



Solar inverter

PVS980-CS

The FIMER compact skid is a plug-and-play solution designed for large-scale solar power generation using PVS980-58 high-power central inverters.

It houses all the electrical equipment that is needed to rapidly connect a photovoltaic (PV) power plant to a medium voltage (MV) electricity grid.

Up to 5000 kVA

Turnkey-solution for PV power plants

The FIMER compact skid design capitalizes on FIMER's long experience in developing and manufacturing solutions for utilities and major end users worldwide in conventional power transmission installations.

A skid houses one 4348 to 5000kVA FIMER PVS980-58 central inverter, an optimized MV oil immersed transformer, MV switchgear and all needed auxiliary services. The FIMER 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 FIMER compact skids can be used.

Compact design eases transportation

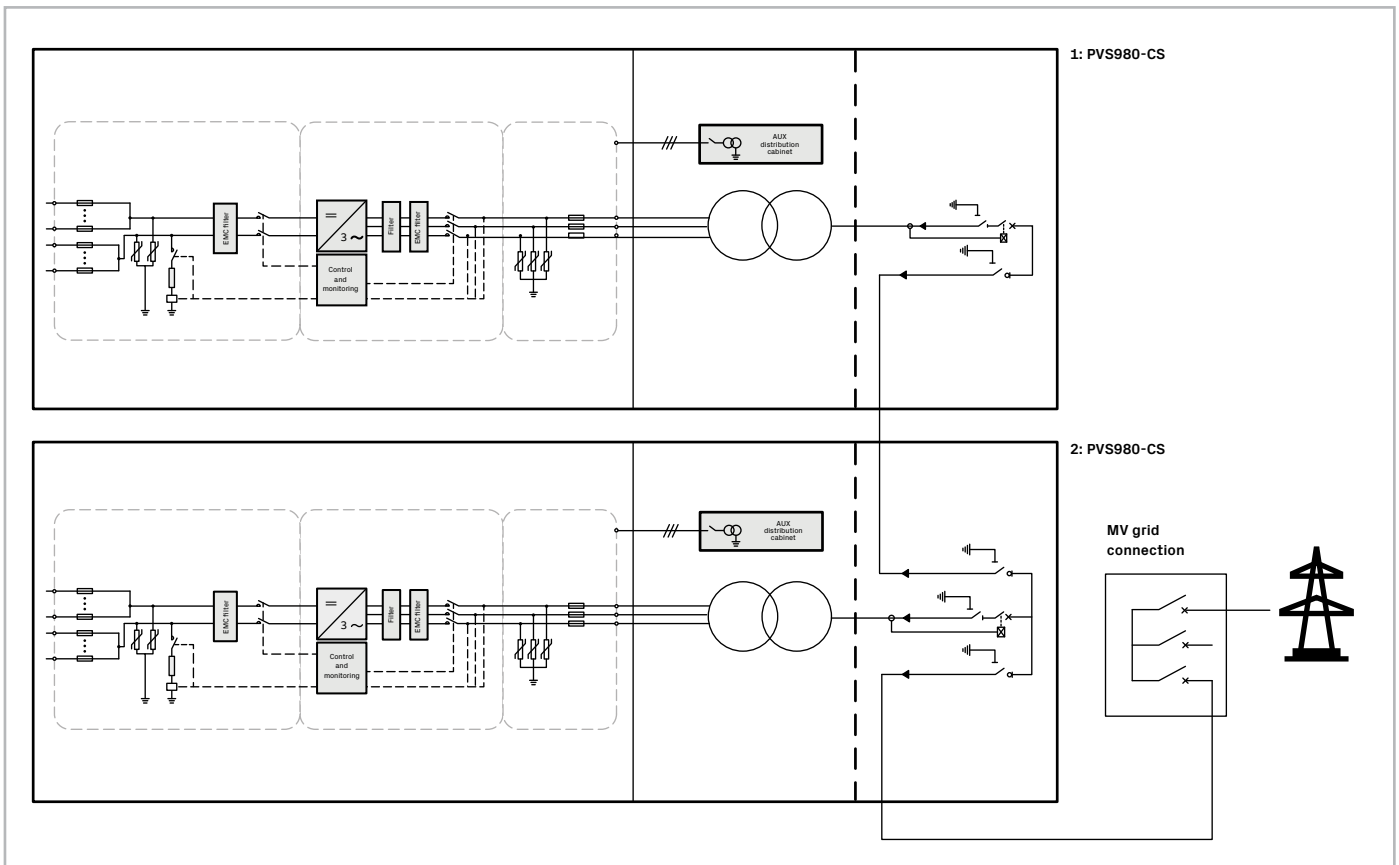
The compact skid solution has dimensions suitable for transportation inside closed 40 feet High Cube (HC) shipping container. The total package weighs less than 24 tons. The standardized shipping dimensions ensures cost-effective and safe transportability to the site, even overseas. Inverter's optimized 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 FIMER 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_{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

Compact skid design and grid connection



PVS980-CS

Solar inverters

The FIMER PVS980-58 inverter 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 PVS980-58 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 CO₂-free alternating current (AC) that can be fed into the power distribution network. One FIMER central inverter is used in the FIMER compact skid. The inverter provides high conversion efficiency with low auxiliary power consumption, as well as very low maintenance need.

Transformer

The FIMER compact skid includes an oil immersed transformer. The transformer is designed to meet the reliability, durability and

efficiency required in PV applications. It is specifically designed and optimized for the PVS980-58 inverter to provide the best performance throughout the lifetime of the plant.

Different power transformers are available to meet customer requirements. All transformers are manufactured in accordance with the most demanding industry and international standards.

Switchgear

The FIMER compact skid is equipped, as standard, with the widely proven 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.

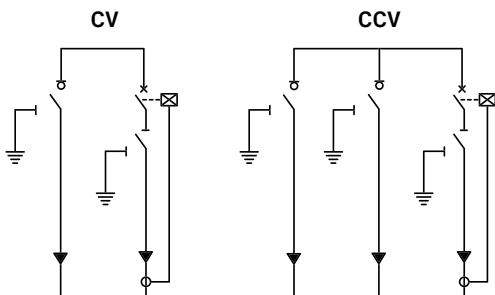
Technical data and type

| Type code | 4.3MVA | 4.6MVA | 4.8MVA | 5.0MVA |
|--|---|----------|----------|----------|
| Maximum rating in kVA | 4348 | 4565 | 4782 | 5000 |
| Inverter | | | | |
| Inverter | PVS980-58, 4.3-5MVA | | | |
| Maximum operating DC input voltage | 1500 V | | | |
| Number of inverters | 1 | 1 | 1 | 1 |
| Number of independent MPPT | 1 | 1 | 1 | 1 |
| MPPT range @ 25° C in V | 850-1350 | 893-1350 | 935-1350 | 978-1350 |
| MPPT range @ 35° C in V | 850-1250 | 893-1250 | 935-1250 | 978-1250 |
| MPPT range @ 50° C in V | 850-1100 | 893-1100 | 935-1100 | 978-1100 |
| AC output voltage | 600 V | 630 V | 660 V | 690 V |
| MV transformer | | | | |
| Transformer type | Oil immersed (ONAN) | | | |
| AC Power @ 25° C in kVA | 4343 | 4565 | 4782 | 5000 |
| AC Power @ 35° C in kVA | 4229 | 4441 | 4652 | 4864 |
| AC Power @ 50° C in kVA | 3845 | 4037 | 4229 | 4421 |
| Number of secondary windings | 1 | 1 | 1 | 1 |
| 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 | 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) | | | |
| Protection relay type | REJ603 (others on request) | | | |
| Motorized optional | Yes | | | |

Technical data and type

| Type code | 4.3MVA | 4.6MVA | 4.8MVA | 5.0MVA |
|--|--|--------|--------|--------|
| Auxiliary supply | | | | |
| Auxiliary transformer power | 10 kVA (higher on request) | | | |
| Auxiliary transformer primary voltage level | 600 V | 630 V | 660 V | 690 V |
| Auxiliary transformer secondary voltage level | 400-230 V | | | |
| Low voltage distribution panel for auxiliary functions | Yes | | | |
| Mechanical characteristics | | | | |
| Transport dimensions (length x width x height) in mm | 11850 x 2150 x 2570 (40ft HC container dimensions) | | | |
| Weight approx. in ton | 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 55 for inverter) | | | |
| Painting corrosion protection | C4 | | | |
| Product compliance | | | | |
| Conformity | IEC 60364, IEC 61936-1, IEC 60502-1 | | | |
| Grid support | Reactive power compensation (also at night), power reduction, LVRT, HVRT, FqRT | | | |

MV switchgear standard configurations for FIMER compact skid



Accessories

- Solar array junction boxes with string monitoring
- Remote monitoring solutions

Options

- MV AC output voltages up to 36 kV
- Different MV switchgear configurations
- I/O extensions
- Floating DC
- Fieldbus and Ethernet connections

- Auxiliary power supply up to 40kVA
- Warranty extensions
- LV AC breaker to inverter output

Support and service

FIMER supports its customers with a dedicated global service network 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 FIMER representative or visit:

fimer.com

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