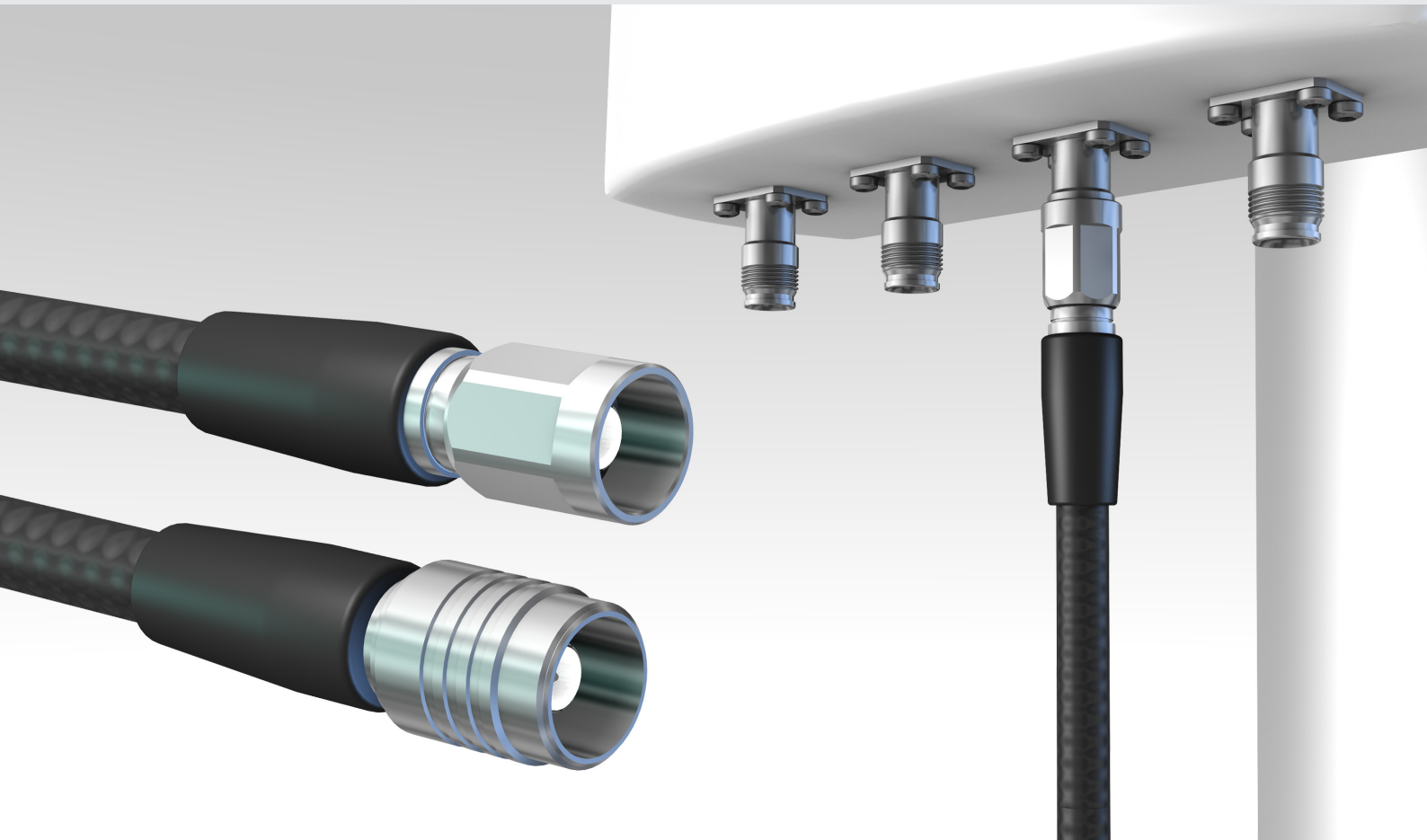


NEX10™

Miniature coaxial connectors

Edition 2018/04



Small size 12.7 mm flange height

Robust design for outdoor use

Low PIM –166 dBc independent of torque

NEX10™:

Small, Robust and Low PIM RF Connector series





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Your partner for system solutions

HUBER+SUHNER is a leading international manufacturer and supplier of components and systems for electrical and optical connectivity. HUBER+SUHNER unites technical expertise in radio frequency technology, fiber optics and low frequency under one roof and offers a high-quality product range for the communication, transport and industrial markets.

Miniature low PIM RF coax connector system

As a leader of innovative RF interconnector solutions, HUBER+SUHNER in partnership with two other leading suppliers has developed a coaxial connector solution for the smaller equipment in the telecom market.

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

- Optimized for 1/4" flexible cable
- Low PIM, independent of coupling mechanism
- Operating frequency up to 20 GHz
- Small size, flange height of 12.7 mm
- Protection of contact areas
- Three coupling mechanisms (quick lock, screw and hand screw)
- Rubber boot weather protection

Benefits

- Robust design for outdoor use
- Reliable performance eliminating installation errors
- Excellent RL and electrical performance
- Compact and space saving modules
- Interface safe from installation damages
- Flexibility in installation
- Interface specific boot guaranteeing protection in extreme weather

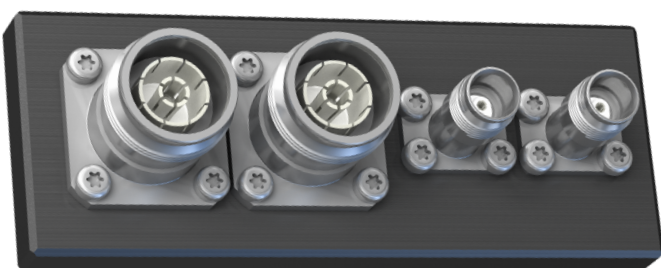
Series NEX10™ – technical data

Requirement	NEX10			
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 Screw Quick lock	DC to 6 GHz ≥ 110 dB DC to 3 GHz: ≥ 90 dB (typical) 3 – 6 GHz: ≥ 70 dB (typical)			
Durability (mating cycles)	100 min. 500 for test and measurement adaptors			
Mating characteristics Quick lock: Engagement force Screw type: Rec. Torque	40 N Typical 1.5 Nm			
Interface retention force	Quick lock 150 N min.	Screw 500 N min		
Bending Force	≥ 5 Nm			
Vibration	100 m/s ² , 10 - 500 Hz (IEC 61169-1§9.3.3)			
Cable size	Optimized for corrugated 1/4" flex			
Flange height	12.7 mm			

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 3 Nm	100 N Typical 5 Nm
Cable size	Optimized for corrugated 1/4" flex	Optimized for corrugated 1/2" flex
Flange height	12.7mm	25.4mm

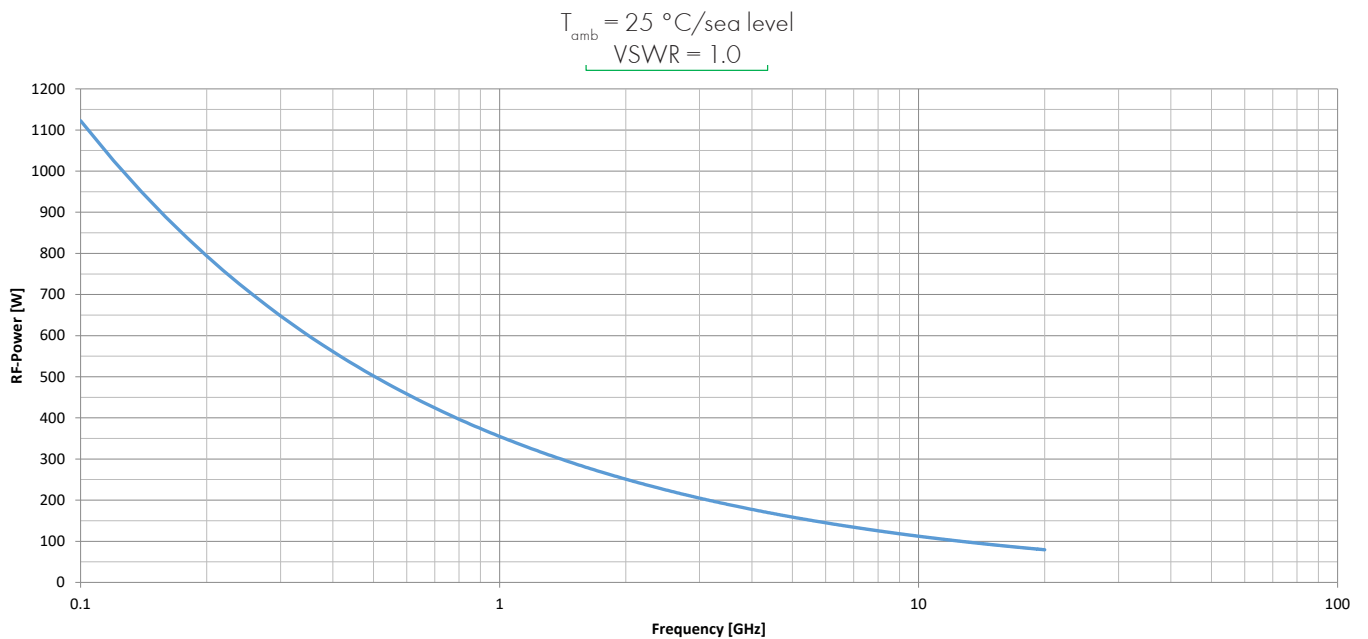


Size comparison between 4.3-10 and NEX10™

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® / silver
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)

For Sucoform, the hand formable cables

- Cable entry soldered
- Centre contact soldered

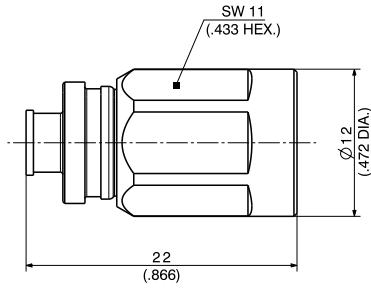


Fig. 1

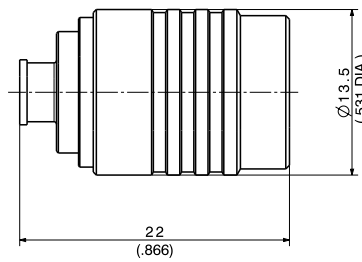


Fig. 2

HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Fig.
11_NEX10-50-3-X1/033_-H	85091361	Y12, (Sucoform_141)	Bulk	1
11_NEX10-50-3-Z2/003_-H	85095347	Y12, (Sucoform_141)	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

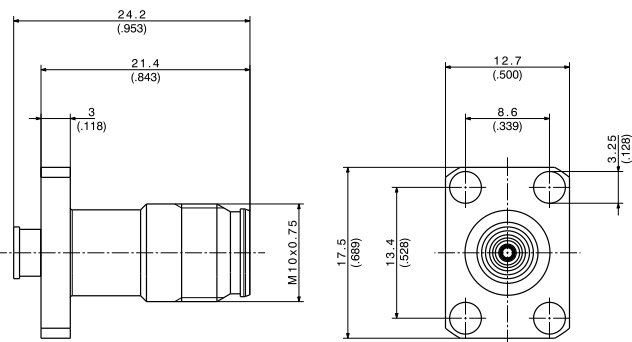


Fig. 1

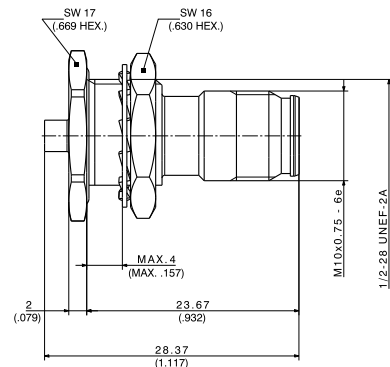


Fig. 2

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

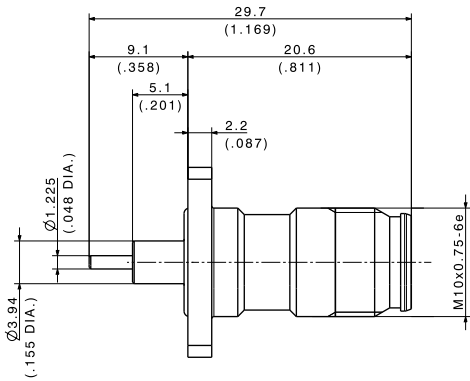


Fig. 1

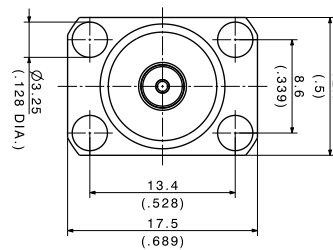
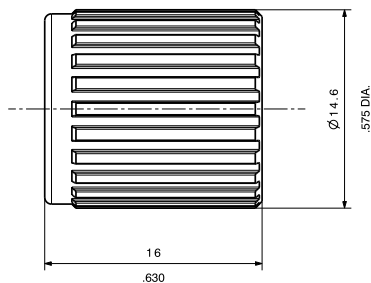


Fig. 2

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/---_H	85095030	Bulk	Ingress Protection IP X8

Series NEX10™ – PIM adaptors



Between series adaptors NEX10™ – 716

- Intermodulation <math>< -166 \text{ dBc}</math>, $2 \times 20 \text{ W}$, 1.8 GHz
- RL $\geq 28 \text{ dB}$, DC to 4 GHz

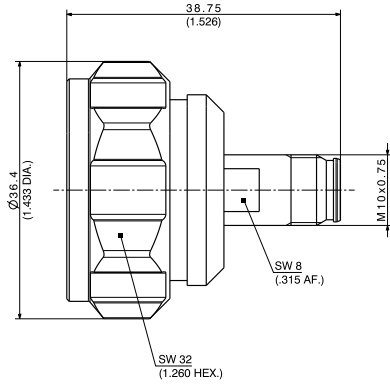


Fig. 1

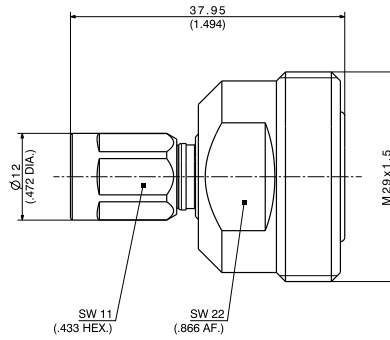


Fig. 2

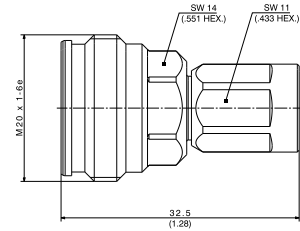


Fig. 3

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 X: screw

Series NEX10™ – measurement adaptors



Between series adaptors NEX10™-N, NEX10™-PC3.5

- Optimized for NEX10™ swapping calibration
- RL $\geq 34 \text{ dB}$, DC to 4 GHz
- $\geq 32 \text{ dB}$, DC to 6 GHz

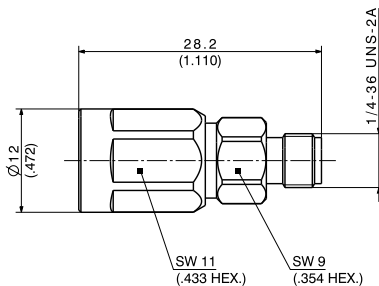


Fig. 1

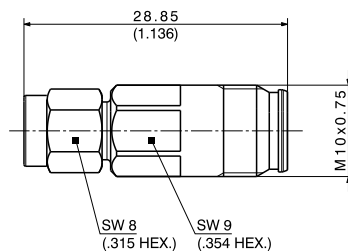


Fig. 2

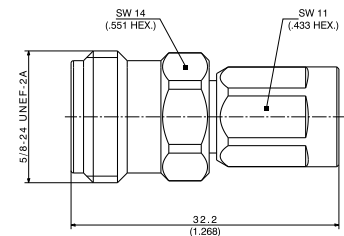


Fig. 3

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: screw

NEX10™ PIM measurement cables

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
NEX10™ male (screw) - DIN 7/16 male	85091353	TL-P-11716-11NXX-01500-51	1.5 m
	85091354	TL-P-11716-11NXX-03000-51	3.0 m

Series NEX10™ – torque wrench



HUBER+SUHNER type	Item no.	Description	Torque	Opening
74_Z-0-0-663	85101096	NEX10 (m, type X)	1.5 Nm	AF11

Series NEX10™ – Jumper

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™ configurations can be ordered:

		example:	LIS - C5 F - 11 431X - 16 NXX - 02000 - 51			
		product name				
Sucofeed_1/4_HF	C5	cable type				
Flame retardant	F					
Plenum white	P					
PE	No indication					
Straight male	11	pattern of connector	1	2		
Right angle male	16					
Straight female	21					
NEX10™	type 1: screw type 3: quick lock	NXX NXZ	4.3-10	type 1: screw type 2: hand screw type 3: quick lock	431X 431Y 431Z	1 2
* 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				
Standard	51	jumper performance code				
LTE Standard, RL/PIM tested	52					
Customer specific	01					

Example: LIS-C5-F-11NXX-16431X-02000-51 means 1/4" 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 51 (standard RL/ PIM performance)

Rubber boot



Rubber boots protect the connection from extreme weather conditions (water, ice, corrosion). The NEX10™ interface (female side) has a designated sealing area for rubber boots. The boot offers IP 68 protection and is tested accordingly. The NEX10™ rubber boot is available as a standard product for screw type connectors.

Multicoax



The separation of electrical and mechanical contact in NEX10™ interface allows to have a PIM stable multicoax and blind mate solution. The NEX10™ multicoax solution can consist of upto five connectors integrated in one housing. The multi-coax solution could provide benefits of space reduction and installation time while providing excellent electrical performance and mechanical robustness for outdoor use.

HUBER+SUHNER AG
Radio Frequency Division
Degersheimerstrasse 14
9100 Herisau
Switzerland
Phone +41 71 353 4111
hubersuhner.com

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

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