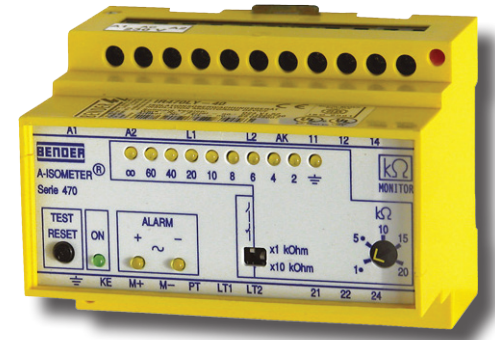


This document is intended as a reference guide for installing and using a BENDER IR470LY ground fault detector / insulation monitor. This document includes installation, setup, and usage instructions. For complete details, including installation, setup, settings, and troubleshooting, refer to the IR470LY user manual, document number BP104001. This document is intended as a supplement and not a replacement to the complete 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

IR470LY series devices may be DIN rail mounted, or screw mounted using the clips located on the top and bottom of the device.

#### Wiring - General

The IR470LY monitors a single-phase or three-phase AC system. Refer to figures 1 and 2 for basic wiring schematic. Line connections (L1 and L2) may use the schematic below for systems below 793 VAC. For higher voltages, a voltage coupler is required. See section "Wiring - Voltage Couplers" on additional requirements for wiring into system connection terminals. Use minimum AWG 24, maximum AWG 12 wire. Refer to IR470LY series user manual for complete technical details.

**Only one BENDER insulation monitor may be on and measuring in a single system at any given time.**

**! DANGER**

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

- Disconnect all power before servicing.
- Observe all local, state, and national codes, standards, and regulations.

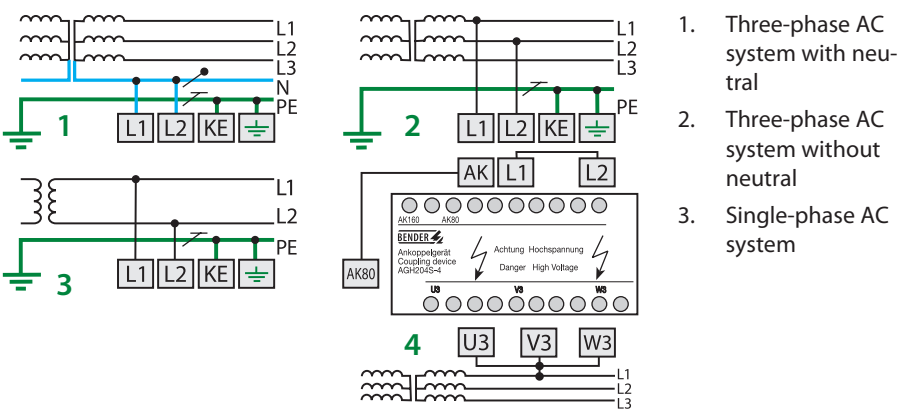


Figure 1 - IR470LY wiring diagram, system connections

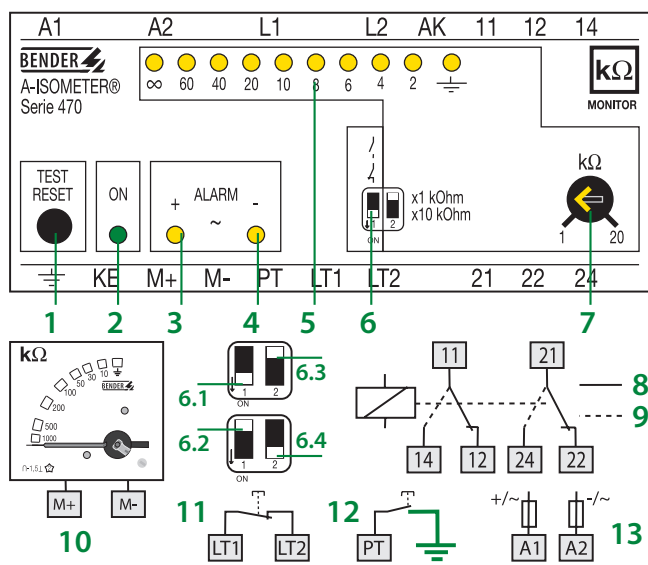


Figure 2 - IR470LY wiring diagram for additional connections and display elements

1. Combined test/reset button (push to reset, hold > 1 to test)
2. Green POWER LED
3. Alarm LED, yellow: Illuminates when the alarm value is exceeded. Flashes when a connection alarm is active.
4. Alarm LED, yellow
5. kΩ LED bar graph indicator
6. Settings for contact and response behavior: 6.1 - Normally deenergized operation; 6.2 - Normally energized operation; 6.3 - x10 alarm setpoint multiplier; 6.4 - x1 alarm setpoint multiplier
7. Alarm value potentiometer
8. Alarm relay - normally energized example
9. Alarm relay - normally deenergized example
10. Connections for optional meter
11. External reset input
12. External test input
13. Supply voltage to power device - 5 A fuse required (two if powered by an ungrounded system).

### Wiring - Voltage Couplers

System voltages greater than 793 VAC require an additional voltage coupler, installed inline between the IR470LY and the system. Figures 3 and 4 show wiring schematics for the various available voltage couplers. Locate the wiring diagram utilizing the correct voltage coupler.

#### Wiring - IR470LY and AGH204S-4

The AGH204S-4 is used on AC systems up to 1650 V. Use figure 3 below for wiring. NOTE: The x10 alarm setpoint multiplier must be active when using this coupler.

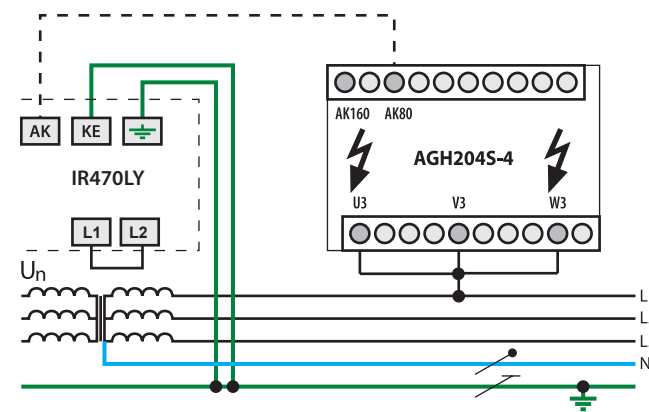


Figure 3 - IR470LY system wiring diagram when using AGH204S-4

#### Wiring - IR470LY and AGH520S

The AGH520S is used on AC systems up to 7200 V. Use figure 4 below for wiring. For systems without neutral, connect to L1. Otherwise, connect to the neutral. NOTE: The x10 alarm setpoint multiplier must be active when using this coupler.

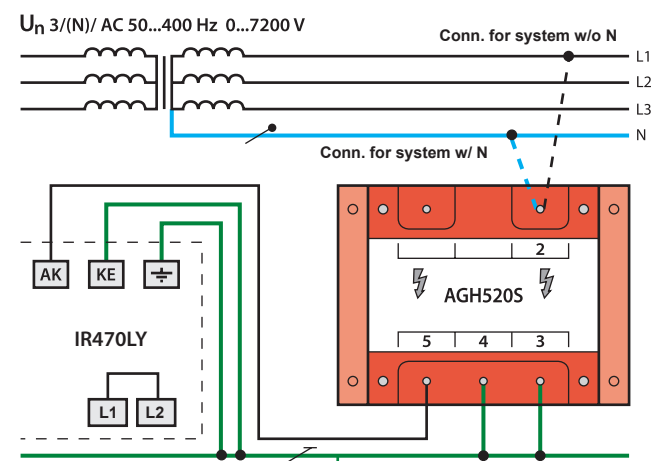


Figure 4 - IR470LY system wiring diagram when using AGH520S

### Wiring - Contacts

Using a normally closed or normally open contact utilizes two factors: wiring out of the proper terminal, and setting the respective contact to normally energized or deenergized operation.

#### Device Relay Conditions

Relay Operation Setting	Device Alarm State	K1 STATE	K2 STATE
Normally deenergized mode (N/D) Non-failsafe mode "N/O" in device settings menu	Power ON, normal state (no alarms)	11-12 CLOSED 11-14 OPEN	21-22 CLOSED 21-24 OPEN
	Power OFF	11-12 CLOSED 11-14 OPEN	21-22 CLOSED 21-24 OPEN
Energized in the alarm state Relay will switch when the alarm is activated.	Power ON, alarm state	11-12 OPEN 11-14 CLOSED	21-22 OPEN 21-24 CLOSED
	Power OFF	11-12 CLOSED 11-14 OPEN	21-22 CLOSED 21-24 OPEN
Normally energized mode (N/E) Failsafe mode "N/C" in device settings menu	Power ON, normal state (no alarms)	11-12 OPEN 11-14 CLOSED	21-22 OPEN 21-24 CLOSED
	Power OFF	11-12 CLOSED 11-14 OPEN	21-22 CLOSED 21-24 OPEN
Energized in the normal state Relay will switch when the alarm is activated, or when supply voltage to the device is lost.	Power ON, alarm state	11-12 CLOSED 11-14 OPEN	21-22 CLOSED 21-24 OPEN
	Power OFF	11-12 OPEN 11-14 CLOSED	21-22 OPEN 21-24 CLOSED