NDT1470

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

10-06-2026
CAEN CODE: NDT1470

https://www.caen.it/products/NDT1470

Features

- 4 independent channels in 2U NIM module
- 220 V/110 V AC plug for desktop operation
- 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. NDT1470** provides **4** independent High Voltage channels in a double width NIM mechanics. Desktop operation (110/220V AC Powered, needless a NIM crate) is also supported. 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

NIM double width, 4 channels Mod. NDT1470

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:

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.
Safety Board Interlock	common Interlock logic for channels enable/disable and individual inputs signal for channel Kill function.

Technical Specifications

Package

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

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

Iset / Imon Resolution

50 nA (IMonRange = High)
5 nA (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: < 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:

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

1 ÷ 20000 kHz:

- 3kV/200µA. Maximum: 10 mVpp
- 3kV/3mA. Typical: 5 mVpp / Maximum: 10 mVpp
- 8kV/800µA. 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 ±200 nA (IMonRange = Low) - Imon Zoom Active

Iset vs. Iout Accuracy

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

Cooling Fan

2 Sunon 60 x 60 x 15 mm; 12V KDE1206PHV1 and 2 Mouser 40x40x20 mm; 12V 1608KL-04W-B50-L00

Humidity range

0 ÷ 80%

Operating temperature

0 ÷ 45°C

Storage Temperature

-10 ÷ 70°C

Vout / Temperature coefficient

max. 50 ppm/C°

Imon / Temperature coefficient

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

Long term stability Vout vs. Vset
± 0.02% (after one week @ constant temperature)

Ordering Options

Code	Description	
WNDT1470AAAA	NDT1470 - 4Ch NIM/Desktop Programmable HV Power Supply (±8kV, 3mA, 50nA res.)	RoHS

Accessories

HV CABLES

High Voltage Cable Assemblies

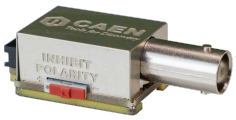
A1483

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

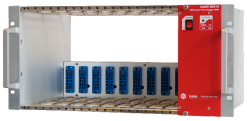
Library for CAEN Power Supply Control

Related Products

NIM8304

7U 12 slot smart fan unit Switching 2000 W Crate

NIM8302



5U 10 slot 150 W Compact Crate

NIM8306

2 Slot Switching 750 W Mini Crate

NIM8303

5U 12 slot 300/600 W Crate

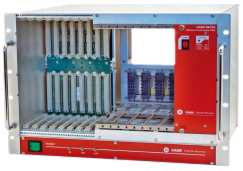
LabVIEW Driver (PSM - Power Supply Modules)

LabVIEW Instrument Driver for Power Supply Modules

NIM8305

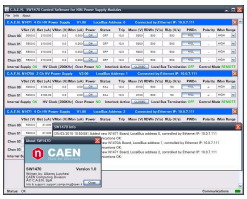
2 Slot Switching 450 W Mini Crate

NV8020A



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

SW1470



Control Software for NIM Power Supply Modules

Gallery


CAEN
4 Ch NIM/Desktop
HV Power Supply
CAEN Electronic Instrumentation
CH0
CH1
CH2
CH3
HV EN / ON
OFF
KILL
ALARM
HV
INTERLOCK
ON
COMM
OUT
IN
ETHERNET
USB
S/N


Power Supply
stand-alone
CAEN


VMon
IMon
Status
Touch screen
for local control
CAEN


Ethernet and
USB connections
CAEN


The NDT Power Supply can
work on your desk or
plugged in a standard NIM bin
CAEN

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