INSTALLATION AND OPERATING MANUAL **EN**

OFYS RT

1 - 3kVA

socomec
Innovative Power Solutions

EN CONTENTS

1. CERTIFICATE AND CONDITIONS OF WARRANTY

This SOCOMEC continuous power system is guaranteed against any manufacturing or material defects. The warranty is valid for 12 (twelve) months from the commission date, provided activation is carried out by SOCOMEC personnel or personnel from a support centre authorised by SOCOMEC, and no more than 15 (fifteen)

months from being shipped from SOCOMEC.

The warranty is valid throughout national territory. If the UPS is exported abroad, the warranty will only cover the parts used to repair faults.

The warranty is valid ex-works and covers labour and parts used to repair the faults. The warranty shall not apply in the following cases:

- Failure due to unforeseen circumstances or force majeure (lightning, floods, etc.);
- Failure due to negligence or improper use (use outside limits: temperature, humidity, ventilation, electric power supply, applied load, batteries);
- Insufficient or inappropriate maintenance;
- When maintenance, repairs or modifications have not carried been out by SOCOMEC personnel, or personnel from a support centre authorised by SOCOMEC.
- If the battery has not been recharged in accordance with the terms indicated on the packaging and in the manual, in the event of long periods of storage or UPS inactivity.

SOCOMEC may, at its own discretion, opt for the repair of the product or the replacement of faulty or defective parts with new parts, or with used parts of equivalent quality to new parts with regard to function and performance.

Defective or faulty parts replaced free of charge must to be made available to SOCOMEC, which becomes the sole owner.

Replacement or repair of parts, or any modifications to the product during the warranty period, will not extend the duration of the warranty.

SOCOMEC will not be responsible for damages under any circumstances (including, without limitations, damage for loss of earnings, interruption of activity, loss of information or other financial losses) arising from the use of the prod- uct.

2. SAFETY STANDARDS

This user manual specifies installation and maintenance procedures, technical data and safety instructions for SOCOMEC. For further information visit the Socomec website: www.socomec.com.

	NOTE! Any work carried out on the equipment must be performed by skilled, qualified technicians.
	NOTE! Before carrying out any operations on the unit read the installation and operating manual care- fully. Keep this manual safe for future reference.
	NOTE! The models are not available for all markets. Contact Socomec for further information.
	DANGER! Failure to observe safety standards could result in fatal accidents or serious injury, and damage equipment or the environment.
	CAUTION! If the unit is found to be damaged externally or internally, or any of the accessories are damaged or missing, contact SOCOMEC. Do not operate the unit if it has suffered a violent mechanical shock of any kind.
	NOTE! Install the unit in accordance with clearances in order to prevent access to handling devices and guarantee sufficient ventilation (refer to ‘Environmental requirements and handling’ chapter).
	NOTE! Only use accessories recommended or sold by the manufacturer.
	NOTE! When the equipment is transferred from a cold to a warm place wait approx. two hours before putting the unit into operation.
	NOTE! When carrying out electrical installation, all standards applicable specified by the IEC, in particu- lar IEC 60364, and the electricity supplier must be observed. All national standards applicable to batteries must be observed. For further information refer to ‘Technical specifications’ chapter.
	CAUTION! A battery can present a risk of electrical shock and high short circuit current. The following precautions should be observed when working on batteries: - Remove watches, rings or metal objects. - Use tools with insulated handles. - Wear rubber gloves and boots. - Do not lay tools or metal parts on top of the batteries. - Disconnect the charging source prior to connecting or disconnecting battery terminals. - Determine if battery is inadvertently grounded. If inadvertently grounded, remove source from ground. Contact with any part of grounded battery can result in electrical shock. The likelihood of such shock can be reduced if such grounds are removed during installation and maintenance (applicable to equipment and remote battery supplies not having a grounded supply circuit).
	WARNING! Connect the protective earth (PE) conductor before making any other connections.
	DANGER! RISK OF ELECTRIC SHOCK! Before carrying out any operations on the unit (cleaning and maintenance performances, connection of appliances, etc.) disconnect all power sources.
	DANGER! RISK OF ELECTRIC SHOCK! After disconnecting all power sources wait approx. 5 minutes for the complete discharge of the unit.
	NOTE! The UPS may be powered from an IT distribution system with a neutral conductor.

	NOTE! Installing the equipment correctly guarantees the IP20 protection level
	NOTE! Any use other than the specified purpose will be considered improper. The manufacturer/ supplier shall not be held responsible for damage resulting from this. Risk and responsibility lies with the system manager.
	CAUTION: Do not open or mutilate batteries. Released electrolyte is harmful to the skin and eyes. It may be toxic.
	CAUTION: Do not dispose of batteries in a fire. The batteries may explode.
	WARNING: Care shall be taken not to wear clothes and footwear which may build up electro- static charge. Absorbing cloth moistened only with water shall be used for battery cleaning. Other cleaning agents may result in built up of static charge or may damage the battery cases.
	NOTE: Only use accessories recommended or sold by the manufacturer.
	NOTE: Batteries must only be replaced with batteries recommended or sold by the manufacturer. Batteries must only be replaced by qualified technicians.
	NOTE: The batteries are toxic waste. If the battery cabinet needs to be scrapped it is essential to entrust the equipment solely and exclusively to firms specialising in the disposal of the materials making up the system. These are obliged to break up and dispose of the various components in accordance with the legal provisions in force in the country where the system is installed.

Note: the product you have chosen is designed for commercial and industrial use only. In order to be used for particular critical applications such as life support systems, medical applications, commercial transportation, nuclear facilities or any other application or system where product failure is likely to cause substantial harm to people or prop- erty, the products may have to be adapted. For such uses we would advise you to contact SOCOMEC beforehand to confirm the ability of these products to meet the requested level of safety, performance, reliability and compliance with applicable laws, regulations and specifications.

	NOTE! This is a product for commercial and industrial application – installation restrictions or additional measures may be needed to prevent disturbances.
	WARNING! This is a category C3 UPS product. This is a product for commercial and industrial application in the second environment – installation restrictions or additional measures may be needed to prevent disturbances. The product falls within the C2 category if one 2.5 kW module is used, therefore in a residential environment it may cause radio interference and users may be required to take additional meas- ures.

Safety requirements for secondary batteries, battery installations and backfeed protection as well.

	The installer is responsible for ensuring that the battery installation and their operating environ- ment conform to national and international codes and safety standards.

2.1. Description of symbols

Symbols	Description
	Protective earth terminal (PE).
	Authorised personnel only. Only qualified personnel are permitted to work on the batteries.
	Do not use naked flames or cause sparks in the vicinity of the accumulators.
	No smoking.
	Batteries charging! Batteries and related parts contain lead which is dangerous to health if ingested. Wash hands after handling!
	Accumulators are heavy! Use suitable transport and lifting equipment to work safely.
	Risk of electric shock! Connecting accumulators in series creates hazardous voltages.
	Risk of explosion! Avoid short circuits! Never place tools or metal objects on the accumulators.
	Corrosive liquids (electrolyte).
	Read the user instructions carefully. Read the user manual before performing any operations.
	Wear protective gloves.
	Wear safety shoes.
	Wear protective goggles.
	In the event of accidents, improper use, failure or electrolyte leakage wear a protective apron.
	In the event of accidents, improper use, failure or electrolyte leakage wear a gas mask.
	In the event of contact with the eyes, wash immediately with plenty of water and call a doctor. Call a doctor immediately in the event of accidents or illness.
	Do not dispose of in normal waste stream (symbol WEEE).

2.2. Abbreviations

For the purpose of this document, the following abbreviations may be used:

BMS	Battery Management System
EBM	External Battery Module
EMC	Electromagnetic Compatibility
HMI	Human Machine Interface
IEC	International Electrotechnical Commission
IMD	Insulation Monitoring Device
LIB	Li-Ion battery
MBMS	Master BMS
PE	Protective Earth
SOC	State of Charge
SOH	State of Health
SPD	Surge Protection Device
THDI	Total Harmonic Distortion in Current
THDV	Total Harmonic Distortion in Voltage
UPS	Uninterruptible Power Supply
U.P.O.	UPS Power Off

3. ENVIRONMENTAL REQUIREMENTS AND HANDLING

	NOTE! Before carrying out any operations on the unit read the ‘Safety standards’ chapter carefully.

3.1. Environmental requirements

The room must be:

- Of a suitable size;
- Clean and dry.
- Free from conductive, inflammable and corrosive items;
- Not exposed directly to sunlight.

The unit is designed for indoor installation only.

The unit can be housed in a rack independent cabinet of 19”. The hosting rack must have front and back opening for air flow. The cold or ambient temperature air inlet is on the front; the hot air outlet is on the back. Connections must be accessible from the rear.

	NOTE! It is necessary to guarantee the front inlet air flow and the rear output air flow. Be certain that a clearance of at least 20 cm is left on both sides to ensure adequate ventilation and provide access to the rear panel.

3.2. Handling

- The packaging guarantees the stability of the unit during shipping and physical transfer.
- Carry the packaged units as close as possible to the installation site.

	The battery units MUST be handled by at least two people. The people MUST take position at the sides of the UPS with respect to the direction of movement.
	WARNING! Failure to heed this warning could result in the unit falling over, equipment damage, injury and even death.

3.3. Unpacking

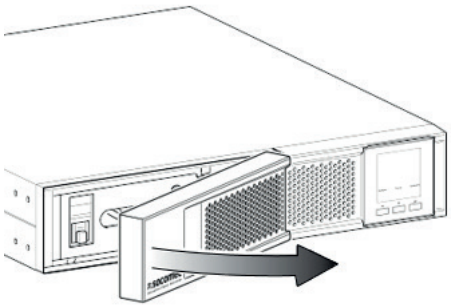
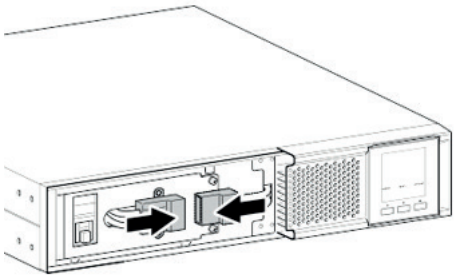
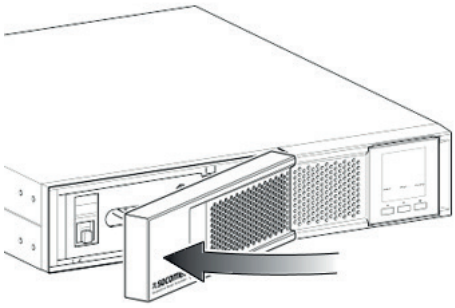
The UPS comes with disconnected batteries inside.

	CAUTION! Do not lift or move the product using the front plastic cover as you may damage or break it and cause injury to yourself in the process
	WARNING! Heavy Weight!

Up to 30kg

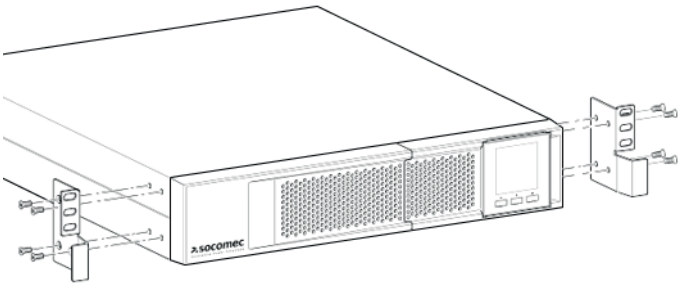
4. INSTALLING

For safety consideration, the UPS is shipped out from factory without connecting battery wires.
Before install the UPS, please follow below steps to re-connect battery wires first.

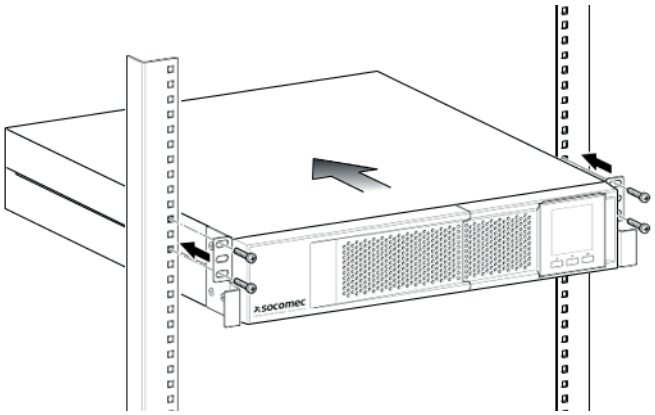
Remove front panel.	Connect the AC input and re-connect battery wires.	Put the front panel back to the unit.
		

4.1. Rack mounting

1

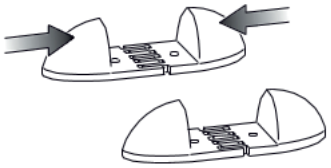


2

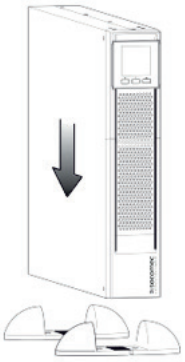


4.2. Tower mounting

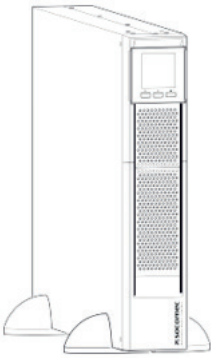
1



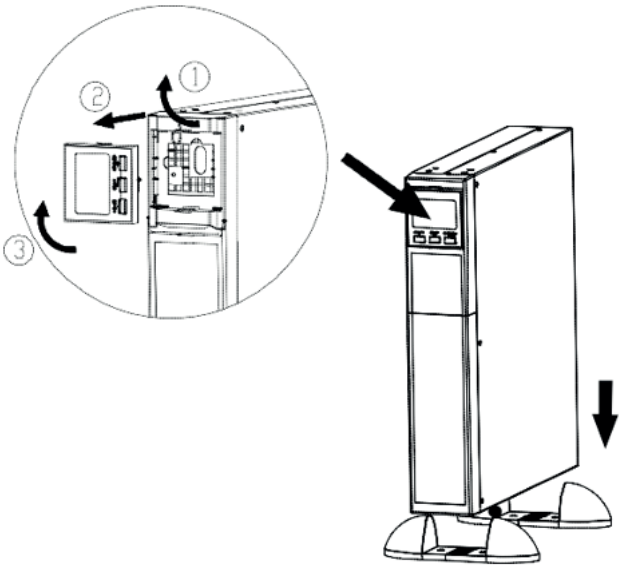
2



3

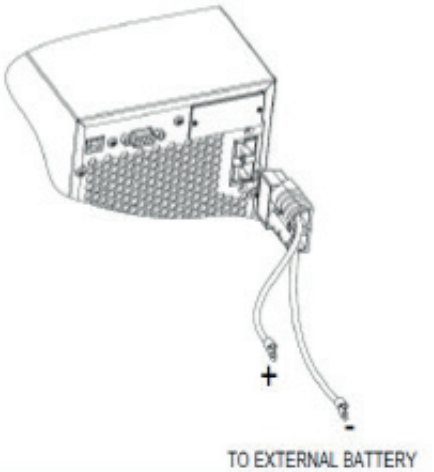


4



4.3. Battery Connection

Only for long backup time models, connect external batteries as in the picture below.



5. ELECTRICAL INSTALLATION

⚠	NOTE! Before carrying out any operations on the unit read the ‘Safety standards’ chapter carefully.

⚠	The installer is responsible for ensuring that the battery installation and their operating environment conform to national and international codes and safety standards.

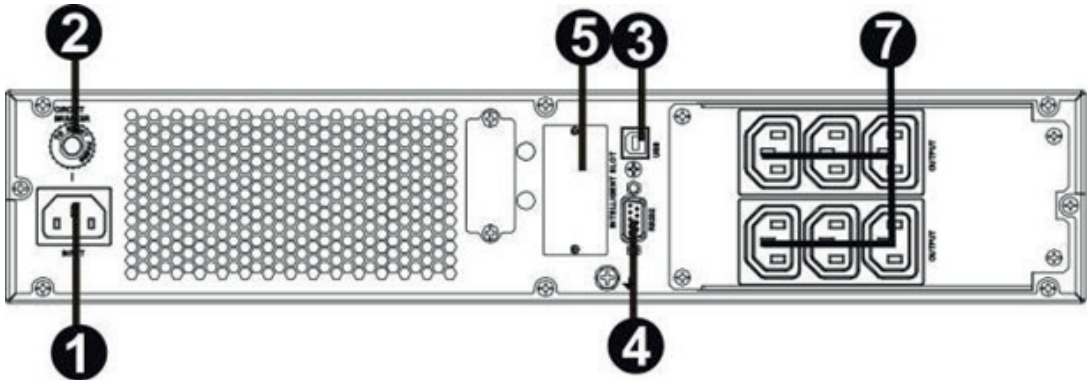
5.1. Electrical requirements

⚠	Since OFYS is a pluggable equipment type A, the protective device is provided in the installation and shall not require any specific characteristics other than that required in IEC 60364 or other local installation codes.

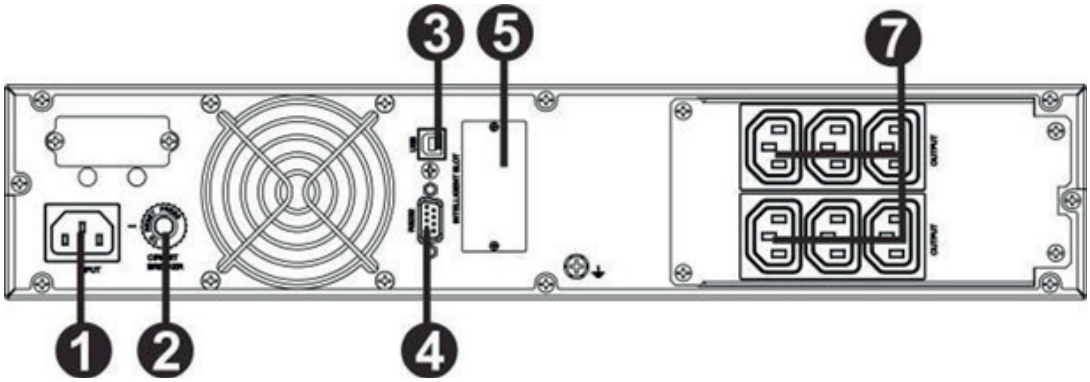
6. CONNECTIONS

⚠	NOTE! Before carrying out any operations on the unit read the ‘Safety standards’ chapter carefully.
⚠	WARNING! Make sure the UPS is not turned on before installation. The UPS should not be turned on during wiring connection. Turn off battery breaker before installation if any.
⚠	NOTE! Plug the UPS into a two-pole, three-wire, grounded receptacle only. Avoid using extension cords.

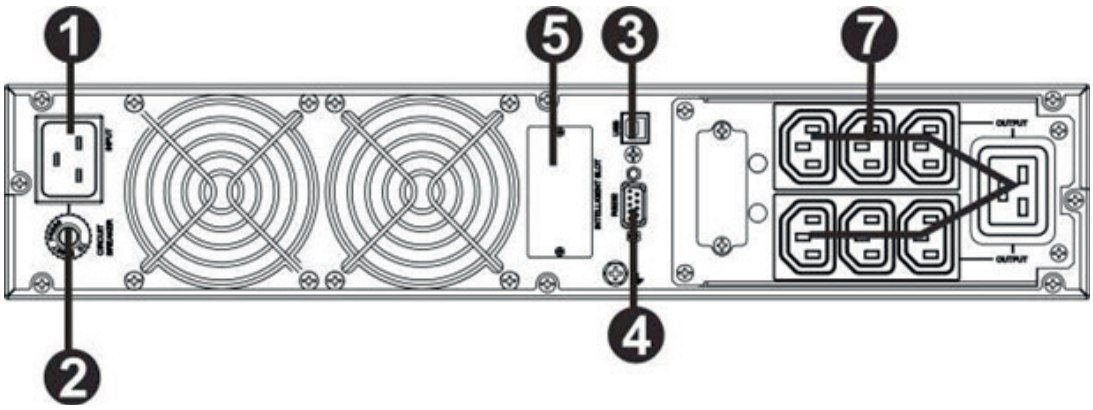
1000VA



2000VA

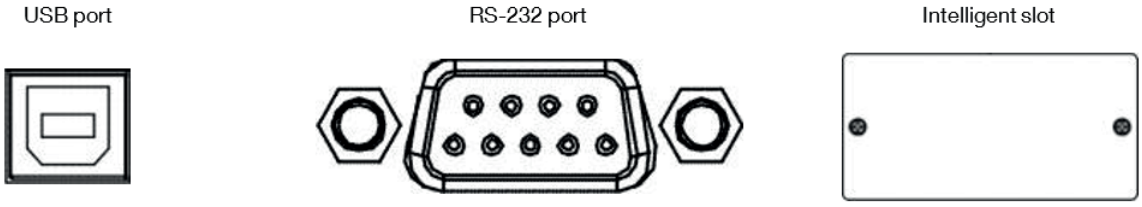


3000VA



1. AC input
2. Input circuit breaker
3. USB communication port
4. RS-232 communication port
5. SNMP intelligent slot (option)
6. ----
7. Output receptacles (max cables length = 3m)

6.1. Communication connection



To allow for unattended UPS shutdown/start-up and status monitoring, connect the communication cable one end to the USB/ RS-232 port and the other to the communication port of your PC. With the monitoring software installed, you can schedule UPS shutdown/start-up and monitor UPS status through PC.

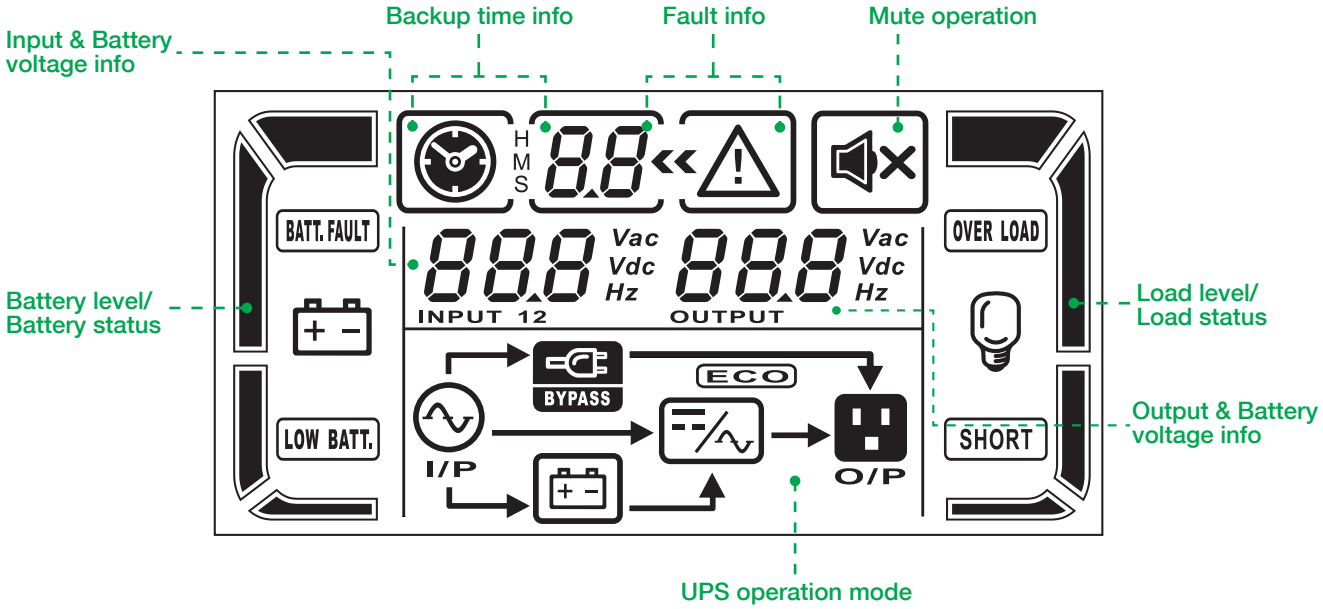
	ATTENTION! USB port and RS-232 port can't work at the same time. Max cables length = 3m.

7. CONTROL PANEL

CONTROL PANEL	
Button	**Description**
ON/MUTE	• **Turn on the UPS:** Press and hold ON/Mute button for at least 2 seconds to turn on the UPS. • **Mute the alarm:** When the UPS is on battery mode, press and hold this button for at least 5 seconds to disable or enable the alarm system. But it's not applied to the situations when warnings or errors occur. • **Up key:** Press this button to display previous selection in UPS setting mode. • **Switch to UPS self-test mode:** Press and hold ON/Mute button for 5 seconds to enter UPS self-testing while in AC mode, ECO mode, AECO mode, or converter mode.
OFF/ENTER	• **Turn off the UPS:** Press and hold this button at least 2 seconds to turn off the UPS in battery mode. UPS will be in standby mode under power normal or transfer to bypass mode if the Bypass enable setting by pressing this button. • **Confirm selection key:** Press this button to confirm selection in UPS setting mode.
SELECT	• **Switch LCD message:** Press this button to change the LCD message for input voltage, input frequency, battery voltage, output voltage and output frequency. • **Setting mode:** Press and hold this button for 5 seconds to enter UPS setting mode when Standby and Bypass mode. • **Down key:** Press this button to display next selection in UPS setting mode.
ON/Mute/Select Button	• **Switch to bypass mode:** When the main power is normal, press ON/Mute and Select buttons simultaneously for 5 seconds. The UPS will now switch to bypass mode. This action will be ineffective if the input voltage is out of acceptable range.

8. MENU

8.1. Display overview



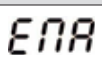
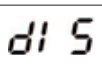
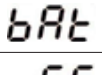
Display	Function
Backup time information	
	Indicates battery discharge time in numbers. H: hours, M: minutes, S: seconds
Fault information	
	Indicates that the warning and fault occurs.
	Indicates the fault codes, and the codes are listed in details in section «8.5. Fault code», page 20.
Mute operation	
	Indicates that the UPS alarm is disabled.
Output & Battery voltage information	
	Indicates the output voltage, frequency or battery voltage. Vac: output voltage, Vdc: battery voltage, Hz: frequency.
Load information	
	Indicates the load level by 0-25%, 26-50%, 51-75%, and 76-100%.
	Indicates overload.
	Indicates the load or the output is short.

Display	Function
Mode operation information	
	Indicates the UPS connects to the mains.
	Indicates the battery is working.
	Indicates the bypass circuit is working.
	Indicates the ECO mode is enabled.
	Indicates the Inverter circuit is working.
	Indicates the output is working.
Battery information	
	Indicates the Battery capacity by 0-25%, 26-50%, 51-75%, and 76-100%.
	Indicates the battery is not connected.
	Indicates low battery level and low battery voltage.
Input & Battery voltage information	
	Indicates the input voltage or frequency or battery voltage. Vac: Input voltage, Vdc: battery voltage, Hz: input frequency.

8.2. Alarms

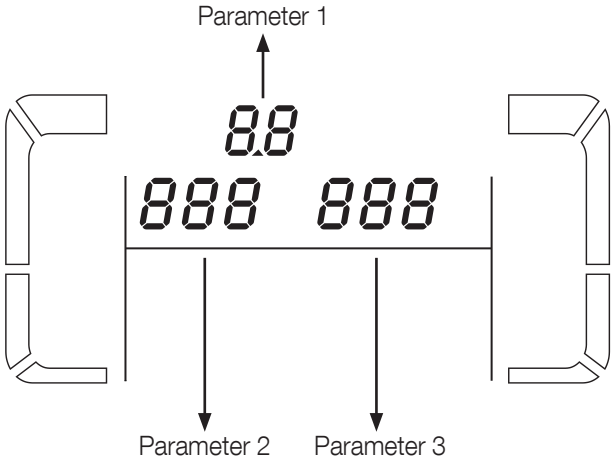
Description	Buzzer status
UPS status	
Bypass mode	Beeping once every 10 seconds.
Battery mode	Beeping once every 4 seconds.
Fault mode	Beeping continuously.
Warning	
Overload	Beeping twice every second.
Low Battery	Beeping once every second.

8.3. Abbreviations meaning in the display

Abbreviation	Display content	Meaning
ENA		Enable
DIS		Disable
ESC		Escape
HLS		High loss
LLS		Low loss
BAT		Battery
CF		Converter
TP		Temperature
CH		Charger
FU		Bypass frequency unstable
EE		EEPROM error

8.4. Menu function descriptions

There are three parameters to set up the UPS. Refer to following diagram.



Parameter 1: It's for program alternatives. Refer to below program list for the details.

Parameter 2 and parameter 3 are the setting options or values for each program.

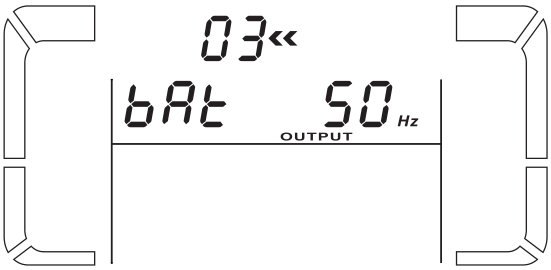
- **01: Output voltage setting**

Interface	Setting
	**Parameter 3: Output voltage** You may choose the following output voltage in parameter 3: **208**: Presents output voltage is 208Vac (power derating 70%) **220**: Presents output voltage is 220Vac **230**: Presents output voltage is 230Vac **240**: Presents output voltage is 240Vac

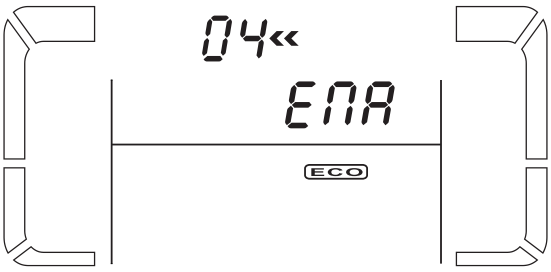
- **02: Frequency converter enable/disable**

Interface	Setting
	**Parameter 2 & 3: Enable or disable converter mode** You may choose the following two options: CF ENA: converter mode enable (power derating 70%, transfer to bypass is forbidden). CF DIS: converter mode disable.

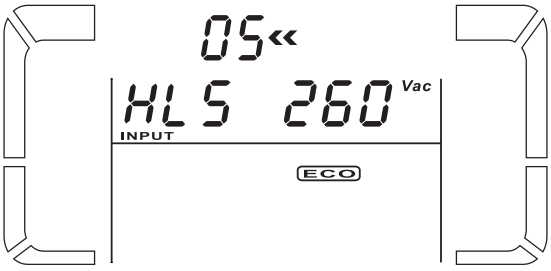
- **03: Ouput frequency setting**

Interface	Setting
	**Parameter 2 & 3: Output frequency setting** You may set the cold start frequency on battery mode: BAT 50: presents output frequency is 50Hz BAT 60: presents output frequency is 60Hz If converter mode is enabled, you may choose the following output frequency: CF 50: presents output frequency is 50Hz CF 60: presents output frequency is 60Hz

• 04: ECO enable/disable

Interface	Setting
	**Parameter 3: Enable or disable ECO function** You may choose the following two options: ENA: ECO mode enable DIS: ECO mode disable (Default)

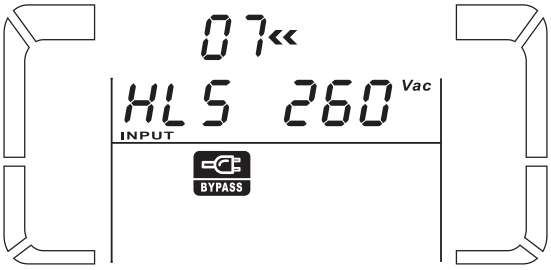
• 05: ECO voltage range setting

Interface	Setting
	**Parameter 2 & 3: Set the acceptable high voltage point and low voltage point for ECO mode by pressing Down key or Up key** HLS: High loss voltage in ECO mode in parameter 2. The setting range in parameter 3 is from +7V to +24V of the nominal voltage. (Default: +12V) LLS: Low loss voltage in ECO mode in parameter 2. The setting range in parameter 3 is from -7V to -24V of the nominal voltage. (Default: -12V)

• 06: Bypass enable/disable in stand-by mode

Interface	Setting
	**Parameter 3: Enable or disable Bypass function**: You may choose the following two options: ENA: Bypass enable DIS: Bypass disable (Default).

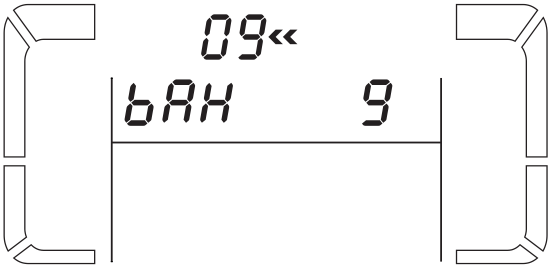
• 07: Bypass voltage range setting

Interface	Setting
	**Parameter 2 & 3: Set the acceptable high voltage point and acceptable low voltage point for Bypass mode by pressing the Down key or Up key** HLS: Bypass high voltage point. 230-264: setting the high voltage point in parameter 3 from 230Vac to 264Vac. (Default: 264Vac). LLS: Bypass low voltage point. 180-220: setting the low voltage point in parameter 3 from 180Vac to 220Vac. (Default: 180Vac).

• 08: Autonomy limitation setting

Interface	Setting
	**Parameter 3: Set up backup time on battery mode for general outlets** 0-999: setting the backup time in minutes from 0-999 for general outlets on battery mode. 0: When setting as “0”, the backup time will be only 10 seconds. 999: When setting as “999”, the backup time setting will be disabled. (Default).

• 09: Total battery AH

Interface	Setting
	**Parameter 3: Set up total battery AH value of the UPS. (unit: AH)** 7-999: setting the total battery capacity from 7 to 999. Please set up this figure if external battery pack is connected. If the UPS is standard model, the default setting is 9AH. If the UPS is long-run model, the default setting is 65AH.

8.5. Fault code

Fault event	Fault code	Icon	Fault event	Fault code	Icon
Bus start failure	01	None	Inverter output short	14	SHORT
Bus over	02	None	Battery voltage too high	27	BATT. FAULT
Bus under	03	None	Battery voltage too low	28	BATT. FAULT
Bus unbalance	04	None	Over temperature	41	None
Inverter soft start failure	11	None	Overload	43	OVER LOAD
High Inverter voltage	12	None	Charger failure	45	None
Low Inverter voltage	13	None			

8.6. Warning indicator

Warning	Icon (flashing)	Alarm
Battery low		Beeping every second
Overload		Beeping twice every second
Battery not connected		Beeping every second
Over charge		Beeping every second
Over temperature		Beeping every second
Charger failure		Beeping every second
Battery fault		Beeping every second
Out of bypass voltage range		Beeping every second
Bypass frequency unstable		Beeping every second
EEPROM error		Beeping every second

9. OPERATING PROCEDURES

9.1. Switching on (in Normal mode)

1. After power supply is connected correctly, the fan is running and the UPS enters to stand-by mode. The charger will charge the batteries.
2. Press and hold the ON/Mute button for at least 2 seconds to turn on the UPS and the buzzer will beep once.
3. A battery test will carried out for 20 seconds.
4. Then the UPS will enter to Normal mode. If the mains power is abnormal, the UPS will operate in Battery mode without interruption.

Note: The battery charges fully during the first five hours of normal operation. Do not expect full battery run capability during this initial charge period.

Note: when the UPS is running out battery, it will shut down automatically at Battery mode. When the utility power is restored, the UPS will auto restart in Normal mode.

9.2. Cold start (in battery mode)

1. Press and hold the ON/Mute button for at least 2 seconds to turn on the UPS and the buzzer will beep once.
2. A few seconds later, the UPS will be turned on and enter to Battery mode.

9.3. Connect device to UPS

After the UPS is turned on, you can connect devices to the UPS.

1. Turn on the UPS first and then switch on the devices one by one, the control panel will display total load level.
2. If it is necessary to connect the inductive loads such as a printer, the in-rush current should be calculated carefully to see if it meets the capacity of the UPS, because the power consumption of this kind of loads is quite big.
3. If the UPS is overload, the buzzer will beep twice every second.
4. When the UPS is overload, please remove some loads immediately. It is recommended to have the total loads connected to the UPS less than 80% of its nominal power capacity to prevent overload for system safety.
5. If the overload time is longer than acceptable time listed in spec at Normal mode, the UPS will automatically transfer to Bypass mode. After the overload is removed, it will return to Normal mode. If the overload time is longer than acceptable time listed in spec at Battery mode, the UPS will become fault status. At this time, if bypass is enabled and the voltage and frequency in the range of it is set value, the UPS will power to the load via bypass. If bypass function is disabled or the input power is not within bypass acceptable range, it will cut off output directly.

9.4. Charge the batteries

1. After the UPS is connected to the utility power and working on the Normal mode, the charger will charge the batteries automatically except in Battery mode or during battery self-test.
2. Suggest to charge batteries at least 10 hours before use. Otherwise, the backup time may be shorter than expected time.

9.5. Battery mode operation

1. When the UPS is in Battery mode, the buzzer will beep according to different battery capacity. If the battery capacity is more than 25%, the buzzer will beep once every 4 seconds; If the battery voltage drops to the alarm level, the buzzer will beep quickly (once every sec) to remind users that the battery is at low level and the UPS will shut down automatically soon. Users could switch off some non-critical loads to disable the shutdown alarm and prolong the backup time. If there is no more load to be switched off at that time, you have to shut down all loads as soon as possible to protect the devices or save data. Otherwise, there is a risk of data loss or load failure.
2. In Battery mode, if buzzer sound annoys, users can press the Mute button for 5 seconds to disable the buzzer. It will be restored when the mains power is newly available.
3. The backup time of the long-run model depends on the external battery capacity.
4. The backup time may vary from different environment temperature and load type.

9.6. Battery test

1. If you need to check the battery status when the UPS is running in Normal mode/Converter mode/ECO mode, you could press the ON/Mute button for 5 seconds to let the UPS do battery self-test.

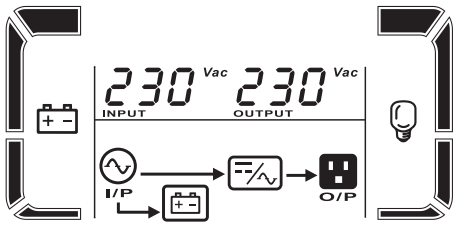
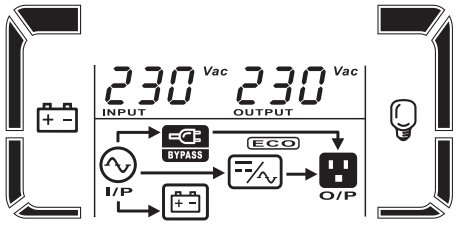
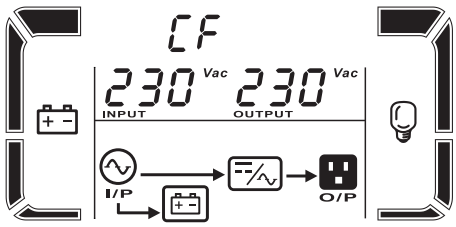
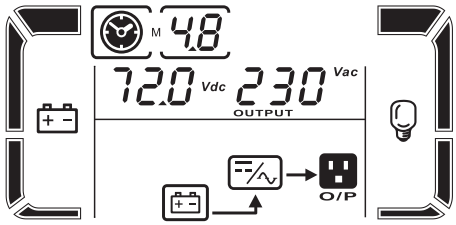
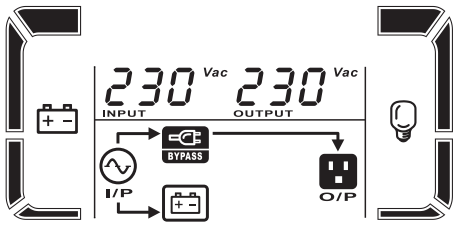
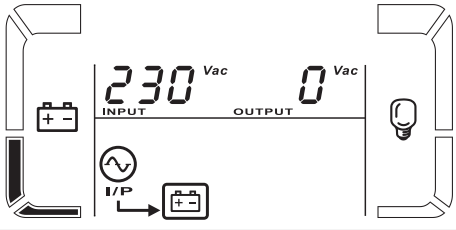
9.7. Turn off the UPS with utility power supply in Normal mode

1. Turn off the inverter of the UPS by pressing OFF button for at least 2 seconds, and then the buzzer will beep once. The UPS will turn into standby mode and cut off the output keeping the batteries charged.
2. Remove the input cable to completely shut down the UPS.

9.8. Turn off the UPS without utility power supply in battery mode

1. Turn off the UPS by pressing “OFF” button for at least 0.5s, and then the buzzer will beep once.
2. Then UPS will cut off power to output and there is no display shown on the display panel.

10. OPERATING MODE

Operating mode		
Normal Mode	Description	When the input voltage is within acceptable range, UPS will provide pure and stable AC power to output. The UPS will also charge the battery at normal mode.
	Display	
ECO mode	Description	When the input voltage is within voltage regulation range and ECO mode is enabled, UPS will bypass voltage to output for energy saving.
	Display	
Converter mode	Description	When input frequency is within 40 Hz to 70 Hz, the UPS can be set at a constant output frequency, 50 Hz or 60 Hz. The UPS will still charge battery under this mode.
	Display	
Battery mode	Description	When the input voltage is beyond the acceptable range or power failure, UPS will backup power from battery and alarm will beep every 4 seconds.
	Display	
Bypass mode	Description	When input voltage is within acceptable range but UPS is overload, UPS will enter bypass mode or bypass mode can be set by front panel. Alarm is sounding every 10 second
	Display	
Standby mode	Description	UPS is powered off and no output supply power, but still can charge batteries.
	Display	

10.1. Standard features and options

Availability	
●	Factory-installed option
○	Available as option
-	Not available

Features	OFYS	Compatibility
Communication Option		
REPO	●	
RS 232 Port	●	⚠ not simultaneously with USB
USB Port	●	⚠ not simultaneously with RS 232
OFYS-OP-SNMP	○	⊘ OFYS –OP-REL cannot be installable
OFYS-OP-REL	○	⊘ OFYS-OP-SNMP cannot be installable
Electrical Option		
OFYS-OP-CBL10F	○	
Mechanical Option		
OFYS-OP-RAIL	○	

● Required option
⊘ Incompatible option

11. TROUBLE SHOOTING

If the UPS system does not operate correctly, please solve the problem by using the table below.

Symptom	Possible cause	Remedy
No indication and alarm in the front display panel even though the mains is normal.	The AC input power is not connected well.	Check if input power cord firmly connected to the mains.
	The AC input is connected to the UPS output.	Plug AC input power cord to AC input correctly.
The icon ⚠ and flashing on the display and alarm is sounding every second.	The external or internal battery is incorrectly connected.	Check if all batteries are connected well.
Fault code is shown as 27 and the icon BATT. FAULT is lighting on the display and alarm is continuously sounding.	Battery voltage is too high or the charger is fault.	Contact your dealer.
Fault code is shown as 28 and the icon BATT. FAULT is lighting on the display and alarm is continuously sounding.	Battery voltage is too low or the charger is fault.	Contact your dealer.
The icon ⚠ and OVER LOAD is flashing on the display and alarm is sounding twice every second.	UPS is overload	Remove excess loads from UPS output.
	UPS is overloaded. Devices connected to the UPS are fed directly by the electrical network via the Bypass.	Remove excess loads from UPS output.
	After repetitive overloads, the UPS is locked in the Bypass mode. Connected devices are fed directly by the mains.	Remove excess loads from UPS output first. Then shut down the UPS and restart it.
Fault code is shown as 43 and the icon OVER LOAD is lighting on the display and alarm is continuously sounding.	The UPS shut down automatically because of overload at the UPS output.	Remove excess loads from UPS output and restart it.
Fault code is shown as 14 and the icon SHORT is lighting on the display and alarm is continuously sounding.	The UPS shut down automatically because short circuit occurs on the UPS output.	Check output wiring and if connected devices are in short circuit status.
Fault code is shown as 01, 02, 03, 04, 11, 12, 13, 41 or 45 on the display and alarm is continuously sounding.	A UPS internal fault has occurred. There are two possible results: - The load is still supplied, but directly from AC power via bypass. - The load is no longer supplied by power.	Contact your dealer.
Battery backup time is shorter than nominal value.	Batteries are not fully charged.	Charge the batteries for at least 5 hours and then check capacity. If the problem still persists, consult your dealer.
	Batteries defect.	Contact your dealer to replace the battery.

12. MAINTENANCE

WARNING!
The UPS generates HAZARDOUS INTERNAL VOLTAGES. All maintenance operations should be carried out by AUTHORISED SERVICE ENGINEERS ONLY.

- The unit will operate to its maximum capability if kept powered round the clock (24/7); this ensures that the batteries will always be properly charged.
- If the appliance is not to be used for any length of time wait until the batteries are fully charged (connection to mains power supply for 8 hours continuous) before shutting the UPS down.
- Recharge the batteries for a duration of 24 hours at least every 4 weeks when the unit is not in use.

12.1. Storage

The UPS system contains no user-serviceable parts. If the battery service life (3~5 years at 25 °C ambient temperature) has been exceeded, the batteries must be replaced. In this case, please contact your dealer.

Be sure to deliver the spent battery to a recycling facility or ship it to your dealer in the replacement battery packing material.

Before storing, charge the UPS 5 hours. Store the UPS covered and upright in a cool, dry location. During storage, recharge the battery in accordance with the following table:

Storage temperature	Recharge frequency	Charging duration
-25°C to 40°C	Every 3 months	1-2 hours
40°C to 45°C	Every 2 months	1-2 hours

13. SAFEGUARDING THE ENVIRONMENT

Do not dispose of electrical appliances with normal waste, use separate collection facilities.

Follow local council waste regulations for proper disposal arrangements to reduce the environmental impact of waste electrical and electronic equipment or contact your local government for information regarding the collection arrangements available.

If electrical appliances are disposed of in landfills or dumps, hazardous substances can leak into the groundwater and get into the food chain, damaging health and wellbeing. Depleted batteries are considered as toxic waste. When battery replacement becomes necessary, only give rundown batteries to certified and licensed waste disposal companies. In accordance with local legislation, it is prohibited to dispose of batteries together with other industrial waste or household refuse.

	The crossed-out trash bin symbol is placed on this product to encourage users to recycle components and units whenever possible. Please be environmentally responsible and recycle this product through your recycling facility at the end of its lifetime. For any questions regarding the disposal of the product, contact local distributors or retailers. In case of product with incorporated battery, please use the proper recycling.

14. TECHNICAL SPECIFICATIONS

Model		1000	2000	3000
Power Rating		1000VA/900W	2000VA/1800W	3000VA/2700W
Waveform		Pure Sinewave		
Input	Nominal Voltage	208/220/230/240 Vac		
	Voltage Range	180 ~ 280Vac (100% load); 120 ~ 300Vac (50% load)		
	Frequency Range	40Hz ~ 70 Hz		
	Power Factor	≥ 0.95 @ Nominal Voltage (100% load)		
	iTHD	< 10% according to IEC 61000-3-2 / IEC 61000-3-3		
	Connection	IEC 320 C14 (10A)		IEC 320 C20 (16A)
	Electrical input supply system	TT, TN		
Output	Voltage	208/220/230/240 Vac		
	Voltage Regulation	± 1% (battery mode)		
	Frequency	50/60 Hz ± 3 Hz 50 Hz ± 0.25 Hz or 60Hz ± 0.3 Hz (battery mode)		
	vTHD	≤ 3 % THD (Linear Load) ≤ 6 % THD (Non-linear Load)		
	Overload Capacity	(AC Mode, Tamb < 35°C) 105%~110%: 10min, 110%~130%: 30s, 130%~150%:3sec, >150% immediate (AC Mode, Tamb > 35°C) 105%~110%: 5min, 110%~130%: 15s, 130%~150%:1.5sec, >150% immediate (Battery Mode) 100%~110%: 30sec, 110%~130%: 10sec, >130% : 1sec		
	Crest Factor	3:1		
	Connection	6 (10 A) x IEC 320		6 (10 A) x IEC 320 1 (16 A) x IEC 320
	Electrical output supply system	TT, TN		
Battery & Charger	Battery Voltage	24 Vdc	48 Vdc	72 Vdc
	Battery Type	Sealed lead-acid battery 9 Ah		
	Charging Current	1.0 A		
	Electrical battery supply system	TT, TN		
Long-run Model	Battery Numbers	3	6	6
	Charging Current	1.0A/2.0A/4.0A/6.0A		
	Charging Voltage	41.0VDC± 1%	82.0VDC± 1%	82.0VDC± 1%
Efficiency	Online Mode	Up to 88%	Up to 89%	Up to 90%
	Battery Mode	Up to 86%	Up to 87%	Up to 89%
Audible Noise		Less than 50dBA @ 1 Meter		
Display		LED indicators and LCD display		
Communication Interfaces		SMART Slot × 1, RS-232 Port × 1, USB Port × 1		
Physical	Dimensions (D × W × H)	310 x 438 x 88 mm	410 x 438 x 88 mm	630 x 438 x 88 mm
	Weight	10.8 kg	18.2 kg	29.3 kg
Long-run Model	Dimensions (D × W × H)	310 x 438 x 88 mm	410 x 438 x 88 mm	460 x 438 x 88 mm
	Weight	9 kg	12 kg	14.2 kg

Model		1000	2000	3000
Environment	Operating Altitude	0 ~ 3000 m (0 ~ 10000 ft); 0 ~ 1000 m (0 ~ 3300 ft) (without derating)		
	Operating Temp.	0 to 40°C 70% derating when 40°C <Ambient Temp.<50°C Decrease the overload capacity when 40°C <Ambient Temp.<50°C		
	Storage Temperature	-20 to +50°C		
	Relative Humidity	20% to 90% no condensing		
Standard Compliance		CE / EN IEC 62040-1, EN IEC 62040-2, Category C2		

Derating to 70% of capacity in Frequency converter mode or when the output voltage is adjusted to 208VAC.

15. APPENDIX: TOXIC AND HAZARDOUS SUBSTANCES AND ELEMENTS

环保信息卡

本产品为绿色环保型产品，符合国家颁布的 《电器电子产品有害物质限制使用管理办法》中的各项要求。使用前，请详细阅读《用户手册》，正确使用本产品。在正常情况下， 产品中的有害物质不会产生泄漏或挥发，也不会对人体及环境造成危害。

我们一直致力于设计、制造环保型产品，并通过持续的技术研发，进一步降低或消除产品中的有害物质。以下列出有害物质所在的零件之具体部位，以方便环保部门回收。

部件名称	有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr6+)	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
电池类	x	o	o	o	o	o
陶瓷电子组件类	x	o	o	o	o	o
保险丝类	x	o	o	o	o	o
半导体器件类	x	o	o	o	o	o
焊锡	x	o	o	o	o	o
开关/断路器类	x	o	x	o	o	o
电源线和插座之端子	x	o	o	o	o	o
印刷电路板	x	o	o	o	o	o
o：表示在该零部件的均质材料中，该有害物质的含量符合 GB/T 26572-2011 规定的限量要求 x：表示在该零部件的均质材料中，该有害物质的含量超出 GB/T 26572-2011 规定的限量要 求						

表示本产品含有中国 RoHS 禁止的物质：数字表示所涉及产品和零件的"环保使用期限"；
"环保使用期限"说明：本产品的环保使用期限，是指在正常使用条件和遵守本产品安全使用注意事项的情况下，从生产日起本产品含有的有害物质或元素不会对环境、人身及财产造成严重影响的期限。因电池需周期性更换，所以20 年环保使用期限不包括电池。

CORPORATE HQ CONTACT:
SOCOMEC SAS
1-4 RUE DE WESTHOUSE
67235 BENFELD, FRANCE

www.socomec.com

551906A

socomec
Innovative Power Solutions