

Series QN – coaxial connectors

Description

HUBER+SUHNER QN coaxial connectors are available with 50 Ω impedance. The frequency range extends to 11 GHz, depending on the connector and cable type, however most of the QN connectors are return loss optimised for frequencies up to 6 GHz. The interface is based on the inner dimensions of the N connector but instead of a threaded coupling mechanism a snap-lock mechanism is used.

The QN interface has a very similar performance to N, but in addition it offers an easier, faster and safe coupling operation, helping the customers to save significantly time during production of their systems.

The packaging density of QN increased compared to N thanks to the fact that no torque spanner is required to fasten the coupling nut. Additionally the outer dimensions of QN are smaller than N, leading to the advantage that even TNC-size flanges can be used at QN connectors.

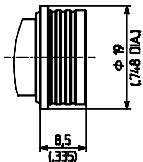
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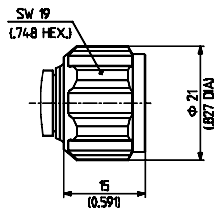
Interface dimensions compared to N

Plug (male)

QN

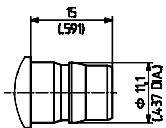


N

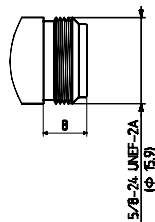


Jack (female)

QN



N



Features of QN connectors

- Cycle time improvement for making RF connections (10 times faster to mount than threaded connectors)
- No torque required
- Higher packaging density
- Free-rotating connection when mated (cable torsion relief)
- Eliminates loosening problems associated with threaded connectors
- Same performance as N
- Best intermodulation performance thanks to the unique interface design

HUBER+SUHNER QN – the cost effective solution for advanced RF interconnections!

IP rating (interface, mated) IP68

Series QN – technical data

Electrical data	Requirements
Impedance	50 Ω
Frequency range	DC to 6 GHz (optimised) DC to 11 GHz (working range)
Dielectric withstanding voltage (at sea level)	2500 V rms, 50 Hz
Working voltage (at sea level)	≤ 1000 V rms, 50 Hz
Insulation resistance	≥ 5 · 10 ³ MΩ
Contact resistance • Centre contact • Outer contact	≤ 1.5 mΩ ≤ 1.5 mΩ
RF leakage	100 MHz to 3 GHz ≥ 90 dB
Return loss (typical)	DC to 3 GHz ≥ 32 dB; 3 to 6 GHz ≥ 25 dB; 6 to 11 GHz ≥ 20 dB
Intermodulation	better -155 dBc (2 × 43 dBm carrier)

Mechanical data	Requirements
Engagement force (typical)	30 N
Disengagement force (typical)	30 N
Retention force for interface	≥ 450 N
Bending moment admissible (interface)	≤ 10 Nm
Contact captivation	≥ 28 N
Durability (matings)	≥ 100

Environmental data	Requirements
Temperature range	-40 to +125 °C / -40 to +257 °F
Climatic category	40/125/21 (IEC 60169_1 16.2)
Moisture resistance	MIL-STD-202, method 106 F
Corrosion	saltspray test acc. to MIL-STD-202, method 101 D, condition B
Vibration	IEC-1169-1 paragraph 9.3.3. (10 to 500 Hz; 5 g)
Shock	MIL-STD-202, method 213, condition 1
Rapid change of temperature	IEC 60169-1 16.4 (-40 to +125 °C / -40 to +257 °F)

Material data		
Connector parts	Material	Plating
Bodies	brass	SUCOPLATE®
Pin contacts	brass	SUCOPRO® gold plating
Socket contacts	spring bronze	SUCOPRO® gold plating
Insulators	PTFE or PFA	
Contact washer	spring bronze or copper-beryllium	SUCOPRO® gold plating

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

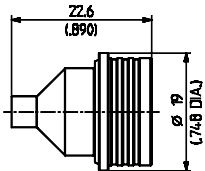
The products are designed and guaranteed to pass the above mentioned test procedures. Any additional or different requirement arising from specific applications or environmental conditions which is not covered by these test procedures is subject to request.

Series QN – cable connectors

Straight cable plugs (male)

For semi-rigid, Sucoform and Multiflex cables

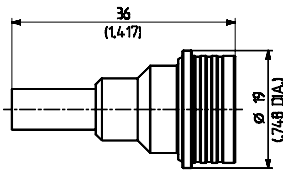
- Cable entry soldered
- Centre contact plugged-in



HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Assembly instruction
11_QN-50-3-3/113_NE	23033393	Y5, Y12 (SM_141)	single	27502

For flexible cables

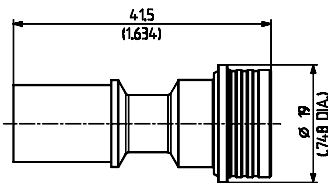
- HUBER+SUHNER full crimp



HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Assembly instruction	Crimp insert
11_QN-50-3-1/133_NE	23033391	U9 (EF_142)	single	27500	2 B
11_QN-50-3-2/133_NE	23033392	U7 (RG_58_C/U)		27501	
11_QN-50-3-4/133_NE	84016563	U11, U41 (EF_400)		230235	

For flexible cables

- HUBER+SUHNER full crimp



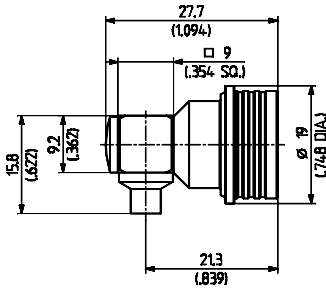
HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Assembly instruction	Crimp insert
11_QN-50-7-1/133_NE	23033394	U32, U43 (RG_214_U)	single	27503	3 D
11_QN-50-7-2/133_NE	23033395	U33 (EF_393)		27504	2.5 D
11_QN-50-7-3/133_NE	23033396	U29, U42 (RG_213/U)		27505	3 D

Series QN - cable connectors

Right angle cable plugs (male)

For semi-rigid, Sucoform and Multiflex cables

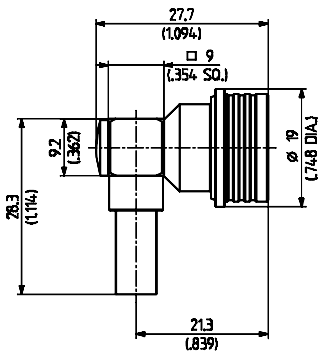
- Cable entry soldered
- Centre contact soldered



HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Assembly instruction
16_QN-50-3-3/13_NE	23033268	Y5, Y12, Y17 (SM_141)	single	27508

For flexible cables

- Cable entry crimp
- Centre contact soldered



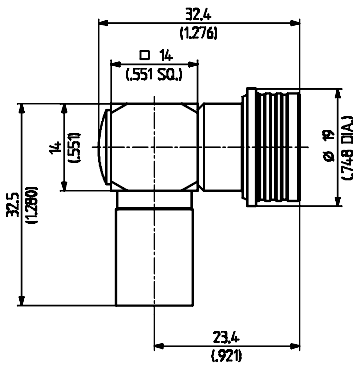
HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Assembly instruction	Crimp insert
16_QN-50-3-1/133_NE	23033267	U9, U11, U39 (EF_400)	single	27506	B
16_QN-50-3-2/133_NE	23033398	U7 (RG_58_C/U)		27507	B
16_QN-50-4-1/133_NE	23033078	S16 (S_04262_D)		27509	C

Series QN – cable connectors

Right angle cable plugs (male)

For flexible cables

- Cable entry crimp
- Centre contact soldered

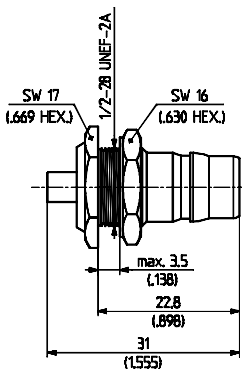


HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Assembly instruction	Crimp insert
16_QN-50-7-1/133_NE	23032410	U32, U33 (EF_393)	single	27510	D
16_QN-50-7-2/133_NE	23033399	U29 (RG_213_/U)		27511	
16_QN-50-7-5/133_NE	84078879	U30 (SPUMA_400)		27511	

Straight bulkhead cable jacks (female)

For semi-rigid, Sucoform and Multiflex cables

- Cable entry soldered
- Centre contact plugged-in



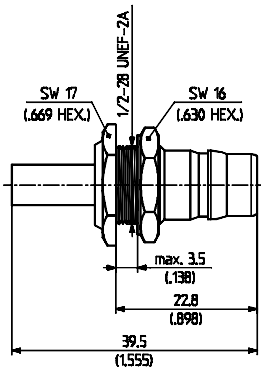
HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Assembly instruction	Mounting hole
24_QN-50-3-3/13_NE	23033423	Y5, Y12, Y17 (SM_141)	single	27514	ML 112

Series QN – cable connectors

Straight bulkhead cable jacks (female)

For flexible cables

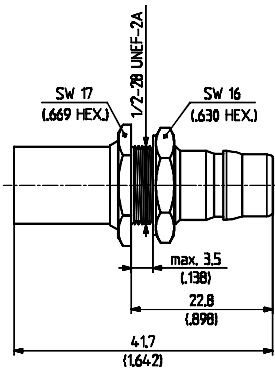
- HUBER+SUHNER full crimp



HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Assembly instruction	Mounting hole	Crimp insert
24_QN-50-3-1/133_NE	23033400	U9 (EF_142)	single	27512	ML 112	2 B
24_QN-50-3-2/133_NE	23033402	U7 (RG_58_C/U)		27513		

For flexible cables

- HUBER+SUHNER full crimp



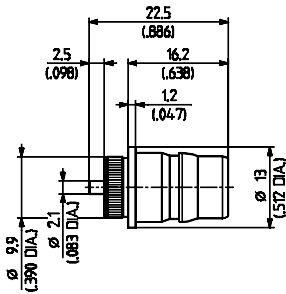
HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Assembly instruction	Mounting hole	Crimp insert
24_QN-50-7-1/133_NE	23033403	U33 (EF_393)	single	27515	ML 112	2.5 D
24_QN-50-7-2/133_NE	23033404	U32, U43 (RG_214_U)		27516		3 D
24_QN-50-7-3/133_NE	23033405	U29, U42 (RG_213_U)		27517		3 D
24_QN-50-7-5/133_NE	84039869	U30 (SPUMA_400)		253545		4 D

Series QN – receptacles with solder end

Receptacles, jacks (female)

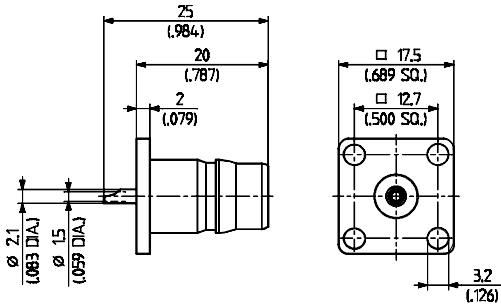
For flexible cables

- Bulkhead mounted
- Press-in chassis mount



HUBER+SUHNER type	Item no.	Packaging	Notes
22_QN-50-0-1/133_NE	23033237	single	press-in
22_QN-50-0-1/133_NY	23033904	bulk 100 pcs.	

- Panel mounted



HUBER+SUHNER type	Item no.	Packaging	Notes
23_QN-50-0-1/133_NE	23033251	single	flange with same dimensions as TNC
23_QN-50-0-1/133_NY	23033252	bulk 150 pcs.	

QN eXtreme – XQN

Description

Besides the outstanding characteristics of the quick lock connector QN, this advanced version has some extra features. The coupling mechanism is completely waterproof and not only the RF signal path, thus protecting the complete connector from corrosion in a salty atmosphere and from freezing in case of high humidity and low temperatures.

This extra features besides the excellent PIM performance (typical -162 dBc) and the optimum power performance (≈ 350 W by 2 GHz) makes this connector the ideal solution for antenna connections.

Key features

- IP67 sealing for the complete connection including coupling mechanism
- High corrosion resistance
- Freezing protection

Benefits

- Compactness (X-QN size is smaller than DIN716 and DIN 4.1/9.5)
- Easy to install (tool-less, quick-lock)
- No taping required (secure mating with outdoor protection)
- Overall lower costs of ownership
- Excellent PIM performance



For more product information please contact our offices.

