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UPO33

User Manual



*Three-Phase UPS
With Integrated Monitoring System*



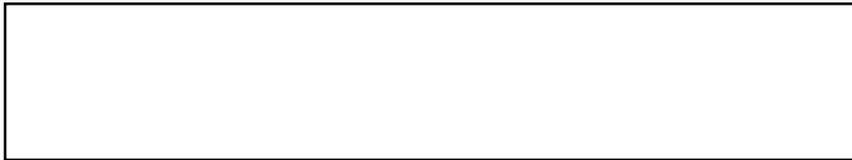
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INTRODUCTION

The purpose of this manual is to provide all persons involved in the various processes of handling, transport, installation and operation of the UPS, the information needed to handle the machine properly and safely for both the UPS and the equipment that it protects, and for those who interact with it. Any question or suggestion that may arise while reading this manual, please contact us, we will look to solve their requirements.

2. SECURITY RECOMENDATIONS



2.1. Handling, transporting and storing

During handling, transport and storage of equipment prior to installation keep it in its original packaging to protect it from shocks, impacts and harmful environmental conditions.

It is important to note that the UPS usually exceeds 200 kg (see the weight of the unit in the table of technical specifications) and should only be handled with appropriate equipment for lifting and handling heavy loads. In addition, always be kept upright

Upon receipt of the check the packaging machine which must be in perfect condition, no hits, no breaks, free from excessive moisture, otherwise immediately notify the carrier and our company.

During storage of ups, it must be placed in a suitable place, where not exposed to direct sunlight or near heat sources such as boilers, stoves, etc. As one should not store near water pipes or in wet environments. The height above sea level can affect equipment performance. The UPS and its batteries require the following storage conditions:

UPS

- Temperature: 0° C a 40°C.
- Relative Humidity: 0% a 95% withoutn condensation.

Battery

- Temperature: 0°C a 25°C.
- Relative Humidity: 0% a 95% without condensation.

If the UPS is stored for longer than three months is necessary to charge the batteries to prevent irreparable damage to them and therefore the loss of the guarantee of the same.

2.2. Minimum conditions for UPS location

The place will be installed the UPS must meet the following minimum requirements:

- The same conditions recommended for storage.
- For purposes of ventilation equipment should be left between the wall and the back of the UPS an area of at least 30 cm. For purposes of maintaining a 1 meter around the system would be adequate.
- The ambient temperature must not exceed 25 ° C, as this is the maximum operating temperature recommended by battery manufacturers. Higher temperature levels affect their lifetime, leading to decrease by half if they operate above 30 degrees.
- If there is air conditioning, be sure not to generate condensation.

- When installing the UPS with flexible cables with a length sufficient to enable the team to move in such a way that is accessible from all sides to perform any service.

2.3. Battery Handling

Batteries are elements with high energy storage capacity and generates dangerous voltages within the UPS, even while disconnected from the power supply unit of input, so both the team and their batteries should only be operated by qualified personnel and take preventive measures listed below:

- Remove watches, rings and other metal objects.
- Use only tools with insulated handles.
- To change batteries, install the same amount and same type of batteries.
- Replace battery fuse only with same type and same rating.
- Do not open, or destroy, or burn batteries, the electrolyte may cause injury to the skin and eyes. It is highly toxic. If exposed to fire may explode
- Disposal of batteries must be in accordance with relevant environmental standards.

2.4. Installation, operation and maintenance handling

Here are some safety recommendations during installation, operation and maintenance of the UPS:

- All work must be intervention at UPS Realize by qualified personnel.
- Prior to installation of the equipment must verify that all breakers are in the OFF position, mainly batteries and must be handled only when the UPS is completely interconnected to rush for strict compliance to the procedure described in this manual.
- Remove the caps from the UPS and check that all internal components are in perfect condition, while checking the fit of connectors

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3. GENERAL DESCRIPTION

The UPO CDP Phase UPS provides AC power 33 to power equipment that requires a good quality of energy such as computer equipment, communications, servers, data networks, electrical equipment (not recommended for equipment used for life support) etc. automation systems.

The PWM ON-LINE double conversion UPS provides free energy of the main problems of the grid, such as blackouts, sudden changes in voltage and / or frequency, power surges, brownouts, noise, transients, harmonic distortion, etc.

The device has a user friendly interface, which displays the UPS status easily. It also has an LCD screen through which you can consult various UPS parameters such as voltages in each phase, frequency, temperature, current, etc.

The device has an RS232 interface which allows system monitoring from a PC. As optional devices can include an SNMP device or a cellular modem. The latter two can monitor the UPS from a remote location via the Internet.

EXTERNAL APPEARANCE



Figure 3.1. Frontal view, a), and rear, b) of 20 to 30 KVA UPS



Figure 3.2 Frontal view, a), and rear, b) of 40 to 60 KVA uOS

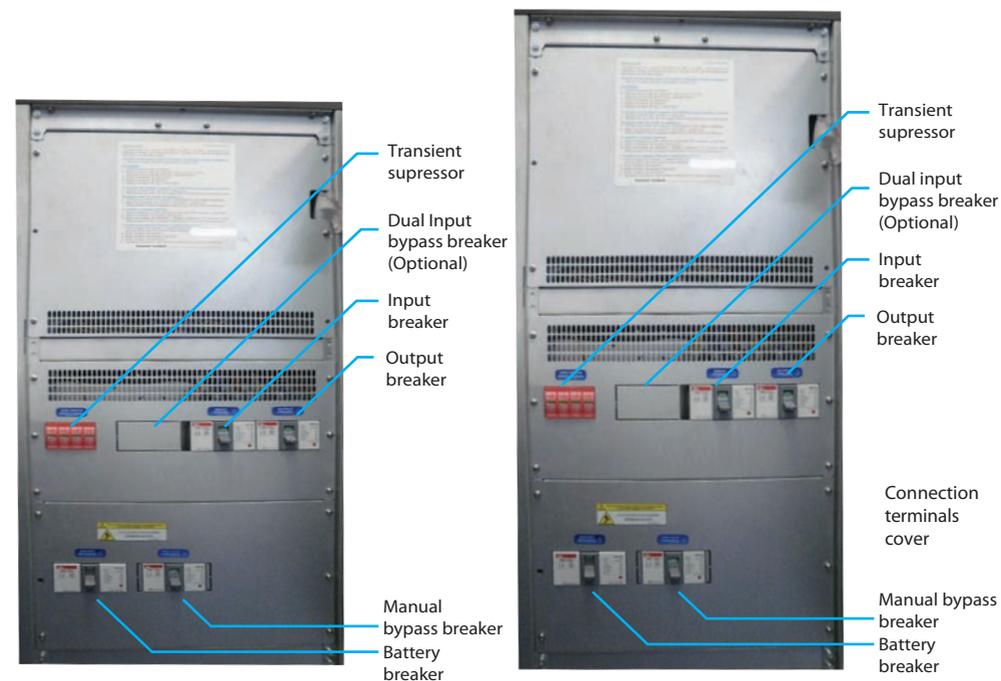


Figure 3.3 Y 3.4. Coverless frontal view of 20KVA a 30KVA UPS

4. WORKING AND OPERATIONS MODES

The UPO 33 UPS works under the following operation modes:

4.1. Normal Operation

Figure 3.1 shows the outline of UPO 33 UPS operation when operating normally

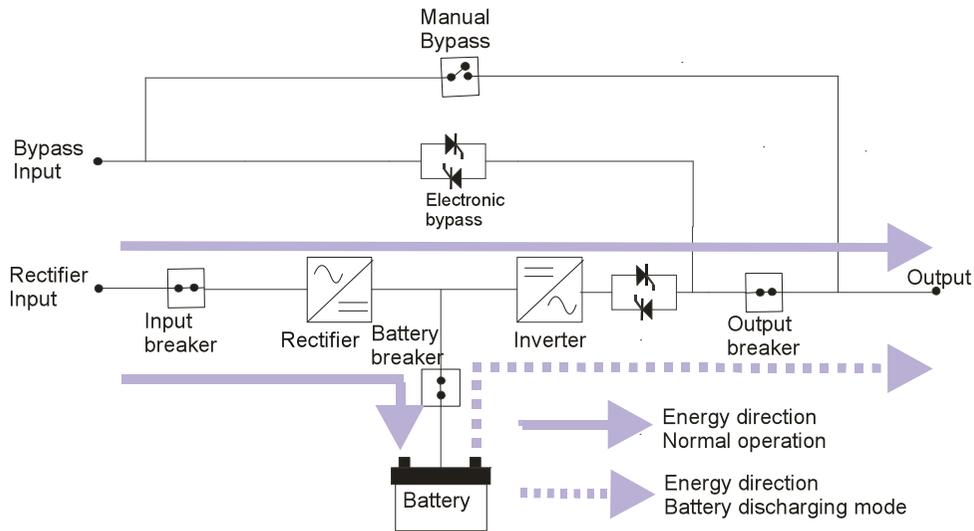


Figure 4.1 . Operating diagram UPO 33 UPS in normal mode

When the UPS is operating normally , the AC voltage at the input is converted into DC voltage by the rectifier . This DC voltage is used to charge the batteries and power the inverter. The inverter is responsible for transforming the DC voltage to the rectifier output in a sine wave feed the load .

4.2. Battery discharge

In this mode, the energy delivered to the load is supplied by the battery bank. The investor is responsible for transforming the DC voltage into AC voltage batteries. The UPS enters this mode when no input voltage to the UPS or there is an abnormal condition at the entrance. If the abnormality to the input persists for a long time, the UPS will cease to supply the load in order to prevent a deep discharging the batteries, however, the control electronics and the front panel will continue to function. If the outage lasts much longer, it is recommended to completely turn off the UPS and disconnect the battery bank (see section 6.2) in order to avoid a complete discharge of the batteries.

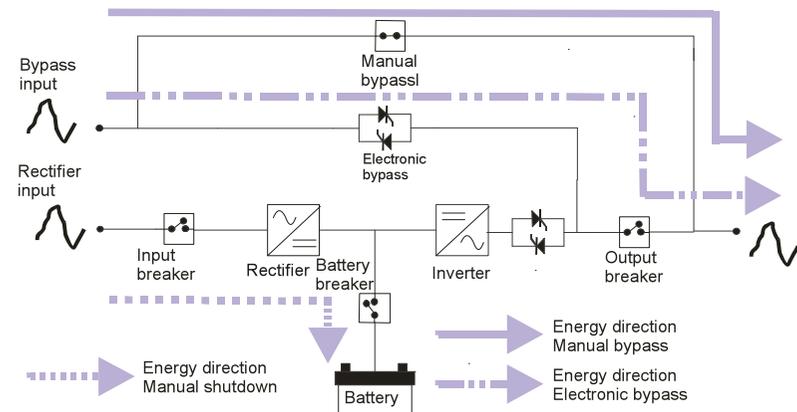


Figure 4.2 Operating diagram UPO33 UPS in battery mode

4.3 Electronic Bypass

In this state the load is powered from the mains through an electronic switch (SCR's). This happens when there is some kind of overload, when the temperature inside the UPS is above the nominal value of operation or when the battery pack is deeply discharged.

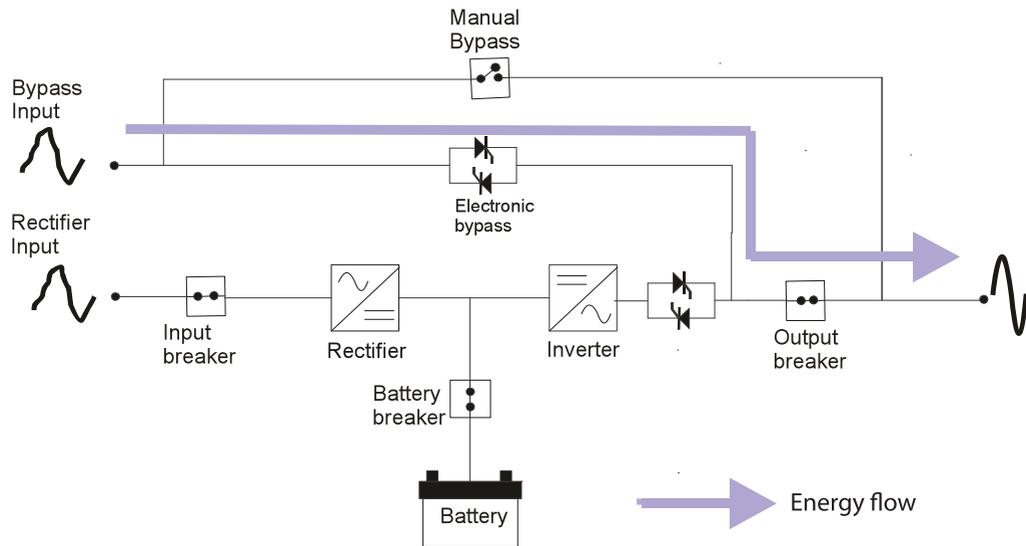


Figure 4.3 Operating diagram UPO33 UPS in electronic mode

4.4. Manual bypass

In this state the load is powered from the network through the bypass breaker. When the UPS is in manual bypass the load is supplied directly from the network through the bypass breaker while the UPS remains de-energized. This allows maintenance on the UPS without interrupting power to the load.

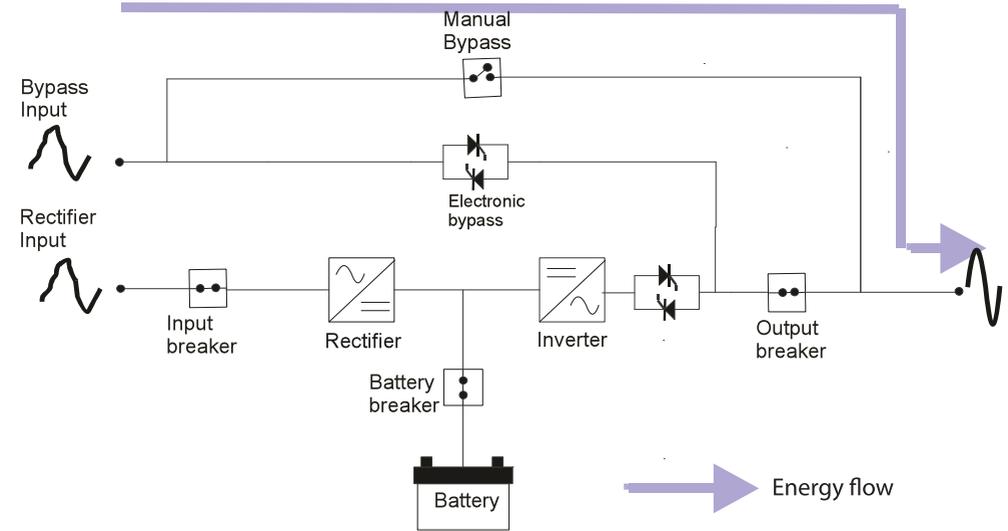


Figure 4.4 Operating diagram UPO33 UPS in electronic bypass

4.5. Total manual shutdown

In full manual mode off the inverter is off and the load is not powered through the bypass. However, if the batteries are down-rooted, the battery charger works. Communications devices and LCD display also operate in this state.

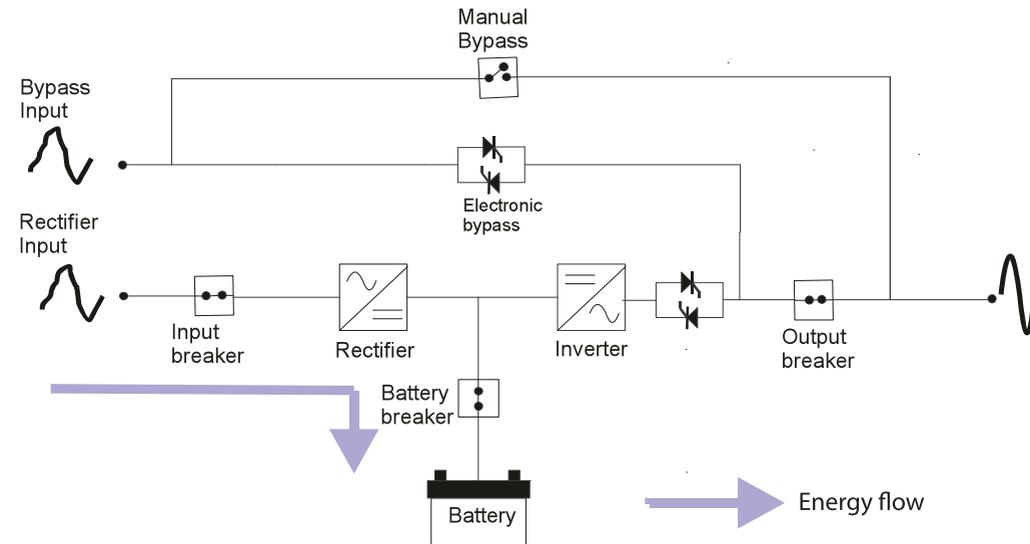


Figure 4.5 Operating diagram UPO33 UPS in total manual shutdown.

4.6. Total shutdown

In this state it is not working any device within the UPS. However, there is still energy stored in batteries, so it is still dangerous working inside your computer.

4.7. Operation modes transference

Figure 5.3.1 shows a state diagram which illustrates the transfer between different modes of operation of the UPS.

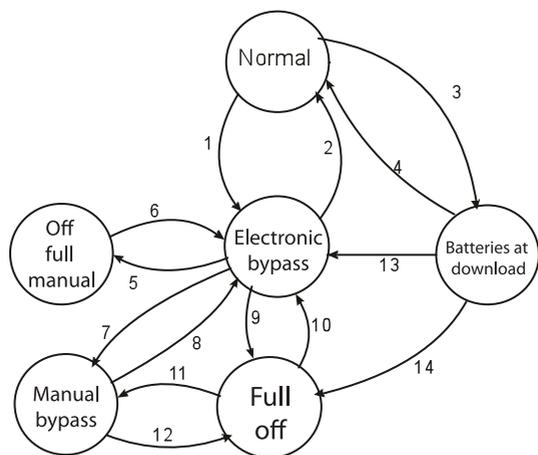


Figure 4.8 Operation modes transference

Cause of change in the mode of operation:

1. Overload. High temperature inside the UPS. Press the "OFF" for about 3 seconds.
2. Press the "ON" for more than a second.
3. No power to the input of the UPS.
4. Is new power to the input of the UPS, before the bat estuaries discharge.
5. Press the "OFF" for five seconds.
6. Press the "ON" for more than six seconds.
7. See procedure in Section 6.4.

8. See procedure in Section 6.4.
9. See procedure in Section 6.2.
10. See procedure in Section 6.1
11. Turn off the bypass breaker.
12. Switch the bypass breaker.
13. When it returns to the input energy and the batteries are discharged.
14. See procedure in Section 6.2.

INSTALLATION

It is recommended that installation be done by a licensed electrician in order to reduce the risk of personal injury or equipment damage. The following recommendations should be taken only as a guide. Installation in accordance with local regulations.

5.1. UNPACKING

The UPS comes un a wood package, as showed in figure 5.1.1



Figure 5.1.1. UPS with wood package.

To remove the packaging first remove the top cover, side covers and then finally the front and rear. The UPS is anchored at the sides of a pallet as shown below in Figure 5.2

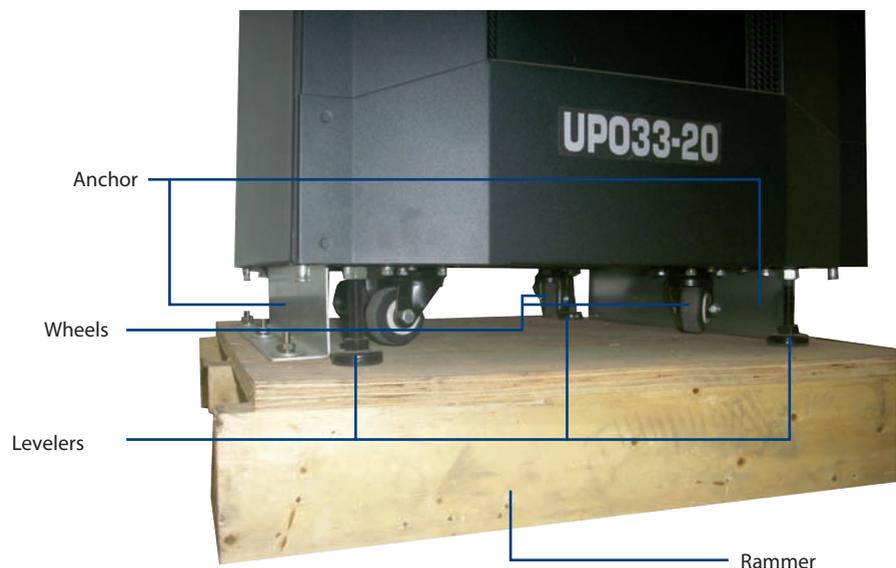


Figure 5.2. Anchorage to rammer

After removing the packaging is necessary to lower the UPS stowage. For this operation, do the following:

- Remove the side covers.
- Lift the Levellers.
- UPS Tilt slightly to the right (or left) for easy removal of the anchor on the left.
- Repeat the above procedure to anchor the other side. Removing the anchor UPS can move the wheels.
- Install a ramp at one side of the pallet.
- Turn the UPS via the ramp.

Once on the floor, you can move the UPS to its final location where you can set it down levelers.

5.2. Requirements rush

The UPO 33 UPS requires three phase input 3x120/208 VAC. There must be a unique breaker to the UPS distribution panel. Each line entry and exit should have adequate thickness to withstand the current passing through it. The current driving the UPS, and hence the sizes of the wires at the entrance and exit, agreements changes do to their ability as shown in the following tables.

5.1 table: Gauges of the wires to the input of the UPS.

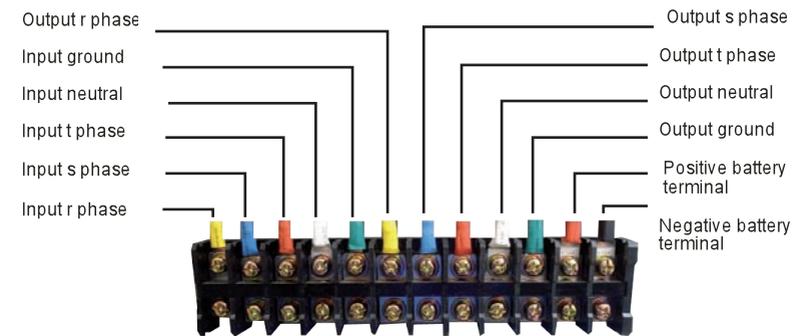
CAPACITY (KVA)	PASHE GAUGE (mm)	NEUTRAL GAUGE (mm)	GROUND GAUGE (mm)	THREE-PHASE BREAKER*
20	10	10	10	50
30	21	25	21	75
40	25	30	25	100
60	50	60	50	150

5.2 table Cross sections of the wires to the output of the UPS

Capacity (KVA)	Phase gauge (mm) (AWG)	Neutral Gauge (mm) (AWG)	Ground Gauge (mm)	Three-Phase breaker*
10	10	8	10	40
15	8	6	8	50
20	6	2	8	70
30	2	No 1/0	8	125
40	No 1/0	No 3/0	8	150
50	No 2/0	No 4/0	6	175
60	No 3/0	No 4/0	4	200

5.3. Connection terminals

To access the terminals in the UPS 20 to 30 KVA, remove the back cover. The terminals are at the bottom. In the UPS from 40 to 60 KVA terminals are located in the front face. To access them you must first open the front cover and then remove the cap covering the terminals (see Figure 3.4), which is located below the surge suppressor. Figure 5.3 shows the connection terminals.



5.4. Checks prior to implementation

- Make sure all connections are correct and are firm.
- Verify that the phases are connected correctly.
- Check that the UPS switches are turned off
- Check that all loads are off.
- Check the polarity of the battery bank.

6. OPERATING PROCEDURES

6.1. Comissioning

To start the system:

- Set the input breaker (See Figure 3.3 or Figure 3.4 eb the page. 8).
- Wait for power the UPS control electronics, this will take about 8 seconds. All this time nothing is displayed on the LCD display and all LEDs indicate UPS status appear in red.
- When the control electronics into operation the battery LED will start flashing changing color between red and green. This indicates that still can not activate the battery breaker for the charger still does not work. At this moment the UPS is operating in bypass mode mail. The LCD will display the following messages: "UPS ON BYPASS", "BATTERIES IN SHOCK" and "BATTERY OFF". WARNING: If you turn the breaker LED battery while the battery is flashing could cause serious equipment damage.
- When the battery LED turns green battery power on the breaker both UPS and the battery bank. Make sure the batteries have the correct polarity.
- Turn the output breaker. At this point will begin to supply the load through the bypass.
- For the UPS is operating in normal mode press the "ON" for more than a second. When the UPS goes to bypass normal mode is a battery test, if there is a problem with them an alarm appears on the LCD (BATTERY TEST FAILURE) and you will hear a beep. If this is the case, check that batteries are properly connected and the battery breaker is on.

If when installing the UPS was an error in the phases connection, turning on the UPS on the screen appears an alarm ("FAILURE SEQUENCE BYPASS"). In this case the UPS will not operate in bypass mode but it will operate in normal mode of operation. To solve the problem correctly connect phases.

6.2. Total off

To completely turn off the UPS:

- Ensure that all equipment connected to the UPS is turned off
- Lower breakers exit, entry and batteries. Internally, the UPS will shut down in about 1 minute.

6.3. Transfer from normal to bypass mail

- Pressing the "OFF" for 2 seconds
- Verify that the LEDs are blinking red bypass. Whenever required to transfer the UPS to bypass previously need to be reviewed on the display that the input voltages are Suitable bypass in three phases.

6.4. Manual bypass

To enter manual bypass, based on the normal mode of operation, it should follow the following procedure.

- Place the UPS in bypass mail, to accomplish this press the "OFF" for more than two seconds.
- Turn the bypass breaker. In doing so the LCD displays a warning: "MANUAL BYPASS ACTIVE".
- Disable the output breaker.
- Turn the battery breaker.
- Turn the input breaker.

If during the above procedure there is a power outage, the load will be without power. To switch to another mode once manual operation follows a similar procedure to start (see section 6.1.)

- Set the input breaker (See Figure 3.3 or Figure 3.4)
- Wait for power the UPS control electronics, this will take about 8 seconds. All this time nothing is displayed on the LCD display and all LEDs indicate UPS status appear in red.
- When the control electronics into operation the battery LED will start flashing changing color between red and green. This indicates that still can not activate the battery breaker for the charger still does not work. At this moment the UPS is operating in bypass mode mail. The LCD will display the following messages: "UPS ON BYPASS", "BATTERIES IN SHOCK" and "BATTERY OFF".

WARNING: If you turn the breaker LED battery while the battery is flashing could cause serious equipment damage.

- When the battery LED turns green battery power on the breaker both UPS and the battery bank. Make sure the batteries have the correct polarity.
- Turn the output breaker. At this point will begin to supply the load through the bypass.
- Turn the manual bypass breaker.
- For the UPS is operating in normal mode press the "ON" for more than a second.

It is recommended that the bypass breaker manipulation is done by qualified personnel.

6.5. Alarm Reset

See section 8.2

7. OPERATION

7.1. Control Panel

The UPS UPO33 includes a control panel that displays the status of the UPS and observe certain parameters on a LCD screen (input voltage, output voltage, frequency, temperature, etc.). Figure 7.1 shows the interface

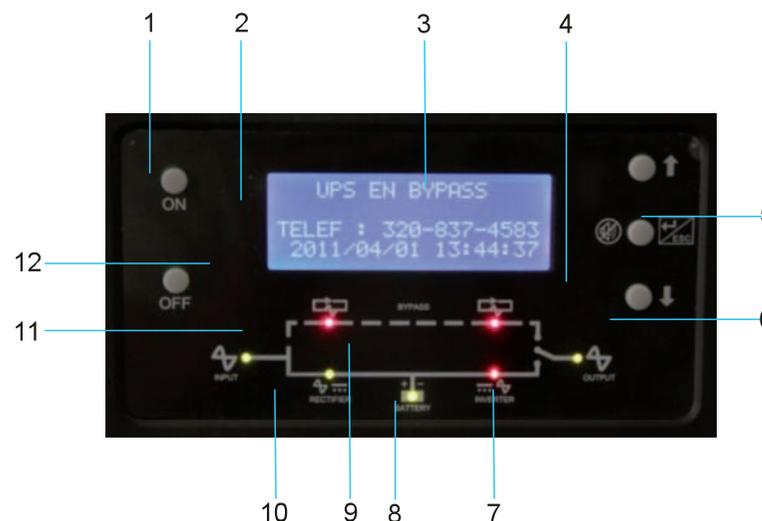


Figure 7.1. control panel

- 1.EPO: Emergency Power Off button. When activated the computer completely off.
2. "ON": You can bring the UPS to normal operation, one of its functions is to turn the inverter.
- 3.Pantalla LCD: The LCD displays information about the operation of UPS battery status, input voltages, alarms and more.

4. "Up Arrow" and "Down Arrow": Used to change the options in the sub-menus on the LCD.
5. "Enter / Esc": Allows you to enter or exit a sub-menu in the LCD. It also serves to turn the siren on the UPS by a small amount of time.
- 6.LED Out: Indicates whether the output voltage of UPS or any problems with the output.
- 7.LED investor: Indicates the status of the investor. When the inverter is switch-on is green. If off is red.
- 8.LED Battery: Indicates the battery status. If the batteries are functioning normally be green and if a problem will be red.
- 9.LED 's BYPASS: When the UPS is in bypass mail the four LEDs light up intermittently.
- 10.LED Rectifier: Indicates the status of the charger.
- 11.LED Network: Whether there is any abnormality to the UPS input. When the input is normal is green when there is a problem in red.
12. "OFF": You can take the UPS.

The following table gives a more detailed description of the meaning of the LEDs on the mimic.

Table 7.1 Meaning of the LEDs.

green;. out = green.	output load. however, the batteries are charging.
network = red;. charger = red. batteries = green;. inverter = green;. out = green.	there was an abnormal event at the entrance of ups and the load is being fed through the inverter, the energy stored in batteries.
network = red;. charger = red;. batteries = flashing red-green. inverter = green;. out = green.	no energy input and energy in the batteries are running low. it also generates an audible alarm. the display will show "low battery alert". it is advised to turn off all computers that are connected to ups.
network = flashing red-green	the network is not optimal to switch to manual bypass.
network = yellow	no synchronization: the network conditions are close to be appropriate but are not required.
network = red	the entry conditions are not suitable to enter bypass, so this operation is not allowed because it could raise problems with the load.
out = red	the load is not being fed by the ups. consult service.
output = flashing red-green	the load is being supplied by the bypass, and the network conditions are not good.
out = green	the load is being fed by the ups through the inverter or bypass still appropriate network conditions.
bypass leds, lighting intermittently	the electronic bypass is activated.

Table 5.1. meaning of the leds.

leds color	descripción
network = green. charger = green;. batteries = green;. investor = green;. output = green.	the ups is operating normally
network = green;. charger = green;. batteries = flashing yellow-orange. inverter = green;. out = green.	the ups operates normally, but the batteries are charging. if a power failure the ups entry will have no autonomy, because the batteries are not charged to 100%.
network = green;. charger = red. batteries = red. inverter =	the batteries are completely discharged, in case of a court there is no energy input to the

7.2. Front cover lights

The UPS has lights on the front that also displays the status of the UPS as follows:

- If the lights are blue means that the UPS is operating normally, or is in bypass mail
- If the lights are red means that the load is being supplied with energy stored in batteries
- IF the lights are flashing red and blue is because the charger is not working properly. The cause may be that missed one or two steps at the entrance.
- When the charger starts and there is no problem if the lights are flashing blue and violet.
- If you use the emergency shutdown of the UPS, the light has a violet color.

7.3. LCD operation

In Figure 7.2 illustrates the operation of the LCD and in Table 7.2 is a description of each display.

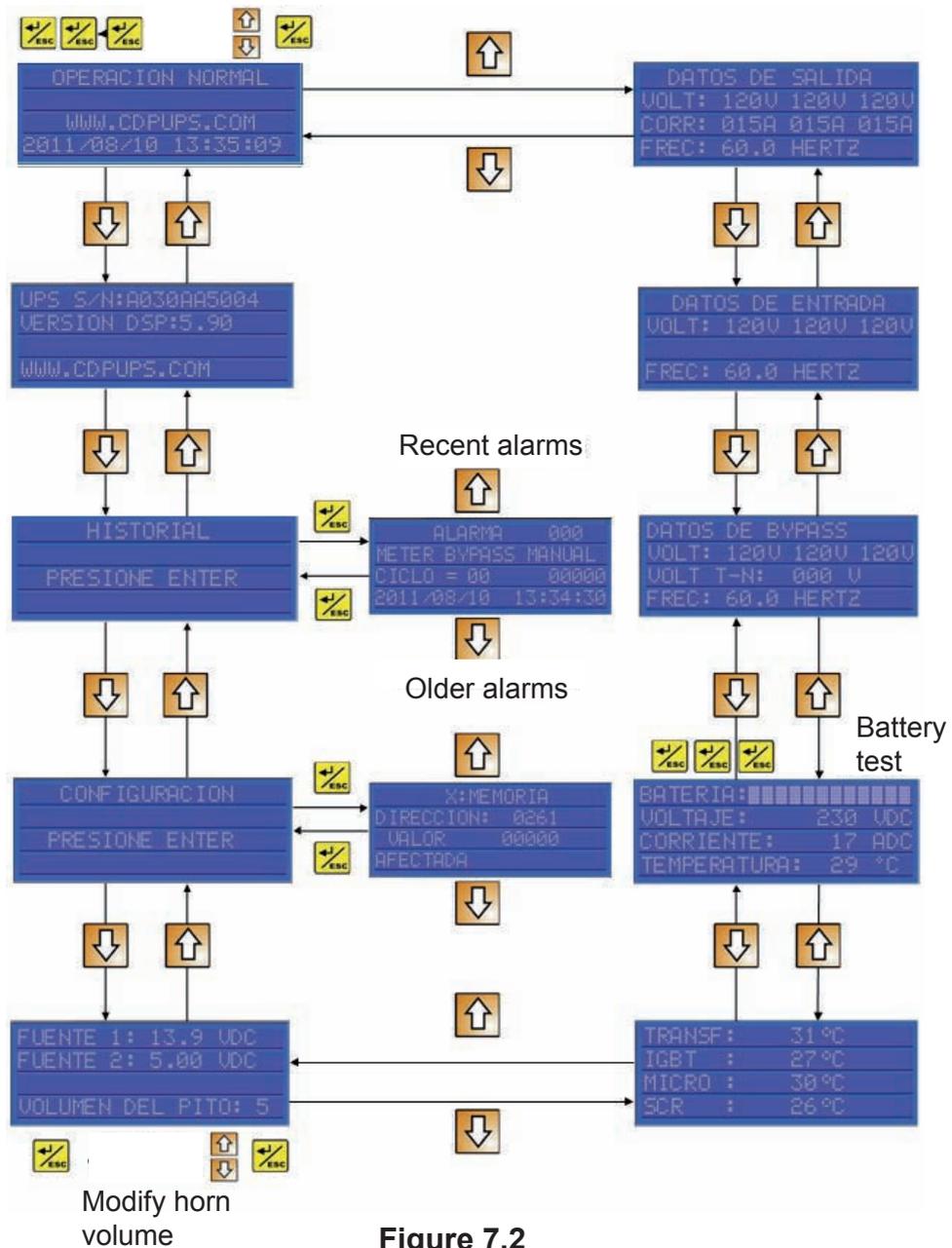


Figure 7.2

7.4 table UPS's menu description

visualitation	name	description
<pre> NORMAL OPERATION WWW.CDPUPS.COM 2011/08/10 13:35:09 </pre>	main menu	<p>This is the main menu display. this screen shows the ups operating status (in this case is in normal operation).it also displays the web address of manufacturer, date and time. in this menu you can also update the date and time, to make it do the following:</p> <ul style="list-style-type: none"> press three times the "enter / esc button", and the last two digits of the year start to flash, change the year using the "arrow" and "down arrow". when you set the year again press "enter / esc button" and the number for the month will flash, change the month using the "arrow" and "down arrow". press again "enter / esc", and the number for the day will flash. change the day with "arrow" and "down arrow". to change the time simply press "enter / esc button" and modify it with "arrow" and "down arrow" press again "enter / esc button" and may amend the minutes to "arrow" and "down arrow". return to press "enter / esc button" and the date and time will be updated.
<pre> UPS S/N:A030AA5004 DSP VERSION:5.90 WWW.CDPUPS.COM </pre>	serial number and firmware version	this screen shows the serial computer, the firmware version of the ups and contact the manufacturer.
<pre> HISTORY PRESS ENTER </pre>	alarm history	this screen allows entry into the alarm history. to view the history you must press "enter / esc button"
<pre> ALARM # 0000 UPS IN INVERTER MODE CYCLE=21 65471 2011/03/05 14:08:38 </pre>	alarm history detail	on this screen you can see information about the latest alarms have been activated in the ups. for information about other alarm press the "arrow" or "down arrow". in the first line is the order in which the alarm occurred alarm 000 being the most recent. the second line shows the cause of the alarm (In table 7.1 there is more information about alarms that may occur). the fourth line displays the date and time of the event. the third line shows the number of cycles of the output waveform, which went before the occurrence of the event and after the time that is recorded in the fourth line.

<pre> CONFIGURATION PRESS ENTER </pre>	configuration	allowed in the setup menu.
<pre> X:MEMORY ADDRESS : 0261 VALUE 00000 PARAMETER: </pre>	values of configuration parameters	this menu may change the operating parameters of the ups. since the change of these parameters can cause serious damage to the ups, only qualified personnel can make modifications.
<pre> P.SUPP 1: 13.8 P.SUPP 2: 4.98 BEEP VOLUME: 5 </pre>	supply voltage and volume of the whistle	indicates the dc voltages that supply the electronic control of the ups. it also indicates the volume of the alarm. to change the volume of the alarm, press "enter / esc button" three times and then vary the volume with "arrow up" to up and "down arrow" to down.
<pre> TRANSF: 31° C IGBT : 27° C MICRO : 30° C </pre>	temperatures	this display indicates the temperature of critical devices within the ups (transformer, igbt's, microcontroller).
<pre> BATTERY: ██████████ VOLTAGE: 230VDC CURRENT: 17ADC TEMPERATURE: 22° C </pre>	batteries	this screen shows the battery status: percentage of load, voltage, current and temperature. in this menu you can perform a battery test, press three times to do the "enter / esc button". the duration of the test depends on the configuration (default is one minute). if the end of the test result is satisfactory, there is no display on the lcd and an alarm will occur "battery test ok", which can be seen in the alarm history. if the result is not satisfactory to generate the alarm "battery test failure", which is displayed on the screen and stored in the alarm history. the battery led will be red.
<pre> BYPASS LINE VOLT: 120V 120V 120V VOLT G-N : 000 V FREQ: 60.0 HERTZ </pre>	bypass	indicates the status of the bypass input: voltage in the three phases of the bypass input, voltage and frequency neutral ground.
<pre> INPUT VOLT: 120V 120V 120V FREQ: 60.0 HERTZ </pre>	input	indicates the status of the ups input: input voltage on all three phases and frequency.
<pre> OUTPUT VOLT: 120V 120V 120V AMPS: 000A 000A 000A FREQ: 60.0 HERTZ </pre>	output	indicates the output status of the ups in the three-phase voltage, current in all three phases and frequency.

<pre> CONFIGURATION PRESS ENTER </pre>	configuration	allowed in the setup menu.
<pre> X: MEMORY ADDRESS : 0261 VALUE 00000 PARAMETER: </pre>	values of configuration parameters	this menu may change the operating parameters of the ups. since the change of these parameters can cause serious damage to the ups, only qualified personnel can make modifications.
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<pre> TRANSF: 31° C IGBT : 27° C MICRO : 30° C </pre>	temperatures	this display indicates the temperature of critical devices within the ups (transformer, igbt's, microcontroller).
<pre> BATTERY: ██████████ VOLTAGE: 230VDC CURRENT: 17ADC TEMPERATURE: 22° C </pre>	batteries	this screen shows the battery status: percentage of load, voltage, current and temperature. in this menu you can perform a battery test, press three times to do the "enter / esc button". the duration of the test depends on the configuration (default is one minute). if the end of the test result is satisfactory, there is no display on the lcd and an alarm will occur "battery test ok", which can be seen in the alarm history. if the result is not satisfactory to generate the alarm "battery test failure", which is displayed on the screen and stored in the alarm history. the battery led will be red.
<pre> BYPASS LINE VOLT: 120V 120V 120V VOLT G-N : 000 V FREQ: 60.0 HERTZ </pre>	bypass	indicates the status of the bypass input: voltage in the three phases of the bypass input, voltage and frequency neutral ground.
<pre> INPUT VOLT: 120V 120V 120V FREQ: 60.0 HERTZ </pre>	input	indicates the status of the ups input: input voltage on all three phases and frequency.
<pre> OUTPUT VOLT: 120V 120V 120V AMPS: 000A 000A 000A FREQ: 60.0 HERTZ </pre>	output	indicates the output status of the ups in the three-phase voltage, current in all three phases and frequency.

7.5. Emergency shutdown

The equipment has an emergency shutdown that turned off your computer completely. The button is in the UPS front panel (see Figure 7.1)

8. ALARMS

8.1. Active Alarms

When event that affects the normal functioning of the UPS (overload, high temperature, abnormal input voltage, etc.) will sound an alarm signal and displayed on the main screen of your display case until the abnormal situation has passed. The cause of the alarm being stored in the alarm history. Table 8.1 lists possible alarm messages, a description of the message and a possible solution to the problem.

TABLA 8.1

alarm message	description	possible solution
NORMAL OPERATION	the ups is operating normally	na
DISCHARGING BATERIES	<ul style="list-style-type: none"> the battery charger is off and the batteries are discharged. the causes may be: dc fuse open loss of any of the input phases input voltage (phase neutral) outside the operating range (80 to 150 volts rms) 	<ul style="list-style-type: none"> check the input voltages. call for service.
RECTIFIER TURN ON	is on the battery charger	na
INVERTER TURN ON	The invertir is turned on	na
MANUAL SHUTDOWN INV	inverter has been turned off manually	na
EMERGENCY PWR OFF	emergency shutdown is active. the emergency shutdown can easily de energize the ups in case of an emergency.	before starting the machine again, make sure that the operating conditions are not dangerous.

MANUAL LOAD SHUTDOWN	the ups has entered the operating mode "manual off total".	na
CONFIGURATION MODE	configuration mode enabled. in this mode you can modify any parameter of operation of the ups. only qualified personal should access the configuration mode.	na
END CONFIGURATION	out of configuration mode	na
TURN ON MANUAL BYPASS	if you have a problem with any of the phases, due to a problem in the inner workings of the ups, this alarm is activated, recommending the user to operate the manual bypass.	activate the manual bypass and call service center to solve the problem at ups.
BYPASS SCR FAILURE	one of the bypass scrs failed	support call
BYP. ROTATION ERROR	the phase sequence of the bypass is reversed.	check on the terminal block of the bypass, the phases are connected correctly.
BYP. ROTATION OK	the sequence phases of the bypass, is correct.	na
UTILITY ABNORMAL	this alarm is activated when the voltage at the input of the bypass is not adequate to supply the load: the voltage is too high or too low, the frequency is not adequate.	check the wiring that feeds the ups. if the facility is good, wait until the entry conditions are normal.
BYPASS AVAILABLE	the input voltage conditions on the bypass are suitable for switching to bypass.	na
CRITICAL OVERLOAD	it is activated when you have had an overload that has lasted longer than the ups can support, leading to bypass.	<ul style="list-style-type: none"> • check for shorts to the output • verify that the load does not consume more power than it is capable of delivering the ups
INVERTER SHUTDOWN A	it is activated when the inverter is turned off because it suffers an internal failure of control.	support call
INVERTER SHUTDOWN B	it is activated when the inverter is turned off, because it suffers an internal failure of control.	support call
BATTERY	the ups batteries are depleted. one possible cause is that the ups has operated	wait for the ups input is normal, and start charging the batteries. if

BATTERY EXHAUSTED	the ups batteries are depleted. one possible cause is that the ups has operated in battery mode for long.	wait for the ups input is normal, and start charging the batteries. if after the input is normal, the battery will not charge call service.
DC FUSE BLOWN	the dc fuse is open. this happens when you turn the battery breaker before you turn on the charger when you are starting the ups	support call
5 V PWR SUPPLY FAIL	the 5v supply that feeds electronic control failed.	support call
5 V PWR SUPPLY OK	the source of 5 volts that powers the electronic control works correctly	na
14 V PWR SUPPLY FAIL	the 13.5v supply that feeds electronic control failed.	support call
14 V PWR SUPPLY OK	the source of 13.3 volts that powers the electronic control works correctly .	na
INVERTER OVERFLOW	when reading in the inverter output voltage is not reliable because the voltage is read range the electronic control. this event will bypass the ups. this condition can occur when there are transients.	if the problem persists, contact technical support.
OVERLOAD 200%	there is an overload to the output more than twice the rating of the ups.	<ul style="list-style-type: none"> • check for shorts to the output • check that the load does not consume more power which supplies the ups.
TXI FAILURE	failure to transfer to the investor. there is an internal problem that can't activate the inverter.	support call
INVERTER COMP. FAIL	the output voltage of the ups is different from the inverter output voltage	support call
HIGH GROUND VOLTAGE	the voltage between ground and neutral is too high (10 volts rms). this can occur because there is no connection to ground at the facility where ups or because there is no solid connection between neutral and ground. another cause may be an overload on the network that feeds the ups especially if the load is unbalanced.	<ul style="list-style-type: none"> • make sure the installation that is connected to ups has a grounding. • check the connection between ground and neutral at the facility where the ups. • review the balance of the load.
CLR HIGH GND VOLT	activated when the voltage is normalized between neutral and ground.	na

INVERTER SCR FAIL	there is an internal short in the scr at the inverter output.	support call
UPS IN BYPASS MODE	the ups is in operation mode " electronic bypass "	na
HIGH FREQUENCY BYP	the frequency of bypass input is too high.	wait until the frequency is normal. if ups is fueling a power plant, check it. one reason may be that the plant fuel is running low.
BYP FREQUENCY OK	the frequency of bypass input is normal.	na
UPS IN INVERTER MODE	the load is being fed through the inverter.	na
LOW BYP FREQUENCY	the frequency of bypass input is too low	wait until the frequency is normal. if ups is fueling a power plant, check it. one reason may be that the plant fuel is running low.
BYPASS OUT OF RANGE	the bypass voltage is beyond the recommended voltage to supply equipment in accordance with ul standards.the charger and inverter are still active. this alarm is only informative.	to increase the tolerance of this alarm, please contact technical support.
BYPASS VOLTAGE OK	the bypass voltage is within the recommended voltage to supply equipment in accordance with ul standards.	na
CLR OVERLOAD	it is activated when the output current standard ups, having been overcharged.	na
UNBALANCE WARNING	there is a considerable imbalance in the load of the ups.the difference in current between phases is greater than 50% of the rated current.	check the balance of the load.
CLR UNBALANCE	charging the ups returns to rock, after submission of an unbalance alarm.	na
CHECK BATTERIES	the batteries have more than 5 years of operation	due to the operating history of the batteries is recommended to verify performance and age of these.
LOW BATTERY WARNING	the battery is running low	turn off computers that are connected to the ups as it does not take much time off.

CLR LOW BATTERY	the battery has enough charge after the filing of a low battery warning.	na
CHECK FANS	the blowholes are more than 5 years of use	it is advisable to change the FANS. to perform the operation contact technical support.
SELFDIAGNOSTIC	alarm information indicates that event counters ups have flooded the memory limit. note: this does not imply a malfunction of the machine	diagnostic is recommended by "software", call support
PWR SUPPLY WARNING	it is activated when the control board has no power.	support call
CLR PWR SUPPLY FAIL	this alarm appears when the power returned to the control board after a power alert.	na
DC OVERVOLTAGE	it is activated when there has been an excessively high voltage to the inverter input. this alarm may be generated when there is a sudden change of current to the exit.	try to avoid charges that generate large current peaks shortly.
DC OVERFLOW	when the reading on the charger output voltage is not reliable, because the voltage is not in the read range of electronic control. this event will take the ups to bypass. this condition can occur when there are transients.	if the problem persists, call for service.
CLR DC OVERFLOW	when the voltage on the charger output is back in the read range of electronic control after an alarm"overflow dc".	na
FLASH MISMATCH	it occurs when changing a parameter that can affect the normal operation of the ups.	not manipulate the settings menu, it should be handled only by qualified personnel.
FLASH UPDATED	occurs when any parameter of operation of the ups is modified.	na
TRANSFM TEMPERATURE	the transformer temperature is above the recommended limit for the proper functioning of the ups and can affect battery life.	check the temperature of where the ups is located. check the air conditioning system, as it may be a fault
IGBT TEMPERATURE	igbt temperature is above the recommended limit for the proper functioning of the ups and can affect battery life. this may cause a malfunction in the inverter and reduce the efficiency of the ups.	check the temperature of where the ups is located. check the air conditioning system, as

IGBT TEMPERATURE	igbt temperature is above the recommended limit for the proper functioning of the ups and can affect battery life. this may cause a malfunction in the inverter and reduce the efficiency of the ups.	check the temperature of where the ups is located. check the air conditioning system, as it may be a fault
SCR TEMPERATURE	the temperature of the "scr" is above the recommended limit for the proper functioning of the ups and can affect battery life. this may cause a malfunction in the ups and loss of efficiency.	check the temperature of where the ups is located. check the air conditioning system, as it may be a fault
AMBIENT TEMPERATURE	the atmosphere temperature is above the recommended limit for the proper functioning of the ups and can affect battery life.	check the temperature of where the ups is located. check the air conditioning system, as it may be a fault
CLR AMBIENT TEMP	it is activated when the temperature has returned to normal after an event occurred overheating.	na
BYPASS FUSE PHASE A	bypass the fuse phase a is open. this may be because there is an overload to the output that can't stand the fuse.	service call to replace the fuse.
BYPASS FUSE B	bypass the fuse phase b is open. this may be because there is an overload to the output that can't stand the fuse.	service call to replace the fuse.
BYPASS FUSE C	bypass the fuse phase c is open. this may be because there is an overload to the output that can't stand the fuse.	service call to replace the fuse.
MAINTENANCE MODE	it is activated by modifying a parameter of operation of the ups. this facilitates the solution of both internal and external problems of the team as it omits some alarms. when maintenance mode is activated, the display flashes.	the maintenance mode is deactivated at 12 at night or whenever changed the corresponding configuration parameter.
MAINTENANCE MODE END	it is activated when you leave the maintenance mode.	na
PROCESSOR RESET	it occurs when the ups has shut down completely. the alarm appears when you turn on the ups.	na
TEMPERATURE ALERT	this alarm occurs when there is a high temperature in the computer, but not high enough to go to bypass.	check the temperature of where the ups is located. check the air conditioning

START TEST	BATTERY	has been initiated battery test.	na
END TEST	BATTERY	he has completed the test battery	na
OVERLOAD PH A	100%	it occurs when the output current in phase a is greater than the nominal and less than 1.5 times the rated current.	<ul style="list-style-type: none"> • check for shorts to the output • verify that the load does not consume more power than it is capable of supplying the ups
OVERLOAD PH B	100%	it occurs when the output current in phase b is greater than the nominal and less than 1.5 times the rated current.	<ul style="list-style-type: none"> • check for shorts to the output • verify that the load does not consume more power than it is capable of supplying the ups
OVERLOAD PH C	100%	it occurs when the output current in phase c is greater than the nominal and less than 1.5 times the rated current.	<ul style="list-style-type: none"> • check for shorts to the output • verify that the load does not consume more power than it is capable of supplying the ups
OVERLOAD PH A	150%	it occurs when the output current in phase a is greater than 1.5 times the rated current and less than twice the rated current.	<ul style="list-style-type: none"> • check for shorts to the output • verify that the load does not consume more power than it is capable of supplying the ups.
OVERLOAD PH B	150%	it occurs when the output current in phase b is greater than 1.5 times the rated current and less than twice the rated current.	<ul style="list-style-type: none"> • check for shorts to the output • verify that the load does not consume more power than it is capable of supplying the ups.
OVERLOAD PH C	150%	it occurs when the output current in phase c is greater than 1.5 times the rated current and less than twice the rated current.	<ul style="list-style-type: none"> • check for shorts to the output • verify that the load does not consume more power than it is capable of supplying the ups.
REVERSE FAIL	POWER	it occurs when there is a return current in the output of the ups.	check the equipment connected to the output of the ups.

PARALLEL FAILURE	this alarm occurs when two ups are connected in parallel and one of the two fails.	check the ups is going wrong and try to restore system operation, if necessary contact your service
INVERTER OFF	<ul style="list-style-type: none"> the inverter is turned off. this may be due to: you manually turn off the inverter there was an overload. there was a temperature overload. there was an overload on the dc voltage to the inverter input. inconsistency in the voltage of the inverter overflow of the investor 	<ul style="list-style-type: none"> check for shorts to the output verify that the load does not consume more power than it is capable of supplying the ups check the temperature of where the ups is located avoid charges that generate large surges in short time. if the problem persists call service.
BYP FRQ OUT OF RANGE	the frequency of the input bypass is not adequate to power the loads.	wait until the frequency is normal. if ups is fueling a power plant, check it. one reason may be that the plant fuelis running low.
MANUAL BYPASS ENABLED	bypass breaker is activated (see section 6.4).	na
MANUAL BYPASS DISABLED	se ha desactivado el breaker de bypass (ver sección Error! Reference source not found.)	na
BATTERY TEST FAILED	<ul style="list-style-type: none"> there is a problem with the batteries. possible causes are: you have not activated the battery breaker the batteries are not connected the battery polarity is incorrect. batteries need replacement 	<ul style="list-style-type: none"> turn the battery breaker turn off the ups and connect the battery properly. replace the battery bank.
BATTERY TEST OK	the battery test was successful.	na

There are alarms that cause the UPS inverter is blocked (overload, for example), preventing return to normal operation. For the device to normal operation takes the display to the main menu and press the "Enter" for more than 6 seconds.

9. COMMUNICATIONS

9.1. RS 232 Port

The RS 232 is located in the back of the computer. This interface can be used for remote monitoring of UPS. It is recommended that the distance between the UPS and the monitoring equipment does not exceed 10 meters. If the computer you want to do the monitoring does not have RS232 port, we recommend using a USB to serial converter TRENDnet TU-S9. Monitoring can be done from a PC using HyperTerminal, which is included in Windows versions less than or equal to Windows XP. For more recent versions can be downloaded from the Internet.

When running the program window appears as shown in Figure 9.1

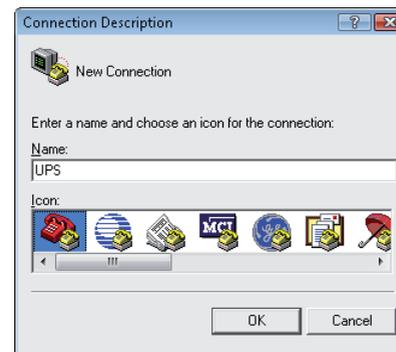


Figure 9.1

Give the connection a name and select an icon and click "OK". Then in the next window in the "Connect using" select the port where the UPS is connected and click "OK" (see Figure 9.2). In the next window set the port, choose 2400 bits per second transmission rate, with 8 data bits per frame, no parity bit, with one stop bit and no flow control, as shown in Figure 9.3 . Click the "OK" button.

Then see the window shown in Figure 9.1.4. Click on the button  (off) and then  (Properties).

Then see the window shown in Figure 9.1.5. Select the "Settings" tab and click on the "ASCII Setup" (see Figure 9.1.6). In the next window select the "Add linefeed at the end of each line received" and click "OK" to see the window in Figure 9.1.4. and click on the button  (call).



Figure 9.2



Figure 9.3

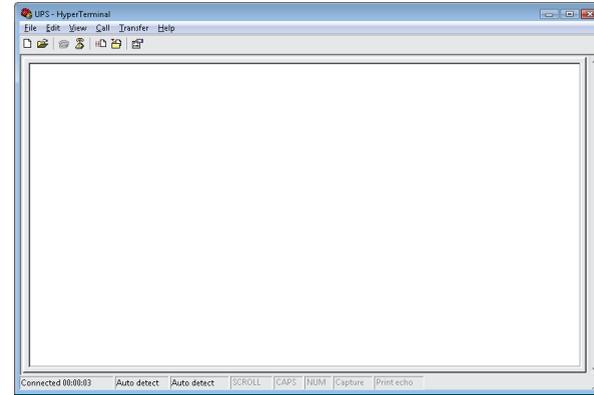


Figure 9.4

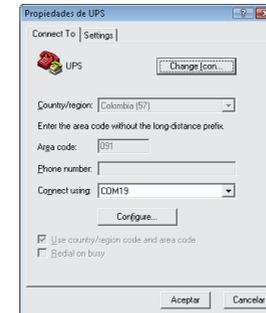


Figure 9.5

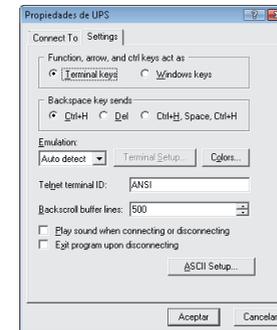


Figure 9.6

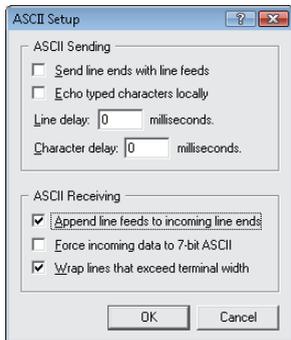


Figura 9.7

Now you can see on the screen 9.1.4 what appears on the LCD of the UPS. To change the menu click on the computer keyboard key ↑ or ↓ these amount to "Up Arrow" and "Down Arrow" respectively, on the front panel of the UPS. The equivalent of the button "Enter / Esc" key on the computer-do is the ← key. Can it while connected to the serial port lines are displayed with strange characters, this is normal in the operation of the UPS.

9.2 . Network Adapter (Optional)

The adapter enables the exchange of information across a LAN or internet. Monitoring through the network adapter can be of two types which can be used independently or simultaneously if desired:

- Via HTTP server, the UPS acts as a small HTTP server. Monitoring can be done from any computer that has access to the IP address that was assigned to the UPS.
- The other option is for SNMP. With this option, the manufacturer provides SNMP adapter software (NetAgent utility) that allows monitoring of the UPS in real time. The software provides audible signals and signs on the screen when an abnormality occurs. Additionally provide the UPS MIB to adapt to an environment with a professional monitoring NMS program such as OpenView.

If allowed, the UPS is able to send E-MAIL's warning to 8 different email addresses in case of abnormal operating conditions, including cell phone numbers.

9.3. Cell Phone Modem (Optional)

The cellular modem allows a GSM network to monitor the UPS status. This system allows real-time knowledge of the behavior of equipment in a remote place where you can access a cellular network. With the system are available up to 130 variables among which are: input voltages and frequencies, voltages and output frequencies, output current, load percentage on the battery, etc. In the event of an alarm, the description thereof is transmitted via email or SMS. The system also allows remote management and control of the team. Data for UPS status can be viewed through internet at a website.

10. SPECIAL FEATURES

10.1. Dual Input System

The Dual Input lets you connect two power supplies to UPS. One of them is connected to the rectifier and the other bypass. If the source is connected to the rectifier fails, the UPS goes into bypass mode so that the load is fed by the second power supply.

10.2. Parallel Redundant System

The CDP UPO33 UPS may operate in parallel, allowing implement a redundant system. That way if either one UPS fails, the other is responsible for supplying power to the load. Parallelism can also handle loads that require more power than it can deliver a single UPS.

10.3. Dry contact Card

The relay card allows, through switches, take the signs that indicate the status of the UPS you can use them in external devices such as mime, PLC's or control systems. The outputs of the board indicate the status of the UPS input, the output of UPS, batteries and inverter. For each signal is a normally open switch and a normally closed switch, thus complementary signals. For example when the UPS inverter is operating normally, the normally open switch is open and normally closed switch is closed. If the inverter fails, the normally open switch closes and the normally closed switch will open.

10.4. Power plant operation

With the ability to customize the UPS is easy to adapt the UPS to the particular characteristics of virtually any power plant. The UPS CDP UPO 33 can be programmed to perform a gradual start, so that the effective power required for emergency power plant is slightly higher than the UPS. This energy can be up to twice the power of the UPS.

11. TECHNICAL SPECIFICATIONS

Model	UPO33-20	UPO33-30	UPO33-40	UPO33-60	UPO33-80	UPO33-100	UPO33-120	UPO33-160	UPO33-200
Capacity	20kVA 18kW	30kVA* 27kW*	40kVA 36kW	60kVA* 54kW*	80kVA 72kW	100kVA* 90kW*	120kVA 108kW	160kVA 144kW	200kVA 180kW
AC/DC efficiency	Over 92%								
Transfer time	0ms								
Technology	True online double conversion with IGBT inverter								
INPUT									
Voltage	208 phase to phase +/- 25% (480 and other voltages on request)								
Connection	Three phase 5 wires (3 phases + neutral + ground)								
Frequency	60Hz +/- 10%								
Filters	EMI, RR								
Dual Input	Optional								
OUTPUT									
Selectable voltage	208 phase to phase 60 Hz +/- 5% balanced loads (480 and other voltages on request)								
Frequency	60 Hz +/- 0.1%								
Wave form	Sine wave through high frequency PWM modulation								
Conexión	Three phase 5 wire (3 phases + neutral+ ground)								
Connection THD	<2% linear load <5% non linear load								
Crest factor	3:1								
Power factor	0,9*								
Overload recovery	Auto transfer to the UPS								
Inverter	IGBT								
Isolating transformer	Inverter								
Voltage regulation	+/- 1% balanced load								
Overload	125% for 12 min/ 150% for 1 min								
BATTERIES									
Type	Sealed, free maintenance , VRLA (Valve Regulated Lead Acid) technology								
Backup time with full load	5 to 15 minutes. Backup for extended autonomy								
Typical backup time	4 hours at 90%								
Battery management	Self testing, point of transfer adjustable								
Battery protection	Breaker protection. Set to turn off when the battery is low. Battery test. Smart charger.								
Charger	Cold start with full load. Current management								
PROTECTIONS									
By hardware	Input and output breaker, batteries, bypass. DC fuses, fan fuses with temperature sensor , ON/OFF alarm switch								
Bypass	Solid state breaker, manual breaker for maintenance. External bypass optional								
Emergency switch	Local and remote EPO								
Monitoreo y comunicaciones									
Frontal panel	LCD Display with 4 rows and 20 columns to analyze parameters . Touchscreen optional								
Alarms	Buzzer and visual alarms								
Communications	RS232, SNMP, RJ45, GPRS module for remotemonitoring								
Environment									
Temperature	0° to 40 °C								
Humidity	0% to 95% non condensation								
Noise	<60 dBA @ 1.5 m								
BTU	7506	11260	15013	22519	27296	34120	40944	54592	68240
DIMENSIONS/WEIGHT									
UPS (LxAxP)	540x1120x620	540x1120x620	660x1550x865	660x1550x865	1200x1900x980	1200x1900x980	1200x1900x980	2200x1800x955	2200x1800x955
Battery bank (LxAxP)	270x1125x774	270x1125x774	432x1550x897	432x1550x897	800x1900x980	800x1900x980	800x1900x980	2049x1220x1070	2049x1220x1070
Weight UPS (Kg)	225 Kg	273 Kg	437 Kg	500 Kg	700 Kg	775 Kg	775 Kg	1600 Kg	1600 Kg
Battery bank Weight (Kg)	59 Kg	59 Kg	105 Kg	105 Kg	210 Kg	210 Kg	210 Kg	280 Kg	280 Kg

* Calculated at room < / > = 30 ° C / 86 ° F Efficiency

12. DIAGRAMA UNIFILAR

Apply TECHNICAL WIRING REGULATIONS (RETIE) and in general any rules to help achieve optimal levels of safety and quality of electrical installations.

The electric adjustment must be performed by skilled and well trained for this purpose. The input and output cables must be located zero meters (cable terminal tip of the eye), duly reviewed and tested. These should be stranded, preferably type welder. The maximum distance between battery bank and UPS should be 2 meters, otherwise, the cable required will be borne by the customer.

The regulation of input and output drivers recommended in the table is calculated for an average distance of 30 meters and 2 meters for the battery bank.

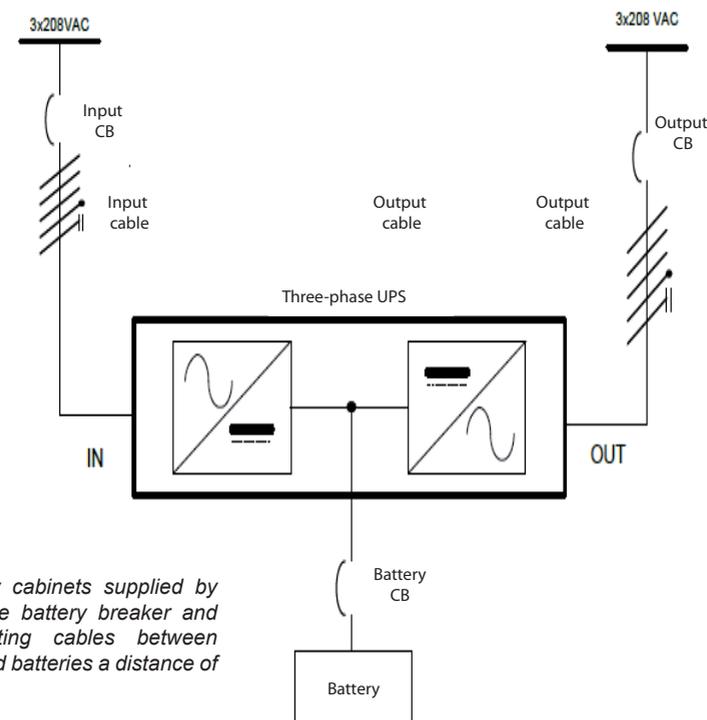
The earthing of the UPS input must come directly from the grounding system generally, verifying that the neutral of the transformer secondary overall system power is referenced to this point. The input and output conductors must be routed together to avoid feedback and achieve electromagnetic compatibility.

It must establish that the minimum distances of ventilation, maintenance and operation of the UPS to the walls or barriers around, must be at least 500mm (50cm).

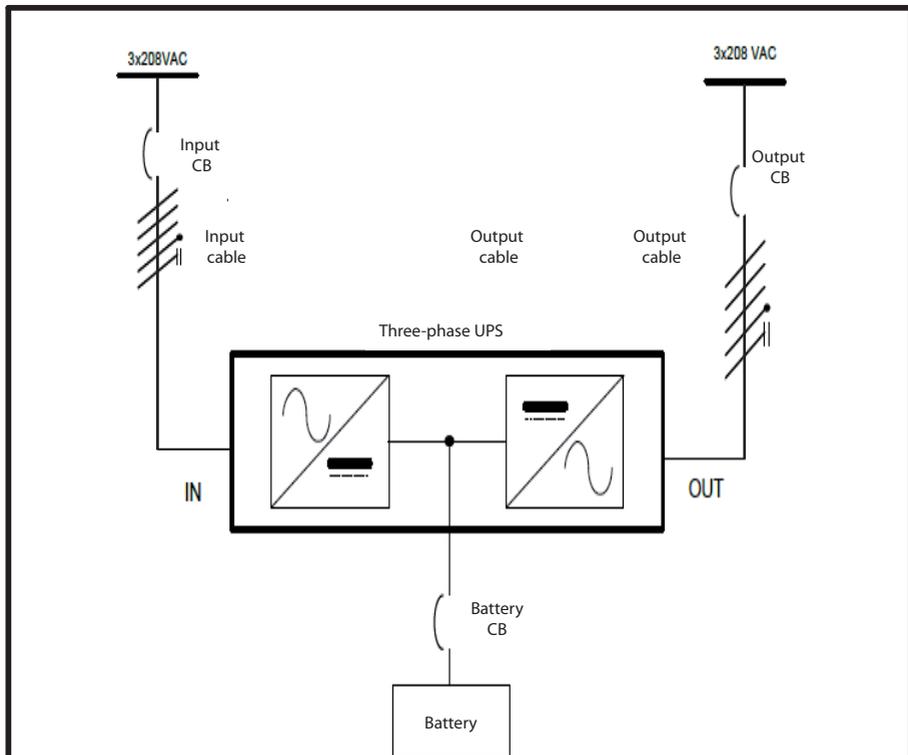
The board should have a regulated insulated neutral bus bar and one for ground.

To achieve the expected service life and optimum battery performance, it is essential that the ambient temperature at the installation location remains approximately at 22 ° C.

"All the features mentioned above are mandatory for equipment installation and warranty coverage"



The battery cabinets supplied by CDP include battery breaker and interconnecting cables between the UPS and batteries a distance of 1 meter.



Parameters	UPS power					
	20	30	40	50	60	
Input CB	3x90A	3x125A	3x150A	3x190A	3x250A	
AGW input cable or kcmils	4	2	1/0	2/0	3/0	
	2	1/0	3/0	4/0	4/0	
	8	8	8	6	6	
Battery cable AWG (positive, common, negative)	6	2	1/0	2/0	2/0	
	Battery CB	3X50A	3X80A	3X100	3X100	3X100
Number of batteries						
AGW output cable or kcmils	3 Phase	4	2	1/0	2/0	3/0
	1 Neutral	2	1/0	3/0	4/0	4/0
	1 Ground	8	8	8	6	4
Output CB	3X70A	3X125A	3X150A	3X175	3X200	
No. PCs	80	120	160	200	240	
Dimensions in mm.	Width	540	540	660	660	660
	High	1120	1120	1550	1550	1550
	Deep	620	620	865	865	865
UPS without battery weight (kg)	225	273	437	500	500	

CONVENTIONS Phase Neutral Ground	UPS DIAGRAM UNIFILIAR CDP UPO33	
	DATE: OCTOBER12/2011	DOCUMENT: UPO33 Three-phase
	PERFORMED : Ing. William Mendez	Reviewed and approved: Engineering Department

CDP MEXICO WARRANTY POLICY

CHICAGO DIGITAL POWER OF MEXICO, SA DE CV warrants this product for a period of two years in all parts and labor against defects in manufacture and operation from the date of delivery to consumers.

I. To make this guarantee can not be required more than the presentation requirements of this policy with the product in the place of purchase or service center CHICAGO DIGITAL POWER OF MEXICO, SA DE CV located at: Tramonte NO. 94 COL. PASTORS, CP 33340, NAUCALPAN EDO. MEXICO. TEL: (55) from 5359 to 5057 against defects in manufacture and operation, imperfections of materials, parts, components and labor.

II. CHICAGO DIGITAL POWER OF MEXICO SA DE CV will repair the product and if your judgment is not beyond repair, to change the team and the defective parts and components thereof without charge to the owner during the warranty period, and the cost reasonably incurred transportation of the product resulting from compliance.

III. The repair time will not exceed thirty days from the date of receipt of the product in any of the sites where the guarantee can be made and where they can also purchase parts and parts. IV. Should this policy warranty card, consumers can turn to your dealer for issuing a duplicate of the warranty policy on submission of the purchase note or invoice.

This warranty is not valid in the following cases:

- a) When the product has been used in other than normal.
- b) If the product has not been operated in accordance with the instruction manual that accompanies it.
- c) When the product is altered or repaired by persons not authorized by the national manufacturer, importer or responsible marketer concerned.
- d) Does not apply to normal wear or damage resulting from accidents. The lack of physical ground and reverse polarity will void any warranty.

Product: _____	SEAL STORE DATE OF DELIVERY
Model: _____	
Mayorist Name: _____	
Address: _____	
Teléfono: _____	