

NDT1419

4 Ch Reversible 500 V/200 μ A NIM/Desktop HV Power Supply Module (USB/Ethernet/T.scr een)



Features



- 4 independent channels in 2U NIM module
- 220 V / 110 V AC plug for desktop operation
- 500 V / 200 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 (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. NDT1419** 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 **±500V** max voltage and a **200 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÷50 V/s in 1 V/s steps. The module features 5 nA Iset/Imon resolution. Zoom (x 10) for Imon increases resolution to 500 pA.

SHV connector

NIM double width, 4 channels for Mod. NDT1419

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

500 V / 200 μ A (IMonRange = High)
500 V / 20 μ A (IMonRange = Low) - Imon Zoom Active

Max. Ch. Output Power

100 mW

Vset Resolution

10 mV

Vmon Resolution

10 mV

Iset Resolution

5 nA

Imon Resolution

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

Vmax

0 ÷ 510 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 0.5 V

Vmax resolution

\pm 0.1 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÷50 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: 5 mVpp, Maximum: 10 mVpp
- 1 ÷ 20000 kHz: Typical: 3 mVpp, Maximum: 5 mVpp

Vmon vs. Vout Accuracy

±0.02% of read value ±0.2 V

Vset vs. Vout Accuracy

±0.02% of read value ±0.2 V

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

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%

Storage temperature

-10 ÷ 70°C

Operating temperature

0 ÷ 45°C

Vout / Temperature coefficient

max. 50 ppm / °C

Vout /voltage coefficient

max 2 ppm/V

Imon / Temperature coefficient

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

Long term stability V_{out} vs. V_{set}

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

Ordering Options

Code	Description	
WNDT1419AAAA	NDT1419 - 4Ch NIM/Desktop Programmable HV Power Supply ($\pm 500V$, 200uA, 5nA res.)	RoHS

Accessories

A148x



Inhibit - Kill Signal BNC Adapter for HV Power Supply Modules

A1483

Inhibit - Kill Signal BNC Adapter for HV Power Supply Modules

HV CABLES



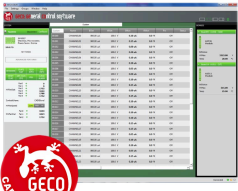
High Voltage Cable Assemblies

A1484

Inhibit - Kill Signal BNC Adapter for HV Power Supply Modules

Related Software

GECO2020



General Control Software for CAEN HV Power Supplies

Related Software Libraries

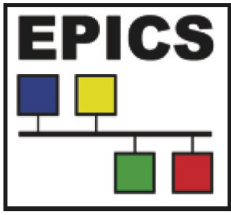
CAEN HV Wrapper Library



Library for CAEN Power Supply Control

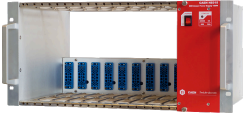
Related Products

EPICS IOC (PSM Power Supply Modules)



EPICS IOC for Power Supply Modules

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

NV8020A



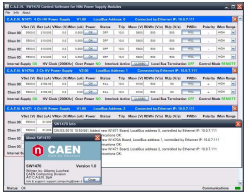
7U CRATE VME/NIM 8 slot VME64 365W, 5 slot NIM 150W

NIM8306



2 Slot Switching 750 W Mini Crate

SW1470



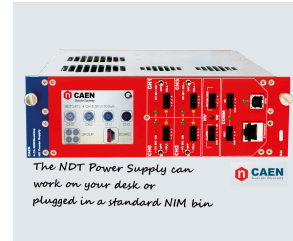
Control Software for NIM Power Supply Modules

NIM8305



2 Slot Switching 450 W Mini Crate

Gallery



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