**Description of Normal Operation for the Sign’s Internal Power Supply**

Diagnostic LEDs are included on the internal power supply to aid in verifying that input power is present and is being transferred to the sign face through the output connectors.

**V Out LED**

This LED illuminates Green when 12-24VDC power is applied to the internal power supply’s input power pigtail.  
*Note: The transformer on the power supply converts 12-24VDC power to +12V.*

**Output Connectors**

These connectors transfer power from the internal power supply to the sign face to illuminate the individual message(s).

For signs with one message and one power supply, the V Out LED should illuminate green when the message is powered. For signs with multiple message and/or multiple power supplies, the V Out LED on each power supply of the energized message should illuminate.  
*Note: A longer single message may require multiple power supplies to illuminate the entire message.*

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**Single Message with Multiple Power Supply Example**

- **+12-24VDC**
- **12-24VDC**
- **Negative**
- **Power Supply (Factory installed)**
- **Power Interconnect**
- **Message A Lead**
- **+12-24VDC (Red Wire)**
- **Negative (Black Wire)**
- **SPST On/Off Switch**
- **V Out LED**
- **Output Connector**
- **Input Power Pigtail**
- **Sign Face**
- **Output Power to Sign Face**
Problem: Dark band or area when message is illuminated
SBL(F) Series 12-24VDC

There is a dark band or dark area when message is illuminated

Do some areas of the sign face appear dark when illuminated?

YES

Entire Sign needs replaced

Contact sales with the serial number of the sign, and be prepared with other relevant information:
- Input voltage reading from multimeter.
- Output voltage of power supply.
- Photos/video showing the issue/damage.
- Photos of the inside of the sign, showing the wiring and power supplies.

Please refer to the diagrams on page 1.
Problem: A message is lit that shouldn’t be

Please refer to the diagrams on page 1.

A message is lit that should not be

Do the wires run parallel to other high power devices?

- **YES**
  - Run wires in separate conduit

- **NO**

Is there incoming voltage on that channel?

- **YES**
  - Recheck all connections to switches or controlling system

- **NO**

Replace power supply

Contact sales with the serial number of the sign, and be prepared with other relevant information:
- Input voltage reading from multimeter.
- Output voltage of power supply.
- Photos/video showing the issue/damage.
- Photos of the inside of the sign, showing the wiring and power supplies.
Problem: Display is flickering

SBL(F) Series 12-24VDC

Display is flickering

Is the V Out LED illuminated steady?

NO

External power source may be AC or it may not have adequate current capacity to accommodate the sign’s power supply inrush current. Check incoming voltage, power source, switches and wiring

YES

Is the output connector secure?

YES

Supply is defective and needs replaced

NO

Re-attach connector

Contact sales with the serial number of the sign, and be prepared with other relevant information:

- Input voltage reading from multimeter.
- Output voltage of power supply.
- Photos/video showing the issue/damage.
- Photos of the inside of the sign, showing the wiring and power supplies.
Problem: Entire display is out
SBL(F) Series 12-24VDC

Entire display is out

Is the V Out LED illuminated on the affected power supply? NO

Is the input polarity correct? NO

Reverse input polarity

YES

Can you measure the correct incoming voltage at the sign? NO

Check power source, switches and wiring

YES

Are the input connectors and pigtail secure? NO

NO

Re-attach connector

YES

Is the output connector secure? NO

Supply is defective and needs replaced

YES

Re-attach connector

YES

Are the input connectors and pigtail secure?

Contact sales with the serial number of the sign, and be prepared with other relevant information:
• Input voltage reading from multimeter.
• Output voltage of power supply.
• Photos/video showing the issue/damage.
• Photos of the inside of the sign, showing the wiring and power supplies.

Please refer to the diagrams on page 1.