



## Universal test bench inverter UPI800

Inverter for 3-phase electrical motors



### Main features

- Power electronics with SiC modules with suitable driver control.
- Control and data acquisition via dSPACE MicroLabBox with 50-pin DSub connectors
- AC and DC voltage acquisition ( $\pm 0,6\%$ , 0 – 800 kHz)
- DC current acquisition ( $\pm 1\%$ , 0 – 140 kHz) and AC current acquisition ( $\pm 1\%$ , 0 – 240 kHz)
- Heat sink temperature sensing
- Connection possibilities for resolver and incremental encoders via interface cards
- Protection against overcurrent and overvoltage
- DC power supply via battery simulator or vehicle battery possible
- Internal FPGA logic for self-protection (max. frequency, hot branch, heat sink temperature)

Technical data:

Max. voltage DC:	800 V																																										
Continuous output AC:	490 kVA @ 560 V																																										
Continuous current AC:	500 Arms																																										
Overload current AC:	650 Arms for 30s/750 Arms for 10s																																										
Switching frequency:	1 kHz – max. 20 kHz																																										
Continuous current AC vs. rotating field frequency	<p>UPI800-3 Continuous current I<sub>rms</sub> = f(f<sub>sw</sub>, f<sub>out</sub>), 800VDC (11.04.2024)</p> <table border="1"> <caption>Data points from the graph (approximate values)</caption> <thead> <tr> <th>Output Frequency (Hz)</th> <th>1kHz-200Hz (Arms rms)</th> <th>5kHz-200Hz (Arms rms)</th> <th>10kHz-200Hz (Arms rms)</th> <th>15kHz-200Hz (Arms rms)</th> <th>20kHz-200Hz (Arms rms)</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>250</td> <td>300</td> <td>350</td> <td>400</td> <td>450</td> </tr> <tr> <td>20</td> <td>500</td> <td>500</td> <td>500</td> <td>500</td> <td>500</td> </tr> <tr> <td>100</td> <td>400</td> <td>400</td> <td>400</td> <td>400</td> <td>400</td> </tr> <tr> <td>200</td> <td>300</td> <td>300</td> <td>300</td> <td>300</td> <td>300</td> </tr> <tr> <td>500</td> <td>150</td> <td>150</td> <td>150</td> <td>150</td> <td>150</td> </tr> <tr> <td>1000</td> <td>75</td> <td>75</td> <td>75</td> <td>75</td> <td>75</td> </tr> </tbody> </table>	Output Frequency (Hz)	1kHz-200Hz (Arms rms)	5kHz-200Hz (Arms rms)	10kHz-200Hz (Arms rms)	15kHz-200Hz (Arms rms)	20kHz-200Hz (Arms rms)	0	250	300	350	400	450	20	500	500	500	500	500	100	400	400	400	400	400	200	300	300	300	300	300	500	150	150	150	150	150	1000	75	75	75	75	75
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500	150	150	150	150	150																																						
1000	75	75	75	75	75																																						
DC link capacity:	1,2 mF																																										
Protection class:	1, PE connection with min. 70 mm <sup>2</sup>																																										
Protection:	IP30																																										
Permitted ambient temperature:	5 – 40 °C, non condensing humidity																																										
Auxiliary power supply:	230 V (max. 500 VA) for inverter 230 V (max. 100 VA) for MicroLabBox																																										

Housing dimensions and cooling water connection:

Housing:	approx. 525 x 525 x 250 mm (L x W x H)
Cooling water:	50:50 water-glycol, max. flow temperature: 25 °C, 20 L/min
Dimensions MicroLab-Box mounting:	approx. 450 x 450 x 140 mm (L x W x H)

Schematic representation:

