Qoltec®

OPERATING INSTRUCTIONS

PURIFIER UPS PURE SINE WAVE

MODEL: 52640, 52641, 52642

Introduction

Thank you for choosing a Qoltec UPS emergency power supply. The device has been designed to provide stable and safe power supply to connected electronic devices in the event of mains power failure or voltage fluctuations.

The UPS protects computer equipment, network devices, monitoring systems and other sensitive electronic devices from the effects of sudden power outages, surges and voltage drops. Thanks to advanced power management technology, the device ensures stable output voltage and automatic switchover to battery power in the event of a mains power failure.

This manual contains information on the installation, configuration, use and maintenance of the device. Before using the UPS, it is recommended that you read the manual carefully to ensure correct and safe operation of the device.

Please keep this manual for future reference.

Safety instructions

Before installing, starting up and using the device, please read the following safety instructions carefully.

1. If it is necessary to move the UPS system, place it in its original packaging to protect it from mechanical damage.
2. When moving the device from a cold to a warm environment, moisture condensation may occur inside the enclosure. Wait until the device is completely dry before installation. It is recommended to leave the UPS in the installation location for at least 2 hours to allow it to reach the ambient temperature.
3. Do not install the device in locations exposed to:
    - contact with water,
    - high humidity,
    - direct sunlight,
    - proximity to heat sources (e.g. radiators).
4. Do not block or cover the ventilation openings in the device housing.
5. Power cords and other cables should be routed in such a way as to prevent them from being stepped on, crushed or damaged.
6. The power socket should:
    - be earthed,

- have surge protection,
- be located near the device,
- be easily accessible to the user.

7. The UPS system can be installed and used by persons without specialist training, provided that these instructions are followed.
8. Only use power cables that comply with VDE standards and have CE certification (e.g. standard power cables used in computers) to connect the device.
9. Do not connect devices that may overload the system, such as laser printers, to the UPS output sockets.
10. During installation, calculate the total leakage current of the UPS system and all connected devices. The total value must not exceed 3.5 mA.
11. Do not disconnect the UPS power cord or electrical wiring while the device is in operation. This may result in the loss of grounding protection for the UPS and connected devices.
12. The UPS system has an internal power source (battery). Even when disconnected from the mains, some components of the device and output sockets may remain live.
13. Prevent liquids and foreign objects from entering the device.
14. The UPS system operates with dangerous electrical voltage. All maintenance work must be performed by qualified personnel only.
15. Risk of electric shock. Even after disconnecting the device from the mains, the internal components remain connected to the battery and may remain live.
16. When performing maintenance work, you must:
    disconnect the device from the mains,
    disconnect the battery,
    ensure that there is no voltage inside the device.
17. Particular attention should be paid to high-capacity circuit components such as capacitors.
18. Batteries may only be replaced by persons experienced in working with batteries and using appropriate safety measures.
19. The battery may cause electric shock and generate high short-circuit current. When working with the battery, you should:
    remove watches, rings and other metal objects,
    use tools with insulated handles.

20. When replacing the batteries, install the same number and type of batteries.
21. Do not throw batteries into a fire – this may cause an explosion.
22. Do not disassemble or damage the battery. Electrolyte leakage can cause skin irritation and eye damage.
23. Do not disassemble the UPS system.

Installation and configuration

Note: Before starting the installation, check the contents of the package and make sure that the device and accessories have no visible damage caused during transport.

It is recommended that you keep the original packaging for possible future transport or storage of the device.

Rear panel of the device

Model: 52640

Illustration 1 in the appendix

Model: 52641, 52642

Illustration 2 in the appendix

UPS configuration

Step 1: Connecting the UPS power supply

The mains socket to which the UPS system is connected must be a grounded three-wire socket (L/N/PE).

Avoid using extension cords.

It is recommended to use the power cord supplied with the device.

Step 2: Connecting devices to the UPS output

For models with output sockets:

Connect the device directly to the UPS output socket. In the event of a mains power failure, the UPS will automatically switch to battery power and ensure that the connected devices continue to operate.

For models with a terminal strip:

Follow these steps to connect the device:

a) Remove the small protective cover from the terminal strip.

b) We recommend using an AWG14 power cable (approx. 2.1 mm^2).

c) After completing the connection, double-check that all connections are correct.

d) Replace the protective cover on the rear panel of the device.

Step 3: Connecting the communication interface

Communication ports:

RS-232 interface (standard)

Once the monitoring software has been installed, it will be possible to:

remotely monitor the UPS operation,

switch the device on and off from your computer.

Step 4: Switching on the UPS

Press the Power/On-Mute button on the front panel and hold it down for about 2 seconds until the device starts up.

Note: During the first start-up, the battery should be charged for at least 5 hours.

If the charging time is less than 5 hours, the battery backup time may be shorter accordingly.

Step 5: Installing the software

To ensure full protection of your computer, it is recommended that you install UPS monitoring software, which can be downloaded from the Internet. Go to the manufacturer's website, go to the Data Download section, select Power Manager and start the download. Follow the instructions on the screen to install the

software. After restarting your computer, the monitoring programme icon will appear on the taskbar (next to the clock).

Operation and use

Button operation

Button	Function
ON / Mute	Turning on the UPS: Press and hold the Power/On-Mute button for more than 2 seconds to start the device.
	Mute: When the UPS is operating in battery mode, press and hold the Power/On-Mute button for more than 5 seconds to mute the audible alarm. This function is only active when the UPS is generating an alarm or warning.
	Battery test: In mains mode or frequency conversion mode, press and hold the Power/On-Mute button for more than 5 seconds to start the battery test.
OFF	Turning off the UPS: Press and hold the Power/Off button for more than 2 seconds to turn off the UPS operating in battery mode. If the UPS is operating in mains mode, standby mode or if the bypass function is enabled, the device will switch to bypass mode.

Description of LED operating modes

Operating mode	Description	LED panel indication
Mains mode (Online) or frequency conversion mode	When the input voltage is within the acceptable range, the device is switched on and the UPS operates in mains power mode. In this mode, a stable AC output voltage	LED indicators signal operation in mains mode.

	is provided and the battery is charged at the same time. The LED indicators signal operation in mains mode.	
Battery mode	When the input voltage is incorrect or there is a mains power failure, the UPS automatically switches to battery mode. At the same time, an audible signal is activated, which repeats approximately every 4 seconds. In this mode, the UPS supplies the connected devices with power from the battery. The LED indicators) signal operation in battery mode.	The LED indicators signal operation in battery mode.
Bypass mode	If the UPS is operating in mains mode and an overload occurs, and the input voltage is within the acceptable range, the device will automatically switch to bypass mode. In this mode, the loads are powered directly from the mains. If the UPS is in standby mode and connected to the mains power supply, it will also automatically switch to bypass mode to power the connected devices. When operating in bypass mode, an audible	The LED indicators signal operation in bypass mode.

	signal will be emitted approximately every 10 seconds. The LED indicators signal operation in bypass mode.	

Description of LCD display operating modes

Operating mode	Description	LCD panel display
Online mode or frequency conversion mode	When the input voltage is within the acceptable range and the device is switched on, the UPS operates in mains power mode. In this mode, it provides a stable and clean AC output voltage while charging the battery.	The LCD display shows information about operation in mains mode.
Battery mode	When the input voltage is incorrect or there is a mains power failure, the UPS automatically switches to battery mode. At the same time, an audible signal sounds approximately every 4 seconds. In this mode, the UPS supplies the connected devices with power from the battery.	The LCD display shows information about battery mode operation.
Bypass mode	If the UPS is operating in mains mode and an overload occurs, and the input voltage is within the acceptable range, the device will automatically switch to bypass mode. In this mode, the connected devices are powered directly from the mains. If the UPS is in standby mode and connected to the mains power supply, it will also automatically switch to bypass mode to power the loads. When operating in bypass mode, an audible signal will be emitted approximately every 10 seconds.	The LCD display shows information about operation in bypass mode.

Troubleshooting

Fault indication via LED indicators

If an error message appears on the LCD display or the UPS system is not functioning properly, try to resolve the problem according to the table below.

Problem	Possible causes	Solution
The mains power supply is correct, but one of the LED indicators is not lit and no audible signal is heard.	The mains power cable may be loose or incorrectly connected.	Check that the power cord is properly connected to the UPS power input.
	Incorrect connection of the UPS power input.	Check that the input power cord is connected correctly.
LED2 on the LED panel flashes and at the same time a buzzer sounds once per second.	Incorrect connection of the external or internal battery.	Check that all batteries are connected correctly.
LED5 and LED9 are lit and the buzzer sounds continuously.	The battery voltage is too high or the charger is faulty.	Contact the service department or your dealer.
LED5 and LED7 are lit and the audible signal is continuous.	Incorrect UPS internal bus voltage.	Contact the service department or your dealer.
LED5 and LED10 are lit and the audible signal is continuous.	The internal temperature of the UPS is too high or the fan is not working properly.	Contact the service department or your dealer.
LED5 and LED6 flash simultaneously and the audible signal repeats twice per second.	UPS overload.	Remove some of the load from the UPS output.
	The internal temperature of the UPS is too high or the fan is not working properly.	Remove some of the load from the UPS output.
	After several occurrences of overload, the UPS switches to bypass mode or supplies power to the loads directly from the mains.	Remove the excessive load and switch off the UPS output.
LED5 and LED6 light up simultaneously and an	The UPS has automatically switched	Remove the excessive load and switch off the

audible signal repeats every second.	to bypass mode due to output overload.	UPS output.
LED5 and LED8 light up simultaneously and the audible signal is continuous.	The UPS has automatically disabled the inverter due to incorrect output voltage or a short circuit.	Check the UPS output to ensure there is no short circuit.
The battery backup time is shorter than specified.	The battery may not be fully charged.	Charge the battery for at least **5 hours**. If the problem persists, contact the service department.
	The battery is damaged.	Contact the service department and replace the battery.

TECHNICAL SPECIFICATIONS

Model	52640	52641	52642
Capacity	1000VA / 800W	2000VA / 1600W	3000VA / 2400W
Input			
Voltage range	145Vac – 275Vac		
Frequency range	50/60Hz ± 3Hz (Auto)		
Phase	Single-phase		
Power factor	0.8		
Output			
Output voltage	220-240VAC		
Voltage regulation	±10		
Frequency synchronisation range	Default 50Hz. The UPS synchronises with the mains frequency in the range of 47–53Hz. When set to 60Hz, the synchronisation range is 55–65Hz.		
Frequency range (battery mode)	50Hz ± 0.25Hz or 60Hz ± 0.3Hz		
Overload	100% – 110% An alarm signal is emitted 110% – 130 The UPS will automatically shut down after 30 seconds or switch to bypass mode (if the input voltage is correct) >130 The UPS will shut down immediately or switch to bypass mode (if the input voltage is correct)		

Peak current ratio	3:1		
Harmonic distortion	≤3% THD (linear load) / ≤6% THD (non-linear load)		
Switching time	4 ms (under standard conditions)		
Output voltage waveform	Pure sine wave		
Efficiency			
Mains mode	~85%		~88%
Battery mode	~83%		~85%
Battery			
Battery type (internal)	12V / 7–9Ah		
Number of batteries	2	4	6
Charging time	Approximately 4 hours to 90% capacity (internal battery)		
Backup time	The backup time depends on the power consumption of the connected device.		
Charging current	1A max	1A/2A/4A/6A (adjustable)	1A/2A/4A/6A (adjustable)
Charging voltage	27.3V±1%	54V±1%	54V±1%
Sockets	2xSchuko	2xSchuko	2xSchuko
Communication interface	RS-232		
Operating systems	Windows 2000 / 2003 / XP / Vista / 2008 / 7, Linux, Unix, Mac		
Environmental conditions			
Operating humidity	20% – 95% RH (non-condensing)		
Operating temperature	0°C – 40°C		
Noise level	<45 dB (at a distance of 1 m)		
Dimensions (W × D × H)	340 × 140 × 220 mm	315 × 190 × 320 mm	315x190x320mm
Certificate	CE		

Maintenance and upkeep

Please observe the following maintenance recommendations:

1) Do not open the external casing of the UPS.
2) Do not install or use the UPS near water or in an environment with high temperatures or high humidity.
3) Prevent water and foreign objects from entering the device.

4) The UPS should be operated in a well-ventilated room.
5) Do not install the UPS in locations exposed to direct sunlight or near heat sources.
6) In low temperature conditions, moisture condensation may occur in an unused UPS. In this case, wait until the interior of the device is completely dry before starting it up. Otherwise, there is a risk of electric shock.
7) If the UPS is not used for a long time, it is recommended to recharge it every 4-6 months.
8) Under normal operating conditions, the battery life is typically 3 to 5 years. If deterioration is detected, the battery should be replaced earlier. Replacement should be performed by qualified personnel.
9) In high-temperature environments, the battery should be charged and discharged every two months, with a continuous charging time of no less than 12 hours.
10) Under normal conditions of use, the battery should be charged and discharged every 4-6 months, also with a continuous charging time of not less than 12 hours.
11) Please note that discharging should be carried out at a load not exceeding 50% to avoid damage to the battery caused by deep discharge.
12) Replacing individual batteries is not recommended. When replacing the entire set, follow the instructions provided by the battery manufacturer.

Storage

1. During storage, perform periodic maintenance charging according to the table below.
2. Before long-term storage, charge the device for at least 5 hours.
3. The UPS should be stored in a dry place, in its original packaging and in an upright position.

Storage temperature	Charging frequency	Charging time
-25°C ~ 40°C	Every 3 months	1–2 hours
40°C ~ 45°C	Every 2 months	1–2 hours

Warranty terms and conditions

1. The warranty is valid only upon presentation of a valid sales document from an authorised dealer.
2. During the warranty period, the user is responsible for the cost of transporting the device to the service centre. In the event of a malfunction, please contact your nearest service centre or dealer.

Glossary of technical terms (UPS)

UPS (Uninterruptible Power Supply)	UPS emergency power supply	A device that provides backup power in the event of a mains power failure.
Online mode	Mains mode (Online)	The UPS operates from the mains power supply and stabilises the output voltage.
Battery mode	Battery mode	The UPS supplies the connected devices with power from the battery.
Bypass mode	Bypass mode	The receivers are powered directly from the mains, bypassing the UPS systems.
Standby mode	Standby mode	The UPS is in standby mode but does not actively power the receivers.
Frequency conversion mode	Frequency conversion mode	The UPS stabilises the output frequency regardless of the input frequency.
Inverter	Inverter	An electronic circuit that converts DC voltage from the battery to AC voltage.
Rectifier	Rectifier	A circuit that converts AC voltage from the mains into DC voltage.
Charger	Battery charger	A circuit responsible for charging UPS batteries.
Battery pack	Battery pack	A set of batteries that power the UPS.
External battery	External battery	A battery connected to the UPS to extend the backup time.
Long Run model	Long Run model	UPS designed to work with external batteries.
Overload	Overload	Power consumption exceeding the

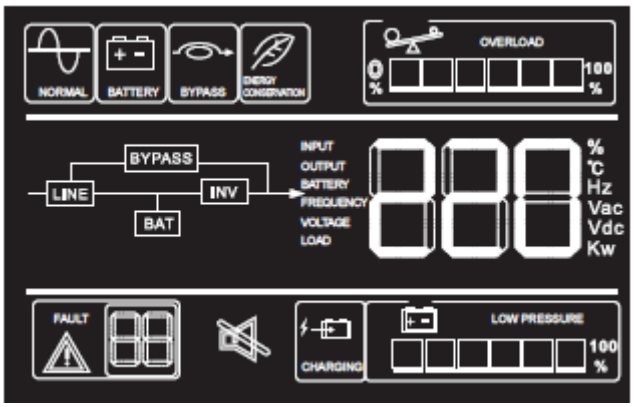
		permissible power of the UPS.
Short circuit	Short circuit	A direct connection between wires causing a very high current.
Input voltage	Input voltage	Voltage supplied to the UPS from the mains.
Output voltage	Output voltage	The voltage supplied by the UPS to connected devices.
Input frequency	Input frequency	The frequency of the UPS supply voltage.
Output frequency	Output frequency	Frequency of the voltage supplied by the UPS.
LED indicator	LED indicator	A diode indicating the operating status of the UPS.
LCD display	LCD display	Screen displaying UPS operating parameters.
Buzzer	Audible signal (buzzer)	Audible alarm indicating UPS operating status or errors.
Power button	Power button	Button used to turn the UPS on or off.
Mute	Alarm mute	Function to turn off the audible signal.
Communication port	Communication port	A connector enabling communication between the UPS and a computer.
USB interface	USB interface	USB communication port for UPS monitoring.
RS-232 interface	RS-232 interface	Serial communication port.
SNMP card	SNMP card	Module enabling UPS management via a network.
AS400 card	AS400 card	Communication card for integration with industrial systems.
Monitoring software	UPS monitoring software	Programme for managing and monitoring UPS operation from a computer.

Attachment

1

2

3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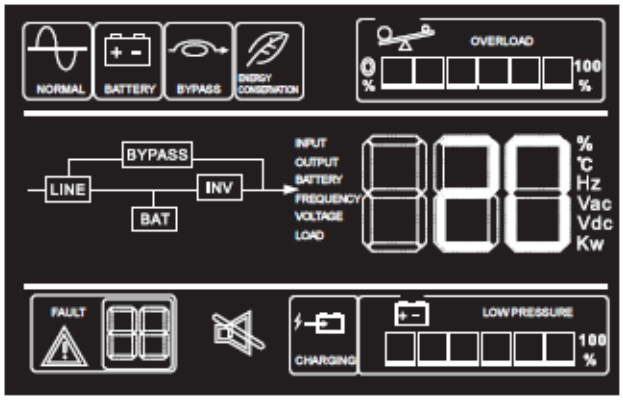
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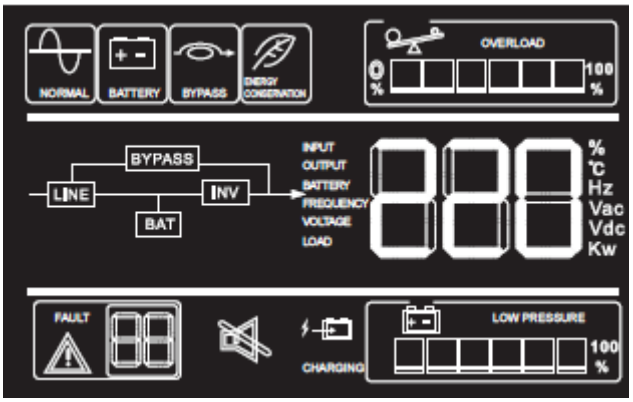
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