DT1471ET

4 Ch Reversible 5.5 kV/300 µA Desktop HV Power Supply Module (USB/Ethernet/T.screen)

4	±5500 V	300 µA
No. of Channels	Max Output V	Max Output I

The DT1471ET is a 4-channel reversible desktop high-voltage power supply, delivering up to ±5.5 kV and 300 µA per channel with independently selectable polarity. Its channels use SHV coaxial outputs, share a common floating return, and provide independently programmable 1–500 V/s ramp rates. Current set/monitor resolution is 5 nA, or 500 pA with x10 Imon-Zoom. Local control is provided by a 2.8″ color touchscreen; USB 2.0 and Ethernet support remote operation. Interlocks, individual channel kill, trip handling and programmable VMAX protection provide channel safety.

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Overview

Product Highlights

- 4 independent channels in a Desktop case (110/220V AC Powered)
- Channels with individually selectable positive or negative polarity
- Common floating return
- Under/over-voltage alert, overcurrent and max. voltage protection
- 5 nA Current monitor resolution (with x10 Imon-Zoom: 500 pA)
- Local and Remote control (USB2.0/Ethernet)
- Software Tools for easy channel management
- 5.5 kV / 300 µA output range
- SHV coaxial output connectors
- Low Ripple
- Interlock logic for board enable and Individual channel kill
- 2.8″ color touch screen display
- Daisy-chain capability

Product Description

AT A GLANCE	
No. of Channels	**4**
Max Output V	**±5500 V**
Max Output I	**300 µA**
Vset/Vmon Resolution	**100 mV**
Iset/Imon Resolution	**Iset: 5 nA Imon: 5 / 0.5 nA**
Max. Ramp Up/Down Rate	**500 V/s**

The CAEN **Mod. DT1471ET** provides **4** independent high voltage channels in a desktop package (110/220 V AC powered). Each channel delivers up to **±5.5 kV** and **300 µA**, and its output polarity can be selected independently.

The channels share a common floating return, insulated from the crate ground, and the HV outputs are delivered through Radiall R317580 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. The module offers 5 nA Iset/Imon resolution, and the x10 Imon Zoom increases the current monitor resolution to 500 pA.

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 **free software tools** is available to control the unit: GECO2020, with a user-friendly GUI, and the CAEN HV Wrapper library for custom software development. EPICS and LabVIEW are also supported.

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The module also includes dedicated safety features that allow it to operate as a current generator. A common safety board interlock logic enables or disables the channels globally, while individual input signals provide a kill function for each channel. 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). If a channel attempts to draw a current higher than its programmed limit, it enters TRIP status and holds the maximum allowed value for a programmable time (TRIP) before being switched off. A programmable hardware VMAX protection limit is also available.

Technical Specifications

Package	• Desktop module housed in a 239x84x184 mm^3 (WxHxD) Aluminium case • Weight: ~5.2 kg
Output channels	• 4 channels, Common Floating Return, SHV connector • Positive or Negative Polarity (requires internal setting)
Output ranges	• 5.5 kV / 300 µA (IMonRange = High) • 5.5 kV / 30 µA (IMonRange = Low) – Imon Zoom Active
Max. Ch. Output Power	1.65 W
Vset Resolution	100 mV
Vmon Resolution	100 mV
Iset Resolution	5 nA
Imon Resolution	• 5 nA (IMonRange = High) • 500 pA (IMonRange = Low) – Imon Zoom Active
Vmax	• 0 ÷ 5600 V Absolute maximum HV level that the channel is allowed to reach, independently from the preset value Vset. • Output voltage cannot exceed the preset value Vmax. The accuracy is 1 % ± 5 V
Vmax resolution	± 1 V
Alarm output	Open collector, 100 mA maximum sink current
Interlock input	LOW: <1V; current~5mA; HIGH: 4÷6 V
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	• 20 ÷ 1000 Hz: Typical: 10 mVpp / Maximum: 15 mVpp • 1 ÷ 20000 kHz: Typical: 3 mVpp / Maximum: 8 mVpp
Vmon vs. Vout Accuracy	±0.02% of read value ±2V
Vset vs. Vout Accuracy	±0.02% of read value ±2V
Imon vs. Iout Accuracy	• ±2% of read value ±20 nA (IMonRange = High) • ±2% of read value ±2 nA (IMonRange = Low) – Imon Zoom Active
Iset vs. Iout Accuracy	• ±2% of read value ±30 nA (IMonRange = High) • ±2% of read value ±3 nA (IMonRange = Low) – Imon Zoom Active
Ventilation Fan	60 x 60 24 V; 62 dBA maximum noise level

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Technical Specifications (continued)

Humidity range	0 ÷ 80%
Storage temperature	-10 ÷ 70°C
Operating temperature	0 ÷ 45°C
Vout / Temperature coefficient	max. 50 ppm / °C
Imon / Temperature coefficient	max 100 ppm/C°; max 300 ppm/C° with Imon zoom
Long term stability Vout vs. Vset	± 0.02% (after one week @ constant temperature)

Ordering Information

ORDERING CODE	DESCRIPTION
WDT1471ETXAA	DT1471ET – 4 Channel 5.5kV Desktop HV Power SupplyModule with Ethernet & 2.8″ Touchscreen

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

Software & Control Tools

EPICS IOC (PSM Power Supply Modules) — EPICS IOC for Power Supply Modules

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

GECO2020 — GEneral COntrol Software for CAEN HV Power Supplies

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