R8034H

8-16 Channel 6 kV/20 µA Rack 19' HV Power Supply (USB/Ethernet/Touchscreen)

8/16	6000 V	20 µA
No. of Channels	Max Output V	Max Output I

The R8034H is a 19″ 2U NIM high-voltage power supply providing 8 or 16 independent channels, each delivering up to 6 kV and 20 µA. Channels are available with positive, negative or mixed polarity and use SHV outputs. Independent ramp-up and ramp-down rates are programmable from 1 to 500 V/s in 1 V/s steps, with 100 pA Iset and 500 pA current-monitor resolution (50 pA with Imon-Zoom). Local control is provided by a 2.8″ color touchscreen; USB 2.0 and Ethernet support remote operation. Safety functions include interlock, individual channel kill, over/undervoltage warning, overcurrent trip and programmable constant-current mode.

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Overview

Product Highlights

- 8 independent channels in a 2U NIM module
- Channels with either positive or negative polarity
- Low Ripple
- Interlock logic for board enable and Individual channel kill
- 2.8″ color touch screen display
- 6 kV / 20 µA output range
- SHV coaxial output connectors
- Under/over-voltage alert, overcurrent and max. voltage protection
- 500 pA Current monitor resolution (with x10 Imon-Zoom: 50 pA)
- Local and Remote control (USB2.0/Ethernet)

Product Description

The CAEN **Mod. R8034H** provides **8 or 16** independent high voltage channels in a 19″ rack unit (110/220 V AC powered). Each channel delivers up to **6 kV** and **20 µA**. The unit is available with positive, negative or “mixed” channels (4 positive and 4 negative).

The Mod. R8034H is housed in a 19″ 2U rack unit and, in both the 8- and 16-channel versions, delivers its outputs through SHV connectors; for further technical information, consult our connectors reference page. Ramp-up and ramp-down rates can be set independently for each channel from 1 to 500 V/s in 1 V/s steps, and the module offers 100 pA Iset resolution.

The module can be controlled **locally**, through a **2.8″ color touchscreen LCD display** with a completely redesigned user interface, or **remotely** via **USB 2.0** or **Ethernet**. A complete set of **software tools** is available to control the unit, and users can freely download low-level libraries, the LabVIEW driver and graphical application software.

The module also includes dedicated safety features that allow it to operate as a current generator. An overvoltage and undervoltage warning is issued when the output voltage differs from the programmed value by more than 2% of the set value (minimum 10 V). When a channel attempts to exceed its programmed current limit, it is flagged as being in “overcurrent” and enters TRIP status: the output voltage is adjusted to keep the current below the programmed limit for a programmable TRIP time, after which the channel is switched off. If TRIP is set to “constant current mode”, the channel behaves as a current generator. Hardware VMAX and IMAX limits can be set via front panel potentiometers to the same common value for all channels of the board, and both values can be read out via software. Finally, a common safety board interlock logic enables or disables the channels, while individual input signals provide a kill function for each channel.

AT A GLANCE

No. of Channels	**8/16**
Max Output V	**6000 V**
Max Output I	**20 µA**
Vset/Vmon Resolution	**20 mV**
Iset/Imon Resolution	**Iset: 100 pA Imon: 100 / 10 pA**
Max. Ramp Up/Down Rate	**500 V/s**

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Technical Specifications

Packaging	19” rack (h: 2U; d: 360mm). 110/220V AC Powered
Output Channels	8-16 channels, SHV connector Positive, Negative or Mixed (4-8 positive and 4-8 negative) Polarity; common ground
Output Voltage	0÷6 kV
Max. Output Current	20 µA
Max. Ch. Output Power	0.12 W
Vset Resolution	20 mV
Vmon Resolution	20 mV
Iset Resolution	100 pA
Imon Resolution	100 pA (high range) / 10 pA (low range)
Vmax	0 ÷ 6 kV
Vmax resolution	2 V
IMAX hardware	20 µA
IMAX hardware resolution	20 nA
Ramp Up/Down	1÷500 Volt/s, 1 Volt/s step
Trip	Max. time an “overcurrent” can last (seconds). A channel in “overcurrent” works as a current generator; output voltage varies in order to keep the output current lower than the programmed value. “Overcurrent” lasting more than set value (1 to 9999) causes the channel to “trip”. Output voltage will drop to zero either at the Ramp-down rate or at the fastest available rate, depending on Power Down setting; in both cases the channel is put in the OFF state. Trip range: 0 ÷ 999.9 s; 1000 s = INFINITE. Step = 0.1 s (If trip= INFINITE, “overcurrent” lasts indefinitely)
Voltage Ripple	10 – 1000 Hz: < 4mVpp typ; < 8 mVpp max 1kHz – 20 MHz: < 2mVpp typ; < 5 mVpp max
Vmon vs. Vout Accuracy	± 0.02% ± 1V
Vset vs. Vout Accuracy	± 0.02% ± 1V
Imon vs. Iout Accuracy	± 0.2% ± 20 nA
Iset vs. Iout Accuracy	± 0.2% ± 20 nA
Humidity range	0 ÷ 80% non condensing
Operating temperature	0 ÷ 45°C
Storage Temperature	-10 ÷ 70°C
Vout / Temperature coefficient	±50 ppm / °C
Long Term stability (1 week after 1h warmup)	±0.02% / full scale
Local Control	LCD touchscreen
Remote Control	USB & Ethernet

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Ordering Information

ORDERING CODE	DESCRIPTION
WR8034HDXMAA	R8034HDM – Rack-mount Programm. HV P.S. (8ch-6kV 20µA, 8ch +6kV 20µA) 50pA res – SHV conn. – C. Gnd
WR8034HDXNAA	R8034HDN – 16CH Rack-mount Programmable HV Power Supply (-6kV 20µA) 50pA res – SHV conn. – C. Gnd
WR8034HDXPAA	R8034HDP – 16CH Rack-mount Programmable HV Power Supply (+6kV 20µA) 50pA res – SHV conn. – C. Gnd
WR8034HXMAAA	R8034HM – Rack-mount Programm. HV P.S. (4ch -6kV 20µA, 4ch +6kV 20µA) 50pA res – SHV conn. – C. Gnd
WR8034HXNAAA	R8034HN – 8CH Rack-mount Programmable HV Power Supply (-6kV 20µA) 50pA res – SHV conn. – Common Gnd
WR8034HXPAAA	R8034HP – 8CH Rack-mount Programmable HV Power Supply (+6kV 20µA) 50pA res – SHV conn. – Common Gnd

1. Ordering codes and descriptions are reproduced from the product record. Availability is confirmed at order entry.

Accessories

A148x — Inhibit - Kill Signal BNC Adapter for HV Power Supply Modules

HV CABLES — High Voltage Cable Assemblies

Related Products

DT8034H — 8 Channel 6 kV/ 20 µA Desktop Power Supply Module (USB/Ethernet/Touchscreen)

N8034H — 8 Channel 6 kV / 20 µA NIM Power Supply Module (USB/Ethernet/Touchscreen)

R8032 — 8-16 Channel 500 V/10 mA 19" Power Supply Module (USB/Ethernet/Touchscreen)

Software & Control Tools

CAEN HV Wrapper Library — Library for CAEN Power Supply Control

GECO2020 — GEneral COntrol Software for CAEN HV Power Supplies

LabVIEW Driver (PSM – Power Supply Modules) — LabVIEW Instrument Driver for Power Supply Modules

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