R8031

8-16 Channel 100 V / 10 mA 19" Power Supply Module (USB/Ethernet/Touchscreen)

8/16	100 V	10 mA
No. of Channels	Max Output V	Max Output I

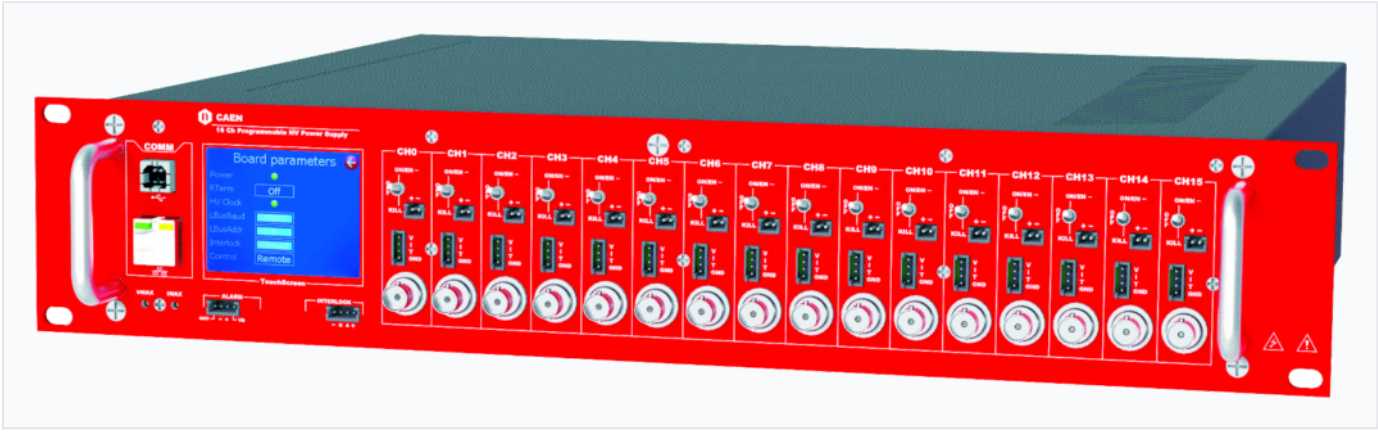
The CAEN **Mod. R8031** provides **8 or 16** independent 100 V / 10 mA channels in a 19″ rack unit (110/220 V AC powered). Each channel delivers up to **100 V** and **10 mA**. The unit is available with positive, negative or “mixed” channels (4-8 positive and 4-8 negative).

The Mod. R8031 is housed in a 19″ 2U rack unit and, in both the 8- and 16-channel versions, delivers its outputs through BNC 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 50 V/s in 1 V/s steps, and the module offers 50 nA 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.

R8031



Product Highlights

- 8 or 16 independent channels in a 19″ rack unit (110/220V AC Powered)
- Channels with either positive or negative polarity
- Temperature probe input
- Under/over-voltage alert, overcurrent and max. voltage protection
- 50 nA current monitor resolution (with x10 Imon-Zoom: 5 nA)
- Local and Remote control (USB2.0/Ethernet)
- 100 V / 10 mA output range
- BNC coaxial output connectors
- Low Ripple
- Interlock logic for board enable and Individual channel kill
- 2.8″ color touch screen display
- Software Tools for easy channel management

Technical Specifications

Packaging	19” rack (h: 2U; d: 360 mm). 110/220V AC Powered
Output Channels	8-16 channels, BNC connector Positive, Negative or Mixed (4-8 positive and 4-8 negative) Polarity; common ground
Output Voltage	0÷100 V
Max. Output Current	10 mA
Max. Ch. Output Power	1 W
Voltage Resolution	500 µV
Vmon Resolution	500 µV
Iset Resolution	50 nA
Imon Resolution	50 nA (high range) / 5 nA (low range)
Vmax	0 ÷ 100 V
Vmax resolution	1V
IMAX hardware	10 mA
IMAX hardware resolution	10 µA
Ramp Up/Down	• 1÷50 Volt/s, 1 Volt/s step • Step = 0.1 s

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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. *If trip= INFINITE, “overcurrent” lasts indefinitely. TRIP range: 0 ÷ 999.9s; 1000 s = Infinite.*
Voltage Ripple	• 10 – 1000Hz: < 3mVpp typ; < 5mVpp max • 1kHz – 20MHz: < 1mVpp typ; < 3mVpp max
Vmon vs. Vout Accuracy	± 0.02% ± 20mV
Vset vs. Vout Accuracy	± 0.02% ± 20mV
Imon vs. Iout Accuracy	± 0.5% ± 50µA
Iset vs. Iout Accuracy	± 0.5% ± 50µA
Humidity range	0 ÷ 80% non condensing
Operating Temperature	0 ÷ 45°C
Storage Temperature	-10 ÷ 70°C
Vout / Temperature coefficient	±10 ppm/°C typ
Long Term stability (1 week after 1h warmup)	±0.02% / full scale
Local Control	LCD touchscreen
Remote Control	USB & Ethernet

Ordering Information

ORDERING CODE	DESCRIPTION
WR8031DXAAAA	R8031DN – 16CH Rack-mount Programmable HV Power Supply (-100V 10mA) – BNC conn. – Common Gnd
WR8031DXMAAA	R8031DM – 16CH Rack-mount Programmble HV P.S. (8ch-100V 10mA,8ch +100V 10mA) – BNC conn. – C. Gnd
WR8031DXPAAA	R8031DP – 16CH Rack-mount Programmable HV Power Supply (+100V 10mA) – BNC conn. – Common Gnd
WR8031XAAAAA	R8031N – 8CH Rack-mount Programmable HV Power Supply (-100V 10mA) – BNC conn. – Common Gnd
WR8031XMAAAA	R8031M – 8CH Rack-mount Programmable HV P.S.(4ch -100V 10mA,4ch +100V 10mA) – BNC conn. – Common Gnd
WR8031XPAAAA	R8031P – 8CH Rack-mount Programmable HV Power Supply (+100V 10mA) – BNC conn. – Common Gnd

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Accessories

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

HV CABLES — High Voltage Cable Assemblies

Related Products

DT8031 — 8 Channel 100 V/ 10 mA Desktop Power Supply Module (USB/Ethernet/Touchscreen)

N8031 — 8 Channel 100 V / 10 mA NIM 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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