



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
- **Test Results Documentation**
- **Lanyard**
- **Hard Shell Case**
- **Protection Caps**

Material and plating

Connector parts

Center conductor
Outer conductor
Coupling nut
Body
Dielectric
Substrate

Material

Brass
Brass
Brass
Brass
PTFE / PPE
Al₂O₃

Plating

Gold, min. 1.27 µm, over nickel
Flash white bronze over silver(e.g. Optargen®)
White bronze(e.g. Optalloy®)
powder-coated

Electrical data

Frequency range DC to 6 GHz

Open

Error from nominal phase¹ ≤ 3.0°, DC to 6 GHz

Short

Error from nominal phase² ≤ 2.0°, DC to 6 GHz

Load

Return loss ≥ 42 dB, DC to 2.5 GHz
≥ 38 dB, 2.5 GHz to 6 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 5.28 mm to 5.84 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 Z₀ / Impedance / Z₀ 50 Ω
Offset Delay 67.78 ps
Length (electrical) / Offset Length 20.32 mm
Offset Loss 0.80 GΩ/s
Loss 0.0094 dB/√GHz
Fringing Capacitances
C₀ = -1.17000 x 10⁻¹⁵ F / -1.17000 fF
C₁ = -4280.00 x 10⁻²⁷ F/Hz / -4.28000 fF /GHz
C₂ = 1600.00 x 10⁻³⁶ F/Hz² / 1.60000 fF /GHz²
C₃ = -106.000 x 10⁻⁴⁵ F/Hz³ / -0.10600 fF /GHz³

Technical Data Sheet

Rosenberger

N 50 Ω

Calibration Kit
Plug

53S36R-MSON3

Short

Offset Z_0 / Impedance / Z_0	50 Ω
Offset Delay	67.78 ps
Length (electrical) / Offset Length	20.32 mm
Offset Loss	0.80 GΩ/s
Loss	0.0094 dB/√GHz
Short Inductance	$L_0 = 23.5000 \times 10^{-12} \text{ H} \quad / \quad 23.5000 \text{ pH}$
	$L_1 = -2300.00 \times 10^{-24} \text{ H/Hz} \quad / \quad -2.30000 \text{ pH/GHz}$
	$L_2 = -2000.00 \times 10^{-33} \text{ H/Hz}^2 \quad / \quad -2.00000 \text{ pH/GHz}^2$
	$L_3 = 269.000 \times 10^{-42} \text{ H/Hz}^3 \quad / \quad 0.26900 \text{ pH/GHz}^3$

Load

Offset Z_0 / Impedance / Z_0	50 Ω
Offset Delay	0.0000 ps
Length (electrical) / Offset Length	0.000 mm
Offset Loss	0.00 GΩ/s
Loss	0.0000 dB/√GHz

Environmental data

Operating temperature range ³	0 °C to +50 °C
Storage temperature range	-40 °C to +85 °C
RoHS	compliant

³ Temperature range over which these specifications are valid.

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

Recommendation	12 months
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Packing

Standard	1 pce in bag
Weight	140 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	Rev.	Engineering change number	Name	Date
Kerstin Herzog	20.07.06	Markus Müller	29.04.20	g00	19-2083	Marion Striegler	29.04.20

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Page

3 / 3

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