

**0.3kV – 2kV; 1.8W - 2.5W**

**REGULATED, PROGRAMMABLE, ULTRA LOW NOISE HIGH VOLTAGE POWER SUPPLIES**

## FEATURES

- Exceptional Low Noise, High Stability
- Lowest Noise to Below 1Hz
- Analog Programmable
- Voltage and Current Monitor
- Protected Against Arc and Short Circuit
- Very Compact Package, Chassis Mountable
- 6-sided Metal Shielding
- High Performance, Low Cost
- Made in Germany

## APPLICATIONS

- Photomultipliers, Phototubes
- GM Tubes, Radiation Counters Tubes
- MASS Spectrometry, Electron Beam / Ion Beam



The HM24 Series is a family of ultra low noise, high voltage, high performance power supplies. Analog programming and monitor outputs for output voltage and output current are provided.

Output can be controlled by using either an external control voltage or external potentiometer. A very low noise reference voltage output is available. The output voltage is directly proportional to the programming voltage. It features outstanding linearity.

Load regulation is excellent and the output voltage is independent from the input supply voltage. The output is not isolated. High voltage return is internally connected to ground (GND).

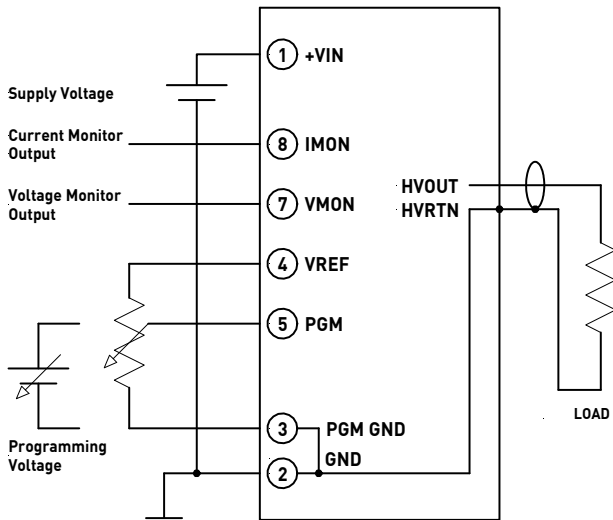
The power supply modules are protected against arc and short circuit.

| Output Voltage | Max. Output Current | Model                    |                          | Ripple (>5kHz)    | Noise (1Hz-5kHz)  |
|----------------|---------------------|--------------------------|--------------------------|-------------------|-------------------|
|                |                     | Positive Polarity Output | Negative Polarity Output |                   |                   |
| 0 – 300V       | 8mA                 | HM24-0.3P-24             | HM24-0.3N-24             | 1mV <sub>PP</sub> | 4mV <sub>PP</sub> |
| 0 – 600V       | 3mA                 | HM24-0.6P-24             | HM24-0.6N-24             | 1mV <sub>PP</sub> | 4mV <sub>PP</sub> |
| 0 – 1000V      | 2.5mA               | HM24-1P-24               | HM24-1N-24               | 1mV <sub>PP</sub> | 4mV <sub>PP</sub> |
| 0 – 1500V      | 1.5mA               | HM24-1.5P-24             | HM24-1.5N-24             | 1mV <sub>PP</sub> | 4mV <sub>PP</sub> |
| 0 – 2000V      | 1mA                 | HM24-2P-24               | HM24-2N-24               | 1mV <sub>PP</sub> | 4mV <sub>PP</sub> |

## SPECIFICATIONS

|   |   |
|---|---|
| Input Supply Voltage (+V <sub>IN</sub> ): | +24V <sub>DC</sub> ±10%   |
| Input Current                             | 300mA typ.  |
| Programming Input (PGM):                  | Control voltage 0 to +10V results in 0 to full rated output; input impedance: 100kΩ typ.  |
| Load Regulation:                          | <20ppm (0 to 100% load change)  |
| Line Regulation:                          | <20ppm (±1V input voltage change)   |
| Temperature Coefficient:                  | 20ppm/K typ., 50ppm/K max.  |
| Stability:                                | 15ppm/15min, 50ppm/8h   |
| Voltage Reference (VREF):                 | 10.00V ±0.2%, 10ppm/K typ.  |
| Monitor Outputs:                          | 0 to +10V, ±1% accuracy, output impedance: 10kΩ   |
| Protection:                               | Arc, output short circuit   |
| Temperature Range:                        | Operating: -10°C to +50°C<br>Storage: -20°C to +70°C  |
| Dimensions (LxWxH):                       | 95.0 x 49.0 x 15.0mm <sup>3</sup>   |
| Weight:                                   | ca. 100g  |
| Input Terminal:                           | Connector housing 4 pin: MOLEX 22-01-3047<br>Connector housing 5 pin: MOLEX 22-01-3057<br>Crimp contact: MOLEX 08-50-0032<br>Assembled mating connectors on request |
| Output Cable:                             | Coaxial cable RG174, length: 500mm, diameter: 2.8mm<br>Other cable lengths on request<br>Output cable fitted with SHV connectors on request                         |
| Operating Conditions:                     | All voltages are referenced to GND.<br>Specifications are at full rated output, rated load, 25°C, after a 1h warm up unless otherwise specified.                    |

## CONNECTION DIAGRAM



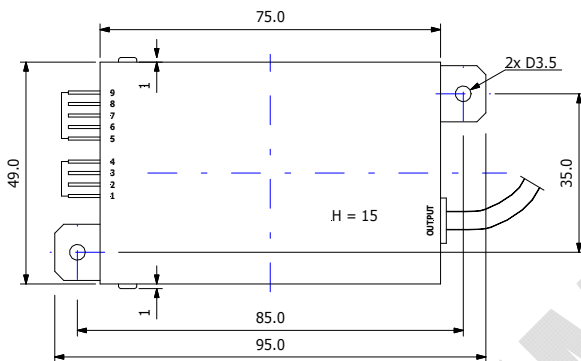
High voltage return of the load should be connected to the HV output cable braid.

## PIN FUNCTION DESCRIPTIONS

| Pin No. | Designation | Function                           |
|---------|-------------|------------------------------------|
| 1       | +VIN        | Input Supply Voltage               |
| 2       | GND         | Power GND                          |
| 3       | PGM GND     | Signal GND (PGM, VREF, VMON, IMON) |
| 4       | VREF        | Reference Voltage Output           |
| 5       | PGM         | Programming Input                  |
| 6       | NC          | not connected                      |
| 7       | VMON        | Voltage Monitor Output             |
| 8       | IMON        | Current Monitor Output             |
| 9       | NC          | not connected                      |
|         | HVOUT       | High Voltage Output                |
|         | HVRTN       | High Voltage Return                |

- Both GND pins and HVRTN are connected internally to the case; they should not be tied together outside the module.

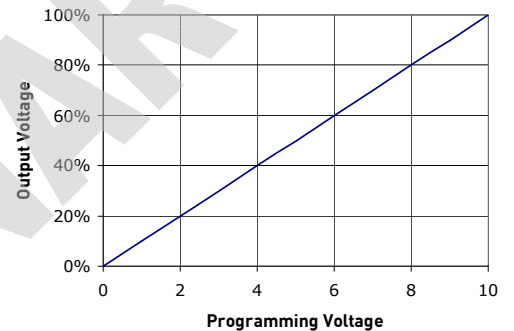
## DIMENSIONS



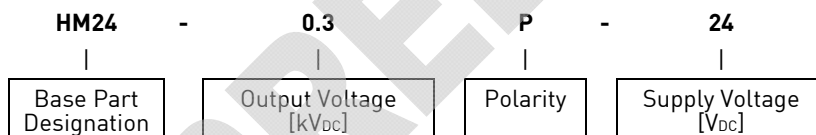
Top view

All dimensions are in mm; drawings not to scale

## CONTROL CHARACTERISTICS



## ORDERING INFORMATION



Example: HM24-0.3P-24 (HM24 series, output 300V<sub>DC</sub> positive, input supply 24V<sub>DC</sub>)

All listed models are RoHS2 compliant.

### Disclaimer

The information given in this data sheet is technical data, not assured product characteristics. It has been carefully checked and is believed to be accurate; however, no responsibility is assumed for inaccuracies. The user has to ensure by adequate tests that the product is suitable for his application regarding safety and technical aspects. hivolt.de GmbH & Co. KG does not assume any liability arising out of the application or use of any product described.

### Safety Advice

Design, installation and inspection of machinery and devices carrying high voltage require accordingly trained and qualified personnel. Appropriate safety rules and directives must be complied with. Improper handling of high voltage can mean severe injuries or death and may cause serious collateral damage!