

PVMaster III EM

PVM3.59.350.EM

- Central inverter for direct connection to a medium voltage transformer
- MPP voltage range 590 V to 920 V
- Applicable with all common module types
- Maximum efficiency >98.8 % ⁷⁾



Technical data

Designation	PVM3.59.350.EM
Generator connection (DC)	
Recommended PV generator output ¹⁾	385 kWp
Min./max. input voltage ($V_{dc, min} / V_{dc, max}$)	590 V / 1000 V
MPP voltage range ($V_{mpp, min}$ to $V_{mpp, max}$)	590 V to 920 V
MPP-Tracker	1
Max. input current ($I_{dc, max}$)	600 A
Rated input voltage ($V_{dc, r}$)	640 V
Start voltage supply ($V_{dc, start}$) ²⁾	660 V
Termination technique flat terminal (L+, L-) ³⁾	M12 (1 x 300 mm ² Cu, 2 x 150 mm ² Cu, 1 x 400 mm ² Al, 2 x 185 mm ² Al)
Mains power connection (AC)	
Max. output power ($S_{ac, r}$) at $V_{ac, r}$	350 kVA
Rated power ($P_{ac, r}$) at $\cos \varphi = 1$ ⁴⁾	350 kW
Rated voltage ($V_{ac, r}$) ⁵⁾	390 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 $\cos \varphi$ 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 mm ² Cu, 2 x 120 mm ² Cu, 1 x 300 mm ² Al, 2 x 185 mm ² 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 m ³ /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 currently available PV generator output

3) With DC main switch

4) At $\cos \varphi = 1$ 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 $\cos \varphi$.

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 %

Technical data

Designation	PVM3.59.350.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	<ul style="list-style-type: none"> – CE conformity – Conforming to EEG 2014 – DIN EN 62109: Safety of power converters for use in photovoltaic power systems – 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	<ul style="list-style-type: none"> – 1 x Ethernet (RJ45) – 1 x microSD card – 7 x digital outputs as floating contacts (24 V to 230 V, AC/DC, changeover contact) – 7 x digital inputs with extended-range actuation coils (24 V or 230 V, AC/DC) – 2 x S0 pulse inputs or digital inputs with extended-range actuation coils (24 V or 230 V, AC/DC) – 2 x analog inputs (0 V to +10 V / -10 V to +10 V / 0 mA to 20 mA / 4 mA to 20 mA) – 2 x PT100 input – 1 x CAN (e.g. for string monitoring) – 1 x LTI InterCOM (cross-communication between multiple PVMaster III)
Features	<ul style="list-style-type: none"> – DC surge protector type 2 – AC surge protector type 2 (auxiliary supply AC voltage) – DC main switch – AC short-circuit proofing – Insulation monitoring of PV generator – Extensive power factor control functions for static and dynamic grid stabilisation – Web server – Integrated data logger – Support for various online portals
Options	<ul style="list-style-type: none"> – LTI medium voltage transformer – DC surge protector type 1 + 2 – AC surge protector type 1 + 2 – PV generator earthing – Heavy-duty transportation and mounting plinth – VPN modem (GSM, DSL) for remote data access and transmission – Control unit with extensive functionality – Online monitoring of operational data – Trouble reports issued by e-mail – Air/liquid heat exchanger with pump – LTI plant control system

9) Without fan in passive mode