A2554

8 Channel 64 V/1.5 A Full Floating Channel Board

8	64 V	1.5 A
No. of Channels	Max Output V	Max Output I

A2554 is a single-width (5 TE) board for the CAEN Universal Multichannel Power Supply System, providing 8 independently controllable Low Voltage channels with individual full floating insulation up to ±500 V. Each channel delivers 0 ÷ 64 V at up to 1.5 A (60 W), with 2 mV voltage and 0.05 mA current monitor resolution, individual remote sensing, and DB37 connectors. Protection includes overvoltage, undervoltage and overcurrent detection, programmable TRIP, and channel enable/interlock logic.

CAEN
Tools for Discovery

Overview

Product Highlights

- 8 independently controllable Low Voltage channels
- DB37 connectors
- Floating Type: Individual Full Floating Channel
- Under/over-voltage alert, overcurrent and max. voltage protection
- Software Tool for easy channel management
- 0 ÷ 64 V Output Voltage / 1.5 A maximum current (60 W)
- Individual remote sense lines
- Low ripple
- Interlock logic for unit enable

Product Description

AT A GLANCE	
No. of Channels	**8**
Max Output V	**64 V**
Max Output I	**1.5 A**
Vset/Vmon Resolution	**2 mV**
Iset/Imon Resolution	**0.05 mA**
Max. Ramp Up/Down Rate	**500 V/s**

The CAEN Mod A2554 is a single width board (5 TE wide) that houses 8 independent Low Voltage Individual Full Floating channels, compatible with the CAEN Universal Multichannel Power Supply System (SY4527, SY5527)..

Channels are delivered with **DB37** connectors. Consult our connectors reference page for technical information.

A2554 Individual Full Floating channels allow on-detector grounding, reducing the noise level. The floating channels are insulated from each other up to ±500 V. Each output channel is provided with individual remote sensing lines to compensate for the voltage drop over the connection cables.

The output voltage range is **0 ÷ 64 V**, with **2 mV** monitor resolution. The maximum output current is **1.5 A**, with **0.05 mA** monitor resolution. The maximum channel power is **60 W.**

Independently programmable for each channel:

Output voltage:	0 ÷ 64 V	Step: 2 mV
Current limit (Iset):	0 ÷ 1.5 A	Step: 0.05 mA
V Ramp up/down:	1 ÷ 500V/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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- **Overvoltage detection:** if a channel voltage exceeds the programmed Overvoltage threshold value (OVVThr), it is signaled to be in “overvoltage” and is switched off.
- **Undervoltage detection:** if a channel voltage decreases below the programmed undervoltage threshold (UNVThr), it is signaled to be in “undervoltage” and is switched off.
- **Overcurrent detection:** when a channel attempts to exceed the programmed current limit, it signals an "overcurrent" condition and enters TRIP status. The output voltage is adjusted to keep the current below the programmed limit for a programmable TRIP time, after which the channel is switched off. If TRIP is set to "constant current mode", the channel behaves as a current source.
- **A global enable/disable connector** allows to disable the channels and it is also possible, via front panel logic signals, to enable individually each channel (DB37 version only).

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.

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

Technical Specifications

Packaging	1 unit (5 TE) wide; 6U – High mechanics
No. of Channels	8
Polarity	Individual Full Floating (±500V isolation)
Output Voltage	0 ÷ 64 V
Max Output Current	1.5 A
Max Output Power (connector Output)	60 W
Vset Resolution	2 mV
Iset Resolution	0.05 mA
Vmon Resolution	2 mV
Imon Resolution	0.05 mA
Ramp Up/Down	1-500 V/s (1 V/s step)
Voltage Ripple (10Hz ÷ 20MHz)	Typ: < 4 mVpp Max: < 8 mVpp

Accuracy

±% read value ± % FS

- Vout/Vmon ± 0.1% ± 50 mV
- Vset/Vout ± 0.1% ± 50 mV
- Iout/Imon ± 1% ± 5 mA
- Iset/Iout ± 1% ± 5 mA

Hardware OVV Protection	70 V typ
Trip	0 to 999.9s; 1000s = Infinite; step 0.1s
Stability	<5mV (Vset = 45V – No Load – one day after 1 hour warm up)
Long Term Stability	<10mV (Vset = 45V – No Load – one week after 1 hour warm up)
Temperature Coefficient	±25 ppm/°C
Load regulation	< 0.05% (Vset = 40V, Iout from 0.1A to 1.25A, 1m AWG20 cable / 1m AWG20 sense wire)
Operating temperature	0 ÷ 45°C
Storage temperature	-10 ÷ 70°C
Humidity	0 – 80% non condensing
Altitude	2000 m

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Ordering Information (continued)

MTBF
Base: 120000 hours

EMC qualification	CE Standards

ORDERING CODE	DESCRIPTION
WA2554AXAAAA	A2554A – individual floating 8 ch 64V/1.5A (60W) board – DB37 conn

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

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)

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

SY5527LC — Universal Multichannel Power Supply System Low Cost / 19”wide, 4U-high (4 slot)

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