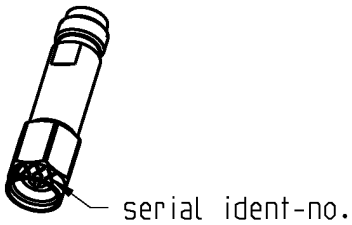
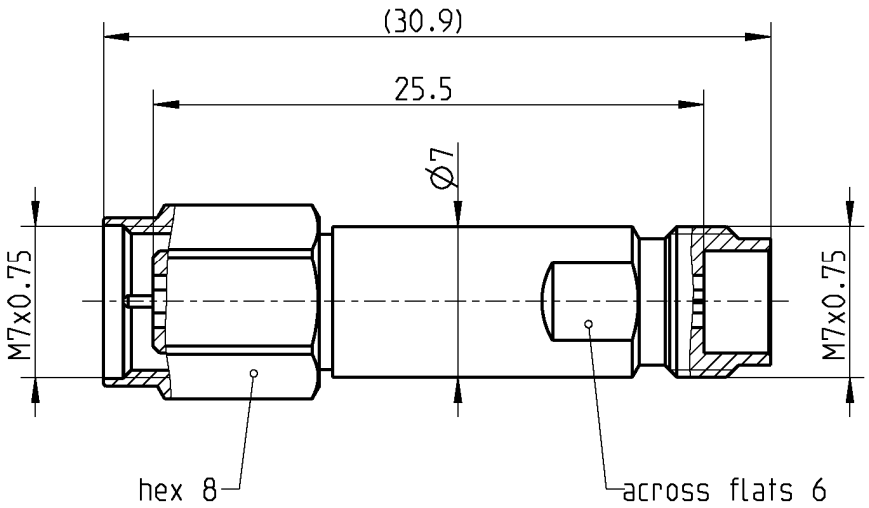
Technical Data Sheet		Rosenberger
RPC-2.40	Airline Plug / Jack	**09S101-K025**





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

Interface

According to	IEC 61169-40
Mechanically compatible with	RPC-1.85

Documents

Application note	AN001 “Calibration Services”

Material and plating

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	≤ 0.25 dB at 50 GHz

Mechanical data

Mating cycles	≥ 500
Maximum torque	1.65 Nm
Recommended torque	0.90 Nm
Airline dimensions at 23 °C:	
- Diameter outer conductor	2.400 mm ± 0.005 mm
- Diameter inner conductor	1.042 mm ± 0.005 mm
- Length outer conductor	25.50 mm + 0.02 mm
- Length inner conductor	25.50 mm - 0.02 mm
- Length difference (outer conductor – inner conductor)	≤ 0.04 mm

Calculated data (non warranted)

Lossless characteristic impedance[1]	50 Ω ± 0.95 Ω
Return loss[2]	≥ 36 dB, 0.4 GHz to 4 GHz ≥ 30 dB, 4 GHz to 26.5 GHz ≥ 26 dB, 26.5 GHz to 50 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_o / Impedance / Z_o	50 Ω
- Offset Delay	85.1198 ps
- Length (electrical) / Offset Length	25.518 mm
- Offset Loss	3.40 GΩ/s
- Loss	0.0249 dB/$\sqrt{\text{GHz}}$

Environmental data

Operating temperature range[3]	+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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