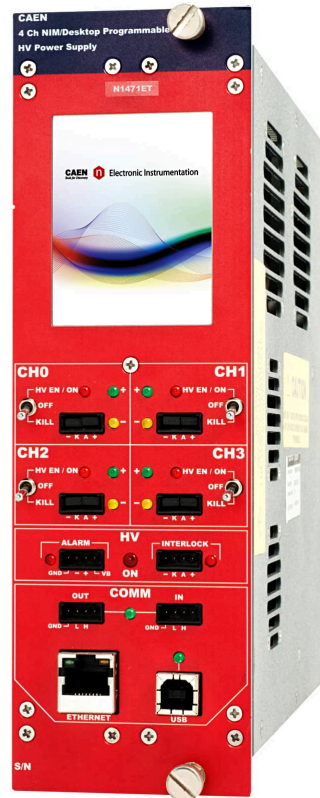


N1471ET

4 Ch Reversible 5.5 kV/300 μ A NIM HV Power Supply Module (USB/Ethernet/T.scr een)



Features



- 4 independent channels in 2U NIM module
- 5.5 kV / 300 μ A output range
- 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
- 5 nA Current monitor resolution resolution (with x10 Imon-Zoom: 500 pA)
- 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. N1471ET** provides **4** independent High Voltage channels in a double width NIM mechanics. Each channel can provide a **± 5.5 kV** max voltage and a **300 μ A** 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.



SHV connector

NIM double width, 4 channels for Mod. N1471ET

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 range $1 \div 500$ V/s in 1 V/s steps. The module features 5nA Iset/Imon resolution. Zoom (x 10) for Imon increases resolution to 500 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**.

A complete set of **Software Tools** is available to control these units; the user can freely download low level libraries, **LabVIEW driver** and Graphical application software.

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

Channels can be enabled or disabled	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.

Module control can take place either locally, assisted by a Graphic colour display, or remotely, via USB (1) or RS485 (1). It is also controllable via TCP/IP (2) by the Smart Fan Unit of CAEN **NIM8301** crate:

Available Options:

- **A1480** DC Input Power Equalizer.

Technical Specifications

Packaging

Double width NIM mechanics. Weight: ~2.6 kg

Output channels

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

Output ranges

5.5 kV / 300 μ A (IMonRange = High)
5.5 kV / 30 μ A (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 \div 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 % \pm 5 V

Vmax resolution

\pm 1 V

Alarm output

Open collector, 100 mA maximum sink current

Interlock input

LOW: < 1 V; current~5mA; HIGH: 4 \div 6 V

Ramp Up/Down

1 \div 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

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	
WN1471ETXAAA	N1471ET - 4 Channel 5.5kV NIM HV Power Supply Module with Ethernet & 2.8" Touchscreen	RoHS

Accessories

A1480



DC Power Input Equalizer for N14XX Family

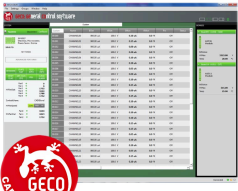
HV CABLES



High Voltage Cable Assemblies

Related Software

GECO2020



General Control Software for CAEN HV Power Supplies

Related Software Libraries

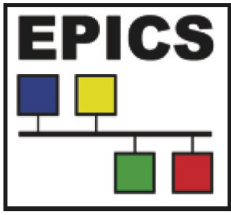
CAEN HV Wrapper Library



Library for CAEN Power Supply Control

Related Products

EPICS IOC (PSM Power Supply Modules)



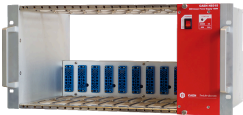
EPICS IOC for Power Supply Modules

NIM8306



2 Slot Switching 750 W Mini Crate

NIM8302



5U 10 slot 150 W Compact Crate

NIM8304



7U 12 slot smart fan unit Switching 2000 W Crate

NIM8303



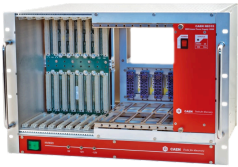
5U 12 slot 300/600 W Crate

LabVIEW Driver (PSM - Power Supply Modules)



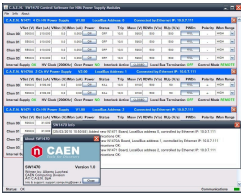
LabVIEW Instrument Driver for Power Supply Modules

NV8020A



7U CRATE VME/NIM 8 slot VME64 365W, 5 slot NIM 150W

SW1470



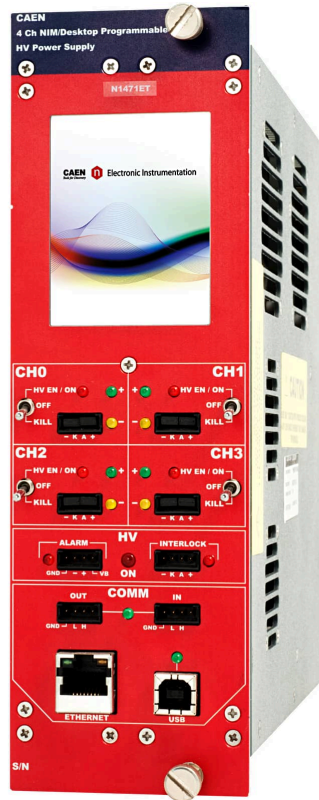
Control Software for NIM Power Supply Modules

NIM8305



2 Slot Switching 450 W Mini Crate

Gallery



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