DT8031

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

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

The DT8031 is an 8-channel desktop power supply module, providing up to 100 V and 10 mA per channel from 110/220 V AC. Positive, negative or mixed configurations are available, with BNC coaxial outputs, independently programmable 1 to 50 V/s ramp-up and ramp-down rates, 50 nA Iset resolution and 50 nA current-monitor resolution (5 nA with x10 Imon-Zoom). It includes temperature probe input, a 2.8″ color touchscreen, USB 2.0 and Ethernet control, over/undervoltage warning, overcurrent protection, programmable TRIP or constant-current mode, hardware VMAX/IMAX limits, and interlock and individual-channel kill inputs.

Overview

Product Highlights

- 8 independent channels in a Desktop case (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

Product Description

The CAEN **Mod. DT8031** provides **8** independent 100 V / 10 mA channels in a desktop package (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 positive and 4 negative).

The channel outputs are delivered through BNC coaxial connectors, with 8 channels available in all versions of the Mod. DT8031P/N/M; 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.

AT A GLANCE	
No. of Channels	**8**
Max Output V	**100 V**
Max Output I	**10 mA**
Vset/Vmon Resolution	**0.5 mV**
Iset/Imon Resolution	**Iset: 50 nA Imon: 50 / 5 nA**
Max. Ramp Up/Down Rate	**50 V/s**

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Technical Specifications

Package	Desktop module housed in a 239 x 84 x 184 mm^3 (WxHxD) Aluminium case (110/220V AC Powered)
Output channels	• 8 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
Vset 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	1 V
IMAX hardware	10 mA
IMAX hardware resolution	10 µA
Ramp Up/Down	1÷50 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. If trip= INFINITE, “overcurrent” lasts indefinitely. TRIP range: 0 ÷ 999.9s; 1000 s = Infinite. Step = 0.1 s
Voltage Ripple	• 10 – 1000Hz: <3 mVpp typ; <5 mVpp max • 1 kHz – 20 MHz: <1 mVpp typ; <3 mVpp 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

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Ordering Information

ORDERING CODE	DESCRIPTION
WDT8031XAAAA	DT8031N – 8CH Desktop Programmable HV Power Supply(-100V 10mA) – BNC conn. – Common Gnd
WDT8031XMAAA	DT8031M – 8CH Desktop Programmable HV Power Supply(4ch +100V 10mA, 4ch -100V 10mA)-BNC conn. C. Gnd
WDT8031XPAAA	DT8031P – 8CH Desktop Programmable HV Power Supply(+100V 10mA) – BNC 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

N8031 — 8 Channel 100 V / 10 mA NIM Power Supply Module (USB/Ethernet/Touchscreen)

R8031 — 8-16 Channel 100 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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