

Technical Data Sheet

Rosenberger

RPC-N
50 Ω

Calibration Kit
Jack

05K30R-MSOS3



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

Interface

According to

IEC 61169-16

Contents and Documentation

This kit is delivered with

- **Standard Definitions Card**
Printed Standard Definitions that can be used on nearly all Vector Network Analyzers
- **Certificate of Testing**
- **Lanyard**
- **Hard Shell Case**
- **Protection Caps**
- **User Manual**

Material and plating

Connector parts

Center conductor
Outer conductor
Body
Dielectric
Substrate

Material

CuBe
Stainless steel
Aluminum
PPE
Al₂O₃

Plating

Gold, min. 1.27 μm, over nickel
Passivated
black anodized

Electrical data

Frequency range DC to 18 GHz

Open

Error from nominal phase ¹	$\leq 2.0^\circ$, DC to 6 GHz $\leq 3.0^\circ$, 6 GHz to 9 GHz $\leq 4.0^\circ$, 9 GHz to 18 GHz
---------------------------------------	---

Short

Error from nominal phase ²	$\leq 1.5^\circ$, DC to 6 GHz $\leq 2.0^\circ$, 6 GHz to 9 GHz $\leq 2.5^\circ$, 9 GHz to 18 GHz
---------------------------------------	---

Load

Return loss	≥ 42 dB, DC to 6 GHz ≥ 36 dB, 6 GHz to 9 GHz ≥ 30 dB, 9 GHz to 18 GHz
DC-Resistance	50 Ω ± 0.5 Ω
Power handling (at 25 °C, sea level)	≤ 1.0 W, derate by 0.01 W/K

¹ The nominal phase is defined by the Offset Delay, the Offset Loss and the Fringing Capacitances

² The nominal phase is defined by the Offset Delay, the Offset Loss and the Short Inductance

Mechanical data

Mating cycles	≥ 500
Maximum torque	1.70 Nm
Recommended torque	1.10 Nm
Gauge	5.22 mm to 5.26 mm

General standard definitions

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

Open

Offset Z _o / Impedance / Z _o	50 Ω		
Offset Delay	40.028 ps		
Length (electrical) / Offset Length	12.00 mm		
Offset Loss	0.80 GΩ/s		
Loss	0.0056 dB/√GHz		
Fringing Capacitances	C ₀ = 37.1000 x 10 ⁻¹⁵ F	/	37.1000 fF
	C ₁ = 1200.00 x 10 ⁻²⁷ F/Hz	/	1.20000 fF /GHz
	C ₂ = -30.0000 x 10 ⁻³⁶ F/Hz ²	/	-0.03000 fF /GHz ²
	C ₃ = 0.00000 x 10 ⁻⁴⁵ F/Hz ³	/	0.00000 fF /GHz ³

Page
3 / 3