

PVmaster II EM

PVM2-45-132-EM to PVM2-45-270-EM PVM2-50-200-EM to PVM2-50-305-EM

- Large-scale inverter for direct connection to a medium voltage transformer
- MPP voltage range 450 V to 850 V or 500 V to 850 V
- Applicable with all common module types
- Maximum efficiency >98 %



Technical data

Designation	PVM2-45-				PVM2-50-	
	132-EM	175-EM	230-EM	270-EM	200-EM	305-EM
Generator connection (DC)						
Recommended PV generator output ¹⁾	145 kWp	195 kWp	250 kWp	300 kWp	220 kWp	335 kWp
Min./max. input voltage ($V_{dc\ min}$ / $V_{dc\ max}$)	450 V / 900 V				500 V / 900 V	
MPP voltage range ($V_{mpp\ min}$ to $V_{mpp\ max}$)	450 V bis 850 V				500 V bis 850 V	
MPP-Tracker	1				1	
Max. input current ($I_{dc\ max}$)	302 A	401 A	526 A	618 A	412 A	628 A
Rated input voltage ($V_{dc,r}$)	500 V	500 V	500 V	500 V	550 V	550 V
Start voltage supply ($V_{dc\ start}$) ²⁾	510 V	510 V	510 V	510 V	565 V	565 V
Termination technique flat terminal (L+, L-) ³⁾	M10	M10	M12	M12	M12	M12
Mains power connection (AC)						
Max. output power ($S_{ac,r}$) at $V_{ac,r}$	132 kVA	175 kVA	230 kVA	270 kVA	200 kVA	305 kVA
Rated power ($P_{ac,r}$) at $\cos \varphi = 1$	132 kW	175 kW	230 kW	270 kW	200 kW	305 kW
Rated voltage ($V_{ac,r}$) ⁴⁾	290 V				330 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 ($I_{ac\ max}$)	263 A	349 A	458 A	538 A	350 A	534 A
System form	IT (3~)					
Power factor $\cos \varphi$	Adjustable 0.8 ind. to 0.8 cap.					
Distortion factor (THD) at $P_{ac,r}$	<2.5 %					
Termination technique box terminal (L1, L2, L3)	120 mm² to 300 mm²					
Efficiency						
Max. efficiency	>98 %	>98 %	>98 %	>98 %	>98 %	>98 %
European efficiency	>97,5 %	>97,5 %	>97,5 %	>97,5 %	>97,5 %	>97,5 %
CEC efficiency	>97 %	>98 %	>98 %	>98 %	>98 %	>98 %
Dimensions						
Height (including 200 mm plinth)	2000 mm	2000 mm	2000 mm	2000 mm	2000 mm	2000 mm
Width	1000 mm	1000 mm	1000 mm	1000 mm	1000 mm	1000 mm
Depth	800 mm	800 mm	800 mm	800 mm	800 mm	800 mm
Weight (approx.)	400 kg	600 kg	600 kg	700 kg	400 kg	700 kg
General data						
Immediate vicinity	Indoor installation					
Ambient temperature	-10 °C to +50 °C ⁵⁾					
Relative humidity	15 % to 85 %, condensation not permitted					
Fresh air requirement	1100 m³/h	1100 m³/h	1100 m³/h	1100 m³/h	1100 m³/h	1100 m³/h
Cooling method	Regulated air/water cooling					
Pollution severity (EN 60664-1)	2					
Power consumption						
Intrinsic consumption in active mode	<1 % rated power ($P_{ac,r}$)					
Standby power consumption ⁶⁾ / night	<100 W / 1.5 W					
External auxiliary voltage supply	1 x terminal, three-phase, 400 V, 50/60 Hz					

1) At Module-STC in accordance with EN 60904-3

Data as per E EN 50524:2008-10

2) The actual DC start voltage is derived from the currently available PV generator output

3) With DC main switch

4) Line-to-line voltage; other rated system voltages on request

5) Ratings up to 45 °C; power derating where appropriate at higher ambient temperatures

6) Without fan in passive mode

Technical data

Designation		PVM2-45-				PVM2-50-	
		132-EM	175-EM	230-EM	270-EM	200-EM	305-EM
Safety / Protective equipment							
Protection class (IEC 62103)		1					
Protection type (IEC 60529)		Dependent on installed exhaust air system, otherwise IP00					
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					
Isolation point		Yes					
Standards							
General		CE conformity Conforming to EEG 2009 DIN EN 50178: Electronic equipment for use in power installations DIN EN 61000-6-2 and DIN EN 61000-6-4: Electromagnetic compatibility VDE-AR-N 4105 DIN EN 61439-1: Low voltage switchgear assemblies DIN EN 50274: Low voltage switchgear assemblies - Protection against electric shock DIN EN 61000-3-12: Limits for harmonic currents produced by equipment connected to public low-voltage systems with input current >16 A and ≤75 A per phase BDEW (Bundesverband der Energie- und Wasserwirtschaft e. V. - Federal Energy and Water Management Association) guidelines: Guidelines for connection and parallel operation of generating plants on medium voltage networks, issued 06/2008, and regulations and transition periods for specific requirements supplementary to the technical guidelines, issued 02/2011.					
System monitoring		In accordance with country-specific requirements					
Interfaces / Features / Options							
Interfaces		1 x Ethernet (RJ45) 1 x µSD card 5 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 to 230 V, AC/DC) 2 x S0 pulse inputs 2 x analog inputs (0 V to +10 V / -10 V to +10 V / 0 mA to 20 mA / 4 mA to 20 mA) 1 x PT100 input 1 x CAN (e.g. for string monitoring) 1 x LTI InterCOM (cross-communication between multiple PVmaster II)					
Features		DC surge protector type 2 DC main switch AC short-circuit proofing Insulation monitoring of PV generator Web server with extensive functionality Integrated data logger Support for various online portals					
Options		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 GSM modem Control station with extensive functionality Online monitoring of operational data Trouble reports issued by e-mail or SMS Service contract, service extension Air/water heat exchanger with pump					