

ENFORCER®

EAP-3D5Q, EAP-5D5Q

Access Control Power Supply, Five Outputs

Manual



EAP-5D5Q shown

Features:

- Input 110~240 VAC, fused at 3.15A
- 5 Outputs individually fused (PTC, 1.1A), in both fail-safe and fail-secure modes
- DC Output failure supervision relay
- Filtered and electronically regulated outputs
- Individual LED status indicators for AC input, DC output, and channel outputs
- Adjustable output voltage to compensate for voltage drop
- AC Power failure supervision relay
- Over-current fuse-protected AC input
- 12/24 VDC Outputs, field selectable
- Battery failure / low battery supervision relay
- Built-in back-up battery charger (Batteries not included)
- Automatically switch to backup battery if AC fails.
- Selectable 2.2k Ω End-of-Line (EOL) resistor for AC failure and battery failure supervision relays via DIP switch
- Auxiliary output relay
- Selectable delay timer (5sec, 5min, 5h) for AC failure supervision relay via DIP switch
- Board designed with LED overload indicator and automatic shutdown for short-circuit protection.
- Heavy-duty steel case with removable cover for easy access to connections
- Ventilation holes to prevent heat buildup
- Room for two 7Ah batteries (or two 12Ah batteries for EAP-5D5Q) (Batteries not included)
- Knockouts for power connections and optional cam lock

ENFORCER Access Control Power Supply, Five Outputs

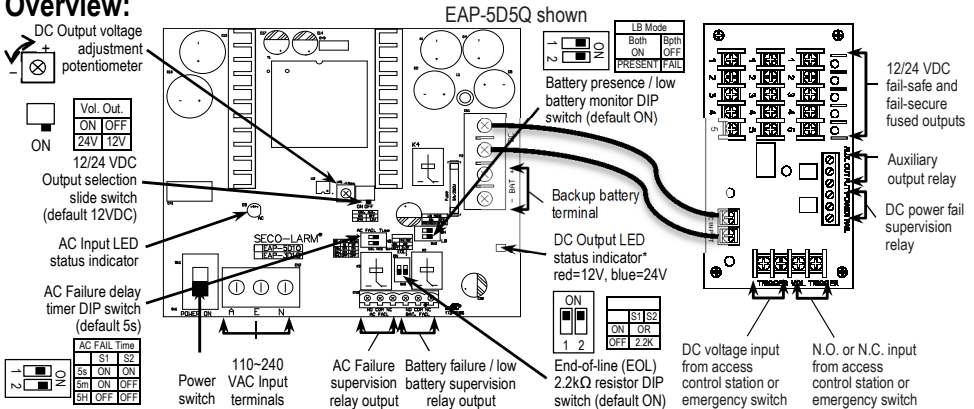
Parts List:

1x Power Supply / Enclosure	2x Screws for the enclosure door	1x Cable management clamp
1x Cable management nut	3x Wires for backup battery (red, black, white)	1x 6ft Power cord with ground wire
1x Manual		1x Protective plastic bushing for power cable

Specifications:

Model	EAP-3D5Q	EAP-5D5Q
Operating voltage	110~240 VAC	
Output voltage	12/24 VDC (selectable)	
Output voltage range (adjustable)	12VDC	12~13
	24VDC	23~25
LED Status indicator	Red=12VDC, blue=24VDC for each output	
	DC	Green, input
Current rating	3A@12VDC, 1.5A@24VDC	5A@12VDC, 2.5A@24VDC
Supervision relays	EOL: Selectable ON (2.2kΩ) or OFF, 3A@24VDC dry relay output	
Power failure supervision relay	3A@24VDC	
Auxiliary supervision relay	3A@24VDC	
AC Input fuse rating	3.15A	
AC Power cord	6ft (1.8m)	
Operating humidity	85% maximum	
Operating temperature	-4°~149° F (-20°~65° C)	
Dimensions	12 ¹ / ₈ "x12 ¹ / ₄ "x3 ⁹ / ₁₆ " (308x311x90 mm)	14 ¹³ / ₁₆ "x14 ⁵ / ₁₆ "x4 ¹ / ₈ " (377x363x105 mm)
Weight	10-lb 2-oz (4.6kg)	11-lb (5kg)

Overview:



***Built-in output overload / short-circuit protection** – If an overload occurs, the motherboard's output voltage output will drop. The voltage drop will depend on the extent of the overload. The greater the overload the greater the voltage drop. If the overload is extensive, the voltage output will become intermittent and the red LED will start flashing. When the overload is removed, the motherboard will automatically restart normal output. If an output short-circuit occurs, the motherboard will automatically shut the output down and the red LED will turn off. When the short-circuit is removed, the motherboard will automatically come back on line.

Installation:

IMPORTANT: The ENFORCER Power Supply is not waterproof or weatherproof. Therefore, it must be mounted indoors where it will not be exposed to rain or other moisture.

Installation must be done by qualified personnel, and should conform to local and all other applicable codes.

- Choose a mounting location out of sight and protected from moisture and weather, but easily accessible for future servicing.
NOTE: Make sure the space where the enclosure is to be mounted has adequate ventilation. Otherwise, heat buildup inside the enclosure could damage the electronic parts.
- Locate the enclosure mounting holes. Using these holes as a template, mark the location of the 4 screws on the wall with a pencil.
- Thread the AC power cord through the protective plastic power cord bushing and then through the power cord hole in the enclosure, snapping the bushing into place. Secure the power cord with the cable management clamp.

Installation (Continued):

4. Attach to the wall by first screwing in two $\frac{3}{16}$ " x 1" (4x26 mm) upper screws using plastic wall anchors if needed (both not included) until the gap between the wall and the screw head is approximately $\frac{1}{4}$ " (6mm).
5. Hang the enclosure on the two upper screws using the enclosure's upper screw holes and adjust the proper location of the enclosure. Screw in the two lower screws. Then securely fasten the upper and lower screws.
6. Run wires from the access control devices to the power supply. The enclosure has knock-outs on the side, top, bottom, and rear panels for running cables. Punch out the appropriate knock-outs.
7. Set the desired DC output voltage (12 or 24 VDC) of the power supply using the sliding switch (see "Overview," pg. 3). The default is 12VDC.
8. Connect the backup battery to the backup battery terminal (see Fig. 1). Check voltage output reading of the power distribution module (PDM). If the green LED is ON, and the voltage reading of the PDM's five channel outputs are the same as the backup battery terminal's voltage reading, this indicates that the power supply is working properly. Disconnect battery after testing.
9. Connect the power input wires of the access control devices or accessories to the power distribution module (PDM, see "Overview," pg. 2). **Observe correct polarity.** For fail-secure devices, connect positive to terminals marked "POS. OPEN LOOP" and negative to terminals marked "NEG." For fail-safe devices, connect positive to terminals marked "POS. CLOSE LOOP" and negative to terminals marked "NEG".

IMPORTANT NOTES/WARNINGS:

- a. To avoid risk of electrical shock, the ground terminal of the "AC INPUT" MUST be connected to earth via the power cord.
 - b. If the "Trigger" terminal block function is to be used, a 2.2kΩ resistor must always be connected to the "Trigger" terminal block as in Fig. 2.
 - c. Maximum total current connected to the power supply terminal must not exceed the power supply's total current capacity (5A@12VDC and 2.5A@24VDC).
 - d. Check the output voltage reading of the power supply as stated above and double check the specified operating voltage of each device before connecting it to the power supply to avoid potential damage.
 - e. Use at least 18-gauge wires to minimize voltage drop. The thinner the wire, the greater the voltage drop.
 - f. Keep power limited wiring separated from non-power limited wiring (AC input, battery wiring) by a minimum distance of $\frac{1}{4}$ " (7mm) and use separate knockouts in the enclosure.
10. Connect a visual or audio indicator (such as siren or strobe light) to the AC-failure and battery-failure / low battery supervision relays if needed (see "Overview," pg. 2). Use between 22AWG to 18AWG wire size.
 11. Follow the connection diagrams shown in Fig. 3-8 to trigger the PDM from a wet and/or dry contact switch from the control station.
 12. Connect a visual or audio indicator (such as siren or strobe light) to the power fail supervision relay and Auxiliary output relay if needed.
 13. Double check to ensure everything is connected properly. Connect the AC power (110-240 VAC). The AC LED & DC LED on the main board (red=12VDC, blue+24VDC), and the power LED on the PDM should turn ON to indicate the power supply unit is working properly.
 14. Reconnect the backup battery. Again ensure the voltage output reading of the PDM is within the normal working range. Check the DC output voltage reading at the end of the wire pairs where it is to be connected to the device. If the output voltage reading falls below the minimum voltage requirement of the device, use a small screwdriver to carefully turn the potentiometer marked "VR1" located on the PCB. Turn clockwise to increase the voltage and counterclockwise to decrease the voltage (see "Overview," pg. 2).

Fig. 1

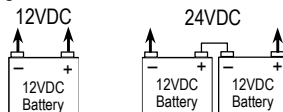


Fig. 2

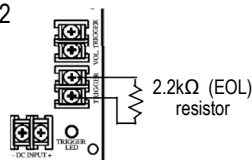


Fig. 3 Momentary trigger for wet and/or dry N.C. switch

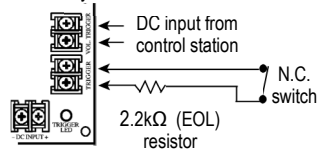


Fig. 4 Momentary trigger for wet and/or dry N.O. switch

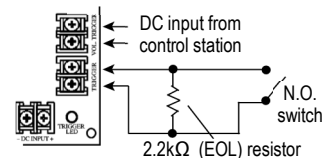


Fig. 5 Latch trigger for wet and/or dry N.C. switch

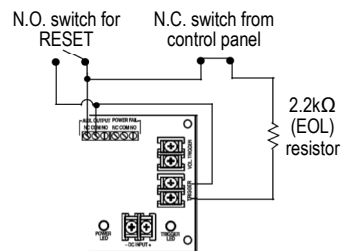
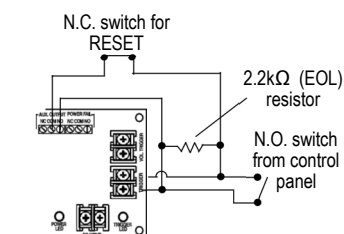


Fig. 6 Latch trigger for wet and/or dry N.O. switch



ENFORCER Access Control Power Supply, Five Outputs

Installation (Continued):

IMPORTANT NOTES:

- a. Do not adjust the potentiometer unless absolutely necessary. Adjusting the potentiometer alters default factory settings.
 - b. The potentiometer adjusts the voltage of all output wire pairs. Check each device carefully. An output voltage in excess of the specified voltage level of the device may cause damage.
15. Once the desired DC output voltage is achieved, connect the wire pairs to the device.

Programmable Features

- a. **AC-failure Relay Output Delay Timer** — Program the AC-failure relay delay timer at 5sec, 5min or 5h using the DIP switch (see "Overview," pg. 2). The default setting is at 5sec.
 - b. **2.2kΩ End-of-Line (EOL) Resistor** — The end-of-line 2.2kΩ resistor for AC-failure relay and battery-failure / low battery supervision relays (3A@24VDC) can be activated independently using the DIP switch (see "Overview," pg. 2, default ON).
 - c. **Battery Presence and Low Battery Monitor** — When the LB MODE DIP switches are in the ON position, the power supply will monitor the battery to verify if it has sufficient voltage to run the power supply in case of AC power failure. Selecting "OFF" will stop monitoring of battery status and will charge battery continuously. It can take up to 5 minutes to alert you of a battery failure. The length of time the system will run will be limited by the overall capacity and the age of the batteries and the amount of load being drawn off the power supply.
16. Connect the backup battery to the backup battery terminal (see Fig. 2 and "Overview," pg. 2, default ON).
17. Close the enclosure door and secure it with either the provided machine screws or an optional cam lock.

Fig. 7 Multiple PDM momentary trigger for wet and/or dry N.O. switch

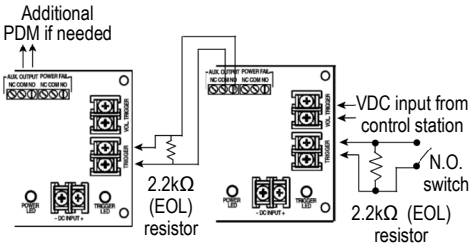


Fig. 8 Multiple PDM momentary trigger for wet and/or dry N.O. switch

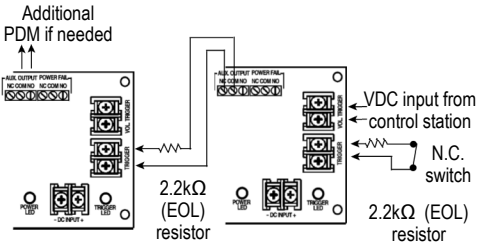


Table 1: Terminal Functions

Main Board		Power Distribution Module (PDM)	
Legend	Functions	Legend	Functions
A EN	To connect 110-240 VAC power ("A" for active wire, "E" for earth or ground wire, and "N" for neutral wire)	TRIGGER	Used to connect NO or NC input trigger signal (2.2kΩ EOL resistor) from access control panel. A short or open circuit will transfer power from "POS CLOSE LOOP" to "POS OPEN LOOP."
BAT. FAIL	Used to notify battery failure. Dry contact relay rated at 3A@24VDC. If backup battery is not connected properly or if voltage output falls below 11.2VDC for 12VDC setting (or 22.7VDC for 24VDC setting, the connected warning device will be activated).	VOL. TRIGGER	Used to connect wet (5-30 VDC) input trigger signal from access control panel. A short circuit or open circuit will transfer power from "POS CLOSE LOOP" to "POS OPEN LOOP."
- BAT +	Used to charge the backup battery. Maximum charging current is 5A	POWER FAIL	Used to notify loss of DC power. Dry contact relay rated 3A@24VDC. If VDC input to the PDM is interrupted, the connected warning device will be activated.
- DC +	12 or 24 VDC Output terminal from main board	AUX OUTPUT	Used to activate other auxiliary device when trigger signal is received from the "TRIGGER" or "VOL TRIGGER" terminals
		- DC INPUT +	12 or 24 VDC Input from main board

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