



HITEK POWER® MSRZ SERIES
MASS SPECTROMETRY POWER SUPPLY MODULES





MSRZ SERIES

MSRZ series reversible source modules provide a fast reversible output voltage with high stability, low ripple, and excellent repeatability for precision applications. They perform reliably even under short-circuit or arc conditions.

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: 3.2 W
- › Output voltage: ± 1 to ± 20 kV
- › Ripple: < 40 to < 300 mV
- › Temperature coefficient: 25 ppm/ $^{\circ}$ C
- › Stability: $< 0.01\%$ per hour, 0.05% in eight hours after warmup
- › Reversible outputs
- › Fast switching
- › Four quadrant power stage
- › Controllable through zero
- › High reliability



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

SPECIFICATIONS

Output Power	3.2 W, max
Output Voltage	±1 to ±20 kV
Output Current	0.35 to 1 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	< 40 to < 300 mV, depending on model
Voltage Control	0 to 10 V = 0 to 100%, accuracy ±2%
Current Control	Fixed at approximately 110 to 130% of max
Voltage Monitor	±10 V = +100 to -100%, accuracy ±2%
Current Monitor	±10 V = +100 to -100%, accuracy ±2%
Polarity Control	Low < 0.8 V = Negative High > 3.5 V or open = Positive
Inhibit	Low < 0.8 V = Enabled High > 3.5 V or open = Inhibited
Stability	< 0.01 % per hour, 0.05% in eight hours (after one hour warmup)
Temperature Coefficient	25 ppm/°C at max output voltage (tested with external voltage control, 10 ppm available on request)
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.
Options	A control option can be supplied with a bipolar input voltage program of ±10 V without the polarity control signal. Please consult our Sales Team for part numbering for this option.

Mechanical Specification

Dimensions	159 mm x 182 mm x 47 mm (6.25" x 7.16" x 1.85")
Weight	1.5 kg (3.3 lb)
Casing	Aluminum, clear non-chrome passivate finish
Output Cable	Unterminated URM76; 1 m (39.37") of screened output cable
Connectors	Various options are available upon request.



OUTPUT AND ORDERING INFORMATION

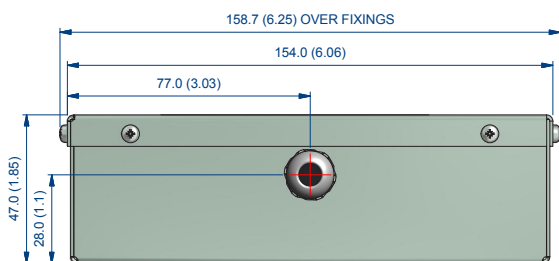
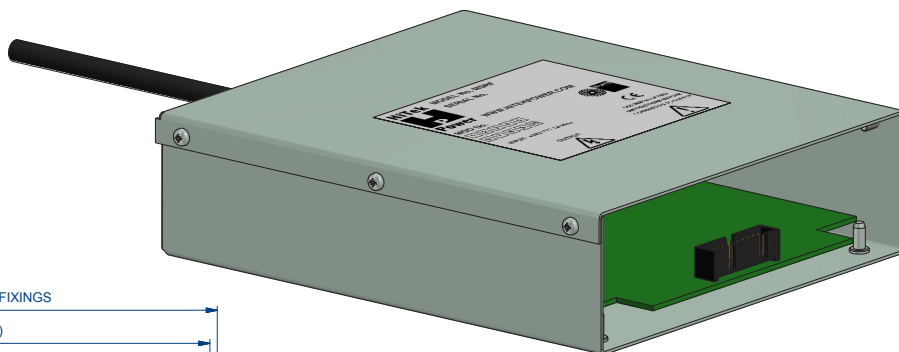
Model No	Output voltage	Output current	Ripple (pk to pk)	Full Scale Speed
MSRZ-102	±1 kV	1 mA	< 40 mV	< 20 msec to 99%
MSRZ-252	±2.5 kV	0.5 mA	< 50 mV	< 30 msec to 99%
MSRZ-302	±3 kV	0.4 mA	< 80 mV	< 40 msec to 99%
MSRZ-502	±5 kV	0.4 mA	< 150 mV	< 40 msec to 99%
MSRZ-802	±8 kV	0.4 mA	< 250 mV	< 45 msec to 99%
MSRZ-103	±10 kV	0.3 mA	< 300 mV	< 50 msec to 99%

INTERFACE CONNECTIONS

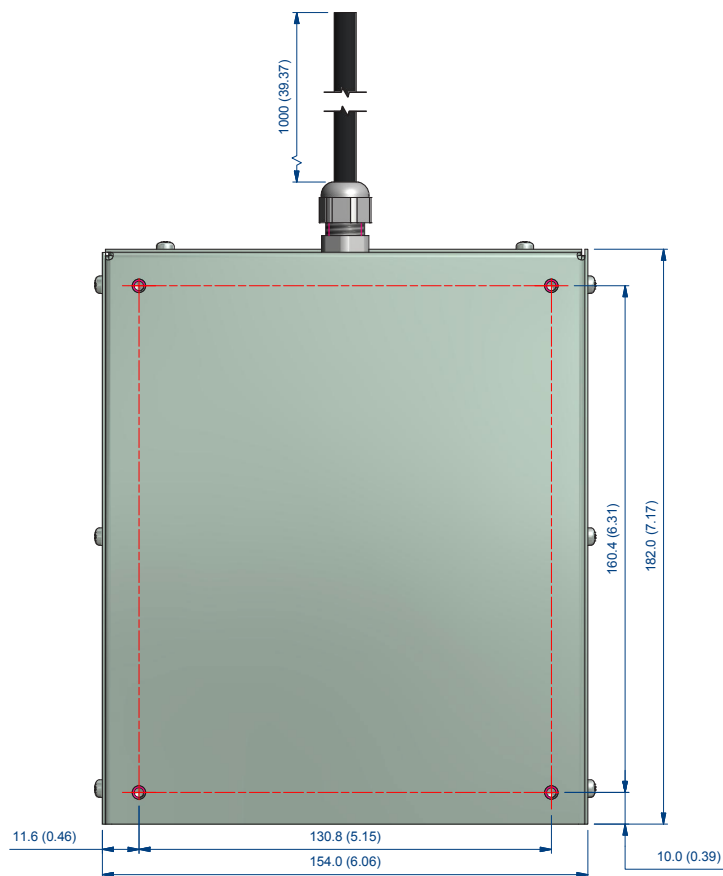
20-Way IDC Connector

+24 VDC INPUT SUPPLY	1
NOT CONNECTED	2
+24 VDC INPUT SUPPLY	3
VOLTAGE MONITOR	4
+24 VDC INPUT SUPPLY	5
CURRENT MONITOR	6
+24 VDC INPUT SUPPLY	7
VOLTAGE CONTROL	8
+24 VDC INPUT SUPPLY	9
CONTROL RETURN	10
0 V INPUT	11
0 V INPUT	12
0 V INPUT	13
SIGNAL GROUND	14
0 V INPUT	15
NOT CONNECTED	16
0 V INPUT	17
POLARITY SELECT	18
0 V INPUT	19
NOT CONNECTED	20

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



MOUNTING: 4 OFF M3 BLIND FASTENERS; POSITION AS SHOWN
 DIMENSIONS IN mm (in)





Advanced Energy Industries, Inc.

HiTek Power Ltd.*
Hawthorn Road
Littlehampton
West Sussex
BN17 7LT
United Kingdom

+44 0 1903 712400

hvsales@aei.com
advanced-energy.com

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