MS Detector power supplies

1W

DC-HVDC power supplies

The MS Detector range of detector-optimized, dual-output high voltage DC-DC power solutions are developed for the detector stage of mass spectrometry instruments, integrating a fast-reversible main output up to ±12kV and a secondary adjustable output up to -5 kV in a single compact module.

Designed to simplify system architecture and improve analytical performance, the MS Detector delivers low ripple, high voltage stability, and polarity switching as fast as 5ms to support high-speed positive/negative ion detection. With precise voltage and current regulation, control and monitoring interfaces, and comprehensive arc and overload protection, the MS Detector platform enables faster analysis times and easy integration into mass spectrometers.

Features

- Input: +24VDC
- Output 1: up to ±12kV reversible (bias)
- Output 2: up to -5kV (multiplier)
- Other output voltages available on request
- Switching speeds of 25ms; optional 5ms
- Output voltage and current regulated
- Voltage and current monitor outputs
- Short circuit, arc, and overload protection
- Low ripple, high stability
- Designed to meet UL 61010
- Operating temperature: +10°C to +60°C
- 3 year warranty

Applications

- Mass Spectrometry
- Electrophoresis

Dimensions

170 x 140 x 54mm (6.69” x 5.51” x 2.12”)

Dimensions can be tailored to exact customer requirements.

Documentation

For further information click the link or scan the code

→ xppower.com

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Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Input voltage range	22.8	24	25.2	VDC	24V nominal
Inrush current			2	A	
Voltage programming input	0		10	VDC	Analog DC voltage controls output 0 to 100%

Output - Bias Supply

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Output voltage			±12000	VDC	Other output voltages available on request
Output current			100	µA	Can be modified based on the specific customer requirement
Turn on time			2	s	
Polarity reversal time	25ms for fast switching version to 95% of full scale, 5ms optional				
Linearity: output vs program			1.5	%	10 to 100% output
Temperature coefficient		100		ppm/°C	
Line regulation			0.01	%	100% Vpgm, Full Load, (min to max input)
Load regulation			0.01	%	100% Vpgm, 24Vin, [NL to FL]
Ripple & noise	Can be modified for the specific customer requirement				
Stability		100		ppm/hr	After 1 hour warm up

Output - Multiplier Supply

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Output voltage			-5000	VDC	Can be modified based on the specific customer requirement
Output current			400	µA	
Output programming	10		100	%	Output Voltage is programmable; current limited to 120%, current programming available
Turn on time			2	s	
Temperature coefficient		100		ppm/°C	Can be modified based on the specific customer requirement
Linearity: output vs program			1.5	%	10 to 100% output
Minimum Load	No minimum load required				
Line regulation			0.01	%	100% Vpgm, Full Load, (min to max input)
Load regulation			0.01	%	100% Vpgm, 24Vin, [NL to FL]
Ripple & noise		0.01		%	Can be modified based on the specific customer requirement

General

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Isolation: input to output	N/A - input ground is internally connected to output ground				

Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Operating temperature	+10		+60	°C	
Storage temperature	-20		+85	°C	
Cooling	Natural convection				
Humidity			95	%RH	Non-condensing

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Safety approvals

Certification	Standard	Notes & conditions
UL	Designed to meet UL 61010	
CE	Meets all applicable directives	
UKCA	Meets all applicable legislation	

Signals

Signal	Notes & conditions	Notes & conditions
Control signal	Can be configured according to customer requirements	

Pin	Description	Pin	Description
1	+24VDC input power	31	Multiplier supply On/Off (referenced to Control ground) (driven by open collector output) (OPEN = Off, CLOSED = On)
2	+24VDC input power	32	
3	+24VDC input power	33	Reserved
4	+24VDC input power	34	
5	+24VDC input power	35	Reserved
6	+24VDC input power	36	
7	Power ground	37	Reserved
8	Power ground	38	
9	Power ground	39	
10	Power ground	40	
11	Power ground	41	Multiplier voltage control signal (referenced to Analog ground 1)
12	Power ground	42	Analog ground 1
13		43	
14		44	Analog ground 1
15		45	Reserved
16		46	Reserved
17		47	
18		48	Reserved
19		49	Dynode voltage readback (referenced to Analog ground 2)
20		50	Analog ground 2
21	Control ground	51	
22	Control ground	52	Analog ground 2
23	Control ground	53	Multiplier voltage readback (referenced to Analog ground 3)
24	Control ground	54	Analog ground 3
25		55	
26		56	Analog ground 3
27	Dynode supply On/Off (referenced to Control ground) (driven by open collector output) (OPEN = Off, CLOSED = On)	57	Reserved
28	No connection (Type select 0)	58	Reserved
29	Dynode polarity (referenced to Control ground) (driven by open collector output) (OPEN = Negative, CLOSED = Positive)	59	
30	No connection (Type select 1)	60	Reserved

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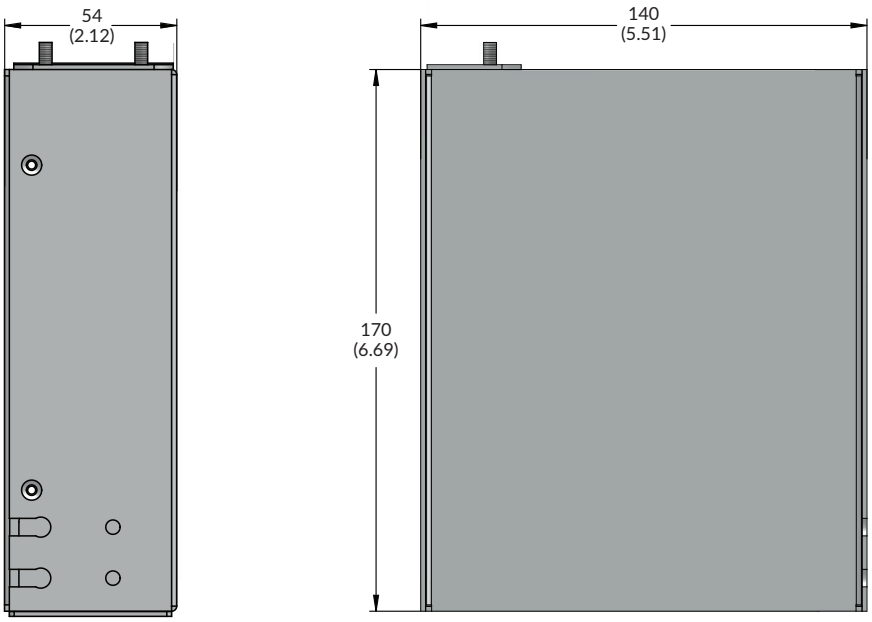
Mechanical details



Notes:

1. Dimensions in mm (inches).
2. Dimensions can be tailored to exact customer requirements.
3. Connector type and interface can be modified according to customer requirements.