ROHDE & SCHWARZ
Make ideas real

R&S®NGM200
versus GW INSTEK PPH-1503D

Key features

► Fast regulation of output voltage with minimum overshoot and very fast load recovery time
► Minimum residual ripple and noise to supply interference-free voltage to sensitive DUTs
► Acquisition rate of up to 500.000 samples per second to capture extremely fast variations in voltage or current
► High accuracy and readings with up to 6½ digit resolution
► Two quadrants: operation as a source or sink
► Battery simulation

Your benefit	Features
Optimized load recovery time with minimal overshoot	Featuring optimized load recovery time of < 30 µs, the R&S®NGM200 power supplies can handle abrupt load changes from a few µA to the ampere range without creating voltage drops or overshoots.
Low ripple and noise	Low ripple and noise make it possible to supply interference-free voltage to sensitive designs, such as complex semiconductors, and to support the development of power amplifiers and MMICs.
High-speed acquisition (FastLog functionality)	With an acquisition rate of up to 500 ksample/s, voltage and current results are available every 2 µs. On the R&S®NGM202, data acquisition can be performed on both channels in parallel.
Battery simulation	The battery simulator function of the R&S®NGM200 enables simulation of the actual battery output performance. Testing can be based on a selected battery model, while battery capacity, SoC and Voc can be set to any state to test the device under specific conditions

For prices and more information, visit:
www.rohde-schwarz.com/product/NGM200

Parameter	R&S®NGM200	GW INSTEK PPH-1503D
Number of channels	1 / 2	2
Output voltage per channel	0 V to 20 V	0 V to 15 V (channel 2: 12 V)
Max. output power per channel	60 W	45 W
Max. output current per channel	≤ 6 V output voltage: 6 A > 6 V output voltage: 3 A	≤ 9 V output voltage: 5 A > 9 V output voltage: 3 A
Max. sink current per channel	3 A	3.5 A
Adjustable output impedance	−50 mΩ to 100 Ω	1 mΩ to 1 Ω
Voltage ripple and noise (20 Hz to 20 MHz)	< 500 µV (RMS) < 2 mV (peak-to-peak)	< 1 mV (RMS) < 8 mV (peak-to-peak)
Current ripple and noise (20 Hz to 20 MHz)	< 1 mA (RMS)	not specified
Load recovery time (20 mV)	< 30 µs	< 80 µs
Programming resolution	1 mV / 0.1 mA	2.5 mV / 1.25 mA
Max. readback resolution	10 µV / 10 nA	1 mV / 100 µA
Readback accuracy, voltage	20 V range: < 0.02 % + 2 mV 5 V range: < 0.02 % + 500 µV	< 0.05 % + 3 mV
Readback accuracy, current	10 A range: < 0.05 % + 250 µA 1 A range: < 0.05 % + 1 mA 100 mA range: < 0.05 % + 100 µA 10 mA range: < 0.05 % + 15 µA	5 A range: < 0.2 % + 400 µA 5 mA range: < 0.2 % + 1 µA
Max. measurement speed	500,000 sample/s (2 µs)	64,000 sample/s (≈ 16 µs)
Protection functions	OCP / OVP / OPP / OTP	OCP / OVP / OTP
Remote control interfaces	standard: USB / LAN optional: IEEE-488 (GPIB)	standard: USB / LAN / IEEE-488 (GPIB)
Display	5", 800 x 480 pixel WVGA, capacitive touchscreen	3.5", TFT LCD
Dimensions (W × H × D)	222 mm × 97 mm × 436 mm	222 mm × 86 mm × 363 mm
Weight	7.1 kg / 7.3 kg	approx. 4.5 kg

R&S®NGM200 series vs. GW INSTEK PPH-1500 series

R&S®NGM200 series
► Two instruments, one or two channels
► Output power: 60 W per channel
► Output voltage: 0 V to 20 V per channel

GW INSTEK PPH-1500 series:
► Four instruments, 1 or 2 channels
► Power:
Ch 1: 45 W,
Ch 2: 18 W or 36 W
► Voltage:
Ch1 : 0 V to 15 V
Ch2 : 0 V to 12 V

R&S®NGM200 series: all channels are identical

The R&S®NGM202 and the GW INSTEK PPH-1503D both have two channels, but only R&S®NGM202 has the advantage of having identical functionality over both channels

R&S®NGM202
Both channels provide:
► 60 W output power
► 0 V to 20 V output voltage
► Identical functionality

GW INSTEK PPH-1500
Channels 1 and 2 are different:
► Ch1 provides 45 W output power, Ch2 only 18 W
► Ch1 provides 0 V to 15 V output voltage, Ch2 only 0 V to 12 V
► Some functions are available only for one channel.

Source and sink and 6½ digit resolution
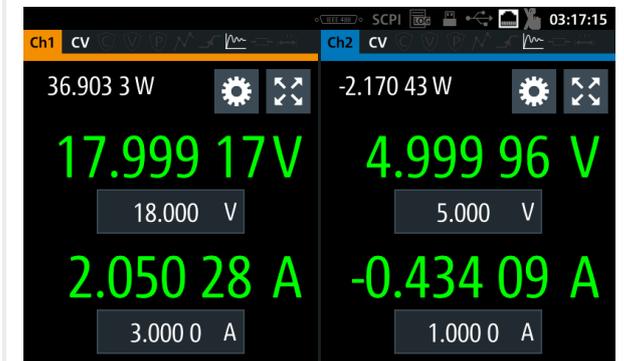
A resolution of up to 6½ digits is perfect for characterizing DUTs that have low power consumption in standby mode and high current in full load operation. The R&S®NGM200 power supplies automatically switch between source and sink mode. A negative current reading indicates that the instrument operates as a load.
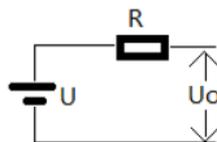
Battery simulation

R&S®NGM200 series:

Capacity, open circuit voltage (Voc) and equivalent series resistance (ESR) are important battery characteristics that depend on the battery's state of charge (SoC). The optional R&S®NGM-K106 battery simulator allows users to simulate the battery behavior under different charging conditions, e.g. when powering a DUT.

► Testing the discharging behavior can be based on a selected battery model, while battery capacity, SoC and Voc can be set to any state to test the device under specific conditions.
► The charging behavior of a battery can also be simulated, for example when designing battery chargers. In this application, the R&S®NGM200 power supply is used in sink mode.
► Both cases provide dynamic simulation, meaning Voc, ESR and SoC change according to charging/discharging conditions like a real battery. The state of charge is shown graphically; all other values are displayed numerically.
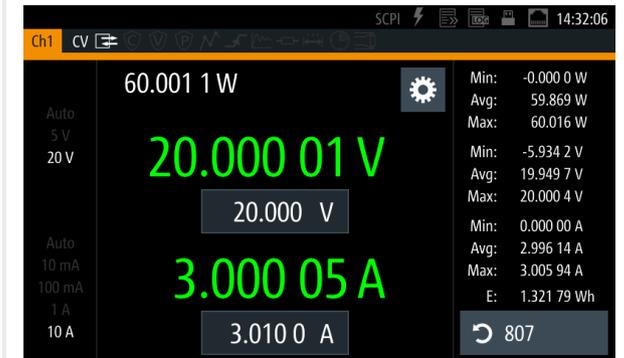
GW INSTEK PPH-1503D:

This DC source has only one battery simulation function, which can define the output impedance settings for an internal series resistor to simulate the output voltage of a battery during discharge.

Large touchscreen – new standard for power supplies

The large capacitive touchscreen is the central operating element on the R&S®NGM200. The very high resolution of 800 x 480 pixel makes it easy to read voltage and current values even from a distance. Information such as power values and statistics can be displayed in addition. Icons indicate the status of selected protection and special functions.