

Excellence in High Voltage DC Detector Series Data Sheet

Fast Polarity Switching PSU

Application:

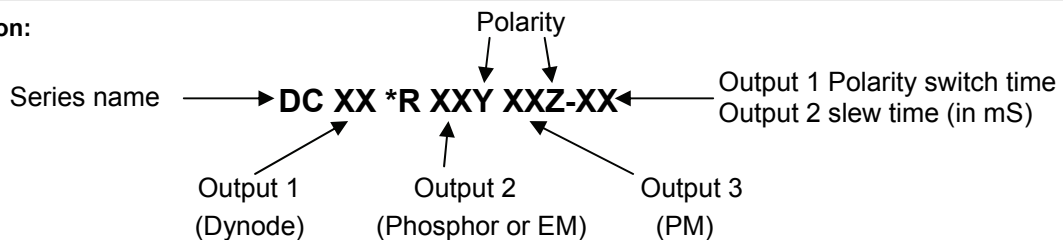
Quadrupole and Ion Trap mass spectrometers using electron multiplier or photomultiplier detectors

- Configurable 2 or 3 outputs
- Up to $\pm 15\text{kV}$ dynode output with Dynamic Control™ fast polarity switching up to 10mS (for $\pm 5\text{kV}$)
- Remote programming, voltage and current monitor & true zero volt crossing with full linear control
- 2 package formats. 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 fast 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. For custom / volume applications please contact us for details.

Part number selection:



Electrical Specification

Input	+24V dc $\pm 10\%$ <1A. 0V input common to HV return and chassis.
Control of output (output 1 only)	0 to $\pm 5\text{V}$ for 0 to 100% rated output voltage, input Z = 1M, polarity follows the control polarity..
Control of output (outputs 2 & 3)	0 to +5V for 0 to 100% rated output voltage, input Z = 1M.
Voltage monitor (all outputs)	Zero to +5V for zero to 100% rated output voltage, $\pm 2\%$ (source Z= 10k)
Protection (all outputs)	All outputs are protected against intermittent arcing and continued short circuit to ground.
Outputs 1 & 2 only	
Output 1 voltage / polarity (Conversion dynode output)	Up to $\pm 15\text{kV}$ / *Reversible, maximum 1kV / mS with settling to 90% of target, this can be limited to a slower speed if required (up to $\pm 10\text{kV}$ is available in the smaller package size).
Output 2 voltage / polarity (Phosphor or EM output)	Up to 10kV / Fixed, "N" denotes negative and "P" denotes positive (position "Y" in part number), maximum 1kV / mS with settling to 90% of target, this can be limited to a slower speed if required.
Output current,	5 μA
Output ripple	500ppm pk / pk
Line regulation	<0.1% for 10% change in input voltage.
Load regulation	<0.1% for 20% to maximum load.
Temperature coefficient,	<200 ppm / °C
Drift (after 1 hour warm up)	<0.01% per hour, <0.05 over an 8 hour period.

Electrical Specification

Output 3 only (PM Detector o/p)

Output voltage / polarity	Up to 3kV / Fixed, "N" denotes negative and "P" denotes positive (position "Z" in part number).
Output current,	0.5mA (higher output current may be available at lower voltages, maximum power is 3W).
Output ripple	<3ppm pk / pk
Line regulation	<20ppm for 10% change in input voltage.
Load regulation	<20ppm for zero to maximum load
Temperature coefficient,	<50 ppm / °C
Drift (after 1 hour warm up)	<15ppm in any 15 minute period, <50ppm in any 8 hour period.
Current monitor (output 3 only)	Zero to +5V for zero to 100% rated output current, ±5% (source Z= 10k)

Environmental Specification

Temperature, storage	-10 to +80°C.	Temperature, operating	0 to +45°C.
Pollution category	II	Humidity (RH)	80% maximum non-condensing

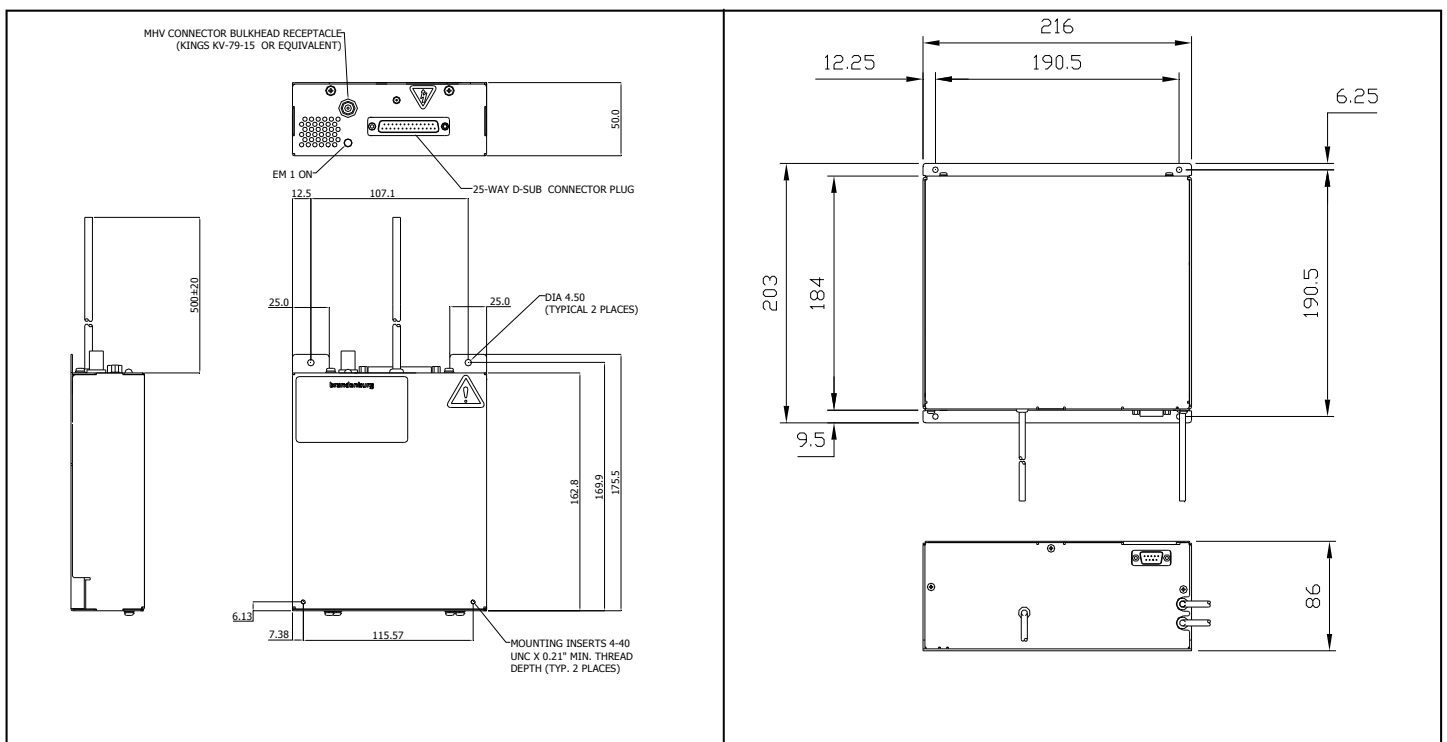
Mechanical Specification

2 output (max V for o/p 1 = 10kV) only types (see left drawing)

Dimensions	175.5 x 107.1 x 50 mm (7" x 2.25" x 2")
Weight	2.5Kg (5.5 lb) approximately
Input / control	25way "D" connector
Output 1	Flying lead, red UL3239 un-screened 30kV cable 0.5m long. HV return to case fixings.
Output 2	1 off MHV BNC connector

2 or 3 output types (see right drawing)

Dimensions	216 x 203 x 86 mm (8.5" x 8" x 3.375")
Weight	3.5Kg (7.75 lb) approximately
Input / control	15way "D" connector
Output 1	Flying lead, red UL3239 un-screened 30kV cable 0.5m long. HV return to case fixings.
Output 2	2 flying leads, URM76 screened cable 0.5m long. HV return to screen or case fixings.



Applied Kilovolts Ltd

Woods Way, Goring by Sea, BN12 4QY. United Kingdom.
 Tel: +44 (0) 1903 708 850 Fax: +44 (0) 1903 708 851
 Web: appliedkilovolts.com E-mail: sales@ appliedkilovolts.com

Applied Kilovolts Inc

3 Dodworth Ct. Suite 303, Timonium, MD 21093. USA.
 Tel: 1 410 303 4828 Fax: 1 410 303 4835
 Web: appliedkilovoltsms.com E-mail: nasales@ appliedkilovolts.com