

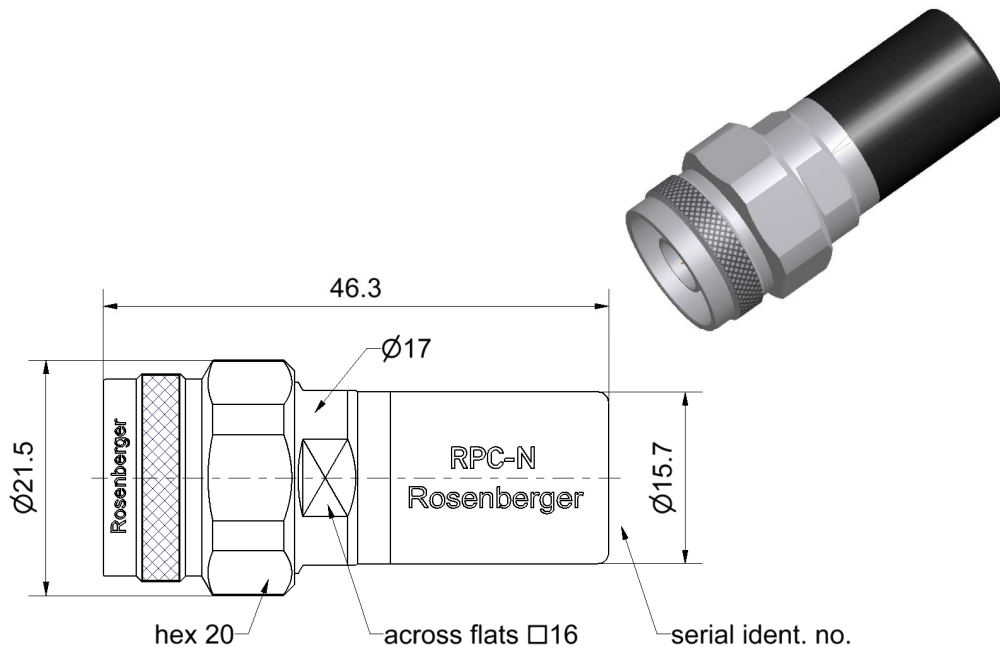
# Technical Data Sheet

# Rosenberger

RPC-N  
50 Ω

Open Circuit  
Plug

05S12L-000S3



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

## Interface

According to

IEC 61169-16

## Documents

Application note

AN001 "Calibration Services"

## Material and plating

### Connector parts

Center conductor  
Outer conductor  
Coupling nut  
Dielectric

### Material

CuBe  
Stainless steel  
Stainless steel  
PS

### Plating

Gold, min. 1.27 µm, over nickel  
Passivated  
Passivated

## Electrical data

|                                       |                                    |
|---------------------------------------|------------------------------------|
| Frequency range                       | DC to 18 GHz                       |
| Return loss                           | $\leq 0.10$ dB, DC to 4 GHz        |
|                                       | $\leq 0.15$ dB, 4 GHz to 8 GHz     |
|                                       | $\leq 0.20$ dB, 8 GHz to 18 GHz    |
| Error from nominal phase <sup>1</sup> | $\leq 1.5^\circ$ , DC to 4 GHz     |
|                                       | $\leq 2.0^\circ$ , 4 GHz to 8 GHz  |
|                                       | $\leq 3.0^\circ$ , 8 GHz to 18 GHz |

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

## Mechanical data

|                    |                    |
|--------------------|--------------------|
| Mating cycles      | $\geq 500$         |
| Maximum torque     | 1.70 Nm            |
| Recommended torque | 1.10 Nm            |
| Gauge              | 5.28 mm to 5.32 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.

|                                     |                                |
|-------------------------------------|--------------------------------|
| Offset $Z_o$ / Impedance / $Z_o$    | 50 $\Omega$                    |
| Offset Delay                        | 50.3682 ps                     |
| Length (electrical) / Offset Length | 15.10 mm                       |
| Offset Loss                         | 0.80 G $\Omega$ /s             |
| Loss                                | 0.0070 dB/ $\sqrt{\text{GHz}}$ |
| Fringing Capacitances <sup>2</sup>  |                                |

<sup>2</sup> Fringing Capacitances are determined individually for each open circuit and are documented in a Calibration Certificate.

## Environmental data

|                                             |                   |
|---------------------------------------------|-------------------|
| Operating temperature range <sup>3</sup>    | + 20 °C to +26 °C |
| Rated temperature range of use <sup>4</sup> | 0 °C to +50 °C    |
| Storage temperature range                   | - 40 °C to +85 °C |

|      |           |
|------|-----------|
| RoHS | compliant |
|------|-----------|

<sup>3</sup> Temperature range over which these specification are valid.

<sup>4</sup> This range is underneath and above the operating temperature range, within the open circuit is fully functional and could be used without damage.

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|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|----------------------|----------|-----------------------------------------------------|------|---------------|------|------------------|-----------|---------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--|--|------|---------------------------|------|------|-----|---------|------------------|----------|
| Technical Data Sheet                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                           |                      |          | Rosenberger                                         |      |               |      |                  |           |               |              |                                                                                                                                                                                  |            |  |  |      |                           |      |      |     |         |                  |          |
| RPC-N<br>50 Ω                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                           | Open Circuit<br>Plug |          | 05S12L-000S3                                        |      |               |      |                  |           |               |              |                                                                                                                                                                                  |            |  |  |      |                           |      |      |     |         |                  |          |
| <div>Declaration of calibration options</div> <div>Factory Calibration</div> <p>Standard delivery for this calibration standard includes a Factory Calibration. The Calibration Certificate issued reports individual calibration results, traceable to national / international standards. Model based standard definitions are individually optimized and reported in an Agilent/Keysight, Rohde &amp; Schwarz and Anritsu compatible VNA format.</p> <div>Accredited Calibration</div> <p>Optional this calibration standard can be delivered with an Accredited Calibration (DAkkS) having the highest confidence in the traceability. The DAkkS Calibration Certificate issued reports individual calibration results in a complex format, traceable to national / international standards. Model based standard definitions are individually optimized and reported in an Agilent/Keysight, Rohde &amp; Schwarz and Anritsu compatible VNA format as well as in a dense data set needed for data based standard definitions. The uncertainties are smaller than in a Factory Calibration.</p> <p>For further, more detailed information see application note AN001 on the Rosenberger homepage.</p> <div>Calibration interval</div> <table><tr><td>Recommendation</td><td>12 months</td></tr></table> <div>Packing</div> <table><tr><td>Standard</td><td>1 pce in box</td></tr><tr><td>Weight</td><td>44.0 g/pce</td></tr></table> |                           |                      |          |                                                     |      |               |      | Recommendation   | 12 months | Standard      | 1 pce in box | Weight                                                                                                                                                                           | 44.0 g/pce |  |  |      |                           |      |      |     |         |                  |          |
| Recommendation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 12 months                 |                      |          |                                                     |      |               |      |                  |           |               |              |                                                                                                                                                                                  |            |  |  |      |                           |      |      |     |         |                  |          |
| Standard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1 pce in box              |                      |          |                                                     |      |               |      |                  |           |               |              |                                                                                                                                                                                  |            |  |  |      |                           |      |      |     |         |                  |          |
| Weight                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 44.0 g/pce                |                      |          |                                                     |      |               |      |                  |           |               |              |                                                                                                                                                                                  |            |  |  |      |                           |      |      |     |         |                  |          |
| <p>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.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                           |                      |          |                                                     |      |               |      |                  |           |               |              |                                                                                                                                                                                  |            |  |  |      |                           |      |      |     |         |                  |          |
| <table><tr><td>Draft</td><td>Date</td><td>Approved</td><td>Date</td></tr><tr><td>Herbert Babinger</td><td>28.07.04</td><td>Markus Müller</td><td>11.10.16</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                           |                      |          | Draft                                               | Date | Approved      | Date | Herbert Babinger | 28.07.04  | Markus Müller | 11.10.16     | <table><tr><td>Rev.</td><td>Engineering change number</td><td>Name</td><td>Date</td></tr><tr><td>f00</td><td>16-1390</td><td>Marion Striegler</td><td>10.10.16</td></tr></table> |            |  |  | Rev. | Engineering change number | Name | Date | f00 | 16-1390 | Marion Striegler | 10.10.16 |
| Draft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Date                      | Approved             | Date     |                                                     |      |               |      |                  |           |               |              |                                                                                                                                                                                  |            |  |  |      |                           |      |      |     |         |                  |          |
| Herbert Babinger                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 28.07.04                  | Markus Müller        | 11.10.16 |                                                     |      |               |      |                  |           |               |              |                                                                                                                                                                                  |            |  |  |      |                           |      |      |     |         |                  |          |
| Rev.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Engineering change number | Name                 | Date     |                                                     |      |               |      |                  |           |               |              |                                                                                                                                                                                  |            |  |  |      |                           |      |      |     |         |                  |          |
| f00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 16-1390                   | Marion Striegler     | 10.10.16 |                                                     |      |               |      |                  |           |               |              |                                                                                                                                                                                  |            |  |  |      |                           |      |      |     |         |                  |          |
| Rosenberger Hochfrequenztechnik GmbH & Co. KG<br>P.O.Box 1260 D-84526 Tittmoning Germany<br>www.rosenberger.de                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                           |                      |          | Tel. : +49 8684 18-0<br>Email : info@rosenberger.de |      | Page<br>3 / 3 |      |                  |           |               |              |                                                                                                                                                                                  |            |  |  |      |                           |      |      |     |         |                  |          |