

R&S® ESSENTIALS

R&S® NGA100

POWER SUPPLY SERIES

Linear. Accurate. Affordable.

dataTec

Mess- und Prüftechnik. Die Experten.

**Ihr Ansprechpartner /
Your Partner:**

dataTec AG

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Data Sheet
Version 02.00

ROHDE & SCHWARZ

Make ideas real



MODEL OVERVIEW



R&S® NGA101

- ▶ One output
- ▶ Max. 40 W total output power
- ▶ Max. 35 V or max. 6 A per output



R&S® NGA102

- ▶ Two outputs
- ▶ Max. 80 W total output power
- ▶ Max. 35 V or max. 6 A per output
- ▶ Max. 70 V in serial or max. 12 A in parallel mode



R&S® NGA141

- ▶ One output
- ▶ Max. 40 W total output power
- ▶ Max. 100 V or max. 2 A per output



R&S® NGA142

- ▶ Two outputs
- ▶ Max. 80 W total output power
- ▶ Max. 100 V or max. 2 A per output
- ▶ Max. 200 V in serial or max. 4 A in parallel mode

AT A GLANCE

R&S®NGA100 power supplies are linear, compact and easy to use. All models have excellent readback accuracy with a low-current range for demanding measurements.

Features such as data logging, arbitrary waveforms, built-in statistics and remote sensing make the instruments ideal for various bench applications. Equipped with a number of different remote interfaces, including USB and Ethernet, R&S®NGA100 power supplies are great for automated testing.

The channel fusion feature extends voltage and current range. Get up to 200 V with the R&S®NGA142 in serial mode and up to 12 A with the R&S®NGA102 in parallel mode.

Advanced protection functions keep devices connected and power supplies safe.

BENEFITS

Thoughtfully engineered

- ▶ Linear design
- ▶ High readback accuracy
- ▶ Built-in statistics
- ▶ Independent channels
- ▶ FlexPower
- ▶ Color coding
- ▶ Safety binding posts
- ▶ Rackmountable

Full-featured

- ▶ EasyRamp
- ▶ EasyArb
- ▶ Data logging
- ▶ Low-current measurement range
- ▶ Channel fusion
- ▶ Tracking
- ▶ Remote sensing
- ▶ Save/recall device settings
- ▶ Protection functions

Well-connected

- ▶ USB interface
- ▶ Ethernet interface
- ▶ Digital trigger I/O

DIFFERENT POWER SUPPLY CLASSES



R&S®NGC103 and R&S®NGE103B
three-channel power supplies

Basic power supplies

- ▶ Affordable, quiet and stable
- ▶ For manual operation and simple computer-controlled operation
- ▶ Used in education, on the bench and in system racks



R&S®HMP4040 and R&S®NGP804
four-channel power supplies

Performance power supplies

- ▶ When speed, accuracy and advanced programming features are vital to test performance
- ▶ Features such as DUT protection, fast programming times and downloadable V and I sequences
- ▶ Used in labs and ATE applications



R&S®NGU401 single-channel SMU and
R&S®NGM202 two-channel power supply

High precision power supplies

- ▶ Tailored to specific applications
- ▶ Unique features such as
 - Emulation of unique battery characteristics
 - Electronic loads to accurately sink current and controlled power dissipation
- ▶ For labs and ATE environments

THOUGHTFULLY ENGINEERED

Linear design

Advanced electronic circuitry is often complex and sensitive to supply line interference. The linear design of the output stages lets R&S®NGA100 power supplies operate with minimum residual ripple and noise. Supplying extremely stable output voltage and current is crucial when developing sensitive components.

High readback accuracy

The R&S®NGA100 power supply series has outstanding programming and readback accuracy to accurately measure and replicate a device's actual power consumption – even at low voltage and current levels. These built-in measurements reduce the need for external multimeters and simplify the setup.

Built-in statistics

The integrated statistics show the min. and max. values for power, voltage and current.

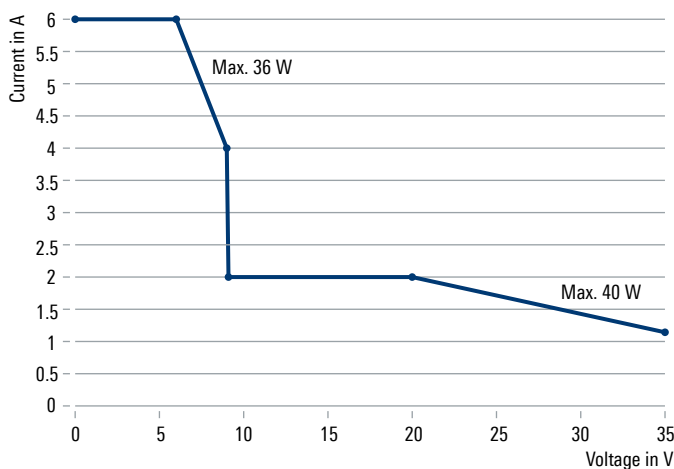
Independent channels (R&S®NGA102 and R&S®NGA142)

The two channels have completely separate circuitry and are not connected to the chassis ground, making it easy to combine channels for bipolar circuitries that might need +12 V/–12 V. Both channels are electrically equivalent, with the same voltage, current and power. The two channels act as separate power supplies and can be operated individually or simultaneously.

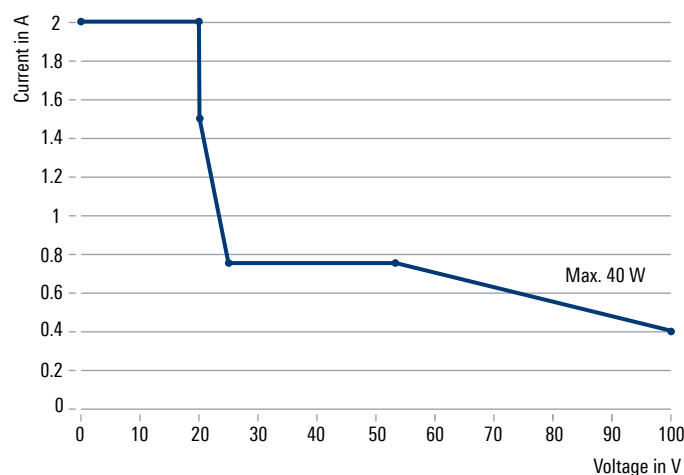
FlexPower

The R&S®NGA100 series operates with maximum power at various operating points and covers far more applications than single range power supplies. All possible voltage and current combinations are shown in the corresponding FlexPower curves.

R&S®NGA101/R&S®NGA102 FlexPower curve per output



R&S®NGA141/R&S®NGA142 FlexPower curve per output

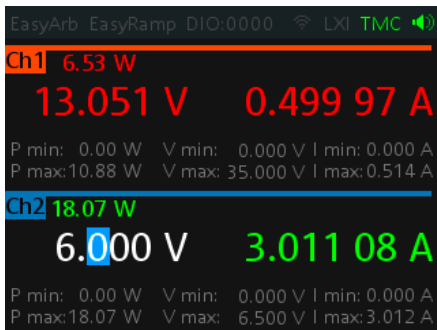


Color coding

All operating conditions can be clearly seen on the 3.5" display, including the status of any protective functions. Voltage and current values are easy to read, even from a distance. The different operating states are color coded:

- ▶ Active output in constant voltage mode is green.
- ▶ Active output in constant current mode is red.
- ▶ Inactive output is white. Whenever a channel is in setting mode, a blue background marks the number being set.

Color coding at the binding posts and on the display help prevent connection errors.



Safety binding posts

The R&S®NGA100 output power supply connectors can use both 4 mm safety banana plugs and stripped cables without an adapter.



Rackmountable

A compatible rackmount kit and rear output connectors ensure easy integration into test systems. Each rackmount frame can hold up to two R&S®NGA100 power supplies.

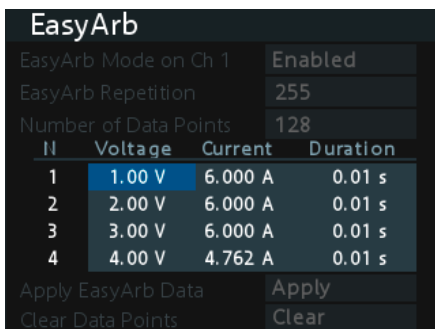
FULL-FEATURED

EasyRamp

To control inrush currents, some test setups require continuously rising supply voltage instead of rapid jumps. The EasyRamp function increases the output voltage continuously over timeframes of 10 ms to 10 s.

EasyArb

Voltage and current must be varied during a test sequence to stimulate different device states. Arbitrary waveform sequences can be programmed either manually, via the user interface or via the external interfaces.



Data logging

Logging data is key to long-term monitoring, reviewing test setups and repeating test conditions when analyzing power behavior or optimizing power consumption.

R&S®NGA100 power supplies simultaneously log voltage and current measurements over time on all outputs at a sampling rate of 10 sample per second. The time stamped data can be easily exported as a .csv file for reports and documentation. Pressing the Log button will start data acquisition, pressing it again stops the acquisition.

Low-current measurement range

IoT devices can have multiple sleep modes where current consumption is very low. To accurately determine these operating states, R&S®NGA100 power supplies have a low-current measurement range. Currents below 200 mA are measured with a resolution of 1 µA and an accuracy of ±(0.15% + 25 µA).

Channel fusion (R&S®NGA102 and R&S®NGA142)

The two output channels operate in series or parallel for higher voltage or current. After activating serial or parallel channel fusion, the device will start to act like a one-channel power supply with double voltage or current capability. In serial mode the outputs can be connected internally, while the parallel mode requires external wiring.

The function enables further applications to be covered by a single instrument.



Serial mode



Parallel mode

Tracking (R&S®NGA102 and R&S®NGA142)

Symmetrically adjusts voltage or current on both outputs simultaneously.

Remote sensing

Improve your voltage regulation with remote sensing, by regulating output voltage directly at DUT input terminals instead of the power supply output terminals.

Four-wire remote sensing compensates for voltage drops in supply leads, especially in high current applications. The R&S®NGA100 power supplies have sense connections for each output on the rear.

Save/recall device settings

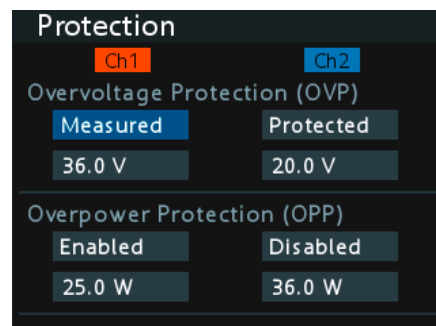
Easily store and recall up to five common instrument settings with five memory keys on the front panel.

Protection functions

Each channel enables settings for:

- ▶ Maximum current (electronic fuse, overcurrent protection, OCP)
- ▶ Maximum voltage (overvoltage protection, OVP)
- ▶ Maximum power (overpower protection, OPP)

When the limit is reached, the output automatically switches off and a message (FUSE, OVP or OPP) appears. On two-channel devices (R&S®NGA102 and R&S®NGA142), overcurrent protection can be linked to the other channel (FuseLink function). Here, the channel exceeding maximum current and the linked channel are switched off. Delay times can also be set for electronic fuses, preventing outputs from switching off because of short current spikes. R&S®NGA100 power supplies also come with internal overtemperature protection to switch off the affected output when thermal overload is pending.



WELL-CONNECTED

USB interface (virtual COM port and TMC class)

External PCs can control R&S®NGA100 power supplies via the USB interface. The USB port can save log data files and screenshots to a USB drive.

Ethernet interface with integrated web server

Remotely control all instrument parameters with the Ethernet interface. Choose between a fixed IP address or use the DHCP function to allocate dynamic IP addresses. The integrated web server offers easy instrument control directly via the browser.

| Ethernet | |
|-----------------|--------------------|
| MAC Address | 16:90:27:4e:ef:83 |
| Status | Disconnected |
| IP Mode | DHCP & Auto-IP |
| IP Address | 169 . 254 . 9 . 20 |
| Subnet Mask | 255 . 255 . 0 . 0 |
| Default Gateway | 169 . 254 . 9 . 20 |
| Reset LXI | Reset |

Digital trigger I/O

Digital input triggers can automatically control the main instrument functions. The instrument events can also control the remote interface via output triggers. The optional 4-bit digital in/out interface enables easy trigger system setup. The R&S®NGA-K103 option is required to activate this function.

| Digital IO | | | |
|---------------|---------------|-------|-------|
| Master Enable | Disabled | | |
| DIO 1 | DIO 2 | DIO 3 | DIO 4 |
| Direction | Trigger In | | |
| Channel | Ch 1 | | |
| Response | Start EasyArb | | |
| Trigger | Pulse | | |
| Logic | Active High | | |
| Status | Enabled | | |



SPECIFICATIONS

Definitions

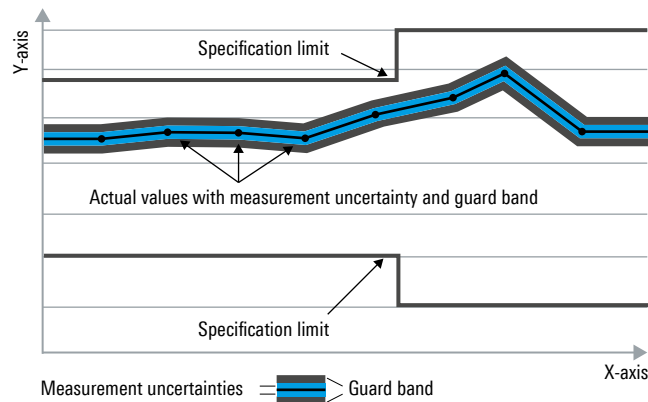
General

Product data applies under the following conditions:

- ▶ Three hours of storage at ambient temperature followed by 30 minutes of warm-up operation
- ▶ All data is valid at +23°C (−3°C/+7°C) after 30 minutes of warm-up time
- ▶ Specified environmental conditions met
- ▶ Recommended calibration interval adhered to
- ▶ All internal automatic adjustments performed, if applicable

Specifications with limits

Represent warranted product performance by means of a range of values for the specified parameter. These specifications are marked with limiting symbols such as $<$, \leq , $>$, \geq , \pm or descriptions such as maximum, limit, minimum. Compliance is ensured by testing or is derived from the design. Test limits are narrowed by guard bands to take into account measurement uncertainties, drift and aging, if applicable.



Specifications without limits

Represent warranted product performance for the specified parameter. These specifications are not specially marked and represent values with no or negligible deviations from the given value, e.g. dimensions or resolution of a setting parameter. Compliance is ensured by the design.

Typical data (typ.)

Characterizes product performance by means of representative information for the given parameter. When marked with $<$, $>$ or as a range, it represents the performance met by approximately 80% of the instruments at production time. Otherwise, it represents the mean value.

Nominal values (nom.)

Characterize product performance by means of a representative value for the given parameter, e.g. nominal impedance. In contrast to typical data, a statistical evaluation does not take place and the parameter is not tested during production.

Measured values (meas.)

Characterize expected product performance by means of measurement results gained from individual samples.

Uncertainties

Represent limits of measurement uncertainty for a given measurand. Uncertainty is defined with a coverage factor of 2 and has been calculated in line with the rules of the Guide to the Expression of Uncertainty in Measurement (GUM), taking into account environmental conditions, aging, wear and tear.

Device settings and GUI parameters are indicated as follows: "parameter: value".

Typical data as well as nominal and measured values are not warranted by Rohde&Schwarz.

In line with the 3GPP standard, chip rates are specified in million chips per second (Mcps), whereas bit rates and symbol rates are specified in billion bit per second (Gbps), million bit per second (Mbps), thousand bit per second (kbps), million symbols per second (MSPS) or thousand symbols per second (kSPS), and sample rates are specified in million samples per second (Msample/s). Gbps, Mcps, Mbps, MSPS, kbps, kSPS and Msample/s are not SI units.

All data is valid at +23°C (-3°C/+7°C) after 30 minutes of warm-up time.

| Electrical specifications | | |
|------------------------------------|--|---|
| Outputs | The channel outputs are galvanically isolated and not connected to ground. | |
| Number of output channels | R&S®NGA101, R&S®NGA141 | 1 |
| | R&S®NGA102, R&S®NGA142 | 2 |
| Maximum total output power | R&S®NGA101, R&S®NGA141 | 40 W |
| | R&S®NGA102, R&S®NGA142 | 80 W |
| Maximum output power per channel | | 40 W |
| Output voltage per channel | R&S®NGA101, R&S®NGA102 | 0 V to 35 V |
| | R&S®NGA141, R&S®NGA142 | 0 V to 100 V |
| Maximum output current per channel | R&S®NGA101, R&S®NGA102 | 6 A |
| | R&S®NGA141, R&S®NGA142 | 2 A |
| Voltage ripple and noise | 20 Hz to 20 MHz | |
| | R&S®NGA101, R&S®NGA102 | < 0.5 mV (RMS) (meas.); < 10 mV (peak-to-peak) (meas.) |
| | R&S®NGA141, R&S®NGA142 | < 1.5 mV (RMS); < 20 mV (peak-to-peak) (meas.) |
| Current ripple and noise | 20 Hz to 20 MHz | < 500 µA (RMS) (meas.) |
| Load regulation | load change: 10% to 90% | |
| Voltage | ±(% of output + offset) | |
| | R&S®NGA101, R&S®NGA102 | < 0.01% + 5 mV |
| | R&S®NGA141, R&S®NGA142 | < 0.01% + 10 mV |
| Current | ±(% of output + offset) | |
| | | < 0.01% + 5 mA |
| Load recovery time | 10% to 90% load change to within 0.2% of rated voltage | |
| | R&S®NGA101, R&S®NGA102 | < 100 µs (meas.) |
| | R&S®NGA141, R&S®NGA142 | < 50 µs (meas.) |
| Rise time | 10% to 90% of rated output voltage, resistive load | |
| | R&S®NGA101, R&S®NGA102 | < 50 ms (meas.) |
| | R&S®NGA141, R&S®NGA142 | < 100 ms (meas.) |
| Fall time | 90% to 10% of rated output voltage, resistive load | |
| | R&S®NGA101, R&S®NGA102 | full load: 15 ms (meas.); 50% load: 30 ms (meas.) |
| | R&S®NGA141, R&S®NGA142 | full load: 30 ms (meas.); 50% load: 50 ms (meas.) |
| Programming resolution | | |
| Voltage | R&S®NGA101, R&S®NGA102 | 1 mV |
| | R&S®NGA141, R&S®NGA142 | 10 mV |
| Current | | 1 mA |
| Programming accuracy | | |
| Voltage | ±(% of output + offset) | |
| | R&S®NGA101, R&S®NGA102 | < 0.05% + 5 mV |
| | R&S®NGA141, R&S®NGA142 | < 0.05% + 20 mV |
| Current | ±(% of output + offset) | |
| | | < 0.05% + 500 µA |

| Output measurements | | |
|---|---|----------------------------------|
| Measurement functions | | voltage, current, power |
| Readback resolution | | |
| Voltage | | 1 mV |
| Current | | 10 μ A |
| Low-current measurement range | ≤ 200 mA output current | 1 μ A |
| Readback accuracy | | |
| Voltage | \pm (% of output + offset) | |
| | R&S [®] NGA101, R&S [®] NGA102 | < 0.02% + 5 mV |
| | R&S [®] NGA141, R&S [®] NGA142 | < 0.02% + 10 mV |
| Current | \pm (% of output + offset) | < 0.05% + 500 μ A |
| Low-current measurement range | | < 0.15% + 40 μ A |
| Temperature coefficient (per °C) | | |
| | +5°C to +20°C and +30°C to +40°C | |
| Voltage | \pm (% of output + offset) | < 0.0075% + 0.75 mV |
| Current | \pm (% of output + offset) | < 0.015% + 3 mA |
| Low-current measurement range | | < 0.023% + 5 μ A |
| Remote sensing | | |
| Maximum sense compensation | R&S [®] NGA101, R&S [®] NGA102 | 0.5 V (meas.) |
| | R&S [®] NGA141, R&S [®] NGA142 | 1.0 V (meas.) |
| Ratings | | |
| Maximum voltage to ground | | 250 V DC |
| Maximum counter voltage | voltage with the same polarity connected to the outputs | |
| | R&S [®] NGA101, R&S [®] NGA102 | 36 V |
| | R&S [®] NGA141, R&S [®] NGA142 | 102 V |
| Maximum reverse voltage | voltage with opposite polarity connected to the outputs | 0.4 V |
| Maximum reverse current | for 5 min max. | 6 A |
| Remote control | | |
| Command processing time | | < 50 ms (meas.) |
| Protection functions | | |
| Overvoltage protection | | |
| | | adjustable for each channel |
| Programming resolution | R&S [®] NGA101, R&S [®] NGA102 | 1 mV |
| | R&S [®] NGA141, R&S [®] NGA142 | 10 mV |
| Overpower protection | | |
| | | adjustable for each channel |
| Overcurrent protection (electronic fuse) | | |
| | | adjustable for each channel |
| Programming resolution | | 1 mA |
| Response time | $(I_{load} > I_{resp} \times 2)$ at $I_{load} \geq 2$ A | < 1 ms |
| Fuse linking (FuseLink function) | R&S [®] NGA102, R&S [®] NGA142 | yes |
| Fuse delay time | adjustable for each channel | 10 ms to 10 s (10 ms increments) |
| Response time for linked channels | | < 75 ms (meas.) |
| Overtemperature protection | | |
| | independent for each channel | yes |

| Special functions | | |
|---------------------------------------|--------------|--|
| Output ramp function | | EasyRamp |
| EasyRamp time | | 10 ms to 10 s (10 ms increments) |
| Arbitrary function | | EasyArb |
| Parameters | CH1 only | voltage, current, time |
| Maximum number of points | | 128 |
| Dwell time | | 10 ms to 600 s (10 ms increments) |
| Repetition | | continuous or burst mode with 1 to 255 repetitions |
| Trigger | | manually, by remote control or optional trigger input |
| Trigger and control interfaces | | digital I/O |
| Trigger response time | R&S®NGA-K103 | < 100 ms |
| Maximum voltage (IN/OUT) | | 5 V |
| Input level | | TTL |
| Maximum drain current (OUT) | | 5 mA |
| Data logging | | |
| Maximum acquisition rate | | 10 sample/s |
| Memory depth | | external USB drive |
| Voltage resolution | | see readback resolution |
| Voltage accuracy | | see readback accuracy |
| Current resolution | | see readback resolution |
| Current accuracy | | see readback accuracy |
| Channel fusion | | |
| Maximum voltage in serial mode | R&S®NGA102 | 70 V |
| | R&S®NGA142 | 200 V |
| Maximum current in parallel mode | R&S®NGA102 | 12 A |
| | R&S®NGA142 | 4 A |
| Restricted functions | | <ul style="list-style-type: none"> ▶ EasyRamp ▶ EasyArb ▶ Remote sensing ▶ Digital I/O |
| Display and interfaces | | |
| Display | | 3.5"/QVGA |
| Front panel connections | | 4 mm safety binding posts |
| Rear panel connections | | 8-pin connector block (outputs, remote sensing) |
| Remote control interfaces | standard | USB-TMC, USB-CDC (virtual COM) |
| | | LAN |

| General data | | |
|---|--|---|
| Environmental conditions | | |
| Temperature | operating temperature range | +5°C to +40°C |
| | storage temperature range | -20°C to +70°C |
| Humidity | noncondensing | 5% to 95% |
| Altitude | operating altitude | max. 2000 m above sea level |
| Power rating | | |
| Mains nominal voltage | | 100 V/115 V/230 V (±10%) |
| Mains frequency | | 50 Hz to 60 Hz |
| Maximum power consumption | | 230 W |
| Main fuses | 100 V/115 V AC power source | 5 A, 250 V IEC 60127-2/5 T |
| | 230 V AC power source | 2.5 A, 250 V IEC 60127-2/5 T |
| Product conformity | | |
| Electromagnetic compatibility | EU: in line with Radio Equipment Directive 2014/53/EU; for serial numbers < 110000 | applied standards: ▶ ETSI EN300328 V2.2.2 ▶ EN61326-1 ▶ EN61326-2-1 ▶ EN55011 (Class A) ▶ EN55032 (Class A) ▶ ETSI EN301489-1 V2.1.1 ▶ ETSI EN301489-17 V3.1.1 |
| | EU: in line with EU EMC Directive 2014/30/EU; for serial numbers ≥ 110000 | applied standards: ▶ EN61326-1 ▶ EN61326-2-1 ▶ EN55011 (Class A) ▶ ETSI EN301489-1 V2.2.0 ▶ ETSI EN301489-17 V3.2.0 |
| | Korea | KC mark |
| | USA, Canada | FCC47 CFR Part 15B, ICES-003 Issue 6 |
| Electrical safety | EU: in line with Low Voltage Directive 2014/35/EU | applied harmonized standard: EN61010-1 |
| | USA, Canada | UL61010-1, CAN/CSA-C22.2 No. 61010-1 |
| WLAN approvals | Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom; for serial numbers < 110000 | CE |
| | Singapore; for serial numbers < 110000 | IMDA standards DB102020 |
| RoHS | USA, Canada; for serial numbers < 110000 | FCC, IC |
| | in line with EU Directive 2011/65/EU | EN IEC63000:2018 |
| Mechanical resistance | | |
| Vibration | sinusoidal | 5 Hz to 55 Hz, 0.3 mm (peak-to-peak), 55 Hz to 150 Hz, 0.5 g const., in line with EN60068-2-6 |
| | random | 8 Hz to 500 Hz, acceleration: 1.2 g (RMS), in line with EN60068-2-64 |
| Shock | | 40 g shock spectrum, in line with MIL-STD-810E, method 516.4, procedure I |
| Mechanical data | | |
| Dimensions | W × H × D | 222 mm × 97 mm × 448 mm (8.74 in × 3.82 in × 17.64 in) |
| Weight | R&S®NGA101 | 6.6 kg (14.5 lb) |
| | R&S®NGA141 | 6.9 kg (15.2 lb) |
| | R&S®NGA102 | 7.0 kg (15.4 lb) |
| | R&S®NGA142 | 7.3 kg (16.1 lb) |
| Rack installation | R&S®HZN96 | ½ 19", 2 HU |
| Recommended calibration interval | operation 40 h/week over entire range of specified environmental conditions | 1 year |

ORDERING INFORMATION

| Designation | Type | Order No. |
|---|--------------|--------------|
| Base unit | | |
| One-channel power supply, 35 V/6 A | R&S®NGA101 | 5601.8002.02 |
| One-channel power supply, 100 V/2 A | R&S®NGA141 | 5601.8002.03 |
| Two-channel power supply, 35 V/6 A | R&S®NGA102 | 5601.8002.04 |
| Two-channel power supply, 100 V/2 A | R&S®NGA142 | 5601.8002.05 |
| Accessories supplied | | |
| Set of power cables, terminal blocks, quick start guide | | |
| Options | | |
| Wireless LAN remote control; for serial numbers < 110 000 | R&S®NGA-K102 | 5601.8419.03 |
| Digital trigger I/O | R&S®NGA-K103 | 5601.8425.03 |
| System components | | |
| 19" rack adapter, 2 HU | R&S®HZN96 | 3638.7813.02 |

| Warranty | | |
|---|---------|--|
| Base unit | | 3 years |
| All other items ¹⁾ | | 1 year |
| Options | | |
| Extended warranty, one year | R&S®WE1 | |
| Extended warranty, two years | R&S®WE2 | |
| Extended warranty with calibration coverage, one year | R&S®CW1 | Contact your local Rohde & Schwarz sales office. |
| Extended warranty with calibration coverage, two years | R&S®CW2 | |
| Extended warranty with accredited calibration coverage, one year | R&S®AW1 | |
| Extended warranty with accredited calibration coverage, two years | R&S®AW2 | |

¹⁾ For options installed, the remaining base unit warranty applies if longer than 1 year. Exception: all batteries have a 1 year warranty.

FROM PRESALES TO SERVICE. AT YOUR DOORSTEP.

The Rohde & Schwarz network in over 70 countries ensures optimum on-site support by highly qualified experts.

User risks are reduced to a minimum at all project stages:

- ▶ Solution finding/purchase
- ▶ Technical startup/application development/integration
- ▶ Training
- ▶ Operation/calibration/repair



Service at Rohde & Schwarz
You're in great hands

- ▶ Worldwide
- ▶ Local and personalized
- ▶ Customized and flexible
- ▶ Uncompromising quality
- ▶ Long-term dependability



dataTec

Mess- und Prüftechnik. Die Experten.

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Rohde & Schwarz

The Rohde&Schwarz technology group is among the trail-blazers when it comes to paving the way for a safer and connected world with its leading solutions in test & measurement, technology systems and networks & cybersecurity. Founded 90 years ago, the group is a reliable partner for industry and government customers around the globe. The independent company is headquartered in Munich, Germany and has an extensive sales and service network with locations in more than 70 countries.

www.rohde-schwarz.com

Sustainable product design

- ▶ Environmental compatibility and eco-footprint
- ▶ Energy efficiency and low emissions
- ▶ Longevity and optimized total cost of ownership

Certified Quality Management
ISO 9001

Certified Environmental Management
ISO 14001

Rohde & Schwarz training

www.training.rohde-schwarz.com

Rohde & Schwarz customer support

www.rohde-schwarz.com/support

