellite manufacturers
- Ruggedisations available on request

For defence applications

- Lightweight reduces overall system weight and aids portability
- Rugged connectors made for easy serviceability
- Specialised range of connectors, which is being continuously extended
- Comprehensive tested product range
- High-end product approved for Europe's most sophisticated military aircraft
- Additional armours provide increased crush and abrasion resistance
- Ruggedisations available on request

HUBER+SUHNER type	Operating frequency (GHz)	Temperature range		Outer diameter (mm)	Nom. attenuation 18 GHz/25 °C (dB/m)	Bending radii	
		minimum (°C)	maximum (°C)			static (mm)	dyn. (mm)
SUCOFLEX_301	18	-55	+125	3.5	2.0	15	20
SUCOFLEX_302	18	-55	+125	3.7	1.9	20	30
SUCOFLEX_304	18	-55	+125	5.4	1.2	20	50

Please contact your local HUBER+SUHNER partner for more specific information.

SUCOFLEX® 300 - Lightweight Series

SUCOFLEX 300 Microwave Cable Assemblies offer a lightweight connection solution combined with a low loss. The weight is reduced up to 40% compared to conventional low loss cables assemblies. These features make it ideal for aerospace and spaceflight applications.

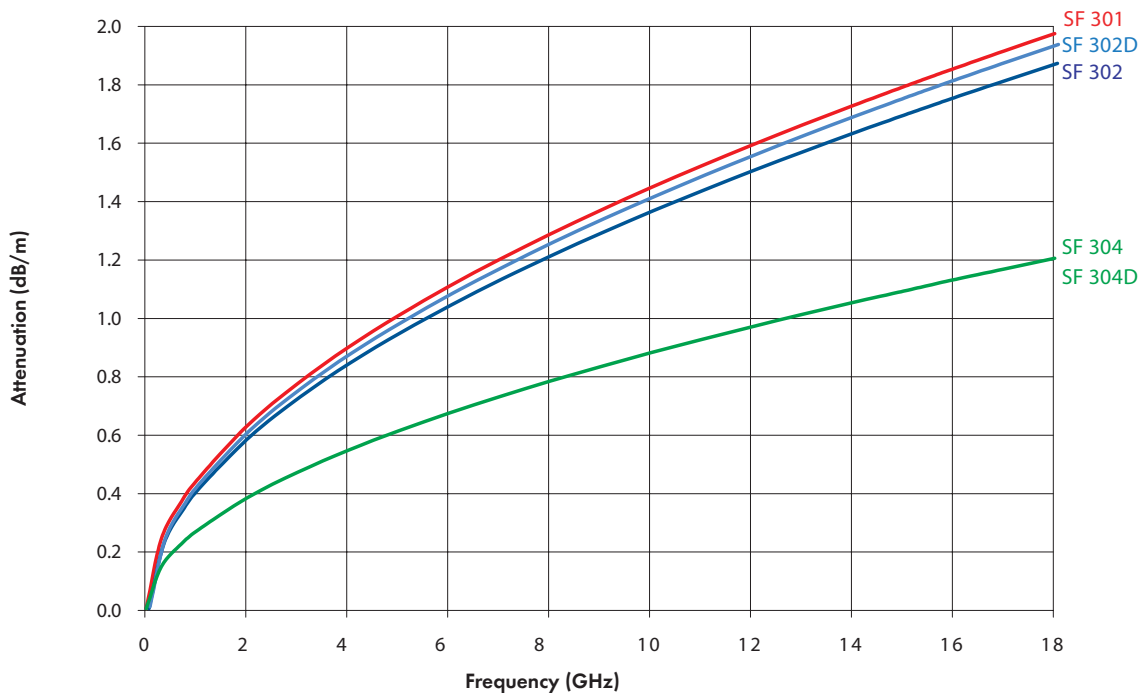
Cable assembly design



Note: SUCOFLEX® 300 lightweight low-loss microwave cables are available as "ready to use" assemblies only

1	Centre conductor	Lightweight wire with silver plated conductive surface
2	Dielectric	Low density PTFE
3	1st Shield	Helical wrapped silver plated tape
4	2nd Shield	Silver plated round wire braid
5	Jacket	Solid extruded ETFE
6	Connector	Connector designs with different materials available e.g. optimised for low weight, max. mechanical strength

Cable attenuation



SUCOFLEX® 300 - Lightweight Series

Assembly insertion loss

The nominal or maximum loss at +25°C of an assembly provided with two connectors (male or female) is calculated according to the following formulas.

$$\alpha_{25} = a \cdot \sqrt{f} + b \cdot f$$

$$IL = \alpha_{25} \cdot (l + l_{C1} + l_{C2}) + (c_1 + c_2) \cdot \sqrt{f}$$

where

α_{25}	Cable attenuation at 25°C	[dB/m]
a, b	Attenuation parameters cable	see cable data sheet
f	Frequency	[GHz]
IL	Assembly insertion loss	[dB]
l	Length assembly	[m]
l_{C1}, l_{C2}	Length extension (for swept connectors only)	[m] see connector data sheet
$c_1 + c_2$	Loss coefficient connectors	see connector data sheet

Assembly VSWR / Return Loss

The VSWR or Return Loss of an assembly provided with two connectors (male or female) is calculated according to the following formula.

$$VSWR_{ASSY} = VSWR_{C1} \cdot VSWR_{C2}$$

$$RL = 20 \cdot \log \left[\frac{VSWR_{ASSY} + 1}{VSWR_{ASSY} - 1} \right]$$

The maximum VSWR levels of the connectors are listed on the connector data sheets.

Note: Calculated assembly VSWR is valid for "S11" as well as "S22" on 4-pole view

Cable assembly identification

Each cable assembly will be fitted with an identification shrink tube marked with the HUBER+SUHNER serial number. Further information like the customer's part number can be printed on request.

Spaceflight requirements

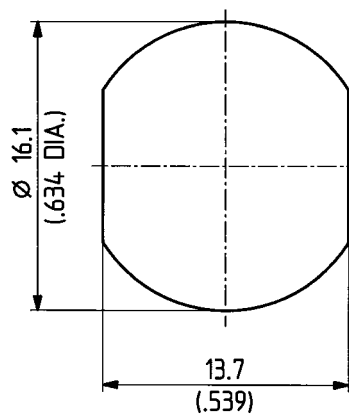
Cable assemblies for spaceflight applications are manufactured by ESA certified assemblers in a class 10'000 clean room environment. These cable assemblies meet the outgassing requirements according to ESA PSS-01-702 and are 100% X-ray inspected.

Please identify your orders as "SPACEFLIGHT ORDER" to ensure that you will receive spaceflight grade cable assemblies.

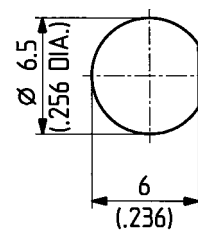
SUCOFLEX® 300 - Lightweight Series

Mounting holes

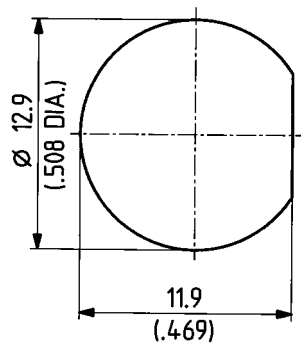
ML 12



ML 35



ML 4



SUCOFLEX® 301

Electrical cable data

Frequency range			DC ... 18 GHz
Impedance			50 Ohm
Attenuation	for calculation use formula on page 169		
	a/b parameters nominal values	@ 25 °C a_{nom}	0.4320
		b_{nom}	0.0076
	maximum values	a_{max}	0.4752
		b_{max}	0.0084
Capacitance			86.4 pF/m
Relative signal propagation			77.0 %
Signal delay			4.3 ns/m
Phase stability	vs temperature	over entire temp. range	1500 ppm
	vs flexure		$\pm 0.8^\circ/\text{GHz}$
Minimum screening effectiveness up to 18 GHz			> 90 dB

General cable data

Temperature range		- 55 ... + 125 °C
Weight		23.9 g/m
Diameter		3.5 mm
Min. bending radius	static	15 mm
	dynamic	20 mm
Qualification status spaceflight		qualified

Suitable connectors

Connector type	Max. frequency (GHz)	VSWR	Loss coefficient c	Length extension (m) / c	Temperature range (°C)	Fig.
11_SMA-187	18	1.12	0.02	0	- 55 ... + 125	300
16_SMA-189	18	1.12	0.02	0.018	- 55 ... + 125	301
11_SMA-152	18	1.20	0.02	0	- 55 ... + 125	302
16_SMA-161	18	1.12	0.025	0.008	- 55 ... + 125	303
16_SMA-180	18	1.12	0.025	0.008	- 55 ... + 125	304

for spaceflight only

Other connector types and patterns on request.

SUCOFLEX® 301

11_SMA-187 - SMA straight plug (male)

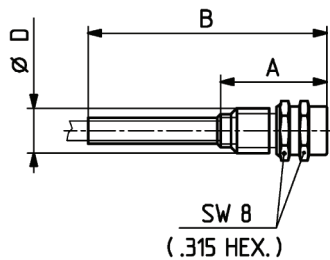


Fig. 300

Dimensions (mm)	A	16.5
	B	39.0
	C	-
	Ø D	6.5
	Ø d	-
Weight (g)		2.5
Materials	Body	CuBe/Au
	Nut	stainless steel

for spaceflight only, connector vented

16_SMA-189 - SMA swept plug (male)

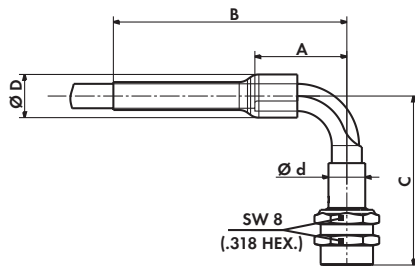


Fig. 301

Dimensions (mm)	A	13.0
	B	33.0
	C	23.9
	Ø D	6.1
	Ø d	5.2
Weight (g)		3.0
Materials	Body	CuBe/Au
	Nut	stainless steel

for spaceflight only, connector vented

11_SMA-152 - SMA straight plug (male)

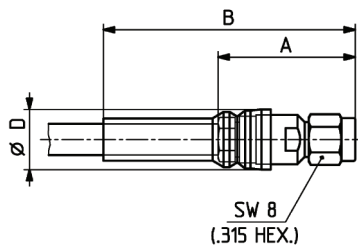


Fig. 302

Dimensions (mm)	A	27.0
	B	58.0
	C	-
	Ø D	10.0
	Ø d	-
Weight (g)		6.7
Materials	Body	stainless steel
	Nut	stainless steel

SUCOFLEX® 301

16_SMA-161 - SMA right angle box plug (male)

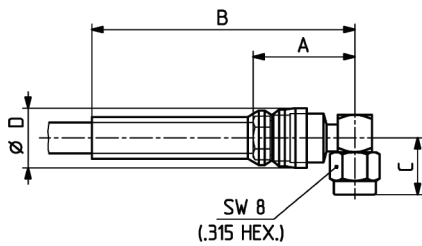


Fig. 303

Dimensions (mm)	A	21.5
	B	37.0
	C	10.5
	Ø D	8.5
	Ø d	-
Weight (g)		5.7
Materials	Body	stainless steel
	Nut	stainless steel

16_SMA-180 - SMA right angle box plug (male)

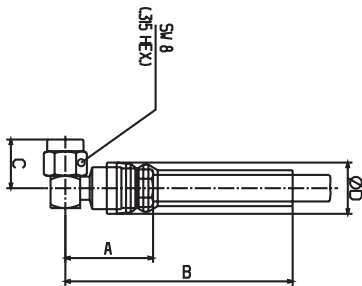


Fig. 304

Dimensions (mm)	A	21.5
	B	42.0
	C	10.5
	Ø D	8.5
	Ø d	-
Weight (g)		6.0
Materials	Body	stainless steel
	Nut	stainless steel

for spaceflight only

SUCOFLEX® 302 / 302D

Electrical cable data

			SUCOFLEX_302	SUCOFLEX_302D
Frequency range			DC ... 18 GHz	DC ... 18 GHz
Impedance			50 Ohm	50 Ohm
Attenuation	for calculation use formula on page 169			
	a/b parameters nominal values	@ 25 °C		
		a _{nom}	0.4045	0.4170
		b _{nom}	0.0084	0.0087
	maximum values	a _{max}	0.4449	0.4587
		b _{max}	0.0093	0.0096
Capacitance			87.3 pF/m	87.3 pF/m
Relative signal propagation			77.0 %	77.0 %
Signal delay			4.3 ns/m	4.3 ns/m
Phase stability	vs temperature	over entire temp. range	2850 ppm	2850 ppm
	vs flexure		± 2.0°/GHz	± 2.0°/GHz
Minimum screening effectiveness up to 18 GHz			> 90 dB	> 90 dB

General cable data

		SUCOFLEX_302	SUCOFLEX_302D
Temperature range		- 55 ... + 125 °C	- 55 ... + 125 °C
Weight		29 g/m	31 g/m
Diameter		3.7 mm	4.3 mm
Min. bending radius	static	20 mm	20 mm
	dynamic	30 mm	30 mm
Qualification status spaceflight		n/a	n/a

Suitable connectors

Connector type	Max. frequency (GHz)	VSWR	Loss coefficient c	Length extension (m) l _c	Temperature range (°C)	Fig.
11_SMA-254	18	1.12	0.02	0	- 55 ... + 125	320
16_SMA-210	18	1.20	0.02	0.018	- 55 ... + 125	321
16_SMA-259	18	1.12	0.025	0.008	- 55 ... + 125	322
11_TNC-226	18	1.12	0.02	0	- 55 ... + 125	323

Other connector types and patterns on request

Further information about D-armour see page 129.

SUCOFLEX® 302 / 302D

11_SMA-254 - SMA straight plug (male)

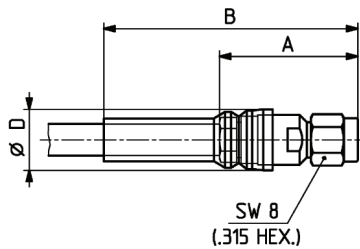


Fig. 320

Dimensions (mm)	A	26.0
	B	36.0
	C	-
	Ø D	8.0
	Ø d	-
Weight (g)		4.8
Materials	Body	stainless steel
	Nut	stainless steel

16_SMA-210 - SMA swept plug (male)

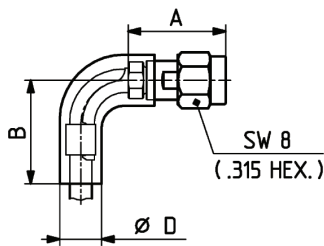


Fig. 321

Dimensions (mm)	A	16.0
	B	17.0
	C	-
	Ø D	6.5
	Ø d	-
Weight (g)		3.8
Materials	Body	stainless steel
	Nut	stainless steel

16_SMA-259 - SMA right angle box plug (male)

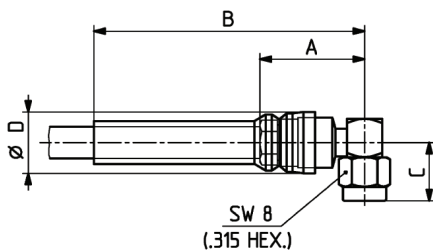


Fig. 322

Dimensions (mm)	A	21.5
	B	37.0
	C	10.5
	Ø D	8.5
	Ø d	-
Weight (g)		5.6
Materials	Body	stainless steel
	Nut	stainless steel

11_TNC-226 - TNC straight plug (male)

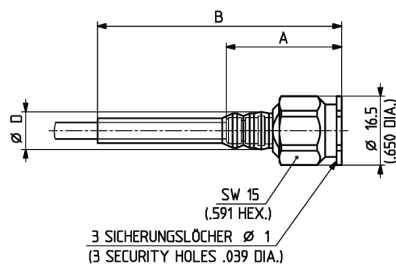


Fig. 323

Dimensions (mm)	A	28.0
	B	42.0
	C	-
	Ø D	9.0
	Ø d	-
Weight (g)		16.5
Materials	Body	stainless steel
	Nut	stainless steel

SUCOFLEX® 304 / 304D

Electrical cable data

			SUCOFLEX_304	SUCOFLEX_304D
Frequency range			DC ... 18 GHz	DC ... 18 GHz
Impedance			50 Ohm	50 Ohm
Attenuation	for calculation use formula on page 169			
	a/b parameters nominal values	@ 25 °C a _{nom}	0.2607	0.2607
		b _{nom}	0.0052	0.0052
	maximum values	a _{max}	0.2868	0.2868
		b _{max}	0.0057	0.0058
Capacitance			86.7 pF/m	87.0 pF/m
Relative signal propagation			77.0 %	77.0 %
Signal delay			4.3 ns/m	4.3 ns/m
Phase stability	vs temperature	over entire temp. range	1500 ppm	1500 ppm
	vs flexure		± 2.4°/GHz	± 2.4°/GHz
Minimum screening effectiveness up to 18 GHz			> 90 dB	> 90 dB

General cable data

		SUCOFLEX_304	SUCOFLEX_304D
Temperature range		- 55 ... + 125 °C	- 55 ... + 125 °C
Weight		46 g/m	56 g/m
Diameter		5.4 mm	6.0 mm
Min. bending radius	static	20 mm	20 mm
	dynamic	50 mm	50 mm
Qualification status spaceflight		qualified	n/a

Suitable connectors

Connector type	Max. frequency (GHz)	VSWR	Loss coefficient c	Length extension (m) l _c	Temperature range (°C)	Fig.
11_SMA-487	18	1.12	0.02	0	- 55 ... + 125	340
16_SMA-489	18	1.12	0.02	0.028	- 55 ... + 125	341
24_N-408	15	1.16	0.02	0	- 55 ... + 125	342
11_SMA-459	18	1.12	0.02	0	- 55 ... + 125	343
16_SMA-461	18	1.12	0.025	0	- 55 ... + 125	344
24_SMA-454	18	1.20	0.02	0	- 55 ... + 125	345
11_TNC-457	18	1.12	0.02	0	- 55 ... + 125	346
16_TNC-459	18	1.18	0.025	0	- 55 ... + 125	347
24_TNC-457	18	1.12	0.02	0	- 55 ... + 125	348

 for spaceflight only

Other connector types and patterns on request. Further information about D-armour see page 129.

SUCOFLEX® 304 / 304D

11_SMA-487 - SMA straight plug (male)

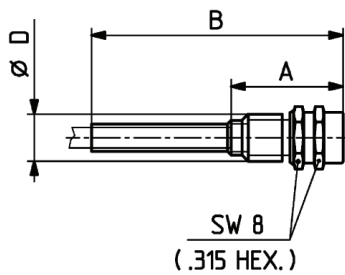


Fig. 340

Dimensions (mm)	A	22.0
	B	44.0
	C	-
	Ø D	8.0
	Ø d	-
Weight (g)		4.1
Materials	Body	CuBe/Au
	Nut	stainless steel

for Spaceflight only, connector vented

16_SMA-489 - SMA swept plug (male)

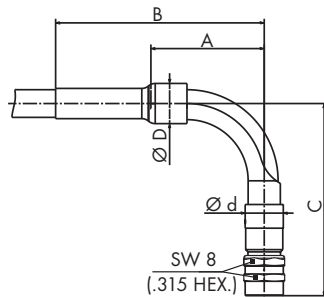
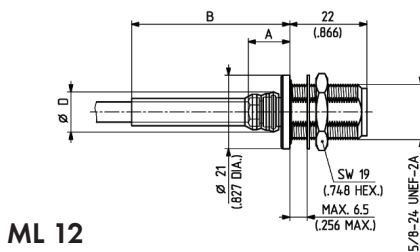


Fig. 341

Dimensions (mm)	A	22.0
	B	40.5
	C	37.3
	Ø D	7.8
	Ø d	7.4
Weight (g)		4.9
Materials	Body	CuBe/Au
	Nut	stainless steel

for Spaceflight only, connector vented

24_N-408 - N straight bulkhead jack (female)



ML 12

Fig. 342

Dimensions (mm)	A	16.5
	B	35.0
	C	-
	Ø D	11.0
	Ø d	-
Weight (g)		39.5
Materials	Body	stainless steel
	Nut	stainless steel

SUCOFLEX® 304 / 304D

11_SMA-459 - SMA straight plug (male)

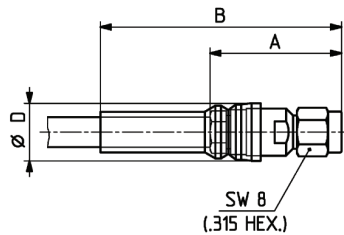


Fig. 343

Dimensions (mm)	A	32.0
	B	51.0
	C	-
	Ø D	11.0
	Ø d	-
Weight (g)		6.8
Materials	Body	stainless steel
	Nut	stainless steel

16_SMA-461 - SMA right angle box plug (male)

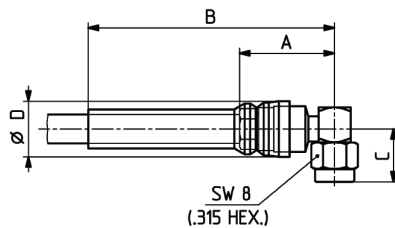
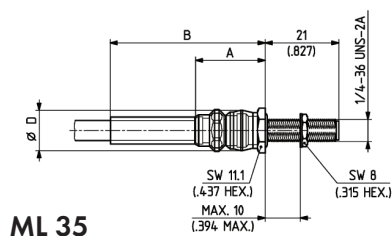


Fig. 344

Dimensions (mm)	A	20.5
	B	39.0
	C	10.5
	Ø D	10.0
	Ø d	-
Weight (g)		7.5
Materials	Body	stainless steel
	Nut	stainless steel

24_SMA-454 - SMA straight bulkhead jack (female)



ML 35

Fig. 345

Dimensions (mm)	A	19.9
	B	44.0
	C	-
	Ø D	11.0
	Ø d	-
Weight (g)		8.4
Materials	Body	stainless steel
	Nut	stainless steel

SUCOFLEX® 304 / 304D

11_TNC-457 - TNC straight plug (male)

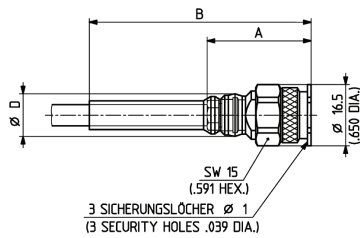


Fig. 346

Dimensions (mm)	A	33.0
	B	62.0
	C	-
	Ø D	11.0
	Ø d	-
Weight (g)		18.3
Materials	Body	stainless steel
	Nut	stainless steel

16_TNC-459 - TNC right angle box plug (male)

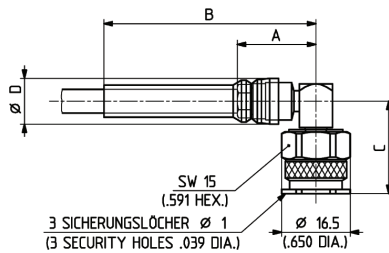
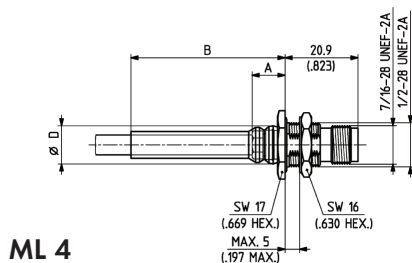


Fig. 347

Dimensions (mm)	A	23.5
	B	42.0
	C	22.5
	Ø D	11.0
	Ø d	-
Weight (g)		22.4
Materials	Body	stainless steel
	Nut	stainless steel

24_TNC-457 - TNC straight bulkhead jack (female)



ML 4

Fig. 348

Dimensions (mm)	A	14.5
	B	40.0
	C	-
	Ø D	13.0
	Ø d	-
Weight (g)		18.6
Materials	Body	stainless steel
	Nut	stainless steel

TYPE INDEX

Type	Page	Type	Page
SEM-RIGID		MULTIFLEX	
EZ_34_25_TP	38	MULTIFLEX_86	66
EZ_34_TP_M17	38	MULTIFLEX_141	68
EZ_47_AL_TP	22		
EZ_47_CU_TP	38	S-SERIES	
EZ_47_M17	38	S_04212_B	78
EZ_47_TP_M17	20	S_04262_B-01	80
EZ_86_75_TP	38	S_04272_B	76
EZ_86_AL_TP_M17	26		
EZ_86_CU_TP_M17	38	SUCOTEST	
EZ_86_M17	38	SUCOTEST_18/SMAm/SMAm/36"	86
EZ_86_TP_M17	24	SUCOTEST_18/Nm/Nm/36"	86
EZ_90_25_TP	38	SUCOTEST_18/SMAm/Nm/36"	86
EZ_118_TP	28	SUCOTEST_18/SMAm/SMAm/48"	86
EZ_141_70_TP	38	SUCOTEST_18/Nm/Nm/48"	86
EZ_141_75_TP	38	SUCOTEST_18/SMAm/Nm/48"	86
EZ_141_AL_TP_M17	32	SUCOTEST_18/SMAm/SMAm/72"	86
EZ_141_CU_TP	38	SUCOTEST_18/Nm/Nm/72"	86
EZ_141_M17	38	SUCOTEST_18/SMAm/Nm/72"	86
EZ_141_TP_M17	30		
EZ_250_AL_TP	36	ST18A/11N468/11N468/1500 mm	88
EZ_250_M17	38	ST18A/11N468/21N409/1500 mm	88
EZ_250_TP_M17	34	ST18A/11N468/11N468/3000 mm	88
		ST18A/11N468/21N409/3000 mm	88
		ST18A/11N468/11716403/1500 mm	88
		ST18A/11N468/21716403/1500 mm	88
		ST18A/11N468/11716403/3000 mm	88
		ST18A/11N468/21716403/3000 mm	88
SUCOFORM		SUCOFLEX® 100	
SUCOFORM_47_CU	46	SUCOFLEX_101	94
SUCOFORM_47_CU_LSFH	46	SUCOFLEX_101_E	93
SUCOFORM_86	48	SUCOFLEX_101_EA	93
SUCOFORM_86_75	58	SUCOFLEX_101_P	96
SUCOFORM_86_75_FEP	58	SUCOFLEX_101_PE	98
SUCOFORM_86_FEP	48	SUCOFLEX_101_PEA	93
SUCOFORM_86_PE	48		
SUCOFORM_141	50	SUCOFLEX_102	102
SUCOFORM_141_35	58	SUCOFLEX_102_D	101
SUCOFORM_141_35_FEP	58	SUCOFLEX_102_E	101
SUCOFORM_141_60	58	SUCOFLEX_102_EA	101
SUCOFORM_141_60_FEP	58		
SUCOFORM_141_75	58	SUCOFLEX_103	108
SUCOFORM_141_75_FEP	58	SUCOFLEX_103_B	107
SUCOFORM_141_100	58	SUCOFLEX_103_C	107
SUCOFORM_141_100_FEP	58	SUCOFLEX_103_D	107
SUCOFORM_141_CU	52	SUCOFLEX_103_E	107
SUCOFORM_141_CU_LSFH	54	SUCOFLEX_103_EA	107
SUCOFORM_141_CU_FEP	54		
SUCOFORM_141_CU_PE	52		
SUCOFORM_141_PE	50		
SUCOFORM_141_FEP	50		
SUCOFORM_250-01	56		
SUCOFORM_250-01_FEP	56		

Type	Page
------	------

SUCOFLEX® 100 (cont.)

SUCOFLEX_104	112
SUCOFLEX_104_A	111
SUCOFLEX_104_B	111
SUCOFLEX_104_C	111
SUCOFLEX_104_D	111
SUCOFLEX_104_E	111
SUCOFLEX_104_EA	111
SUCOFLEX_104_EM	111
SUCOFLEX_104_G	111
SUCOFLEX_104_P	114
SUCOFLEX_104_PE	116
SUCOFLEX_104_PEA	111
SUCOFLEX_104_PEM	111
SUCOFLEX_104_PB	111

SUCOFLEX_106	122
SUCOFLEX_106_A	121
SUCOFLEX_106_B	121
SUCOFLEX_106_C	121
SUCOFLEX_106_D	121
SUCOFLEX_106_G	121
SUCOFLEX_106_P	124
SUCOFLEX_106_PA	121
SUCOFLEX_106_PB	121
SUCOFLEX_106_PD	121
SUCOFLEX_106_PG	121

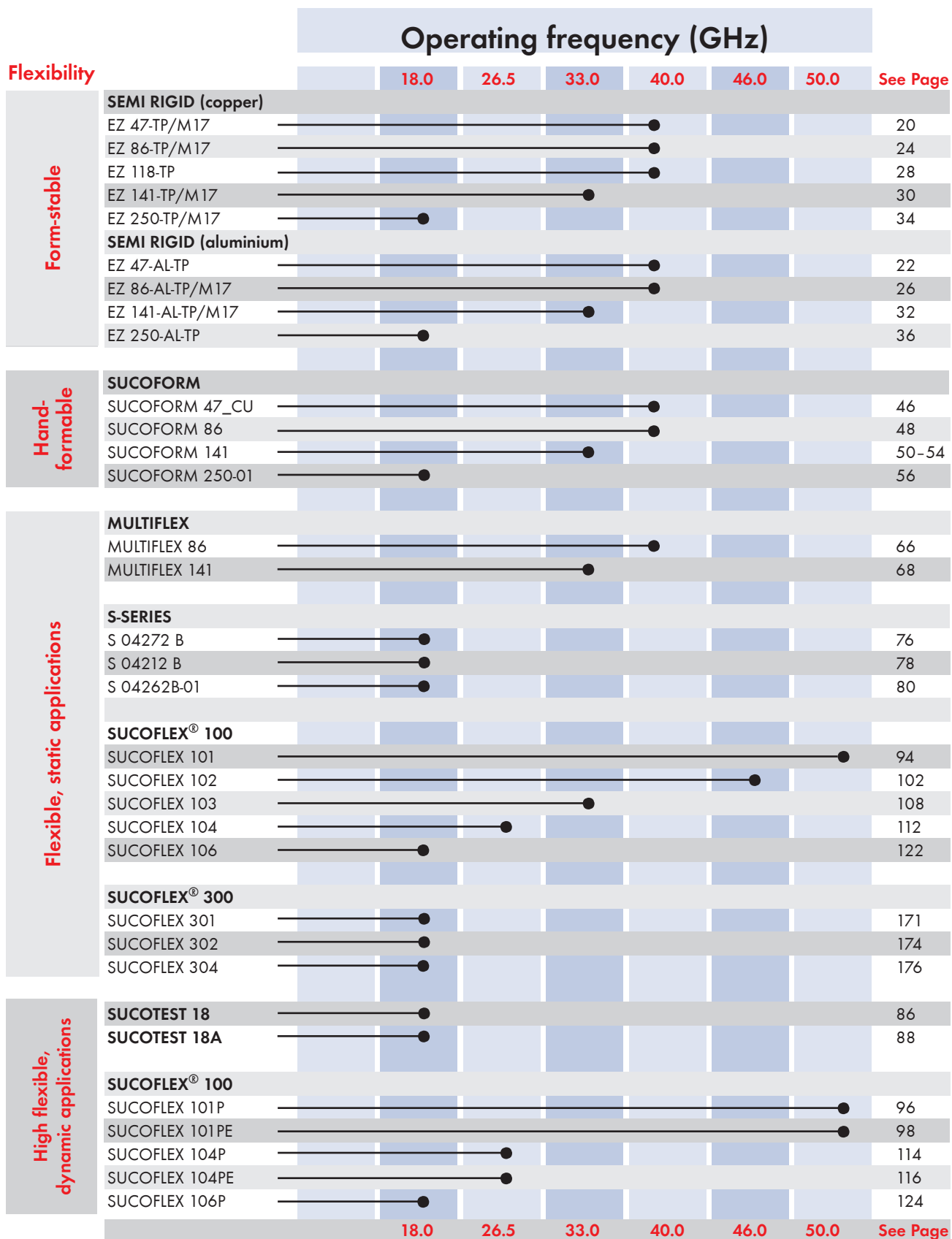
SUCOFLEX® 300

SUCOFLEX_301	171
SUCOFLEX_302	174
SUCOFLEX_302D	174
SUCOFLEX_304	176
SUCOFLEX_304D	176

Comparison of 50 Ω HUBER+SUHNER microwave cables

HUBER+SUHNER cable type	Flexibility				Mechanical properties				Electrical properties					General		
	Form-stable	Handformable	Flexible, static applications	High flexible, dynamic applications	Min. bending radius, static (mm)	Min. bending radius, dynamic (mm)	Outer diameter (mm)	Weight (kg/100 m)	Operating frequency (GHz)	Velocity of Propagation (%)	Nom. attenuation (dB/m, 18 GHz, 25 °C)	Min. screen effectiveness (dB/m, 18 GHz)	Max. power (Watt, 18 GHz, 40 °C)	Temperature range (°C)	Assemblies only	More information see page
SEMI-RIGID (copper)																
EZ_47-TP/M17	•				3.18	n/a	1.19	0.71	40	69.5	5.1	120	7	-40	+100	20
EZ_86-TP/M17	•				3.18	n/a	2.20	2.35	40	69.5	3.2	120	30	-40	+125	24
EZ_118-TP	•				9.53	n/a	2.95	3.40	40	80	1.8	120	141	-40	+125	28
EZ_141-TP/M17	•				6.53	n/a	3.58	5.22	33	69.5	2.1	120	106	-40	+125	30
EZ_250-TP/M17	•				19	n/a	6.35	15.80	18	69.5	1.5	120	330	-40	+90	34
SEMI-RIGID (aluminium)																
EZ_47-AL-TP	•				1.27	n/a	1.19	0.31	40	69.5	5.4	120	7	-40	+100	22
EZ_86-AL-TP/M17	•				1.78	n/a	2.20	1.19	40	69.5	3.3	120	30	-40	+125	26
EZ_141-AL-TP/M17	•				3.18	n/a	3.58	3.05	33	69.5	2.2	120	106	-40	+125	32
EZ_250-AL-TP	•				19	n/a	6.35	8.86	18	69.5	1.5	120	330	-40	+90	36
SUCOFORM																
SUCOFORM_47_CU		•			3.18	n/a	1.20	0.60	40	71	5.4	100	7.5	-65	+165	46
SUCOFORM_86		•			6	20	2.10	1.50	40	71	3.4	100	38	-65	+165	48
SUCOFORM_141		•			8	40	3.58	3.80	33	71	2.2	100	100	-65	+165	50
SUCOFORM_250-01		•			30	120	6.35	11.40	18	71	1.4	100	217	-65	+165	56
MULTIFLEX																
MULTIFLEX_86			•		6	20	2.65	2.10	40	71	3.6	90	33	-65	+165	66
MULTIFLEX_141			•		10	40	4.14	4.50	33	71	2.1	90	88	-65	+165	68
S-SERIES																
S_04272_B			•		25	90	5.50	4.40	18	82	1.6	90	28	-40	+85	76
S_04212_B			•		25	90	5.53	4.10	18	82	1.6	90	28	-40	+85	78
S_04262_B-01			•		25	90	5.50	4.10	18	82	1.6	90	28	-40	+85	80
SUCOTEST 18																
SUCOTEST 18A			•	n/a	100	4.60	5.30	18	77	1.3	90	131	-55	+105	•	86
			•	n/a	50	10.3	17.20	18	77	1.6	90	35	-55	+85	•	88
SUCOFLEX 100																
SUCOFLEX 101			•		11	20	3.65	3.60	50	77	2.0	90	70	-55	+125	• 94
SUCOFLEX 101P			•		11	20	3.65	3.30	50	77	3.0	90	65	-55	+125	• 96
SUCOFLEX 101PE			•		11	20	3.65	3.00	50	77	3.0	90	14	-40	+85	• 98
SUCOFLEX 102			•		12	20	4.00	4.00	46	77	1.7	90	93	-55	+125	• 102
SUCOFLEX 103			•		13	22	4.60	5.30	33	77	1.3	90	145	-55	+125	• 108
SUCOFLEX 104			•		16	25	5.50	8.40	26.5	77	1.1	90	214	-55	+125	• 112
SUCOFLEX 104P			•		16	25	5.50	6.90	26.5	77	1.6	90	187	-55	+125	• 114
SUCOFLEX 104PE			•		16	25	5.50	6.80	26.5	77	1.6	90	35	-40	+85	• 116
SUCOFLEX 106			•		24	40	7.90	15.70	18	77	0.8	90	373	-55	+125	• 122
SUCOFLEX 106P			•		24	40	7.90	15.80	18	77	1.3	90	326	-55	+125	• 124
SUCOFLEX 300																
SUCOFLEX 301			•		15	20	3.50	2.40	18	77	2.0	90	70	-55	+125	• 171
SUCOFLEX 302			•		20	30	3.70	2.90	18	77	1.9	90	93	-55	+125	• 174
SUCOFLEX 304			•		20	50	5.40	4.60	18	77	1.2	90	214	-55	+125	• 176

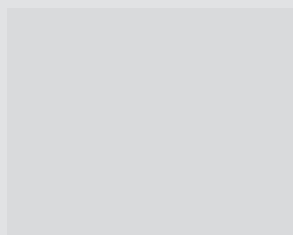
Selection Help



HUBER+SUHNER certified according to
ISO 9001 and ISO 14001.

WAIVER

It is exclusively in written agreements that we provide our customers with warrants and representations as to the technical specifications and/or the fitness for any particular purpose. The facts and figures contained herein are carefully compiled to the best of our knowledge, but they are intended for general informational purposes only.



HUBER+SUHNER AG
Radio Frequency Division
Degersheimerstrasse 14
9100 Herisau/Switzerland
Tel. +41 (0) 71 353 41 11
Fax +41 (0) 71 353 45 90
info@hubersuhner.com

23012500/08.2008

hubersuhner.com

