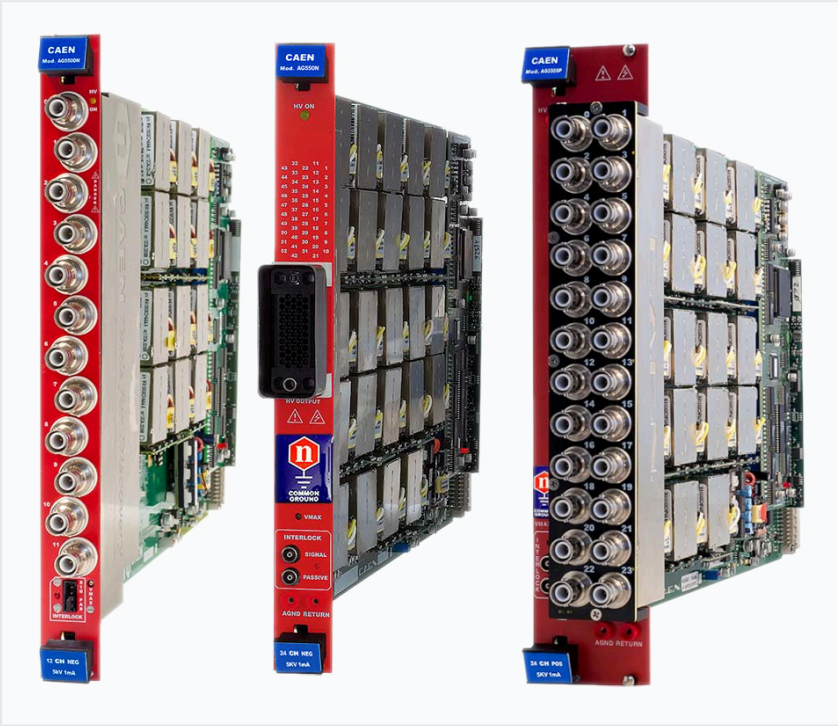
AG550

12/24 Channel 5 kV/1 mA Common Ground Boards

OBSOLETE



AG550 is a common-ground high-voltage board with 12 or 24 independently controllable channels, available in single-width 12-channel SHV, single-width 24-channel Radiall multipin, and double-width 24-channel versions, with positive or negative polarity. Each channel provides 0 ÷ 5 kV and up to 1 mA, with 500 mV voltage and 100 nA current set and monitor resolution. Independent ramp rates range from 1 ÷ 500 V/s. Voltage and current protections, programmable trip or constant-current operation, interlock logic, and a common hardware VMAX limit support safe operation.

Overview

Product Highlights

- 12/24 independently controllable High Voltage channels
- Available with either positive or negative polarity
- Low ripple
- Interlock logic for unit enable
- 5 kV / 1 mA output range
- Radiall 52 pin or SHV coaxial connectors
- Under/over-voltage alert, overcurrent and max. voltage protection
- Software Tool for easy channel management

Product Description

The CAEN Mod.AG550 houses 12 or 24 high voltage channels and is available in different versions equipped with SHV or with Radiall Multipin connector.

Radiall multipin connector	**SHV connector**
Single width (5 TE wide), 24 channel for Mod. AG550	Single width (5 TE wide), 12 channels for Mod. AG550DP, AG550DN Double width (10 TE wide), 24 channels AG550S

Consult our connectors reference page for technical information.

The channels share a common ground and the output voltage range is 0 ÷ 5 kV, with 500 mV set and monitor resolution. The maximum output current is 1 mA, with 100 nA current set and monitor resolution. The board is available with either positive or negative output polarity. The boards are provided with both current and voltage protections. If overcurrent occurs, the relevant channel can be programmed either to turn off after a programmable trip time or to keep on providing the maximum allowed current: this particular feature allows the modules to work as current generator. The maximum output voltage can be set through a potentiometer to a value which is common to all channels and can be read out via software. Channel can be enabled or disabled through the Interlock logic. The HV RAMP-UP and RAMP-DOWN rates may be selected independently for each channel in the **1 ÷ 500 V/s range** (1 V/s step).

Safety features allows the module to perform as a current generator and includes:

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 disables the HV generation when the HV outputs are not connected to their loads (only for Multipin Connector versions).

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Overview (continued)

For boards with Radiall 52 pin connector are available the following accessories:

- Mate cable connector (Mod. A996) and relevant insertion/extraction tool (Mod. A995)
- 24 Channel Multipin Radiall to SHV Adapter (Mod. A647 – R647)

Technical Specifications

No. of Channels	12 / 24 (Common Ground)
Polarity	Positive / Negative
Output Voltage	0÷5 kV
Max. Output Current	1 mA
Voltage Set Resolution	500 mV
Voltage Monitor Resolution	0.5V
Current Set Resolution	100 nA
Current Monitor Resolution	100 nA
VMAX hardware	0÷5 kV common for all the board channels
VMAX hardware accuracy	± 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: ± 0.3% ± 0.5 V max: ± 0.3% ± 2 V
Voltage Set vs. Voltage Monitor Accuracy	• typical: ± 0.3% ± 0.5 V • max: ± 0.3% ± 2 V
Current Monitor vs. Output Current Accuracy	• typical: ± 2% ± 500 nA • max: ± 2% ± 1 µA
Current Set vs. Current Monitor Accuracy	• typical: ± 2% ± 500 nA • max: ± 2% ± 1 µA
Maximum output power	5 W per channel (software limit)
Power consumption	200 W @ full power (24 channels)

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Ordering Information

ORDERING CODE	DESCRIPTION	STATUS
WAG550DXAAAA	AG550DN – SYx527 H.V. channels -5 KV 1 mA – SHV Conn. common ground (12 ch)	Obsolete
WAG550DXPAAA	AG550DP – SYx527 H.V. channels +5 KV 1 mA – SHV Conn. common ground (12 ch)	Obsolete
WAG550SXAAAA	AG550SN – SYx527 H.V. channels -5 KV 1 mA – SHV Conn. common ground (24 ch 10TE wide)	Obsolete
WAG550SXPAAA	AG550SP – SYx527 H.V. channels +5 KV 1 mA – SHV Conn. common ground (24 ch 10TE wide)	Obsolete
WAG550XAAAAA	AG550N – SYx527 H.V. channels -5 KV 1 mA – Multipin Conn. common gound (24 ch)	Obsolete
WAG550XPAAAA	AG550P – SYx527 H.V. channels +5 KV 1 mA – Multipin Conn. common ground (24 ch)	Obsolete

1. Ordering codes and descriptions are reproduced from the product record. Availability is confirmed at order entry.

Accessories

A647 — 24 Channel Multipin Radiall to SHV connector Adapter (Max: 8 kV - Desktop)

A995 — Insertion/extraction tool for A996

A996 — 52 pin cable connector

HV CABLES — High Voltage Cable Assemblies

R647 — 24 Channel Multipin Radiall to SHV connector Adapter (Max: 8 kV - 19" Rack)

R649B — 32 Channel Multipin Radiall to SHV connector Adapter (Max: 8 kV - 19' Rack)

Related Products

SY4527 — Universal Multichannel Power Supply System / 19”wide, 8U-high (16 slot)

SY4527LC — Universal Multichannel Power Supply System Low Cost / 19”wide, 8U-high (10 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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