



ALARM SAF

Rack Mount DC Power Supplies

Operating and

Installation

Instruction Manual

Includes PS5-M Power Supplies &
FAI Accessory Boards



MEA
Approved



AlarmSaf, Inc.
65A Industrial Way, Wilmington, Massachusetts 01887
978-658-6717 800-987-1050
www.alarmsaf.com

MODEL NUMBERS

THIS MANUAL COVERS MODEL NUMBERS: RMDC-PS5-M, RMDC-PS5-M-UL-FAI, RMDC-1248(F), RMDC-PS5-M-8(F)-UL-FAI, RMDC-PS5-MD, RMDC-PS5-MD-UL-FAI, RMDC-12416(F), RMDC-PS5-MD-16(F)-UL-FAI

Full product list available at www.alarmsaf.com

TABLE OF CONTENTS

Warnings and Notices	2	Section 2: Installation.....	6
Introduction.....	2	Mounting.....	6
RMDC Model Descriptions	3	Wiring.....	6
Applicable Standards & Documents.....	3	Section 3: Operation	7
Warranty	3	Jumper and Switch Configuration.....	7
Section 1: Overview	4	Visual Indicators	9
Electrical Ratings & Specifications	4	Appendix A: FAI Input Connection Methods	10
Power Supply Drawing	4	Appendix B: Enclosure CAD Drawing	11
Terminal Descriptions.....	5	Troubleshooting	12
Fuses	5	Glossary.....	13

WARNINGS AND NOTICES

WARNING: To reduce the risk of fire or electric shock, do not expose these products to rain or moisture.

WARNING: Installation and all servicing should be made by qualified service personnel and should conform to all local codes.

NOTICE: This equipment shall be installed in a manner which protects against unintentional operation by employees or other personnel working about the premises, damage from falling objects, building vibration or other causes.

NOTICE: This equipment is not intended for use within the patient care areas of a health care facility.

SYMBOL DEFINITIONS



WARNING: Read the instruction manual to avoid personal injury or property damage.



WARNING: Risk of electric shock. Service to be performed by a qualified service person.

INTRODUCTION

AlarmSaf Rack Mount DC Power Supplies supply regulated and filtered main, standby or auxiliary power to access control, CCTV, fire and security systems and components. Single and Dual Voltage systems are available with fuse protected or power limited outputs and/or fire alarm interface capability. Product features include:

- Illuminated master power switch with circuit breaker to control primary power.
- Computer style 3-wire grounded line cord for connection to primary power source.
- Screw-secured plug-in terminal strips for field wiring
- Removable face plate for ease of serviceability
- Enhanced surge and transient protection.

- Standard EIA 19", 2U rack mount chassis.
- External LEDs to indicate output status
- Individual output protection using either automotive blade fuses or resettable PTCs.
- Compatible with AlarmSaf Rack Mount Battery Enclosure (model #RMBE-1224-4B7) for single or dual voltage battery back-up

When installed in accordance with all standards listed on page 3 of this document, the RMDC series provides DC power for DC CCTV cameras, access control equipment, IT equipment and related accessories, or other DC powered devices.

RMDC MODEL DESCRIPTIONS

SINGLE VOLTAGE SYSTEMS

All single voltage systems use one power supply, user selectable for 12VDC, 8A or 24VDC, 4A.

- **RMDC-PS5-M:** Single voltage, single output system.
- **RMDC-PS5-M-UL-FAI:** Single voltage system with FAI accessory module provides a single uncontrolled output and a single FAI controlled output.
- **RMDC-1248(F):** Single voltage system with eight (8) power distributed outputs. Available with either fuse protected or power limited outputs.
- **RMDC-PS5-M-8(F)-UL-FAI:** Single voltage system with FAI accessory module and eight (8) power distributed outputs, individually selectable for FAI control. Available with either fuse protected or power limited outputs.

DUAL VOLTAGE SYSTEMS

All dual voltage systems use two power supplies; each is user selectable for 12VDC, 8A or 24VDC, 4A.

- **RMDC-PS5-MD:** Provides two (2) independent power supply outputs, each 12 or 24VDC, user selectable.
- **RMDC-PS5-MD-UL-FAI:** Dual voltage system with 2 FAI accessory modules provides dual uncontrolled outputs and dual FAI controlled outputs. Each uncontrolled/FAI output pair is user selectable for 12 or 24VDC.
- **RMDC-12416(F):** Dual voltage system with sixteen (16) power distributed outputs, individually selectable for operation from either power supply. Available with either fuse protected or power limited outputs.
- **RMDC-PS5-MD-16(F)-UL-FAI:** Dual Voltage system with two (2) FAI accessory modules and sixteen (16) power distributed outputs. Each bank of eight (8) outputs is user selectable for 12 or 24VDC, while each output is individually selectable for FAI control. Available with either fuse protected or power limited outputs.

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/ANSI 294 Access Control System Units
UL/ANSI 1076 Proprietary Burglar Alarm Units and Systems
UL/ANSI 1481 Power Supplies for Fire Protective Signaling System
UL/ANSI 2044 Commercial Closed-Circuit Television Equipment

OTHER STANDARDS

NY MEA Listed
California State Fire Marshal (CSFM) Listed
Applicable Local and State Building Codes
Requirements of the Local Authority Having Jurisdiction (LAHJ)

CANADIAN STANDARDS

ULC S318 Standard for Power Supplies for Burglar Alarm Systems
ULC S527 Standard for Control Units for Fire Alarm Systems
CAN/CSA-C22.2 No. 107.1-01 General Use Power Supplies

OTHER APPLICABLE ALARMSAF DOCUMENTS

52-382 FAIM Installation Manual
52-342 RMBE Installation Manual

FCC COMPLIANCE

This equipment has been tested and found to comply with the limits for Class A digital device pursuant to Part 15 of FCC rules. These limits are designed to provide reasonable protection against harmful interference when this equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case, the user is required to correct the interference at his/her own expense.

LISTING COMPLIANCE NOTE

This product carries an ETL Listing from Intertek for one or more of the standards listed above. Intertek is recognized by the Occupational Safety and Health Administration (OSHA) as a Nationally Recognized Testing Laboratory (NRTL) and accredited by the Standards Council of Canada as a Testing Organization and Certifying Body. The ETL Listed Mark is recognized, acknowledge and accepted by local inspectors and Authorities Having Jurisdiction (AHJs) throughout North America as an accepted alternative to UL and as proof of product compliance. For more information about the NRTL program, we encourage you to visit the OSHA Web site at www.osha.gov.

WARRANTY

Most products manufactured by AlarmSaf have a limited lifetime warranty except on certain products where the warranty is specifically designated as two (2) years. The lifetime warranty will be in effect for the lifetime of the product. Any product that has been discontinued by AlarmSaf or has been improperly installed, modified, or subjected to unwarranted abuse based on the observations of the AlarmSaf

Technical Repair Department will not be considered under warranty. AlarmSaf will not be obligated to repair or replace any product not under warranty. A Return Material Authorization (RMA) number issued by AlarmSaf Customer Support is required for all products being returned. Merchandise received without an RMA number will be refused.

SECTION I: ELECTRICAL RATINGS & SPECIFICATIONS

Electrical Ratings

	SINGLE SUPPLY		DUAL SUPPLY	
	PTC Output	Fuse Output	PTC Output	Fuse Output
Input Voltage	120VAC 50-60Hz			
Input Power	170 Watts Maximum		340 Watts Maximum	
Max Total Output	8A @ 12V, 4A @ 24V		8A @ 12V, 4A @ 24V - Per Supply	
Max Individual Output	1.6A/Output	3A/Output	1.6A/Output	3A/Output
Efficiency	~85%			
Ripple	<0.25% Typical, <0.50% During Battery Charge			
Input Frequency	50-60Hz			
Min Bat Charge Capacity	7Ah Per PS5-M Power Supply			
Max Bat Charge Capacity	80Ah (48 Hour Charge) Per PS5-M Power Supply			
Max Bat Charge Current	2A Per PS5-M Power Supply			
Max Bat Standby Current	80mA Plus Total Output Load Per PS5-M Power Supply			

Temperature Specifications

Ambient temperature range: 0°C to 49°C (32°F to 120°F)

Ambient humidity: 93% @ 32°C (90°F) maximum

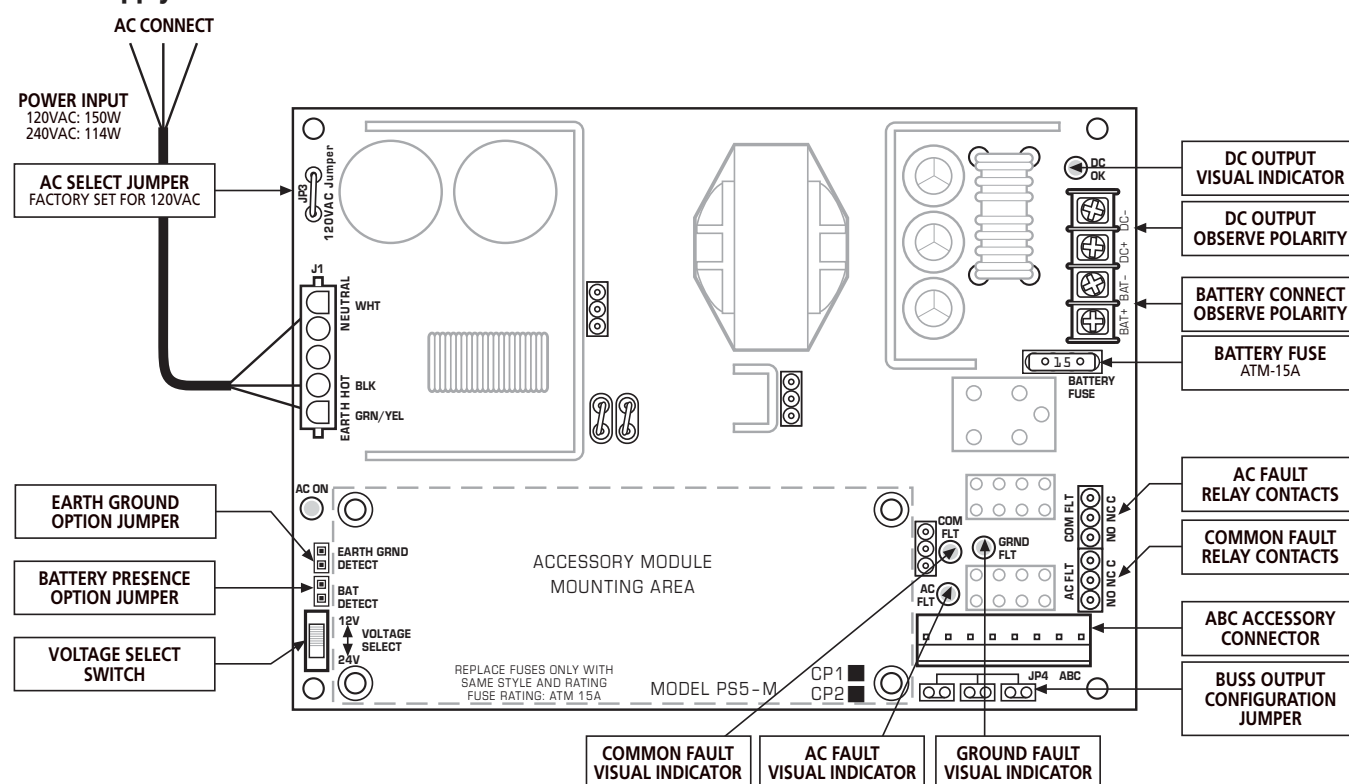
BTU output: 85 BTU/hr max (single) 160BTU/hr max (dual)

Mechanical Specifications

Weight: Approx. 14 lbs. (model dependent)

Overall size: 19.00"W x 10.75"D x 3.50"H (depth includes terminal strips on back panel)

Power Supply Module



1.2 TERMINAL DESCRIPTIONS

The terminal strips are located on the back panel of the unit. All terminal strips are removable with locking screws and accept wire sizes from 14-26AWG. Wire should be sized appropriately for voltage drop and current carrying capability. All terminals are labeled for polarity where appropriate.

1.2.1 AC Input

- 120VAC input: 3-wire line cord set included with unit.

1.2.2 DC Distributed Outputs (OUT 1 - OUT 8/16)

- Each distributed output is individually over-current protected (3A for fuse protected units, 1.6A for PTC protected units). In dual-supply models, each output can be programmed for either supply by front panel jumpers.
- These distributed outputs are not present in models RMDC-PS5-M-UL, RMDC-PS5-M-UL-FAI, RMDC-PS5-MD-UL and RMDC-PS5-MD-UL-FAI

1.2.3 Battery Terminals (BAT +/-)

- Terminals are internally fused at 15A.
- Battery presence detection is available by setting internal jumpers.
- Each internal supply has one set of battery terminals.
- Minimum battery charging capacity: 7Ah.
- Maximum battery charging capacity: 80Ah within 48 hours.
- When no batteries are connected there is no voltage on the battery terminals. The battery charger does not enable until it senses a battery on the terminals.

Note: It is the responsibility of the installer to determine the minimum battery requirement for the specific application in which the supply is being used. Backup batteries should be serviced at regular intervals as determined by local and/or national codes.

AlarmSaf offers an RMBE Battery Enclosure for use with the RMDC series power supplies. It provides battery backup in a standard 19 inch 2RU rack mountable enclosure. The RMBE includes 4 12V-7Ah batteries and can be configured for single or dual output. Each output can be configured for either 12 or 24VDC by pluggable jumpers on its back panel. Each battery in the enclosure is protected from overcurrent, short circuit and incorrect configuration by a 9A PTC.

Model No. RMBE-1224-4B7

1.2.4 Bulk Output Terminals (SYSTEM DC +/-)

- Bulk output of internal supply. Full current capacity of supply is available on this single output terminal set.
- Each internal supply in the enclosure has one bulk output.

1.2.5 Fault Outputs (AC FAULT / COMMON FAULT)

- Form C contacts.
- Contacts rated 1A @ 24VDC, 0.5A @ 120VAC
- Fault relays employ "fail-safe" operation and are powered in a non-fault condition (connection between common and NO when no fault exists).
- Each internal supply has independent sets of fault contacts.

1.2.6 FAI Input / FAI DC (Optional)

The FAI function is optional and must be requested at time of order.

- The FAI DC +/- terminals are a bulk output controlled by the FAI input terminals. The full current of the supply is available at this output.
- The FAI input terminals are the control input for the FAI function. Terminal usage is as follows:
 - A** This terminal is the positive input terminal. It accepts a voltage from a minimum of 9VDC to a maximum of 30VDC supplies from either an internal or external source for activation of the FAI function.
 - B** This terminal serves one of two functions, depending on the internal jumper settings.
 - When FAI input is configured as a non-latching input, this terminal is the common input terminal. It accepts a dry contact or open collector connection switched to DC common.
 - When FAI input is configured as a latching input, this terminal is tied to the FAI input **L** terminal through a normally closed contact or manual switch. When the FAI input is activated, this terminal latches the input on. Opening the normally closed contact resets the FAI input.
 - V+** This terminal provides a current-limited DC voltage to be used with an external dry contact to activate the positive input.
 - L** This terminal provides a voltage output to be used with the **B** terminal and a remote manual switch for latching the FAI condition until manually reset.

NOTE: In certain applications, one of the RMDC DC- terminals must be used in conjunction with the FAI wiring to provide a common system negative connection.

- See Page 10, Appendix A for FAI connection examples.

1.3 FUSES

When replacing fuses in the RMDC, use only the equivalent type and rating. The RMDC utilizes commonly available Automotive Miniature fuses (type ATM). Units whose model numbers end in an "F" employ ATM-3 fuses on the PCB located behind the front panel of the RMDC. A spare fuse is provided on the bottom right corner of the PCB.

Each internal PS5-M contains two replaceable fuses: the Battery Fuse and the ABC Buss Fuse. Both fuses are rated at 15A (ATM-15). The AC input fuse is soldered-in and non-replaceable. If it is determined that this fuse has opened, the PS5-M board must be returned to AlarmSaf for repair.

SECTION 2: INSTALLATION

2.1 MOUNTING

2.1.1 Temperature and Humidity

Mount the unit in locations that meet the following temperature and humidity requirements. Do not expose to conditions outside of these ranges.

Temperature	0°C to 49°C (32° to 120°F)
Humidity	32°C (90°F) @ 93%

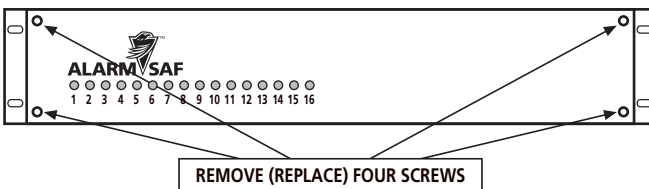
2.1.2 Mounting in the Rack

Mount the unit in a standard 19" equipment rack using the appropriate hardware for the rack.

- Ensure all jumpers, switches, etc. are set properly before installing into the rack.
- Locate an open 2RU slot in the rack and remove the filler panel(s), if present.
- Slide the unit into the open slot from the front of the rack.
- Install the four mounting screws into the end brackets of the unit.

2.1.3 Removing the Faceplate

To remove the faceplate of the RMDC unit, remove the four screws at the corners of the faceplate. Pull out gently on the faceplate to disengage the LEDs from the holes in the faceplate.



2.1.4 Replacing the Faceplate

Gently slide the faceplate over the output LEDs and secure with the four screws removed from the faceplate.

2.2 WIRING

2.2.1 Wire Routing

All wiring must be installed in accordance with NFPA70 (NEC760) and all local code requirements.

Power limited wiring requires that power limited and non-power limited wiring remain physically separated. All power limited circuits must remain at least one-quarter inch (1/4") away from any non-power limited wiring.

2.2.2 AC Power Connection

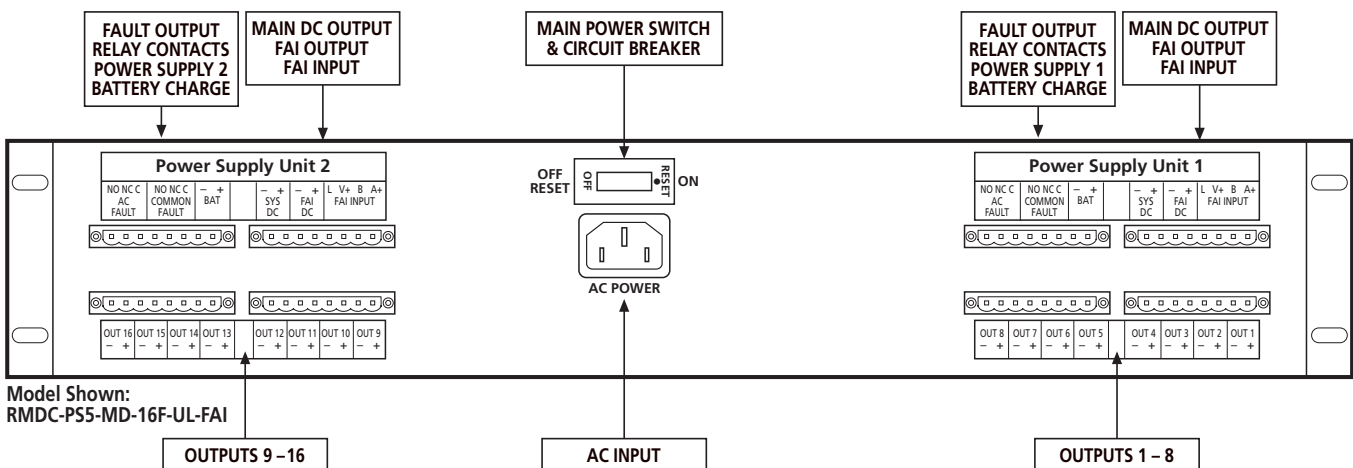
Before using the power outputs, the unit must be connected to the main electrical power. Use the supplied cord set to connect the unit to a live AC outlet and verify that the AC indicator light built into the main ON/OFF switch on the rear panel is illuminated when the unit is turned on. The unit may have a delayed power up of approximately five seconds due to internal diagnostic processes when there is no battery set connected.

Shut off the electrical power to the location of the unit and then complete the general installation.

CAUTION Before powering the system, the jumpers on the internal board(s) must be set for proper operation. Do not change jumper or switch settings while the unit is powered or damage to the system can occur.

2.2.3 Field Wiring

Locate the terminal wiring blocks on the back panel of the unit and remove the terminal block from the header. (There are two locking screws, one on either end of the terminal block.) Connect the wiring for the equipment to be powered, battery set, fault outputs, etc. to the terminal block. The back panel of the enclosure is labeled with the terminal and polarity indications (see also section 1.2). Replace the terminal block on the header and tighten the locking screws.



SECTION 3: OPERATION

3.1 JUMPER AND SWITCH CONFIGURATION

3.1.1 Internal Jumper and Switch Configuration

To access the internal boards, remove the top cover.

CAUTION Before powering the system, the jumpers on the internal board(s) must be set for proper operation. Do not change jumper or switch settings while the unit is powered or damage to the system can occur.

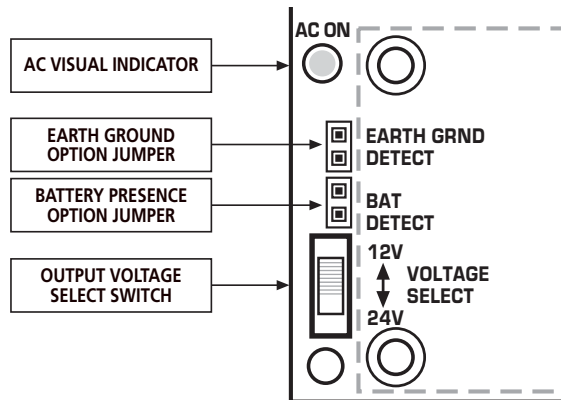
PS5-M Jumper and Switch Settings

Each unit contains either one or two PS5-M boards. The voltage switch and jumpers on each board need to be configured for desired operation.

Output Voltage Setting

Before installing an RMDC system, the output voltage setting switch of the PS5-M board(s) must be set. Set the switch toward the green AC visual indicator for 12V, away from the green AC visual indicator for 24V. (The PC board is labeled with the voltage settings.) If the RMDC contains two PS5-M boards, they may be set for two different voltages or the same voltage.

CAUTION Do not change the switch setting while the unit is powered or damage to the system can occur.



3.1.1.3 Jumper Settings

For proper operation, the jumpers on the PS5-M should be set appropriately.

CAUTION Do not change the jumper settings while the unit is powered or damage to the system can occur.

JUMPER	DESCRIPTION	SETTINGS	DEFAULT
JP10 (Bat Detect)	Bat Presence Fault Detection	Jumper On - Enable Jumper Off - Disable	None
JP9 (Earth Ground Detect)	Earth Ground Fault Detection	Jumper On - Enable Jumper Off - Disable	Enable
JP5, JP6, JP7, (Buss 1 / Buss 2)	ABC Buss Select	N/A	Buss 1 (JP5 & 7)

JP10 Battery Presence Option

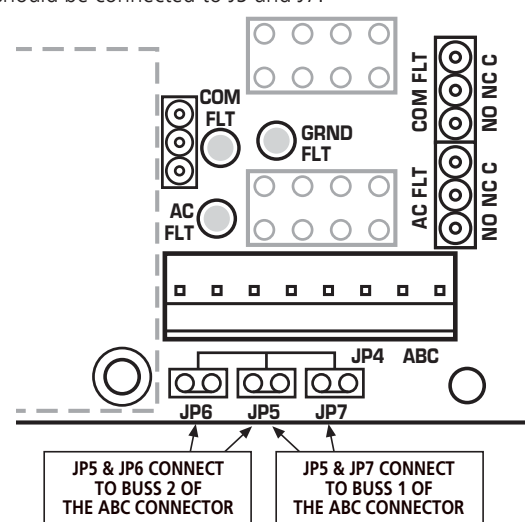
This jumper allows disabling of the battery presence detection for applications where no backup battery set is used. Jumper is provided without a default setting. Installer must select setting.

JP9 Earth Ground Option

This jumper allows disabling of the earth ground fault detection for applications that either do not require earth ground fault detection or where earth ground fault detection is provided by the panel.

JP5, JP6, JP7 (ABC Connector Buss)

This fuse determines how the output of the PS5-M connects to the ABC Connector. For all RMDC units the ABC Buss Select Fuse should be connected to J5 and J7.



3.1.2 FAI Module Jumper Settings (Optional)

If the RMDC has FAI capability, the jumpers on the Fire Alarm Interface Module (FAIM) need to be set for proper operation.

JUMPER	DESCRIPTION	SETTINGS	DEFAULT
J1	FAI Latch	Left - Latching Right - Non Latching	Right
J2	ABC Buss Connect	Up	Up
J3	FAI Buss Connect	Down	Down

J1 FAI Latch

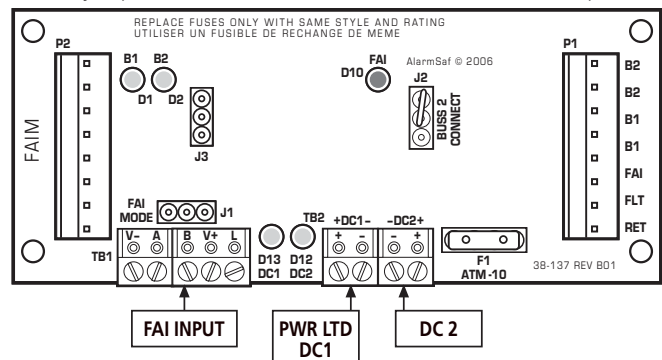
For applications that require the FAI activation to latch, see Appendix A for wiring options

J2 ABC Buss Connect

This jumper **MUST** be set in the up position

J3 FAI Buss Connect

This jumper has no effect and should be set in the down position.



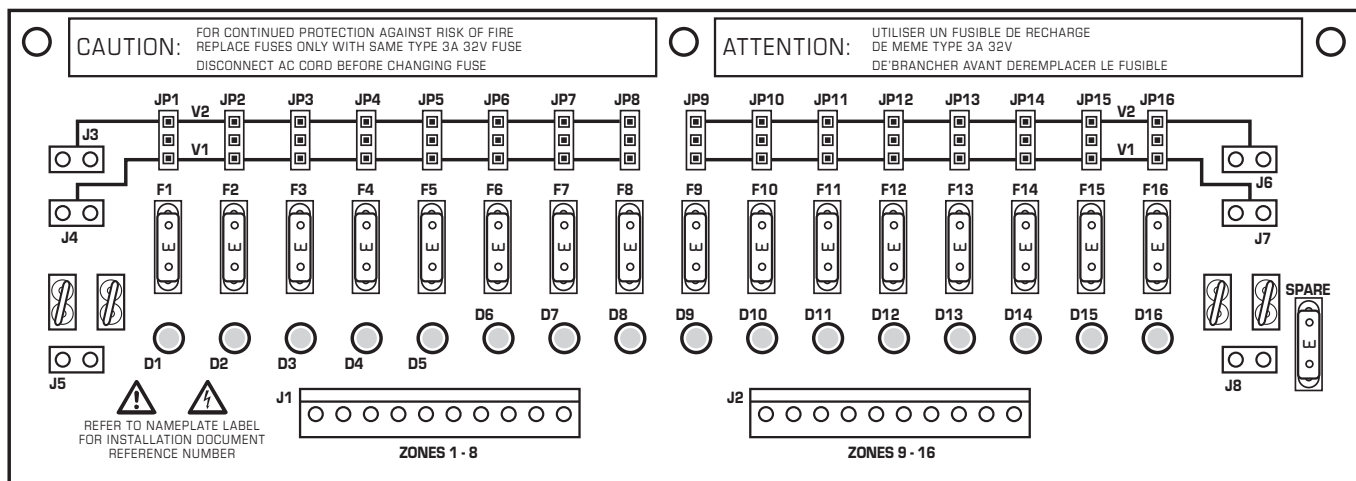
3.1.3 Front Panel Jumpers (Optional)

Not all RMDC models have front panel jumpers. When present, these jumpers correspond to individual outputs and allow the selection of certain settings or functions depending on the model. RMDC units with front panel jumpers are listed below with settings. Models not listed do not have front panel jumpers

⚠ CAUTION ⚠ Front panel jumpers must be set before initial power-up. Do not change jumper settings while the unit is powered or damage to the system can occur.

ORDER#	MODEL#	SETTING OPTIONS	DEFAULT
RMDC Units Without FAI Capability			
03015	RMDC-1248F	V1 (Down) Serves no function V2 (Up) Selects voltage from power supply unit 1*	Zones 1-8: V2 (Up)
03017	RMDC-1248	V1 (Down) Serves no function V2 (Up) Selects voltage from power supply unit 1*	Zones 1-8: V2 (Up)
03014	RMDC-12416F	V1 (Down) Selects voltage from power supply unit 1* V2 (Up) Selects voltage from power supply unit 2*	Zones 1-8: V2 (Up) Zones 9-16: V1 (Down)
03016	RMDC-12416	V1 (Down) Selects voltage from power supply unit 1* V2 (Up) Selects voltage from power supply unit 2*	Zones 1-8: V2 (Up) Zones 9-16: V1 (Down)
RMDC Units With FAI Capability			
03021	RMDC-PS5-M-8-UL-FAI	V1 (Down) Constant voltage output V2 (Up) FAI Controlled Output	Zones 1-8: V2 (Up)
03022	RMDC-PS5-M-8F-UL-FAI	V1 (Down) Constant voltage output V2 (Up) FAI Controlled Output	Zones 1-8: V2 (Up)
03024	RMDC-PS5-MD-16-UL-FAI	V1 (Down) Constant voltage output V2 (Up) FAI Controlled Output	Zones 1-16: V2 (Up)
03025	RMDC-PS5-MD-16F-UL-FAI	V1 (Down) Constant voltage output V2 (Up) FAI Controlled Output	Zones 1-16: V2 (Up)

* As identified on labels on the back of the unit.



3.2 VISUAL INDICATORS

3.2.1 External Visual Indicators

Illuminated Circuit Breaker/Power Switch: the power switch illuminates red when it is in the ON position and power is present.

Front Panel Indicators: all units except RMDC-PS5-M-UL, RMDC-PS5-M-UL-FAI, RMDC-PS5-MD-UL and RMDC-PS5-MD-UL-FAI have front panel LED indicators. Each output has one LED which illuminates when voltage is available at that output terminal.

3.2.2 Internal Visual Indicators

Indicators on the PS5-M board

LED	DESCRIPTION	COLOR	CONDITIONS
AC ON (D19)	AC Power	Green	Lights when AC voltage is present on the input
DC OUT (D15)	DC Output	Green	Lights when DC voltage is present on the output
AC FLT (D22)	AC Fault	Yellow	Lights when AC voltage is low or missing
COM FLT (D16)	Common Fault	Yellow	See COM FLT below
GND FLT (D23)	Earth Ground Fault	Yellow	Lights under an earth ground fault condition

AC ON: for safety reasons this LED illuminates any time there is AC voltage present at the AC input, regardless of the AC fault status, battery charge state or power supply condition.

CAUTION Always check for AC presence with a volt meter before servicing.

DC OUT: illuminates when DC voltage is available at the DC+/DC- terminals.

AC FLT: illuminates when AC voltage falls below approximately 85% of the nominal input setting.

COM FLT: illuminates on any of the following conditions:

- High or low battery voltage
- High or low output voltage
- Missing or damaged battery
- Earth ground fault
- Fault received on ABC Connector

GND FLT: illuminates when there is a ground fault between either positive or negative rail of the power supply output.

3.2.3 Indicators On the (Optional) FAIM Board

LED	DESCRIPTION	COLOR	CONDITIONS
B1	Buss 1 Voltage	Green	Lights when voltage is present on Buss 1 of the ABC buss
B2	Buss 2 Voltage	Green	Lights when voltage is present on Buss 2 of the ABC buss
DC1	DC1 Voltage	Green	Lights when voltage is available on the DC1 output terminals
DC2	DC2 Voltage	Green	Lights when voltage is available on the DC2 output terminals
FAI	FAI Input	Red	Lights when a valid FAI input is received

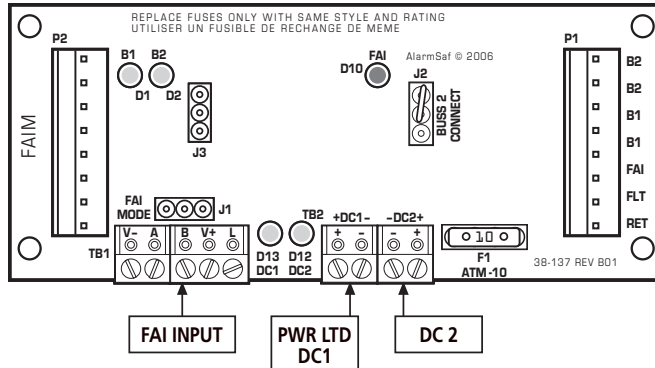
B1: Illuminates when AC voltage is present on Buss 1 of the ABC Connector. In the RMDC series this voltage is sourced from the PS5-M board

B2: illuminates when AC voltage is present on Buss 2 of the ABC Connector. In the RMDC series this voltage is sourced from the PS5-M board

DC1: illuminates when voltage is available at the DC1 terminals of the FAI module.

DC2: illuminates when voltage is available at the DC2 terminals of the FAI module.

FAI: illuminates when a valid FAI input signal has been received on the FAI input terminals of the FAI module. When this LED is lit, the output power of the FAI module is disabled. DC1 and DC2 LEDs will not be illuminated when the FAI input is received.

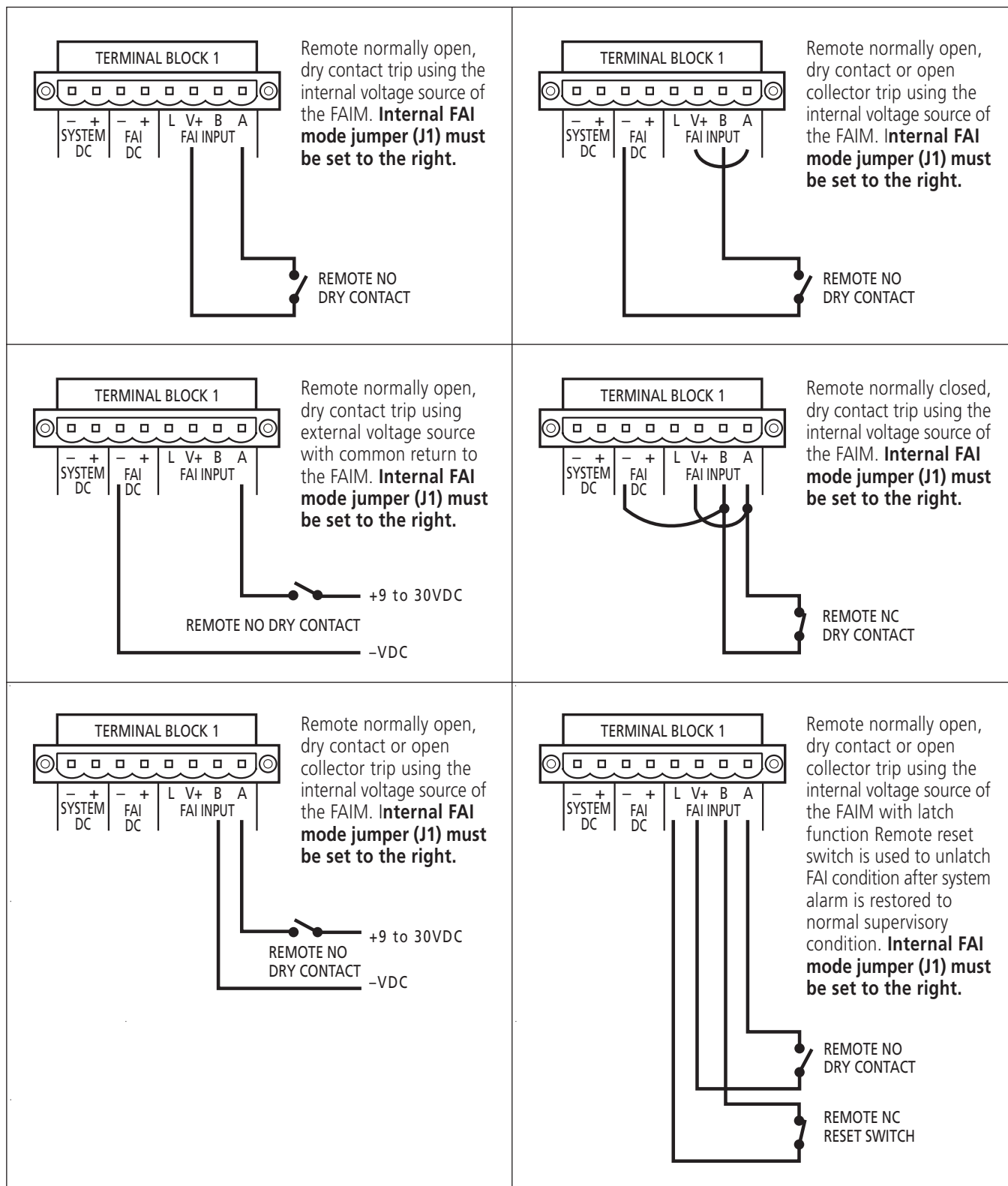


APPENDIX A: FAI INPUT CONNECTION METHODS

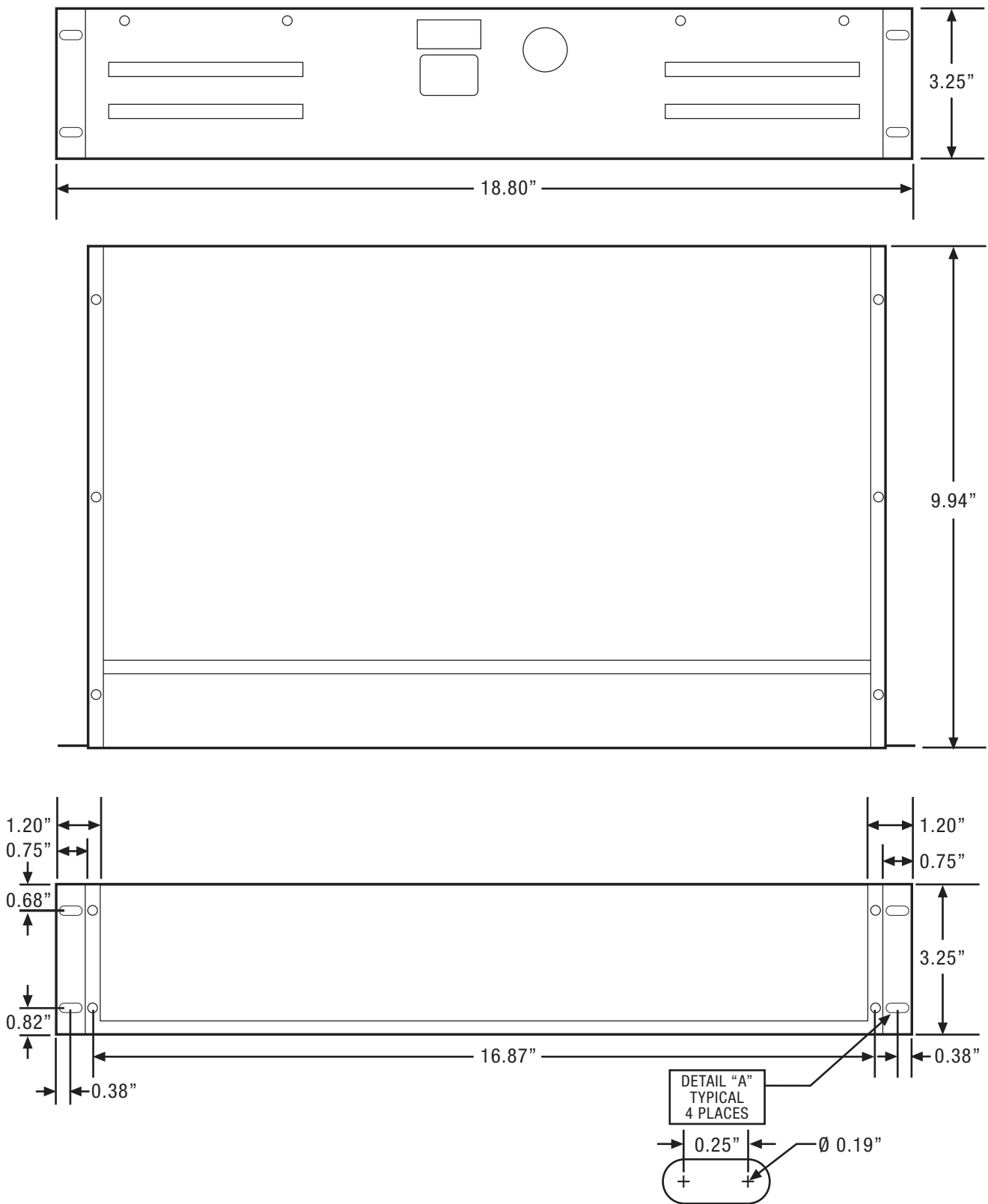
The RMDC series can be ordered with an optional FAI input to disable the power to selected outputs upon activation of the FAI input. The FAI input may be wired to latch if required by local codes and accepts a 9–30V DC voltage, NO/NC contact or open collector for activation.

collector for activation.

These diagrams show various wiring methods. Be sure all internal jumpers are set properly.



APPENDIX C: ENCLOSURE CAD DRAWING



TROUBLESHOOTING

⚠ CAUTION ⚠ Installation and service should be performed only by a qualified service person and conform to all local codes

CONDITION	POSSIBLE CAUSE	SOLUTION
Power supply output voltage(s) incorrect or not present	Power switch off or AC trouble	Verify presence of at least 102VAC on the input, the AC switch is "ON" and the input circuit breaker is not tripped.
	Tripped input circuit breaker	The power switch also serves as a circuit breaker. Switch to "OFF/RESET" for 30 seconds, verify wiring integrity, then switch back to "ON".
	Excessive loading	Verify loading less than the maximum current for each supply in the RMDC.
	Bad or incorrect battery set	Verify that a good battery set of the proper voltage is connected to the RMDC.
	The internal PS5-M has shut down	If the PS5-M experiences an overtemperature, overload or output voltage outside +/-10% regulation fault ten times within 52 seconds, the supply will shut down and transfer to battery until AC power is cycled.
	Internal problem	Contact AlarmSaf.
Voltage not present at one or more of the power distribution outputs	Blown output fuse or PTC	Verify output wiring integrity and loading, then replace fuse behind front panel. If the unit is PTC protected, remove the associated output jumper and verify the wiring. Then wait 30 seconds and replace the jumper.
	Excessive loading	Verify loading less than the maximum current for each supply in the RMDC.
	Internal problem	Contact AlarmSaf.
The common fault relay indicates fault condition	Blown battery fuse on the internal PS5-M	Verify fuse is intact. Check wiring integrity before replacing fuse.
	Excessive loading	Verify individual and total output is less than rated current.
	Improper ABC cable connection to the internal PS5-M	Verify proper connection of the ABC cable(s).
	Bad, incorrect or missing battery set	Verify that a good battery set of the proper voltage is connected to the RMDC.
	Earth ground fault	An impedance exists in the system between earth ground and the output of the supply.
	Internal problem	Contact AlarmSaf.
The AC fault relay indicates fault condition	Low or missing AC	Verify presence of at least 102VAC on the input, the AC switch is "ON" and the input circuit breaker is not tripped.
	Blown AC fuse on the internal PS5-M	This fuse is not replaceable. Contact AlarmSaf.
No battery presence detection	Battery not connected	Verify connection of an appropriate battery set and the integrity of the wiring between the battery set and the RMDC.
	Battery detect jumper (JP10) set incorrectly on the internal PS5-M	Verify correct setting of the battery detect jumper.
	Internal problem	Contact AlarmSaf.
Voltage not present at	Battery set not connected	The charger does not enable until it senses a battery on the

GLOSSARY

ABC	See "Accessory Board Connector."
Accessory Board Connector	Connector on some AlarmSaf power supplies and accessory boards, allowing plug-in expansion of the system.
Accessory Board	AlarmSaf product used with AlarmSaf power supplies having an ABC connector. These boards allow plug-in expansion of system functionality.
AC-DC Converter	DC power supply whose voltage input is either direct from the AC line or through a step-down AC transformer.
Buss 1 (B1)	Primary DC voltage in a system. Typically the higher voltage in dual voltage systems.
Buss 2 (B2)	Secondary DC voltage in a dual voltage system.
Class 2 Power Limited	See "Power Limited".
Controlled Distribution	Voltage distribution providing on/off control for the outputs. Control can be from FAI, an access control panel, card reader, or other device.
DC-DC Converter	DC power supply whose voltage input comes from another DC source. DC-DC converters allow multi-voltage system backup with a single battery set.
FAI	See "Fire Alarm Interface."
Fire Alarm Interface	Input on some AlarmSaf products allowing control of system output(s). Typically used for dropping power to maglocks on egress doors during a fire alarm condition, can also control other functions, such as resetting smoke detectors.
Negative Trip	Input activated by the switching of a DC Common to its terminals. The DC Common can be from an external (common grounded) source, or can be provided as one of the input terminals, depending on the product. This input type is used with a dry contact or open collector input.
Positive Trip	Input activated by the switching of a positive DC voltage to its terminals. The positive voltage can be from an external (common grounded) source, or can be provided as one of the input terminals, depending on the product. This input type is used with a dry contact or voltage input.
Power Limited	Voltage output or wiring which conforms to NEC Article 725.
PTC	Resettable overcurrent protection device.
Rack Mount	Product that fits in a standard 19-inch equipment rack.
Simple Distribution	Voltage distribution without control functions for the distributed outputs. Power is always available to the outputs.
Voltage Distribution	Splitting a bulk power supply output into multiple, current limited outputs to prevent a single circuit failure from taking down an entire system. Multiple terminal outputs simplify wiring by providing a pair of terminals for each circuit, rather than wiring several circuits to a single pair of terminals.