R9000 TL

FIMER
INVERTER FOR LIFE

MV CENTRAL INVERTER
TRANSFORMERLESS
MAX INPUT VOLTAGE @1.000V

MAXIMUM EFFICIENCY	OUTPUT VOLTAGE	MPPT VOLTAGE RANGE
98.9 %	330 V_{AC}	610 - 920V_{DC}

MAX INPUT VOLTAGE @1.000V

R9000 TL

FIMER Centralized inverters with MV connection to the electricity distribution are completely innovative machines. The MPS technology (Modular Power System), owned and patented by FIMER, allows the improvement of three main features of a PV inverter:

> PERFORMANCE
> LIFETIME
> ELIMINATION OF MACHINE DOWN-TIMES

PERFORMANCE

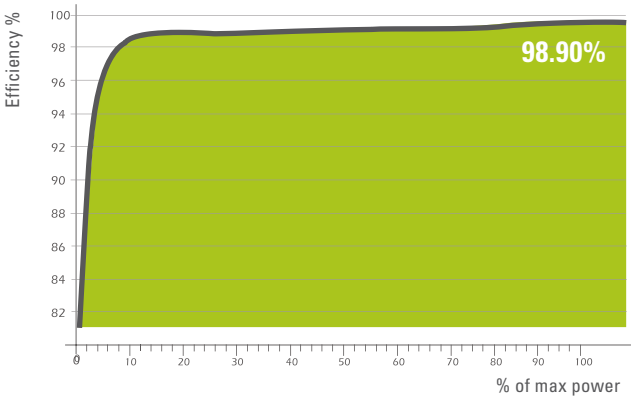
FIMER inverter is modular and, as already explained, this peculiarity is due to the inverter's conversion stage which is formed by more IGBT 75kWp power modules working in parallel in output on the AC power distribution grid: if we take as reference a 750 kWp machine, this is formed by ten 75 kWp modules, instead a 300 kWp inverter is made of four 75kWp modules, and so on. The modularity also extends to magnetic devices (inductors), capacitors energy conversion and all cards and electronic devices for control and regulation (whose one piece is always available for each power module). This makes FIMER machines unique on the market. Why? Because if any inverter of the competitors, for example a 750 kWp, usually needs to magnetize the power circuits devices (f.e. inductances, line filter, capacitors on the grid side, etc..) about 10% of the nominal power, which corresponds in this case to about 75 kWp, FIMER machine must magnetize always and only one 75kWp module at a time which in our case corresponds to a magnetizing energy consumption of 0.8 kWp, a consumption that is applied only to the modules that at that time the machine is switching on and is making work. This means that FIMER machine produces about 11% more than any other manufacturer in the world thanks to this unique feature. By installing a FIMER inverter, you will be able to pay-off your investment in the first years of functioning and product basis warranty.

LIFETIME

A FIMER inverter lasts longer! To last longer electronics need to work at low temperatures. FIMER inverter power modules turn on and off in a sequential manner so they are always cool, (or they operate in low temperatures and they are always checked) so they are destined to last longer. Furthermore in this way the use of cooling fans is also optimized, they absorb and dissipate less energy turning less and less time, which ensures higher performance and profitability to the PV Inverter.

ELIMINATION OF MACHINE DOWN-TIMES

As the power architecture is divided into several modules, the inverter will never stop completely because it will only stop the failing module inside the converter. Competitors' inverters are usually made with a single power module inverter (or in case of multi-modules, often with a single magnetic filter device towards the grid), when a competitor's machine stops then the inverter will stop producing until it's repaired. Instead FIMER inverter keeps on functioning as it has multiple modules and multiple magnetic devices, even when one is damaged, the others continue to operate normally so our customer will never lose a EURO of production.



Advantage

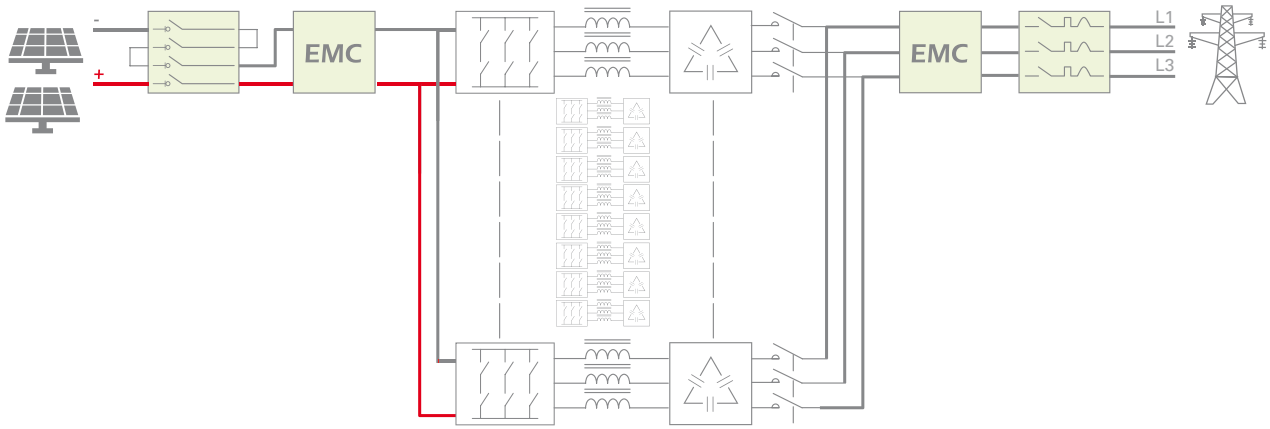
> High efficiency, up to 99%.
> Modular inverter (MPS system).

Features

> Use of a single magnetic component each module.
> Advance modularity (according to IPCCM algorithm).
> Continual monitoring of the system and integrated datalogger.
> Outbound communication.
> Monitoring of the photovoltaic plant.

Accessories

> Accessories references



PROCTION DEGREE

IP 20

It indicates the classification of the degree of protection provided by mechanical enclosures and electrical boards against the intrusion of solid particles (for example parts of the body and dust) and access of liquids.
In this case the inverter is protected against intrusion of solid objects larger than 12 mm and the intrusion of fingers.

CE MARKING

The product complies with the safety requirements of the applicable EC directives.

LVFRT

LVFRT

It is the capability of the inverter to remain connected to the grid even following any poly-phase failure and whenever a voltage dip occurs, within some limits of time.
The curve is completely configurable in order to meet any requirement of the grid code.

OVER FREQUENCY P REDUCTION

HFRT

It is the capability of the inverter to reduce the active power P for transient over-frequency of the grid and consequently to participate to Primary Frequency regulation at the POI.
The curve is completely configurable in order to meet any requirement of the grid code.

SEMICIRCULAR CAPABILITY

SEMICIRCULAR CAPABILITY

It is the capability of the inverter to able of generating, upon request, a certain amount of active and reactive power in whichever point of the P,Q space delimited by the semi-circular diagram.

GRID VOLTAGE REGULATION FUNCTION BY MEANS OF REACTIVE POWER

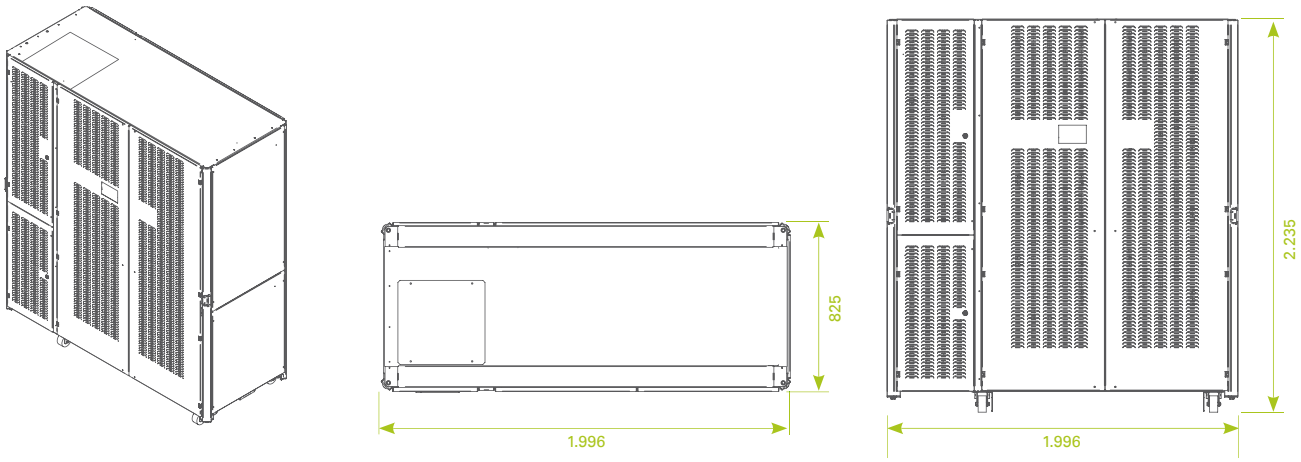
Q=f(V)

Grid voltage regulation function is carried out by appropriate generation of reactive power Q by the
Inverters in local logic.
The curve is completely configurable in order to meet any requirement of the grid code.

POWER FACTOR FUNCTION OF ACTIVE POWER

$COS_{(\varphi=f(P)}$

It is the capability of the inverter to regulate in local logic and the power factor at the POI as a function of the active power P.
The curve is completely configurable in order to meet any requirement of the grid code.



DC Input - PV Module

	R9000TL
MPPT voltage range(V_{DC})	610 - 920 V
Max no-load PV voltage (V_{DC})	**1.000 V**
DC-voltage ripple (%)	< 2%
Maximum input current (A_{DC})	1.500 A
DC control mode	Rapid and efficient MPPT control
Number of MPPT	1
Number of input max in parallel	2 (Opt. 4)
Reverse polarity protection	•
DC input connection	Integrated DC Switch
Overvoltage protection	Implemented by using SPD varistors device
Overvoltage Category	II

AC Output grid

Nominal power (kVA) (Note1)	833 kVA
Max current (A_{AC}) (Note1)	1.460 A
Nominal current (A_{AC}) (Note1)	1.363 A
AC output Voltage (V_{AC})	330V_{RMS} ±10%
Nr Phase	3-phase (L1-L2-L3-PE)
Frequency (Hz)	50/60 Hz
Aux. power supply (V_{AC} - I_{AC})	230V ±10% - 10A (L-N)
Auxiliary control supply (V)	230V ±10% - 10A (L-N)
Distortion factor (THD)	< 3%
Galvanic insulation	No (transformerless)
AC input connection	Magnetothermic AC grid switch

General Data

Maximum efficiency	98.90%
European efficiency	98.62%
Night consumption (W)	< 60 W
Modulation	By using the IPCCM algorithm
Weight (kg)	1.670 kg
Protection degree	IP20 (Opt. IP31)
Cooling	By using fans speed controlled by temperature
Dimensions (WxDxH mm)	1.996x825x2.235 mm
Noise level (dBA)	< 70 dBA
Operating temperature (°C)	-10° C +50° C
Storage temperature (°C)	-20° C +60° C
Humidity Not condensing	0 ÷ 95%
Height above the sea (without derating) *(Note 2)	1.500 m
Air Flow	4.100 m^3/h
Protection class	I
Colour	RAL 9006

*Note1. Power factor ($\cos\varphi$)= 1
*Note2. Above 1500m derate the power of 1% pr 100m
*Note3. From 50° C to 55°C derating of power

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