A1625B

8 Channel 1kV/25 - 2.5 mA Individual Floating Channel Dual Range Board

8	1000 V	25 / 2.5 mA selectable
No. of Channels	Max Output V	Max Output I

CAEN Mod A1625B is a 5 TE single-width board providing 8 independently controllable, individually floating high-voltage channels. Each channel delivers 0 ÷ 1000 V with 20 mV monitor resolution and offers software-selectable dual current ranges: 0 ÷ 25 mA with 100 nA monitor resolution or 0 ÷ 2.5 mA with 10 nA monitor resolution. Channels are independently programmable and available in positive, negative or mixed polarity, with DB37 connectors, 1 ÷ 100 V/s ramping, low ripple, interlock logic, over/undervoltage warnings, overcurrent detection and maximum-voltage protection.

CAEN
Tools for Discovery

Overview

Product Highlights

- 8 independently controllable High Voltage channels
- Dual range current:
  - High Power: 25 mA (100 nA monitor resolution)
  - High resolution: 2.5 mA (10 nA monitor resolution)
- DB37 connectors
- Low ripple
- Interlock logic for unit enable
- Output voltage:0 ÷ 1000 V
- Available with Negative / Positive / Mixed Polarity
- Floating Type: Individual Floating
- Under/over-voltage alert, overcurrent and max. voltage protection
- Software Tools for easy channel management

Product Description

AT A GLANCE	
No. of Channels	**8**
Max Output V	**1000 V**
Max Output I	**25 / 2.5 mA selectable**
Vset/Vmon Resolution	**20 mV**
Iset/Imon Resolution	**Iset: 500 nA Imon: 100 / 10 nA**
Max. Ramp Up/Down Rate	**100 V/s**

The CAEN Mod A1625B is a single width board (5 TE wide) that houses 8 independent high voltage channels.

All channels have independent floating returns, isolated up to 50 V from each other and from chassis/crate ground (Individual Floating channel) The board is available with positive, negative or mixed output polarity. Channels are delivered with **DB37** connectors. Consult our connectors reference page for technical information.

The output voltage range is **0 ÷ 1000 V**, with **20 mV** monitor resolution. The output channels offer **dual current ranges** (software selectable):

High Power: 0 ÷ 25 mA	**High Resolution:** 0 ÷ 2.5 mA
I set resolution: 500 nA	I set resolution: 500 nA
I mon resolution: 100 nA	I mon resolution: 10 nA

Independently programmable for each channel:

Output voltage:	0 ÷ 1000 V	Step: 20 mV
Current limit (Iset):	0 ÷ 25 / 2.5 mA selectable	Step: 500 nA
V Ramp up/down:	1 ÷ 100 V/s	Step: 1 V/s
TRIP parameter:	0 ÷ 999.9 s; 1000 s = Infinite	Step: 0.1 s

Safety features include:

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- **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:**
- **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.

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Technical Specifications

No. of Channels	8 Individual Floating (±50V isolation)
Output Voltage	0 ÷ 1000 V
Polarity	Positive / Negative / Mixed depending on purchased version
Max. Output Current	Dual Range: • High Power: 2.5 mA • High Resolution: 25 mA
Voltage Set Resolution	Voltage Set Resolution
Voltage Monitor Resolution	20 mV
Current Set Resolution	500 nA
Current Monitor Resolution	• High Power: 100 nA • High Resolution: 10 nA
VMAX hardware	0÷1000 V common to all channels
VMAX hardware accuracy	± 2% of FSR
VMAX software	0÷1000 V individual
VMAX software resolution	1 V
Ramp Up/Down	1÷100 Volt/sec, 1 Volt/sec step settable for each channel
Voltage Ripple	
1 KHz ÷ 20 MHz • Differential (typ/max): <10 mVpp; <15 mVpp; • Common (typ/max): <10 mVpp; <25 mVpp; 10 Hz ÷ 1KHz • Differential (typ/max): <10 mVpp; <15 mVpp; • Common (typ/max): <15 mVpp; <30 mVpp;	
Voltage Monitor vs. Output Voltage Accuracy	• Typical: ± 0.1% ± 0.1 V • Max: ± 0.2% ± 0.2 V
Voltage Set vs. Output Voltage Accuracy	• Typical: ± 0.1% ± 0.1 V • Max: ± 0.2% ± 0.2 V
Current Monitor vs. Output Current Accuracy	• Typical: ± 0.1% ± 0.1 V • Max: ± 0.2% ± 0.2 V

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Ordering Information (continued)

Current Set vs. Output Current Accuracy
High Power: • Typical: ± 1% ± 50 µA; • Max: ± 1% ± 100 µA High Resolution: • Typical: ± 1% ± 5 µA; • Max: ± 1% ± 10 µA

Maximum output power	20 W
Consumption @ full power	280 W max

ORDERING CODE	DESCRIPTION
WA1625BMXAAA	A1625BM – SYx527 mixed polarity individual floating 8 ch 1000 V/25-2.5 mA (20 W) board
WA1625BNXAAA	A1625BN – SYx527 negative individual floating 8 ch 1000 V/25-2.5 mA (20 W) board
WA1625BPXAAA	A1625BP – SYx527 positive individual floating 8 ch 1000 V/25-2.5 mA (20 W) board

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

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