

A7038

32/48 Channel 1 kV/100 μ A Common Floating Return Boards



Features

- 32 / 48 independently controllable High Voltage channels
- Output voltage: 0 ÷ 1000 V
- Maximum output current: 0.1 mA
- Available with Negative / Positive Polarity
- SHV / DB37 connectors
- **Floating Type:** Common Floating Return
- Low ripple
- Under/over-voltage alert, overcurrent and max. voltage protection
- Interlock logic for unit enable
- Software Tools for easy channel management

Description

The power supplies of the A7038 Family house 32 / 48 independent high voltage channels.

The channels share a Common Floating Return, which is insulated from the chassis/crate ground. This feature may help to minimize problems of ground-loops. The board is available with positive or negative output polarity Channels are delivered with **SHV / DB37** connectors. Consult our **connectors reference page** for technical information.

The output voltage range is **0 ÷ 1000 V**, with **2 mV** monitor resolution. The maximum output current is **0.1 mA**, with **500 pA** monitor resolution.

Independently programmable for each channel:

Output voltage:	0 ÷ 1000 V	Step: 20 V
Current limit (Iset):	0 ÷ 0.1 mA	Step: 2 nA
V Ramp up/down:	1 ÷ 500 V/s	Step: 1 V/sec
TRIP parameter:	0 ÷ 999.9 s; 1000 s = Infinite	Step: 0.1 s

Safety features include:

- **Channels:** can be enabled or disabled through the Global Interlock logic.
- **Overvoltage and Undervoltage warning:** when the output voltage differs from the programmed value.
- **Overcurrent detection:** when a channel attempts to exceed the programmed current limit (Iset), it signals an "overcurrent" condition and enters TRIP status: the channel is switched off after a programmable TRIP time. The output current is permitted to exceed the Iset value; the channel behaves like a current generator only when the IMAX current value is reached.
- **Hardware VMAX and IMAX:** maximum output voltage and maximum current value can be fixed, via front panel potentiometer, at the same common value for all the board channels. IMAX and VMAX values can be read out via software.
- **Safety Board Interlock:** this protection disables the HV generation when the HV outputs are not connected to their loads (only for Multipin Connector versions).

CAEN provides a complete software range to control, monitor and configure its Power Supply products.

- **GECO2020 GEneral Control Software**
- **CAEN HV Wrapper Library,**
- **HiVoCS web tool**
- **OPC Server for CAEN Power Supplies**
- **EPICS Service**

These tools, which support the most used operating systems, ranging from low level libraries (**CAEN HV Wrapper Library**), to be used as a source for customer designed software, to the WEB interface (**HIVOCS**) available on each mainframe, up to the all-inclusive Control Software (**GECO2020**) with user friendly graphical interfaces, to meet any application needs.

Advanced control via OPC Server (**CAEN OPC Server**) and EPICS (**EPICS IOC**) is supported, to easily include CAEN power supplies within existing setups featuring such standards.

- **All tools are available for free download.**

Universal Multichannel Power Supply Systems (Mainframes)

Universal Multichannel Power Supply Systems, or Mainframes, are modular systems designed to house and control High Voltage (HV) and Low Voltage (LV) boards, providing power for particle detectors and their associated electronics in standard 19" racks. CAEN offers four mainframe versions:

- **SY4527:** A large experimental system. This 19" wide / 8U high mainframe can house **up to 16 HV/LV boards**. It offers a power output from 600W up to a maximum of **4200W**, depending on installed Power Supply Units and display type. Local control is optionally available via a 10.4" or 5.7" LCD Touchscreen.

- **SY5527:** A more compact laboratory version. This 19" wide / 4U high mainframe can house **up to 6 HV/LV boards**. Its power output ranges from 600W up to a maximum of **1800W**, depending on Power Supply Units. Optional local control is available via a 5.7" LCD Touchscreen.
- **SY4527LC:** A cost-effective alternative with a shorter depth (~20cm compared to standard SYx527). This 19" wide / 8U high mainframe houses **up to 10 boards** and includes a **600W power supply**. It does not include an LCD display. It is fully compatible with SY4527 and SY5527 boards.
- **SY5527LC:** Also a cost-effective, shorter depth alternative (~20cm compared to standard SYx527). This 19" wide / 4U high mainframe houses **up to 4 boards** and includes a **400W power supply**. It does not include an LCD display. It is fully compatible with SY4527 and SY5527 boards.

All systems offer modular design for simplified upgrades and maintenance and can be controlled remotely via Ethernet.

Technical Specifications

No. of Channels

32 / 48 (Common Floating Return)

Output Voltage

0÷1 kV

Polarity

Positive / Negative depending on purchased version

Max. Output Current

100 μ A

Voltage Set Resolution

20 mV

Voltage Monitor Resolution

2 mV

Current Set Resolution

2 nA

Current Monitor Resolution

500 pA

VMAX hardware

0÷1 kV common for all the board channels

VMAX hardware accuracy

\pm 1% of FSR

VMAX software

0÷1 kV settable for each channel

VMAX software resolution

1 V

IMAX hardware

0÷100 μ A common for all the board channels

IMAX hardware accuracy

\pm 1% of FSR

Ramp Up/Down

1÷500 Volt/sec, 1 Volt/sec step settable for each channel

Voltage Ripple

10 - 1000Hz: <10 mVpp typical, 15mVpp max;
1 - 20000kHz: <3 mVpp typical, 5mVpp max

Voltage Monitor vs. Output Voltage Accuracy

typical: $\pm 0.3\% \pm 50 \text{ mV}$; max: $\pm 0.3\% \pm 200 \text{ mV}$

Voltage Set vs. Voltage Monitor Accuracy

typical: $\pm 0.3\% \pm 50 \text{ mV}$; max: $\pm 0.3\% \pm 200 \text{ mV}$

Current Monitor vs. Output Current Accuracy

typical: $\pm 1\% \pm 10 \text{ nA}$; max: $\pm 1\% \pm 100 \text{ nA}$

Output Current vs. Current Set Accuracy

typical: $\pm 2\% \pm 100 \text{ nA}$; max: $\pm 2\% \pm 1 \mu\text{A}$

Power consumption

48 channels 73 W @ full power
32 channels: 60 W @ full power

Ordering Options

Code	Description	
WA7038ANXAA4	A7038AN - SYx527 H.V. channels -1 KV 100uA - DB37 Conn. common floating (48 ch)	RoHS
WA7038APXAA4	A7038AP - SYx527 H.V. channels +1 KV 100uA - DB37 Conn. common floating (48 ch)	RoHS
WA7038STNXA3	A7038STN - SYx527 H.V. channels -1 KV 100uA - SHV Conn. common floating (32 ch)	RoHS
WA7038STPXA3	A7038STP - SYx527 H.V. channels +1 KV 100uA - SHV Conn. common floating (32 ch)	RoHS

Accessories

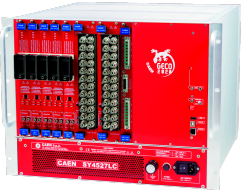
HV CABLES



High Voltage Cable Assemblies

Related Products

SY4527LC



Universal Multichannel Power Supply System Low Cost / 19"wide, 8U-high (10 slot)

SY4527



Universal Multichannel Power Supply System / 19"wide, 8U-high (16 slot)

SY5527



Universal Multichannel Power Supply System / 19"wide, 4U-high (6 slot)

SY5527LC



Universal Multichannel Power Supply System Low Cost / 19"wide, 4U-high (4 slot)

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CAEN S.p.A.

Via Vetraia 11
55049 - Viareggio
Italy

Phone +39.0584.388.398

Fax +39.0584.388.959

info@caen.it

www.caen.it

CAEN GmbH

Brunnenweg 9
64331 Weiterstadt, Germany

Phone +49 (0)212.254.4077

Mobile +49 (0)151.16.548.484

info@caen-de.com

www.caen-de.com

CAEN Technologies, Inc.

1 Edgewater Street - Suite 101
Staten Island, NY 10305
USA

Phone +1.718.981.0401

Fax +1.718.556.9185

info@caentechnologies.com

www.caentechnologies.com

CAENspa India Private Limited

B205, BLDG42, B Wing,
Azad Nagar Sangam CHS,
Mhada Layout, Azad Nagar, Andheri West
Mumbai, Maharashtra 400053, India

info@caen-india.in

www.caen-india.in

