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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**Tools Needed:**  
- Philips head screwdriver  
- Multi-meter

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

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<tr>
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<td>Dark band or area when illuminated</td>
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---

**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.*

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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

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

Please refer to the diagrams on page 1.
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

NO: Check switches and wiring

YES: Supply is defective and needs replaced

NO: Re-attach connector

YES: Is the output connector secure?

YES: Contact sales with the serial number of the sign

Please refer to the diagrams on page 1.
Problem: Entire display is out
PHX(F) Series 12-24VDC

Entire display is out

- Is the V Out LED illuminated? NO
  - Is the output LED for the affected message illuminated? NO
    - Are the input connectors and pigtail secure? NO
      - Re-attach connector
    - NO
  - YES
  - Is the output connector secure? NO
    - Supply is defective and needs replaced
    - YES
  - Check switches and wiring

- Is the input polarity correct? NO
  - Can you measure the correct incoming voltage at the sign? NO
    - Contact sales with the serial number of the sign
    - YES
  - YES

Please refer to the diagrams on page 1.