DT1470ET

4 Ch Reversible 8 kV/3 mA (8 W) Desktop HV Power Supply Module (USB/Ethernet/T.screen)

Features

- 4 independent channels in a Desktop case (110/220V AC Powered)
- 8 kV / 3mA output range
- Max output power:
  - 9 W (< 3 kV output)
  - 8 W (> 3 kV output)
- Channels with individually selectable positive or negative polarity
- SHV coaxial output connectors
- Common floating return
- Low Ripple
- Under/over-voltage alert, overcurrent and max. voltage protection
- Interlock logic for board enable and Individual channel kill
- 50 nA Current monitor resolution (with x10 Imon-Zoom: 5 nA)
- 2.8" color touch screen display
- Local and Remote control (USB2.0/Ethernet)
- Daisy-chain capability
- Software Tools for easy channel management

Description

The CAEN **Mod. DT1470ET** provides **4** independent High Voltage channels in a desktop package (110/220V AC Powered). Each channel can provide a **±8 kV** max voltage, a **3 mA** max current and a 9 W max power (8 W max power when output voltage is larger than ±3 kV). The output polarity is independently selectable for each channel.
Channels have **common floating return** (common return insulated from the crate ground); HV outputs are delivered through SHV connectors. The HV output RAMP-UP and RAMP-DOWN rates may be selected independently for each channel in the range 1÷500 V/s in 1 V/s steps. The module features 50 nA Iset/Imon resolution. Zoom (x 10) for Imon increases resolution to 5nA.

SHV connector

Radiall R317580 HV coaxial connector for DT1470ET

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

Module control can take place either **locally** thanks to a **2.8" Touchscreen Graphic color 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 this unit: **GECO2020** with user friendly GUI and **CAEN HV Wrapper library** for custom SW development. **EPICS** and **LabVIEW** also supported.

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 by more than 2% of set value (minimum 10V).
Overcurrent detection	if a channel tries to draw a current larger than its programmed limit, it enters TRIP status, keeping the maximum allowed value for a programmable time (TRIP), before being switched off.
Hardware VMAX	Programmable VMAX protection limit.
Safety Board Interlock	common Interlock logic for channels enable/disable and individual inputs signal for channel Kill function.

Technical Specifications

Package

Desktop module housed in a 239 x 84 x 184 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

8 kV / 3 mA	(IMonRange = High)
8 kV / 300 µA	(IMonRange = Low) - Imon Zoom Active

Max. Ch. Output Power

9 W (Vset < 3 kV)
8 W (Vset > 3 kV)

Vset Resolution

200 mV

Vmon Resolution

200 mV

Iset Resolution

50 nA

Imon Resolution

50 nA	
5 nA	(IMonRange = High)
	(IMonRange = Low) - Imon Zoom Active

Vmax

0 ÷ 8100 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; o utput 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 o n 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

- 3 kV/200 µA: Typical: 20 mVpp; Maximum: 25 mVp p
- 3 kV/3 mA: Typical: 20 mVpp; Maximum: 30 mVpp
- 8 kV/800 µA: Typical: 25 mVpp; Maximum: 30 mVp p

1 ÷ 20000 kHz

- 3 kV/200 µA: Typical: 5 mVpp; Maximum: 10 mVpp
- 3 kV/3 mA: Typical: 5 mVpp; Maximum: 10 mVpp
- 8 kV/800 µA: Typical: 10 mVpp; Maximum: 15 mVp p

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	
±2 µA	(IMonRange = High)
±2% of read value	(IMonRange = Low) - Imon Zoom
±200 nA	Active

Iset vs. Iout Accuracy

±2% of read value	
±2 µA	(IMonRange = High)
±2% of read value	(IMonRange = Low) - Imon Zoom
±200 nA	Active

Ventilation Fan

60 x 60 24 V; 62 dBA maximum noise level

Humidity range

0 ÷ 80%

Storage temperature

-10 ÷ 70°C

Operating temperature

0 ÷ 45°C

Imon / Temperature coefficient

max 100 ppm/C°; max 300 ppm/C° with Imon X10 zoom

Vout / Temperature coefficient

max. 50 ppm/°C

Long term stability Vout vs. Vset

± 0.02% (after one week @ constant temperature)

Ordering Options

Code	Description	
WDT1470ETXAA	DT1470ET - 4 Channel 8kV/3 mA(9W) Desktop HV Power Supply Module with Ethernet & 2.8" Touchscreen	RoHS

Accessories

A148x

Inhibit - Kill Signal BNC Adapter for HV Power Supply Modules

A1484

Inhibit - Kill Signal BNC Adapter for HV Power Supply Modules

HV CABLES

High Voltage Cable Assemblies

A1483

Inhibit - Kill Signal BNC Adapter for HV Power Supply Modules

Related Software

GECO2020

GEneral COntrol Software for CAEN HV Power Supplies

Related Software Libraries

CAEN HV Wrapper Library

Library for CAEN Power Supply Control

Related Products

LabVIEW Driver (PSM - Power Supply Modules)

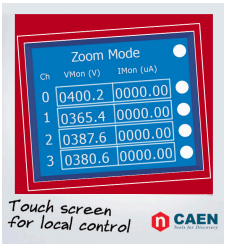
LabVIEW Instrument Driver for Power Supply Modules

EPICS IOC (PSM Power Supply Modules)

EPICS IOC for Power Supply Modules

Gallery


Zoom Mode
Ch VMon (V) IMon (uA)
0 0400.2 0000.00
1 0365.4 0000.00
2 0387.6 0000.00
3 0380.6 0000.00
HV ON
CH0
CH1
CH2
CH3
CAEN
DT1470ET


Zoom Mode
Ch VMon (V) IMon (uA)
0 0400.2 0000.00
1 0365.4 0000.00
2 0387.6 0000.00
3 0380.6 0000.00
Touch screen
for local control
CAEN


Ethernet and
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