

NIM

SYSTEMS

# NHR

## REVERSIBLE HIGH PRECISION HV MODULE IN NIM STANDARD

- ▶ 4 channels, 2 / 6 kV versions
- ▶ Electronically switchable polarity
- ▶ 6 kV channel with switchable HV-modes:  
up to 2 kv / 4 mA, 4 kV / 3 mA or  
6 kV / 2 mA
- ▶ Ultra low ripple and noise
- ▶ Front panel control with 1.44" TFT display
- ▶ Hardware voltage and current limits, control & measure per channel
- ▶ USB and CAN interface, programmable parameters



### SPECIFICATIONS

	NHR STANDARD	NHR HIGH PRECISION
Polarity	electronically switchable	electronically switchable
Ripple and noise	< 10 mV	< 2-3 mV
Temperature coefficient	50 ppm / K	30 ppm/K   opt. 10 ppm/K (TC)
Resolution voltage setting	$2 \cdot 10^{-6} \cdot V_{nom}$	$2 \cdot 10^{-6} \cdot V_{nom}$
Resolution current setting	$2 \cdot 10^{-6} \cdot V_{nom}$	$2 \cdot 10^{-6} \cdot I_{nom}$
Resolution voltage measurement	$2 \cdot 10^{-6} \cdot V_{nom}$	$1 \cdot 10^{-6} \cdot V_{nom}$
Resolution current measurement - full range	$2 \cdot 10^{-6} \cdot I_{nom}$	$1 \cdot 10^{-6} \cdot I_{nom}$
Resolution current measurement - 2nd range	n/a	50 pA [ $I_{out} < 20\mu A$ ]
Accuracy voltage measurement *	$\pm (0.01 \% \cdot V_{out} + 0.02 \% \cdot V_{nom})$	$\pm (0.01 \% \cdot V_{out} + 0.01 \% \cdot V_{nom})$
Accuracy current measurement * - full range	$\pm (0.01 \% \cdot I_{out} + 0.02 \% \cdot I_{nom})$	$\pm (0.01 \% \cdot I_{out} + 0.01 \% \cdot I_{nom})$
Accuracy current measurement * - 2nd range	n/a	$\pm (0.01 \% \cdot I_{out} + 4 nA)$
Voltage ramp up / down	$1 \cdot 10^{-6} \cdot V_{nom}/s$ up to $0.2 \cdot V_{nom}/s$ opt. up to $0.75 \cdot V_{nom}/s$	$1 \cdot 10^{-6} \cdot V_{nom}/s$ up to $0.2 \cdot V_{nom}/s$ opt. up to $0.75 \cdot V_{nom}/s$
Protection	INHIBIT, Safety loop, short circuit, overload, hardware V/I limits	INHIBIT, Safety loop, short circuit, overload, hardware V/I limits
HV connector	SHV	SHV
Case	1/12 NIM cassette	1/12 NIM cassette

\* All specifications guaranteed from  $1\% \cdot V_{nom} < V_{out} < V_{nom}$

### CONFIGURATIONS

MODEL	CHANNELS	PRECISION	OUTPUT VOLTAGE	OUTPUT CURRENT	OUTPUT MODES
NHR 20 20	2	Standard	2000 V	6 mA	2 kV / 6 mA
NHR 20 60	2	Standard	6000 V	4 mA	6 kV / 2 mA   4 kV / 3 mA   2 kV / 4 mA
NHR 40 20	4	Standard	2000 V	6 mA	2 kV / 6 mA
NHR 40 60	4	Standard	6000 V	4 mA	6 kV / 2 mA   4 kV / 3 mA   2 kV / 4 mA
NHR 22 20	2	High	2000 V	6 mA	2 kV / 6 mA
NHR 22 60	2	High	6000 V	4 mA	6 kV / 2 mA   4 kV / 3 mA   2 kV / 4 mA
NHR 42 20	4	High	2000 V	6 mA	2 kV / 6 mA
NHR 42 60	4	High	6000 V	4 mA	6 kV / 2 mA   4 kV / 3 mA   2 kV / 4 mA

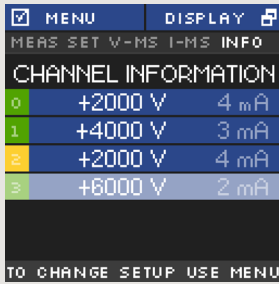
Other configurations on request!

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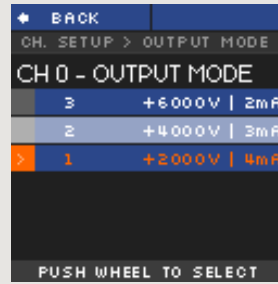
## REVERSIBLE HIGH PRECISION HV MODULE IN NIM STANDARD



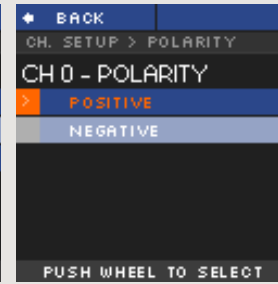
See channel settings at runtime



Setup each channel individually



Select preferred output mode



Select preferred polarity

The iseg NHR modules are multi-channel high voltage power supplies in 1/12 NIM standard cassette format. The iseg technology combines ultra precise high voltage generation and measurement in pico amp range.

The NHR series provides up to 4 channels, each with an independent voltage and current control and electronically reversible polarity. The 6 kV channel provides a maximum of versatility: with three electronically switchable HV-generation modes it can supply 4 mA up to voltages of 2 kV, 3 mA up to 4 kV or 2 mA up to 6 kV. Alternatively the NHR can be equipped with cost efficient 2 kV / 6 mA channels with one HV output mode.

Several NHR modules can be daisy-chained by CAN and controlled with a single USB connection or by optional iseg iCS system via Ethernet. The module is made of best components such as 24 bit ADC and 20 bit DAC, an excellent front panel control with TFT display plus comprehensive security features.



### OPTIONS & ORDER INFO

OPTION	ORDER INFO
Voltage correction by temperature	VCT
Lower temperature coefficient	TC
Lower current (100 µA, high precision version only)	L
Single channel INHIBIT - down	ID
Single channel INHIBIT - up	IU