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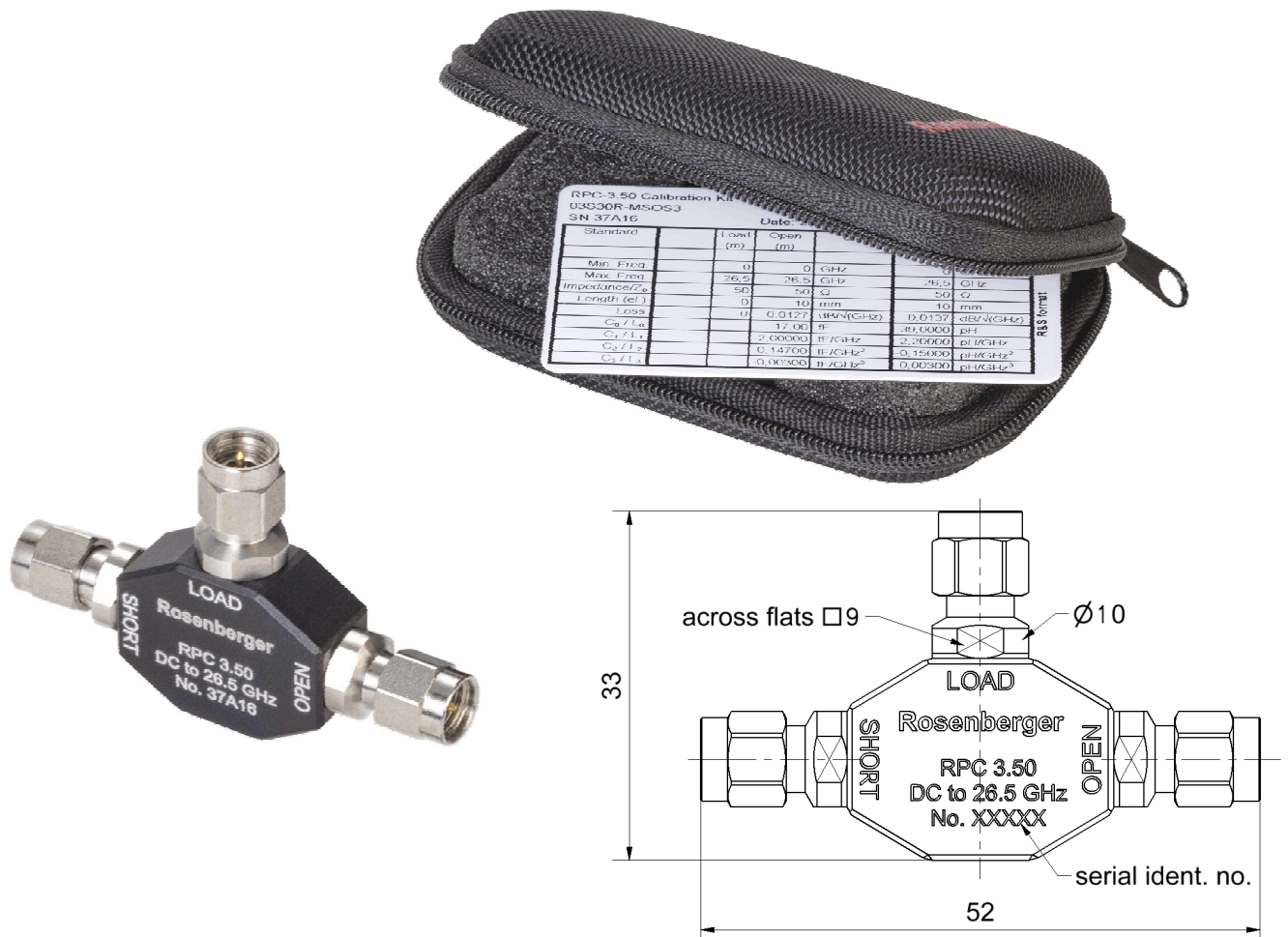
## Technical Data Sheet

# Rosenberger

RPC-3.50

Calibration Kit  
Plug

03S30R-MSOS3



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

### Interface

According to  
Mechanically compatible with

IEC 61169-23  
RPC-2.92 and SMA

### 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**

### Material and plating

#### Connector parts

Center conductor  
Outer conductor  
Coupling nut  
Body  
Dielectric  
Substrate

#### Material

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

#### Plating

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



## Electrical data

Frequency range DC to 26.5 GHz

### Open

Error from nominal phase<sup>1</sup>

$\leq 1.0^\circ$ , DC to 4 GHz
$\leq 2.0^\circ$ , 4 GHz to 8 GHz
$\leq 3.0^\circ$ , 8 GHz to 26.5 GHz

### Short

Error from nominal phase<sup>2</sup>

$\leq 1.0^\circ$ , DC to 4 GHz
$\leq 2.0^\circ$ , 4 GHz to 8 GHz
$\leq 3.0^\circ$ , 8 GHz to 26.5 GHz

### Load

Return loss

$\geq 40.0$ dB, DC to 4 GHz
$\geq 35.0$ dB, 4 GHz to 8 GHz
$\geq 30.0$ dB, 8 GHz to 26.5 GHz

DC Resistance  $50 \Omega \pm 0.5 \Omega$

Power handling  $\leq 0.5$  W

<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  $\geq 500$

Maximum torque 1.70 Nm

Recommended torque 0.90 Nm

Gauge 0.00 mm to 0.08 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 $Z_0$ / Impedance / $Z_0$	50 $\Omega$	
Offset Delay	33.356 ps	
Length (electrical) / Offset Length	10.00 mm	
Offset Loss	2.20 G $\Omega$ /s	
Loss	0.0127 dB/ $\sqrt{\text{GHz}}$	
Fringing Capacitances	$C_0 = -17.000 \times 10^{-15}$ F	/ -17.000 fF
	$C_1 = -2000.0 \times 10^{-27}$ F/Hz	/ -2.0000 fF /GHz
	$C_2 = 147.00 \times 10^{-36}$ F/Hz <sup>2</sup>	/ 0.1470 fF /GHz <sup>2</sup>
	$C_3 = -3.0000 \times 10^{-45}$ F/Hz <sup>3</sup>	/ -0.0030 fF /GHz <sup>3</sup>

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Technical Data Sheet				Rosenberger			
RPC-3.50		Calibration Kit Plug		03S30R-MSOS3			
<div>Short</div> <div>Offset <math>Z_o</math> / Impedance / <math>Z_o</math>50 <math>\Omega</math></div> <div>Offset Delay33.357 ps</div> <div>Length (electrical) / Offset Length10.00 mm</div> <div>Offset Loss2.36 G<math>\Omega</math>/s</div> <div>Loss0.0127 dB/<math>\sqrt{\text{GHz}}</math></div> <div>Short Inductance<div><math>L_0 = -39.000 \times 10^{-12} \text{ H} \quad / \quad -39.000 \text{ pH}</math> <math>L_1 = 2200.0 \times 10^{-24} \text{ H/Hz} \quad / \quad 2.2000 \text{ pH /GHz}</math> <math>L_2 = -150.00 \times 10^{-33} \text{ H/Hz}^2 \quad / \quad -0.1500 \text{ pH /GHz}^2</math> <math>L_3 = 3.0000 \times 10^{-42} \text{ H/Hz}^3 \quad / \quad 0.0030 \text{ pH /GHz}^3</math></div></div>							
<div>Load</div> <div>Offset <math>Z_o</math> / Impedance / <math>Z_o</math>50 <math>\Omega</math></div> <div>Offset Delay0.0000 ps</div> <div>Length (electrical) / Offset Length0.000 mm</div> <div>Offset Loss0.00 G<math>\Omega</math>/s</div> <div>Loss0.0000 dB/<math>\sqrt{\text{GHz}}</math></div>							
<div>Environmental data</div> <div>Operating temperature range<sup>3</sup>+20 °C to +26 °C</div> <div>Rated temperature range of use<sup>4</sup>0 °C to +50 °C</div> <div>Storage temperature range-40 °C to +85 °C</div> <div>RoHScompliant</div>							
<div><sup>3</sup> Temperature range over which these specifications are valid.</div> <div><sup>4</sup> This range is underneath and above the operating temperature range, within the calibration kit is fully functional and could be used without damage</div>							
<div>Declaration of documentation</div> <div>Standard delivery for this kit includes Test Results. The documentation issued reports which quantities were tested individually, traceable to national / international standards. Model based standard definitions of the calibration standards are reported in Agilent / Keysight, Rohde &amp; Schwarz and Anritsu compatible VNA format.</div>							
<div>Inspection interval</div> <div>Recommendation12 months</div>							
<div>Packing</div> <div>Standard1 pce in bag</div> <div>Weight26.4 g/pce</div>							
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<div>Draft</div> <div>Date</div> <div>Approved</div> <div>Date</div>				<div>Rev.</div> <div>Engineering change number</div> <div>Name</div> <div>Date</div>			
<div>Marcel Panicke</div> <div>07.01.16</div> <div>Markus Müller</div> <div>02.05.18</div>				<div>e00</div> <div>18-0787</div> <div>Marion Striegler</div> <div>02.05.18</div>			
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