

Solar inverters and inverter solutions for power generation

FIMER has one of the widest portfolios of solar inverters ranging from single- and three-phase string inverters up to megawatt-sized central inverters. This extensive range of solar inverters is suitable for the smallest residential photovoltaic (PV) systems right up to multi-megawatt PV power plants.

For utility-scale power generation FIMER is one of the most reliable suppliers standing behind the promises over the whole lifetime of the plant to maximize the return on your investment.

FIMER solar inverters utilize our 50 years of experience and advances made in inverter and power converter technology that have contributed to FIMER becoming one of the largest provider of power electronic solutions.

FIMER plug and play solutions house all electrical equipment needed to rapidly and effortlessly connect the PV plant to any medium voltage (MV) grid in the world.

Filippo Carzaniga
Chairman of the Board

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FIMER solar inverter solutions

String inverter solutions

FIMER string inverter solutions enable the smart and cost-effective designs for industrial and small utility-scale PV power plants by maximizing energy yields even in challenging land shapes and locations. FIMER's offering for these plants includes complete plug and play inverter solutions and MV stations. The string inverter solutions can be utilized also in PV power plants of commercial and industrial buildings to minimize the needed investment.



Power block size (kW)

Central inverter solutions

In large ground-mounted multi-megawatt photovoltaic (PV) power plants the PV modules are typically installed uniformly mounted at ground level, either on fixed-tilted structures facing the sun or on tracking devices. For these land-based power plants FIMER central inverters offer the most cost-effective and efficient solution for PV energy generation by feeding electricity directly to the medium voltage (MV) power distribution network (i.e. grid). FIMER's offering for large plants includes a wide range of central inverter stations and turnkey solutions.



Power block size (kW)



Meet your bankability and profit targets with FIMER solar inverter solutions

Maximize the return on your PV investment with solar inverter solutions designed for high total efficiency, reliability and ease of installation.

Proven solutions with long-term reliability

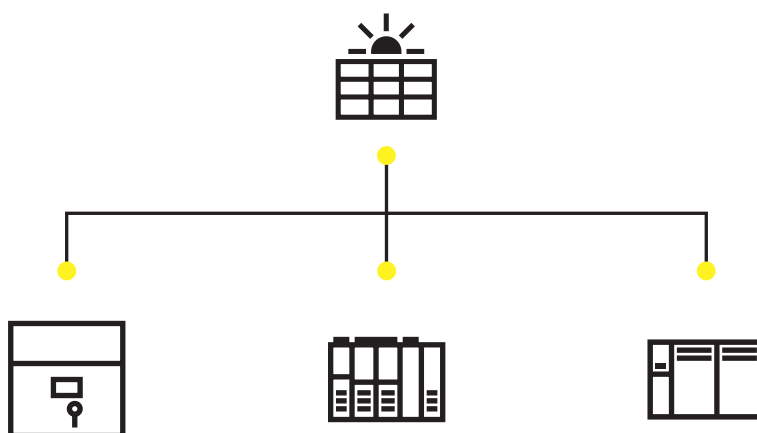
FIMER inverter solutions utilize decades of experience and advances in inverter and power converter technology. Together with FIMER's engineering know-how and complete product portfolio for PV power plants, FIMER inverter solutions provide optimized plug and play experience for quick and reliable connection of the PV plant to the grid.

Global presence with local support

FIMER solar inverters and inverter solutions are supported through a worldwide sales and services network. The high-performance FIMER solutions provide highly reliable, cost-effective and bankable utility-scale PV power plants. Wherever your project is located, FIMER is your reliable partner to support you over the whole lifetime of your plant.

FIMER solar inverter solutions – features and benefits

- Plug and play solutions, designed for large-scale solar power generation enabling rapid installation with cost-effectiveness
- All-in-one design ensuring maximum uptime of the plant with minimum total investment
- High reliability and efficiency with low auxiliary power consumption resulting in high total performance
- Modular and serviceable systems increased uptime
- Proven technology and reliable components securing long operating life and attractive return on investment
- Smart connectivity with controllability for digital grid compatibility
- Global life cycle services and support





FIMER string inverters and inverter solutions

The future of energy is anchored to renewable energy sources like photovoltaics that have already driven the transformation in the way energy is produced, consumed and provided through modern distribution grids. Photovoltaics are already one of the most cost-effective energy sources in many regions of the world. When they complement with digital technologies the benefits for users are at the maximum scale.

FIMER's offering includes three-phase string inverters as well as string inverter solutions with medium voltage (MV) stations. The string inverter solutions can be used in PV power plants of commercial and industrial buildings as well as in ground mounted applications.

Bright future ahead for decentralized power generation

Designed to optimize the total cost of ownership in PV projects, our inverters guarantee high total efficiency and reliability. The high power density and reduced installation and maintenance efforts enhance overall cost efficiency.

Thanks to their modularity and flexibility, our string inverters are the ideal solution for simplified system planning and design.

Complete string inverter solutions

for decentralized energy at its full potential

Economically attractive solutions can also be built in remote locations or places where land shapes create additional challenges for the plant design. Even multi-megawatt size installations can be designed with technically and

economically cost-effective results, thanks to our complete string inverter solutions. They include all MV components as well as a series of cloud based advanced communications services, which simplify the integration in smart environments.

Thanks to our string inverter solutions for decentralized applications, many companies can achieve greater efficiency and sustainable growth, today and tomorrow.

Features and benefits

- Configurable all-in-one design with built-in and monitored protection devices providing reduced system cost
- Wide input voltage range with multiple MPPT (Maximum Power Point Tracking) enabling flexibility for system designers
- High total efficiency for rapid return on investment
- Advanced grid support functions and compatibility with grid codes
- Safe and intuitive user and service interface enabling fast and easy commissioning
- Robust enclosure with IP65 rating for outdoor installations



Solar inverter

PVS-175-TL

up to 185 kW

The PVS-175-TL is FIMER's innovative three-phase string inverter, delivering a six-in-one solution to enhance and optimize solar power generation for ground mounted utility-scale applications.

High power density

This new high-power string inverter with the highest power density within the 1500 Vdc segment, delivers up to 185 kVA at 800 Vac. This not only maximizes the ROI for ground-mounted utility-scale applications but also reduces Balance of System costs (i.e. AC side cabling) for small to large scale, free field ground mounted PV installations.

Design flexibility

The inverter comes equipped with 12 MPPT, the highest available in the market, assuring maximum PV plant design flexibility and increasing yields also in case of complex installations.

Installer friendly design

Quick and easy installation, thanks to plug and play connectors, as the existing PV module's mounting systems can be used to install the inverters, thus saving time and cost on site preparation and hire of plant.

The fuse and combiner free design eliminates the need for external components, such as separate DC combiner boxes and AC first level combiners, thanks to the integrated DC disconnect and AC wiring compartment with optional AC disconnect.

The Advanced Cooling Concept preserves the lifetime of the system and minimizes O&M costs thanks to internal heavy-duty inverter cooling fans. These can be easily removed during scheduled maintenance cycles whilst the power module can be easily replaced without removing the wiring box.

Advanced communication for O&M

Standard wireless access from any mobile device makes the configuration of inverter and plant easier and faster. Improved user experience thanks to a built-in User Interface (UI) enables access to advanced inverter configuration settings.

The Installer for Solar Inverters mobile APP and configuration wizard enable a quick multi-inverter installation and commissioning thus reducing the time spent on site.

Fast system integration

Industry standard Modbus (RTU/TCP)/SUNSPEC protocol enables fast system integration.

Two Ethernet ports enable fast and future-proof communication for PV plants.

Protect your assets

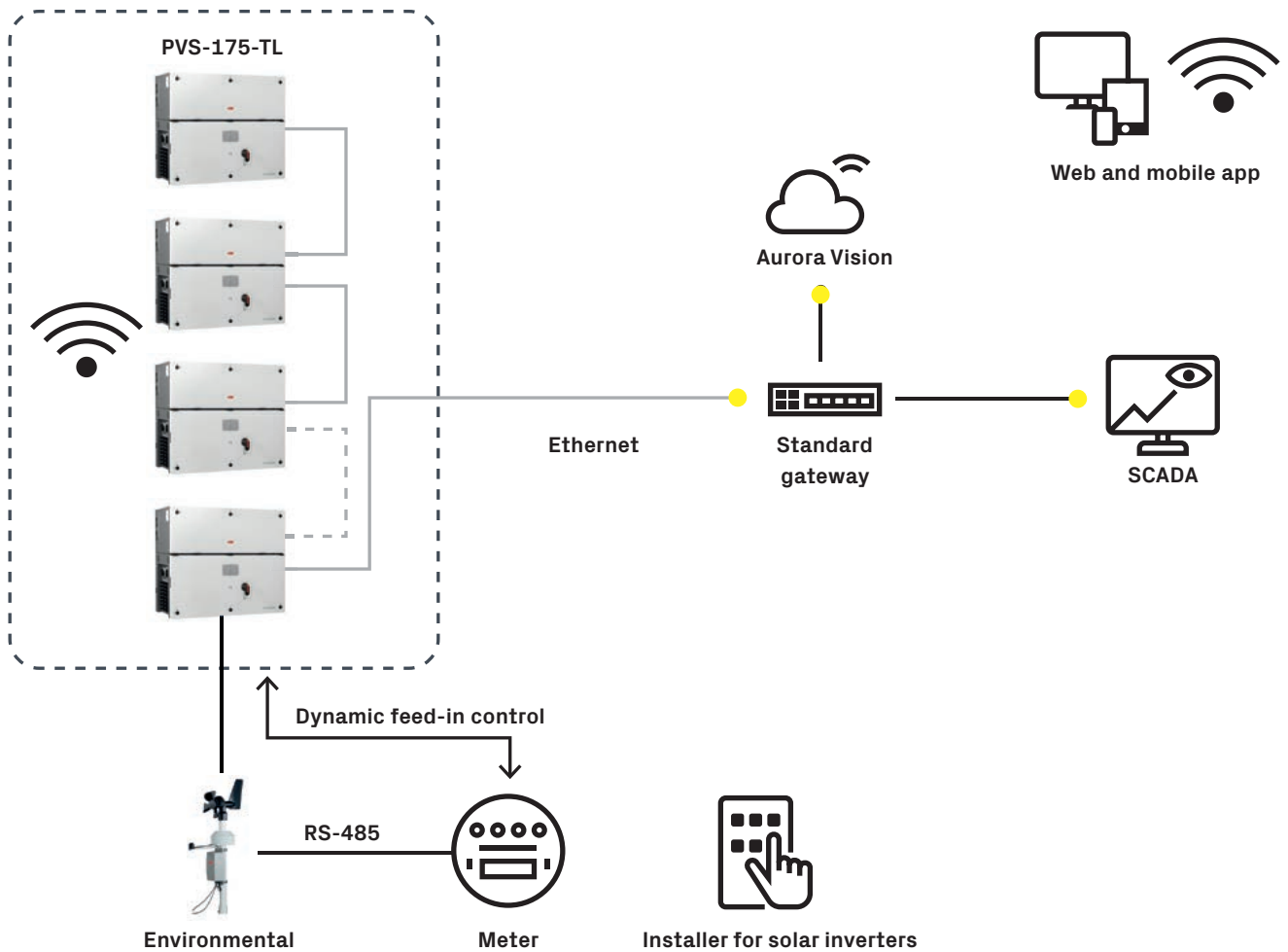
Monitoring your assets is made easy, as every inverter is capable to connect to Aurora Vision cloud platform and thanks to the state-of-the-art cybersecurity and Arc Fault Detection option, your assets and profitability are secure in the long term.

Highlights

- Up to 185 kW power rating, highest in class
- All-in-one combiner and fuse free design
- Separate power module and wiring compartment for fast swap and replacement
- Easy access to consumables for fast inspection and replacement
- 12 MPPT and wide input voltage range for maximum energy yield
- WLAN interface for commissioning and configuration
- Remote monitoring and firmware upgrade via the Aurora Vision cloud platform (logger free)
- Free of charge standard access to Aurora Vision cloud



FIMER PVS-175-TL block diagram



FIMER medium voltage compact skid IEC version

PVS-175-MVCS

up to 6660 kVA

The FIMER medium voltage compact skid is a plug and 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.

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.

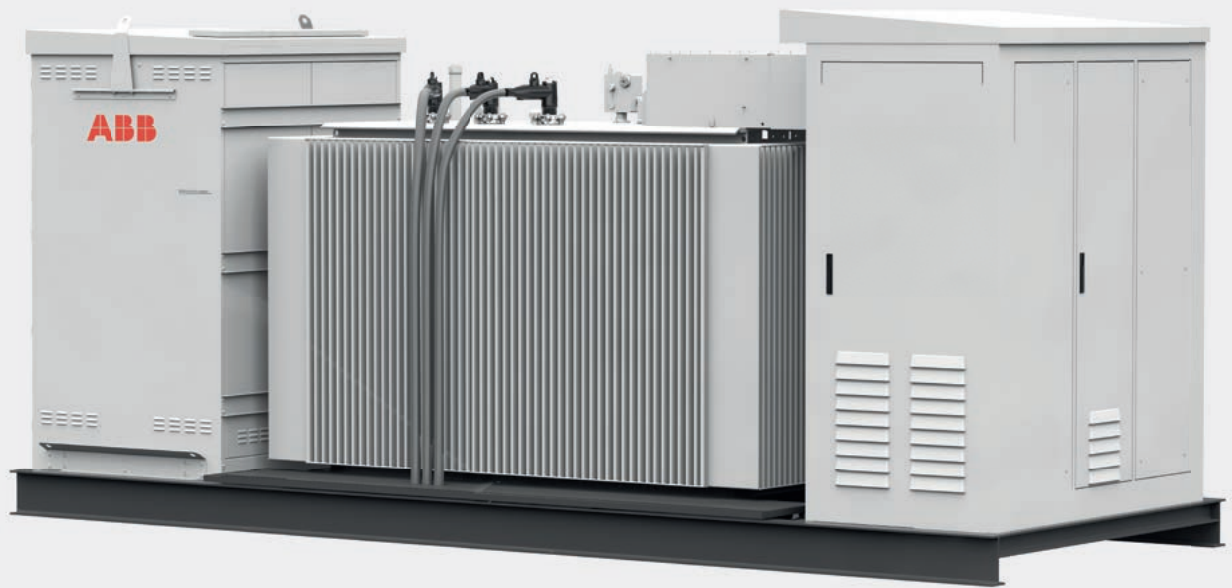
This medium voltage compact skid is used to connect a PV power plant to a MV electricity grid easily and rapidly. To meet the PV power plant's demanded capacity, several FIMER compact skids can be used and connected in any possible manner thanks to the versatility of the integrated MV switchgear.

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



FIMER medium voltage compact skid for US market

PVS-175-MVCS

up to 5920 kVA

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

The PVS-175-MVCS is an integrated product specifically engineered for decentralized solar plants realized with FIMER PVS-175 string inverters.

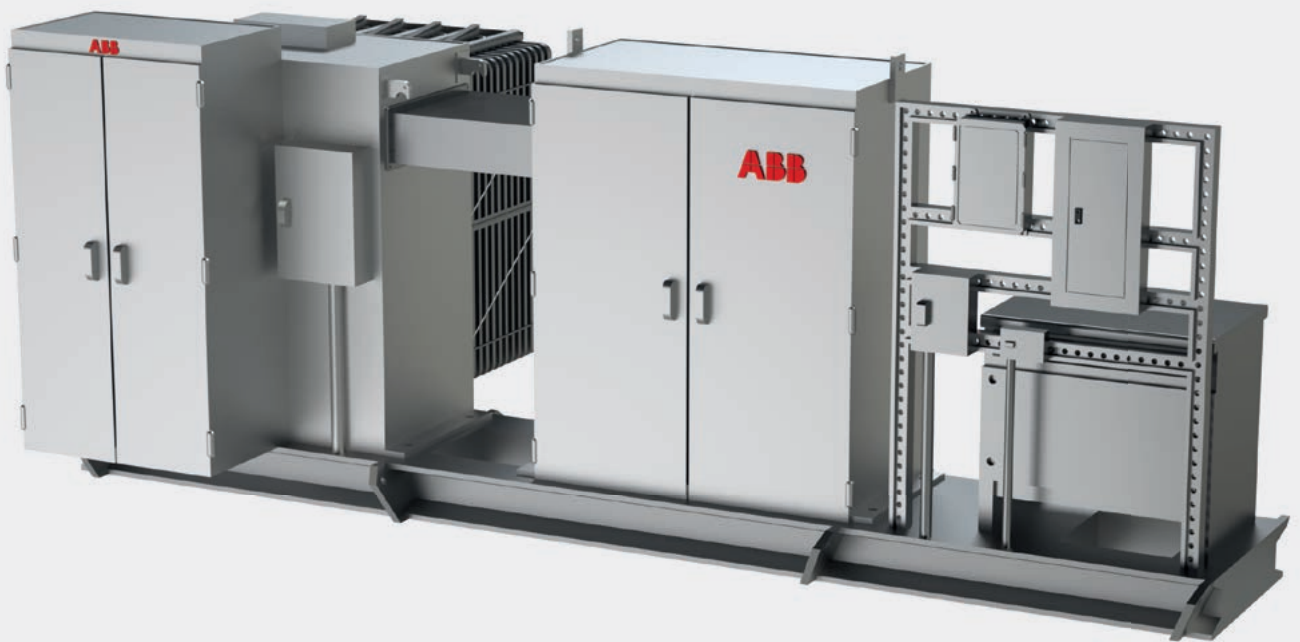
All PVS-175-MVCS components ensure the highest standards of quality, performance and durability.

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 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 PVS-166/175-TL 1500 Vdc string inverters
- 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



PVS-175 string inverter

digital capabilities

The FIMER PVS-175 comes with all the digital capabilities and functionalities enabled by the new FIMER digital communication platform allowing great advantages in terms of smart grid integration and controlling as well as reducing time spent on site.

“All-in-one” solution

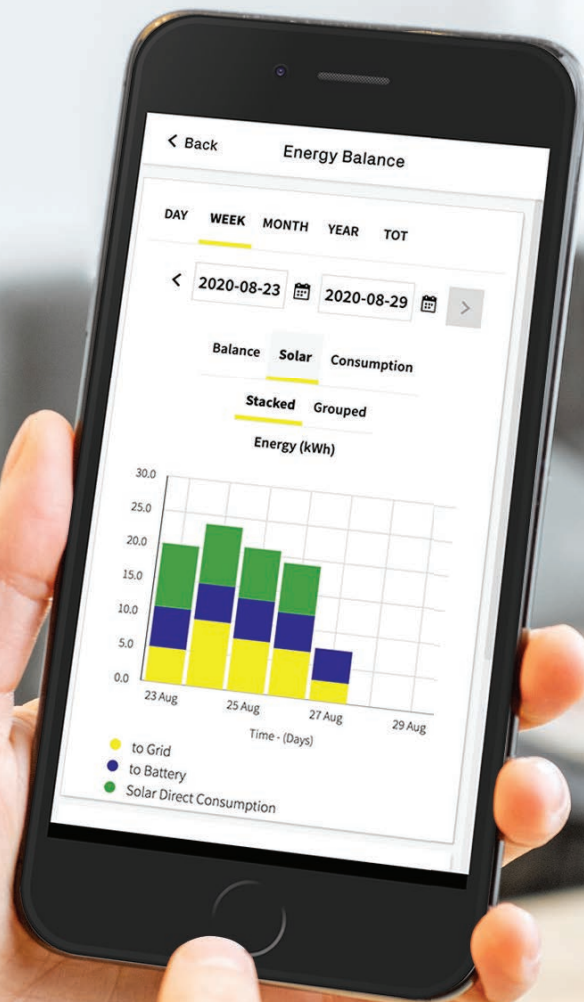
The digital technologies of the PVS-175 inverter allows the electric grid to better adapt to the dynamic behavior of renewable energy and distributed generation, helping both consumers and utilities to access these resources and harvest their benefits from remote. The PVS-175 inverter features natively the proven standard TCP/IP technology and the open and widely used Modbus RTU and TCP Sunspec allowing customer to easy integrate the inverter with any modern systems in range of IoT and in compliance with modern regulatory norms worldwide.

The integrated data logging capabilities, the direct transferring of telemetry data to the cloud via Internet and the innovative built-in distributed control algorithm allow

meeting any limit to the plant exported power at the point of connection. There is no need of using any additional device beyond the inverter which ensures maximum flexibility in plant designing and reduces the complexity of the plant dramatically. Consequently, it increases the PV plant's reliability.

Highlights

- Protecting customer's investment
- Reduced plant complexity and increased reliability
- Minimum TCO
- Improved user experience
- Support to cross-sector integration
- IoT ready



Aurora Vision

Aurora Vision[®] is a scalable, secure and reliable cloud-based platform that allows customers to remotely manage and analyze the main KPIs (Key Performance Indicators) of their photovoltaic systems as well as use advanced diagnostics tools, in all market segments.

This cloud-based solution, accessible through an Aurora Vision[®] account, provides highly interactive real-time access to PV systems data, thereby showing key performance indicators and operational metrics to help in the management and optimization of the system, speeding up the alignment with company objectives. The Aurora Vision[®] platform offers numerous dashboard views that allow fleet-level management of performance and resources through reporting, diagnostics, analysis or alerts and event management:

The platform includes four different products, designed with specific customer needs in mind:

- **Plant Portfolio Manager:** an advanced application that allows stakeholders (such as installers/operators/managers) to manage and administer a portfolio of power plants using advanced features.
- **Energy Viewer:** an easy-to-use application for monitoring the main power generation, self-consumption and self-sufficiency indicators, for owners of residential and commercial PV plants.
- **Plant Viewer:** an easy-to-view dashboard for monitoring the main power and energy indicators, for owners of residential and commercial PV plants.
- **Plant Viewer for mobile:** the mobile version of Plant Viewer



Export limitation solution

The PVS-175 string inverters is even more smart and innovative thanks to the innovative built-in distributed logic control algorithm which allows meeting export limits without the need of installing any additional system or device*.

The new innovative Export limitation solution allows solar plant owners to get the maximum energy from their inverters, without needing to invest in additional external systems, and is compliant with the export limits set by grid operators and utilities worldwide. It is the only solutions currently on the market** that does not require the installation of any additional components besides PVS series string inverters and a supported and standard modbus meter, allowing for great advantage in terms of both investments and ownership costs, plant reliability and system complexity. The PVS-175 string inverter comes with an innovative distributed control algorithm built-in which, once quickly configured through the Installer for solar inverters set-up wizard, allows the entire plant to dynamically follow the load curves in compliance with the most restrictive regularity norms worldwide. To get the solution properly configured and working, the supported standard meter needs to be installed at the point of Interconnection and connected to the inverters just once, by either direct RS-485 serial line, to the inverter's serial port, or over Ethernet cable, to the router of the Local Area Network to which all the inverters are connected to.

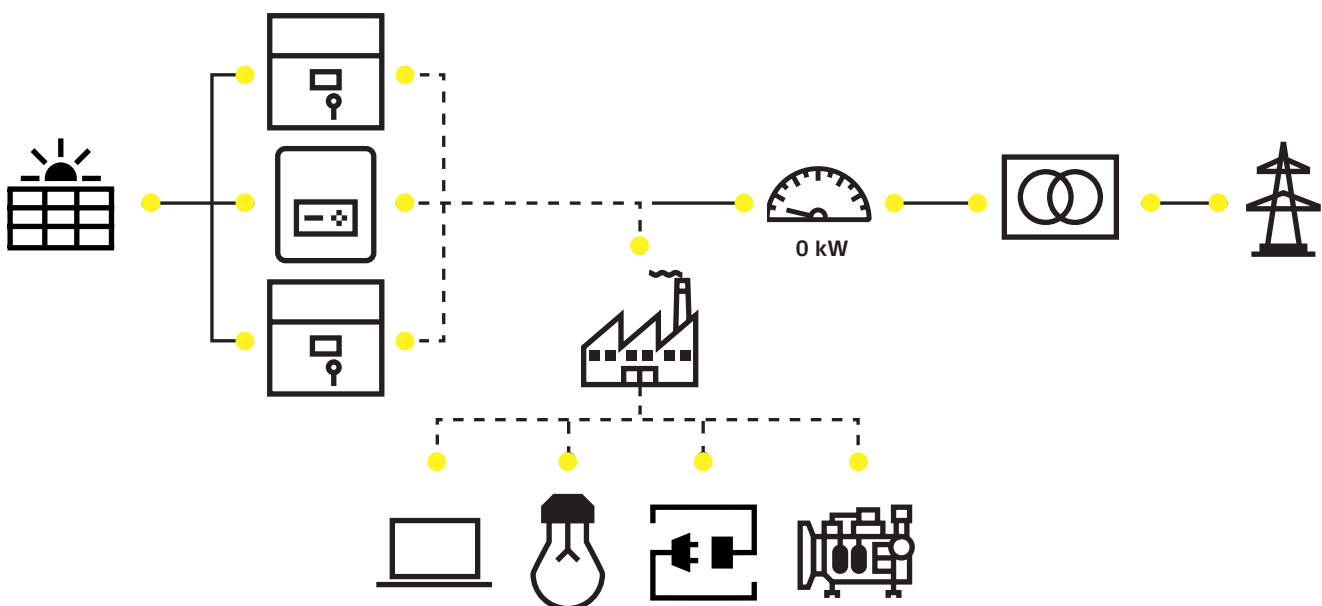
According to the specific meter installed, the new Export limitation algorithm can work in a large utility-scale plant, where up to maximum 15 unites per plant are connected to the grid by middle voltage stage.

Highlights

- IP based solution
- Distributed control algorithm built-in the inverter
- PVS-175 string inverters supported (15 units per plant)
- Just a standard Modbus meter (either RS-485 or Ethernet) needed
- System setting through Installer for solar inverter mobile app
- Fully integrated with Aurora Vision® cloud
- Both low and medium voltage connection with the grid allowed
- High performance control solution: < 2 seconds for reaching the target
- Compliant with modern regulatory norms worldwide (such as : AS/NZS 4777.2:2015, UNE 217001 IN, G100)

* With the exception of a standard Modbus meter from the ones supported.

** To date



FIMER central inverters and inverter solutions

FIMER's offering includes highly cost-effective and performant central inverters as well as complete plug and play stations with inverters and medium voltage (MV) components for an attractive return on investment.

Central inverters for maximized total efficiency

FIMER's central inverter portfolio is based on decades of experience with power converting technology, which has been custom adapted for the PV business.

This ensures that the product itself, and the processes to support it over the plant lifetime, are optimized and offer a truly bankable solution.

The central inverter's industrial design and modularity combined with FIMER's life cycle service approach simplify the operation of the inverters. This assures maximum uptime of the plant and highest return on your investment.

The high efficiency, together with high reliability and extremely low auxiliary power consumption give investors maximized total efficiency over the lifetime of the plant

Highlights

- Power ratings up to 5000 kVA
- 1000 V and 1500 Vdc input voltage
- All-in-one design approach to reduce the amount of external components needed

Central inverter solutions for high performance

FIMER's central inverter solutions are designed for large multi-megawatt PV power plants and are most cost-effective by feeding electricity directly to the MV grid.

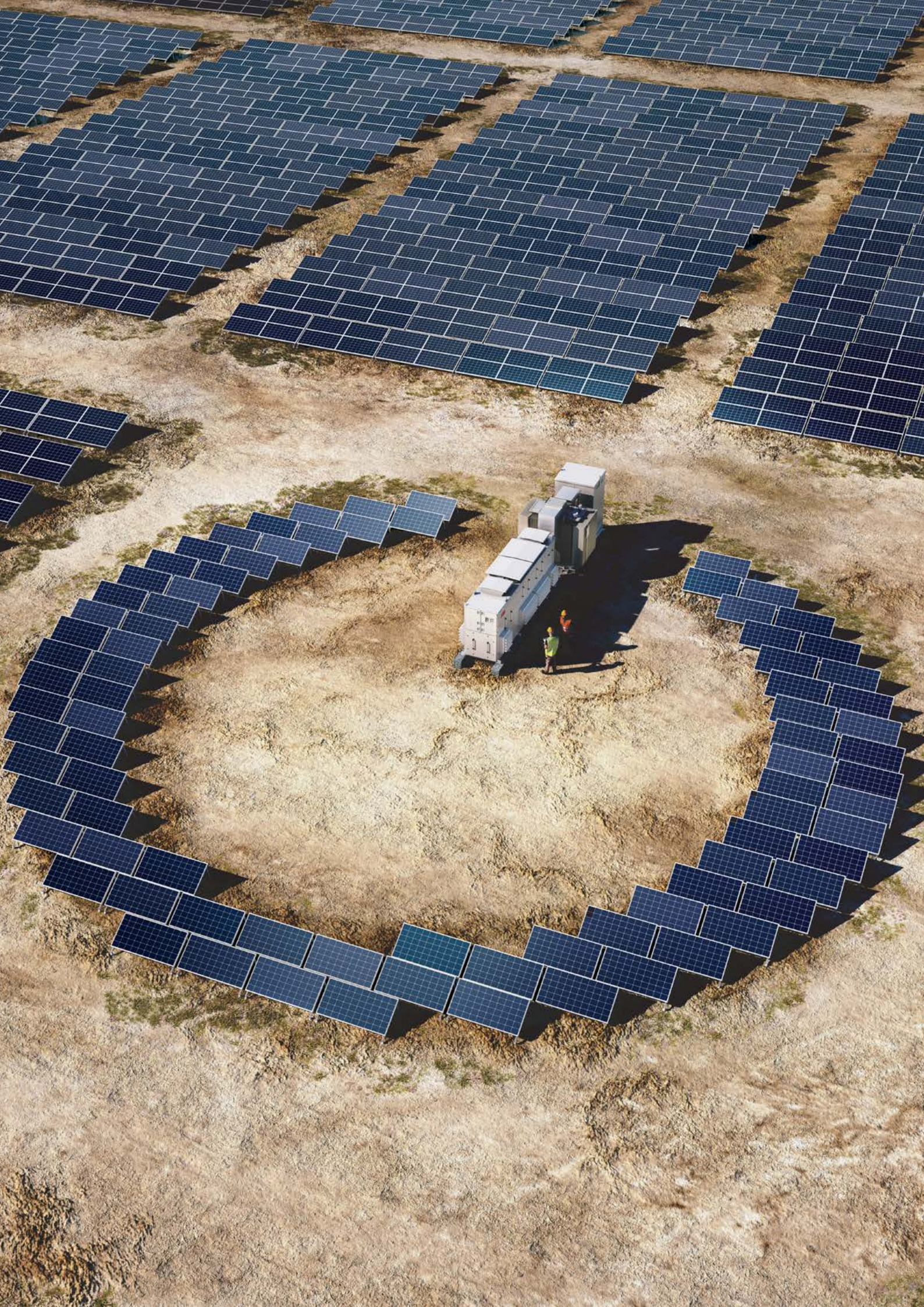
The components' compatibility ensures highest standards of quality, performance and durability.

The complete plug and play stations are available in different designs, to provide the most feasible solutions for every weather and site condition.

Highlights

- Plug and play solutions with ratings up to 5000 kVA
- Customized solutions with ratings up to 10000 kVA
- Standardized shipping dimensions to ensure cost-effective and safe transportability





FIMER central inverter (1500 Vdc) PVS980-58

up to 5000 kVA

The new high power FIMER central inverters raise the performance, cost 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. PVS980-58 central inverters are now available from 4348 kVA up to 5000 kVA, and are optimized for multi-megawatt power plants.

World's leading inverter platform

Like other FIMER central inverters, the PVS980-58 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.

PVS980-58 central inverters from FIMER

FIMER PVS980-58 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 FIMER PVS980-58 central inverters provide a rapid return on investment. New extended power range along with fast site installation raises the total cost efficiency to a new level.

Highlights

- High total performance
- Modular product design
- High DC input voltage up to 1500 VDC
- Extensive DC and AC side protection
- Easy to commission, no separate chiller installation
- Fast and easy AC coupling to transformer by busbars
- 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 FIMER's extensive global service network



FIMER compact skid IEC version (1500 Vdc) **PVS980-CS**

up to 5000 kVA

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.

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.

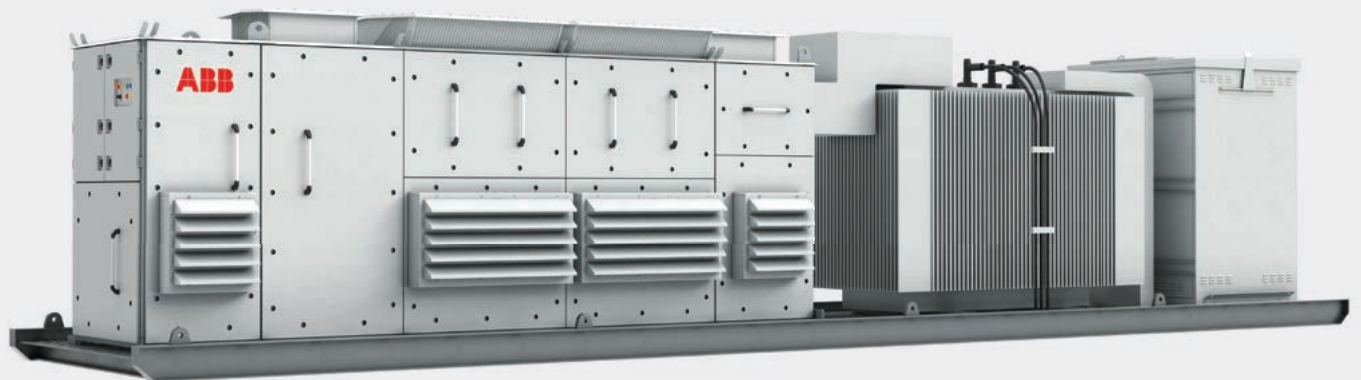
A skid houses one 4348 to 5000kVA FIMER PVS980-58 central inverter, an optimized MV oil immersed transformer, MV switchgear and all needed auxiliary services. The FIMER compact skid is used to connect a PV power plant to a MV electricity grid easily and rapidly. To meet the PV power plant's demanded 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 VDC
- 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



FIMER compact skid for US market (1500 Vdc) **PVS980-CS-US**

up to 5000 kVA

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.

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 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 supports fast on-site installation with easy transportation to project sites. Transport of the skid can be done with a standard truck and can be set in place with a standard crane for a simple installation.

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.

This skid mounted solution is pre-assembled on a factory built steel or concrete foundation. With pre-configured layout options a minimal footprint can be achieved.

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 Vdc
- 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
- Arc-proof design



FIMER central inverter (1500 Vdc) PVS980-58

up to 2300 kVA

FIMER high power central inverters raise the performance, cost 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. PVS980-58 central inverters are now available from 1818 kVA up to 2300 kVA, and are optimized for multi-megawatt power plants.

World's leading inverter platform

Like other FIMER central inverters, the PVS980-58 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.

PVS980-58 central inverters from FIMER

PVS980-58 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 FIMER PVS980-58 central inverters provide a rapid return on investment.

Highlights

- Patented, self-contained cooling system with high efficiency
- High total performance
- Outstanding endurance for outdoor use
- Compact, modular product design
- High DC input voltage up to 1500 VDC
- Extensive DC and AC side protection
- 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 FIMER's extensive global service network solar inverters



FIMER bidirectional converter (1500 Vdc) **PVS980-58BC**

up to 2300 kVA

FIMER bidirectional converter PVS980-58BC is aimed at large-scale grid connected energy storage applications. The converters are available from 1454 kVA up to 2300 kVA. PVS980-58BC bidirectional converter is based on the world's leading converter platform used also in FIMER solar inverters ensuring high performance, reliability and availability of global service support.

World's leading converter platform

Like FIMER central inverters, the PVS980-58BC bidirectional converter 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 the PVS980-58BC series.

PVS980-58BC bidirectional converter from FIMER

FIMER PVS980-58BC bidirectional converters are ideal for multi-megawatt energy storage systems, providing maximum grid stability for power plants with intermittent energy sources. For power plants combining photovoltaics and energy storage, the common platform shared with PVS980-58BC bidirectional converter and PVS980-58BC central inverter brings synergies in both the availability of service and support personnel and the spare part logistics.

Highlights

- Patented, self-contained cooling system suitable for harsh environments
- High total performance
- Outstanding endurance for outdoor use
- Full four quadrant active power and reactive power support
- High DC input voltage up to 1500 VDC for minimizing system cost
- Compact, modular product design
- Life cycle service and support through FIMER's extensive global service network



FIMER compact skid IEC version (1500 Vdc) **PVS980-CS**

up to 4600 kVA

The FIMER compact skid is a compact plug and play solution designed for large-scale solar power generation using PVS980-58 high-power central inverters. The station houses all the electrical equipment that is needed to rapidly connect a photovoltaic (PV) power plant to a medium voltage (MV) electricity grid.

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 or two outdoor 1818 to 2300 kVA FIMER PVS980-58 central inverters, 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 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



FIMER compact skid for US market (1500 Vdc) **PVS980-CS-US**

up to 4400 kVA

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.

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 transmissions installations. It is made to meet the safety and electrical installation standards for USA markets.

The design is optimized to provide cost-effective transportation as well as fast and easy installation on site. 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.

All the components within this medium voltage skid come from FIMER'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 FIMER medium voltage skid mounted design capitalizes on FIMER'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

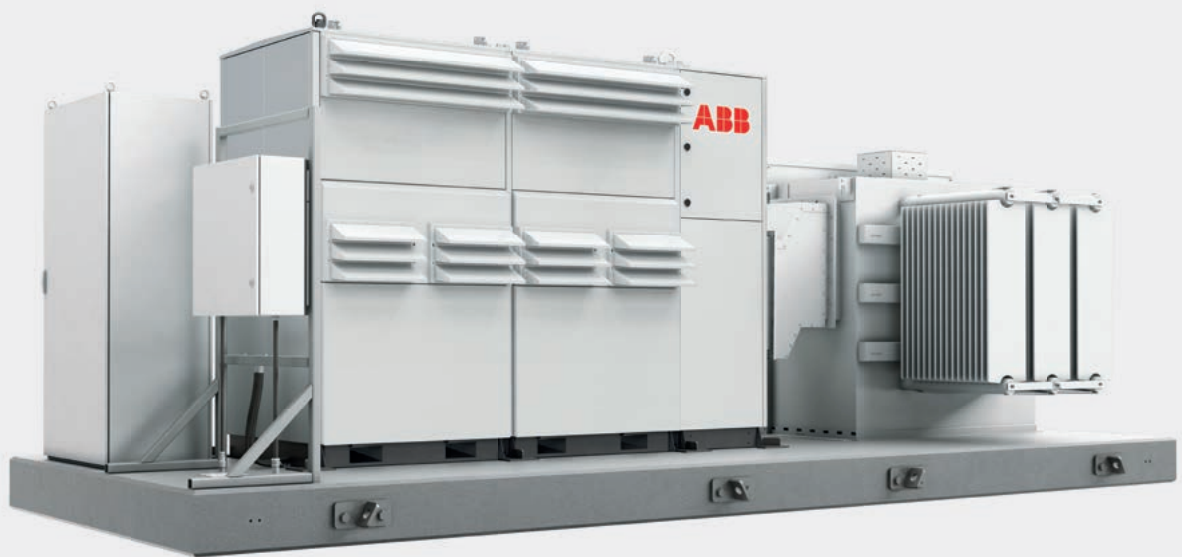
Compact and robust design for harsh environments

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 FIMER 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



FIMER medium voltage pad (1000 and 1500 Vdc) PVS800/980-MVP

up to 10000 kVA

FIMER medium voltage pad mounted solution is designed for large-scale solar power generation and to be compatible with PVS800-58 inverter station and PVS980-58 outdoor central inverter.

Cost-efficient plug and play solution for PV power plants

The solution contains the medium voltage step-up transformer and the medium voltage switchgear equipment needed to rapidly install and connect the inverters to the medium voltage network of the photovoltaic plant. The components' compatibility ensures highest standards of quality, performance and durability.

The FIMER medium voltage pad design capitalizes on FIMER's long experience in developing and manufacturing secondary substations for utilities and major end users worldwide in conventional power transmission installations. The solution contains an optimized transformer, MV switchgear and signaling interfaces for the central inverter.

PVS980-58 central inverter together with the medium voltage pad mounted solution ensures easy and rapid connection of the central inverters to a plant's medium voltage network and its monitoring and communication system.

Modular design for easy transportation

The pad mounted solution is designed for easiness of transportation and allowing to use in an optimum manner FIMER production footprint.

The solution is to be wired on-site. The pad mounted solution is available with oil type transformer. The design enables operation in harsh temperature and humidity environments and is designed for at least 25 years of operation.

The pad mounted solution components can be lifted with a standard truck crane, thereby simplifying transportation and installation at the site with a minimal free footprint and installation area needed around the power block. The solution also allows to optimize timing of the solar array cabling to the inverters as well as MV cabling before the transformer arrives. Pad mounted solution can utilize also more freely FIMER's wide global manufacturing footprint.

Highlights

- Reliability
 - proven components
- 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



FIMER megastation (1500 Vdc) MS 7440 FI up to 6220 kVA

The FIMER megastation is a fully integrated turnkey solution designed for large-scale solar power generation using FIMER central inverters. The station houses all the electrical equipment that is needed to rapidly connect a photovoltaic (PV) power plant to a medium voltage (MV) electricity grid.

Plug and play solution for PV power plants

The FIMER MS 7440 FI megastation maximizes efficiency and performance of any solar park due to the patented Modular Power System (MPS) architecture. It houses two or four FIMER R series inverters, a power transformer, a MV switchgear and all needed auxiliary services.

To meet the PV power plants' demanded capacity, either one or two FIMER R series central inverters can be used. When housing two inverters and in case of failure of one of the inverters, the other power converter modules continue their energy production to reduce downtime of the plant.

Compact design eases transportation

The inverters, the transformer and the MV switchgear are mounted on a 40 feet High Cube (HC) shipping container to ensure maximum stability as well as cost-effective and safe transportability to the site, even overseas. The fully waterproof and insulated design enables installations in various ambient conditions, from harsh desert temperatures to cold and humid environments. The FIMER megastation is designed for at least 25 years of operation.

Highlights

- Compact and robust design
- Modular and scalable power size
- Outstanding endurance for outdoor use
- High DC input voltage up to 1500 Vdc
- High reliability ensuring that less maintenance is required
- High total efficiency
- Easy access to components enabling fast service and maintenance



PVS980 central inverters **connectivity solutions**



Plant controller & SCADA

PVS980 inverters come with MODBUS/TCP fieldbus interface and MODBUS/RTU communication links as standard. Plug-in connectivity adapters enable communication with all major automation networks.

The inverter supports two Ethernet communication ports simultaneously offering the possibility for ring topology connectivity.

With a local webpage interface the following service can be activated:

- Simple Network Time Protocol (SNTP) for time synchronization
- Remote access with PC tool via Ethernet tool network

Highlights

- Plug-in connectivity adapters enable communication with all major automation networks
- Single point of access to all the inverters
- Ring topology for high reliability



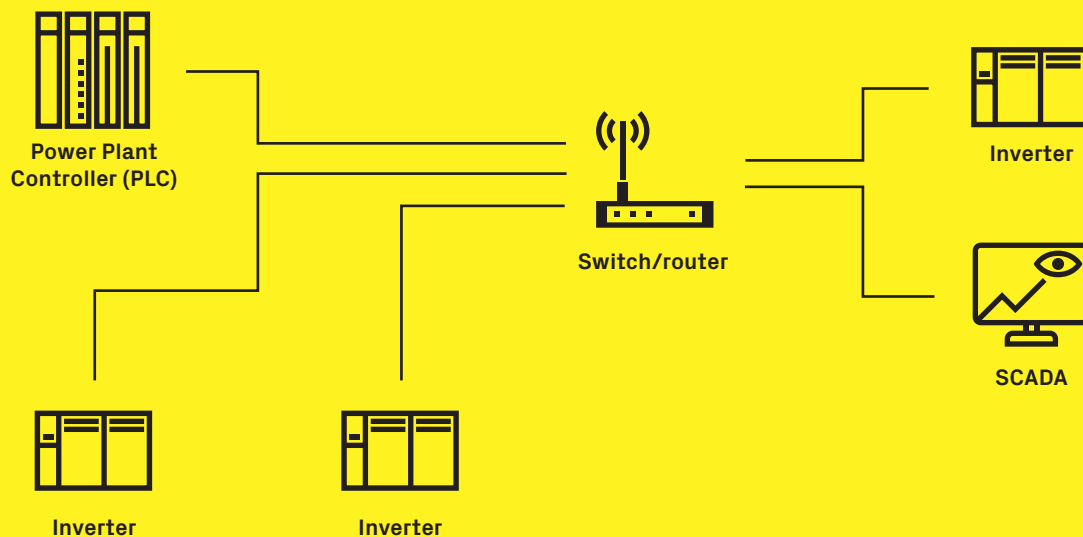
Cost efficient and
scalable solutions



Data handling for efficient
cloud-solutions



Real-time
Monitoring



Remote monitoring solutions

Cloud data collection Aurora Vision

Monitor your central inverter solar power plants the way you want with Aurora Vision.

Aurora Vision comes with different products for better meeting the needs of customers aiming to monitor and manage their own solar assets in a very cost-effective manner.

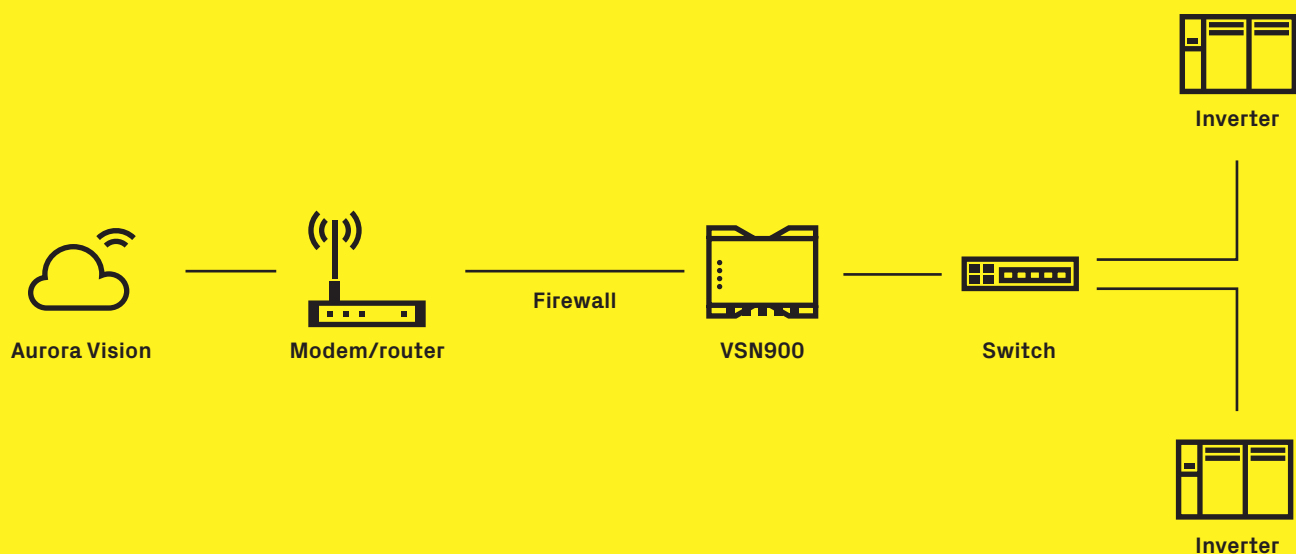
Aurora Vision includes:

- Plant Portfolio Manager: the professional web portal
- Plant Viewer: the simplified web portal
- Plant Viewer for mobile: the mobile app for power generation applications
- Energy Viewer: mobile app for self-consumption applications
- Aurora Vision Application program interface (API): enabling data-sharing with third party systems

Thanks to the simple integration of our gateway VSN900 the central inverters can be connected to the cloud and send data to Aurora Vision.

Highlights

- Easy cloud connection of whole power plant
- Active control of transferred data
- Smart data handling on edge-level for cost-efficient cloud-solutions



Remote monitoring solutions

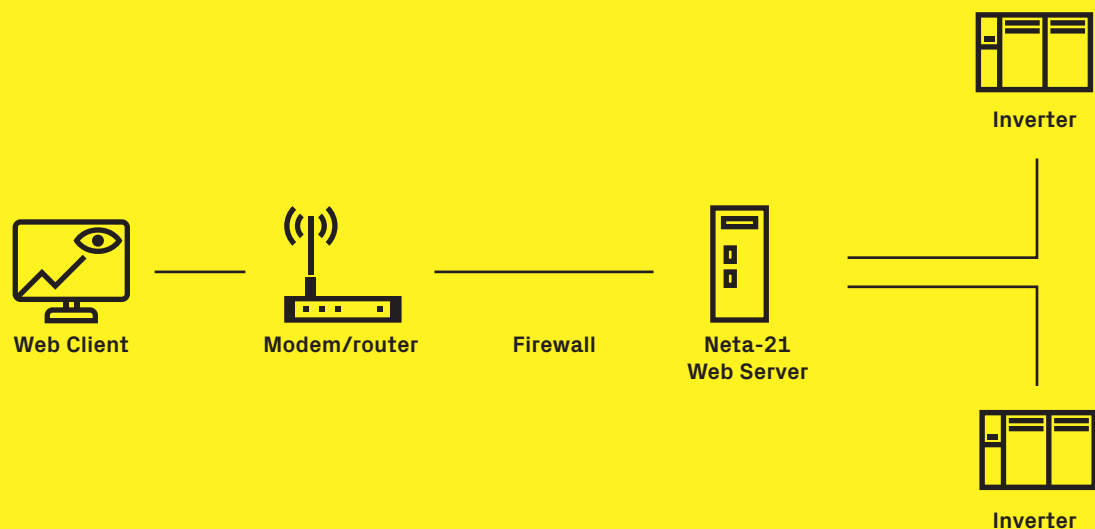
Inverter direct remote access

With a built-in web server and standalone data logger, the NETA-21 remote monitoring tool enables secure worldwide access to the inverters. Inverter data can also be collected via 3G/4G mobile connection (modem not included).

The remote monitoring tool gives easy access to the inverter via the Internet or a local Ethernet network. NETA-21 comes with a built-in web server. Through the web interface, the user can monitor log data in real-time and access the inverter parameters. One NETA-21 supports up to 10 inverters. The collected data can be stored remotely and utilized for service, maintenance and troubleshooting.

Highlights

- Cost efficient direct monitoring
- Full real-time monitoring of the inverter status
- Scalable & platform-independent remote connectivity



Accessories



Monitoring and communications

VSN800 Weather Station

The weather stations belonging to the VSN800 family allow the monitoring of a series of environmental and panel data through Aurora Vision cloud platform, being equipped with temperature, irradiation and wind sensors.



The VSN800 contains the essential environmental sensor set needed for solar monitoring. The expanded sensor set allows a wider monitoring of environmental parameters. VSN800 is the perfect companion to the VSN700 Data Logger products and it can directly be connected to the RS-485 port of the new PVS string inverter families.

Shipped preconfigured and ready for installation requiring no special tools

The VSN800 Weather Station is delivered ready for installation and requires the installer to mechanically mount the modules on a user-supplied mast, connect power and communication, and initialize the automatic system commissioning process. No special software, or on-site calibration is required.

The all-in-one weather station reduces the installation, support and maintenance cost while improving the robustness and manageability of the PV plant monitoring solution.

The basic sensor set the VSN800-12 model is equipped with provides data needed to calculate a performance ratio allowing a plant operator to track solar array performance

against expected energy production.

The advanced sensor set the VSN800-14 model is equipped with improves monitoring of weather conditions that can affect energy production. The extra irradiance sensor for mounting at the plane of the array allows more accurate measurement of irradiance that is incident in the plane of the solar panels.

The wind speed and direction sensor gives the operator information about how the wind may be cooling the panels and some indication of how much dust may be accumulating on the panels.

Highlights

- Two models offered for basic and advanced sensor sets
- VSN800-12 includes a basic sensor set: ambient temperature, solar irradiance, and back of module temperature
- VSN800-14 includes additional advanced sensors: plane of array irradiance and wind direction and speed
- Sensors, data acquisition unit, and RS-485
- Can be connected directly to the RS-485 port of the new PVS string inverter families.

FIMER string combiner boxes

SB and SBC

FIMER's offering includes the string combiner boxes SB and SBC to ensure the first parallel connection of the PV modules of solar generator modules. Equipped with a robust exterior case, the high-performance boxes guarantee quick and safe installation for outdoor usage and reduce plant downtime.

SB zone monitoring

FIMER's SB zone monitoring combiner boxes are designed for quick and safe installation of centralized solar plants.

Equipped with 20A fuses, the boxes protect solar panels from overcurrent. The disconnect of the output and input fuses allows isolating single PV subfields or individual strings from the other parts of the PV system, enabling operators to work safely both during installation and maintenance activities. Each combiner box is equipped with safety devices as well as a SPD varistor to faults due to overvoltage and lightning.

Highlights

- 1000 and 1500 Vdc combiner boxes
- Possible amount of DC inputs: 16, 20, 24, 32

SBC string monitoring

FIMER's SBC string monitoring combiner boxes are smart control boxes that allow current measurement of each PV string.

In addition of all advantages of the SB combiner boxes, the SBC combiner box localizes malfunction of PV plants accurately to minimize plant downtime with targeted service interventions.

Due to the integrated Modbus RTU protocol, FIMER SBC combiner boxes allow controlling of the solar installation remotely to provide flexibility.

Highlights

- Complete control and monitoring
- 1000 and 1500 Vdc combiner boxes
- Possible amount of DC inputs: 16, 20, 24



Life cycle services for solar inverters. Optimizing the performance of your solar plant

The FIMER solar service offering spans over the whole lifetime of the solar power plant. To support this, FIMER has developed a life cycle management model aimed at providing proactive services to maximize availability and performance. This model provides optimum support to end users over the whole lifetime of the solar power plant securing the value of solar power plant assets to the owner.

Pre-purchase

FIMER pre-sales support helps our customers to select the right inverter and services for their applications. This ensures higher yield and performance of the entire system and compatibility with customer requirements.

Order and delivery

Orders can be placed through any FIMER office, and spare parts can also be ordered online through the web. Our sales and service network offers timely deliveries worldwide.

Installation and commissioning

FIMER certified engineers can advise or undertake the commissioning of the solar inverters and supervise the installation.

Operation and maintenance

FIMER helps to ensure a long lifetime for its solar inverters by providing on-site preventive maintenance. Preventive maintenance consists of annual inspections and component replacements according to specific maintenance schedules. Reconditioning provides more in-depth maintenance which is carried out at FIMER's authorized service workshops. Reconditioning of the solar inverter includes full inspection, thorough cleaning, individual component analysis and replacement, and complete testing.

Upgrade and retrofit

We can advise on the latest hardware and software upgrades that can continue to maximize the performance of your solar inverters even if the grid codes change.

Life cycle model

The life cycle model divides a product's life cycle into four phases: active, classic, limited and obsolete. Each phase has different implications for the end user in terms of services provided.

Benefits of life cycle management

Life cycle management maximizes the value of the solar inverter and its maintenance investments by:

- Ensuring spare parts and FIMER competence availability throughout the lifetime
- Enabling efficient product support and maintenance for improved reliability
- Adding functionality to the initial product by upgrading or retrofitting
- Providing a smooth transition to new technology at the end of the product lifetime

FIMER Solar Care is a modular set of services for predictable care of your asset and peace of mind over the full lifetime of the solar plant.

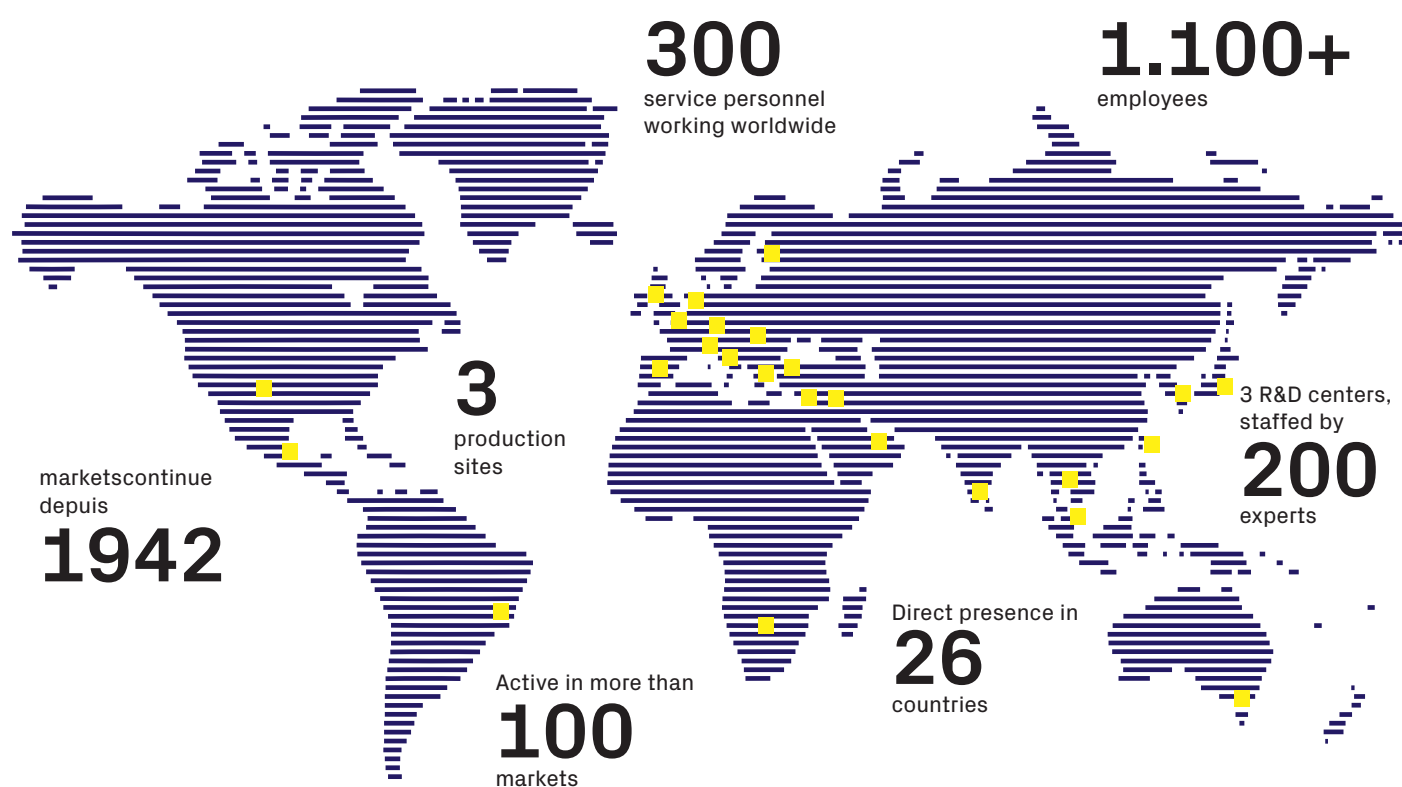
The offering includes:

- Availability of spares
- Extended warranties
- Preventive maintenance
- Corrective maintenance
- Response time
- Uptime guarantee
- Training
- Technical support



Shaping the future of energy

With global innovation



For a bright solar future



94%
of our business is solar



We offer more than
11 GW
solar inverter capacity



More than
25 years
of solar experience



The
broadest
solar portfolio on the market

For supercharged electric mobility



Active in electric vehicle
infrastructure since
2017



More than
23.500
charging stations installed

We have the power to support you. Count on us

FIMER: ready for the future

In a global scenario where the demand for renewable energy is constantly growing, we are a leading global manufacturer of inverters for solar systems.

Among the first to introduce inverter technology to the welding and industrial automation sector, we developed MPS (Modular Power System) technology, revolutionary in the field of utility-scale solar inverters. Our approach based on

constant innovation has enabled us to build a significant market share, with a focus on our research centers specializing in solar and electric mobility.

FIMER and ABB's solar inverter business: a bright future for a strategic business.

With the acquisition and integration of ABB's solar inverter business, completed in the first quarter of 2020, FIMER took a decisive step forward in our strategy focusing on the solar sector.

Our solar business strength is the result of the combination of FIMER with ABB's solar inverter business (including the former Power-One business acquired by ABB in 2013), building on strong heritage on each side.

FIMER has been characterized by a steady path of growth, which began in 1942 and still continues.

The ABB solar inverter business has one of the market's most comprehensive offerings of solar inverters, and boasts almost 50-years history as a leader in high-efficiency and high-density power supply products for a variety of industries including renewable energy. Together we now shape a new strong player with the combined track record and experience, writing a new chapter of our history, building a new, broader and more powerful company.

Solar

FIMER is the 4th largest solar inverter supplier in the world.

4th

Global player

94%

of our business is solar

5

Continents

Providing a full range of inverter solutions for all photovoltaic applications, we address the challenges of the energy transition.

Inverter development and manufacturing is our main vocation and we can provide support to customers all over the world and at every stage of a solar project.

During the last few years, the solar industry has played a core role in the clean energy transition. In this rapid transformation

of the global energy landscape, clients can count on our expertise gathered over decades of experience, translated into a wide, diversified and constantly evolving solutions portfolio. With the complete solutions for the solar market we address the challenge of energy transition.

With our knowledge and experience, we make a contribution to safeguarding and protecting the environment for future generations.

High performance of inverters.

11+ GW

Capacity / year
(String Inverter, Central Inverter,
Storage PCS)

46+ GW

Installed capacity

Our inverters ensure such high yields that they produce more energy than the market average. The strengths of our technology include versatility, the high quality of materials

used and extensive control of the entire production process, ensuring our high quality and safety standards.



**Together we
can take on any
challenge**



Stronger. Better. FIMER.



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