HITEK POWER PSM10 SERIES

PRECISION SCIENTIFIC POWER SUPPLY MODULES



The HiTek Power® PSM10 series is a range of versatile high voltage component power supply modules equally suited to both laboratory and development work, as well as for specification in OEM equipment. Powered from 24 VDC, these units allow full range control and monitoring of voltage and current via 0 to 10 V analog signals and inhibit signal input. Positive or negative polarity models up to 15 kV are available with customer-defined derivatives upon request.

FEATURES

- 10 W output power
- V and I control
- V and I monitor
- Output inhibit
- High stability
- Short circuit and flashover protected
- RoHS compliant to EU Directive 2011/65/EU
- CE marked (LVD)

TYPICAL APPLICATIONS

- Photomultipliers
- Gamma cameras
- Image scanners
- Spectroscopy
- Scintillation counters
- Microchannel plates
- Piezo crystal devices
- Ultrasonic transducers
- Electron beam deflection
- Electrorheological fluids
- Electrostatic lenses (SEMs and STMs)

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ELECTRICAL SPECIFICATIONS

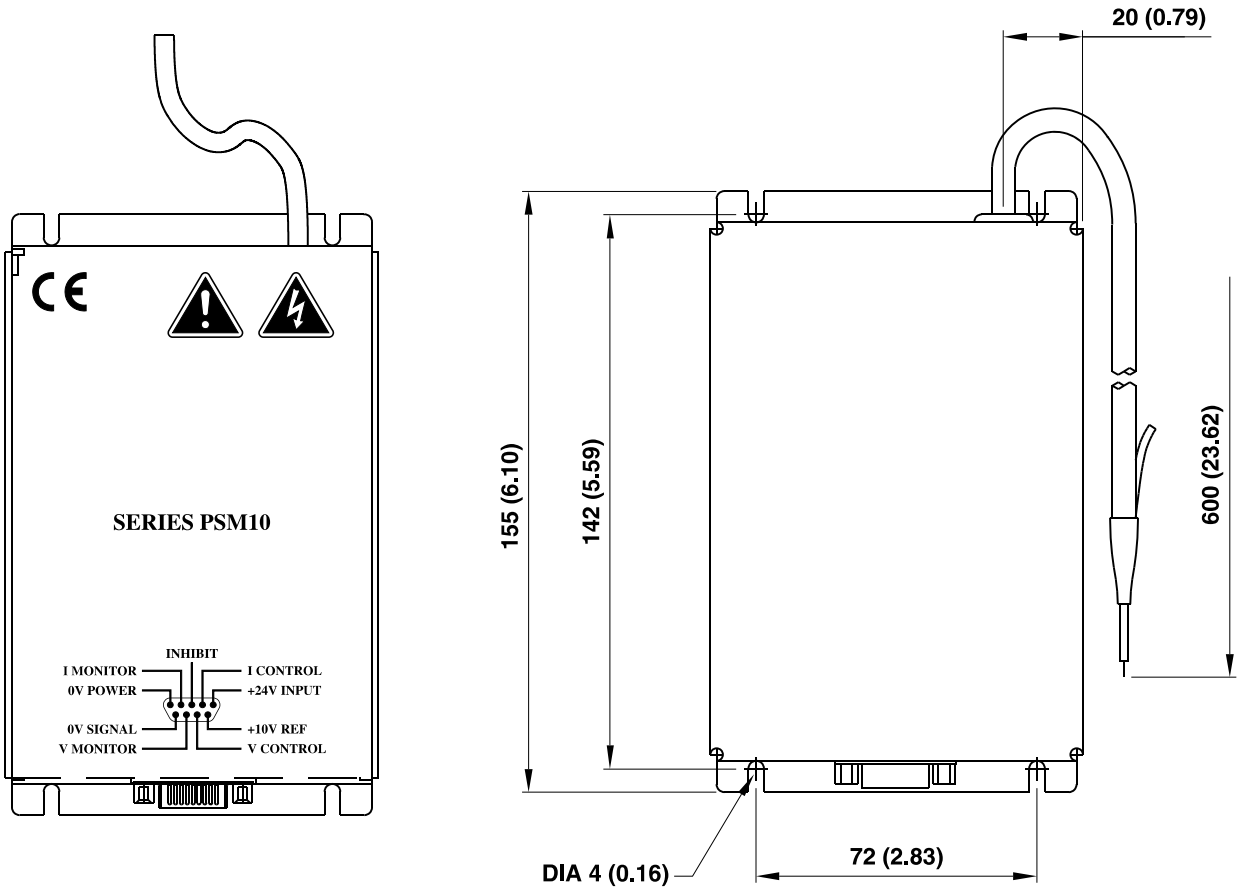
Output Power	10 W at full rated output voltage and current
Output Voltage	10 V to 1 kV to 150 V to 15 kV max depending on model (see table)
Output Current	667 µA to 10 mA max depending on model (see table)
Input Voltage	24 VDC
Input Current	1 A max
Output Polarity	Positive or negative to order
Line Regulation	< 0.005% change in output voltage over range 22 to 26 V at rated output power
Voltage Load Regulation	< 0.005% change in output voltage for change in output current from 0 to max output current at rated output voltage
Ripple	20 mV to 1 V peak to peak depending on model (see table)
Voltage Control	Voltage demand: 0 to 10 V for 0 to max output voltage ±2%
	Input impedance: 22 kΩ (±1%)
	Using DAC or OP-AMP: connect output of Digital to Analog Converter (DAC) or Operational Amplifier to pin 8 and 0 V to pin 6
	Using a potentiometer and internal reference: connect the high end (clockwise) of potentiometer to pin 9, connect low end (counter clockwise) of potentiometer to pin 6, connect wiper of potentiometer to pin 8
	Using a potentiometer and external 10 V reference: connect the high end (clockwise) of potentiometer to external 10 V reference, connect low end of potentiometer (counter clockwise) to pin 6 and external 10 V reference return, connect wiper of potentiometer to pin 8
	Using single fixed resistor: connect a resistor between pin 9 and pin 8 using the internal impedance (22 kΩ ±1%) as potential divider
	Using two fixed resistors: connect a resistor between pin 9 and pin 8, connect an additional resistor between pin 8 and Pin 6. Note: internal impedance 22 kΩ (±1%)
Current Control	Current demand: 0 to 10 V for 0 to max output current ±2% Note: if left open, circuit supply assumes max current capability
	Input impedance: 1 MΩ internal pull-up, to a +15 V rail
	Using DAC or OP-AMP: connect output to digital to analog converter (DAC) or operational amplifier to pin 4 and 0 V to pin 6
	Using potentiometer and internal reference: connect the high end (clockwise) of potentiometer to pin 9, connect low end (counter clockwise) of potentiometer to pin 6, connect wiper of potentiometer to pin 4
	Using two fixed resistors: connect a resistor between pin 9 and pin 4, connect an additional resistor between pin 4 and pin 6
Voltage Monitors	Voltage: 0 to 10 V ±2% or ±100 mV, whichever is greater, for 0 to max output voltage
	Output impedance: 10 KΩ ±1%

ELECTRICAL SPECIFICATIONS (CONTINUED)

Current Monitors	Current: 0 to 10 V ±2% or ±100 mV, whichever is greater, for 0 to max output current
	Output impedance: 10 KΩ ±1%
Inhibit	Disable: 0 to 0.8 V = OFF
	Enable: 2.2 to 24 V = ON; Open circuit = ON
Stability	< 50 ppm per hour at constant ambient temperature and rated output power after 1 h warmup
Temperature Coefficient	< 50 ppm per °C at max output power
Operating Temperature	0 to 50°C (32 to 122°F) at up to 90% RH non-condensing
Storage Temperature	-20 to +70°C (-4 to 158°F)
Altitude	Sea level to 2000 m (6500ft)
Reliability	Mean time between failure (MTBF) > 100,000 hours
	In accordance with MIL-HDBK-217F
Protection	Protected against continuous short circuit and flashover
Safety	Meets the requirements of the Low Voltage Directive, 2014/35/EU, by complying with BS EN60950 when installed as a component part of compliant equipment. Units are CE marked accordingly.
RoHS	Meets the requirements of EU Directive 2011/65/EU on the Restriction of use of certain Hazardous Substances in Electrical and Electronic Equipment (RoHS).

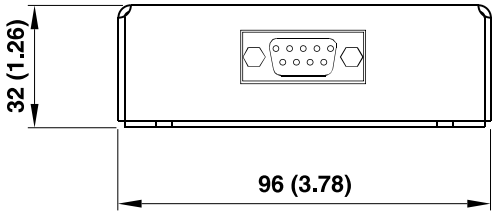
MECHANICAL SPECIFICATIONS

Dimensions	See outline drawing
Weight	PSM10/102 and PSM10/202 0.4 kg (0.88 lb)
	All other models 0.7 kg (1.54 lb)
Construction	Fabricated alloy with black painted finish
Earthing	Case internally connected to 0 V
Output Connection	600 mm long screened flying lead (see drawing)

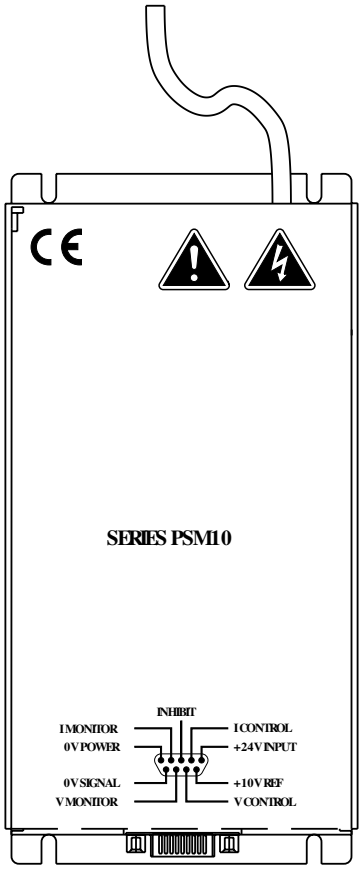


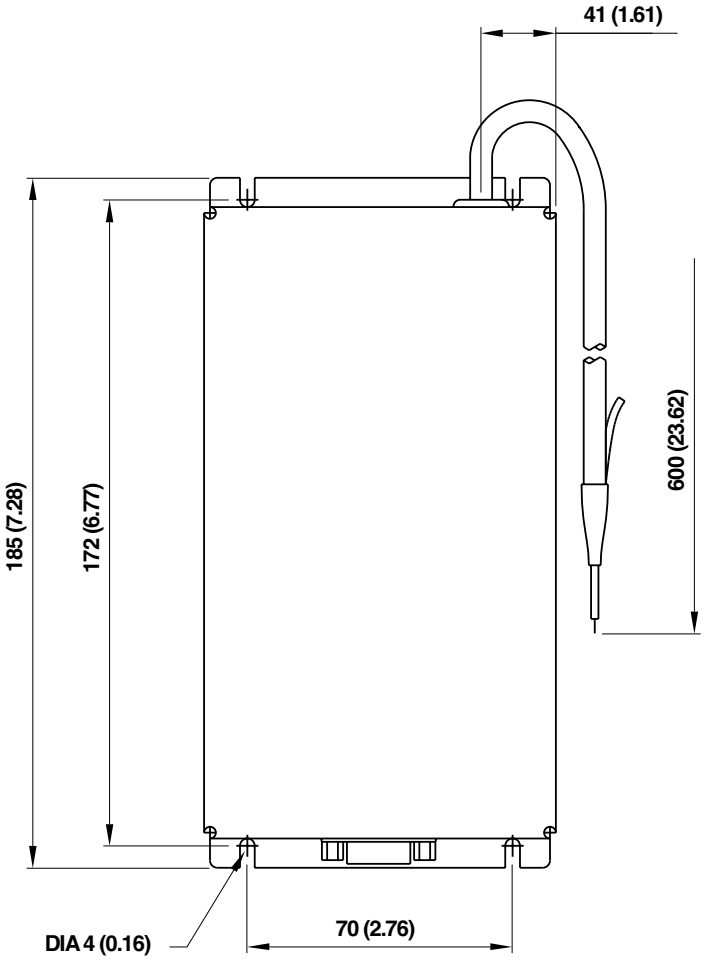
0.4 kg UNIT

PSM10/102
PSM10/202



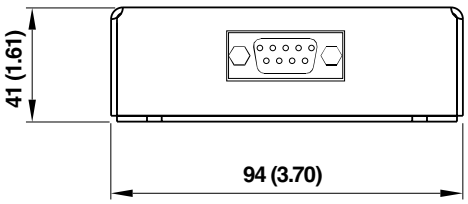
MECHANICAL SPECIFICATIONS (CONTINUED)





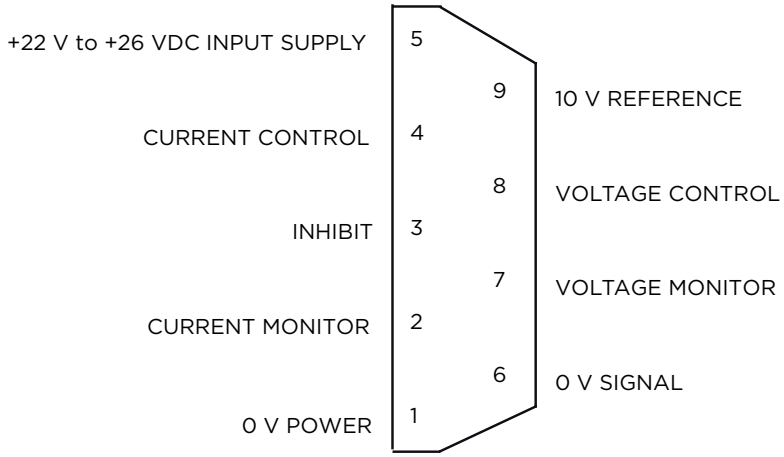
0.7 kg UNIT

PSM10/502
PSM10/103
PSM10/153



INTERFACE

9-way, male D-type connector fitted to module:



The above pinout diagram is view looking at the connector pins.

ORDERING INFORMATION

For ordering information and to find a solution for your exact requirements, please contact your local Advanced Energy sales representative.

ABOUT ADVANCED ENERGY

Since 1981, Advanced Energy (AE) has perfected how power performs for its customers. For both end users and OEMs, AE's comprehensive portfolio of standard and custom high voltage components precisely match system specifications to deliver unparalleled energy, quality, and performance. Through close customer collaboration, design expertise, application insight, and world-class support, AE creates successful partnerships and enables customers to push the boundaries of innovation and stay ahead of evolving market needs.

PRECISION | POWER | PERFORMANCE



CAUTION:
High Voltage

Read and understand all documentation before you install, operate, or maintain Advanced Energy high voltage power supplies. Follow all safety instructions and precautions to protect against property damage and serious or possibly fatal bodily injury. Never defeat safety interlocks or grounds.

Advanced Energy

For international contact information, visit advancedenergy.com.

HVSales@aei.com
+1.970.221.0108

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