

@1500V

R12015 TL | R13515 TL
R15015 TL



MV CENTRAL INVERTER

TRANSFORMERLESS

MAX INPUT VOLTAGE @1.500V



MAXIMUM EFFICIENCY

98.9 %

OUTPUT VOLTAGE

550 V_{AC}

MPPT VOLTAGE RANGE

850 - 1.320V_{DC}

MAX INPUT VOLTAGE @1.500V

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FIMER Centralized inverters with MT 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:

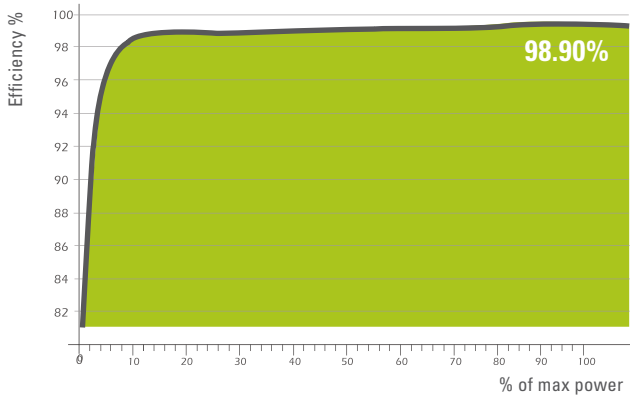
- > PERFORMANCE
- > LIFETIME
- > ELIMINATION OF MACHINE DOWN-TIMES

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 141 kWp power modules working in parallel in output on the AC power distribution grid: if we take as reference R13515TL machine, this is composed by nine 141 kWp modules, instead R12015TL is composed of 8 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 1.500 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 150 kWp, FIMER machine must magnetize always and only one 150 kWp module at a time which in our case corresponds to a magnetizing energy consumption of 1.2 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.

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.



R15015TL

Advantage

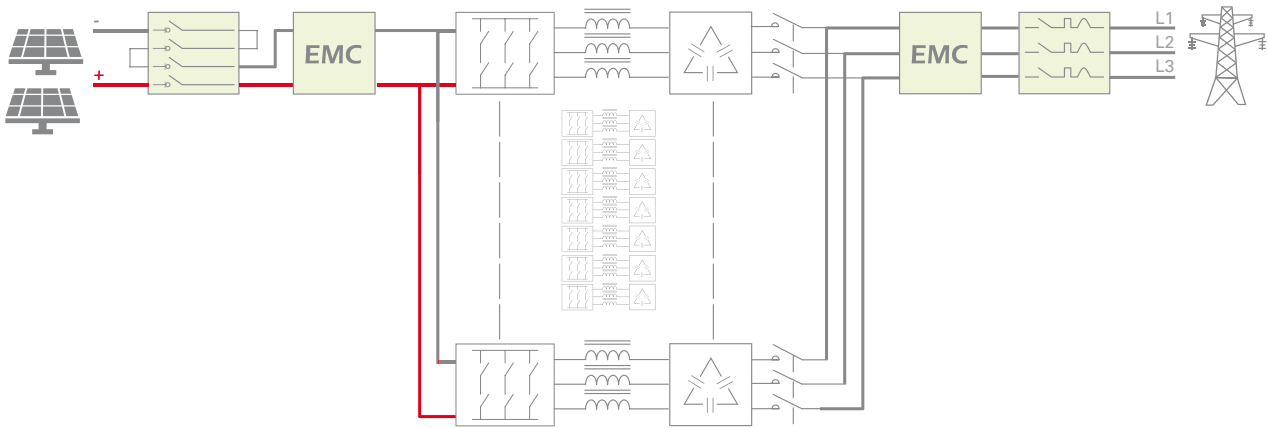
- > High efficiency, up to 99%.
- > Modular inverter (MPS system).

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



PROTECTION DEGREE

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

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.



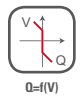
OVER FREQUENCY P REDUCTION

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.



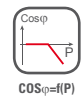
SEMICIRCULAR CAPABILITY

It is the capability of the inverter to be 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.



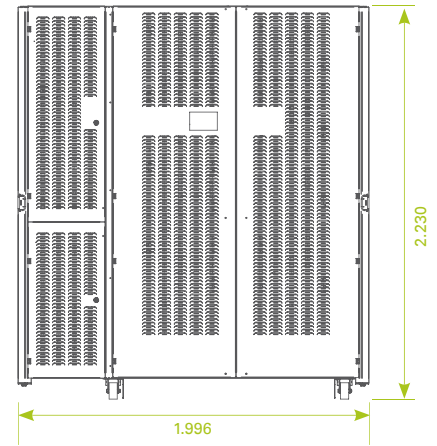
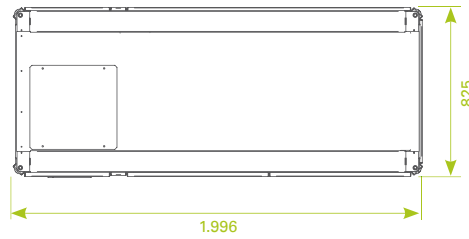
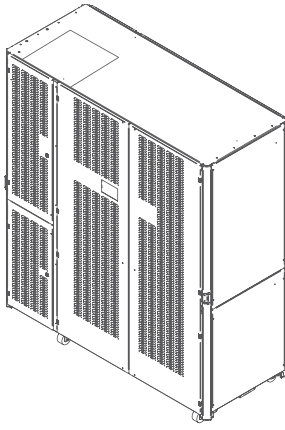
GRID VOLTAGE REGULATION FUNCTION BY MEANS OF REACTIVE POWER

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

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

	R12015 TL	R13515 TL	R15015 TL
Nr Modules	8	9	10
MPPT voltage range (V_{DC})		850 - 1.320 V	
Max no-load PV voltage (V_{OC})		1.500 V	
DC-voltage ripple (%)		>2%	
Maximum input current (A_{DC})		1.600 A	
DC control mode		Rapid and efficient MPPT control	
Number of MPPT		1	
Reverse polarity protection		•	
DC input connection		DC Switch under load	
Overvoltage protection		SPD device Class I+II	
Reverse Polarity Protection		•	

AC Output grid

Nominal power (kVA)* (Note1)	1.128 kVA	1.269 kVA	1.410 kVA
Max current (A_{AC})	1.184 A	1.332 A	1.480 A
Max unbalance current		< 2%	
AC output Voltage (V_{AC})		550V _{RMS} ±10%	
Nr Phase		3-phase (L1-L2-L3-PE)	
Frequency (Hz)		50/60 Hz	
Aux. power supply ($V_{AC} - I_{AC}$)		230V ±10% - 16A (L-N)	
Auxiliary control supply		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%	
Static MPPT efficiency		> 99.9 %	
Dynamic MPPT efficiency		> 99.8 %	
Night consumption (W)		< 60 W	
Maximum power dissipated in overload condition	34,0 kW - 29250 Kcal/h	38,0 kW - 32675 Kcal/h	42,0 kW - 36113 Kcal/h
Weight (kg)	1.400 kg	1.500 kg	1.600 kg
Protection degree		IP20	
Cooling		Air forced cooling fan speed controlled	
Dimensions (WxDxH mm)		1.996x825x2.235 mm	
Noise level (dBA)		< 70 dBA	
Operating temperature (°C) *(Note3)		-10° C +53° 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	4.000 m³/h	4.400 m³/h	4.800 m³/h
Protection class		II	
Colour		RAL 9006	

*Note1. P-Q capability is semicircular.
 *Note2. Above 1500m derate the power of 1% pr 100m
 *Note3. From 50° C to 55°C derating of power

