# LIM2010

## *Installation Bulletin / Reference Guide*

This document is intended as a reference guide to installing and setting a BENDER LIM2010 Line Isolation Monitor. This document includes installation instructions and typical front plate display indications of the device. For complete details, including installation, setup, settings, and troubleshooting, refer to the LIM2010 user manual.

Only qualified maintenance personnel shall operate or service this equipment. These instructions should not be viewed as sufficient for those who are not otherwise qualified to operate or service this equipment. This document is intended to provide accurate information only. No responsibility is assumed by BENDER for any consequences arising from use of this document.


## Installation

**Mounting**

The front plate provides four holes with a diameter of 1/8" (3.2 mm) for screw mounting. Use the four (4) provided screws for mounting. Use minimum 2.6 lb-in (0.3 N-m), maximum 3.5 lb-in (0.4 N-m) torque. Before mounting, plug the connector plate into the LIM. Refer to Figures 1 and 2 for dimensions, listed in inches (mm).

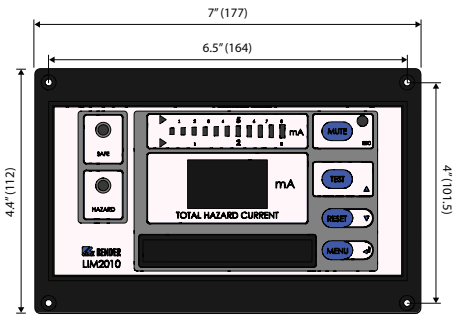


*Figure 1 - LIM2010 dimensions, front view*

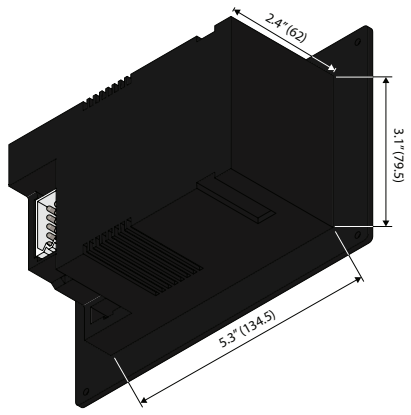


*Figure 2 - LIM2010 dimensions, rear isometric view*

**Wiring**

The LIM2010 connects to a connector plate assembly. Use the proper wiring diagram to connect to the assembly. Before mounting the LIM, plug the connector plate into the LIM.

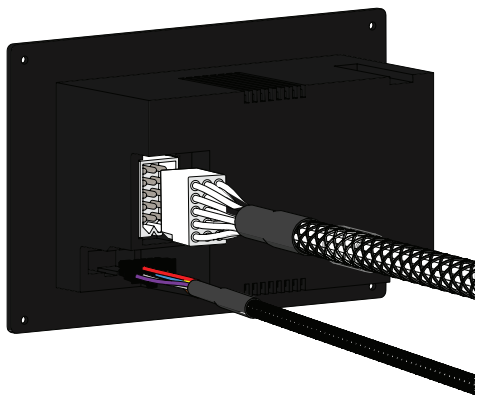

*Figure 3 - Connecting connector plate plugs to LIM2010*

Figure 4 shows wiring the connector plate for basic installation with no accessories. If other equipment is to be installed, such as remote indicators, fault location, or load monitoring, or for more information on the connector plate and installation, refer to the LIM2010 user manual.

Connector plate L1 and L2 connect to the main lines of the system, on the secondary of the isolation transformer. Connector plate LIMGND and GND2 are **separate** connections to the system ground.

**⚠ DANGER**

**HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH**

- Disconnect all power before servicing.
- Reference NFPA 99 / CSA Z32 for Installation Standard.

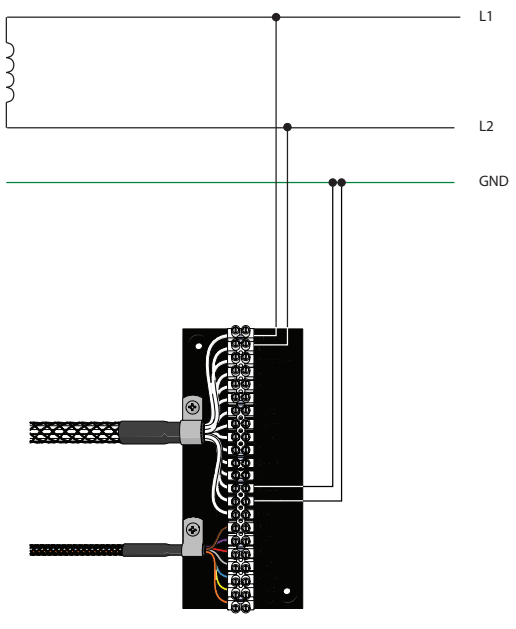


*Figure 4 - LIM2010 connector plate wiring - basic installation with no accessories*

## Connector Plate

Actual cable length for connector cables is 20" (50.8 cm). Both plugs are connected to LIM2010. Connector plate must only be installed in a grounded, metallic enclosure.

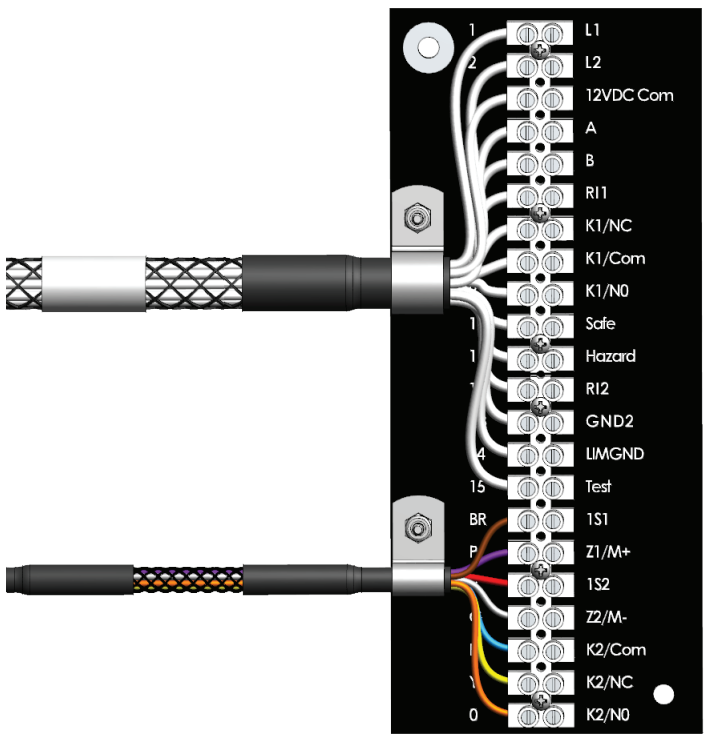


*Figure 5 - CP-LIM2010 connector plate*

| Connector plate terminals | |
|---|---|
| **Type** | **Description** |
| L1, L2 | Connected to secondary of isolation transformer |
| 12 VDC Com. | Common connection for remote indicators |
| A, B | RS-485 communication interface |
| RI1 | Test button source for remote indicators |
| K1/NC | Alarm relay K1, N/C |
| K1/Common | Alarm relay K1, common |
| K1/NO | Alarm relay K1, N/O |
| SAFE | "SAFE" light connection for remote indicators |
| HAZARD | "HAZARD" light connection for remote indicators |
| RI2 | Local and system muting from LIM and remote indicators |
| GND2, LIM GND | Separate ground connections |
| TEST | Connection for remote test |
| Z1/M+, Z2/M- | Connection for overtemperature sensor or analog meter |
| K2/Common | Alarm relay K2, common |
| K2/NC | Alarm relay K2, N/C |
| K2/NO | Alarm relay K2, N/O |

## Front Panel Display - Normal Condition

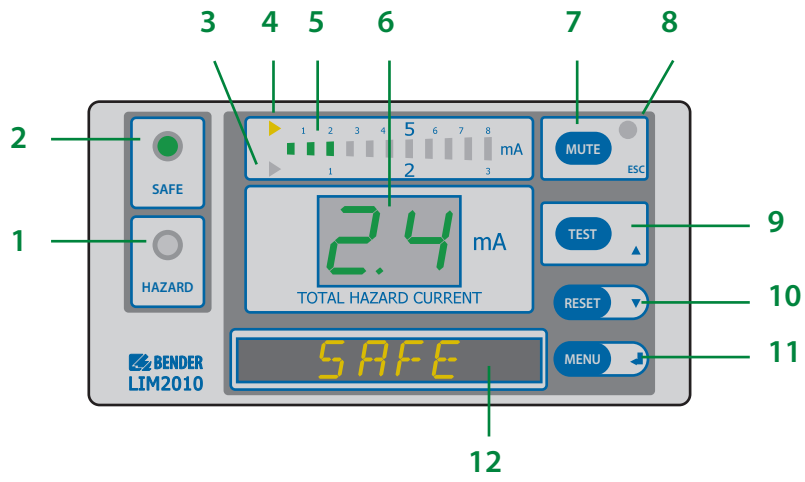


*Figure 4 - LIM2010 in the normal condition*

1. HAZARD LED (red): Not illuminated.
2. SAFE LED (green): Illuminated. Will be in the normal condition when the displayed Total Hazard Current is below the set response value (2 mA or 5 mA).
3. Trip value indication light (yellow): Indicates that the 2 mA trip level has been activated.
4. Trip value indication light (yellow): Indicates that the 5 mA trip level has been activated.
5. LED bar graph: In a normal condition, only the green bars are illuminated.
6. Seven-segment display of Total Hazard Current: Green in color for the normal condition.
7. MUTE button / ESC key: To go to a higher level in the built-in menu.
8. MUTE LED: Not illuminated in the normal condition.
9. TEST button: Activates self-test. / UP key: To move up in the menu and to increase values.
10. DOWN key: Moves down in the menu and to decrease values.
11. MENU key: Enters the main menu. / ENTER key: To confirm entries.
12. Digital display: Reads SAFE in the normal condition. Also displays menu options when in the device's menu.

## Front Panel Display - Alarm Condition

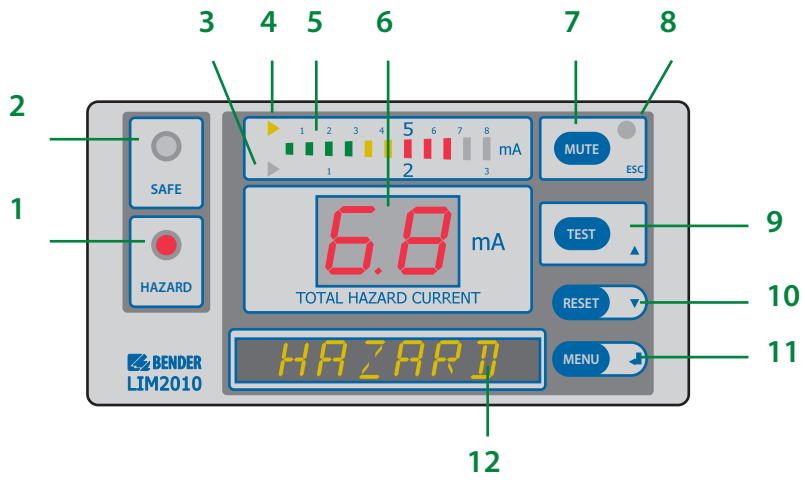


*Figure 5 - LIM2010 in the alarm condition*

1. HAZARD LED (red): Flashes red.
2. SAFE LED (green): Not illuminated.
3. Trip value indication light (yellow): Indicates that the 2 mA trip level has been activated.
4. Trip value indication light (yellow): Indicates that the 5 mA trip level has been activated.
5. LED bar graph: In the alarm condition, the red bars will be illuminated.
6. Seven-segment display of Total Hazard Current: Red in color for the alarm condition.
7. MUTE button / ESC key: To go to a higher level in the built-in menu.
8. MUTE LED: When in the alarm condition, will be illuminated yellow after the MUTE button has been pressed.
9. TEST button: Activates self-test. / UP key: To move up in the menu and to increase values.
10. DOWN key: Moves down in the menu and to decrease values.
11. MENU key: Enters the main menu. / ENTER key: To confirm entries.
12. Digital display: Reads HAZARD in the alarm condition.

## Navigating the Main Menu

**Accessing the main menu**
Hold the "MENU" button for at least one second. The device will enter into menu mode. The first item in the menu, "VALUES," will appear. The number "1" will flash.

**Entering the password prior to menu navigation**
Many submenu options may be password protected. Passwords are entered as three digit numbers. The default password is **807**. When applicable, follow the below procedure to enter the password:

1. A flashing number illustrates which number is currently in focus.
2. Use the UP/DOWN arrow key to select the correct number.
3. Confirm with the ENTER button.
4. Repeat for the next numbers until the last number is confirmed.
5. Settings may now be modified until the menu is exited. Reentering the menu will require a reentry of the password.

When a parameter is changed and confirmed with the enter key, the change will have an immediate effect. The LIM2010 will continue to operate while settings are modified.

**Exiting the menu**
Press the ESC key to return to the last step in the menu. Repeat this step until the display has returned to the main screen. If the LIM2010 is idle in the menu for 5 minutes, the device will automatically return to the main screen.

**Menu structure**
Refer to the LIM2010 user manual for a complete diagram of the LIM2010 menu.

## Initializing The Clock (Message Code 8.80)

The LIM2010 utilizes date/time stamping. When initially energized, use the menu diagram below to set the date and time. If message code 8.80 appears on the LIM2010, setting the time and date will clear this alarm automatically.

| MENU Level 1 | MENU Level 2 | MENU Level 3 | | Meaning |
|---|---|---|---|---|
| | | EXIT | | |
| **4. SETTING** | **7. Clock** | **Tm** | **10.34 A** | Time: am/pm |
| | | Dy | 12/23 | Date: month/day |
| | | Yr | 2011 | Year |
| | | DST | auto | Daylight saving time: auto/off (North America time zones only) |
| | | EXIT | | |

*Figure 6 - Menu structure for changing date and time*