



# Operator Manual for B-Series Panels

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## Section 1: Panel Overview

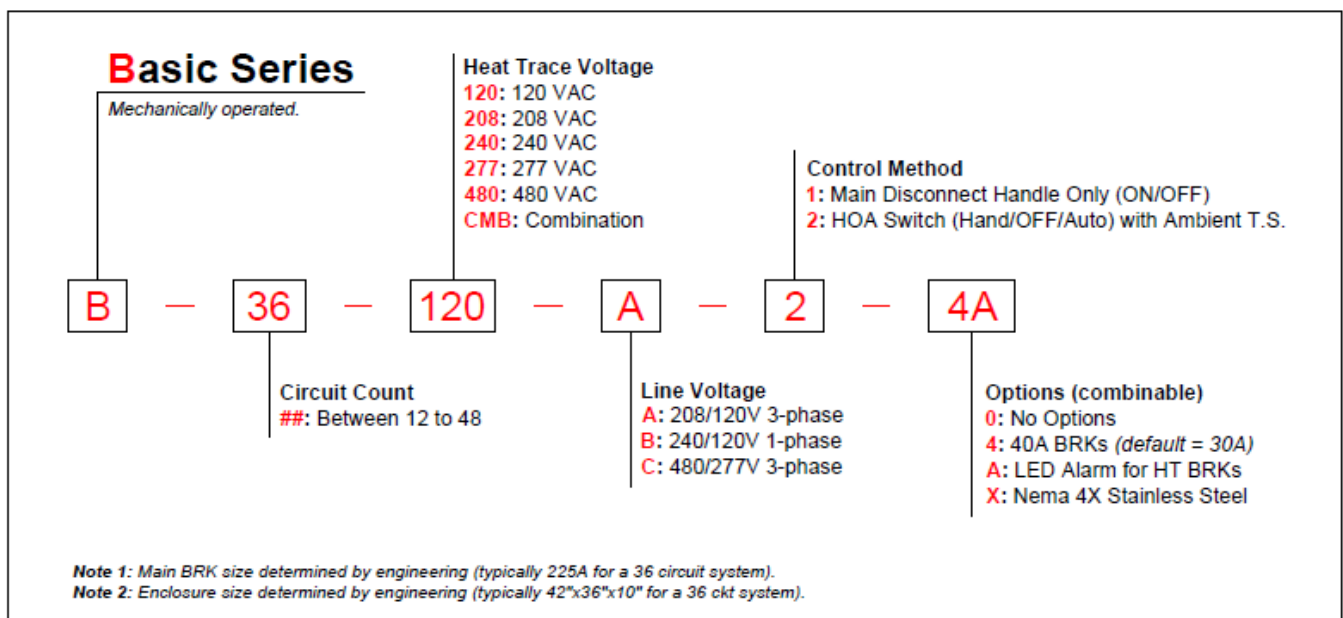
The ATCOM B-Series panel is an independent control system, designed to manage heat trace applications for freeze-protection. The main functionalities include Power Distribution, Ambient Sensing Control, and Breaker Power Monitoring.

The panel is contactor based, controlling up to 48 circuits, available at 120-277VAC. An HOA Switch (Hand/Off/Auto) allows users to select between ambient temperature control (adjustable), or constantly ON.

### 1.1: Main Features

- **NEMA 4 or 4X Enclosure**
- **Power Distribution**
  - *Main Breaker*
  - *Main Contactor*
  - *Panel Board*
  - *Circuit Breakers*
- **12-48 Circuit Count**
- **30A per Circuit @ 120-277VAC**
- **Ambient Temperature Thermostat**
- **Through-Door Main Disconnect**
- **Breaker Power Monitoring & LED**
- **Ground Fault Circuit Tripping**
- **UL 508A Approval**
- **Optional HazLoc Approval**
  - *Type Z Air Purge & Pressurization*

### 1.2: Model Selection



## **Section 2: Installation & Startup**

The ATCOM panel is a true turn-key system, where most of the startup process is done by our engineering team, so the consumer can proceed to standard operation as quickly as possible.

Wiring diagrams are provided with the panel. For most projects, our team will coordinate the location of the panel, conduit runs, and the wiring of the actual heat trace. However, if the consumer will be installing the panel, the following steps must be followed:

- **Panel Location** must be on leveled industrial concrete or equivalent slab, being able to withstand at least 1,000 lbs. The panel must be drilled into the platform to prevent falling
- **Conduit Connections** to the enclosure must be NEMA4 rated (water tight), or C1D2
- **Panel Wiring** – Refer to the official wiring diagrams (provided with the panel) for exact details. Below is a (typical) summary:
  - 3 Hot & 1 Neutral (line voltage) wire must be brought from the power transformer
    - Connect to Main Breaker & Panelboard
  - A ground wire must be brought from a copper earthing rod (or equivalent)
    - Connect to Ground Bar #1
  - A Hot, Neutral, and Ground wire must be brought from each heat trace circuit
    - Connect to panel's Field Terminal Blocks & Ground Bars
- **Ambient Thermostat** is provided and wired in each panel. The actual temperature sensing probe will sit at the bottom of the panel until the customer is ready to drill it out, at a location of their choosing. The probe must protrude out of the panel (by at least 4") in order to collect outdoor air temperature. A NEMA4 rated (water tight) seal must be used at the point of protrusion. If the panel is indoors, the customer must replace the Thermostat with a longer version, in order for the temperature sensor to reach an outdoor area.

### **2.1: Torque Ratings**

Below is a list of torque ratings for the (typical) equipment that is worked on during installation:

- Main Breaker (Square D JDL36225): 25 N/m
- Panelboard Neutral Lug (Square D NQ442L2C): 11.3 N/m
- Field Terminal Blocks (A.B. 1492-J10): 2.3 N/m
- Ground Bar (Schneider PK12GTA): 2.82 N/m
- Dry Contact Relay (Schneider 782XBXC-24D): 1 N/m

### **Section 3: Safety Precautions**

WARNING: High Voltage is used in the operation of this equipment.

Any installation involving control equipment must be performed by a qualified person and must be effectively grounded in accordance with the National Electrical Code to eliminate shock hazard.

To avoid electrical shock or injury, always remove power before servicing a circuit. Personnel working with or near high voltages should be familiar with modern methods of resuscitation.

#### **For Class1Div2 areas that are Z-Purged:**

Air of normal instrument quality, nitrogen or other nonflammable gas shall be used as the source of the protective gas.

Electric power for the protective gas supply shall be supplied from a separate power source or before any service disconnects of the protected enclosure power supply.

### **Section 4: HOA Operation**

Located on the front door of the panel, is a H.O.A Switch. The three switch options may be physically toggled at any time:

- **Hand:** All circuits are forced on.
  - The system is not intended to be operated in this mode, but the option is given to the customer, in case of a unique scenario.
  - The downside of operating in this mode is excess heat-trace power consumption, decreased heat-trace longevity, and possibly overheating pipe applications.
- **Off:** All circuits are forced off.
- **Auto:** All circuits are controlled by the ambient thermostat.
  - This is the **recommended** mode of operation.
  - The heat trace is turned on when ambient temperatures fall to the thermostat's setpoint (adjustable at the physical thermostat).

## **Section 5: LED Alarms**

On the panel door there will be one LED Alarm labeled '**Line Voltage**'; when this is lighted up green, this means that the main power coming into panel is good. If the LED is not lighted, there is a problem.

There will also be a Red LED Alarm labeled '**BRK POWER**'; if this is lighted up red, that means that one of the branch breakers is not outputting power properly, most likely caused by a GFEP trip.

## **Section 6: Replacement Parts & Expansion**

It is highly recommended that Brace wires any expansions to the panel.

For circuit breaker replacement, the model QOB EPD series, manufactured by Square D. The full model# will depend on the voltage of the application:

- 120VAC: model# QOB130EPD
  - 40A version: QOB140EPD
- 208-240VAC: model# QOB230EPD
  - 40A version: QOB240EPD
- 277VAC: model# EDB14030EPD
  - 40A version: EDB14040EPD

## **Section 7: Panel Specs**

Operating Temperature	-4 to 104°F
Area Classification	Ordinary or Optional Class 1 Div 2
Enclosure Rating	NEMA 4 Steel or Optional NEMA 4X Stainless Steel
Enclosure Mounting	Wall Mount or Floor Mount
Line Voltage	120 – 480VAC, 3-Phase
Main Breaker Rating	600VAC, 3-Phase, 100-250A, Thermal Magnetic
Short Circuit Current Rating	10kA
Max Output Rating	40A per circuit
Output Control Method	HOA (Hand / Off / Auto)
Alarms	Circuit Breaker Power via LED Lights
Temperature Rating	T4
Approvals	UL (Ordinary & Class 1 Division 2 Groups A,B,C,D); File # E489368