



HITEK POWER® MSRL SERIES
MASS SPECTROMETRY POWER SUPPLY MODULES





The MSRL series has a latched output voltage polarity that can only be changed when the output voltage has been set to zero. These modules provide reliable operation even in short circuit or arc conditions. They can be set by internal potentiometer, external voltage, or external potentiometer.

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: 10 W
- › Output voltage: +10 V to +20 kV
- › Ripple: < 10 mV to < 200 mV
- › Temperature coefficient: 10 or 25 ppm/°C
- › Stability: < 0.01% per hour, 0.05% in eight hours after warmup
- › Reversible latching outputs
- › Screened case for low magnetic radiation
- › High reliability
- › Versatile control options



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



SPECIFICATIONS	
Output Power	10 W, max
Output Voltage	±10 V to ±30 kV (depending on model)
Output Current	0.25 to 10 mA (depending on model)
Input Voltage	+24 VDC ±10%
Input Current	1 A, max (depending on model)
Line Regulation	< 10 ppm for a 1 V input voltage change
Load Regulation	< 10 ppm for a 10 to 100% load change
Ripple	< 10 to < 200 mV (depending on model)
Voltage Control	0 to 10 V = 0 to 100%, accuracy ±2% Can also be controlled by internal potentiometer (See connection details.)
Current Control	Fixed at approximately 110 to 130% of max
Voltage Monitor	0 to +10 V = 0% to 100%, accuracy ±2%
Current Monitor	0 to +10 V = 0% to 100%, accuracy ±2%
Polarity Control	Low < 0.8 V = Positive High > 2.5 V or open = Negative
Polarity Monitor	Pin 11 negative polarity = Low Pin 12 positive polarity = Low
Stability	< 0.01% per hour, 0.05% in eight hours (after one hour warm up)
Temperature Coefficient	10 or 25 ppm/°C at max output voltage (tested with external voltage control)
Cooling	Convection cooled
Protection	Units are fully protected against over-voltage, short-circuit, and intermittent arcs to ground.
Operational Temperature	10 to 50°C (50 to 122°F)
Storage/Transport Temperature	-20 to 85°C (-4 to 185°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% max relative humidity up to 31°C (88°F), reducing linearly to 50% at 40°C (104°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	See <i>Output and Ordering Information</i> table, on page 4.
Weight	See <i>Output and Ordering Information</i> table, on page 4.
Casing	Aluminum, clear non-chrome passivate finish
Output Cable	Unterminated URM76; 1 m (3.3') of screened output cable
Connectors	Various options are available upon request.



OUTPUT AND ORDERING INFORMATION

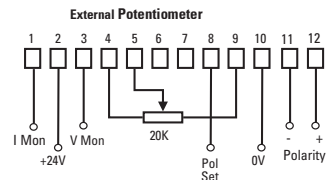
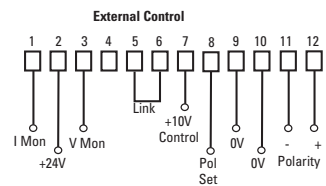
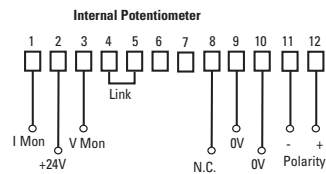
Model	Output Voltage	Output Current	Ripple (pk to pk)	Size	Weight
MSRL-102	±10 V to ±1 kV	10 mA	< 10 mV	200 mm x 98 mm x 47 mm (7.9" x 3.9" x 1.9")	1 kg (2.2 lb)
MSRL-252	±10 V to ±2.5 kV	4 mA	< 20 mV	200 mm x 98 mm x 47 mm (7.9" x 3.9" x 1.9")	1 kg (2.2 lb)
MSRL-502	±25 V to ±5 kV	2 mA	< 40 mV	200 mm x 98 mm x 47 mm (7.9" x 3.9" x 1.9")	1 kg (2.2 lb)
MSRL-103	±50 V to ±10 kV	1 mA	< 50 mV	155 mm x 216 mm x 52 mm (6.1" x 8.5" x 2.1")	1.2 kg (2.7 lb)
MSRL-203	±100 V to ±20 kV	0.4 mA	< 200 mV	240 mm x 216 mm x 52 mm (9.5" x 8.5" x 2.1")	3 kg (6.6 lb)

INTERFACE CONNECTIONS

Molex KK Series 3003 0.2" 12-Way Connector,
Mating Half Shell 10-01-1124 and Crimps 08-50-0108

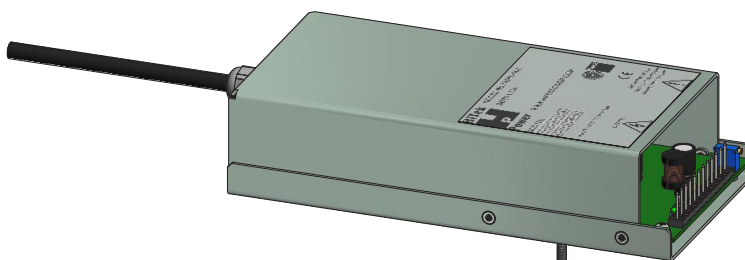
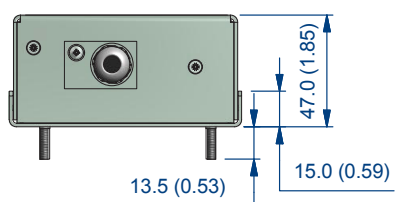
CURRENT MONITOR	1
+24 VDC INPUT SUPPLY	2
VOLTAGE MONITOR	3
CONTROL LINK (+10 V REF)	4
CONTROL LINK (INPUT)	5
CONTROL LINK (CONTROL OUTPUT)	6
VOLTAGE CONTROL	7
POLARITY SELECT	8
SIGNAL GROUND	9
0 V INPUT	10
NEGATIVE POLARITY MONITOR	11
POSITIVE POLARITY MONITOR	12

CONTROL LINK DIAGRAM



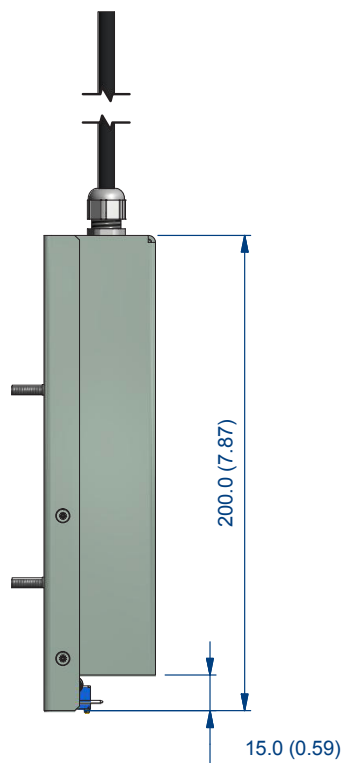
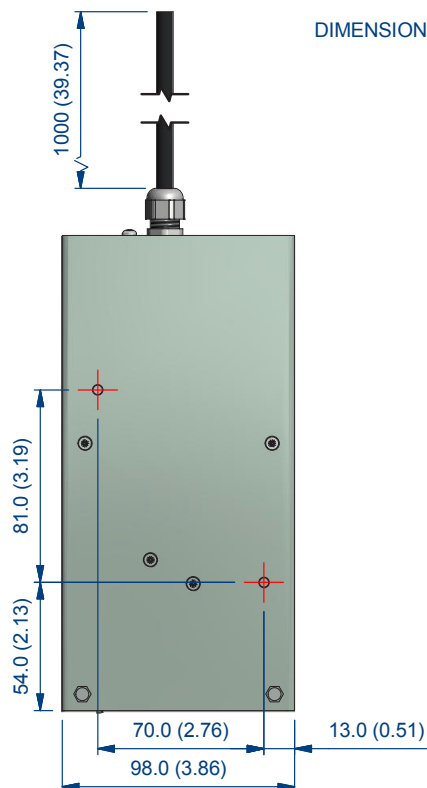
MODEL MSRL-102
MODEL MSRL-252
MODEL MSRL-502

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



MOUNTING: 2 OFF M4 STUDS; LENGTH AND POSITION AS SHOWN

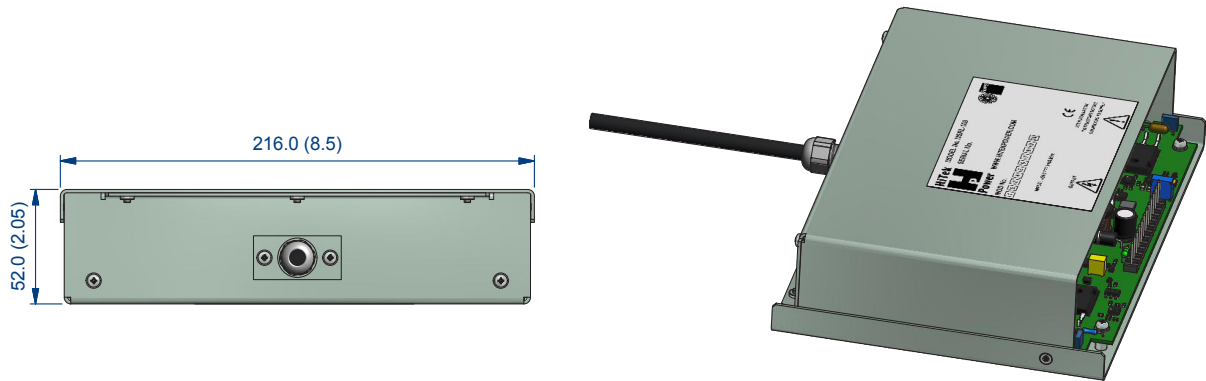
DIMENSIONS mm (in)



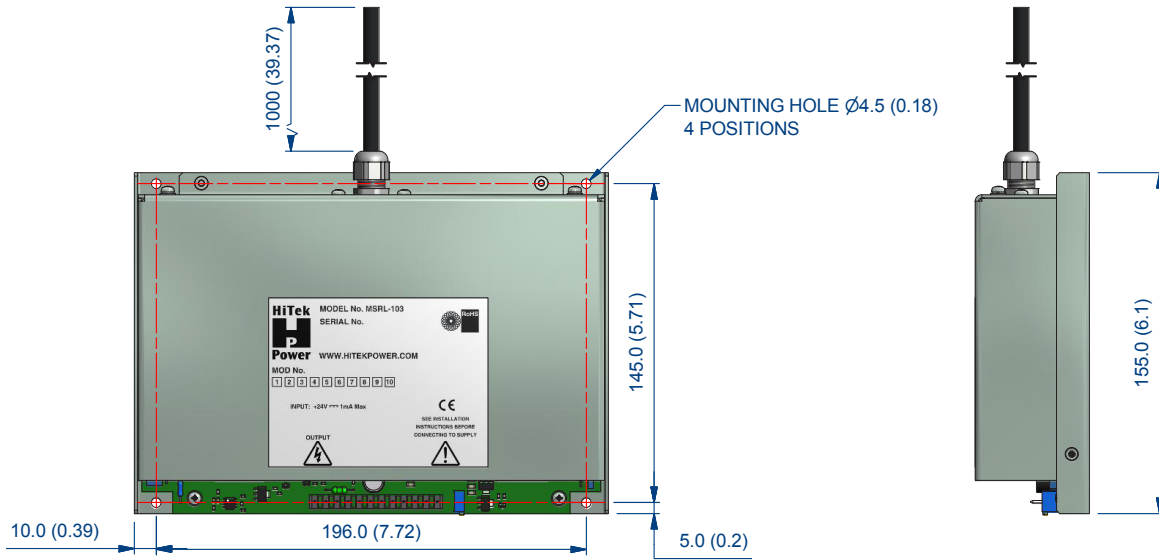


MODEL MSRL-103

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



DIMENSIONS mm (in)





For international contact information, visit
advanced-energy.com.