## PANEL FAULT TROUBLE-SHOOTING GUIDE

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<th>FRONT INDICATIONS</th>
<th>SPECIFIC INDICATIONS</th>
<th>CHECKS</th>
<th>CAUSES</th>
<th>ACTION</th>
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<tr>
<td><strong>Fire (Zone)</strong></td>
<td>- Smoke / Heat detector</td>
<td>- Enviroment&lt;br&gt;- Reverse Connection&lt;br&gt;- Faulty</td>
<td></td>
<td>IF CONFIRMED FALSE ALARM (Isolate respective zone).&lt;br&gt;- Silence sounder (Press ORANGE SW.)&lt;br&gt;- Reset (Press BROWN SW.)&lt;br&gt;- If FIRE clears, a) check zone lines, detectors / sub panel&lt;br&gt;- If FIRE remains, a) Call for service&lt;br&gt;b) Silence sounder (After 3 mins)</td>
</tr>
<tr>
<td></td>
<td>- Manual Call Point</td>
<td>Glass broken</td>
<td></td>
<td>- Reverse Connection&lt;br&gt;- Silence sounder (Press ORANGE SW.)&lt;br&gt;- Reset (Press BROWN SW.)&lt;br&gt;- If FIRE clears, a) check zone lines, detectors / sub panel&lt;br&gt;- If FIRE remains, a) Call for service&lt;br&gt;b) Silence sounder (After 3 mins)</td>
</tr>
<tr>
<td></td>
<td>- Flow / Pressure Switch</td>
<td>- Activated</td>
<td></td>
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<td>- Sub Panel</td>
<td>- Activated</td>
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</tr>
<tr>
<td></td>
<td>- EOL</td>
<td>- Wrong Value used</td>
<td></td>
<td>- Use 6.8K ohm resistor</td>
</tr>
<tr>
<td><strong>Fault (Zone)</strong></td>
<td><strong>LO = Line open</strong> (on ZCB)</td>
<td>Detector Fuse</td>
<td>Blown</td>
<td>Isolate respective zone&lt;br&gt;- If FAULT clears,&lt;br&gt;a) Measure line resistance&lt;br&gt;b) If not 6.8K ohm (approx.)&lt;br&gt;c) Check Line&lt;br&gt;- If FAULT remains,&lt;br&gt;a) Call for service&lt;br&gt;b) Silence buzzer (press YELLOW SW.)</td>
</tr>
<tr>
<td></td>
<td>Line</td>
<td>- Line discontinuity&lt;br&gt;- Detector removed</td>
<td></td>
<td>- If FAULT clears,&lt;br&gt;a) Measure line resistance&lt;br&gt;b) If not 6.8K ohm (approx.)&lt;br&gt;c) Check Line&lt;br&gt;- If FAULT remains,&lt;br&gt;a) Call for service&lt;br&gt;b) Silence buzzer (press YELLOW SW.)</td>
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<tr>
<td></td>
<td>EOL</td>
<td>- EOL missing (6.8k ohm)</td>
<td></td>
<td>- If FAULT clears,&lt;br&gt;a) Measure line resistance&lt;br&gt;b) If not 6.8K ohm (approx.)&lt;br&gt;c) Check Line&lt;br&gt;- If FAULT remains,&lt;br&gt;a) Call for service&lt;br&gt;b) Silence buzzer (press YELLOW SW.)</td>
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<td></td>
<td>Termination</td>
<td>- Loosely tightened</td>
<td></td>
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<tr>
<td></td>
<td>Sub Panel</td>
<td>- Fault in Sub panel</td>
<td></td>
<td>- If FAULT clears,&lt;br&gt;a) Measure line resistance&lt;br&gt;b) If not 6.8K ohm (approx.)&lt;br&gt;c) Check Line&lt;br&gt;- If FAULT remains,&lt;br&gt;a) Call for service&lt;br&gt;b) Silence buzzer (press YELLOW SW.)</td>
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<tr>
<td><strong>Mains Failure</strong></td>
<td><strong>Fault (Zone)</strong></td>
<td>Line</td>
<td>Line shorted</td>
<td>Isolate respective zone&lt;br&gt;- If FAULT clears,&lt;br&gt;a) Measure line resistance&lt;br&gt;b) If not 6.8K ohm (approx.)&lt;br&gt;c) Check Line&lt;br&gt;- If FAULT remains,&lt;br&gt;a) Call for service&lt;br&gt;b) Silence buzzer (press YELLOW SW.)</td>
</tr>
<tr>
<td><strong>Charger Fault</strong></td>
<td>Mains Failure Fuse</td>
<td>- 230V AC</td>
<td>Mains Failure</td>
<td>Silence buzzer (press YELLOW SW.)&lt;br&gt;- Check&lt;br&gt;a) Termination&lt;br&gt;b) Switch&lt;br&gt;c) AC Fuse rating&lt;br&gt;d) Measure Line voltage (230V AC)</td>
</tr>
<tr>
<td></td>
<td>AC Switch</td>
<td>- OFF position</td>
<td></td>
<td>- Check&lt;br&gt;a) Termination&lt;br&gt;b) Switch&lt;br&gt;c) AC Fuse rating&lt;br&gt;d) Measure Line voltage (230V AC)</td>
</tr>
<tr>
<td></td>
<td>AC Fuse</td>
<td>- Blown</td>
<td></td>
<td>- Check&lt;br&gt;a) Termination&lt;br&gt;b) Switch&lt;br&gt;c) AC Fuse rating&lt;br&gt;d) Measure Line voltage (230V AC)</td>
</tr>
<tr>
<td></td>
<td>Termination</td>
<td>- Not terminated / loosely tightened</td>
<td></td>
<td>- Check&lt;br&gt;a) Termination&lt;br&gt;b) Switch&lt;br&gt;c) AC Fuse rating&lt;br&gt;d) Measure Line voltage (230V AC)</td>
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<td><strong>Charger Fault</strong></td>
<td>Charger Fuse</td>
<td>Charger Fuse</td>
<td>Blown</td>
<td>Charger Fuse (check rating)</td>
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<tr>
<td></td>
<td>(on CCB)</td>
<td>- Over load</td>
<td></td>
<td>- Total load should not be more than charger rating</td>
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<td></td>
<td></td>
<td>Total Load</td>
<td></td>
<td>- Total load should not be more than charger rating</td>
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<td></td>
<td></td>
<td>Charger Low (on CCB)</td>
<td>Supply voltage</td>
<td>Measure supply&lt;br&gt;- Adjust back to 27.5V (tune VR1 on CCB)&lt;br&gt;- If can't be adjusted, call service</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Charger High (on CCB)</td>
<td>Supply voltage</td>
<td>Measure supply&lt;br&gt;- Adjust back to 27.5V (tune VR1 on CCB)&lt;br&gt;- If can't be adjusted, call service</td>
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<td><strong>Auxiliary Supply Fault</strong></td>
<td>Auxiliary Fuse (on BCB)</td>
<td>Auxiliary Fuse</td>
<td>Blown</td>
<td>Change fuse (check rating)</td>
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<td></td>
<td>Auxiliary Line</td>
<td>- Line shorted</td>
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<td>Check Line</td>
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<tr>
<td></td>
<td>Auxiliary Load</td>
<td>- Over Load</td>
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<td>Auxiliary load should not be more than specific rating</td>
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<tr>
<td>Battery Fault</td>
<td>Battery Discon Fuse (On CCB)</td>
<td>- Termination</td>
<td>- Not terminated - Loosely tightened - Reverse polarity</td>
<td>- Check termination &amp; polarity</td>
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<td></td>
<td></td>
<td>- Battery Fuse</td>
<td>- Blown</td>
<td>- Replace Fuse (check rating)</td>
</tr>
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<td></td>
<td></td>
<td>- Wire</td>
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<td>- Check Wire</td>
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<td>&lt; 20V DC (Battery weak)</td>
<td>- Battery charging in progress</td>
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<tr>
<td>Charger High</td>
<td>Charger High (On CCB)</td>
<td>- Supply Voltage</td>
<td>&gt; 30V DC</td>
<td>- Measure supply - Adjust back 27.5V (tune VR1 on CCB) - If can't be adjusted, call service</td>
</tr>
<tr>
<td>Sounder Fault</td>
<td>Bell 1 - LO Bell 2 - LO (On BCB)</td>
<td>- Bell Fuse</td>
<td>- Blown</td>
<td>- Replace Fuse (check rating) - Check Bell Line is shorted</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Line</td>
<td>- Line discontinuity</td>
<td>- Silence buzzer (Press YELLOW SW.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- EOL</td>
<td>- EOL missing</td>
<td>- Dismantle bell line - Terminate EOL (6.8K ohm)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Termination</td>
<td>- Loosely tightened</td>
<td>- If sounder fault clears, a) Measure line resistance b) If not 6.8K ohm (approx) c) Check line</td>
</tr>
<tr>
<td></td>
<td>Bell 1 - LS Bell 2 - LS (On BCB)</td>
<td>- Line</td>
<td>- Line shorted</td>
<td>If sounder fault remains, a) Call for service</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Bell</td>
<td>- Non polarized bell are used - Faulty</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>- Connection</td>
<td>- Reversed</td>
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<td>Earth fault</td>
<td>Earth + ve line (On BCB)</td>
<td>- Zone + ve line</td>
<td></td>
<td>- Silence buzzer (press YELLOW SW.)</td>
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<tr>
<td></td>
<td></td>
<td>- Bell -ve line (normal condition)</td>
<td></td>
<td>- Dismantle the lines</td>
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<tr>
<td></td>
<td></td>
<td>- Bell + ve line (Alarm condition)</td>
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<td>- Measure line to chassis</td>
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<tr>
<td></td>
<td></td>
<td>- Aux + ve line</td>
<td></td>
<td>- Check the line shorted to chassis /trucking/conduit</td>
</tr>
<tr>
<td></td>
<td>ARMS Fire + ve line</td>
<td></td>
<td></td>
<td>- Clear the shorted point</td>
</tr>
<tr>
<td></td>
<td>ARMS Fault + ve line</td>
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<td>- Terminate back the line</td>
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<tr>
<td></td>
<td>24V DC + ve line</td>
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<td></td>
<td>Earth - ve line (on BCB)</td>
<td>- Zone - ve line</td>
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<td></td>
<td>- Bell + ve line (Alarm condition)</td>
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</table>
### Earth Fault
- **Earth -ve (on BCB)**
  - - Aux -ve line
  - - Line shorted to chassis/trucking/conduit
  - - Silence buzzer (press YELLOW SW.)
  - - Dismantle the lines
  - - Measure line to chassis
  - - Check the line shorted to chassis/trucking/conduit
  - - Clear the shorted point
  - - Terminate back the line

<table>
<thead>
<tr>
<th>ARMS Fire -ve line</th>
<th>ARMS Fault -ve line</th>
<th>24V DC -ve line</th>
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<tbody>
<tr>
<td>- Line shorted</td>
<td>- Line</td>
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</tr>
<tr>
<td>- Not connected to</td>
<td>- Line</td>
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<tr>
<td>- Decam</td>
<td>- Line</td>
<td></td>
</tr>
<tr>
<td>- Loosely tightened</td>
<td>- Line</td>
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</tbody>
</table>

### ARMS Fire Line Fault
- **ARMS Fire - LO (on BCB)**
- - Line
- - Line discontinuity
- - Silence buzzer (Press YELLOW SW.)
- - Dismantle ARMS Fire line
- - Terminate EOL (3K ohm)
- - If ARMS Fire Line Fault clears,
  a) Measure line resistance
  b) If more than 5.6K ohm (approx) or less than 220 ohm (approx), then check line
- - If ARMS Fire Line Fault remains,
  a) Call for service

<table>
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<th>ARMS Fire - LS (on BCB)</th>
<th>- Line</th>
<th>- Line discontinuity</th>
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<td>- Not connected to</td>
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<tr>
<td>- Loosely tightened</td>
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</tbody>
</table>

### ARMS Fault Line Fault
- **ARMS Fault - LO (on BCB)**
- - Line
- - Line discontinuity
- - Silence buzzer (Press YELLOW SW.)
- - Dismantle ARMS Fault line
- - Terminate EOL (3K ohm)
- - If ARMS Fault Line Fault clears,
  a) Measure line resistance
  b) If more than 15K ohm (approx) or less than 12 ohm (approx), then check line
- - If ARMS Fault Line Fault remains,
  a) Call for service

<table>
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<tr>
<th>ARMS Fault - LS (on BCB)</th>
<th>- Line</th>
<th>- Line shorted</th>
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<tbody>
<tr>
<td>- Not connected to</td>
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<tr>
<td>- auxiliary load</td>
<td></td>
<td></td>
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<tr>
<td>- Loosely tightened</td>
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</tbody>
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### Auxiliary Line Fault
- **Aux-1 LO (on BCB)**
- - Line
- - Line discontinuity
- - Silence buzzer (Press YELLOW SW.)
- - Dismantle Auxiliary Line
- - Terminate EOL (6.8K ohm)
- - If Auxiliary Line Fault clears,
  a) Measure line resistance
  b) If more than 75K ohm (approx) or less than 12 ohm (approx), then check line
- - If ARMS Fire Line Fault remains,
  a) Call for service

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### Useful tip
Before terminating the line, measure the line resistance & voltage cross the +ve and -ve lines and check whether lines are shorted to chassis.

### Auxiliary lines
- **Using voltage free contact**
  - Line voltage = 30V DC 1A maximum
  - AC line should not be terminated directly

### Zone lines / Bell lines
- **Using voltage 24V DC voltage contact**
  - Line voltage = 0V (AC / DC)
  - Maximum Load = 24V DC 2A
  - Lines to chassis resistance = infinite ohm