LTI RE ENERGY
KÖRBER SOLUTIONS

DATA SHEET

# PVMaster III EM with Ampt Mode™

## PVM3.86.500.EM

- Central inverter for direct connection to a medium voltage transformer
- Voltage range 860 V to 920 V
- Applicable with all common module types
- Maximum efficiency >98.8 % 7)
- Inverter is optimized to operate in Ampt Mode™

### Technical data

| Designation | PVM3.86.500.EM |
|---|---|
| **Generator connection (DC)** | |
| Recommended PV generator output 1) | 550 kWp |
| Min./max. input voltage ($V_{dc\,min}$ / $V_{dc\,max}$) | 860 V / 1000 V |
| Voltage range ($V_{min}$ to $V_{max}$) | 860 V to 920 V |
| Voltage controller | 1 |
| Max. input current ($I_{dc\,max}$) | 600 A |
| Rated input voltage ($V_{dc,r}$) | 880 V |
| Start voltage supply ($V_{dc\,start}$) 2) | 860 V |
| Termination technique flat terminal (L+, L-) 3) | M12 (1 x 300 mm² Cu, 2 x 150 mm² Cu, 1 x 400 mm² Al, 2 x 185 mm² Al) |
| **Mains power connection (AC)** | |
| Max. output power ($S_{ac,r}$) at $V_{ac,r}$ | 500 kVA |
| Rated power ($P_{ac,r}$) at cos φ = 1 4) | 500 kW |
| Rated voltage ($V_{ac,r}$) 5) | 555 V |
| Min./max. output voltage ($V_{ac\,min}$ / $V_{ac\,max}$) | In accordance with country-specific requirements |
| Rated frequency ($f_r$) | 50 Hz / 60 Hz |
| Frequency range ($f_{min}$ to $f_{max}$) | In accordance with country-specific requirements |
| Max. output current ($I_{ac\,max}$) | 520 A |
| System form | IT (3~) |
| Power factor cos φ 6) | Adjustable 0.8 ind. to 0.8 cap. |
| Distortion factor (THD) at $P_{ac,r}$ | <2.5 % |
| Termination technique flat terminal (L1, L2, L3) | M10 (1 x 240 mm² Cu, 2 x 120 mm² Cu, 1 x 300 mm² Al, 2 x 185 mm² Al) |
| **Efficiency 7)** | |
| Max. efficiency | >98.8 % |
| European efficiency | >98.6 % |
| CEC efficiency | >98.6 % |
| **Dimensions** | |
| Height (including 200 mm plinth) | 2080 mm |
| Width | 1200 mm |
| Depth | 500 mm |
| Weight (approx.) | 470 kg |
| **General data** | |
| Immediate vicinity | Indoor installation |
| Ambient temperature 8) | -10°C to +50°C |
| Relative humidity 8) | 15 % to 95 %, condensation not permitted |
| Pollution severity (EN 60664-1) | 2 |
| Cooling method | Regulated air/liquid cooling |
| Fresh air requirement | 600 m³/h |
| **Liquid cooling** | |
| Max. coolant input temperature | 60°C |
| Min. coolant flow rate | 8 l/min |
| Coolant | Water-glycol mixture |

1) At Module-STC (1000 W/m²; AM 1.5; 25°C) in accordance with EN 60904-3 — Data as per EN 50524
2) The actual DC start voltage is derived from the Ampt™ string optimizer
3) With DC main switch
4) At cos φ = 1 the maximum apparent power ($S_{ac,r}$) of the unit is available as active power at the rated grid voltage ($V_{ac,r}$). The maximum active power will be reduced accordingly with decreasing grid voltage and/or decreasing power factor cos φ.
5) Line-to-line voltage; other rated system voltages on request
6) Engineering notes regarding module design at reactive power from 0.9 ind. or 0.9 cap.
7) Data referred to inverter excluding medium voltage transformer
8) Option cabinet heater is required if frosting occurs or humidity higher than 85 %

Revision: 7
Date: 03/2018

## Technical data

| Designation | PVM3.86.500.EM |
|---|---|
| Power consumption | |
| Intrinsic consumption in active mode (approx.) | 600 W |
| Standby power consumption [9] / night | <100 W / 1.5 W |
| External auxiliary voltage supply | 1 x terminal, three-phase, 400 V, 50/60 Hz |
| Safety / Protective equipment | |
| Protection class (IEC 62103) | 1 |
| Protection type (IEC 60529) | Dependent on installed exhaust air system, otherwise IP20 |
| Insulation monitoring of PV generator | Yes |
| AC/DC surge voltage protector | Optional / Yes |
| Temperature monitoring | Temperature-dependent derating, shutdown at impermissible temperatures |
| Overload response | Current limitation, operating point shift |
| PV generator/mains decoupling | Electrical isolation by low frequency transformer |
| Disconnection option | Yes |
| Standards | |
| General | – CE conformity<br>– Conforming to EEG 2014<br>– DIN EN 62109: Safety of power converters for use in photovoltaic power systems<br>– DIN EN 61000-6-2 and DIN EN 61000-6-4: Electromagnetic compatibility |
| Grid monitoring | – In accordance with country-specific requirements |
| Interfaces / Features / Options | |
| Interfaces | – 1 x Ethernet (RJ45)<br>– 1 x microSD card<br>– 7 x digital outputs as floating contacts (24 V to 230 V, AC/DC, changeover contact)<br>– 7 x digital inputs with extended-range actuation coils (24 V or 230 V, AC/DC)<br>– 2 x S0 pulse inputs or digital inputs with extended-range actuation coils (24 V or 230 V, AC/DC)<br>– 2 x analog inputs (0 V to +10 V / -10 V to +10 V / 0 mA to 20 mA / 4 mA to 20 mA)<br>– 2 x PT100 input<br>– 1 x CAN (e.g. for string monitoring)<br>– 1 x LTI InterCOM (cross-communication between multiple PVMaster III) |
| Features | – DC surge protector type 2<br>– AC surge protector type 2 (auxiliary supply AC voltage)<br>– DC main switch<br>– AC short-circuit proofing<br>– Insulation monitoring of PV generator<br>– Extensive power factor control functions for static and dynamic grid stabilisation<br>– Web server<br>– Integrated data logger<br>– Support for various online portals |
| Options | – LTI medium voltage transformer<br>– DC surge protector type 1 + 2<br>– AC surge protector type 1 + 2<br>– PV generator earthing<br>– Heavy-duty transportation and mounting plinth<br>– VPN modem (GSM, DSL) for remote data access and transmission<br>– Control unit with extensive functionality<br>– Online monitoring of operational data<br>– Trouble reports issued by e-mail<br>– Air/liquid heat exchanger with pump<br>– LTI plant control system |

9) Without fan in passive mode