

INSTALLATION



PS6 SERIES

Power Supplies

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**Power Supplies c/w Fire Panel Interface, EOL Trigger
and Standby Power Option**

Installation and Specifications Manual

Base Features

- Standard 115VAC/60Hz input
- Field selectable 12VDC or 24VDC output via slide switch
- Surge protected input
- Fused output (PS6 only)
- AC and DC visual indication
- Precise battery regulation for lead acid batteries
- Instantaneous switching on AC failure
- Form C relay SPDT to monitor AC failure

Fire Panel Interface Features

- Non Latching or Latching mode
- Universal 12VDC or 24VDC Operation
- Reverse polarity protected
- Normally ON & Normally OFF Output
- Output LED's indicate condition
- Outputs can be Triggered with:
 - 1) N/O or N/C Switch with Supervised End of Line Resistor (EOL)
 - 2) N/C Switch with (OVR) over ride
 - 3) N/C Switch with (AUX-IN) auxiliary
 - 4) Ground on any trigger input when (GRN) Jumper is enabled
- Form C DPDT Relay Indicates Trigger Status
- Auto or manual reset by jumper selection

Installation Instructions

1. Mount the power supply in an accessible location using the mounting keyholes in the back of the box.

Note: The DORMA PS6 Power Supplies are for use in a controlled indoor environment. All devices connected to, or powered from, these power supplies shall be installed within the same continuous building structure. Installation must be in accordance with the National, Local Building and Fire Codes. Check with the Authority Having Jurisdiction (AHJ) for details prior to installation.

2. Route AC power through appropriate knockout and connect to the AC input terminals as marked (See Fig. 1). Use ground feature with 8-32 ground screw provided.
3. Run wiring for devices to be powered through panel knockouts as required and connect to DC output terminals (See Fig. 1). Minimum 22 AWG and maximum distance of 6170ft for field wiring. Use listed conduit or bushings for all knock-outs. Accessory boards mounted in the enclosure require 13mm high non-conductive stand offs.
4. Set DC output voltage selector switch to desired voltage prior to connecting battery and energizing AC input voltage (See Fig. 1).
Do not adjust voltage with power or battery connected.
5. As the PDD-FT (Power Distribution Device with Fire Trigger) can be used to power multiple devices ensure that all wiring is of an appropriate gauge for the devices being installed.

6. Maximum torque of 7 in*lb for black input and output terminals.
7. Connect devices to be powered to output terminals of PDD-FT control board, paying close attention to polarity requirements. Minimum 22AWG and maximum distance of 6170ft. for field wiring.
8. Set jumpers (RST, OVR, AUX, and GRN) as required for proper installation.
9. Connect fire alarm control panel to EOL input terminals, ensure the 2.2K resistor is installed at the terminals in the fire alarm panel.
 - a) See fire alarm control panel installation and operation manual for details about signaling requirements.
 - b) Fig's 3-7 in this installation guide will provide details on wiring to the fire alarm control panel.
10. Connect any required monitoring equipment to the trigger relays using appropriate cabling.
11. Connect backup battery(s) to battery leads if required using the supplied cables that are suitable to the installation. Ensure correct polarity (See Fig. 1).
12. Apply power to AC input terminals and test DC outputs for proper operation.

Power Supply Wiring

See wiring diagram on inside of Power Supply cover.

For PS610 models, maintain a minimum clearance of .25" between power limited and non-power limited circuits. For model PS610RF only, use shielded cable as noted.

Lead acid gel cell batteries are typically used for stand by power in security applications, as they float charge well and have no usage memory. When float charged, they typically last 4-5 years. A precision power supply/charger will provide the proper voltage for any given temperature regardless of load. This is what provides long battery life from the DORMA PS6 Series power supply.

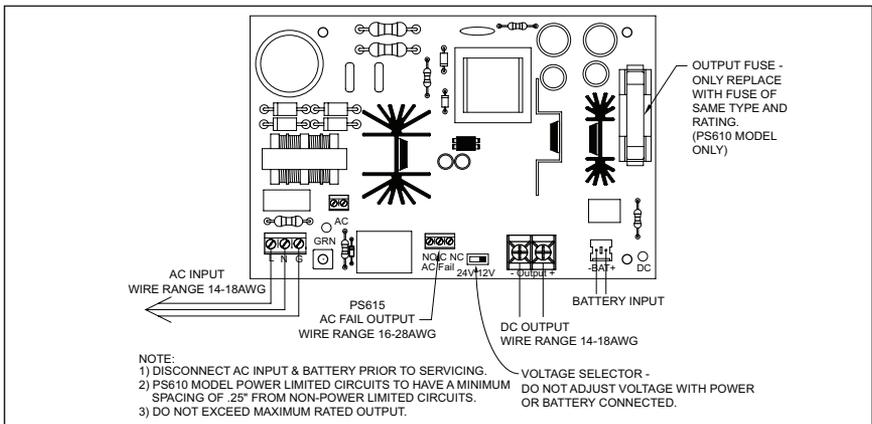


Fig. 1 - Power Supply Circuit Board

Specifications

- **UL 294 and ULC S319 Class I Access Control System Units.**

Input

- AC visual indicator

PS610	PS615
115VAC 60 Hz	
0.8 Amps	1.0 Amps

PDD-FT Input

- Input Voltage: 12 or 24VDC \pm 10%
- Typical Current Draw with no Output:
 - PDD-FT-3 Load: 10mA @ 12VDC
15mA @ 24VDC
 - PDD-FT-1.5 Load: 38mA @ 12VDC
70mA @ 24VDC

Output

- Nominal Output Voltage 12VDC or 24VDC (Measured Voltage. 12VDC - 13VDC or 24VDC - 27VDC)
- Maximum torque of 7 in*lb for black output terminals
- DC visual indicator
- PS610 models have power limited output
- PS615 models have non-power limited output
- Thermally protected DC output

Output	PS610	PS615
@ 12VDC	1.5 Amps	3.0 Amps
@ 24VDC	1.0 Amps	1.5 Amps

Note: Load rating using AC input.
Loads rated with 0.6 power factor.

PDD-FT Output

- Output Relay Rating: 3A for PDD-FT-3
1.5 for PDD-FT-1.5

PDD-FT Monitor Inputs

- EOL (End of Line) Trigger: Trigger at + or - 50% of 2.2K
- OVR Trigger
- AUX Trigger
- Reset Input
- Ground Fault Trigger

Monitor Outputs

- Trigger Relay Rating: 1A DPDT

Battery Backup

- Tested for use with UL 1034 listed locking devices
- Fully integrated charging circuit
- Battery over current protection
- Average recharge current 75mA

	PS610	PS615
0.5 Hour Standby Time		
12VDC Output	1 x 12V, 4.5 Ahr	1 x 12V, 4.5 Ahr or 1 x 12V, 7 Ahr
24VDC Output	2 x 12V, 4.5 Ahr*	2 x 12V, 4.5 Ahr* or 2 x 12V, 7 Ahr*
1 Hour Standby Time		
12VDC Output	1 x 12V, 7 Ahr	N/A
24VDC Output	2 x 12V, 7 Ahr*	N/A

*Batteries wired in series

Supervision

- Form "C" AC fail relay output 2A @ 120VAC
- For PS610, installations that use AC Fail relay are not UL Listed and may result in nuisance AC Fail signals in the event of a substantial transient

Environmental

- Use in a controlled indoor environment.
- Operating temperature 0°C to 49°C (32°F to 120°F)

Warning: Improper wiring connections may result in damage to these products.

Description of PDD-FT Connections See Fig. 2

Input Power

“-INPUT+”: 2 position terminal block with self clamping screws will accept multiple 12AWG wires Universal input.

Output Power

Two, 2 position terminal blocks. Self clamping screws will accept multiple 12AWG wires. “-N/ON+” are normally ON output power. This output is ON when the PDD-FT is not triggered. “-N/OFF+” is normally OFF. This output is ON when this unit is triggered. The transfer relay is rated at 3 Amps.

Power LED's

A red led above each output indicates which output is active.

Input Trigger EOL*

2 position terminal block – Will accept 12AWG wire. This input must see the 2.2K ohm end of line resistor to be in the normal set condition. A change in resistance of ± 50 will cause the trigger relays to drop out in the Triggered mode. This change in resistance is caused by the supervised wire between the EOL at the fire panel and the PDD-FT being shorted or opened. The EOL supervises the pair of wires.

Input Trigger OVR*

2 position terminal block - Will accept 12AWG wire. This pair is normally closed and can be connected to an override switch. When OVR is open, unit will trigger.

Input Trigger AUX-IN*

2 position terminal block - Will accept 12AWG wire. This pair is normally closed and can be connected to an auxiliary device. When AUX-IN is open, unit will trigger.

Reset 2 Position Terminal Block*

2 position terminal block - Will accept 12AWG wire. When this pair is shorted, input triggers do not latch. If pair is open, the input triggers will latch until alarm is corrected and RESET is momentary closed to reset trigger.

***Minimum 22AWG and maximum distance of 6170ft for field wiring.**

Jumpers RST - OVR - AUX

Jumpers are used to activate (remote) features as required.

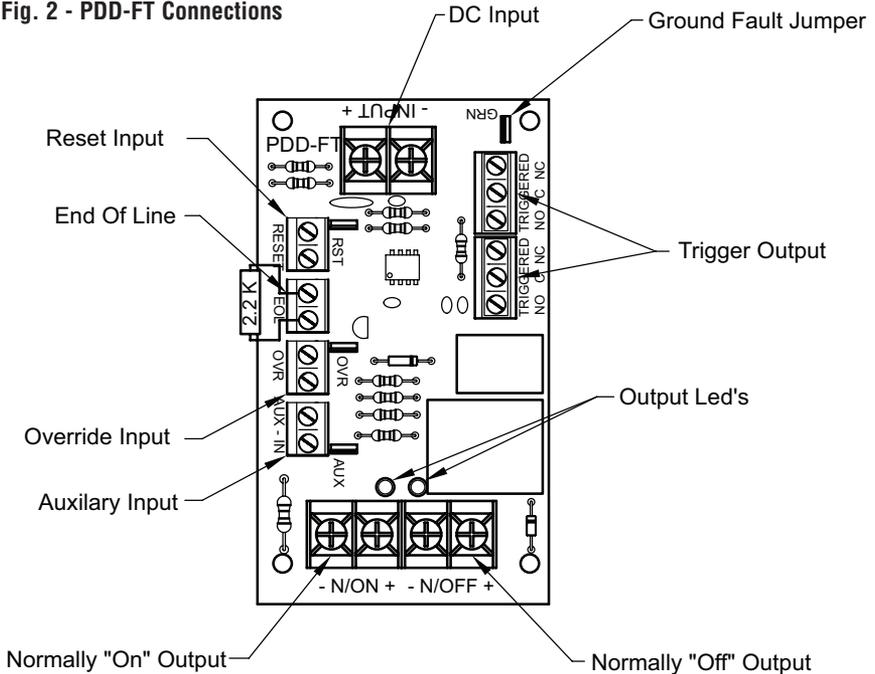
Jumpers GRN

This jumper is used to enable ground supervision or the inputs. If the jumper is connected to both headers, and the mounting hole adjacent to jumper is connected to earth ground, a ground on any of the input triggers will cause a trigger.

Trigger Status Terminal block

Two, 3 position terminal blocks - Will accept 12AWG wire. Form C DPDT relay with a 1 Amp rating will indicate the condition of trigger. C and NO are normally open in the normal energize not triggered state. C and NC are normally closed in the normal energized not triggered state. These contacts may be used to provide feedback to the FACP or other auxiliary devices.

Fig. 2 - PDD-FT Connections



Application Diagrams

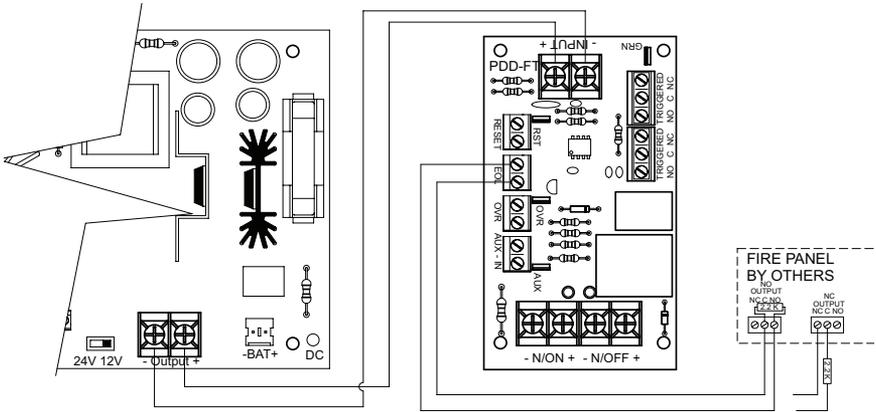


Fig. 3 - Fire Panel Connections for Non-Latching Automatic Reset Operation

This application illustrates how to connect the PDD-FT to a power supply for main input as well as a fire alarm control panel. If wired in this manner, outputs will change state only as long as the fire alarm relay is active. When the fire alarm resets the PDD-FT outputs will also reset.

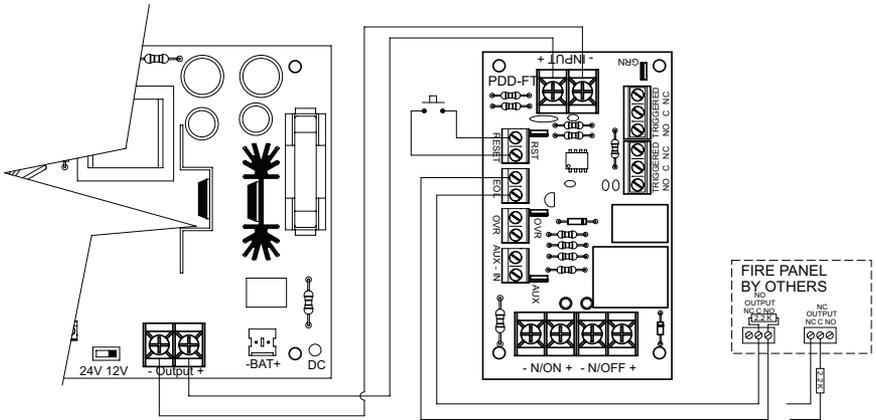


Fig. 4 - Fire Panel Connections for Latching Release with N/O Manual Reset

This application illustrates how to connect the PDD-FT to a power supply for main input as well as a fire alarm control panel. If wired in this manner, outputs will change state whenever the fire alarm relay activates and remain latched in the triggered state until reset by activating the N/O switch.

Note: Remove RST jumper for manual reset operation.

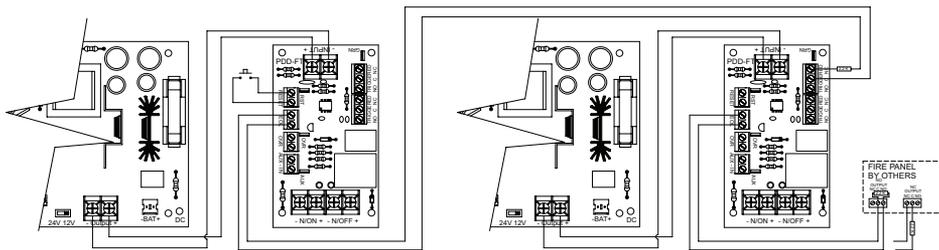


Fig. 5 - Connections for Non-Latching release reset using multiple PDD-FT boards

This application illustrates how to connect the PDD-FT to a power supply for main input as well as a fire alarm control panel. If wired in this manner, outputs will change state only as long as the fire alarm relay is active. When the fire alarm resets the PDD-FT outputs will also reset. Connecting the EOL input of one board to the trigger relay of the next board as shown will allow for override and reset of multiple boards.

Note: The RST jumper must be left in place on all boards for automatic reset operation.

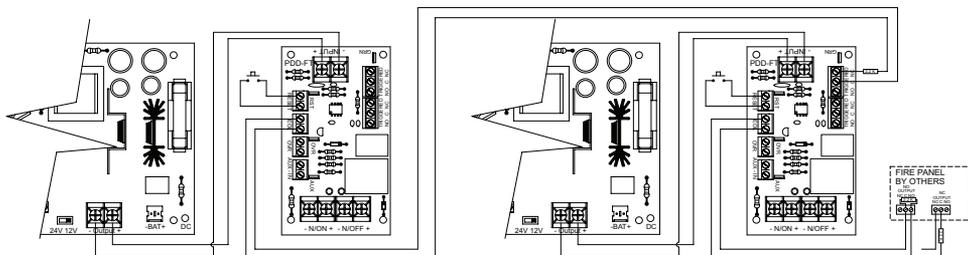


Fig. 6 - Connections for latching release with N/O manual reset using multiple PDD-FT boards (Master & Slave)

This application illustrates how to connect the PDD-FT to a power supply for main input as well as a fire alarm control panel. If wired in this manner, outputs will change state whenever the fire alarm relay activates and remain latched in the triggered state until Master is reset by activating the N/O switch. Connecting the EOL input of one board to the trigger relay of the next board as shown will allow for reset of multiple boards.

Note: The RST jumper must be left in place on all slave boards except the one that is directly connected to the fire alarm (Master), reset, and switches.

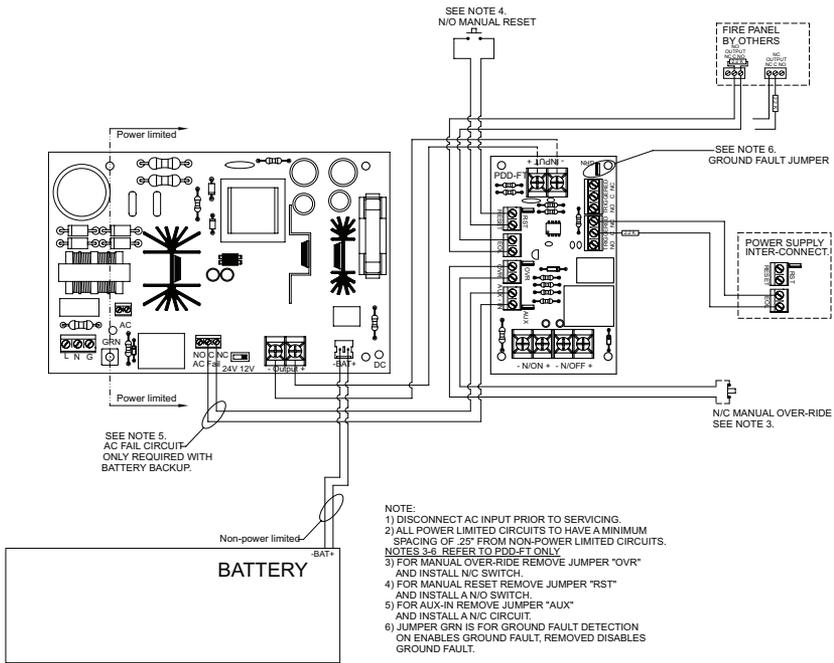


Fig. 7 - Fire Panel Connections for Latching Trigger with N/O Manual Reset and N/C override with Battery Backup

This application illustrates how to connect the PDD-FT to a DORMA Power Supply for main input, AC failure as well as a fire alarm control panel. If wired in this manner, trigger outputs will change state whenever the fire alarm, or AC failure relays activate. The PDD-FT outputs will remain in the triggered state until both relays have been reset and the N/O manual reset is triggered.

Note: Ensure jumpers for RST, OVR, and AUX IN are removed to allow terminals to operate correctly.

Maintenance

- Under normal conditions the power supply should be checked for proper operation on an annual basis
- Check output voltage
- It is also recommended that the current draw is checked to ensure that the current is within specifications. Check battery voltage under load. Under normal conditions the battery will last approximately 4-5 years. If battery backup is critical it is recommended to change the battery every 4 years or less.

Troubleshooting Guide

Problem	Solution
No DC output from terminals.	<ul style="list-style-type: none"> - Check AC and DC LED's on power supply board. Both should be on for proper operation AC ON – RED, DC ON - RED. - If LED's are not on, check AC power. - Check Power Supply for voltage output. - Check devices connected to outputs for a short circuit. (PTC's may require short to be removed for several minutes before automatically resetting). - Check trigger jumpers. Output LED should be lit if output is active.
Output voltage is not correct for the connected equipment.	<ul style="list-style-type: none"> - Disconnect AC power, battery(s) and all connected equipment IMMEDIATELY. - Change voltage selection switch to desired voltage. - Reconnect equipment and reapply AC power.
Trigger is active and will not reset.	<ul style="list-style-type: none"> - Check for proper wiring connections on trigger connections. - Ensure that 2.2K resistor is installed at End of Line position in the wiring.
Trouble output relay is de-energized. (Relay terminals are labeled shown in the Normal, energized, “no trouble” condition. Relays are energized when no trouble is detected.)	<ul style="list-style-type: none"> - Check devices connected to outputs for a short circuit. (PTC's may require short to be removed for several minutes before automatically resetting.)

Wire Gauge Selection Chart

with 24V Load Current

Total One Way Length of Wire Run (ft.)	.25A	.50A	.75A	1.0A	1.25A	1.50A	2.0A	3.0A
100	20	18	16	16	14	14	12	10
150	20	16	14	14	12	12	10	--
200	18	16	14	12	12	10	10	--
250	18	14	12	12	10	10	--	--
300	16	14	12	10	10	--	--	--
400	16	12	10	10	--	--	--	--
500	14	12	10	--	--	--	--	--
750	12	--	--	--	--	--	--	--
1000	12	--	--	--	--	--	--	--

See 12V Selection Chart on next page

Wire Gauge Selection Chart with 12V Load Current

Total One Way Length of Wire Run (ft.)	.25A	.50A	.75A	1.0A	1.25A	1.50A
100	18	16	14	12	12	10
150	16	14	12	10	10	--
200	16	12	10	10	--	--
250	14	12	10	--	--	--
300	14	10	--	--	--	--
400	12	10	--	--	--	--
500	12	--	--	--	--	--
750	10	--	--	--	--	--

See 24V Selection Chart on previous page

These recommended wire gauge selection tables are based on the 2008 National Electrical Code (2008 NEC), assume 60°C (140°F) rated wire, include a 25% safety factor, and define the amperage ratings at the listed distances that result in 5% voltage drop due to wire resistance. Five percent is normally acceptable in low voltage systems.

For product support, parts and ordering information contact:

DORMA
Dorma Drive, Drawer AC
Reamstown, PA 17567 USA

Phone: (717) 336-3881
Fax: (717) 336-2106
Toll Free: (800) 523-8483
Email: archdw@dorma-usa.com

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USA: DORMA DRIVE, DRAWER AC, REAMSTOWN, PA 17567 PHONE: (800) 523-8483 (717) 336-3881 FAX: (717) 336-2106
EMAIL: archdw@dorma-usa.com WEBSITE: dorma-usa.com