ITYS E

from 1 to 10 kVA - Mini Tower

Installation and operating manual GB

socomec
Innovative Power Solutions

WARRANTY CERTIFICATE AND CONDITIONS

This SOCOMEC appliance is guaranteed against manufacturing and material defects for a period of 12 months from the date of purchase (local warranty conditions are applicable in addition to the general conditions). This warranty certificate should NOT be e-mailed, but kept by the customer along with proof of purchase, for use in the event of a claim being made for repairs or replacement under warranty.

The warranty period commences on the date the new product was purchased by the end user at an authorised showroom (reference details are shown on the receipt).

Return-to-base warranty is provided: components and labour for repairs supplied free of charge, any products to be replaced must be returned to SOCOMEC or authorised service centres, at the customer's own risk and expense.

The warranty is recognized within national territory. If the UPS is exported out of national territory, the warranty shall be limited to the cover of the parts used to repair the fault.

To claim service under the warranty please observe the following:

- The product must be returned in the original packing. Any damage caused during shipping in packaging other than the original will not be covered by the warranty;
- The product must be accompanied by proof of purchase such as an invoice or receipt indicating the date of purchase and product ID information (model, serial numer). The sender must also attach the reference number issued to authorise the return of the product, together with a detailed description of the defect. If any of this information is missing the warranty will be invalid. The authorisation number is issued by service centres over the telephone on receiving information on the malfunction in question;
- If it is not possible to provide proof of purchase the serial number and date of manufacture will be used to calculate the probable expiry date of the warranty; this could result in a reduction of the original warranty period.

The warranty on the product does not cover damage caused by carelessness (improper use: wrong input power, explosions, excessive humidity, temperature, poor ventilation, etc.), tampering or any unauthorised repair work.

During the warranty period, SOCOMEC reserves the right to decide whether the product should be repaired, or whether to replace defective parts with new parts, or used parts that are equivalent to new parts in terms of functionality and performance.

In the case of batteries, warranty is valid only if the battery has been recharged regularly in accordance with the manufacturer's instructions. On purchasing the product it is advisable to check that the next recharge date indicated on the packaging has not expired.

Battery

- Batteries are treated as consumable parts and warranty only covers manufacturing defects.
- Batteries must be stored in compliance with Supplier recommendations.
- Warranty is valid only if the battery has been recharged regularly in accordance with the manufacturer's instructions. On purchasing the product it is advisable to check that the next recharge date indicated on the packaging has not expired.

Optionals

A 12-month return-to-base warranty is provided on optionals.

Software products

Software products are guaranteed for 90 days. The software is guaranteed to work as indicated in the manual accompanying the product. Hardware media or accessories (e.g. diskettes, cables, etc.) used with appliances are guaranteed free of material or manufacturing defects under normal conditions of use for a period of 12 months from the date of purchase.

SOCOMEC will not be responsible for damages (including loss of income, interruption of business activity, loss of information or other financial losses, of any nature) arising from the use of the product.

These conditions are subject to Italian law. Disputes shall come under the jurisdiction of Court of Vicenza.

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NOTE!
The models are not available for all markets. Contact Socomec for further information.

ITYS 1-3 KVA

ITYS 6-10 KVA

1. SAFETY STANDARDS

1.1. IMPORTANT

This manual should be kept in a safe place near the UPS, so it can be consulted by the operator at any time for information that may be needed regarding correct use of the unit. Read the manual carefully before connecting the unit to the a.c. mains supply and the downstream appliances. Before the UPS is put into commission the user should be completely familiar with its operation, the position of all the controls and the technical and functional characteristics of the unit, so as to ensure there will be no risk to people or the appliance itself.

- Before being started, the unit must be equipotentially bonded, in accordance with current safety regulations. The earth wire of the UPS must then be connected to an efficient earth system.
- If there is no earth connection, the appliances connected to the UPS will not be equipotentially bonded. In this situation, the manufacturer declines all liability for any damage or accidents that could result from failure to observe the requirements.
- Should a power outage occur (UPS in stand-alone mode), do not disconnect the power cord from the mains, as this will break the earth connection to bonded appliances.
- All subsequent maintenance operations must only be performed by authorised service engineers. The UPS generates high internal voltages that could be hazardous for a maintenance operative not in possession of the appropriate skills and training for this type of work.
- If a hazardous situation should arise at any time when the UPS is in use, isolate the unit from the power supply (by operating a switch at the upstream PDU if possible) and switch the appliance off completely by running the shutdown procedure.
- The UPS houses a source of electrical energy, i.e. its batteries. The output of the UPS may be powered even when the appliance is not connected to the a.c. mains supply.
- Never force, break or attempt to open the batteries. These batteries are sealed, maintenance-free components containing substances that are harmful to health and a source of environmental pollution. If liquid can be seen leaking from the battery, or a white powdery residue is noticeable, do not switch the UPS on.
- Avoid exposing the UPS to contact with water or any liquids generally. Do not insert foreign objects into the cabinet.
- Danger of explosion if the batteries are replaced with others of the wrong type.
- Replaced batteries must be disposed of at authorised waste disposal centres.

It is very dangerous to touch any part of the batteries as there is no insulation between the batteries and the mains power source.

CAUTION!
A battery can present a risk of electrical shock and high short circuit current.

- If the appliance is to be disposed of it should only be entrusted to a specialist waste disposal company. These companies will dismantle and dispose of the various components in accordance with statutory regulations in the country of purchase.
- Use the UPS in accordance with the technical specifications indicated in this manual.
- To meet Emergency Switch Device (ESD) operating requirements, a specific input with remote ESD/EPO function is available.
- In the event that the equipment has no automatic backfeed protection contactor device, ensure that:
  - the user/installer attaches warning labels to all mains isolating switches located remotely from the area where the UPS is situated, in order to inform service personnel that the circuit is connected to a UPS.
  - an external isolating device is installed
- The product you have selected, given the specified conditions of use, capacity and performance limits, is designed exclusively for commercial and industrial operation. Using the product in critical applications could require compliance with statutory regulations and standards, specific local bylaws, or adaptation to SOCOMEC recommendations. For this type of use it is always advisable to contact SOCOMEC beforehand for confirmation regarding the capacity of products to meet required levels of safety, performance and reliability. Critical applications include, in particular, life support systems, medical applications, commercial transport, nuclear facilities or any other systems where failure of the product might on occasion cause serious damage to people or property.

WARNING!

This is a category C2 UPS product. In a residential environment, this product may cause radio interference, in which case the user may be required to take additional measures.

WARNING!
This is a product for commercial and industrial applications in an industrial environment – installation restrictions or additional measures may be needed to prevent interference.

CAUTION IF DAMAGED
NON-SPILLABLE BATTERIES
Torn, crushed or damaged packaging which exposes the contents should be set aside in an isolated area and inspected by a qualified person. If the package cannot be shipped the contents must be promptly collected, segregated, and either the sender or recipient contacted.

All packaging material must be recycled in compliance with the laws in force in the country where the system is installed.

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 systems where product failure is likely to cause substantial harms to person or property, the products may have to be adapted.
For such uses we would advise you to contact SOCOMEC UPS beforehand to confirm the ability of these products to meet the requested level of safety, performance, reliability and compliance with applicable laws, regulations and specifi cations.

Only for ITYS 1-3 kVA

- Since the UPS power cord functions as an isolating device, ensure ready access to the mains power socket where the UPS is connected, and/or the rear panel of the UPS, so the unit can be easily unplugged.
- The UPS generates a leakage current of approximately 2 mA. To guarantee the maximum leakage current of 3.5 mA, ensure the leakage current generated by the load is no greater than 0.5 mA. Should the leakage current from the load exceed this limit, instruct a skilled engineer to install an industrial type connection (to IEC 309 standard) between the UPS and the a.c. mains supply, sized to handle a current compatible with the rating of the appliance.

Only for ITYS 6-10 kVA

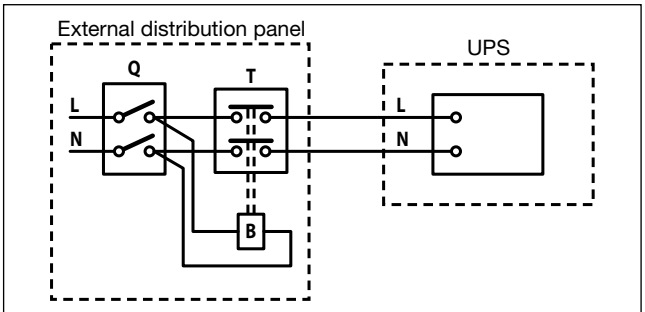
The UPS MUST only be moved by two people at least. They MUST take position at the sides of the UPS with respect to the direction of movement.

Secure the UPS with feet A only when it is in position with the cable connected.

Since the UPS does not have an automatic protection device against current backfeed inside, the installer must:

- add warning labels to all the mains power disconnecting switches installed at a distance from the UPS area; this serves to remind technicians of the fact that the circuit is connected to a UPS.
- install an external isolating device as shown in figure.

ISOLATE THE UPS BEFORE
OPERATING ON THIS CIRCUIT



Legend
BCoil
Q Magneto-thermal input main switch
T 90 A AC1 remote contactor 2-pole; 230 V coil

2. ENVIROMENTAL REQUIREMENTS AND MOVING

2.1. ENVIRONMENTAL REQUIREMENTS

Consult the following check list when installing the UPS:

- ITYS units are designed for use in enclosed environments.
- Position the UPS on a flat, stable surface in a properly ventilated room, well away from heat sources and avoiding direct exposure to sunlight.
- Ambient temperature should be kept between 0 to 45 °C, and relative humidity below 90% (without condensation); the optimum temperature to maximise battery lifetime is 15 to 20 °C.
- Check that the UPS will not be installed in a dusty environment.
- Take care not to stand the UPS or any other heavy objects on cables.
- Check that the operating voltage and frequency settings are correct for the mains power supply at the installation site. Details for the UPS will be found on the data plate attached to the rear panel.
- When carrying out the RS232 serial connection, use only the cables and accessories supplied or specified by the manufacturer.
- When the UPS is first used, it is advisable to leave the battery on charge for a minimum of 8 hours.
- Condensation may occur if the UPS system is moved directly from a cold to a warm environment. The UPS system must be completely dry before being installed. Please allow at least two hours for the UPS system to become acclimatised to the environment.
- Do not install the UPS system near water or in damp environments.
- Do not connect appliances or devices which would overload the UPS system (e.g. laser printers) to the UPS output sockets.
- Ensure there is a reliable earth connection.
- Ensure external battery sources are earthed.

PRECAUTIONS IN THE EVENT OF DAMAGE
DO NOT TURN THE BATTERIES OVER
Torn, crushed or damaged packaging which exposes the contents should be kept separate in a secure area, and inspected by qualified staff. Packing which cannot be shipped must be set aside immediately and kept secure, and the sender or recipient contacted.

Only for 1-3 k

- Connect the UPS system to an earthed shockproof outlet only, which is easily accessible and close to the UPS system.
- Do not block ventilation openings on the UPS casing. Ensure the air vents on the front, side and rear of the UPS are not blocked. Ensure at least 25 cm of space at the front and the rear of the UPS, and at least 10 cm on both the sides.

Only for 6-10 k

- This is permanently connected equipment and must be installed by qualified maintenance personnel.
- The overload capacity would be de rated automatically in Line mode while the circumstance temperature is larger than 35 degree.
- Ensure at least 50 cm of space at the front and the rear of the UPS, and at least 10 cm on both the sides.

ITYS-E

from 1 to 3 kVA

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Innovative Power Solutions

3. ELECTRICAL INSTALLATION

3.1. ELECTRICAL REQUIREMENTS

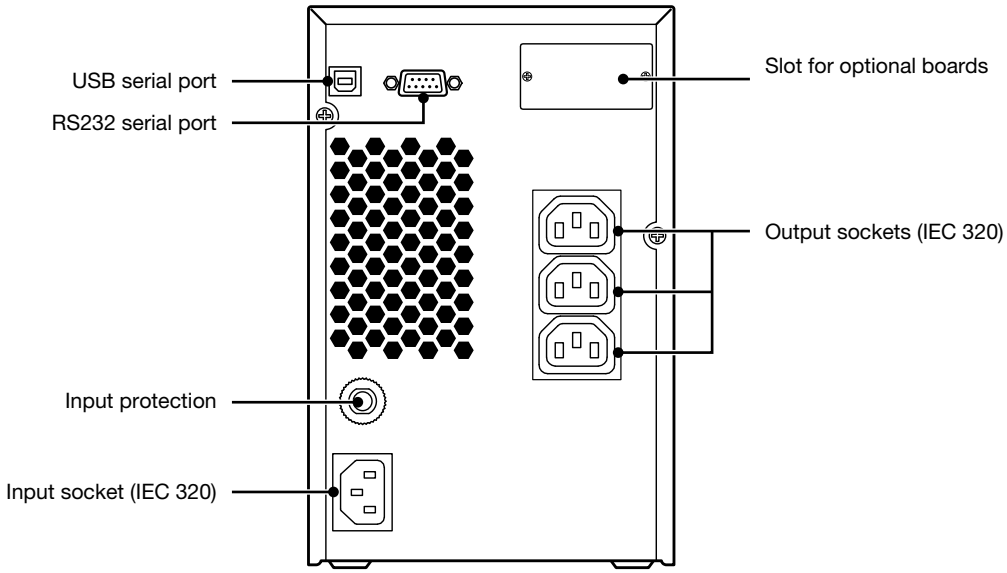
The fixed power distribution unit must include protection and isolation for the utility supply and the back-up supply. In the event that a residual current device is installed on the UPS input line (optional), this must be located upstream of the power distribution unit.

Electrical requirements			
UPS	**Thermal-magnetic switch on input**	**Input leakage current**	**Cable section**
1 kVA	10 C	< 3.5 mA	according to IEC
2 kVA	16 C	< 3.5 mA	according to IEC
3 kVA	20 C	< 3.5 mA	according to IEC

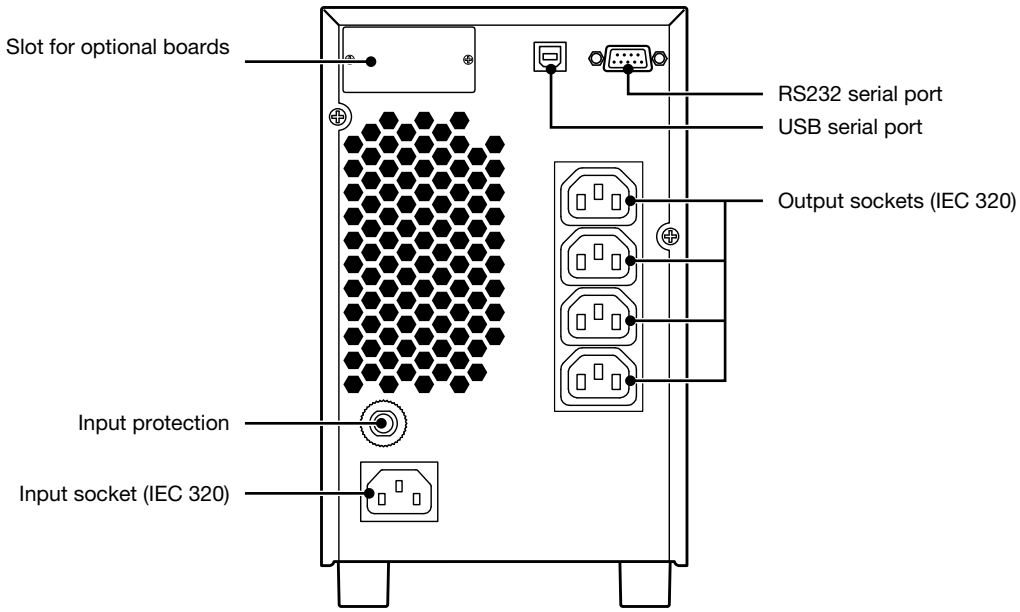
4. OVERVIEW

Connection to the mains power supply and to the load(s) must be made using cables of suitable cross section, in accordance with current standards.

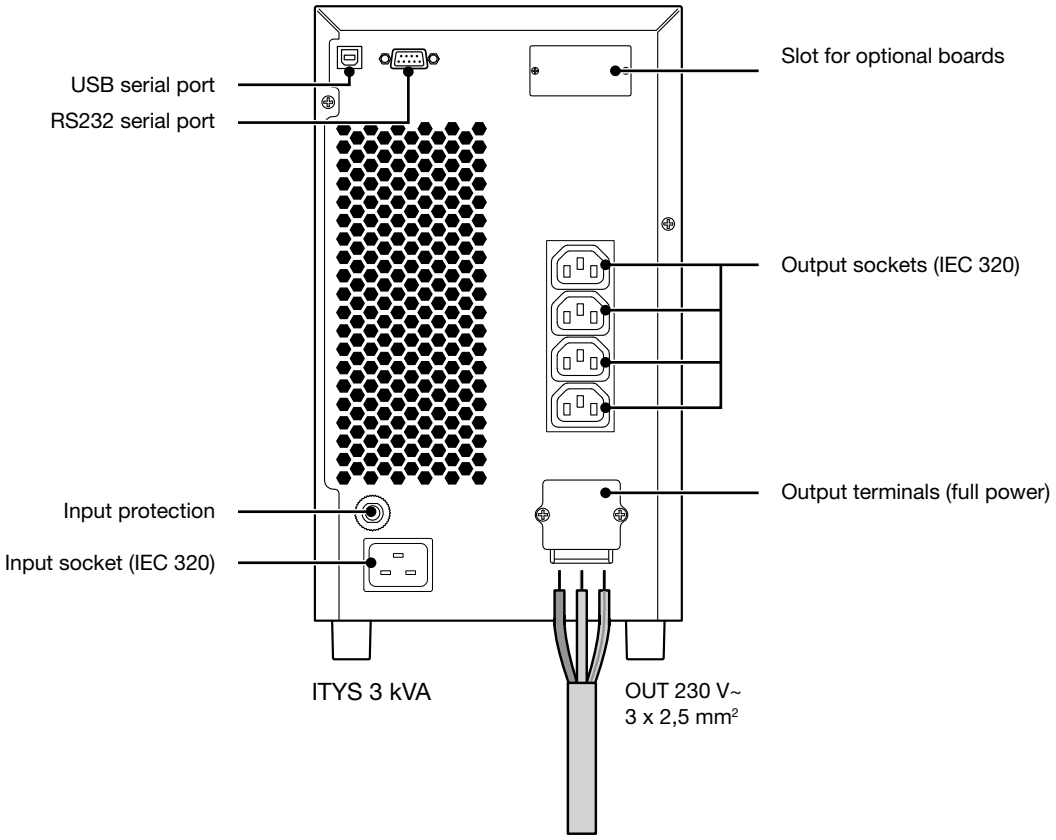
If not already provided, install a PDU panel allowing isolation of the mains supply upstream of the UPS. The panel must be equipped with an automatic switch rated high enough to handle the current draw on full load, and with a residual current device.



ITYS 1 kVA



ITYS 2 kVA


USB serial port
RS232 serial port
Slot for optional boards
Output sockets (IEC 320)
Output terminals (full power)
Input protection
Input socket (IEC 320)
ITYS 3 kVA
OUT 230 V~
3 x 2,5 mm²

5. CONNECTIONS

5.1. EXTERNAL BATTERY CONNECTION

NOTE!
The models are not available for all markets. Contact Socomec for further information.

- Before connecting the battery extension, check that it is fully compatible with the model of UPS in use.
- The use of battery extensions not supplied by the manufacturer is inadvisable.

WARNING!
There is a risk of explosion if battery modules are replaced with others of incorrect type.

- Depleted batteries are considered as toxic waste. When battery replacement becomes necessary, release all depleted batteries only to certified and licensed waste disposal companies. In accordance with local bylaws, it is absolutely forbidden to dispose of batteries together with other industrial waste or household refuse.

WARNING!
It is extremely dangerous to touch any part of the battery storage unit.

When connecting the UPS to the battery extension, use only the cable provided with the equipment.

Any wiring error that results in the polarity of the battery being inverted can cause permanent damage to the equipment.

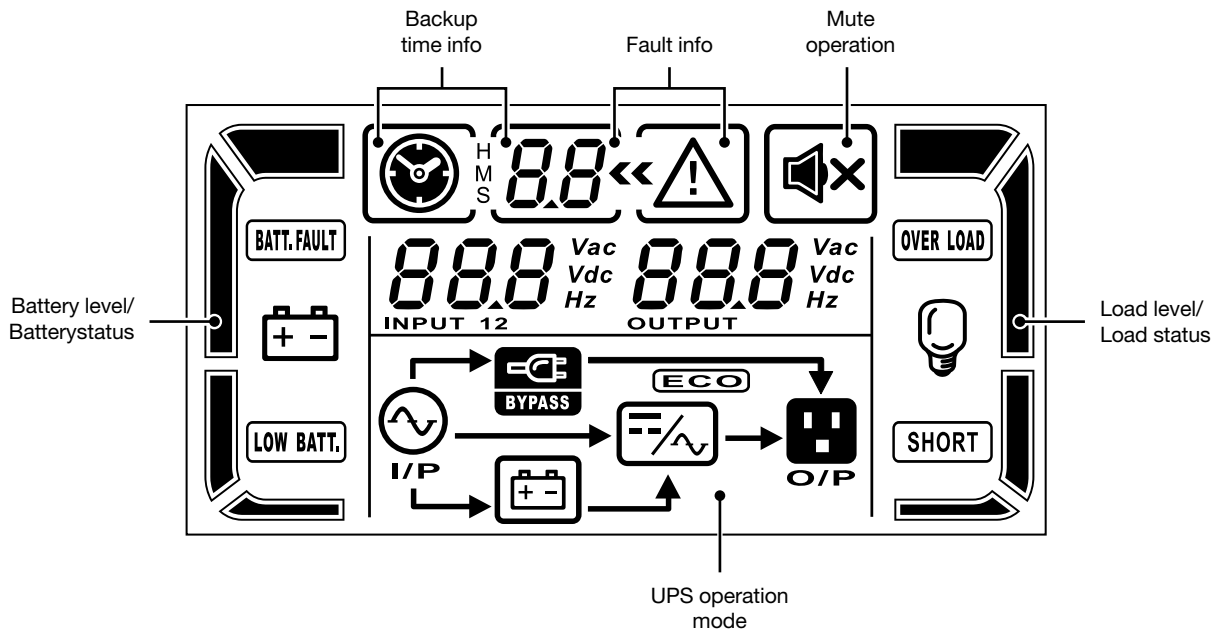
- Connect the External Battery cable on the rear of the UPS.

6. MENU

Control panel		
Button		Description
▲	ON/MUTE	Turn UPS on (press for 2 seconds) Up key (press and hold) Mute the alarm (press for 5 seconds) Switch to UPS self-test mode (press for 5 seconds while in AC, ECO, or converter mode)
▼	SELECT	Setting mode (press for 5 seconds while in standby or bypass mode) Switch LCD message (press for 2 seconds) Down key (press and hold)
↵	OFF/ENTER	Turn UPS off (press for 2 seconds) Confirm selection key (press and hold)

6.1. DISPLAY OVERVIEW

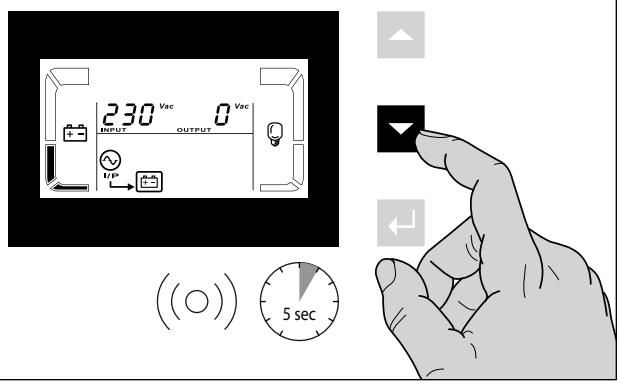
6.1-1



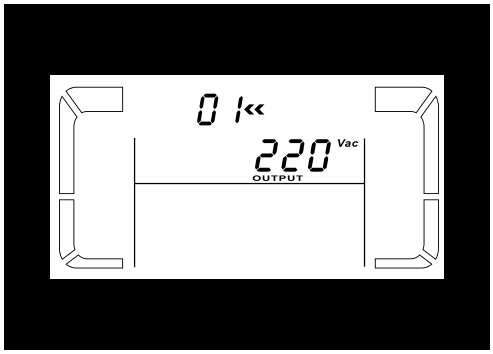
6.2. MENU FUNCTIONS DESCRIPTION

ENTER/ESC THE MENU SETTING

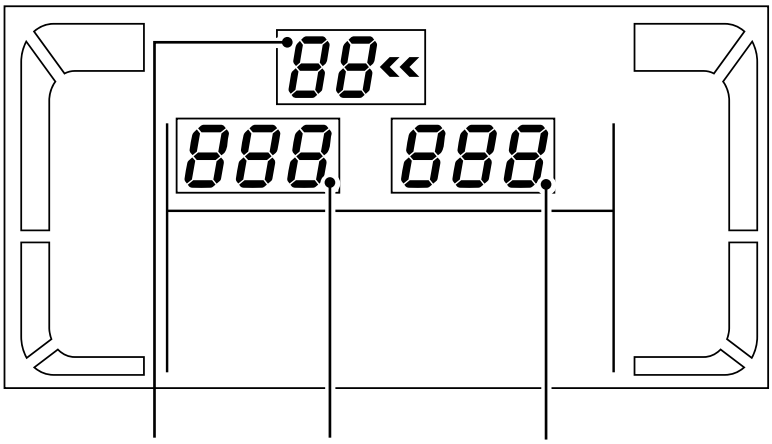
6.2-1



6.2-2



6.2-3



(1) Options/values for each setting

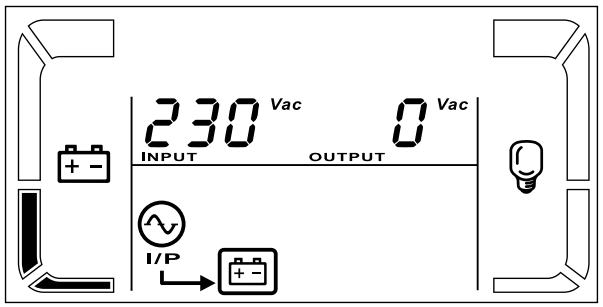
Setting menu			
Setting code		Parameter 1	Parameter 2
01	Output voltage setting		Setting range: 208 to 240 Vac Default setting: 230 Vac
02	Frequency Converter enable/disable	CF ENA (converter mode enable) CF DIS (converter mode disable / default)	
03	Output frequency setting	BAT 50 (output frequency 50 Hz) BAT 60 (output frequency 60 Hz) If converter mode is enabled: CF 50 (output frequency 50 Hz) CF 60 (output frequency 60 Hz)	
04	ECO enable/disable		ENA (ECO mode enable) DIS (ECO mode disable / default)
05	ECO voltage range setting	HLS (High Loss Voltage) Setting range: +7 to +24 V (+12 V default) LLS (Low Loss Voltage) Setting range: -7 to -24 V (-12 V default)	
07	Bypass voltage range setting	HLS (bypass high voltage point)	Setting range: 230 to 264 Vac Default setting: 264 Vac
		LLS (bypass low voltage point)	Setting range: 170 to 220 Vac Default setting: 170 Vac
08	Autonomy limitation setting		Setting range: 0(1) to 999 minutes Default setting: 999 minutes

(1) When 0 is set, backup time is only 10 seconds.

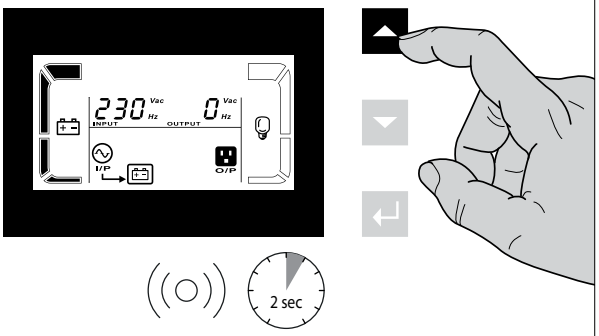
7. OPERATING PROCEDURES

7.1. SWITCHING ON

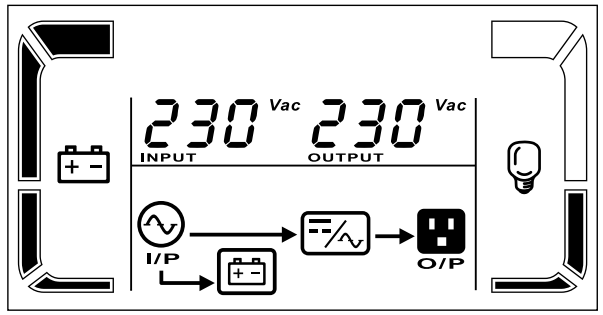
7.1-1



7.1-2

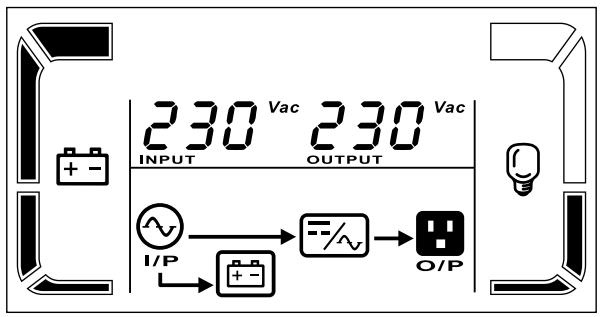


7.1-3

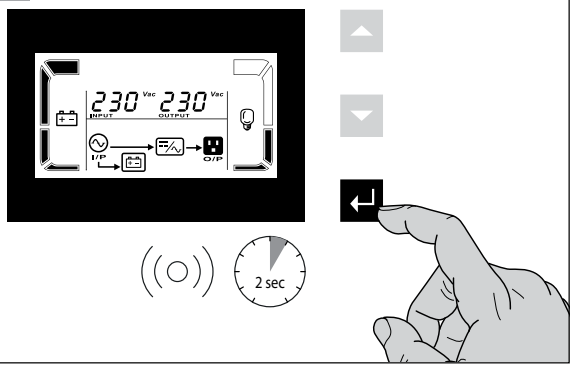


7.2. SWITCHING OFF

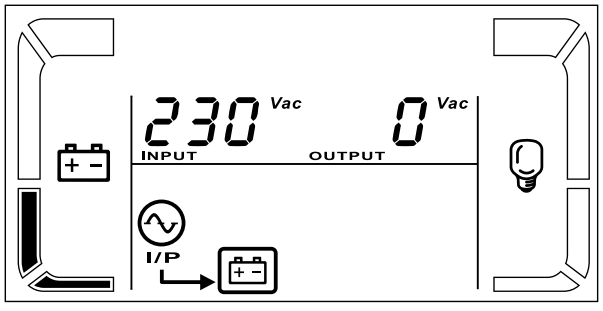
7.2-1



7.2-2



7.2-3



7.2-4

NOTE: wait for the complete shutdown.

ENGLISH

7.3. BATTERY OPERATIONS

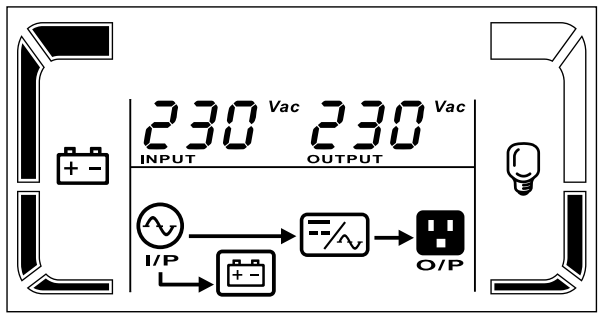
BATTERY RECHARGING

Connect the UPS to the mains voltage for approximately 8 hours to recharge the internal batteries.

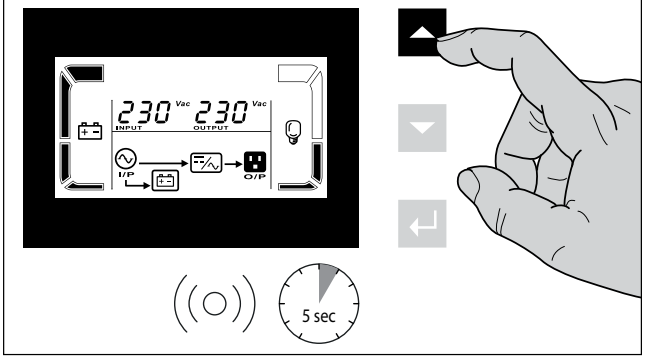
The UPS can be used even with the batteries not fully charged, though if a power cut occurs backup duration will be shorter.

BATTERY TEST

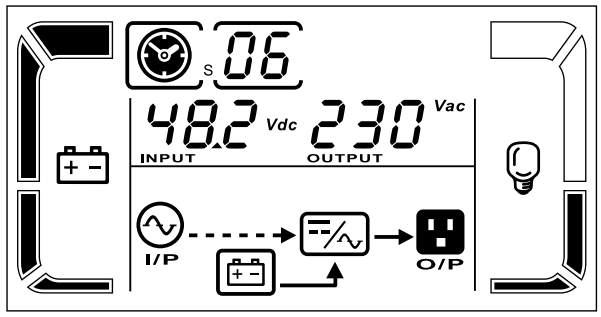
7.3-1



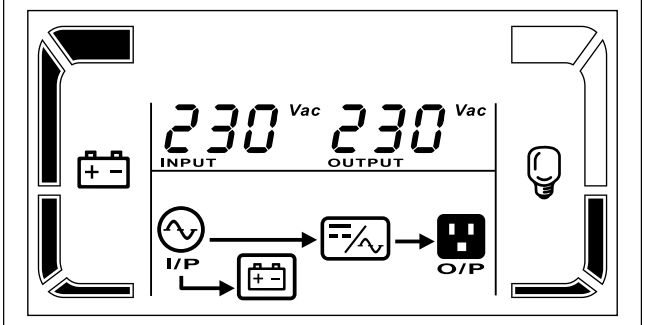
7.3-2



7.3-3

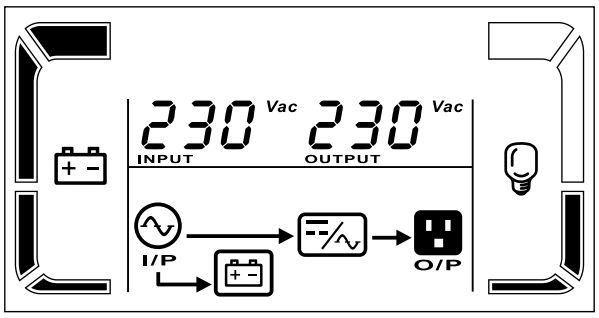


7.3-4

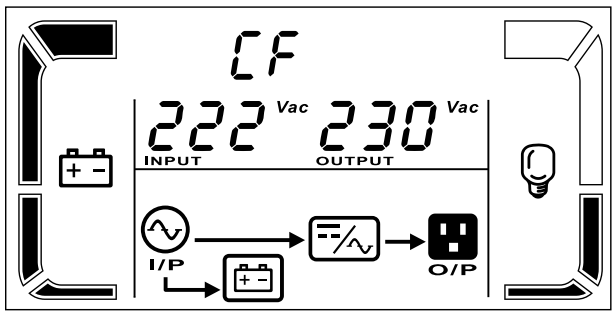


8. OPERATING MODES

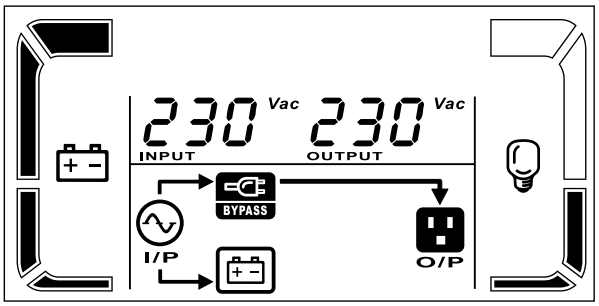
8-1 Normal mode



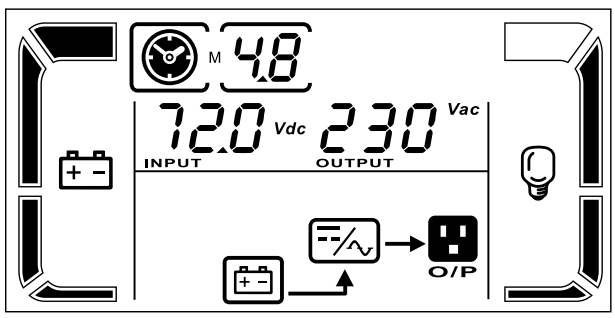
8-2 Converter mode



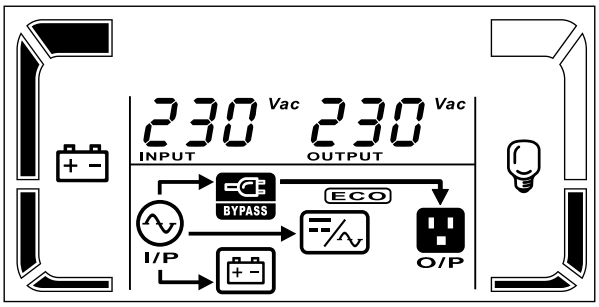
8-3 Bypass mode



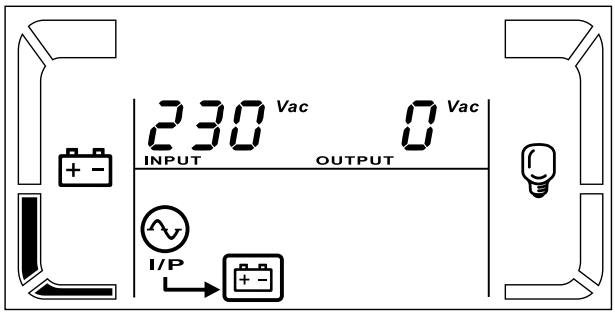
8-4 Battery mode



8-5 ECO mode



8-6 Standby mode



9. STANDARD FEATURES AND OPTIONAL

Communication software and accessories are available for monitoring status,for the purpose of optimising normal operation and ensuring that shutdown at the end of backup time is managed correctly. Applications allow recording of all power outages and any depletion of battery power so as to enable the activation of an automatic procedure for closing programs in an ordered sequence and shutting down the system.

USB INTERFACE

The UPS can communicate with the server directly by way of the USB interface using HID protocol, if available on the computer operating system, without the need to install any additional software. Once connected UPS recognition occurs in the same way as for any other peripheral, and the operating parameters can be managed with the OS service menu. Use the connecting cable provided.

RS232 INTERFACE

This interface is required to run **Local View** ideal UPS monitoring and shutdown point-to-point solution for Windows®, Linux® and Mac OS X® operating systems.

10. WARNING AND TROUBLESHOOTING

The following tables show the description of the LCD display string:

Code	Fault
01	Bus start fail
02	Bus over
03	Bus under
04	Bus unbalance
11	Inverter soft start fail
12	Inverter voltage high
13	Inverter voltage Low
14	Inverter output short
27	Battery voltage too high
28	Battery voltage too low
41	Over temperature
43	Overload
45	Charger fault

Warning	Icon (flashing)	Alarm
Low Battery	⚠ LOW BATT.	Sounding every second
Overload	⚠ OVER LOAD	Sounding twice every second
Battery is not connected	⚠	Sounding every second
Over Charge	⚠	Sounding every second
Over temperature	⚠ tP	Sounding every second
Charger failure	⚠ CH	Sounding every second
Battery fault	⚠ BATT. FAULT	Sounding every 1or 2 second
Out of bypass voltage range	⚠ BYPASS	Sounding every second
Bypass frequency unstable	⚠ FU	Sounding every second
EEPROM error	⚠ EE	Sounding every second

WARNING!
If problems persist or recur frequently after following the procedures indicated in this section contact the SOCOMEC After Sales Service, providing a full description of the problem.

If the UPS system does not operate correctly use the table below to try and resolve the problem.

Problem	Possible cause	Solution
No indication and alarm 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 LCD 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 LCD 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 LCD 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 LCD 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 LCD 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 LCD 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 and 45 on LCD display and alarm is continuously sounding.	A UPS internal fault has occurred. There are two possible results: 1. The load is still supplied, but directly from AC power via bypass. 2. 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.

11. TECHNICAL SPECIFICATION

NOTE!
The models are not available for all markets. Contact Socomec for further information.

Models							
		B(1)	LB(2)	B(1)	LB(2)	B(1)	LB(2)
		1	1	2	2	3	3
Nominal Power	VA/W	1000/800		2000/1600		3000/2400	
Input/Output phases		1/1		1/1		1/1	
Electrical Specifications - Input							
Mains voltage (Vin)	Vin	230 V (1ph) 160 to 300 V up to 110 V @60% load					
Input frequency	Hz	50/60 Hz					
Input power factor		≥ 0.99					
THDI		< 10 % with full load					
Electrical Specifications - Output							
Output Voltage	V	208/220/230/240 V ± 2 % The output power will be derated to 80% using 208 V as output voltage					
Frequency	Hz	50/60 Hz (47÷53 Hz / 57÷63 Hz) (in battery mode 50/60 ± 0.1 Hz)					
Overload – Normal Mode (@ 25°C)	%	Up to 130% for 1 minute					
Crest Factor		3:1					
Voltage distortion	%	< 6 % Non Linear Load; < 3 % Linear Load					
Electrical Specificationsn - Battery							
Type		Sealed lead acid maintenance free-expected life 3/5 years					
Voltage		24	36	48	96	72	96
BUT(3)		> 8 min	-	> 8 min	-	> 8 min	-
Charger		-	up to 6 A	-	up to 6 A	-	up to 6 A
Enviroment							
Operating temperature	°C	0 to 40 °C (15 to 25 °C for maximum battery life)					
Relative humidity	%	0 to 95% without condensation					
Max. altitude	m	1000 m without derating					
Noise level at 1 m	dBA	< 55 dBA					
Standards							
Safety		EN 62040-1, EN 60950-1					
EMC		EN 62040-2					
Product Certification		CE					
Protection Level		IP20					
Mechanical Characteristics with standard batteries							
Dimensions (W x D x H)	mm	145 x 285 x 220		145 x 390 x 240		190 x 425 x 340	145 x 400 x 240
Weight	kg	10	5	17	7	28	8

1. Models with internal battery.

2. Models without battery.

3. Back-up time at 75% of rated VA load pf 0,7.

ITYS-E

from 6 to 10 kVA

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12. ELECTRICAL INSTALLATION

12.1. ELECTRICAL REQUIREMENTS

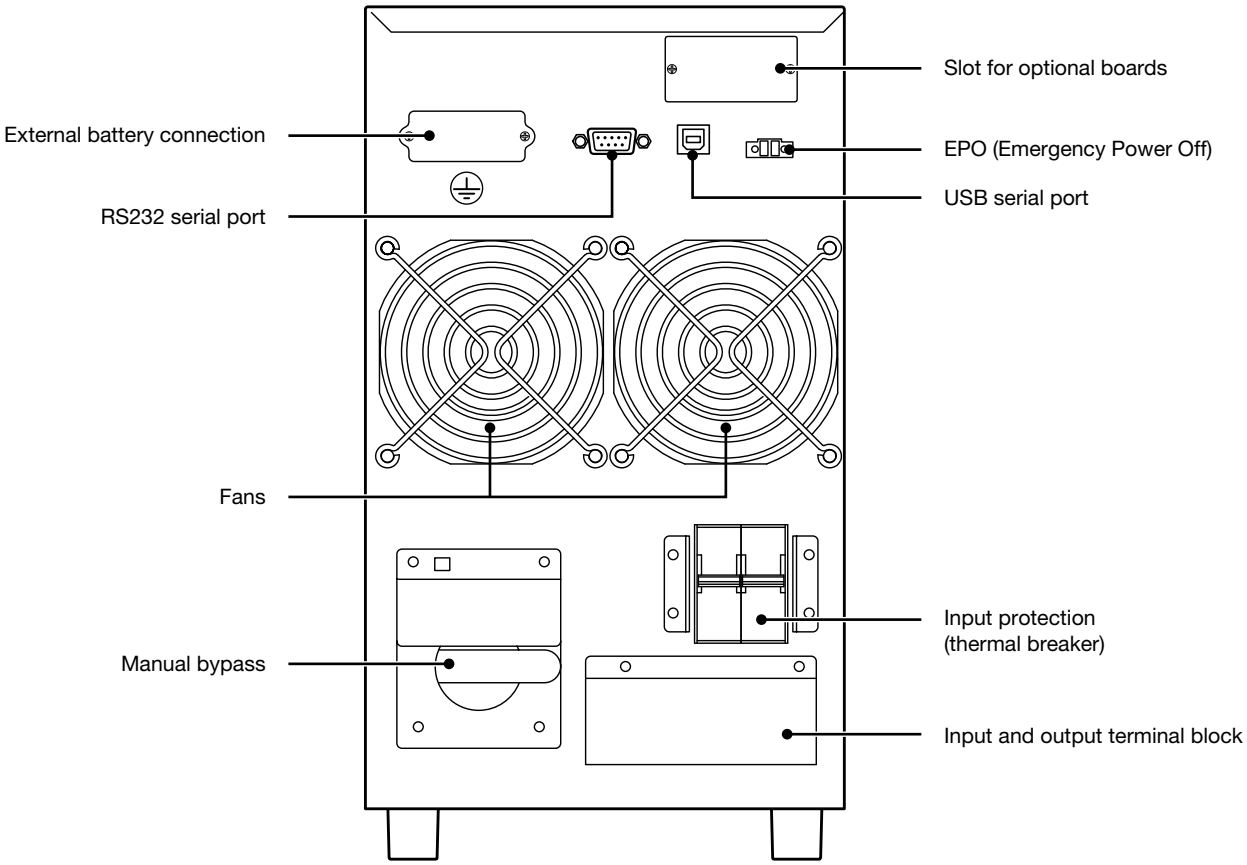
The installation and the system must comply with pertinent national statutory regulations.
The fixed power distribution unit must include protection and isolation for the utility supply and the back-up supply. In the event that a residual current device is installed on the UPS input line (optional), this must be located upstream of the power distribution unit.

Electrical requirements			
UPS	**Thermal-magnetic switch on input**	**Input leakage current**	**Cable section**
6 kVA	50 C	0.1 A type A	6 mm^2
10 kVA	63 C	0.1 A type A	10 mm^2

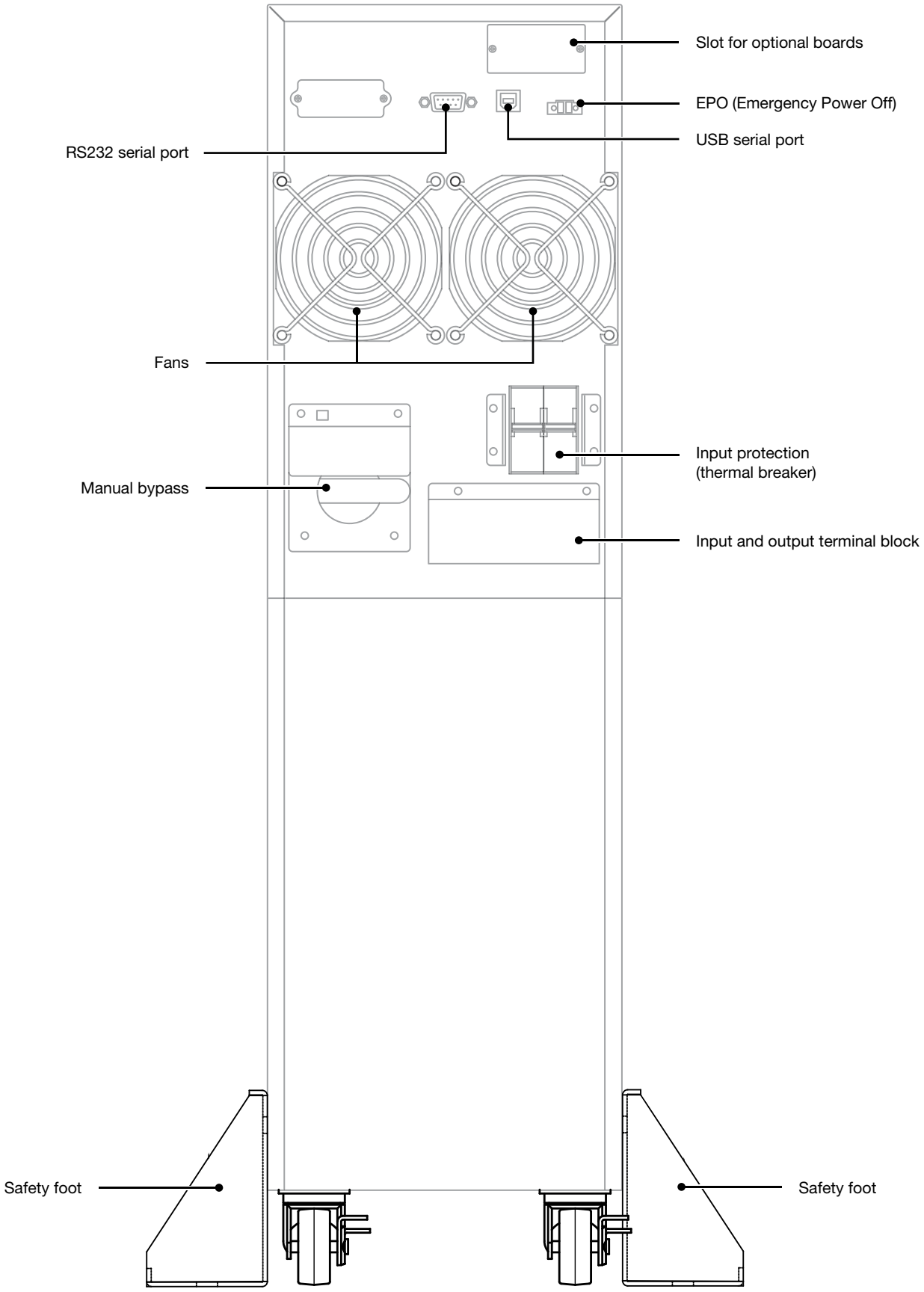
WARNING!
Use type A two-pole selective (S) RCDs. Any leakage currents at the loads will be added to that of the UPS, so that current peaks can occur during transients (loss and restoration of mains supply), although these will be of very short duration. Where loads generate high leakage current, ensure the rating of the RCD is suitably matched. Always conduct a preliminary test for current leakage to earth. When connecting the UPS to the mains and the load, it is strongly recommended that protective devices are installed. The protective devices must use approved components that meet safety standards.

Always refer to local wiring regulations for correct cable sizes and protective device ratings depending on installation environment.

13. OVERVIEW



ITYS 6 to 10 kVA



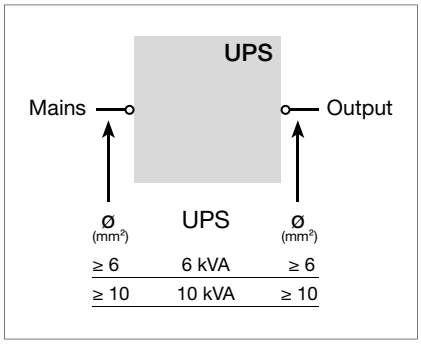
ITYS 6 to 10 kVA with battery cabinet

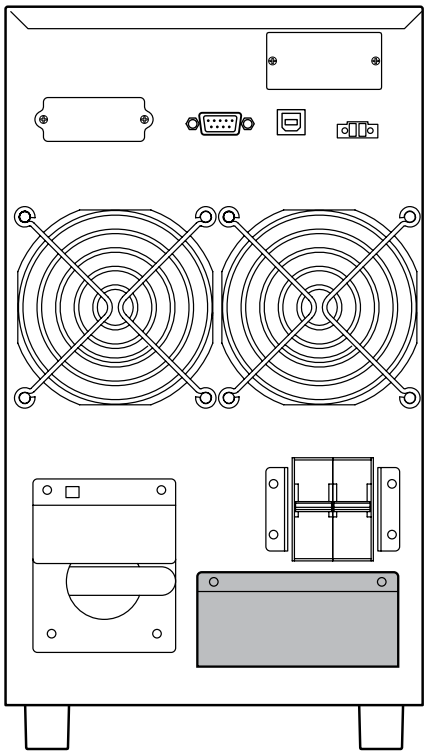
14. CONNECTIONS

The installation and the system must comply with national plant regulations. If a differential switch is installed on the mains power switch (optional), it must be inserted upstream from the distribution panel.

CAUTION!
Use selective type differentials. Any current dispersed by the loads will be summed to that of the UPS. The differential protection must be regulated in cases of loads with high current dispersion.

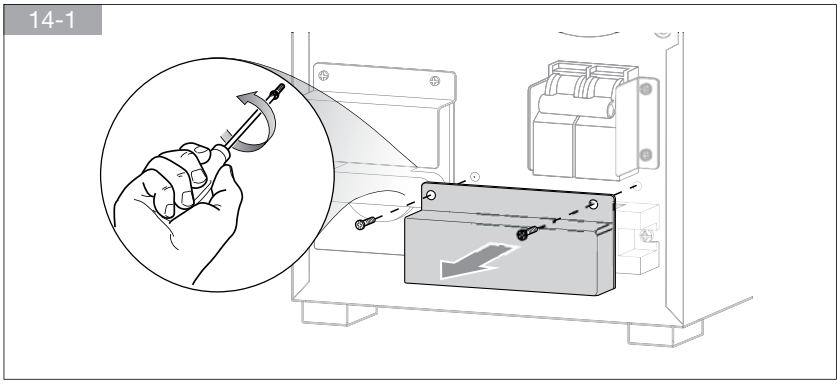
The UPS MUST only be moved by two people at least. They MUST take position at the sides of the UPS with respect to the direction of movement.



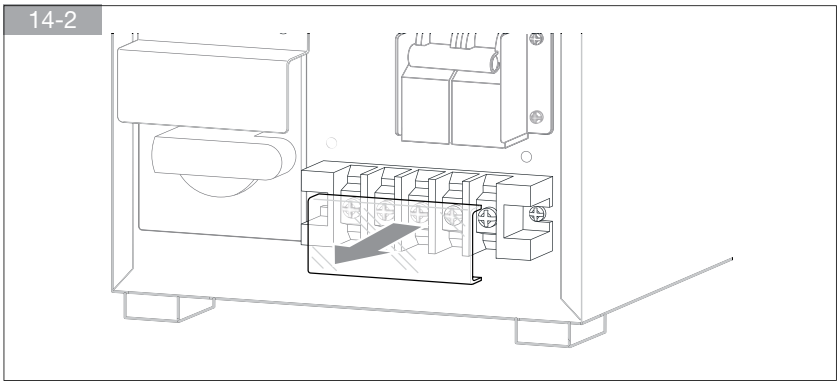


6 to 10 kVA

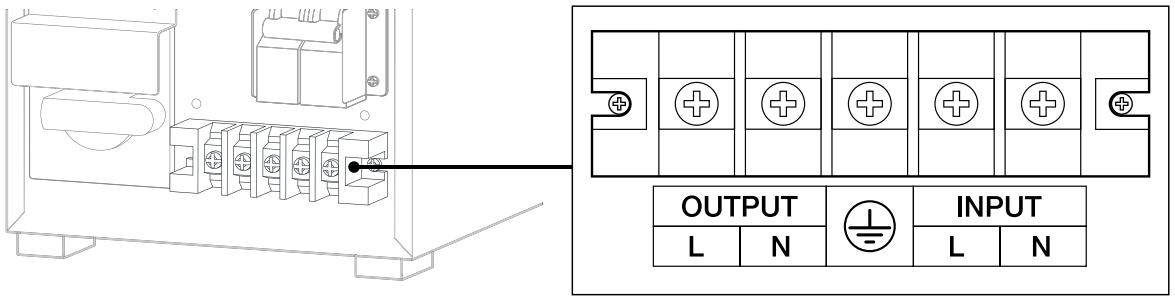
14-1



14-2



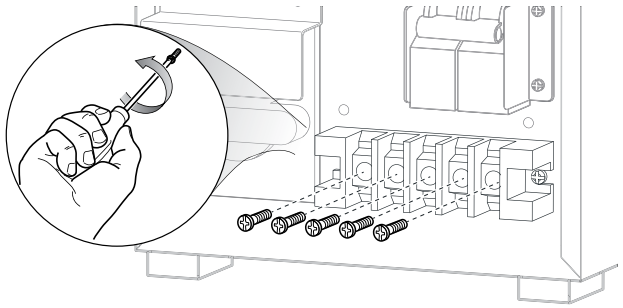
14-3



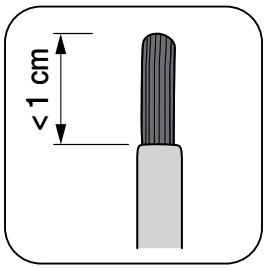
L line
N neutral

ENGLISH

14-4

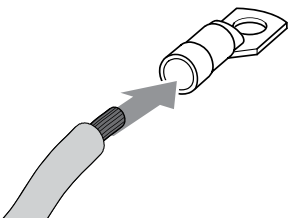


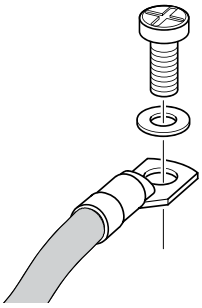
14-5

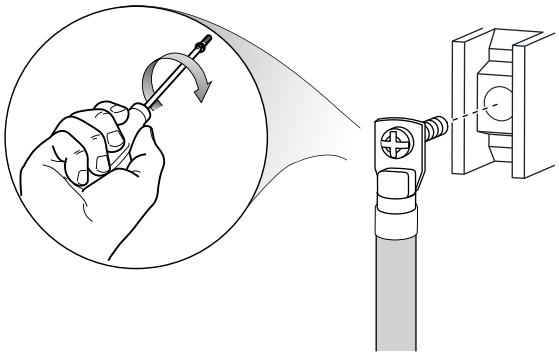


14-6

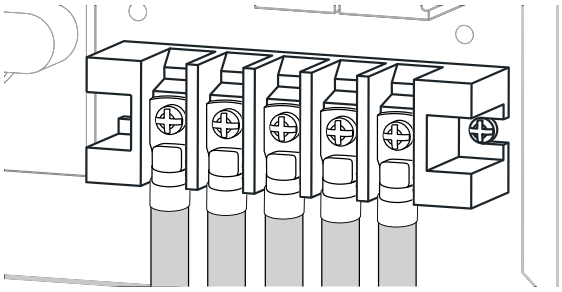
Use isolated terminal only
6 kVA: GK-M5
10 kVA: ANE 2-M5



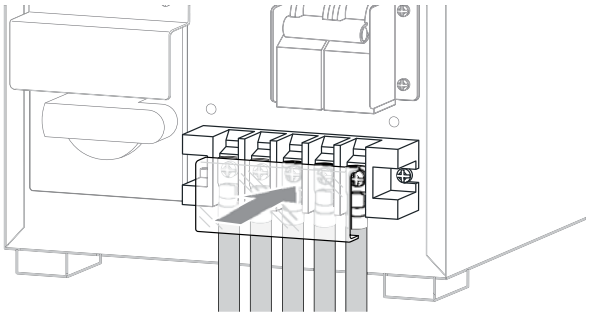




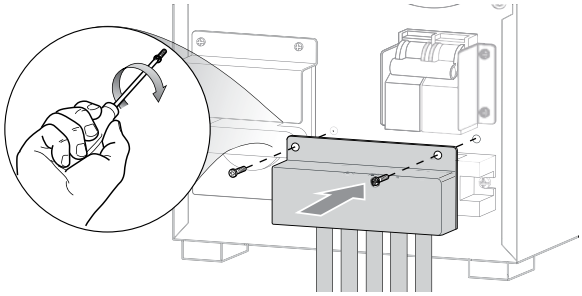
14-7



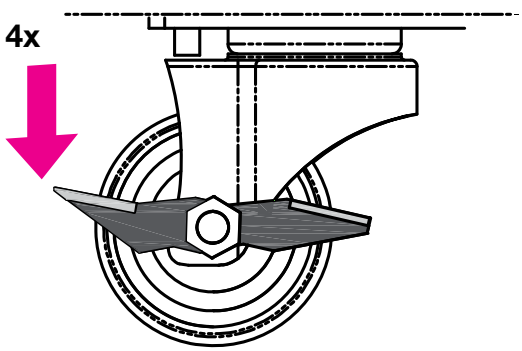
14-8



14-9



14-9



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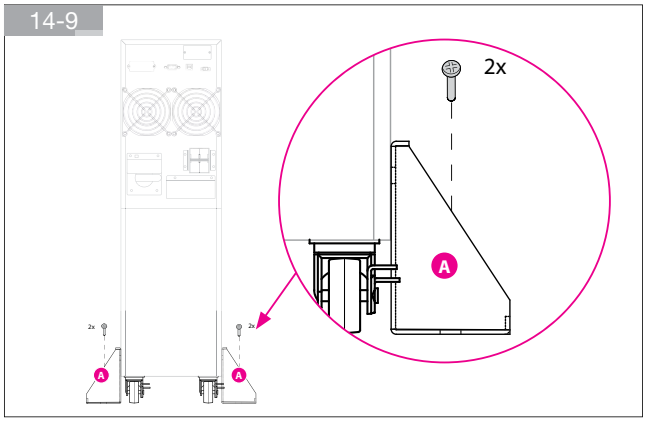
14-9



Secure the UPS with feet A only when it is in position with the cable connected.

14.1. EXTERNAL BATTERY CONNECTION

NOTE!
The models are not available for all markets. Contact Socomec for further information.

- Before connecting the battery extension, check that it is fully compatible with the model of UPS in use.
- The use of battery extensions not supplied by the manufacturer is inadvisable.

WARNING!
There is a risk of explosion if battery modules are replaced with others of incorrect type.

- Depleted batteries are considered as toxic waste. When battery replacement becomes necessary, release all depleted batteries only to certified and licensed waste disposal companies. In accordance with local bylaws, it is absolutely forbidden to dispose of batteries together with other industrial waste or household refuse.

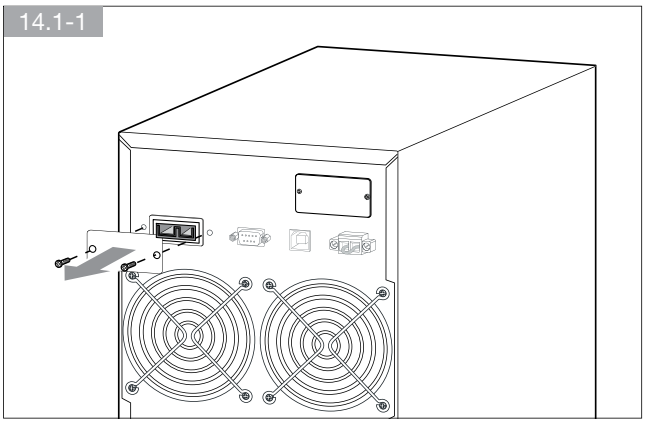
WARNING!
It is extremely dangerous to touch any part of the battery storage unit.

When connecting the UPS to the battery extension, use only the cable provided with the equipment.

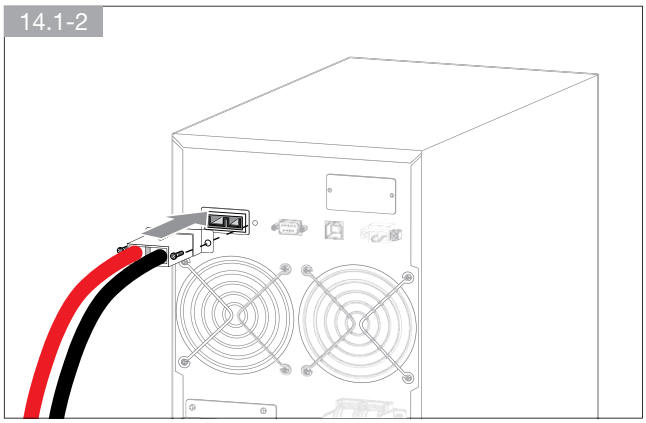
Any wiring error that results in the polarity of the battery being inverted can cause permanent damage to the equipment.

- Connect the battery cabinet to ground **separately from the UPS**.
- Connect the External Battery cable on the rear of the UPS.
- Connect the cables to the battery cabinet terminals, respecting polarity very carefully.

14.1-1



14.1-2

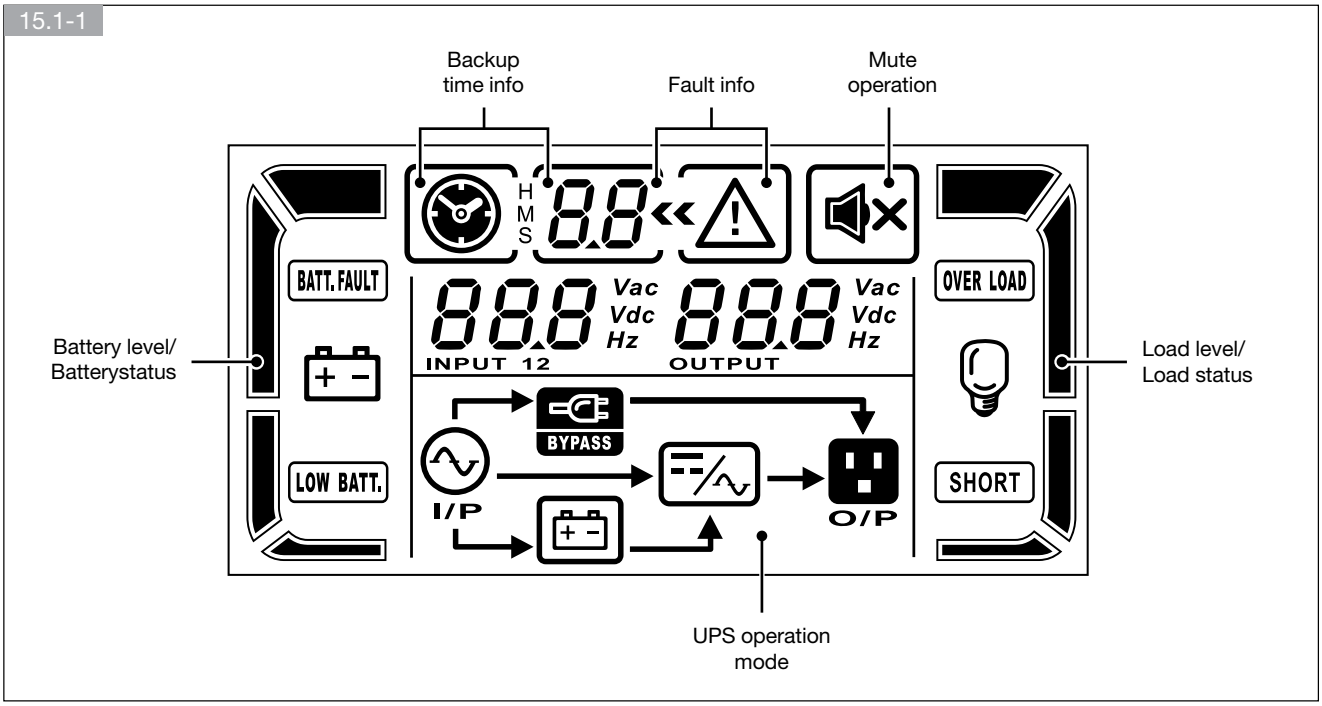


15. MENU

Control panel		
Button		Description
	OFF/ESC	Turn UPS off (press for 1 seconds) Esc key (press and hold)
	TEST/UP	Battery test (press for 1 seconds) UP key (press and hold)
	MUTE/DOWN	Mute the alarm (press for 1 seconds) Down key (press and hold)
	ON/ENTER	Turn UPS on (press for 1 seconds) Enter key (press and hold)

15.1. DISPLAY OVERVIEW

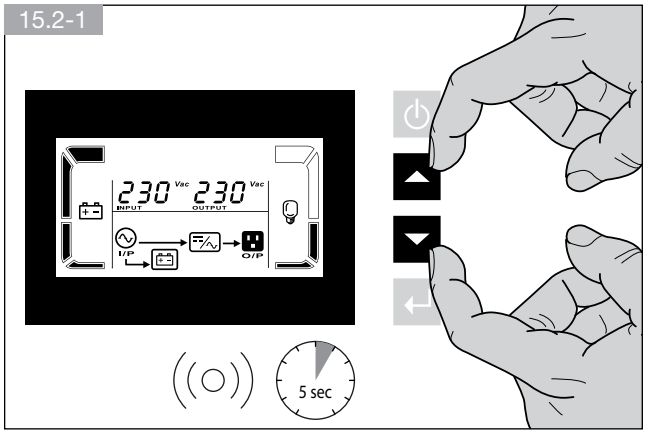
15.1-1



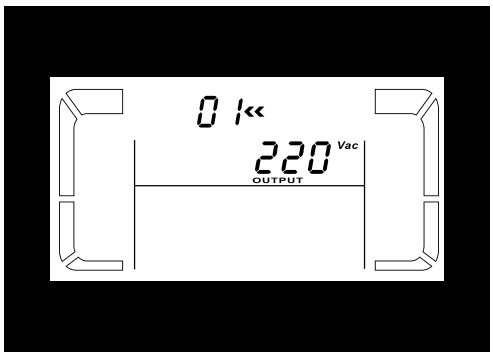
15.2. MENU FUNCTIONS DESCRIPTION

ENTER/ESC THE MENU SETTING

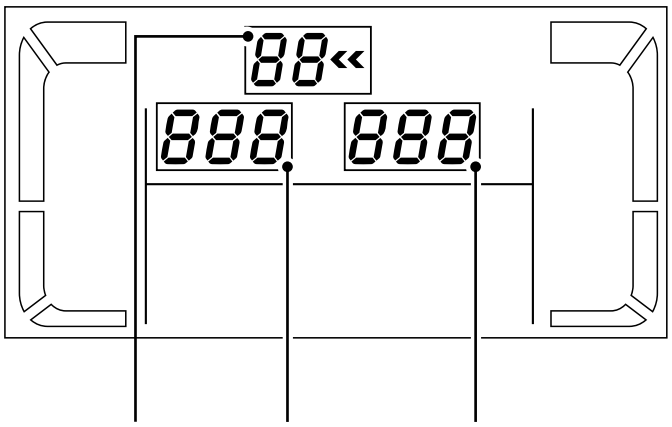
15.2-1



15.2-2



15.2-3



(1) Options/values for each setting

NOTE!
Settings 5-6-7-10-11-12-16-17 are reserved.

Setting availability				
Setting code		Bypass mode	Normal mode	Converter
01	Output voltage	•		
02	Output frequency	•		
03	Voltage range for bypass	•		
04	Frequency range for bypass	•		
08	Bypass mode setting	•	•	
09	Battery maximum discharge time setting	•	•	•
13	Battery voltage Calibration	•	•	•
14	Charger voltage adjustment	•	•	•
15	Inverter voltage Calibration		•	•
18	Charger maximum current setting	•	•	•
19	Battery capacity and groups setting	•	•	•
20	Backup time calibration	•	•	•

Setting menu			
Setting code		Parameter 1	Parameter 2
01	Output voltage		It's possible to choose the following output voltage value: 208-220-230-240 Vac
02	Output frequency	50.0 Hz 60.0 Hz ATO	Set output frequency to converter mode or not. CF: UPS in converter mode. NCF: UPS in normal mode.
03	Voltage range for bypass	Set the acceptable low voltage for bypass. Setting range: 110 to 209 V Default setting: 195 V	Set the acceptable high voltage for bypass. Setting range: 231 to 276 V Default setting: 264 V
04	Frequency range for bypass	Set the acceptable low frequency for bypass. Setting range: 46.0 to 49.0 for 50 Hz system 54.0 to 59.0 for 60 Hz system Default setting: 46.0 for 50 Hz system 56.0 for 60 Hz system	Set the acceptable high voltage for bypass. Setting range: 51.0 to 54.0 for 50 Hz system 61.0 to 64.0 for 60 Hz system Default setting: 54.0 for 50 Hz system 64.0 for 60 Hz system
08	Bypass mode setting	OPN: bypass allowed (depends on Parameter 2 setting) FBD: bypass not allowed	ENA: bypass enabled DIS: bypass disabled (manual bypass not allowed)
09	Battery maximum discharge time setting		Set the maximum discharge time. UPS will shutdown to protect battery after discharge time arrives. Setting range: 000 to 999 min Default setting: 990 min DIS: backup time depend on battery capacity
13	Battery voltage Calibration	Calibrate battery voltage to real figure. Add-Sub	Voltage range: 0 to 5.7 V Default setting: 0 V
14	Charger voltage adjustment	Adjust charger voltage. Add-Sub	Voltage range: 0 to 6.4 V Default setting: 0 V
15	Inverter voltage Calibration	Calibrate inverter voltage. Add-Sub	Voltage range: 0 to 6.4 V Default setting: 0 V
18	Charger maximum current setting		Adjust the macimum charging current.(1) Voltage range (long run model): 0.5 to 6 A Default setting (long run model): 4 A Voltage range (standard model): 0.5 to 2 A Default setting (standard model): 1 A
19	Battery capacity and groups setting	7-9-10-12-17-26-40-65-100 AH. Default setting: 9 AH	Set the battery backup time calculation. Voltage range: 1 to 6 group Default setting: 1 group
20	Backup time calibration		Calibrate the displayed backup time adjusting the multipler factor. Voltage range: 0.5 to 2.0 Default setting: 1.0

(1) When input voltage is below 200 Vac, the UPS will reduche charging current to 4 A automatically.

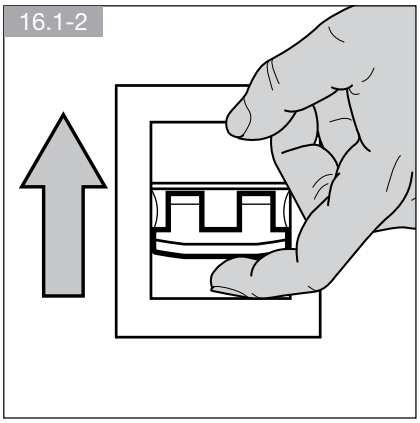
16. OPERATING PROCEDURES

16.1. SWITCHING ON

16.1-1

NOTE: only for LB version:
- Check that batteries are connected.
- Close the battery cabinet switch.

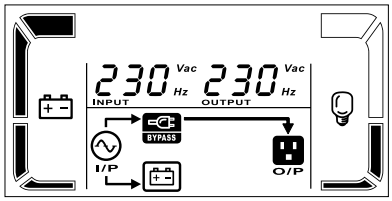
16.1-2



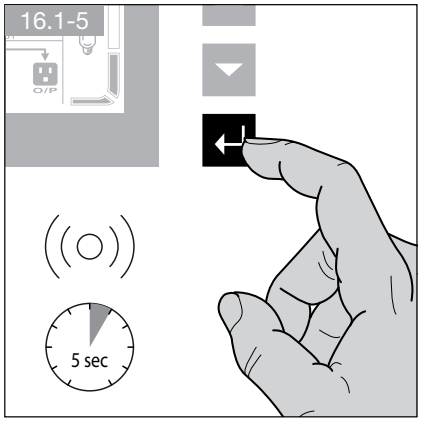
16.1-3

WARNING!
LOAD POWERED!

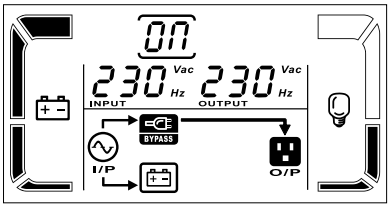
16.1-4



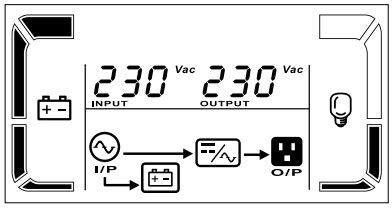
16.1-5



16.1-6

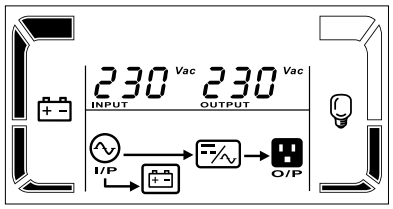


16.1-7

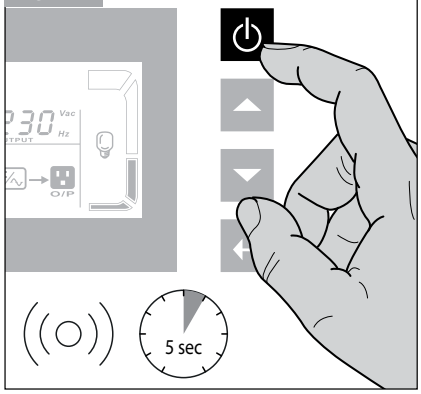


16.2. SWITCHING OFF

16.2-1



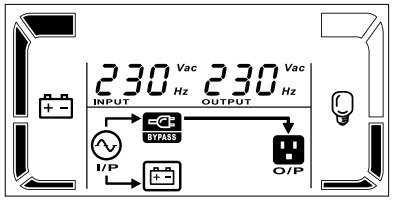
16.2-2



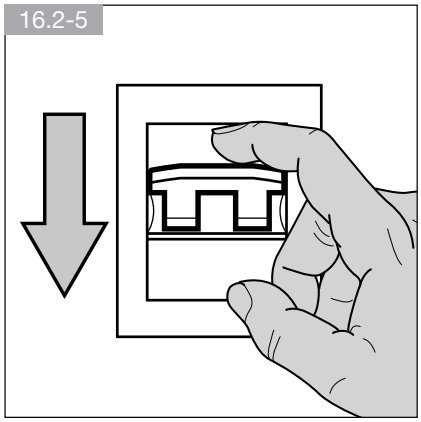
16.2-3

WARNING!
LOAD POWERED!

16.2-4



16.2-5



16.2-6

NOTE: wait for the complete shutdown.

16.2-7

NOTE: only for LB version:
Open the battery cabinet switch.

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16.3. BYPASS OPERATIONS

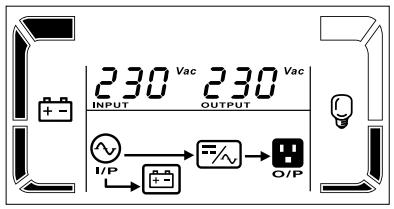
OPERATION FROM NORMAL MODE TO MANUAL BY-PASS

If the maintenance bypass is activated using the appropriate procedure, the load is powered directly from the maintenance by-pass, while the UPS is separated from the power supply.

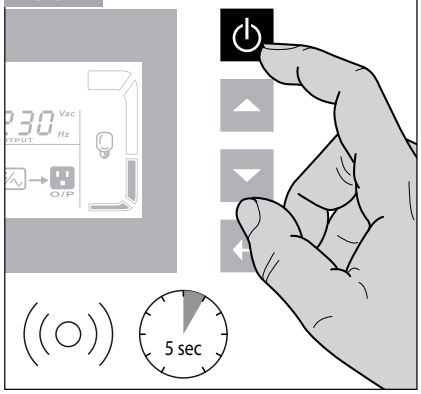
WARNING!
In this mode continuity is not guaranteed in the event of a mains power failure.

This operating mode can be selected for maintenance to be carried out on the system so that the necessary actions can be performed by service personnel without having to disconnect the power supply to the load.

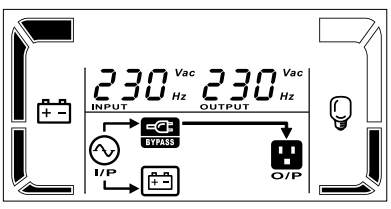
16.3-1



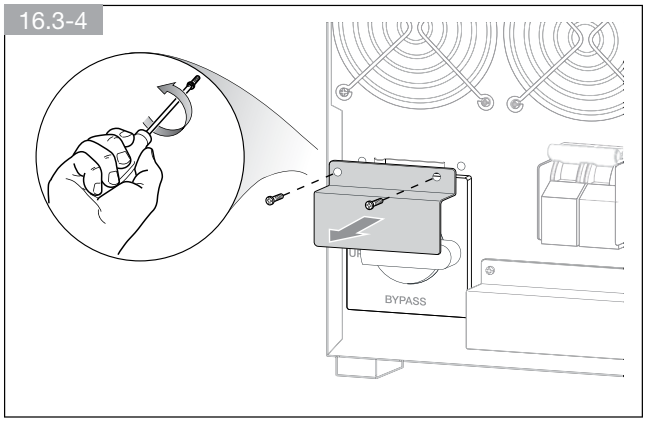
16.3-2



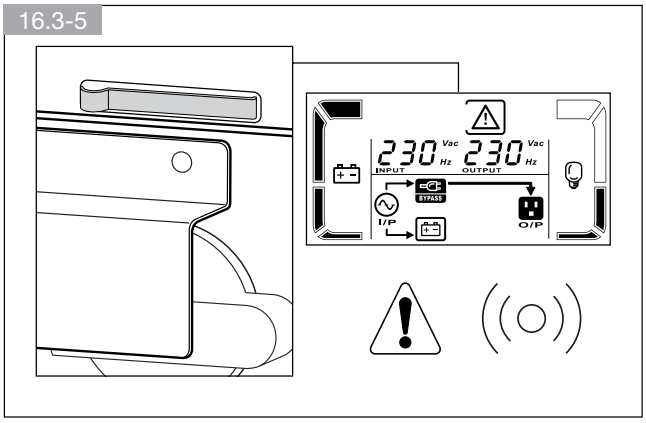
16.3-3



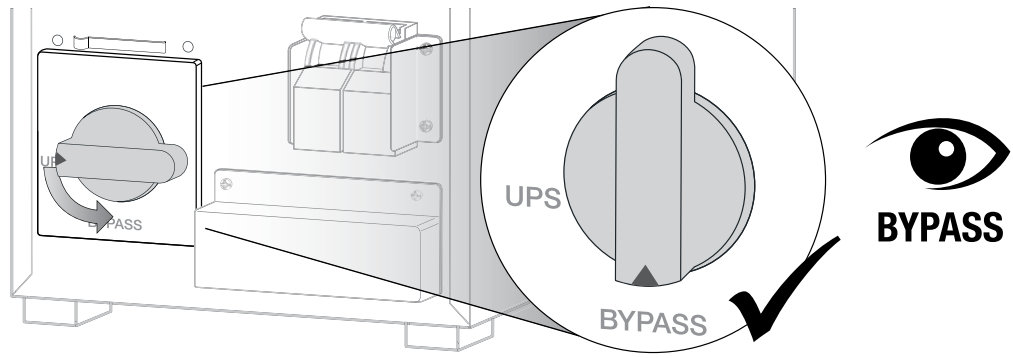
16.3-4



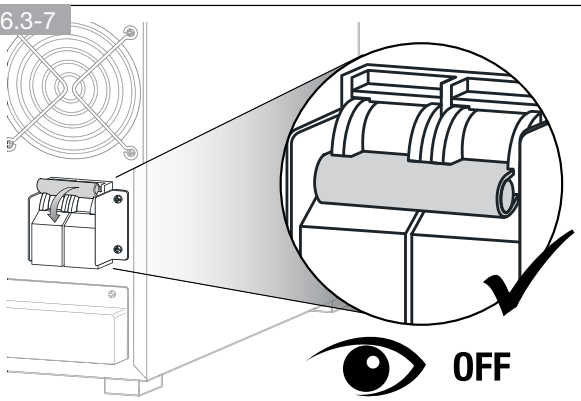
16.3-5



16.3-6



16.3-7



16.3-8


NOTE: wait for the complete shutdown.

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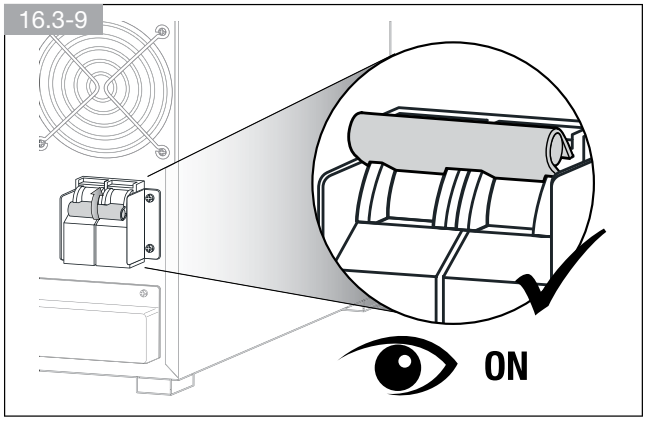
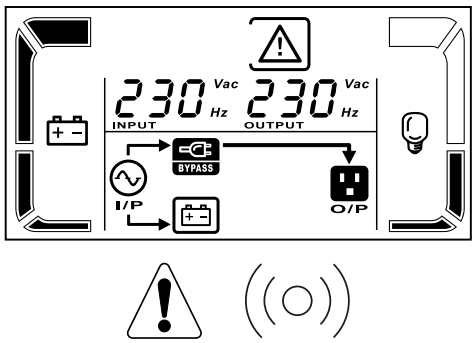
OPERATION FROM MANUAL BYPASS TO NORMAL MODE

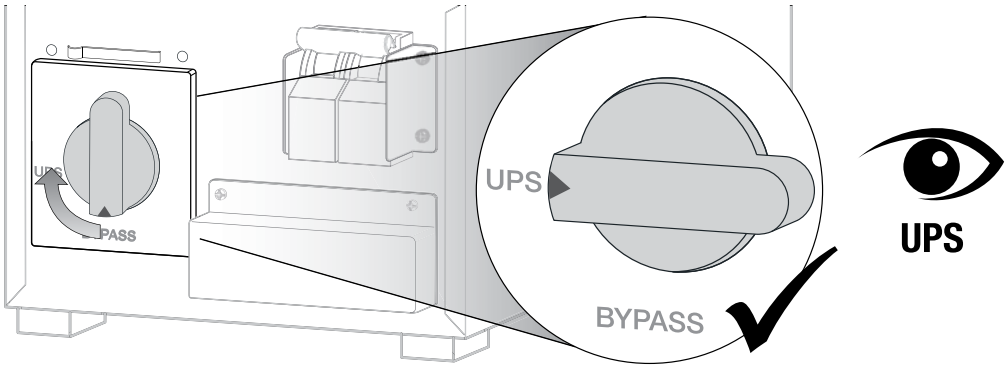
16.3-9



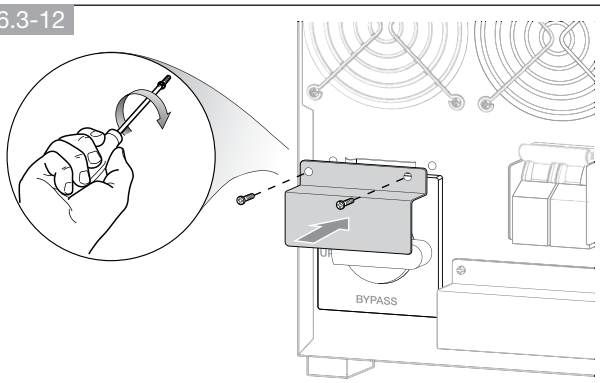
16.3-10



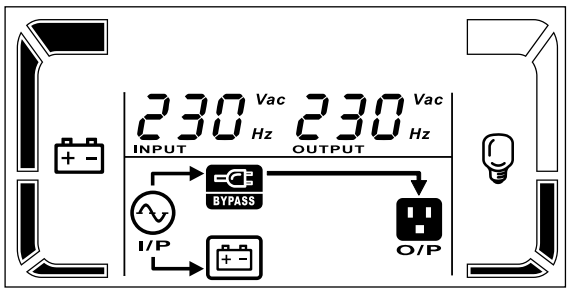
16.3-11



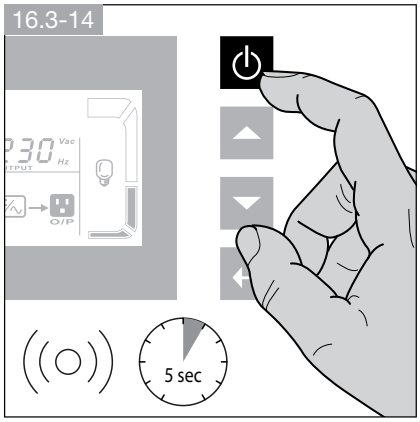
16.3-12



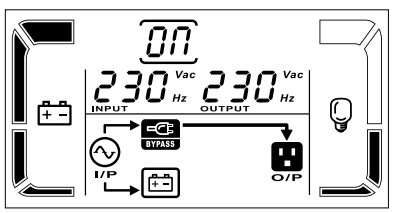
16.3-13



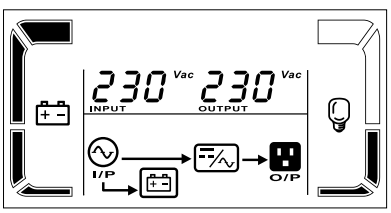
16.3-14



16.3-15



16.3-16



16.4. BATTERY OPERATIONS

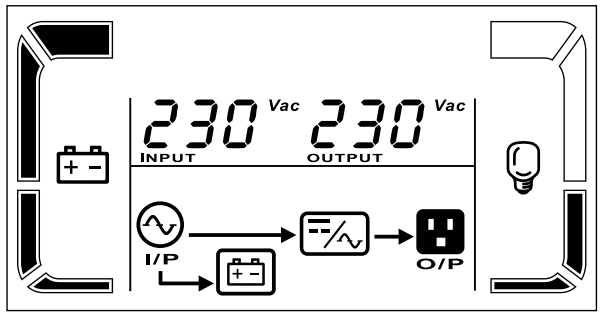
BATTERY RECHARGING

Connect the UPS to the mains voltage for approximately 8 hours to recharge the internal batteries.

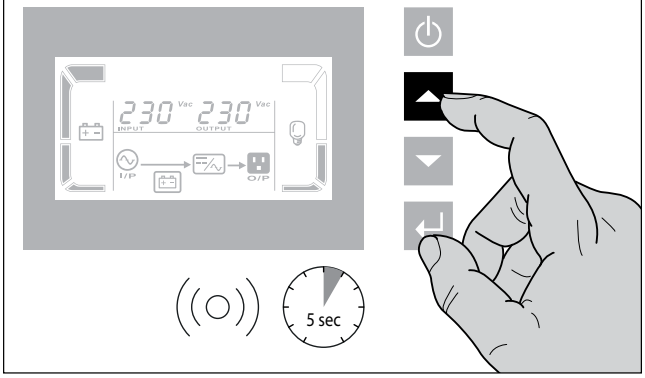
The UPS can be used even with the batteries not fully charged, though if a power cut occurs backup duration will be shorter.

BATTERY TEST

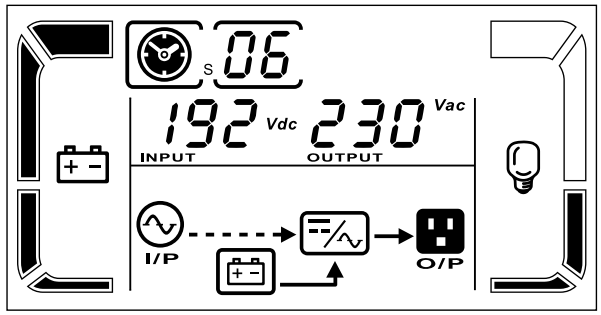
16.4-1

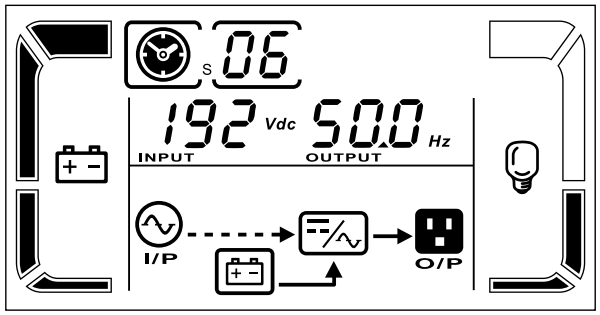


16.4-2

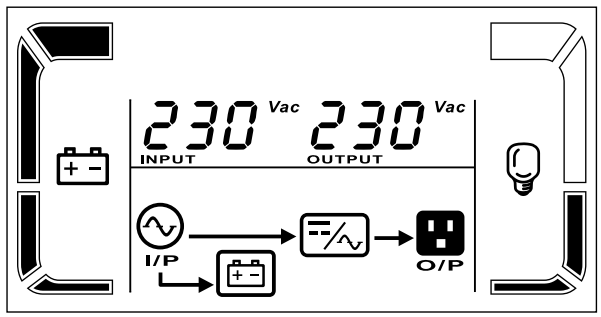


16.4-3



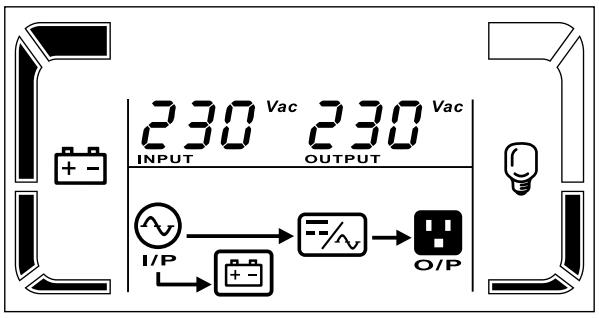


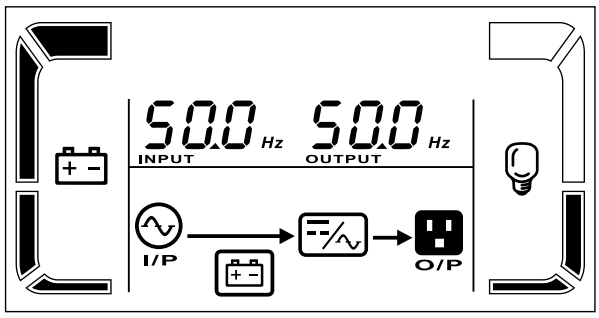
16.4-4



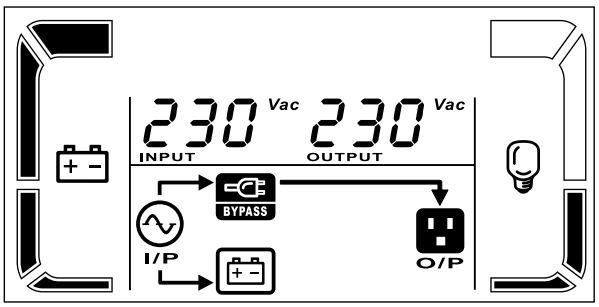
17. OPERATING MODES

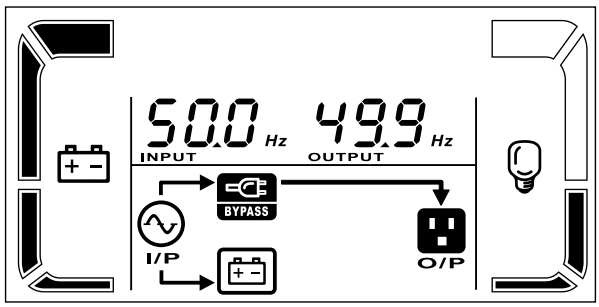
17-1 Normal mode



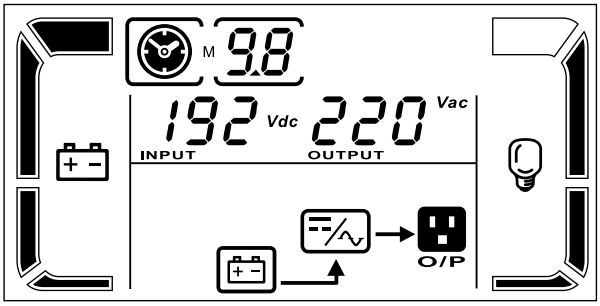


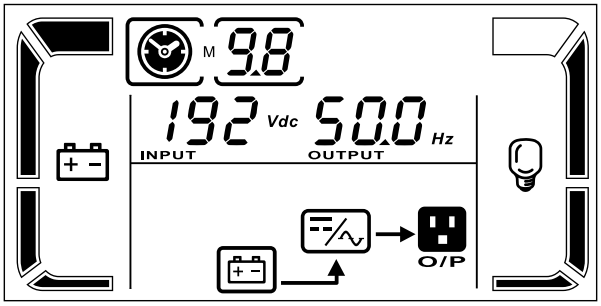
17-2 Bypass mode



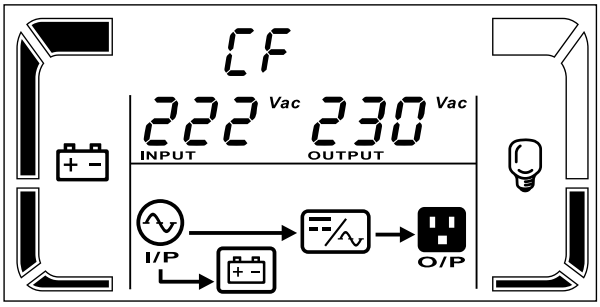


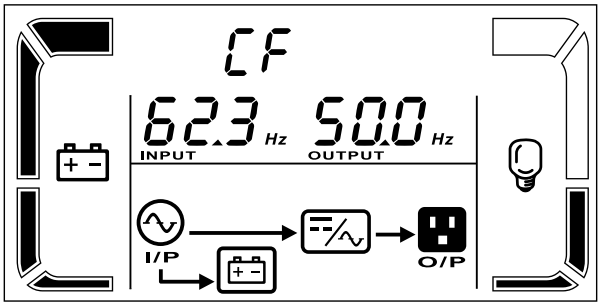
17-3 Battery mode





17-4 Converter mode





18. STANDARD FEATURES AND OPTIONAL

Communication software and accessories are available for monitoring status,for the purpose of optimising normal operation and ensuring that shutdown at the end of backup time is managed correctly. Applications allow recording of all power outages and any depletion of battery power so as to enable the activation of an automatic procedure for closing programs in an ordered sequence and shutting down the system.

USB INTERFACE

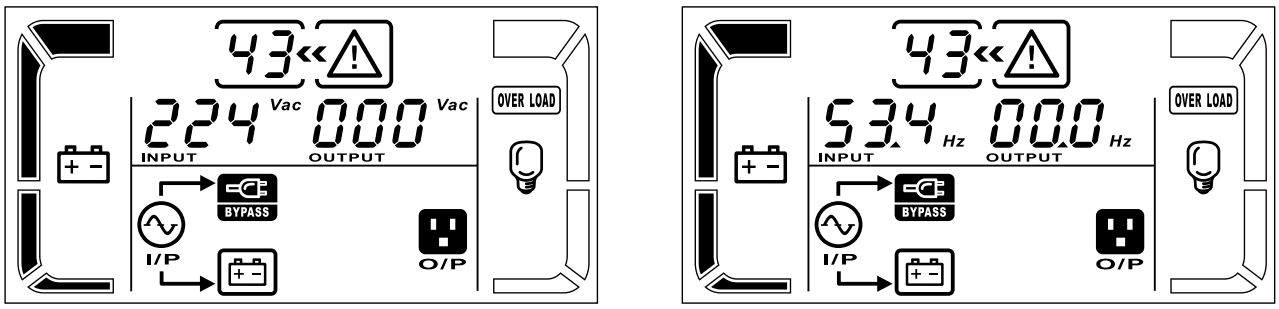
The UPS can communicate with the server directly by way of the USB interface using HID protocol, if available on the computer operating system, without the need to install any additional software. Once connected UPS recognition occurs in the same way as for any other peripheral, and the operating parameters can be managed with the OS service menu. Use the connecting cable provided.

RS232 INTERFACE

This interface is required to run **Local View** ideal UPS monitoring and shutdown point-to-point solution for Windows®, Linux® and Mac OS X® operating systems.

19. WARNING AND TROUBLESHOOTING

19-1 Fault status



The following tables show the description of the LCD display string:

Code	Fault
01	Bus start failure
02	Bus over
03	Bus under
04	Bus unbalance
11	Inverter soft start failure
12	High Inverter voltage
13	Low Inverter voltage
14	Inverter output short circuited
1A	Negative power fault
21	Battery SCR short circuited
24	Inverter relay short circuited
41	Over temperature
42	CPU communication failure
43	Overload

Warning	Icon (flashing)	Alarm
Low Battery	⚠ LOW BATT.	Sounding every second
Overload	⚠ OVER LOAD	Sounding twice every second
Battery is not connected	⚠ BATT. FAULT	Sounding every second
Over Charge	⚠	Sounding every second
EPO enable	⚠ EP	Sounding every second
Fan failure/Over temperature	⚠	Sounding every second
Charger failure	⚠	Sounding every second
I/P fuse broken	⚠	Sounding every second
Overload 3 times in 30min(1) or Cover of manual bypass switch is open	⚠	Sounding every second

(1) WARNING! In this mode continuity is not guaranteed in the event of a mains power failure. Reduce the load and apply the switching ON procedure, to restore the UPS functionality.

ENGLISH

Please have the following information at hand before calling the After-Sales Service Department:

- Model number, serial number
- Date on which the problem occurred
- LCD display status, Buzzer alarm status
- Utility power condition, load type and capacity, ambient temperature, ventilation conditions
- The information (battery capacity, quantity) of external battery pack if the UPS is an S model
- Other information for a complete description of the problem

IMPORTANT!
If problems persist or recur frequently after following the instructions in this chapter call the technical service centre providing a full description of the problem.

WARNING!
If problems persist or recur frequently after following the procedures indicated in this section contact the SOCOMEC After Sales Service, providing a full description of the problem.

If the UPS system does not operate correctly use the table below to try and resolve the problem.

Problem	Possible cause	Solution
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 cable firmly connected to the mains.
The icon ⚠ and the warning code EP flash on LCD display and alarm beeps every second.	EPO function is enabled.	Set the circuit in closed position to disable EPO function.
The icon ⚠ and BATT. FAULT flash on LCD display and alarm beeps every second.	The external or internal battery is incorrectly connected.	Check if all batteries are connected well.
The icon ⚠ and OVER LOAD flash on LCD display and alarm beeps 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. The icon OVER LOAD lights on LCD display and alarm beeps continuously.	UPS is overload too long and becomes fault. Then UPS shut down automatically.	Remove excess loads from UPS output and restart it.
Fault code is shown as 14, the icon SHORT lights on LCD display, and alarm beeps continuously.	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.
Other fault codes are shown on LCD display and alarm beeps continuously.	A UPS internal fault has occurred.	Contact your dealer
Battery backup time is shorter than nominal value	Batteries are not fully charged	Charge the batteries at least 7 hours and then check capacity. If the problem still persists, consult your dealer.
	Batteries defect	Contact your dealer to replace the battery.
The icon ⚠ and flash on LCD display and alarm beeps every second.	Fan is locked or not working; or the UPS temperature is too high.	Check fans and notify dealer.

20. TECHNICAL SPECIFICATION

NOTE!
The models are not available for all markets. Contact Socomec for further information.

Models					
		B(1)	LB(2)	B(1)	LB(2)
		6	6	10	10
Nominal Power	VA/W	6000/4800		10000/8000	
Input/Output phases		1/1		1/1	
Electrical Specifications - Input					
Mains voltage (Vin)	Vin	230 V (1ph) 160 to 300 V up to 110 V @ 60% load			
Input frequency	Hz	50/60			
Input power factor		0.99			
THDI		< 5 % with full load			
Electrical Specifications - Output					
Output Voltage	V	208/220/230/240 V The output power will be derated to 60% using converter mode or to 90% using 208 V as output voltage			
Frequency	Hz	50/60 Hz (46 to 54 Hz / 56 to 64 Hz) (in battery mode 50/60 ± 0.1 Hz)			
Overload – Normal Mode (@ 25°C)	kW	Up to 130% for 1 minute			
Crest Factor		3:1			
Voltage distortion		< 5 % Non Linear Load; < 2 % Linear Load			
Electrical Specificationsn - Battery					
Type		sealed lead-acid maintenance free - expected life 3/5 years			
Voltage		192 V		240 V	
BUT(3)		> 9 min	-	> 9 min	-
Charger		-	up to 6 A	-	up to 6 A
Enviroment					
Operating temperature	°C	0 to 40 °C (15 to 25 °C for maximum battery life)			
Relative humidity	%	0 to 95% without condensation			
Max. altitude	m	< 1000 m without derating			
Noise level at 1 m	dBA	< 59 dBA			
Standards					
Safety		EN 62040-1, EN 60950-1			
EMC(4)		EN 62040-2 C2			
Product Certification		CE			
Protection Level		IP20			
Mechanical Characteristics with standard batteries					
Dimensions (W x D x H)	mm	190 x 370 x 640	190 x 370 x 320	190 x 450 x 640	190 x 450 x 320
Weight	kg	60	12	75	16

1. Models with internal battery

2. Models without battery

3. Back-up time at 75% of rated VA load pf 0,7.

4. With output cables measuring less than 10 metres

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