

Solar inverters

ABB string inverters

PVS300

3.3 to 8.0 kW



ABB string inverters cost-effectively convert the direct current generated by solar panels into high-quality alternating current that can be fed into the power network. Designed to meet the needs of the entire supply chain – from system integrators and installers to end users – these transformerless, single-phase inverters are suitable for small and medium-size photovoltaic systems connected to the public electricity network.

New inverter from the market leader in frequency converters

ABB is the global market leader in frequency converters and brings over 40 years experience, technology leadership and application know-how to all solar inverter projects. Such experience and technology for renewable energies ensures high quality, reliable and safe solar inverters are delivered every time.

String inverters packed with powerful features

ABB string inverters are designed for photovoltaic (PV) systems installed on residential, commercial and industrial buildings.

The ABB string inverter comes with a series of user-focused features including a high total efficiency that feeds more electricity to the grid thereby generating higher revenues; built-in protection, which reduces the need for costly external devices; a compact design that frees-up space for other equipment; and an intuitive and easy to read control unit that can be mounted within the inverter enclosure or remotely.

Highlights

- High total efficiency
- Built-in and monitored system protection devices
- High maximum input voltage
- Wide DC input voltage range
- Detachable control unit with graphical display
- Integrated performance data monitoring
- Outdoor IP55 enclosure with additional safety features

Power and productivity
for a better world™



ABB string inverters

High total efficiency

The ABB string inverter offers a high conversion and MPP tracking efficiency in all conditions. This means that more electricity can be fed to the public grid compared to that from similar available inverters. The result is higher revenues for the end-user, thereby ensuring a faster return on investment for the entire photovoltaic system.

Built-in protection

The ABB string inverter is designed with monitored protection devices built within its enclosure. This avoids the cost of external protection devices, enclosures, monitoring and safety devices. All of this enables easy installation of the inverter as there are fewer components within the system. Fewer components also

means more efficient use of space in installations that use multiple inverters. If needed these protection devices are easy and safe to replace by the user.

High maximum input voltage

The high maximum DC voltage allows more photovoltaic modules to be connected in series which results in higher string power for the same current. This helps to reduce cabling power losses and also cabling size and cost.



Technical data and types

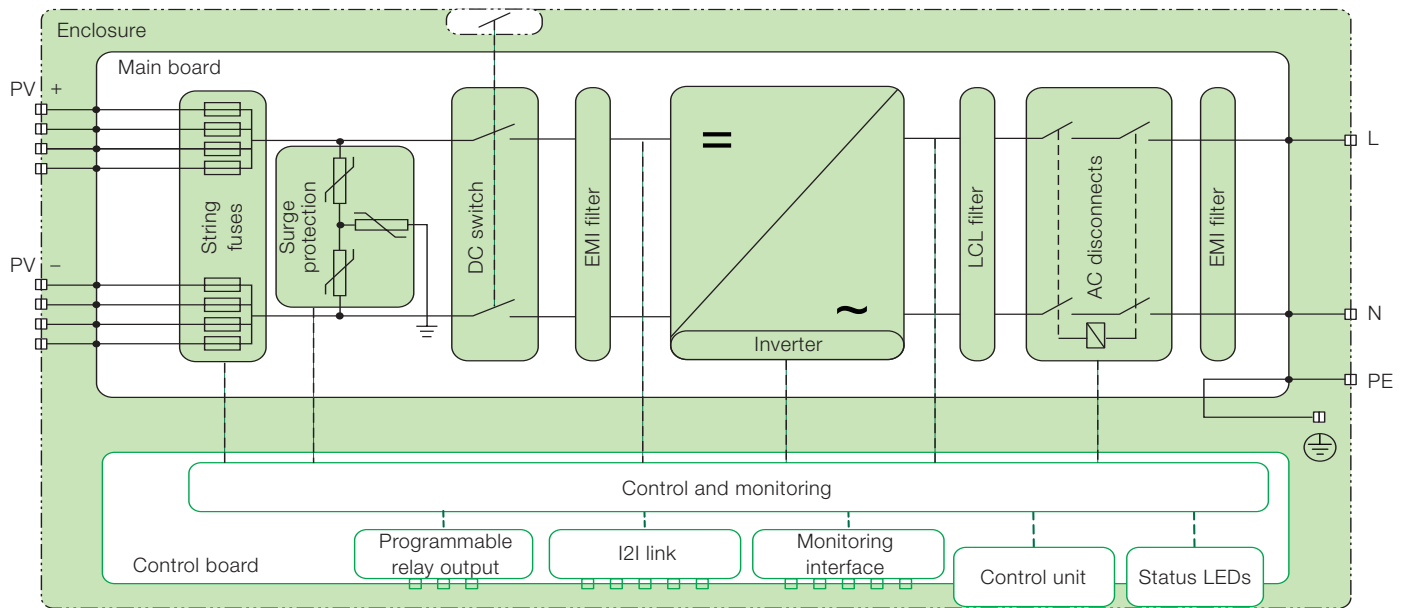
Type code	PVS300-TL-3300W-2	PVS300-TL-4000W-2	PVS300-TL-4600W-2	PVS300-TL-6000W-2	PVS300-TL-8000W-2
	3.3 kW	4.0 kW	4.6 kW	6.0 kW	8.0 kW
Input (DC)					
Nominal PV-power (P_{PV})	3400 W	4100 W	4700 W	6100 W	8100 W
Maximum PV-power ($P_{PV,max}$)	3700 W	4500 W	5200 W	6700 W	8900 W
DC voltage range, mpp (U_{DC})	335 to 800 V				
Max DC voltage ($U_{DC,max}$)	900 V				
Nominal DC voltage, (U_N)	480 V				
Max DC current ($I_{DC,max}$)	10.5 A	12.7 A	14.6 A	19.0 A	25.4 A
Number of DC inputs (parallel)	4, with MC4 quick connectors				
Output (AC)					
Nominal AC output power (P_{AC})	3300 W	4000 W	4600 W	6000 W	8000 W
Nominal AC current ($I_{AC,nom}$)	14.3 A	17.4 A	20.0 A	26.1 A	34.8 A
Nominal voltage ($V_{AC,nom}$)	230 V				
Operating range, grid voltage ¹⁾	180 to 276 V				
Operating range, grid frequency (f_{AC}) ²⁾	47 to 63 Hz				
Harmonic distortion of grid current (K_{IAC})	< 3%				
Power factor (cosφ)	1				
Grid connection	Single phase: L, N and PE				
Transformer	No				
Efficiency					
Max efficiency ($P_{AC,max}$)	97.1%				
Euro-eta	96.0%	96.3%	96.3%	96.6%	96.6%
Power consumption					
In standby operation ($P_{standby}$)	< 12 W				
Night consumption (P_{night})	< 1 W				
Environmental limits					
Degree of protection	IP55				
Permissible ambient temperature range	-25 C° to +60 C°				
Nominal power up to	+50 C°				
Relative humidity, not condensing	0 to 100%				
Max. altitude (above sea level) ³⁾	2000 m				
Acoustic noise level	<45dBA				

¹⁾ Range to be adjusted specifically for each country standards

²⁾ Range to be adjusted specifically for each country standards.

³⁾ Nominal output could be limited at higher altitudes.

ABB string inverter design and grid connection



Technical data and types

Type code	PVS300-TL-3300W-2 3.3 kW	PVS300-TL-4000W-2 4.0 kW	PVS300-TL-4600W-2 4.6 kW	PVS300-TL-6000W-2 6.0 kW	PVS300-TL-8000W-2 8.0 kW
Dimensions and weight					
Width / Height / Depth, mm	W 392 / H 581 / D 242				
Weight appr.	27		29		
Protection					
Ground fault monitoring	Yes				
Grid monitoring with anti-islanding	Yes				
Residual current detection (RCD)	Yes				
DC power switch	Yes				
DC string fuses ⁴⁾	Yes				
DC reverse polarity	Yes				
AC short circuit	Yes				
Overload	Yes				
Over temperature ⁵⁾	Yes				
Replaceable surge protection device	Yes				
Protection class ⁶⁾	Class I				
Overvoltage category ⁷⁾	Category III				
User interface and communications					
Control unit type	Detachable with graphical display and keypad				
Control unit interface	EIA-485				
Inverter to inverter (I2I) communication	Yes				
Inverter to inverter interface	EIA-485				
Three phase configuration and monitoring	Yes, with I2I link				
Status LEDs	Yes				
Electrically isolated relay output	Yes, user programmable function				
Remote monitoring	Yes, with accessories				
Monitoring interface	EIA-485				
Monitoring protocols	Modbus RTU / Ethernet, with accessories				
Product compliance					
Safety	According to EN50178:1997 and EN62109-1:2010				
Grid compliance	According to VDE V 0126-1-1:2006-2, UTE C15-712-1				
CE	CE conformity according to LVD 2006/95/EC and EMCD 2004/108/EC				

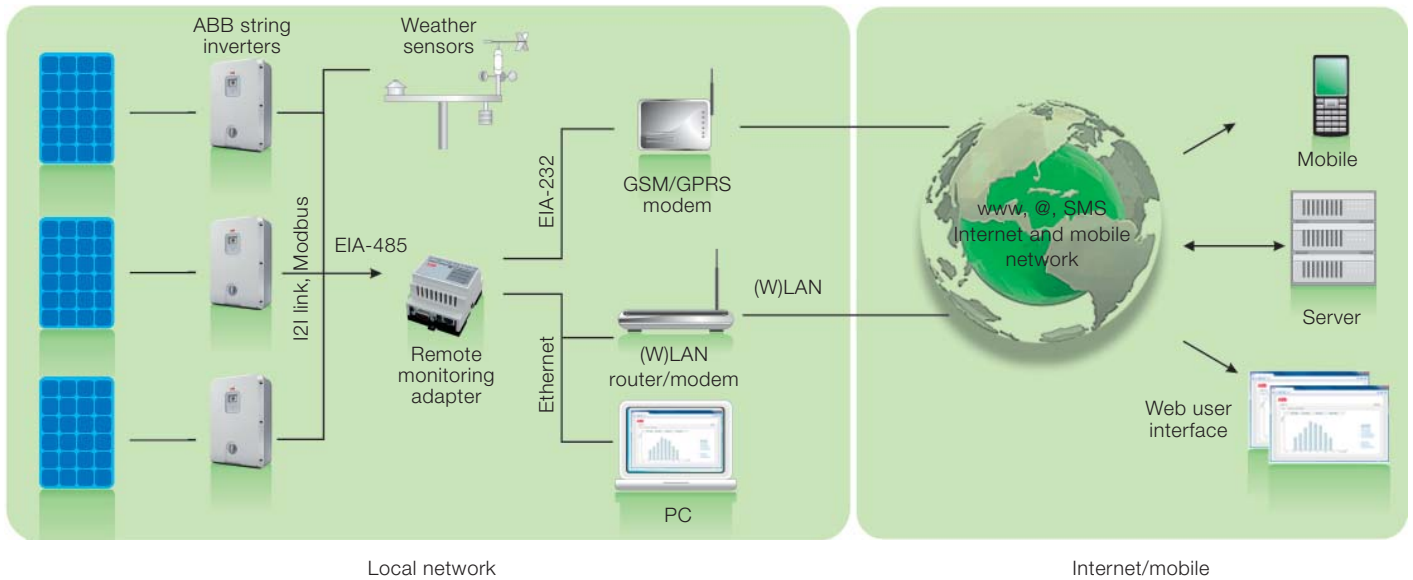
⁴⁾ PV fuses 12A delivered with inverter

⁵⁾ By output power limitation

⁶⁾ By IEC 62103

⁷⁾ By EN 60664-1

ABB string inverter data communication principle



Local network

Internet/mobile

Intuitive control unit with versatile mounting options

The simplicity of the control unit enables a fast inverter set-up. The control unit can be mounted within the inverter enclosure or alternatively it comes with an optional wall mounting kit which enables it to be installed away from the actual inverter, for example on a wall inside the building. From here the user can monitor the inverter performance round-the-clock.

An optional wireless installation kit enables the control unit to be installed separately without cabling to the inverter. The photovoltaic system can be monitored from a living room or kitchen while the inverter is installed elsewhere such as a garage, roof or yard.

Accessories

- Control unit wall mounting kit, PVS-APK-F (includes surface and flush mounting frames)
- Control unit table stand and wireless communication kit, PVS-APK-M
- Remote monitor adapter with integrated web interface, SREA-50

Support and service

ABB supports its customers with dedicated, global service organization in more than 60 countries and strong regional and national technical partner networks providing complete range of life cycle services.

For more information contact your local ABB representative or visit:

www.abb.com/solar
www.abb.com

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Remote monitoring adapter



Flush mounted control unit



Control unit with table stand