

DT5533E

4 Channel 4 kV/3 mA (4 W) Desktop HV Power Supply Module (USB/Ethernet)



Features



- 4 independent channels in a compact desktop case
- 4 kV / 3mA output range (4W max)
- Available with positive, negative or mixed polarity
- SHV coaxial output connectors
- Low Ripple
- 10 nA Current monitor resolution (with x10 Imon-Zoom: 1 nA)
- Remote control (USB 2.0 and Ethernet)
- Software Tools for easy channel management

Description

The CAEN **Mod.DT5533E** is a desktop module housing **4** independent High Voltage Power Supply Channels **4 kV, 3 mA (4 W max)**. The unit is available with either positive or negative output polarity; mixed version with 2 positive and 2 negative channels is also available. HV outputs are delivered through **SHV** connectors.

SHV connector

Radial R317580 HV coaxial connector for Mod.DT5533E

Consult our **connectors reference page** for technical information.

The HV output RAMP-UP and RAMP-DOWN rates may be selected independently for each channel in the **1 ÷ 500 V/s** range with **1 V/s** steps. The module features 10 nA I_{mon} resolution. Features include current monitor resolution extended by 10x in a Lower range (selectable via software). Functional parameters can be programmed and monitored via **USB 2.0** or **Ethernet**.

A complete set of software tools is available to control these units, from low level libraries to graphical application software.

Safety features allows the module to perform as a current generator and includes:

Channels	can be enabled or disabled through the Global Interlock logic.
Overvoltage and Undervoltage warning	when the output voltage differs from the programmed value ($\pm 0.5\%$ of the set value, ± 3 V).
Overcurrent detection	when a channel attempts to exceed the programmed current limit, it signaled to be in "overcurrent" and enter in a TRIP status. The output voltage is varied to keep the current below the programmed limit for a programmable TRIP time, then the channel is switched of. If TRIP is set to "constant current mode", the channel behaves like a current generator.
Hardware VMAX, IMAX	Programmable VMAX, IMAX protection limit.
Safety Board Interlock	common Interlock logic for channels enable/disable and individual inputs signal for channel Kill function.

Here you can find the link at the "MIRACLES detector prototypes and front-end electronics: integration, tests and some lessons learned" presented in DENIM (Design and Engineering of Neutron Instruments Meeting) on September 2023 at Forschungszentrum Jülich in Germany.

Technical Specifications

Package

Desktop module housed in a 154x50x164 mm³ (WxHxD) alloy box; weight: ~800g

No. of Channels

4

Output Voltage

0 ÷ 4 kV

Polarity

Positive / Negative / Mixed depending on purchased version; common ground

Max. Output Current

3 mA (4W max)

Voltage Set Resolution

100 mV

Voltage Monitor Resolution

10 mV

Current Set Resolution

50 nA

Current Monitor Resolution

10 nA (high range) / 1 nA (low range)

Current Set Maximum Value

3100 µA

VMAX Hardware

0 ÷ 4100 V common to all board channels

VMAX Hardware Resolution

1 V

VMAX Hardware Accuracy

2% of FSR

Ramp Up/Down

1 ÷ 500 Volt/sec, 1 Volt/sec step

Trip

Max. time an "overcurrent" is allowed to last (seconds). A channel in "overcurrent" works as a current generator; output voltage varies 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 ÷ 999.9 s; 1000 s = Infinite. Step = 0.1 s

Voltage Ripple

20 ÷ 1000 Hz: <7 mVpp typical; < 10 mVpp maximum
1 ÷ 20000 kHz: <2 mVpp typical; < 5 mVpp maximum

Vmon vs. Vout accuracy

±0.05% of read ±1 V

Vset vs. Vout accuracy

±0.05% of read ±1 V

Imon vs. Iout accuracy

high range: ±2% of read ±1 µA
low range: ±2% of read ±100 nA

Iset vs. Imon Accuracy

- high range: ±2% of read ±1 µA
- low range: ±2% of read ±100 nA

Maximum Output Power

4 W per channel (software safety limit)

Ordering Options

Code	Description	
WDT5533EXMAA	DT5533EM - 4 Channel 4 kV/3 mA (4 W) Desktop HV Power Supply (USB/Ethernet) - Mixed	RoHS
WDT5533EXNAA	DT5533EN - 4 Channel 4 kV/3 mA (4 W) Desktop HV Power Supply (USB/Ethernet) - Negative	RoHS
WDT5533EXPAA	DT5533EP - 4 Channel 4 kV/3 mA (4 W) Desktop HV Power Supply (USB/Ethernet) - Positive	RoHS

Accessories

A1483

Inhibit - Kill Signal BNC Adapter for HV Power Supply Modules

HV CABLES



High Voltage Cable Assemblies

A1484

Inhibit - Kill Signal BNC Adapter for HV Power Supply Modules

A148x



Inhibit - Kill Signal BNC Adapter for HV Power Supply Modules

Related Software

GECO2020



General Control Software for CAEN HV Power Supplies

CAEN Toolbox



Multi-Functional Software Suite for the Upgrade of Front-end Boards, Bridges and Power Supplies

Related Software Libraries

CAEN HV Wrapper Library



Library for CAEN Power Supply Control

Related Products

LabVIEW Driver (PSM - Power Supply Modules)



LabVIEW Instrument Driver for Power Supply Modules

Gallery



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