

SOLAR INVERTERS

## ABB Compact Skid for US market

PVS980-CS-US – 2 to 4.4 MVA



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01 ABB Compact Skid  
for US markets,  
rated 2.2 MVA

**All the components within this medium voltage skid come from ABB's product portfolio to meet the performance and quality standards required for solar applications. The skid is a cost-effective solution with easy in-lands transportability package for PV power plants.**

The ABB medium voltage skid mounted design capitalizes on ABB's long experience in developing and manufacturing medium voltage components for utility-scale solutions for major end-users worldwide in conventional power transmission installations. The solution contains an optimized transformer, optional DC disconnection cabinet and signaling interfaces for the PVS980 inverter. PVS980 central inverter together with the skid mounted solution ensures easy and rapid connection of the inverters to a plant's medium voltage grid and its communication network.

The ABB medium voltage compact skid is a cost-efficient and robust solution designed for large-scale solar power generation and to be compatible with the PVS980 outdoor inverters. It combines the medium voltage ANSI design transformer needed to connect the inverters to the medium voltage network of the photovoltaic plant.

### **Compact and robust design for harsh environments**

This skid mounted solution is pre-assembled on a factory built steel or concrete foundation. The design enables operation in harsh temperature and humidity environments and is designed for at least 25 years of operation. The ABB medium voltage skid mounted solution supports fast on-site installation and it is easy to transport inlands. Transport of the skid can be done with a standard truck and lifted to site as one transport unit, which simplifies the installation. Together with pre-configured layout options a minimal footprint and optimum cabling can be achieved.

### **Highlights**

- Reliability – proven components from one supplier
- Transportability – compact and robust design
- Plug-and-play – integrated signaling interfaces
- Increased uptime – modular and serviceable system
- Bankable solution – global life cycle services and support

## PVS980-CS-US

### Solution

The solution is the result of decades of experience in manufacturing and delivering compact secondary substations and other medium voltage solutions for demanding customer projects all over the world. The solution is made to meet the safety and electrical installation standards for USA markets. All components used are from the ABB product range to ensure compatibility.

LV connection is made with close coupling to inverter to minimize on-site installation. The design is optimized to provide cost-effective transportation inland as well as fast and easy installation on site. The pre-designed skid type foundation layouts for the outdoor type transformer optimize the foot print needed and also minimize the cost and on-site works needed. The compact skid structure can serve also as a leakage reservoir for the transformer oil.

### Transformer

The ABB compact skid mounted solution is available with ANSI design ABB ONAN type oil transformer. The transformer is designed and optimized for PVS980 central inverters and for photovoltaic plant load profile to provide the best performance throughout the lifetime of the plant. The transformer is also designed to meet the reliability, durability, and efficiency required in PV applications. Transformers are available in standard sizes that are based on optimized power ratings to meet different climatic conditions and inverter station sizes. The transformers as well as the general design provide excellent mechanical and short-circuit characteristics. All ABB's transformers are manufactured in accordance with the most demanding industry and ANSI standards.

### Technical data and types

Compact Skid Type	PVS980-CS-2000kVA-US-K-XX	PVS980-CS-4000kVA-US-K-XX
Inverter Type <sup>1)</sup>	PVS980-58-2000kVA-K	2 x PVS980-58-2000kVA-K
<b>Input (DC)</b>		
Maximum DC Voltage	1500 V	
Maximum Combined Input Power	3200 kWp	6400 kWp
Number of Protected DC inputs	24	48
<b>Output (AC)</b>		
Inverter Rated Power (at 50°C/35°C)	2000 kVA / 2200 kVA	4000 kVA / 4400 kVA
Inverter Rated AC Current (at 50°C/35°C)	1750 A / 1925 A	1750 A / 1925 A per inverter
Inverter Rated Output Voltage	660 V	2 x 660 V
<b>Transformer</b>		
Transformer Type <sup>4)</sup>	3-Phase Pad-Mounted, Oil Filled, UL Listed	
Power Rating	2200 kVA	4400 kVA
Winding Configuration	2-winding	3-winding
Cooling Class <sup>2)</sup>	ONAN	
Fluid <sup>3)</sup>	Mineral Oil	
Frequency	60 Hz	
Low Voltage	660 V	2 x 660 V
High Voltage	12.47 kV to 34.5 kV	
LV terminals <sup>4)</sup>	6-hole integral spade bushings	6-hole integral spade bushings x 2
HV terminals	600 A dead-break bushings (dead front) x 6	
Fuses	Bay-O-Net with Back-Up Current Limiting	Varies based on high voltage kV rating
Switches	2-position 300A LBOR transformer switch	
Monitoring <sup>5)</sup>	Pressure relief valve, liquid level-, temperature- and pressure gauges with alarm contacts	
Fittings	1" drain valve and sampler located in LV compartment, external drain valve padlockable box	

<sup>1)</sup> See inverter data sheet for inverter type options

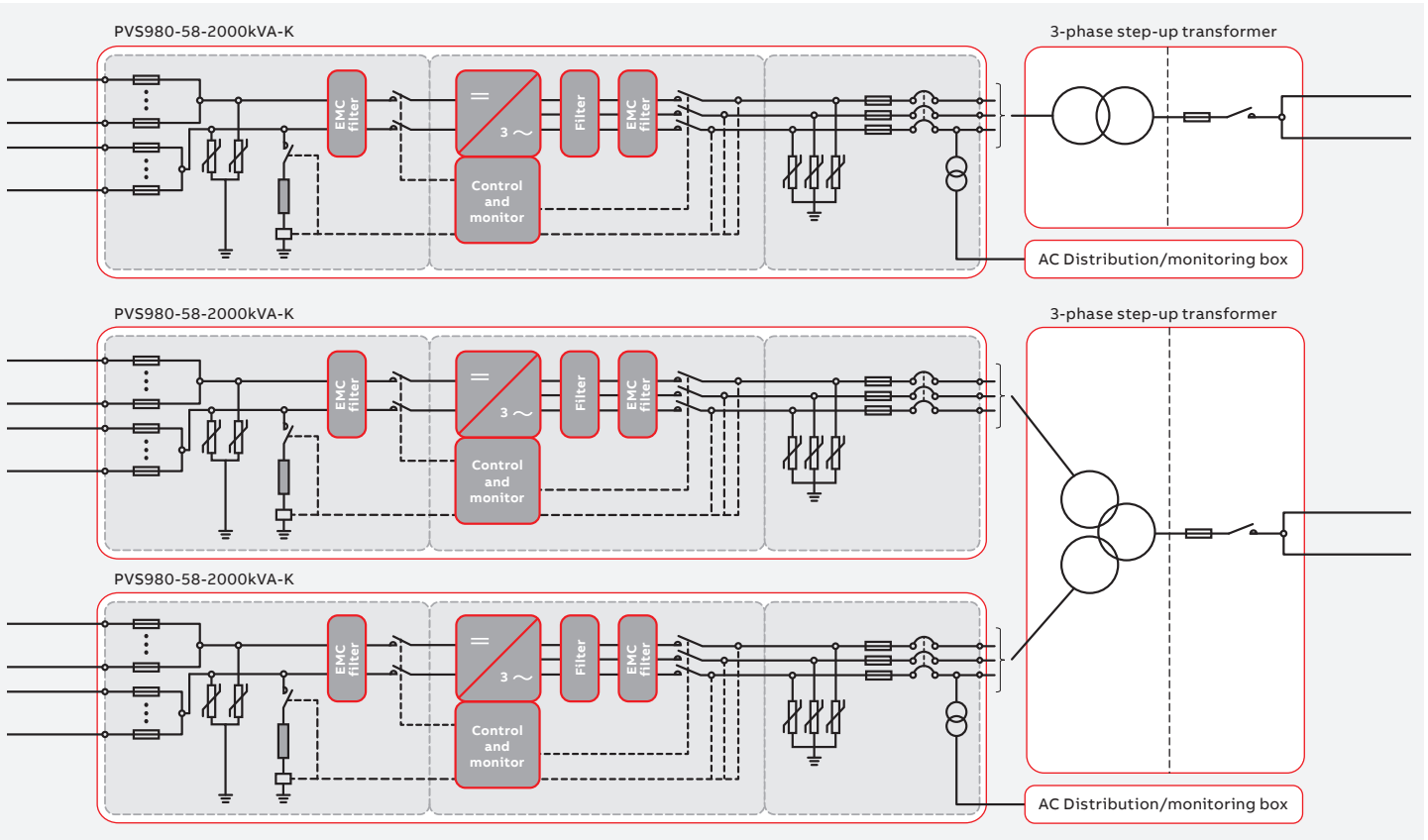
<sup>2)</sup> KNAN optional

<sup>3)</sup> Natural Ester Fluid optional

<sup>4)</sup> Sidewall mounted

<sup>5)</sup> Includes liquid temperature gauge with 2 sets of alarm contacts

ABB compact skid design and grid connection



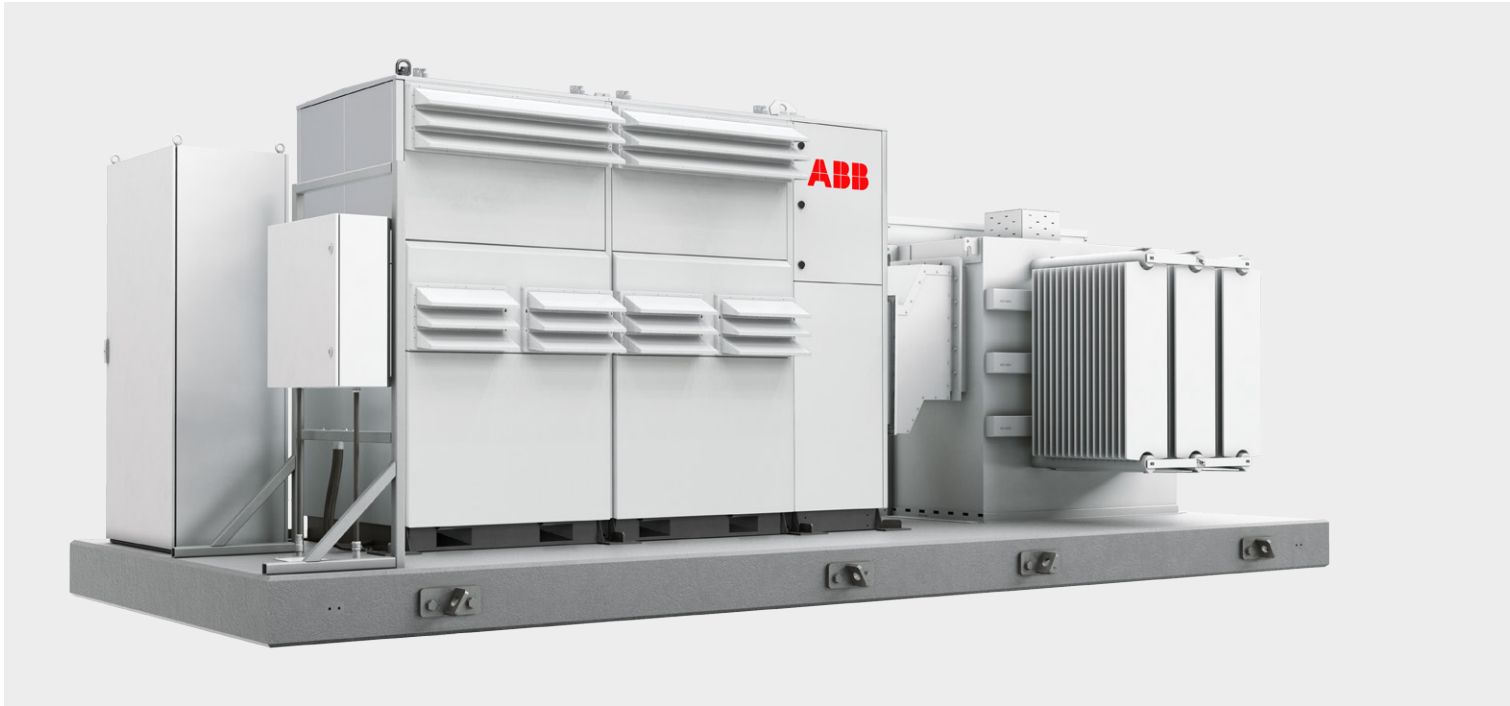
Technical data and types

Compact Skid Type	PVS980-CS-2000kVA-US-K-XX	PVS980-CS-4000kVA-US-K-XX
Inverter Type <sup>1)</sup>	PVS980-58-2000kVA-K	2 x PVS980-58-2000kVA-K
<b>Auxiliary Equipment</b>		
Power (Standard)	1-phase output, 115-120VAC, 2 kVA power, 20 A disconnect switch for protection	
Power (Optional) <sup>6)</sup>	3-phase output, 660VAC, max 60 A, rated disconnect switch, auxiliary step-down transformer	
<b>Environmental</b>		
Ambient temperature range <sup>7)</sup>	-20°C to +50°C	
Altitude <sup>8)</sup>	up to 4000 m	
<b>Physical</b>		
Base	Concrete or Steel	
Width/Height/Depth (approximate)	9'-0" x 8'-10" x 20'-7" (Standard)	9'-6" x 8'-10" x 34'-1" (Standard)
Mounting	Pad-Mount or Pier Mount	
Environmental Protection Rating	NEMA Type 3R (Inverter) & NEMA Type 3R (All other equipment)	
<b>Options</b>		
DC Disconnect	1500VDC, 8-24 inputs, 150 A-400 A switches, Non-Load Break or Load Break, UL Listed	
Oil Containment	Vault or Built-in Pan	

<sup>6)</sup> Rated power panelboard per customer specifications

<sup>7)</sup> Extend range -40°C optional

<sup>8)</sup> Derating above 1000 m



02

02 ABB Compact Skid, PVS980-CS-US – a compact plug-and-play solution for utility-scale PV plants

#### Accessories

- Surge protection for medium voltage side
- Warranty extensions
- Service contracts

#### Options

- Transformer LV side terminal box
- Output voltage from 12.47 kV up to 34.5 kV
- Additional transformer signaling options
- DC disconnection cabinet

#### 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)

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