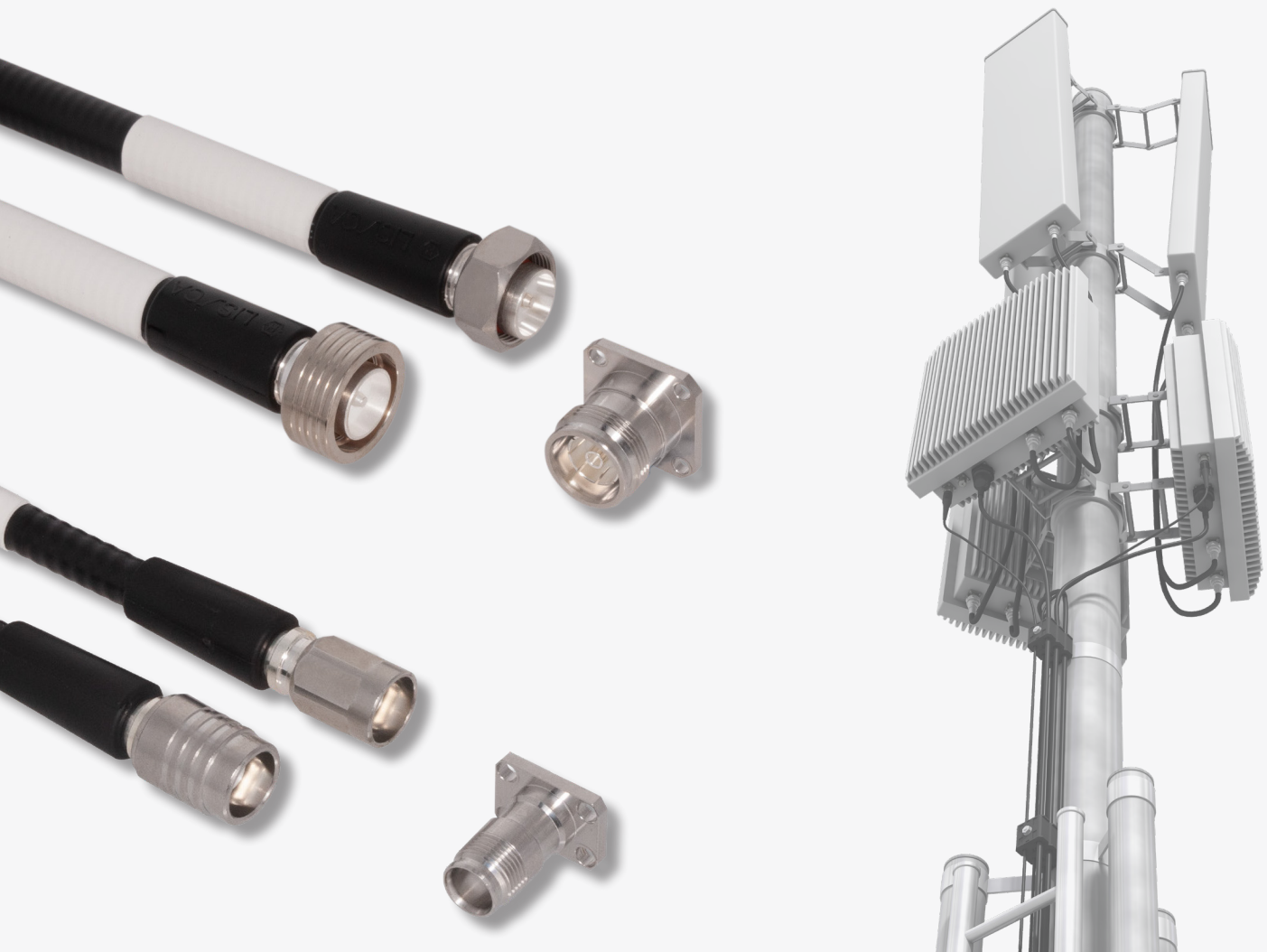


Low PIM Antenna Connectors

4.3-10 and NEX10®

Edition 2019/05



Very stable PIM connector series





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Your partner for interconnect solutions

As a global leader in radio frequency and fiber optic connectivity solutions, HUBER+SUHNER has worked together in partnership with renowned connector manufacturers and developed new and innovative connector systems to meet today's and future demands of wireless telecoms industry. The low PIM antenna connector series of NEX10 and 4310 connectors provide very low PIM, robust and superior electrical performance in different sizes to cover small cells and macro cell applications.

Low PIM Connector series NEX10[®] and 4.3-10

The NEX10 and 4.3-10 connector series are characterized by an innovative design feature of separation of electrical and mechanical contacts. This design feature is contrary to the 716, N and 4195 connector interface. The separation of electrical and mechanical contacts allows to have a compact connector design and very low PIM independent of applied coupling torque as well as different coupling mechanism options of push pull and screw type.

Applications

- Applications requiring PIM stability and robustness in a small size
- Small Cell and MIMO
- DAS/In-building
- Antennas/radios and filter output
- Multicoax/blind mate
- Outdoor and indoor

Features

- Radial contact
- Interface optimized for return loss
- Compact size
- Protection of electrical contact areas
- Multiple coupling mechanisms
- Rubber boot weather protection

Benefits

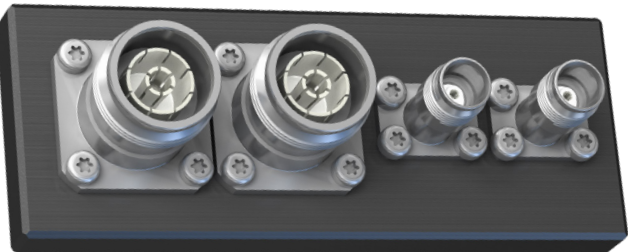
- Low PIM, independent of coupling mechanism
- Reliable performance eliminating installation errors
- Compact and space saving modules
- Interface safe from installation damages
- Flexibility in installation
- Interface specific boot guaranteeing protection in extreme weather



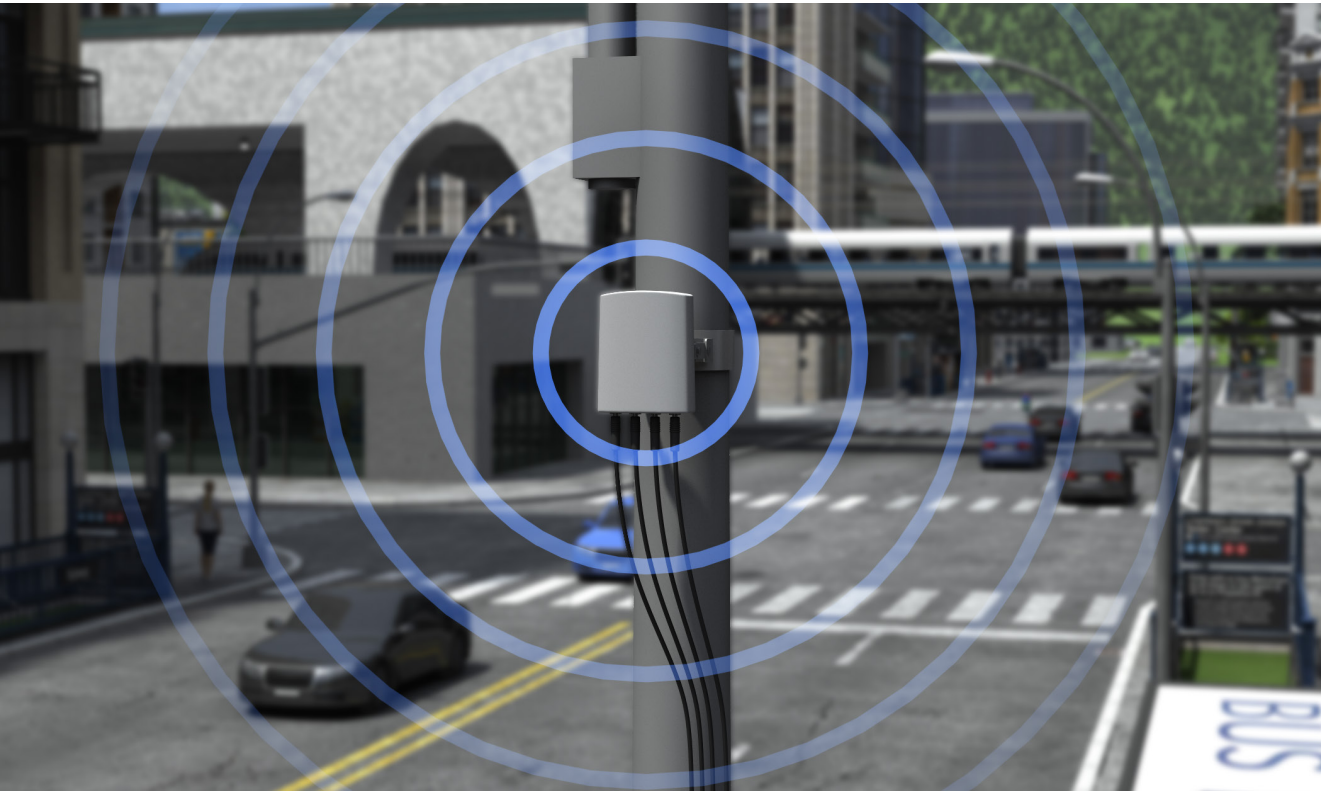
Comparison NEX10[®] and 4.3-10

The main distinguishing feature of NEX10 is the small size which allows it to be used for applications where space is critical. Below is a brief overview of distinguishing features of NEX10 comparing to 4.3-10.

Requirement	NEX10	4.3-10
Frequency	DC to 20 GHz	DC to 12 GHz
PIM (Passive Intermodulation)	-166 dBc, 2x43 dBm (static and dynamic)	-166 dBc, 2x43 dBm (static and dynamic)
Power	100 W @ 2 GHz @ 85°C	500 W @ 2 GHz @ 85°C
Mating characteristics Quick Lock: Engagement force Screw type: Rec. Torque	40 N Typical 1.5 Nm	100 N Typical 5 Nm
Flange height	12.7 mm	25.4 mm



Size comparison between 4.3-10 and NEX10



Series NEX10® – Technical data

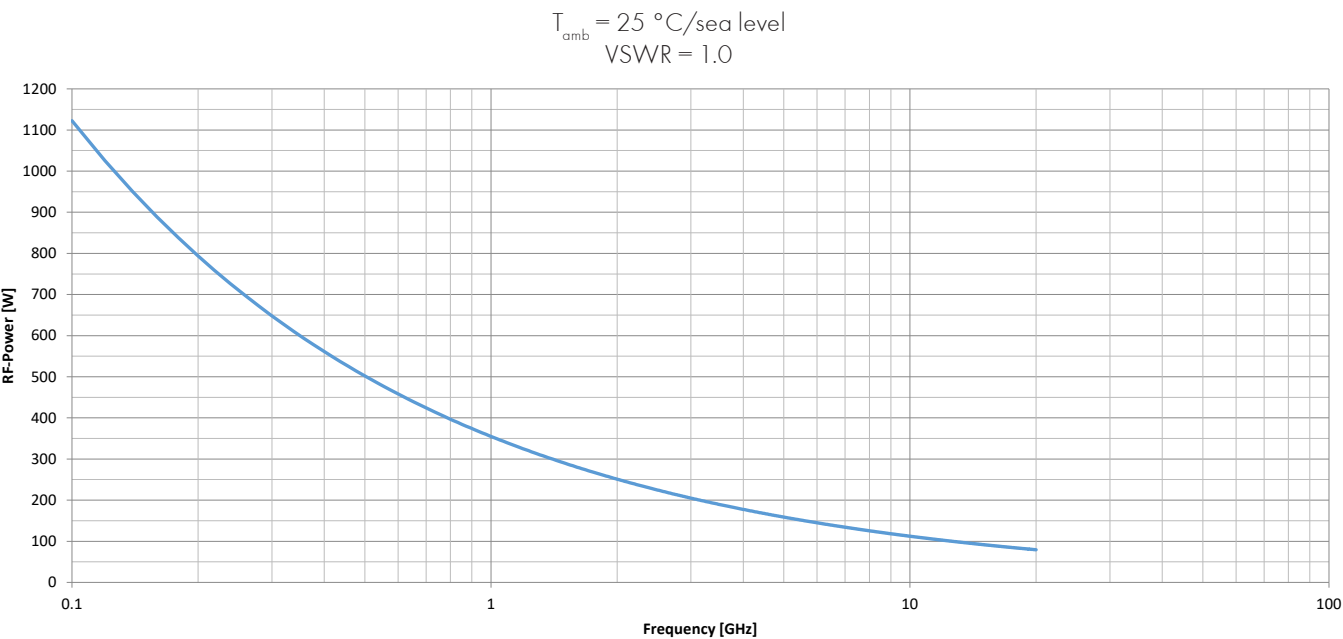
Electrical Data				
Frequency	DC to 20 GHz			
Impedance	50 Ω			
PIM (Passive Intermodulation)	–166 dBc, 2x43 dBm (static and dynamic)			
Power	100 W @ 2 GHz @ 85°C			
Interface return loss (typical)	DC...4 GHz	4...6 GHz	6...10 GHz	10...20 GHz
	≥ 36 dB	≥ 34 dB	≥ 30 dB	≥ 20 dB
Working voltage	1000 V			
Screening effectiveness	DC to 6 GHz ≥ 110 dB DC to 3 GHz: ≥ 90 dB (typical) 3 – 6 GHz: ≥ 70 dB (typical)			
Screw				
Quick lock				
Mechanical data				
Durability (mating cycles)	100 min. 500 for test and measurement adaptors			
Mating characteristics	40 N Typical 1.5 Nm			
Quick lock: Engagement force				
Screw type: Rec. Torque				
Interface retention force	Quick lock 150 N min.	Screw 500 N min		
Bending Force	≥5Nm			
Vibration	100 m/s ² , 10 - 500 Hz (IEC 61169-1§9.3.3)			
Flange height	12.7 mm			
Environmental Data				
Temperature Range:	-55 °C ...+125 °C			
Corrosion	48 Hours Salt Mist Test (720 hrs on request)			
Interface Ingress Protection	IP68 (24hrs, 1m, room temp, mated pair)			
RoHS	Compliant			

Performance listed is typical for NEX10 interface and individual connector performance may vary depending on connector design and cable used. Please contact a HUBER+SUHNER representative for detailed information on specific connector types.

Series NEX10® – Admissible RF power

The maximum temperature usually occurs on the connector inner conductor. When connectors are employed in a coaxial cable assembly, the connector should have a center conductor diameter that is equal to or larger than the cable center conductor diameter in order to maximise the power handling of the assembly.

The curves are the results of a typical application and are simulation results. Curves may vary depending on the connector. For specific questions please contact nearest HUBER+SUHNER sales office.



Material data		
Connector parts	Material	Plating
Bodies	brass	SUCOPLATE®, Tin-Nickel, silver, Nickel-Phosphorus
Outer contact	spring bronze	silver
Insulators	PTFE	
Centre contact	brass/CuBe	silver
Gaskets	MVQ	
Coupling nut	brass	SUCOPLATE®

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

Series NEX10[®] – Cable connectors

Straight cable plugs (male)

- Cable entry soldered
- Centre contact soldered

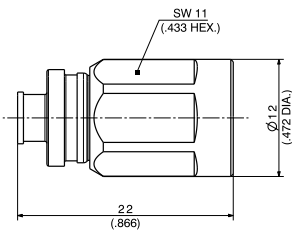


Fig. 1

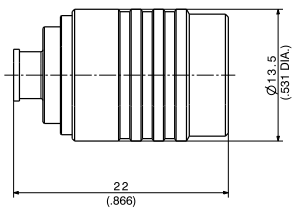


Fig. 2

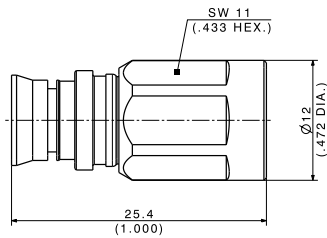


Fig. 3

HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Fig.
11_NEX10-50-3-X1/003_-H	85091361	Y12, (Sucoform_141)	Bulk	1
11_NEX10-50-3-Z2/003_-H	85095347	Y12, (Sucoform_141)	Bulk	2
11_NEX10-50-5-X1/000_-H	85095631	M5 (SUCOFEED_1/4_HF)	Bulk	3

Right angle jacks (male)

- Cable entry soldered
- Centre contact soldered

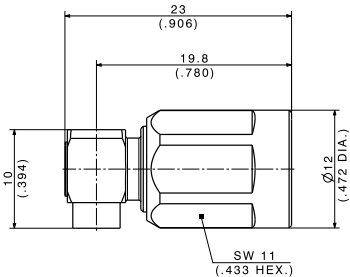


Fig. 1

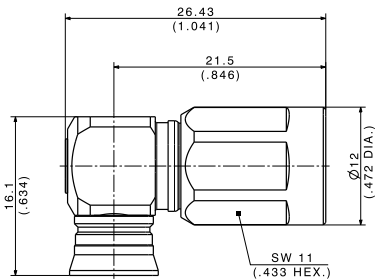


Fig. 2

HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Fig.
16_NEX10-50-3-X1/003_-H	85102764	Y12, (Sucoform_141)	Bulk	1
16_NEX10-50-5-X1/003_-H	85095633	M5 (SUCOFEED_1/4_HF)	Bulk	2

X: torque, Z: quick-lock

Series NEX10[®] – Cable connectors

Straight cable jacks (female)

For Sucoform, the hand formable cables

- Cable entry soldered
- Centre contact soldered

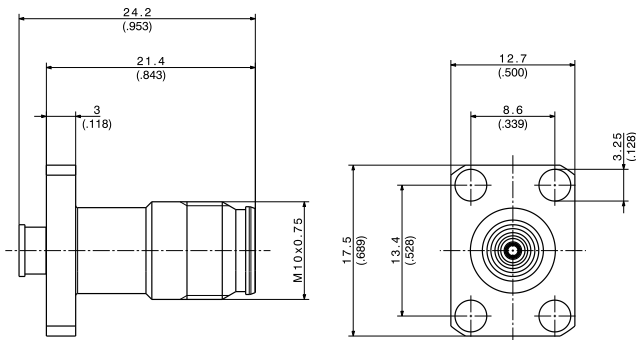
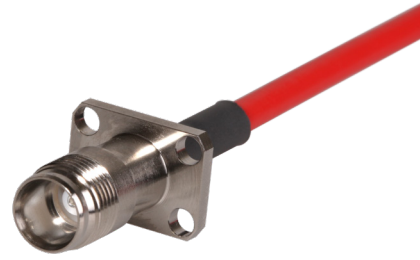


Fig. 1

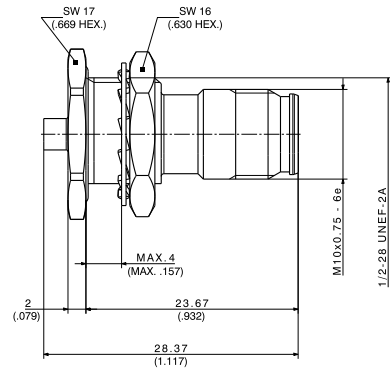


Fig. 2

HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Fig.
25_NEX10-50-3-1/033_-E	85091413	Y12, (Sucoform_141)	Bulk	1
24_NEX10-50-2-1/033_-Y	85095339	Y16, (Sucoform_86)	Bulk	2

Series NEX10[®] – Receptacles

Straight panel receptacle (jack)

- With solder end
- 4 hole, 12.5 mm flange height
- M3 mounting screws

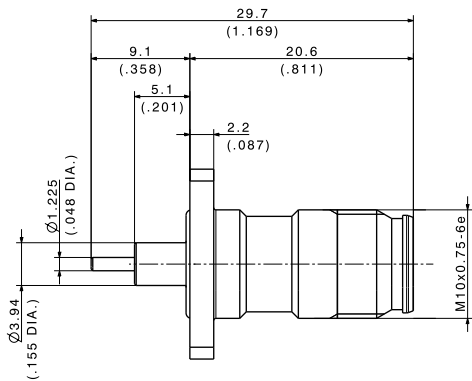


Fig. 1

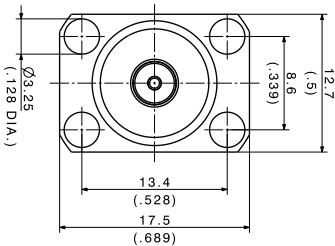


Fig. 2

HUBER+SUHNER type	Item no.	Packaging	Fig.
23_NEX10-50-0-3/033_-Y	85094630	Bulk	1

Series NEX10[®] – Protective cap

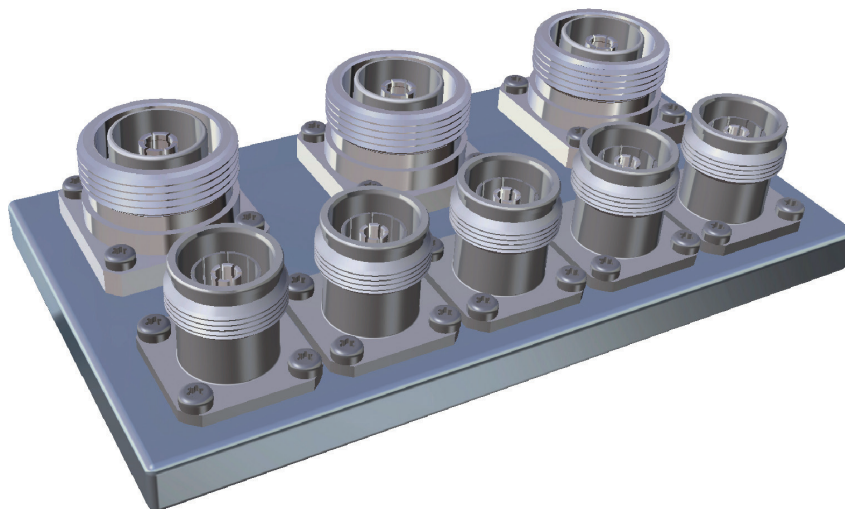
- Cap for NEX10 female (jack) interface
- Economical design



HUBER+SUHNER type	Item no.	Packaging	Notes
62_NEX10-0-0-1/-/_-Z	85095030	Bulk	Ingress Protection IP X8

Series 4.3-10

4.3-10 interface is characterised by an innovative design feature of separate electrical and mechanical contacts, yielding very stable PIM performance even without the applied coupling torque. The separation of electrical and mechanical contacts also allows to offer the interface with three different coupling mechanisms of screw, hand screw and push pull types.



Series 4.3-10 – Technical data

The 4.3-10 interface dimensions conform to the international standards IEC 61169-54.

Electrical data	IEC 61169-1	
Nominal impedance		50 Ω
Frequency range		up to 12 GHz
Reflection factor (interface only)	9.2.1.	0.015 max. DC to 4 GHz (RL $\geq$ 36 dB) 0.025 max. 4 – 6 GHz (RL $\geq$ 32 dB)
Centre and outer contact resistance	9.2.3.	initial $\leq$ 1.0 m Ω after conditioning $\leq$ 1.5 m Ω
Insulation resistance	9.2.5.	initial $\geq$ 5 G Ω after conditioning $\geq$ 200 M Ω
Proof voltage at sea level r.m.s. values at 40 Hz to 60 Hz	9.2.6.	2500 V
Screening effectiveness • Torque/screw type • Hand screw and quick lock	9.2.8.	DC to 6 GHz $\geq$ 120 dB DC to 3 GHz: $\geq$ 90 dB; 3 – 6 GHz: $\geq$ 70 dB
Intermodulation • 2 $\times$ 20 W • 2 $\times$ 40 W	IEC 62037-3	-166 dBc (0.4 to 4 GHz) -160 dBc (0.4 to 4 GHz)
Mechanical data	IEC 61169-1	
Mechanical operations/matings	9.3.15	> 100 operations
Centre contact captivation (axial force)	9.3.5.	30 N
Coupling torque (screw)	9.3.6.	$\geq$ 5 Nm
Engagement force (quick-lock)	9.3.6.	typ. 100 N
Separation force (quick-lock)	9.3.6.	typ. 80 N
Coupling mechanism retention force (quick-lock)	9.3.11.	$\geq$ 450 N
Vibration	9.3.3.	100 m/s ² , 10 g acceleration, 2 – 200 Hz
Shock	9.3.14.	981 m/s ² , 100 g acceleration, 1/2 sin 6 ms
Environmental data	IEC 61169-1	
Temperature range		-55 to +90 °C
Climatic category ¹⁾		40/85/21
Sealing	IEC 60529	IP68 2.5 bar, 1 h, 25 °C
Salt mist	9.4.6.	duration of spraying 48 h (720 hours on request)
High temperature endurance	9.6.	250 h at 85 °C

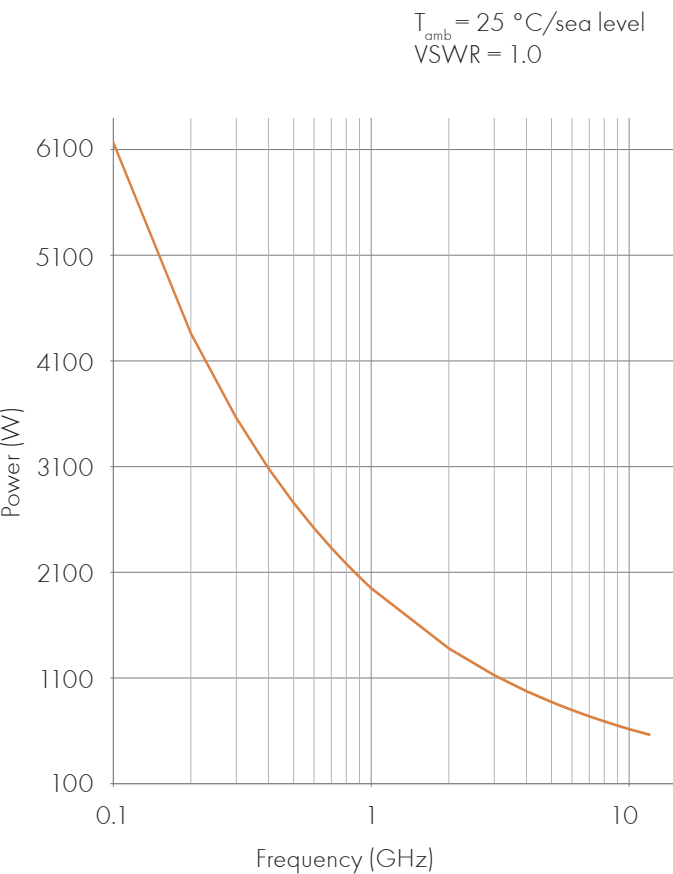
Performance listed is typical for 4.3-10 interface and individual connector performance may vary depending on connector design and cable used. Please contact a HUBER+SUHNER representative for detailed information on specific connector types.

¹⁾ For certain connectors the upper temperature limit is restricted by the cable characteristics. Reference should be made to the relevant cable specification.

Series 4.3-10 – Admissible RF power

The maximum temperature usually occurs on the connector inner conductor. When connectors are employed in a coaxial cable assembly, the connector should have a center conductor diameter that is equal to or larger than the cable center conductor diameter in order to maximise the power handling of the assembly.

The curves are the results of a typical application and are simulation results. Curves may vary depending on the connector. For specific questions please ask our offices.



Material data		
Connector parts	Material	Plating
Bodies	brass	SUCOPLATE®, Tin-Nickel , Silver, Nickel-Phosphorus
Outer contact	spring bronze	silver
Insulators	PTFE	
Centre contact	CuBe/ spring bronze, brass	silver
Gaskets	MVQ	
Coupling nut	brass	SUCOPLATE®

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

Series 4.3-10 – Cable connectors

Straight cable plugs (male)

For Semi-rigid cables, Sucoform and Multiflex cables

- Cable entry soldered
- Centre contact soldered

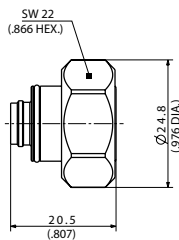


Fig. 1

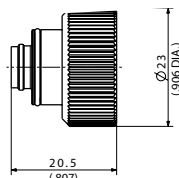


Fig. 2

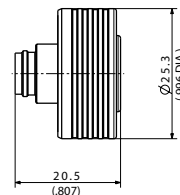


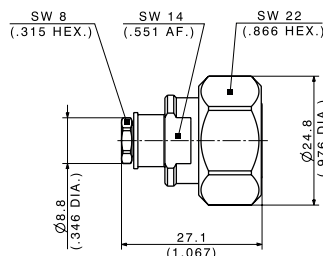
Fig. 3

HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Fig.
11_4310-50-5-X1/003_-H 11_4310-50-5-X1/003_-E	85020471 85021044	Y14 (SUCOFORM_250-1, EZ_250)	bulk 100 pcs single	1
11_4310-50-5-Y1/003_-E	85021045	Y14 (SUCOFORM_250-1, EZ_250)	single	2
11_4310-50-5-Z1/003_-H 11_4310-50-5-Z1/003_-E	85020523 85021047	Y14 (SUCOFORM_250-1, EZ_250)	bulk 100 pcs single	3

X: torque, Y: hand screw, Z: quick-lock

For semi-rigid, Sucoform and Multiflex cables

- Cable entry soldered
- Centre contact plugged

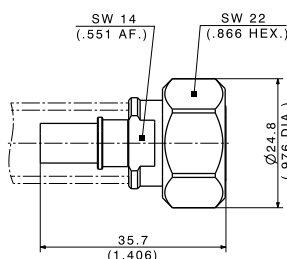


HUBER+SUHNER type	Item no.	Cable group (example)	Packaging
11_4310-50-3-X1/033_-Y	85081267	Y12 (SUCOFORM_141_Cu)	tray 40 pcs.

X: torque

Flexible cable

- Center contact plugged
- Outer contact: Crimped



HUBER+SUHNER type	Item no.	Cable group (example)	Packaging
11_4310-50-4-X1/033_-H	85078855	X28 (Spuma_240, LMR240)	Bulk

X: torque

Series 4.3-10 – Cable connectors

Right angle cable plugs (male)

For Semi-rigid cables, Sucoform and Multiflex cables

- Cable entry soldered
- Centre contact soldered

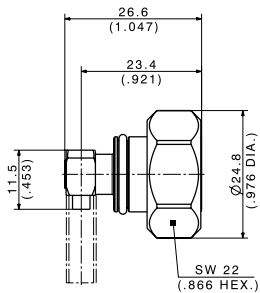


Fig. 1

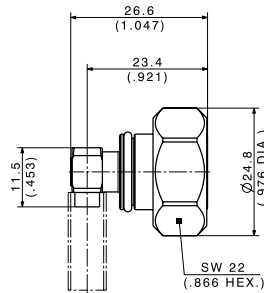


Fig. 2

HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Fig.
16_4310-50-2-X2/003_-H	85029015	Y3 (SUCOFORM_86)	bulk 100 pcs.	1
16_4310-50-3-X1/003_-H	85064160	Y12 (SUCOFORM_141)		2

X: torque

Right angle cable plugs (male)

For Semi-rigid cables, Sucoform and Multiflex cables

- Cable entry soldered
- Centre contact soldered

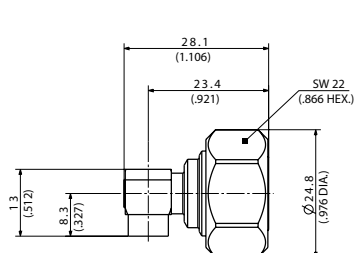


Fig. 1

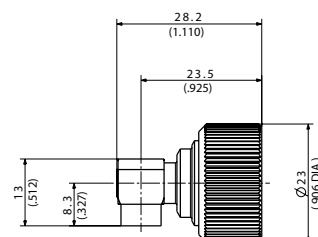


Fig. 2

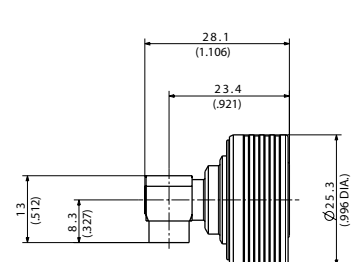


Fig. 3

HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Fig.
16_4310-50-5-X1/003_-E	85021049	Y14 (SUCOFORM_250-1)	bulk 100 pcs single	1
16_4310-50-5-Y1/003_-H 16_4310-50-5-Y1/003_-E	85020525 85021070	Y14 (SUCOFORM_250-1)	bulk 100 pcs single	2
16_4310-50-5-Z1/003_-H 16_4310-50-5-Z1/003_-E	85020526 85021071	Y14 (SUCOFORM_250-1)	bulk 100 pcs single	3

X: torque, Y: hand screw, Z: quick-lock

Series 4.3-10 – Cable connectors

Straight cable jacks (female)

For Semi-rigid cables, Sucoform and Multiflex cables

- Cable entry soldered
- Centre contact soldered

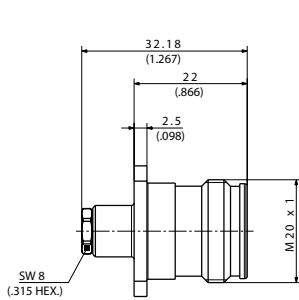


Fig. 1

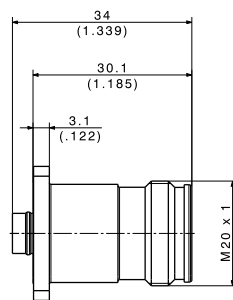


Fig. 2

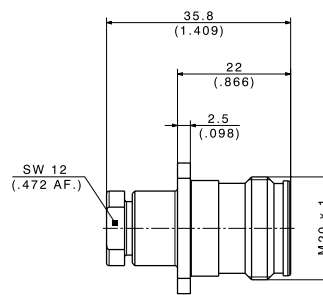
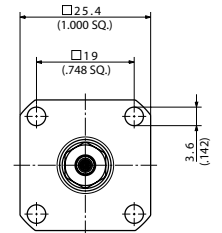


Fig. 3



Flange size for fig 1, 2 and 3

HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Notes	Fig.
25_4310-50-2-1/003_-Y 25_4310-50-2-1/003_-E	85020530 85021079	Y16 (SUCOFORM_86)	tray 20 pcs single	for cable type 0.086	1
25_4310-50-3-6/003_-Y	85116109	Y5, Y12 (Sucoform/EZ 141)	Tray	for cable type 0.141	2
25_4310-50-5-1/003_-Y	85064165	Y14 (SUCOFORM_250-1)	tray 50 pcs	for cable size 0.250	3

For semi-rigid, Sucoform and Multiflex cables

- Cable entry soldered
- Centre contact soldered

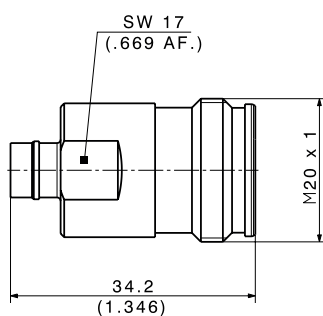


Fig. 1



HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Fig.
21_4310-50-3-1/003_-Y	85068552	Y12 (SUCOFORM_141_Cu)	tray 50 pcs.	1

Series 4.3-10 – receptacles

Straight panel receptacle (jack)

With coaxial end

- 4 hole, 1 inch flange

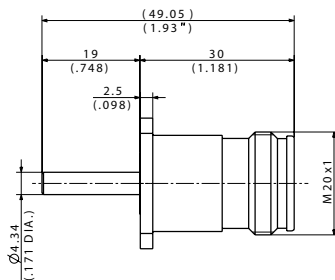


Fig. 1

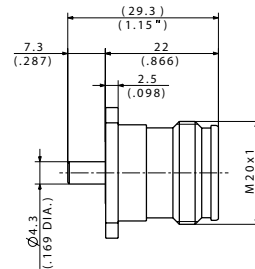
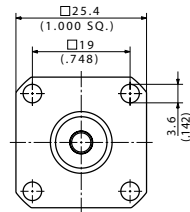


Fig. 2

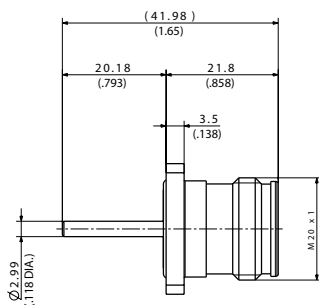
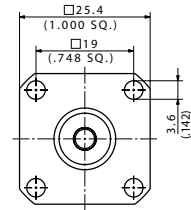


Fig. 3

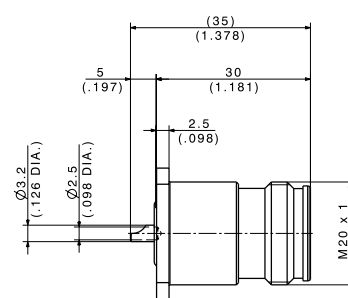
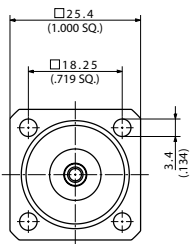
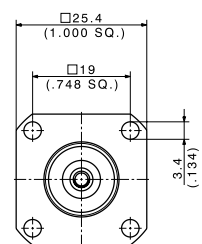


Fig. 4



HUBER+SUHNER type	Item no.	Packaging	Notes	Fig.
23_4310-50-0-1/003_-Y	85020598	tray 40 pcs		1
23_4310-50-0-1/003_-E	85021072	single		
23_4310-50-0-2/003_-Y	85020599	tray 60 pcs		2
23_4310-50-0-2/003_-E	85021073	single		
23_4310-50-0-5/003_-Y	85021011	tray 60 pcs	with panel seal	3
23_4310-50-0-5/003_-E	85020470	single		
23_4310-50-0-16/003_-Y	85064166	tray 50 pcs		4

Series 4.3-10 – protective caps

Protective cap for 4.3-10 female (jack) interface

- Economical design
- Snap on silicon material design

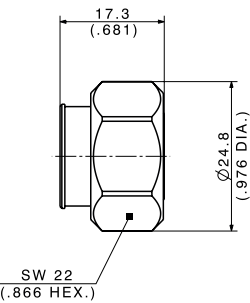


HUBER+SUHNER type	Item no.	Packaging	Notes
62_4310-0-0-1/---_H	85092602	each	Ingress Protection IP X8

X: torque

Protective cap for 4.3-10 jack

- Water protection, IP68



HUBER+SUHNER type	Item no.	Packaging	Notes
62_4310-0-0-X3/-33_-E	85083632	each	4.3-10 torque type

X: torque

4.3-10 Plus

Eliminating the 4.1-9.5 mating problem

- Patented solution, US 9,831,619 B2
- IEC Compatible design
- Extended dielectric prevents damage from 4.1-9.5 (mini-Din) male connectors
- Antenna and filter connectors per customer requests



Comparison between 4.3-10 plus and 4.3-10 standard interface.

HUBER+SUHNER type	Item no.	Packaging	Fig.
23_4310-U50-0-58/003_-Y	85105910	Tray packaging	1

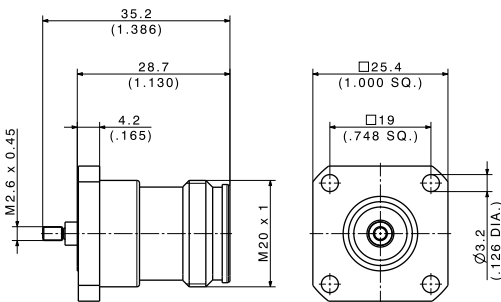


Fig. 1

Low PIM Adaptors: NEX10 and 4.3-10

- Between series and within series
- Intermodulation < -166dBc, 2x20W, 1.8GHz

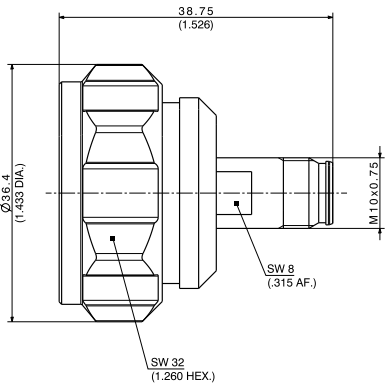


Fig. 1

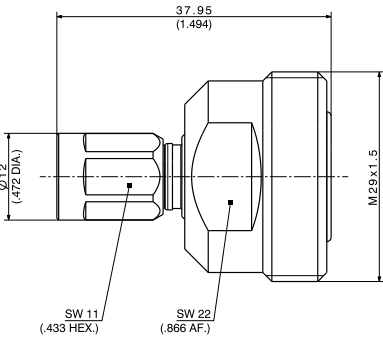


Fig. 2

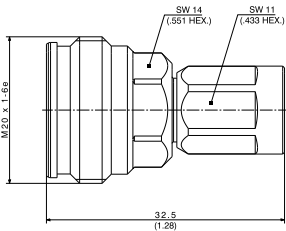


Fig. 3

HUBER+SUHNER type	Item no.	Description	Packaging	Fig.
33_716-NEX10-50-1/133_WE	85092476	NEX10 (f)-7/16 (m)	Each	1
33_NEX10-716-50-X1/133_WE	85092478	NEX10 (m, type X)-7/16 (f)	Each	2
33_NEX10-4310-50-X1/003_Y*	85095346	NEX10 (m, type X)-4310 (f)	Each	3

* RL Data on request

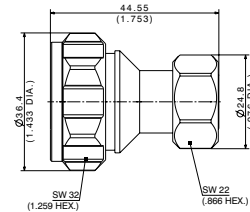


Fig. 1

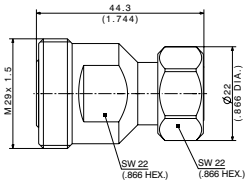


Fig. 2

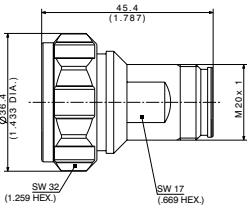


Fig. 3

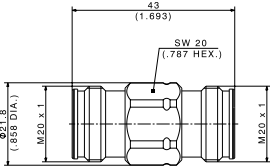


Fig. 4

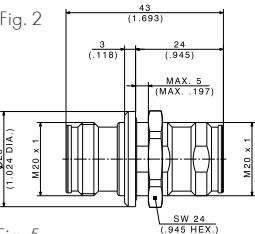


Fig. 5

HUBER+SUHNER type	Item no.	Description	Packaging	Fig.
32_4310-716-50-X1/133_WE	85017233	4310 (m) (type 1)-7/16 (m)	Each	1
33_4310-716-50-X1/133_WE	85017237	4310 (m) (type 1)-7/16 (f)		2
33_716-4310-50-1/133_WE	85017213	4310 (f)-7/16 (m)		3
31_4310-50-0-1/003_WE	85064168	4310 (f)-4310 (f)		4
34_4310-50-0-1/003_WE	85064169	4310 (f)-4310 (f) mounting hole ML 183	Each, with panel gasket	5

X: torque

Measurement Adaptors: NEX10[®] and 4.3-10

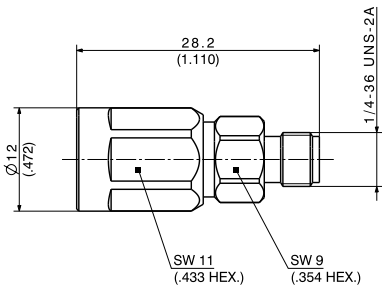


Fig. 1

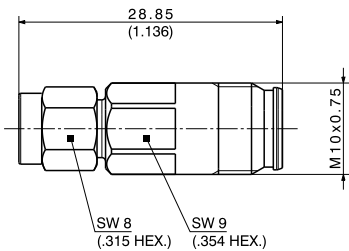


Fig. 2

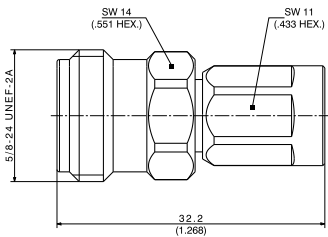


Fig. 3

HUBER+SUHNER type	Item no.	Description	Packaging	Fig.
33_NEX10-PC35-50-X1/1-9_NE	85092467	NEX10 (m, type X) - PC35 (f)	Each	1
33_PC35-NEX10-50-1/199_NE	85092475	NEX10 (f) - PC35 (m)	Each	2
33_NEX10-N-50-X1/109_-E*	85095344	NEX10 (m, type X) - N (f)	Each	3

* RL Data on request X: torque

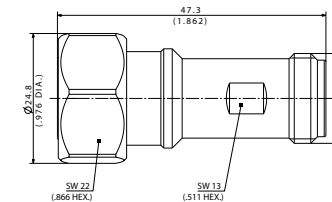


Fig. 1

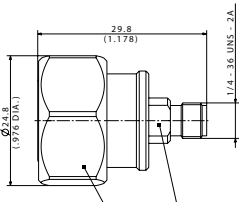


Fig. 2

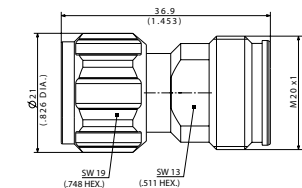


Fig. 3

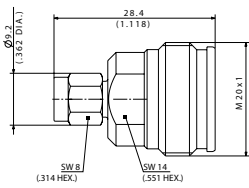


Fig. 4

HUBER+SUHNER type	Item no.	Description	Packaging	Fig.
33_4310-N-50-X1/133_NE	85017229	N (f)/4310 (m)	Each	1
33_4310-PC35-50-X1/133_NE	85017252	PC35 (f)/4310 (m)		2
33_N-4310-50-1/133_NE	85017232	N (m)/4310 (f)		3
33_PC35-4310-50-1/1-9_NE	85017256	PC35 (m)/4310 (f)		4

X: torque

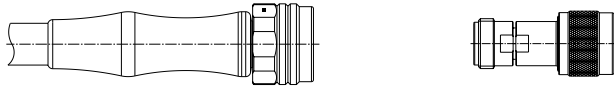
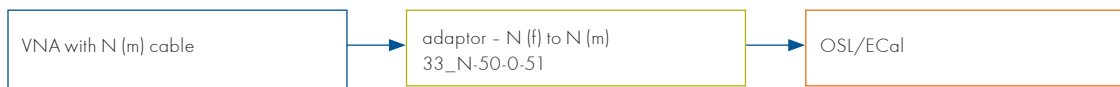
Series 4.3-10 – Calibration with precision adaptors (swapping method)

For return loss/VSWR measurements of 4.3-10 connectors, HUBER+SUHNER recommends the following calibration method. Depending on the 4.3-10 side (male or female) or ports on the test leads, different configurations are possible. Four different configurations with PC3.5 calibration kits or precision N calibration kits are listed below:

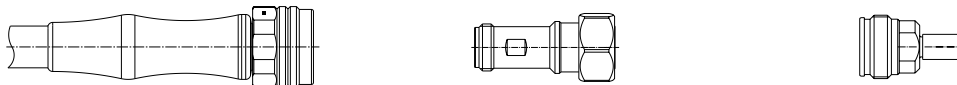
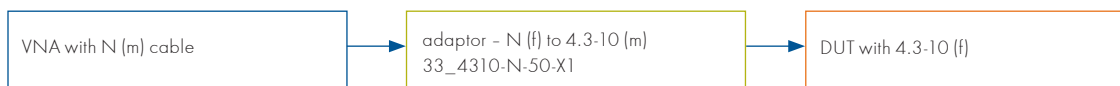
Configuration 1

DUT type: 4.3-10 female, test port/cable: N male

Step 1, calibrate with precision adapter



Step 2, replace the 33_N-50-0-51 adaptor with matching 4.3-10 adaptor and connect with DUT



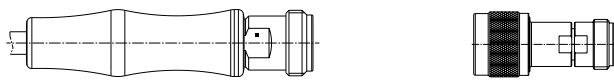
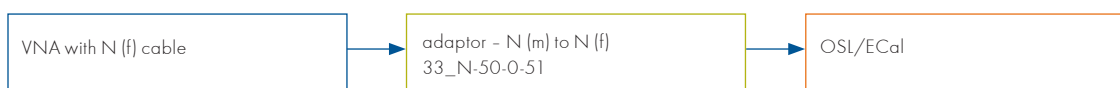
Note:

For VNA measurement cable with PC 3.5 (m) instead of N (m), replace the 33_N-50-51 adaptor with matching 33_PC35-50-0-2 for calibration and 33_4310-PC35-50-X1 for measurement.

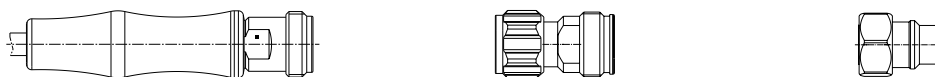
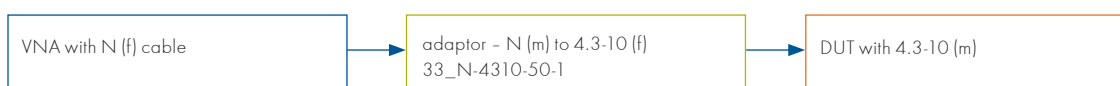
Configuration 2

DUT type: 4.3-10 male; test port/cable: N female

Step 1, calibrate with measuring adaptor



Step 2, replace the 33_N-50-0-51/193 NE adaptor with matching 4.3-10 adapter and connect with DUT



Note:

For VNA measurement cable with PC 3.5 (f) instead of N (f), replace the 33_N-50-51 adaptor with matching 33_PC35-50-0-2 for calibration and 33_PC35-4310-50-1 for measurement.

Torque Wrenches

HUBER+ SUHNER offers following torque wrenches for NEX10 and 4.3-10 series.



HUBER+SUHNER type	Item no.	Description	Torque	Opening
74_Z-0-0-663	85101096	NEX10 (m, type X)	1.5 Nm	AF11
74_Z-0-0-504	85020152	4.3-10	5 Nm	22 mm

X: torque

RF Terminations

HUBER+SUHNER offers following terminations for 4.3-10 and NEX10 interface.

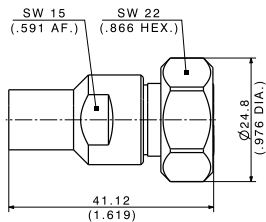


Fig. 1

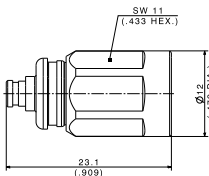


Fig. 2

HUBER+SUHNER type	Item no.	Series	Avg. power	Max Fre- quency	Packaging	Fig.
65_4310-50-0-X1/033_-E	85096478	4.3-10	2W at 30°C	DC-4GHz	Each	1
65_NEX10-50-0-X1/003_NE	85113130	NEX10	2W at 85°C	DC-6GHz	Each	2

X: torque

PIM Measurement Flexible Cable Assemblies

High flexible PIM test lead

Especially designed for in field and factory PIM testing of antennas and components.

- More than 2000 mating cycles
- Very stable PIM under dynamic test (< 160 dBc, 2 × 43 dBm)
- Small bend radius (> 110 mm/4.3 inch)
- Excellent return Loss (≥ 23 dB up to 3 GHz)



Configuration	Item no.	Description	Length
4.3-10 male (X) - DIN 7/16 male	85029279	TL-P-11431X-11716-01500-51	1.5 m
NEX10™ male (X) - DIN 7/16 male	85091353 85091354	TL-P-11716-11NXX-01500-51 TL-P-11716-11NXX-03000-51	1.5 m 3.0 m

X: torque

LISCA

Corrugated RF jumper cable assembly



- Excellent return loss
- Low, stable passive intermodulation products (PIM)
- Low attenuation
- Moisture protection IP68
- Factory-made cable assemblies
- Test leads for low intermodulation test equipment
- Now as well with IP boots available



HUBER+SUHNER Lisca assemblies

Lisca cable assemblies are specially developed for applications where low VSWR and low attenuation combined with low intermodulation products are required. The excellent performance is achieved by utilizing corrugated Sucofeed cables with low intermodulation designed connectors and a controlled assembly process with HUBER+SUHNER solder technology. This product line is designed to provide optimal performance up to 6 GHz.

- Excellent RF performance
- Low attenuation
- Low stable intermodulation products
- Moisture protection IP 68



Besides our existing Lisca portfolio, the following NEX10 and 4.3-10 configurations can be ordered:

			example:		LIS - C5 F - 11		431X - 16		NXX - 02000 - 51		
			product name								
Sucofeed_1/4_HF		C5	cable type								
Sucofeed_3/8_HF		C7									
Flame retardant		F									
PE		No indication									
Straight male		11	pattern of connector				1		2		
Right angle male		16									
Straight female		21									
NEX10™		type 1: torque	NXX	4.3-10	type 1: torque	431X	1		2		
		type 3: quick lock	NXZ		type 3: quick lock	431Z					
* Other interfaces like 7/16, 4.1-9.5, N and SMA are also available with NEX10 jumpers.											
* Rubber boot protection for jumpers also available on request											
			assembly length in mm								
LTE Standard, RL/PIM tested		52	jumper performance code								
Customer specific		01									

Example: LIS-C5-F-11NXX-16431X-02000-52 means ¼" flexible Lisca jumper with NEX10 screw male on one side, right angle 4310 (m) screw on the other side with overall length of 2.0 m and performance code of 52 (standard RL/ PIM performance)

Universal Weather Protection Boots

Silicon rubber boot protection against water ingress and corrosion.

- IP68 (1m, 24hrs, 20°C)
- UV resistant (silicon)
- NEX10 and 4.3-10 Torque types only (quick lock on request)
- N, 716 and 4.1-9.5 interface also available
- Boots can be ordered as individual products or assembled on LISCA assemblies



HUBER+SUHNER type	Item no.	Series	Cable type	Packaging	Notes
62_NEX10-U0-0-X1/---_E	85097853	NEX10 (str)	Sucofeed_1/4"HF	Each	Field mountable/one piece design
62_NEX10-U0-0-X1/---_Y	85095293	NEX10 (str)	Sucofeed_1/4"HF	Bulk	Field mountable/one piece design
62_NEX10-U0-0-X2/---_E	85112104	NEX10 (str)	Sucofeed_3/8"HF	Each	Field mountable/one piece design
62_NEX10-U0-0-X2/---_Y	85112105	NEX10 (str)	Sucofeed_3/8"HF	Bulk	Field mountable/one piece design
62_NEX10-U0-0-X3/---_E	85118057	NEX10 (r/a)	Sucofeed_1/4"HF	Each	One piece design
62_NEX10-U0-0-X3/---_Y	85118058	NEX10 (r/a)	Sucofeed_1/4"HF	Bulk	One piece design
62_4310-U0-0-6/---_E	85076268	4.3-10 (str)	Sucofeed_1/2"HF Sucofeed_1/2" Annular	Each	One piece design
62_4310-U0-0-6/---_Y	85076267	4.3-10 (str)	Sucofeed_1/2"HF Sucofeed_1/2" Annular	Bulk	One piece design
62_4310-U0-0-7/---_E	85106932	4.3-10 (str)	Sucofeed_1/4"HF Sucofeed_3/8"HF	Each	Field mountable/one piece design
62_4310-U0-0-7/---_Y	85106931	4.3-10 (str)	Sucofeed_1/4"HF Sucofeed_3/8"HF	Each	Field mountable/one piece design
62_4310-U0-0-X8/---_E	85118062	4.3-10 (str)	Sucofeed_1/4"HF Sucofeed_3/8"HF	Each	Field mountable/two piece design Max OD 30mm
62_4310-U0-0-X8/---_Y	85118063	4.3-10 (str)	Sucofeed_1/4"HF Sucofeed_3/8"HF	Bulk	Field mountable/two piece design Max OD 30mm
62_4310-U0-0-X5/---_E	85118064	4.3-10 (r/a)	Sucofeed_1/4"HF Sucofeed_3/8"HF	Each	Two piece design
62_4310-U0-0-X5/---_Y	85118065	4.3-10 (r/a)	Sucofeed_1/4"HF Sucofeed_3/8"HF	Bulk	Two piece design
62_716-U0-0-6/---_E	85074664	716 (str)	Sucofeed_1/2"HF Sucofeed_1/2" Annular	Each	Field mountable/two piece design
62_716-U0-0-6/---_Y	85074682	716 (str)	Sucofeed_1/2"HF Sucofeed_1/2" Annular	Bulk	Field mountable/two piece design
62_N-U0-0-20/---_E	85074693	N (str)	Sucofeed_1/2"HF Sucofeed_1/2" Annular	Each	Field mountable/two piece design
62_N-U0-0-20/---_Y	85074694	N (str)	Sucofeed_1/2"HF Sucofeed_1/2" Annular	Bulk	Field mountable/two piece design

Note:

The overall diameter the boots differ depending on the interface and design of boot. Please check data sheet for exact dimensions of each individual boot and assembly instructions.

Series Quick-Fit plus – field terminated coaxial connectors

Description

Thanks to their one-piece design, the new Quick-Fit plus connectors eliminate loose parts such as O-rings and washers. This allows extremely easy and fast assembling and removes the need for additional steps such as the application of grease on sealings. The innovative cable entry design allows the connectors to be mounted using standard wrenches, eliminating the need for expensive tools or calibrated torque wrenches.



Connector portfolio 4.3-10 screw

Cable compatibility

- Quickfit Plus connectors are available for following 1/2» Annular and Plenum cables
- Type a: HUBER+SUHNER Sucofeed_1/2, _1/2_LW, _1/2_FR, _1/2_PW
- Type b: RFS CELLFLEX LCF-50JFN, ICA12-50JPL, ICA12-50JPLW, ICA12-50JPLLW
- Type c: ANDREW/COMMScope LDF4-50A
- Type d: ANDREW/COMMScope HL4RPV-50
- Type e: ANDREW/COMMScope AL4RPV-50

Connector style	Type description	Item number	Cable type
4.3-10 male straight	11_4310-50-12-X60	85067026	a, b, c
4.3-10 male right angle	16_4310-50-12-X60	85067267	a, b, c
4.3-10 female straight	21_4310-50-12-60	85067226 (fits all locking mechanisms)	a, b, c
4.3-10 male straight	11_4310-50-12-X61	85067072	d
4.3-10 male right angle	16_4310-50-12-X61	85067268	d
4.3-10 female straight	21_4310-50-12-61	85067228 (fits all locking mechanisms)	d
4.3-10 male straight	11_4310-50-12-X62	85086308	e
4.3-10 male right angle	16_4310-50-12-X62	85092655	e
4.3-10 female straight	21_4310-50-12-62	85092653	e

MaxTool – All-in-one cable preparing tool

- Fully controlled/zero defect cable preparing
- Perfect cutting process – no swarf – no PIM
- Easy-to-handle – easy-to-carry
- Ergonomic design
- Semi-automated and manual operation



RF cable assembly SPJ/SM

Plenum rated RF assembly with cable Sucoform 122/222

HUBER+SUHNER standard plenum jumper with Sucoform cables (SPJ/SM) for applications where optimum VSWR and attenuation combined with low intermodulation products are required. Perfectly designed for connectivity solution for indoor and outdoor DAS and Small Cell installations, coax-link between antennas and feeder-lines or between components in an active or passive DAS tray.

- Excellent low loss (attenuation/return loss)
- Low PIM
- Small bending radius
- Plenum certified cables
- Excellent shielding performance



Standard plenum jumper with Sucoform cables

Cable types	Cable attenuation	Jacket diameter	Bending radius
Sucoform 122 LA Cu CMP	0.66 dB/m @ 2.7 GHz	3.75 mm	min. 5 mm
Sucoform 222 LA Cu CMP	0.41 dB/m @ 2.7 GHz	6.20 mm	min. 25 mm

Connector types	Male straight	Male right angle	Female straight
DIN 7/16	X	X	X
DIN 4.1/9.5	X	X	X
N	X	X	X
4.3-10-X (HEX. Nut)	X	X	X
SMA	X	X	X
QMA	X		
NEX10	X	X	X

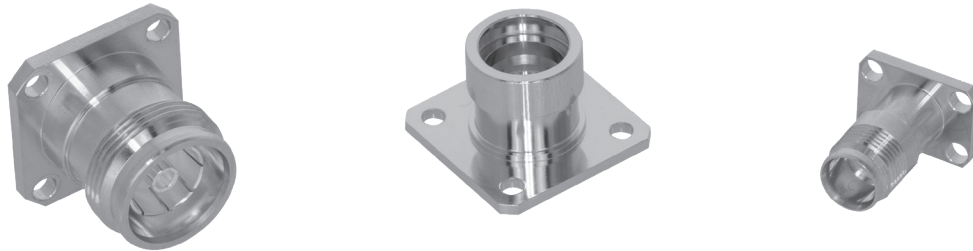


Technical data			
Frequency range	DC up to 6 GHz		
Return loss	Frequency 0.38 to 1.0 GHz up to 2.2 GHz up to 2.7 GHz up to 3.8 GHz up to 6 GHz	Straight/straight ≥ 29 dB ≥ 27 dB ≥ 26 dB ≥ 23 dB ≥ 20 dB	Straight/angle ≥ 28 dB ≥ 25 dB ≥ 24 dB ≥ 20 dB ≥ 19 dB
PIM performance at 1.8GHz 2x 43dBm	≤ 160 dBc (QMA: ≤ 140 dBc)	typical –165 dBc	

Environmental data	
Temperature range	–40 to 105 °C
Waterproof	IP67 (0.5 m/1 h/20 °C)
Cable performance	UV resistance
	UL444/CMP/FT6, ETL listed
	Jacket colour: white
Further information	100 % tested for return loss, attenuation and PIM Serial product label on each jumper for tracking Stock items in lengths of 0.5 up to 5 m

Platings for Antenna connectors

HUBER+SUHNER has state of the art plating capabilities to provide different plating solutions depending on the market and customer requirements.



SUCOPLATE

SUCOPLATE has been used for more than 20 years for connectors in outdoor and indoor applications. The plating consists of a copper-tin-zinc alloy and offers beneficial electrical properties, good corrosion protection and an attractive appearance. Hardness of 600 to 700 HV as well as good abrasion resistance and ductility prevent damage even under mechanical stress from friction or bending. Its high electrical conductivity and low coefficient of friction ensure good electrical contact. The non-magnetic alloy has excellent PIM performance and also offers low attenuation at high frequencies.

720 hours corrosion resistant applications

The current trend in the market is to have a minimum requirement of 720hrs corrosion resistant for antenna connectors. Therefore, HUBER+SUHNER offers the following plating solutions for such applications.

Suro720

The trimetal plating is now state of the art. HUBER+SUHNER has developed an improved version of trimetal as Suro720 with higher corrosion resistant for applications which require better performance against corrosion. This improved trimetal provides the same solderability, handling and electrical performance as the existing trimetal but a much higher corrosion resistant. Therefore, this new Suro720 plating can be used for filter type connectors as well as cable connectors which need excellent PIM and solderability.

Tin Nickel

This plating allows to have an excellent corrosion resistant when tested against 720hrs salt mist test. The addition of Tin to the Nickel plating helps to make the plating non-magnetic and hence an excellent candidate for applications requiring high corrosion resistance as well as low PIM. For applications which require soldering of connectors to cables, the plating shall be verified before use.

Nickel Phosphorus

The addition of Phosphorus to Nickel also makes an excellent non-magnetic plating for RF connectors. This plating is already used as an underlayer in many gold plating applications, e.g., Sucopro. This plating can also be a good candidate for applications requiring low PIM and corrosion resistant.

Silver

Silver plating provides an excellent corrosion resistances when tested in a 720hrs corrosion test. Due to its non-magnetic properties, excellent electrical conductivity and solderability, silver is an excellent candidate for RF connectors used in telecommunications market. However, silver can become discolored with time due to oxidation which does not influence the characteristics of plating.

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HUBER+SUHNER is certified according to EN (AS) 9100, ISO 9001, ISO 14001, ISO/TS 16949 and IRIS.

Waiver

Fact and figures herein are for information only and do not represent any warranty of any kind.