

Si-36 Inverter

INSTRUCTION MANUAL

10.2020

UNIVERSAL MINI INVERTER

PURE SINUSOIDAL AC OUTPUT

OUTPUT VOLTAGE AUTO SETTING EQUAL TO INPUT VOLTAGE

POWER SHARE TECHNOLOGY FOR HIGH WATTAGE CONNECTED LOADS



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 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. Use this product in 0°C minimum, 55°C maximum ambient temperatures (Ta). To ensure the emergency operating time over 90 minutes, the output emergency power of Si-36 should be Max. 36W with auto adjust for 0-10V dimming installations and operating temperatures between 10°C ≤ Ta ≤ 55°C. The Max. load for non dimmed loads must be limited to 36W at operating temperatures range of 10°C ≤ Ta ≤ 55°C and 27W between 0°C ≤ Ta ≤ 55°C. Contact Factory for details regarding 2 hour run time applications.
7. 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.
8. 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.
9. The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition and void warranty.
10. Do not use this product for other than intended use.
11. Installation and service should be performed by qualified service personnel.
12. This product should be mounted in locations and at heights where it will not readily 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 THIS INSTRUCTIONS

INSTALLATION



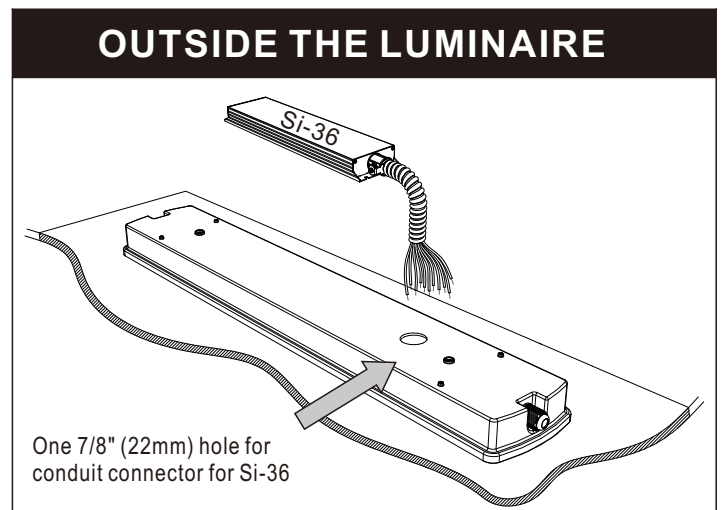
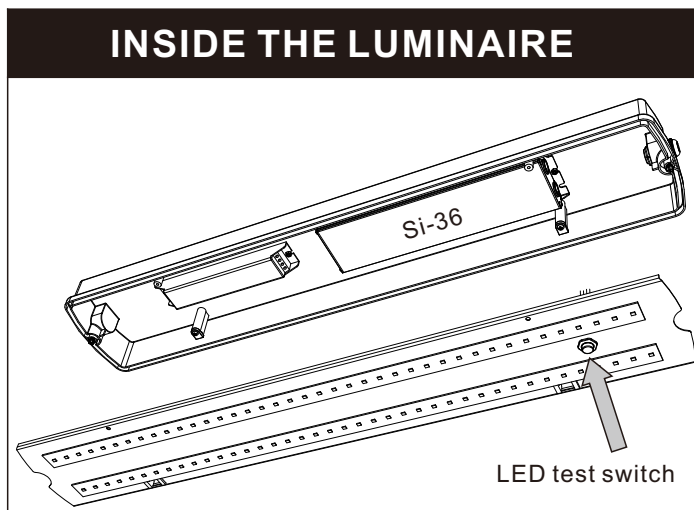
CAUTION: MAKE CERTAIN THE AC POWER IS OFF AND THE Si-36 UNIT CONNECTOR IS DISCONNECTED UNTIL THE INSTALLATION IS COMPLETE.

1. OPERATING SPECIFICATIONS

Model	Voltage		Output Power	
	Input	Output	10°C ≤ Ta ≤ 55°C	0°C ≤ Ta ≤ 55°C
Si-36	120V/60Hz	120V/60Hz	Max. 36W With dimmable or non-dimmable load	Max. 27W Max. non-dimmable load
	230V/50Hz	230V/50Hz		
	277V/60Hz	277V/60Hz		

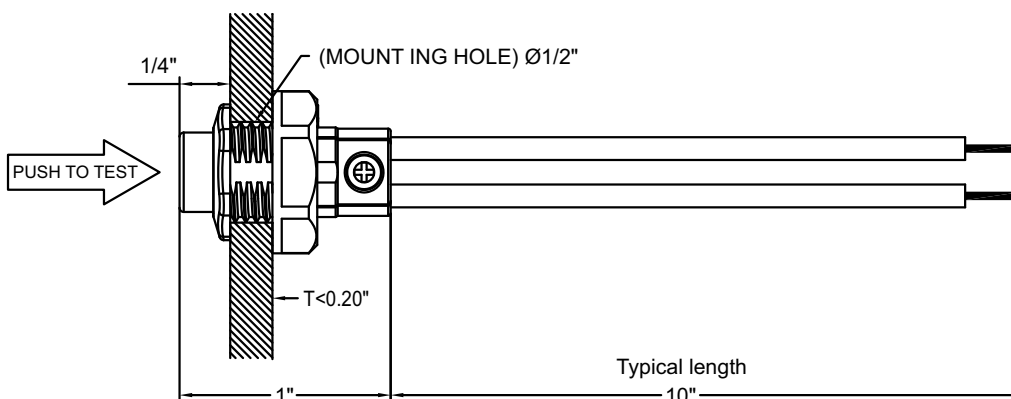
2. INSTALLING THE Si-36

The Si-36 can be mounted inside or outside (nearby or on top of) the luminaire.



3. INSTALLING THE LED TEST SWITCH (LTS)

Select a convenient location for the LED test switch so that it can be seen after installation. Drill a 1/2" (12 mm) hole for mounting the LED test switch. Connect the wires from the LED test switch to the Si-36 according to the wiring diagram on page 3.



All dimensions are typical

WIRING DIAGRAMS



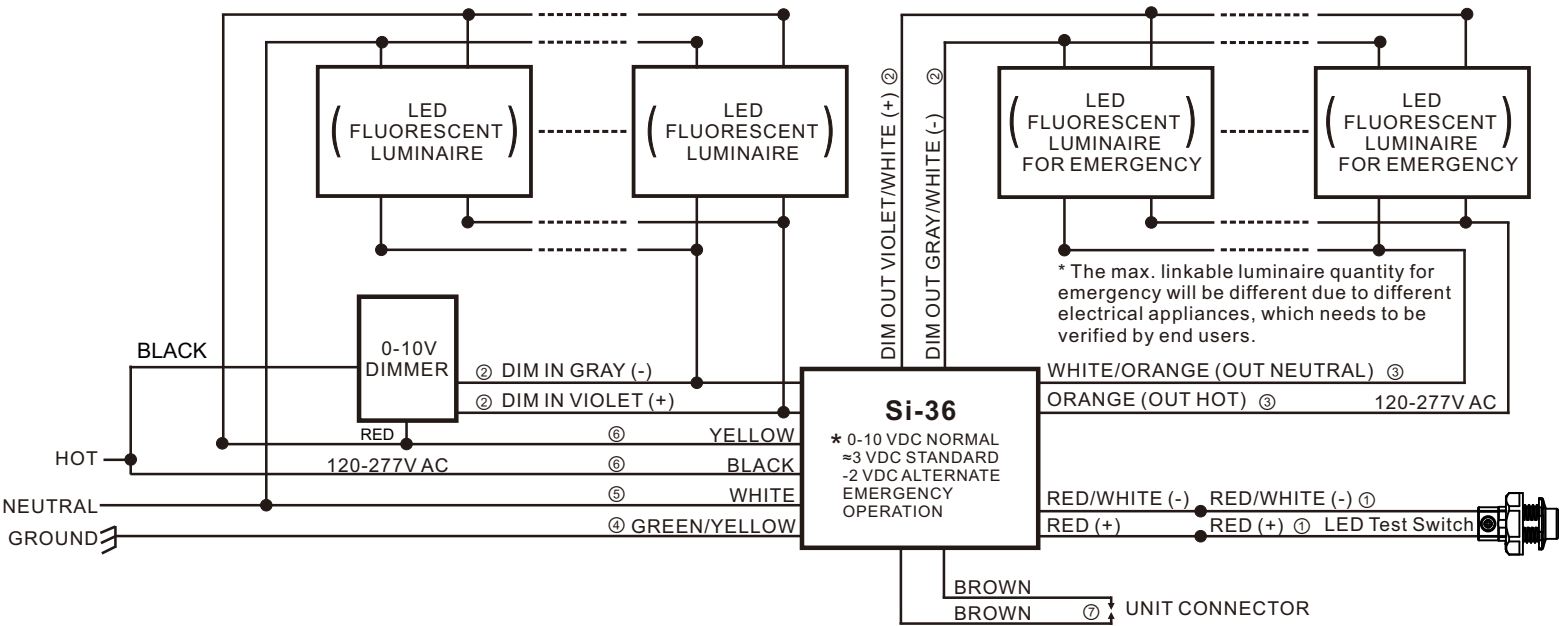
CAUTION: DO NOT MATE UNIT CONNECTOR UNTIL INSTALLATION IS COMPLETE AND AC POWER IS SUPPLIED.

1. The Si-36 requires an unswitched AC power supply of 120-277 volt, 50/60Hz.
2. Refer to the wiring diagrams below. Make connections in the following order ①②③④⑤⑥⑦
3. Consult the factory for other wiring diagrams.

WIRING DIAGRAM FOR 0-10V DIMMABLE EMERGENCY LIGHTING SYSTEM - PST

ANY QUANTITY

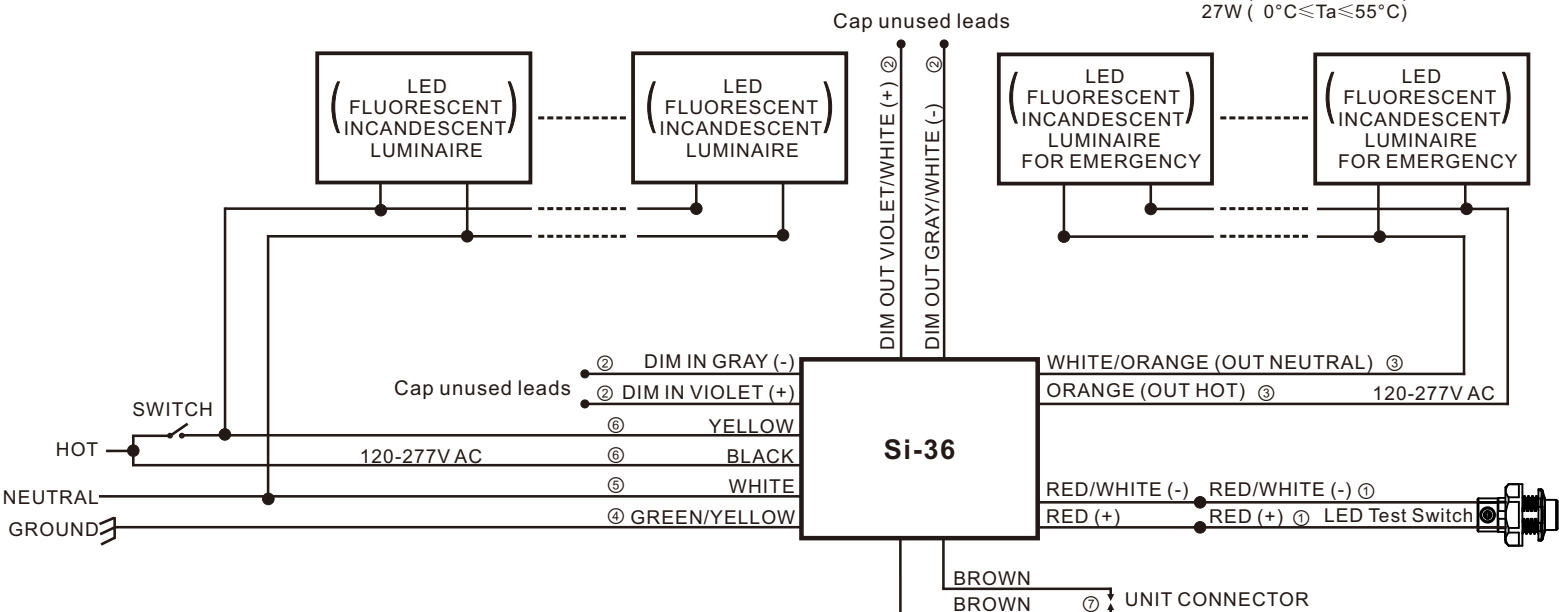
PST STANDARD SETTING (3 Vdc) TOTAL NORMAL DIMMABLE POWER 120W (MAX.)
PST ALTERNATE SETTING (2 Vdc) TOTAL NORMAL DIMMABLE POWER 180W (MAX.)



WIRING DIAGRAM FOR NON-DIMMABLE EMERGENCY LIGHTING SYSTEM

ANY QUANTITY

Max. load = 36W (10°C ≤ Ta ≤ 55°C)
27W (0°C ≤ Ta ≤ 55°C)



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-36 automatically switches to emergency power, operating the lighting load at approximately 30% (Reprogrammed to 20%) of rated luminaire power (max. 120W (PST @ 3 Vdc) or 180W (PST @ 2 Vdc) using **Power Share Technology**. The Si-36 can also be used as a stand alone 36W inverter when used with lighting loads less than or equal to 36 watts. During power failure, the LED test switch indicator will be off. When power is restored, the Si-36 switches back to normal mode of operation and resumes battery charging. The minimum emergency operating time is 90 minutes. The charging time for a full discharge is 24 hours.

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 test.

AUTO TEST

1.Initial Auto Test:When the system is connected properly and powered on, the Si-36 will perform an initial Auto Test. If any abnormal conditions exist, the LTS will flash rapidly*. Once the abnormal condition is corrected, the LTS will function correctly.

2.Monthly Auto Test:The Si-36 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, and will test transfer function from normal to emergency, emergency function, charging and discharging conditions. Monthly test time is approximately 30 seconds.

3.Annual Auto Test: It 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, Monthly and Annual Auto Test.

MANUAL TEST

1. Press the LTS 2 times continuously within 5 seconds to force a 30-second monthly test. After the test is complete, the next (30-day) monthly test will count from this date.
2. 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.
3. 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

**LTS (selectable 2 VDC): Long ON, Short OFF, Long ON

POWER SHARE TECHNOLOGY

The Si-36 utilizes Power Share Technology (PST) which allows single or multiple 0-10 Vdc controlled luminaires (up to 120W combined normal luminaire power) to automatically adjust and share up to 36W of emergency AC power. During normal operation, the emergency inverter will pass through normal dimming voltage (0-10 Vdc) on the dim output leads, but then supply a default 3 VDC (or selectable **2 VDC) during emergency operation to achieve approximately 30% (or selectable **20%) of rated luminaire power during an emergency power failure.

** Reduced output mode 2 VDC (~20%) can be selected and easily programmed via the LED test switch (LTS) by pressing the illuminated button for 5 seconds, releasing, then repeating the 5-second button push (i.e. two 5-second extended button pushes within a 13 second timespan). LTS flash sequence confirming 2 VDC mode: long ON, short OFF, long ON. (Return to the default 3 VDC mode by repeating the extended button press sequence above.)

Example (default 3 Vdc setting): Three 40W LED luminaires (120W) will share 12W each of the maximum available 36W emergency power per Si-36. $40W \times 30\% \text{ dim} = 12W$. Similarly, if each luminaire is 30W, then 4 units can 9W each; whereas if the luminaire power is over 40W, then 2 or less luminaires can be operated.

Example (2 Vdc setting): Four 45W LED luminaires (180W) would share 9W each of the total 36W emergency power per Si-36. $45W \times 20\% \text{ dim} = 9W * 4 \text{ luminaires} = 36W$. If the luminaire power is over 45W, then 3 or fewer luminaires can be operated.

See Si-36 application detail at www.AssuranceLighting.com or contact Tech Support at 1-877-774-4775.

When non-dimmable loads are used, the normal and emergency output will be 36W (max.) at temperatures of (10-55°C), 27W for (0-55°C) and 27W for 2 hours (10-55°C).