

Model PD8(F)

Basic Power Distribution Board

Operating and Installation Instructions

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Section 1

Introduction

The PD8(F) Basic Power Distribution board provides eight outputs to any AlarmSaf power supply or accessory board with an ABC expansion port. It accepts inputs from one or two independent voltage sources, either of which is available to ALL outputs by jumper selection.

- Eight individually protected outputs
- Output voltage able to be selected (as a group) from one of two voltage busses
- Available with Class-2 Power Limited outputs (PD8) or Fused (non-power limited) outputs (PD8F)
- Each output is capable of supplying up to 3A (PD8F) or 1.6A (PD8) up to the maximum current capability of each voltage source
- Fused versions use easily obtainable ATM-3 automotive miniature blade fuses

Section 2

Applicable Standards / Documents

NFPA Standards

NFPA 72 National Fire Alarm Code

NFPA 70 National Electrical Code

NFPA 731 Standard for the Installation of Electronic Premises Security Systems

US Standards

UL 294 Access Control System Units

UL 1481 Power Supplies for Fire Protective Signaling System

Other

Applicable Local and State Building Codes

Requirements of the Local Authority Having Jurisdiction (LAHJ)

Other Applicable AlarmSaf Documents

52-296: Beacon Power Supply Installation Manual

52-375: PS5-M Installation Manual

52-350: SPS4 Accessory Board Installation Manual

52-351: CMB8(F) Accessory Board Installation Manual

52-352: MB8(F) Accessory Board Installation Manual

Section 3

System Overview

3.1 Electrical Ratings and Specifications

Manufactured By

AlarmSaf
6 Ledgerock Way, Unit 7
Acton, MA 01720
Tel: 978 658 6717
800 987 1050
www.alarmsaf.com

Model Numbers

PD8, PD8F

Electrical Ratings

Inputs	Two Inputs: 0 to 24VDC Nominal @ 14 Amps maximum per input
Outputs	Eight Outputs: 1.5A (PD8) or 3A (PD8F) per output up to the maximum capability of the base power supply selected. Output voltage determined by base power supply selected.
Fuse Type (PD8F only)	ATM-3 Automotive Miniature Blade-type

Product Use

When installed in accordance with all standards listed in Section 2 of this document and used with an appropriate listed supply, the PD8(F) provides eight constant outputs, sourced from one of two voltage sources for powering devices such as (but not limited to) Mag Locks, Door Strikes, Card Readers, Smoke Dampers, 4-Wire Smoke detectors, etc.

3.2 PD8(F) Terminal and Connector Descriptions and Electrical Ratings

Terminal / Connector	Description	Rating
P1	ABC Input or Output	0-24V Nominal at 14A per Buss (controlled by base supply selected)
P2	ABC Input or Output	
TB1 - Outputs 1 through 4		
Out1 +	Output 1 +	1.5A (PD8) or 3A (PD8F) maximum - Voltage determined by base supplies and jumper selection
Out1 -	Output 1 -	
Out2 +	Output 2 +	1.5A (PD8) or 3A (PD8F) maximum - Voltage determined by base supplies and jumper selection
Out2 -	Output 2 -	
Out3 +	Output 3 +	1.5A (PD8) or 3A (PD8F) maximum - Voltage determined by base supplies and jumper selection
Out3 -	Output 3 -	
Out4 +	Output 4 +	1.5A (PD8) or 3A (PD8F) maximum - Voltage determined by base supplies and jumper selection
Out4 -	Output 4 -	
TB2 - Outputs 5 through 8		
Out5 +	Output 5 +	1.5A (PD8) or 3A (PD8F) maximum - Voltage determined by base supplies and jumper selection
Out5 -	Output 5 -	
Out6 +	Output 6 +	1.5A (PD8) or 3A (PD8F) maximum - Voltage determined by base supplies and jumper selection
Out6 -	Output 6 -	
Out7 +	Output 7 +	1.5A (PD8) or 3A (PD8F) maximum - Voltage determined by base supplies and jumper selection
Out7 -	Output 7 -	
Out8 +	Output 8 +	1.5A (PD8) or 3A (PD8F) maximum - Voltage determined by base supplies and jumper selection
Out8 -	Output 8 -	

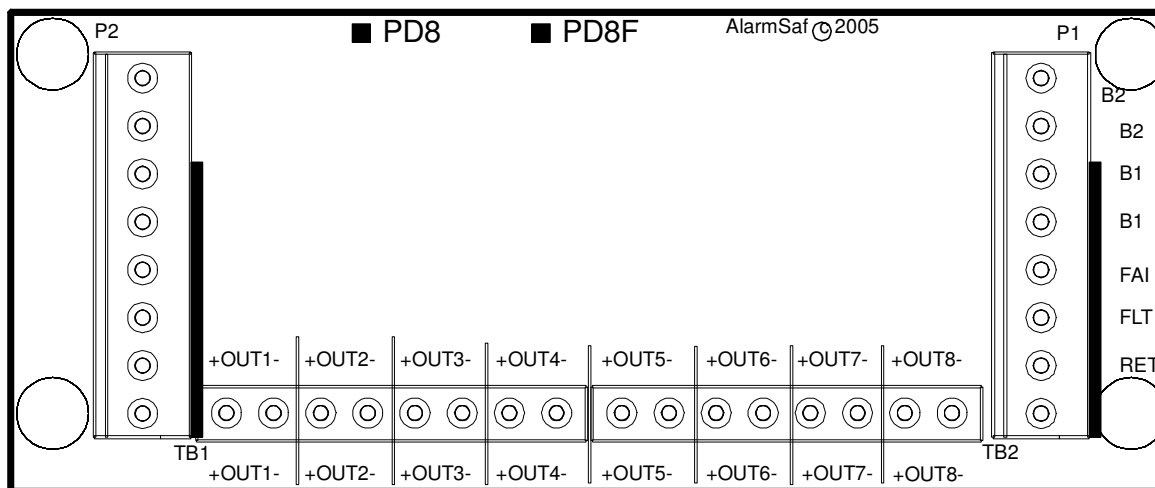


Figure 3.2.1

3.3 ABC Connectors and Harnesses

3.3.1 The ABC buss supplies the voltages (B1 and B2) and FAI control to compatible accessory boards. By using the appropriate cables (see section 3.3.4), one or two independent voltage sources can be connected to **accessory boards**.

3.3.2 Single Voltage Distribution

A single power source can be connected to the PD8(F) by using the ABC-03 cable,(00521) power supplies with an ABC connector or the ABC-07 cable (#00525) for power supplies with no ABC connector.

3.3.3 Dual Voltage Distribution

This feature is not available with the PD8(F). For dual voltage power distribution use either the MB8(F) or the CMB8(F). Contact AlarmSaf at 800.987.1050 for additional information.

3.3.4 Cable Types

Order #	Model #	Type	Length	Description
00521	ABC-03	8-8	8 in.	Connect Beacon power supply to the first accessory board or interconnect accessory boards
00522	ABC-04	8-8	18 in.	Connect Beacon power supply to the first accessory board or interconnect accessory boards
00523	ABC-05	6-8	8 in.	Connect Beacon power supply to SPS4 Module NOTE: Also used in units manufactured before 2010 and custom products
00524	ABC-06	6-8	18 in.	Connect Beacon power supply to SPS4 Module NOTE: Also used in units manufactured before 2010 and custom products
00525	ABC-07	6-2SP	18 in.	Connect distribution board to terminals on power supplies with no ABC connector

3.4 Output Terminals

The PD8(F)'s output terminals (TB1 and TB2) provide power distributed from the B1 or B2 (if present) supplies. The voltage source selection is made through the voltage buss jumper (JP1) setting. See Section 5 for configuration jumper settings.

Each output is protected by either an ATM-3 fuse (PD8F) or a 1.6A PTC (PD8). If an output PTC is tripped, remove the output load for 30 seconds.

Caution - Observe the polarity of the PD8(F) output terminals with respect to the load or damage to the load may occur.

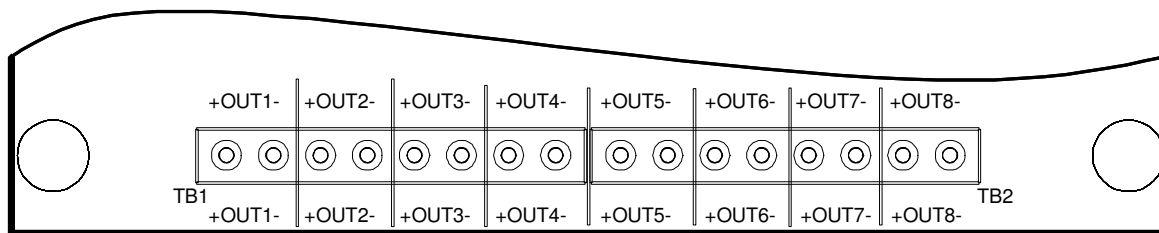


Figure 3.4.1

Section 4

Installation

4.1 Mounting

The PD8(F) mounts either in the accessory board space on the power supply or to the back of a metal enclosure.

4.1.1 Mounting On a Power Supply

1. Remove and save the four mounting screws from the accessory board mounting space on the power supply.
2. Install 6-32 x 1 1/4" Male-Female standoffs in the four locations where the screws were removed (the aluminum standoff, if present, is installed in the top left mounting hole).
3. Mount the PD8(F) to the standoffs using the screws removed in step 1
4. Connect ABC cable(s) appropriately (See section 3.3)

4.1.2 Mounting In a Metal Enclosure

1. Install four 6-32 x 3/4" Female-Female nylon standoffs on the appropriate mounting studs in the enclosure (the aluminum standoff, if present, is installed on the top left mounting stud).
2. Mount the PD8(F) to the standoffs using 6-32 x 3/8" screws.
3. Connect ABC cable(s) appropriately (See section 3.3)

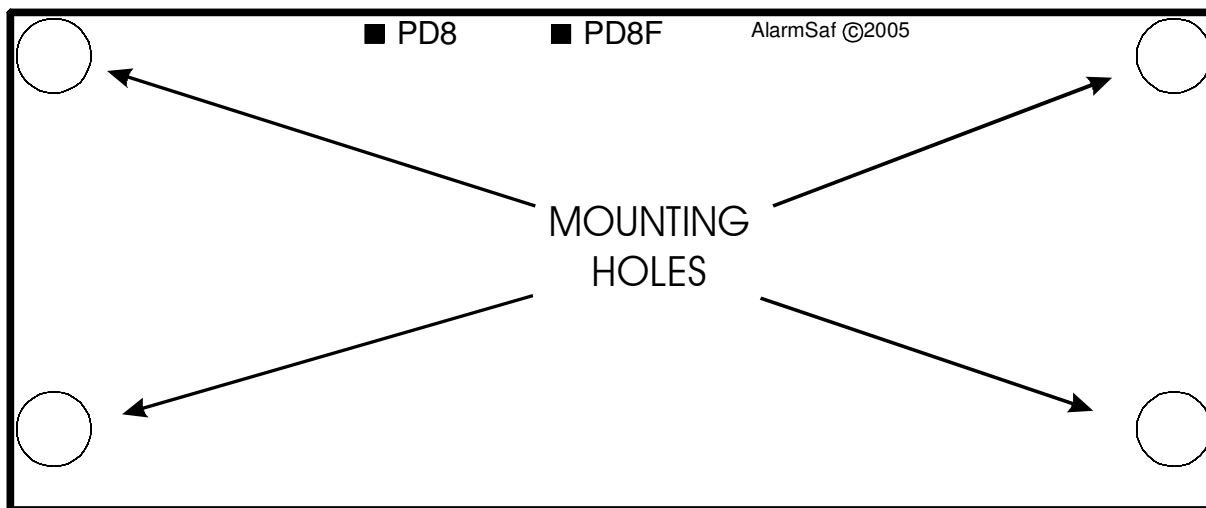


Fig 4.1.1

4.2 Wiring

4.2.1 Wire Routing

All wiring must be installed in accordance with NFPA70 [NEC760], NFPA72, and all local code requirements.

Power Limited wiring requires that power limited and non-power limited wiring remain physically separated. Any power limited circuit entering the enclosure must remain at least one quarter inch ($\frac{1}{4}$ ") away from any non-power limited circuit wiring. Any power limited circuit wiring must enter and exit the enclosure through different knockouts than non-power limited circuit wiring.

Wiring within the enclosure should be routed around the perimeter of the cabinet. It should not be routed across the circuit boards. See the enclosure's documentation for complete wire routing instructions.

4.2.2 ABC Connector

See section 3.3

4.2.3 Output Wiring

Locate the output wiring terminal blocks (TB1 and TB2) and remove the terminal block from the header. Connect the wiring for the equipment to be powered to the terminal block. The PC board is labeled with the output numbers and polarity (See also section 3.2). Replace the terminal block on the header.

NOTE: Wire size for these terminals must be 22-14 AWG.

4.3 Labeling

If the PD8(F) was purchased separately from the power supply unit, the supplied label must be applied to the inside cover of the power supply's enclosure. The label shall not cover any ventilation holes or other labeling on the enclosure.

Section 5

Operating the PD8(F)

5.1 Jumper Configuration

Before powering a system containing a PD8(F), the jumper must be set for proper operation. Failure to do so before applying power could damage the system.

Jumper	Description	Settings	Factory Default
JP1	Voltage Buss Selection	Left (B1) - The PD8(F)'s outputs are supplied from B1 Right (B2) - The PD8(F)'s outputs are supplied from B2	Left (B1)

5.1.1 The Voltage Buss Selection jumper (JP1) is used to select which of the two voltage busses on the ABC connector(s) are to be used to supply the outputs. The jumper selects the source for ALL EIGHT outputs. If individual selection is required, use the MB8(F).

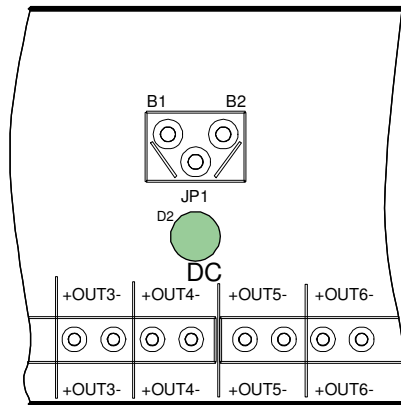


Figure 5.1.1

5.2 Visual Indicators

The PD8(F) has one LED to indicate status of the input voltage selected for the outputs. The LED lights when there is voltage available to the outputs.

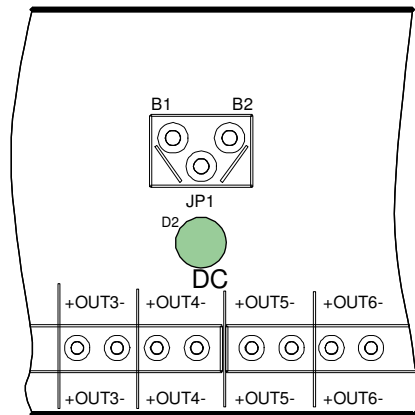


Figure 5.2.1

5.3 Troubleshooting

Condition	Possible Cause	Solution
No voltage on output	Jumper setting incorrect	Verify proper jumper setting
	Missing jumper	Verify jumper present
	No voltage supply	Verify the power supply
	Blown output fuse (PD8F)	Check output wiring and replace fuse
	Tripped output PTC (PD8)	Check output wiring and remove load for 30 seconds to reset
Incorrect voltage on output	Incorrect voltage buss selected	Verify proper jumper setting
	Power supply outputting incorrect voltage	Check power supply
LED not lit	No voltage on the voltage buss selected	Check the selected power supply and ABC cable
	Jumper set improperly	Verify proper setting of jumper JP1
	Jumper missing	Verify jumper JP1 is present and set properly

Section 6

Specifications

6.1 Electrical Specifications

6.1.1 Input Voltage (B1 and B2)	0-24VDC Nominal
6.1.2 Input Current (B1 and B2)	14A maximum per buss
6.1.3 Battery Requirement	The PD8(F) draws 0.01A in addition to the output load

6.2 Temperature Specifications

6.2.1 Ambient Temperature Range	0°C to 49°C (32°F to 120°F)
6.2.2 Ambient Humidity	93% at 32°C (90°F) Maximum

6.3 Mechanical Specifications

6.3.1 Weight	0.05 Lbs (Not including hardware or cables)
6.3.2 Size	4.85" L x 2.10" W x 1.00" H <i>Note: Width includes terminal block overhang of 0.2"</i>
6.3.3 CAD Drawing	

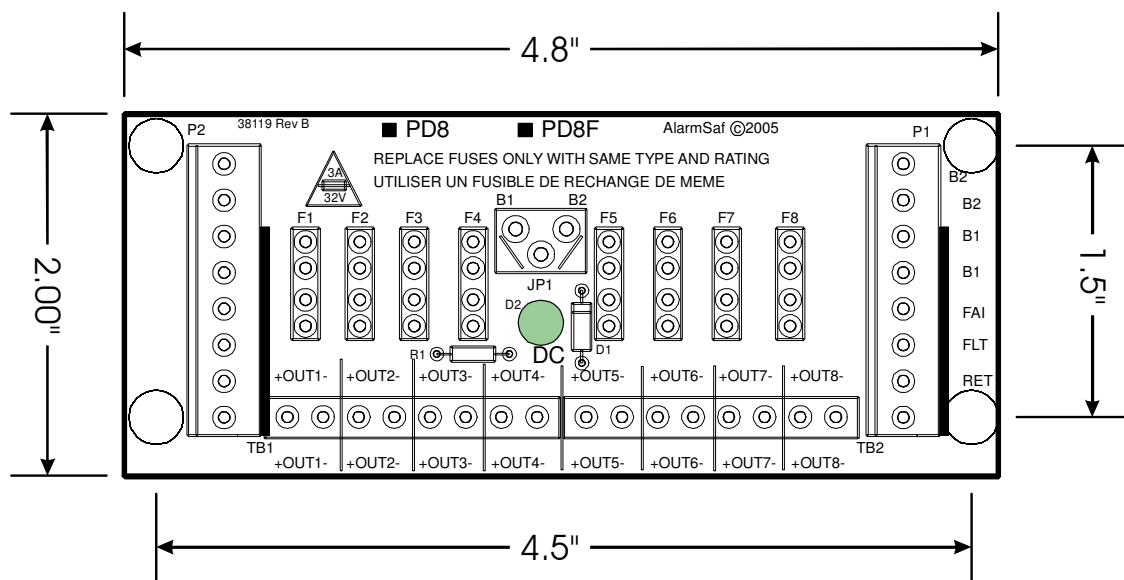
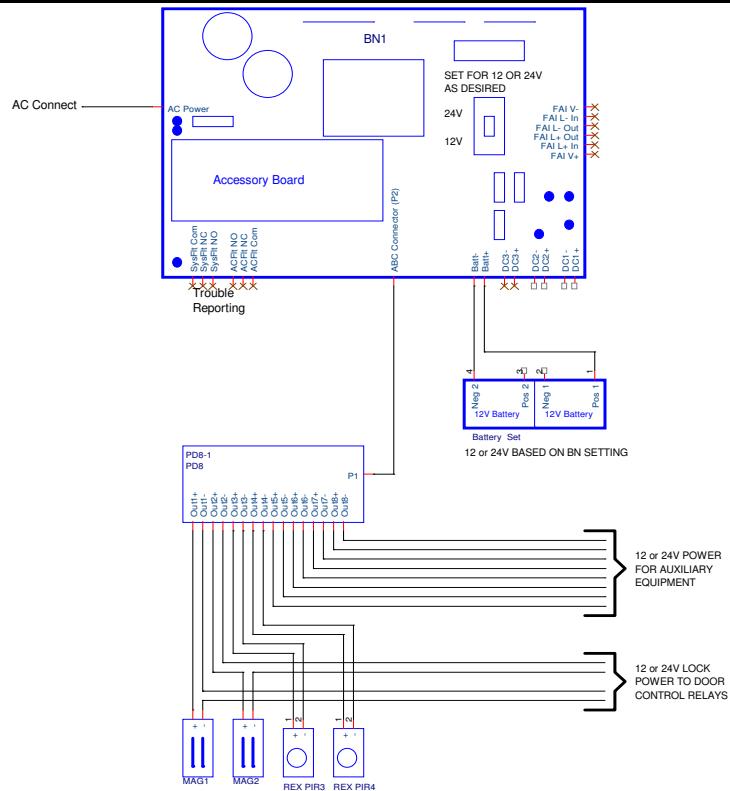


Figure 6.3.1

Appendix A Sample Applications

A.1 Single Voltage Power Management With The PD8(F)



The BN power supply is configured to provide either 12 or 24 VDC to one PD8(F) power distribution module.

The PD8(F) will split the 12 or 24VDC into eight individually protected outputs for use in powering locks, doorstrikes, or auxiliary equipment such as REX PIRs, keypads, egress timers, or readers.

The diagram illustrates a common eight door system with two maglocks used for the egress doors, six doorstrikes used for internal access control and a mix of auxiliary power needs such as cameras, keypads, and REX PIRs. Emergency access buttons should be used on the maglocks due to FAI not being used.

The PD8 should be used for Class 2 power limited service.

The PD8F should be used if fuse protection is desired.

A single battery set is used to provide standby power to both the locks and the control equipment.

All components as shown will fit within a B02 (12"H X 12"W X 4"D) enclosure, while allowing space for a 12V - 14 Ah or 24V - 7Ah standby battery set.