# Level & Leak Detection

## Zone Leak Detection Module with Cable

**LiQue-Tect Monitoring System**

### Description

The **Liebert Liqui-tect® Monitoring System** is the ultimate in leak detection and retrofitting capabilities for computer rooms and other large areas. The **Liebert Liqui-tect** provides direct-read at the control unit location, as well as the ability to communicate with the **Liebert SiteScan® Web** enterprise monitoring system or a building management system.

The **Liebert Liqui-tect** features an easy-to-use liquid crystal display (LCD) panel with readout of normal and alarm conditions, as well as leak location. Display and measurement modules are contained in a single compact package.

The panel can monitor up to 10,000 ft. (3048m) of Liebert LT500Y leak detection cable, divided into two zones of up to 5,000 ft. (1524m) each.

### Features

- Audible and visual alarms
- Adjustable sensitivity setpoints for leaks and contamination
- Continuous scrolling of data and history logs
- Connection to a building management system
- Automatic detection of broken cables and contaminated cables
- Retention of configuration after a power failure

### Specifications

#### Mounting

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Building Wall or Structural Member</th>
</tr>
</thead>
<tbody>
<tr>
<td>14 1/4&quot;W x 2 3/4&quot;D x 12&quot;H</td>
<td></td>
</tr>
<tr>
<td>18&quot;W x 2 3/4&quot;D x 18&quot;H</td>
<td></td>
</tr>
</tbody>
</table>

#### Approvals

- **UL, UL3121, CE, FCC Compliance**
- CFR 47 Part 15, With Transformer Module

#### UL-UL3121, UL1012, CE, FCC Compliance

- CFR 47 Part 15, With Transformer Module

#### UL-UL3121, UL1585, CE, FCC Compliance

- CFR 47 Part 15

#### Weight

- 7.68 lb (3.48kg), 20.56 lb (9.33 kg)

#### Communication Protocol

- **Liebert SiteScan Web®**
- IGM Protocol, 422

#### Inputs & Outputs (Quantity)

- **Cable Input (2)**
- **N/A**
- **Analog Output (2)**
- 4-20mA signal output

#### Alarm Output (4)

- 24VAC, 1A

#### Liquid Crystal Display

- Four line, 20 character, backlit

#### Ambient Operating Environment

- 32°F to 104°F (0°C to 40°C) 0% RH to 95% RH (non-condensing)

#### Power Requirements

- 24VAC ±10% of nominal 50/60 Hz, 0.3A, 8VA, 115VAC ±10% of nominal 60 Hz, 4A, 460VA, 230VAC ±10% of nominal; 50 Hz, 0.5A, 115VA

#### Processor Specifics

- **Model**
- MC68HC16Z1

- **Clock Speed**
- 20MHz

- **Total RAM**
- 128Kb

- **Total FLASH**
- 256Kb

- **Total NVRam**
- 32Kb

- **A/D Resolution (Analog IN)**
- 14 bits

- **Clock Type**
- Real-Time Clock

- **Clock battery backup type**
- Internal

- **Clock battery life**
- 10 years, constant, no power

- **Enclosure Type**
- NEMA 1

### Dimensions and Mounting Dimensions

- **Large Enclosure**
  - Front view
  - Back view

- **Small Enclosure**
  - Front view
  - Back view

- **Transformer Module**
  - Front view
  - Bottom view

- **Mounting Plate**
  - Back view

- **Liebert Liqui-tect panel back plate**

- **Large Enclosure**
  - Top view
  - Bottom view

- **Small Enclosure**
  - Top view
  - Bottom view

- **Liebert Liqui-tect panel back plate**

March 2014

WHEN YOU NEED IT RIGHT. RIGHT NOW, CALL KELE.
LEVEL & LEAK DETECTION

WIRING

Power Wiring
The LT460 is rated for 24 VAC, 50/60 Hz and 0.12 amp.
Figure 1 24V from Liebert environmental units to LT460

```
<table>
<thead>
<tr>
<th>Liebert DS, Deluxe System3, Challenger, Rined or Mini-Meta2 (8 ton)</th>
<th>LT460</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB1</td>
<td>TB1-1</td>
</tr>
<tr>
<td>TB1</td>
<td>TB1-2</td>
</tr>
</tbody>
</table>

Location of connections on Liebert unit
```

Figure 2 24V from transformer to LT460

```
<table>
<thead>
<tr>
<th>Transformer</th>
<th>LT460</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB1</td>
<td>TB1-1</td>
</tr>
<tr>
<td>TB1</td>
<td>TB1-2</td>
</tr>
</tbody>
</table>

* Requires a 24V external transformer (there are no designated terminal connections on the unit)

Wiring to Auxiliary Alarm Panels
The LT460 has two Form-C dry contact alarm output contacts (TB2 & TB3). Each contact is rated for 24 VAC at 3 amp.
Figure 3 LT460 to Liebert environmental units

```
<table>
<thead>
<tr>
<th>LT460</th>
<th>Liebert DS</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB2</td>
<td>TB2-3 (N.C.)</td>
</tr>
<tr>
<td>TB2-2 (C)</td>
<td>24 (24V)</td>
</tr>
<tr>
<td>TB2-1 (N.O.)</td>
<td>55, 51, 55 or 95</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LT460</th>
<th>Liebert Deluxe System3, Challenger, Rined or Mini-Meta2 (8 ton)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB2</td>
<td>TB2-3 (N.C.)</td>
</tr>
<tr>
<td>TB2-2 (C)</td>
<td>24 (24V)</td>
</tr>
<tr>
<td>TB2-1 (N.O.)</td>
<td>55, 51, 55 or 95</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LT460</th>
<th>Liebert Mini-Meta2 (1 to 5 ton)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB2</td>
<td>TB2-3 (N.C.)</td>
</tr>
<tr>
<td>TB2-2 (C)</td>
<td>24 (24V)</td>
</tr>
<tr>
<td>TB2-1 (N.O.)</td>
<td>TB1-2 (N.O.)</td>
</tr>
</tbody>
</table>

Figure 4 LT460 to Liebert contact monitor panel

```
<table>
<thead>
<tr>
<th>LT460</th>
<th>Liebert contact monitor panel</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB2</td>
<td>TB2-3 (N.C.)</td>
</tr>
<tr>
<td>TB2-2 (C)</td>
<td>Alarm panel</td>
</tr>
<tr>
<td>TB2-1 (N.O.)</td>
<td>Input contact (N.O.1)</td>
</tr>
</tbody>
</table>
```

Configuration Switch Settings
A four-position DIP switch is used to select two alarm filter delays and three mutually exclusive alarm modes. The switches are located next to the wiring termination block.

```
Configuration settings
1. Alarm filter delay
2. Alarm filter delay
3. Alarm mode
```

INPUT AND OUTPUT POWER CONNECTIONS

Power wiring to TM115
```
TM115

Wire nuts connecting electrical wiring

Knockout for external wiring

Ground

24VAC output (TB1)
```

Power wiring to TM230
```
TM230

Knockout for external wiring

Ground

Neutral (L2)

Line (L1)

24VAC output (TB1)
```

<table>
<thead>
<tr>
<th>TM115</th>
<th>TM230</th>
<th>Connection Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>White wire</td>
<td>Neutral (L2)</td>
<td>Neutral</td>
</tr>
<tr>
<td>Black wire</td>
<td>Line (L1)</td>
<td>Power (Line)</td>
</tr>
<tr>
<td>Green wire</td>
<td>Ground lead</td>
<td>Ground</td>
</tr>
</tbody>
</table>
ELECTRICAL CONNECTIONS TO PANEL

External wiring through knockout

Ground wire (black)

Earth ground terminal

24VAC wiring (red & white)

24VAC input connector

ORDERING INFORMATION

<table>
<thead>
<tr>
<th>MODEL</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>LPS0240</td>
<td>Liebert Liqui-tect panel small enclosure</td>
</tr>
<tr>
<td>LPL1150</td>
<td>Liebert Liqui-tect panel large enclosure with 115VAC transformer module</td>
</tr>
<tr>
<td>LPL2300</td>
<td>Liebert Liqui-tect panel large enclosure with 230VAC transformer module</td>
</tr>
</tbody>
</table>

RELATED PRODUCTS

<table>
<thead>
<tr>
<th>TM115</th>
<th>Transformer module 115VAC with two 24VAC outputs (40V each) and 115VAC receptacle</th>
</tr>
</thead>
<tbody>
<tr>
<td>TM230</td>
<td>Transformer module 230VAC with two 24VAC outputs (40V each) and 115VAC receptacle</td>
</tr>
</tbody>
</table>