ITYS 10-20 kVA

- 安装及操作手册 CN
- Installations- und bedienungsanleitung DE
 - Installation and operating manual
 - Manual de instalación y uso ES
 - Manuel d'installation et d'utilisation FR
 - Manuale di installazione e uso



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 valid throughout national territory. If the UPS is exported abroad, 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 number). 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 the Court of Vicenza.

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This document is not a specification. SOCOMEC reserves the right to make any changes to information without prior notice.



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1. SAFETY STANDARDS

• This document describes the procedures for the installation, maintenance, technical specifications and safe use of this SOCOMEC unit. For further information visit the SOCOMEC website www.socomec.com.



Any work carried out on the equipment must be performed by qualified technicians authorised by SOCOMEC.



Failure to observe safety standards could result in fatal accidents or serious injury, and damage equipment or the environment.



Read the user manual before performing any operations. Keep this manual safe for future reference.



Connect the PE ground conductor first before making any other connections.



WARNING!

RISK OF ELECTRIC SHOCK!

After the unit is disconnected from the mains power supply components inside the UPS are still connected to the battery, which are potentially dangerous.

- Do not expose the unit to rain or liquids in general. Do not insert foreign bodies.
- Do not block ventilation.
- Do not connect any kind of equipment to the UPS output which may overload it.
- Place cables in such a way that no one can step on or trip over them.
- The UPS must be connected to earth and the battery cabinet must be connected to the same earth as the UPS.
- An integral single emergency switching device which prevents further supply to the load by the UPS in any mode of operation should be provided in the building wiring installation.
- An appropriate disconnection device such as short-circuit backup protection should be provided in the building wiring installation.
- For three-phase equipment connection to an IT power system, a four-pole device which disconnects all phase conductors and the neutral conductor should be provided in the building wiring installation.
- High electrical voltages are generated inside the power system, which is dangerous for maintenance personnel not suitably qualified or trained for such work.
- Do not interfere with the disconnection switches on the unit while the UPS is operating.
- Before carring out any operations ensure the UPS has been shut down completely and disconnected.



There is no insulation between the batteries and the mains supply therefore it is extremely dangerous to touch any part of the accumulator battery.



Do not interfere with the disconnecting switches on the unit while the UPS is operating on battery power.

- Batteries must only be replaced with batteries recommended or sold by the manufacturer. Batteries must only be replaced by qualified technicians.
- The batteries are toxic waste. If they are replaced send used batteries to local specialist disposal companies only.
- If the unit needs to be disposed of it should only be entrusted to a specialist waste disposal company.

The product you have chosen is designed for commercial and industrial use only.

Products may have to be adapted 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 harm to people or property.

For such use it is advisable to contact SOCOMEC beforehand to confirm the ability of these products to meet the required level of safety, performance, reliability and compliance with applicable laws, regulations and specifications.



1.1. DESCRIPTION OF SYMBOLS



Accumulators are heavy! Use suitable transport and lifting equipment to work safely.



Wear safety goggles and suitable clothing.



Connecting accumulators in series creates hazardous voltages.



Read the user instructions carefully. Read the user manual before performing any operations.



The electrolyte corrodes metals and burns the skin and all parts of the human body.



Wear protective gloves and clothing.



WARNING!

Risk of explosion! Avoid short circuits! Never place tools or metal objects on the accumulators.



Ground terminal.



In the event of contact with the eyes, wash immediately with plenty water and call a doctor. Call a doctor immediately in the event of accidents or illness.



The unit MUST be handled by at least two people.

Pb

Batteries and related parts contain lead. Lead is dangerous to health if ingested. Wash hands after handling!

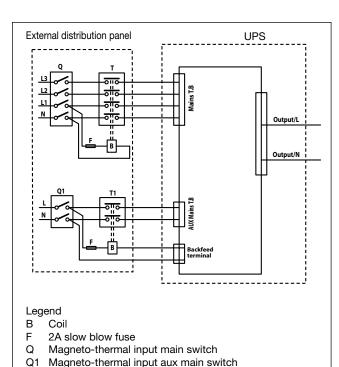
1.2. BACKFEED PROTECTION

If the UPS does not have an automatic protection device against current backfeed, the operator/installer must:

- attach warning labels to all the mains power disconnection 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.

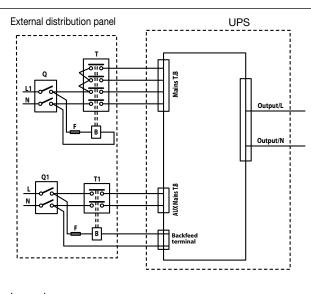
ISOLATE THE UPS BEFORE OPERATING ON THIS CIRCUIT

- install an external isolating device as shown in the figure.



30 A AC1 remote contactor 4-pole; 230 V coil

90 A AC1 remote contactor 2-pole; 230 V coil



Legend

- В Со
- F 2A slow blow fuse
- Q Magneto-thermal input main switchQ1 Magneto-thermal input aux main switch
- 30 Å AC1 remote contactor 4-pole; 230 V coil
- T1 90 A AC1 remote contactor 2-pole; 230 V coil



2. INSTALLATION

2.1. SHIPPING AND MOVING

- The packaging guarantees the stability of the unit during shipping and physical transfer.
- The unit must remain in a vertical position during all shipping and moving operations.
- Ensure that the floor is strong enough to support the weight of the unit.
- Carry the packaged unit as close as possible to the installation site.



WARNING! HEAVY WEIGHT!

Move the unit using a forklift truck taking the utmost care at all times.



The unit MUST be handled by at least two people.



Do not move the unit by putting pressure on the front door.



When moving the unit on even slightly sloping surfaces, use the locking equipment and braking devices to ensure that the unit does not fall over.



WARNING!

RISK OF ELECTRIC SHOCK!

When the equipment is transferred from a cold to a warm place wait approx. two hours after unpacking before Installing the unit and putting it into operation.



CAUTION IF DAMAGED.

If the unit is found to be damaged externally or internally, or any of the accessories are damaged or missing, contact SOCOMEC.



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

2.2. ENVIRONMENTAL REQUIREMENTS

Install the unit in a technical room to which only skilled technicians have access. The room must be:

- of a suitable size;
- clean and dry;
- free from inflammable items;
- maintained at a temperature between 0 and 40 °C.

The unit is not designed for outdoor use. Do not expose the unit to direct sunlight.

See TECHNICAL SPECIFICATIONS.

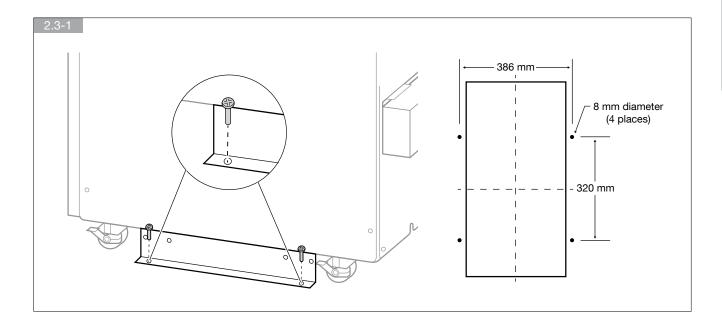


2.3. NOTES FOR INSTALLATION



Ensure the air vents on the front and rear of the UPS are not blocked. Allow at least 0.5 m of space on each side.

Once the installation is completed, the side mounting brackets (used in shipping) shall be fixed back to ensure the stability of the UPS enclosure. If this is not possible, additional stability can be added by anchoring the assembly brackets to the floor with M8 bolts.





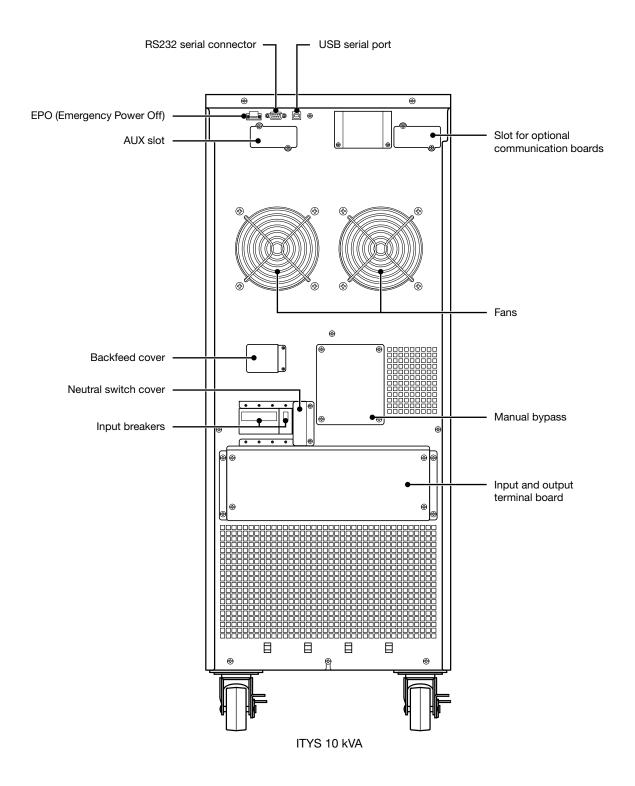
3. ELECTRICAL REQUIREMENTS

The installation and system must comply with national plant regulations. The electrical distribution panel must have a protection and sectioning system installed for the input mains and auxiliary mains. If a differential switch is installed on the mains power switch (optional) it must be inserted upstream from the distribution panel.

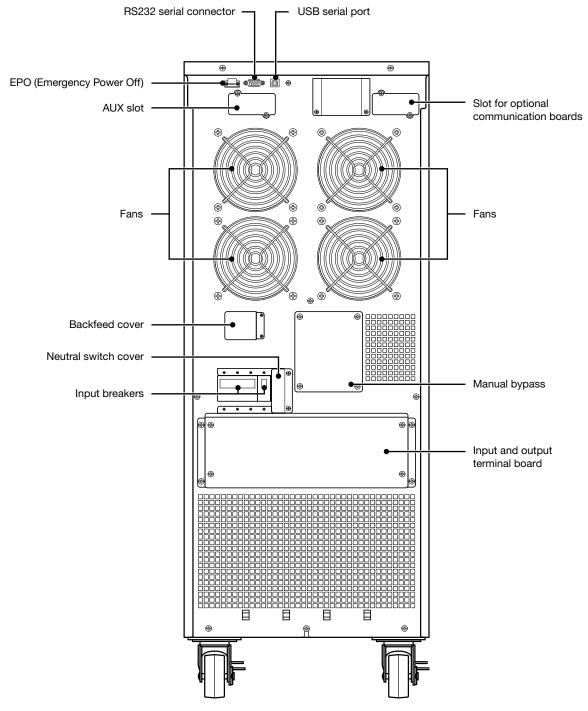
The table below shows the size of the input protection devices recommended for correct installation.

Size c	Size of input protection devices														
Model rating	Magneto-thermal Input	Magneto-thermal Aux. Mains	Differential input	Input mains cable	core size	Input mains fuse	Aux mains cable core size		Output	cable core size	Battery cable	core size	Protective Earthing conductor	Battery protection	Torque for fixing above terminals
(kVA)	(A)	(A)	(A)	(m	m²)		(mm²)		(mm²)		(mm²)		(mm²)	(A)	Lb in
	single	single	selective type	min	max		min	max	min	max	min	max	max		
10 1/1	63 A 250 VAC	63 A 250 VAC	0.5 A	10	13	30 A 250 VAC	10	13	10	13	10	13	13	50	10
10 3/1	40 A 250 VAC	63 A 250 VAC	0.5 A	2.5	4	30 A 250 VAC	10	13	10	13	10	13	13	50	10
20 1/1	100 A 250 VAC	100 A 250 VAC	0.5 A	21	25	50 A 690 VAC	21	25	21	25	21	25	25	100	18
20 3/1	60 A 250 VAC	100 A 250 VAC	0.5 A	6	10	50 A 690 VAC	21	25	21	25	21	25	25	100	18

4. REAR VIEW







ITYS 20 kVA

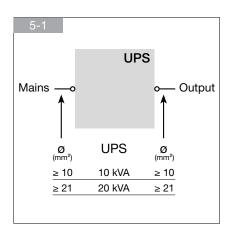
5. CONNECTIONS

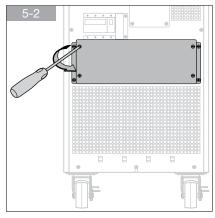
The installation and the system must comply with national plant regulations. If a differential switch is installed on the mains power switch (optional) it must be inserted upstream from the distribution panel.

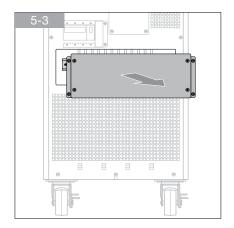


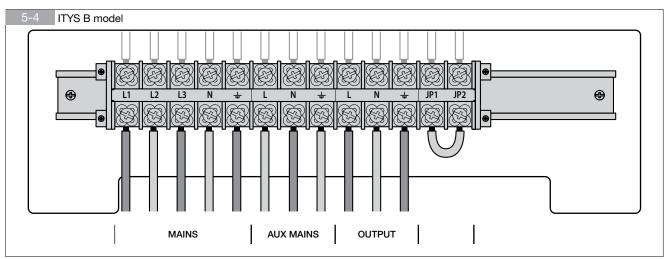
CAUTION

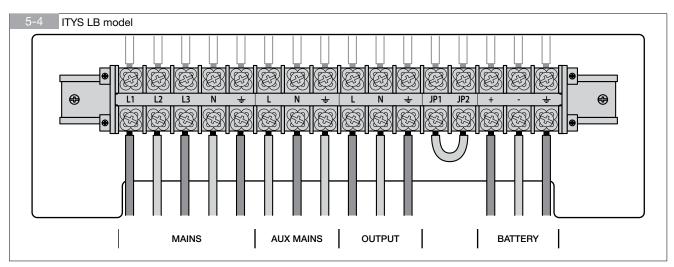
Use selective differentials. Any current dispersed by the loads will be summed to that of the UPS. The differential protection must be regulated in cases of loads with high current dispersion.

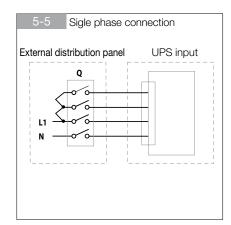


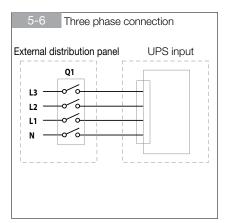






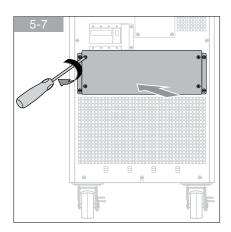


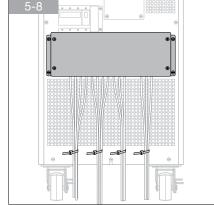






All cables must be securely connected.





5.1. OPERATION IN HIGH EFFICIENCY MODE

The UPS has a selectable, programmable economy operating mode that can increase overall efficiency by up to 98% for energy saving purposes. With this mode of operation, specific daily or weekly time intervals can be selected and programmed to power the applications directly from the auxiliary mains. If there is a power cut the UPS will automatically switch onto the inverter and continue to supply power to the load by drawing energy from the battery.

This mode does not provide perfect stability in frequency and voltage like the ON LINE mode. Thus the use of this mode should be carefully evaluated according to the level of protection required by the application.

5.2. OPERATION IN CONVERTER MODE

In converter mode the UPS can supply a fully stabilised sinusoidal output voltage with a different frequency from the input power line (50Hz or 60Hz is available as output frequency value).



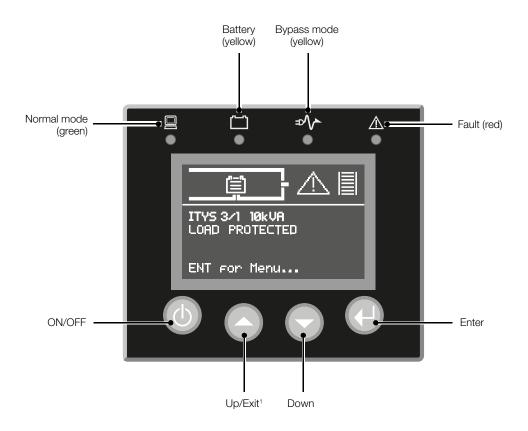
IMPORTANT!

Only set this mode on UPS units with the mains power (MAINS) and auxiliary mains (AUX MAINS) separate, and with the auxiliary mains (AUX MAINS) disconnected!

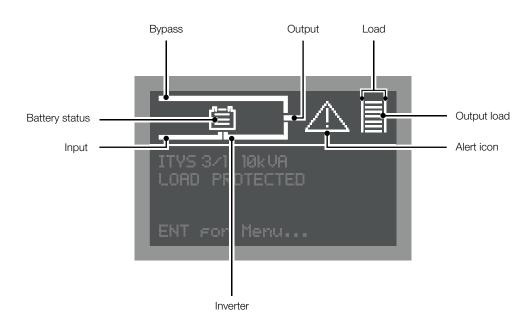
Do not set this mode on UPS units with common mains lines as it could damage the load!



6. MIMIC PANEL



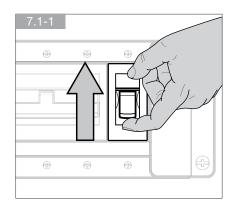
1. Press for 1 second

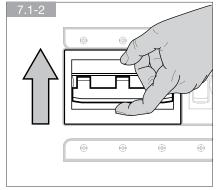


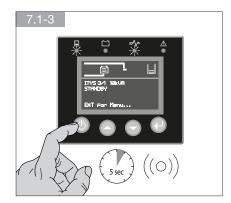


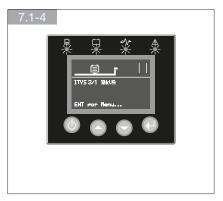
7. OPERATING MODES

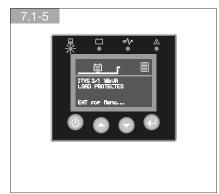
7.1. SWITCHING THE ITYS ON





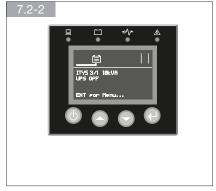


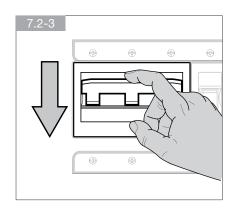


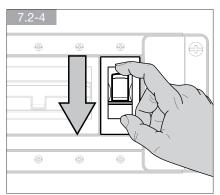


7.2. SWITCHING THE ITYS OFF

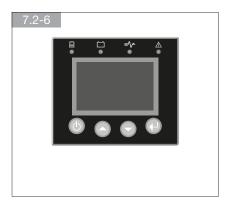






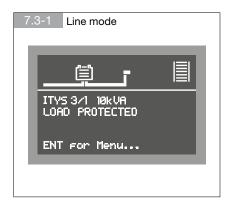




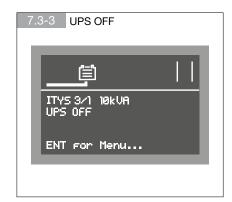


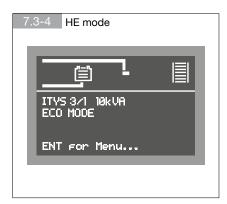


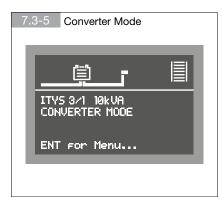
7.3. OPERATING MODES

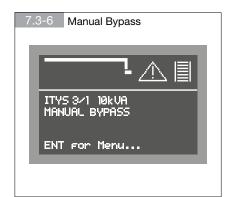












7.4. MENU TREE

FIRST LEVEL	SECOND LEVEL	THIRD LEVEL
UPS STATUS		
EVENT LOG	OUTPUT OVERLOAD	
	UTILITY ABNORMAL	
	OVER CHARGER	
MEASUREMENTS	OUTPUT	
	TEMPERATURE	
	DC BUS	
	BATTERY	
	BYPASS INPUT	
	LINE INPUT	
CONTROL	BUZZER MUTE	Buzzer Mute: no
	SINGLE UPS BATTERY TEST	Status: battery test OK Schedule battery test: no
	CLEAR EPO STATUS	Status EPO active Clear: no
	RESET FAULT STATUS	Status: Fault active Reset fault: no
	CLEAR EVENT LOG	Total events: 30 Clear event log: no
	RESTORE FACTORY SETTINGS	Reset: no



FIRST LEVEL	SECOND LEVEL	THIRD LEVEL
IDENTIFICATION	TYPE/MODEL	
	SERIAL NUMBER	
	UPS FIRMWARE	
SETTINGS	USER PASSWORD	enabled/disabled
	AUDIO ALARM	enabled/disabled
	OUTPUT VOLTAGE	208/220/230/240 V
	OUTPUT FREQUENCY	autosensing 50/60 Hz
	POWER STRATEGY	normal/high efficiency/ converter
	DC START	enabled/disabled
	AUTOMATIC BATTERY TEST PERIOD	0 to 31days
	AUTO RESTART	enabled/disabled
	AUTOMATIC OVERLOAD RESTART	enabled/disabled
	AUTO BYPASS	enabled/disabled
	SHORT CIRCUIT CLEARANCE	enabled/disabled
	BYPASS VOLTAGE LOW LIMIT	110 to 215 V
	BYPASS VOLTAGE HIGH LIMIT	245 to 276 V
	BYPASS FREQUENCY LOW LIMIT	1 to 10 %
	BYPASS FREQUENCY HIGH LIMIT	1 to 10 %
	HE VOLTAGE LOW LIMIT	1 to 10 %
	HE VOLTAGE HIGH LIMIT	1 to 10 %
	HE FREQUENCY LOW LIMIT	1 to 10 %
	HE FREQUENCY HIGH LIMIT	1 to 10 %
	EXTERNAL BATTERY MODULE	0-4
	SET RUNNING TIME	Day:hour:minute:second 0000:0000:00~9999:23:59:59
	LCD CONTRAST	-5 to +5



8. COMMUNICATION

Communication software and accessories are available for monitoring UPS status, with the aim 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.

ITYS no-break systems are equipped with an RS232 serial communication interface and slots for NetVision cards.

8.1. RS232 INTERFACE

Communication with the server can take place directly via the RS232 interface.

In addition to local or networked shutdown it is possible to perform full monitoring of the electrical parameters regarding battery status and the automatic programming of UPS start-up and shutdown procedures.

For a complete description of software features refer to the UniVision and UniVision Pro documentation.

8.2. USB INTERFACE

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

8.3. INTELLIGENT SLOT

This UPS series is equipped with intelligent slot for Net Vision (optional accessory) or other optional card to remotely manage the UPS through internet / intranet. Please contact your local distributor for further information.

8.4. AUX SLOT

This UPS series is equipped with auxiliary slot for dry contact interface. Optional card (available for insertion in the slot) which is able to handle isolated contact signals to remote relay UPS status information.

Please contact your local distributor for details.



9. TROUBLESHOOTING



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

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, alarm buzzer 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.

Alert code		Problem	Possible cause	Solution
Warning	11	Battery Disconnected	Battery pack is not connected correctly	Do the battery test to confirm. Check the battery bank is connected to the UPS. Check the battery breaker is turned on.
Warning	12	Battery low	Battery voltage is low	When alarm sounds every second battery is almost empty.
Warning	14	Over Charge	Battery is over charged	The UPS will turn off the charger until the battery voltage is normal
Warning	15	Charger Failure	Charging fails	Consult dealer
Fault	21	Bus Over Voltage	UPS internal fault	Consult dealer.
Fault	22	Bus Under Voltage	UPS internal fault	Consult dealer.
Fault	23	Bus Unbalance	UPS internal fault	Consult dealer.
Fault	24	Bus short	UPS internal fault	Consult dealer.
Fault	25	Bus Softstart Fail	UPS internal fault	Consult dealer.
Fault	31	Output Short Circuit	Output short circuit	Remove all the loads. Turn off the UPS. Check if UPS output and loads have short-circuited. Ensure short circuit is removed before turning on again.
Fault	32	Inv Over Voltage	UPS internal fault	Consult dealer.
Fault	33	Inv Under Voltage	UPS internal fault	Consult dealer.
Fault	34	Inv Softstart Fail	UPS internal fault	Consult dealer.
Warning	41	Output Overload	Overload	Check the loads and remove some non-critical loads. Check if some loads have failed.
Fault	42	Inv Overload Fault	Overload	Check the loads and remove some non-critical loads. Check if some loads have failed.
Fault	43	Byp Overload Fault	Overload	Check the loads and remove some non-critical loads. Check if some loads have failed.
Warning	71	Epo Active	EPO connector is open	Check the EPO connector status
Warning	72	On Maintain Bypass	Maintain bypass switch is open	Check the maintain bypass switch status
Fault	81	Heatsink Over Temperature Fault	Internal UPS temperature too high	Make sure the UPS is not overloaded; the air vents are not blocked and the ambient temperature is not too high. Wait for 10 minutes for the UPS to cool down before turning on again. If fails, please contact the distributor or service centre.
Warning	84	Fan Failure	Fan abnormal	Check the fan is running normally.



Alert co	de	Problem	Possible cause	Solution		
Warning	86	Heatsink Over Temperature	Internal UPS temperature of UPS too high	Check the ventilation of the UPS and ambient temperature.		
Warning	92	Model Pin Error	UPS internal fault	Consult dealer.		
Fault	93	Backfeeder	UPS internal fault	Don't touch any terminal of equipment which connects utility power with the UPS even if you cut off the utility power. Please consult dealer.		
Fault	E1	Negative Power Fault	The load is pure inductive and capacitive	Remove some non-critical loads. Bypass supplies the load first, ensure there is no overload, then turn on UPS.		
Other	-	No indication, no warning tone even though system is connected to mains power supply	No input voltage	Check the building wiring and input cable. Check if the input breaker is closed.		
Other	-	BYPASS LED lights up even though the power supply is available	Inverter not switched on	Press On-Switch 'I' to turn on UPS.		
Other	-	BATTERY LED lights up, and alarm sounds every 4 seconds	Input voltage and/or frequency are out of tolerance	Check input power source. Check the building wiring and input cable. Check if the input breaker is closed.		
Other	-	Emergency supply period shorter than nominal value	Batteries not fully charged / battery defect	Charge the batteries for at least 12 hours and then check capacity.		



10. TECHNICAL SPECIFICATION

Models									
		KVA	10	10 (LB)	20	20 (LB)			
Nominal Power		VA/W	10000/9000 20000/18000						
Input/Output ph	ases		3/1 or 1/1						
Electrical Spec	ifications - Inpu	ıt							
Mains voltage (\	/in)	Vin	(110-2	276) VAC (Depends o	n Load Level) 3Ph+1i	N+PE,			
Bypass input Vo	oltage(Vin)	Vbp	220 V 1Ph+N						
Input frequency		Hz	50-60 Hz ±10%						
Input power fac	tor			> 0.99 (@	Full load)				
THDI				< 5% wit	h full load				
Electrical Spec	ifications - Out	out							
Output Voltage		V	(If output voltage		230/240 V Dower will derate to 909	% of power rating)			
Output Current		А	45/48.1/45.	5/43.5/41.7	90/96.2/90	.9/87.0/83.3			
Frequrency		Hz			n normal mode in battery mode				
Overload – Normal Mode (@ 25°C)	10 m 1 m 10 s 100 ms	kW	105% to 110% 110% to 130% 130% to 150% > 150%						
Voltage distortion	1			<5% Non Linear Loa	ad; <2% Linear Load				
Electrical Spec	ifications - Batt	ery							
Туре			Sealed le	ead acid maintenance t	free-expected lifetime 3	3-5 years			
Voltage		V	280						
BUT ²		min	12	-	12	-			
Charger		А	-	4	-	4			
Environment									
Operating tempe	rature	°C	0 to 45 ¹						
Relative humidity		%	0 to 95 No Condensing						
Max. altitude		m	< 1000 without derating						
Acoustic noise		dBA	55 at front 1 m						
Standards									
Safety			EN 62040-1						
EMC			EN 62040-2 C3						
Product Certification			CE						
Protection Level				IP.	20				
Mechanical Ch	aracteristics								
Dimensions (W x	D x H)	mm	350 x 650 x 890						
Weight		kg	48	128	58	188			

^{1. 15-25 °}C for longer battery lifetime.



^{2.} Back-up time @75 % of rated load (models with internal batteries) PF 0.7

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