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All about e-mobility

Universal test bench inverter UPI800

Inverter for 3/6-phase electrical motors

19″ rack with MicroLabBox®

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 (± 0,6%, 0 – 800 kHz)
- DC and AC current acquisition (± 1%, 0 – 72 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)

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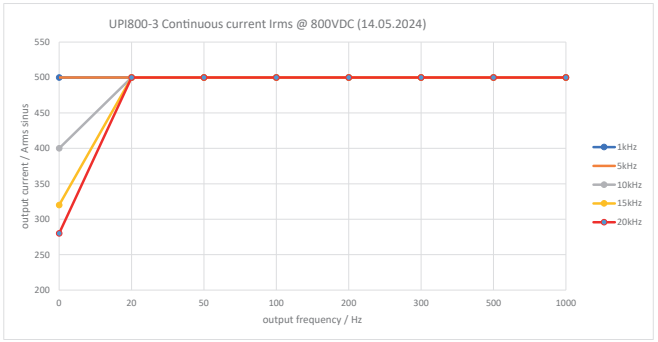
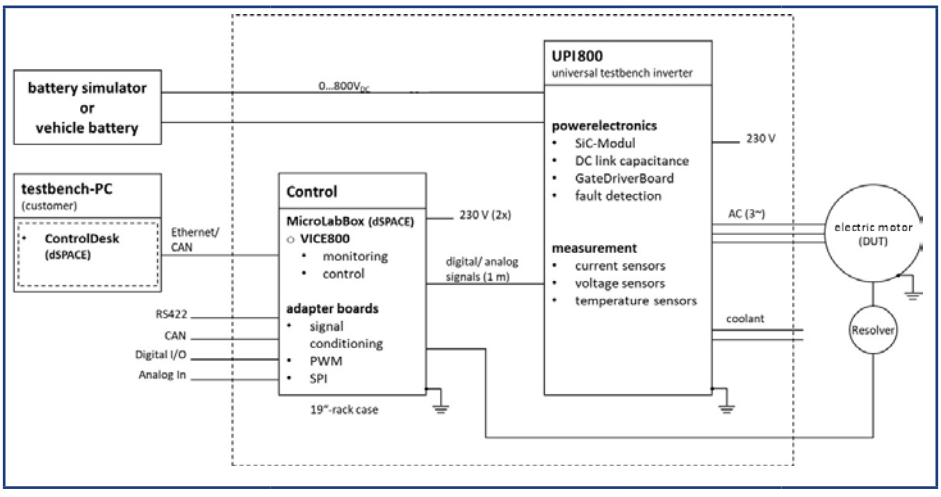
Technical data:

Max. voltage DC:	800 V
Continuous output AC:	490 kVA @ 560 V
Continuous current AC:	500 Arms (3-phase), 250 Arms (6-phase)
Overload current AC:	650 Arms for 30 s/750 Arms for 10 s (3-phase) 325 Arms for 30 s/375 Arms for 10 s (6-phase)
Switching frequency:	1 kHz – max. 20 kHz
Continuous current AC vs. rotating field frequency	
DC link capacity:	1,2 mF
Protection class:	1, PE connection with min. 70 mm^2
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. 610 x 605 x 240 mm (L x W x H)
Weight:	approx. 50 kg
Cooling water:	50:50 water-glycol, max. flow temperature: 25 °C, 20 L/min
Dimensions MicroLab-Box housing:	approx. 450 x 450 x 140 mm (L x W x H)

Schematic representation:



EESM extension

Main features

- Extension module to the UPI800 for supplying externally excited machines (the module is integrated into the UPI800 and must therefore be taken into account when ordering)
- Control and measured value acquisition via the UPI800‘s control module
- Monitoring of coolant temperature, overcurrent and overvoltage
- Internal communication with the UPI800 control board
- DC power supply directly from UPI800 or externally via additional source possible
- Integrated buck converter to reduce the excitation voltage
- Current regulator for setting the excitation current
- Prepared for contactless and transformer-based transmission of the excitation current

Technical data:

Max. voltage DC:	800 V
Exciting current:	–40 A ... + 40 A
Continuous output AC:	max. 4 kW
Current dynamics:	depending on the regulation approx. 3 A/ms (> 500 V @L_{exc} = 140 mH and R = 2,9 Ω)
Switching frequency:	10 ... 50 kHz
Housing:	approx. 610 x 605 x 340 mm (L x W x H)
Weight:	approx. 65 kg