

7.0 TROUBLESHOOTING

This section indicates various UPS symptoms a user may encounter and provides a troubleshooting guide in the event the UPS develops a problem. Use the following information to determine whether external factors caused the problem and how to remedy the situation.

7.1 UPS Symptoms

The following symptoms indicate the Liebert® GXT3™ is malfunctioning:

- The relative indicators illuminate, indicating the UPS has detected a problem.
- An alarm buzzer sounds, alerting the user that the UPS requires attention.

7.1.1 Indicators

In addition to the fault indicator being illuminated, one or more of LED segments of battery level indicator will also be illuminated to provide a diagnostic aid to the user, as shown in **Figure 24**. The descriptions are listed in **Table 8**.

Figure 24 Battery level indicator



Table 8 Indicator descriptions

Indicator	Diagnosis/Audible alarm
A - E	On bypass from output overload (half-second beep every half-second)
A	On bypass due to overtemperature condition (1-second beep every 4 seconds)
B	On bypass due to DC bus overvoltage (1-second beep every 4 seconds)
C	On bypass due to DC/DC power supply failure (1-second beep every 4 seconds)
D	On bypass due to PFC failure (1-second beep every 4 seconds)
E	On bypass due to inverter failure (1-second beep every 4 seconds)
A&B	UPS Failure (includes dual-fan failure, single-fan failure under certain conditions and battery charger failure) and continuous alarm
A&C	UPS failed battery test (2-second beep every 60 seconds)
A&E	Bypass feedback (1-second beep every 4 seconds)
B&E	Short circuit on the output
C&E	UPS shutdown by command from communication (USB port or Liebert IntelliSlot port) (no audible)
Utility LED flash	L-N reverse
Battery Indicator Flashing	Internal battery not connected (continuous horn); check battery connection, power down and restart UPS
Bypass Indicator Flashing	Mains power voltage or frequency is out of tolerance; bypass is unavailable

A - E indicators are shown in **Figure 24**.

If the UPS experiences an overload, the UPS will transfer from bypass back to inverter approximately 5 minutes after the overload ends.

7.1.2 Audible Alarm

An audible alarm will sound in conjunction with the visual indicators to indicate a change in UPS operating status. The audible alarm will sound as described in **Table 9**.

Table 9 Audible alarm description

Condition	Alarm
Battery discharge	Half-second beep every 10 seconds
Low battery	Two half-second beeps every 5 seconds
UPS fault, load on bypass	1-second beep every 4 seconds
UPS fault, no power to load	Continuous
Overload	Half-second beep every half second
Battery replacement	2-second beep every 60 seconds
Battery loss	Continuous
Wiring problem (loss of proper grounding for UPS)	Continuous
Bypass reminder	1-second beep every 2 minutes

7.2 Troubleshooting

In the event of an issue with the UPS, refer to **Table 10** to determine the cause and solution. If the fault persists, contact Emerson Channel Support.

Table 10 Troubleshooting table

Problem	Cause	Solution
UPS fails to start when the On/Alarm Silence/Manual Battery Test button is pressed	UPS is short-circuited or overloaded	Ensure UPS is Off. Disconnect all loads and ensure nothing is lodged in output receptacles. Ensure loads are not defective or shorted internally.
Battery indicator is illuminated	UPS is not plugged in	UPS is operating from battery mode. Ensure UPS is securely plugged into the wall receptacle.
	UPS input protection fuse has blown/opened	UPS is operating from battery mode. Save data and close applications. Replace UPS input fuse, then restart UPS.
	Mains power is out of tolerance	UPS is operating from battery mode. Save data and close applications. Ensure mains supply voltage is within acceptable limits for UPS.
UPS has reduced battery backup time	Batteries are not fully charged	Keep UPS plugged in continuously at least 24 hours to recharge batteries.
	UPS is overloaded	Check load level indicator and reduce the load on the UPS.
	Batteries may not be able to hold a full charge due to age	Replace batteries. Contact your local dealer, Emerson representative or Emerson Channel Support for replacement battery kit.
Fault and Bypass indicators and all LED segments of battery level indicator are illuminated	UPS is overloaded or load is faulty	Check load level indicator and remove non-essential loads. Recalculate the load and reduce number of loads connected to UPS. Check load for faults.
Fault and Bypass indicators and diagnostic A indicator are illuminated	UPS has been shut down due to temperature condition; load is on bypass power	Ensure UPS is not overloaded, ventilation holes are not blocked and room ambient temperature is not excessive. Wait 30 minutes to allow UPS to cool, then restart UPS. If UPS cannot restart, contact your local dealer, Emerson representative or Emerson Channel Support.
Fault and Bypass indicators and diagnostic B indicator are illuminated	UPS internal DC bus overvoltage	UPS requires service. Contact your local dealer, Emerson representative or Emerson Channel Support.

Table 10 Troubleshooting table (continued)

Problem	Cause	Solution
Fault and Bypass indicators and diagnostic C indicator are illuminated	UPS DC/DC fault	UPS requires service. Contact your local dealer, Emerson representative or Emerson Channel Support.
Fault indicator and diagnostic D indicator are illuminated	UPS PFC (Power Factor Correction Circuit) fault	UPS requires service. Contact your local dealer, Emerson representative or Emerson Channel Support.
Fault and Bypass indicators and diagnostic E indicator are illuminated	UPS inverter fault	UPS requires service. Contact your local dealer, Emerson representative or Emerson Channel Support.
Fault indicator and diagnostic A and C indicators are illuminated	UPS failed the battery test	Replace batteries. Contact your local dealer, Emerson representative or Emerson Channel Support.
Fault and Bypass indicators and diagnostic C and E indicators are illuminated	UPS has been shut down by a command from the communications port(s)	Your UPS has received a signal or command from the attached computer. If this was inadvertent, ensure the communication cable used is correct for your system. For assistance, contact your local dealer, Emerson representative or Emerson Channel Support.
Fault indicator and diagnostic A and B indicators are illuminated	UPS failure (includes dual-fan failure, single-fan failure under certain conditions and battery charger failure) and continuous alarm	Ensure fan is not blocked up. If the fault is not removed, contact your local dealer, Emerson representative or Emerson Channel Support.
AC input indicator is flashing.	UPS detected a line-to-neutral reversal or a loss of proper grounding for UPS; continuous horn and UPS cannot start up in standby status. This is active only when power is first applied to the input. Once the UPS is running, the AC input indicator will flash, unless the input wiring is correctly changed.	Contact a qualified electrician to verify site wiring.
Battery indicator is flashing.	Battery source is not available; continuous horn.	Check battery connections, completely power down and restart UPS. NOTE: If the battery circuit opens while the UPS is running, it will be detected when the next battery test is performed.
Bypass indicator is flashing.	Because the voltage or frequency is outside acceptable limits, the bypass is disabled.	The AC input powers the PFC input and serves as the bypass source. If the AC is present but the voltage or frequency exceeds the acceptable range for safe operation with a load, the bypass will be disabled and this indicator will flash, indicating that the bypass is unavailable.

When reporting a UPS issue to Emerson, include the UPS model and serial number. These are on the top panel of the Liebert® GXT3™.