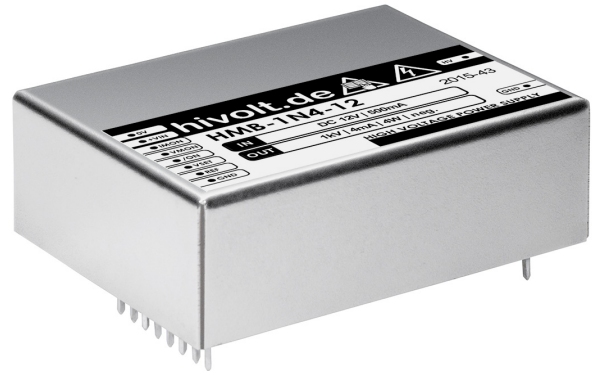


## 500V – 6kV; 4W REGULATED, PROGRAMMABLE HIGH VOLTAGE POWER SUPPLIES

### FEATURES

- High voltages up to 6kV
- Positive or negative polarity
- Internal reference voltage
- Remote On Input
- Stable output voltage
- Patented resonance converter technology
- Low ripple and noise
- Made in Germany



The HMB series is a line of small DC to HV converters providing 500V<sub>DC</sub> to 6000V<sub>DC</sub>, positive or negative, at 4W output power. The output voltage control is achieved by means of a potentiometer or a control voltage. The programming potentiometer can utilize the reference voltage output of the module. Output voltage and output current monitors as well as a remote ON input are provided.

The units are housed in a compact PCB mountable package. The metal box and a patented resonant converter principle guarantee very low EMI. Protected against overload and short circuit. RoHS compliant.

Output Voltage V <sub>NOM</sub>	Max. Output Current I <sub>NOM</sub>	Model		Ripple / Noise *1 (f>10Hz typ. / max.)
		Positive Polarity Output	Negative Polarity Output	
0 – 500V	8.0mA	<b>HMB-0.5P8-12</b>	<b>HMB-0.5N8-12</b>	< 5mV / 10mV <sub>PP</sub>
0 – 1000V	4.0mA	<b>HMB-1P4-12</b>	<b>HMB-1N4-12</b>	< 5mV / 10mV <sub>PP</sub>
0 – 2000V	2.0mA	<b>HMB-2P2-12</b>	<b>HMB-2N2-12</b>	< 5mV / 10mV <sub>PP</sub>
0 – 3000V	1.3mA	<b>HMB-3P1.3-12</b>	<b>HMB-3N1.3-12</b>	< 5mV / 10mV <sub>PP</sub>
0 – 4000V	1.0mA	<b>HMB-4P1-12</b>	<b>HMB-4N1-12</b>	< 5mV / 10mV <sub>PP</sub>
0 – 6000V	0.67mA	<b>HMB-6P0.67-12</b>	<b>HMB-6N0.67-12</b>	< 5mV / 10mV <sub>PP</sub>

### SPECIFICATIONS

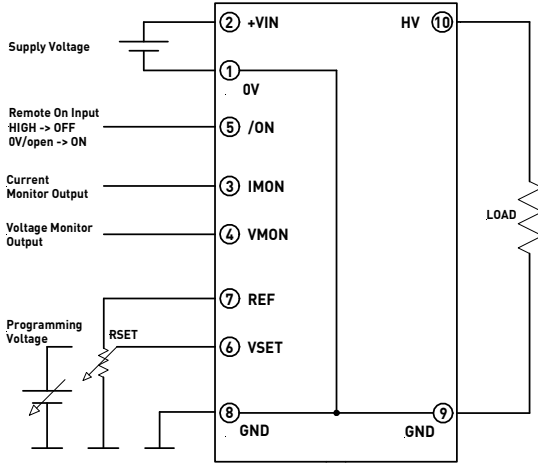
Input Supply Voltage (+V <sub>IN</sub> ):	+12V <sub>DC</sub> ±5%
Input Supply Current *2:	10mA max. (at V <sub>OUT</sub> = 0) 40mA max. (at V <sub>OUT</sub> = V <sub>NOM</sub> , no load) 500mA max. (at V <sub>OUT</sub> = V <sub>NOM</sub> , max load)
Programming Input (VSET):	1. External control voltage: (R <sub>I</sub> = 4.7MΩ) 0 to +5.0V results in 0 to full rated output ±1% (at 0°C to +40°C) ±1.5% (at -20°C to +60°C) 2. External potentiometer R <sub>SET</sub> (10kΩ to 100kΩ) connected between REF and GND; the wiper connected to VSET
Output Voltage Limit:	1.1 * V <sub>NOM</sub>
Output Current Limit:	1.1 * I <sub>NOM</sub>
Line Regulation *1:	< 2 * 10 <sup>-4</sup> * V <sub>NOM</sub> (ΔV <sub>OUT</sub> / ΔV <sub>IN</sub> min to max supply voltage)
Load Regulation *1:	< 5 * 10 <sup>-4</sup> * V <sub>NOM</sub> (ΔV <sub>OUT</sub> / ΔR <sub>LOAD</sub> no load to rated load)
Temperature Coefficient:	≤ 50ppm/K (at 0°C to +40°C) ≤ 150ppm/K (at -20°C to +60°C)
Voltage Reference (REF):	5.0V ±5% / max. 0.5mA
Voltage Monitor (VMON):	0 to 5.0V (R <sub>I</sub> = 10kΩ)
Current Monitor (IMON):	0 to 5.0V (R <sub>I</sub> = 10kΩ)
/ON Input:	ON: 0V or open; OFF (V <sub>OUT</sub> = 0): 2.5V – 5.5V (R <sub>I</sub> = 1MΩ)
Protection:	overload and short circuit
Temperature Range:	Operating: -20°C to +60°C Storage: -20°C to +60°C

Dimensions (LxWxH): HMB-6...: 55 x 40 x 17mm<sup>3</sup>  
 others: 50 x 40 x 17mm<sup>3</sup>

Weight: HMB-6...: ca. 62g  
 others: ca. 42g

Notes:  
 All voltages are referenced to GND.  
 \*1 at 2% \* V<sub>NOM</sub> < V<sub>OUT</sub> ≤ V<sub>NOM</sub>  
 \*2 at full rated output voltage, rated load, 25°C, after 1h warm up

## CONNECTION DIAGRAM

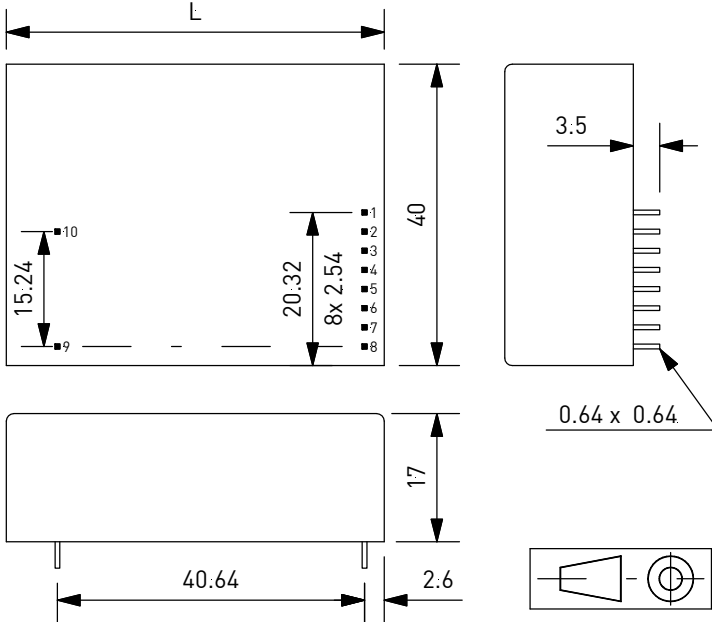


## PIN FUNCTION DESCRIPTIONS

Pin No.	Designation	Function
1	0V	Input Supply Ground
2	+VIN	Input Supply Voltage
3	IMON	Current Monitor Output
4	VMON	Voltage Monitor Output
5	/ON	HV ON Input
6	VSET	Programming Input
7	REF	Reference Voltage Output
8	GND	Ground Reference
9	GND	High Voltage Return
10	HV	High Voltage Output

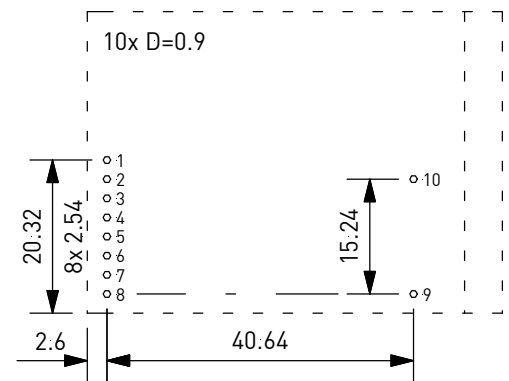
Pins 1, 8 and 9 are internally connected to the case.

## DIMENSIONS



## FOOTPRINT

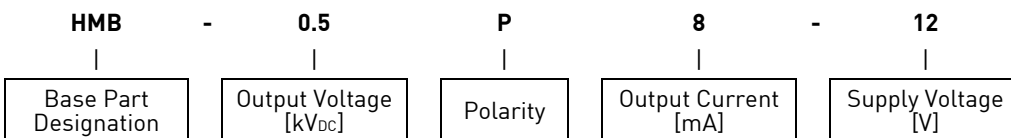
Top view



Dimension L: HMB-6...: 55  
 others: 50

All dimensions are in mm; drawings not to scale

## ORDERING INFORMATION



Example: HMB-0.5P8-12 (HMB series, 0.5kV, positive, 8mA, 12V supply)

### 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!