ADAMS RITE MANUFACTURING CO.
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OWNER'S MANUAL AND INSTALLATION INSTRUCTIONS

ADAMS RITE POWER SUPPLY

PS-SE

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THEORY OF OPERATION

The Adams Rite Power Supply provides power and control for up to two exit devices. Each exit device is controlled by a timer that is initiated by a switch closure. The timer is user configured and holds the exit device(s) in the unlatched position for 2-60 seconds. At the end of the selected time the exit device(s) will relatch. If the switch controlling the exit device is held closed longer than the selected time, the exit device remains unlatched until the controlling switch is released.

An optional mode is available allowing both retraction timers to activate in response to closure of either switch.

The Adams Rite Power Supply is listed as an Exit Device, Access Control System unit to UL305 and UL1012 requirements for power supplies and CAN / CSA - C22.2.

Exit devices under the system control remain latched during a complete power failure but always allow free mechanical egress.

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1. CONFIGURE THE ADAMS RITE POWER SUPPLY

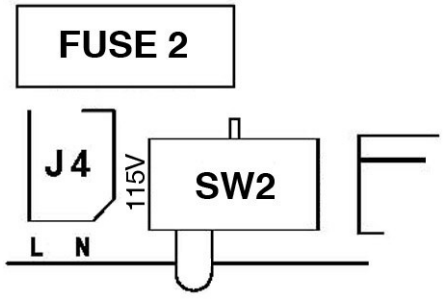
****CAUTION****

- **ALL CONNECTIONS MUST BE MADE PER THE FOLLOWING INSTRUCTIONS.**
- **SAFETY AND PROPER OPERATION RELY ON PROPER INSTALLATION.**
- **BYPASSING OR OMITTING CONNECTIONS MAY DAMAGE EXIT DEVICES, THE ADAMS RITE POWER SUPPLY, AND COULD RESULT IN UNSAFE CONDITIONS.**

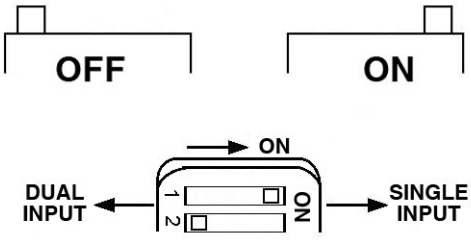
THIS IS NO PLACE FOR CREATIVE WIRING!

1.1 STEP 1 – PRIMARY VOLTAGE

- The Adams Rite PS-SE Power Supply is rated for 115VAC ONLY.
- SW2 is factory pre-set for 115 VAC operation.
- **MAKE SURE THIS SETTING IS CORRECT BEFORE APPLYING POWER!**



1.2 STEP 2—SET OPERATION MODE



Two operating modes are available. Set the mode with switch 1 on dip switch SW1.

Single Input – Sequential Operation (Factory Setting)
Application: Control one opening
Operation: Either input retracts Exit Device #1 immediately followed by Exit Device #2.

Dual input – Independent Operation
Application: Control two separate openings
Operation: Input IN1 retracts Exit Device #1. Input IN2 retracts Exit Device #2.

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1.3 STEP 3—SET HOLD OPEN TIMES

The Adams Rite Power Supply has two hold open timers. Set the hold open time for Exit Device #1 with switches 3, 4, and 5 on dip switch SW1. Set the hold open time for Exit Device #2 with switches 6, 7, and 8 on dip switch SW1.

The following charts show settings for a given hold time:

Solenoid Hold Time Settings for Exit Device #1

	2 SEC	5 SEC	10 SEC	15 SEC	20 SEC	30 SEC	45 SEC	60 SEC
Switch 3	OFF	ON	OFF	ON	OFF	ON	OFF	ON
Switch 4	OFF	OFF	ON	ON	OFF	OFF	ON	ON
Switch 5	OFF	OFF	OFF	OFF	ON	ON	ON	ON

Solenoid Hold Time Settings for Exit Device #2

	2 SEC	5 SEC	10 SEC	15 SEC	20 SEC	30 SEC	45 SEC	60 SEC
Switch 6	OFF	ON	OFF	ON	OFF	ON	OFF	ON
Switch 7	OFF	OFF	ON	ON	OFF	OFF	ON	ON
Switch 8	OFF	OFF	OFF	OFF	ON	ON	ON	ON

1.4 STEP 4 – CONNECT FIRE ALARM

****CAUTION****

USE OF THE ADAMS RITE POWER SUPPLY WITH FIRE DOORS REQUIRES THE SYSTEM TO BE UNDER THE CONTROL OF AN AUTOMATIC FIRE CONTROL ALARM SYSTEM

The Adams Rite Power Supply is factory set to be used without a fire alarm interface. To use the Adams Rite Power Supply without fire alarm control, leave the factory installed jumper in place between positions 9 and 10 of the J3 terminal block.

To use the Adams Rite Power Supply with a fire alarm control connect as follows:

- Remove the jumper wire factory installed between positions 9 and 10 (Fire) of the J3 terminal block.
- Connect the fire alarm normally closed relay contacts to positions 9 and 10 (Fire) of the J3 terminal block.
- Closed relay contacts indicate NO ALARM CONDITION.
- When a fire alarm occurs, the controlled exit devices will immediately latch secure. Exit Devices remain latched during a Fire Alarm but always allows free mechanical egress.
- Maximum current through the fire alarm relay contacts is 120mA at 24VDC.

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1.5 STEP 5 – WIRE INPUT CONTROL SWITCHES

- Wire the normally open activation switch (dry contacts!) for Exit Device #1 to the IN1 terminals on J3 (J3-3 and J3-4).
- Wire the normally open activation switch for Exit Device #2 to the IN2 terminals on J3 (J3-1 and J3-2). Exit device is rated for continuous duty.

1.6 STEP 6 – WIRE EXIT DEVICES

The Adams Rite Power Supply is designed to power one or two Adams Rite SE exit devices. Use the information below to determine the correct wire gauge.

Do not exceed the maximum length listed with each wire gauge.

MAXIMUM CABLE LENGTH	WIRE GAUGE
0-300 FEET	18 AWG
300-600 FEET	16 AWG
600-900 FEET	14 AWG

1.7 STEP 7 – MOUNT THE ADAMS RITE POWER SUPPLY

****CAUTION****

THE ADAMS RITE POWER SUPPLY IS INTENDED FOR INDOOR USE ONLY.

Install the Power Supply close to the door that will be operated. Securely fasten the Power Supply to the wall using the mounting holes located in the back of the metal enclosure. Mounting holes are ¼ inch in diameter. Box dimensions are 10” wide x 10” long x 4” high.

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1.8 STEP 8 – INSTALLING THE BATTERY BACKUP SYSTEM (BBK-SE)

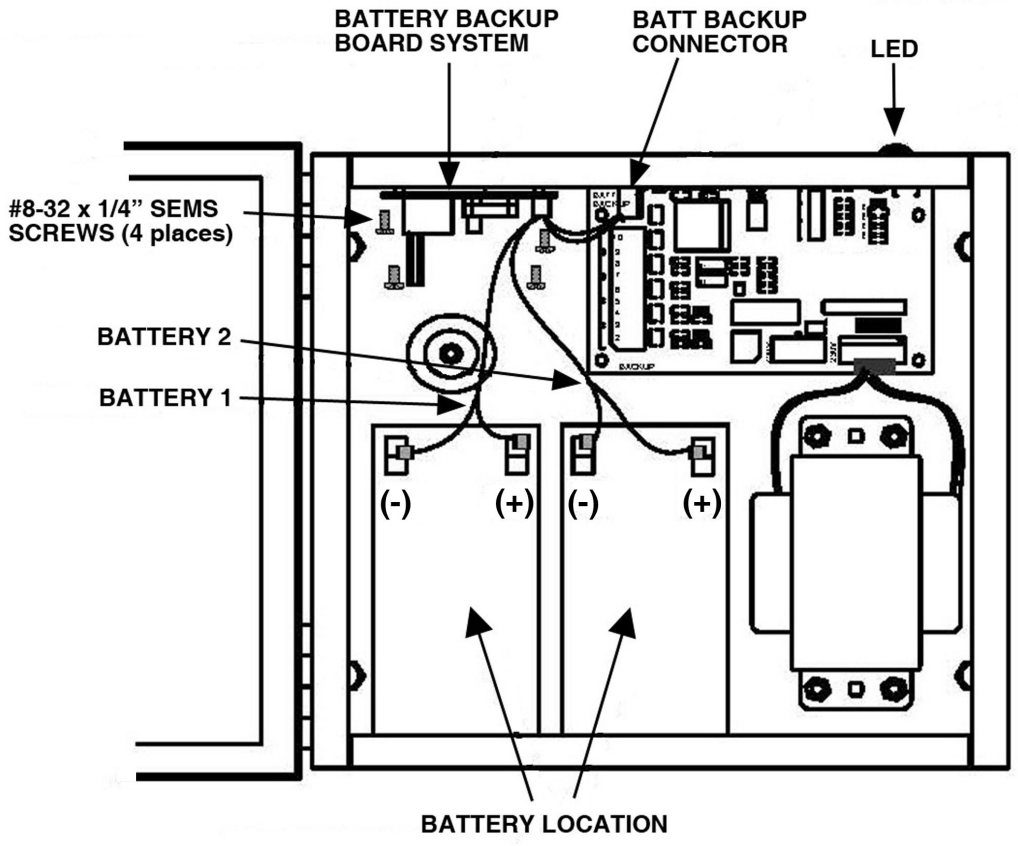
To install the Battery Backup in the Power Supply Final Assembly, you will need to order the BBK-SE Battery Backup System Kit and two 12V, 7AH batteries such as EverOn EVA12-7.5F batteries or equivalent.

An orange jumper block has been installed into the BATT BACKUP connector of the Power Supply circuit board. Remove this jumper by pulling the orange jumper free from the circuit board.

Install the Battery Backup System circuit board in the location shown below. Mounting points are available in the enclosure for the Battery Backup System circuit board.

The Adams Rite Battery Backup System circuit board has a short wire harness to connect to the Adams Rite Power Supply circuit board. Install the orange connector of this harness into the BATT BACKUP connector of the Adams Rite Power Supply circuit board.

Wire the battery terminals of one battery to the (-) and (+) terminals on the BATT1 connector of the Adams Rite Battery Backup System circuit board. Wire the battery terminals of the other battery to the (-) and (+) terminals on the BATT2 connector of the Battery Backup System circuit board.



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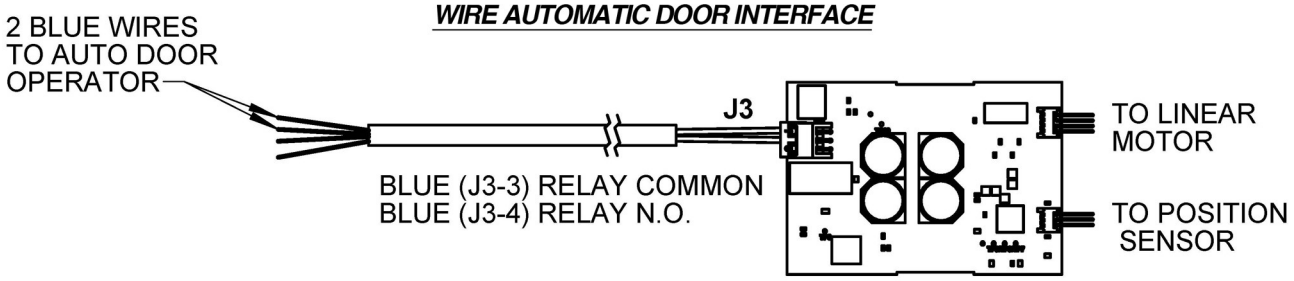
1.9 STEP 9 – WIRE AUTOMATIC DOOR INTERFACE (OPTIONAL)

This step is required to use the Adams Rite Power Supply with an automatic door opener. Automatic door opening systems need an indication of the latch state. The latch controller which is located in the panic device has relay contacts that let the automatic door opener know the latch state. (The relay contacts are closed when the latch is fully retracted). The relay contacts open when the latch is extended. Connect the automatic door opener as shown in the figure below.

WIRE AUTOMATIC DOOR INTERFACE



1.10 STEP 10 – WIRING PRIMARY POWER CONNECTION

J4 Connection

For the 115 VAC power input, terminal block J4 will accommodate up to 12AWG wire. Connect the mains "live wire" to J4 pin L. Connect the main's neutral wire to J4 pin N.

Ground Connection

An earth ground connection is provided for, within the chassis. Make the ground connection to the green ground screw located on the back of the chassis.

****CAUTION****

AN EARTH GROUND CONNECTION MUST BE MADE TO THE CHASSIS.

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2. DESCRIPTIONS, PART NUMBERS & MEASUREMENTS

2.1 DESCRIPTIONS AND PART NUMBERS

PS-SE Board	P/N# 29-0623-02	(Power Supply)
Battery Backup System Kit	P/N# BBK-SE	(Power Supply)
Exit Device SE Control Board	P/N# 31-0613	(Exit Device)

Fuses for PS-SE Board *(Can be purchased from Fuses Unlimited 1-800-255-1919)*

F1 - 2 Amps*	P/N# 0213002.MXP
F2 - 2 Amps*	P/N# 0213002.MXP
F3 - 4 Amps* (unserviceable)	P/N# 0230004.HXP

*All Slow Blow

2.2 PS-SE VALUE READINGS

OUT 1 & OUT 2 when IN1 / IN2 are open **1.6VDC**
OUT 1 & OUT 2 when IN1 / IN2 are closed **24VDC (unregulated)**

2.3 LED CONFIGURATION

Power to PS-SE Board* **Main Power** (Red LED) **Output Power** (Green LED) ON.
*If OUT1 and/or OUT2 (green LED) are on and IN1 and IN2 are OPEN, Replace Board.

2.4 SW1 DIP SWITCH SETTINGS

Single Input # 1 On (controls one/pair opening)
Operation: Either Input retracts Exit Device # 1 immediately followed by Exit Device # 2.
Either IN1 / IN2 (green LED) will activate OUT1 (green LED) then OUT2 (green LED)

Dual Input # 1 Off (controls two separate openings)
Operation: IN1 retracts Exit Device # 1, IN2 retracts Exit Device # 2
IN1 (green LED) will activate OUT1 (green LED). IN2 (green LED) will activate OUT2 (green LED)

Refer to 1.3. Step 3 for Set Hold Open Times settings (page 5).

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3. FREQUENTLY ASKED QUESTIONS

3.1. Q: ***THE EXIT DEVICE WON'T UNLOCK WHEN I USE MY ACCESS CONTROL SYSTEM?***

A: Check PS-SE board that MAIN POWER & OUTPUT POWER LEDs are on. Check SW2 switch (located next to TRANSFORMER connector J5). Setting should be on 115V.

Disable Access Control from 1-2 of IN2 and/or 3-4 of IN1 found on J3 and place a jumper wire in 3-4 of IN1. If exit devices activate, problem could be the access controller. Verify Jumper on J3 9-10 for Fire Alarm is secure and tight. Verify connector for BATT BACKUP is in place and secure. Also check for shorts in the wiring and if fuses are blown in the PS-SE.

Exit Level Check—Ensure that when power is turned on from the PS-SE that the LED's on the Exit PCBA are turning on when power is applied. The motor will retract the latch when power is applied. If no motion is apparent, double check to see if D2 is blinking. If LED is blinking 3 flashes, followed by a 1 second pause, the hall effect will need replacement.

3.2. Q: ***I HAVE BLOWN FUSES IN MY PS-SE***

A: If new install, check for shorts in the wiring, particularly around the exit device and hinge. Check for rods binding.

3.3. Q: ***THE EXIT DEVICE INTERMITTENTLY LOCKS AND UNLOCKS?***

A: When device is activated, the motor may retract and release the push bar. If this is observed, ensure that the line voltage to the PS-SE is 115VAC +/- 15VAC.

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TROUBLESHOOTING

4.1 ***NO POWER TO THE EXIT***

- Ensure that the power connector is connected properly, and that all wiring from the power supply is continuous (without opens) and that there are no shorts to ground.

4.2 ***NEITHER EXIT DEVICE RETRACTS AFTER THE CONTROL SWITCH IS ACTIVATED. VERIFY CONNECTIONS***

- Ensure exit device wires are properly terminated in the power supply.
- Verify continuity through power transfer devices such as wired hinges and door cords/ loops.

4.3 ***"MAIN POWER" RED LED IS NOT LIT***

- Verify line voltage is present.
- Check fuse F2 (in the black fuse holder). See Section 3.1 for replacement details.
- Ensure that the Primary Voltage Selection Switch SW2 is properly set. See installation Step 1 for additional information.

4.4 ***"OUTPUT POWER" LED ON POWER SUPPLY BOARD IS NOT LIT***

- Check fuse F1. See Section 3.1 for replacement details.
- If fuse F1 is blown, the wires that are run to the exit device are probably shorted together against the conduit, door frame, or electric hinge. Use a meter to check for shorts.
- There is no Fire Alarm connected between J3-9 and J3-10 or the factory installed jumper between J3-9 and J3-10 is removed.

4.5 ***IN1 AND IN2 LIGHTS DO NOT LIGHT IN RESPONSE TO INPUT SWITCHES***

- An open connection in the field wiring exists between the Adams Rite Power Supply and control switch used for activating the latch solenoids.
- A defective control switch exists on J3-1 and J3-2 or J3-3 and J3-4.

4.6 ***OUT1 AND OUT2 LIGHTS DO LIGHT IN RESPONSE TO INPUT SWITCHES***

- An open connection in the field wiring between the Adams Rite Power Supply and the exit device may exist. Do a continuity check to verify. If previous suggestions do not solve the problem, and one EXIT DEVICE works and one does not, prop the door open and connect a voltmeter across the BLACK and WHITE leads coming from the exit device. Next, activate the non-operational Exit Device. If the voltmeter measures approximately 24VDC at the time of activation, but the latch did not budge, then the SE PCBA is not activating the motor. The exit device must be replaced.

4.7. ***DEVICES RETRACT EVEN THOUGH THE CONTROL SWITCH HAD NOT BEEN ACTIVATED.***

- A maintained control switch is being used and is in the closed position.
- Control switch is defective – Disconnect switch to verify.

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5. APPENDIX

5.1 APPROVED REPLACEMENT FUSES

5.1.1 The Adams Rite Power Supply has two user serviceable fuses: F1 and F2. These fuses are described below:

F1 ***2.0 A/250V 5X20MM***
I²C 92.705 SLOW-BLOW
Fuse F1 is in line with the transformer output (24VDC)

- Little Fuse P/N: 213002.MXP
- Adams Rite Mfg P/N: 29-0672

F2 ***2.0 A/250V 5X20MM***
I²C 92.705 SLOW-BLOW
Fuse F2 is in line with the transformer input (115 VAC)

- Little Fuse P/N: 213002.MXP
- Adams Rite Mfg P/N: 29-0672

5.1.2 BBK-SE Fuses. BBK-SE Battery backup charger fuse is the same as F1 (above).

5.1.3 Fuse Replacement must be the same rating. Fuse F3 is not user serviceable. If replacement is needed, return to the factory. This fuse will blow if fuse F1 is replaced with a fuse of higher value than recommended.

The average input current for the Adams Rite PS-SE Power Supply is:

- 115 VAC 0.70 Amp

****CAUTION****

INSTALLING A FUSE THAT EXCEEDS THE RATING OF THE ORIGINAL FUSE WILL BLOW F3—AN INTERNAL FUSE—AND VOID THE WARRANTY. THE ADAMS RITE POWER SUPPLY CAN NO LONGER BE USED AND MUST BE SENT BACK TO THE FACTORY FOR REPLACEMENT.

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5.2 CONNECTOR SIGNAL DESCRIPTIONS

5.2.1 Connector J1 – BATTERY BACKUP

PIN	*DESCRIPTION*
1	Power In - 24VDC returned from battery charging system
2	Power Out - 24VDC supplied to battery charging system
3	Ground

5.2.2 Connector J3 – FIELD WIRING

PIN	*DESCRIPTION*
1&2	INPUT #2: Normally open activation switch
3&4	INPUT #1: Normally open activation switch
5	EXIT DEVICE #2
6	EXIT DEVICE #2, +24VDC
7	EXIT DEVICE #1
8	EXIT DEVICE #1, +24VDC
9	FIRE RELAY
10	FIRE RELAY

5.2.3 Connector J4 – MAIN POWER

PIN	*DESCRIPTION*
L	The Main Power LIVE / HOT input. Usually black or any other color other than White or Green
N	The Main Power NEUTRAL / RETURN input. White Conductor

5.3 CALIBRATION PROCESS

- Fully depress pushbar.
- Apply 24 VDC to the device.
- Continue to hold the pushbar for 4 seconds, or until you hear the motor make an activation sound. Once you hear the sound, release the pushbar to its latch position.
- The push bar will automatically complete the calibration process.
- If the calibration process does not complete the cycle, repeat the first three steps.