# R&S®HMC804x

# Power Supply
# 100 W and 1, 2 or 3 Channels


ROHDE&SCHWARZ

Test & Measurement

Product Brochure | 01.03

**Total output power**
All models: 100 W

**Output current per channel**
HMC8041: max. 10 A
HMC8042: max. 5 A
HMC8043: max. 3 A

**EasyArb**
Create individual V/I curves directly on the device

**FuseLink**
Combine electronic fuses as required

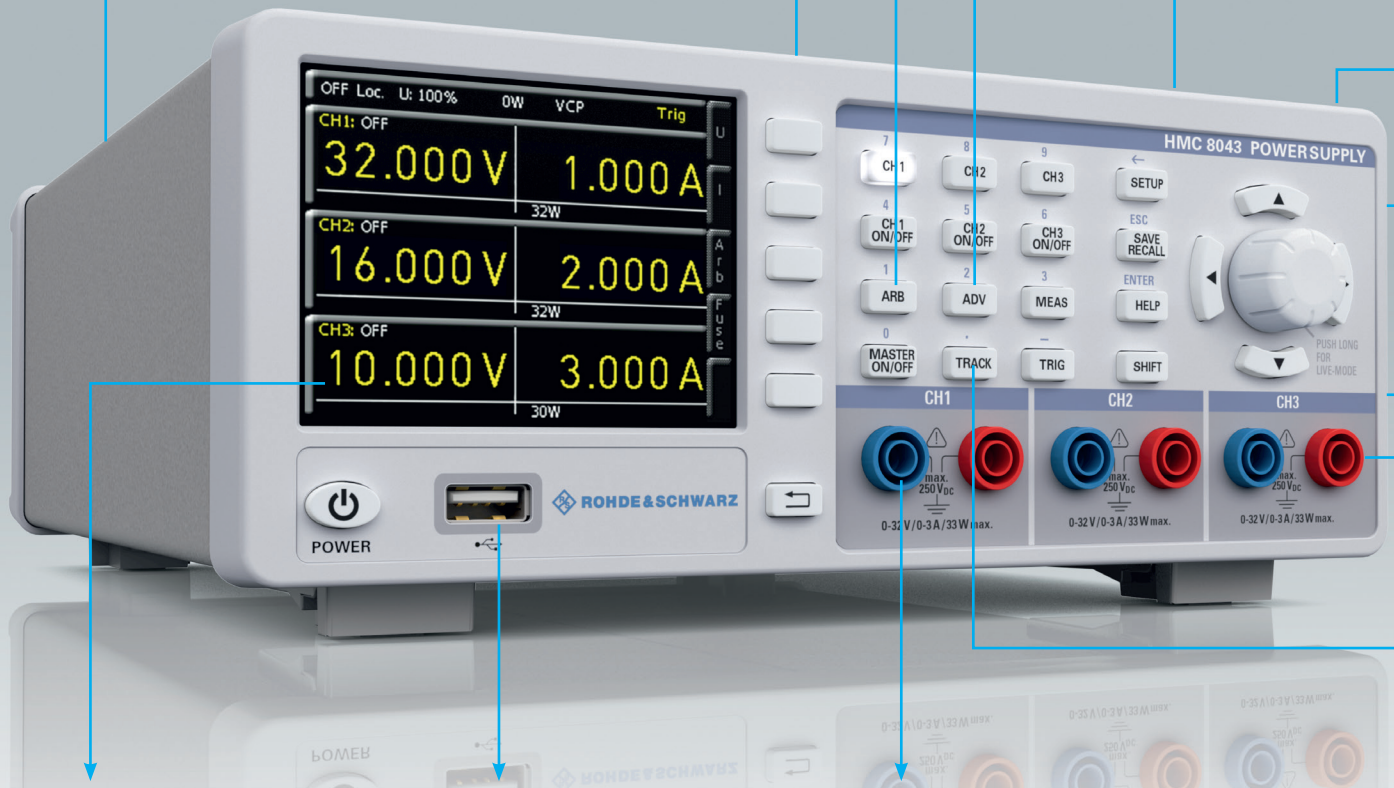
**EasyRamp**
Program a startup curve directly on the device

**Sequencing**
Sequenced start of channels

**Trigger input**
Start and control EasyArb, et al.

**Analog input**
Control output channel with external voltage and current

**High energy efficiency**
Low heat dissipation and quiet fan




**Brilliant Screen**
QVGA TFT Display with 320 x 240 Pixels

**Data logging**
To USB flash drive in CSV format

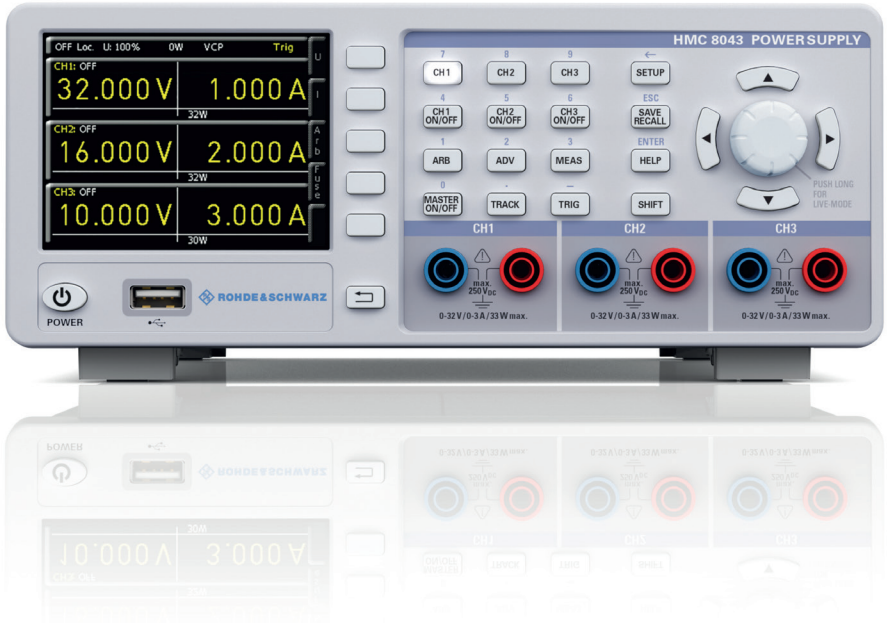
**Protection**
Overvoltage (OVP) and Overpower protection (OPP) for all outputs

**UI-Tracking**
Convenient parallel and serial operation

USB · TCP/IP · optional IEEE-488 · LXI · Lab-VIEW · Software · Printed Manual

# At a glance

One, two or three channels – R&S®HMC804x power supplies with their specifications and wide range of functions are ideal for use in development labs and industrial environments. Thanks to their high energy efficiency, the linear power supplies remain cool and quiet, even at maximum load. Practical interfaces and connectors allow users to work quickly and conveniently with the R&S®HMC804x, even in 19“ racks.




The R&S®HMC804x family consists of three models with a maximum total power of up to 100 W and a continuous voltage range from 0 V to 32 V. The one-channel R&S®HMC8041 delivers a maximum of 10 A, the two-channel R&S®HMC8042 a maximum of 5 A and the three-channel R&S®HMC8043 a maximum of 3 A per channel. The two-channel and three-channel models enable users to connect multiple outputs in parallel or in series to increase the voltage or current. The outputs are galvanically isolated, floating, and protected against overloading and short circuits. Voltage, current and power values are output on a brilliant QVGA display.

The R&S®HMC804x offers a wide range of logging functions, an integrated energy meter and electronic fuses that can be individually combined for each channel, making it ideal for hardware developers, labs and industrial environments. Linear switching power supplies ensure high efficiency, for minimum heat dissipation even at full load. Developers and industrial users benefit from useful functions such as sequenced start of channels, EasyArb and EasyRamp functions that are directly programmable on the device, an analog input for external control of voltage values, an external trigger input for controlling channels and arb steps, and adjustable overvoltage/overpower protection for each channel.

All connectors, including SENSE, are available on the rear panel. A cage clamp facilitates rack installation and deinstallation. The LXI-compliant power supply can be controlled via LAN, USB or an optional GPIB interface. The CDC (virtual COM port) and TMC classes are supported for communications via USB. The remote control commands are based on the SCPI standard.

The R&S®HMC804x power supplies from the Rohde & Schwarz value instruments product range offer top quality and intelligent, practical functions at an extremely attractive price.

# Key facts

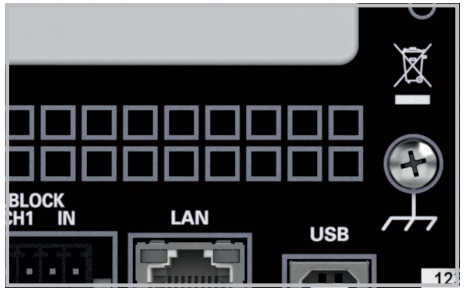
### Clear display of all measured parameters
- Brilliant QVGA color display (320 x 240 pixel)
- Realtime voltage, current and power values
- High setting and readback resolution: 1 mV and 0.1 mA/1.0 mA (depending on current and model)
- Low residual ripple due to linear postregulation
- High energy efficiency, low heat dissipation and quiet fan

### Galvanically isolated, floating and short-circuit-proof outputs
- Front panel: 4 mm (0.16 in) safety sockets (R&S®HMC8041 including SENSE)
- Rear panel: WAGO cage clamp for all channels including SENSE
- Convenient parallel and serial operation via
- V/I tracking

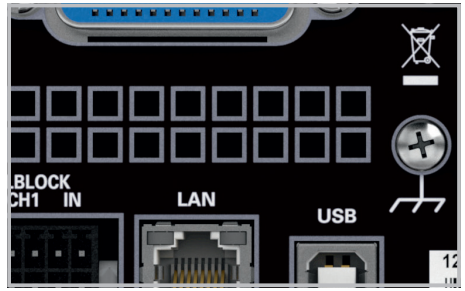
### Protective functions adjustable for each channel
- Overvoltage protection (OVP) for all outputs
- Overpower protection (OPP) for all outputs
- FuseLink (freely combinable electronic fuses)
- FuseDelay (fuse activation delay)

### Ideal power supply for hardware developers and labs
- EasyArb function for user-definable V/I curves
- EasyRamp for simulating a start-up curve (directly programmable on device)
- Sequencing (sequenced start of channels)
- Energy meter (measurement of energy output)
- Analog input for external control via voltage (0 V to 10 V) and current (4 mA to 20 mA)
- Trigger input for starting/controlling EasyArb
- Data logging to USB flash drive in CSV format

### Remote control
- USB interface (CDC/virtual COM port, TMC)
- LAN interface, LXI-compliant
- Optional GPIB interface
- Remote control via SCPI-based commands



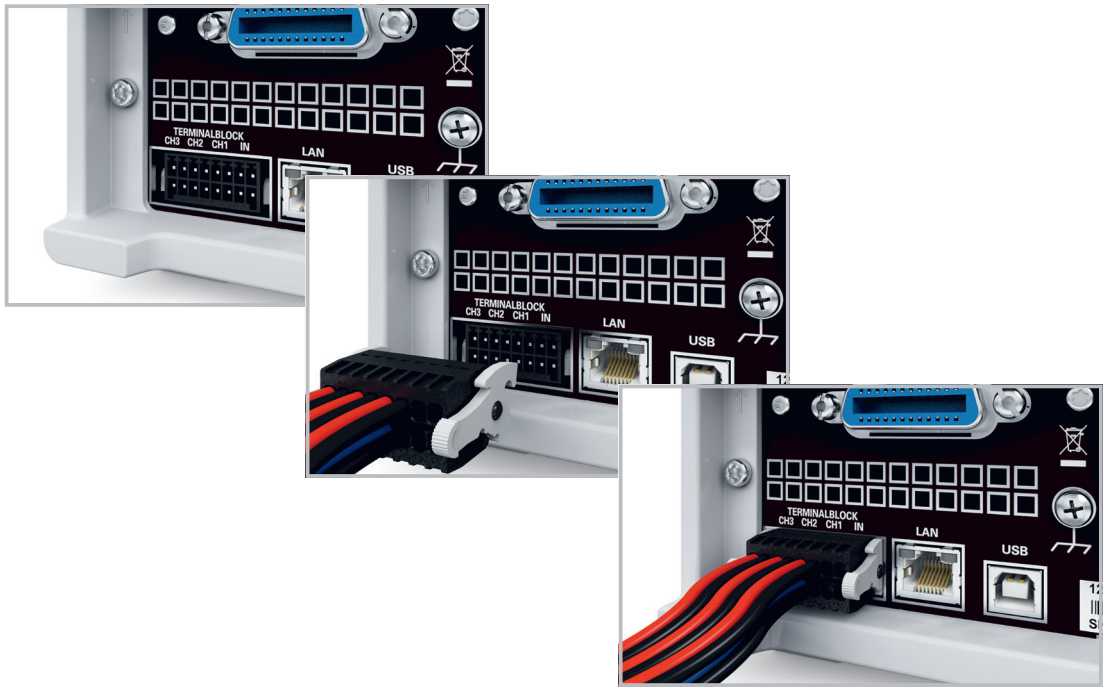
HMC804x: standard version



HMC804xG: GPIB version

| Application | How the HAMEG R&S®HMC804x meets your needs |
|---|---|
| Engineering lab | ▪ FuseLink (freely combinable electronic fuses)<br>▪ EasyArb function for user-definable V/I curves<br>▪ EasyRamp for simulating a start-up curve (directly programmable on device)<br>▪ Built-in energy meter<br>▪ Data logging to USB flash drive in CSV format |
| Automatic test equipment (ATE) | ▪ Analog input for external control via voltage (0 V to 10 V) and current (4 mA to 20 mA)<br>▪ Trigger input for starting/controlling EasyArb<br>▪ Sequencing (sequenced start of channels) |
| Production environment | ▪ Rear connectors for all channels, including SENSE<br>▪ WAGO cage clamp on the rear panel for easy installation and deinstallation<br>▪ Remote control via SCPI-based commands<br>▪ LAN interface, integrated web server, LXI-compliant<br>▪ Optional GPIB interface (R&S®HMC804xG models) |

# Ideal for industrial environments




Power supply units in industrial production environments are often found in 19" racks. The HMC804x series instruments are very suitable for this use as all models can be integrated into 19" racks with the rack mounting kits HZC95. Two HMC8043 models built side by side result in 6 channels on 2 rack units. Please ensure sufficient space is available in the rack for adequate cooling (required minimum space above a HMC804x: 1 rack unit).
Additionally, all front panel connectors plus SENSE lines are located at the back panel of the instrument. In order to facilitate the regular fitting-out for calibration the rear panel connector was designed with a WAGO cage clamp. The complementary part is available as option HZC40.

| Base unit | Channels | Power | GPIB-Interface |
|---|---|---|---|
| R&S®HMC8043G | 3 | 100 W (33 W/Channel, 3 A (max.)) | ✔ |
| R&S®HMC8043 | 3 | 100 W (33 W/Channel, 3 A (max.)) | ✗ |
| R&S®HMC8042G | 2 | 100 W (50 W/Channel, 5 A (max.)) | ✔ |
| R&S®HMC8042 | 2 | 100 W (50 W/Channel, 5 A (max.)) | ✗ |
| R&S®HMC8041G | 1 | 100 W (10 A (max.)) | ✔ |
| R&S®HMC8041 | 1 | 100 W (10 A (max.)) | ✗ |

# R&S®HMC8043
# R&S®HMC8042
# R&S®HMC8041

## 1/2/3 channel power supply

from firmware version 01.104

| Electrical Specifications | |
|---|---|
| Total power output | 100 W |
| Maximum power per channel | |
| R&S®HMC8043<br>R&S®HMC8042<br>R&S®HMC8041 | 33 W<br>50 W<br>100 W |
| Voltage output | |
| all models | 0 V to 32 V |
| Current output | |
| R&S®HMC8043<br>R&S®HMC8042<br>R&S®HMC8041 | max 3 A<br>max 5 A<br>max 10 A |
| Number of outputs | |
| R&S®HMC8043<br>R&S®HMC8042<br>R&S®HMC8041 | 3<br>2<br>1 |
| Line & load regulation (SENSE connected) | |
| Constant voltage mode | |
| R&S®HMC8043 | <0.02% + 3 mV |
| R&S®HMC8042 R&S®HMC8041 | <0.03% + 5 mV |
| Constant current mode | |
| R&S®HMC8043 | <0.03% + 200 µA |
| R&S®HMC8042 R&S®HMC8041 | <0.03% + 300 µA |
| Voltage ripple 20 Hz to 20 MHz (front connector) (V=16 V, I=Imax*0.5) | |
| R&S®HMC8043 R&S®HMC8042 | 450 $\mu V_{rms}$ / 4 $mV_{pp}$ |
| R&S®HMC8041 | 1 $mV_{rms}$ / 5 $mV_{pp}$ |
| Current ripple 20 Hz to 20 Mhz (V=16 V, I=Imax*0.5) | |
| all models | typ. <1 $mA_{rms}$ |
| Response time with SENSE compensation (10 % to 90 % load change) | 1 ms (±20 mV) |
| Max SENSE compensation | 1 V |
| Programming accuracy (23° C ±5° C) | |
| Voltage | |
| all models | <0.05% + 2 mV |
| Current | |
| R&S®HMC8043 | <0.05% + 2 mA<br>typ. <0.05% + 1 mA (I <100 mA) |
| R&S®HMC8042 | <0.1% + 5 mA<br>typ. <0.05% + 2 mA (I <100 mA) |
| R&S®HMC8041 | <0.2% +10 mA<br>typ. <0.2% + 4 mA (I <100 mA) |
| Readback accuracy (23° C ±5° C) | |
| Voltage | |
| all models | <0.05% + 2 mV |
| Current | |
| R&S®HMC8043 | <0.05% + 2 mA<br>typ. <0.05% + 1 mA (I <100 mA) |
| R&S®HMC8042 | <0.05% + 4 mA<br>typ. <0.1% + 2 mA (I <100 mA) |
| R&S®HMC8041 | <0.15% + 10 mA<br>typ. <0.2% + 4 mA (I <100 mA) |
| Resolution | |
| Voltage | |
| all models | 1 mV |
| Current | |
| R&S®HMC8043 R&S®HMC8042 | 0.1 mA (I <1 A)<br>1 mA (I >1 A) |
| R&S®HMC8041 | 0.5 mA (I <1 A)<br>1 mA (I >1 A) |
| Voltage to earth | 250 VDC |
| Reverse voltage | max. 33 V |
| Inverse voltage | max. 0.4 V |
| Max. current allowed in case of inverse voltage | 3 A |
| **Supplemental characteristics** | |
| Front connectors | 4 mm saftey sockets |
| Rear connectors | Wago male connector (713-1428/037-000), 8 x 2-pole, pin spacing 3.5 mm / 0.138 in |
| Temperature coefficient ±(% of output + offset) (per K) | voltage: <0.02 % + 3 mV<br>current: <0.02 % + 3 mA |
| Output voltage overshoot during turn-off of AC power with activated channel output | 100 mV |
| Over temperature protection | Yes |

| Voltage programming speed (within 1 % of total excursion) | |
|---|---|
| Positive voltage change | |
| no load | 10 ms + µC-time |
| with resistive load | 10 ms + µC-time |
| Negative voltage change | |
| no load | 500 ms + µC-time |
| with resistive load | 10 ms + µC-time |
| Command processing time | <30 ms |
| Over Voltage Protection | Yes |
| Over Power Protection | Yes |
| Energy Meter | Yes |
| EasyRamp | Yes |
| EasyRamp time | 10 ms to 10 s |
| **Electronic Fuse** | |
| Fuse trip time | <10 ms |
| Fuse linking | <100 µs + trip time of linked channel |
| Fuse delay | 10 ms to 10 s |
| **Analog Interface** | |
| Shunt resistance (4 mA to 20 mA) | 250 Ohm |
| Input resistance 0 V to 10 V | >10 kOhm |
| Acquisition rate V/I interface | 10 Sa/s |
| Response time V/I interface | <150 ms |
| Resolution | 14 bit |
| **Trigger Input** | |
| Trigger response time | <1 ms |
| Min. trigger interval | 10 ms |
| Trigger level | TTL |
| Edge direction | rising, falling |
| **Arbitrary (EasyARB)** | |
| Parameter | Voltage, current, time, interpolation mode (y/n) |
| Number of Points | max. 512 |
| Dwell time | 10 ms to 600 s |
| Repetition rate | continous or burst mode with 1 to 255 repetitions |
| Trigger | manually, interface, trigger input |

| Logging | |
|---|---|
| Sampling rate | 1000 Sa/s, 100 Sa/s, 10 Sa/s, 1 to 3600 Sa/s |
| Resolution | |
| R&S®HMC8043 | 1 mV / 0.1 mA (<100 Sa/s)<br>10 mV / 1 mA (1000 Sa/s) |
| R&S®HMC8042 / R&S®HMC8041 | 1 mV / 1 mA (<100 Sa/s);<br>10 mV / 10 mA (1000 Sa/s) |
| Memory | Internal or external memory (USB memory sticks) |
| Maximum number of points | limited by memory |
| **Output Sequencing** | |
| Synchronicity | <100 µs |
| Delay per channel | 1 ms to 60 s |
| **Remote Interfaces** | |
| Connectors | USB-TMC, USB-CDC (Virtual COM), LAN (LXI), GPIB (optional) |
| **Miscellaneous** | |
| Input power option | 100 VAC to 240 VAC (±10 %) 50/60 Hz |
| Maximum input power | 200 W |
| Fuse | T3, 15L 250 V |
| Operating temperature | 0 °C to +40 °C |
| Storage temperature | -20 °C to +70 °C |
| Humidity | 5 % to 80 % |
| Display | 3.5" / QVGA |
| Dimensions (H x W x D) | 88 x 222 x 280 mm |
| Rack mount capability (half 19") | Yes |
| Weight | 2.6 kg |

The specifications are based on a 30 min warm-up period.

**Accessories included:**
Line cord, printed operating manual, software-CD

Printed operating manual

Software-CD

# Recommended Accessories

## HZC95

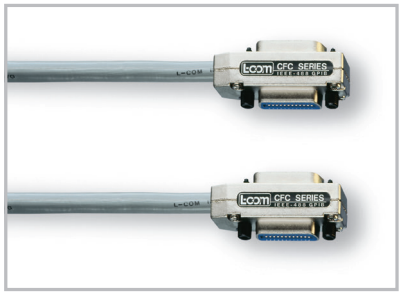
19" rackmount kit
for HMC series, 2 HE

## HZC40

Female connector
with ejectors, 8x2-pole

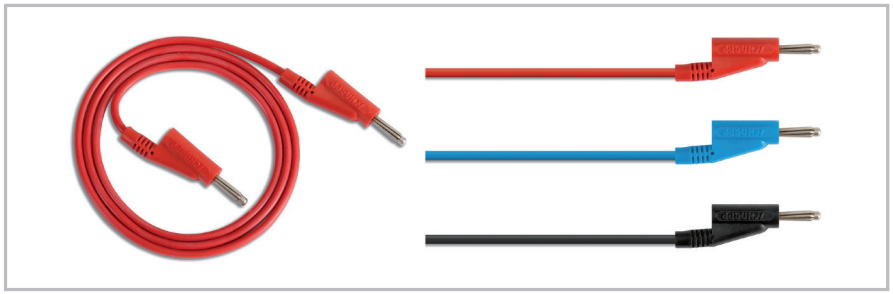

## HZ72

IEEE-488 (GPIB) bus
interface cable

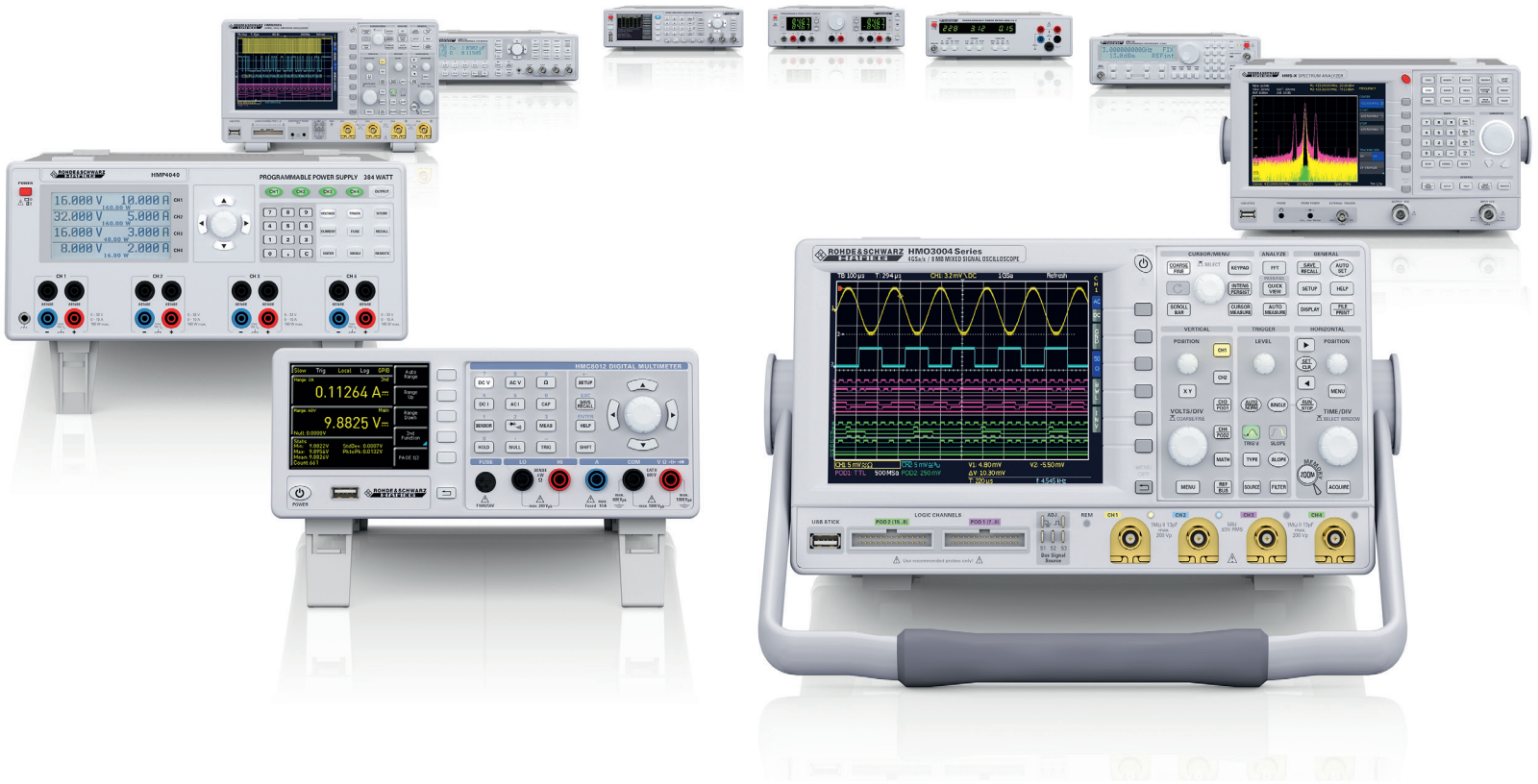


## HZ10

5x silicon test lead
HZ10S: black, HZ10R: red, HZ10B: blue



value-instruments.com




www.hameg.com

HAMEG Instruments GmbH
Industriestr. 6 | 63533 Mainhausen | Germany | Phone +49 (0) 6182 8000


PD 3607.0169.32 | Version 01.03 | 07/2015 | © HAMEG Instruments GmbH
Data without tolerance limits is not binding | Subject to change

3607016932

PD 3607.0169.32 V 01.03 PDP1 en

# X-ON Electronics

Largest Supplier of Electrical and Electronic Components

***Click to view similar products for*** rohde & schwarz ***manufacturer:***

Other Similar products are found below :

HMF2525 HMP2020 HMP2030 RT-ZP03 HZ24 HV512 HMC8041 RTC1K-102 RTC1K-202 HA-Z211 RTB2002 (RTB2K-72) RTB2004 + RTB-B241 (RTB2K-104) RTM-B222 RTM-B223 RTM-B225 RTM-B2210 RTM-B243 RTM-B2410 R&S FPL1003-P4 R&S® FPH-B8 NGE103B NGL-K103 FPC-COM1 RTB2K-202 RTB2K-74 RTC1K-COM2 HMC8042 HZ22 RTB2K-104 HM8118.02 HA-Z302 RTB2002 + RTB-B221 (RTB2K-102) RTB-PK1 RTM-K1 RTM-B242 R&S HMP4030 R&S NRX R&S RTM-K36 HMC8012 HZ42 RTM-K3 RTM-K15 RTM-K18 R&S HM7042-5 RTB2004 (RTB2K-74) RTM3K-COM4 RTM-K2 RTM-K5 RTM-K6 RTM-K7