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› PROTACTOR PT-C230A 2 Pole 32 AMP Heavy Duty Enclosed AC Contactor Instruction Manual

## PROTACTOR PT-C230A

# PROTACTOR 2 Pole 32 AMP Heavy Duty Enclosed AC Contactor

Model: PT-C230A

## 1. PRODUCT OVERVIEW

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The PROTACTOR PT-C230A is a heavy-duty, enclosed 2-pole AC contactor designed for reliable performance in various applications, including residential air conditioning and heat pump systems. It serves as a direct replacement for most 2-pole contactors rated at 32 Amps or less, featuring a 24 Volt coil. Its robust design includes enclosed contacts to prevent ingress of insects and debris, and an encapsulated coil for enhanced durability. The visible plunger mechanism allows for positive verification of contact engagement.



Figure 1: Front view of the PROTRACTOR PT-C230A Contactor, highlighting main terminals and coil connections.

## 2. KEY FEATURES

- **UL Listed:** Ensures safety and reliability, backed by a 2-year replacement policy.
- **High Amp Rating:** 32 FLA Amp Rating with a 2-pole configuration and 24 Volt coil, suitable for replacing most 20, 25, or 30 Amp 2-pole contactors.
- **Protected Design:** Features enclosed contacts and an encapsulated 24 Volt coil to protect against insects and debris, ensuring consistent operation.
- **Versatile Connection Options:** Equipped with heavy lug terminals and four male quick-connect 1/4" terminals on each line voltage connection for maximum wiring flexibility. The low voltage coil terminals feature double 1/4" male quick connects.
- **Universal Replacement:** Designed to replace most 2-pole contactors rated 32 Amps or less from various major brands.
- **Flexible Mounting System:** The mounting base measures 2-5/16" X 1-15/16" with four oblong mounting holes (1-5/8" x 1-5/8" on center) and additional slots, offering multiple mounting options for easy installation.

### 3. SPECIFICATIONS

|                      |                                                       |
|----------------------|-------------------------------------------------------|
| Brand                | PROTACTOR                                             |
| Model Number         | PT-C230A                                              |
| Mounting Type        | Surface Mount                                         |
| Material             | Plastic (Housing), Copper or Brass (Contact Material) |
| Terminal Type        | Heavy Lug Terminals, Quick Connect (1/4" male)        |
| Coil Voltage         | 24 Volts AC                                           |
| Current Rating (FLA) | 32 Amps                                               |
| Maximum Current      | 32 Amps                                               |
| Operating Voltage    | 240/277 VAC, 480/600 VAC                              |
| Operation Mode       | ON-OFF                                                |
| Contact Type         | Normally Open                                         |
| Circuit Type         | Parallel                                              |
| Number of Positions  | 2                                                     |
| Switch Type          | Toggle                                                |
| Coil Rating          | 6 VA sealed / 31 VA inrush                            |

### 4. SETUP AND INSTALLATION

**WARNING:** Installation should only be performed by qualified personnel. Ensure all power to the equipment is disconnected at the main breaker before beginning any installation or maintenance procedures. Failure to do so can result in serious injury or death.

#### 4.1 Mounting

The contactor features a flexible mounting base with dimensions of 2-5/16" X 1-15/16". It includes four oblong mounting holes (1-5/8" x 1-5/8" on center) and additional slots to accommodate various mounting configurations. Secure the contactor firmly to a stable surface using appropriate fasteners.



Figure 2: Bottom view of the contactor, illustrating the flexible mounting options.

## 4.2 Wiring Connections

The contactor is designed for maximum wiring flexibility. Refer to the wiring diagram of your specific HVAC unit for correct connections.

- **Line Voltage Connections (L1, L2, T1, T2):** These terminals handle the main power supply. They feature heavy lug terminals for robust connections and four male 1/4" quick-connect terminals on each line voltage connection for additional wiring options.
- **Low Voltage Coil Connections:** The two terminals for the 24 Volt coil each have double 1/4" male quick connects. Connect the low voltage control wires here.

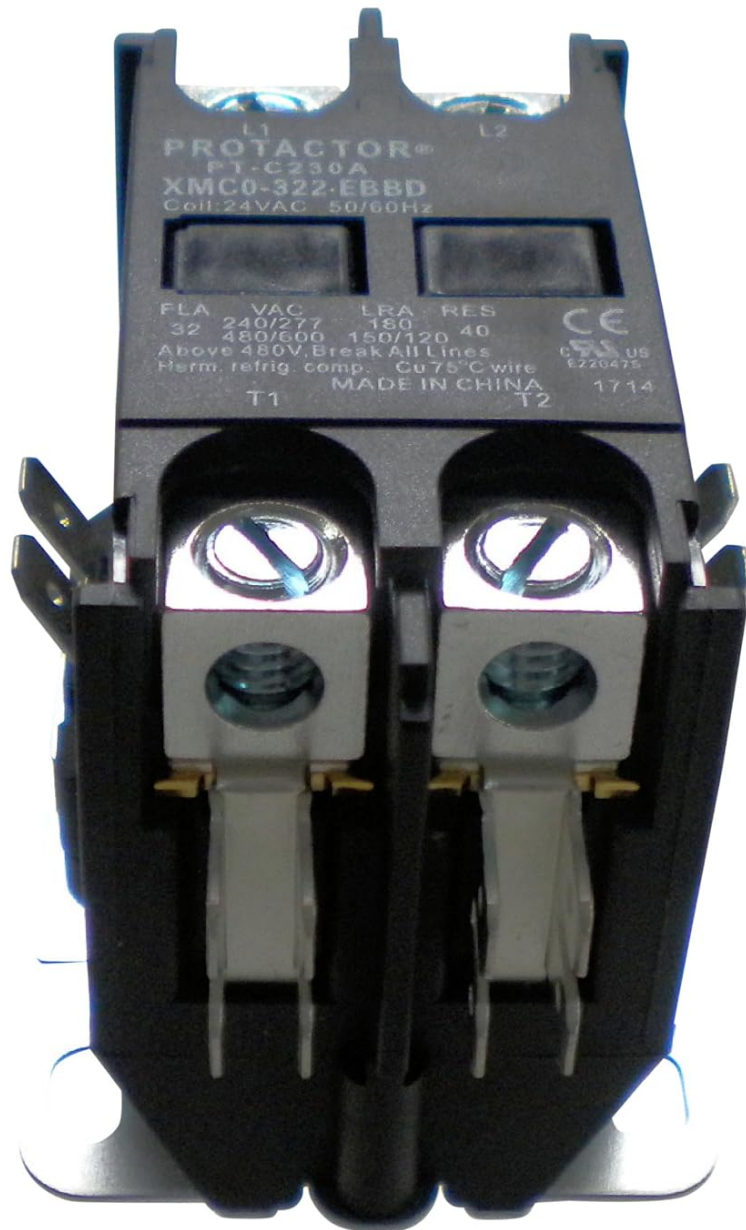


Figure 3: Side view showing quick connect terminals for both line and coil connections.

Ensure all connections are secure and properly insulated. Double-check all wiring against the equipment's schematic before restoring power.

## 5. OPERATING PRINCIPLES

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The PROTACTOR PT-C230A contactor operates as an electrically controlled switch. When a 24 Volt AC signal is applied to its coil terminals, an electromagnetic field is generated, which pulls the internal plunger, closing the main power contacts. This action allows high voltage (e.g., 240V or 480V) to flow through the L1/T1 and L2/T2 terminals to the connected load, such as an air conditioner compressor or heating element. When the 24 Volt signal is removed, the electromagnetic field collapses, and springs return the contacts to their normally open position, interrupting the high voltage supply to the load.

The enclosed contact mechanism and encapsulated coil protect internal components from environmental factors, contributing to reliable and consistent operation.

## 6. MAINTENANCE

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The PROTRACTOR PT-C230A contactor is designed for minimal maintenance. However, periodic inspection can help ensure long-term reliability.

- **Visual Inspection:** Annually inspect the contactor for any signs of physical damage, discoloration from overheating, or accumulation of debris.
- **Connection Integrity:** Verify that all electrical connections (both high and low voltage) are tight and free from corrosion. Loose connections can lead to overheating and premature failure.
- **Debris Removal:** Although enclosed, ensure no large debris has entered the contactor housing.
- **Plunger Movement:** Observe the visible plunger to ensure it moves freely and fully engages when the coil is energized.

No user-serviceable parts are inside the sealed unit. If the contactor shows signs of malfunction or damage, it should be replaced.

## 7. TROUBLESHOOTING

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If your system is not functioning correctly, consider the following troubleshooting steps:

- **Contactor Not Engaging:**
  - Check for 24 Volt AC power at the coil terminals. If no voltage is present, the issue lies in the control circuit (thermostat, control board, etc.).
  - If 24 Volts is present but the plunger does not move, the coil may be faulty, or the plunger mechanism is obstructed.
- **No Power to Load (e.g., Compressor):**
  - Ensure the contactor is engaging (plunger pulled in).
  - With power disconnected, check continuity across the main power contacts (L1-T1 and L2-T2) when the contactor is manually engaged. If there is no continuity, the contacts may be pitted or fused.
  - Verify all high voltage connections are secure.
- **Contactor Overheating or Humming:**
  - Ensure the contactor is correctly rated for the load's current draw.
  - A persistent hum or chatter can indicate low coil voltage, loose connections, or mechanical issues within the contactor.

If these steps do not resolve the issue, it is recommended to consult a qualified HVAC technician.

## 8. WARRANTY AND SUPPORT

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This PROTRACTOR part is covered by an exclusive **two-year limited replacement policy**. If this part fails within two years from the date of purchase, you may return the defective part along with a copy of the original invoice to the place of purchase for a replacement.

For detailed information regarding the warranty claim process or for further support, please contact the authorized PROTRACTOR dealer from whom you purchased the part.

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