

ZERO CROSSING REVERSIBLE MODULES UP TO ±10kV HIGH VOLTAGE


APPLIED KILOVOLTS

HPZ Series

Application:

Bipolar lens supplies, mass spectrometers, focus & high voltage bias, high voltage amplifiers, E-chucks.

Features:

- 1kV, 2.5kV, 5kV, 10kV, [15kV consult factory]
- Through zero voltage programming
- Fast reversing, slewing & settling
- Differential control input
- High voltage amplifier
- High stability, temp-co <25ppm/°C
- Flashover & short circuit protected
- UL recognised as a component under UL category OGTK2, evaluated under UL61010-1-2nd Edition File No E254121 



The HPZ range is a unique family of high voltage power supplies, extending the operation and versatility of Applied Kilovolts high precision HP series. The HPZ units feature very fast slewing and settling times, together with the ability to slew cleanly through zero. With a differential control input, they operate like a high voltage amplifier with very tight temperature co-efficient of <25ppm/°C. Note – the HPZ range also features a 4 quadrant output stage, so the unit can source or sink up to its maximum output current, in either polarity.

ELECTRICAL SPECIFICATIONS: HPZ SERIES

UNIT TYPE	OUTPUT VOLTAGE	OUTPUT CURRENT	RIPPLE AT FULL LOAD	SLEWING & SETTLING	SIZE (mm)	WEIGHT (kg)
HP001ZIP025	-1kV to +1kV	1mA	55mV (pk to pk)	20msec	159 x 184.5 x 47	2.3
HP2.5ZIP025	-2.5 kV to +2.5 kV	400µA	65mV (pk to pk)	40msec	159 x 184.5 x 47	2.3
HP005ZIP025	-5kV to +5kV	400µA	170mV (pk to pk)	40msec	159 x 184.5 x 47	2.3
HP010ZIP025	-10kV to +10kV	400µA	300mV (pk to pk)	50msec	159 x 184.5 x 47	2.3

ELECTRICAL SPECIFICATION

Input:	+24V dc ±10% <1A. 0V input common to HV return and chassis.
Control of output:	0V to ±10V for 0% to ±100% ±2%, (Z _{in} = 200Kohm) {0V to +10V plus Polarity see option}
Voltage monitor:	-10V to +10V ±2% for -100% to +100%. (Z _{out} = 10k)
Precision Current Monitor:	-10V to +10V ±2%, Offset ±0.1% of FS for -100% to +100%. (Z _{out} = 10k)
Polarity Control — OPTION:	Low <0.8V = +ve, High >2.5V or oc = -ve
Inhibit input:	Low <0.8V = Enable, High >2.5V or oc = Inhibit [only available with 'POL' option]
Output Temperature Co-efficient:	<25ppm/°C
Drift (after 1 hour warm up):	<0.01% per hour, <0.05% over an 8 hour period
Line regulation:	<20ppm for 1V change in input voltage
Load regulation:	<100ppm for 100uA to maximum load

HPZ Series

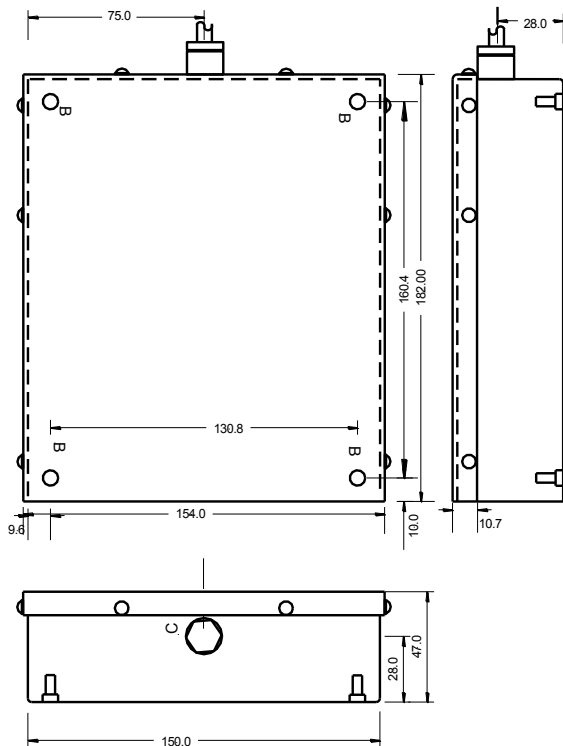
MECHANICAL SPECIFICATION

Mountings:	4 off M3 blind fasteners—see outline drg
Input & control:	20Way IDC straight header for use with ribbon cable
Outputs:	By 1.0m screened (shielded) lead type URM43

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% 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.



PIN ASSIGNMENT

1	+24V dc input ¹	11	Supply 0V ¹
2	nc	12	Supply 0V ¹
3	+24V dc input ¹	13	Supply 0V ¹
4	Voltage monitor o/p	14	Signal ground
5	+24V dc input ¹	15	Supply 0V ¹
6	Current monitor o/p	16	nc
7	+24V dc input ¹	17	Supply 0V ¹
8	Voltage control i/p ²	18	nc ³ Polarity i/p
9	+24V dc input ¹	19	Supply 0V
10	Control return ²	20	nc ³ TTL Inhibit (H= Inhibit)

Notes:

- The input connector pins are not rated at the full input current of the power supply. Please use at least 2 pins in parallel for the +24V power supply input & the power ground.
- Control input is fully differential, but -0.6V > Control Return pin 10 > +0.6V -10.25V < Voltage Control i.e. pin8 - Vpin10 < +10.25V
- Polarity Option – height increases to 52mm
 Pin 8 Control input becomes 0V to +10V only
 Pin 18 becomes polarity input H=Pos
 Pin 20 becomes Inh H=Inh

PART NUMBER SELECTION

SERIES CODE: HP

O/P kV	POLARITY	OPTIONS CODE	TEMP CO
001=1.0kV	Z= Thu Zero	IP= no options	025
2.5=2.5kV	R = Pol option	OP= Polarity Option fitted	
005=5.0kV			
010=10kV			

Example: HP2.5ZIP025 = 2.5kV version with no option fitted.

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