Si-200-PST 200W MINI INVERTER

Assurance Emergency Lighting
a division of Assurance Engineering LLC

EMERGENCY POWER EQUIPMENT
UNIVERSAL INPUT/OUTPUT PURE SINE WAVE SELF TEST MINI INVERTER
OUTPUT VOLTAGE AUTO SETTING EQUAL TO INPUT VOLTAGE
POWER SHARE TECHNOLOGY AUTO DIMMING (0-10V) OF CONNECTED LOAD UP TO 900W@120V, 1800W@277V

INSTRUCTION MANUAL

IMPORTANT SAFEGUARDS

WHEN USING ELECTRICAL EQUIPMENT, BASIC SAFETY PRECAUTIONS SHOULD ALWAYS BE FOLLOWED, INCLUDING THE FOLLOWING

READ AND FOLLOW ALL SAFETY INSTRUCTIONS

1. To prevent electric shock, switch off the mains power supply until installation is complete and AC input power is supplied to this product.
2. This product requires an unswitched AC power supply of 120-277V, 50/60Hz.
3. Make sure all connections are in accordance with the National or Canadian Electrical code and any local regulations.
4. To reduce the risk of electrical shock, disconnect both normal power, emergency power supplies and unit connector of this product before servicing.
5. For emergency operation of LED, incandescent, fluorescent fixtures and screw-base lamps.
6. The product is UL Listed for field installation, and use with grounded, Listed, Wet location rated fixtures and the case should be grounded.
7. Use this product in 0°C minimum, 50°C maximum ambient temperatures (Ta).
8. This product is suitable for use in dry or damp locations. Do not use outdoors. Do not mount it near gas, heaters, air outlets or other hazardous locations.
9. Do not attempt to service the batteries. A sealed, non-maintenance battery is used that is not field replaceable. Contact the manufacturer for information or service.
10. The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition and void warranty.
11. Do not use this product for other than intended use.
12. Installation and service should be performed by qualified service personnel.
13. This product should be mounted in locations and at heights where it will not be subjected to tampering by unauthorized personnel.

Li-ion

THIS PRODUCT CONTAINS A RECHARGEABLE LI-ION BATTERY.
THE BATTERY MUST BE RECYCLED OR DISPOSED OF PROPERLY.

SAVE THESE INSTRUCTIONS

UL LISTED 3KLH E506473

BC

INSTALLATION

CAUTION: MAKE CERTAIN THE AC POWER IS OFF AND THE INVERTER UNIT CONNECTOR IS DISCONNECTED UNTIL THE INSTALLATION IS COMPLETE.

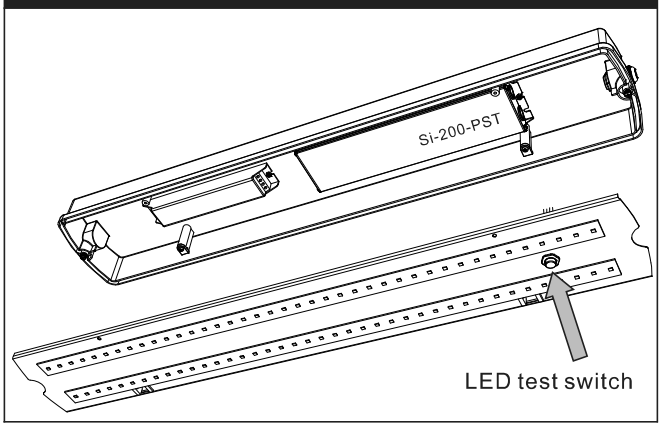
1. OPERATING SPECIFICATIONS

Voltage		Output power
Input	Output	Si - 200 -PST
120V/60Hz	120V/60Hz	200W
230V/50Hz	230V/50Hz	
277V/60Hz	277V/60Hz	

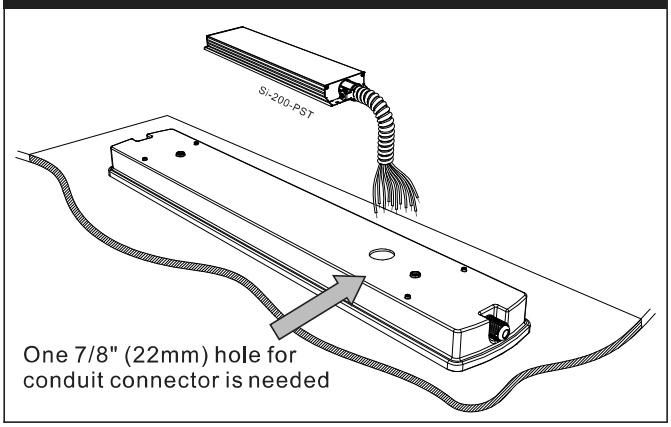
2. INSTALLING THE MINI INVERTER

The Si-100-PST & Si-200-PST can be mounted inside or outside (nearby or on top of) the luminaire.

INSIDE THE LUMINAIRE



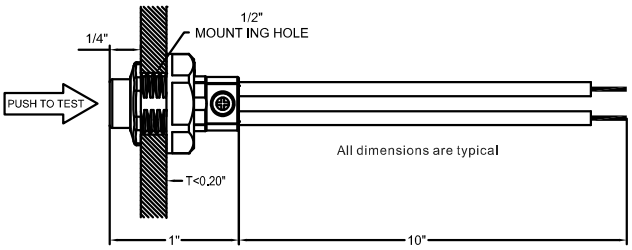
OUTSIDE THE LUMINAIRE



Note: When installing inside a luminaire, the flex conduit will need to be removed. Remove conduit connector screw and slide flex conduit off the unit.

3. INSTALLING THE LED TEST SWITCH (LTS)

Select a convenient location for the LTS so that it can be seen after installation. Drill a 1/2"(12 mm) hole for mounting the LTS. Connect the wires from LTS to the inverter model according to the wiring diagram on page 3.



POWER SHARE+ TECHNOLOGY

The Si-200-PST mini inverters utilize Power Share Technology (PST+) which allows single or multiple, 0-10 Vdc dimmable luminaires of greater than the inverter power to be connected for emergency applications.

The emergency lighting inverter will auto adjus the 0-10 Vdc to the AC drivers to ensure the emergency power level of 200 Watts.

Example 1 - The Si-200-PST can be connected to (20) 45W, 0-10 Vdc dimmable LED luminaires which total 900W (900W max.) of normal power load (@120 Vac). In emergency operation, the 20 luminaires will operate at a total of 200W or 10 watts each. At a typical 140 lumens per watt, the luminaire will provide about 1400 lumens in emergency operation. If higher emergency lighting is needed when using this inverter, reduce the number of normal connected luminaires. Reducing to 10 luminaires, the Si-200-PST will provide approximately 2800 lumens per luminaire. (140 lumens per watt x 200W / 10 = 2800 lumens)

Example 2 - Using the Si-200-PST with (2) 175 Watt 0-10 Vdc dimmable high bay luminaires, the emergency inverter will auto adjust to 200W or about 57% of normal power for each luminaire in emergency. (200W / (2 x 175)) = 0.57 or 100W for each luminaire. A simpler calculation would be that the 200W is divided by number of luminaires (max AC load is 900W @120 Vac).

Example 3 - Using the Si-200-PST with (20) 40W 0-10 Vdc luminaires, 200W / 20 = 10 Watts each in emergency. Note 40W x 20 = 800W which is under the 900W @120 Vac limit.

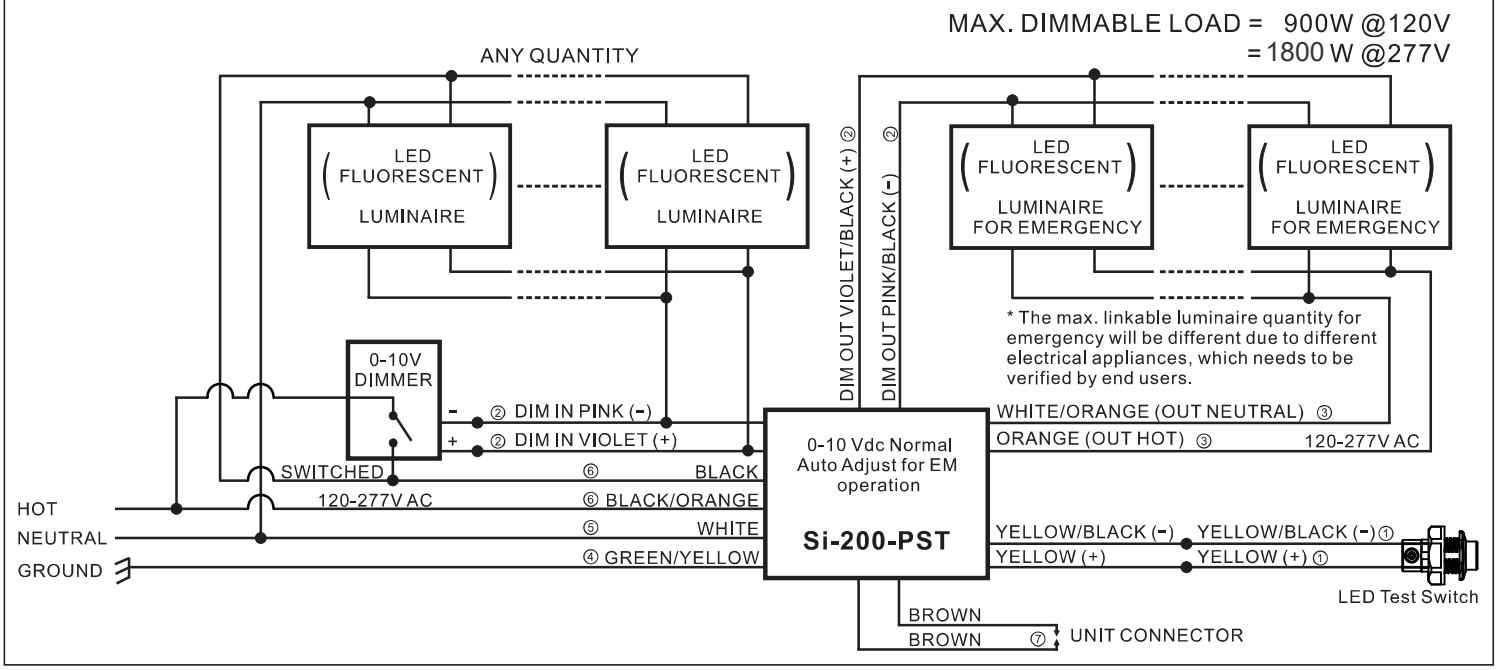
Note - All connected Emergency fixtures will need to be on same branch circuit.

WIRING DIAGRAMS

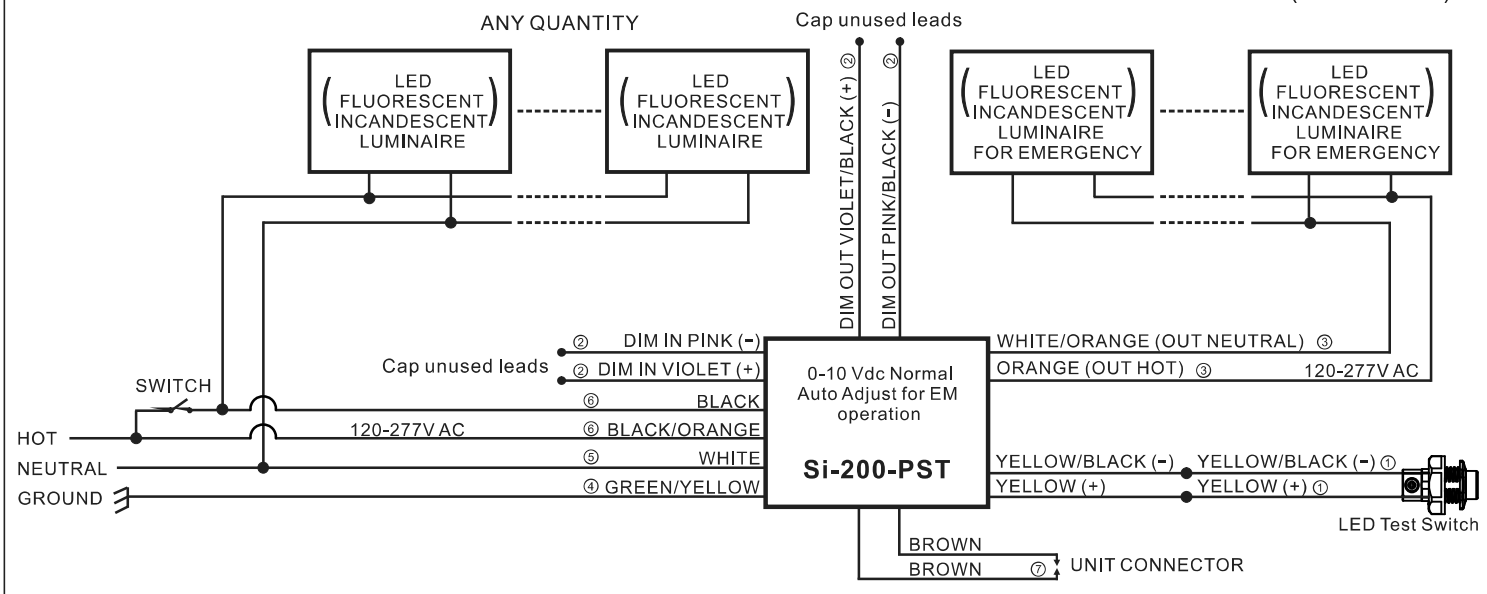
CAUTION: DO NOT MATE UNIT CONNECTOR UNTIL INSTALLATION IS COMPLETE AND AC POWER IS SUPPLIED.

1. The inverter requires an unswitched AC power supply of 120-277 volt, 50/60Hz.
2. Refer to the wiring diagrams below. Make connections in the following order①②③④⑤⑥⑦
3. Consult the factory for other wiring diagrams.

WIRING DIAGRAM FOR 0-10V DIMMABLE EMERGENCY LIGHTING SYSTEM



WIRING DIAGRAM FOR NON-DIMMABLE EMERGENCY LIGHTING SYSTEM



OPERATION / TESTING / MAINTENANCE

OPERATION

When AC power is applied, the LED test switch is illuminated, indicating that the batteries are being charged. When AC power fails, the Si-200-PST automatically switches to emergency power, operating the lighting load at rated emergency power. During power failure, the LED test switch will be off. When the AC power is restored, the mini inverter switches the system back to normal mode of operation and resumes battery charging. The minimum emergency operation time is 90 minutes. A short term discharge test may be conducted after unit has been charging for 1 hour. Charge for 24 hours before conducting a long term discharge test. Refer to page 2 for Power Share Technology applications.

TESTING AND MAINTENANCE

The following Periodic testing is recommended to ensure the system is working correctly.

1. Visually inspect the LED test switch (LTS) monthly. It should be illuminated when AC power is applied.
2. Conduct a 30-second discharge test by switching off the emergency breaker every month. The LTS will be off.
3. Conduct a 90-minute discharge test once per year. The LTS will be off during the test.

AUTO TEST

This mini inverter has an Auto Test feature which saves cost by reducing the need for manual testing.

1. Initial Auto Test
   When the system is connected properly and powered on (make sure the load is switched on), the Si-200-PST will perform an Initial Auto Test. If any abnormal conditions exist, the LTS will blink quickly. Once the abnormal condition is corrected, the LTS will function correctly. The Initial Auto Test will be restarted automatically when the connected dimmable loads' maximum power increases.
2. Preprogrammed Scheduled Auto Test

a) The unit will conduct the first Monthly Auto Test after 24 hours and up to 7 days after initial power on. Then monthly tests will be performed every 30 days.

b) Annual Auto test will occur every 52 weeks after initial power on.

- Monthly Auto Test
  The Monthly Auto Test shall be executed every 30 days, and will test:
  Normal to emergency transfer function, emergency, charging and discharging conditions are normal.
  Monthly test time is approximately 60 seconds.
- Annual Auto Test
  Annual Auto Test will occur every 52 weeks after the initial 24 hours full charge, and will test:
  Proper initial battery voltage, 90-minute emergency operation and acceptable battery voltage at the end of the full 90-minute test.

If the Auto Test is interrupted by a power failure, a full 90-minute Auto Test will occur again 24 hours after the power is restored. If the power failure causes the battery to fully discharge, the product will restart the Initial Auto Test and Preprogrammed Scheduled Auto Test.

MANUAL TEST

1. Press the LTS one time to simulate emergency mode for 10 seconds.
2. Press the LTS 2 times continuously within 5 seconds to force a 60-second monthly test. After the test is completed, the next (30-day) monthly test will count from this date.
3. Press the LTS 3 times continuously within 5 seconds to force a 90-minute annual test. After the test is completed, the next (52-week) annual test will count from this date. Note - unit must be 24-hour fully charged.
4. In normal mode, press and hold the LTS for greater than 3 seconds to restart Initial Auto Test.
5. During any manual test, press and hold the LTS for greater than 3 seconds to terminate a manual test. The Preprogrammed Scheduled Auto Test time will not change.

LED TEST SWITCH CONDITIONS

LTS Slow Blinking: Normal Charging
LTS On: Battery Fully Charged - Normal Condition
LTS Off: Power Failure
LTS Gradual Change: In Testing Mode
LTS Quickly Blinking: Abnormal Condition - Corrective Action Required

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