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All about e-mobility

Modular inverter system UPI48-M

Modular inverter for multi-phase 48 V-system



Main features

- Modular system, consisting of 19"-3U-rack-mount chassis unit, 19"-2U-control unit and configurable half-bridge plug-in modules
- Up to 6 slots for half-bridge plug-in modules available in the power unit
- Half-bridge modules configurable as step-up/step-down converters, interleaved DC-DC converters, full-bridge DC/DC or DC/AC converters, 3-/6-phase DC/AC converters, multilevel converters
- Each half-bridge module contains its own current, voltage and temperature measurement circuitry

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Technical data:

DC-link voltage range:	8 – 60 VDC per power card, serial connection up to 400 VDC possible
Output current per half-bridge module:	± 125 A rated/sine with 150 A peak (amplitude)
Switching frequency:	0 – 100 kHz
DC-link capacitance per half-bridge module:	800 µF
Analog signals for half-bridge module (isolated):	- Output current, accuracy ≤ 0,5% for T_A = 25 °C, –3 dB-bandwidth 0 ... 750 kHz - Output voltage, –3 dB-bandwidth 0 ... 600 kHz, DC-link input voltage 800 Hz – 3 dB, accuracy ≤ 0,10% for T_A = 25 °C
Included protection features:	DC-link overvoltage, devices overtemperature, overcurrents at transistors or output, minimum dead-time or cross-conduction, supply undervoltage, fan stall
Signal connection to the half-bridge modules	DSUB-26 cable with differential digital and analog signals
Signal connection to the control unit: MicroLab-Box II® or similar	4 DSUB-50 cable
External communication: status messages	CAN 2.0 with selectable via DIL switches messages' IDs
Trigger signals:	2 BNC connectors, TTL level 0/5 V
Additional inputs:	2 configurable resolver/encoder inputs DSUB-9
Power supply for control unit:	230 VAC, 200 W
Power supply half-bridge module:	+ 12 VDC, 2 A (provided by distribution unit or generated from DC link)

Housing dimensions and cooling:

Dimensions:	19"- Racks Control unit 2U, 315 mm deep Power unit 3U, 495 mm deep for installing a maximum of 6 half-bridge modules
Cooling:	Forced air cooling with speed and temperature monitoring

Schematic representation:

