

# PVMaster ISO-Container Station

## PVI3.59.1400

- 20-foot PVMaster ISO-Container Station for direct connection to the medium voltage system
- MPP voltage range 590 V to 920 V
- Applicable with all common module types
- Maximum efficiency >98.8 % <sup>5)</sup>



### Technical data

Designation	PVI3.59.0350	PVI3.59.0700	PVI3.59.1050	PVI3.59.1400
<b>Generator connection (DC)</b>				
Recommended PV generator output <sup>1)</sup>	385 kWp	770 kWp	1155 kWp	1540 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			
Max. input current ( $I_{dc, max}$ )	1 x 600 A	2 x 600 A	3 x 600 A	4 x 600 A
Rated input voltage ( $V_{ac,r}$ )	640 V			
Start voltage supply ( $V_{dc, start}$ ) <sup>2)</sup>	660 V			
Number of MPP trackers	1			
Termination technique (L+, L-)	Cage clamp terminal 240 mm <sup>2</sup>			
<b>Mains power connection (AC)</b>				
Max. output power ( $S_{ac,r}$ ) at $V_{ac,r}$	350 kVA	700 kVA	1050 kVA	1400 kVA
Rated power ( $P_{ac,r}$ ) at $\cos \varphi = 1$ <sup>3)</sup>	350 kW	700 kW	1050 kW	1400 kW
Rated voltage ( $V_{ac,r}$ ) <sup>4)</sup>	10 kV / 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			
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			
<b>Efficiency <sup>5)</sup></b>				
Max. efficiency	>98.8 %			
European efficiency	>98.6 %			
CEC efficiency	>98.6 %			
<b>Dimensions</b>				
Height	2,591 mm			
Width	6,058 mm			
Depth <sup>6)</sup>	2,438 mm			
Weight (approx.)	9,000 kg	9,500 kg	10,000 kg	10,500 kg
<b>General data</b>				
Immediate vicinity	Outdoor installation			
Ambient temperature	-20 °C to +50 °C <sup>7)</sup>			
Relative humidity	15 % to 85 %, condensation not permitted			
Cooling method	Regulated air/liquid cooling (self-contained system)			
Pollution severity (EN 60664-1)	2			
Noise emission at a distance of 10 m	70 db (A)			
<b>Power consumption</b>				
Intrinsic consumption in active mode <sup>8)</sup>	600 W	1200 W	1800 W	2400 W
Standby power consumption <sup>9)</sup> / night	<100 W / 1.5 W	<200 W / 3 W	<300 W / 4.5 W	<400 W / 6 W
External auxiliary voltage supply	1 x terminal, three-phase, 400 V, 50/60 Hz			

- 1) At Module-STC (1000 W/m<sup>2</sup>; 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) 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) If an air conditioning system is used. Ratings up to 45 °C can be achieved without air conditioning system; power derating where appropriate at higher ambient temperatures
- 8) Consumption of inverters excluding additional components
- 9) Without fan in passive mode

## Technical data

Designation	PVI3.59.1400
<b>Safety / Protective equipment</b>	
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
<b>Protection type (IEC 60529)</b>	
Inverter room	IP23
Medium voltage transformer room	IP23
<b>Standards</b>	
General	<ul style="list-style-type: none"> <li>- CE conformity</li> <li>- Conforming to EEG 2014</li> <li>- DIN EN 62109: Safety of power converters for use in photovoltaic power systems</li> <li>- DIN EN 61000-6-2 and DIN EN 61000-6-4: Electromagnetic compatibility</li> <li>- DIN VDE 0101: Power installations exceeding 1 kV a.c.</li> <li>- DIN VDE 0100: Low-voltage electrical installations</li> </ul>
Grid monitoring	- In accordance with country-specific requirements
<b>Interfaces / Features / Options</b>	
Interfaces	<ul style="list-style-type: none"> <li>- Ethernet (RJ45)</li> <li>- microSD card</li> <li>- Digital outputs as floating contacts (24 V to 230 V, AC/DC, changeover contact)</li> <li>- Digital inputs with extended-range actuation coils (24 V or 230 V, AC/DC)</li> <li>- S0 pulse inputs or digital inputs with extended-range actuation coils (24 V or 230 V, AC/DC)</li> <li>- Analog inputs (0 V to +10 V / -10 V to +10 V / 0 mA to 20 mA / 4 mA to 20 mA)</li> <li>- PT100 inputs</li> <li>- CAN (e.g. for string monitoring)</li> </ul>
Features	<ul style="list-style-type: none"> <li>- DC surge protector type 2</li> <li>- AC surge protector type 2 (auxiliary supply AC voltage)</li> <li>- DC main switch</li> <li>- AC short-circuit proofing</li> <li>- Insulation monitoring of PV generator</li> <li>- Extensive power factor control functions for static and dynamic grid stabilisation</li> <li>- Web server</li> <li>- Integrated data logger</li> <li>- Support for various online portals</li> <li>- Integrated medium voltage transformer</li> <li>- Integrated medium voltage switchgear</li> <li>- Air/liquid heat exchanger with pump</li> </ul>
Options	<ul style="list-style-type: none"> <li>- DC surge protector type 1 + 2</li> <li>- AC surge protector type 1 + 2</li> <li>- PV generator earthing</li> <li>- VPN modem (GSM, DSL) for remote data access and transmission</li> <li>- Control unit with extensive functionality</li> <li>- Online monitoring of operational data</li> <li>- Trouble reports issued by e-mail</li> <li>- Extended temperature range</li> <li>- LTI plant control system</li> <li>- Air conditioning system for harsh and warm environments</li> </ul>