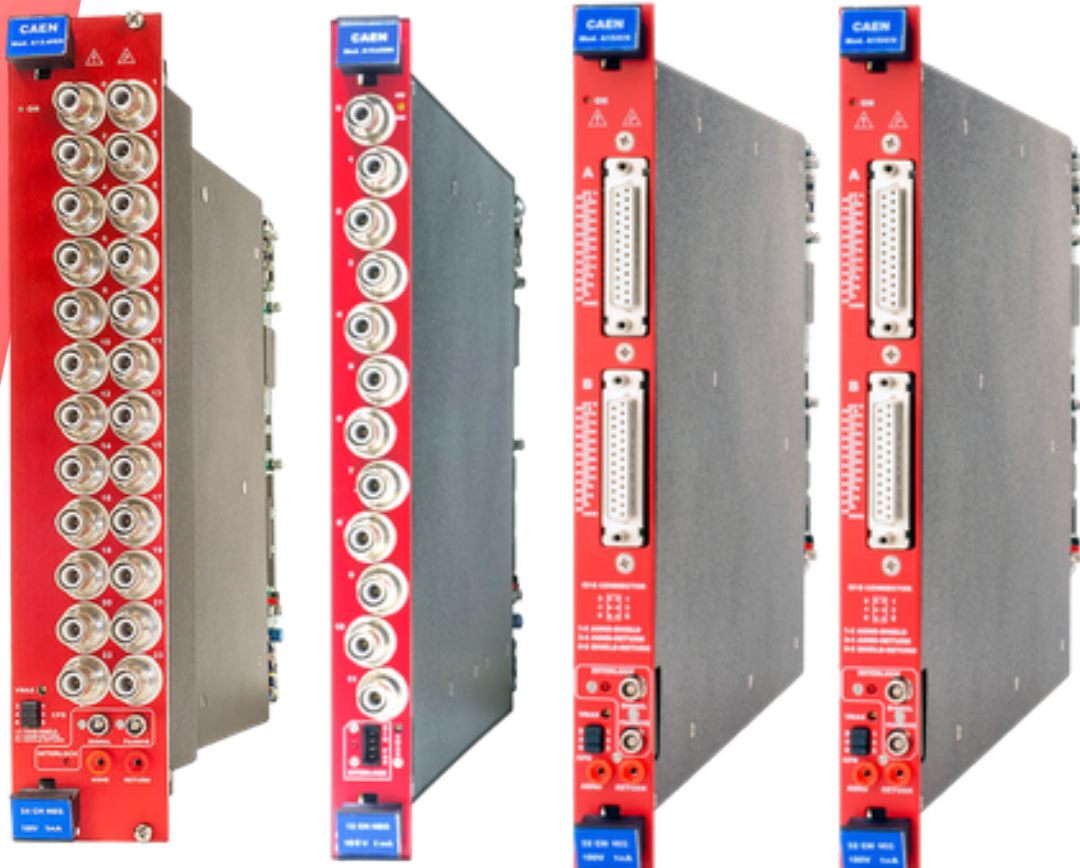
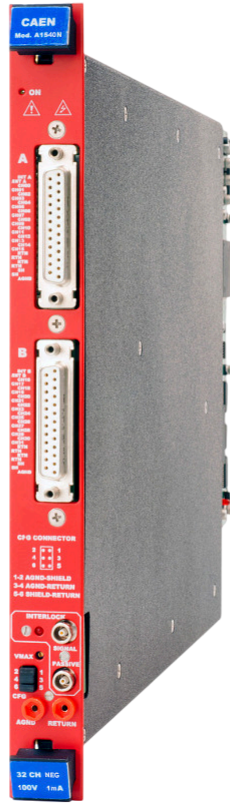


A1540H

12/24/32 Channel 100 V, 1 mA/100 μ A Common Floating Return Dual Range Boards



Features



- 12 / 24 / 32 independently controllable High Voltage channels
- Maximum output voltage: 100 V
- Dual range current:
 - High Power: 1 mA (1 nA monitor resolution)
 - High resolution: 0.1 mA (0.1 nA monitor resolution)
- Available with Negative / Positive / Mixed Polarity
- SHV / DB25 connectors
- **Floating Type:** Common Floating Return
- Low ripple
- Under/over-voltage alert, overcurrent and max. voltage protection
- Interlock logic for unit enable
- Software Tool for easy channel management

Description

The power supplies of the A1540H Family house 12 / 24 / 32 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, negative or mixed output polarity. Channels are delivered with SHV / DB25 connectors. Consult our **connectors reference page** for technical information.

The output voltage range is **0 ÷ 100 V**, with **1 mV** monitor resolution. The output channels offer **dual current ranges** (software selectable):

High Power: 0 ÷ 1 mA	High Resolution: 0 ÷ 0.1 mA
I set resolution: 20 nA	I set resolution: 20 nA
I mon resolution: 1 nA	I mon resolution: 0.1 nA

Independently programmable for each channel:

Output voltage:	0 ÷ 100 V	Step: 10 mV
Current limit (Iset):	0 ÷ 1 / 0.1 mA selectable	Step: 20 nA
V Ramp up/down:	1 ÷ 50 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, it signalled to be in "overcurrent" and enter in a TRIP status. The output voltage is varied to keep the current below the programmed limit for a programmable TRIP time, then the channel is switched off. If TRIP is set to "constant current mode", the channel behaves like a current generator.
- **Hardware VMAX** Maximum output voltage can be set, via front panel potentiometer, at the same common value for all the board channels. VMAX value can be read out via software.
- **Safety Board Interlock** This protection allows to disable the primary HV generation when the HV outputs are not connected to their loads.

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

12 / 24 / 32 (Common Floating Return)

Output Voltage

0÷100 V

Polarity

Positive / Negative / Mixed depending on purchased version

Max. Output Current

- High Power: 1 mA
- High Resolution: 100 μ A

Voltage Set Resolution

10 mV

Voltage Monitor Resolution

1 mV

Current Set Resolution

20 nA

Current Monitor Resolution

- High Power: 1 nA
- High Resolution: 100 pA

VMAX hardware

0÷100 V common for all the board channels

VMAX hardware accuracy

1 V

VMAX software

0÷100 V settable for each channel

VMAX software resolution

1 V

Ramp Up/Down

1÷50 Volt/sec, 1 Volt/sec step

Voltage Ripple

- < 3 mVpp (Typical)
- < 5 mVpp (Max)

Vmon vs. Vout accuracy

$\pm 0.02\% \pm 50 \text{ mV}$

Vset Vs. Vout accuracy

$\pm 0.02\% \pm 50 \text{ mV}$

Imon vs. Iout accuracy

- High Power: $\pm 2\% \pm 1 \mu\text{A}$
- High Resolution: $\pm 2\% \pm 0.1 \mu\text{A}$

Iset vs. Iout accuracy

- High Power: $\pm 2\% \pm 1 \mu\text{A}$
- High Resolution: $\pm 2\% \pm 0.1 \mu\text{A}$

Ordering Options

Code	Description	
WA1540HDXAAA	A1540HDN - SYx527 H.V.channels -100V 1mA/100µA - SHV Conn. common floating (12 ch) 100pA res.	RoHS
WA1540HDXMAA	A1540HDM - SYx527 H.V.ch +100V 1mA/100µA (6ch) - 100V 1mA/100µA (6CH) - SHV C. Float. 100pA res.	RoHS
WA1540HDXPAA	A1540HDP- SYx527 H.V.channels +100V 1mA/100µA - SHV Conn. common floating (12 ch) 100pA res.	RoHS
WA1540HLXAAA	A1540HLN - SYx527 H.V.channels -100V 1mA/100µA - Multipin Conn. common floating (24 ch) 100pA res.	RoHS
WA1540HLXMAA	A1540HLM - SYx527 H.V. channel (12ch +100V 1 mA/100uA, 12ch -100V 1mA/100uA)- db25 Comm. floating	RoHS
WA1540HLXPAA	A1540HLP - SYx527 H.V.channels +100V 1mA/100µA - Multipin Conn. common floating (24 ch) 100pA res.	RoHS
WA1540HSXAAA	A1540HSN - SYx527 H.V.channels -100V 1mA/100µA - SHV Conn. common floating (24 ch) 100pA res.	RoHS
WA1540HSXMAA	A1540HSM - SYx527 H.V.chs +100V 1mA/100µA (12ch) -100V 1mA/100µA (12CH) - SHV C. Float. 100pA res.	RoHS
WA1540HSXPAA	A1540HSP - SYx527 H.V.channels +100V 1mA/100µA - SHV Conn. common floating (24 ch) 100pA res.	RoHS
WA1540HXAAAA	A1540HN - SYx527 H.V.channels -100V 1mA/100µA - Multipin Conn. common floating (32 ch) 100pA res.	RoHS
WA1540HXPAAA	A1540HP - SYx527 H.V.channels +100V 1mA/100µA - Multipin Conn. common floating (32 ch) 100pA res.	RoHS

Accessories

HV CABLES



High Voltage Cable Assemblies

Related Products

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



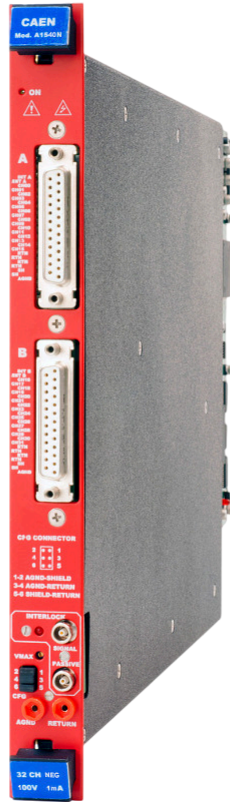
Universal Multichannel Power Supply System Low Cost / 19"wide, 4U-high (4 slot)

SY4527LC

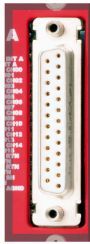


Universal Multichannel Power Supply System Low Cost / 19"wide, 8U-high (10 slot)

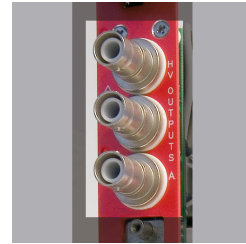
Gallery



Single width (5 TE wide), 24/32 channels: A1540HLN, A1540HLP, A1540HN, A1540HP



DB25 connector. (Factory Name: Amphenol DBPV25S365GTLF)



SHV connector. (Factory Name: Radiall R317580)

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