ZETA SERIES

RHO SERIES

FARBER

2.0KVA/24V | 2.5KVA/48V | 3.0KVA/48V | 3.5KVA/48V | 5.0KVA/48V | 5.0KVA/96V | 7.5KVA/120V | 10.0KVA/180V

USER GUDIE

Email : sales@farberpower.com
Website : www.farberpower.com

FARBER

ZETA SERIES

RHO SERIES

FARBER

Dear Customer,

Congratulations! We thank you and appreciate your decision to go for a modern and high reliability of Pure Sine Wave UPS. Farber UPS incorporates highly advanced i-DSP technology, which delivers Pure sine wave output.

Farber UPS is designed to sense blackouts, brownouts, sags and surges of the mains supply and prevent them to reach your gadgets which are connected to the UPS by disconnecting the Grid supply and provide supply from UPS.

The following ratings are available in Farber higher range of UPS.

A few key benefits of UPS are as follows.

1. Advanced i-DSP technology delivers Pure Sine Wave output, enables to get optimum designed life of loads.
2. Clear LCD display, displays working functions and fault alarms of UPS.
3. 5 Stage charging method for superior performance of battery.
4. Automatic Battery charge level management provides power saving due to quick & efficient battery charging.
5. Suitable for electrical and electronics loads in home and offices.

Hope you will be satisfied with our Product and Services.

With Regards,

FARBER.

This **'USER GUIDE'** *provides you the complete understanding of UPS and its optimum use. Please do spare some time to read it before installing and using your UPS.*

CAUTION *and* ***WARNING*** *Statements are mentioned for special attention.* ***CAUTION*** *statements are identified conditions or practices that could result in damage to UPS or appliances and* ***WARNING*** *statements are identified conditions or practices that could result in personal injury or loss of life.*

ZETA SERIES

RHO SERIES

FARBER

INSTALLATION REPORT

(To be filled up by Technician/Electrician after Installation and send it to Company)

Customer(Purchaser) Details:

Customer Name : ..... Ph/Mobile No : .....

Address : .....

.....

Pure Sine Wave UPS Details:

Rating : 2.0KVA/24V ☐ 2.5KVA/48V ☐ 3.0KVA/48V ☐ 3.5KVA/48V ☐
5.0KVA/48V ☐ 5.0KVA/96V ☐ 7.5KVA/120V ☐ 10.0KVA/180V ☐

Note: Please put tick mark (✔) where applicable

Serial Number :.....

Date of Sale: D D M M Y Y Installation Date: D D M M Y Y

Power Cut per Day : ..... Hrs.

Details of loads that are connected to UPS:

Sl.No.	Load details	Qty	Power(VA)
1			
2			
3			
4			
5			
6			
7	Sockets		
Total			

Electrician Details

Electrician Name .....

Signature & Date .....

Phone .....

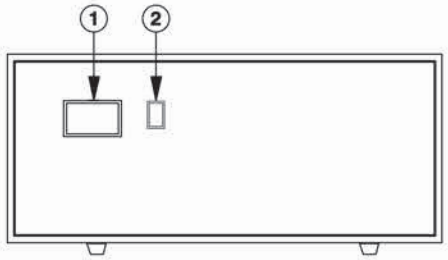
Product is working satisfactory.

Customer Signature:

FARBER

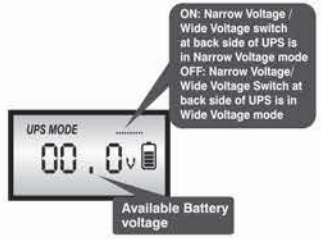
1. Knowing your UPS

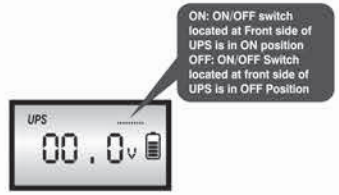
I) 2.0 KVA:

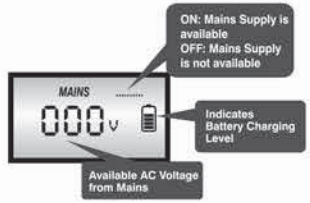


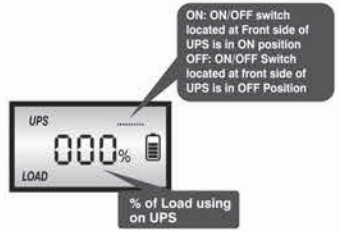
Picture: 01
Front panel diagram of UPS (2.0KVA)

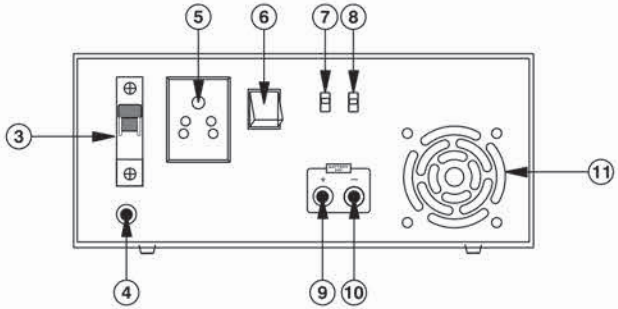
Sl.No	Part Name	Purpose of the Part
1	LCD Display	To display the working parameters of UPS
2	ON/OFF Switch	To switch ON/OFF the UPS output supply.











Picture : 02
Rear panel diagram of UPS (2.0KVA)

Sl.No	Part Name	Purpose of the Part
3	AC MCB	To switch ON/OFF the AC mains supply
4	Mains Power Cord	To connect Line, Neutral & Earth cables of mains supply as input supply to UPS.
5	Output Socket	To connect Line, Neutral & Earth cables of loads to output supply of UPS.
6	AC Bypass Switch	To bypass UPS from the circuit for its maintenance purpose.
7	Toggle Switch1*	To select 'Quick Charge' or 'Normal Charge'
8	Toggle Switch2**	To select 'Narrow Voltage' or 'Wide Voltage'
9 & 10	Battery Cables	Red colour is for +Ve terminal & Black colour is for -Ve terminal of the battery bank.
11	Fan	To reduce the temperature inside the UPS

***Toggle Switch1:** Factory setting comes with '**Quick Charge**' selection by considering longer duration of Power cuts but it can be changed to **'Normal Charge'** mode if power cut duration is less or connected with batteries less than 100AH capacity.

****Toggle Switch2:** Factory setting comes with **'Wide Voltage'** mode selection to avoid unnecessary battery discharge due to unstable Power Supply from mains, but it can be changed to **'Narrow Voltage'** mode when Mains Power supply is stable or using Computer/ IT peripherals loads on UPS.

Refer Technical specifications for more details

WARRANTY REGISTRATION CARD

(To be filled up by dealer and send it to company for Warranty Registration)

Customer(Purchaser) Details:

Customer Name :.....

Phone/Mobile No :.....

E-mail :.....

Address :.....

.....

Pure Sine Wave UPS Details:

Product Model, Rating & Serial Number Rating:

Bar Code Sticker

Date of Sale : D D M M Y Y

Invoice Number: .....

Dealer's Signature

Place.....

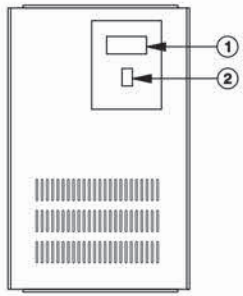
Seal

Customer Signature

Date.....

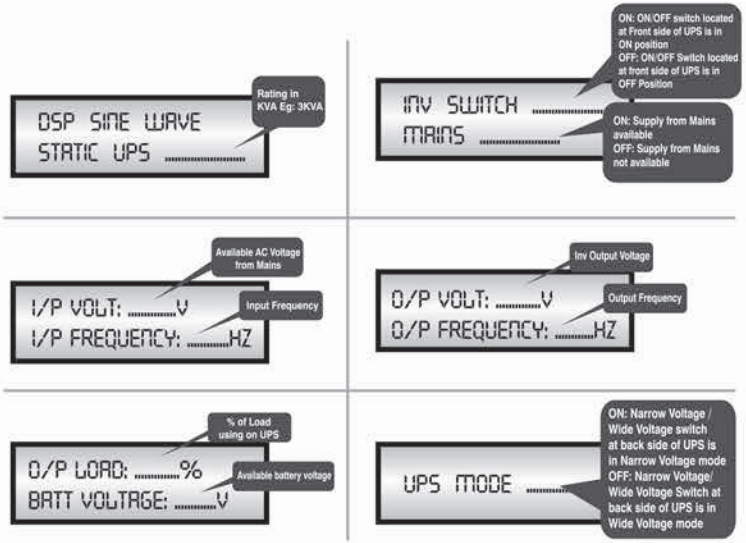
FARBER

II) 2.5 KVA to 10.0 KVA:

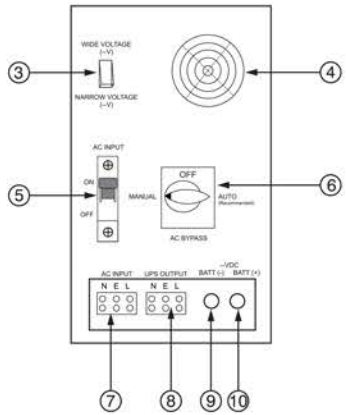


Picture : 03
Front Panel diagram of UPS (2.5KVA to 10.0KVA)

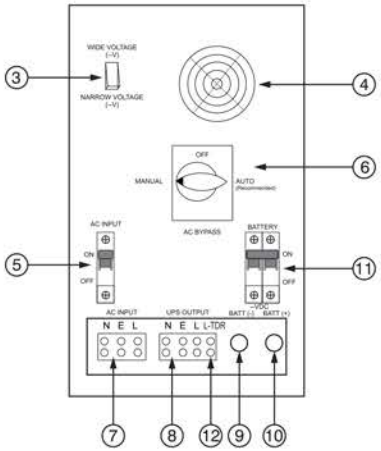
Sl.No	Part Name	Purpose of the Part
1	LCD Display	To display the working parameters of UPS
2	ON/OFF Switch	To switch ON/OFF the UPS output supply.



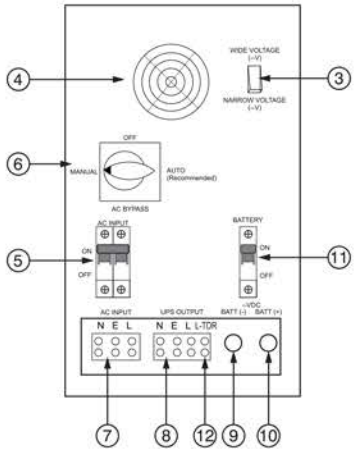
Rear panel diagrams of UPS:



Picture: 04
2.5/3.0/3.5KVA UPS



Picture: 05
5.0/7.5KVA UPS



Picture: 06
10.0 KVA UPS

CONDITIONS UNDER WHICH THIS WARRANTY SHALL BECOME VOID

The First Purchaser clearly understands and agrees that the warranty conditions shall be null and void, if:

1. The Product is transferred by the First Purchaser to any person.
2. The Product is not purchased from Farber's authorized dealer.
3. The completed Warranty Card is not presented to service personnel at the time of service of the Product.
4. Improper Power Supply to the Product or appliances connected to the Product that is/are not recommended or Product is not operated according to instructions given in the 'User Guide'.
5. Repair or Service of Product by any person other than authorized service center
6. Unauthorized tampering of seal on the Product or presence of foreign objects in the Product.
7. Damage to the Product due to operation in any abnormally corrosive alkaline/acidic atmosphere.
8. Damage resulting due to any defect which is not immediately notified to Farber Customer Care.
9. Any defect or damage resulting due to improper maintenance of the Product
10. Removal, obliteration or alteration of original serial number on the Product/Warranty Card.
11. Damage to the Product or any part/s due to transportation or shifting is not covered under Warranty.
12. Defects are caused beyond control of Company like lightening, faulty wiring, acts of God, environmental conditions such as excessive moisture or dampness, negligence of Purchaser or while in transit to service center or improper storage of Product.

Product Model, Rating& Serial Number :

Bar Code Sticker

Invoice No: _____ Date of Sale: D D M M Y Y

Purchaser's details	Dealer's details
Name	Name .....
Phone	Phone .....
Address	Address .....
.....	.....

Purchaser's Signature **Dealer's Signature & Stamp**

Purchaser clearly understands and agrees to the above mentioned terms and conditions of the Product warranty at the time of purchase.

Note: Customer shall contact us at sales@farberpower.com to register date of purchase of the product or visit website at www.farberpower.com for register the details.

14. Warranty card

PRODUCT WARRANTY

Farber Company provides warranty to Pure Sine Wave UPS (hereinafter referred to as "Product") for a period of 12 months from the date of sale ("Initial Warranty Period") on all parts except metal & plastic parts, provided always that the Warranty Card bears the rubber stamp, date and signature of Authorized Dealer.

TERMS AND CONDITIONS UNDER PRODUCT WARRANTY

1. The Warranty is confined to the Purchaser who has purchased the Product, only fromFarber or any Farber's Authorized Dealer ("Purchaser"/ "First Purchaser"). The Warranty cannot be transferred by the First Purchaser to any person by whatever means.
2. Farber warrants to the First Purchaser, that the Product is free from defects in material and workmanship under normal use and service for the Warranty Period.
3. In case of complaint registered by the Purchaser all efforts will be made promptly to attend to the complaint. Repair/replacement of part(s) during the Warranty period will be free of cost, if it is determined by the authorized service center of Farber that these are due to manufacturing defects.
4. In case of major failure in Product, first purchaser shall send the Product to the authorized service center of the Company. The responsibility including expenses for transportation/transit insurance of the Product shall rest with the first Purchaser.
5. Defective parts arising out of replacements within warranty period shall become property of Farber.
6. Call registered with the Farber Customer Care wherein only cleaning of the Product/parts in the Product due to dust accumulation on portions of the Product, general explanations/returning, are not to be considered as defects.
7. Farber will not be liable for any direct, indirect and consequential losses, damages such as loss of profit, loss of goodwill, loss of life etc. and/or damages caused to the Purchaser or third party due to non or partial performance of the Product or any part thereof.
8. Except as provided herein, this Warranty for the Product will expire automatically upon completion of 12 months from the date of sale, irrespective of the period, the Product was not in use by the Purchaser or was not giving proper performance or was under break down or the time taken for repair/replacement of defective parts or even if some part/s have been repaired or replaced during the Warranty period.
9. The Purchaser should preserve the original invoice and Warranty Card for necessary verification and produce it at the time of service.
10. The Warranty does not cover Installation/Demonstration of the Product and also to the accessories external to the Product.
11. The decision of Farber with regard to the complaint under this Warranty shall be final and binding on the purchaser.

Sl.No	Part Name	Purpose of the Part
3	Rocker Switch*	To select 'Wide Voltage' or 'Narrow Voltage'
4	Fan	To reduce the temperature inside the UPS
5	AC MCB	To switch ON/OFF the AC mains supply
6	AC Bypass Switch	To by-pass the AC Mains in case of UPS failure.
7	Terminal Block-1 (AC Mains)	To connect Mains supply Line, Neutral & Earth cables as input to UPS.
8	Terminal Block-2 (Output)	To connect Line, Neutral & Earth cables of loads to get supply from UPS.
9 & 10	Battery Terminals	Red colour is for +Ve terminal & Black colour is for -Ve terminal of the battery bank.
11	DC MCB	To Switch ON/OFF the DC supply from batteries
12	TDR(Time Delay Relay) Output**	To connect compressor loads

***Rocker Switch:** Factory setting comes with **'Wide Voltage'** mode selection to avoid unnecessary battery discharge due to unstable Power Supply from Mains, but it can be changed to **'Narrow Voltage'** mode when Mains Power supply is stable or using Computer/ IT peripherals loads on UPS.

****TDR Output:** Output through TDR is typically used for compressor loads like Air conditioners, Refrigerators etc., can be connected directly to TDR output by removing the stabilizer connected if any.

2. Application Chart

Refer the below 'Application Chart' to understand different loads that can run with output power supply of different rating of UPS.

Type of Loads	Loads*	Average Power (VA)#	Appliances(Loads)+						
			2.0KVA	2.5KVA	3.0KVA	3.5KVA	5.0KVA	7.5KVA	10KVA
Computer & IT Peripherals	Laptop	65	✓	✓	✓	✓	✓	✓	✓
	Computer-TFT model	200	✓	✓	✓	✓	✓	✓	✓
	Computer-CRT	300	✓	✓	✓	✓	✓	✓	✓
	Scanner**	375	✓	✓	✓	✓	✓	✓	✓
	Inkjet Printer	250	✓	✓	✓	✓	✓	✓	✓
	Dot Matrix Printer	250	✓	✓	✓	✓	✓	✓	✓
	Fax Machine	180	✓	✓	✓	✓	✓	✓	✓
	Laser Printer**	600	✓	✓	✓	✓	✓	✓	✓
Electrical Loads	Tube Light	50	✓	✓	✓	✓	✓	✓	✓
	Ceiling Fan	100	✓	✓	✓	✓	✓	✓	✓
	CFL	20	✓	✓	✓	✓	✓	✓	✓
	Incandescent Bulb	75	✓	✓	✓	✓	✓	✓	✓
	Floor Fan	200	✓	✓	✓	✓	✓	✓	✓
Kitchen Appliances	Wet Grinder **	900	✓	✓	✓	✓	✓	✓	✓
	Mixer**	1000	✓	✓	✓	✓	✓	✓	✓
	Refrigerator**	1250	✓	✓	✓	✓	✓	✓	✓
	Micro Owen**	1250	✓	✓	✓	✓	✓	✓	✓
Entertainment Equipment's	Television CRT	150	✓	✓	✓	✓	✓	✓	✓
	TV(LCD/LED <40")	150	✓	✓	✓	✓	✓	✓	✓
	TV (LCD/LED>40")	200	✓	✓	✓	✓	✓	✓	✓
	Set top Box	50	✓	✓	✓	✓	✓	✓	✓
	CD/DVD Player	125	✓	✓	✓	✓	✓	✓	✓
	Blue-Ray DVD Player	250	✓	✓	✓	✓	✓	✓	✓
	Music System**	500	✓	✓	✓	✓	✓	✓	✓
Other Loads	Washing Machine**	1000	✓	✓	✓	✓	✓	✓	✓
	Motor ½ HP**	1000	✓	✓	✓	✓	✓	✓	✓
	Motor 1 HP**	2000			✓	✓	✓	✓	✓
	Petrol Dispensers**	2500			✓	✓	✓	✓	✓
	AC-1 Ton**	3500					✓	✓	✓
	AC-1.5 Ton**	4000					✓	✓	✓
	AC-2.0 Ton**	5000							✓

13. Service Assistance

Farber UPS is backed by a sophisticated and systematic real world service support brought to you by **Farber support.**

For any personalized assistance like planning any new back-up power requirements or if you find any abnormality in Product, Please contact us at **support@farberpower.com** with details of Product model, Rating, Serial Number, Date of Sale and nature of problem you have observed in Product.

12. Trouble Shooting of UPS (2.5KVA TO 10.0KVA)

LCD Display	Nature of problem	Actions/Remedies
•PROTECTION• MAINS MCB TRIP	MCB tripping due to Short Circuit in Power Supply or High Power consumption loads used on UPS.	Switch ON the 'AC Mains MCB' which is available at rear panel of UPS
•PROTECTION• OVERLOAD TRIP	When excessive load connected to the UPS output	1. Reduce loads which are connected to output of UPS. 2. Reset ON/OFF Switch located at front panel of UPS after reducing the loads (if UPS gets shutdown).
•PROTECTION• SHORT CIRCUIT	Due to short in output wiring of UPS or short in appliances.	1. Remove the short in wiring or Remove the appliance from line which have problem. 2. Reset 'ON/OFF' Switch located at front panel of UPS.
•PROTECTION• OVER TEMPERATURE	When Temperature reaches preset value at inside the UPS.	1. Check whether Cooling Fan is running at rear panel of UPS. 2. Switch OFF loads and let UPS cool for some time.
•PROTECTION• BATT VOLT LOW	When batteries voltage reaches 10.4 +/- 0.2V per Battery	1. Switch OFF the UPS output power supply by using 'ON/OFF' Switch which is located at front panel of UPS 2. Charge battery immediately once AC mains power resumes.
INV SWITCH ON MAINS XXX	Due to fluctuations in AC Mains supply (Display shows actual voltage of input mains supply)	1. Check the Input Mains Power supply. 2. Check 'Narrow Voltage'/'Wide Voltage' Switch at rear panel of UPS and change it to 'Wide Voltage' mode selection.

**The above chart only represents the various appliances (loads) which can run with UPS output Power supply but it does not indicate that all appliances (loads) can run simultaneously on UPS.*

#Power consumption (VA) of each load is only average but actual power consumption (VA) may vary based on make, model, age and features of appliance (load).

+The total load on UPS must be calculated by adding power consumption (VA) of all loads that are connected to UPS. At any time during operation of the UPS, it must be ensured that the total power consumption (VA) of loads connected to UPS should not be more than UPS rating (VA).

***Startup (Inrush / Surge Current) Power (VA) of appliance (Load) is more, which generally is three times than its rated Power (VA). Hence you may find Overload message with buzzer sound in UPS when you Switch 'ON' appliance (Load) in Back up mode of UPS.*

3. Preparation for Installation of UPS

I. Selection of Location:

UPS requires controlled environment where the Temperature, Humidity & Dust levels are as recommended by manufactures. Hence, select the location to install the UPS on a flat, clean, dry, well ventilated and dust free environment by considering accessibility for maintenance/Service of UPS.

CAUTION: Do not select location like closed containers where temperature levels will be high, which leads to performance degradation of the UPS.

WARNING: Do not select location near to flammable materials to avoid fire hazards. Do not select near to water pipes, water or rain flow which will cause electrical shock or personal injury and damages Product.

II. Electrical Wiring:

Please contact Company/Dealer to depute Electrician for inspecting the electrical wiring exists and makes necessary changes, if required.

a. Input AC Power supply to UPS:

Install Gang box which contains MCB near to selected location for installing UPS and extend input power cables of Line, Neutral and Earth from Mains Distribution Box. Recommended to use below mentioned MCB rating at input side of UPS.

UPS Rating	Recommended MCB Rating
2.0 KVA	16A/250VAC
2.5/3.0/3.5 KVA	25A/250VAC
5.0 KVA	40A/250VAC
7.5 KVA	63A/250VAC
10.0 KVA	80A/250VAC

b. Output AC Power Supply from UPS:

Check the existing wiring and separate the Line, Neutral and Earth (L-N-E) cables of appliances (which to be used with UPS supply) by disconnecting Mains Power supply at Mains Distribution Box and connect the cables to UPS output. It is recommended for loads like Electrical appliances, Entertainment Equipment's,Computer & IT peripherals and Kitchen appliances etc., to be used on UPS for which 'Earth' is required for safety of appliances.

11. Trouble Shooting of UPS (2.0KVA)

LCD Display	Nature of problem	Actions/Remedies
UPS OFF FAULT OVERLOAD	When excessive load connected to the UPS output	Reduce the load by Switching 'OFF' some of the loads immediately.
UPS OFF FAULT	When Temperature reaches a preset value at inside of the UPS.	Check Cooling Fan whether running at rear panel of UPS and clean if any dust accumulates at Fan.
MAINS FAULT FUSE TRIP	MCB tripping due to Short Circuit in Power Supply or High Power consumption loads used on UPS.	Switch ON the 'AC Mains MCB' which is available at rear panel of UPS.
UPS OFF FAULT SHORT CIRCUIT	Due to short circuit in output wiring of UPS or when there is short in appliance's internal circuits	Remove the short in wiring or Remove the appliance from line which have problem
UPS OFF FAULT	When batteries voltage reaches 10.4 +/- 0.2V per Battery.	1. Switch OFF the UPS output power supply with ON/OFF Switch located at front panel of UPS. 2. Charge the battery immediately once Mains power resumes
	No Display & No voltage due to loose bonding of Battery cables of UPS at battery terminal.	Ensure battery terminals to be tightened properly to UPS.
UPS ON 25.3v	1. Battery is getting discharge even when mains power available due to fluctuations in AC Mains supply. 2. When AC mains not presence.	1. Check the Input Mains Power supply. 2. Check 'Narrow Voltage'/'Wide Voltage' switch at rear panel of UPS and change it to 'Wide Voltage' mode selection.

10. Frequently asked questions (FAQ)

1. **Q. Whom shall I contact for my UPS Installation & what will be the Charges?**

   A. You can contact our Farber Authorized Dealer where you have purchased the Product. They will depute certified Electrician to do Electrical wiring and Installation of UPS. Electrical wiring will be charged based on number of loads connected to UPS and material required for wiring will be charged at actual.

2. **Q. Can I ask Electrician to connect all appliances that are available in my home?**

   A. No. Please go through the 'Application Chart' for Power consumption (VA) of load or check the actual power consumption (VA) of loads and add total Power consumption of loads which you would want to run on UPS and ensure that using within UPS rating (VA) for optimum use of your UPS.

3. **Q. Can I Switch 'OFF' the Supply to UPS when we go to vacation?**

   A. No. Do not switch 'OFF' the input supply to UPS. But you can switch 'OFF' the output Supply of UPS by pressing Push Button Switch which is available at front panel to avoid battery discharge during AC fluctuations.

4. **Q. What capacity of battery should I buy for my UPS?**

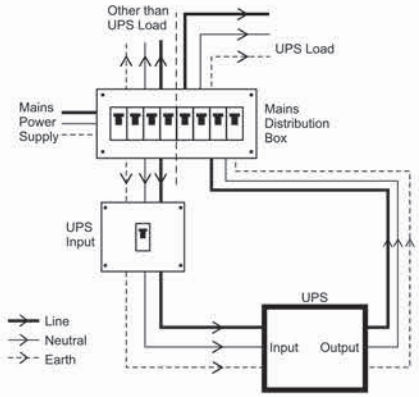
   A. Battery capacity selection is depends on required backup time with average power of appliances that to be used when power is not available. Please contact us at support@farberpower.com with details of appliances and backup time requirements to assist you in selection of battery.

5. **Q. Can my UPS charger auto stop when battery is fully charged?**

   A. Yes. Once battery gets fully charged the charger stops to pump current to battery and Charged indication will display on LCD panel of UPS.

6. **Q. Can I connect different brand or ratings of batteries to UPS?**

   A. No. Not recommended to mix two different ratings or makes of batteries due to variance in internal resistance of batteries, results imbalance charging causes for battery failure.



Picture-07
Electrical wiring diagram for UPS Input & Output Supply

Refer below table for recommended thickness of cable for UPS AC Input/ Output supply of UPS. Please use Battery cables supplied along with UPS.

UPS Rating	DC Voltage (V)	AC Input cable size (Sq.mm)	AC Output cable size (Sq.mm)
2.0 KVA	24	2.5	2.5
2.5 KVA	48	2.5	2.5
3.0/3.5 KVA	48	2.5	2.5
5.0KVA	48	6	6
5.0KVA	96	6	6
7.5KVA	120	10	10
10.0KVA	180	10	10

CAUTION: Use proper size/quality of cables, Sockets, MCB or Switch etc., for wiring. Otherwise, it may cause heat/melt of material or damage the Product. Ensure 'Line' cable on right side pin of the socket do not mix R-Y-B incase 3 phase supply is available.

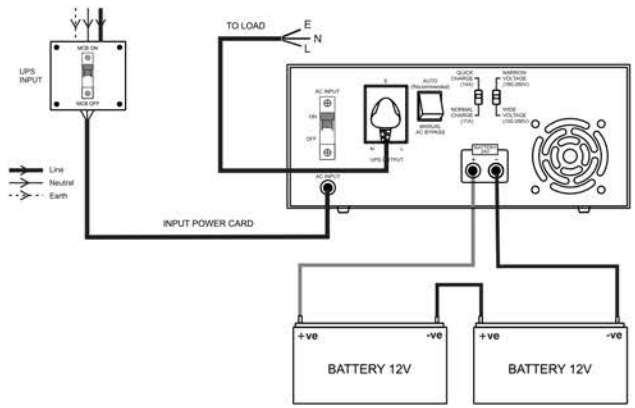
WARNING: Switch OFF Mains Supply before proceeding for wiring. Ensure earth and not to mix up the output supply cables of UPS with Mains cables. Otherwise, this may result electrical shock or personal injury.

4. Installation & Operation of UPS (2.0KVA)

A. **Placement:** Place the Battery stand with Batteries & UPS in selected location for Installation. Ensure UPS 'ON/OFF' Switch at front panel of UPS in 'OFF'. Keep the Input MCB in 'OFF' position which is available at rear panel of UPS.

B. **Battery Connection:** Connect two no's of 12V batteries in series by using inter connecting battery cable supplied along with UPS to make it as battery bank. Connect red colour cable comes from UPS to Positive (+Ve) terminal of the first battery and connect black colour cable to Negative (-Ve) terminal of the second battery. Ensure cables are tightened properly.

C. **AC Output Connection:** Connect the three pin plug which has been separated for loads to UPS output socket located at rear panel. Now switch 'ON' the UPS 'ON/OFF' switch at Front Panel. Check whether 'UPS ON', 'LOAD 000%' and 'MAINS OFF' displays in LCD. Switch 'ON' appliances one by one which are connected to UPS output Supply and Switch 'OFF' the UPS 'ON/OFF' switch.



Picture : 08
Rear panel diagram of UPS-After installation (2.0 KVA UPS)

D. **AC Input Connection:** Connect the AC mains Power Cord which is coming from UPS rear panel to Grid Power Supply Socket which has been extended from Mains Distribution box. Switch 'ON' the MCB/Mains Supply to UPS and also Switch 'ON' the MCB which is located at rear panel of UPS and check whether 'MAINS ON' and 'Battery symbol' displays in LCD. Please note that all appliances connected to UPS works with Mains power.

5 Stage Battery charging technology enables to get optimum design life of the Battery.

5 STAGE CHARGING	
Bulk	Batteries shall be charged at maximum acceptable continuous constant current and constant voltage for fast charging of batteries till it reaches 13.8V per Battery.
Boost	The charger checks the charging current when the Battery voltage reaches 13.6V per battery. Then boost mode of the charger will be activated, which will boost the battery up to 20% more than its rated voltage (i.e. 14.0V per Battery) and Charging current reduces to 50% of bulk charging rate (i.e.5 to 4 Amps)
Taper	When the voltage level of battery is 20% more than its rated voltage, then Taper mode of the charger shall be activated, which will keep the charging current about 4 Amps to achieve the specific gravity of electrolyte to charge battery fully
Float	In float stage, the charger keeps the charging voltage i.e., 13.6V & current level at its trickle charging set point with minimum charging current 1.0 Amp.
Pulse (Reset)	To maintain the float level, the charger resets to Zero current at 13.6V for sometime and starts again with pulse charging of <1 Amp current at some voltage. This keeps the battery in full charge condition even when not in use.

II) 5.0/7.5/10.0KVA UPS:

UPS Rating	5.0KVA	5.0KVA	7.5KVA	10.0KVA
DC Voltage	48V	96V	120V	180V
No of Batteries	4	8	10	15
1. Output Parameters				
Output Voltage @ No load	220 ± 5V AC	230 ± 5V AC	230 ± 5V AC	230 ± 5V AC
Output Voltage @ Full load	180 – 220V AC	180 – 220V AC	180 – 220V AC	180 – 220V AC
Battery discharging current @ Full load	104 ± 2A DC	54 ± 2A DC	62 ± 2A DC	53 ± 2A DC
Over load trip time @ 105/110%	60/30 Sec	60/30 Sec	60/30 Sec	60/30 Sec
Output frequency	50 ± 1.0Hz	50 ± 1.0Hz	50 ± 0.5Hz	50 ± 0.5Hz
LCD Vs. Actual tolerance for DC	± 1 %	± 1 %	± 1 %	± 1 %
TDR (Time Delay Relay)-Time	6 Min	6 Min	6 Min	6 Min
Crest Factor	3:1	3:1	3:1	3:1
THD	<3%	<3%	<3%	<3%
2. Battery Charging Mode				
Charging current @ 220VAC	15±2A DC	15±2A DC	15±2A DC	15±2A DC
Boost Charging Voltage	14.0V±0.2V/Batt.	14.0V±0.2V/Batt.	14.0V±0.2V/Batt.	14.0V±0.2V/Batt.
Float Charging Voltage	13.6V±0.2V/Batt.	13.6V±0.2V/Batt.	13.6V±0.2V/Batt.	13.6V±0.2V/Batt.
Battery low voltage cut	10.4V±0.2V/Batt.	10.4V±0.2V/Batt.	10.4V±0.2V/Batt.	10.4V±0.2V/Batt.
3. Narrow Voltage Mode				
Low Voltage cut	180 ± 10V AC	180 ± 10V AC	180 ± 10V AC	180 ± 5V AC
Low Voltage recovery	190 ± 10V AC	190 ± 10V AC	190 ± 10V AC	190 ± 5V AC
High Voltage cut	260 ± 10V AC	260 ± 10V AC	260 ± 10V AC	260 ± 5V AC
High Voltage recovery	255 ± 10V AC	255 ± 10V AC	255 ± 10V AC	255 ± 5V AC
Change over time	< 10 ms	< 10 ms	< 10 ms	< 10 ms
4. Wide Voltage Mode				
Low Voltage cut	115 ± 10V AC	125 ± 10V AC	125 ± 10V AC	125 ± 10V AC
Low Voltage recovery	125 ± 10V AC	135 ± 10V AC	135 ± 10V AC	135 ± 10V AC
High Voltage cut	280 ± 10V AC	280 ± 10V AC	280 ± 10V AC	280 ± 10V AC
High Voltage recovery	275 ± 10V AC	275 ± 10V AC	275 ± 10V AC	275 ± 10V AC
Change over time	< 50 ms	< 50 ms	< 50 ms	< 50 ms
5. Physical Parameters				
Product Weight (Kgs)	54±1	54±1	78±1	89±1
Dimension(mm)-LxWxH	350x390x540	350x390x540	550x350x650	550x350x660
6. Environment				
Acoustic Noise (1Meter)	<45 dB			
Operating Temperature	0° C to 45° C			

Note: *Design improvement is a continuous process of Farber. As a result specification may subject to change without prior notice.*

E. Changeover Confirmation: Switch 'ON' UPS 'ON/OFF' switch and Switch 'OFF' the AC mains MCB available at rear panel of UPS. Similarly Switch 'OFF' Mains Supply to UPS and check whether 'UPS ON'& 'LOAD 000%', 'Mains OFF' displays in LCD and observe no disturbance in appliances during Changeover from Mains Power Supply (Mains mode) to UPS (Backup Mode). Now Switch 'ON' Mains Supply to UPS (UPS Input) and AC mains MCB available at rear panel of UPS and check whether 'MAINS ON' and 'Battery symbol' displays in LCD display and observe no disturbance in appliances during changeover from Backup mode to Mains mode.

F. Selection of Toggle Switch: Select 'Wide Voltage' mode to use electrical loads like TV, Fan, Tube light etc., Select 'Narrow Voltage' mode for Computer/IT peripherals loads.

5. Installation & Operation of UPS (2.5KVA TO 10.0KVA)

A. **Placement:** Place the Battery stand with Batteries & UPS in selected location for Installation. Ensure UPS 'ON/OFF' Switch at front panel of UPS in 'OFF' position. Keep the DC MCB* and AC Mains MCB in 'OFF' position which is available at rear panel of UPS.

B. **Battery Connection:** Initially connect the batteries in series to increase the DC voltage by connecting inter connecting cable between the Positive (+Ve) of the first battery and the Negative (-Ve) of the second battery likewise connect remaining batteries. Check the battery bank voltage with Multimeter before connecting it to the UPS and connect the Battery cables i.e. Red cable to Positive (+Ve) terminal of the end battery & Black cable to Negative (-Ve) terminal of the another end battery. Ensure cables are tightened properly.

C. **AC Output Connection:** Connect the cables which have been separated to output load of terminal block which is located at rear panel of UPS. Switch 'ON' the DC MCB* and UPS 'ON/OFF' switch. Check whether LCD displays 'INV. Switch ON' and 'Mains OFF' at front panel. Then Switch 'ON' all appliances one by one which are connected to UPS output supply. Now switch 'OFF' the UPS 'ON/OFF' switch.

D. **AC Output Connection for compressor loads:** Usually air conditioner loads requires time delay to 'ON' each time after the interruption in input mains power. To provide the time delay, an extra terminal block is (Time Delay Relay (TDR)) provided at rear panel of UPS in output load terminal block. It is applicable for 5.0KVA and above ratings.

E. **AC Input Connection:** Connect the cables which have been extended to AC mains connection of terminal block located at rear panel of UPS. Switch 'ON' AC Mains MCB at rear panel of UPS and Input MCB of distribution box. Check whether 'Mains OK, I/P Volt, I/P Freq' and 'Battery Charging' displays in LCD at front panel. Please note that all appliances connected to UPS works with Mains power

***DC MCB** is not available in 2.5KVA/3.0KVA & 3.5KVA hence need not to switch it ON, instead DC fuses are mounted on PMB.*

9. Technical Specifications

I) 2.0/2.5/3.0/3.5KVA UPS:

UPS Rating	2.0KVA	2.5KVA	3.0KVA	3.5KVA
DC Voltage	24V	48V	48V	48V
No of Batteries	2	4	4	4
1. Output Parameters				
Output Voltage @ No load	220 ± 7V AC	220 ± 5V AC	220 ± 5V AC	220 ± 5V AC
Output Voltage @ Full load	180 – 220V AC	180 – 220V AC	180 – 220V AC	180 – 220V AC
Battery discharging current @ Full load	62 ± 2A DC	49 ± 2A DC	53 ± 2A DC	59 ± 2A DC
Over load trip time @ 105/110%	45/22 Sec	60/30 Sec	60/30 Sec	60/30 Sec
Output frequency	50 ± 1.0Hz	50 ± 1.0Hz	50 ± 1.0Hz	50 ± 1.0Hz
LCD Vs. Actual tolerance for DC	± 1 %	± 1 %	± 1 %	± 1 %
Crest Factor	3:1	3:1	3:1	3:1
THD	<3%	<3%	<3%	<3%
2. Battery Charging Mode				
Charging current @ 220VAC (Normal Charge)	11 ± 2A DC	15±2A DC	15±2A DC	15±2A DC
Charging current @ 220VAC (Quick Charge)	14 ± 2A DC			
Boost Charging Voltage (Quick Charge)	14.5V±0.2V/Batt.	14.0V±0.2V/Batt.	14.0V±0.2V/Batt.	14.0V±0.2V/Batt.
Boost Charging Voltage (Normal Charge)	14.0V±0.2V/Batt.			
Float Charging Voltage (Quick Charge /Normal Charge)	13.6V±0.2V/Batt.	13.6V±0.2V/Batt.	13.6V±0.2V/Batt.	13.6V±0.2V/Batt.
Battery low voltage cut	10.4V±0.2V/Batt.	10.4V±0.2V/Batt.	10.2V±0.2V/Batt.	10.4V±0.2V/Batt.
3. Narrow Voltage Mode				
Low Voltage cut	180 ± 10V AC	180 ± 10V AC	180 ± 10V AC	180 ± 10V AC
Low Voltage recovery	190 ± 10V AC	190 ± 10V AC	190 ± 10V AC	190 ± 10V AC
High Voltage cut	260 ± 10V AC	260 ± 10V AC	260 ± 10V AC	260 ± 10V AC
High Voltage recovery	250 ± 10V AC	255 ± 10V AC	255 ± 10V AC	255 ± 10V AC
Change over time	< 15 ms	< 10 ms	< 10 ms	< 10 ms
4. Wide Voltage Mode				
Low Voltage cut	100 ± 10V AC	100 ± 10V AC	100 ± 10V AC	100 ± 10V AC
Low Voltage recovery	190 ± 10V AC	110 ± 10V AC	110 ± 10V AC	110 ± 10V AC
High Voltage cut	280 ± 10V AC	280 ± 10V AC	285 ± 10V AC	280 ± 10V AC
High Voltage recovery	270 ± 10V AC	275 ± 10V AC	280 ± 10V AC	275 ± 10V AC
Change over time	< 50 ms	< 50 ms	< 50 ms	< 50 ms
5. Physical Parameters				
Product Weight(Kgs)	19±1	29±1	32±1	32±1
Dimension(mm)-LxWxH	335x320x165	310x290x450	310x290x450	310x290x450
6. Environment				
Acoustic Noise (1Meter)	<45 dB			
Operating Temperature	0° C to 45° C			

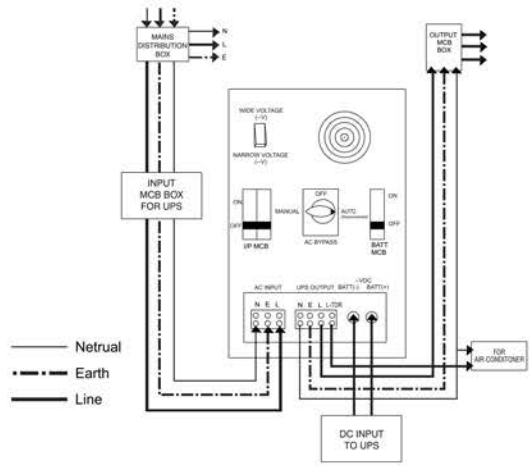
8. General Precautions

Do's

- Always keep Batteries in Battery stand.
- Use proper gauge cables and recommended rated MCB or Plugs for wiring.
- Install UPS in ventilated area and keep away from flammable materials.
- Select 'Narrow Voltage' mode while using computer with UPS output Supply.
- Tighten the battery connections properly by using correct size of tools.
- Follow the battery manufacturers' specific precautions for battery maintenance.
- Retain original bill and warranty card with Dealer's stamp & signature in safe custody for warranty claim.

Don'ts

- Do not pull the UPS with AC Mains Power connection or Battery Cables.
- Do not use poor quality of material while doing electrical wiring for UPS Installation.
- Do not Install UPS near water or damp environment or closed container.
- Do not place metal objects on top of the UPS & Battery.
- Do not use loads and other than recommended by company.
- Do not increase length of battery cables by joining extra cables.
- Do not connect battery cables with reverse polarities of the battery.
- Do not disconnect battery from Circuit while UPS is 'ON'
- Do not connect different rating/make of the batteries in same circuit.
- Do not connect more batteries than recommended.
- Do not tap battery power for any other DC loads.



Picture : 09
Rear Panel diagram of UPS-After installation (2.5KVA to 10.0KVA)

G. Changeover Confirmation: Switch 'ON' UPS 'ON/OFF' switch at front panel and Switch 'OFF' the AC mains MCB available at rear panel of UPS, similarly Switch 'OFF' Mains Supply to UPS and check whether 'INV. Switch ON' and 'Mains OFF' displays in LCD and observe no disturbance in appliances during Changeover from Mains Power Supply (Mains mode) to UPS (Backup Mode).

Now Switch 'ON' Mains Supply to UPS and AC mains MCB available at rear panel of UPS and check whether 'Mains OK', I/P Volt, I/P Freq. and 'Battery Charging' displays in LCD and observe no disturbance in appliances during changeover from Backup mode to Mains mode.

H. Selection of Rocker Switch: Select 'Wide Voltage' mode to use electrical loads like TV, Fan, Tube light etc., Select 'Narrow Voltage' mode for Computer/IT peripherals loads.

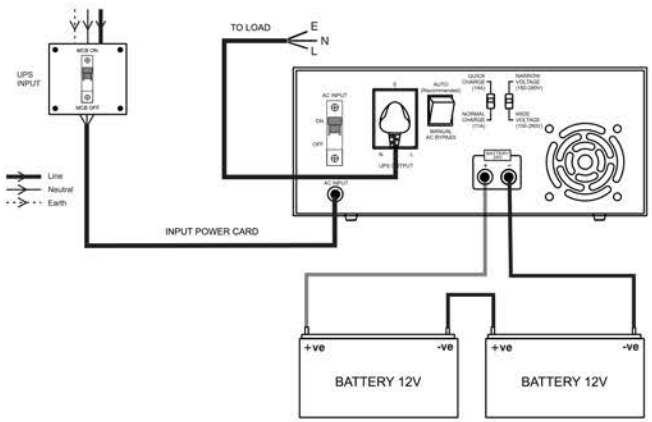
CAUTION: Ensure battery cable connections i.e Red cable to Positive (+Ve) terminal & Black cable to Negative (-Ve) terminal of the battery .Ensure both the battery cables to be connected tightly. Wrong connection or loose connection may damage the Product.

WARNING: Keep Children away from the Product. Do not touch the output plug when it is in open condition.

6. Guidelines to bypass UPS (2.0KVA)

The following steps to be followed to bypass the UPS and Battery from the circuit for maintenance or service purpose.

- Switch 'OFF' appliances that are connected to UPS output, MCB at Mains box, MCB at rear panel and 'ON/OFF' switch at front panel of UPS.
- Change the AC Bypass switch to 'MANUAL' mode available at rear panel of UPS.
- Switch 'ON' the UPS 'ON/OFF' switch available at front panel, 'AC mains MCB at rear panel and Mains Supply MCB to UPS.
- Now, your UPS has been bypassed from circuit and appliances that are connected to UPS shall be used with Mains Power supply when ever available

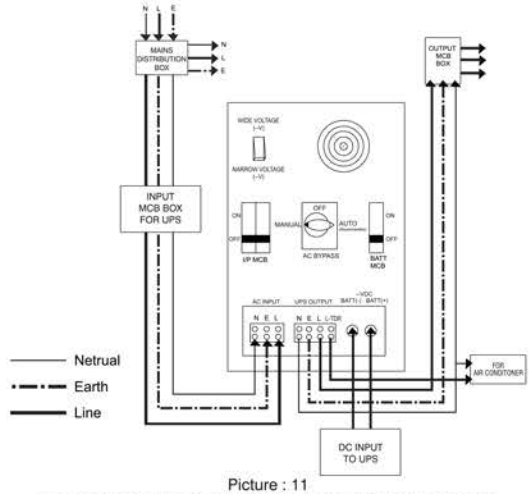


Picture : 10
Rear Panel diagram of UPS-After bypassing (2.0KVA)

7. Guidelines to bypass UPS (2.5KVA to 10.0 KVA)

The following steps to be followed to bypass the UPS and Battery from the circuit for maintenance or service purpose.

- Switch 'OFF' all appliances that are connected to UPS, MCB at Mains box, MCB at rear panel and 'ON/OFF' switch at front panel of UPS.
- Change the AC Bypass switch to 'MANUAL' mode available at rear panel of UPS.
- Switch 'ON' the UPS 'ON/OFF' switch, 'AC mains MCB at rear panel and Mains Supply MCB to UPS.
- Now, your UPS has been bypassed from circuit and appliances that are connected to UPS shall be used with Mains Power supply when ever available



Picture : 11
Rear Panel diagram of UPS-After bypassing (2.5KVA to 10.0KVA)

CAUTION: Use right sized tools to remove the cables from battery terminals and do not disconnect battery without bypassing UPS from Circuit.

WARNING: Never insert or pull out the mains plug from the Mains distribution box & UPS output plug with wet hands. Do not touch the removed plug pins as it may leads to electrical shock.