

GUIDE DE MONTAGE INSTALLATION GUIDE







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General conditions

BEFORE BEGINNING: Read this guide carefully.

This manual is a step by step quide to assist you before starting your installation.

Symbols used in Equipment Markings

	Refer to the operating instructions	Â	Caution! Risk of electric shock
<u>_!</u>	Caution! Risk of danger		Caution! Risk of electric shock. Energy
	Caution! Hot surface		storage timed discharge for 5 minutes.

WARNING: This manual is for qualified staff having high skills and the necessary experience in inverter and battery installation as well as electricity. It is absolutely forbidden to proceed to the mounting or dismounting of this kit if you do not have the necessary skills.

WARNING: Besides the electric risks on all the installation, the handling of batteries can be dangerous. Never approach a battery with an object capable of generating a spark nor with a source of heat. Gloves and safety glasses are necessary to work near batteries for complete safety.

(人) WARNING: Authorized service staff should reduce the risk of electrical shock by disconnecting AC, DC and battery power from the inverter before attempting any maintenance or cleaning or working on any circuits connected to the inverter. Turning off controls will not reduce this risk. Internal capacitors may remain charged for 5 minutes after disconnecting all sources of power.

WARNING: Do not cover IMEON. It is fitted with a heat removal system to avoid any overheating.

WARNING: Do not disassemble IMEON yourself. It contains no user-serviceable parts. Attempt to service IMEON yourself may cause a risk of electrical shock or fire and will void the warranty from the manufacturer.



WARNING: To avoid a risk of fire and electric shock, make sure that existing wiring is in good condition and that the wire is not undersized.



WARNING: To avoid electromagnetic disturbance between power cables and communication cables, it is necessary to separated them physically and using shielded cable for communication cable.

IMEON ENERGY is not responsible for any damages caused by bad maintenance and/or not respecting the specific instructions of this manual.

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Technical specifications

GRID (ON-GRID & OFF-GRID)	IMEON 3.6	IMEON 9.12	
Nominal output power :	3000 W	9000 W	
Maximum output power (3sec) :	6000W	12000W	
AC voltage (input & output) :	230 Vac (±15 %) / 50 - 60Hz (±5Hz)	3/N/PE - 230/400 Vac (±15 %) / 50 - 60Hz (±5Hz)	
Nominal output current :	13 A	13 A / phase	
Maximum output current :	26 A	17,5 A / phase*	
Grid feed :	Programmable (yes default value)	
Priority of energy sources	Programmable (F	PV / Storage / Grid)	
SOLAR INSTALLATION			
Maximum PV input power :	Up to 4000 Wc ⁽¹⁾	Up to 12000 Wc ⁽¹⁾	
Start up voltage :	150 V	350 V	
Number of MPPT	1	2	
MPP voltage range :	120V – 480V	380V – 750V	
Maximum input current :	18 A	2 x 18 A	
Isc PV ^{a:}	18 A	2 x 23 A	
Maximum input voltage :	560 V	850 V	
Solar production use :	Programmable prioriti	es (PV / Storage / Grid)	
Maximum efficiency :	DC to AC : >9	5,5% (94,5% EU)	
BATTERY & CHARGE			
DC nominal voltage / DC range	48 \/dc	42-62\/dc	
voltage:	+0 Vdc /	42-02 V 40	
Maximum discharge current:	80 A	200 A	
Peak discharge current:	150 A	300 A	
Maximum charging current:	60 A	160 A	
Type of batteries :	Gel, AGM (Lithium for manufa	acturer compatible with IMEON)	
Charging curve :	3 phases (Bulk /	Absorption / Float)	
Battery charge :	Programmable (Threshold / timeslot via AC Grid)		
Battery discharge :	Programmable (2 thresholds according to grid availability)		
GENERAL		,	
Dimensions (w x h x d) :	440 x 580 x170mm 17.32 x 22.83 x 6.69 inch	580 x 800 x240 mm / 22.85 x 31.5 x 9.45 inch	
Protective Class (I,II, or III)			
Protection category :	IP 20	IP 20	
Weight :	18 kg	46 kg	
Noise:	<45dBA	<55dBA	
Topology:	TL (trans	formerless)	
	Wifi 802.11 b/g/n 2.4 GH	z / 2 USB 2 / 1 Ethernet IP	
Connectivity:	1 CAN bus / 2 RS 485 / 1 relay 230 V / 16 A		
	4 analog inputs : 1 temperature probe – 3 electrical measurements		
	Humidity level : 0% to 90 % without condensation		
Conditions of use:	T°C: -20°C to +50°C, derating power >40°C (15W/°C)		
	EN 62109-2 / EN 62109-1 / EN 62040-1 / DIN V VDE V 0126-1-1 (+VFR2013) / VDF-AR-N 4105		
Compliance:	DIN VDE V 0124-100 / Synergrid C10/11 / TE3 2 1 / AS4777 2 / AS4777 3 / NBS 097-2-1 / G83		
Warranty	10 years ⁽²⁾ / Extension to 20 years (ontional)		

(1) Taking into account the full inverter specifications

(2) An internet connection must be established for minimum of 95% of the operating time



1. Wiring diagram



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2. Overview of the inverter

2.1 Connection

All the connection terminals are located at the bottom of the inverter.



IMEON 3.6: Description of the available connections



IMEON 9.12: Description of the available connections



The inverter is equipped with several communication ports: RS485, Ethernet, CAN, USB, Wifi, RELAY and sensor ports (Ecap, Tcap).

- RS485-A : to communicate with the Smart Meter
- RS485-B : to communicate with specific devices
- ETH: to connect via Ethernet (RJ45 cable) with a local area network
- WiFi: to connect with a wireless network (router, PC, mobile...)
- CAN: to communicate with lithium batteries (only batteries compatible with IMEON)
- USB-A : To upgrade the inverter with a USB key
- USB-B : Reserved
- RELAY: Control of a diesel generator, load control (under development)
- Tcap: DRM0 function, temperature sensor (under development)
- Ecap: current sensor (under development)



2.2 Compatibility

IMEON Smart Inverter is designed to manage the continuous power of three different sources of energy: solar panels, the batteries, and the grid.

IMEON uses the maximum power point technology (MPPT) to optimize the maximum quantity of energy supplied by the solar panels. When the solar panels voltage input falls in the inverter's MPPT range, the IMEON Smart Inverter will supply the consumption and charge batteries simultaneously. IMEON smart inverters are only compatible with mono-crystalline and poly-crystalline PV modules. Concerning thin films panels, it is necessary to check their compatibility with transformerless inverters and follow the PV manufacturer recommendation as well as IMEON's specification.

Some precautions must be realized to make sure that the maximum open circuit voltage never exceeds the inverter's specifications. Please note that the maximum voltage will occur in the lowest temperature planned. You will find detailed information about the influence of the temperature in the manufacturer datasheet of the PV modules.

IMEON is compatible with lead and lithium batteries. Please consult the IMEON website (as well as your IMEON distributor) to check the list of the lithium batteries supported.

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3. Installation

3.1 Selecting Mounting Location

- > Do not mount the inverter on flammable construction materials.
- Mount on a solid surface.
- IMEON may possibly be noisy during operation which would be uncomfortable if installed in a living room area.
- > The temperature may cause a reduction of power due to the excessive heating.
- > Install the IMEON at eye level in order to allow the LCD display to be read at all times.
- > Dusty conditions may impair the performance of this inverter.
- Do not switch IMEON on, if the temperature or the humidity are out of the authorized limits. The ambient temperature should be between -20°C and +50°C and relative humidity should be between 0% and 90% to ensure optimal operation.
- ➢ For proper air circulation to dissipate heat, allow a clearance of approx. 50 cm to the side and approx. 50 cm above and below the IMEON.
- > For proper operation of this inverter, please use appropriate cables for grid connection.
- For the appropriate functioning of this inverter, please use adapted cables cross- section (taking into account the length of cables, the mode of installation, the impedances, currents and voltage).
- > The recommended installation position (vertical) is to be adhered to.
- > Installation must be adapted to the weight and the dimensions of the inverter.
- > This inverter is designed with IP20 for indoor applications only.

3.2 Mounting Unit

WARNING: This inverter is heavy! Please be careful when removing it from the package.

- > Choose an appropriate place of support.
- Wall fixation should be done with the proper screws so that the solar inverter can be easily attached. After that, the device should be bolted on securely.

IMEON 3.6	IMEON 9.12	
5 to 9 mm	15 to 18 mm	2
Ø M5	Ø M10	

WARNING: Suitable for mounting on concrete or other non-combustible surface only! Take into account a space for ventilation between the case and the wall.

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3.3 Electrical connection

WARNING: To prevent any risk of electric shock, make sure that the ground cable is correctly connected to the earth ground before switching on and using the inverter.

Source	Designation	Connector	Suggestion of cable for IMEON 3.6	Suggestion of cable for IMEON 9.12
	PV1 +	+ (type MC4)	6mm ² stranded cable	
	PV1 -	- (type MC4)	4mm ² solid cable	
FV	PV2 +	+ (type MC4)		
	PV2 -	- (type MC4)		
	Earth	📥 (RST)		6mm ² stranded cable
	Ν	N (RST)	6mm ² stranded cable	
Grid	L1	1 (RST)		
	L2	2 (RST)		
	L3	L (RST)		
Pattony	BAT +	POS +	33mm2 stranded cable	05mm2 stranded cable
Ballery	BAT -	NEG -	SSITITIZ Stranueu Cable	95mm2 Stranded Cable
	Earth	📥 (RST)		6mm ² stranded cable
	Ν	N (RST)	4mm ² stranded cable	
AC BACKUP	L1	1 (RST)		
	L2	2 (RST)		
	L3	L (RST)		
Earth	Earth	Earth	6mm ² stranded cable 4mm ² solid cable	6mm ² stranded cable 4mm ² solid cable

 Δ **WARNING:** These values are provided solely for guidance. It is necessary to calculate again the cable cross section, according to the current and to the cable length.

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3.4 Smart Meter Installation

1. The energy meter must be installed between the IMEON inverter and the Public Grid. The monophase Smart meter model is equipped with a clamp. See the diagram below:



 The communication cable has to be plugged on the RS485A inverter port. Follow the pin map below to establish the communication between the energy meter and the inverter.

The length of the cable between the inverter and the meter must be a maximum of 10 to 20m depending on the cable category used (stranded cable of minimum category 6A is recommended). In case a longer cable used, please refer to the standard IEA-485 and the guideline TSB-89.

	IMEON connection (pin	Smart Meter connection	
	out RJ45 connector)	Monophase model	Threephase model
	1	A (10)	A (23)
	2	B (9)	B (24)
12345678	8	GND (8)	GND (22)

Note : Image on left is only for illustration purpose (wiring following code T568B) and may differ from our current installation. For wiring, ignore cable colors and use only pin numbers.

3. To confirm the good communication between the inverter and the Smart Meter, please check if the orange AND green LEDs of the RS485A port are flashing.



3.5 Ground connection

WARNING: It is necessary to connect the frame of IMEON to the earth ground in order to prevent the electric shock.

Use earth ground cables. Remove insulation and connect it at the location marked with " " symbol. Ensure the earth ground wire is properly connected before turning on the IMEON inverter.

3.6 Battery connection

- WARNING: It is very important for system safety and efficient operation to use appropriate cables and to install the system in a correctly ventilated area. There is a risk related to the voltage and current of the battery. It is necessary to cover the battery terminals.
- **Note:** You can use lead acid or lithium batteries. Use lead acid batteries corresponding to IMEON specification. Use only Lithium batteries approved by IMEON (see website).
- Note: Lithium batteries installed in parallel on the same installation must be of the same model.
- **Note:** Please check maximum discharge current 200A. The maximum charging current is 160A. In the case of lead-acid batteries, to optimize the battery life time, the charging / discharging current must be between 10% and 20% of the total battery bank capacity. The cable losses between the battery and the inverter have to be integrated via IMEON OS. ONE. In order to define the battery bank capacity necessary, a plant design has to be done at first.
- **Note:** In case of Lithium battery, charge and discharge currents are dynamically imposed by the battery's BMS. It is necessary to ensure that the consumption on AC BACKUP does not exceed the discharge current of the battery, otherwise the inverter will go into error when the grid is unavailable.
- **Note:** To preserve and optimize the lead acid battery life time, it is necessary to set the voltage thresholds (see information supplied by your battery manufacturer).

WARNING: Before connecting to the batteries, please install DC circuit breaker and fuses between inverter and batteries according to the existing standards.

Step 1: Make sure the nominal voltage of the battery corresponds to the technical specifications of the inverter.

Step 2: Check polarity of the battery bank and identify the positive "+" and the negative "-" terminals.



- **WARNING:** Incorrect polarity of the battery bank will damage the inverter! Check the system before connecting the batteries.
- **Step 3:** Switch the breaker and fuses to OFF position, in order to avoid electric arcs and the risk of damage.
- Step 4: Use two battery cables. Remove 30 mm of the insulation sleeve (a), insert into cable ring terminal and crimp it with a dedicated crimping tool (H type), then insert it into the connector (b).



- Step 5: Make sure the cables are correctly connected.
- Step 6: Plug the battery connector into IMEON's "DC BATTERY" socket.
- **Step 7:** The battery parameter can be done on IMEON OS. ONE (refer to inverter configuration section).



WARNING: Do not switch the circuit breaker when the IMEON is under load, it can damage the inverter.

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3.7 PV Module (DC) Connection

WARNING: It's very important for system safety and efficient operation to use appropriate cables for PV module connection

WARNING: Do NOT touch the connectors of the inverter when the photovoltaic modules are exposed to sunlight. The PV modules can generate a DC voltage on the inverter terminals and a risk of electric shock.

▲ WARNING: Before connecting inverter to PV modules, install separately a DC circuit breaker between inverter and PV modules. Install protection (circuit breakers, fuses and lightning conductors) according to existing standards.

Before the photovoltaic system is connected, the solar array voltage must be verified to make sure that it is correct.

Never move the inverter when the solar array is connected. If it's necessary, please disconnect the solar array first (see general conditions).

Caution: Because this inverter is non-isolated, only two types of PV modules are acceptable: mono crystalline and poly crystalline. To avoid any malfunction, do not connect any PV modules that may introduce leakage current to the inverter. For example, non-grounded PV modules will cause leakage current to the inverter. See manufacturer technical datasheet of the PV modules.

Step 1: Check the output voltage of PV modules string falls in the inverter range.

WARNING: Exceeding the maximum PV input voltage will damage the unit! Check the system before wire connection.

Step 2: Check the polarity of the PV string and identify the positive input (+) and the negative input (-).

Step 3: Switch the DC breaker of the PV to OFF position.

Step 4: Wiring of the supplied connectors.



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Step 5: Connect each input to the corresponding mounted connector of the inverter.

Connect negative pole (-) of connection cable to negative pole (-) of PV input connector. Connect positive pole (+) of connection cable to positive pole (+) of PV input connector.



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3.8 AC Grid Connection

WARNING: It is very important for system safety and efficient operation to use the appropriate cross section cable for grid connection.

WARNING: Although IMEON is equipped with fuses, it is still necessary to install a separate circuit breaker for further safety. Please use protection devices (circuit breakers, fuses and lightning conductors) according to existing standards.

- Note: Before connecting to AC grid, please install a separate AC circuit breaker between inverter and AC grid. This will ensure that IMEON can be securely disconnected during maintenance and fully protected from over current at AC Input.
- Step 1: Open the circuit breaker in order to work safely on the installation.
- Step 2: Check the grid voltage and frequency with an AC multimeter. They should be within the Vac

margin marked on the product label and the functional range of IMEON.

Step 3: Remove insulation sleeve and connect wires according to polarities indicated on the terminal block. Be sure to connect PE protective conductor (\bigcirc) first.

3.8.1 Grid Connection for IMEON 3.6

Step 1 : Wire the connector as defined in paragraph 3.3.



Step 2: Make sure the wires are securely connected.

Step 3: Plug the RST connector in the GRID CONNECTION socket.

3.8.2 Grid Connection for IMEON 9.12

WARNING: Check phase shift rotation clockwise L1, L2 and L3. In case of phase inversion, the inverter will start but will not be synchronized with the public grid.

Step 1 : Wire the connector as defined in paragraph 3.3.



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Step 2: Make sure the wires are securely connected.

Step 3: Plug the RST connector in the GRID CONNECTION socket.

3.9 AC BACKUP connection



- **WARNING:** It is very important for the safety and efficiency of the system to use the appropriate AC connection cables.
- WARNING: Please use maximal protection according to the existing standards (circuit breaker, differential current breaker). The circuit breaker must protect against currents exceeding the maximum output current of the inverter (17 A per phase). Use a circuit breaker Type A 30mA.
- **Note:** The inverter current (battery + PV) cannot exceed 13A nominal per phase. In the case of grid outage, make sure not to go over this figure.
- **Note**: In case of the operation with PV only (grid outage and no battery), the AC BACKUP of the inverter will not be activated.
- **Note:** To prevent further supply to the load via the inverters AC BACKUP during any mode of operation, an additional disconnection device should be placed in the buildings wiring installation.
- Step 1: Open the circuit breaker in order to work safely on the installation.
- Step 2: Remove insulation sleeve and connect wires according to polarities indicated on the terminal block. Be sure to connect PE protective conductor () first.



3.9.1 AC BACKUP Connection for IMEON 3.6

Step 1 : Wire the connector as defined in paragraph 3.3.



Step 2: Make sure the wires are securely connected.

Step 3: Plug the RST Connector in the AC BACKUP socket.



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WARNING: Before plug-in in the cable, make sure there is no load on the circuit connected to the AC BACKUP.

WARNING: AC BACKUP cannot be connected in parrallel to another IMEON and should not be connected to the grid.

3.9.2 AC BACKUP Connection for IMEON 9.12

Step 1 : Wire the connector as defined in paragraph 3.3.



Step 2: Make sure the wires are securely connected.

Step 3: Plug the RST Connector in the AC BACKUP socket.



WARNING: Before plug-in in the cable, make sure there is no load on the circuit connected to the AC BACKUP.

WARNING: AC BACKUP cannot be connected in parrallel to another IMEON and should not be connected to the grid.



3.10 Temperature sensor



In case the temperature sensor is used, it must be connected to the T.CAP terminal. The temperature sensor must be placed in the center of the battery bank. When the temperature sensor is connected, the temperature compensation is 5mV/°C.

3.11 Generator relay



The integrated relay allows automatically starting and stopping the diesel generator via a <u>dry contact</u> depending on the battery state of charge.

WARNING: The generator must be equipped with a voltage regulator and a frequency regulator. The output of the generator must comply with the AC input voltage specifications of the IMEON (N/PE =0 Vac) to be checked prior to connection to IMEON.

The generator will charge the batteries connected to the IMEON through the "GRID CONNECTION" terminal as soon as the voltage of battery bank is below the "battery cut-off voltage when grid is available" threshold. The generator will stop automatically. The generator will stop charging the batteries when the battery pack is recharged.

In order to use this function, you need to go to IMEON OS. ONE, page "Module", then enable the "Genstart" module and configure the module. It will auto-configure certain settings of the inverter. To learn more about auto-configuration, refer to the module description.



4. Inverter supervision

4.1 LCD Information

NOTE: Press any button to turn the display on.

Display :



Indicator	Detail
AC OUTPUT L1N 8888 kW L2N 8888 kVA L3N VHz	Indicates AC BACKUP active power, apparent power, frequency and voltage kW: Active Power L1N, L2N, and L3N. kVA: Apparent power L1N, L2N, and L3N. Hz: Frequency L1N, L2N, and L3N. V: Voltage L1N, L2N and L3N.
BATTERY 8.8.8 %	Indicates BATTERY voltage, charge current and percentage of charge A: Current. V: Voltage. % : percentage of charge (displayed for information only because it depends on several parameters)
AC GRID L1N L2N L3N	Indicates AC GRID input voltage and frequency. V: Voltage L1N, L2N and L3N. Hz: Frequency L1N, L2N and L3N.
RENEWABLE ENERGY 8.8.8.8.8.8 TODAY TOTAL <i>kWh</i>	Indicates PV input voltage and power. Today kWh: Today Production. Total kWh: Total Production.
	Indicates the generated PV production of both DC INPUT P1 and P2. kW: Active power. A: Current. V: Voltage.
P1 P2	Indicates the PV MPPT P1 and P2 of both MPPT trackers. If any of the icons flashes, that means that the dedicated array is unavailable.
	Indicates the grid. If the icon flashes, that means the grid is unavailable.

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Indicator	Detail
	 Indicates the battery state of charge. Left icon : battery fully charged Center icon: If the icon flashes, that means the battery is unavailable Right icon: battery has a low voltage
	Indicates that the AC BACKUP is activated and the delivery of power to the load.
	Indicates the BACKUP power level
OVER LOAD	Indicates an overload on AC BACKUP
SL	Security Load : Indicates consumers are connected on AC BACKUP
NORMAL	Indicates that IMEON is up and running
ERROR	Indicates an error in the system

4.2 Button definition

Button	Function
	Short pressure : > Change the indicators clockwise. > Change the unit of the selected indicator. Long pressure (>3sec) : > Display of the inverter's IP address
	Short pressure: > Change the indicator counterclockwise. > Change the unit of the selected indicator. Long pressure (>3sec) : > Display of the error codes
ок	 > Select the indicator. > Confirm the choice of the indicator. > Hold the button for 3 seconds until the buzzer sounds to activate the AC BACKUP.
Esc	 > Go back to the previous indicator or exit the indicator. > Hold the button for 3 seconds until the buzzer sounds to deactivate the AC BACKUP.

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Button	Function
	Long pressure (>5sec) > Put all the Wi-Fi driver parameters to default values in case of IMEON Wi-Fi connection failure
Esc	Long pressure (>10sec) > Do a backup to a previous release package version in case of upgrade package failure

4.3 Query Menu Operation

This display shows the current status of your system. These values can be changed in the menu with the buttons. There are five indicators available.

Choice of the indicator:



AC GRID

Choice of the unit indicator:



RENEWABLE

ENERGY





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5. Operation Mode and display

Display	Operation mode
	The photovoltaic production allows supplying the load, to charge the batteries and to feed-in the surplus of energy to the grid. If "BATTERY" icon is filling up and is flashing, the battery is not enough charged yet to be discharged again.
	The photovoltaic production allows to charge the batteries and to feed-in the surplus of energy to the grid. The AC BACKUP is deactivated, the load is not supplied. If "BATTERY" icon is filling up and is flashing, the battery is not enough charged yet to be discharged again.
	The photovoltaic production allows to supply the load and to charge the batteries. The grid supplies the additional energy to charge the batteries. If "BATTERY" icon is filling up and is flashing, the battery is not enough charged yet to be discharged again.
	The photovoltaic production allows charging the batteries. The grid supplies the additional energy to charge the batteries. The AC BACKUP is deactivated, the load is not supplied. If "BATTERY" icon is filling up and is flashing, the battery is not enough charged yet to be discharged again.

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The « BATTERY » icon is empty and is flashing, the batteries are disconnected from IMEON. The photovoltaic production allows to supply the load and to feed-in the surplus of energy to the grid.
The « BATTERY » icon is empty and is flashing, the batteries are disconnected from IMEON. The photovoltaic production supplies the load. The grid supplies the additional energy to the load.
The « BATTERY» icon is empty and is flashing, the batteries are disconnected from IMEON. The photovoltaic production is fed-in to the grid. The AC BACKUP is deactivated, the load is not supplied.
The « AC GRID » icon is flashing, the grid is disconnected from IMEON. The photovoltaic production allows to supply the load and to charge the batteries. If "BATTERY" icon is filling up and is flashing, the battery is not enough charged yet to be discharged again.

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6. Inverter configuration : IMEON OS. ONE

IMEON OS. ONE is web-based software included with IMEON inverters, which allows using local Wi-Fi network for easy and intuitive configuration of the system and real-time monitoring. It also allows setting up the Internet access for the inverter. This interface is compatible with all up-to-date web browsers except "Internet explorer".

Wifi signal appears 5 minutes after startup of IMEON.

Note: An Ethernet connexion to IMEON OS. ONE is available. Please refer to the section « MONITORING ».



6.1 Network Connection

- 1. On a PC / Tablet / Smartphone, go to Wi-Fi network manager, then scan the Wi-Fi network
- Select IMEON SSID (for example Imeon-9616100000003) and connect using the « BonjourImeon » password.



3. When connected to IMEON Wi-Fi, in a Web browser, go to the URL address:

For IMEON 3.6: For IMEON 9.12:

http://192.168.3.6 http://192.168.9.12





6.2 Identification



Login using the below information depending on the profile:

<u>User profile :</u> **Usage:** Allows access to a simplified interface **Email**: user@local **Password**: password

Installer profile: Usage: Allows access to an interface with some additional parameters Email: installer@local Password: Installer_P4SS

 \checkmark Warning: If the connection is established but the access to the identification page is unavailable, please refer to the annex « IP address modification » in order to set an automatic IP (DHCP).

6.3 Description of IMEON OS. ONE

WARNING: Before performing any modifications, make sure that you follow the applicable standards in your country. Only the IMEON OS. ONE interface can be used for configuration of IMEON inverters. The use of any software other than IMEON OS.ONE is not authorized by IMEON ENERGY and may cause irreversible damage affecting the operation of IMEON inverter.

6.3.1 "Dashboard" page

The dashboard page allows viewing the real time distribution of the energy sources feeding the load, as well as the evolution of the self-production rate, the status of the battery and the overview of the energy flow.

6.3.2 « Settings » page

The "settings" page allows you to change the setting of the inverter.

Each parameter has its explanation. Click i info icon for more information.

After modification of a parameter, it is necessary to click <u>VOK</u> icon in order to confirm your choice.

In case of any doubt about the inverter's parameters, a refresh of the page (F5 keyboard key) will reload all the inverter's parameters.

Refer to the annex "Mode of operation" for more information on different modes of operation.

Note: A more advanced setting is possible (voltage, current setting) with a different connection code held by your distributor.



6.3.2.1 Standard selection

The selection of the operating standard is possible from the settings/flow management.

The Italian standard IEC 0-21 requires for all inverters that inject power into the public grid a self-test

function in accordance with IEC 0-21. This self test is possible from the button Auto test. At the end of the test, the results are recordable.

6.3.2.2 Using a Lithium battery

Refer to the battery manufacturer's documentation.

- For Lithium battery using a CAN communication, connect the RJ45 connector wired as presented on figure 2 (stranded cable, minimum category 6A is recommended) on IMEON's CAN port. Refer to the battery documentation for connection on battery side.
- 2. Select the battery from the list, then press "OK".
- 3. Start the battery physically.
- Once communication is established, the battery will be started automatically. Note: Inverters with a software version lower than 1.7.7.7 do not benefit from this feature. Please update your inverter.
- 5. When the "Battery operating" message is displayed, the battery is operational and communicates with IMEON.

6.3.3 User/Installer drop-down menu

By clicking on the drop-down menu, several pages are available, in particular:

- "WiFi" page: Allows connecting the inverter to Internet. Refer to "Inverter Internet access: MONITORING" Section.
- $\sum_{n=1}^{n}$ Note: The SSID of the selected network must not contain special characters (@, é, à...).
- "About" page: Allows viewing the inverter's ID information, refreshing the parameters of the "Settings" page, restoring the default settings of the inverter and checking if a new inverter upgrade is available.



Figure 2 - RJ45 connector



7. Inverter Internet access : MONITORING

The MONITORING is a Web-based application for remotely viewing the real time as well as historical photovoltaic plant performance data.

This application requires an unlimited connection to the Internet, the subscription of which is the responsibility of the user.

There are 2 possibilities to connect the inverter to the Internet:

- With Ethernet cable RJ45
- With Wi-Fi



Choice 1 : Ethernet Cable RJ45

Choice 2 : Wi-Fi

7.1 Configuration for Ethernet connection

- 1. Connect the inverter with an Ethernet cable (RJ45) from "ETH" port to an access point.
- 2. Check if the DEL of « ETH » port are blinking
- 3. On a PC connected to the same Ethernet network, through the network explorer, check if an IMEON device is displayed.
- 4. The inverter is connecter to the access point. Go to the web portal identification step.



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7.2 Configuration for Wi-Fi connection.

- 1- Connect to IMEON OS. ONE, then click on WiFi icon on the bottom right corner of the interface.
- 2- Press "Search for the available wireless networks" to scan and display the list of Wi-Fi networks available for the inverter.
- 3- In the list of identified networks, press "Select" to establish connection with the chosen network.
- 4- Enter the network key (if required), then click on "Connect".
- 5- The name of the Wi-Fi network selected is displayed on « Wireless station name » and the status is « connected »

Wireless station name:	wifi	
Wireless connection status:	Connected	FR
		EN
7.3 Web portal Identification		
The URL to access the MONITORING portal is:	Vour Power, Your Rules	

monitoring.imeon-energy.com

Your Power, Your Rules
Veuillez vous connecter pour avoir accès à Imeon Web
Adresse email
Mot de passe
Connexion
Mot de passe oublié ?

Log in with the information (email address and password) you received by email when the installer created the user account, then press "Login".

If no account has been created, contact your installer.

7.4 Description of the MONITORING

7.4.1 Dashboard

The homepage is the same as one of IMEON OS. ONE. It allows viewing the real time distribution of the energy sources feeding the load, as well as the evolution of the self-production rate, the status of the battery and the overview of the energy flow.

7.4.2 Stats page

Allows viewing the real time and historical data concerning consumption, solar distribution, grid power and battery behavior.

7.4.3 My account

Allows viewing and modifying the user information and information related to the system.



8. Maintenance & Cleaning

8.1 Warning and error codes

Warning and error codes In case of a warning or error displayed by the inverter, refer to the table below before contacting technical support if needed.

Code	Туре	Description		
2	warning_ond	Islanding detected. If this problem remains, please contact your grid operator		
3	warning_ond	Grid voltage higher than the limit of the norm. If this problem remains, please contact your grid operator.		
4	warning_ond	Grid voltage lower than the limit of the norm. If this problem remains, please contact your grid operator.		
5	warning_ond	Grid frequency higher than the limit of the norm. If this problem remains, please contact your grid operator.		
6	warning_ond	Grid frequency lower than the limit of the norm. If this problem remains, please contact your grid operator.		
7	warning_ond	Grid voltage lost. Check if the GRID CONNECTION connector is correctly supplied by the public grid. If this problem remains, please contact your grid operator.		
9	warning_ond	Grid frequency lost. Check if the GRID CONNECTION connector is correctly supplied by the public grid. If this problem remains, please contact your grid operator.		
10	warning_ond	There is a phase rotation problem. Reverse 2 phases and restart the inverter.		
11	warning_ond	Grid sinus lost. Check if the GRID CONNECTION connector is correctly supplied by the public grid. If this problem remains, please contact your grid operator.		
12	warning_ond	Average grid voltage greater than norm voltage for 10 min. If this problem remains, please contact your grid operator.		
13	warning_ond	Overload on the AC BACKUP. Remove the high power devices with inrush power (air conditioner, pumps,).		
14	warning_ond	High inverter temperature. Please check the good ventilation of your inverter and the temperature in the inverter room.		
15	warning_ond	Earth default. Please check inverter is correctly connected to the ground.		
22	warning_pv	Low PV2 voltage. Check the PV sizing, connection and installation.		
23	warning_pv	PV voltage too high. Check the PV sizing and installation. This problem can cause a critical electronic damage.		
24	warning_pv	PV2 voltage too high. Check the PV sizing and installation. This problem can cause a critical electronic damage.		
25	warning_cpu	CPU1 flash failure. Please reboot the inverter and check the version is the last one. If the problem remains, please contact your distributor.		
26	warning_cpu	CPU1 start failure. Please reboot the inverter and check the version is the last one. If the problem remains, please contact your distributor		
27	warning_bat	Battery warning reported. Check the battery ID warning in IMEON OS. ONE. If the problem remains contact your battery distributor.		
30	warning_bat	Battery not connected. Please connect the batteries and check if a breaker/fuse is not open between inverter and batteries. If the problem remains contact your battery distributor		
32	warning_bat	Battery voltage too high. Disconnect your battery and check if the battery specifications comply with inverter.		
35	error_ond	CPU1 communication failure. Please reboot the inverter and check the version is the last one. If the problem remains, please contact your distributor		
37	error_soft	Internal wiring failure. Please reboot the inverter. If the problem remains contact your distributor or IMEON for repair		
38	error_soft	Software service failure. Please reboot the inverter. If the problem remains, please contact your distributor.		
39	error_soft	Software service failure. Please reboot the inverter. Please reboot the inverter and check the version is the last one. If the problem remains, please contact your distributor.		
40	error_soft	Software service failure. Please reboot the inverter. Please reboot the inverter and check the version is the last one. If the problem remains, please contact your distributor.		



Code	Туре	Description		
41	error_soft	Software service failure. Please reboot the inverter. Please reboot the inverter and check the version is the last one. If the problem remains, please contact your distributor.		
42	error_pv	² V overvoltage. This problem may cause a critical electronic damage, stop immediately the ² V production and check the PV sizing and installation. If the problem remains, please contact your distributor.		
43	error_pv	V overcurrent. This problem may cause a critical electronic damage, stop immediately the V production and check the PV sizing and installation. If the problem remains, please ontact your distributor.		
44	error_pv	Solar insulation too low. Measure the PV insulation which must be higher than 600kOhm for IMEON 3.6 and 1Mohm for IMEON 9.12. If the problem remains, please contact your distributor.		
45	error_ond	DC BUS overvoltage. This problem may cause a critical electronic damage. Please reboot the batteries and the inverter. If the problem remains, please contact your distributor.		
46	error_ond	DC BUS undervoltage. Please reboot the inverter, activate the AC BACKUP and connect the battery. If the problem remains, please contact your distributor.		
47	error_ond	DC BUS soft start timeout. This problem may cause a critical electronic damage. Stop immediately the inverter and check the installation. If the problem remains, please contact your distributor.		
48	error_ond	Inverter circuit soft start timeout. This problem may cause a critical electronic damage. Stop immediately the inverter and check the installation. If the problem remains, please contact your distributor.		
49	error_ond	Inverter overcurrent. Inverter may have a critical failure as a result of an overload or a short circuit. Stop immediately the inverter and check the installation. If the problem remains, please contact your distributor.		
50	error_ond	Overheating. This problem may cause a critical electronic damage, stop the inverter and check the good ventilation of inverter and temperature of the room.		
51	error_ond	nternal relay failure. This problem may cause a critical electronic damage. Stop nmediately the inverter and check the installation. If the problem remains, please contact our distributor.		
52	error_ond	DC current sensor failure. This problem may cause a critical electronic damage. Stop immediately the inverter and check the installation. If the problem remains, please contact your distributor.		
53	error_ond	PV overvoltage. This problem may cause a critical electronic damage, stop immediately the PV production and check the PV sizing and installation. If the problem remains, please contact your distributor.		
54	error_ond	Over leakage current. Check that all the devices connected to the installation are wired on a unique ground system. If the problem remains, please contact your distributor.		
55	error_ond	DC BUS overcurrent. This problem may cause a critical electronic damage. Stop immediately the inverter and check the installation. If the problem remains, please contact your distributor.		
56	error_ond	CPU1 measurement error. Please reboot the inverter and check the version is the last one. If the problem remains, please contact your distributor.		
57	error_ond	GFCI sensor failure. Please reboot the inverter. If the problem remains, please contact your distributor.		
58	error_ond	AC input ground lost. There is an electrical security problem. Please check the inverter earth connection.		
59	error_ond	Discharge DC BUS failure. This problem may cause a critical electronic damage. Stop immediately the inverter and check the installation. If the problem remains, please contact your distributor.		
60	error_ond	Discharge DC BUS soft start timeout. This problem may cause a critical electronic damage. Stop immediately the inverter and check the installation. If the problem remains, please contact your distributor.		
61	error_ond	Overload on the AC BACKUP. Remove the high power devices with inrush power. If the problem remains, please contact your distributor.		
62	error_ond	Overcurrent on the AC BACKUP. Remove the high power devices with inrush power. If the problem remains, please contact your distributor.		

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Code	Туре	Description		
63	error_ond	AC BACKUP short-circuits. Shutdown the inverter, then unplug the AC BACKUP connector, then restart the inverter and activate the AC BACKUP by pushing the OK button during 3sec. If this error is resolved, the issue comes from a connected device on the AC BACKUP connector. If the problem remains, please contact your distributor.		
64	error_ond	Fan failure. Please restart the inverter. If the problem remains, please contact your distributor.		
65	error_ond	AC BACKUP sensor failure. Please restart the inverter. If the problem remains, please contact your distributor.		
66	error_ond	Hardware version detection error. Please restart the inverter. If the problem remains, please contact your distributor.		
67	error_ond	AC Input/Output reversal. This problem may cause a critical electronic damage. Stop the inverter and check the AC Grid and AC BACKUP connections are not reversed. If the problem remains, please contact your distributor.		
68	error_ond	AC BACKUP undervoltage. Please reboot the inverter and activate the AC BACKUP. If the problem remains, please contact your distributor.		
69	error_ond	AC BACKUP overvoltage. Please reboot the inverter and activate the AC BACKUP. If the problem remains, please contact your distributor.		
70	error_bat	Battery voltage too high. This problem may cause a critical electronic damage. Disconnect your battery and check if its specifications comply with inverter. If the problem remains, please contact your battery distributor.		
71	error_bat	Battery not connected. Please connect the batteries and check if a breaker/fuse is not open between inverter and batteries. If the problem remains contact your battery distributor.		
72	error_bat	Charging current error. Check battery settings and check the battery connection & voltage. If the problem remains, please contact your distributor.		
73	error_bat	Battery voltage differs from communicated value. There is a communication problem between inverter and battery BMS. Please reboot the battery and inverter and check the good connection of battery communication cable. If the problem remains, please contact your distributor.		
74	error_ond	Internal supply failure. Please restart the inverter. If the problem remains, please contact your distributor.		
75	com_lost	CAN communication lost. There is a communication problem between inverter and battery BMS. Please reboot the battery and inverter and check the good connection of battery communication cable. If the problem remains, please contact your distributor.		
76	error_bat	Battery error reported. Check the battery ID error in OS. ONE, then restart the battery and the inverter. If the problem remains contact your battery distributor.		
77	com_lost	Communication lost between processors. Please reboot the inverter. If the problem remains, please contact your distributor.		
78	com_lost	Internet connection lost. Check your internet connection.		
87	error_bat	Battery current exceeds max battery current limit. Please check the good setting of battery parameter in OS. ONE. If the problem remains contact your battery distributor.		
88	error_ond	Power on grid connection overpasses maximum power specification. Please check the installation, this problem can cause a critical electronic damage. If the problem remains contact your distributor.		
89	error_ond	Current on grid connection overpasses maximum power specification. Please check the installation, this problem can cause a critical electronic damage. If the problem remains contact your distributor.		
90	error_ond	Frequency on AC BACKUP exceeds minimum frequency specification. Please check the installation, this problem can cause a critical electronic damage. If the problem remains contact your distributor.		
91	error_ond	Frequency on AC BACKUP exceeds maximum frequency specification. Please check the installation, this problem can cause a critical electronic damage. If the problem remains contact your distributor.		
92	error_ond	Current on AC BACKUP overpasses maximum current specification. Remove the high power devices with inrush power (air conditioner, pumps,). This problem can cause a critical electronic damage. If the problem remains contact your distributor.		
93	error_ond	PV input power overpasses specification. This problem can cause a critical electronic damage. Please check the PV sizing, connection and installation. If the problem remains contact your distributor.		

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Code	Туре	Description		
94	error_ond	PV2 input power overpasses specification. This problem can cause a critical electronic damage. Please check the PV sizing, connection and installation. If the problem remains contact your distributor.		
95	error_ond	Temperature exceeds the specification of the inverter. Please check the installation, this problem can cause a critical electronic damage. If the problem remains contact your distributor.		
96	error_ond	Battery discharging current overpasses specification of the inverter. Please check the installation, this problem can cause a critical electronic damage. If the problem remains contact your distributor.		
97	com_lost	Communication lost between Inverter and Smartmeter. Please check the wiring between Smartmeter and inverter. If the problem remains, contact your distributor.		
98	error_spe	Voltage on grid connection exceeds minimum voltage specification. Please check the installation, this problem can cause a critical electronic damage. If the problem remains contact your distributor.		
99	error_spe	Voltage on grid connection exceeds maximum voltage specification. Please check the installation, this problem can cause a critical electronic damage. If the problem remains contact your distributor.		
100	error_spe	Frequency on grid connection exceeds minimum frequency specification. Please check the installation, this problem can cause a critical electronic damage. If the problem remains contact your distributor.		
101	error_spe	Frequency on grid connection exceeds maximum frequency specification. Please check the installation, this problem can cause a critical electronic damage. If the problem remains contact your distributor.		
102	error_spe	Voltage on AC BACKUP exceeds minimum voltage specification. Please check the installation, this problem can cause a critical electronic damage. If the problem remains contact your distributor.		
103	error_spe	Voltage on AC BACKUP exceeds maximum voltage specification. Please check the installation, this problem can cause a critical electronic damage. If the problem remains contact your distributor.		
104	error_spe	Power on AC BACKUP overpasses maximum power specification. Remove the high power devices with inrush power. This problem can cause a critical electronic damage. If the problem remains contact your distributor.		
105	error_spe Voltage on DC bus overpasses maximum voltage specification. Please check the installation, this problem can cause a critical electronic damage. If the problem remains contact your distributor.			
106	error_spe	Voltage on Battery overpasses maximum voltage specification. Disconnect the battery and check the voltage on terminal complies with inverter specifications. If the problem remains contact your distributor.		
107	error_spe	PV input current overpasses specification. Stop the PV production and check the PV sizing, connection and installation. If the problem remains contact your distributor.		
108	error_spe	PV2 input current overpasses specification. Stop the PV production and check the PV sizing, connection and installation. If the problem remains contact your distributor		
109	error_spe	PV input voltage overpasses specification. Stop the PV production and check the PV sizing, connection and installation. If the problem remains contact your distributor		
110	error_spe	PV2 input voltage overpasses specification. Stop the PV production and check the PV sizing, connection and installation. If the problem remains contact your distributor		
111	error_spe	Battery charging current overpasses specification of the inverter. Please check the installation, this problem can cause a critical electronic damage. If the problem remains contact your distributor.		
112	error_ond	Neutral / Ground wires reversed. Stop the inverter and check the Neutral and Ground wires are not reversed on "GRID CONNECTION" connector and "AC BACKUP" connector. If the problem remains contact your distributor		

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8.2 Inverter maintenance and update procedures

To restart or decommission the inverter completely, please follow the steps below.

8.2.1 Shutdown the inverter

- 1- Switch all protective devices to OFF position in the following order.
 - PV switch
 - Battery switch
 - AC breakers
- 2- Wait for the LCD display of the inverter to shut down (maximum 30sec)

8.2.2 Uninstall the inverter

- 1- Unplug the PV, Batteries, AC GRID and AC BACKUP connectors
- 2- Disconnect the ground cable from the inverter
- 3- Disconnect the communication cables (Ethernet, CAN etc.)
- 4- Unscrew the 2 support screws fixing the inverter to the wall mounting plate
- 5- Remove the inverter from the wall mounting plate

8.2.3 Reinstall the inverter

- 1- Place the inverter on the wall mounting plate
- 2- Screw the 2 support screws fixing the inverter to the wall mounting plate
- 3- Connect the communication cables (Ethernet, CAN etc.)
- 4- Connect the ground cable of the inverter
- 5- Make sure that all protective devices (PV switch, battery switch and AC breakers) are in the OFF position.
- 6- Plug the PV, Batteries, AC GRID and AC BACKU connectors

8.2.4 Restart the inverter

- 1- Switch all protective devices to ON position in the following order.
 - AC breakers
 - Battery switch
 - PV switch



8.2.5 Software update

This document explains the process of updating the inverter software. Before attempting the update, check the current software version of the inverter using **OS.ONE**, by going to "flow management" tab, "software package version" line.

- If the current version is lower than 1.7.0: The update is not available. Please contact your reseller.
- If the current version is higher than or equal to 1.7.6.2: The step 'h.' is not necessary
- If the current version is higher than or equal to 1.7.6.5: If the inverter is online, the latest software version can be downloaded and effectuated using **OS.ONE**, the "about" tab.

Update by USB :

- a- Format an USB stick it in FAT32. (Figure below)
- b- Rename your USB stick to "IMEON" (Figure below).

énéral Outils Ma	tériel Partage ReadyBoost	Personnaliser
	DN	
Type :	Disque amovible	
Système de fichiers :	FAT32	
Espace utilisé :	15 654 912 octets	14,9 Mo
Espace libre :	7 969 251 328 octets	7,42 Go
Capacité :	7 984 906 240 octets	7,43 Go
(
	Lecteur F :	

Figure - USB Key properties in Windows (right-click over the USB disk icon)

- c- Copy the « **imeon_firmware.imeon** » file onto formatted and renamed USB stick. Note: the file must be located in root directory.
- d- The update must be effectuated with the inverter powered by AC GRID only. Turn the PV breaker and the battery breaker OFF.
- e- Insert the USB stick containing the update file into one of the USB ports on the bottom of the inverter (or on the IMA-BOX if used). Wait from 3 to 5 minutes for the update to complete. During the process, depending on the initial software package version, it is normal to see the LCD screen and/or the LED flashing indicating progress. When the RS485A port LED blinks, it indicates that the update is complete.
- f- Once the update is completed, restart the complete system (the inverter together with IMA-BOX if used) by turning it off and then back on.
- g- Verify the software package version using **OS.ONE**, by going to "flow management" tab, "software package version" line. Verify that the software package version displayed there corresponds well to the downloaded software version.
- h- Reconfigure the inverter, as the software update resets the system to factory settings.

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8.3 Regular checks

Check the following points to ensure proper operation of the whole solar system at regular intervals.

WARNING: Before cleaning this inverter, be sure to turn off all the breakers (AC breaker, battery breaker and PV DC breaker).

WARNING: A battery can present a risk of electrical shock and high short-circuit current. Do not dispose of batteries in a fire. The batteries may explode. Do not open or mutilate batteries. Released electrolyte is harmful to the skin and eyes. It may be toxic.

- Ensure the cleanliness of the air circulation (ventilation of the inverter).
- > Clean the PV panels during the cool time of the day, whenever it is visibly dirty.
- Periodically inspect the system to make sure that all cables and connectors are securely fastened in place.

WARNING: There are no user-replaceable parts inside IMEON. Do not attempt to service or swap the unit yourself. Please contact the technical support with the following above warning or error code



The warranty

IMEON ENERGY SAS guarantees products sold against any manufacturing defects or material preventing said products and/or goods from working according to the specifications of the command and for usual use for which these products are intended.

The guarantee shall be valid for ten years or 120 months in case of IMEON products connected to the Internet (the connection must be established for minimum of 95% of operating time). The guarantee shall be valid for five years or 60 months in case of IMEON products not connect to the Internet. The guarantee period of IMEON starts from the date in which the product is first operational, which must be within twelve months from the date of invoicing by IMEON ENERGY SAS.

An optional extension of guarantee by additional 10 years (to 20 years in total) is possible only in case of IMEON products connected to the Internet, if solicited within a maximum period of 6 months after the date of first commissioning.

This guarantee does not apply to components and consumable elements, nor to the resulting defects of, or bound by, the non-compliance by the buyer with the conditions of use and maintenance mentioned in the specifications and the documentation of IMEON products and, more generally, according to the standard rules of use of said products. Improper programming may result in irreversible damage to the installation, electrical hazards and / or fires that may cause personal injury. Before making any changes, make sure that you comply with the regulations in force in your country. Only the IMEON software must be used for the settings of the inverter. Any other software is not compatible and may affect the operation of the inverter

The guarantee does not give rise to these following defects, and any responsibility is excluded:

(1) In case of association of IMEON ENERGY SAS products with an equipment non provided by technical specifications of IMEON ENERGY SAS,

(2) In case of repairs or modifications realized by a person who was not approved by IMEON ENERGY SAS,

- (3) In case of any accident,
- (4) The normal wear and tear,
- (5) In case of inappropriate installation, maintenance, transport or storage.
- (6) An inadequate energy,
- (7) In case of misuse,

(8) In case of intervention of a foreign matter, climate event or natural disaster (lightning strike, surge, damage of water, etc..).

The services provided under the guarantee will not be honored if the serial number or the type number of the product has been altered, moved, removed, falsified or rendered illegible.

At the reception of the service provided under the guarantee, IMEON ENERGY SAS will realize an expertise on the material in question. This expertise will determine whether the product can be taken under warranty or not, according to the various defined exclusions.

The guarantee accepted by IMEON ENERGY SAS is limited to the replacement or the repair by IMEON ENERGY SAS of all or a part of said defective products and to the delivery of said repaired or replaced products according to the initial delivery terms provided that :



(1) Said defective products had been returned to IMEON ENERGY SAS at the buyer's costs and risks at the latest thirty (30) days after the discovery of the defect,

(2) Said defective products had been indeed recognized as defective products by IMEON ENERGY SAS.

In case where the products returned under guarantee presents no defect, all the costs of expertise shall be borne by the buyer.

IMEON ENERGY SAS cannot be held in any way liable in the event of installation of equipment having no production of electricity or a weaker production of electricity than one estimated by any study.

The professional developers are not entitled to the compensation of the loss of income.

INSTALLATION – AFTER-SALES SERVICE

The buyer has to install products according to the installation manuals of IMEON ENERGY SAS transmitted with every order and by following the instructions supplied to the buyer by IMEON ENERGY SAS. Only this document is adapted to the delivered products and bound with the order accepted by the buyer. No other documents can be used as a substitute.

The installations made by uncertified staff, installed in non-compliance with the official installation manuals and the instructions of IMEON ENERGY SAS, or otherwise badly installed, will immediately cancel the guarantee of products supplied by IMEON ENERGY SAS.

FREE-OF-CHARGE GUARANTEE SERVICES:

The free of charge guarantee service refers to the labor and material costs bound to the restoration of functioning of said products in the premises of IMEON ENERGY SAS.

Travelling and subsequent expenses of IMEON ENERGY SAS staff in conformance with the technical expertise, on-the-spot repairs, the moving or the reinstallation, or those made by other persons shall be borne by the applicant, unless otherwise provided by a written agreement.

PROCEDURE OF PRODUCT RETURN TO IMEON ENERGY SAS

Transport costs of the product shall be borne by IMEON ENERGY SAS only in the case that the product is under warrantee. Otherwise out-of-warranty products' transport costs shall be borne by the applicant.

In the European Union zone (excluding islands), IMEON ENERGY SAS will effectuate returning the defective products to the factory on its charge, and will invoice the applicant in case products are not taken under warrantee.

Outside this area, transportation cost of returned material to IMEON ENERGY SAS is on the applicant.

Note: Our transporters do not pick up material at the end-users.

The IMEON ENERGY SAS after-sales service department:



IMEON ENERGY SAS After Sales Service Department

10 Rue Amiral Romain Desfossés

29200 Brest - FRANCE

Checks before any repair request:

It is important to verify the real presence of a default prior to attempting this procedure.

External factors might be the cause of the malfunction (diameter of cables, protection, settings, batteries, etc).

IMEON ENERGY SAS reserves the right to charge expert fees and logistics expenses inherent to an undue or unjustified return even during the guarantee period.

Any attempt by a third party including opening an IMEON, nullifies the warranty or justifies a denial of repair.

Under-warrantee charges:

The transport and repair costs shall be borne by IMEON ENERGY SAS during all the warranty period, assuming the inverters operation in normal conditions, respecting requirements from the installation guides.

Non-warrantee charges:

The transport, expertise and repair shall be borne by the applicant.

If the equipment must be replaced or necessitates repairs costing less than 150€ excl. VAT, the changes will be made without consultation an invoice will be sent including the cost of transport. If the equipment must be replaced or necessitates repairs the cost more than 150€ excl. VAT, IMEON ENERGY SAS will inform the applicant with the charges.

Your application request of non-warrantee service entails full acceptation of the current conditions, especially the incurred charges as indicated.

Storage costs of up to $45 \in$ ex. tax per month apply upon exceeding a period of 30 days after a price offer and / or an invoice is issued by IMEON ENERGY SAS, if no feedback from the applicant is received.

WARNING:

It is your responsibility that the product is properly packed in its original packaging. Damage caused during transportation will not be in any way taken into charge by IMEON ENERGY SAS. Bad packaging may result in destruction of the equipment.

IMEON ENERGY Support

1. Support

All requests for support from IMEON ENERGY must be made via the online form on the IMEON ENERGY website, to the following address: <u>http://www.imeon-energy.com</u>

You can also contact the technical support from Monday to Friday to the following number: +33(0)1 86 95 95 86 from 9am to 12am and from 1:30pm to 6pm (GMT Paris).



ANNEXES

Annex 1 : Wiring diagram of IMEON 3.6

Note: This wiring diagram is offered only as a guide. Make sure you comply with the applicable laws and regulations of your country.



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Annex 2 : Wiring diagram of IMEON 9.12

Note: This wiring diagram is offered only as a guide. Make sure you comply with the applicable laws and regulations of your country.



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Annex 3 : Maximum peak power calculation

Some devices will require a higher start-up power than the operating power. This specificity must be considered.

Peak power = Equipment nominal power × start-up coefficient

See below some example of equipments showing difference between the operation power and the minimum acceptable power for the inverter.

Equipment		Operating power	Start-up Coefficient	Maximum peak power
	Electric oven	2 500 W	1	2 500 W
	Television	300 W	1	300 W
	Portable grinder	900 W	2,5	2 250 W
	Circular saw	1 100 W	2,5	2 750 W
	Freezer	300 W	3,5	1 050 W
	Single phase compressor	1 500 W	3,5	5 250 W
	Washing machine	3 000 W	3,5	10 500W

To identify the exact power of your equipment, please consult the manufacturer datasheets on the device manual.

Note: Calculations have been done for mono-phase devices.



OFF-GRID MODE	1. Batteries 2. Consumers	1. Photovoltaic 2. From the AC Input	 Photovoltaic Batteries From the grid 	 Program a specific time range during which battery charging from the AC Input is permitted Block charging batteries from the grid⁽³⁾
BACK-UP MODE	 Batteries Consumers To the grid 	 Photovoltaic From the grid 	 Photovoltaic From the grid Batteries 	 Block feeding to the grid Program a specific time range during which battery charging from the grid is permitted Block charging batteries from the grid⁽³⁾
SMART-GRID MODE	 Consumers Batteries To the grid 	 Photovoltaic From the grid 	 Photovoltaic Batteries From the grid 	 Block feeding to the grid Allow to discharge batteries only when photovoltaic panels do not produce⁽¹⁾⁽²⁾ Program a specific time band during which battery charging from the grid is permitted Block charging batteries from the grid⁽³⁾
	Photovoltaïque production Usage priorities	Charging battery sources priorities	Consumer supply sources priorities AC Output)	Available options

Annex 4 : Modes of operation

1. No battery

No consumer⁽⁴⁾

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ON-GRID MOD

1. To the grid⁽⁴⁾

1) The night is considered under the DC PV tension threshold. In the case of very bad weather, the PV DC tension drops lower than this threshold during the day.

(2) In this case, the priorities of feeding the consumers are as follows:

If there is solar production \rightarrow 1. PV, 2. Grid

If there is no solar production \rightarrow 1. Batteries, 2.Grid

(3) Not charging batteries for a prolonged period may entail a deep discharge that would cause irreversible consequences on the batteries. As a result, IMEON ENERGY cannot be held responsible of such material damage. Installers or users selecting to block battery charge from the grid undertake the entire esponsibility.

4) The « Grid Connection » output of IMEON supplied the electric panel of the household (see installation guide). A part of the generated electricity by the photovoltaic installation can be consumed in the production site. Only the surplus of solar production is injected to the grid.

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Annex 5 : IP address modification

The PC / Tablet / Smartphone used for connecting to inverter Wi-Fi has to be configured with an automatic IP (DHCP).

If the connection is established but the access to the identification page is unavailable, that means the PC / Tablet / Smartphone is configured with a fixed IP. It is necessary to change the Wi-Fi parameters.



The Wi-Fi properties are now correctly configured. Continue to the identification page.

Warning: After disconnection of the PC / Tablet / Smartphone from the IMEON, it is necessary to configure the Wi-Fi properties by entering the five IP addresses saved previously.

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IMEON ENERGY / FRANCE



Adresse / Address: 10 Rue Amiral Romain Desfossés 29200 BREST - FRANCE Tel : +33 1 84 17 51 15

www.imeon-energy.com