

Solar inverter

Medium voltage Compact Skid

PVS-175-MVCS

The FIMER medium voltage compact skid is a plug&play solution designed for large-scale solar power generation using PVS-175 high-power string inverters. It includes the medium voltage transformer, the medium voltage switchgear and all low voltage protections needed to connect the inverters to the transformer.

String inverter - PVS-175-MVCS

The PVS-175-MVCS is an integrated product specifically engineered for decentralized solar plants realized with FIMER "PVS-175" string inverters. The solution allows to connect up to 36 inverters for a maximum power of 6.7MVA

The MVCS includes an optimized MV oil-immersed transformer, MV gas-insulated switchgear, all necessary LV protections and connections to attach the solar array and a set of available auxiliary services with independent auxiliary power.

All PVS-175-MVCS components ensure the highest standards of quality, performance and durability.

This medium voltage 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 and connected in any possible manner thanks to the versatility of the integrated MV switchgear.

The compact skid solution has dimensions suitable for transportation inside a closed 20 feet high cube shipping container. The standardized shipping dimensions ensure cost-effective and safe transportability to the site, even overseas.

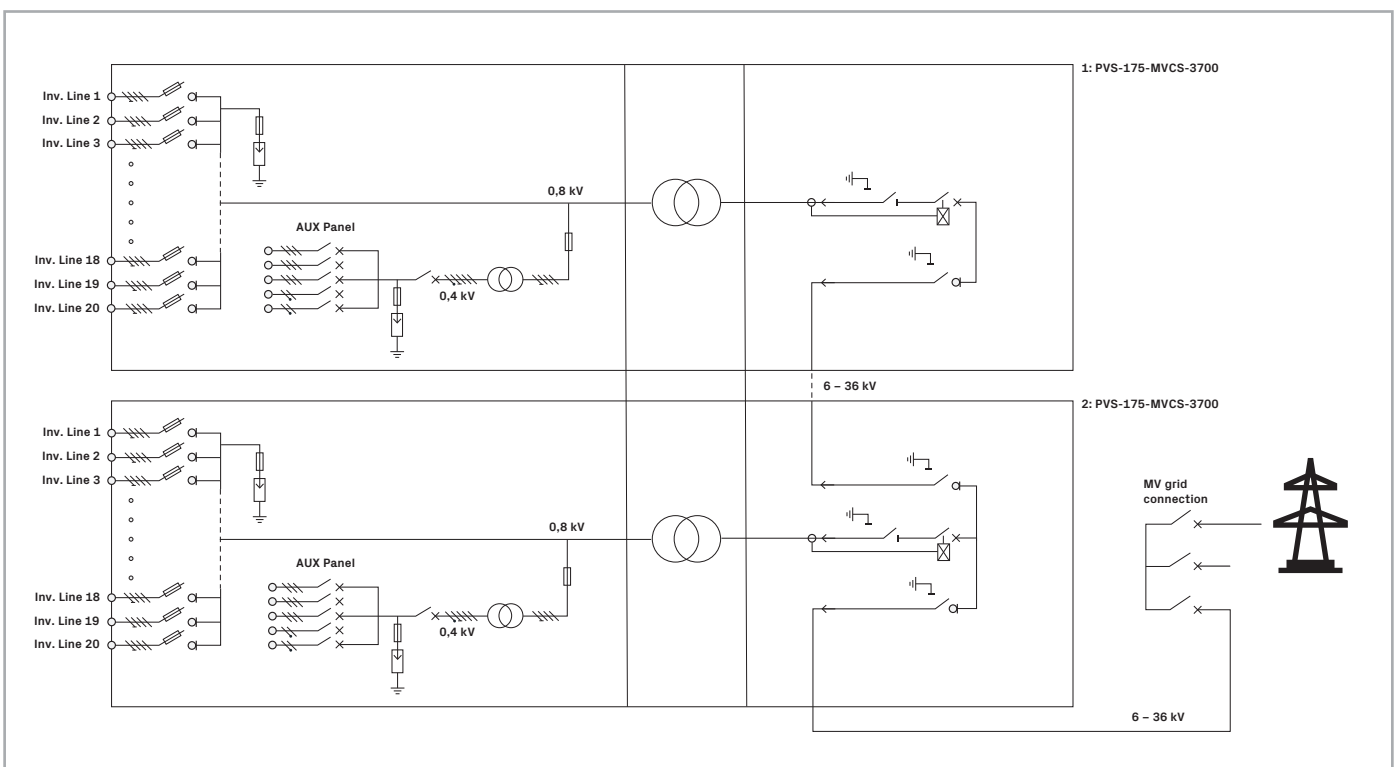
The solution's optimized cooling, filtering and high

environmental protection degree enable installations in a wide span of ambient conditions, from harsh desert temperatures to cold and humid environments. The FIMER medium voltage compact skid is designed for at least 25 years of operation.

Highlights

- Designed for decentralized systems based on the award-winning 1500 Vdc string inverters PVS-175-TL
- Integrated low voltage distribution panel for a simplified and cost optimized Balance of System (BoS) without the need of additional recombiners
- Quick individual isolation of each feeder, even on-load, for easy and cost-effective maintenance, ensuring maximum uptime
- Individually-protected feeders, enabling separate inverters to be serviced without disrupting the rest of the units connected to the same cluster
- Optimized and very compact layout for integration of all components necessary for medium voltage connection
- Standardized shipping dimensions ensure reduced logistic costs
- Made in Europe product, compatible with most of the world-wide structural regulations and standards
- Vertically integrated product from FIMER, guaranteed by FIMER

PVS-175-MVCS block diagram example



Technical data and types

| Type code | 1850 | 2220 | 2590 | 2960 | 3330 | 3700 | 4070 |
|--|---|------|------|------|------|------|------|
| Inverter | PVS-175-TL | | | | | | |
| Number of inverters in parallel | 10 | 12 | 14 | 16 | 18 | 20 | 22 |
| Maximum rating in kVA | 1850 | 2220 | 2590 | 2960 | 3300 | 3700 | 4070 |
| LV distribution panel | | | | | | | |
| Number of fused protected feeders | 10 | 12 | 14 | 16 | 18 | 20 | 22 |
| Fuse rating of feeders | 200 A | | | | | | |
| Breakable on load | Yes | | | | | | |
| Over voltage protection - replaceable surge arrester | Type 2 (Type 1+2 optional) | | | | | | |
| MV transformer | | | | | | | |
| Transformer type | Oil immersed (ONAN) | | | | | | |
| AC Power @ 30° C in kVA | 1850 | 2220 | 2590 | 2960 | 3300 | 3700 | 4070 |
| AC Power @ 40° C in kVA | 1750 | 2100 | 2450 | 2800 | 3150 | 3500 | 3850 |
| Low voltage level | 800 V | | | | | | |
| Medium voltage level range | ≤ 36kV | | | | | | |
| Rated frequency | 50 Hz 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 | SF ₆ -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 | | | | | | |
| Auxiliary supply | | | | | | | |
| Auxiliary transformer power | 10 kVA (higher on request) | | | | | | |
| Auxiliary transformer voltage | 800 / 400-230 V | | | | | | |
| Low voltage distribution panel for auxiliary functions | Yes | | | | | | |
| Mechanical characteristics | | | | | | | |
| Dimensions (length x width x height) in mm | 5700 x 2150 x 2500 | | | | | | |
| Weight approx. in ton | 9 | 9 | 10 | 10 | 10 | 11 | 11 |
| Environmental | | | | | | | |
| Operating temperature range | -25° C ... +60° C (with derating above 40° C) | | | | | | |
| Operating altitude range | ≤ 2000 m | | | | | | |
| Relative humidity (non-condensing) | ≤ 95% | | | | | | |
| Environmental protection rating | IP 54 | | | | | | |
| Painting corrosion protection | C4 (C5M optional) | | | | | | |
| Product compliance | | | | | | | |
| Conformity | IEC 60364, IEC 61936-1, IEC 60502-1 | | | | | | |

Technical data and types

| Type code | 4440 | 4810 | 5180 | 5550 | 5920 | 6290 | 6660 |
|--|---|------|------|------|------|------|------|
| Inverter | PVS-175-TL | | | | | | |
| Number of inverters in parallel | 24 | 26 | 28 | 30 | 32 | 34 | 36 |
| Maximum rating in kVA | 4440 | 4810 | 5180 | 5550 | 5920 | 6290 | 6660 |
| LV distribution panel | | | | | | | |
| Number of fused protected feeders | 24 | 26 | 28 | 30 | 32 | 34 | 36 |
| Fuse rating of feeders | 200 A | | | | | | |
| Breakable on load | Yes | | | | | | |
| Over voltage protection - replaceable surge arrester | Type 2 (Type 1+2 optional) | | | | | | |
| MV transformer | | | | | | | |
| Transformer type | Oil immersed (ONAN) | | | | | | |
| AC Power @ 30° C in kVA | 4440 | 4810 | 5180 | 5550 | 5920 | 6290 | 6660 |
| AC Power @ 40° C in kVA | 4200 | 4550 | 4900 | 5250 | 5600 | 5950 | 6300 |
| Low voltage level | 800 V | | | | | | |
| Medium voltage level range | ≤ 36kV | | | | | | |
| Rated frequency | 50 Hz 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 | SF ₆ -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 | | | | | | |
| Auxiliary supply | | | | | | | |
| Auxiliary transformer power | 10 kVA (higher on request) | | | | | | |
| Auxiliary transformer voltage | 800 / 400-230 V | | | | | | |
| Low voltage distribution panel for auxiliary functions | Yes | | | | | | |
| Mechanical characteristics | | | | | | | |
| Dimensions (length x width x height) in mm | 5700 x 2150 x 2500 | | | | | | |
| Weight approx. in ton | 12 | 12 | 13 | 13 | 14 | 14 | 15 |
| Environmental | | | | | | | |
| Operating temperature range | -25° C ... +60° C (with derating above 40° C) | | | | | | |
| Operating altitude range | ≤ 2000 m | | | | | | |
| Relative humidity (non-condensing) | ≤ 95% | | | | | | |
| Environmental protection rating | IP 54 | | | | | | |
| Painting corrosion protection | C4 (C5M optional) | | | | | | |
| Product compliance | | | | | | | |
| Conformity | IEC 60364, IEC 61936-1, IEC 60502-1 | | | | | | |



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