PVmaster II TT

PVM2-45-045-TT to PVM2-45-110-TT

- Large-scale inverter with integrated transformer for connection to the low-voltage system
- MPP voltage range 450 V to 850 V
- Applicable with all common module types
- Maximum efficiency >97 %

Technical data

Designation	PVM2-45-045-TT	PVM2-45-075-TT	PVM2-45-090-TT	PVM2-45-100-TT	PVM2-45-110-TT
Generator connection (DC)					
Recommended PV generator output [1]	50 kWp	83 kWp	100 kWp	110 kWp	120 kWp
Min./max. input voltage ($V_{dc\ min}$ / $V_{dc\ max}$)	450 V / 850 V	450 V / 900 V	450 V / 900 V	450 V / 900 V	450 V / 900 V
MPP voltage range ($V_{mpp\ min}$ to $V_{mpp\ max}$)	450 V to 850 V	450 V to 850 V	450 V to 850 V	450 V to 850 V	450 V to 850 V
Max. input current ($I_{dc\ max}$)	103 A	172 A	206 A	229 A	252 A
Rated input voltage ($V_{dc,r}$)	500 V	500 V	500 V	500 V	500 V
Start voltage supply ($V_{dc\ start}$) [2]	510 V	510 V	510 V	510 V	510 V
Termination technique flat terminal (L+, L-)	M10				
Mains power connection (AC)					
Max. output power ($S_{ac,r}$) at $V_{ac,r}$	45 kVA	75 kVA	90 kVA	100 kVA	110 kVA
Rated power ($P_{ac,r}$) at cos φ = 1	45 kW	75 kW	90 kW	100 kW	110 kW
Rated voltage ($V_{ac,r}$) [3]	400 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 ($I_{ac\ max}$)	65 A	108 A	130 A	145 A	159 A
Recommended fusing (low-voltage HRC)	80 A	125 A	160 A	160 A	200 A
System form	TN-S (3~/N/PE) / TN-C (3~/PEN)				
Power factor cos φ	Adjustable 0.8 ind. to 0.8 cap.				
Distortion factor (THD) at $P_{ac,r}$	<2.5 %				
Termination technique flat terminal (L1, L2, L3)	M8	M8	M8	M8	M10
Efficiency					
Max. efficiency	>96 %	>97 %	>97 %	>97 %	>97 %
European efficiency	>96 %	>96 %	>96 %	>96 %	>96 %
CEC efficiency	>96 %	>96 %	>96 %	>96 %	>96 %
Dimensions					
Height (including 200 mm plinth)	2000 mm	2000 mm	2000 mm	2000 mm	2000 mm
Width	800 mm	800 mm	800 mm	800 mm	800 mm
Depth	800 mm	800 mm	800 mm	800 mm	800 mm
Weight (approx.)	500 kg	700 kg	800 kg	800 kg	900 kg
General data					
Immediate vicinity	Indoor installation				
Ambient temperature	-10 °C to +50 °C [4]	-10 °C to +50 °C [5]			
Relative humidity	15 % to 85 %, condensation not permitted				
Fresh air requirement	700 m³/h	700 m³/h	700 m³/h	700 m³/h	700 m³/h
Cooling method	Regulated air 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, single-phase, 230 V, 50/60 Hz				

1) At Module-STC in accordance with EN 60904-3
2) The actual DC start voltage is derived from the currently available PC generator output
3) Line-to-line voltage; other rated system voltages on request
4) Ratings up to 40 °C; power derating where appropriate at higher ambient temperatures
5) Ratings up to 45 °C; power derating where appropriate at higher ambient temperatures
6) Without fan in passive mode

Data as per E EN 50524:2008-10

Technical data

Designation	PVM2-45-045-TT	PVM2-45-075-TT	PVM2-45-090-TT	PVM2-45-100-TT	PVM2-45-110-TT
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				
System monitoring [7]	■ VDEW, DIN V VDE V 0126-1-1 (including country-specific variations), RD1663/200, Enel Connection Guide (DK5940), C10/11 EN 50438, ÖNORM E8001-4-712, IEC 61727, IEC 62116, G59/2, others on request				
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 ■ TFT LCD touch-screen ■ Web server with extensive functionality ■ Integrated data logger ■ Support for various online portals ■ Heavy-duty transportation and mounting plinth				
Options	■ DC surge protector type 1 + 2 ■ AC surge protector type 1 + 2 ■ PV generator earthing ■ GSM modem ■ Online monitoring of operational data ■ Trouble reports issued by e-mail or SMS ■ Service contract, service extension				

7) Referred to settings of the internal system monitor / switching point; UL equipment on request (UL1741/IEEE 1547)

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Revision: 2.2
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PVmaster II TT

PVM2-50-085-TT to PVM2-50-125-TT

- Large-scale inverter with integrated transformer for connection to the low-voltage system
- MPP voltage range 500 V to 850 V
- Applicable with all common module types
- Maximum efficiency >97 %

Technical data

	PVM2-50-	
Designation	**085-TT**	**125-TT**
Generator connection (DC)		
Recommended PV generator output [1]	95 kWp	140 kWp
Min./max. input voltage ($V_{dc\ min}$ / $V_{dc\ max}$)	500 V / 900 V	500 V / 900 V
MPP voltage range ($V_{mpp\ min}$ to $V_{mpp\ max}$)	500 V to 850 V	500 V to 850 V
Max. input current ($I_{dc\ max}$)	175 A	258 A
Rated input voltage ($V_{dc,r}$)	550 V	550 V
Start voltage supply ($V_{dc\ start}$) [2]	565 V	565 V
Termination technique flat terminal (L+, L-)	M10	
Mains power connection (AC)		
Max. output power ($S_{ac,r}$) at $V_{ac,r}$	85 kVA	125 kVA
Rated power ($P_{ac,r}$) at cos φ = 1	85 kW	125 kW
Rated voltage ($V_{ac,r}$) [3]	400 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 ($I_{ac\ max}$)	123 A	181 A
Recommended fusing (low-voltage HRC)	160 A	200 A
System form	TN-S (3~/N/PE) / TN-C (3~/PEN)	
Power factor cos φ	Adjustable 0.8 ind. to 0.8 cap.	
Distortion factor (THD) at $P_{ac,r}$	<2.5 %	
Termination technique flat terminal (L1, L2, L3)	M8	M10
Efficiency		
Max. efficiency	>97 %	>97 %
European efficiency	>96 %	>96 %
CEC efficiency	>96 %	>96 %
Dimensions		
Height (including 200 mm plinth)	2000 mm	2000 mm
Width	800 mm	800 mm
Depth	800 mm	800 mm
Weight (approx.)	700 kg	900 kg
General data		
Immediate vicinity	Indoor installation	
Ambient temperature	-10 °C to +50 °C [4]	
Relative humidity	15 % to 85 %, condensation not permitted	
Fresh air requirement	700 m³/h	700 m³/h
Cooling method	Regulated air cooling	
Pollution severity (EN 60664-1)	2	
Power consumption		
Intrinsic consumption in active mode	<1 % rated power ($P_{ac,r}$)	
Standby power consumption [5] / night	<100 W / 1.5 W	
External auxiliary voltage supply	1 x terminal, single-phase, 230 V, 50/60 Hz	

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2) The actual DC start voltage is derived from the currently available PC generator output
3) Line-to-line voltage; other rated system voltages on request
4) Ratings up to 45 °C; power derating where appropriate at higher ambient temperatures
5) Without fan in passive mode

Data as per E EN 50524:2008-10

Technical data

Designation	PVM2-50- 085-TT	125-TT
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	
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