DT8033

8 Channel 4 kV/ 3 mA (6W) Desktop Power Supply Module (USB/Ethernet/Touchscreen)

8	4000 V	3 mA
No. of Channels	Max Output V	Max Output I

DT8033 is an 8-channel desktop high-voltage power supply, providing independent outputs up to 4 kV, 3 mA and 6 W. Channels are available with positive, negative or mixed polarity and use SHV coaxial connectors. It offers 10 mV Vset and 10 nA Iset resolution, programmable 1–500 V/s ramp-up and ramp-down rates, and over/undervoltage, overcurrent and maximum-voltage protection. A 2.8″ color touchscreen enables local control, while USB 2.0 and Ethernet support remote operation. Common interlock and individual channel-kill inputs are provided.

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Overview

Product Highlights

- 8 independent channels in a Desktop package (110/220V AC Powered)
- Channels with either positive or negative polarity
- Low Ripple
- 10 nA Iset resolution
- Programmable ramp-up / ramp-down (1-500 V/s)
- Local and Remote control (USB2.0/Ethernet)
- Software Tool for easy channel management
- 4 kV / 3mA output ranges
- SHV coaxial output connectors
- 10 mV Vset resolution
- Under/over-voltage alert, overcurrent and max. voltage protection
- 2.8″ color touch screen display
- Interlock logic for board enable and Individual channel kill

Product Description

AT A GLANCE	
No. of Channels	**8**
Max Output V	**4000 V**
Max Output I	**3 mA**
Vset/Vmon Resolution	**10 mV**
Iset/Imon Resolution	**Iset: 10 nA Imon: 10 / 1 nA**
Max. Ramp Up/Down Rate	**500 V/s**

The CAEN **Mod. DT8033** provides **8** independent 4 kV / 3 mA (6 W) channels in a desktop package (110/220 V AC powered). Each channel delivers up to **4 kV** and **3 mA**, with a maximum output power of 6 W. The unit is available with positive, negative or “mixed” channels (4 positive and 4 negative).

The Mod. DT8033 delivers its 8 channel outputs through SHV coaxial 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 10 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.

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Technical Specifications

Package	Desktop module housed in a 239x84x184 mm3 (WxHxD) Aluminium case (110/220V AC Powered)
Output channels	8 channels, SHV connector Positive, Negative or Mixed (4-8 positive and 4-8 negative) Polarity; common ground
Output Voltage	0÷4 kV
Max. Output Current	3 mA
Max. Ch. Output Power	6 W
Vset Resolution	10mV
Vmon Resolution	10mV
Iset Resolution	10 nA
Imon Resolution	10 nA (high range) / 1 nA (low range)
Vmax	0 ÷ 4 kV
Vmax resolution	1 V
IMAX hardware	3 mA
IMAX hardware resolution	10µA
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. If trip= INFINITE, “overcurrent” lasts indefinitely. TRIP range: 0 ÷ 999.9s; 1000 s = Infinite. Step = 0.1 s
Voltage Ripple	10 – 1000Hz: <4mVpp typ; <8mVpp max 1kHz – 20MHz: <2mVpp typ; <5mVpp max
Vmon vs. Vout Accuracy	± 0.02% ± 1V
Vset vs. Vout Accuracy	± 0.02% ± 1V
Imon vs. Iout Accuracy	± 0.2% ± 2µA
Iset vs. Iout Accuracy	± 0.2% ± 2µA
Humidity range	0 ÷ 80% non condensing
Operating temperature	0 ÷ 45°C
Storage temperature	-10 ÷ 70°C
Vout / Temperature coefficient	±50 ppm/°C typ
Long Term stability (1 week after 1h warmup)	±0.02% / full scale
Local Control	LCD touchscreen
Remote Contol	USB & Ethernet

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Ordering Information

ORDERING CODE	DESCRIPTION
WDT8033XAAAA	DT8033N – 8CH Desktop Programmable HV Power Supply(-4KV 3mA) -SHV conn. – Common Gnd
WDT8033XMAAA	DT8033M – 8CH Desktop Programmable HV Power Supply(4ch +4KV 3mA, 4ch -4KV 3mA)-SHV conn. C. Gnd
WDT8033XPAAA	DT8033P – 8CH Desktop Programmable HV Power Supply(+4KV 3mA) -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

N8033 — 8 Channel 4 kV/ 3 mA (6W) NIM Power Supply Module (USB/Ethernet/Touchscreen)

R8033 — 8-16 Channel 4 kV/ 3 mA (6W) 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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