

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, document number NAF2025010.

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 provided #4-40 oval head, black oxide finished screws. 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.

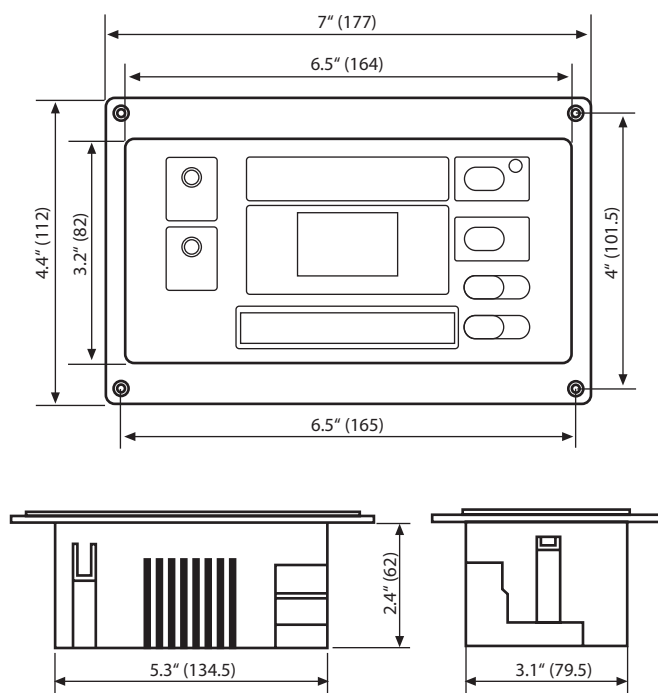


Figure 1 - LIM2010 dimensions in inches (mm)

#### 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 2 is for connecting the LIM2010 with no accessories. If remote indicators or load monitoring will be installed, or for more information on the connector plate and installation, refer to the LIM2010 User Guide, document NAE2025010.

**⚠ DANGER**

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

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

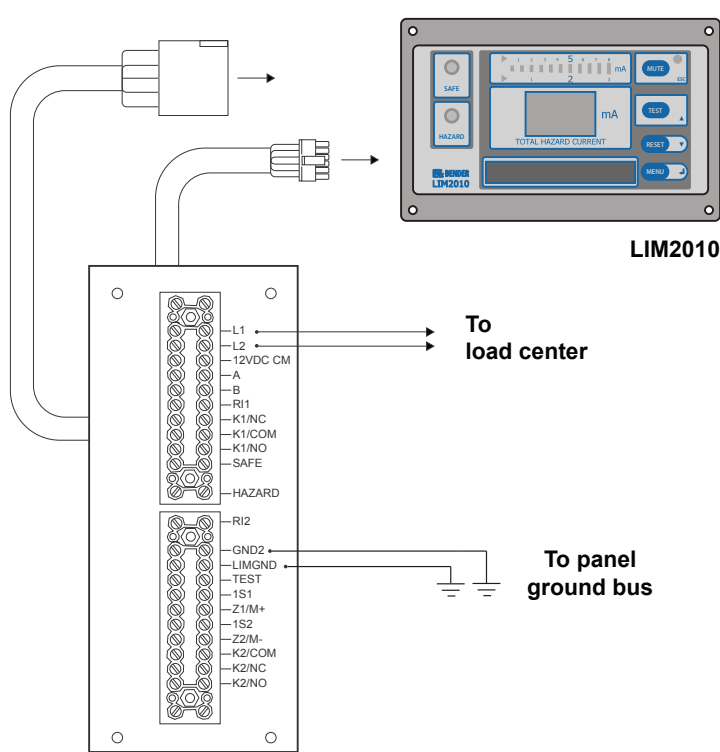


Figure 2 - LIM2010 wiring diagram with no accessories

- Connector plate L1 and L2 connect to the main lines of the system.
- Connector plate LIMGND and GND2 are **separate** connections to the system ground.
- Refer to section "Connector Plate: CP-LIM2010" for detailed information on connector plate terminals.

### Connector Plate: CP-LIM2010

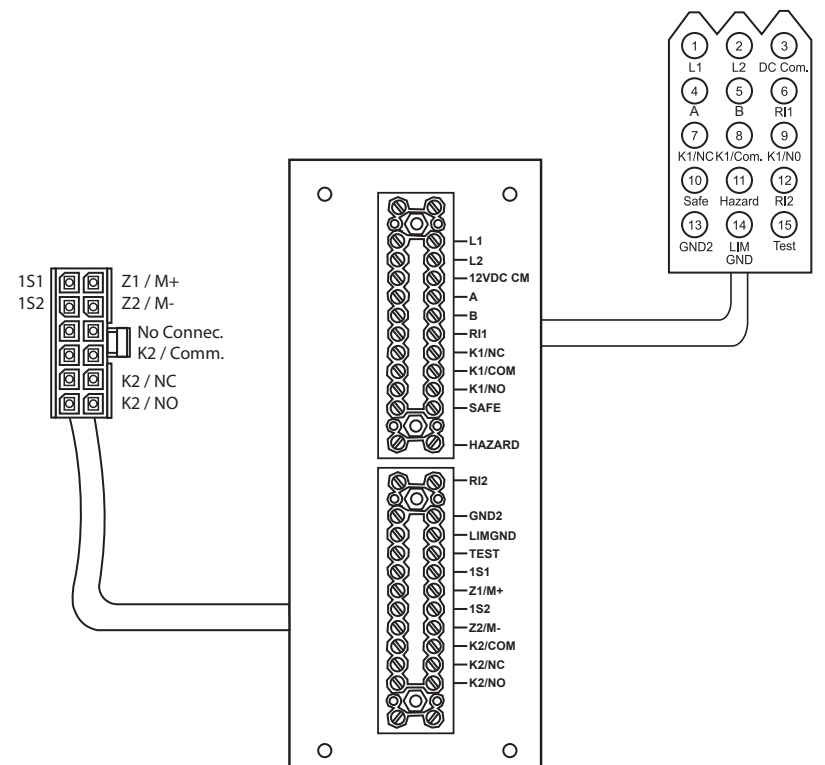


Figure 3 - CP-LIM2010 connector plate

NOTE: Connector plate must only be installed in a grounded, metallic enclosure.

#### Terminal Connections for CP-LIM2010

Terminal	Description
L1, L2	Connection to the isolated power system to be monitored.
12 VDC Com.	Common connection for MK2000 series remote indicators, up to four (4)
A, B	RS-485 interface used with BENDER communication bus / connection for MK2000CBM remote indicator
RI1	+ 12 V connection for test button for MK2000P series remote indicators, or supply voltage connection for MK2000CBM remote indicator
K1/NC	N/C contact for alarm relay K1
K1/Common	Common contact for alarm relay K1
K1/NO	N/O contact for alarm relay K1
Safe	Normal condition signal for MK2000(C)(P) series remote indicators
Hazard	Alarm condition signal for MK2000(C)(P) series remote indicators
RI2	MUTE function for MK2000(C)(P) series devices
GND2	Separate connections to ground
LIM GND	
TEST	Connection for testing the LIM2010 from MK2000P series remote indicators
K2/NC	N/C contact for alarm relay K2
K2/Common	Common contact for alarm relay K2
K2/NO	N/O contact for alarm relay K2
1S1, 1S2	Connection for load monitoring current transformer Only use these CT models: STW3, STW4, SWL-100A
Z1/M+, Z2/M-	Connections for overtemperature sensor OR Connection to external analog meter for THC measurements

### Front Panel Display - Normal Condition

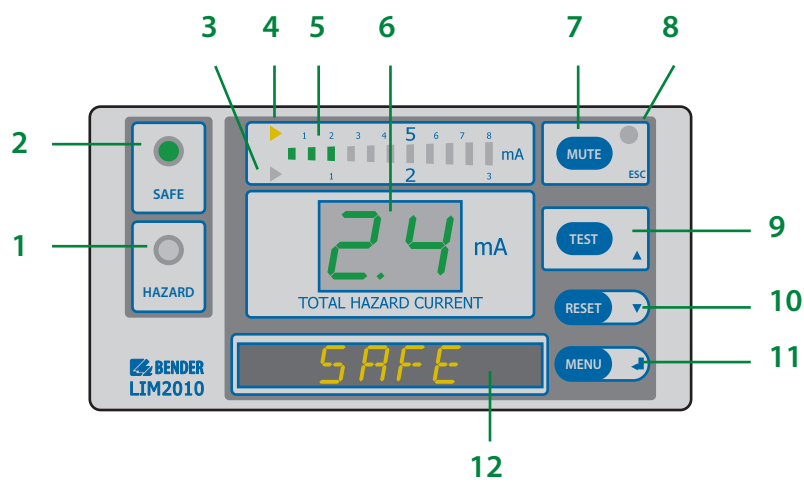


Figure 4 - LIM2010 in the normal condition

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

### Front Panel Display - Alarm Condition

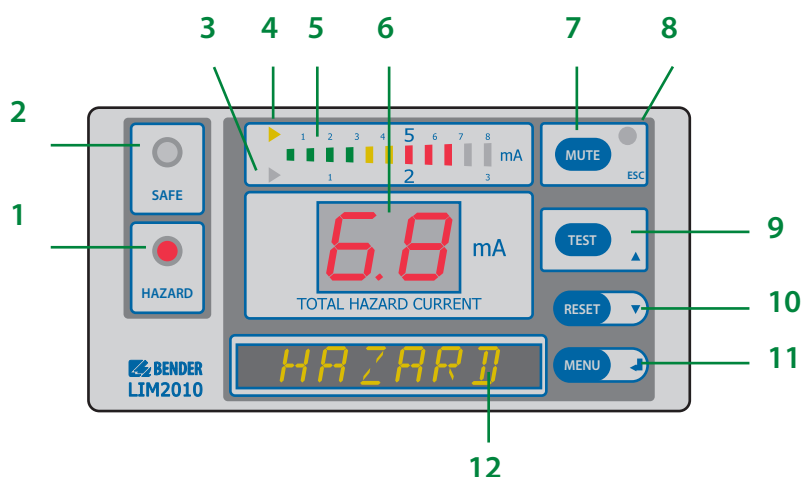


Figure 5 - LIM2010 in the alarm condition

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

- A flashing number illustrates which number is currently in focus.
- Use the UP/DOWN arrow key to select the correct number.
- Confirm with the ENTER button.
- Repeat for the next numbers until the last number is confirmed.
- 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, document NAE2025010, 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