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HV and LV Power Supply

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Low Voltage Supply

- Previous LV supply has been designed to work in hostile area, where high dose radiation and strong magnetic field.
- Other Option

A1517B

6 Channel Floating 7 V, 4 A Board



- 6 floating channels
- 0-7 V output voltage
- 4 A current full scale
- 10 mV Voltage Set/Monitor resolution
- 10 mA Current Set/Monitor resolution
- Programmable TRIP parameter
- Voltage ripple smaller than 5 mV pp
- Current generator operation in Overcurrent condition

VMAX hardware	0-7 V common for all the board channels
VMAX hardware accuracy	± 2% of FSR
VMAX software	0-7 V settable for each channel
VMAX software resolution	0.1 V
Ramp Up/Down	1-14 Volt/sec, 1 Volt/sec step
Voltage Ripple	< 5 mV pp
Vmon vs. Vout accuracy	typical: ± 0.3% ± 30 mV max: ± 0.3% ± 50 mV
Vset Vs. Vout accuracy	typical: ± 0.3% ± 30 mV max: ± 0.3% ± 50 mV
Imon vs. Iout accuracy	typical: ± 2% ± 10 mA max: ± 2% ± 20 mA
Iset vs. Iout accuracy	typical: ± 2% ± 10 mA max: ± 2% ± 20 mA
Power consumption	275 W

Crate for LV Supply

- To control LV for each channel

- Available for 6 slots and 16 slots

- This crate is possible to use for HV supply together if we do not prefer NIM HV supply.

SY5527

Universal Multichannel Power Supply System



+ Image

- Available in a fully equipped option: [SY5527 Premium Version](#)
- Communications via Gigabit Ethernet
- Communications via Wi-Fi (optional)
- OPC Server to ease integration in DCS
- Fast, accurate setting and monitoring of channel parameters
- 5.7" colour touchscreen LCD (optional)
- Live insertion of boards
- Advanced Trip handling
- Hardware current protection
- Modular and expandable power supply
- Secure access to the system via Intranet
- Application software for remote control
- Graphical web interface
- Easy firmware upgrading

HV for same crate

- 24 Channel or 12 Channel

A1550

24 Channel 5 kV/1 mA Common Floating Return Board



- Channels with common floating return
- Available with either positive or negative polarity
- 0 + 5 kV output voltage
- 1 mA current full scale, with 100 nA resolution
- 500 mV Voltage Set/Monitor resolution
- Voltage ripple smaller than <math><25\text{ mVpp}</math> (typical)
- Programmable TRIP parameter
- Current generator operation in Overcurrent condition
- Radial 52 pin connector



- Previous NIM HV : Voltage ripple <math>< 5\text{ mVpp}</math> (Typ), max $10\text{ mVpp}</math>$
- Our current HV supply: $3.0\text{ mV rms @ }5\text{ kV}</math> ; $\sim 8.4\text{ mVpp}</math>$$

More about the HV

- **Details**

Polarity	Positive / Negative depending on purchased version
Output Voltage	0+5 kV
Max. Output Current	1 mA
Voltage Set/Monitor Resolution	500 mV
Current Set/Monitor Resolution	100 nA
VMAX hardware	0+5 kV common for all the board channels
VMAX hardware accuracy	$\pm 2.5\%$ of FSR
VMAX software	0+5 kV settable for each channel
VMAX software resolution	1 V
Ramp Up/Down	1+500 Volt/sec, 1 Volt/sec step
Voltage Ripple	< 25 mV typical; max 40mV
Voltage Monitor vs. Output Voltage Accuracy	typical: $\pm 0.3\% \pm 0.5$ V max: $\pm 0.3\% \pm 2$ V
Voltage Set vs. Voltage Monitor Accuracy	typical: $\pm 0.3\% \pm 0.5$ V max: $\pm 0.3\% \pm 2$ V

Another Option instead of CAEN

- WIENER products : MPOD
- It is available mixed LV and HV
- 10 slots or 4 slots



LV Module from WIENER

- **8 Channels**

8 channel low voltage module with floating outputs with individual return lines and sense lines

- Polarity configurable, outputs are insulated from each other and the chassis mainframe earth with 125V DC working voltage (Test voltage = 500VDC)
- 0.2% / 10K output voltage stability
- Voltage set / monitor: 15 bit resolution, +/-0.1% of full scale or better accuracy, measurement of both sense and terminal voltage
- Current limit set / monitor: 15 bit resolution, +/-0.05% of full scale or better accuracy
- Ramp-up / down programmable from 1 V/s to 500 V/s in 1 V/s steps.
- Output Voltage Ripple: < 10mV_{pp}; 1mV_{RMS} with 350MHz Bandwidth

< 5mV_{pp}; 0.5mV_{RMS} with 100MHz Bandwidth

< 3mV_{pp}; 0.5mV_{RMS} with 20MHz Bandwidth

- Low conducted disturbance current
- Static Regulation: < 10mV
- Dynamic Regulation: <100mV with I = +/- 25% change and 70A/s recovery time < 5mS
- Dimensions: 6U x 40.64mm x 220mm
- Front Panel Indicators: tri-color LED's with on / off / failure for every channel
- Interlock Loop – optional
- Safety Loop – in connector PIN 18 and 37



Type	Channels	Voltage	I Max	Peak Power	V-Res	I-Res	Ripple
MPV 8008LD	8	0 - 8V	5A	40W / ch.	0.5mV	0.25mA	<10mVpp
MPV 8008LI	8	0 - 8V	5A	40W / ch.	0.5mV	0.25mA	<10mVpp

HV Module from WIENER

- 8, 16, 32 Channels : SHV or REDEL (<4kV) multi pin



Type	Channels	V max	I max	V res	I res	Ripple
EHS Series, 8/16 channels with common ground						
EHS 8060x_105	8	6kV	1mA	12mV	2nA	<30mV
EHS 8040x_205	8	4kV	2mA	10mV	4nA	<10mV
EHS F040x_205	16	4kV	2mA	10mV	4nA	<10mV
EHS High Precision Series, 8/16 channels (floating channels or common floating ground)						
EHS 8260x_105 (F)	8	6kV	1mA	12mV	1nA/50pA	<20mV
EHS 8240x_205 (F)	8	4kV	2mA	10mV	2nA/50pA	<5mV
EHS F240x_205 (F)	16	4kV	2mA	10mV	2nA/50pA	<5mV
EDS 20 025x_504	32	4kV	1mA	20mV	10nA	<10mV