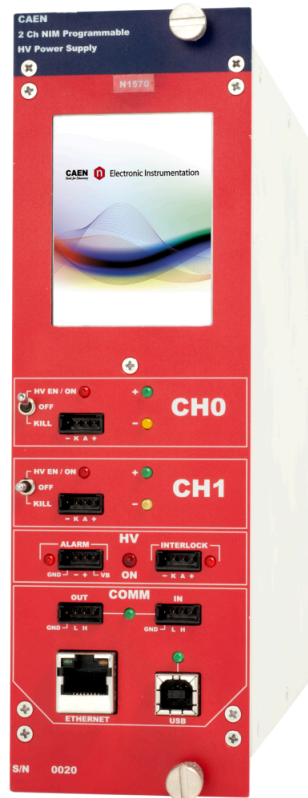


## N1570

# 2 Channel 15 kV/1 mA (10 W) NIM HV Power Supply Module (USB/Ethernet/T.scr een)



## Features



- 2 independent channels in 2U NIM module
- 15 kV / 1mA output range
- Max channel power: 10W (< 10kV) or 7W (> 10kV)
- Channels with individually selectable positive or negative polarity
- LEMO HV 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
- 20 nA Current monitor resolution (with x10 Imon-Zoom: 2 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.N1570** provides 2 independent High Voltage channels in a double width NIM mechanics. Each channel can provide a  $\pm 15$  kV max voltage, 1 mA max current and a 10 W max power. 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 Lemo HV 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.

### LEMO HV connector

NIM double width, 2 channels for Mod. N1570

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

The module features 20 nA Iset/Imon resolution. Zoom (x 10) for Imon increases resolution to 2 nA. 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 or Ethernet, taking advantage of the new **GECO2020** Control Software.

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:

<b>Channels</b>	can be enabled or disabled through the Global Interlock logic.
<b>Overvoltage and Undervoltage warning</b>	when the output voltage differs from the programmed value by more than 2% of set value (minimum 10V).
<b>Overcurrent detection</b>	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.
<b>Hardware VMAX</b>	Programmable VMAX protection limit.

### Available Options:

- **A1480** DC Input Power Equalizer.

## Technical Specifications

### Packaging

Double width NIM mechanics. Weight: ~2.6kg

### Output channels

2 channels, Common Floating Return, LEMO HV connector Positive or Negative Polarity (requires internal setting)

### Output ranges

- 15 kV / 1 mA (IMonRange = High)
- 15 kV / 100  $\mu$ A (IMonRange = Low) - Imon Zoom Active

### Max. Ch. Output Power

- 10 W (Vset < 10 kV)
- 7 W (Vset > 10 kV)

### Vset Resolution

400 mV

### Vmon Resolution

500 mV

### Iset Resolution

20 nA

### Imon Resolution

- 20 nA (IMonRange = High)
- 2 nA (IMonRange = Low) - Imon Zoom Active

### Vmax

0 ÷ 15100 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 %  $\pm$  5 V

### Vmax resolution

$\pm$  1 V

### Alarm output

Open collector, 100 mA maximum sink current

### Interlock input

LOW: < 1 V; current ~5 mA; 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 ÷ 1000Hz

- 7 kV / 250  $\mu$ A. Typical: 7 mVpp / Maximum: 10 mVpp
- 10 kV / 350  $\mu$ A. Typical: 12 mVpp / Maximum: 15 mVpp
- 14 kV / 500  $\mu$ A. Typical: 20 mVpp / Maximum: 25 mVpp

### 1 ÷ 20000 kHz

- 7 kV / 250  $\mu$ A. Typical: 4 mVpp / Maximum: 10 mVpp
- 10kV / 350  $\mu$ A. Typical: 6 mVpp / Maximum: 15 mVpp
- 14kV / 500  $\mu$ A. Typical: 20 mVpp / Maximum: 25 mVpp

## Vmon vs. Vout Accuracy

$\pm 0.02\%$  of read value  $\pm 2V$

## Vset vs. Vout Accuracy

$\pm 0.02\%$  of set value  $\pm 2V$

## Imon vs. Iout Accuracy

- $\pm 2\%$  of read value  $\pm 1 \mu A$  (IMonRange = High)
- $\pm 2\%$  of read value  $\pm 100 nA$  (IMonRange = Low) - Imon Zoom Active

## Iset vs. Iout Accuracy

- $\pm 2\%$  of read value  $\pm 1 \mu A$  (IMonRange = High)
- $\pm 2\%$  of read value  $\pm 100 nA$  (IMonRange = Low) - Imon Zoom Active

## Humidity range

0 ÷ 80%

## Storage temperature

-10 ÷ 70°C

## Vout / Temperature coefficient

max. 50 ppm/°C

## Imon / Temperature coeff.

max 100 ppm/°C; max 300 ppm/°C with Imon zoom5

## Longterm stab. Vout vs. Vset

$\pm 0.02\%$  (after one week @ constant temperature)

## Ordering Options

Code	Description	
WN1570XAAAAA	N1570 - 2 Channel NIM Programmable High Voltage Power Supply ( $\pm 15$ kV 1mA, 10W Max)	RoHS

## Accessories

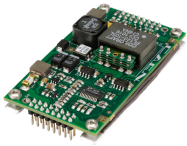
### HV CABLES



High Voltage Cable Assemblies

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### A1480

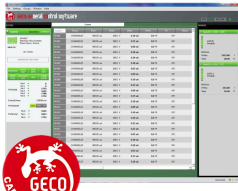


DC Power Input Equalizer for N14XX Family

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## Related Software

### GECO2020



General Control Software for CAEN HV Power Supplies

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## Related Software Libraries

### CAEN HV Wrapper Library



Library for CAEN Power Supply Control

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## Related Products

### DT1570ET



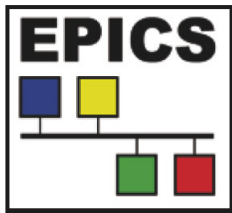
2 Channel 15 kV/1 mA (10 W) Desktop HV Power Supply Module

### R1570ET



4/2 Channel 15 kV/1 mA (10 W) Rack 19' HV Power Supply

### EPICS IOC (PSM Power Supply Modules)



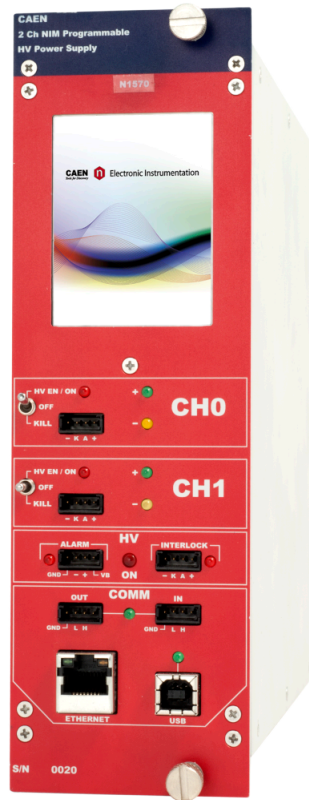
EPICS IOC for Power Supply Modules

### LabVIEW Driver (PSM - Power Supply Modules)



LabVIEW Instrument Driver for Power Supply Modules

# Gallery



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