

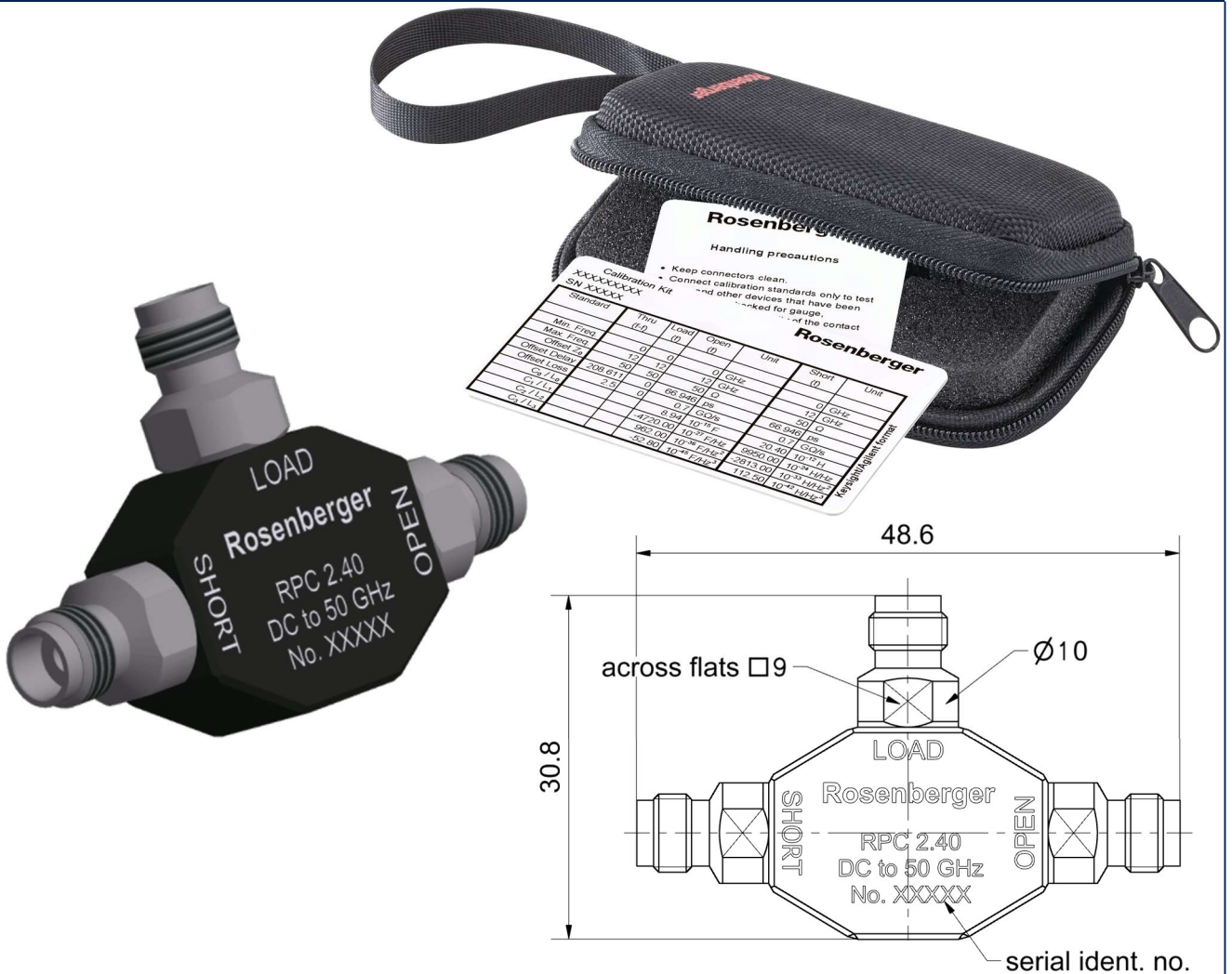
# Technical Data Sheet

# Rosenberger

RPC-2.40

Calibration Kit  
Jack

09K30R-MSOS3



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

## Interface

According to  
Mechanically compatible with

IEC 61169-40  
RPC-1.85

## Contents and Documentation

This kit is delivered with

- **Standard Definitions Card**  
Printed Standard Definitions that can be used on nearly all Vector Network Analyzers
- **Test Results Documentation**
- **Hard Shell Case**
- **Protection Caps**

## Material and plating

### Connector parts

Center conductor  
Outer conductor  
Body  
Dielectric  
Substrate

### Material

CuBe  
Stainless steel  
Aluminum  
PS  
Al<sub>2</sub>O<sub>3</sub>

### Plating

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

**Electrical data**

Frequency range DC to 50.0 GHz

**Open**

Error from nominal phase<sup>1</sup>  
 ≤ 2.0°, DC to 4 GHz  
 ≤ 4.0°, 4 GHz to 26.5 GHz  
 ≤ 6.0°, 26.5 GHz to 50.0 GHz

**Short**

Error from nominal phase<sup>2</sup>  
 ≤ 1.5°, DC to 4 GHz  
 ≤ 3.0°, 4 GHz to 26.5 GHz  
 ≤ 4.5°, 26.5 GHz to 50.0 GHz

**Load**

Return loss  
 ≥ 36.0 dB, DC to 4 GHz  
 ≥ 30.0 dB, 4 GHz to 26.5 GHz  
 ≥ 22.0 dB, 26.5 GHz to 50.0 GHz

DC Resistance 50 Ω ± 0.5 Ω  
 Power handling (at 25 °C, sea level) ≤ 0.5 W, derate by 0.005 W/K

<sup>1</sup> The nominal phase is defined by the Offset Delay, the Offset Loss and the Fringing Capacitances

<sup>2</sup> The nominal phase is defined by the Offset Delay, the Offset Loss and the Short Inductance

**Mechanical data**

Mating cycles ≥ 500  
 Maximum torque 1.65 Nm  
 Recommended torque 0.90 Nm  
 Gauge 0.00 mm to 0.03 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<sub>o</sub> / Impedance / Z<sub>o</sub> 50 Ω  
 Offset Delay 23.350 ps  
 Length (electrical) / Offset Length 7.00 mm  
 Offset Loss 3.20 GΩ/s  
 Loss 0.0130 dB/√GHz  
 Fringing Capacitances  
 C<sub>0</sub> = 4.30000 x 10<sup>-15</sup> F / 4.30000 fF  
 C<sub>1</sub> = -718.000 x 10<sup>-27</sup> F/Hz / -0.71800 fF /GHz  
 C<sub>2</sub> = 28.7000 x 10<sup>-36</sup> F/Hz<sup>2</sup> / 0.02870 fF /GHz<sup>2</sup>  
 C<sub>3</sub> = -0.30000 x 10<sup>-45</sup> F/Hz<sup>3</sup> / -0.00030 fF /GHz<sup>3</sup>