ENGLISH



9E UPS
9E EBM

Advance user guide

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P9103-739290-02
9E 1-3 kVA EMEA EN

Special symbols

The following are examples of symbols used on the UPS or accessories to alert you to important information:



RISK OF ELECTRIC SHOCK - Observe the warning associated with the risk of electric shock symbol.



Important instructions that must always be followed.



Information, advice, help.



Refer to the user manual of UPS accessories

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1.Introduction

Thank you for selecting an EATON product to protect your electrical equipment. The 9E range has been designed with the utmost care.
We recommend that you take the time to read this manual to take full advantage of the many features of your UPS (Uninterruptible Power Systems).
Before installing your 9E, please read the Information and safety Instruction booklet. This advance user guide provides complementary information.
To discover the entire range of EATON products and the options available for the 9E range, we invite you to visit our web site at eaton.com or contact your EATON representative.

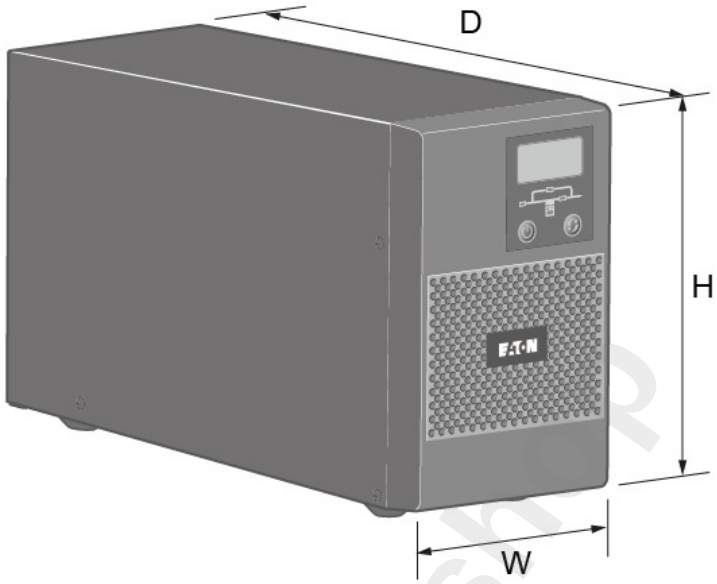
The EATON 9E uninterruptible power systems (UPS) protects your sensitive electronic equipment from the most common power problems, including power failures, power sags, power surges, brownouts, line noise, high voltage spikes, frequency variations, switching transients, and harmonic distortion.
Power outages can occur when you least expect it and power quality can be erratic. These power problems have the potential to corrupt critical data, destroy unsaved work sessions, and damage hardware - causing hours of lost productivity and expensive repairs.
With the EATON 9E, you can safely eliminate the effects of power disturbances and guard the integrity of your equipment. Providing outstanding performance and reliability, the EATON 9E's unique benefits include:

- True online double-conversion technology with high power density, utility frequency independence, and generator compatibility.
- Standard communication options: one RS-232 communication port, one USB communication port
- Optional connectivity cards with enhanced communication capabilities.
- Extended runtime with up to four Extended Battery Modules (EBMs) per UPS.
- Backed by worldwide agency approvals.

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2. Presentation

2.1 Standard installation



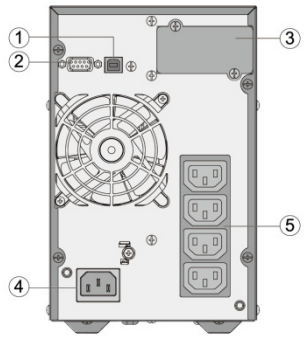
Catalog Number	Weights (kg)	Dimensions (mm) W x H x D
9E1000I	9.5	144 x 228 x 356
9E2000I	22.4	190 x 330 x 399
9E3000I	24.2	190 x 330 x 399
9E3000IXL	7.9	190 x 330 x 399
9E1000IAU	9.5	144 x 228 x 356
9E2000IAU	22.4	190 x 330 x 399
9E3000IAU	24.2	190 x 330 x 399
9E3000IXLAU	7.9	190 x 330 x 399
9EEBM72	35.8	190 x 330 x 399

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2. Presentation

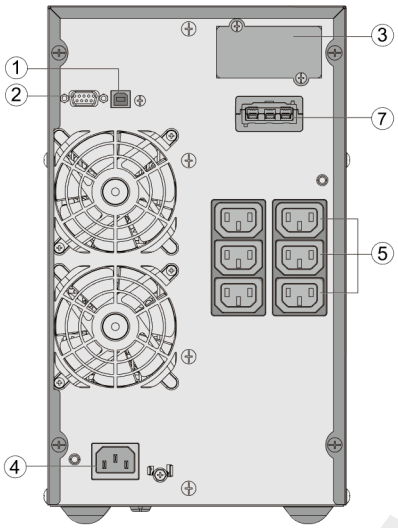
2.2 Rear panel

9E1000I/ 9E1000IAU

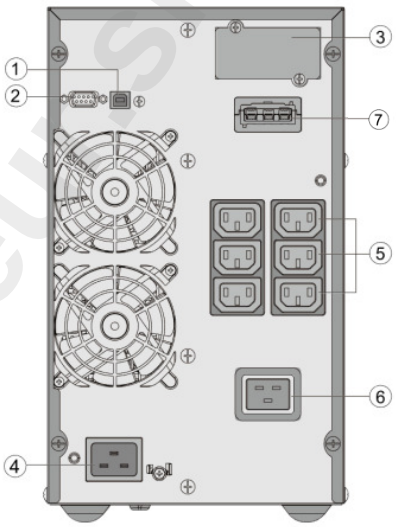


① USB communication port
② RS232 communication port
③ Slot for optional communication card
④ Input AC power source
⑤ Output outlets 10A
⑥ Output outlets 16A
⑦ Connector for additional battery module
⑧Connector to additional battery module
⑨ Connector to the UPS or additional battery module
(See " EBM Tower 1-3kVA " on page 11 for specific detail).

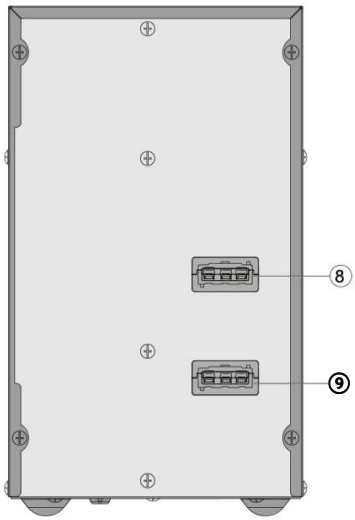
9E2000I/ 9E2000IAU



9E3000I/ 9E3000IXL/9E3000IAU/9E3000IXLAU



9EEBM72



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2.3 Accessories

Part number	Description
Network-M2	Network card
Modbus-MS	Modbus and network card
INDGW-M2	Industrial Gateway Card MiniSlot
Relay-MS	Relay card

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3. Installation

3.1 Inspecting the equipment

If any equipment has been damaged during shipment, keep the shipping cartons and packing materials for the carrier or place of purchase and file a claim for shipping damage. If you discover damage after acceptance, file a claim for concealed damage.

To file a claim for shipping damage or concealed damage:

1.File with the carrier within 15 days of receipt of the equipment;

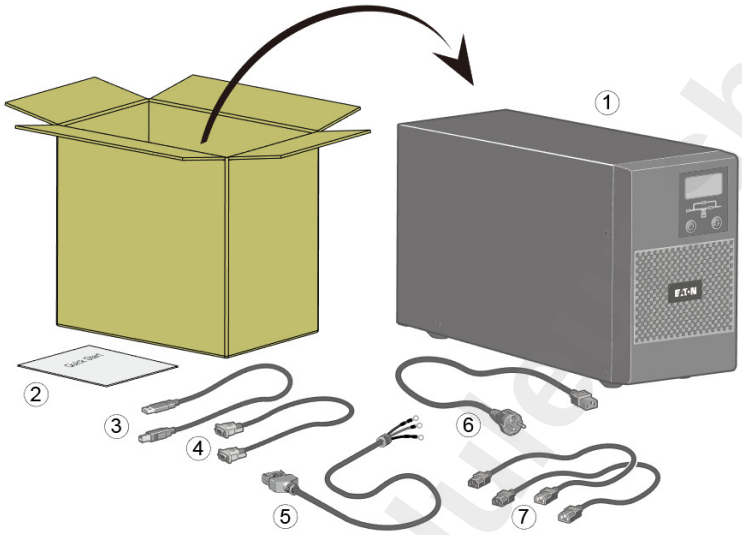
2.Send a copy of the damage claim within 15 days to your service representative.

Check the battery recharge date on the shipping carton label. If the date has passed and the batteries were never recharged, do not use the UPS. Contact your service representative.

3.2 UPS Tower 1-3kVA

CAUTION : The unit is heavy: wear safety shoes and use vacuum lifter preferentially for handling operations.
All handling operations will require at least two (2) people (unpacking, lifting).

A - Checking the accessory kit



Verify that the following additional items are included with the UPS:

① 9E UPS

② Quick start Information and safety instruction

③ USB communication cable

④ RS232 communication cable

⑤ Battery power cable (9E3000IXL and 9E3000IXLAU models only)

⑥ Connection cable to AC-power source (except 9E1000I and 9E2000I models)

⑦ 2 connection cables for the protected equipment

B - Installation

If you ordered other UPS accessories, refer to specific user manuals to check the tower installation with the UPS.

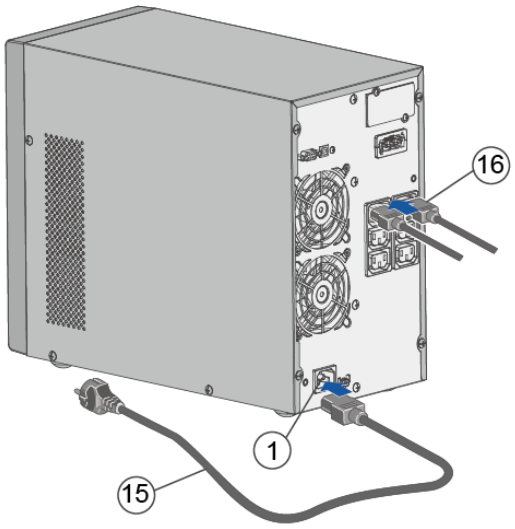


1. Place the UPS on a flat, stable surface in its final location.
2. Do not block ventilation openings on the UPS's housing. Ensure the air vents on the front, side and rear of the UPS are not blocked. Recommended at least 25cm of space on each side

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C - UPS connection

Check that the indications on the name plate located on the back of the UPS meets to the AC-power source and the true electrical consumption of the total load.



1. **9E1000I / 2000I:** connect the UPS input socket ① to the AC-power source using the cable of the protected equipment.
   9E1000IAU/2000IAU: connect the supplied cable ⑮ (250 V - 10 A) to the socket ① , then to the AC-power source.
   9E3000I/3000IXL/3000IAU/3000IXLAU: connect the supplied cable ⑮ (250 V - 16 A) to the socket ①, then to the AC-power source.

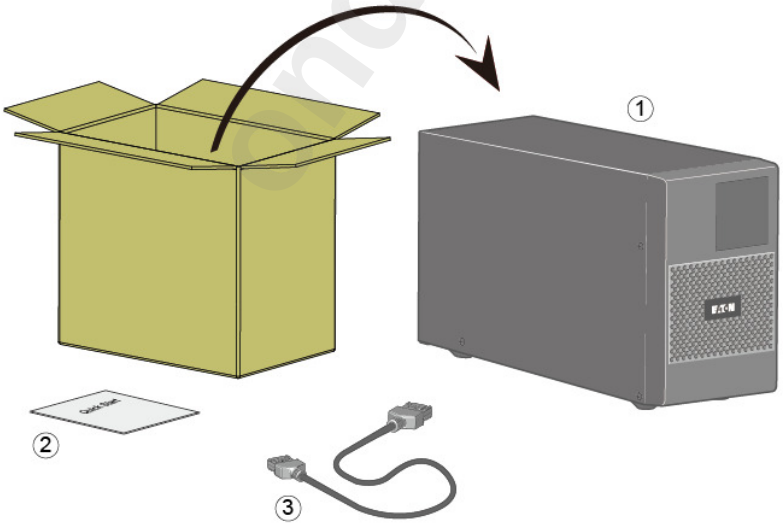
2. Connect the loads to the UPS using the cables of the protected equipment.
   Connect the loads to the outlets marked ⑤10A outlet.
   Connect any high-power devices to the 16 A outlet marked ⑥ (**9E3000I/3000IXL/3000IAU/3000IXLAU only**).

Note: The UPS charges the battery as soon as it is connected to the AC-power source, even if ⏻ button is not pressed.
Once the UPS is connected to the AC-power source, 24 hours of charging are required before the battery can supply the rated backup time.

3.3 EBM Tower 1-3kVA

CAUTION : The unit is heavy: wear safety shoes and use vacuum lifter preferentially for handling operations.

A - Checking the accessory EBM



① 9E EBM
② Quick start
③ Battery power cable

Discard the EBM user's guide if you are installing the EBM with a new UPS at the same time. Use the UPS user's guide to install both the UPS and the EBM.

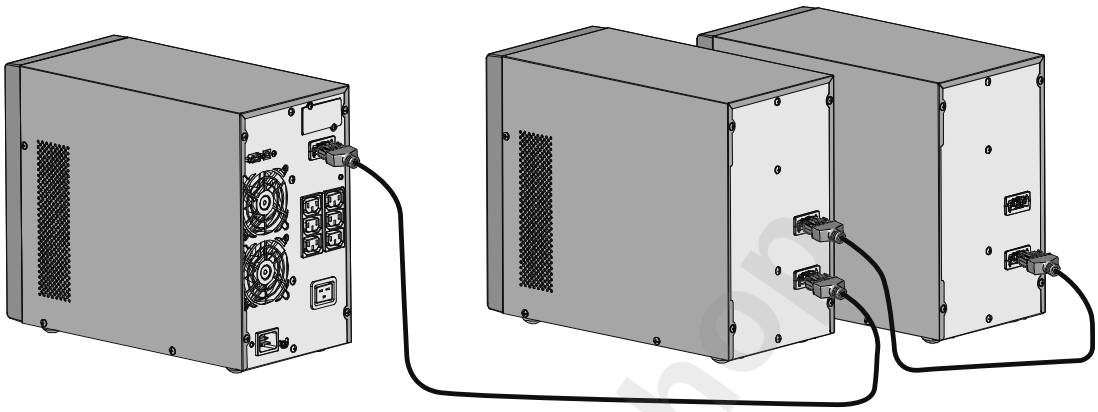
If you ordered other UPS accessories, refer to specific user manuals to check the packing contents.

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3. Installation

B - Connecting the EBM

1. Plug the EBM power cable(s) into the battery connector(s). Up to 4 EBMs may be connected to the UPS.
2. Verify that the EBM connections are tight, and that adequate bend radius and strain relief exist for each cable.
3. Refer to the wiring as shown, UPS needs to connect to the bottom connector of the EBM, connecting the wrong EBM interface may cause EMC to worse
4. After wiring, you have to configure the number of EBM's with the Eaton SetUPS software that can be found on the Eaton website



3.4 Connecting other accessories

If you ordered other UPS accessories, refer to specific user manuals to check the connection to the UPS.

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4. Interfaces and Communication

4.1 Display and Buttons



Figure 4.1 Control Panel

The following tables show the buttons, LCD indicator and LED indicator status and description:

Table 4-1 Control Buttons Functions

The Button	Function	Illustration
	Turn on	If the UPS is in standby or bypass mode, press >2s, the buzzer will beep, then the UPS system will be turned on.
	Turn off	If the UPS is in line, battery, HE or battery test mode, press >3s, the buzzer will beep, then the UPS will be turned off.
	Transfer	If the UPS is in fault mode, and the fault cause has disappeared, press >2s, the buzzer will beep, fault will be cleared and UPS will turn to standby mode.
	Function key	Battery test in line mode, Press the button >5s
		Mute: Press the button for 2s ~ 5s
		Down to next page: Press the button for 100ms~2s

Table 4-2 LED indicator

LED name	Colour	Description
Line	Green	It indicates the utility is normal
Battery	Yellow	It indicates the input is connected with battery and the input power is supplied from the battery.
Bypass	Yellow	It indicates the UPS is in bypass mode and the load current is directly supplied from the utility power
Inverter	Green	It indicates that the inverter is OK and the load is supplied from the inverter.

Note: After UPS power on, all LEDs will be lightened for 2 seconds, and then turn to normal status. When UPS is turning on, 4 LEDs will be lightened one by one until the UPS is turned on successfully.

LED	Line	Battery	Bypass	Inverter
Standby mode (utility normal / abnormal)	●/★			
Bypass mode	●		●	
Line mode	●			●
Battery mode		●		●
Battery test mode		★		●
Fault mode	□		◇	
Warning	□	□	□	□

⊙: Utility is normal ● : Lightened constantly ★: Flashing every 1s

◇: Depended on the fault status □ : Depend on the original display

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4. Interfaces and Communication

Table 4-3 Buzzer

Priority	UPS condition	Buzzer
1	UPS fault and failure	Continuous
2	Normal mode	No beep
3	Battery/battery test mode	One beep per 4 sec (One beep per 1s when battery low)
4	Standby mode	No beep
5	Overload	One beep per 500ms
6	Other alarm	One beep per 1s
7	Forced bypass	One beep per 2 minutes

Note: buzzer alarm can be muted by function button, if buzzer alarm is muted, all present alarm is muted except that the button press still has a tick beep. Buzzer alarm will be active automatically once new alarm arises.

In order to make sure all segments are OK, LCD begins to do self-test after power on. During self-test, all the segments will be lighted for 2 seconds, then the LCD will turn to normal display status.

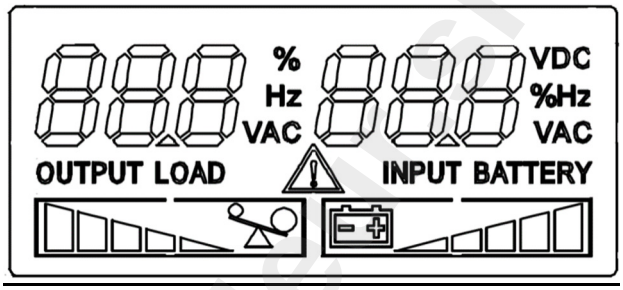
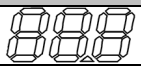


Figure. 4-2 The default LCD display

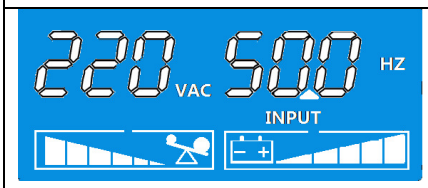
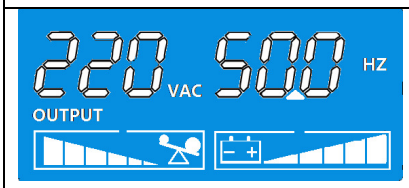
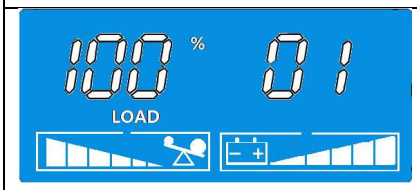
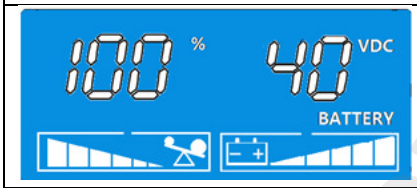
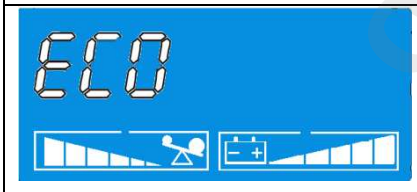
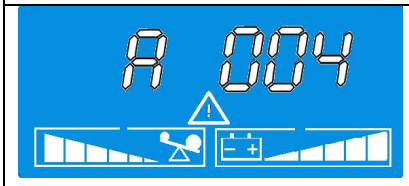
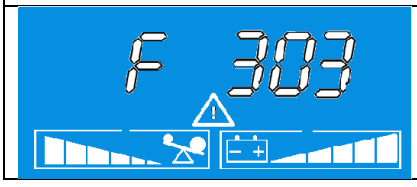
Icon	Icon name	Description
	Measurements	Display values, eg: voltage, frequency, load percentage, etc.
VDC	DC Voltage	Battery voltage
%	Percentage	The percentage, eg: Load percentage and battery capacity percentage
OUTPUT	Output	It indicates information for output.
INPUT	Input	It indicates information for input.
LOAD	Load	It indicates information for load.
BATTERY	Battery	It indicates information for battery.
	Load level	It indicates the load level. Load border will flash if the load is overload.
	Battery level	It indicates the battery capacity. Battery border will flash if the battery is low.
	Warning/Fault	It indicates warnings or UPS Fault . If it is a warning, the icon will flash; if it is a fault, the icon will be lighted constantly.

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4.2 Measurement and working mode display

The front panel will be used to display some important information of UPS. The LCD first show the main input voltage after self-test, press the function button repeatedly to display a different display screen until the desired screen appears.

Display pages are shown as below

GRAPHIC EXAMPLE	DESCRIPTION
	input voltage and frequency
	output voltage and frequency
	load percentage and working mode 00:Power on mode 01:Standby mode 02:Bypass mode 03:Line mode 04:Battery mode 05:Battery test mode 06:Fault mode 07:Converter mode 08:ECO mode 09:Shut Down mode
	battery level and battery voltage
	system work mode 1. ECO: High efficiency mode enable 2. CVF:Converter Mode enable 3. display none: UPS work in line mode
	current alarm code Note: If there are more than one alarm, user can check all the alarm messages one by one by pressing the function button. If ups doesn't have any alarm, this page will not display.
	current fault code Note: If ups doesn't have any fault, this page will not display.

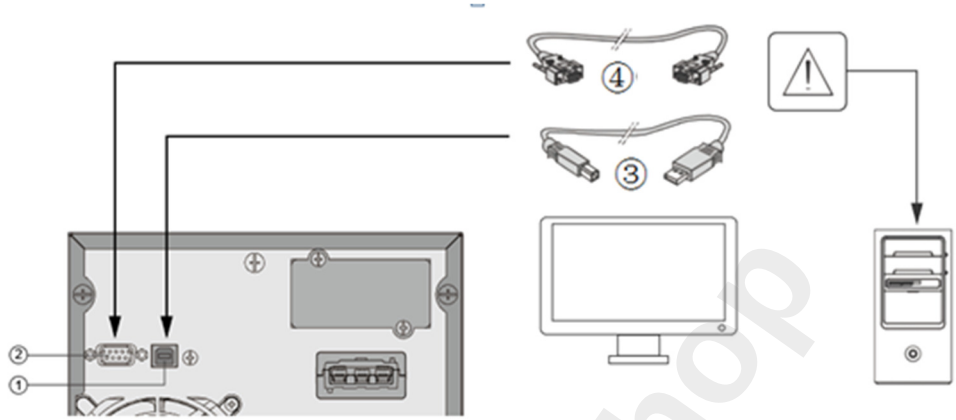
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4. Interfaces and Communication

4.3 Communication ports

Connection of RS232 or USB communication port

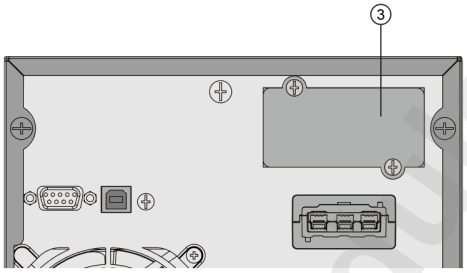
Independent	Multiplexed	
Communication Bay	**USB**	**RS-232**
Any connectivity card	Available	Not in use
Any connectivity card	Not in use	Available



1. Connect the RS232 ④ or USB ③ communication cable to the serial or USB port on the computer equipment.
2. Connect the other end of the communication cable ③ or ④ to the USB ① or RS232 ② communication port on the UPS.

   The UPS can now communicate with EATON power management software.

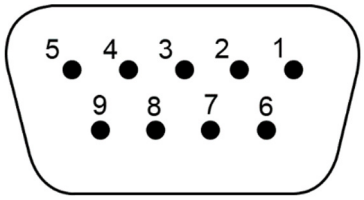
Installation of the communication cards **(optional)**



It is not necessary to shut down the UPS before installing a communication card.

1. Remove the slot cover ③ secured by screw.
2. Insert the communication card in the slot.
3. Secure the card cover with the 2 screws.

Characteristics of the contact RS232 communication port



Pin	Signal	Direction	Function
1			
2	TxD	Output	Transmit to external device
3	RxD	Input	Receive from external device
4			
5	GNDS	-	Signal Common tied to chassis
6	PNP	Input	Plug and Play
7			
8			
9	+5V	Output	Power supply for external signal or options

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4.4 UPS remote control functions

Connectivity cards allow the UPS to communicate in a variety of networking environments and with different types of devices. The 9E models have one available communication bay for the following connectivity cards:

- **Gigabit Network card (NETWORK-M2)** - provides a Gigabit Ethernet connection and enables secure UPS monitoring over HTTPS web browser interface, SNMP v1/v3 protocol and email alarms. In addition, up to 3 Environmental Monitoring Probes can be attached to obtain humidity, temperature, smoke alarm, and security information.
- **Modbus-MS card -** has connection to Modbus protocol in addition to network management.
- **Relay-MS card** - has isolated dry contact (Form-C) relay outputs for UPS status: Utility failure, Battery low, UPS alarm/OK, or on Bypass.

4.5 Eaton Intelligent Power Software suite

Eaton Intelligent Power Software suite is available from eaton.com/downloads.

Eaton Software suite provides up-to-date graphics of UPS power and system data and power flow.

It also gives you a complete record of critical power events, and it notifies you of important UPS or power information.

If there is a power outage and the 9E UPS battery power becomes low, Eaton Software suite can automatically shut down your computer system to protect your data before the UPS shutdown occurs.

4.6 Cybersecurity

Eaton is committed to minimizing the Cybersecurity risk in its products and deploys cybersecurity best practices and latest cybersecurity technologies in its products and solutions, making them more secure, reliable and competitive for our customers. Eaton also offers Cybersecurity Best Practices whitepapers to its customers, referenced at www.eaton.com/cybersecurity.

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5.Operation

5.1 Start-up and Normal operation

To start the UPS:

1. Verify that the UPS power cord is plugged in.
2. Power on the UPS and at this time the fan begins to rotate.
3. Check the UPS front panel display for active alarms or notices. Resolve any active alarms before continuing. See "Troubleshooting" on page 21.

   If the ⚠ indicator is on, do not proceed until all alarms are clear. Check the UPS status from the front panel to view the active alarms. Correct the alarms and restart if necessary.
4. Press the button on the UPS front panel for at least 2 seconds. The buzzer will beep, UPS starts to turn on.
5. A few seconds later, the UPS turns into Line mode.

5.2 Starting the UPS on Battery

To start the UPS on battery:

1. Power on the UPS and at this time the fan begins to rotate.
2. Check the UPS front panel display for active alarms or notices. Resolve any active alarms before continuing. See "Troubleshooting" on page 21.

   If the ⚠ indicator is on, do not proceed until all alarms are clear. Check the UPS status from the front panel to view the active alarms. Correct the alarms and restart if necessary.
3. Press the button on the UPS front panel for at least 2 seconds. The buzzer will beep, UPS starts to turn on.
4. A few seconds later, the UPS turns into battery mode.

5.3 UPS Shutdown

To shut down the UPS:

1. Press the ⏻ button on the front panel for 3 seconds.
2. The UPS will turn into standby mode.
3. Cut off the mains power supply.
4. A few seconds later, LCD display is off and UPS shuts down.

5.4 Transfer to Forced Bypass/back to Line mode

1. Press the on/off button and test button continuously for 4s while UPS is working in line mode
2. UPS will transfer to forced bypass mode.
3. Press the on/off button and test button continuously for 4s to clear bypass
4. UPS will turn to line mode again

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6. UPS maintenance

6.1 Equipment care

For the best preventive maintenance, keep the area around the equipment clean and dust free. If the atmosphere is very dusty, clean the outside of the system with a vacuum cleaner.
For full battery life, keep the equipment at an ambient temperature of 25 °C (77 °F).



If the UPS requires any type of transportation, verify that the UPS is disconnected and turned off.

The batteries are rated for a 3-5 year service life. The length of service life varies, depending on the frequency of usage and ambient temperature (life divided by 2 each 10 °C above 25 °C).

Batteries used beyond expected service life will often have severely reduced runtimes. Replace batteries at least every 4 years to keep units running at peak efficiency.

Batteries runtime will be reduced at low temperature (below 10 °C).

6.2 Storing the equipment

If you store the equipment for a long period, recharge the battery every 6 months by connecting the UPS to utility power. The internal batteries charge to 90% capacity in less than 4 hours. However, Eaton recommends that the batteries charge for 48 hours after long-term storage.

Check the battery recharge date on the shipping carton label.

If the date has passed and the batteries were never recharged, do not use them. Contact your service representative.

6.3 When to replace batteries

Eaton UPS batteries have an expected life span of 3-5 years. After 4 years of operation, you should take proactive steps to ensure you replace your batteries for optimal operation and reliability.

Contact your service representative to order new batteries.

6.4 Replacing batteries



DO NOT DISCONNECT the batteries while the UPS is in Battery mode.

UPS needs to be turned off and fully disconnected before replacing batteries.

Consider all warnings, cautions, and notes before replacing batteries.



- Servicing should be performed by qualified service personnel knowledgeable of batteries and required precautions. Keep unauthorized personnel away from batteries.
- Batteries can present a risk of electrical shock or burn from high short circuit current. Observe the following precautions:
    1. Remove watches, rings, or other metal objects.
    2. Use tools with insulated handles.
    3. Do not lay tools or metal parts on top of batteries.
    4. Wear rubber gloves and boots.
- When replacing batteries, replace with the same type and number of batteries or battery packs. Contact your service representative to order new batteries.
- Proper disposal of batteries is required. Refer to your local codes for disposal requirements.
- Never dispose of batteries in a fire. Batteries may explode when exposed to flame.
- Do not open or mutilate the battery or batteries. Released electrolyte is harmful to the skin and eyes and may be extremely toxic.

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6. UPS maintenance

- Determine if the battery is inadvertently grounded. If inadvertently grounded, remove source from ground. Contact with any part of a grounded battery can result in electrical shock. The likelihood of such shock can be reduced if such grounds are removed during installation and maintenance (applicable to equipment and remote battery supplies not having a grounded supply circuit).
- ELECTRIC ENERGY HAZARD. Do not attempt to alter any battery wiring or connectors. Attempting to alter wiring can cause injury.
- Disconnect charging source prior to connecting or disconnecting battery terminals.

Replacing the EBM(s) (all models)



The EBM is heavy. Lifting the cabinet into a rack requires a minimum of 2 people. To replace the EBM(s):

1. Unplug the EBM power cable and battery detection cable from the UPS.
   If additional EBM(s) are installed, unplug the EBM power cable and battery detection cable from each EBM.
2. Replace the EBM(s). See "Recycling the used equipment" on page 20 for proper disposal.



A small amount of arcing may occur when connecting an EBM to the UPS. This is normal and will not harm personnel. Insert the EBM cable into the UPS battery connector quickly and firmly.

3. Plug the EBM cable(s) into the battery connector(s). Up to four EBMs may be connected to the UPS.
4. Verify that the EBM connections are tight, and that adequate bend radius and strain relief exist for each cable.
5. Connect the battery detection cable(s) to the connector of the UPS and of the EBM(s).

Testing new batteries

To test new batteries:

1. Charge the batteries for 48 hours.
2. Press any button to activate the menu options.
3. Press “test button” >5s.
   The UPS starts a battery test if the batteries are fully charged, the UPS is in Normal mode with no active alarms, and the bypass voltage is acceptable.
   During the battery test, the UPS transfers to Battery mode and discharges the batteries for 10 seconds.

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7. Troubleshooting

7.1 Typical alarms and faults

The Eaton 9E are designed for durable, automatic operation and also alert you whenever potential operating problems may occur. Usually the alarms shown by the control panel do not mean that the output power is affected. Instead, they are preventive alarms intended to alert the user.

The following table describes typical conditions.

PROBLEM	POSSIBLE CAUSE	SOLUTION
THE DISPLAY DOES NOT LIGHT UP	MAIN CONNECTION CABLE MISSING	Check that the power cable is connected correctly.
	NO MAINS VOLTAGE (BLACKOUT)	Check that the power reaches the UPS
THE DISPLAY IS ON BUT THE LOAD IS NOT POWERED	THE UPS IS IN STANDBY MODE	Press the “ON” button on the front panel to power the loads.
THE UPS IS OPERATING FROM THE BATTERY DESPITE THE PRESENCE OF MAINS VOLTAGE	THE INPUT VOLTAGE IS OUTSIDE THE PERMITTED TOLERANCE RANGE FOR MAINS OPERATION	Problem with the mains. Wait until the input mains voltage returns within the tolerance range. The UPS will automatically return to mains operation.
THE BUZZER SOUNDS CONTINUOUSLY AND THE DISPLAY SHOWS ONE OF THE FOLLOWING CODES: **A80E, A810, F808, F208**	THE LOAD APPLIED TO THE UPS IS TOO HIGH	Reduce the load to within the threshold of 100% (or user threshold in the case of code A80E). If the display shows a Fault: remove the load and switch the UPS off and back on again.
THE DISPLAY SHOWS THE FOLLOW CODE: **A60D**	BATTERIES MISSING OR BATTERY BOX MISSING OR NOT CONNECTED	Check that the Battery Box is inserted and connected to the UPS correctly.
THE BUZZER SOUNDS CONTINUOUSLY AND THE DISPLAY SHOWS ONE OF THE FOLLOWING CODES: **F004**	THE TEMPERATURE INSIDE THE UPS IS TOO HIGH	Check that the fan is working normally first, then check the Inverter NTC is not damaged.
THE BUZZER SOUNDS CONTINUOUSLY AND THE DISPLAY SHOWS ONE OF THE FOLLOWING CODES: **F805**	THERE IS A FAULT ON ONE OR MORE OF THE LOADS POWERED BY THE UPS	Disconnect all the utilities, switch the UPS off and back on again, reconnect the loads once at a time to identify which one is faulty.
THE BUZZER SOUNDS CONTINUOUSLY AND THE DISPLAY SHOWS ONE OF THE FOLLOWING CODES: **F704, F70D, F70C, F300,F301,F302,F303, F304, F305**	THE UPS IS MALFUNCTIONING	If possible, disconnect the power to the load, switch the UPS off and back on again; if the problem occurs again, call the support center.

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7.Troubleshooting

Alarm codes

Using a sophisticated self-diagnosis system, the UPS is able to check its own status and any anomalies and/or faults which may occur during normal operation and display them on the display panel. If there is a problem, the UPS signals the event by showing the code and the type of active alarm on the display.

Alarms

“Minor” problems which reduce performance or prevent certain functions from being used.

CODE	DESCRIPTION
A107	Cable connection error (Input Line and Neutral inversion)
A612	Battery test failed
A502	Charger voltage high
A604	Battery voltage low
A60D	Battery not connected
A80E	Overload Prealarm
A810	Overload alarm (load percentage > 105%)

Faults

1.These faults are “Minor” problems which reduce performance or prevent certain functions from being used.

CODE	DESCRIPTION
F004	Inner temperature high
F007	Fans blocked
F500	Charger failure

2.Faults are normally preceded by an alarm signal and their scale leads to the power-off of the inverter.

CODE	DESCRIPTION
F004	UPS Over temperature fault
F302 F303	DC Bus too low
F300 F301	DC Bus too high
F304	DC Bus unbalanced
F305	DC Bus Failure on soft start
F308	DC Bus Short
F805	Inverter Output Short
F806	E-P-O control active
F704	Inverter Failure on soft start or INV capacitor reduction
F70C	Inverter under voltage
F70D	Inverter overvoltage
F808	Inverter Output overload fault
F208	Bypass Output overload fault
F613	Battery over voltage
F816	Model Pin detect error

7.2 Silencing the alarm

Press the function button on the front panel display to silence the alarm. Check the alarm condition and perform the applicable action to resolve the condition. If the alarm status changes, the alarm beeps again, overriding the previous alarm silencing.

7.3 Service and support

If you have any question or problem with the UPS, call your distributor, your local service representative or connect to: **eaton.com**.

Please have the following information ready when you call for service:

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- Catalog number
- Serial number
- Firmware version number
- Date of failure or problem
- Symptoms of failure or problem
- Customer return address and contact information

If repair is required, you will be given a Returned Material Authorization (RMA) number. This number must appear on the outside of the package and on the Bill of Lading (if applicable). Use the original packaging or request packaging from the Help Desk or distributor. Units damaged in shipment as a result of improper packaging are not covered under warranty. A replacement or repair unit will be shipped, freight prepaid for all warrantied units.



For critical applications, immediate replacement may be available. Call the **Help Desk** for the dealer or distributor nearest you.

7.4 CE compliance contact

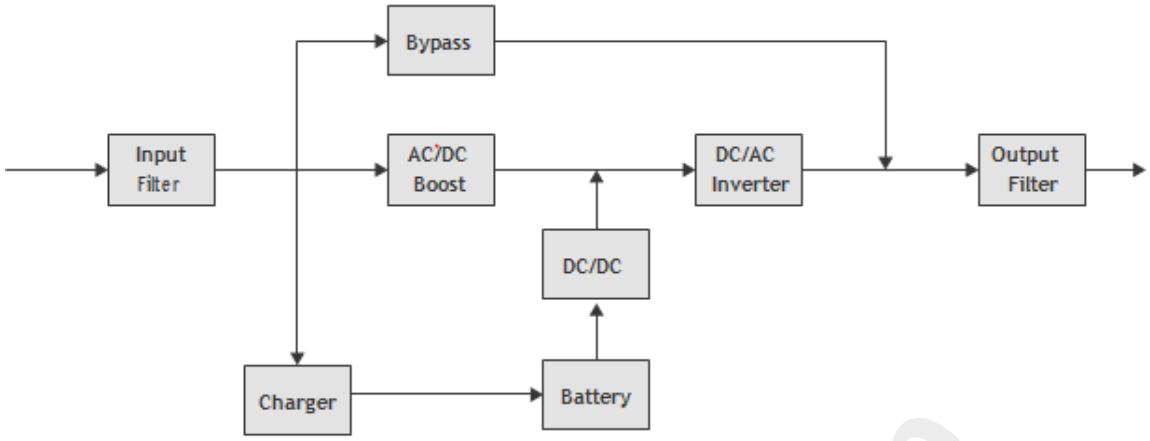
- Eaton I.F. SAS - 110 Rue Blaise Pascal - 38330 Montbonnot St Martin – France.

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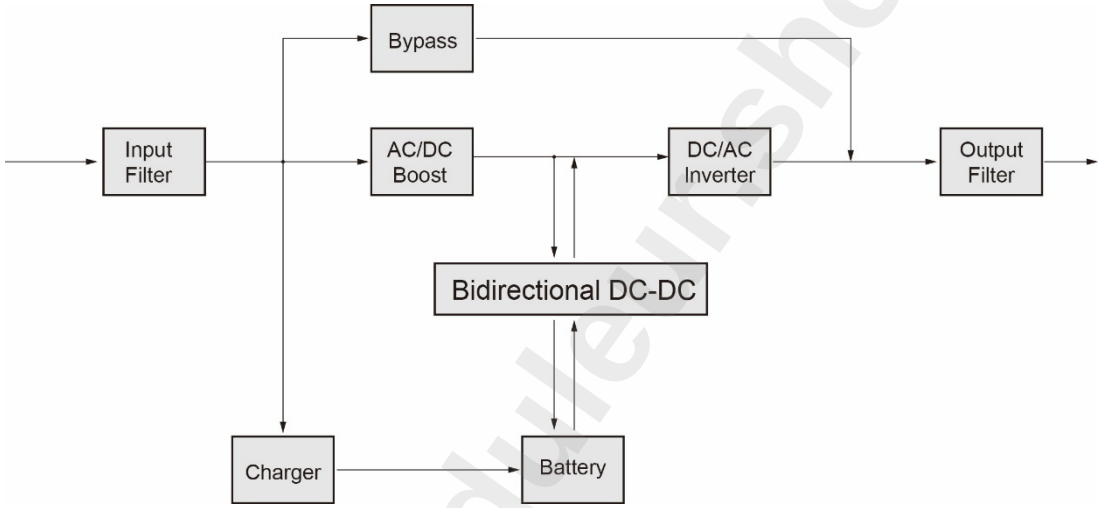
8.Specifications

8.1 Model specifications

1kVA-3kVA diagram



3kXL diagram



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Table 1. Power Module model list

Part Number/ Catalog Number	Power ratings
9103-53904/ 9E1000I	1000VA / 800W
9103-73929/ 9E2000I	2000VA / 1600W
9103-83968/ 9E3000I	3000VA / 2400W
9103-83967/ 9E3000IXL	3000VA / 2400W
9103-53905/ 9E1000IAU	1000VA / 800W
9103-73930/ 9E2000IAU	2000VA / 1600W
9103-83969/ 9E3000IAU	3000VA / 2400W
9103-83970/ 9E3000IXLAU	3000VA / 2400W

Table 2. Extended Battery Module model list

Part Number/ Catalog Number	Configuration	Battery voltage	For power ratings
9000-00371/ 9EEBM72	Tower	72Vdc	2000-3000VA

8.Specifications

Table 3. Weights and dimensions

Part Number/ Catalog Number	Weights (kg)	Dimensions (mm) W x H x D
9103-53904/ 9E1000I	9.5	144x228x356
9103-73929/ 9E2000I	22.4	190x330x399
9103-83968/ 9E3000I	24.2	190x330x399
9103-83967/ 9E3000IXL	7.9	190x330x399
9103-53905/ 9E1000IAU	9.5	144x228x356
9103-73930/ 9E2000IAU	22.4	190x330x399
9103-83969/ 9E3000IAU	24.2	190x330x399
9103-83970/ 9E3000IXLAU	7.9	190x330x399
Part Number/ Catalog Number (EBM)	**Weights (kg)**	**Dimensions (mm) W x H x D**
9000-00371/ 9EEBM72	35.8	190x330x399

Table 4. Electrical input

Nominal frequency	50/60Hz auto-sensing
Frequency range	40-70Hz before transfer to battery
Bypass voltage range	184 ~ 264Vac (default)

Part Number/ Catalog Number	Default input (Voltage/Current)	Input nominal voltages	Input voltage window
9103-53904/ 9E1000I	230V / 4.8A	208V, 220V, 230V, 240V	at 100% load: 176Vac~300Vac at <=40% load: 100Vac~300Vac
9103-73929/ 9E2000I	230V / 9.4A		
9103-83968/ 9E3000I	230V / 14.0A		
9103-83967/ 9E3000IXL	230V / 14.1A		
9103-53905/ 9E1000IAU	230V / 4.8A		
9103-73930/ 9E2000IAU	230V / 9.4A		
9103-83969/ 9E3000IAU	230V / 14.0A		
9103-83970/ 9E3000IXLAU	230V / 14.1A		

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8. Specifications

Table 5. Electrical input connections

Part Number/ Catalog Number	Input connection	Input cable
9103-53904/ 9E1000I	IEC C14-10A	NA
9103-73929/ 9E2000I		
9103-83968/ 9E3000I	IEC C20-16A	Schuko 16A to IEC320/16A
9103-83967/ 9E3000IXL		
9103-53905/ 9E1000IAU	IEC C14-10A	AU 10A to IEC320/10A
9103-73930/ 9E2000IAU		
9103-83969/ 9E3000IAU	IEC C20-16A	AU 16A to IEC320/16A
9103-83970/ 9E3000IAUXL		

Table 6. Electrical output

All models		Normal mode	High Efficiency mode	Battery mode
Voltage regulation		±1%	±1%	±1%
Efficiency	1KVA	89%	97.5%	82%
	2KVA	91%	98%	88.5%
	3KVA	91%	98%	89%
Frequency regulation		Sync with line ±10% of nominal line frequency (outside this range: ±0.05Hz of auto-selected nominal frequency)		±0.05Hz of auto-selected nominal frequency
Nominal output		208/220/230/240V for 0-3KVA (voltage configurable)		
Frequency		50 or 60Hz. autosensing or configurable as a frequency converter		
			0-3KVA	
Output overload (Online mode)		105%~130%*	60 seconds	
		130%~150%*	10 seconds	
		>150%*	Shutdown immediately**	
Output overload (Battery mode)		105%~130%*	10 seconds	
		130%~150%*	1 seconds	
		>150%*	Shutdown immediately**	
Output overload (Bypass mode)		105%~130%*	Continue working	
		130%~180%*	Shutdown after 60 s	
		>180%*	Shutdown immediately**	
Voltage waveform		Sine wave		
Harmonic distortion		< 2% THDV on linear load < 6% THDV on non-linear load		
Power factor		Up to 0.8		
Load crest ratio		> 2.5:1		

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8. Specifications

Table 7. Electrical output connection

Catalog Number	Output connection	Output cables
9E1000I	4* IEC C13 10A	NA
9E2000I	6* IEC C13 10A	
9E3000I	6*IEC C13 10A + 1*C19 16A	
9E3000IXL	6*IEC C13 10A + 1*C19 16A	
9E1000IAU	4* IEC C13 10A	
9E2000IAU	6* IEC C13 10A	
9E3000IAU	6*IEC C13 10A + 1*C19 16A	
9E3000IXLAU	6*IEC C13 10A + 1*C19 16A	

Table 8. Environmental and safety

Certifications	IEC/EN 62040-1 IEC/EN 62040-2: Cat. C2 IEC/EN 62040-3
EMC (Emissions)*	IEC/EN 62040-2, (Radiated field): Category C2 IEC/EN 62040-2, Conducted Category C2 IEC 61000-2-2: Criteria A EN 61000-3-2: Class A
EMC (Immunity)	IEC 61000-4-2, (ESD): Criteria B Level 3 IEC 61000-4-4, (EFT): Criteria B Level 4 IEC 61000-4-5, (Surges): Criteria B, (L-E, N-E) level 4, (L-N) level 3 IEC 61000-4-6, (Electromagnetic field): 10 V

***Note:** For Output cables should not exceed 10 m length.

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

Agency markings	CE + EAC+TISI +UKR+ MOR for IEC model； RCM+ CE for AU model
Operating temperature	0 to 40 ℃ (32 to 104 ℉) in line mode, with linear derating for altitude **Note:** thermal protection switches load to Bypass in case of overheating.
Storage temperature	0 to 40 ℃ (32 to 104 ℉) with batteries -25 to 55 ℃ (-13 to 130 ℉) without batteries
Transit temperature	-25 to 55 ℃ (-13 to 130 ℉)
Relative humidity	0 to 95% no condensing
Operating altitude	Altitude ≤1000m； 3000m≥ Altitude >1000m; the load should derating 1 % every up 100m
Transit altitude	Maximum Operating Altitude 3000m
Audible noise	< 50 dB at 1 meter typical

Table 9. Battery

	Internal batteries	EBM
Tower configuration	1000VA : 24Vdc -2 x12V. 9Ah 2000VA : 72Vdc -6 x12V. 7Ah 3000VA : 72Vdc -6 x12V. 9Ah	9EEBM72: 72Vdc-6 x12.9AH
Type	Sealed, maintenance-free, valve-regulated, lead-acid, with minimum 3-year float service life at 25 ℃ (77 ℉)	
Monitoring	Advanced monitoring for earlier failure detection and warning	
EBM battery cable length	600 mm	

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9.Glossary

Bypass AC source	Source supplying the bypass line. The equipment can be transferred to the by-pass line if an overload occurs on the UPS output, for maintenance or in the event of a malfunction.
Frequency converter	Operating mode used to convert the AC-power frequency between the UPS input and output (50Hz -> 60Hz or 60Hz -> 50Hz).
Low-battery warning	This is a battery-voltage level indicating that battery power is low, and that the user must take action to prevent the imminent break in the supply of power to the load.
Backup time	Time during which the load can be supplied by the UPS operating on battery power.
Load	Devices or equipment connected to the UPS output.
HE mode	Operating mode by which the load is supplied directly by the AC source if it is within the tolerances defined by the user. This mode reduces the consumption of electrical power.
Normal (double conversion) mode	The normal UPS operating mode in which the AC source supplies the UPS which in turn supplies the connected loads (after electronic double conversion).
Normal AC source	Normal source of power for the UPS.
Relay contacts	Contacts supplying information to the user in the form of signals.
UPS	Uninterruptible Power Supply

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