



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

**Interface**

According to

IEC 61169-4, EN 122190, DIN 47223

**Documents**

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**

**Material and plating**

**Connector parts**

- Center conductor
- Outer conductor
- Body
- Coupling nut
- Dielectric
- Substrate

**Material**

- Brass
- Brass
- Brass
- Brass
- PP
- Al<sub>2</sub>O<sub>3</sub>

**Plating**

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

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RF\_35/09;14/6.2

**Electrical data**

Frequency range DC to 6 GHz

**Open**

Return loss  $\leq 0.15$  dB, DC to 6 GHz  
 Error from nominal phase<sup>1</sup>  $\leq 3.0^\circ$ , DC to 6 GHz

**Short**

Return loss  $\leq 0.15$  dB, DC to 6 GHz  
 Error from nominal phase<sup>1</sup>  $\leq 3.0^\circ$ , DC to 6 GHz

**Load**

Return loss  $\geq 40$  dB, DC to 2.5 GHz  
 $\geq 38$  dB, 2.5 GHz to 6 GHz  
 DC Resistance  $50 \Omega \pm 0.5 \Omega$   
 Power handling  $\leq 1.0$  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 30 Nm  
 Recommended torque 2.26 Nm  
 Gauge 1.47 mm to 1.77 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 56.372 ps  
 Length (electrical) / Offset Length 16.90 mm  
 Offset Loss 0.50 G $\Omega$ /s  
 Loss 0.0049 dB/ $\sqrt{\text{GHz}}$   
 Fringing Capacitances  $C_0 = 168.000 \times 10^{-15}$  F / 168.000 fF  
 $C_1 = 2600.00 \times 10^{-27}$  F/Hz / 2.60000 fF /GHz  
 $C_2 = 50.0000 \times 10^{-36}$  F/Hz<sup>2</sup> / 0.05000 fF /GHz<sup>2</sup>  
 $C_3 = 0.80000 \times 10^{-45}$  F/Hz<sup>3</sup> / 0.00080 fF /GHz<sup>3</sup>

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**Short**

|                                     |  |   |                            |
|-------------------------------------|--|---|----------------------------|
| Offset $Z_0$ / Impedance / $Z_0$    | 50 $\Omega$                                      |   |                            |
| Offset Delay                        | 65.712 ps  |   |                            |
| Length (electrical) / Offset Length | 19.70 mm   |   |                            |
| Offset Loss                         | 0.50 G $\Omega$ /s                               |   |                            |
| Loss                                | 0.0057 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/Hz <sup>2</sup> | / | 0.0000 pH/GHz <sup>2</sup> |
|                                     | $L_3 = 0.0000 \times 10^{-42}$ H/Hz <sup>3</sup> | / | 0.0000 pH/GHz <sup>3</sup> |

**Load**

|                                     |                                |
|-------------------------------------|--------------------------------|
| Offset $Z_0$ / Impedance / $Z_0$    | 50 $\Omega$                    |
| Offset Delay                        | 0.0000 ps                      |
| Length (electrical) / Offset Length | 0.000 mm                       |
| Offset Loss                         | 0.00 G $\Omega$ /s             |
| Loss                                | 0.0000 dB/ $\sqrt{\text{GHz}}$ |

**Environmental data**

|  |                   |
|--|-------------------|
| Operating temperature range <sup>3</sup> | 0 °C to +50 °C    |
| Storage temperature range                | - 55 °C to +90 °C |
| RoHS                                     | compliant         |

<sup>3</sup> 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 |
|----------------|-----------|

**Packing**

|          |              |
|----------|--------------|
| Standard | 1 pce in bag |
| Weight   | 332 g/pce    |

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|  |          |               |          |      |                           |   |               |
|--|----------|---------------|----------|------|---------------------------|---|---------------|
| Draft  | Date     | Approved      | Date     | Rev. | Engineering change number | Name  | Date          |
| Kerstin Herzog   | 10.07.06 | Markus Müller | 26.10.17 | i00  | 17-1795                   | Marion Striegler                                    | 26.10.17      |
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