



Spellman's MXR Series are well-regulated high performance DC-DC converters. The MXR's low ripple specification makes it ideal for Mass Spectrometry and electron microscopes. The MXR20 is rated at 20kV @ 300uA and MXR30 is rated at 30kV @ 300uA. Both are packaged in a shielded metal enclosure and are available either in analog or RS-232 and RS-485 (half duplex) digital control options. These units feature a logic signal input to control output polarity reversal. Voltage, polarity and current monitors are provided. The digital version also features an opto isolated interlock input (HV Enable/Inhibit). Easily customized to meet OEM requirements, the MXR Series can be provided with current control, improved ripple performance and higher voltage and current capabilities.

TYPICAL APPLICATIONS

- Mass Spectrometry
- Electron Microscopes
- Capillary Electrophoresis
- Electrostatic Printing

OPTIONS

MXR can be ordered as an analog or a digital controlled unit. See How To Order information below.

Custom captive cable options available upon request.

SPECIFICATIONS

Input Voltage:

24Vdc ($\pm 5\%$)

Input Current:

≤ 1.25 A nominal continuous
 ≤ 4.5 A peak during reversing

Programmable Output Voltage:

MXR20: 250V to ± 20 kV

MXR30: 250V to ± 30 kV

When programmed to 0V, the output voltage will be ≤ 50 V

Output Current:

$\pm 300\mu$ A maximum. Output operating quadrants: 1 & 3
(the output is not designed to sink current)

Voltage Regulation:

Load: < 50 ppm of maximum output voltage for a no load to full load change

Line: < 20 ppm of maximum output voltage for a 5% input line change

- **Hot Switchable Reversible Polarity**
- **Control Options: Analog, RS-232 and RS-485 (half duplex)**
- **Voltage and Current Monitor Outputs**
- **Well Regulated, Low Ripple, High Stability**
- **UL Recognized, CE Marked and RoHS Compliant**
- **Free GUI for Testing and Development Work (digital option)**

Programming and Monitor Accuracy:

Voltage programming: $< \pm 1\%$ or ± 30 V*

Voltage monitoring: $< \pm 1\%$ or ± 10 V*

Current monitoring: $< \pm 3\%$ or $\pm 2\mu$ A*

*Whichever is greater

Ripple:

MXR20: ≤ 100 mVp-p

MXR30: ≤ 150 mVp-p

Stability:

1hr = 10ppm max. after 1hr warm-up

8hrs = 20ppm max. after 1hr warm-up

Temperature Coefficient:

10ppm/ $^{\circ}$ C

Polarity Reversal Time:

1.5s to within 95% at max output voltage

2s to within 3ppm at max output voltage

Protection:

Arc and short circuit protected. Not designed to withstand continuous arcing

Environmental:

Temperature Range:

Operating: 10° C to 50° C

Storage: -35° C to 85° C

Humidity:

0% to 85%, non-condensing

Cooling:

Convection cooled

Dimensions:

2.05" H X 8.47" W X 9.45" D (52mm X 215mm X 240mm)

Weight:

8.80 pounds (4.0kg)

Input Connectors:

Analog units:

Power and Control: 12 way Samtec FWS 12-04-T-S-RA

Digital units:

Power: 2 way Molex Mini-fit Jr 39-30-1022

Control: 10 way 'IDC Ribbon cable' connector
3M N3793-5302RB

Output Connector:

Standard output is GES HB30 receptacle (GES p/n: 7331051). Mating plug is GES HS30 (p/n: 7331050, not included). Mating cable assembly can be ordered separately, see How To Order information below.

Regulatory Approvals:

UL/CUL recognized, File E354595. Compliant to EEC Low Voltage Directive. RoHS Compliant.

ANALOG UNITS—POWER AND CONTROL 12 PIN SAMTEC FWS CONNECTOR

PIN	SIGNAL
1	Current monitor output 0-10V = 0V to 500µA Zout=10kΩ
2	+24Vdc Input
3	Voltage monitor output 0-10V = 0V to Max V Zout=10kΩ
4	N/C
5	N/C
6	N/C
7	Voltage program input 0-10V = 0V to Max V Zin>1MΩ
8	Polarity set input, TTL levels: LO = +VE, HI/Open = -VE
9	Signal ground
10	Ground return for +24Vdc
11	N/C
12	Polarity status output LO (<200mV, source 1.5kΩ) = +VE, HI (+24V, source 2.2kΩ) = -VE

DIGITAL UNITS—POWER 2 PIN MOLEX MINI-FIT JR

PIN	SIGNAL
1	+24Vdc Input
2	Ground return for +24Vdc

DIGITAL UNITS—CONTROL 10 PIN IDC RIBBON CONNECTOR

PIN	SIGNAL
1	Z/TXD Transmit data (output) with respect to pin 2
2	Serial signal ground return (if required)
3	Y/RXD Receive data (input) with respect to pin 2
4	N/C
5	RS-485 mode - Link pins 5 and 6 together for RS-485 communication. see**
6	Interlock opto-isolator input (0mA = Voltage Inhibit) see*
7	Interlock opto-isolator signal return
8	Polarity set opto-isolator input (0mA = -VE) see*
9	Polarity set signal opto-isolator signal return
10	Polarity set signal opto-isolator signal return

*Note: 3.3V@6mA or 5V@10mA

**Note: RS485 (Half duplex) is supported for:
Revision 4D and onwards (5D, 4E or 4F etc.) for the MXR20 units
Revision 3C and onwards for the MXR30 units. The revision is shown on the product label.

How to Order:

Analog (standard): PART NO.: MXR20PN24
PART NO.: MXR30PN24

Digital (option): PART NO.: MXR20PN24/DCC2
PART NO.: MXR30PN24/DCC2

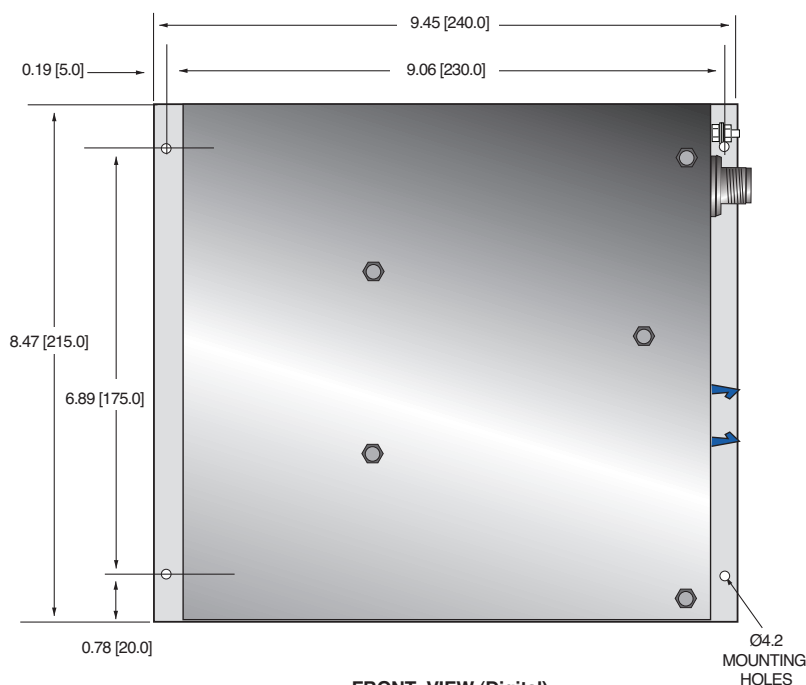
Mating cable,
length 2m: PART NO.: HVC30/1S/1279

DIMENSIONS: in.[mm]

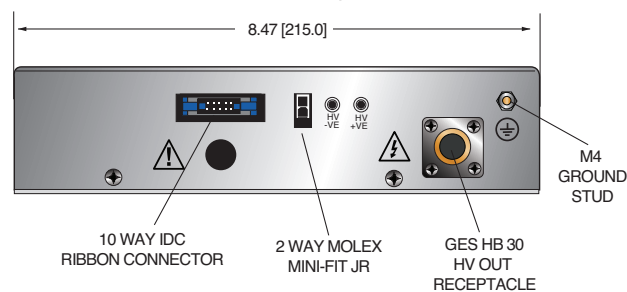
SIDE VIEW



TOP VIEW



FRONT VIEW (Digital)



FRONT VIEW (Analog)

