

PVMaster Concrete Station

PVC3.57.0999

- PVMaster Concrete Station
for direct connection to the medium voltage system
- MPP voltage range 570 V to 920 V
- Applicable with all common module types
- Maximum efficiency >98.8 % ⁵⁾
- Integrated measuring field



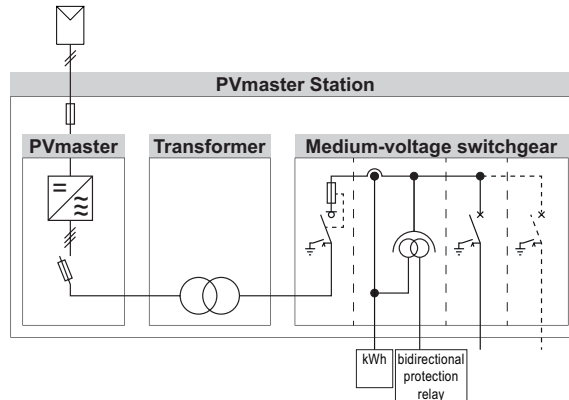
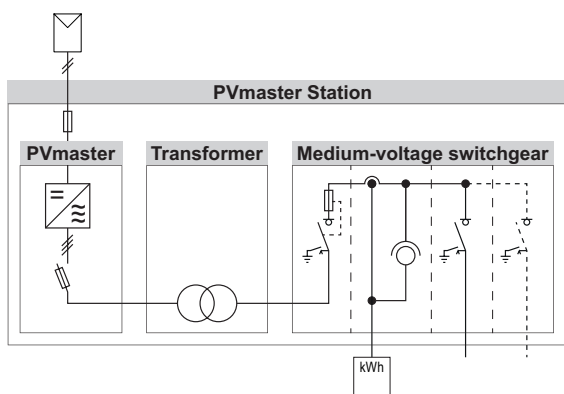
Technical data

Designation	PVC3.57.0999
Generator connection (DC)	
Recommended PV generator output ¹⁾	1099 kWp
Min./max. input voltage ($V_{dc, min} / V_{dc, max}$)	570 V / 1000 V
MPP voltage range ($V_{mpp, min}$ to $V_{mpp, max}$)	570 V to 920 V
Max. input current ($I_{dc, max}$)	3 x 600 A
Rated input voltage ($V_{ac,r}$)	640 V
Start voltage supply ($V_{dc, start}$) ²⁾	660 V
Number of MPP trackers	1
Termination technique (L+, L-)	Cage clamp terminal 240 mm ²
Mains power connection (AC)	
Max. output power ($S_{ac,r}$) at $V_{ac,r}$	999 kVA
Rated power ($P_{ac,r}$) at $\cos \varphi = 1$ ³⁾	999 kW
Rated voltage ($V_{ac,r}$) ⁴⁾	20 kV / 33 kV
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 ($I_{ac, max}$) at 20 kV / 33 kV	28.9 A / 17.5 A
System form	In accordance with country-specific requirements
Power factor $\cos \varphi$	Adjustable 0.8 ind. to 0.8 cap.
Distortion factor (THD) at $P_{ac,r}$	<2.5 %
Termination technique (L1, L2, L3)	Medium voltage substation
Efficiency ⁵⁾	
Max. efficiency	>98.8 %
European efficiency	>98.6 %
CEC efficiency	>98.6 %
Dimensions	
Height	3,500 mm incl. 600 mm cable basement
Width	7,200 mm
Depth ⁶⁾	2,500 mm
Weight (approx.)	35,000 kg
General data	
Immediate vicinity	Outdoor installation
Ambient temperature	-20 °C to +50 °C ⁷⁾
Relative humidity	15 % to 85 %, condensation not permitted
Cooling method	Regulated air/liquid cooling (self-contained system)
Pollution severity (EN 60664-1)	2
Power consumption	
Intrinsic consumption in active mode ⁸⁾	1800 W
Standby power consumption ⁹⁾ / night	<300 W / 4.5 W
External auxiliary voltage supply	1 x terminal, three-phase, 400 V, 50/60 Hz

- 1) At Module-STC (1000 W/m²; AM 1.5; 25 °C) 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 PC generator output
- 3) 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 $\cos \varphi$.
- 4) Line-to-line voltage; other rated system voltages on request
- 5) Values related to inverter performance excluding additional components
- 6) Dimensions excluding heat exchanger and Main Combiner Boxes
- 7) Ratings up to 45 °C; power derating where appropriate at higher ambient temperatures
- 8) Consumption of inverters excluding additional components
- 9) Without fan in passive mode

Technical data

Designation	PVC3.57.0999
Safety / Protective equipment	
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 internal medium voltage transformer
Isolation point	Yes
Protection class (IEC 62103)	1
Protection type (IEC 60529)	
Inverter room	IP23
Medium voltage transformer room	IP23
Standards	
General	<ul style="list-style-type: none"> - 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 - DIN EN 61439-1: Low voltage switchgear assemblies - DIN EN 50274: Low voltage switchgear assemblies - Protection against electric shock <p>The medium-voltage switchgear assembly integrated in the PVMaster Station is compliant with the following standard:</p> <ul style="list-style-type: none"> - TS EN 62271-200: High-voltage switchgear and controlgear - Part 200: AC metal-enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV <p>The PVMaster Station is based on the following standard:</p> <ul style="list-style-type: none"> - TS EN 62271-202: High-voltage switchgear and controlgear - Part 202: High voltage/low voltage prefabricated substation
Grid monitoring	- In accordance with country-specific requirements
Interfaces / Features / Options	
Interfaces	<ul style="list-style-type: none"> - Ethernet (RJ45) - microSD card - Digital outputs as floating contacts (24 V to 230 V, AC/DC, changeover contact) - Digital inputs with extended-range actuation coils (24 V or 230 V, AC/DC) - S0 pulse inputs or digital inputs with extended-range actuation coils (24 V or 230 V, AC/DC) - Analog inputs (0 V to +10 V / -10 V to +10 V / 0 mA to 20 mA / 4 mA to 20 mA) - PT100 inputs - CAN (e.g. for string monitoring)
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 - Integrated medium voltage transformer - Integrated medium voltage switchgear - Air/liquid heat exchanger with pump
Options	<ul style="list-style-type: none"> - DC surge protector type 1 + 2 - AC surge protector type 1 + 2 - PV generator earthing - 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 - Extended temperature range - LTI plant control system



Schematic illustration