

# Series PM10

## PHOTOMULTIPLIER POWER SUPPLY MODULES



### FEATURES

- 10W output power
- V & I control
- V & I monitor
- Output inhibit
- High stability
- Positive or negative polarity models
- Short circuit & flashover protected
- RoHS Compliant to EU Directive 2002/95/EC
- C€ marked (LVD)

### DESCRIPTION

The Series PM10 is a range of versatile high voltage component photomultiplier power supply modules equally suited to both laboratory and development work and for specification in OEM equipment. Powered from 24V DC, these units allow full range control and monitoring of voltage and current via 0-10V analog signals and an inhibit signal input. Positive or negative polarity models are available.

As well as photomultipliers, the PM10 is suitable for gamma cameras, image scanners, spectroscopy, scintillation counters, microchannel plates, piezo crystal devices, ultrasonic transducers, electron beam deflection, electrorheological fluids, and electrostatic lenses (SEMs and STMs).

### SPECIFICATION

#### Output Power:

10W at full rated output voltage and current.

#### Output Voltage:

10V-1kV to 50V-5kV max depending on model (see table).

#### Output Current:

2mA to 10mA max depending on model (see table).

#### Input Voltage:

24V DC.

#### Input Current:

1A max.

#### Output Polarity:

Positive or negative to order.

#### Line Regulation:

Less than 0.001% change in output voltage over range 22V to 26V at rated output power.

#### Voltage Load Regulation:

Less than 0.001% change in output voltage for change in output current from zero to max output current at rated output voltage.

#### Ripple:

10mV to 20mV depending on model (see table).

#### Voltage Control:

Voltage Demand: 0 to 10V for 0 to max output voltage  $\pm 2\%$ .

Input Impedance: 22k $\Omega$  ( $\pm 1\%$ ).

#### Using DAC or OP-AMP:

Connect output of Digital to Analogue Converter (DAC) or Operational Amplifier to Pin 8 and 0V 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 Volt reference:

Connect the high end (clockwise) of potentiometer to external 10V reference, connect low end of potentiometer (counter clockwise) to Pin 6 and external 10V reference return, connect wiper of potentiometer to Pin 8.

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### Using single fixed resistor:

Connect a resistor between Pin 9 and Pin 8 using the internal impedance (22kΩ ±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 22kΩ (±1%).

### Current Control:

Current Demand: 0 to 10V for 0 to max output current ±2%.

Note: If left open, circuit supply assumes maximum current capability.

Input Impedance: 1MΩ internal pull-up, to a +15V rail.

### Using DAC or OP-AMP:

Connect output to Digital to Analogue Converter (DAC) or Operational Amplifier to Pin 4 and 0V 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 potentiometer and external 10V reference:

Connect the high end (clockwise) of potentiometer to external 10V reference, connect low end of potentiometer (counter clockwise) to Pin 6 and external 10V reference return, 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.

### Monitors:

Voltage Monitor: 0 to 10V ±2% or ±100mV, whichever is greater, for 0 to rated output voltage.

Output Impedance: 10KΩ ±1%.

Current Monitor: 0 to 10V ±2% or ±100mV, whichever is greater, for 0 to rated output current.

Output Impedance: 10KΩ ±1%.

### Inhibit:

Disable: 0 to 0.8V =OFF

Enable: 2.2V to 24V =ON

Open circuit =ON

### Stability:

Less than 50ppm per hour at constant ambient temperature and rated output power after 1 hour warm-up.

### Temperature Coefficient:

Less than 25ppm/°C at max output power.

### Operating Temperature:

0°C to 50°C at up to 90% RH non-condensing.

### Storage Temperature:

-35°C to +70°C.

### Altitude:

Sea level to 2000 metres (6500 feet).

### Reliability:

Mean Time Between Failure (MTBF) is greater than 100,000 hours. In accordance with MIL-HDBK-217F.

### Protection:

The PM10 is protected against continuous short circuit and flashover.

### Safety:

Meets the requirements of the Low Voltage Directive, 73/23/EEC, by complying with BS EN60950 when installed as a component part of compliant equipment. Units are CE marked accordingly.

### RoHS:

The Series PM10 meets the requirements of EU Directive 2002/95/EC on the Restriction of use of certain Hazardous Substances in Electrical and Electronic Equipment (RoHS).

### Mechanical Specification:

Dimensions: See outline drawing.

Weight: PM10/102 & PM10/202: 0.4kg (0.88 lb)

PM10/302 & PM10/502: 0.7kg (1.54 lb)

Construction: Fabricated alloy with black painted finish.

Earthing: Case internally connected to 0V.

Output connection: 600mm long screened flying lead (see drawing).

### Output and Ordering Information:

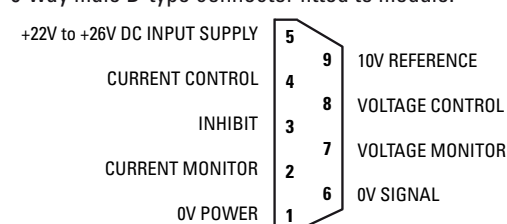
Model no	Output Voltage	Output Current	Current Load Regulation	Ripple pk-pk	Output Stored Charge
PM10/102*	10V-1kV	10mA	0.05%	10mV	<45µC
PM10/202*	10V-2kV	5mA	0.05%	10mV	<35µC
PM10/302*	10V-3kV	3.3mA	0.05%	15mV	<35µC
PM10/502*	50V-5kV	2mA	0.1%	20mV	<30µC

\* Please add either suffix P for positive polarity, or N for negative polarity, eg PM10/202N for a negative polarity unit with 10V-2kV output voltage.

This model is only one of a selection of photomultiplier modules available from HiTek Power. Should you require a different output voltage or current please contact our sales team.

### Interface Connections:

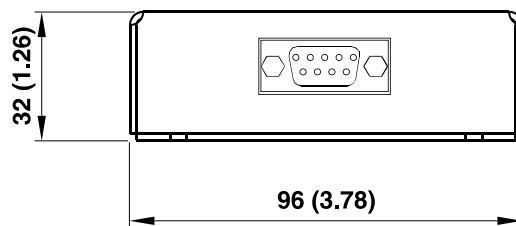
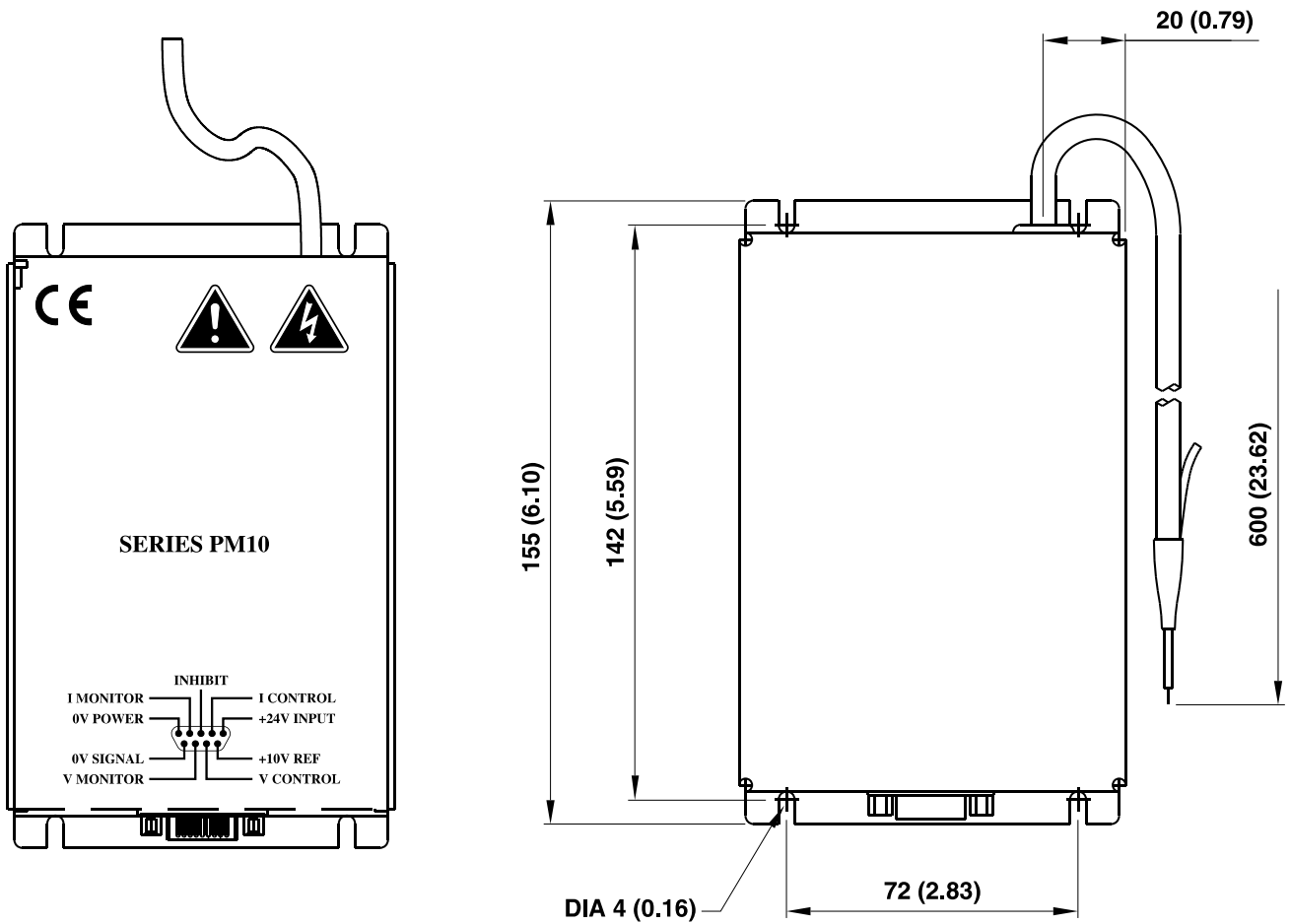
9-way male D-type connector fitted to module:



Please note: The above pin-out diagram is view looking at the connector pins.

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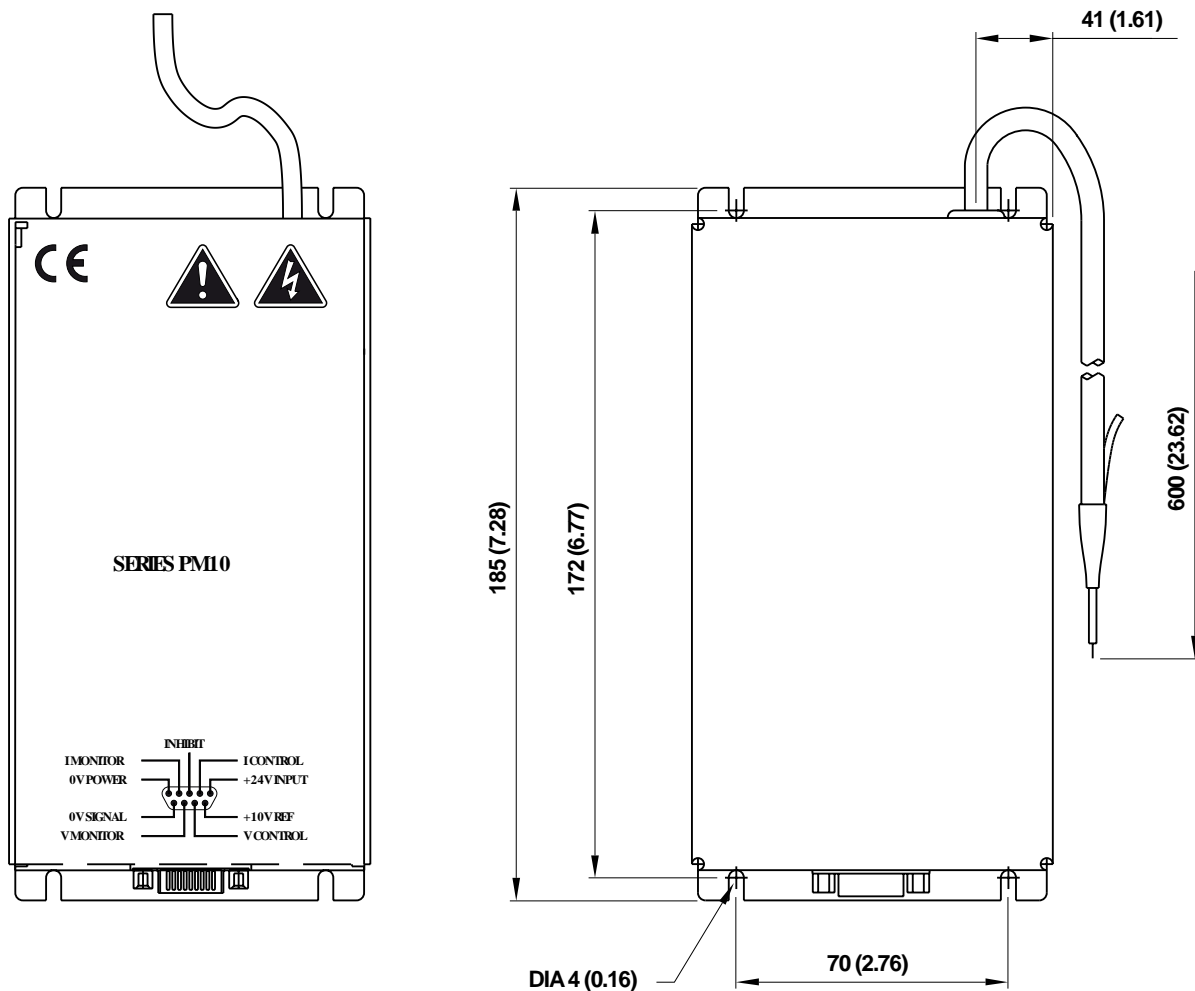


Drawing dimensions are in mm (inches)  
Design developments may result in specification changes

CE These component power supplies meet the requirements of EC Directive 73/23/EEC (LVD).

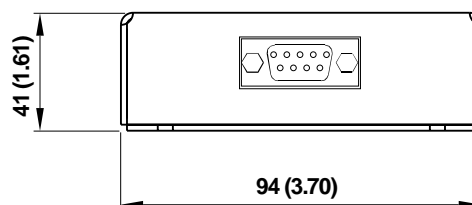
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## PHOTOMULTIPLIER POWER SUPPLY MODULES



**0.7kg UNIT**

**PM10/302**  
**PM10/502**



Drawing dimensions are in mm (inches)  
Design developments may result in specification changes

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