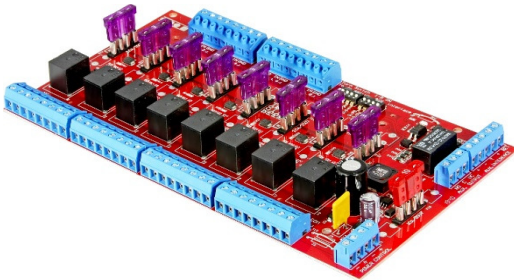


# ENFORCER®

## Access Power Controller Boards Manual



PD-8BTQ shown

Model	Output Fuse		No. of Outputs	Main Fuse
	Type	Rating		
PD-4PTQ	PTC	2.5A	4	10A
PD-4BTQ	Blade	3.0A	4	10A
PD-8PTQ	PTC	2.5A	8	10A
PD-8BTQ	Blade	3.0A	8	10A

### Features:

- For 12/24 VAC/VDC operation
- Each output individually fused
- Each output can operate in both fail-safe and fail-secure modes
- Each output individually controlled
- Individual output relays (10A@24VDC)
- Output fuses rated at 3.0A (PTC@2.5A)
- Individual status LEDs for each output and for emergency input
- Auxiliary supervision relay (1A@28VDC)
- Equipped with dry and wet trigger inputs (blade versions only)
- Includes auxiliary interface to enable emergency egress, alarm monitoring, or to trigger other devices
- Includes auxiliary interface disconnect, individually selectable for each output
- Compatible with ENFORCER Access Control Power Supplies

# ENFORCER Access Power Controller Boards

## Introduction:

The ENFORCER 4- and 8-output Access Power Controller Boards centralizes the power sources and gives individual control for various access control locking devices, such as electromagnetic locks, electric shear locks, door strikes, deadbolt locks, and more. Each output is individually controllable, individually fused, and with individual status LEDs. Each output can operate in fail-safe or fail-secure modes. Each board includes wet and dry trigger inputs for emergency activation and includes power failure supervision relays and auxiliary supervision relays.

## Parts List:

1x Power controller board

4x Mounting spacers

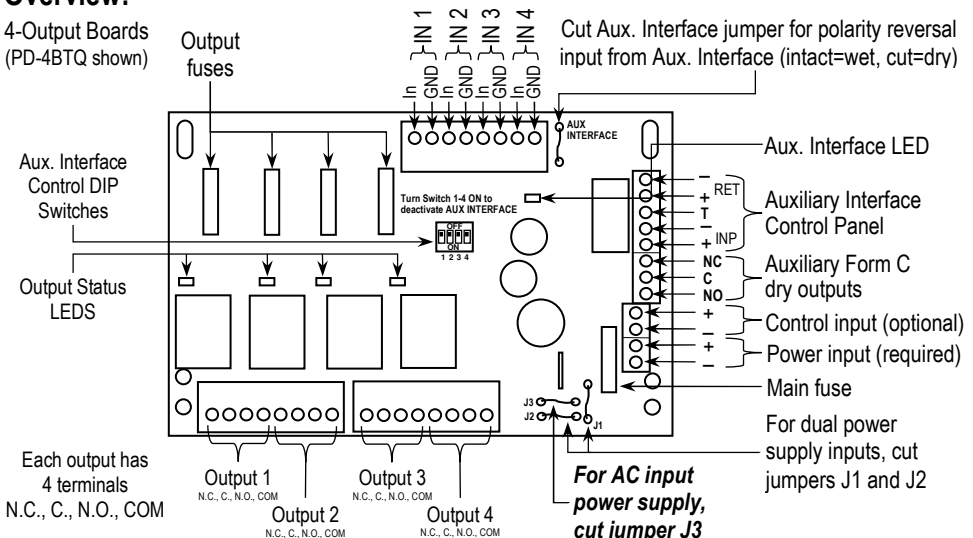
1x Manual

## Specifications:

Model	PD-4PTQ	PD-4BTQ	PD-8PTQ	PD-8BTQ
Input voltage	12/24 VAC/VDC			
Input current draw	10A@24VAC			
Number of outputs	4		8	
Output fuse type/rating	PTC 2.5A	Blade 3.0A	PTC 2.5A	Blade 3.0A
Output relays	Form C (10A@12VDC)			
Auxiliary interface output	DPDT (1A@28VDC)			
LEDs	Status	4 (red, on when relay is energized)		8 (red, on when relay is energized)
	Auxiliary Interface	1 (green on when auxiliary input is triggered, alarm condition)		
Operating humidity	0~95%			
Operating temperature	-40°~167° F (-40°~75° C)			
Dimensions	5 <sup>3</sup> / <sub>8</sub> "x3 <sup>5</sup> / <sub>8</sub> "x1 <sup>5</sup> / <sub>16</sub> " (136x92x23 mm)		8"x5 <sup>1</sup> / <sub>16</sub> "x1 <sup>5</sup> / <sub>16</sub> " (204x129x23 mm)	
Weight	4.9-oz (140g)	4.8-oz (137g)	9.1-oz (257g)	8.9-oz (252g)

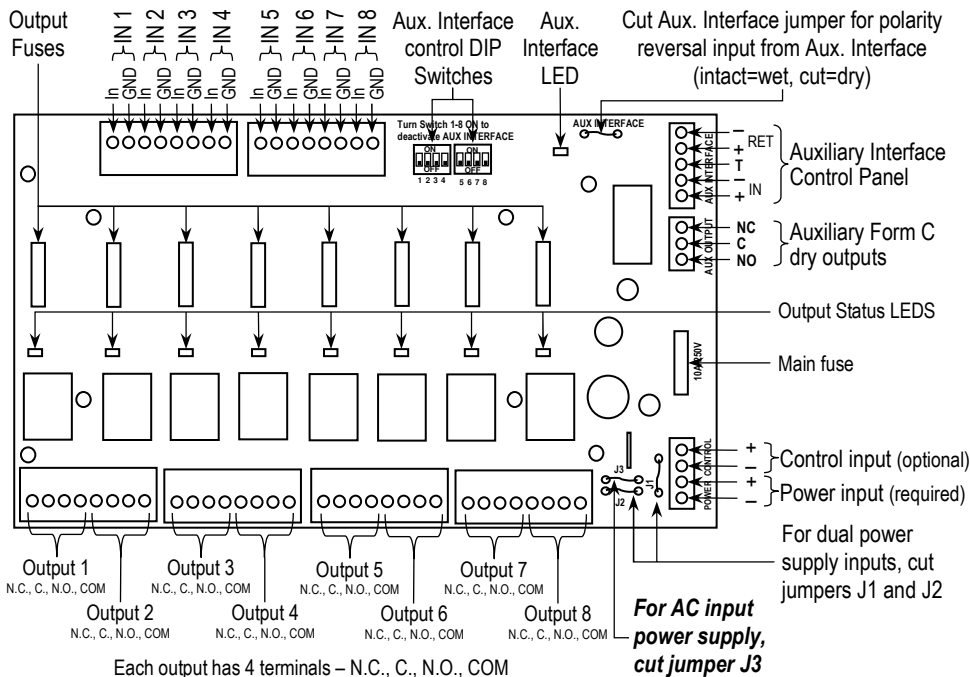
## Overview:

4-Output Boards  
(PD-4BTQ shown)



## Overview (Continued):

8 Output Boards (PD-8BTQ shown)



## Terminal Overview:

Terminal Group	Terminal Labels	Description of Use or Function
Power	+, -	12~24 VAC/VDC Power supply (required)
Control	+, -	Can be connected to a second 12~24 VAC/VDC power supply for isolated operating power (optional)
Inputs (Trigger)	⌋1⌋ ~ ⌋4⌋ (or ~ ⌋8⌋ *) IN, GND	Inputs from either N.O. or open collector sink inputs such as RTE buttons, access control output relays, PIR sensors, keypads, etc. Each input corresponds to the same numbered output.
Outputs	⌋Output 1⌋ ~ ⌋Output 4⌋ (or ~ ⌋Output 8⌋ *) NC, C, NO, COM	12~24 VAC/VDC trigger controlled outputs: 1. Fail-safe devices to N.C. positive and COM negative, 2. Fail-secure devices to N.O. positive and COM negative, 3. Auxiliary output to C positive and COM negative, <b>NOTES:</b> • When using AC power input, polarity is not important. • NC, C, and NO become Form C dry outputs (5A@24VAC/VDC) when corresponding fuse is removed.
Auxiliary Interface Control Panel Inputs	+, -, T, +, RET (-)	Alarm trigger input (either N.C. or N.O.) from Auxiliary Interface Control Panel's output circuit (see Figs. 1~5, pg. 7)
Auxiliary Interface Control Panel Outputs	NO, C, NC	Form C relay contact (1A@28VDC) for alarm reporting

\*PD-8PTQ and PD-8BTQ

# ENFORCER Access Power Controller Boards

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## Installation Notes:

1. DIP Switches control whether an individual output should be triggered by the auxiliary interface (default is "OFF," not controlled).
2. Using a single power supply:
  - a. If the power controller board and the locking devices are powered with a single power supply, connect the output to the positive and negative terminals marked "Power."
3. When using two power supplies:
  - a. Cut the jumpers noted in the overview diagrams on pg. 2 or pg. 3.
  - b. Connect the power for the power controller board to the positive and negative terminals marked "Control."
  - c. Connect the power for the locking devices to the positive and negative terminals marked "Power."

### NOTES:

- When using DC power supply, polarity must be observed.
- **When using AC power supply, cut jumper J3.**

4. Each output can provide a switched power output, a Form C dry output, or both, as well as an unswitched auxiliary power output. See the "Typical Application" on pg. 6.
- 

## Installation:

Prior to installation, ensure that you are familiar with the various options and their requirements noted in the "Overview," "Installation Notes," "Typical Application," and "Wiring Diagrams for Various Auxiliary Interface Installations" sections.

1. Mount the board in a supply box, making sure to use compatible spacers between the board and the metal back (see pg. 8 for ENFORCER Access Control Power Supply instructions).
2. Connect the main power supply to the power controller board terminals marked "Power."
3. If using two power supplies, connect the second power supply to the power controller board terminals marked "Control" and cut the jumpers J1 and J2 as noted in the "Overview" section above (pg. 2 for 4-output boards and pg. 3 for 8-output boards). Be sure not to cut jumper J3 unless using AC power supplies.

### NOTES:

- When using DC power, be careful to observe polarity when connecting power supplies.
  - **When using AC power, be sure to cut jumper J3.**
  - The input marked "Control" will only be used for a second power supply and never used with a single power supply.
4. Connect each controlled device to one of the 4 or 8 outputs. Note the various connection examples shown in the "Typical Application" section (see pg. 6).
    - a. Switched power outputs
      - i. Connect the negative input of the powered device to the terminal marked "COM."
      - ii. For fail-safe operation, connect the positive input of the powered device to the terminal marked "NC."
      - iii. For fail-secure operation, connect the positive input of the powered device to the terminal marked "NO."
    - b. Dry Form C outputs
      - i. Remove the corresponding fuse for the output.
      - ii. Connect the negative input of the powered device directly to the negative input of the power supply.
-

**Installation (Continued):**

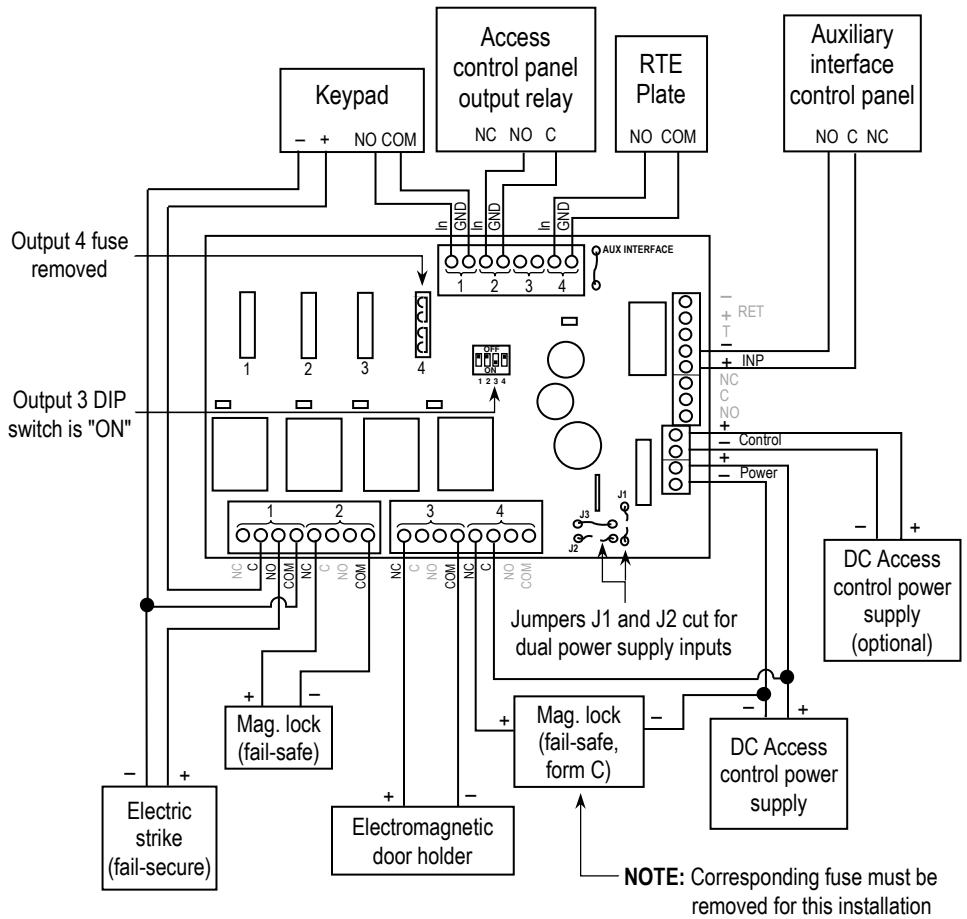
- iii. Connect the power supply's positive terminal to the power controller board output terminal for this device marked "C."
  - iv. For fail-safe operation, connect the positive input of the powered device to the terminal marked "NC."
  - v. For fail-secure operation, connect the positive input of the powered device to the terminal marked "NO."
  - c. Unswitched auxiliary power outputs (to provide power to card readers, keypads, etc.)
    - i. Connect the positive input of the powered device to the terminal marked "C."
    - ii. Connect the negative input of the powered device to the terminal marked "COM."
- NOTE:** Keep power limited wiring separated from non-power limited wiring (AC input, battery wiring) by a minimum distance of 1/4" (7mm) and use separate knockouts in the enclosure.
5. Connect each controlling device (card reader, keypad, RTE plate, etc.) to the corresponding input terminal for the particular device to be controlled. Inputs are activated by normally open or open collector sink inputs.
- a. Normally open (N.O.) input triggers:
    - i. Connect the devices to the terminals marked "IN" and "GND" that correspond to the power output terminals of the device to be controlled.
  - b. Open collector sink inputs:
    - i. Connect the access control panel open collector output to the power controller board's input terminal marked "IN."
    - ii. Connect the access control panel open collector's common (negative) to the power controller board's input terminal marked "GND."
6. Connect an Auxiliary Interface Control Panel (AICP) to the power controller board's Aux. Interface. A normally open, normally closed, or polarity reversal input from an AICP signaling circuit will trigger selected outputs. To enable AICP disconnect for any output, set the corresponding DIP switch for that output to "ON." To disable AICP disconnect for any output, set its corresponding DIP switch to "OFF" (default, "OFF").
- a. Normally open (N.O.) input:
    - i. For a non-latching hookup, refer to the instructions for Fig. 1 on pg. 7.
    - ii. For a latching hookup, refer to the instructions for Fig. 4 on pg. 7.
  - b. Normally closed (N.C.) input:
    - i. For a non-latching hookup, refer to the instructions for Fig. 2 on pg. 7.
    - ii. For a latching hookup, refer to the instructions for Fig. 5 on pg. 7.
  - c. AICP signaling circuit input trigger
    - i. For a polarity reversal input from the AICP Auxiliary Output, refer to the instructions for Fig. 3 on pg. 7.
7. The AICP Auxiliary Output may also be connected as a dry form C output as follows:
- a. Connect the device to be triggered by the unit's dry contact output to the power controller board's Aux. Interface terminals as follows:
    - i. For normally open output, connect to the terminals marked "NO" and "C."
    - ii. For normally closed output, connect to the terminals marked "NC" and "C."

**NOTE:** The unit should be tested at least once a year for proper operation. Voltage on each output should be tested for both triggered and untriggered states and the operation of the AICP must be simulated.

# ENFORCER Access Power Controller Boards

## Typical Application:

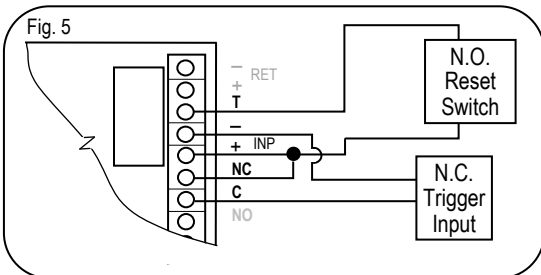
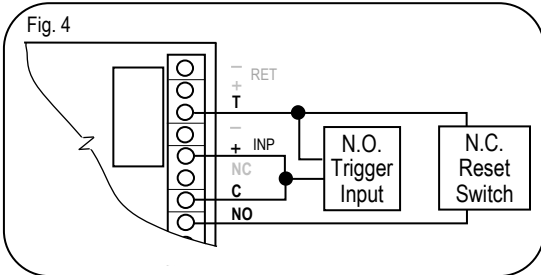
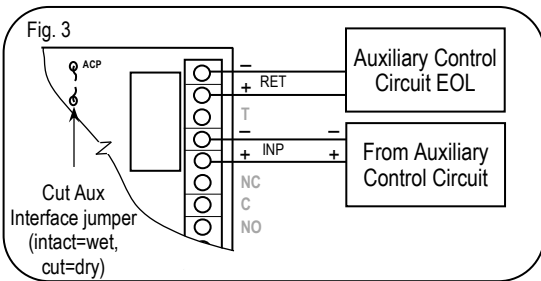
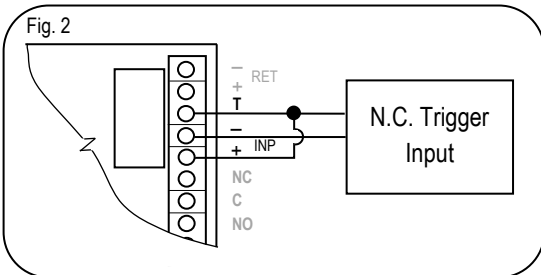
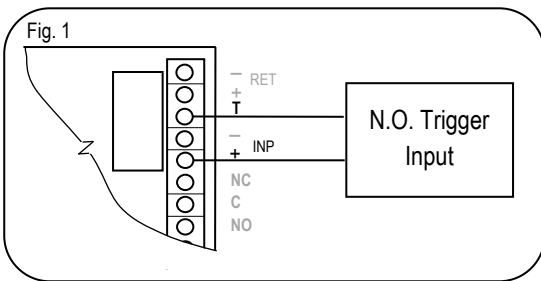
PD-4BTQ shown



1. In this example, each input is activated by an N.O. trigger input. Controlling devices' (keypads, RTE plates, card readers, etc.) outputs are connected to the "In" and the "GND."
2. Switched devices (outputs 1-4) include both fail-safe and fail-secure examples.
3. A keypad is connected both to control the electric strike, but also to the "C" and "COM" outputs for auxiliary power.
4. Output 3 is triggered by the Auxiliary Interface (Controlled by the Aux. Interface DIP switches).
5. Output 4 is an example of a Form C dry contact installation. For this application, the corresponding fuse has been removed.
6. A single power supply must be connected to the power inputs marked "Power."
7. When using two power supplies, the second is connected to the two power inputs marked "Control." In this case, the two jumpers J1 and J2 marked above must also be cut.
8. In this example, the Auxiliary Interface's N.O. (or N.C. for normally closed installations) and C outputs are connected as Form C dry contacts (see pg. 7 for other options).

Wiring Diagrams for Various Auxiliary Interface Installations:

1. For **normally open, non-latching** Auxiliary Interface Control Panel (AICP) input, connect an N.O. trigger to the "T" and "INP +" Aux. Interface terminals (see Fig. 1).
2. For **normally closed, non-latching** AICP input, connect an N.C. trigger to the "T" and "INP -" Aux Interface terminals. Add a jumper between the "T" and "INP +" terminals (see Fig. 2).
3. For a **polarity reversal input** from the AICP output, connect the "+" and "-" terminals from the AICP control circuit to the two terminals "+ INP -" on the Aux. Interface, observing polarity. If an AICP control circuit EOL is used, connect that to the two terminals "+ RET -" terminals on the Aux. Interface (see Fig. 3). Cut the "Aux Interface" jumper near the Aux Interface (see the corresponding "Overview" on pg. 2 or 3).
4. For a **normally open, latching** AICP trigger input with reset, connect an N.O. trigger input to the "T" and "INP +" Aux Interface terminals. Add a jumper between the "C" and "INP +" terminals. Connect an N.C. reset switch to the "T" and "N.O." terminals (see Fig. 4).
5. For a **normally closed, latching** AICP trigger input with reset, connect an N.C. trigger input to the "C" and "INP -" Aux Interface terminals. Add a jumper between the "N.C." and "INP +" terminals. Connect an N.O. reset switch to the "T" and "INP +" terminals (see Fig. 5).



# ENFORCER Access Power Controller Boards

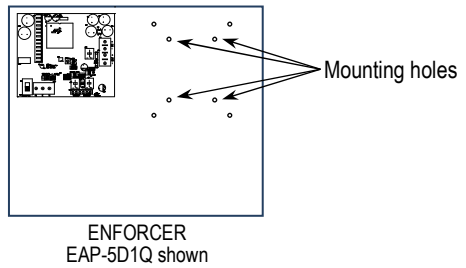
## Installing in ENFORCER Access Control Power Supply:

For installation in an ENFORCER Access Control Power Supply enclosure (see Fig. 6):

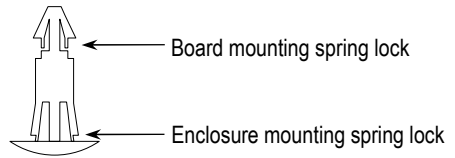
1. Place the APCB inside the enclosure to note which four mounting holes match.
2. From the back side of the enclosure, insert the four nylon mounting spacers (included) through the four holes indicated in step 1, pressing them in firmly until you hear the click of the enclosure mounting spring lock.
3. Align the four holes in the APCB to the nylon mounting spacers and press firmly until you hear the click of the board mounting spring lock.

Connect the APCB power input to the power supply circuit board's DC output terminal according to the wiring diagram on pg. 6.

Fig. 6



Nylon mounting spacers



## Troubleshooting:

No DC output	<ul style="list-style-type: none"><li>• Check whether the AC input voltage or backup battery voltage is normal</li></ul>
Low DC voltage output	<ul style="list-style-type: none"><li>• Check whether the output voltage setting is correct</li><li>• Check whether the AC input wattage is correct (see chart, pg. 3)</li><li>• If the battery is supplying power, check whether the battery voltage is normal</li><li>• Check whether the power supply board is overloaded</li></ul>
No backup battery power	<ul style="list-style-type: none"><li>• Check whether the battery voltage is normal or already discharged</li><li>• Check whether the master fuse has burned out</li></ul>

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