



**HITEK POWER® MSS SERIES**  
MASS SPECTROMETRY POWER SUPPLY MODULES





## MSS SERIES

Compact, general-purpose MSS series modules perform reliably even under short-circuit or arc conditions, for applications that require a small footprint and dependable operation. They can be set by internal potentiometer, external voltage, or an external potentiometer. Typical applications include mass analyzer and ion optics.

## MODULAR DESIGNS, CUSTOM SOLUTIONS

The modular design of AE high voltage products for mass spectrometry enables an array of performance features and combinations. From simple options, such as cable length and connector type, to complete custom designs, we deliver solutions that precisely fulfill your specific requirements.



## FEATURES

- › Output power: 5 W
- › Output voltages: 5 to 20 kV, depending on model
- › Ripple: < 0.02%, peak to peak
- › Temperature coefficient: 300 ppm/°C
- › Stability: < 300 ppm per hour after 1 hour warmup
- › Small package size
- › Versatile control options
- › Screened case for low magnetic radiation

## PROVEN POWER-CONVERSION TOPOLOGIES, CONTROL METHODS, AND MECHANICAL EXPERTISE

## SPECIFICATIONS

Output Power	5 W, max
Output Voltage	5 to 20 kV, depending on model
Output Current	200 $\mu$ A to 1 mA, depending on model
Output Polarity	Positive or negative to order
Input Voltage	+24 VDC $\pm$ 10%
Input Current	0.5 A, max
Line Regulation	< 0.05% for a 1 V input voltage change
Load Regulation	< 0.1% for 10 to 100% load change
Ripple	< 0.02%, peak to peak
Voltage Control	0 to +10 V = 0 to 100%, accuracy $\pm$ 2% Can also be controlled by internal or external potentiometer (See connection details below.)
Current Control	Primary current limit; Unit is protected against permanent short circuits to ground.
Voltage Monitor	0 to +10 V = 0 to 100%, accuracy $\pm$ 3%
Current Monitor	Optional (Please add suffix / to model number.)
Stability	< 300 ppm per hour after 1 hour warm up
Temperature Coefficient	300 ppm/ $^{\circ}$ C at max output voltage
Cooling	Convection cooled
Protection	Units are fully protected against short circuit and intermittent arc to ground.
Operational Temperature	10 to 50 $^{\circ}$ C (50 to 122 $^{\circ}$ F)
Storage/Transport Temperature	-20 to 85 $^{\circ}$ C (-4 to 185 $^{\circ}$ F)
Operational Altitude	Sea level to 2000 m (6500')
Storage/Transport Altitude	Sea level to 18,000 m (59,055')
Reliability	MTBF > 50,000 hours
Humidity	80% maximum relative humidity up to 31 $^{\circ}$ C (88 $^{\circ}$ F), reducing linearly to 50% at 40 $^{\circ}$ C (104 $^{\circ}$ F); non-condensing (ref EN61010-1)
Safety	Meets the requirements of the Low Voltage Directive, 2006/95/EC by complying with BS EN61010-1:2010 when installed as a component part of compliant equipment; Units are CE marked accordingly.
RoHS	Meets the requirements of EU Directive 2011/65/EC on the Restriction of use of certain Hazardous Substances in Electrical and Electronic Equipment (RoHS).
Construction	A fabricated aluminum alloy case is used for good heat dissipation and screening.

## Mechanical Specification

Dimensions	115 mm x 98 mm x 47 mm (4.5" x 3.85" x 1.85")
Weight	0.9 kg (2.2 lb)
Casing	Aluminum, clear non-chrome passivate finish
Output Cable	1 m (39.37") of screened output cable
Connectors	Various options available upon request



## OUTPUT AND ORDERING INFORMATION

Model	Output Voltage	Output Current	Ripple (pk to pk)
MSS-502*	50 V to 5 kV	1 mA	< 0.02%
MSS-103*	100 V to 10 kV	500 $\mu$ A	< 0.02%
MSS-203*	250 V to 20 kV	200 $\mu$ A	< 0.02%

\* Please add the required suffix to the model number:

P: Positive polarity

N: Negative polarity

I: Current monitor

e.g. MSS-502PI for a positive unit with current monitor.

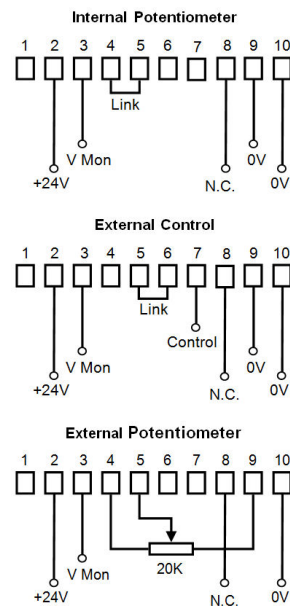
## INTERFACE CONNECTIONS

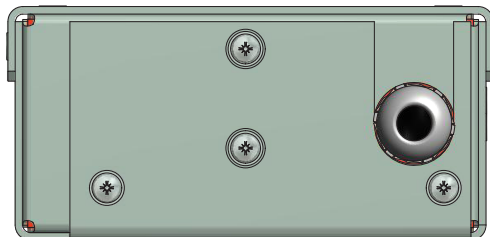
Molex KK Series 3003 0.2" 10-way connector,  
mating half shell 10-01-1104 and crimps 08-50-0108

NOT CONNECTED	1
+24 VDC INPUT SUPPLY	2
VOLTAGE MONITOR	3
CONTROL LINK (+10 V REF)	4
CONTROL LINK	5
CONTROL LINK	6
VOLTAGE CONTROL	7
CURRENT MONITOR (OPTIONAL)	8
SIGNAL GROUND	9
0 V INPUT	10

## CONTROL LINK DIAGRAM

If the current monitor option is fitted, an external resistor should be fitted between pins 8 and 9, and the resistor value should be set to produce the required current monitor voltage at the required output current. Please note that this current monitor voltage is clamped to 16 V internally.



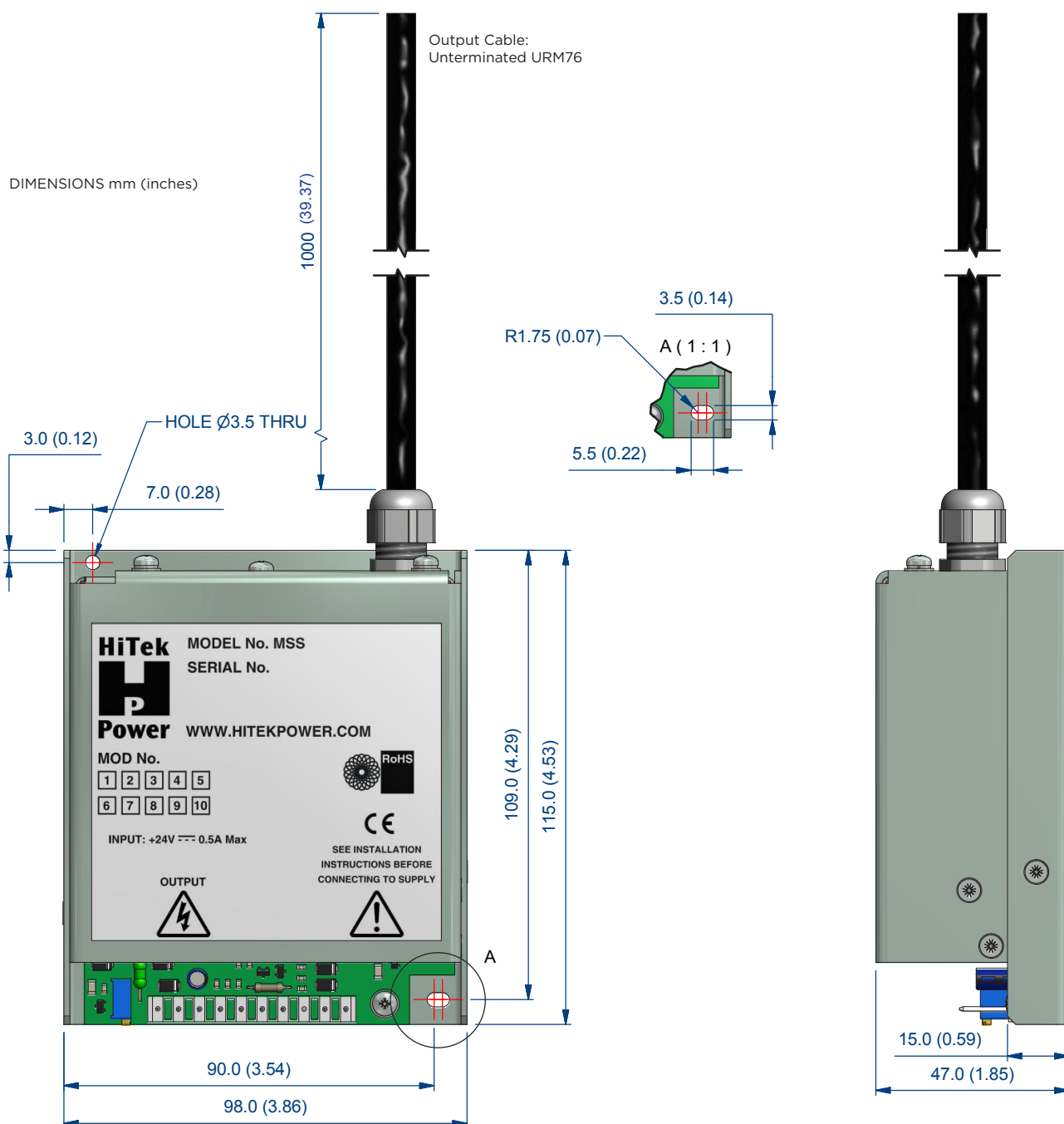


These component power supplies meet the requirements of EC Directive 2006/95/EC (LVD).

Drawing dimensions are in mm (inches).

Design developments may result in specification changes.

**CE** These component power supplies meet the requirements of EC Directive 2006/95/EC (LVD).





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