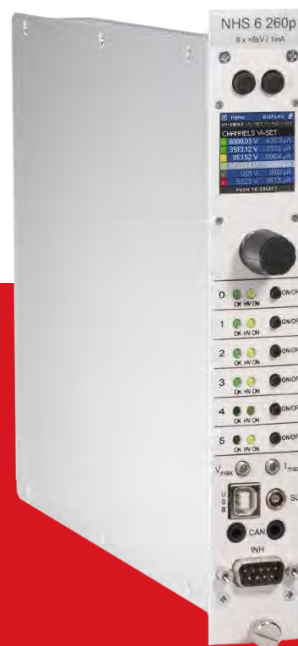


HTP-NHS

6 CHANNEL NIM HIGH VOLTAGE PSU



POSITIVE PROBLEM SOLVING **+ =**

The HTP-NHS is a 6 channel high voltage power supply in 1/12 NIM standard cassette. A full colour 1.44" TFT display enables the set up of each channel.

Along with individual voltage and current limits, the user can set V & I ramps from the front panel. LEDs for channel ready and HV ON clearly show the output status. The output voltage is highly stable. Both standard accuracy and high precision versions with lower ripple and noise are offered. The ripple is valid down to very low frequencies at 0.1Hz. All HTP-NHS modules are equipped with 24 bit ADC and 20 bit DAC circuits.

- + High Voltage Power Supplies in 1/12 NIM Standard Cassette
- + Voltage, Current and Ramps Adjustable from Front Panel
- + High Precision and Standard Versions Available
- + Extensive Programmable Trip Parameters
- + Low ripple and Noise
- + INHIBIT per Channel

HTP-NHS

6 CHANNEL NIM HIGH VOLTAGE PSU

FURTHER DETAILS

The sample rates and digital filter averages are adjustable enabling excellent setting and measurement resolution. The high precision units have a 2nd current measurement range. This enables loads taking a just a few picoamps to be measured and characterised.

Remote control is provided via USB or CAN. Up to 12 modules can be connected via CAN and controlled from a single USB interface via a converter. Comprehensive software is available and ideal for more complex systems where event based programmable trip parameters are useful.

Overload, short-circuit and arc protection is provided. A safety interlock circuit along with inputs for an external inhibit signal are also built in as standard. Recessed 10 position pots enable maximum V and I limits to be set for the whole module to help protect sensitive loads. The HV outputs are provided via SHV sockets and are located on the rear panel.

SELECTION TABLE

Part Number	Output Voltage	Output Current	Max Power (Each Channel)	Setting Resolution		Measurement Resolution*			Model Description
				V _{SET}	I _{SET}	V _{Meas}	I _{Meas} Range 1	I _{Meas} Range 2	
HTP-NHS 60 01x	0 - 100V	0 - 10mA	1W	1mV	100nA	1mV	100nA	-	Standard Precision
HTP-NHS 62 01x	0 - 100V	0 - 10mA	1W	½mV	30nA	½mV	8nA	50pA	High Precision
HTP-NHS 60 10x	0 - 1kV	0 - 8mA	9W	4mV	80nA	4mV	80nA	-	Standard Precision
HTP-NHS 62 10x	0 - 1kV	0 - 8mA	9W	2mV	20nA	2mV	5nA	50pA	High Precision
HTP-NHS 60 20x	0 - 2kV	0 - 4mA	8W	5mV	40nA	5mV	40nA	-	Standard Precision
HTP-NHS 62 20x	0 - 2kV	0 - 4mA	8W	5mV	10nA	5mV	4nA	50pA	High Precision
HTP-NHS 60 30x	0 - 3kV	0 - 3mA	9W	10mV	30nA	10mV	30nA	-	Standard Precision
HTP-NHS 62 30x	0 - 3kV	0 - 3mA	9W	10mV	5nA	10mV	3nA	50pA	High Precision
HTP-NHS 60 40x	0 - 4kV	0 - 2mA	8W	10mV	20nA	10mV	20nA	-	Standard Precision
HTP-NHS 62 40x	0 - 4kV	0 - 2mA	8W	10mV	4nA	10mV	2nA	50pA	High Precision
HTP-NHS 60 60x	0 - 6kV	0 - 1mA	6W	15mV	10nA	15mV	10nA	-	Standard Precision
HTP-NHS 62 60x	0 - 6kV	0 - 1mA	6W	12mV	2nA	12mV	1nA	50pA	High Precision

The 'x' in the part numbers is substituted with 'p' for all positive output, 'n' for all negative output polarity or 'm' for a mixture of 3 negative and 3 positive channels. Other combinations of channel polarities are available, contact ETPS with your requirement. * With standard sample rate of 50/s and digital filter set to 64.

TECHNICAL DATA

GENERAL	
Ripple & Noise [Standard Models]	<5mV _{p-p} (100V models); <10mV _{p-p} (1 to 4kV models); <30mV _{p-p} (6kV model)
Ripple & Noise [High Precision Models]	<3mV _{p-p} (100V models); <5mV _{p-p} (1 to 4kV models); <20mV _{p-p} (6kV model)
Voltage & Current Resolution	See selection table, the measurement resolution depends on the sampling rate and filter settings
Sample Rates	5, 10, 25, 50, 60, 100, 500 samples per sec
Digital Filter Averages	1, 16, 64, 256, 512, 1024
Validity of Resolution and Accuracy Values	1% * V _{MAX} < V _{OUT} ≤ V _{MAX} (for one year)
Accuracy of Voltage Measurement [Standard Model]	± [0.01% × V _{OUT} + 0.02% × V _{MAX}]
Accuracy of Voltage Measurement [High Precision]	± [0.01% × V _{OUT} + 0.01% × V _{MAX}]
Accuracy of Current Measurement [Standard Model]	± [0.01% × I _{OUT} + 0.02% × I _{MAX}]
Accuracy of Current Measurement [High Precision]	Range 1: I _{MAX} ≥ I _{OUT} > 20μA, ± [0.01% × I _{OUT} + 0.01% × I _{MAX}] Range 2: 20μA ≥ I _{OUT} > 0 ± [0.1% × I _{OUT} + 1nA]
Stability [No Load / Load and ΔV _{IN}]	< 1 × 10 ⁻⁴ × V _{MAX}
Temperature Coefficient	< ±50 × 10 ⁻⁶ /K
Hardware Limits	10 position potentiometer per module (reduces V _{MAX} /I _{MAX} for all channels)
Ramp Speed [V/s]	1 × 10 ⁻⁶ × V _{MAX} up to 0.2 * V _{MAX}
Protection	Overload, short-circuit and arc protection; only one short circuit or arc per second allowed
Safety Loop [Potential Free 2 Pin LEMO socket and REDEL SL]	Module ON: 5mA < I _{SLP} < 20mA or Module OFF: 5mA < I _{SLP} < 0.5mA
LED Signals [Each Channel]	Green = Ready; Yellow = HV ON (labelled for each channel)
INHIBIT [Single Channel]	External signal via Sub-D-9 connector (TTL Low)
Power Requirements V _{IN}	±24VDC (1.5A) and +5V (0.3A)
Output Polarity	Factory fixed to positive or negative
HV Output	SHV connectors on rear panel
Interfaces [Potential Free] and Protocols	USB with SCPI & CAN with EDCP (interfaces integrated on front panel)
Operating Temperature	0 to +40°C
Storage Temperature	-20 to +60°C
Mechanical Construction	6 channel in 1/12 NIM standard cassette

19" NIM CRATES

	N-C-2010	N-C-2020	N-C-2030	N-C-2030 A	N-C-2040	N-C-2040 B
Power Total	Max. 90W	Max. 200W	Max. 300W	Max. 300W	Max. 400W	Max. 400W
NIM slots	6	12	12	12	12	12
at ±6V	Each 2A	Each 5A	Each 10A	Each 1.5A	Each 10A	Each 1.5A
at ±12V	Each 1A	Each 2A	Each 2A	Each 2A	Each 2A	--
at ±24V	Each 0.5A	Each 1A	Each 2A	Each 6A	Each 4A	Each 10A

Individual output channels of the HTP-NHS share a common ground. This is connected to the internal crate ground. Common floating and single channel floating grounds are offered by other multichannel modules such as the HTP-EHS series.

Every effort is made to ensure that the information provided within this technical summary is accurate. However, ETPS Ltd must reserve the right to make changes to the published specifications without prior notice. Where certain operating parameters are critical for your application we advise that they be confirmed at the time of order. ETPS Ltd specialises in modifying its proven platforms to suit your needs. Please contact our office if your requirement is non-standard. Please note that your actual unit may differ from those shown.



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