

# ABB central inverters PVS980 1818 to 2000 kVA



**ABB central inverters raise reliability, efficiency and ease of installation to new levels. The inverters are aimed at system integrators and end users who require high-performance solar inverters for large photovoltaic (PV) power plants. PVS980 central inverters are available from 1818 kVA up to 2000 kVA, and are optimized for cost-effective, multi-megawatt power plants.**

#### **World's leading inverter platform**

Like other ABB central inverters, the PVS980 has been developed on the basis of decades of experience in the industry and proven technology platform. Unrivalled expertise from the world's market and technology leader in frequency converters is the hallmark of this solar inverter series.

The PVS980 inverter is one of the most efficient and cost-effective ways of converting the direct current (DC) generated by solar modules into high-quality and CO<sub>2</sub>-free alternating current (AC) that can be fed into the power distribution network.

#### **PVS980 central inverters from ABB**

ABB PVS980 central inverters are ideal for large PV power plants. The high DC input voltage, high efficiency, proven components, compact and modular design and a host of life cycle services ensure ABB PVS980 central inverters provide a rapid return on investment.

#### **Highlights**

- High total performance
- Outstanding endurance for outdoor use
- Compact, modular product design
- High DC input voltage up to 1500 V<sub>DC</sub>
- Extensive DC and AC side protection
- Self-contained cooling system with high efficiency
- Versatile design for large-scale PV plants to minimize system costs
- Complete range of industrial data communication options, including remote monitoring
- Life cycle service and support through ABB's extensive global service network

# Maximum energy revenues



## Maximum energy revenues

ABB central inverters have a high total efficiency. Precise, optimized system control and maximum power point tracking (MPPT) combine with the unit's highly efficient power converter design to deliver the maximum energy from the PV modules to the power distribution network. For end users, this generates the highest possible revenues from the energy sales.

## Self-contained, low-maintenance cooling system

PVS980 inverters feature a proven closed loop cooling system used in other ABB industrial applications. This innovative, truly low-maintenance cooling solution is designed for demanding applications and harsh environments, cutting maintenance costs and ensuring outstanding endurance.

## Compact and modular design

PVS980 inverters are designed for fast and easy installation. The industrial design and modular platform provide a wide range of options, such as remote monitoring, fieldbus connection and modular and flexible DC input connections. The integrated DC saves space and costs as the solar array junction boxes can be connected directly to the fused busbars in the DC cabinet. PVS980 inverters are customized for the needs of end users and will be available with short delivery times.

## Versatile design for large-scale PV plants to minimize system costs

ABB's PVS980 central inverter enables system integrators to design PV power plants that use the optimum combination of inverters with different power ratings. Equipped with extensive electrical and mechanical protection, the inverters are engineered to provide a long and reliable service life of at least 25 years.

## Advanced grid support features

The PVS980 software includes all the latest grid support and monitoring features, including active power limitation, fault ride through (FRT) with current feed-in and reactive power control. Active and reactive power output can be controlled by an external control system or automatically by the inverter.

All grid support functions are parameterized, allowing easy adjusting for local utility requirements. ABB central inverters are also able to support grid stability at night by providing reactive power with the DC input disconnected.

# ABB central inverters

PVS980

1818 to 2000 kVA



## High total performance

- High efficiency
- Low auxiliary power consumption
- Innovative controlled cooling
- Efficient maximum power point tracking
- Long and reliable service life of at least 25 years

## ABB self-contained cooling system

- Closed loop cooling system based on phase transition and thermosiphon technology
- Liquid-cooled inverter power ratings with the simplicity of air cooling
- No fillable liquids, pumps, valves, inhibitors or leaks
- Low maintenance

## Outstanding endurance for outdoor use

- Water- and dustproof outdoor enclosure
- Designed to withstand the toughest environments
- Long and reliable service life following the ABB life cycle model

## Versatile design for large-scale PV plants

- Integrated DC connection with variable number of inputs
- Wide standard option palette for tailoring
- Versatile AC connection methods

## Modular industrial design

- Compact and easy-to-maintain product design
- Fast and easy installation
- Integrated and flexible DC input section

## Minimizes system costs

- 1500 V<sub>DC</sub> system voltage
- Wide ranged and highly efficient MPPT algorithm
- Integrated protection to minimize external components
- Fast and easy installation and commissioning

## Life cycle service and support

- ABB's extensive global service network
- Extended warranties
- Service contracts
- Technical support throughout the service life

## Wide communication options

- Complete range of industrial data communication options for SCADA connections
- Ethernet/Internet Protocol
- Remote monitoring

# ABB central inverters

## PVS980

### 1818 to 2000 kVA



#### Technical data and types

Type designation	-1818kVA-I	-1909kVA-J	-2000kVA-K
PVS980-58	1818 kVA	1909 kVA	2000 kVA
<b>Input (DC)</b>			
Maximum input power ( $P_{PV,max}$ ) <sup>1)</sup>	2910 kWp	3055 kWp	3200 kWp
DC voltage range, mpp ( $U_{DC, mpp}$ ) at 50 °C	850 to 1100 V	893 to 1100 V	935 to 1100 V
DC voltage range, mpp ( $U_{DC, mpp}$ ) at 35 °C	850 to 1500 V	893 to 1500 V	935 to 1500 V
Maximum DC voltage ( $U_{max(DC)}$ )	1500 V	1500 V	1500 V
Number of MPPT trackers	1	1	1
Number of protected DC inputs	8 <sup>2)</sup> to 24 (+/-)	8 <sup>2)</sup> to 24 (+/-)	8 <sup>2)</sup> to 24 (+/-)
<b>Output (AC)</b>			
Nominal power ( $S_{N(AC)}$ ) <sup>3)</sup>	1818 kVA	1909 kVA	2000 kVA
Maximum output power ( $S_{max(AC)}$ ) <sup>4)</sup>	2000 kVA	2100 kVA	2200 kVA
Nominal AC current ( $I_{N(AC)}$ )	1750 A	1750 A	1750 A
Nominal output voltage ( $U_{N(AC)}$ ) <sup>5)</sup>	600 V	630 V	660 V
Output frequency	50/60 Hz	50/60 Hz	50/60 Hz
Harmonic distortion, current <sup>6)</sup>	< 3%	< 3%	< 3%
Distribution network type <sup>7)</sup>	TN and IT	TN and IT	TN and IT
<b>Efficiency</b>			
Maximum <sup>8)</sup>	98.8%	98.8 %	98.8%
Euro-eta <sup>8)</sup>	98.6%	98.6 %	98.6%
<b>Power consumption</b>			
Own consumption in operation	2500 W	2500 W	2500 W
Standby operation consumption	225 W	225 W	225 W
Auxiliary voltage type	internal	internal	internal
<b>Dimensions and weight</b>			
Width/Height/Depth, mm (W/H/D)	3180/2366/1522	3180/2366/1522	3180/2366/1522
Weight apprx.	3850 kg	3850 kg	3850 kg

<sup>1)</sup> DC/AC ratio over 1.6 might decrease time between maintenance intervals

<sup>2)</sup> As standard

<sup>3)</sup> At 50 °C

<sup>4)</sup> At 35 °C

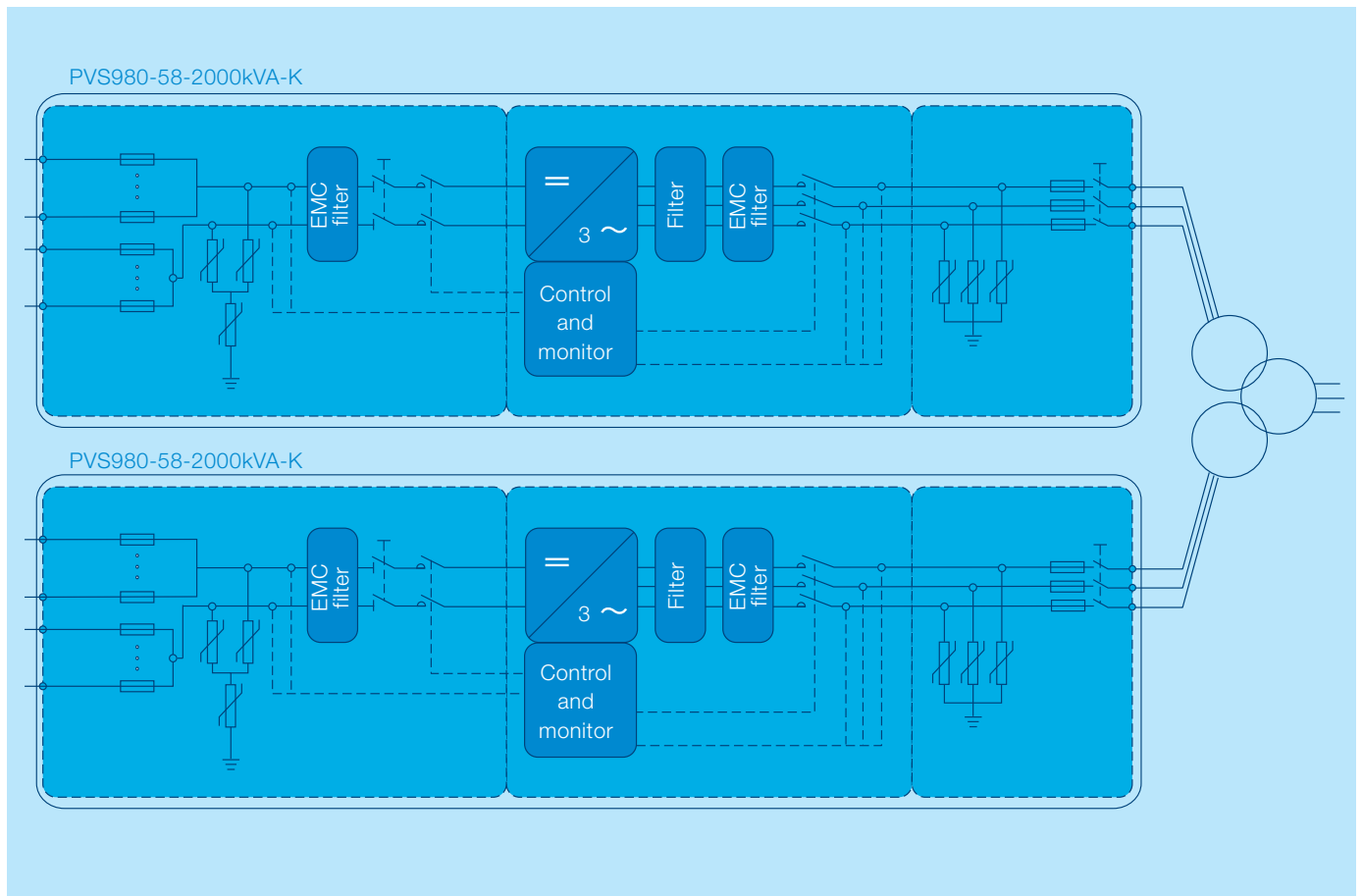
<sup>5)</sup> ±10%

<sup>6)</sup> At nominal power

<sup>7)</sup> Inverter side must be IT type

<sup>8)</sup> Without auxiliary power consumption at min  $U_{DC}$

# ABB PVS980 central inverter design and power network connection



## Technical data and types

Type designation	-1818kVA-I	-1909kVA-J	-2000kVA-K
PVS980-58	1818 kVA	1909 kVA	2000 kVA
<b>Environmental limits</b>			
Degree of protection		IP65 <sup>9)</sup> /Type 3R	
Ambient temp. range (nom. ratings) <sup>10)</sup>		-20 °C to +50 °C	
Maximum ambient temperature <sup>11)</sup>		+60°C	
Relative humidity		5% to 100%	
Maximum altitude (above sea level)		4000 m <sup>12)</sup>	
Maximum noise level		88 dBA <sup>13)</sup>	
<b>Protection</b>			
Ground fault monitoring		Yes	
Grid monitoring		Yes	
Anti-islanding		Yes	
DC reverse polarity		Yes	
AC and DC short circuit and overcurrent		Yes	
AC and DC overvoltage and temperature		Yes	
<b>User interface and communications</b>			
Local user interface		ABB local control panel	
Analog inputs/outputs		Extendable as option	
Digital inputs/relay outputs		Extendable as option	
Fieldbus connectivity		Modbus, Profinet, Ethernet <sup>14)</sup>	
<b>Product compliance</b>			
Safety and EMC <sup>15)</sup>		CE conformity according to LV and EMC directives	
Certifications and approvals <sup>15)</sup>		IEC, UL, CEI, RD, EDF, P.O. 12.3, BDEW, GOST, AS	
Grid support and grid functions		Reactive power compensation <sup>16)</sup> , Power reduction, LVRT, Anti-islanding	

<sup>9)</sup> Excluding underpressure testing

<sup>10)</sup> -40 °C as option

<sup>11)</sup> Power derating after 50 °C

<sup>12)</sup> Derating above 1000 m

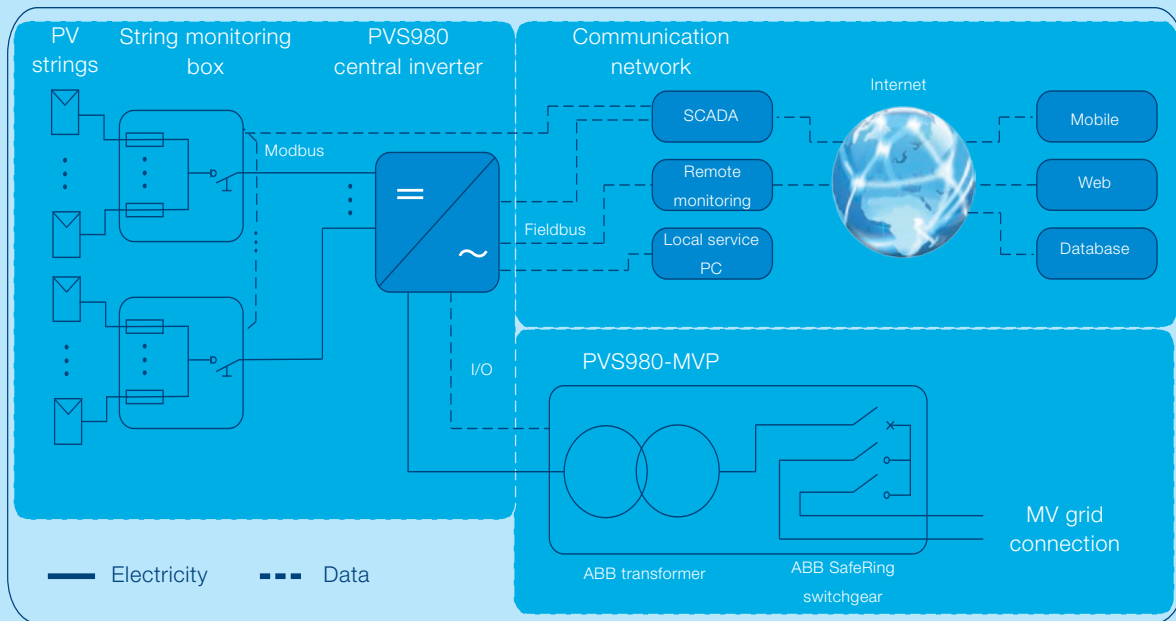
<sup>13)</sup> At partial power typically < 75 dBA

<sup>14)</sup> More communication options as engineered option

<sup>15)</sup> Approvals pending, contact ABB for more information

<sup>16)</sup> Also at night

## Data communication principle for ABB PVS980 central inverters



3AXD50000027473 REV F EN 23.12.2016

### Options

- Integrated and flexible DC input extension
- AC breaker
- AC busbar interface
- DC grounding (negative and positive)
- Fieldbus and Ethernet connections
- Current measurement to each DC input
- High altitude version
- Warranty extensions
- Solar inverter care contracts

### Related products

- Medium voltage station (transformer and switchgear) as outdoor or containerised solution
- String monitoring junction boxes
- Remote monitoring solutions

### Support and service

ABB supports its customers with a dedicated service network in more than 60 countries and provides a complete range of life cycle services from installation and commissioning to preventative maintenance, spare parts, repairs and recycling.

For more information please contact your local ABB representative or visit:

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

© Copyright 2015 ABB. All rights reserved.  
Specifications subject to change without notice.



Power and productivity  
for a better world™

