You must ground voltage and current sensing circuits to limit the maximum voltage to ground for safety. Ground CT secondary circuits at either the CT or the shorting terminal block. All grounds must be made to a common ground bus or terminal.

Refer to the Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1, for additional information.

Wiring Accessory Kit

The power monitor accessory kit simplifies the installation of a PowerMonitor 5000 unit by making all the required installation accessories available in one catalog number, 1400-PM-ACC. The accessory kit includes three10 A fuses and blocks for protecting voltage sensing wiring, a 1 A fuse and block for control wiring protection, and an 8-pole shorting terminal block for CT wiring. Please contact your local Allen-Bradley distributor or Rockwell Automation sales representative for more information.

Voltage and Current Sensing Connections

The PowerMonitor 5000 unit is capable of monitoring a variety of three-phase, single-phase, and split-phase circuits. The voltage sensing connections, current sensing wiring, and metering mode need to be selected to match the configuration of the circuit being monitored.

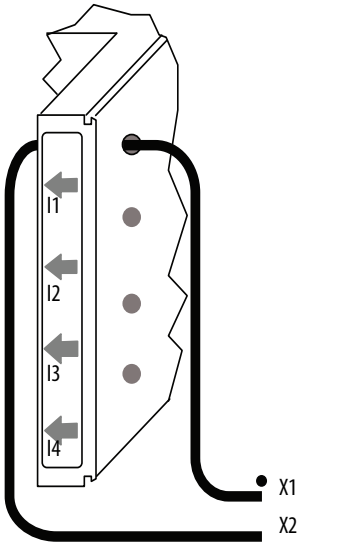
Table 5 provides a key to selecting the proper wiring diagrams and metering modes.

Table 5 - Selecting Wiring Diagrams and Metering Modes

Circuit Type	Line - Line Voltage	No. of CTs	No. of PTs	Voltage Sensing	Current Sensing	Metering_Mode
3-phase, 4-wire Wye	≤690 V	3	-	Diagram V1	Diagram I3	Wye
	> 690 V		3	Diagram V3		
3-phase, 3-wire grounded Wye	≤690 V		-	Diagram V2		
	> 690 V		3	Diagram V5		
3-phase, 4-wire impedance grounded Wye	≤690 V		-	Diagram V1		
	> 690 V		3 L-N	Diagram V3		
			3 L-N, 1 N-G	Diagram V4		
3-phase, 3-wire Delta or ungrounded Wye	≤690 V	2	-	Diagram V2	Diagram I2	Delta 2 CT
		3			Diagram I3	Delta 3 CT
	> 690 V	2	2[(2)]	Diagram V6	Diagram I2	Open Delta 2 CT
		3			Diagram I3	Open Delta 3 CT
Split-phase	≤690 V	2/1	-	Diagram V7	Diagram I1	Split-phase
	> 690 V	2/1	2/1	Diagram V8		

Current Sensing

Route the CT secondary wiring through the openings in the PowerMonitor 5000 unit as shown.



Use a shorting terminal block (included in the 1400-PM-ACC accessory kit), test block, or shorting switch (by user) for CT wiring to permit safely servicing connected equipment such as the PowerMonitor 5000 unit without de-energizing the power system.

Use 2.5 mm^2 (14 AWG) or 3.3 mm^2 (12 AWG) (maximum) wiring between the PowerMonitor 5000 unit and the shorting block. Use 2.5 mm^2 (14 AWG) or larger wire between the shorting block and the CTs, depending on the length of the circuit. Longer circuits require larger wire so that the wiring burden does not exceed the CT burden rating and reduce system accuracy. Note that the diameter of the current sensing wiring openings is 7 mm (0.27 in.).

IMPORTANT Ring lugs are recommended for making CT secondary connections. Standard ring lugs do not pass through the current sensing openings of the PowerMonitor 5000 unit. We recommend that the installer pass the wire from the shorting terminal block through the current sensing opening before crimping on ring lugs.

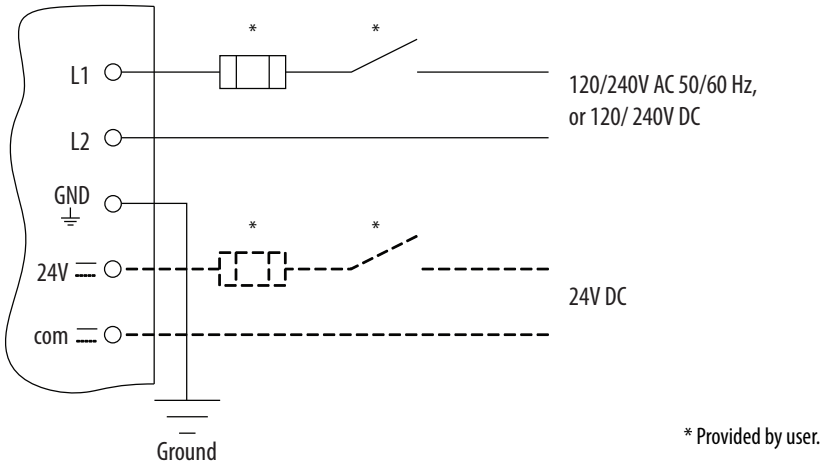
When wiring a PowerMonitor 5000 unit to existing CTs and metering devices, current sensing circuits of the PowerMonitor 5000 unit must be wired in series with the CT secondary and current sensing circuits of the existing metering devices.

Do not install overcurrent protection or non-shorting disconnecting means in CT secondary wiring. Connect the current sensing circuit to a low-impedance earth ground at only one point.

Control Power

Connect the PowerMonitor 5000 unit to a source of 120/240V AC (or 24V DC, shown with dashed lines) control power through a user-provided disconnecting means, such as a switch or circuit breaker close to the power monitor. Provide overcurrent protection sized to protect the wiring, for example, a 5 A rated fuse. Overcurrent protection is included in the 1400-PM-ACC accessory kit. The PowerMonitor 5000 unit is internally protected. Apply control power only after all wiring connections are made to the unit.

Figure 21 - Control Power



Connect Communication

This section describes how to connect communication networks.

USB Communication

The USB Device port can be used to set-up a temporary, point-to-point connection between a personal computer and the PowerMonitor 5000 unit. This connection is used for configuration, data monitoring, diagnostics, and maintenance by using the unit's built-in web pages. The USB Device port is a standard USB Mini-B receptacle. You need to install drivers to enable USB communication.

To connect your personal computer to the PowerMonitor 5000 unit, use a standard USB cable with a Type-A and Mini-B male plugs, Allen-Bradley catalog number 2711C-CBL-UU02 or equivalent.

TIP You can also display the PowerMonitor 5000 web interface by using a PanelView Plus 6 terminal with a 2711P-RP9_ logic module with extended features. USB communication drivers are already installed in the logic module.

Refer to Configure the Connection on page 36 to continue the setup.