

QMA



Characteristics and dimensions of QMA 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® quick-lock coupling mechanism and plastic quick-lock coupling mechanism in 4 different coloured codings

QMA-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® Quick-Lock-Einrastmechanismus und Kunststoff-Quick-Lock-Einrastmechanismus in vier verschiedenen Farbkodierungen

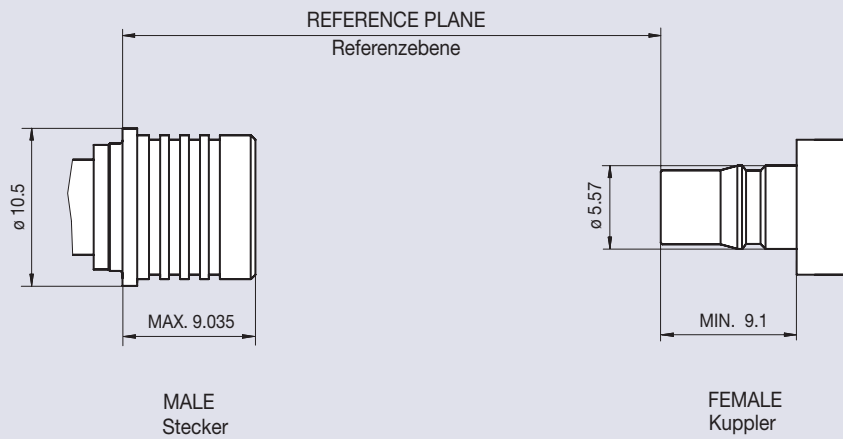
QMA

QMA



Interface Dimensions QMA

Code 28



Rosenberger is authorized to act as QLF[®] manufacturer. Rosenberger QMA connectors fulfill 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.qf.info

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.qf.info



Features

- ▶ Interface according to QLF (Quick Lock Formula)
- ▶ Frequency range DC to 18 GHz
- ▶ Return loss (cable connector straight) ≥ 25 dB @ 3 GHz to 6 GHz
- ▶ Minimum pitch: 12.4 mm
- ▶ Flexibility: 360° turnable
- ▶ Impedance 50 Ω
- ▶ Quick-lock coupling

Product Range

- ▶ Cable connectors
- ▶ Panel connectors
- ▶ PCB connectors
- ▶ Adaptors
- ▶ Terminations

Technical Data QMA

Code 28

| Applicable standards Anwendbare Normen | |
|--|---|
| Interface according to Interface gemäß | QLF® (Quick Lock Formula) Rosenberger is an authorized QLF® manufacturer |
| Electrical data Elektrische Daten | |
| Impedance Wellenwiderstand | 50 Ω |
| Frequency range Frequenzbereich | DC to 18 GHz |
| Return loss (cable connector straight) Rückflusdämpfung (Kabelsteckverbinder gerade) | ≥ 32 dB @ DC to 3 GHz ≥ 25 dB @ 3 GHz to 6 GHz |
| Insertion loss Dämpfung | ≤ 0.05 x √f (GHz) dB |
| Insulation resistance Isolationswiderstand | ≥ 5 GΩ |
| Center contact resistance Übergangswiderstand Innenleiter | ≤ 3 mΩ |
| Outer contact resistance Übergangswiderstand Außenleiter | ≤ 2.5 mΩ |
| Test voltage Prüfspannung | 1000 V rms |
| Working voltage Betriebsspannung | 480 V rms |
| Power handling Leistungsbelastbarkeit | 70 W @ 2.2 GHz (recommended) |
| RF leakage - Interface Schirmdämpfung | ≥ 95 dB @ DC to 2 GHz ≥ 80 dB @ 2 GHz to 4 GHz ≥ 70 dB @ 4 GHz to 6 GHz |
| Intermodulation 3rd order Intermodulation 3. Ordnung | ≤ -120 dBc (2 x 43 dBm) |
| Mechanical data Mechanische Daten | |
| Mating cycles Steckzyklen | ≥ 100 |
| Interface retention force Interface Haltekraft | ≥ 60 N |
| Engagement force Steckkraft | ≤ 25 N |
| Disengagement force Ziehkraft | ≤ 20 N |
| Pitch Packungsdichte | ≥ 12.4 mm |
| Environmental data Umweltdaten | |
| Temperature range Temperaturbereich | -40 °C to +85 °C |
| Thermal shock Temperaturzyklen | IEC 61169-1, Sub-clause 9.4.4 (-40 °C / +85 °C) |
| Damp heat Feuchte Wärme | IEC 60169-1, Sub-clause 16.3 (96 hrs; steady state) |
| Corrosion resistance Korrosionsbeständigkeit | IEC 60169-1, Sub-clause 16.7 (48 hrs) |
| Vibration Vibration | IEC 60068-2-64 random |
| Max. soldering temperature (PCB connectors) Max. Löttemperatur (Leiterplattensteckverbinder) | IEC 61760-1, +260 °C for 10 sec. |
| Materials Materialien | |
| Spring loaded contact parts Federnde Kontaktteile | CuBe / CuSn, Au plating |
| Center contact Innenleiter | CuZn, Au plating |
| Outer contact Außenleiter | CuZn, Au / white bronze plating |
| Body Gehäuse | CuZn, Au / white bronze plating |
| Locking sleeve Verriegelungshülse | QLF®: CuZn, white bronze plating Plastic: POM (black, blue, green, red) |
| Crimping ferrule Crimphülse | Cu, Au / white bronze plating |
| Dielectric Dielektrikum | PTFE |
| Gasket Dichtung | Silicon |


Rosenberger connectors generally fulfill the indicated technical data. Individual values of connectors may deviate depending upon application, design, type of cable, assembly method and workmanship. Data sheets for particular products can be downloaded on our website or can be provided on request from your Rosenberger sales partner.

Rosenberger-Steckverbinder erfüllen grundsätzlich die hier angegebenen technischen Daten. Je nach Anwendung, Bauart, Kabeltyp, Montageart und -ausführung können einzelne Werte der Steckverbinder hiervon abweichen. Datenblätter zu einzelnen Produkten können Sie von unserer Website herunterladen oder auf Anfrage von Ihrem Rosenberger-Ansprechpartner erhalten.

Cable Connectors Semi-Rigid Cables


**Straight Plug, solder
without pin, without dielectric**

Semi-Rigid Cables

| Rosenberger No. | Order No. | Sales Unit | Packaging | Remarks | Cable Group | |
|-----------------|-----------|------------|-----------|---------|-------------|---|
| 28 S 101-272 N | 218302 | 25 | standard | QLF® | 72 |  |
| | | | | | | |


Straight Plug, plug-in/solder

Semi-Rigid Cables

| Rosenberger No. | Order No. | Sales Unit | Packaging | Remarks | Cable Group | |
|-----------------|-----------|------------|-----------|---------|-------------|---|
| 28 S 107-271 N5 | 149573 | 25 | standard | QLF® | 71 |  |
| 28 S 107-272 N5 | 148860 | 50 | standard | QLF® | 72 | |


Right Angle Plug, solder

Semi-Rigid Cables

| Rosenberger No. | Order No. | Sales Unit | Packaging | Remarks | Cable Group | |
|-----------------|-----------|------------|-----------|---------|-------------|---|
| 28 S 206-271 N5 | 151556 | 100 | standard | QLF® | 71 |  |
| 28 S 208-272 N5 | 199214 | 100 | standard | QLF® | 72 | |

Panel Jack, plug-in/solder, hexagonal flange



Semi-Rigid Cables

| Rosenberger No. | Order No. | Sales Unit | Packaging | Remarks | Cable Group | |
|-----------------|-----------|------------|-----------|---------|-------------|---|
| 28 K 607-271 L5 | 159305 | 25 | standard | QLF® | 71 |  |
| 28 K 607-272 L5 | 148861 | 50 | standard | QLF® | 72 | |

Cable Connectors - Flexible Cables


Straight Plug, full crimp

Flexible Cables

| Rosenberger No. | Order No. | Sales Unit | Packaging | Remarks | Cable Group | |
|--------------------|-----------|------------|-----------|--------------------|-------------|---|
| 28 S 107-102 N5 | 156467 | 50 | standard | QLF® | 02 |  |
| 28 S 161-102 N5 | 263993 | 50 | standard | IP 68 (mated pair) | 02 | |
| 28 S 107-103 N5 | 149572 | 50 | standard | QLF® | 03 | |
| 28 S 147-103 N5-bl | 153641 | 25 | standard | blue POM sleeve | 03 |  |
| 28 S 147-103 N5-gn | 153639 | 25 | standard | green POM sleeve | 03 | |
| 28 S 147-103 N5-ro | 153640 | 25 | standard | red POM sleeve | 03 | |
| 28 S 147-103 N5-sw | 153638 | 25 | standard | black POM sleeve | 03 | |

Straight Plug, solder-crimp

Flexible Cables

| Rosenberger No. | Order No. | Sales Unit | Packaging | Remarks | Cable Group | |
|-----------------|-----------|------------|-----------|---------|-------------|--|
| 28 S 107-302 N5 | 156780 | 50 | standard | QLF® | 02 |  |
| 28 S 107-303 N5 | 183399 | 50 | standard | QLF® | 03 | |
| 28 S 107-307 N5 | 147301 | 25 | standard | QLF® | 07 | |


Right Angle Plug, solder-crimp

Flexible Cables

| Rosenberger No. | Order No. | Sales Unit | Packaging | Remarks | Cable Group | |
|--------------------|-----------|------------|-----------|--------------------|-------------|---|
| 28 S 207-302 N5 | 153274 | 100 | standard | QLF® | 02 |  |
| 28 S 207-303 N5 | 140441 | 100 | standard | QLF® | 03 | |
| 28 S 207-307 N5 | 166159 | 50 | standard | QLF® | 07 | |
| 28 S 263-303 N5 | 223005 | 50 | standard | IP 68 (mated pair) | 03 |  |
| 28 S 247-303 N5-bl | 147323 | 25 | standard | blue POM sleeve | 03 | |
| 28 S 247-303 N5-gn | 147322 | 25 | standard | green POM sleeve | 03 | |
| 28 S 247-303 N5-ro | 147324 | 25 | standard | red POM sleeve | 03 | |
| 28 S 247-303 N5-sw | 274857 | 25 | standard | black POM sleeve | 03 | |

Panel Jack, solder-crimp, hexagonal flange


Flexible Cables

| Rosenberger No. | Order No. | Sales Unit | Packaging | Remarks | Cable Group | |
|-----------------|-----------|------------|-----------|--------------------------|-------------|---|
| 28 K 607-302 N5 | 156779 | 50 | standard | QLF® hexagonal flange | 02 |  |
| 28 K 607-303 N5 | 146783 | 50 | standard | QLF® hexagonal flange | 03 | |

Panel Connectors - Coaxial End


Panel Jack, 4-hole flange

Coaxial End

| Rosenberger No. | Order No. | Sales Unit | Packaging | Remarks | |
|-----------------|-----------|------------|-----------|---|---|
| 28 K 401-500 N5 | 140444 | 25 | blister | QLF® 4-hole flange 12.7 mm 4 x Ø 2.6 mm |  |

Panel Jack, hexagonal flange


Coaxial End

| Rosenberger No. | Order No. | Sales Unit | Packaging | Remarks | |
|-----------------|-----------|------------|-----------|--------------------------|---|
| 28 K 601-500 N5 | 161567 | 25 | blister | QLF® hexagonal flange |  |

PCB Connectors - SMD



Straight Jack, PCB

SMD

| Rosenberger No. | Order No. | Sales Unit | Packaging | Remarks | |
|-----------------|-----------|------------|-----------|---------|---|
| 28 K 101-40M L5 | 148878 | 100 | blister | QLF® |  |

Right Angle Jack, PCB


SMD

| Rosenberger No. | Order No. | Sales Unit | Packaging | Remarks | |
|-----------------|-----------|------------|-----------|---------|--|
| 28 K 201-40M L5 | 166347 | 25 | blister | QLF® |  |
| 28 K 203-40M L5 | 153611 | 100 | blister | QLF® |  |

PCB Connectors - Solder Pin


Straight Jack, PCB

Solder Pin

| Rosenberger No. | Order No. | Sales Unit | Packaging | Remarks | |
|-----------------|-----------|------------|-----------|--------------------|---|
| 28 K 101-400 L5 | 148877 | 25 | blister | QLF® round pins |  |

Right Angle Jack, PCB

Solder Pin

| Rosenberger No. | Order No. | Sales Unit | Packaging | Remarks | |
|-----------------|-----------|------------|-----------|--------------------|---|
| 28 K 201-400 N5 | 148879 | 100 | blister | QLF® round pins |  |

Adaptors

Adaptors QMA - QMA

| Rosenberger No. | Order No. | Sales Unit | Packaging | Remarks | Return Loss | |
|-----------------|-----------|------------|-----------|---|--|---|
| 28 S 101-S00 N5 | 147022 | 1 | standard | QMA male - male | |  |
| 28 S 121-S20 N3 | 148950 | 1 | standard | QMA male - male calibration adaptor | ≥ 32 dB @ DC to 4 GHz ≥ 24 dB @ 4 GHz to 18 GHz |  |
| 28 K 101-K00 N5 | 147023 | 1 | standard | QMA female - female | |  |
| 28 K 121-K20 N3 | 148952 | 1 | standard | QMA female - female calibration adaptor | ≥ 32 dB @ DC to 4 GHz ≥ 24 dB @ 4 GHz to 18 GHz |  |
| 28 S 101-K00 N5 | 147024 | 1 | standard | QMA male - female | |  |
| 28 S 121-K20 N3 | 148951 | 1 | standard | QMA male - female calibration adaptor | ≥ 32 dB @ DC to 4 GHz ≥ 24 dB @ 4 GHz to 18 GHz |  |



Adaptors QMA - SMA

| Rosenberger No. | Order No. | Sales Unit | Packaging | Remarks | |
|-----------------|-----------|------------|-----------|-------------------------|--|
| 28 S 132-S00 N5 | 157980 | 1 | standard | QMA male - SMA male |  |
| 28 S 132-K00 N5 | 154721 | 1 | standard | QMA male - SMA female |  |
| 28 K 132-S00 N5 | 147025 | 1 | standard | QMA female - SMA male |  |
| 28 K 132-K00 N5 | 156117 | 1 | standard | QMA female - SMA female |  |

Adaptors QMA - RPC-3.50

| Rosenberger No. | Order No. | Sales Unit | Packaging | Remarks | Return Loss | |
|-----------------|-----------|------------|-----------|--|---|---|
| 03 S 128-S20 N3 | 148944 | 1 | standard | RPC-3.50 male - QMA male, calibration adaptor | ≥ 32 dB @ DC to 4 GHz ≥ 24 dB @ 4 GHz to 18 GHz |  |
| 03 S 128-K20 N3 | 148947 | 1 | standard | RPC-3.50 male - QMA female, calibration adaptor | ≥ 32 dB @ DC to 4 GHz ≥ 24 dB @ 4 GHz to 18 GHz |  |
| 03 K 128-S20 N3 | 148948 | 1 | standard | RPC-3.50 female - QMA male, calibration adaptor | ≥ 32 dB @ DC to 4 GHz ≥ 24 dB @ 4 GHz to 18 GHz |  |
| 03 K 128-K20 N3 | 148949 | 1 | standard | RPC-3.50 female - QMA female, calibration adaptor | ≥ 32 dB @ DC to 4 GHz ≥ 24 dB @ 4 GHz to 18 GHz |  |
| 03 K 728-S22 S3 | 147490 | 1 | standard | 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 |  |

Adaptors QMA - N 50 Ω

| Rosenberger No. | Order No. | Sales Unit | Packaging | Remarks | |
|-----------------|-----------|------------|-----------|----------------------------|---|
| 28 S 153-K00 N5 | 166928 | 1 | standard | QMA male - N 50 Ω female |  |
| 28 K 153-K00 N5 | 166457 | 1 | standard | QMA female - N 50 Ω female |  |


Adaptors QMA - 7-16

| Rosenberger No. | Order No. | Sales Unit | Packaging | Remarks | |
|-----------------|-----------|------------|-----------|------------------------|---|
| 28 K 160-S00 N5 | 159005 | 1 | standard | QMA female - 7-16 male |  |
| 28 S 160-S00 N5 | 160223 | 1 | standard | QMA male - 7-16 male |  |


QMA

Terminations

Termination Plug


| Rosenberger No. | Order No. | Sales Unit | Packaging | Remarks | Return Loss | |
|-----------------|-----------|------------|-----------|-------------------------------------|---|---|
| 28 S 1ER-001 N5 | 161718 | 50 | standard | 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 |  |

Termination Jack

| Rosenberger No. | Order No. | Sales Unit | Packaging | Remarks | Return Loss | |
|-----------------|-----------|------------|-----------|-------------------------------------|---|---|
| 28 K 1ER-001 N3 | 154558 | 5 | standard | 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 |  |

Special Tools

Extraction Tool

| Rosenberger No. | Order No. | Sales Unit | Packaging | Remarks | |
|-----------------|-----------|------------|-----------|--|---|
| 28 W 001-000 | 146488 | 1 | standard | extraction tool for QMA Locking Nut |  |