

Series QMA – subminiature connectors

Description

HUBER+SUHNER QMA coaxial connectors are according to QLF standard and available with 50 Ω impedance. The frequency range extends to 18 GHz, depending on the connector and cable type. However most of the QMA connectors are return loss optimised for frequencies up to 6 GHz. The interface is based on the SMA dimension but instead of a threaded coupling mechanism a new snap-lock mechanism is used.

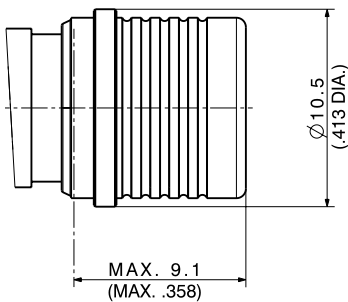
The QMA interface has a very similar performance to the SMA, but in addition it offers an easier, faster and safer coupling operation, helping customers to save significantly time during production. The packaging density of QMA is increased compared to SMA connectors thanks to the fact that no torque spanner is required to fasten the coupling nut. QMA is not intermateable with SMA. QMA connectors are also available as waterproof version (IP68) and are compatible with QLF standard.

Content

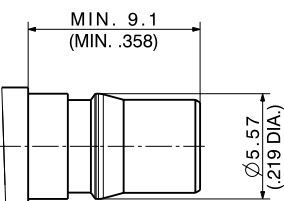
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Interface dimensions (mm/inches)

Plug (male)



Jack (female)



Features

- Easy to mate
- 10 times faster than with threaded SMA
- Increased reliability
- No torque or tooling required
- 360° rotatable interface
- Easy routing of cable assembly without mechanical stress or electrical performance degradation
- Higher packing density
- Size equivalent to SMA, but space saving as there is no need for wrench clearance
- Excellent electrical performance
- Consistent VSWR performance enables to replace standard SMA
- Return loss optimised DC to 6 GHz



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Series QMA – technical data

Electrical data	Requirements
Impedance	50 Ω
Frequency range	DC to 18 GHz
Dielectric withstanding voltage (at sea level)	1000 V rms, 50 Hz
Working voltage (at sea level)	480 V rms, 50 Hz
Insulation resistance	≥ 5 · 10 ³ MΩ
Contact resistance <ul style="list-style-type: none"> • Centre contact • Outer contact 	≤ 3.0 mΩ max. (initial) ≤ 2.5 mΩ max. (initial)
Passive intermodulation	-120 dBc static at 1.8 GHz, 2 × 20 W
Screening effectiveness <ul style="list-style-type: none"> • DC to 3 GHz • 3 to 6 GHz 	-80 dB min. -70 dB min.
Return loss (typical) <ul style="list-style-type: none"> • DC to 3 GHz • 3 to 6 GHz 	≥ 32 dB ≥ 25 dB

Mechanical data	Requirements
Mating characteristics <ul style="list-style-type: none"> • Engagement force • Disengagement force 	25 N typical 20 N typical
Interface retention force	60 N min.
Durability	100 mating cycles min.
Connector pitch	12.4 mm min center to center

Environmental data	Test conditions for standard QMA
Temperature range	-40 to +85 °C
Thermal shock	IEC 60169-1 16.4 (-40 to +85 °C)
Corrosion	IEC 60169-1 16.7 (48 hrs)
Damp heat	IEC 60169-1 16.3 (96 hrs) steady state
Vibration	IEC 60068-2-64 random 5 to 20 Hz: 1.29 (m/s ²) ² /Hz 20 to 500 Hz: -3 dB/octave

Environmental data	Test conditions for waterproof QMA
Temperature range	-40 to +105 °C
Thermal shock	MIL-STD-202, method 107, condition B
Corrosion	MIL-STD-202, method 101, condition B
Damp heat	MIL-STD-202, method 106 F
Vibration	MIL-STD-202, method 204, condition D
Ingress protection	IP68 IEC 60529, mated condition

Series QMA – technical data

Material data		
Connector parts	Material	Plating
Bodies, outer contact	brass/spring bronze	SUCOPLATE®/SUCOPRO® gold plating
Pin contacts	brass	SUCOPRO® gold plating
Socket contacts	spring bronze/copper-beryllium alloy	SUCOPRO® gold plating
Insulators	PTFE or PFA	
Crimp ferrules	copper	SUCOPLATE®
Gaskets	silicone rubber	

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

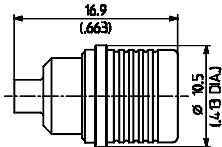
The products are designed and guaranteed to pass the above mentioned test procedures. Any additional or different requirement arising from specific applications or environmental conditions which is not covered by these test procedures is subject to request.

Series QMA – cable connectors

Straight cable plugs (male)

For semi-rigid, Sucoform and Multiflex cables

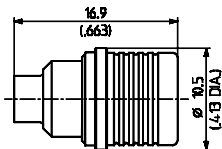
- Cable entry soldered
- Centre contact plugged-in



HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Assembly instruction	Notes
11_QMA-50-2-3/133_NE 11_QMA-50-2-3/133_NH	23017704 23017705	Y3, Y11, Y16 (SUCOFORM_86, EZ_86)	single bulk 100 pcs.	27428	
11_QMA-50-2-7/133_NH	84151091	Y3, Y11, Y16 (SUCOFORM_86, EZ_86)	bulk 100 pcs.		SUCOPLATE® body

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	Notes
11_QMA-50-3-3/133_NE 11_QMA-50-3-3/133_NH	23017695 23017696	Y5, Y12, Y17 (SUCOFORM_141), EZ_141	single bulk 100 pcs.	27428	body: SUCOPRO® gold plating

Series QMA – cable connectors

Straight cable plugs (male)

For semi-rigid, Sucoform and Multiflex cables

- Waterproof
- Cable entry soldered
- Centre contact plugged or soldered

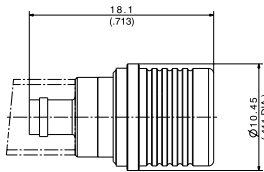


Fig. 1

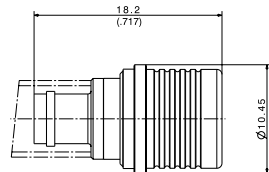
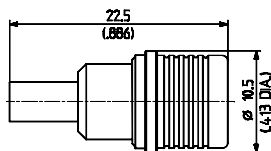


Fig. 2

HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Assembly instruction	Fig.	Notes
11_QMA-W50-2-6/113_NE 11_QMA-W50-2-6/113_NH	84075866 84068215	Y3, Y11, Y16 (SUCOFORM_86, EZ_86)	single bulk 100 pcs.	0000263508	1	
11_QMA-W50-3-7/113_NE 11_QMA-W50-3-7/113_NH	84075868 84068217	Y5, Y12, Y17 (SUCOFORM_141, EZ_141)	single bulk 100 pcs.	0000263762	2	
11_QMA-W50-3-7/133_NH	85004586	Y5, Y12, Y17 (SUCOFORM_141, EZ_141)	bulk 100 pcs.			SUCOPLATE® body

For flexible cables

- HUBER+SUHNER full crimp



HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Assembly instruction	Crimp insert
11_QMA-50-2-1/133_NE 11_QMA-50-2-1/133_NH	23017700 23017701	U4 (K_02252_D)	single bulk 100 pcs.	27427	1 A
11_QMA-50-2-2/133_NE 11_QMA-50-2-2/133_NH	23017720 23017721	U2 (RG_316_/U)	single bulk 100 pcs.		

Series QMA – cable connectors

Straight cable plugs (male)

For flexible cables

- Cable entry crimp
- Centre contact soldered

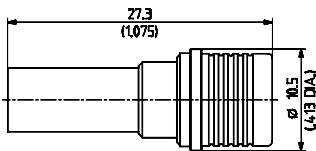


Fig. 1

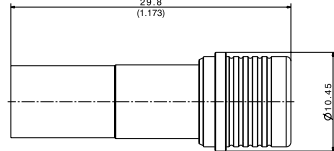


Fig. 2



HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Assembly instruction	Crimp insert	Fig.
11_QMA-50-3-1/133_NE 11_QMA-50-3-1/133_NH	23017697 23017698	U9, U11 (RG_400_U)	single bulk 100 pcs.	27429	B	1
11_QMA-50-3-2/133_NE 11_QMA-50-3-2/133_NH	23017702 23017703	U7 (RG_58_C/U)	single bulk 100 pcs.			
11_QMA-50-4-2/133_NH	84000234	S16, X9 (S_04262_D)	bulk 100 pcs.	0000231592	C	2

For flexible cables

- Waterproof
- Cable entry clamped
- Centre contact plugged or soldered

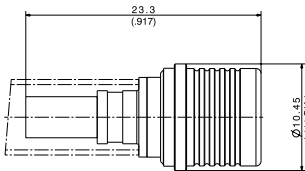


Fig. 1

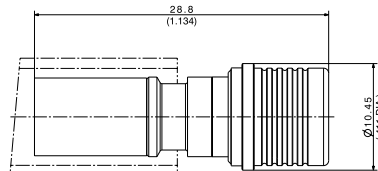


Fig. 2



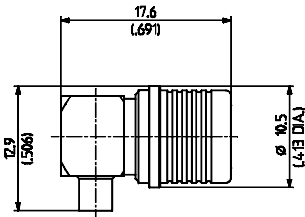
HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Assembly instruction	Crimp insert	Fig.
11_QMA-W50-2-8/133_NH	84104479	U2 (EF_316/RG_316)	bulk 100 pcs.	0000312675	A	1
11_QMA-W50-4-3/133_NE 11_QMA-W50-4-3/133_NH	84075865 84023153	S16, X9, (S_04162_B-60)	single bulk 100 pcs.	0000239799	C	2

Series QMA – 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_QMA-50-2-3/133_NE	23017666	Y3, Y11, Y16	single	27444
16_QMA-50-2-3/133_NH	23017667	(SUCOFORM_86, EZ_86)	bulk 100 pcs.	

For semi-rigid, Sucoform and Multiflex cables

- Cable entry soldered
- Centre contact soldered

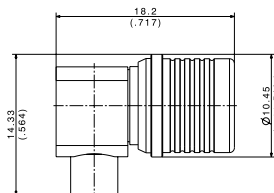
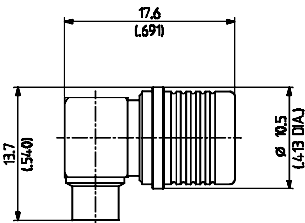


Fig. 1

Fig. 2

HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Assembly instruction	Fig.
16_QMA-50-3-3/133_NE	23017693	Y5, Y12, Y17	single	27444	1
16_QMA-50-3-3/133_NH	23017694	(SUCOFORM_141, EZ_141)	bulk 100 pcs.		
16_QMA-50-3-10/13-NE	85013178	Y5, Y12, Y17	single	0000366362	2
		(SUCOFORM_141, EZ_141)	bulk 100 pcs.		

All highlighted types are HUBER+SUHNER ECO types.

Series QMA – cable connectors

Right angle cable plugs (male)

For semi-rigid, Sucoform and Multiflex cables

- Waterproof
- Cable entry soldered
- Centre contact soldered

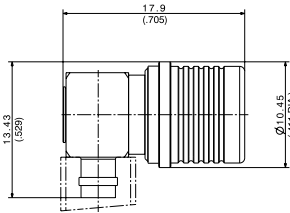


Fig. 1

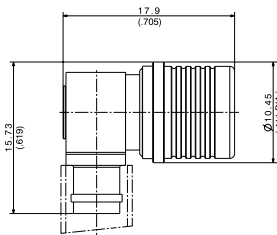


Fig. 2

HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Assembly instruction	Fig.	Notes
16_QMA-W50-2-9/113_NE 16_QMA-W50-2-9/113_NH	84068219 84075867	Y3, Y11, Y16 (SUCOFORM_86)	single bulk 100 pcs.	0000263789	1	body: SUCOPRO® gold plating
16_QMA-W50-3-5/113_NE	84075863	Y5, Y12, Y17 (SUCOFORM_141)	single	0000263850	2	body: SUCOPRO® gold plating

For flexible cables

- Cable entry crimp
- Centre contact soldered

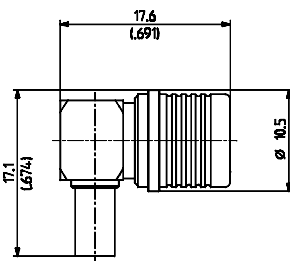


Fig. 1

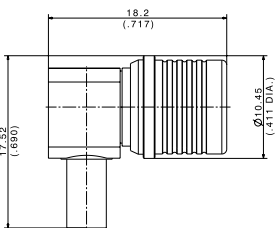


Fig. 2

HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Assembly instruction	Crimp insert	Fig.
16_QMA-50-2-1/133_NE 16_QMA-50-2-1/133_NH	23017654 23017644	U4 (K_02252_D)	single bulk 100 pcs.	27443	A	1
16_QMA-50-2-2/133_NE 16_QMA-50-2-2/133_NH	23017657 23017658	U2 (RG_316_/U)	single bulk 100 pcs.			
16_QMA-50-2-12/13_-NE 16_QMA-50-2-12/13_-NP	85013183 85013184	U4 (K_02252_D)	single bulk 100 pcs.	0000366343	A	2

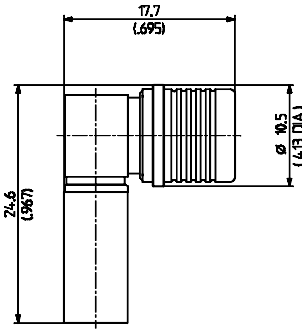
All highlighted types are HUBER+SUHNER ECO types.

Series QMA – cable connectors

Right angle cable plugs (male)

For flexible cables

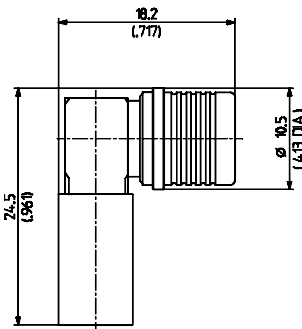
- Cable entry crimp
- Centre contact soldered



HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Assembly instruction	Crimp insert
16_QMA-50-3-1/133_NE 16_QMA-50-3-1/133_NH	23017686 23017687	U9, U11, U39 (RG_400/U)	single bulk 100 pcs.	27443	B
16_QMA-50-3-2/133_NE 16_QMA-50-3-2/133_NH	23017691 23017692	U7 (RG_58_C/U)	single bulk 100 pcs.		

For flexible cables

- Cable entry crimp
- Centre contact soldered



HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Assembly instruction	Crimp insert
16_QMA-50-4-1/133_NH	23012849	S16 (S_04262_D)	bulk 100 pcs.	27405	C

Series QMA – cable connectors

Right angle cable plugs (male)

For flexible cables

- Waterproof
- Cable entry crimp
- Centre contact soldered

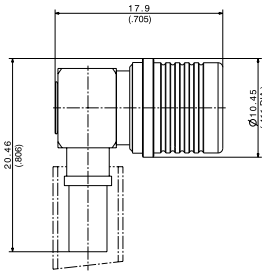


Fig. 1

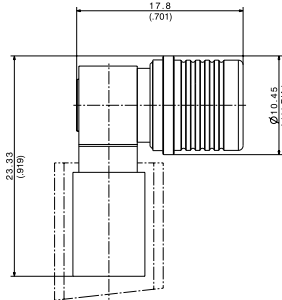


Fig. 2

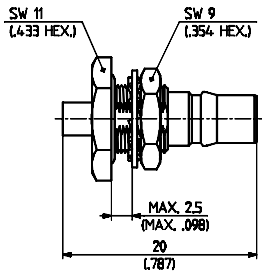


HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Assembly instruction	Crimp insert	Fig.
16_QMA-W50-2-10/133_NH	84104679	U2 (EF_316)	bulk 100 pcs.	0000312747	A	1
16_QMA-W50-4-5/133_NE 16_QMA-W50-4-5/133_NH	84075864 84023140	S16, X9 (S_04162_B-60, SPUMA_240)	single bulk 100 pcs.	0000241978	C	2

Straight bulkhead cable jacks (female)

For semi-rigid, Sucoform and Multiflex cables

- Cable entry soldered
- Centre contact plugged-in
- With panel seal



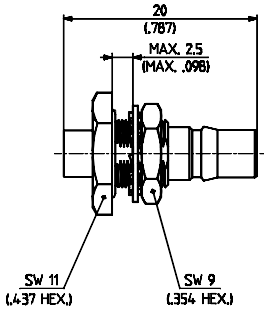
HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Assembly instruction	Mounting hole
24_QMA-50-2-1/111_NE 24_QMA-50-2-1/111_NH	23017742 23017743	Y3, Y11, Y16 (SUCOFORM_86, EZ_86)	single bulk 100 pcs.	27428	ML 20

Series QMA – cable connectors

Straight bulkhead cable jacks (female)

For semi-rigid, Sucoform and Multiflex cables

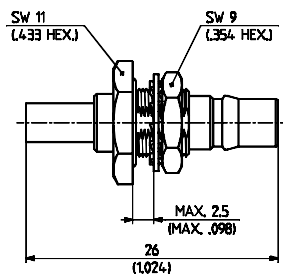
- Cable entry soldered
- Centre contact plugged-in
- With panel seal



HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Assembly instruction	Mounting hole
24_QMA-50-3-3/111_NE	23017683	Y5, Y12, Y17	single	27428	ML 20
24_QMA-50-3-3/111_NH	23017684	(SUCOFORM_141, EZ_141)	bulk 100 pcs.		

For flexible cables

- Cable entry crimp
- Centre contact soldered
- With panel seal



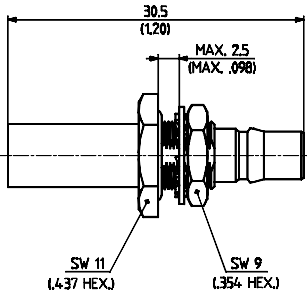
HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Assembly instruction	Mounting hole	Crimp insert
24_QMA-50-2-2/133_NE	23017829	U4 (K_02252_D)	single	27429	ML 20	A
24_QMA-50-2-2/133_NH	23017830		bulk 100 pcs.			
24_QMA-50-2-3/133_NE	23017837	U2 (RG_316_U)	single			
24_QMA-50-2-3/133_NH	23017838		bulk 100 pcs.			

Series QMA - cable connectors

Straight bulkhead cable jacks (female)

For flexible cables

- Cable entry crimp
- Centre contact soldered
- With panel seal

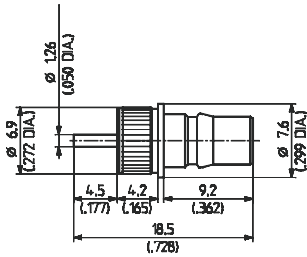


HUBER+SUHNER type	Item no.	Cable group (example)	Packaging	Assembly instruction	Mounting hole	Crimp insert
24_QMA-50-3-1/133_NE	23017822	U9, 11 (RG_400/U)	single	27429	ML 20	B
24_QMA-50-3-1/133_NH	23017823		bulk 100 pcs.			
24_QMA-50-3-2/133_NE	23017795	U7 (RG_58_C/U)	single			
24_QMA-50-3-2/133_NH	23017796		bulk 100 pcs.			

Series QMA – receptacles

Straight bulkhead receptacles, jacks (female)

- Coaxial end
- Press-in chassis mount



HUBER+SUHNER type	Item no.	Packaging	Mounting hole	Notes
22_QMA-50-0-7/133_NF	84001926	bulk 50 pcs.	ML 143	press-in

- Coaxial end
- Screw-in chassis mount

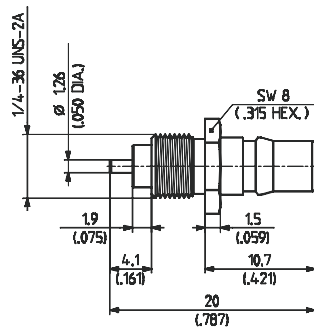


Fig. 1

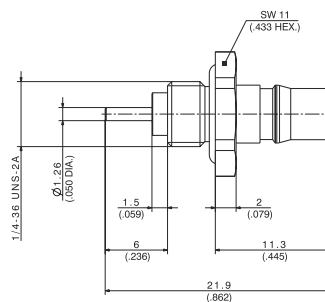


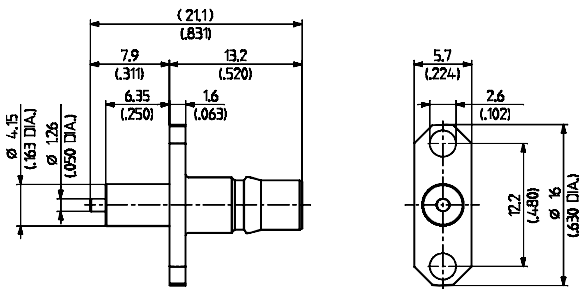
Fig. 2

HUBER+SUHNER type	Item no.	Packaging	Fig.	Notes
22_QMA-50-0-4/133_NH	23022628	bulk 100 pcs.	1	extended dielectric, without panel seal
22_QMA-50-0-34/133_NH	84061333		2	extended dielectric, with panel seal

Series QMA – receptacles

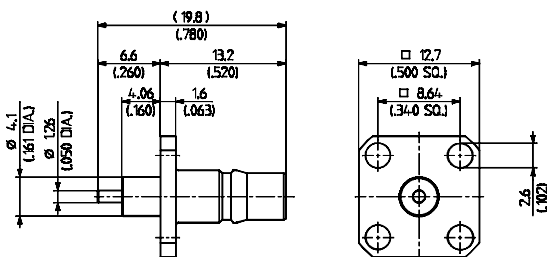
Straight panel receptacle, jack (female)

- 2-hole flange
- Without panel seal
- With coaxial end



HUBER+SUHNER type	Item no.	Packaging	Notes
23_QMA-50-0-2/111_NH	23024985	bulk 100 pcs.	extended dielectric

- 4-hole flange
- Without panel seal
- With coaxial end

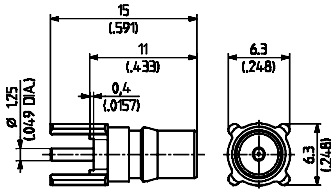


HUBER+SUHNER type	Item no.	Packaging	Notes
23_QMA-50-0-3/111_NH	23025007	bulk 100 pcs.	extended dielectric

Series QMA – PCB connectors

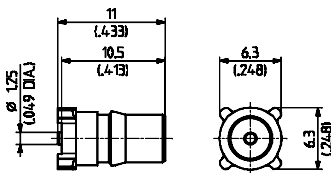
Straight PCB jacks (female)

- With stand-off



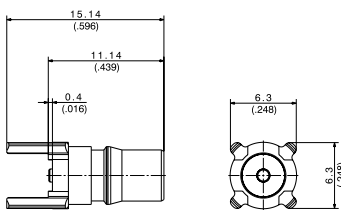
HUBER+SUHNER type	Item no.	Packaging	PCB layout
82_QMA-50-0-3/111_NH	23017656	bulk 100 pcs.	ML 41

- Surface mount type SMT



HUBER+SUHNER type	Item no.	Packaging	PCB layout
82_QMA-S50-0-2/111_NH	23017631	bulk 100 pcs.	ML 136

- With ground pins through-hole and SMT signal pin

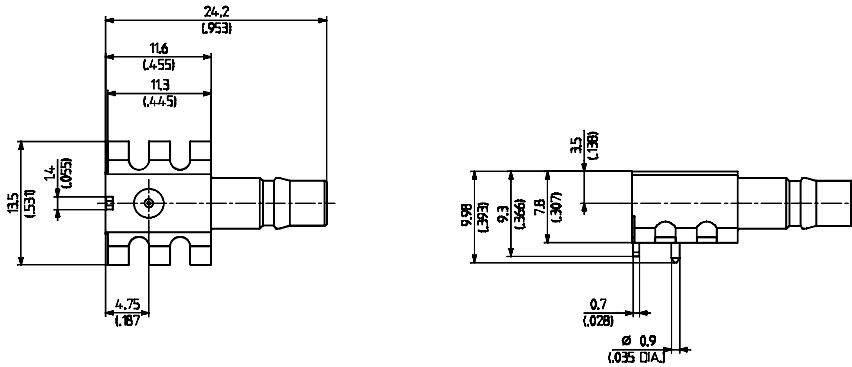


HUBER+SUHNER type	Item no.	Packaging	PCB layout
96_QMA-50-0-1/111_NH	84003328	bulk 100 pcs.	ML 155

Series QMA – PCB connectors

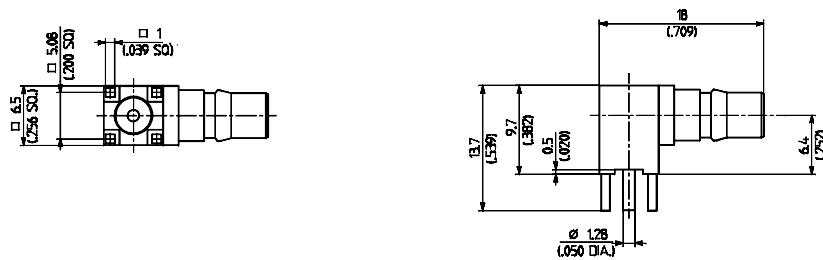
Right angle PCB jacks (female)

- Surface mount type SMT (with positioning pin)



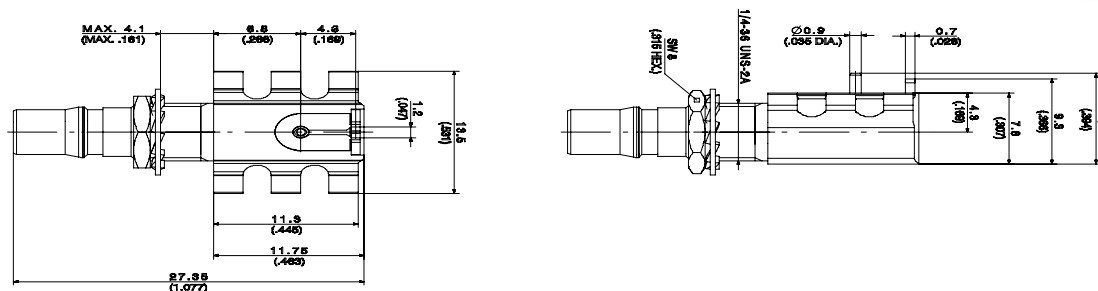
HUBER+SUHNER type	Item no.	Packaging	PCB layout
85_QMA-S50-0-2/111_NM	23021299	tape and reel	ML 137

- With stand-off



HUBER+SUHNER type	Item no.	Packaging	PCB layout
85_QMA-50-0-3/111_NH	23021463	bulk 100 pcs.	ML 41

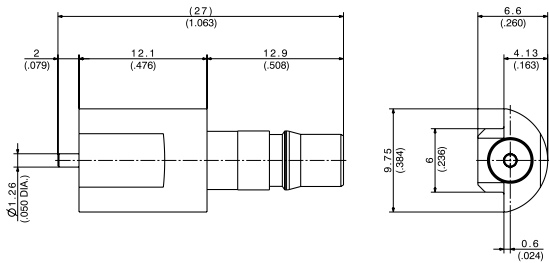
- Surface mount type SMT
- Bulkhead mounted



HUBER+SUHNER type	Item no.	Packaging	PCB layout
85_QMA-S50-0-5/111_NH	23037099	bulk 100 pcs.	ML 137

Series QMA – PCB connectors

Edge mount PCB jack (female)



HUBER+SUHNER type	Item no.	Packaging	PCB layout
92_QMA-50-0-6/111_NM	84015704	tape and reel	ML 169

Protection caps

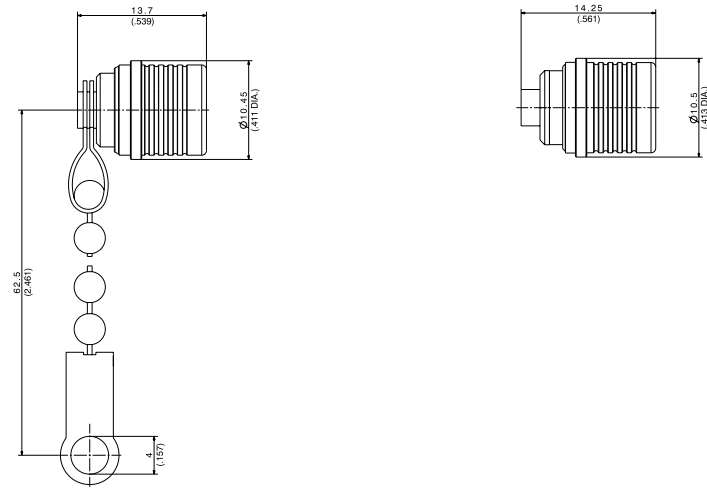


Fig. 1

Fig. 2



HUBER+SUHNER type	Item no.	Packaging	Fig.	Notes
62_QMA-0-0-1/-33_-E	23040004	single	1	
62_QMA-W0-0-4/-33_-E	84068119		2	waterproof

QMA eXtreme – XQMA

Description

QMA eXtreme is the advanced version of the waterproof QMA, combining the quick lock mechanism and waterproof properties also in rough environmental conditions. The coupling mechanism is completely waterproof and not only the

RF signal path, thus protecting the connector from corrosion in a salty atmosphere and from freezing in case of high humidity and low temperature.

Key features

- IP68 sealing on the complete connection including coupling mechanism
- High corrosion resistance
- Freezing protection

Benefits

- Compact modules design
- Easy connection with outdoor protection
- All benefits of the quick lock connection



For more product information please contact our offices.

