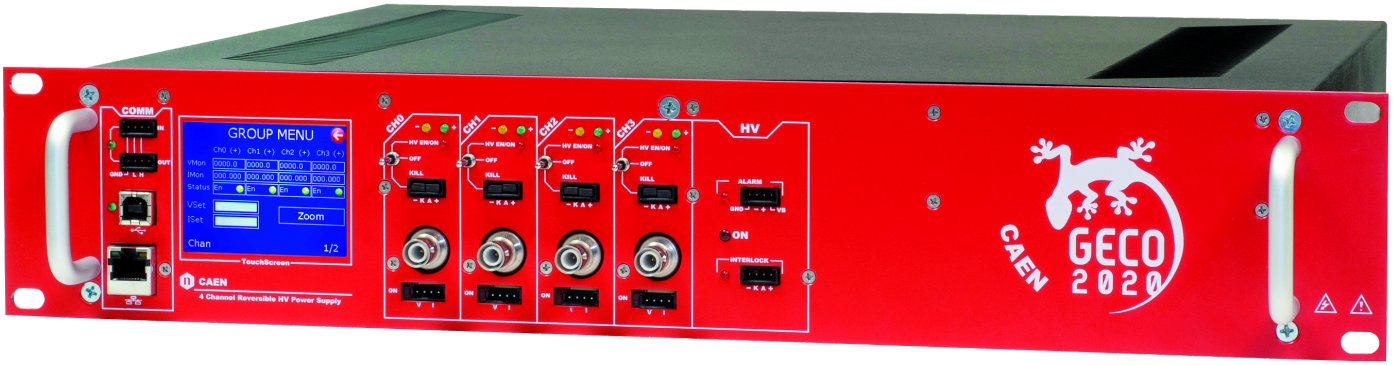
R1471HET

8/4 Ch Reversible 5.5 kV/20 µA 19' HV Power Supply High Accuracy Module (USB/Ethernet/T.screen)

Features



- 4 or 8 independent channels in a 19″ rack unit (110/220V AC Powered)
- 5.5 kV / 20 µA output ranges
- 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
- 1 nA Current monitor resolution (with x20 Imon-Zoom: 50 pA)
- 2.8" color touch screen display
- Local and Remote control (USB2.0/Ethernet)
- Daisy-chain capability (4 channel only)
- Software Tools for easy channel management

Description

The CAEN **Mod. R1471HET** provides **4 or 8** (depending on version) independent High Voltage channels in a 19" rack unit (110/220V AC Powered). Each channel can provide a **±5.5 kV** max voltage and a **20 µA** max current. 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 1 nA Iset/Imon resolution. Zoom for Imon increases resolution to 50 pA.
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**.

SHV connector

19'' 2U, 4/8 channels for Mod. R1471HET

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

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:

Interlock	Common Interlock logic for channels enable/disable and individual inputs signal for channel Kill function
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
VMAX	Programmable VMAX protection limit

Technical Specifications

Packaging

19” rack (h: 2U; d: 360mm). Weight: ~9kg (2-4 ch), 10.5kg (8 ch);

Output channels

4-8 channels, Common Floating Return, SHV connector
Positive or Negative Polarity (requires internal setting)

Output ranges

5.5 kV / 20 µA (IMonRange = High)
5.5 kV / 2 µA (IMonRange = Low) – Imon Zoom Active

Max. Ch. Output Power

0.11 W

Vset Resolution

100 mV

Vmon Resolution

100 mV

Iset Resolution

1 nA

Imon Resolution

1 nA (IMonRange = High)
50 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: < 1 V; 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: Typical: 12 mVpp / Maximum: 20 mVpp
- 1 ÷ 20000 kHz: Typical: 2 mVpp / Maximum: 5 mVpp

Vmon vs. Vout Accuracy

±0.02% of read value ±2 V

Vset vs. Vout Accuracy

±0.02% of read value ±2 V

Imon vs. Iout Accuracy

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

Iset vs. Iout Accuracy

±2% of read value ±3 nA (IMonRange = High)
±2% of read value ±300 pA (IMonRange = Low) - Imon Zoom Active

Ventilation Fan

60x60 24V; 62 dBA maximum noise level

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 Options

Code	Description	
WR1471HETDXA	R1471HETD - 8 Channel 5.5kV 19" HV Power Supply High Accuracy Module with Ethernet, 2.8" Touchscreen	RoHS
WR1471HETXAA	R1471HET - 4 Channel 5.5kV 19" HV Power Supply High Accuracy Module with Ethernet & 2.8" Touchscreen	RoHS

Accessories

HV CABLES

High Voltage Cable Assemblies

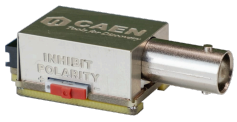
A1483

Inhibit - Kill Signal BNC Adapter for HV Power Supply Modules

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

Related Software Libraries

CAEN HV Wrapper Library

Library for CAEN Power Supply Control

Related Products

EPICS IOC (PSM Power Supply Modules)

EPICS IOC for Power Supply Modules

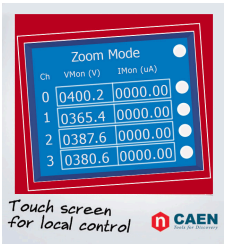
LabVIEW Driver (PSM - Power Supply Modules)

LabVIEW Instrument Driver for Power Supply Modules

Gallery


COMM
CHO MENU
VMon 0000.0 V
IMon 000.000 uA
Status En
Chan 1/2
TouchScreen
CAEN
6 Channel Reversible HV Power Supply
HV
ON
GECO 2020


COMM
GROUP MENU
Zoom
Chan 1/2
TouchScreen
CAEN
4 Channel Reversible HV Power Supply
HV
ON
GECO 2020


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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