A7460

12 Channel 6 kV, 1 mA/100 µA (6W) Common Floating Return Dual Range Board

12	6000 V	1 / 0.1 mA selectable
No. of Channels	Max Output V	Max Output I

The A7460 is a single-width (5 TE) board with 12 independently controllable high-voltage channels and a common floating return insulated from chassis/crate ground. Each channel provides 0 ÷ 6000 V output with 10 mV monitor resolution and software-selectable dual current ranges: 0 ÷ 1 mA with 2 nA monitoring resolution, or 0 ÷ 0.1 mA with 0.2 nA monitoring resolution. Voltage polarity is available as positive or negative, with SHV connectors. Features include programmable voltage ramps, current limits, trip timing, interlock enable, over/undervoltage warnings, overcurrent protection and a common hardware VMAX limit.

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Tools for Discovery

Overview

Product Highlights

- 12 independently controllable High Voltage channels
- Dual range current:
  - High Power: 1 mA (2 nA monitor resolution)
  - High resolution: 0.1 mA (0.2 nA monitor resolution)
- SHV connectors
- Low ripple
- Interlock logic for unit enable
- Output Voltage: 6000 V
- Available with Negative / Positive Polarity
- Floating Type: Common Floating Return
- Under/over-voltage alert, overcurrent and max. voltage protection
- Software Tool for easy channel management

Product Description

AT A GLANCE	
No. of Channels	**12**
Max Output V	**6000 V**
Max Output I	**1 / 0.1 mA selectable**
Vset/Vmon Resolution	**10 mV**
Iset/Imon Resolution	**5 / 2 nA**
Max. Ramp Up/Down Rate	**500 V/s**

The CAEN Mod A7460 is a single width board (5 TE wide) that houses 12 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 or negative output polarity Channels are delivered with SHV connectors. Consult our connectors reference page for technical information.

The output voltage range is **0 ÷ 6000 V**, with **10 mV** monitor resolution. The output channels offer **dual current ranges** (software selectable):

High Power:	0 ÷ 1 mA
I set resolution: 5 nA	
I mon resolution: 2 nA	
High Resolution:	0 ÷ 0.1 mA
I set resolution: 5 nA	
I mon resolution: 0.2 nA	

Independently programmable for each channel:

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Output voltage:	0 ÷ 6000 V	Step: 10 V
Current limit (Iset):	0 ÷ 1 / 0.1 mA selectable	Step: 5 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 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.

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 are available for free download**.

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Technical Specifications

No. of Channels	12 (Common Floating Return)
Output Voltage	0÷6 kV
Polarity	Positive / Negative depending on purchased version
Max. Output Current	1 mA / 100 µA (dual range)
Voltage Set Resolution	10 mV
Voltage Monitor Resolution	10 mV
Current Set Resolution	5 nA
Current Monitor Resolution	2 nA (high range) / 200 pA (low range)
VMAX hardware	0÷6 kV common for all the board channels
VMAX hardware accuracy	< ± 1% of FSR
VMAX software	0÷6 kV settable for each channel
VMAX software resolution	1 V
IMAX hardware	0÷1 mA common for all the board channels
IMAX hardware accuracy	< ± 1% of FSR
Ramp Up/Down	1÷500 Volt/sec, 1 Volt/sec step settable for each channel
Voltage Ripple	20 ÷ 1000 Hz: < 15 mVpp (Typ)< 20 mVpp (Max) 1 ÷ 20000 kHz: < 5 mVpp (Typ)< 10 mVpp (Max)
Voltage Monitor vs. Output Voltage Accuracy	±0.01% of reading ± 0.03% of Max Output Voltage
Voltage Set vs. Output Voltage Accuracy	±0.01% of setting ± 0.03% of Max Output Voltage
Current Monitor vs. Output Current Accuracy	± 0.02% ± 1 µA (high range)± 0.02% ± 500 nA (low range)
Current Set vs. Output Current Accuracy	± 0.02% ± 1 µA (high range)± 0.02% ± 500 nA (low range)
Consumption @ full power	120 W
Maximum output power	6 W per channel (software safety limit)

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Ordering Information

ORDERING CODE	DESCRIPTION
WA7460DNXAA1	A7460DN – SYx527 H.V. channels -6kV 1mA – SHV Conn. common floating (12 ch)
WA7460DPXAA1	A7460DP – SYx527 H.V. channels +6kV 1mA – SHV Conn common floating (12 ch)

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

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)

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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