

# DC Detector Series

## Application:

Quadrupole and Ion Trap Mass Spectrometers using electron multiplier or photomultiplier detectors.

## Features:

- Dynode & EM outputs
- Up to  $\pm 10\text{kV}$  dynode output with fast polarity switching up to 100ms (for  $\pm 10\text{kV}$ )
- Remote programming, voltage monitors
- Flashover & short circuit protected

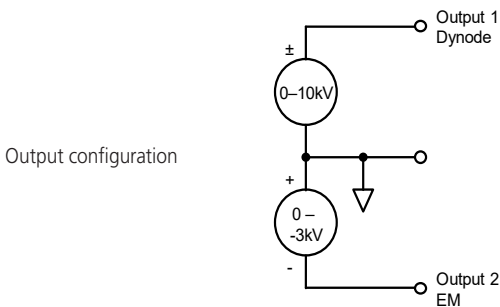


This range of high performance high voltage power supplies has been specifically designed for mass spectrometer multi-stage detector applications requiring a fast polarity switching conversion dynode and fast settling electron multiplier output. The DC series complements our range of polarity switching source (SC series) power supplies and the use of Dynamic Control™ technology within the output stages ensures fast and accurate settling after polarity change with minimal overshoot.

## ELECTRICAL SPECIFICATION: DC DETECTOR SERIES

Input: +15V dc  $\pm 0.5\text{V}$  <1.5A. 0V input common to HV return and chassis.  
 -15V dc  $\pm 0.5\text{V}$  <0.1A. 0V input common.

	OUTPUT 1 CONVERSION DYNODE	OUTPUT 2 ELECTRON MULTIPLIER
Control:	<0.5V or OC for -ve polarity >2.0 for +ve polarity $Z_{in} > 10\text{k}$	0.05V to +5V for -30V to -3kV $\pm 2\%$ $Z_{in} = 200\text{k}$ up to 250 $\mu\text{A}$
Voltage monitor:	$\pm 5\text{V}$ i.e. o/p 1 scaled by 2000 $\pm 1\%$ $Z_{out} = 10\text{k}$	0V to +5V $\pm 5\%$ $Z_{out} = 10\text{k}$
Enable:	<0.5V or OC for OFF >2.0V for ON	<0.5V or OC for OFF >2.0V for ON
Load Regulation:	10% with 720Mohm load. Equivalent to 80Mohms $Z_{out}$	<0.2% for 20% to maximum load.
Output Ripple:	<50V pk to pk with 40G load in parallel with 2.7pF	<200mV pk / pk @ =2.3kV with 22M load
Polarity Reversal:	<100ms from logic assertion to 90% into 50pF load	N/A
Enable Time:	<100ms from logic assertion to 90% into 50pF load	<500ms from logic assertion to 90% into 50pF load <3s from logic de-assertion to 10% into 50pF load
Line regulation:	<0.02% for 10% change in +ve supply voltage	<0.02% for 10% change in +ve supply voltage



# DC Detector Series Data Sheet

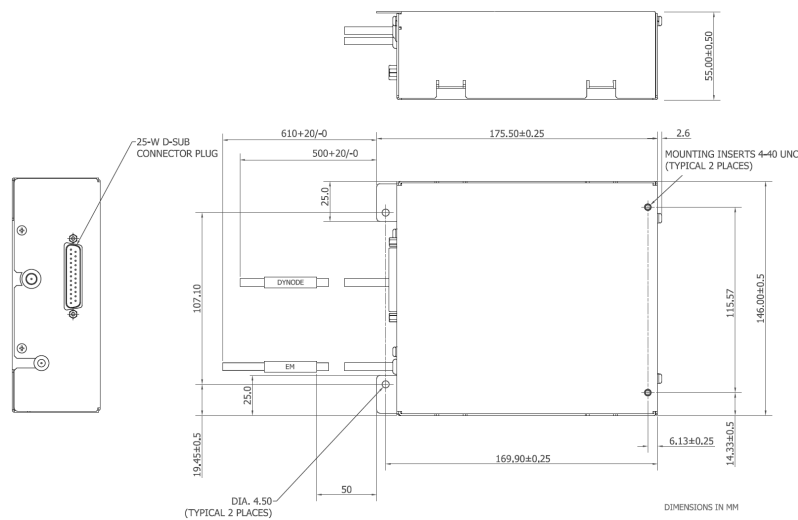
## MECHANICAL SPECIFICATION

Dimensions:	175.5 x 146 x 55 mm (7" x 5.75" x 2")	Weight:	2.5kg (5.5 lb) approximately
Input /control:	25way "D" connector		
Output 1:	500mm URM43 o/p lead, with no connector fitted	Output 2:	610mm URM43 o/p lead, with no connector fitted

## ENVIRONMENTAL SPECIFICATION

Temperature, operating:	+10°C to +50°C	Humidity (RH) <31°C non-condensing:	80% maximum
Temperature, storage:	-35°C to +85°C	Humidity (RH) >30°C non-condensing:	Decrease linearly to 50% @ 40°C
Altitude, operating:	Up to 2,000m	Altitude, storage:	Up to 18,000m

The unit is to be supplied from a current limited supply providing  $\pm 15V$  dc, impulse limited to overvoltage Category I (of IEC60364-4-443).  
For use in an environment of pollution degree 2.



## PIN ASSIGNMENTS

1	+15V	14	+15V
2	NC	15	NC
3	Gnd	16	Gnd
4	GND (Reserved)	17	EM Control i/p 0 to -10V <sup>1</sup>
5	Dynode Enable i/p <sup>2</sup>	18	Dynode Enable i/p <sup>2</sup>
6	NC	19	Dynode Polarity I/p <sup>3</sup>
7	EM Enable i/p <sup>2</sup>	20	EM Voltage Monitor o/p <sup>4</sup>
8	Gnd	21	Gnd
9	-15V	22	Dynode Voltage Monitor o/p <sup>4</sup>
10	+15V	23	+15V
11	NC	24	NC
12	NC	25	NC
13	NC		

### Notes:

- Control Voltage must be between -0.5V & +10.2V
- Enables Low <0.8V or OC = OFF High >2.0V =ON
- Polarity Low <0.8V or OC = -ve High >2.0V =+ve
- Monitors  $Z_{out} = 10k$

## PART NUMBER SELECTION

Part Number: **DC010RZZ781**

DYNODE O/P KV	POLARITY	EM O/P KV	EM POLARITY	DYNODE REVERSING TIME
10 = 10kV	R= Reversible	3kV	Negative	100msec

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