

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 electrical distribution 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 distribution 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
- Grid support functions

# 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.

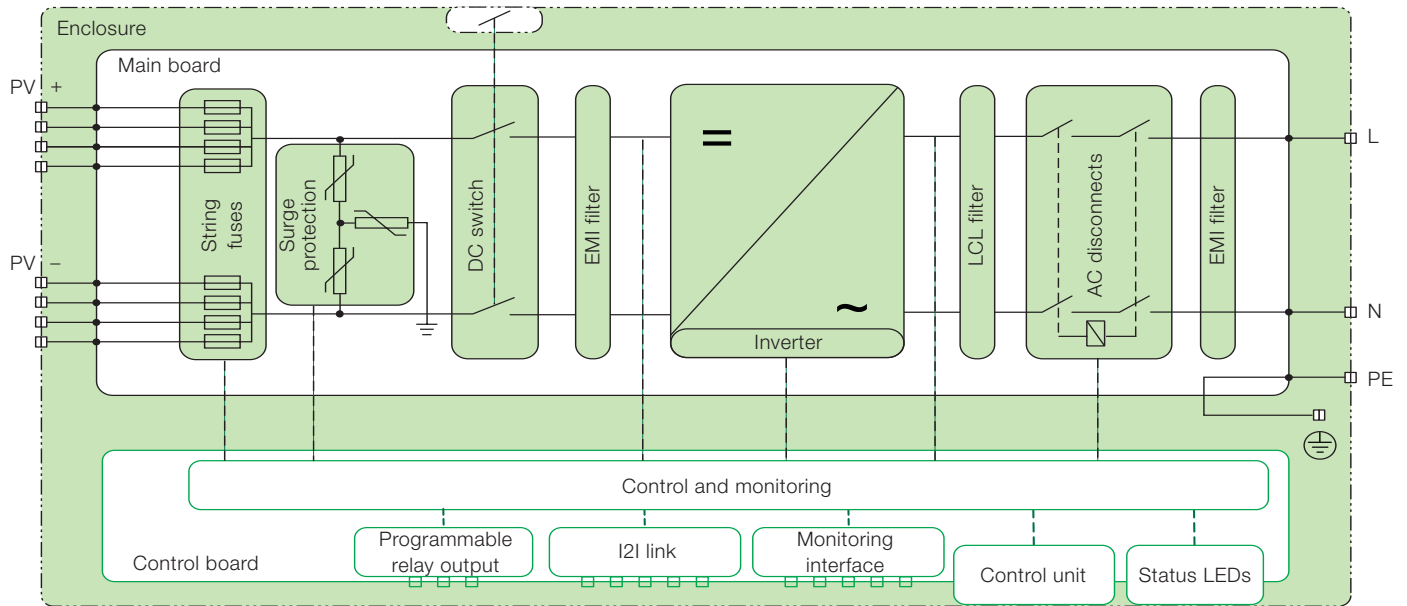


## Technical data and types

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
<b>Input (DC)</b>					
Maximum input power ( $P_{PV,max}$ )	3700 W	4500 W	5200 W	6700 W	8900 W
DC voltage range, mpp ( $U_{DC, mpp}$ )	335 to 800 V				
Maximum DC voltage ( $U_{DC, max}$ )	900 V				
Nominal DC voltage, ( $U_{DC, N}$ )	480 V				
Maximum 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				
<b>Output (AC)</b>					
Nominal AC output power ( $P_{AC, N}$ )	3300 W	4000 W	4600 W	6000 W	8000 W
Nominal AC current ( $I_{AC, N}$ )	14.3 A	17.4 A	20.0 A	26.1 A	34.8 A
Nominal grid connection	1/N/PE AC 230 V 50 Hz				
Operating range, AC voltage <sup>1)</sup>	180 to 276 V				
Operating range, frequency <sup>1)</sup>	47 to 63 Hz				
Harmonic distortion, current	< 3%				
Nominal power factor ( $\cos \phi_N$ )	1				
Power factor compensation, (range)	Yes, (cap. 0.9...1...0.9 ind.)				
Transformer	No				
<b>Efficiency</b>					
Maximum	97.0%				
Euro-eta	96.1%	96.2%	96.4%	96.6%	96.6%
<b>Power consumption</b>					
Standby consumption	< 12 W				
Night consumption	< 1 W				
<b>Environmental limits</b>					
Degree of protection	IP55				
Ambient temperature range	-25 to +60 C°				
Nominal power up to	+50 C°				
Relative humidity, not condensing	0 to 100%				
Maximum altitude (above sea level)	2000 m				
<b>Dimensions and weight</b>					
Width/Height/Depth, mm	W 392/H 581/D 242				
Weight appr.	27 kg			29 kg	

<sup>1)</sup> Range to be adjusted specifically for each country standards

## ABB string inverter design and grid connection



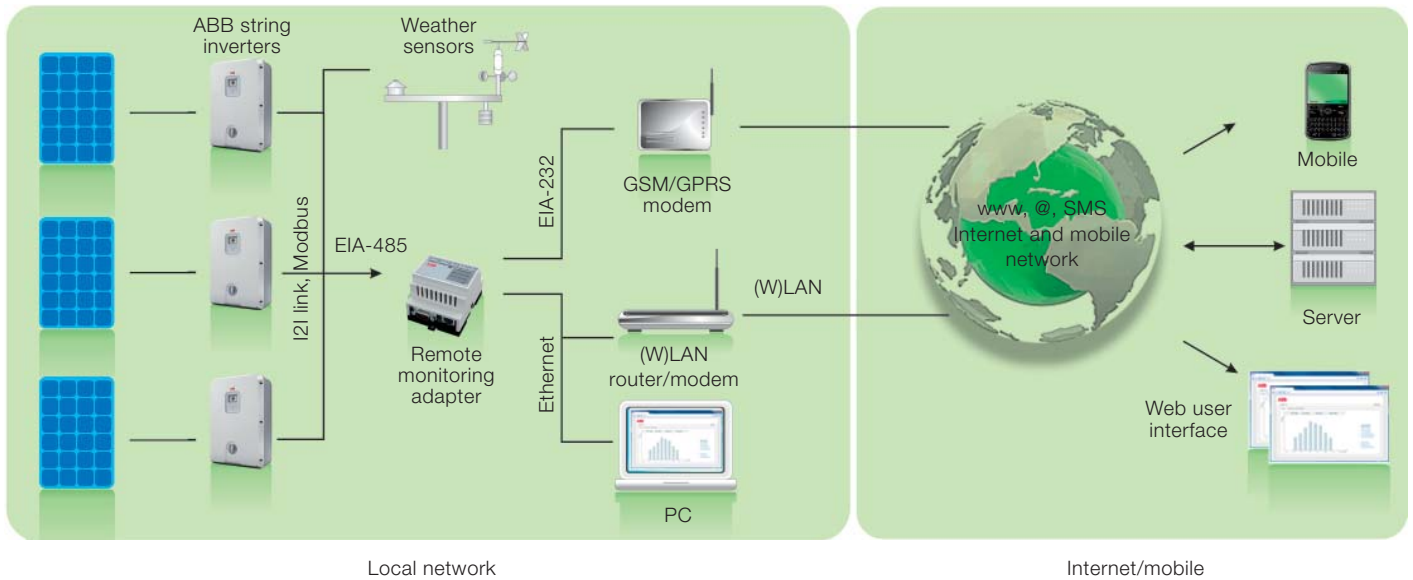
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<b>Protection</b>					
Ground fault monitoring			Yes		
Grid monitoring with anti-islanding			Yes		
Residual current detection (RCD)			Yes		
DC power switch			Yes		
DC string fuses <sup>2)</sup>			Yes		
DC reverse polarity			Yes		
AC short circuit			Yes		
Overload <sup>3)</sup>			Yes		
Over temperature <sup>3)</sup>			Yes		
Replaceable surge protection device			Yes		
Protection class			Class I		
Overvoltage category			Category III		
<b>User interface and communications</b>					
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 embedded/Ethernet, KNX with accessories		
Monitoring partners and support			Solare Datensysteme GmbH: Solar-Log <sup>200/500/1000</sup> PM+		
<b>Product compliance</b>					
Safety and EMC	EN62109-1:2010, CE and C-Tick according to LVD 2006/95/EC and EMCD 2004/108/EC				
Certifications and approvals	AS4777/3100, C10-11, Enel Guida, G59/2, G83/1, IEC 61727, IEC 62116, RD1699/2011, UTE C15-712-1, VDE AR-N 4105, VDE V 0126-1-1				
Grid support	Reactive power compensation and active power limitation				

<sup>2)</sup> PV fuses 12 A delivered with inverter

<sup>3)</sup> By output power limitation

## 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 (EU only)
- 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 please contact your local ABB representative or visit:

[www.abb.com/solar](http://www.abb.com/solar)  
[www.abb.com](http://www.abb.com)

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Remote monitoring adapter



Flush mounted control unit



Control unit with table stand