Tools Needed:
- Philips head screwdriver
- Multi-meter

Always turn off the power to the sign prior to opening the cabinet. Disconnect the power wires going to the sign.

Note: Clear all metal chips created by drilling into sign cabinet.

Note: Do not overtighten fasteners or distort back panel.

Note: Make appropriate wiring connections per local codes.

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.

Identify the Sign Problem:
Follow the flowchart to diagnose the symptoms

- [ ] Dark band or area when illuminated
- [ ] A message is lit that shouldn’t be
- [ ] The display is flickering
- [ ] The entire display is out

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.

[Diagram of Single Message with Multiple Power Supply Example]

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

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.

Please refer to the diagrams on page 1.
Problem: Display is flickering
PHX(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.

Please refer to the diagrams on page 1.
Problem: Entire message is out

PHX(F) Series 12-24VDC

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

Re-attach connector

YES

Is the output connector secure?

YES

Supply is defective and needs replaced

NO

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.