



All dimensions are in mm; tolerances according to ISO 2768 m-H

**Interface**

According to IEC 60169-23  
 Mechanically compatible with RPC-2.92 and SMA

**Documents**

Application note AN001 "Calibration Services"

**Material and plating**

**Connector parts**

Connector parts	Material	Plating
Center conductor	CuBe	Gold, min. 1.27 µm, over chemical nickel
Outer conductor	Brass	Gold, min. 1.27 µm, over chemical nickel
Coupling nut	Stainless steel	Passivated

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**Electrical data**

Insertion loss  $\leq 0.20$  dB at 26.5 GHz

**Mechanical data**

Mating cycles  $\geq 500$   
 Maximum torque 1.70 Nm  
 Recommended torque 0.90 Nm  
 Airline dimensions at 23 °C:  
 - Diameter outer conductor 3.500 mm  $\pm$  0.005 mm  
 - Diameter inner conductor 1.520 mm  $\pm$  0.005 mm  
 - Length outer conductor 38.50 mm + 0.02 mm  
 - Length inner conductor 38.50 mm - 0.02 mm  
 - Length difference  $\leq 0.04$  mm  
 (outer conductor – inner conductor)

**Calculated data (non warranted)**

Lossless characteristic impedance<sup>1</sup> 50  $\Omega$   $\pm$  0.35  $\Omega$   
 Return loss<sup>2</sup>  $\geq 40$  dB, 0.3 GHz to 4 GHz  
 $\geq 38$  dB, 4 GHz to 8 GHz  
 $\geq 35$  dB, 8 GHz to 26.5 GHz

1. The lossless characteristic impedance is calculated from the specified diameters of the inner and outer conductor.
2. The return loss is calculated from the characteristic impedance, the skin depth and the connector interface.

**General standard definitions**

For proper work the vector network analyzer (VNA) used needs a model describing the electrical behaviour of this calibration standard. Depending on the VNA type different models, units and terms are used and have to be entered into the VNA. All values are based on typical geometry and plating.

- Offset  $Z_0$  / Impedance /  $Z_0$  50  $\Omega$   
 - Offset Delay 128.497 ps  
 - Length (electrical) / Offset Length 38.522 mm  
 - Offset Loss 3.00 G $\Omega$ /s  
 - Loss 0.0335 dB/ $\sqrt{\text{GHz}}$

**Environmental data**

Operating temperature range<sup>3</sup> +20 °C to +26 °C  
 Storage temperature range 0 °C to +50 °C  
 RoHS compliant

3. This range is a recommendation. However, the airline can be used in a wider range. Any temperature change from 23 °C results in dimensional changes.

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**Declaration of calibration options**

**Factory Calibration**

Standard delivery for this calibration standard includes a Factory Calibration. The Calibration Certificate issued reports individual mechanical calibration results, traceable to national / international standards. Model based standard definitions are reported in an Agilent/Keysight, Rohde & Schwarz and Anritsu compatible VNA format.

**Accredited Calibration**

Not available.

*For further, more detailed information see application note AN001 on the Rosenberger homepage.*

**Calibration interval**

Recommendation 12 months

**Packing**

Standard 1 pce in box  
 Weight 9.3 g/pce  
 Center conductor loose in an acrylic glass tube

While the information has been carefully compiled to the best of our knowledge, nothing is intended as representation or warranty on our part and no statement herein shall be construed as recommendation to infringe existing patents. In the effort to improve our products, we reserve the right to make changes judged to be necessary.

Draft	Date	Approved	Date	Rev.	Engineering change number	Name	Date
Herbert Babinger	15.10.14	Martin Moder	24.11.14	g00	14-0004	Manuela Fuehrich	24.11.14