

SERIES QLA 00

SUBMINIATURE COAXIAL CONNECTORS

Description

The QLA 00 series contains connectors with a quick latch coupling mechanism: connection is achieved by simply pushing the plug into the jack. 3 latching springs automatically engage, thereby securing the mated connectors against axial and rotational forces. No twisting action is required. The connectors are easily released by slightly pulling back the outer sleeve of the plug. This coupling mechanism provides a fast and reliable connection for applications up to 1.4 GHz.

Compatibility

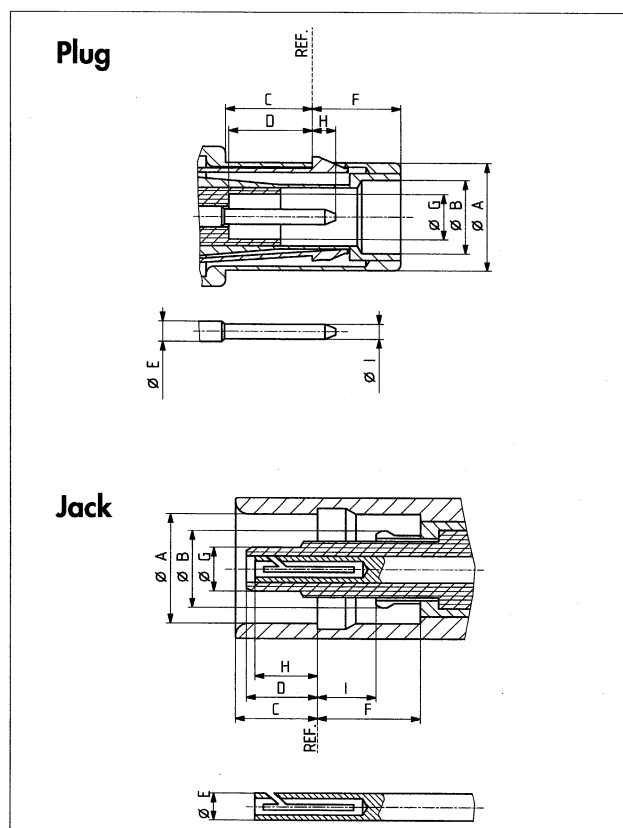
All connectors of the series QLA 00 are without any restrictions intermateable with Lemo series 00.250.

Contents

Page

Description	185
Interface Dimensions	185
Interface Dimensions in mm / inches	185
Standards	185
Technical Data	186
Connectors for Flexible Cables	188
Receptacles with Solder End	190
PCB Connectors	190
Adaptors Within-Series	191
Shorting Plug	193
Termination	193

Interface Dimensions



Interface Dimensions in mm / inches

	Plug		Jack	
	min.	max.	min.	max.
A	4.96/.195	5.03/.198	5.05/.199	5.11/.201
B	3.38/.133	3.44/.135	3.50/.138*	3.55/.140*
C	3.93/.155	4.08/.161	3.73/.147	3.86/.152
D	3.55/.140	—	—	3.48/.137
E	0.95/.037 nom.		1.24/.049 nom.	
F	4.00/.157	4.16/.164	4.23/.167	4.88/.192
G	2.10/0.83	2.16/.085	1.95/.077	2.03/.080
H	—	1.32/.052	—	3.30/.130
I	0.69/.027	0.72/.028	2.35/.093	2.90/.114

* prior to slotting

Standards

Interface dimensions conform to
NIM-CAMAC-Standard CD/N549

Technical Data

ELECTRICAL DATA	REQUIREMENTS
Impedance	50 Ω
Frequency range	DC ... 1.4 GHz (see also Appendix page 436)
VSWR (for mated connector pair 11 QLA – 21 QLA)	typ. 1.15 at 300 MHz typ. 1.20 at 1.4 GHz
RF-leakage (measured at 500 MHz)	≥ 100 dB
Dielectric withstanding voltage (at sea level)	2.0 kV DC
Working voltage (at sea level) – unmated – mated	≤ 300 V rms, 50 Hz ≤ 700 V rms, 50 Hz
Insulation resistance	$\geq 10^6$ M Ω
Contact resistance – centre contact – outer contact	≤ 2 m Ω ≤ 2 m Ω

MECHANICAL DATA	REQUIREMENTS
Engagement force	typ. 2 N / .45 lbs
Disengagement force	typ. 5 N / 1.1 lbs
Coupling nut retention force	≥ 350 N / 78.7 lbs
Contact captivation	≥ 20 N / 4.5 lbs
Cable retention force ¹⁾	see pages 36 – 41
Durability (matings)	$\geq 10\,000$

1) value considers maximum load of the cables without irreversible variations of specifications.

ENVIRONMENTAL DATA	TEST CONDITIONS
Temperature range	– 55°C ... + 150°C / –67°F ... + 302°F
Thermal shock	MIL-STD-202, Method 107, Condition B
Moisture resistance	MIL-STD-202, Method 106
Corrosion	Saltspray test acc. to MIL-STD-202, Method 101, Condition B
Vibration	MIL-STD-202, Method 204, Condition D
Shock	MIL-STD-202, Method 213, Condition I

MATERIAL DATA

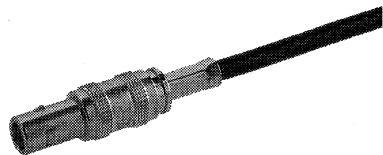
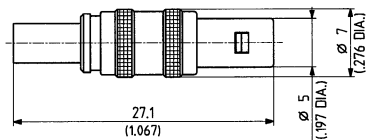
CONNECTOR PART	STANDARDS	MATERIAL	PLATING
Bodies Pin contact	QQ-B-626	brass, annealed	nickel gold
Socket contact	QQ-C-530	beryllium-copper	gold, SUCOPLATE®
Resilient parts	DIN 17660	spring bronze	SUCOPLATE®
Crimp ferrules	SUHNER® specification	copper	SUCOPLATE®
Insulators	ASTM-D-1457, BS 4271 Grade B	PTFE	
Gaskets	ASTM-E-1418 PS 1	silicone rubber	

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

Connectors for Flexible Cables

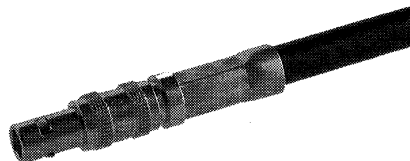
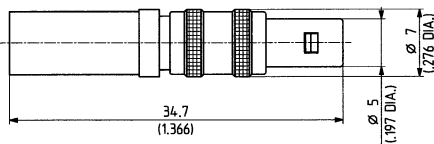
straight plugs

> SUHNER® full crimp



SUHNER TYPE	Ident. no.	Cable group (example)	Crimp insert	Assembly instruction	Weight	Notes
11 QLA-01-1-8	641146	U1 (RG 178 B/U)	1A	9007	3.50 g/.123 oz.	
11 QLA-01-2-8	• 544043	U2 (RG 174/U)	1A	9007	4.00 g/.140 oz.	
11 QLA-01-2-13	• 544142	U3 (G 01130 HT)	1A	27020	4.00 g/.140 oz.	
11 QLA-01-2-9	• 544041	U4 (K 02252 D)	1A	9007	4.00 g/.140 oz.	

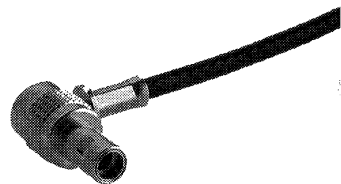
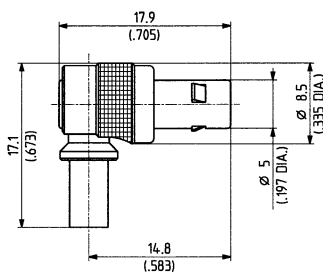
> SUHNER® full crimp



SUHNER TYPE	Ident. no.	Cable group (example)	Crimp insert	Assembly instruction	Weight	Notes
11 QLA-01-3-1	• 641313	U7 (RG 58 C/U)	2B	3015	6.00 g/.210 oz.	
11 QLA-01-3-2	• 643326	U9 (RG 223/U)	2B	3015	5.00 g/.175 oz.	

right angle plugs

- > cable entry crimp
- > centre contact soldered



SUHNER TYPE	Ident. no.	Cable group (example)	Crimp insert	Assembly instruction	Weight	Notes
16 QLA-01-1-1	• 640011	U1 (RG 178 B/U)	A	3091	5.00 g/.175 oz.	
16 QLA-01-2-1	• 640013	U2 (RG 174/U)	A	3091	5.00 g/.175 oz.	
16 QLA-01-2-13	• 544279	U3 (G 01130 HT)	A	3091	5.00 g/.175 oz.	
16 QLA-01-2-4	• 640015	U4 (K 02252 D)	A	3091	5.00 g/.175 oz.	

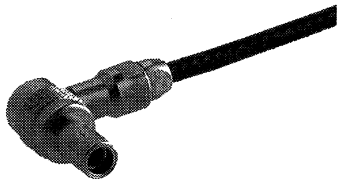
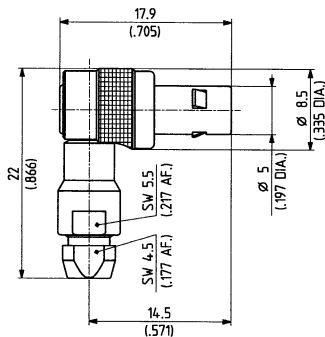
• centre contact captivated

cable groups see page 36

assembly tools see page 403

mounting holes see page 441

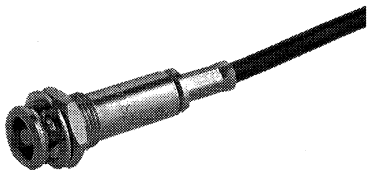
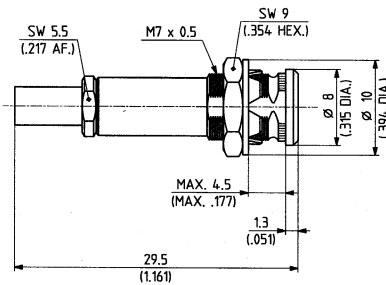
- > cable entry clamp
- > centre contact soldered



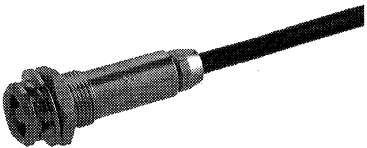
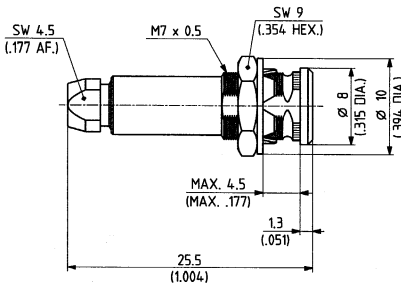
SUHNER TYPE	Ident. no.	Cable group (example)	Assembly instruction	Weight	Notes
16 QLA-01-2-11	544534	U2 (RG 174/U)	9016	6.00 g/.210 oz.	max. cable diameter 2.90 mm/.114 in.

bulkhead jacks

- > cable entry crimp
- > centre contact soldered



SUHNER TYPE	Ident. no.	Cable group (example)	Crimp insert	Assembly instruction	Mounting hole	Weight	Notes
24 QLA-01-2-1	640026	U2 (RG 174/U)	A	3089	ML 99	6.00 g/.210 oz.	
24 QLA-01-2-13	642361	U3 (G 01130 HT)	A	27056	ML 99	6.00 g/.210 oz.	
24 QLA-01-2-4	544033	U4 (K 02252 D)	A	3089	ML 99	6.00 g/.210 oz.	



- > cable entry clamp
- > centre contact soldered

SUHNER TYPE	Ident. no.	Cable group (example)	Assembly instruction	Mounting hole	Weight	Notes
24 QLA-01-1-11	642297	U1 (RG 178 B/U)	9008	ML 99	5.50 g/.193 oz.	max. cable diameter 2.10 mm/.093 in.
24 QLA-01-2-11	544535	U2 (RG 174/U)	9008	ML 99	5.50 g/.193 oz.	max. cable diameter 2.90 mm/.114 in.

- centre contact captivated

Receptacles with Solder End

receptacles, female

- > bulkhead mounted

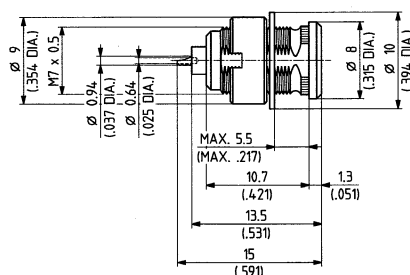
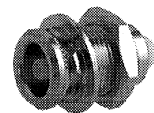


Fig. 1

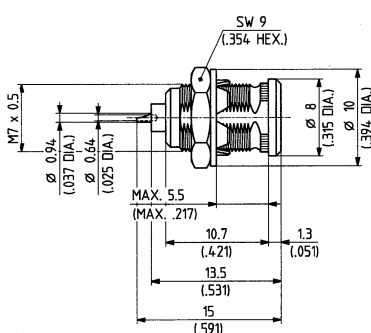


Fig. 2

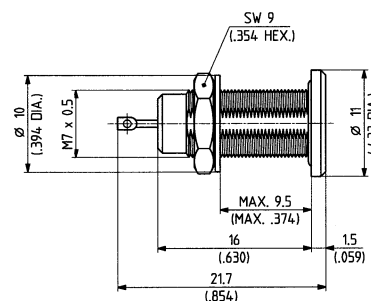
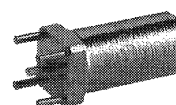
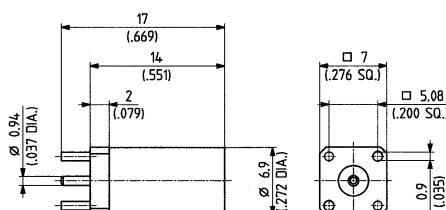


Fig. 3

SUHNER TYPE	Ident. no.	Mounting hole	Weight	Fig.	Notes
22 QLA-01-0-1	● 640023	ML 23	4.00 g/. 140 oz.	1	assembly tool 74 Z-0-0-25 required
22 QLA-01-0-2	● 640024	ML 99	4.00 g/. 140 oz.	2	counter sunk from rear
22 QLA-01-0-3	● 641086	ML 23	5.00 g/. 175 oz.	3	hermetically sealed, leak rate 10^{-6} Torr l/sec.(atm cc/s)

PCB Connectors

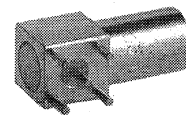
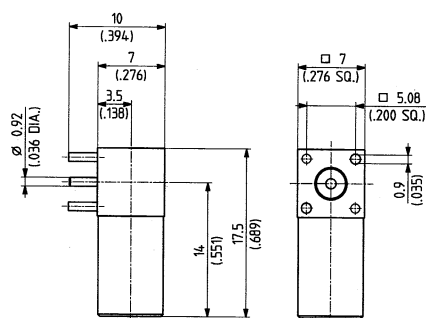
straight PCB jack



SUHNER TYPE	Ident. no.	Mounting hole	Weight	Notes
82 QLA-01-0-2	543414	ML 97	4.00 g/. 140 oz.	without stand-offs

- **centre contact captivated**

right angle PCB jack

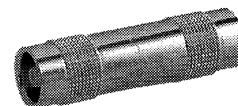
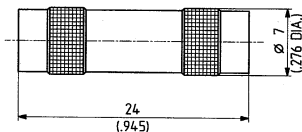


SUHNER TYPE	Ident. no.	Mounting hole	Weight	Notes
85 QLA-01-0-2	• 640039	ML 97	5.00 g/. 175 oz.	without stand-offs

Adaptors Within-Series

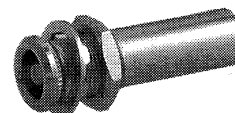
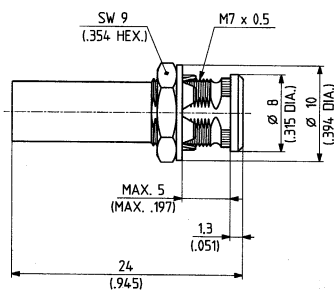
straight adaptors

> jack to jack



SUHNER TYPE	Ident. no.	Weight	Notes
31 QLA-01-0-1	• 640028	4.00 g/. 140 oz.	

> bulkhead mounted
> jack to jack



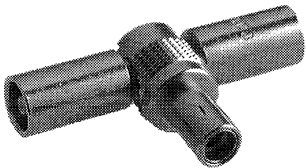
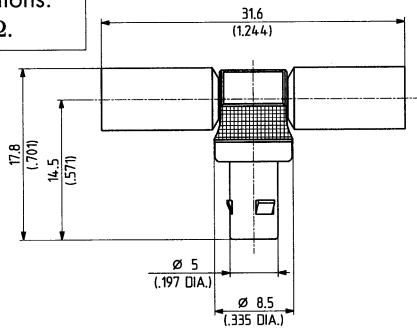
SUHNER TYPE	Ident. no.	Mounting hole	Weight	Notes
34 QLA-01-0-2	• 640031	ML 99	5.00 g/. 175 oz.	counter sunk from rear

• centre contact captivated

T-adaptors

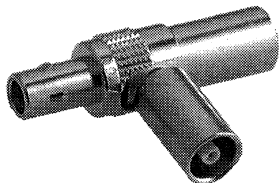
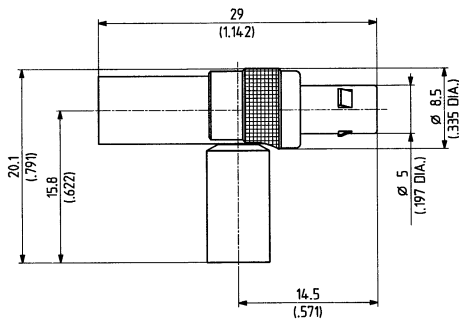
50 Ω nominal impedance. These connectors are non-matched 3 dB dividers for LF applications. VSWR ≥ 2.0 when terminated with 50 Ω.

> 2 jacks, 1 plug



SUHNER TYPE	Ident. no.	Weight	Notes
43 QLA-01-0-1	• 640032	8.00 g/.280 oz.	

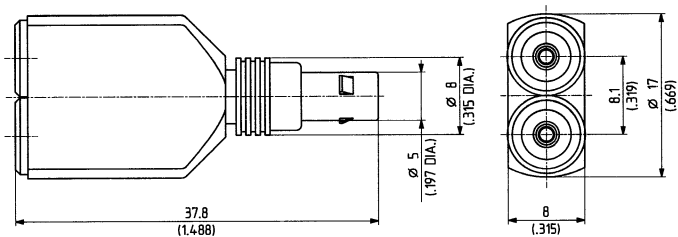
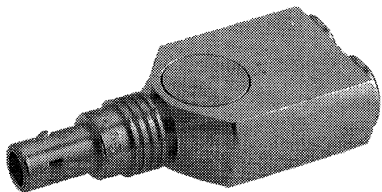
> 2 jacks, 1 plug



SUHNER TYPE	Ident. no.	Weight	Notes
45 QLA-01-0-1	• 640033	8.00 g/.280 oz.	

Y-adaptor

> 2 jacks, 1 plug



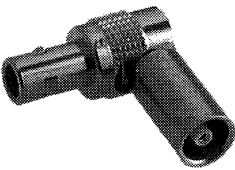
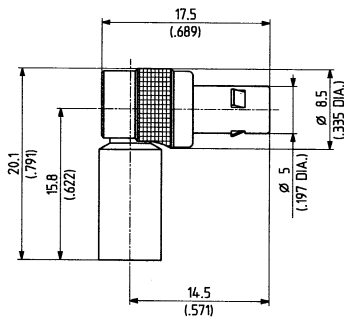
SUHNER TYPE	Ident. no.	Weight	Notes
43 QLA-01-0-11	• 544044	19.0 g/.665 oz.	

• centre contact captivated

cable groups see page 36 assembly tools see page 403 mounting holes see page 441

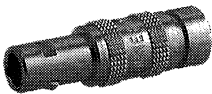
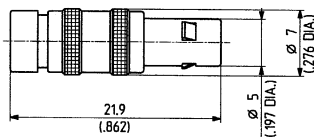
L-adaptor

> plug to jack



SUHNER TYPE	Ident. no.	Weight	Notes
53 QLA-01-0-1	• 640034	6.00 g/.210 oz.	

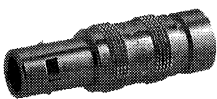
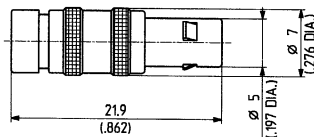
Shorting Plug



SUHNER TYPE	Ident. no.	Weight	Notes
64 QLA-01-0-1	• 640035	4.00 g/.140 oz.	

Termination

50 Ω, plug



SUHNER TYPE	Ident. no.	VSWR at			Interface	Impedance	Power	Weight
		0.5 GHz	1.0 GHz	1.4 GHz				
65 QLA-01-0-1	• 640036	≤ 1.05	≤ 1.15	≤ 1.20	plug	50Ω ± 1 Ω	0.5 Watt*	4.00 g/.140 oz.

* at max. 30°C/86°F ambient temperature, derated linearly to zero watt at 130°C/266°F ambient temperature

• centre contact captivated

