AG523

6 Channel 12 kV/1 mA Common Ground Board

Features

- 6 independently controllable High Voltage channels
- Output Voltage: 12000 V
- Output current: 1 mA
- Available with Negative / Positive Polarity
- CPE HV connectors
- Floating Type: Common Ground
- Low ripple
- Under/over-voltage alert, overcurrent and max. voltage protection
- Interlock logic for unit enable
- Software Tool for easy channel management

Description

The CAEN Mod AG523 is a single width board (5 TE wide) that houses 6 independent high voltage channels.

The channels share a Common Ground, with all output returns hardwired to the chassis/crate ground. The board is available with positive or negative output polarity Channels are delivered with **CPE HV** connectors. Consult our **connectors reference page** for technical information.

The output voltage range is **0 ÷ 12000 V**, with **1000 mV** monitor resolution. The maximum output current is **1 mA**, with **100 nA** monitor resolution.

Independently programmable for each channel:

Output voltage:	0 ÷ 12000 V	Step: 1000 V
Current limit (Iset):	0 ÷ 1 mA	Step: 100 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, 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.

To create cables compatible with the CPE HV connectors on this board, CAEN provides the mate cable connector (Model A997).

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, spread 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 need.

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 CAEN Control Software 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	6 (Common Ground)
Output Voltage	0÷12 kV
Polarity	Positive / Negative depending on purchased version
Max. Output Current	1 mA
Voltage Set Resolution	1 V
Voltage Monitor Resolution	1 V
Current Set Resolution	100 nA
Current Monitor Resolution	100 nA
VMAX hardware	0÷12 kV common for all the board channels
VMAX hardware accuracy	± 2% of FSR
VMAX software	0÷12 kV settable for each channel
VMAX software resolution	1 V
Ramp Up/Down	1÷500 Volt/sec, 1 Volt/sec step
Voltage Ripple	< 30 mVpp
Voltage Monitor vs. Output Voltage Accuracy	± 0.3% ± 2 V

Voltage Set vs. Voltage Monitor Accuracy
± 0.3% ± 1 V

Current Monitor vs. Output Current Accuracy
± 2% ± 1 µA

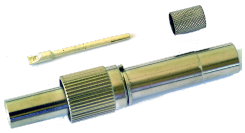
Current Set vs. Current Monitor Accuracy
± 2% ± 0.1 µA

Ordering Options

Code	Description	
WAG523XAAAAA	AG523N - SYx527 H.V. channels -12 KV 1 mA - CPE Conn. common ground (6 ch 10TE wide)	RoHS
WAG523XPAAAA	AG523P - SYx527 H.V. channels +12 KV 1 mA - CPE Conn. common ground (6 ch 10TE wide)	RoHS

Accessories

A997



HV coaxial cable connector for A1526

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

CPE HV connector (Factory Name: CPE 23.100.151.046)

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