

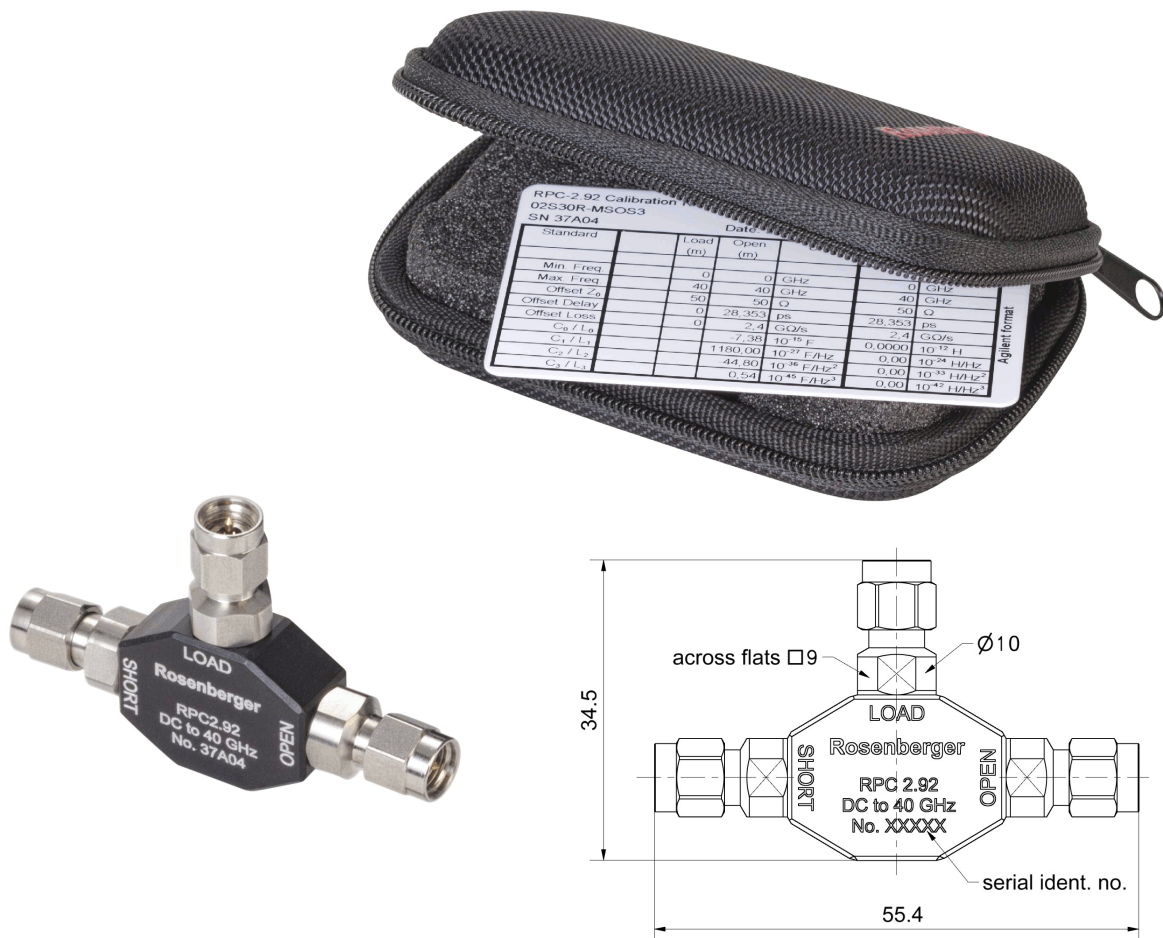
Technical Data Sheet

Rosenberger

RPC-2.92

Calibration Kit
Plug

02S30R-MSOS3



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

Interface

According to
Mechanically compatible with

IEC 61169-35
RPC-3.50 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**
- **Protection Caps**

Material and plating

Connector parts

Center conductor
Outer conductor
Coupling nut
Body
Dielectric
Substrate

Material

CuBe
Stainless steel
Stainless steel
Aluminum
PS
Al₂O₃

Plating

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

Electrical data

Frequency range DC to 40.0 GHz

Open

Error from nominal phase¹

- ≤ 1.5°, DC to 4 GHz
- ≤ 4.0°, 4 GHz to 26.5 GHz
- ≤ 5.0°, 26.5 GHz to 40.0 GHz

Short

Error from nominal phase²

- ≤ 1.5°, DC to 4 GHz
- ≤ 4.0°, 4 GHz to 26.5 GHz
- ≤ 5.0°, 26.5 GHz to 40.0 GHz

Load

Return loss

- ≥ 40.0 dB, DC to 4 GHz
- ≥ 28.0 dB, 4 GHz to 26.5 GHz
- ≥ 25.0 dB, 26.5 GHz to 40.0 GHz

DC Resistance 50 Ω ± 0.5 Ω

Power handling ≤ 0.5 W

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 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 Ω

Offset Delay 28.353 ps

Length (electrical) / Offset Length 8.50 mm

Offset Loss 2.40 GΩ/s

Loss 0.0118 dB/√GHz

Fringing Capacitances

- $C_0 = -7.38000 \times 10^{-15} \text{ F} \quad / \quad -7.38000 \text{ fF}$
- $C_1 = 1180.00 \times 10^{-27} \text{ F/Hz} \quad / \quad 1.18000 \text{ fF /GHz}$
- $C_2 = -44.8000 \times 10^{-36} \text{ F/Hz}^2 \quad / \quad -0.04480 \text{ fF /GHz}^2$
- $C_3 = 0.54000 \times 10^{-45} \text{ F/Hz}^3 \quad / \quad 0.00054 \text{ fF /GHz}^3$

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Short Offset Z_o / Impedance / Z_o50 Ω Offset Delay28.353 ps Length (electrical) / Offset Length8.50 mm Offset Loss2.40 GΩ/s Loss0.0118 dB/ $\sqrt{\text{GHz}}$ Short Inductance $L_0 = 0.0000 \times 10^{-12}$ H / 0.0000 pH $L_1 = 0.0000 \times 10^{-24}$ H/Hz / 0.0000 pH/GHz $L_2 = 0.0000 \times 10^{-33}$ H/Hz² / 0.0000 pH/GHz² $L_3 = 0.0000 \times 10^{-42}$ H/Hz³ / 0.0000 pH/GHz³ <tr><td colspan="8"> Load Offset Z_o / Impedance / Z_o50 Ω Offset Delay0.0000 ps Length (electrical) / Offset Length0.000 mm Offset Loss0.00 GΩ/s Loss0.0000 dB/ $\sqrt{\text{GHz}}$ </td></tr> <tr><td colspan="8"> Environmental data Operating temperature range³+20 °C to +26 °C Rated temperature range of use⁴0 °C to +50 °C Storage temperature range-40 °C to +85 °C RoHScompliant </td></tr> <tr><td colspan="8"> ³ Temperature range over which these specifications are valid. ⁴ This range is underneath and above the operating temperature range, within the calibration kit is fully functional and could be used without damage </td></tr> <tr><td colspan="8"> Declaration of documentation 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 & Schwarz and Anritsu compatible VNA format. </td></tr> <tr><td colspan="8"> Inspection interval Recommendation12 months </td></tr> <tr><td colspan="8"> Packing Standard1 pce in bag Weight29 g/pce </td></tr> <tr><td colspan="8"> 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. </td></tr> <tr><td colspan="2">Draft</td><td colspan="2">Date</td><td colspan="2">Approved</td><td colspan="2">Date</td></tr> <tr><td colspan="2">Marcel Panicke</td><td colspan="2">05.11.15</td><td colspan="2">Markus Müller</td><td colspan="2">17.04.20</td></tr> <tr><td colspan="2">Rev.</td><td colspan="2">Engineering change number</td><td colspan="2">Name</td><td colspan="2">Date</td></tr> <tr><td colspan="2">e00</td><td colspan="2">19-2083</td><td colspan="2">Marion Striegler</td><td colspan="2">17.04.20</td></tr> <tr><td colspan="6">Rosenberger Hochfrequenztechnik GmbH & Co. KG P.O.Box 1260 D-84526 Tittmoning Germany www.rosenberger.de</td><td colspan="2">Page 3 / 3</td></tr> <tr><td colspan="6">Tel. : +49 8684 18-0 Email : info@rosenberger.de</td><td colspan="2"></td></tr>								Load Offset Z_o / Impedance / Z_o50 Ω Offset Delay0.0000 ps Length (electrical) / Offset Length0.000 mm Offset Loss0.00 GΩ/s Loss0.0000 dB/ $\sqrt{\text{GHz}}$								Environmental data Operating temperature range³+20 °C to +26 °C Rated temperature range of use⁴0 °C to +50 °C Storage temperature range-40 °C to +85 °C RoHScompliant								³ Temperature range over which these specifications are valid. ⁴ This range is underneath and above the operating temperature range, within the calibration kit is fully functional and could be used without damage								Declaration of documentation 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 & Schwarz and Anritsu compatible VNA format.								Inspection interval Recommendation12 months								Packing Standard1 pce in bag Weight29 g/pce								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		Marcel Panicke		05.11.15		Markus Müller		17.04.20		Rev.		Engineering change number		Name		Date		e00		19-2083		Marion Striegler		17.04.20		Rosenberger Hochfrequenztechnik GmbH & Co. KG P.O.Box 1260 D-84526 Tittmoning Germany www.rosenberger.de						Page 3 / 3		Tel. : +49 8684 18-0 Email : info@rosenberger.de							
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