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**INSTALLATION INSTRUCTIONS
 MODEL PSC-2420-B AND PSC-2420-R**

Use this product according to this instruction manual. Please keep this instruction manual for future reference.

DESCRIPTION:

The PSC-2420 is a special application 20 Amp, 24VDC Power Supply Battery Charger Unit. It is UL Listed under Standard 1481, Power Supplies for Fire Protective Equipment, and is used to power the Dual Circuit SAFEPATH. Refer to the Dual Circuit SAFEPATH Operation and Installation Manual for further information.

NOTE: All **CAUTIONS** and **WARNINGS** are identified by the symbol . All warnings are printed in bold capital letters.

WARNING: QUALIFIED PERSONNEL MUST TEST THE SAFEPATH PANEL AFTER THE POWER SUPPLY MODULE HAS BEEN INSTALLED AND BEFORE THE SAFEPATH PANEL IS PLACED IN SERVICE IN ACCORDANCE WITH THE INSTRUCTIONS IN THE SAFEPATH OPERATION AND INSTALLATION MANUAL. FAILURE TO TEST THE SAFEPATH PANEL OR CORRECT ANY TROUBLE CONDITION BEFORE THE SAFEPATH PANEL IS PLACED IN SERVICE COULD RESULT IN A MESSAGE NOT BEING PLAYED WHEN AND WHERE REQUIRED IN AN EMERGENCY SITUATION. THIS COULD RESULT IN PROPERTY DAMAGE AND SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.

SPECIFICATIONS:


Mechanical

Dimensions (H x W x D)	21 x 16 x 6 in.
Weight	40 lb.
Finish	Black or red
Enclosure Construction Type	0.050" steel
Mounting	Indoor surface mount
Wiring Entry	Top and bottom knockouts (3/4", 1")
Door Lock	Standard Wheelock key-lock
PC Boards	Power Supply Battery Charger Fuse Block

Environmental

Operating Temperature	0 to 49 °C (32 to 120 °F)
Storage Temperature	-20 to 70 °C (-4 to 158 °F)
Humidity, Non-condensing	85±5% @ 30±2 °C (86 ± 4 °F)

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Electrical (Power Supply)

<i>Input Parameters</i>	
Supply Voltage (Nominal)	120VAC
Supply Voltage Absolute Minimum	102VAC
Supply Voltage Absolute Maximum	132VAC
Input Frequency	60 ± 1Hz
Input Current at 120VAC, 20A	10AAC Max
Input Power at 120VAC, 20A	900W
Efficiency at 120VAC, 20A	87.6 ± 1.75%
Power Factor at 120VAC, 20A	.75 ± .015
<i>Output Parameters</i>	
Output Power at 50° C Natural Convection Cooling	500W
Output Voltage at 120VAC, No Load	24.2 ± VDC
Total Regulation, Over Temperature Range	1.5% Min
Load Regulation	.25% Min
Line Regulation	.10% Min
Ripple and Noise	2% Max Peak to Peak
Temperature Coefficient	-.01%/Degree C
Transient Response at 25 Ohm to 1.15 Ohm Load	2% for 10mS Max
 CAUTION: The maximum current of all output circuits must not exceed 20A.	

Electrical (Battery Charger)

<i>Input Parameters</i>	
Line Input Voltage, Nominal	120VAC
Line Input Voltage, Minimum	102VAC
Line Input Voltage, Maximum	132VAC
Line Input Frequency	60Hz ± 1Hz
Line Input Current at 120VAC	10AAC Max
Power Supply Input Voltage, Nominal	24VDC
Power Supply Input Voltage, Minimum	20.4VDC
Power Supply Input Voltage, Maximum	26.4VDC
Power Supply Input Current at 24VDC, Standby	40 ± 4mADC
Power Supply Input Current at 24VDC, Float Charge State	1A Max DC
Power Supply Input Current at 24VDC, Bulk Charge State	3.7 ± .56ADC

<i>Output Parameters</i>	
Battery Charge Enable Voltage	20 ± .5VDC
Battery Float State Voltage	27.34 ± .27VDC
Battery Float State Voltage, 0° C to 65° C	V(Float)=(28.83-.047T) ± 2.5%
Battery Overcharge Voltage	28.92 ± .29VDC
Battery Overcharge Termination Current	469 ± 188mADC
Battery Bulk Charge Rate at Vbat=26VDC	2.57 ± .39ADC
Battery Open Circuit Voltage	37.57 ± 1.88VDC
Battery Short Circuit Current	20 ± 2mADC
Battery Low Detect Voltage	20.03 ± .50VDC
Battery Open Detect Voltage	30.80 ± .77VDC
Battery Capacity	24 to 60 AH's
Battery Type	Sealed Lead Acid
Battery Charge Time, 24 AH's	19 Hrs Max
Battery Charge Time, 38 AH's	30 Hrs Max
Battery Charge Time, 48 AH's	38 Hrs Max
Battery Charge Time, 60 AH's	48 Hrs Max
Trouble Output Sink Current at .2V	120 ± 12mADC
Relay Delay, Turn On	25 to 100mS
Relay Delay, Turn Off	250 to 400mS
Relay Switching Time, Turn On	5 to 40mS
Relay Switching Time, Turn Off	5 to 40mS

INSTALLATION:

Location

This panel shall be mounted in a location within the environmental limits specified in the latest UL Standard 864 for indoor control panels. The panel shall not be located in a hazardous area.

⚠ CAUTION: In order to comply with the latest NFPA and UL requirements for interconnection of fire alarm control equipment, this panel must be located in the same room as, and within 20 feet of, listed compatible units with the wiring enclosed in conduit and properly connected to such control panel.

Procedure

1. See Figure 1 for mounting hole layout.
2. Drill mounting holes for appropriate screws and anchors to ensure secure mounting to the type of surface at the selected location.
3. Prevent dust and dirt contamination of the panel during installation. This contamination can interfere with the operation and reduce the life of the equipment.
4. Open the door. Mount the panel.

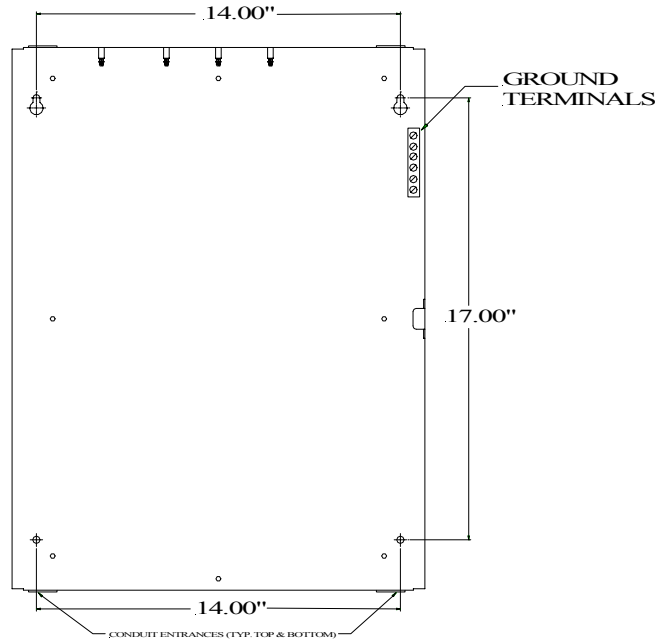


Figure 1.
Panel Mounting

WIRING GUIDELINES:

⚠ CAUTION: The National Electric Code limits the maximum number of conductors that can be installed in conduit and wiring boxes depending on the size of the conduit, the volume of the boxes, and the gauge of the wire used. Make sure that wiring used for installation complies with the latest NEC, NFPA, Local, State, County or Province requirements.

The National Electrical Code defines the types of circuits for protective signaling systems as either **power limited** circuits or **non-power limited** circuits. The SAFEPATH circuits have been designed as **non-power limited** circuits.

Field Wiring:

Before installation, the system specifier shall determine the proper wire gauge for all field wiring and ensure that all wiring complies with the latest NEC, NFPA, Local, State, County of Province Requirements.

The wiring terminals are designed to accept #12 to #22 American Wire Gauge (AWG) (one wire per terminal). When connecting field wiring to terminals, refer to Figure 2.

Check the integrity of all field wiring following directions in the "Field Wiring Checkout" section. Confirm that the specified cable is installed and there is continuity between required points (no "open circuits"), with no unwanted shorts to other conductors, chassis, or earth ground. **Perform the field wiring checkout before making any connections to the wiring terminals.**

Field Wiring Checkout:

Refer to NFPA for guidelines on testing signaling system wiring.

CAUTION: Do not connect input voltage to any equipment until the field wiring has been inspected and approved.

Verify that the field wiring is in full agreement with this manual and with the wiring layout prepared for this installation.

Ensure that no unwanted voltages are present on circuit conductors and ground. Test all ungrounded connectors for electrical isolation from ground. Test all wires that are not intentionally connected for electrical isolation from each other. Measure and record the resistance of each circuit pair (this can be done by temporarily short circuiting one end of the circuit).

WARNING: TO REDUCE THE RISK OF ELECTRICAL SHOCK, NEVER CONNECT OR DISCONNECT FIELD WIRING WHEN INPUT VOLTAGE IS CONNECTED TO THE PANEL

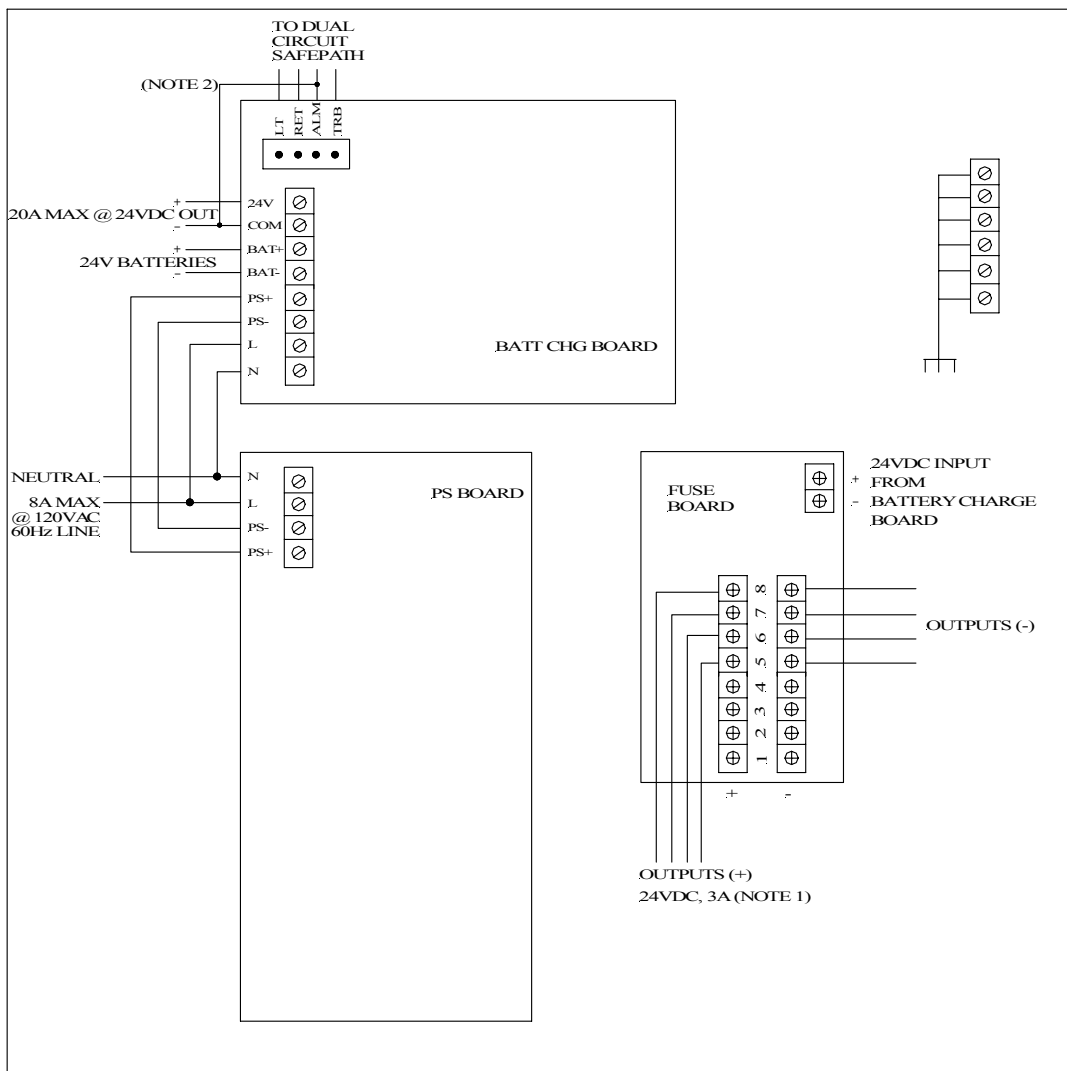


Figure 2.
Wiring Diagram

Notes:

1. The maximum current of all output circuits must not exceed 20A.
2. For installations other than Dual Circuit SAFEPATH, ALM signal from the header J1 must be wired to Power COM.

INSTALLATION AND CARE OF SEALED LEAD ACID BATTERIES

Sealed lead acid batteries are designed to operate in standby service for approximately five years. This is based upon a normal service condition where there is an ambient of 20 degrees C (68 degrees F) and batteries are completely discharged once every three months. LENGTH OF SERVICE LIFE WILL BE DIRECTLY EFFECTED BY THE NUMBER OF DISCHARGE CYCLES, DEPTH OF DISCHARGE, AND AMBIENT TEMPERATURE.

Use Guidelines:

1. Avoid installation and/or operation in close proximity to heat source. While the operating temperature range is 0 to 49 degrees C (32-120 degrees F), battery life will be maximized at an ambient of 20 degrees C (69 degrees F).
2. Batteries may generate ignitable gases. Because of this, batteries shall be installed in a well ventilated location, away from spark producing equipment.
3. Batteries shall not be installed in an atmosphere where organic solvents or adhesives may be present. The batteries shall not be cleaned with oils, thinners, or similar substances. The case and cover of the batteries are ABS plastic resin which may suffer damage from these chemicals.
4. Batteries shall not be installed in a heavy vibration or shock location.
5. Batteries shall have a 1/4" minimum separation between cells.
6. Insulated gloves shall always be worn when handling batteries.
7. Batteries shall not be crushed, incinerated, or dismantled. The electrolyte contains sulfuric acid which can cause serious damage to eyes and skin. If contact does occur, flush with water and seek immediate medical attention.
8. Batteries of different capacities, age, or manufacturer shall not be used together.

Battery Storage:

Batteries which are to be stored for an extended period of time should be given a supplementary charge monthly. Batteries should never be stored in a discharged condition.

The self-discharged rate of batteries is approximately 3% per month when the storage temperature is maintained at 20 degrees C (68 degrees F). The self-discharge rate will vary depending upon temperature. Cooler temperatures cause the self-discharge rate to decrease. Warmer temperatures cause the self-discharge rate to increase.

The PSC-2420 is a special application power supply and battery charger unit that provides 24VDC up to 20 amps output.

Input and Output Ratings:

Input Voltage	120VAC
Input Current	10A Maximum
Output Voltage	24VDC
Output Current	20A Maximum
Maximum Load	1.2 Ohms
Maximum Charging Current	3.0A
Maximum Amp-Hour Capacity	72AH

IN THE EVENT OF TROUBLE CONTACT-

NAME:

ADDRESS:

PHONE:

FRAME AND MOUNT THESE OPERATING INSTRUCTIONS ADJACENT TO THE CONTROL PANEL.

MEA INFORMATION:

Recommendations - That the above units be accepted on condition that all uses, configurations, arrangements and functions, locations and installations comply with the New York City Building Code, specifically Subchapter 17 and with the Referenced Standard RS 17-3 through 17-3C including the NFPA as appropriate, the UL Listing, the manufacturer's instructions, the Fire Department Rules and the Electrical Code of the City of New York, and on further condition that:

- (a) The use, installation and application of the SAFEPATH System shall be restricted exclusively to connection with an BSA/MEA approved compatible Class E, Class J or Class C Fire Command Station.
- (b) The Fire Command Station shall have the capability of overriding any function of the SAFEPATH system.
- (c) Prior to the installation of any SAFEPATH System, a specific approval for a specific installation must be obtained from the Fire Department.
- (d) A priority voice message matrix must be submitted to the Fire Department for approval before the installation is performed and shall include the following information:
 - 1. The duration of each message.
 - 2. The content of each message.
 - 3. The duration of the audible and visual alarm signals prior to the initiation of the subsequent prerecorded message transmission.
 - 4. The interval between the cessation of the audible and visual alarm signals and the generation of prerecorded message.
- (e) The SAFEPATH panel must be located in the room as, and within 20 feet of a BSA/MEA approved Fire Command Station. The wiring between the SAFEPATH Control Unit and the Fire Command Station must be enclosed in conduit.
- (f) Power supply wiring to the SAFEPATH Control Unit shall be installed in the same conduit containing the input and output wiring.
- (g) When used with central office communicator or transmitter, the installation and operation of the equipment and devices listed herein shall comply with Fire Department Rule #3 - RCNY 17-01, NFPA 71, and shall have the capability of transmitting separate and distinct signals to indicate manual pull station alarm, automatic smoke/heat detection alarm, sprinkler waterflow alarm, supervisory signal indications and trouble indications.
- (h) The connection of security/burglar devices and equipment to that submitted for acceptance for fire alarm usage under this MEA application is prohibited within New York City and such equipment and devices shall be so permanently labeled.

All shipments and deliveries of such equipment shall be provided with a metal tag suitably placed, certifying that the equipment shipped or delivered is equivalent to that tested and accepted for use, as provided for in Section 27-131 of the Building Code.

Limited Warranty

Wheelock products must be used within their published specifications and must be PROPERLY specified, applied, installed, operated, maintained and operationally tested in accordance with these instructions at the time of installation and at least twice a year or more

often and in accordance with local, state and federal codes, regulations and laws. Specification, application, installation, operation, maintenance and testing must be performed by qualified personnel for proper operation in accordance with all of the latest National Fire Protection Association (NFPA), Underwriters' Laboratories (UL), Underwriters' Laboratories of Canada (ULC), National Electrical Code (NEC), Occupational Safety and Health Administration (OSHA), local, state, county, province, district, federal and other applicable building and fire standards, guidelines, regulations, laws and codes including, but not limited to, all appendices and amendments and the requirements of the local authority having jurisdiction (AHJ). Wheelock products when properly specified, applied, installed, operated, maintained and operationally tested as provided above are warranted against mechanical and electrical defects for a period of three years from date of manufacture (as determined by date code). Correction of defects by repair or replacement shall be at Wheelock's sole discretion and shall constitute fulfillment of all obligations under this warranty. THE FOREGOING LIMITED WARRANTY SHALL IMMEDIATELY TERMINATE IN THE EVENT ANY PART NOT FURNISHED BY WHEELOCK IS INSTALLED IN THE PRODUCT. THE FOREGOING LIMITED WARRANTY SPECIFICALLY EXCLUDES ANY SOFTWARE REQUIRED FOR THE OPERATION OF OR INCLUDED IN A PRODUCT. WHEELOCK MAKES NO REPRESENTATION OR WARRANTY OF ANY OTHER KIND, EXPRESS, IMPLIED OR STATUTORY WHETHER AS TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER MATTER.

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