Door Controls International

PS17-TD2
Access Control Power Supply/Charger

Rev. 062101

Overview:

The PS17-TD2 is a power supply that will convert 115 VAC/60Hz input into two individually PTC protected 12VDC or 24VDC outputs (see specifications) and provide time delays to conform with both Delayed Egress and Access-controlled Egress provisions of the U.S. model building codes. It is intended for use in applications requiring UL Listing for Access Controls (UL294) and applications requiring an interface with Fire Alarm Control Panels. It must be installed in accordance with National and Local Electrical Codes and Regulations.

Specifications:

- UL Listed for Access Control System (UL294).
- Switch selectable 12VDC or 24VDC power limited output.
- Input 115VAC/60Hz, 0.6 amp.
- 1.75 AMPS continuous supply current @ 12VDC or 24VDC.
- Filtered and electronically regulated output.
- Outputs are overload protected by PTC's.
- Delay timing is reset (before, during, or after a delay) by dry contact closure (RES & GND).
- An output is provided for unlocking devices (electric strikes).
- An auxiliary output is provided which is not affected by the Fire Alarm Relay Terminals.
- An AC Fail relay (Form "C" 1 A @ 28VDC) indicates AC is powering unit.
- A green LED also indicates the AC is powering unit.
- A red LED indicates the DC outputs are powered.
- An output relay (Form "C" 1 A @ 28VDC) indicates the DC Lock+ terminal is powered and not the Strike+ terminal, or vice versa.
- Field selectable: Delayed Egress, Access-controlled Egress, or no delays (a standard power supply).
- Delay for delayed egress applications is 15 or 30 seconds field selectable. (Except factory shipped "UBCDE" model.)
- Delayed egress has field selectable none or 1 second nuisance delay.
- Delayed egress has alarm relay to switch on alarm power.
- Delay for access-controlled applications is 30 or 45 seconds field selectable.
- Delays are triggered by a dry contact closure (TR & GND).

Enclosure Dimensions: 8.5"H x 7.5"W x 3.5"D

Power Supply Output Specifications:

Output VDC	Switch Position	Max Load DC
12VDC	SW5 Open	1.75 amp
24VDC	SW5 Closed	1.75 amp

Battery Backup:

12VDC - One (1) 12VDC 7.2Ah battery will provide 4 hours of backup @ 1.25 AMPS.
24VDC - Two (2) 12VDC 7.2Ah batteries will provide 4 hours of backup @ 1.25 AMPS.
Note: For Access Control applications, batteries are optional. When batteries are not used a loss of AC will result in the loss of output voltage. When standby batteries are used, they must be lead-acid or gel type.

Installation Instructions:

The PS17-TD2 should be installed in accordance with The National Electrical Code and all applicable Local Regulations. See Terminal Identification Chart on page 3 for a description of each terminal function.

1. Mount the PS17-TD2 in desired location.
2. Connect 115VAC to the black and white flying leads of the transformer.

Secure green lead to earth ground.
Use 18 AWG for all power connections (relay DC outputs). Use 22 AWG to 18 AWG for power limited Circuits (trigger inputs, dry outputs).

3. Open SW5 for 12VDC output - Close SW5 for 24VDC output.
4. Measure output voltage before connecting devices. This helps avoid potential damage.
5. Jumper TRG1 and TRG2 unless continuity is provided through a fire alarm circuit as shown on page 5.
6. Connect appropriate signaling notification devices to AC Fail supervisory outputs marked [N.C., C, and N.O.] C is closed to N.C. when AC power is connected. C is closed to N.O. when AC power is off.
7. When a delay is to be used install a N.O. Momentary Reset switch across terminals marked [RES - GND].

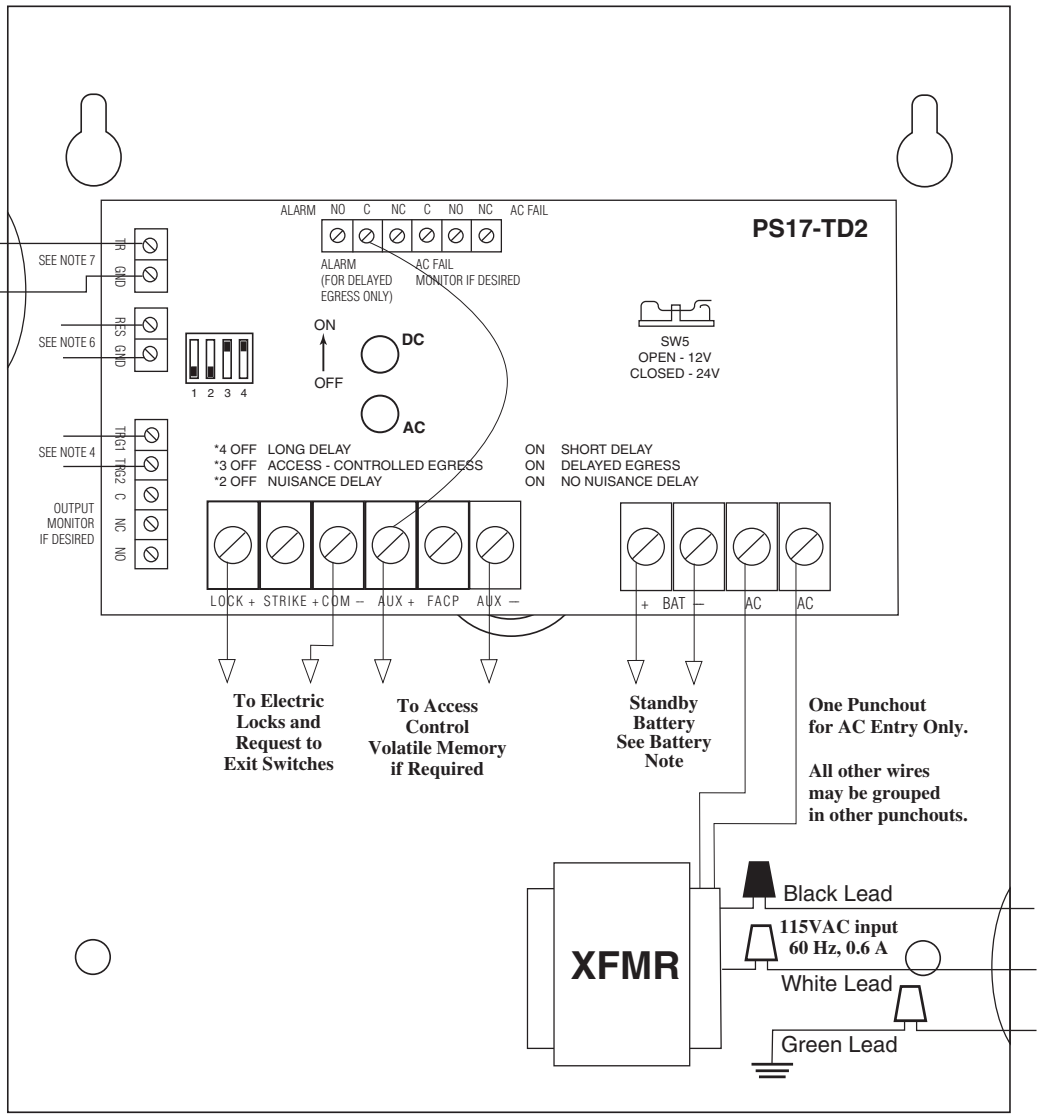


Fig. 1

8. When a delay is to be used install a N.O. Momentary triggering Switch across terminals marked [TR - GND].
9. For monitoring the output relay governing terminals marked [Lock+ and Strike+] use the [C, N.C. and N.O.] terminals next to [TRG1 and TRG2]. C will be closed to N.C. when Lock+ is powered.
10. When a Delayed Egress is used, an alarm is required by all Codes. The alarm relay is used to switch on the alarm. C will close to N.C. when the alarm should sound: immediately at triggering with no nuisance delay, or after one continuous second of trigger with nuisance delay. If moderate power is required for the alarm it can be obtained by jumping [AUX+ to C] on the Alarm relay; and N.C. on the Alarm relay and [AUX –] to the alarm.
11. See diagrams on following pages for Delayed Egress, Access-Controlled Egress, and Fire Alarm interface applications wiring suggestions.

LED Diagnostics:

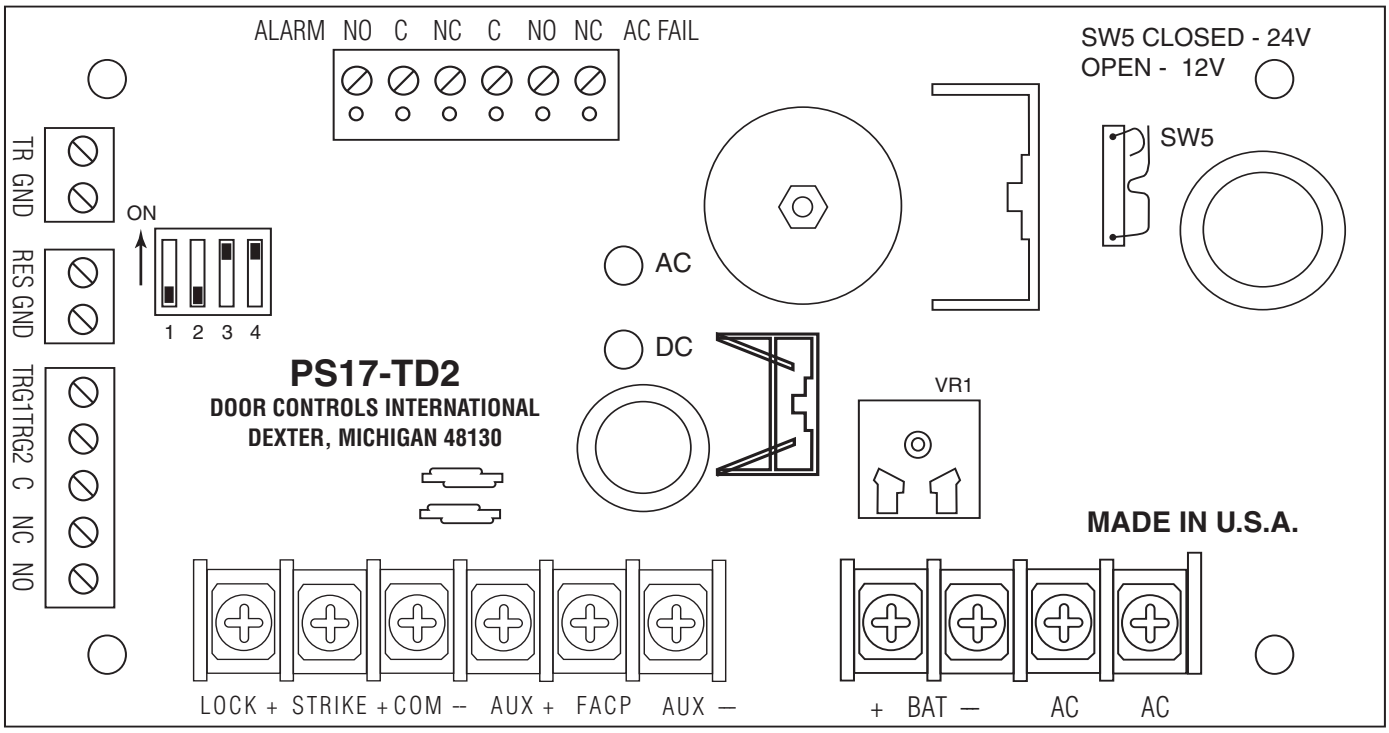
RED (DC)	GREEN (AC)	POWER SUPPLY STATUS
ON	ON	Normal output, powered by AC
OFF	ON	No DC output, but AC is on
ON	OFF	Normal output, backup battery power only
OFF	OFF	No AC nor battery backup

Battery Backup. Use sealed lead-acid 12 volt secondary batteries only. Connect two in series for 24 volts. DCI supplies 5 Ah, 7.2 Ah, and 12 Ah sizes.

Terminal Identification:

Terminal Legend	**Function/Description**
TRG1 & TRG2	These input terminals are designed to connect to the closed C and N.O. terminals of an access control or fire alarm relay. These must be jumped otherwise. These terminals control LOCK+, and STRIKE+, as well as PS17-TD2 output relay contacts N.C., N.O., C.
LOCK+	This terminal provides DC output voltage when TRG1 and TRG2 are shorted together and are typically used to power electromagnetic locks. Two locks may be connected in parallel on LOCK + and COM – *(Fig. 2, page 5)*.
STRIKE+	This terminal provides DC output voltage when TRG1 and TRG2 are unshorted and is typically used to power Electric Strikes.
N.C., N.O., C (adjoining) TRG1 & TRG2	Isolated dry Form "C" contacts. Shorting TRG1 and TRG2 together causes these contacts to switch. They are typically used for controlling multiple power supplies with fire alarm tie-in *(Figs. 7 and 8, page 7)*.
AUX+	Continuous positive (+) DC power output voltage. It is not affected by TRG1, TRG2 operation.
COM – , AUX –, BAT –, GND (adjoining RES), GND (adjoining TR), and TRG2	All six are common (–) output (ground).
FACP	Spare wiring terminal used for fire alarm tie-in application *(Fig. 7, page 7)*.
BAT+, BAT-	Battery backup connections. Apply proper voltage SLA batteries. Batteries are trickle charged with 13.6 or 26.6 volts.
RES & GND	Are normally open. To reset either time delay at any time-close momentarily.
TR & GND	Trigger either Delayed Egress or Access-controlled Egress by closing momentarily TR to GND. If nuisance delay is on in Delayed Egress Mode, trigger must be closed continuously for one full second.

Dip Switch Settings



NOTES ON:
SWITCH SELECTION TABLE:

1	NOT CONNECTED		
2 OFF	NUISANCE DELAY	2 ON	NO NUISANCE DELAY
3 OFF	ACCESS - CONTROLLED EGRESS	3 ON	DELAYED EGRESS
4 OFF	LONG DELAY	4 ON	SHORT DELAY

3 ON DELAYED EGRESS : IN THIS MODE #4 SWITCH SELECTS SHORT DELAY OF 15 SEC. OR LONG DELAY OF 30 SEC., AND #2 SWITCH SELECTS NONE OR A 1 SEC. NUISANCE DELAY.

3 OFF ACCESS CONTROLLED EGRESS : IN THIS MODE #4 SWITCH SELECTS SHORT RELOCK DELAY OF 30 SEC. OR LONG RELOCK DELAY OF 45 SEC., #2 SWITCH IS DISABLED.

Fig. 2 - Typical Delayed Egress System:

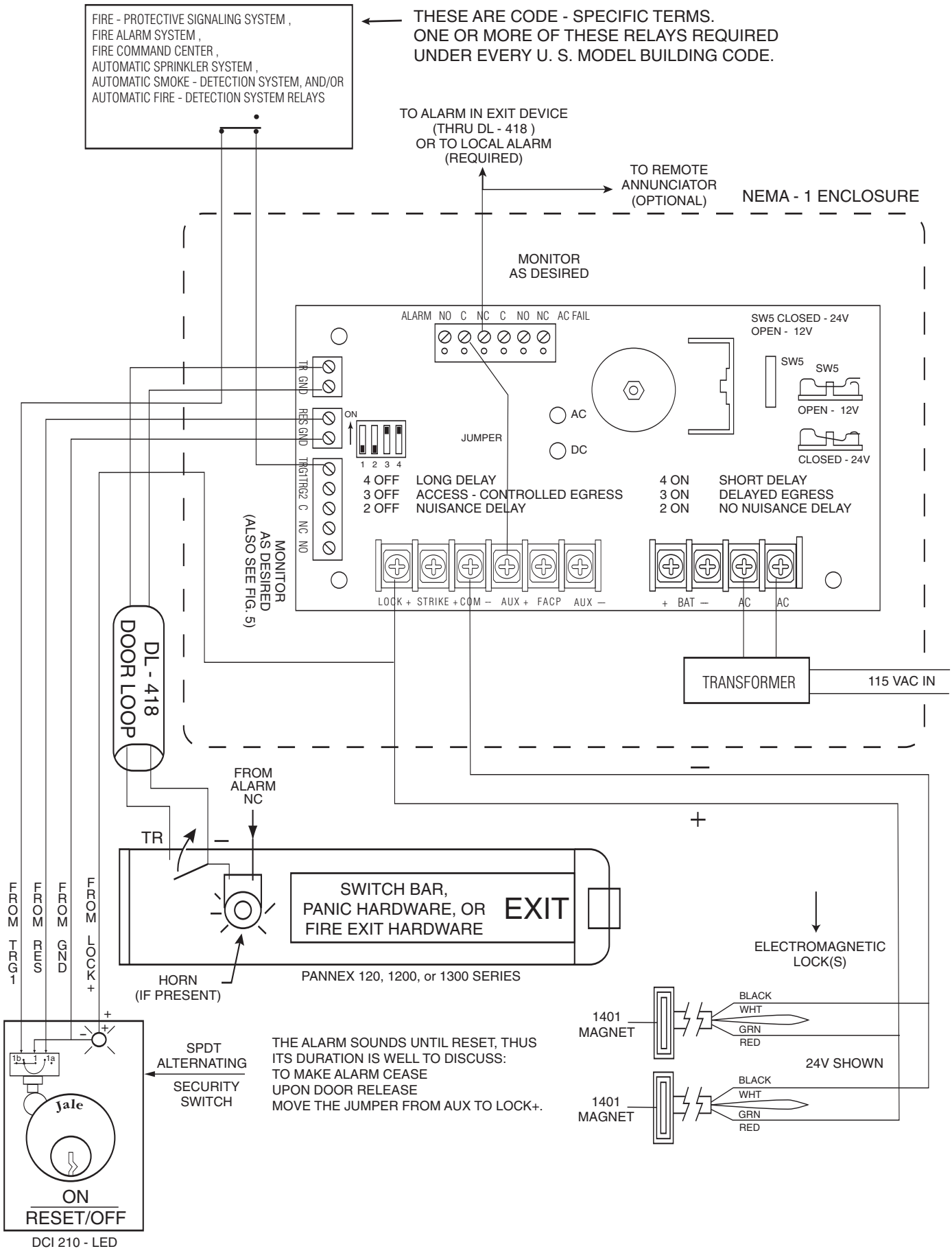
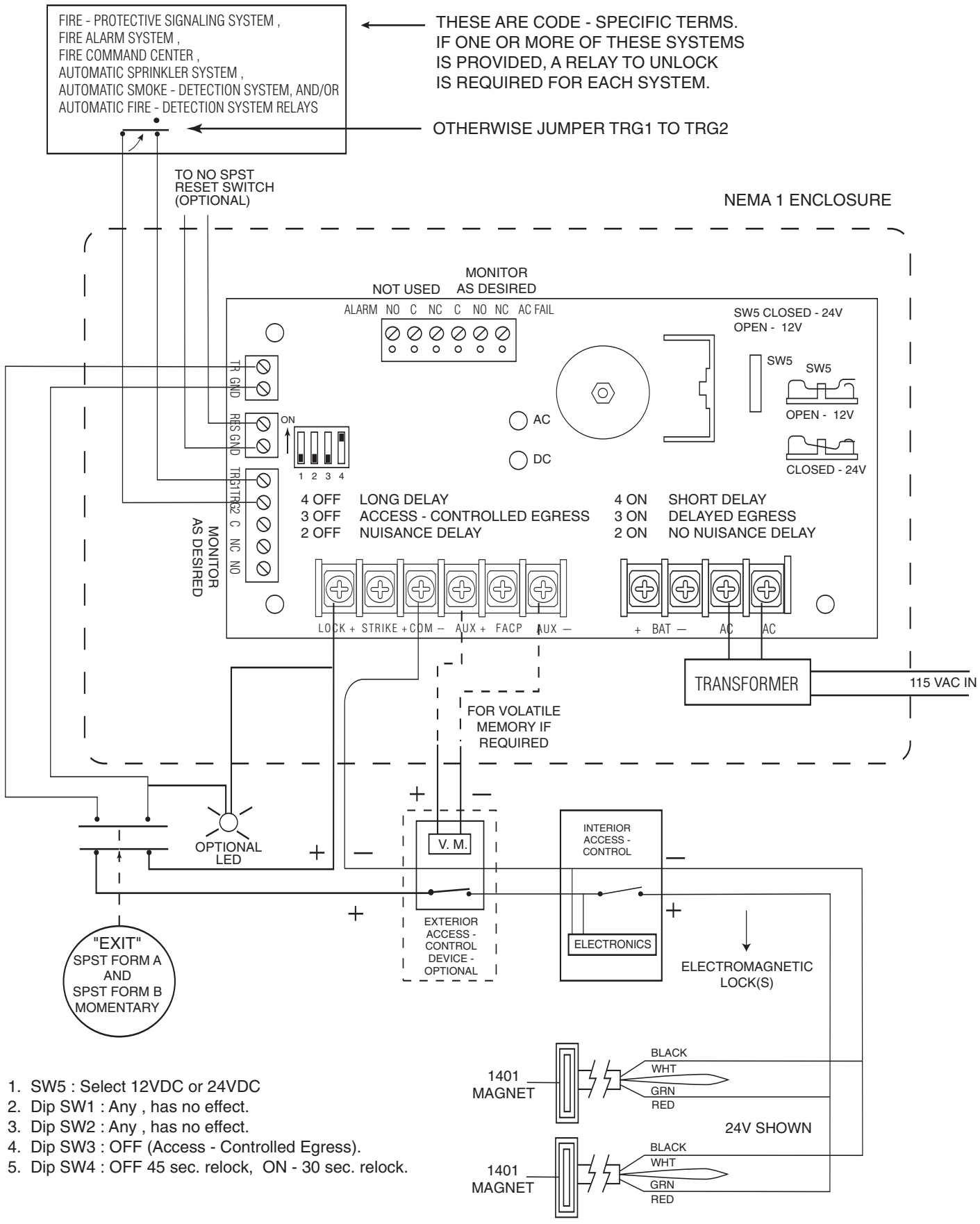


Fig. 3 - Typical Access-Controlled Egress System:



1. SW5 : Select 12VDC or 24VDC
2. Dip SW1 : Any , has no effect.
3. Dip SW2 : Any , has no effect.
4. Dip SW3 : OFF (Access - Controlled Egress).
5. Dip SW4 : OFF 45 sec. relock, ON - 30 sec. relock.

Application Diagrams when used as a typical power supply not using delay features:

Fig. 4 - Typical single mag lock or door strike installation with fire alarm tie-in using trigger controlled output:

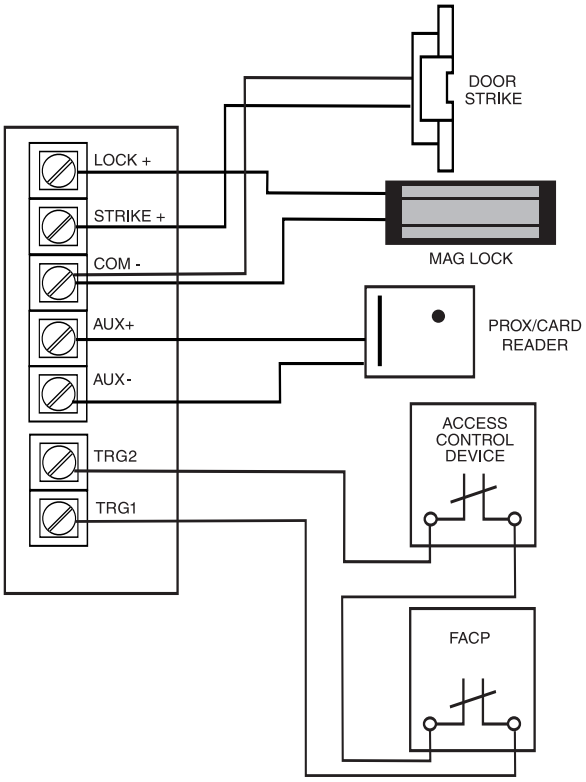


Fig. 5 - Typical dual mag lock installation with fire alarm tie-in using trigger controlled outputs:

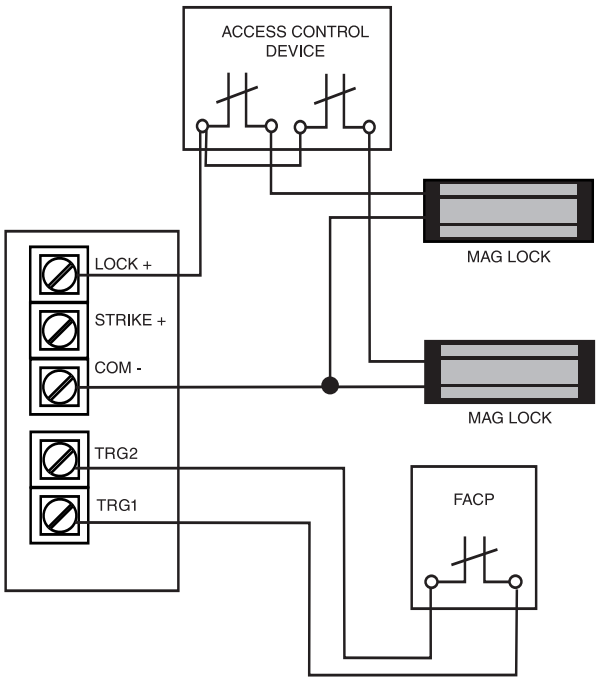


Fig. 6 - Typical mag lock with fire alarm tie-in using aux output installation:

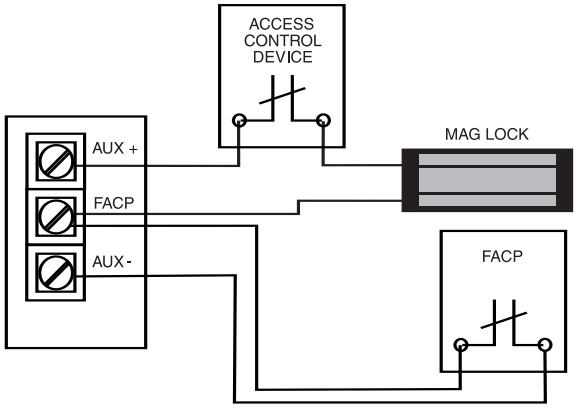


Fig. 7 - Latching fire alarm tie-in with manual reset:

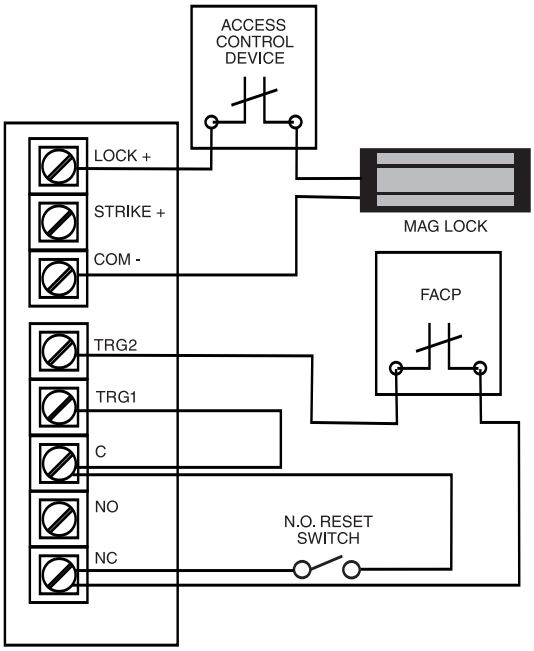
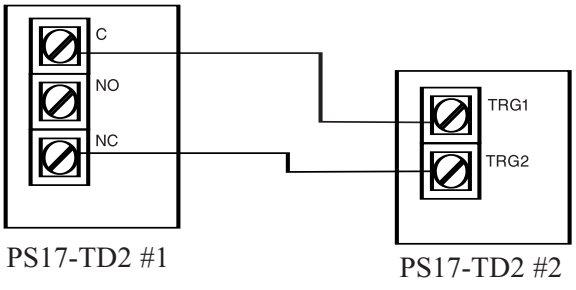


Fig. 8 - Multiple PS17-TD2 power supply connections:



Enclosure Dimensions:

8”H x 7.25”W x 3.5”D