ABB compact skid
PVS980-CS – up to 4600 kVA

The ABB compact skid is a compact plug-and-play solution designed for large-scale solar power generation. It houses all the electrical equipment that is needed to rapidly connect a photovoltaic (PV) power plant to a medium voltage (MV) electricity grid. All the components within the ABB compact skid are from ABB’s product portfolio.

Turnkey-solution for PV power plants
The ABB compact skid design capitalizes on ABB’s long experience in developing and manufacturing secondary substations for utilities and major end users worldwide in conventional power transmission installations.

A skid houses one or two outdoor 1500 V\textsubscript{DC} ABB PVS980 central inverters, an optimized MV oil immersed transformer, MV switchgear and all needed auxiliary services. The ABB compact skid is used to connect a PV power plant to a MV electricity grid easily and rapidly. To meet the PV power plant’s demanded capacity, several ABB compact skid can be used.

Compact design eases transportation
The compact skid solution has dimensions suitable for transportation inside closed 40 feet High Cube shipping container. The total package weighs less than 24 metric tons. The standardized shipping dimensions ensures cost-effective and safe transportability to the site, even overseas. Inverter’s optimized air circulation and filtering system, together with hermetically sealed oil immersed transformer enable installations in various ambient conditions, from harsh desert temperatures to cold and humid environments. The ABB compact skid is designed for at least 25 years of operation.

Highlights
• Proven technology and reliable components
• Compact and robust design
• Outstanding endurance for outdoor use
• High DC input voltage up to 1500 V\textsubscript{DC}
• High total efficiency
• Extensive DC and AC side protection
• Self-contained cooling system for inverters
• Modular and serviceable system
• Embedded auxiliary power distribution system
• Extendable manufacturing footprint with fast deliveries
• Global life cycle services and support
• Transportable inside closed 40 feet HC shipping container
• Arc-proof design
As a major global transformer manufacturer, ABB offers a wide range of transformers. Different power transformers are available to meet customer requirements. All ABB’s transformers are manufactured in accordance with the most demanding industry and international standards.

### Switchgear
The ABB compact skid is equipped, as standard, with the widely proven ABB SafeRing, SF₆-insulated switchgear.

A sealed steel tank with constant atmospheric conditions ensures a high level of reliability as well as personnel safety. The virtually maintenance-free system comes in a compact and flexible design that allows for a versatile switchgear configuration with arc-proof capability.

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**Technical data and types**

<table>
<thead>
<tr>
<th>Type code</th>
<th>2000</th>
<th>2100</th>
<th>2200</th>
<th>2300</th>
<th>4000</th>
<th>4200</th>
<th>4400</th>
<th>4600</th>
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<tbody>
<tr>
<td>Maximum rating in kVA</td>
<td>2000</td>
<td>2100</td>
<td>2200</td>
<td>2300</td>
<td>4000</td>
<td>4200</td>
<td>4400</td>
<td>4600</td>
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**Inverter**

- Inverter: PVS980
- Maximum operating DC input voltage: 1500 V
- Number of inverters: 1
- Number of independent mppt: 1
- Mppt range @ 35°C in V: 850-1500
- Mppt range @ 50°C in V: 850-1100
- AC output voltage: 600 V

**MV transformer**

- Oil immersed (ONAN)
- AC Power @ 35°C in kVA: 2000 2100 2200 2300 4000 4200 4400 4600
- AC Power @ 50°C in kVA: 1818 1909 2000 2091 3636 3818 4000 4182
- Number of secondary windings: 1 1 1 1 2 2 2 2
- Low voltage level: 600 V 630 V 660 V 690 V
- Medium voltage level range: ≤ 36 kV
- Rated frequency: 50Hz or 60 Hz
- Oil type: Mineral (vegetable optional)
- Tap changer: ± 2 x 2.5%
- Winding material (primary / secondary): Al / Al
- Eco efficiency optional: Yes

**MV switchgear**

- Switchgear type: ABB SafePlus (SF₆-insulated)
- Rated current: 630 A
- Configuration: Single (CV) or double feeder (CCV)
- Protection (up to 24 kV / up to 36 kV): Circuit breaker (16 kA or 20 kA / 20 kA or 25 kA)
ABB compact skid design and grid connection

1: PVS980-CS

2: PVS980-CS

Technical data and types

<table>
<thead>
<tr>
<th>Type code</th>
<th>2000</th>
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<tbody>
<tr>
<td>Protection relay type</td>
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<td>Motorized optional</td>
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<tr>
<td>Auxiliary transformer power</td>
<td>10 kVA (20kVA, 30kVA optional)</td>
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<tr>
<td>Auxiliary transformer primary voltage level</td>
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<td>630 V</td>
<td>660 V</td>
<td>690 V</td>
<td>600 V</td>
<td>630 V</td>
<td>660 V</td>
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<tr>
<td>Low voltage distribution panel for auxiliary functions</td>
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**Mechanical characteristics**

| Dimensions (length x width x height) in mm | 11850 x 2150 x 2570 (40ft HC container dimensions) |
| Weight approx. in ton | 17 | 17 | 17 | 24 | 24 | 24 | 24 |

**Environmental**

| Operating temperature range | -20° C . . . +50° C |
| Operating altitude range | ≤ 2000 m |
| Relative humidity (non-condensing) | ≤ 95% |
| Environmental protection rating | IP 54 (IP 66 for inverter) |
| Painting corrosion protection | C4 (C5M optional) |

**Product compliance**

| Conformity | IEC 60364, IEC 61936-1, IEC 60502-1 |
| Grid support | Reactive power compensation (also at night), power reduction, LVRT, HVRT, FqRT |
Accessories
- Solar array junction boxes with string monitoring
- Remote monitoring solutions
- Warranty extensions
- Solar inverter care contracts

Options
- MV AC output voltages up to 36 kV
- Different MV switchgear configurations
- I/O extensions
- DC grounding, positive
- Floating DC
- Fieldbus and Ethernet connections
- Auxiliary power supply up to 40kVA
- C5M enclosure corrosion protection

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
www.abb.com