



Characteristics and dimensions of QMA coaxial connectors are based on the SMA connector interface. QMA connectors are designed for applications up to 18 GHz, the quick-lock coupling mechanism enables fast, easy and reliable connections in the tightest spaces, primarily in mobile base stations. Assembly tools are not necessary.

Rosenberger provides the following QMA connector versions:

- QLF® standard: Quick-lock coupling mechanism, CuZn, white bronze plating
- Plastic quick-lock coupling mechanism in 4 different coloured codings

Rosenberger is authorized to act as QLF® manufacturer.

Rosenberger QMA connectors fulfil the QLF® standard (Quick Lock Formula, a registered trademark). QLF® guarantees full intermateability between connectors produced by licensing agreement parties. Rosenberger as licensee is free to market QMA connectors as QLF® products. For further information, please see: www.qlf.info

QMA-Koaxial-Steckverbinder bauen in Eigenschaften und Abmessungen auf der Serie SMA auf und sind für Anwendungen bis 18 GHz konzipiert. Der Quick-Lock-Einrastmechanismus ermöglicht schnelle, zuverlässige und einfache Steckverbindungen auf engstem Raum, z. B. in Mobilfunk-Basistationen, Werkzeuge sind nicht erforderlich.

Rosenberger bietet QMA-Steckverbinder in folgenden Ausführungen an:

- *QLF®-Standard: Quick-Lock-Einrastmechanismus, CuZn, Weißbronze*
- *Kunststoff-Quick-Lock-Einrastmechanismus in vier verschiedenen Farbkodierungen*

Rosenberger ist autorisierter QLF®-Hersteller.

Rosenberger QMA-Steckverbinder entsprechen dem QLF®-Standard, der als Warenzeichen eingetragen ist. QLF® (Quick Lock Formula) stellt die Steckbarkeit von Produkten der Lizenzparteien sicher. Rosenberger ist als Lizenznehmer berechtigt, QMA-Steckverbinder als QLF®-Produkte zu vermarkten. Weitere Informationen unter: www.qlf.info



QMA

QMA

Features

Interface according to QLF (Quick Lock Formula)

Frequency range DC to 18 GHz

Return loss (cable connector straight) ≥ 25 dB @ 6 GHz

Minimum pitch: 12.4 mm

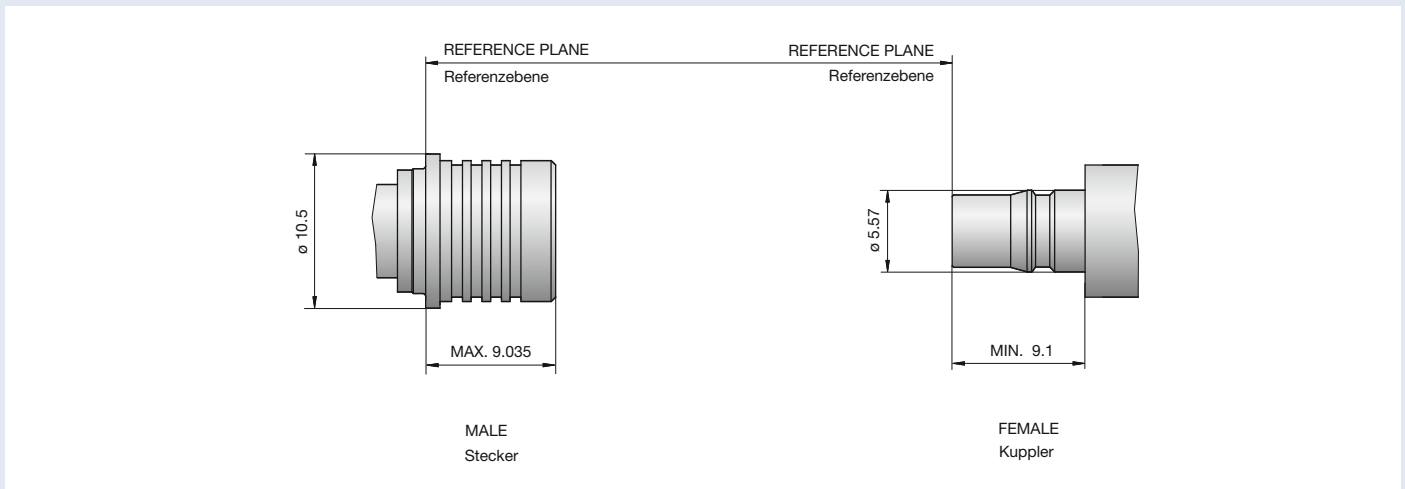
Flexibility: 360° turnable

Impedance 50 Ω

Quick-lock coupling

Interface Dimensions QMA

Code 28



Features

Interface according to QLF (Quick Lock Formula)
 Frequency range DC to 18 GHz
 Return loss (cable connector straight) ≥ 25 dB @ 6 GHz
 Minimum pitch: 12.4 mm
 Flexibility: 360° turnable
 Impedance 50 Ω
 Quick-lock coupling

Product Range

Cable connectors
 Panel connectors
 PCB connectors (SMD, solder versions)
 Adaptors
 Terminations

Further connectors available on request

Technical Data QMA

Code 28

Applicable standards Anwendbare Normen	
Interface according to <i>Interface gemäß</i>	QLF® (Quick Lock Formula) Rosenberger is an authorized QLF® manufacturer
Quality tested according to <i>Qualitätsprüfung gemäß</i>	IEC 60169
Electrical data Elektrische Daten	
Impedance <i>Wellenwiderstand</i>	50 Ω
Frequency range <i>Frequenzbereich</i>	DC to 18 GHz
Return loss (cable connector straight) <i>Rückflussdämpfung (Kabelsteckverbinder gerade)</i>	≥ 32 dB @ DC to 3 GHz ≥ 25 dB @ 3 GHz to 6 GHz
Insertion loss <i>Dämpfung</i>	≤ 0.05 x √f (GHz) dB
Insulation resistance <i>Isolationswiderstand</i>	≥ 5 GΩ
Center contact resistance <i>Übergangswiderstand Innenleiter</i>	≤ 3 mΩ
Outer contact resistance <i>Übergangswiderstand Außenleiter</i>	≤ 2.5 mΩ
Test Voltage <i>Prüfspannung</i>	1000 V rms
Working voltage <i>Betriebsspannung</i>	480 V rms
Power handling <i>Leistungsbelastbarkeit</i>	70 W @ 2.2 GHz (recommended)
RF-leakage <i>Schirmdämpfung</i>	≥ 95 dB @ DC to 2 GHz ≥ 80 dB @ 2 GHz to 4 GHz ≥ 70 dB @ 4 GHz to 6 GHz
Intermodulation 3rd order <i>Intermodulation 3. Ordnung</i>	≥ 120 dBc (2 x 43 dBm)
Mechanical data Mechanische Daten	
Mating cycles <i>Steckzyklen</i>	≥ 100
Interface retention force <i>Interface Haltekraft</i>	≥ 60 N
Engagement force <i>Steckkraft</i>	≤ 25 N
Disengagement force <i>Ziehkraft</i>	≤ 20 N
Environmental data Umweltdaten	
Temperature range <i>Temperaturbereich</i>	-40 °C to +85 °C
Thermal shock <i>Temperaturwechsel</i>	IEC 60169-1, Sub-clause 16.4 (-40 °C / +85 °C)
Damp Heat <i>Feuchte Wärme</i>	IEC 60169-1, Sub-clause 16.3 (96 hrs; steady state)
Corrosion resistance <i>Korrosionsbeständigkeit</i>	IEC 60169-1, Sub-clause 16.7 (48 hrs)
Vibration <i>Vibration</i>	IEC 60068-2-64 random (5 Hz to 20 Hz: 1.29 (m/s ²)/Hz; 20 Hz to 500 Hz: -3 dB / octave)
Max. soldering temperature (PCB connectors) <i>Max. Löttemperatur (Leiterplattensteckverbinder)</i>	IEC 61760-1, +260 °C for 10 sec.
Materials Materialien	
Spring loaded contact parts <i>Federnde Kontaktteile</i>	CuBe, Au plating
Center contact <i>Innenleiter</i>	CuZn, Au plating
Outer contact <i>Außenleiter</i>	CuZn, white bronze plating
Body <i>Gehäuse</i>	CuZn, white bronze plating
Locking sleeve <i>Verriegelungshülse</i>	QLF®: CuZn, white bronze plating Plastic: POM (black, blue, green, red)
Crimping ferrule <i>Crimphülse</i>	Soft copper, white bronze plating
Dielectric <i>Dielektrikum</i>	PTFE

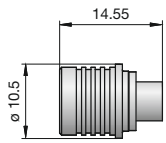
Rosenberger connectors fulfill in principle the indicated data of the Technical Data. Individual values of connectors may deviate depending upon application, design, type of cable, assembly method and execution. Specific data sheets for particular products can be provided on request from your Rosenberger sales partner.

Rosenberger Steckverbinder erfüllen grundsätzlich die in den Technischen Daten angegebenen Daten. Je nach Anwendung, Bauart, Kabeltyp, Montageart und -ausführung können einzelne Werte von Steckverbindern hiervon abweichen. Spezifische Datenblätter zu einzelnen Produkten erhalten Sie auf Anfrage von Ihrem Rosenberger-Ansprechpartner.

Cable Connectors Semi-Rigid Cables

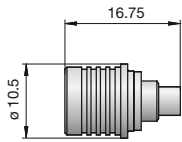
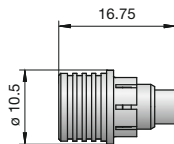
Straight Plug, solder
without pin, without dielectric

Semi-Rigid Cables

Ordering Number	Cable Group	Assembly Instruction	Packing Unit	
28 S 101-272 N	72	28 A3	100	

Straight Plug, plug-in/solder

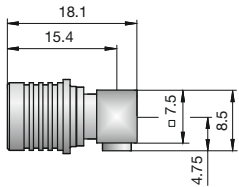
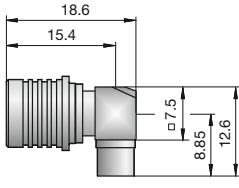
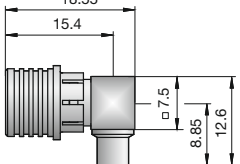
Semi-Rigid Cables

Ordering Number	Version	Cable Group	Assembly Instruction	Packing Unit	
28 S 107-271 N5	QLF®	71	28 A	100	
28 S 107-272 N5	QLF®	72	28 A2	100	
28 S 161-272 N5	IP 68 (mated pair)	72	28 A2	100	
28 S 147-271 N5-*		71	28 A1	100	
28 S 147-272 N5-*		72	28 A1	100	

* Please add the color code to the ordering number
(bl = blue, gn = green, ro = red, sw = black)

Right Angle Plug, solder

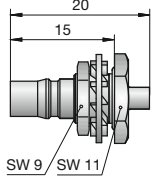
Semi-Rigid Cables

Ordering Number	Version	Cable Group	Assembly Instruction	Packing Unit	
28 S 206-271 N5	QLF®	71	28 C6	100	
28 S 206-272 N5	QLF®	72	28 C3	100	
28 S 263-272 N5	IP 68 (mated pair)	72	28 C5	100	
28 S 246-271 N5-*		71	28 C6	100	
28 S 246-272 N5-*		72	28 C4	100	

* Please add the color code to the ordering number
(bl = blue, gn = green, ro = red, sw = black)

Panel Jack, plug-in/solder, hexagonal flange

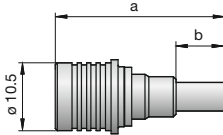
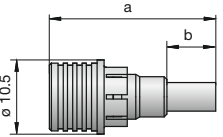
Semi-Rigid Cables

Ordering Number	Version	Cable Group	Assembly Instruction	Panel Piercing / PCB Layout	Packing Unit	
28 K 607-271 L5	QLF®	71	28 A	B 57	100	
28 K 607-272 L5	QLF®	72	28 A	B 57	100	

Cable Connectors - Flexible Cables

Straight Plug, full crimp

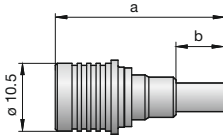
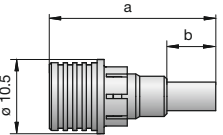
Flexible Cables

Ordering Number	Version	Remarks	Cable Group	Assembly Instruction	Crimp Inserts	Packing Unit	
28 S 107-102 N5	QLF®	a = 24.4 mm; b = 7.0 mm	02	28 E	11 W 150-402	100	
28 S 107-103 N5	QLF®	a = 24.4 mm; b = 7.0 mm	03	28 E	11 W 150-402	100	
28 S 147-102 N5-*		a = 24.4 mm; b = 7.0 mm	02	28 E	11 W 150-402	100	
28 S 147-103 N5-*		a = 24.4 mm; b = 7.0 mm	03	28 E	11 W 150-402	100	

* Please add the color code to the ordering number
(bl = blue, gn = green, ro = red, sw = black)

Straight Plug, solder-crimp

Flexible Cables

Ordering Number	Version	Remarks	Cable Group	Assembly Instruction	Crimp Inserts	Packing Unit	
28 S 107-302 N5	QLF®	a = 24.4 mm; b = 7.0 mm	02	28 D	11 W 150-102	100	
28 S 107-303 N5	QLF®	a = 24.4 mm; b = 7.0 mm	03	28 D	11 W 150-102	100	
28 S 107-306 N5	QLF®	a = 29.0 mm; b = 13.5 mm	06	28 D1	11 W 150-108	100	
28 S 107-307 N5	QLF®	a = 29.0 mm; b = 13.5 mm	07	28 D1	11 W 150-108	100	
28 S 107-3Y8 N5	QLF®	a = 29.6 mm; b = 12.0 mm	Y8	28 D1	11 W 150-109	100	
28 S 147-302 N5-*		a = 24.4 mm; b = 7.0 mm	02	28 D	11 W 150-102	100	
28 S 147-303 N5-*		a = 24.4 mm; b = 7.0 mm	03	28 D	11 W 150-102	100	
28 S 147-306 N5-*		a = 29.0 mm; b = 13.5 mm	06	28 D1	11 W 150-108	100	
28 S 147-307 N5-*		a = 29.0 mm; b = 13.5 mm	07	28 D1	11 W 150-108	100	
28 S 147-3Y8 N5-*		a = 29.6 mm; b = 12.0 mm	Y8	28 D1	11 W 150-109	100	

* Please add the color code to the ordering number
(bl = blue, gn = green, ro = red, sw = black)

Right Angle Plug, solder-crimp

Flexible Cables

Ordering Number	Version	Remarks	Cable Group	Assembly Instruction	Crimp Inserts	Packing Unit	
28 S 207-302 N5	QLF®	a = 12.5 mm; b = 7.0 mm	02	28 B	11 W 150-102	100	
28 S 207-303 N5	QLF®	a = 12.5 mm; b = 7.0 mm	03	28 B	11 W 150-102	100	
28 S 207-306 N5	QLF®	a = 19.0 mm; b = 13.5 mm	06	28 B1	11 W 150-108	100	
28 S 207-307 N5	QLF®	a = 19.0 mm; b = 13.5 mm	07	28 B1	11 W 150-108	100	
28 S 207-3Y8 N5	QLF®	a = 17.5 mm; b = 12.0 mm	Y8	28 B1	11 W 150-109	100	
28 S 263-303 N5	IP 68 (mated pair)	a = 12.35 mm; b = 7.0 mm	03	28 B4	11 W 150-102	100	
28 S 247-302 N5-*		a = 12.5 mm; b = 7.0 mm	02	28 B	11 W 150-102	100	
28 S 247-303 N5-*		a = 12.5 mm; b = 7.0 mm	03	28 B	11 W 150-102	100	
28 S 247-306 N5-*		a = 19.0 mm; b = 13.5 mm	06	28 B1	11 W 150-108	100	
28 S 247-307 N5-*		a = 19.0 mm; b = 13.5 mm	07	28 B1	11 W 150-108	100	
28 S 247-3Y8 N5-*		a = 17.5 mm; b = 12.0 mm	Y8	28 B1	11 W 150-109	100	

* Please add the color code to the ordering number
(bl = blue, gn = green, ro = red, sw = black)

Panel Jack, solder-crimp, hexagonal flange

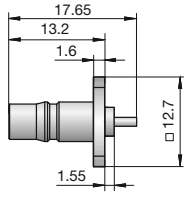
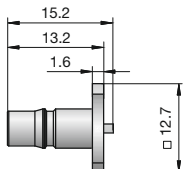
Flexible Cables

Ordering Number	Remarks	Cable Group	Assembly Instruction	Panel Piercing / PCB Layout	Crimp Inserts	Packing Unit	
28 K 607-302 N5	a = 24.0 mm; b = 7.0 mm	02	28 D	B 57	11 W 150-102	100	
28 K 607-303 N5	a = 24.0 mm; b = 7.0 mm	03	28 D	B 57	11 W 150-102	100	
28 K 607-306 N5	a = 30.5 mm; b = 13.5 mm	06	28 D1	B 57	11 W 150-108	100	
28 K 607-307 N5	a = 30.5 mm; b = 13.5 mm	07	28 D1	B 57	11 W 150-108	100	
28 K 607-3Y8 N5	a = 29.0 mm; b = 12.0 mm	Y8	28 D1	B 57	11 W 150-109	100	

Panel Connectors - Coaxial End

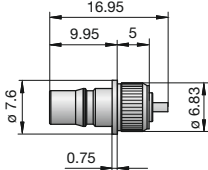
Panel Jack, 4-hole flange

Coaxial End

Ordering Number	Panel Piercing / PCB Layout	Packing Unit	
28 K 401-500 N5	B 55a	100 blister	
28 K 403-500 L5	B 55a	100 blister	

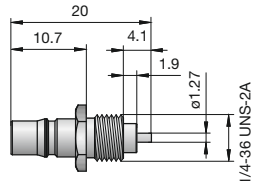
Panel Jack, round flange

Coaxial End

Ordering Number	Version	Panel Piercing / PCB Layout	Packing Unit	
28 K 506-500 L5	press-in	$\varnothing 6.75 \pm 0.03$	100	

Panel Jack, hexagonal flange

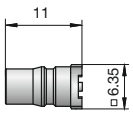
Coaxial End

Ordering Number	Panel Piercing / PCB Layout	Packing Unit	
28 K 601-500 N5	1/4-36 UNS-2A	100 blister	

PCB Connectors - SMD

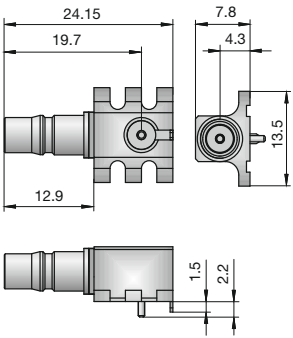
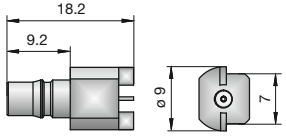
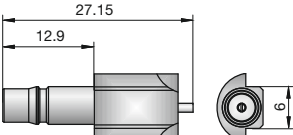
Straight Jack, PCB

SMD

Ordering Number	Panel Piercing / PCB Layout	Packing Unit	
28 K 101-40M L5	B 163	100 blister	

Right Angle Jack, PCB

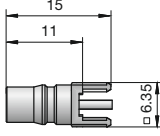
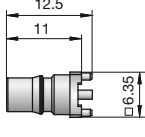
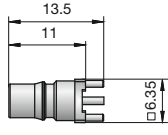
SMD

Ordering Number	Panel Piercing / PCB Layout	Packing	Packing Unit	
28 K 201-40M L5	B 144	VG 49.25000	50 blister, 250 tape & reel	
28 K 203-40M L5	B 210	VG 104.65000	100 blister, 650 tape & reel	
28 K 209-40M L5	B 335b	VG 101.30000	300 tape & reel	

PCB Connectors - Solder Pin

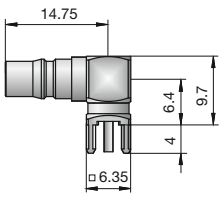
Straight Jack, PCB

Solder Pin

Ordering Number	Remarks	Panel Piercing / PCB Layout	Packing Unit	
28 K 101-400 L5	round pins	B 30b	100 blister	
28 K 102-400 L5	round pins	B 168	100 blister	
28 K 104-400 L5	round pins	B 168	100 blister	

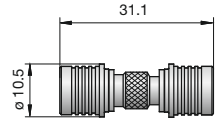
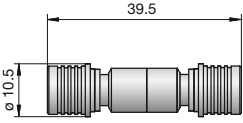
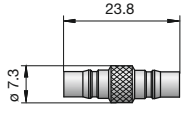
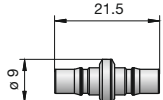
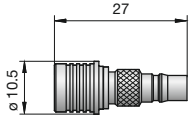
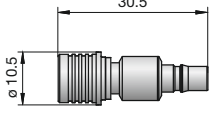
Right Angle Jack, PCB

Solder Pin

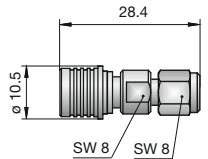
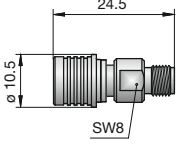
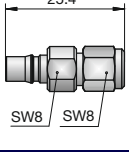
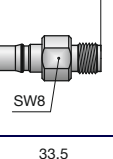
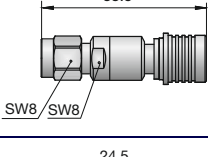
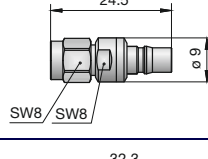
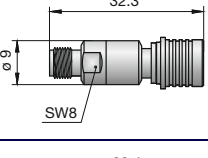
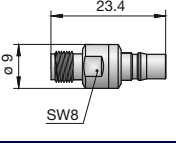
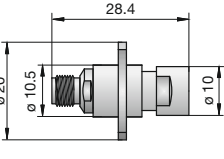
Ordering Number	Remarks	Panel Piercing / PCB Layout	Packing Unit	
28 K 201-400 N5	round pins	B 30b	100 blister	

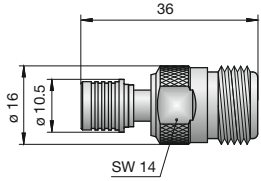
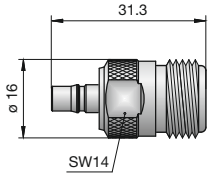
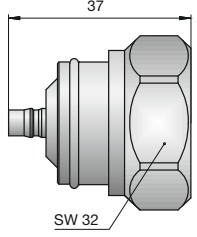
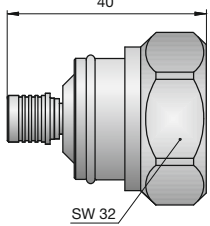
Adaptors

Adaptors (In Series)

Ordering Number	Version	Remarks	Return Loss	Packing Unit	
28 S 101-S00 N5	straight	QMA male - male		1	
28 S 121-S20 N3	straight	QMA male - male calibration adaptor	≥ 32 dB @ DC to 4 GHz ≥ 24 dB @ 4 GHz to 18 GHz	1	
28 K 101-K00 N5	straight	QMA female - female		1	
28 K 121-K20 N3	straight	QMA female - female calibration adaptor	≥ 32 dB @ DC to 4 GHz ≥ 24 dB @ 4 GHz to 18 GHz	1	
28 S 101-K00 N5	straight	QMA male - female		1	
28 S 121-K20 N3	straight	QMA male - female calibration adaptor	≥ 32 dB @ DC to 4 GHz ≥ 24 dB @ 4 GHz to 18 GHz	1	

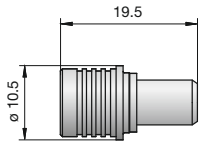
Adaptors (Inter Series)

Ordering Number	Version	Remarks	Return Loss	Packing Unit	
28 S 132-S00 N5	straight	QMA male - SMA male		1	
28 S 132-K00 N5	straight	QMA male - SMA female		1	
28 K 132-S00 N5	straight	QMA female - SMA male		1	
28 K 132-K00 N5	straight	QMA female - SMA female		1	
03 S 128-S20 N3	straight	RPC-3.50 male - QMA male, calibration adaptor	≥ 32 dB @ DC to 4 GHz ≥ 24 dB @ 4 GHz to 18 GHz	1	
03 S 128-K20 N3	straight	RPC-3.50 male - QMA female, calibration adaptor	≥ 32 dB @ DC to 4 GHz ≥ 24 dB @ 4 GHz to 18 GHz	1	
03 K 128-S20 N3	straight	RPC-3.50 female - QMA male, calibration adaptor	≥ 32 dB @ DC to 4 GHz ≥ 24 dB @ 4 GHz to 18 GHz	1	
03 K 128-K20 N3	straight	RPC-3.50 female - QMA female, calibration adaptor	≥ 32 dB @ DC to 4 GHz ≥ 24 dB @ 4 GHz to 18 GHz	1	
03 K 728-S22 S3	straight panel	RPC-3.50 female - QMA male, 2-hole flange, floating test adaptor	≥ 40 dB @ DC to 2.5 GHz ≥ 28 dB @ 2.5 GHz to 6 GHz ≥ 24 dB @ 6 GHz to 18 GHz	1	

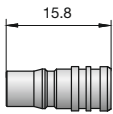
Ordering Number	Version	Remarks	Return Loss	Packing Unit	
28 S 153-K00 N5	straight	QMA male - N 50 Ω female		1	
28 K 153-K00 N5	straight	QMA female - N 50 Ω female		1	
28 K 160-S00 N5	straight	QMA female - 7-16 male		1	
28 S 160-S00 N5	straight	QMA male - 7-16 male		1	

Terminations

Termination Plug

Ordering Number	Remarks	Return Loss	Packing Unit	
28 S 1ER-001 N5	1 Watt Frequency: DC to 12.4 GHz	≥ 29 dB @ DC to 1 GHz ≥ 21 dB @ 1 GHz to 2.5 GHz ≥ 17 dB @ 2.5 GHz to 12.4 GHz	1	

Termination Jack

Ordering Number	Remarks	Return Loss	Packing Unit	
28 K 1ER-001 N3	1 Watt Frequency: DC to 12.4 GHz	≥ 29 dB @ DC to 1 GHz ≥ 21 dB @ 1 GHz to 2.5 GHz ≥ 17 dB @ 2.5 GHz to 12.4 GHz	1	

Special Tools

Extraction Tool

Ordering Number	Remarks	Packing Unit	
28 W 001-000	for QMA Locking Nut	1	