3 PHASE INPUT / 3 PHASE OUTPUT
10-250 Kva.
UPS
USER MANUEL

1. IMPORTANT

Thank for purchasing latest tecnology Series LEGA product.

This DOCUMENT;

UPS features, installation and operation of both you , UPS and contains very important information for the safety of the load accordingly . Learning of the guidelines and implementation by the device correctly and safely use and is essential to provide the maximum benefit from the device.

☞ Read the manual completely before working on this equipment.

☞ Please keep this manual for your later requirements!

☞ Keep this manual near UPS for easy consultation.

☞ Physical life of the product you have purchased is 10 years!

☞ Product warranty starts from the ex-factory invoice date.

2. USED SYMBOLS

☞ This symbol points out the instructions which are especially important.

This symbol points out the risk of electric shock if the following instruction is not obeyed.

This symbol points out the instructions, which may be resulted with the injury of the operator or damage of the equipment if not obeyed.

3. CONTENTS

4. SAFFETY

⚠ Information related to the safety of the UPS, loads and the user is summarized below. But the equipment should not be installed before reading the manual completely.

- The equipment may only be installed and commissioned by authorized technical persons.
- When the UPS is brought from a cold place to a warmer place, humidity of the air may condensate in it. In this case, wait for two hours before beginning with the installation.
- Even with no connections have been done, hazardous voltages may exist on connection terminals and inside the UPS. Do not touch these parts.
- Conne the PE ground connector before connecting any other cable.
- Do not put the battery fuses into the fuse holder before operating the equipment and seeing the "NORMAL" message on the LCD.
- The connections shall be made with cables of appropriate cross-section in order to prevent the risk of fire. All cables shall be of insulated type and shall not be laid out on the walking path of the persons.
- Do not expose UPS to rain or liquids in general. Do not introduce any solid objects.
- The equipment shall be operated in an environment, which is specified in "placement" section of this manual.
- Affix a label bearing the following expression, on the distribution panels feeding the UPS : "Isolate the Uninterruptible Power Supply before working on this circuit"
- Do not plug the communication cables in or out during stormy weather.
- The equipment shall only be maintained and fixed by authorized technical persons.
- In case of an extraordinary situation (damaged cabin or connections, penetration of foreign materials into the cabin etc.) deenergize the UPS immediately and consult to the technical service.
- Replaced batteries must be disposed of at authorized waste disposal centers.
- Keep this manual near for easy consultation.
- The equipment shall be packed properly during transportation.
- The equipment is compliant with the European Community directives.

5. INSTALLATION

5.1 Transportaiton

The UPS must remain in a vertical position throughout the transportation.
Make sure that the floor can support the weight of the system.

5.2 Unpacking

Equipment and batteries whose packages are damaged during transportation shall be inspected by a qualified technical person before starting with the installation.

The procedure is as following:
*Remove the bands and the protective packaging from the UPS.
*Use suitable equipment to remove the UPS from the pallet.
*Mount the cabinet parts supplied with the UPS after positioning and connecting the UPS.

The equipment shall be packed properly during transportation. Therefore it is recommended to keep the original package for feature need.

5.3 Stroge

Recommended storage temperature, humidity and altitude values are listed on the “Technical specifications” section.

If the batteries will be stored for longer than 2 months, they shall be charged periodically. Charge period depends on the storage temperature. The relationship is as shown below:

*Every 9 months if the temperature is below 20 °C,
*Every 6 months if the temperature is between 20 °C and 30 °C,
*Every 3 months if the temperature is between 30 °C and 40 °C,
*Every 2 months if the temperature is over 40 °C

5.4 Placement

5.4.1 Environmental Requisites

This product meets the safety requirements for devices to be operated in restricted access locations according to EN 60950-1 safety standard, which states that the owner should guarantee the following:

Access to the equipment can only be gained by service persons or by users who have been instructed about the reasons for the restrictions applied to the location and about any precautionsthat shall be taken and

Access is through the use of a tool or lock and key, or other means of security and is controlled by the authority responsible for the location.

Recommended operating temperature, humidity and altitude values are listed on the “Technical specifications” section. Air conditioning may be required to provide these values.

Other requisites are:

*The equipment and the batteries shall not be exposed to direct sunlight or placed near to a heat source. Do not expose UPS to rain or liquids in general. Do not introduce any solid objects.

*Avoid dusty environments or areas where dust of conductive or corrosive materials is present.

*Air outlets of the UPS are on sides, front and back. Leaveat least 75 cm at the front and both sides and 50 cm at the back for maintenance and ventilation.

5.4.2 Electrical Reguisites

The installation must comply with national installation regulations.

The electrical distribution panels for the mains and separated by-pass mains inputs must have a protectionand disconnection system. Disconnection devices used in these panels shall disconnect all line conductorsand the neutral conductor simultaneously.

The following table shows therecommended size of the mainsand separate by-pass mains input protection devices (thermal, magnetic and differential) and the cablecross-sections for the linear loads.

UPS POWER	INPUT TERMAL PROTECTION	INPUT CABLE CROSS-SECTION	BATTERY CABLE CROSS-SECTION	NETURAL CABLE CROSS-SECTION
10 kVA	25 A	6 mm²	6 mm²	10 mm²
15 kVA	25 A	6 mm²	6 mm²	10 mm²
20 kVA	40 A	10 mm²	10 mm²	16 mm²
30 kVA	63 A	16 mm²	16 mm²	25 mm²
40 kVA	80 A	16 mm²	16 mm²	25 mm²
60 kVA	100 A	25 mm²	25 mm²	35 mm²
80 kVA	125 A	35 mm²	35 mm²	50 mm²
100 kVA	160 A	35 mm2	35 mm2	50 mm2
120 kVA	200 A	50 mm2	50 mm2	70 mm2
160 kVA	250 A	70 mm2	70 mm2	95 mm2
200 kVA	315 A	95 mm2	95 mm2	120 mm2
250 kVA	400 A	120 mm2	120 mm2	150 mm2

☞ Load leakage currents are added to those generated by the UPS. If loads with high leakage currents arepresent, adjust this value accordingly.

☞ It is recommended to adjust the protective device after measuringthe total leakage current with the UPS installed and operational with the intended load.

☞ During transitory phases (power failure, return and voltage fluctuations) short leakage current peaks may occur. Make sure that the protection is not activated in such cases.

If the loads have a nonlinear characteristic, the current on the mains input, separate by-pass mains input and output neutral conductors may have a value that is 1.5-2 times the phase value during operation. In this case, size the neutral cables and the input/output protectionadequately.

According to EN 62040-1-2, the user shall place a warning label on the input distribution panel and the other primary power isolators, in order to prevent the risk of electric shock caused by afault voltage on the UPS. The label shall carry the following wording:

Isolate uninterruptible power supply before working on this circuit

5.5. Connections

Connections shall be done by authorized technical staff only.

When the UPS is brought from a cold place to a warmer place, humidity of the air may condensate in it. In this case, wait for two hours before beginning with the installation.

Check adequacy and appropriateness of your electrical installation before operating your device.

Check whether your insurance line is inserted at the beginning of the electrical installation and the fair value . LEGA PLUS Series UPS 3 -phase input (380VAC , 50Hz) is working with mains voltage.

Abnormal fluctuations in the mains voltage value , long-term if not decrease more than 10% , the device can work at the desired capacity. Connect the plug / cable to the network by the shortest route possible .

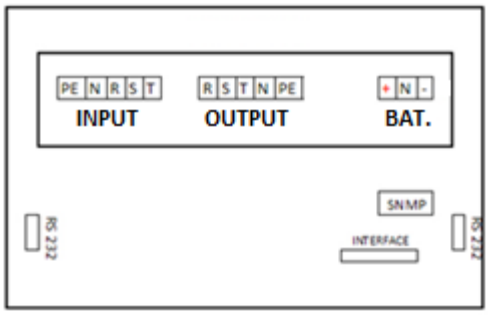
Make sure to ground ! If your device has a protection device against overcurrent . However, use appropriate insurance value to avoid damaging your network.

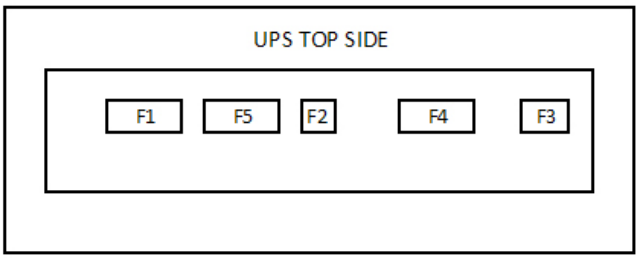
Select the cable to power devices in the appropriate section and fuse selection from the table. (Page 5)

Before starting the installation of all circuit breakers to "OFF" / "0" Make sure the location.

The battery terminals of the device internal battery which can be dangerous voltages.

☞ Layout of the connection terminals shown below:





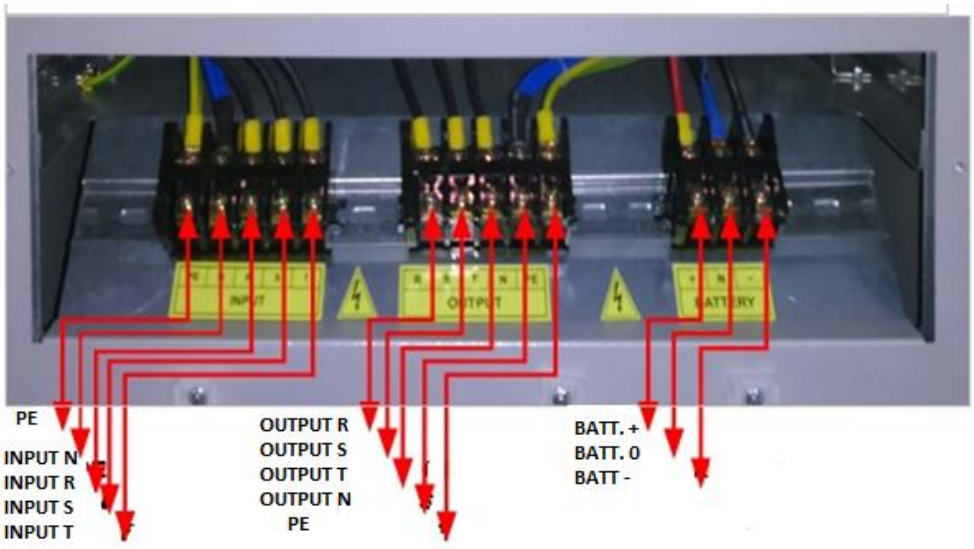
F1. Input Fuse - F2. Inrush Fuse

F3. Battary Fuse - F4.Output Fuse

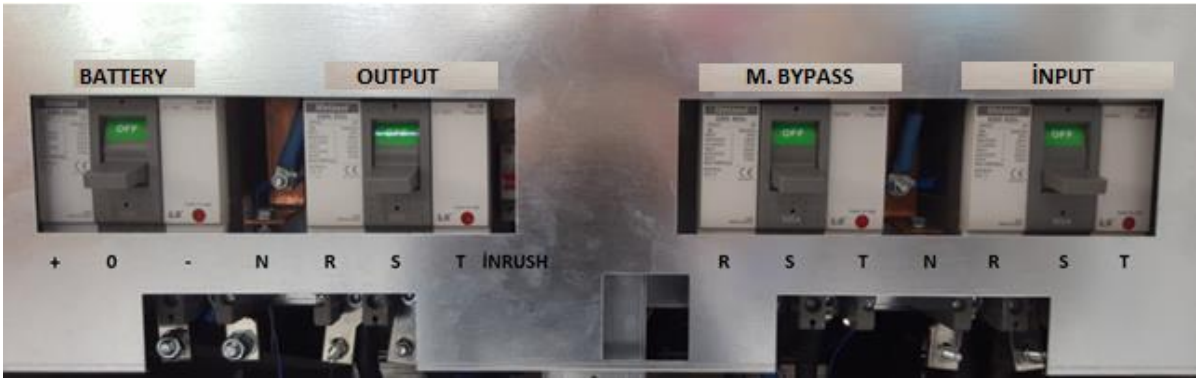
F5. Manual By-pass Fuse

5.5.1 Power Connections

10-15-20-30-40-45-60-80-100-120 kVA Connections;



160-200-250 kVA Connections;



5.5.2 PE Connections ;

The unit should be ground to be safe and reliable work . Before connecting other cables PE grounding plug connectors.

PE terminals of the load will depend on the UPS output to protective earth terminal. If the external battery cabinet must be grounded through the protective earth terminal of the UPS battery .

5.5.3 Mains (Input) Connections;

☞ Mains connection of the UPS will be connected to PE,N,R,S,T terminals. Auto fuse in the distribution panel where the other side of the cable which will be connected,should be connected to phase and neutral and it can be disconnected at the same time.

☞ In addition, if there is 30mA leakage relay on the distribution panel, connection should be done on the mains side of this relay.

☞ Automat should be D-type and its value should be selected in accordance to the maximum current which shown on the technical specifications.

☞ For life safety, battery automat, input and output automat taken to the '0' position. Firstly the aoutomat of the loads taken to 'I' position one by one.When installing the UPS, follow these steps carefully.

*When installing the UPS, never switch the battery fuse to "I" position as a first step.
*After finished the all connections, switch the mains input automat to "I" position.
*Please see the DC bus voltage exceed 350 VDC from front panel. This condition shall not exceed 5 seconds, depending on the mains voltage.
*After that switch the battery and output automat to "I" position respectively.
*After completion of these transactions, UPS will be on operate and the loads will begin to be fed uninterrupted.
*When the UPS is first activated the backup time can be shorter than the calculated. For this reason, before using the UPS, we recommend to recharge the batteries 10 hours.

☞ When you activated the UPS, please enter the ALARMS menu and check any written alarm.

☞ When the UPS connected to the mains voltage, there will be automatically voltage at the output of the UPS.

5.5.4 Load (Output) Connections;

The connection of the loads to the UPS will be connected to R, S, T, N, PE terminals. Loads to be fed more than one, the appropriate value automats should be choosen for each of these loads.

The cables between the loads and ouput terminals should be appropriate cross-section. To enable the short circuit protectionfeature of the UPS, each load shall be fed over a separate circuit breaker chosen according to the load current.

This may provide quick disconnection of the short circuited load and operation continuity of the other loads. To obtain maximum protection, the rating of each individual load circuit breaker shall have the minumum value, which is enough to carry the full load current continuously.

You should get power cable of the loads from the distribution panel.

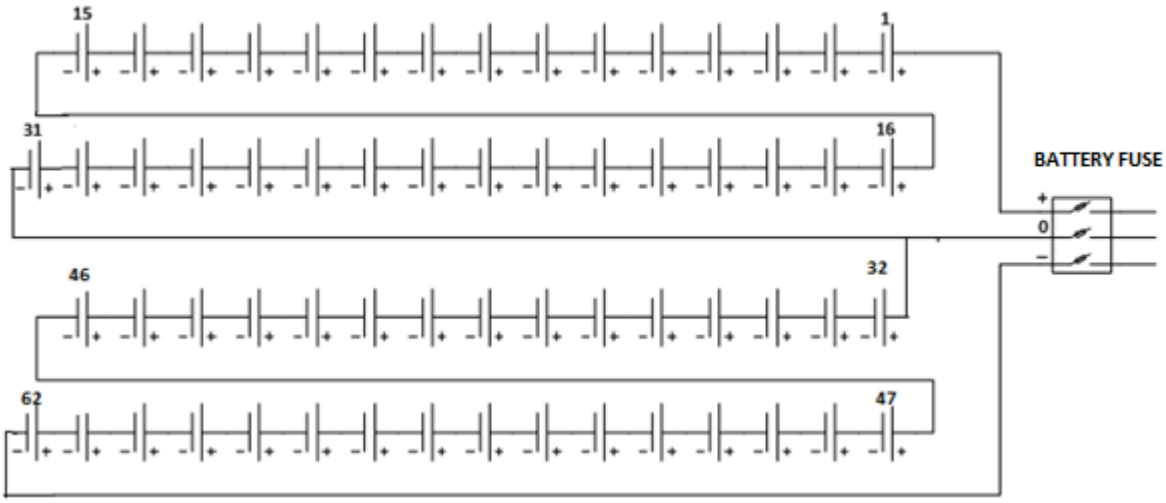
Activate the loads now.

Rated apparent and active power of the loads shall be less than the UPS power ratings.

5.5.5 Batteries Connections ;

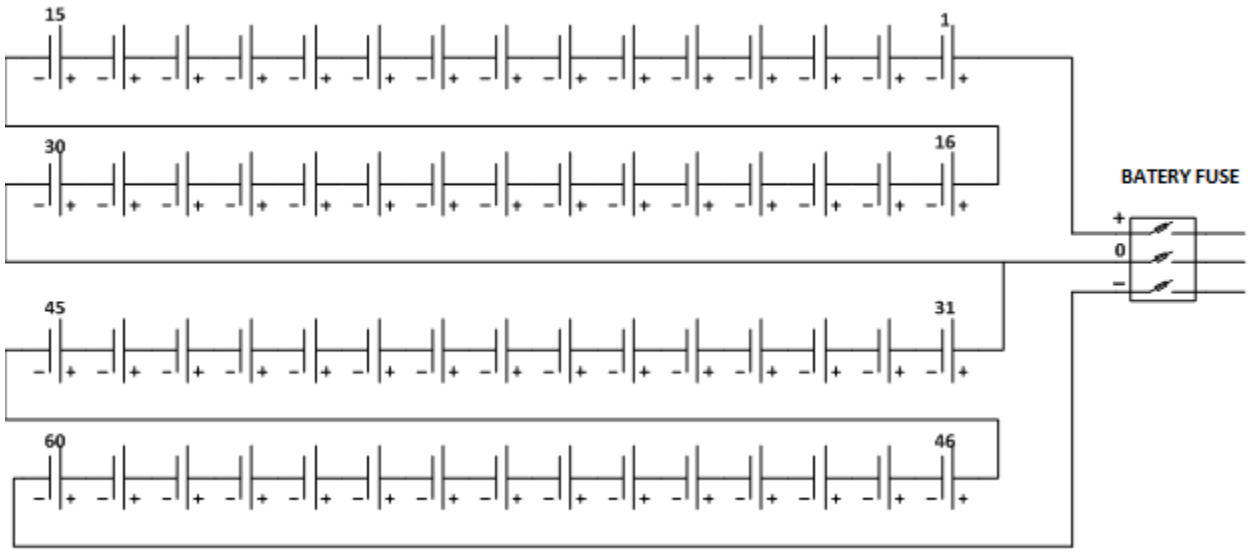
This **10-15-20-30-40-60-80** KVA. series UPS have 62 pcs 12V. and multiplies of 62 pcs maintanence free dry type battery. UPS use +409 Vdc. And -409 Vdc. Bus voltages.

62 PCS BATTERIES CONNECTIONS;



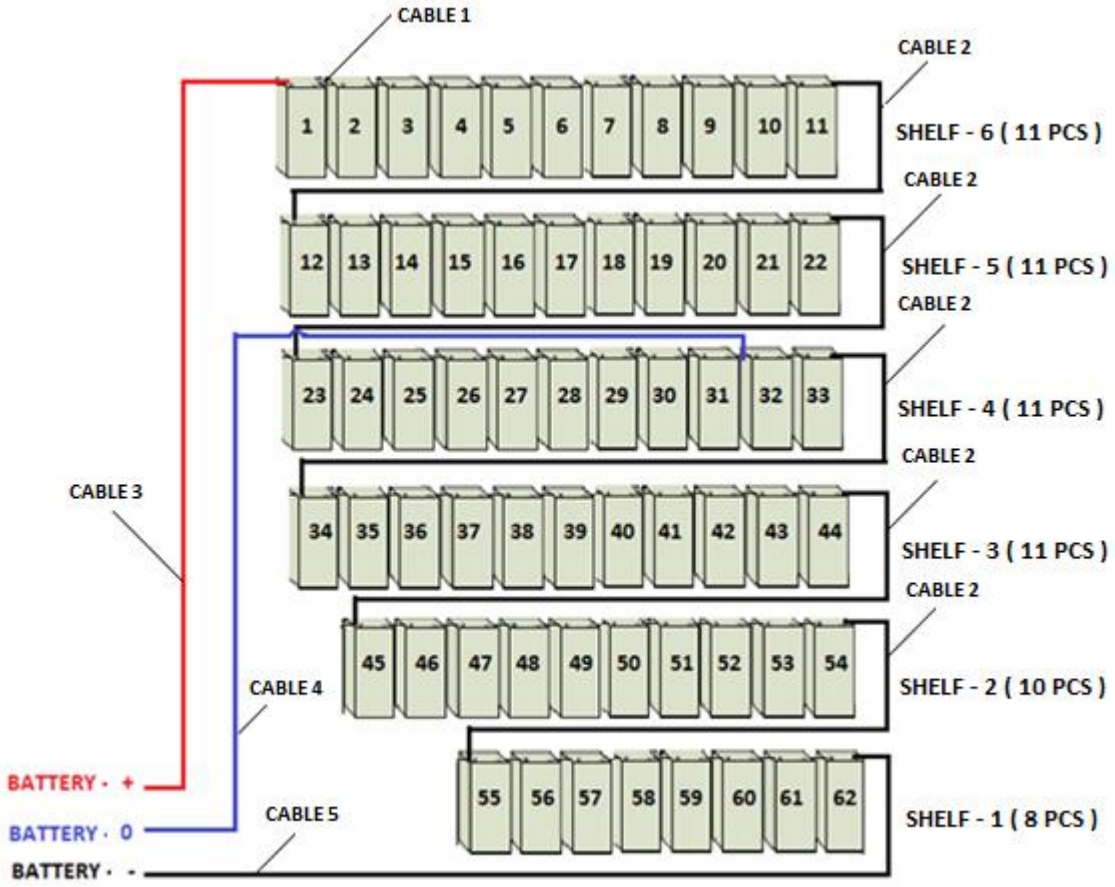
This **100-120-160-200-250 KVA.** series UPS have 60 pcs 12V. and multiplies of 60 pcs maintanence free dry type battery. UPS use +396 Vdc. And -396 Vdc. Bus voltages.

60 PCS BATTERIES CONNECTIONS;



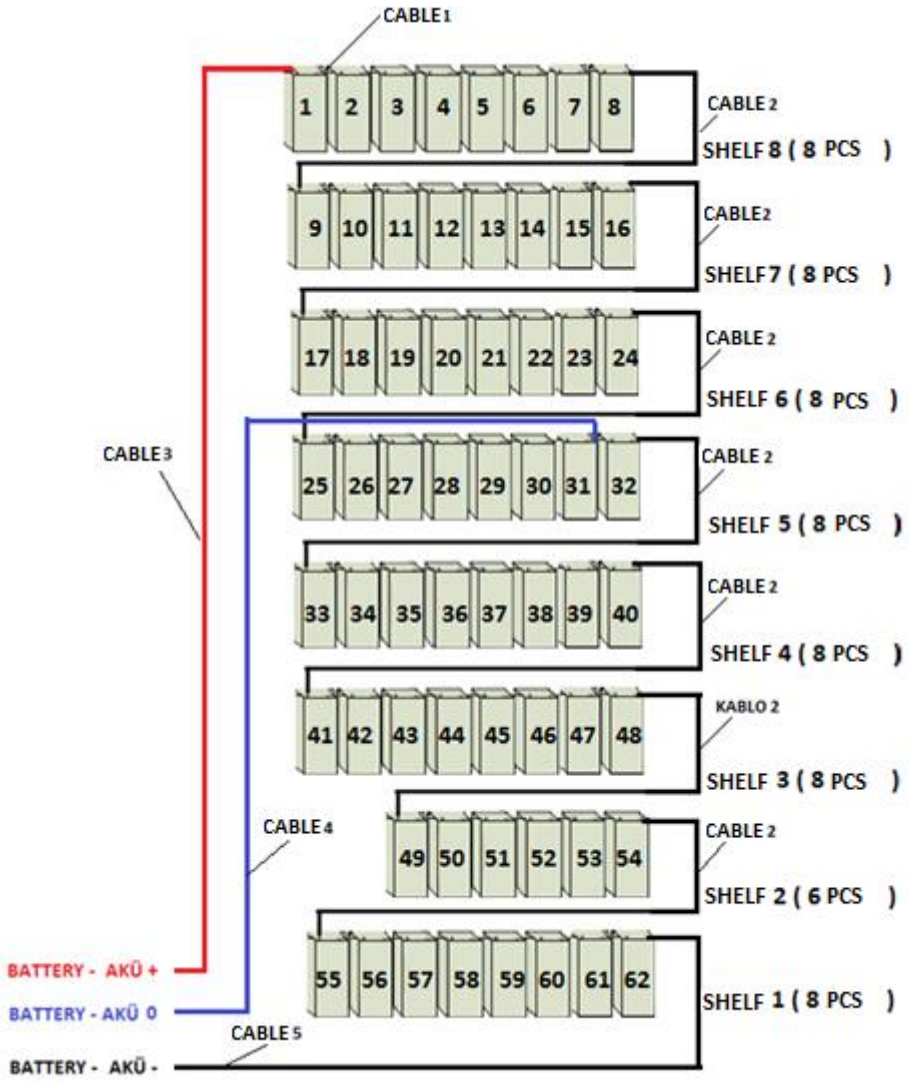
5.5.6 10 - 30 KVA. INTERNAL BATTERY CONNECTIONS;

12V. 7 / 9 Ah. BATTERY CABLE INFORMATION						
No:	**PCS**	**Type**	**Diameter**	**Lenght**	**Color**	**Definition**
Cable 1	56	NYAF	4/6 mm	120 mm	Black	Battery İnterconnect
Cable 2	5	NYAF	6 mm	900 mm	Black	Battery jump self
Cable 3	1	NYAF	6 mm	900 mm	Red	Battery (+)
Cable 4	1	NYAF	6 mm	1200 mm	Blue	Common Battery (0)
Cable 5	1	NYAF	6 mm	900 mm	Black	Battery (-)



5.5.7 40 - 45 KVA. INTERNAL BATTERY CONNECTIONS;

12V. 12 Ah. BATTERY CABLE INFORMATION						
No:	**PCS**	**Type**	**Diameter**	**Lenght**	**Color**	**Definition**
Cable 1	56	NYAF	4/6 mm	120 mm	Black	Battery İnterconnect
Cable 2	7	NYAF	6 mm	1100 mm	Black	Battery jump self
Cable 3	1	NYAF	10 mm	1100 mm	Red	Battery (+)
Cable 4	1	NYAF	10 mm	1400 mm	Blue	Common Battery (0)
Cable 5	1	NYAF	10 mm	1100 mm	Black	Battery (-)



5.5.8 IMPORTANT NOTES FOR BATTERY CONNECTIONS;

*Select suitable Ah. Value for your requirement.

*Be sure pozitive and negative connections are right for battery serial connections.

*Install NH Breaker with 3 poles at output of battery group.

*Connect ''+'', ''-'' and ''0''points of Battery to contacts of breaker.

*Connect the (-) pole of the batteries to the (-) battery terminal.

*Connect the (+) pole of the batteries to the (+) battery terminal.

*Connect the midpoint of the batteries to the battery N terminal.

*Connect output of breaker to DC bus with carrefully. Please check the polarity of connections.

*Please check Battery voltage before doing connection of DC Bus.

*Battery breaker should be switch on after Rectifier and İnverter work.

*Do not connect an extra battery to device during charging.

5.5.8.1 EXTERNAL BATTERY CONNECTIONS;

The way to follow for the external battery connection is listed below ;

*Set the fuse on the battery cabinet to "OFF" or "0" position.
*Connect the (-) terminal on the battery cabinet to the (-) terminal on the UPS
* Connect the (+) terminal on the battery cabinet to the (+) terminal on the UPS
* Connect the middle terminal block on the battery cabinet to the terminal (N) on the UPS
* For working of UPS , in the range of 10 – 80 kVA 31 x 2 (62 pieces) , for 100 kVA and more 30 x 2 (60 pieces) 12 Volt dry battery without full maintenance should be used.

The feed time may vary depending on the selected battery capacity.

10-15-20-30-40-45-60-80 KVA. UPS operate with;
31x2 (62 unit) (+372V, -372V) 12 Volt free maintenance lead-acid type batteries.

100-120-160-200-250 KVA. UPS operate with;
30x2 (60 unit) (+360V, -360V) 12 Volt free maintenance lead-acid type batteries.

Battery backup time is selected according to the capacity needed in case of mains failure.
When the UPS is first activated the backup time can be shorter than the calculated.
For this reason, before using the UPS, we recommend to recharge the batteries 10 hours.

5.5.9 Comminications and interface Connections;

☞ Related information is given in 'Communication' section

6.OPERATION

☞ DEFENDER SERIES DSP Our Uninterruptible Power Supply : three-phase electrical network where your three-phase uninterruptible power blackouts and your critical devices are the source of a type that allows you to operate safely on the network and defend the irregularities .

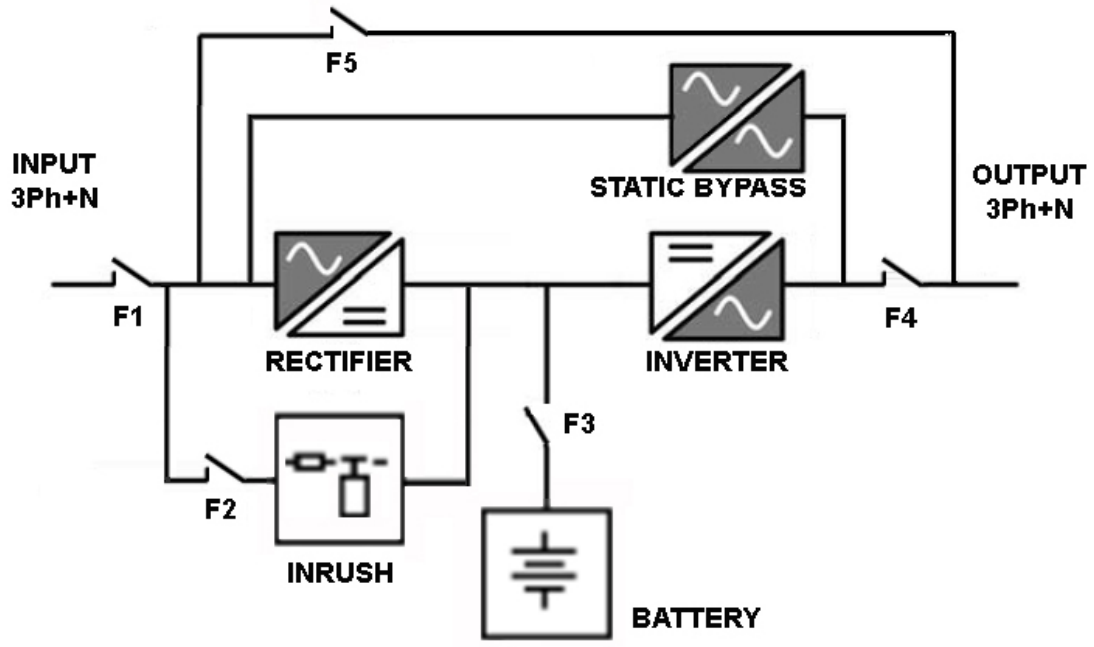
Our unit , in a large scale from 10 kva up to 250 kva 4 are presented in a separate cabin type.
1. Cabinet 10 - 15 - 20 - 30 - 40-45 kVA
2. Cabinet 60- 80 kVA
3. Cabinet 100 - 120 kVA
4. Cabinet 160-200 - 250 kVA

☞ **LEGA PLUS SERIES Uninterruptible Power Supplies;**
Latest Technology from sinus with semiconductor technology , real-time online (true online) , double conversion (double conversions) , transformerless 3-phase input 3 phase output devices are microprocessor controlled, equipped with PWM and IGBT technology, critical and nourishes your sensitive cargo in a safe and stable .

☞ In case of overload the system load through the static bypass unit it is continuously transferred automatically to the backup network and uninterrupted pending . Similarly , in the case of UPS failure is transmitted to the load network. Is outside the allowable tolerances of the UPS continues to supply input voltage is disconnected or completely connected to it via UPS battery charges. When the input voltage or when the UPS eliminates clutter returns to online mode again.

☞ Initially UPS behavior is different from the general working conditions. UPS start work only during the by-pass mode. Therefore, in order to open the by-pass voltage UPS frequency / waveform / rms limits must be within the proper range .
The operation mode specified by the user inverter , rectifier and condition of the network , you bypass is determined by the voltage of the battery .

UPS BLOK DIAGRAM



6.1 BYPASS Mode;

Bypass input power drawn from the grid in non- separate device. Loads are fed from the static bypass line . Input voltage, the output voltage has the same frequency and waveform . Energy flows through the load current path taken by only thermal / magnetic keys are limited . Bypass supply voltage , frequency and waveform must be in their tolerance limits and bypass shall be selected by the UPS to operate in this mode.

Bypass can be achieved by using energy-saving priority . In bypass mode, the yield is higher than the normal operating mode. If the bypass priority is selected , the bypass voltage frequency / waveform / rms value of tolerance limit UPS will operate in bypass mode. Bypass voltage is below these limits , UPS will switch to normal operation.

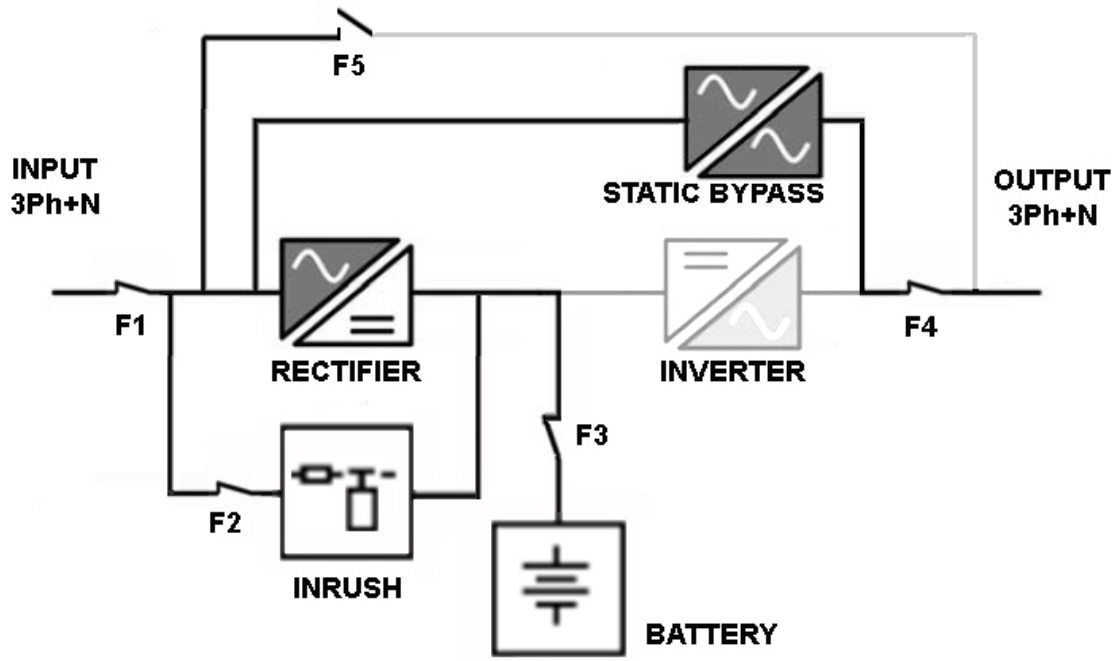
Bypass mode frequency / waveform / rms value of does not provide stability as in normal operating mode. Thus, the embodiment according to the desired level of protection should be applied carefully this operating mode . Bypass mode does not provide short-circuit protection as in normal operating mode. If output short occurs during bypass operation , thermal / magnetic protection will be activated and all loads energized.

Long-term overloads thermal / magnetic protection will be activated and energized the whole load will be disconnected in this condition .

UPS operates in the following cases By-pass mode :

* During START UPS
* Bypass priority is selected (ECO MODE)
* If the inverter is turned off by the user
* If the Inverter temporarily or permanently switch to fault conditions (overload, short circuit, over temperature , output high / low , etc.)

BYPASS MODE



6.2 NORMAL Operation;

Power is drawn from the mains input . Loads are fed via the rectifier and inverter . by rectifying the AC voltage is converted into DC voltage. Inverter DC voltage stable sinusoidal wave form , converts the AC voltage amplitude and frequency . Regulated output voltage is sinusoidal and the amplitude and frequency is independent of the input voltage.

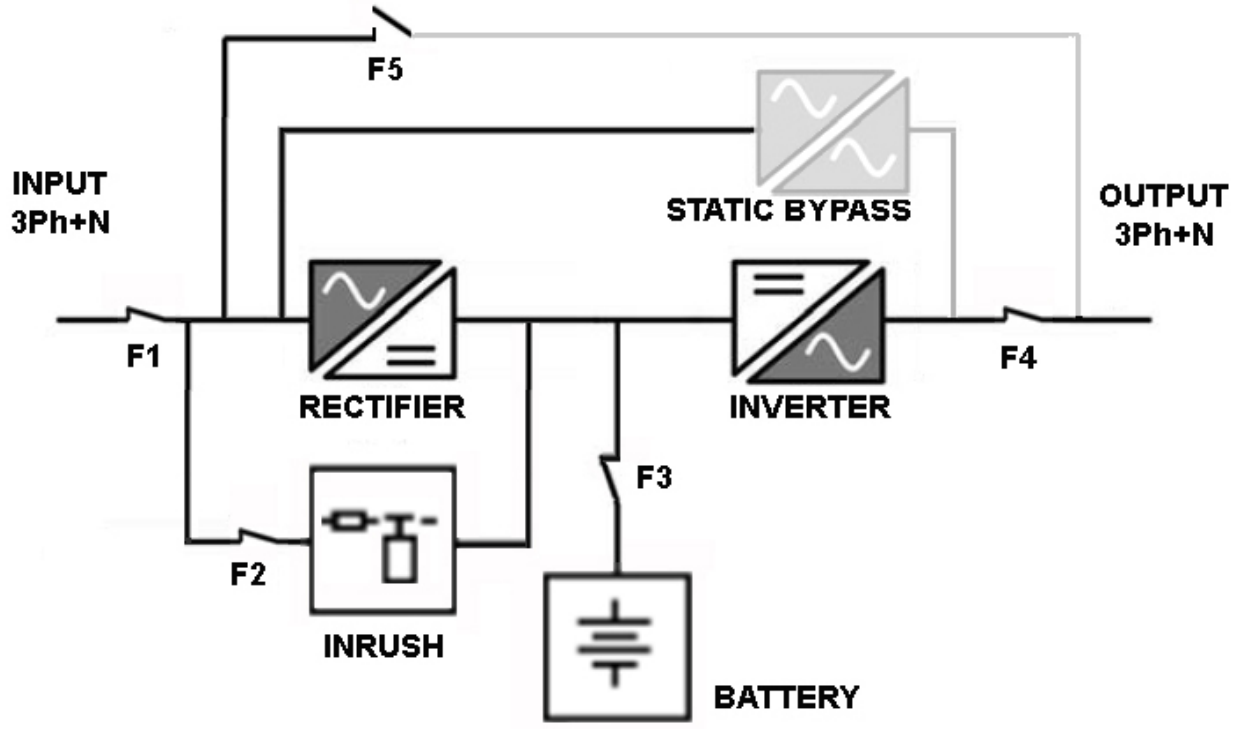
With inverter bypass input without any interruption to the bypass source is synchronized in frequency to transfer the load without overload and rectifier failure.

Input voltage and frequency values must be within the tolerance limits . UPS rectifier and inverter allows the switch to this mode.

If faced with different circumstances , the UPS operates in battery mode the following conditions :

* The inverter features selected.
* Even if the Bypass is selected, not elected bypass or bypass voltage frequency / waveform / rms value is not in accordance with the limit values

NORMAL MODE


F5
INPUT
3Ph+N
STATIC BYPASS
OUTPUT
3Ph+N
F1
RECTIFIER
INVERTER
F4
F3
F2
INRUSH
BATTERY

6.3 BATTERY MODE;

Power is drawn from the battery . Rectifier and Bypass work, the fed inverter loads .

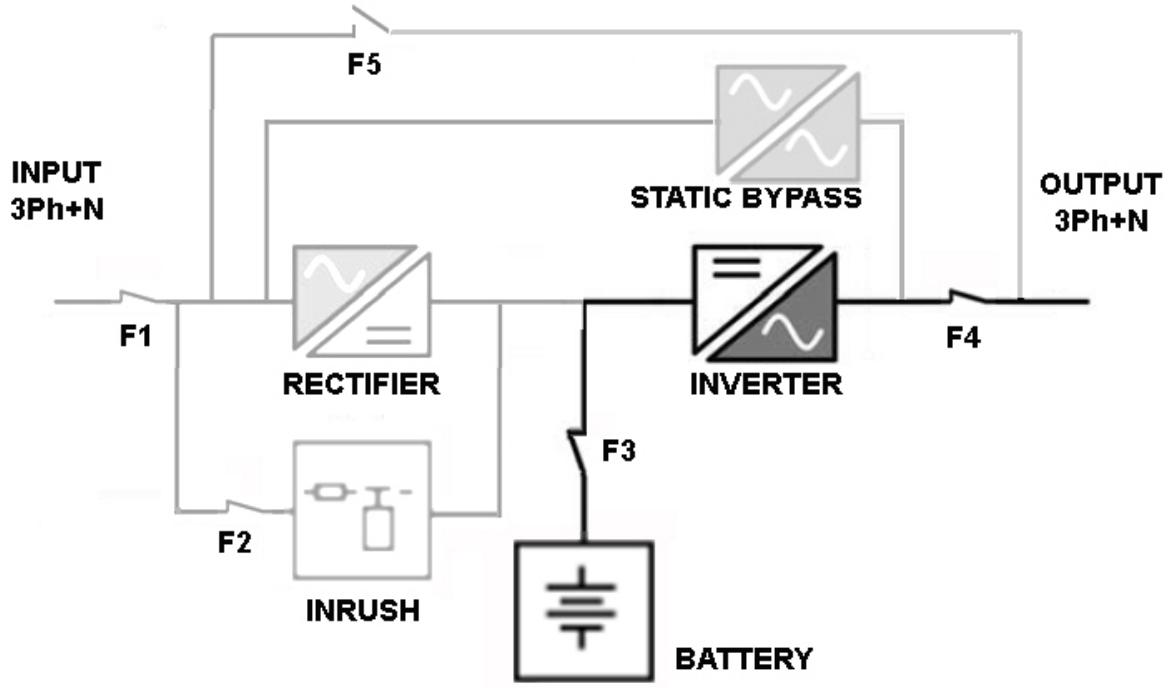
Is regulated sinusoidal output voltage has a magnitude and frequency. It is independent of the battery voltage.

Battery voltage should be in accordance with the limit values and the UPS inverter must provide the opportunity to work in this mode.

If faced with different circumstances , the UPS works in battery mode the following conditions

* The rectifier is defective or off.
* Not Rectifier selected , the input voltage frequency / waveform / rms value is not in accordance with the limit values .

BATTERY MODE



7.OPERATING PROCEDURE

This chapter describes operating procedures and the UPS can be managed.

7.1 UPS ON/START PROSEDURE

Can batteries for security , vending input and output to ' 0' to the position taken . During the UPS installation , follow these steps carefully .

• Input, output and make sure the battery connection is made according to the manual.
• All machines '0' position.
• Never use the device while the battery fuse circuit as a first step to "I" to bring to the position.
• Automatic mains input connections are made after the "I" position.
• The Alarm menu on the device's failure or SYNC BYPASS BYPASS LINE FAILURE existing alarms to repeat the previous steps by changing the input phase sequence.
• In-rush (C2), the automaton "I" position.
• The front panel of the DC bus voltage for 5 seconds. See that in 350 V. (This time may vary depending on supply voltage)
• the battery fuses in the battery cabinet to "I" to bring the DC BUS voltage increased to 426 V and 409 V to see it fixed.
• In this case, the device simply line LED (green) should be on.
• Then the battery, respectively, and the output vending automat "I" position.
• Your device will be commissioned after this embroidered studies have been completed and will start feeding the load without interruption.
• The ALARMS menu after commissioning should be checked whether written an alarm.
• Manual Bypass Switch This switch is normally only during maintenance "0" must be set.

The front panel "NORMAL" message without the battery vending "I" / " ON" position causes the throw to bring the battery fuse .
In this case, the batteries need to be replaced with ultra-fast fuse.

7.2 UPS OFF PROSEDURE

• Command UPS = OFF whether the system menu! Close Next
• Output automaton "OFF" / "0 " position positions.
• Introduction Inrush Automatic and manual bypass the "OFF" / "0 " position positions.
• Battery automaton "OFF" / "0 " position positions.
• External battery cabinet in vending machines vending the "OFF" / "0 " position positions.
• vending machines on the distribution panel to "OFF " / " 0 " position positions.
• When the UPS is operating during a long time , the batteries must be recharged periodically to prolong the battery life . Depending on the temperature of the manual charging period "Storage" in the section .

7.3 UPS BYPASS DEVICE NORMAL MODE UP PROSEDURE

Manual by-pass in order to isolate the electronics from the mains and UPS load, allows you to transfer the load to the bypass supply without interruption.

This feature is very useful for maintenance and service operations, and should only be activated by service personnel or by authorized personnel.

Maintenance and service should be given only by authorized technical service.
Manual bypass Automatic "ON" / "I" position.

Make sure that the UPS switch to bypass mode. (On the LCD panel "BYPASS" see the message).
UPS to switch to bypass mode, the bypass power supply frequency must be within the limits of the voltage and waveform.

Inrush Introduction and dispensers to the "OFF" / "0" position.
Output and battery circuit breakers to the "OFF" / "0" position.
LCD and buzzer will stop working in a few minutes.
During manual bypass are supplied direct from the network as a burden. Therefore, there is no protection against disruption and downtime in the network.

Automatic vending machines at all, except the manual bypass Manual bypass operation is "OFF" must be set. Meanwhile, the terminals are hazardous voltage in the EMC filter in the measuring circuit.

7.4 UPS DEVICES MANUAL BYPASS MODE TO NORMAL MODE PROSEDURE

Output automaton "ON" / "1" bring the positions.

Introduction and Inrush circuit breaker to the "ON" / "1" returns for positions.

Manual Bypass automaton "OFF" / "0" to return to the positions.

LCD displays " NORMAL" You see the message .

Automatic battery to "ON " / "1" position.

7.5 Battery Test

☞ This feature enables the user to obtain information about the battery condition. If the batteries have approached end of their lives, batteries fail.

☞ Battery life depends on several parameters like the number of charge-discharge cycles, discharge depth and ambient temperature. Battery life greatly decreases as the ambient temperature increases. Therefore it is recommended to keep the ambient temperature about 20 °C.

☞ To perform a battery test, enter “START B. TEST” in the COMMANDS menu.If the batteries fail, you’ll receive BATT FAILED message under the ALR submenu. In this case, make sure that the battery circuit breaker is “ON”/”I”, charge the batteries for minimum 10 hours and repeat the test. If the alarm persists, consult technical service for replacement.

☞ Make sure that the batteries are fully charged and battery circuit breaker is “ON”/”I” before starting battery test. Otherwise, the batteries will fail even if they are in good condition.

7.6 UPS Overload Protectıon

☞ Use features in the Guide " UPS overload when working on battery mode or normal operation as specified in the section will continue to supply a certain time.

☞ After this period, the UPS automatically, if the bypass is in proper condition and frequency / waveform / rms value of the input voltage is in acceptable limits , it will switch to bypass mode.

☞ If the overload condition persists in the case bypass the thermal / magnetic protection devices switch to active protection . In this case, the output power supply will be cut off all loads.

☞ Charges to be fed more qualified manner that the UPS is not overloaded.

8. COMINICATION

RS 232 Interface

☞ There is a serial interface as a standard communication interface and also there is a free contact interface as an optional.

• DSUB-9 female connector with the following layout shall be used on the UPS side of the connection cable.

Pin layout is given below.

GND	Pin 5
RXD Input	Pin 3
TXD Output	Pin 2

• RS232 DSU B9 female connector the rest of the Pins
Between 6-4 short circuit
Between 7-8 short circuit

9. CONTROL AND MONITORING

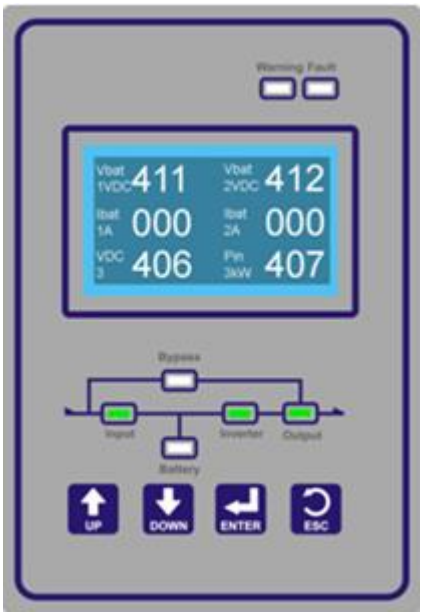
9.1 Front Panel

☞ Front Panel UPS 's work is placed on top of the situation and the user is informed about alarm conditions and measurements. It also allows access to controls and configuration parameters.

* The keypad allows the user to make a choice on the menu and menu access.

* Mimic panel basic information about energy flows, while alarm information.

* LCD (Liquid Crystal Display) allows access to the access controls and detailed information.



9.2 KEY BOARD

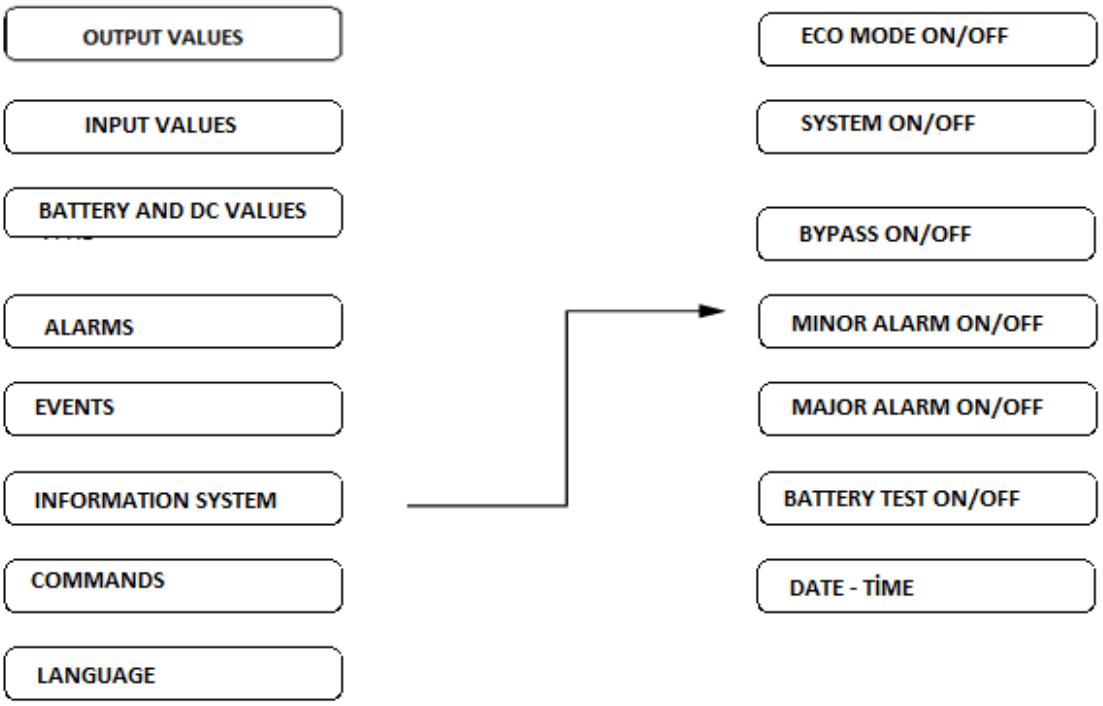
KEY	SYMBOL	DESCRIPTION
UP		Accessible menus / values upwards shifts . During parameter changes will increase the value as long as the button is pressed .
DOWN		Accessible menus / values scroll down. During parameter changes reduce the value as long as the button is pressed .
ENTER		It allows to enter the menu on the display. Selection will lead to the approval of the elections or made .
ESC		exit from the current menu

9.3 Mımıc Panel

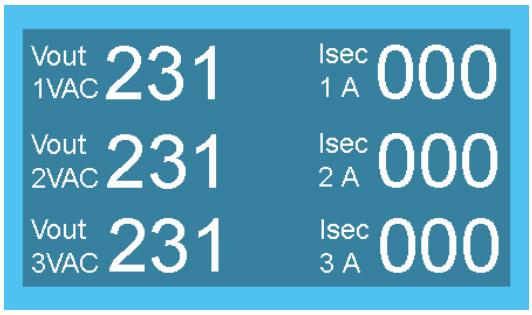
LED's			
ID	**COLOR**	**DESCRIPTION**	**STATUS**
INPUT	**GREEN**	Input Voltaje OK. Rectifier active	Continious
		Input Voltage OK. Not active Rectıfer	Blinking
		Input voltage is lower / upper limit to close active rectifier	
		Not Input Voltage	Off
BATTERY	**GREEN**	Battery Mode Active and Battery Voltage OK.	Continious
		Battery Test Mode Active and Battery Voltage OK.	
		Battery test is active and battery voltage is close to the lower limit (The energy in the battery is near the end)	Blinking
		Rectifier Active and İnverter Active	Off
INVERTER	**GREEN**	Load supplied by inverter	Continious
		Inverter is not active	Off
LOAD	**GREEN**	Load feeds	Continious
		UPS Freight fed but in case of overload	Blinking
		Not Output Voltage	Off
BYPASS	**YELLOW**	Static load is supplied through bypass line	Continious
		Bypass inactive	Off
Fault	**RED**	Not Alarm	Off
		Minör alarm	Blinking
		Majör alarm	Continious
WARNING	**RED**		

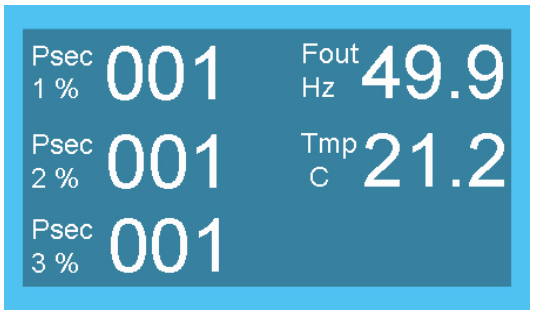
9.4 LCD AND USER MENU

LCD device status , detailed information about alarms and measurements verir.ayrı of users allows you to manage the UPS.



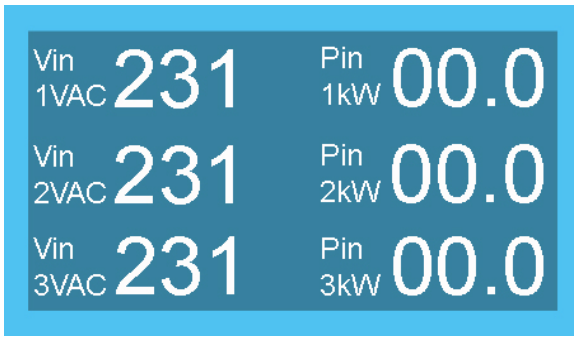
9.5 OUTPUT VALUE MENU





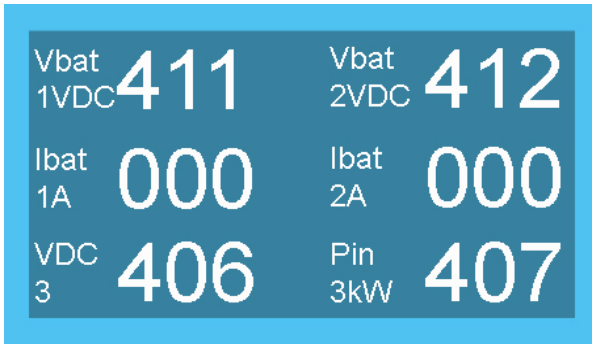
Vout	=	XXX	VAC	Output phase / neutral voltage
Isec	=	XXX	A	Output current
Psec	=	XXX	%	Load %
Fout	=	XX,X	Hz	Output frequency
Tmp	=	XX,X	OC	Ambient temperature

9.6 INPUT VALUE MENU



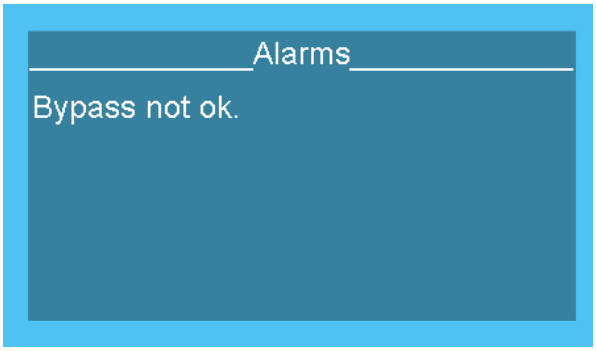
Vin	=	XXX	VAC	Input phase / neutral voltage
Pin	=	XX.X	kW	Input Power
fin	=	XXX	Hz	Input frequency
Vbyp	=	XX,X	VAC	Input phase / neutral voltage

9.7 BATTERY AND DC VALUE MENU



Vbat1	=	XXX	VDC	Positive arm battery voltage
Vbat2	=	XXX	VDC	Negative arm battery voltage
Ibat1	=	XXX	±A	Positive arm battery currents When charging (+) , while discharge (-)
Ibat2	=	XXX	±A	Negative arm battery currents When charging (+) , while discharge (-)
VDC1	=	XXX	VDC	Positive arm voltage DC Bus
VDC2	=	XXX	VDC	Negative arm voltage DC Bus

9.8 ALARMS MENU



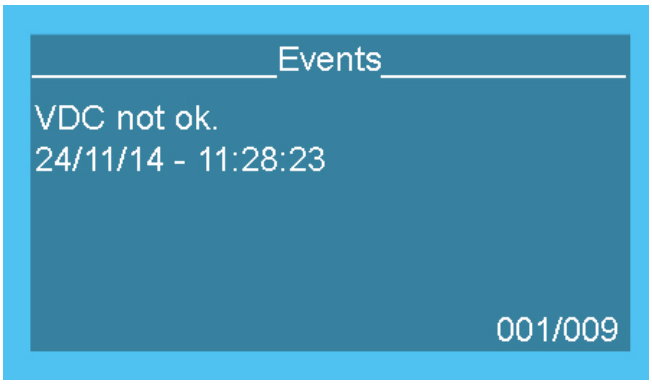
☞ In this sub-menu alarms can be scanned with up and down keys.
Possible alarms are listed below:

ALARM	MEANING	PREVENTIVE MEASURE
-BYPASS NOT OK	Bypass Voltage is out of limits	Wait the bypass voltage and frequency to return into limits
-BYPASS HIGH	Bypass Voltage is high	
-BYPASS LOW	Bypass Voltage is low	
-BYPASS SEQUENCE FAULT	Bypass Frequency is out of limits	
-MAINTENANCE BYPASS ON	Maintenance bypass is on	Deactivated the manuel bypass breaker
-OVER TEMPERATURE	Over Temperature	Check if there is something which prevents the air intake to the UPS . Check around the UPS there is 20cm gap. Check the ambient temperature and the UPS is receiving direct sunlight. Remove some of the loads from the output of the UPS
-OVER LOAD	Over Load	Remove some of the loads from the output of the UPS
-INVERTER OR RECTIFIER OFF	Inverter or Rectifier has fault three times in a row and locked up	Make "your system = ON" from commands menu. If the error persists call technical service.
-LOAD VOLTAGE NOT OK	Load Voltage is out of the limits	Take to ON position battery, mains, load breakers and wait for a while. If the error persist call the technical service.
-MAINS HIGH	Mains Voltage is High	Wait the voltage and frequency to return into limits
-MAINS LOW	Mains Voltage is Low	
-MAINS SEQUENCE FAULT	Mains Frequency is out of limits	
-DC NOT OK	DC voltage is out of the limits	Take to ON position battery, mains, load breakers and wait for a while. If the error persist call the technical service.
-DC VOLTAGE HIGH	DC voltage is high	
-DC VOLTAGE LOW	DC voltage is low	
-REMOTE OFF	UPS shut down remotely	To start up the UPS again make "system=ON" from commands menu. If the error persist call the technical service.
-BATT. FAILED	Battery Fault has detected at the end of battery test	Recharge your batteries and make the battery test again. If the UPS give error again call technical service
-BATT. OPEN CIRCUIT	The battery fuse or battery switch is on	If the battery open circuit breaker is activated . Call the technical service if the error disappearance
-BATT. LOW	Batterry voltage level is low	Recharge the batteries

9.9 EVENTS MENU

☞ In this menu, the alarm can be seen.

☞ **5000** past events can be saved. You can see all events up and down with the arrow keys. 3 times you can delete the event record by pressing the Enter key.

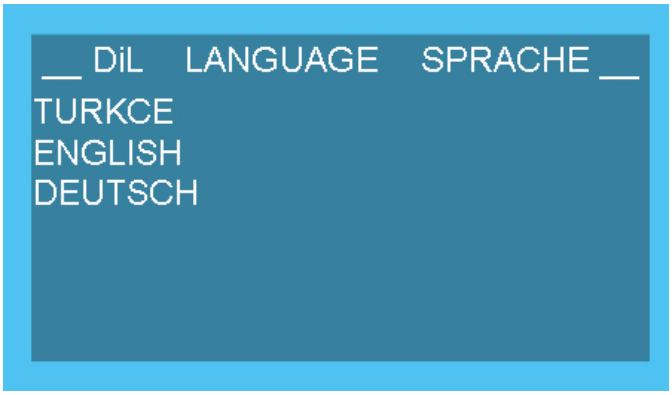


9.10 SYSTEM DATA MENU

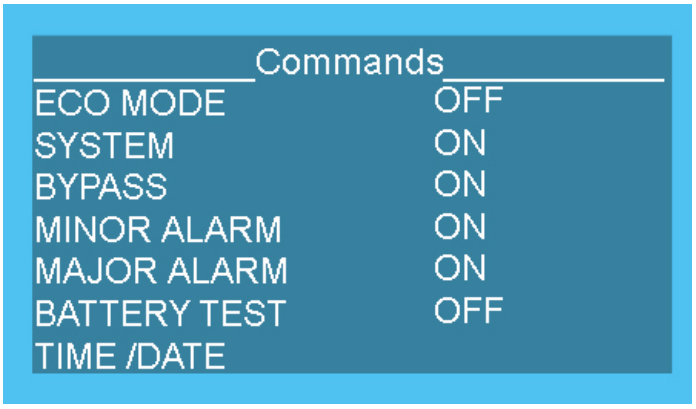
☞ In this menu, UPS model , and serial number of the software can be seen.

9.11 LANGUAGE MENU

☞ In This menu UPS MENU Language TURKISH , GERMAN and ENGLISH as selectable .



9.12 COMMANDS MENU



ECO MODE	OFF	x
	ON	
SYSTEM	OFF	
	ON	x
BYPASS	OFF	
	ON	x
MINOR ALARM	OFF	
	ON	x
MAJOR ALARM	OFF	
	ON	x
BATTERY TEST	OFF	x
	ON	
DATE TİME	Time date settings are done here.	

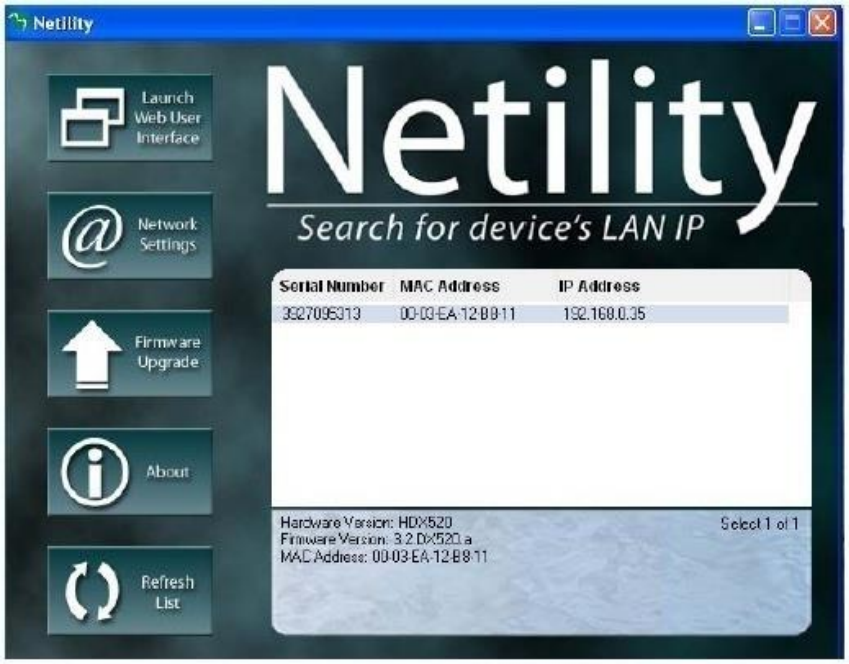
10. SNMP (Optional)

UPS Systems as optional (optional) SNMP (Simple Network Management System)
It can be equipped with .
Internal or External SNMP Module can be connected .
Connection is made using an Ethernet cable and RJ-45 connector.

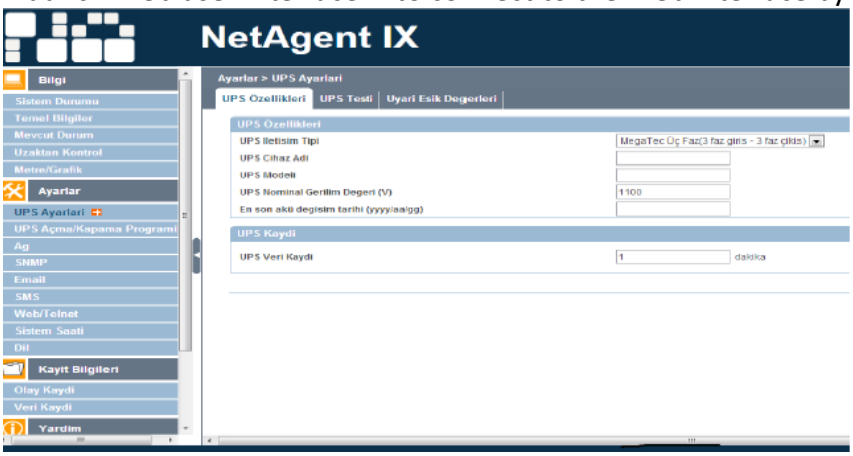
The latest version of the program from Netility http://www.megatech.com.tw/Download.htm site downloaded and installed .

Network Cable SNMP eat inserted. The program is run .

' Resresh list'' buton is clicked . The IP address of the SNMP module Netility program appears in the main window.



''Launch Web user interface ' ' to connect to the Web interface by clicking the button .



11. MAINTENANCE

The manufacturer 's technical information and that it has adequate equipment and devices for reading this guide , infirm and those who are not expert agrees that the guarantee would not interfere with the device.

The manufacturer has informed users of this guide . When the device is opened it is clear that there are parts of the system that contains energy and life-threatening , such as ports. Thus, the specialist manufacturer of non- intervention in damages and does not accept any responsibility . Users will be made by the process are clearly defined . These appropriate site selection, proper temperature and humidity are processes such as supply dust free environment . The manufacturer of all kinds can be caused by user error or improper use of the device will not accept responsibility for the damage and warranty will be void.

Batteries, fans and capacitors shall be replaced at the end of their lives.

Hazardous voltage and high temperature metal parts inside even if the UPS is disconnected. Contact may cause electric shock and burns. All operations except replacing battery fuses shall be carried out by the authorized technical personnel only.

Some parts inside the UPS (terminals, EMC filters and measurement circuits) are still energized during maintenance bypass operation. In order to deenergize all UPS parts, circuit breakers onmains and bypass mains distribution panels feeding the UPS and circuit breakers on external battery cabinet shall be brought to “OFF/0” position. Internal batteries shall also be isolated from the system.

11.1 BATTERİES

Battery life strongly depends on the ambient temperature. There are also other factors like the number of charge-discharge cycles and discharge depth.
Battery life is between 3-10 years if the ambient temperature is between 10 – 20 °C.
Performing battery test can provide you information about battery condition. (See “battery test” section for more information on battery test)

Danger of explosion and fire if the batteries of the wrong type or number are used.

Do not dispose of batteries in a fire. The batteries may explode. Do not open or mutilate batteries. Released electrolyte is harmful to the skin and eyes. It may be toxic.

11.2 FANS

In order to obtain the optimal operating temperature, the cooling fans are located in the UPS.

life of the fan for cooling the electronic power circuit of the power supply varies depending on environmental conditions as well be replaced by an authorized technical service staff is recommended every 5 years .

11.3 CAPACİTORS

The life of the electrolytic capacitors on the DC bus and the capacitors used for output and input filtering purposes depends on the usage and environmental conditions.

Preventive replacement by authorized technical personnel every five years is recommended.

11.4 PERIODIC MAINTENANCE

one should not care , except to authorized personnel . It will be just enough to do the following .

Do not hold the device in places exposed to direct sunlight .

Do not place close to heat sources. It extends the device longevity to keep the ambient temperature around 20 ° C.

Take precautionary measures against dust , fan of , you receive periodic dust airways (hence the life of the device allows the fan to be life long) environment and keep the floor clean . Ensure that appropriate humidity. Humid conditions will affect the device life and work will cause corrosion.

Within the warranty period (except for user error) to provide free materials and labor for the manufacturer has an obligation as to the problems . But apart from that (Warranty internal or external) If the manufacturer provides regular and periodic maintenance requested by itself or direct it costs money authorized technical services.

12. TECNİCAL SPECIFICATIONS

3 Phase Input / 3 Phase Output ; ON - LINE ''Double Conversion'' Teknology
DSP Controlled IGBT Rectifier UPS / 10 KVA. – 250 KVA.

****IGBT Rectifier, DSP Controlled Transformerless desing***
****İnput Power Factor Correction PFC (>0,99)***
****Low Total Harmonic Distorsion Level, High Efficiency (Up to %95)***
****Wide İnput Voltage Range, Generator Compatible Operation, ECO Mode***
****Intelligent battery management system extends the lifetime of batteries***
****Static and Manuel Bypass, Expandable battery blocks, Low installation and operation costs***
****Communications with computers and network systems with SNMP availability***

MODEL	PLUS	PLUS	PLUS	PLUS	PLUS	PLUS	PLUS	PLUS	PLUS	PLUS	PLUS	PLUS	PLUS
OUTPUT POWER (KVA.)	10	15	20	30	40	45	60	80	100	120	160	200	250
NOM. ACTİVE POWER (KW.)	8	12	16	24	32	36	48	64	80	96	128	160	200
İNPUT													
Nminal Voltage (Ph-Ph)	3 FAZ - 380 Vac. / 400 Vac. / 415 Vac.												
Voltage Range (%100 load)	%100 LOAD - 176 / 280 Vac. ± % 5 %50 LOAD - 125 / 280 Vac. ± % 5 %0-25 LOAD - 80/ 280 Vac. ± % 5												
Nominal Frequency (Hz.)	50 / 60 Hz.												
Frequency Range	44 - 66 Hz.												
İnput Current THD	< %4						< %5						
İnput Power Factor	0,99												
OUTPUT													
Power Factor	0,8												
Voltage (Ph-Ph)	3 FAZ - 380 Vac. / 400 Vac. / 415 Vac.												
Static Voltage Regulation	± % 1												
THD-V	< %3												
Crest Factor	3:1												
Frequency (Hz.)	50 / 60 Hz.												
Free running Frequency (Hz.)	0,01 Hz.												
Overload Capasity	%125 for 10 minutes - %150 for 30 sec												
Effiency	> %94												
BATTERY													
Battery Quantity	2x31								2x30				
Battery Protection	Depp discharge Protection with Auto cut off												
Battery Test	Standard (Auto & Manuel)												
DİSPLAY													
LED Display	Line, Bypas, Battery, İnverter, Load, Fault Indications												
LCD Display	Load Input & output Frequency, Voltage & current, Bypass Voltage, Battery Voltage & current, Temperature, Alarrms, History												
STATİK BYPASS													
Voltage Range For Bypass	**175 / 253 Vac.**												
Frequency Range For Bypass	**47-53 Hz. Or 57-63 Hz.**												
ENVIRONMENT / COMMINICATION													
Temperature / Humminty	0 ˚C- 40 ˚C (20-25 ˚C Recommended for Longer Battry life time) - Nem; 0 - %95 (non-condensing)												
Max. Altştude	1.000 M.												
Protection Level	IP 20												
Commiications	Standarts RS 232 / Opsiyonel SNMP and ve dry contact signals												
STANDARTS	ISO 9001, ISO 14001, OHSAS 18001, CE												
PHYSICAL SPECIFICATIONS													
Dimensions - WxDxH (cm.)	**56*82*128**						**56*82*128**		**56*102*130**		**110*82*160**		
Weight (Kg)	**115**	**120**	**120**	**138**	**140**	**140**	**165**	**170**	**220**	**235**	**340**	**380**	**420**

13. WARRANTY

☞ This warranty does not apply in the following circumstances;

*The appliance 's Failure to installation of the operating conditions specified in this manual.
* Device etc. other than authorized repair service . In case of intervention purposes.
*Careless and improper handling can result in damage caused.
*Scraping of the unit serial number / erasure be
*Exposure to the device or liquid blow
* It is used on the device 's power

⚠ **UNDER NO CIRCUMSTANCES UPS MANUFACTURER AND ITS SUPPLIERS AND SERVICE STATIONS OR UNINTERRUPTED POWER SUPPLY WORK DUE TO USER from the FAULTY WORK DIRECTLY OR INDIRECTLY LIABLE TO ANY DAMAGES .**

☞ The UPS manufacturer is valid for the date on which all documents , including published this booklet is free to make changes without prior notice .