

**UP TO ±12.5 kV REVERSIBLE HIGH VOLTAGE MODULES
+3kV FLOATING DETECTOR DUAL POWER SUPPLY**



RD Series

Application:

TOF mass spectrometers, floating detectors

- ±5kV, ±7.5kV, ±10kV, ±12.5kV,
- Fast reversing, slewing & settling
- Differential control inputs
- High stability - temp-co <25ppm/°C
- Flashover & short circuit protected
- Detector has ground referenced power, control & feedback



The RD range is a unique family of fast reversing power supplies, directly coupled internally within the unit to a variable 3kV floating detector supply. The Reversible section features very fast slewing and settling times, together with low ripple, tight temperature co-efficient, and very low drift. They include differential control inputs, for compensating for voltage drops on 24V supply return connections, and eliminating the effects of earth loops.

The detector section with ground referenced power, control and feedback, retains excellent stability even during rapid polarity reversal by its biasing supply.

ELECTRICAL SPECIFICATIONS: RD SERIES

UNIT TYPE	BIAS OUTPUT	BIAS O/P CURRENT	BIAS RIPPLE AT FULL LOAD	FLOATING DETECTOR	FLOATING DETECTOR RIPPLE	SIZE (mm)	WEIGHT (kg)
RD005RIP025	-5kV to +5kV	250µA	<150mV (pk to pk)	3kV @400µA	<200mV (pk to pk)	240 x 216 x 57	4.0
RD7.5RIP025*	-7.5 kV to +7.5 kV	150µA	<165mV (pk to pk)	3kV @400µA	<200mV (pk to pk)	240 x 216 x 57	4.0
RD010RIP025*	-10 kV to +10 kV	125µA	<200mV (pk to pk)	3kV @400µA	<200mV (pk to pk)	240 x 216 x 57	4.0
RD012RIP025	-12.5 kV to +12.5 kV	150µA	<200mV (pk to pk)	3kV @400µA	<200mV (pk to pk)	240 x 216 x 57	4.0

ELECTRICAL SPECIFICATION

Input:	+24V dc ±10% <1A. 0V input common to HV return and chassis.	
Control of Bias output:	0V to +10V for 0% to ±100% ±2%, (Z _{in} = 200k) potentiometer options not available	
Voltage Monitor:	-10V to +10V ±2% for -100% to +100%. (Z _{out} = 10k)	
Polarity Control:	Low <2.0V = -ve, High >2.5V or oc =+ve	
Polarity Change-over Time:	<500msec	
Inhibit:	Low <1.2V or OC = Off High >3.6V = On Applies to both Bias & Detector outputs	
Precision Current Monitor:	-10V to +10V ±2%, Offset ±0.1% of FS for -100% to +100%. (Z _{out} = 10k)	
Output Temperature Co-efficient:	Bias <25ppm/°C	Detector <300ppm/°C
Drift (after 1 hour warm up):	<0.01% per hour, <0.05% over an 8 hour period	
Line regulation:	Bias <100ppm for 1V change in input voltage	Detector <0.1%
Load regulation:	Bias <100ppm for 100uA to maximum load	Detector <0.1%
Control of Detector output:	0V to +10V for 0% to +100% ±2%, (Z _{in} = 200k) Minimum Detector Voltage 500V	
Detector Voltage monitor:	0V to +10V for -100% to +100%. ±2% (Z _{out} = 10k)	
Protection (all outputs):	Protected against intermittent arcing and continued short circuit to ground	

* Non-preferred options available for volume applications only.

RD Series

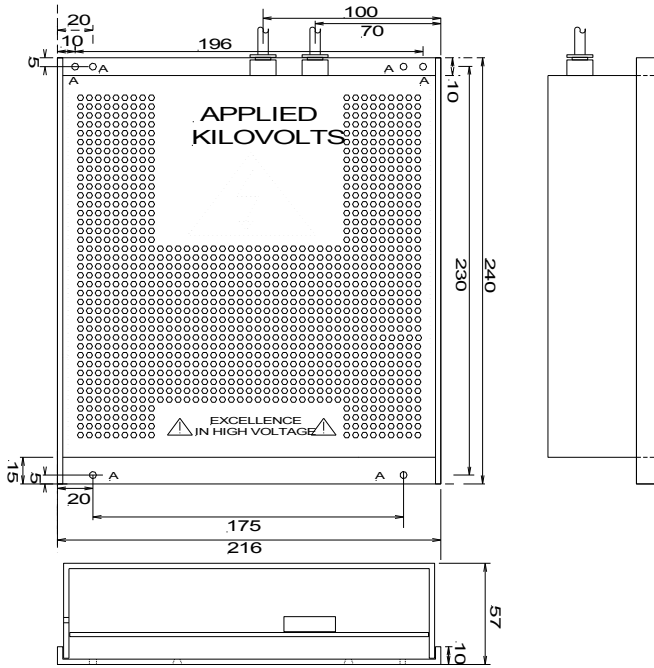
MECHANICAL SPECIFICATION

Mountings:	6 off M4 Clearance holes—see outline drg
Input & control:	Berg 20Way IDC header Part No 65863-069 for use with ribbon cable.
Outputs:	By 0.5m screened (shielded) lead type URM43 Bias Output is internally connected to Detector –ve.

ENVIRONMENTAL SPECIFICATION

Temperature, operating:	+10°C to +50°C	Humidity (RH) <30°C non-condensing:	80% maximum
Temperature, storage:	-35°C to +85°C	Humidity (RH) >30°C non-condensing:	Decrease linearly to 50% at 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 24V dc, impulse limited to overvoltage Category I (of IEC60364-4-443). For use in an environment of pollution degree 2.



Mounting
'A' 6 off M4 clearance holes in the base

PIN ASSIGNMENTS

1	+24V dc input ¹
2	nc
3	+24V dc input ¹
4	Bias Voltage Monitor o/p
5	+24V dc input ¹
6	Current Monitor o/p
7	+24V dc input ¹
8	Bias Voltage Control +i/p ²
9	+24V dc input ¹
10	Bias Voltage Control -i/p ²
11	Signal ground
12	Detector Voltage Control +i/p ²
13	Supply 0V ¹
14	Detector Voltage Control -i/p ²
15	Supply 0V ¹
16	Detector Voltage Monitor o/p
17	Supply 0V
18	Bias Polarity Select i/p, L=<0.5=-ve, H or OC=+ve
19	Supply 0V ¹
20	Inhibit L=OC=<1.0V=OFF, H=>10V=On (both supplies)

Notes:

1. The input connector pins are not rated at the full input current of the power supply. Use at least 2 pins in parallel for the +24V power supply input & the power ground.
2. Control input is fully differential, but -0.6V > Control Return > +0.6V -10.25V < Vpin8 - Vpin10 < 10.25V -0.25V < Vpin12-Vpin14 < 10.25V

PART NUMBER SELECTION

SERIES CODE: RD

O/P kV	POLARITY	OPTIONS CODE	TEMP CO
005 = 5.0kV	R	IP= no options available	25
010=10kV			
012=12.5kV			

Example: RD012RIP025 = 12.5kV version

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