

## EM Module

### MINI EMERGENCY INVERTER

184600

### FEATURES

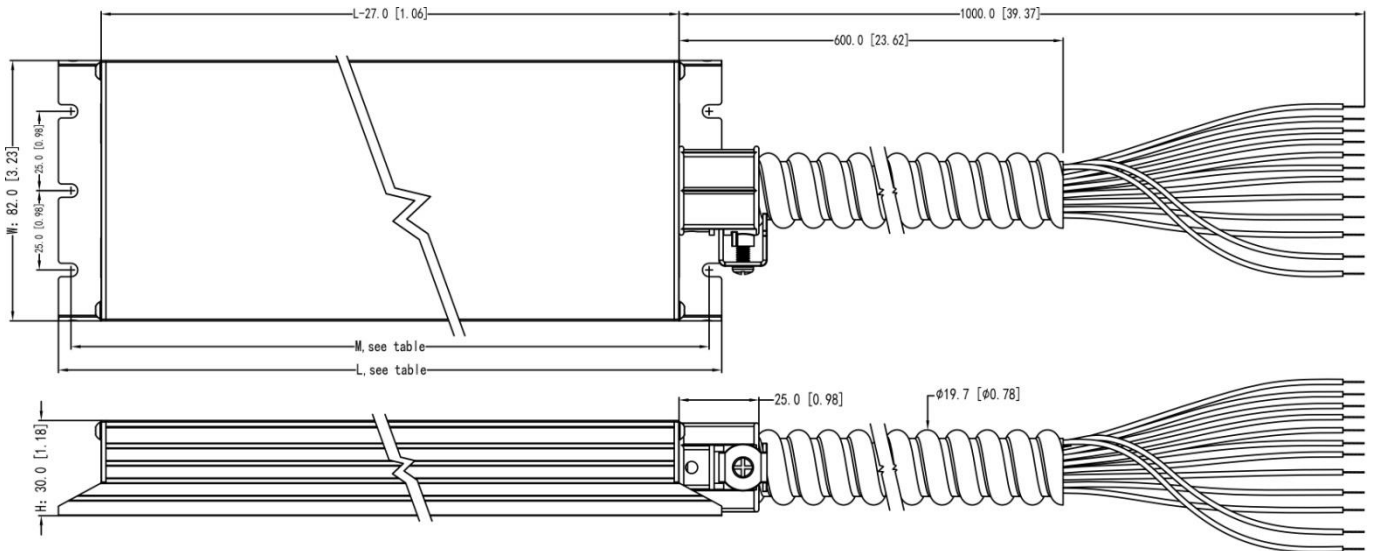


1. Pure sinusoidal AC output
2. Patented APD technology - Auto Preset Dimming (0-10V) the connected load in emergency mode
3. Output voltage auto setting according to different input voltages
4. Auto Test
5. Extremely slim aluminium housing and light in weight
6. Suitable for indoor, dry and damp applications

## CHARACTERISTICS

Type	184600
Lamp type	LED, fluorescent or incandescent bulbs, tubes and lighting fixtures
Rated voltage	120-277VAC 50/60Hz
Rated current	0.1A
Rated power	7W
Power Factor	0.5-0.9 leading, 0.5-0.9 lagging
Output voltage	120-277VAC 50/60Hz
Output power	36W
Max. power of 0-10V dimming load	360W
Battery	Li-ion
Charging time	24 Hours
Discharge time	90 Minutes
Charging current	0.34A (Max.)
Life time of module	5 Years
Charging cycles	>1000
Operation temperature	0-50°C (32°F-122°F)
Efficiency	80%
Abnormal protection	Over load, over current, inrush, over voltage, over temperature, charging and discharging, open circuit , short circuit protection with auto reset
Wire	18AWG/0.75mm <sup>2</sup>
EMC/FCC/IC standard	EN 55015, EN 61547, EN 61000-3-2, EN 61000-3-3, FCC part 15, ICES-005
Safety standard	EN 61347-1, EN 61347-2-7, UL924, CSA C.22.2 No. 141
Meas. mm [inch]	L346 [13.62]xW82 [3.23]xH30 [1.18] Mounting center: 338 [13.31]

## DIMENSION

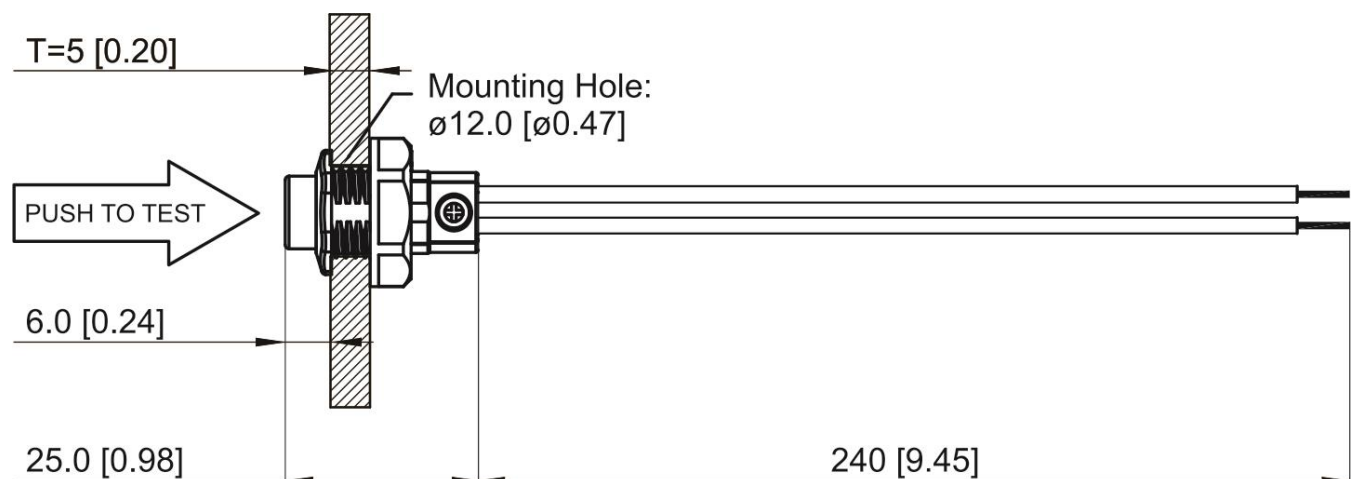
**184600**


Item No.	L mm [inch]	M mm [inch]	W mm [inch]	H mm [inch]
184600	346 [13.62]	338 [13.31]	82 [3.23]	30 [1.18]

Dimension unit: mm [inch]

 Tolerance:  $\pm 1$  [0.04]

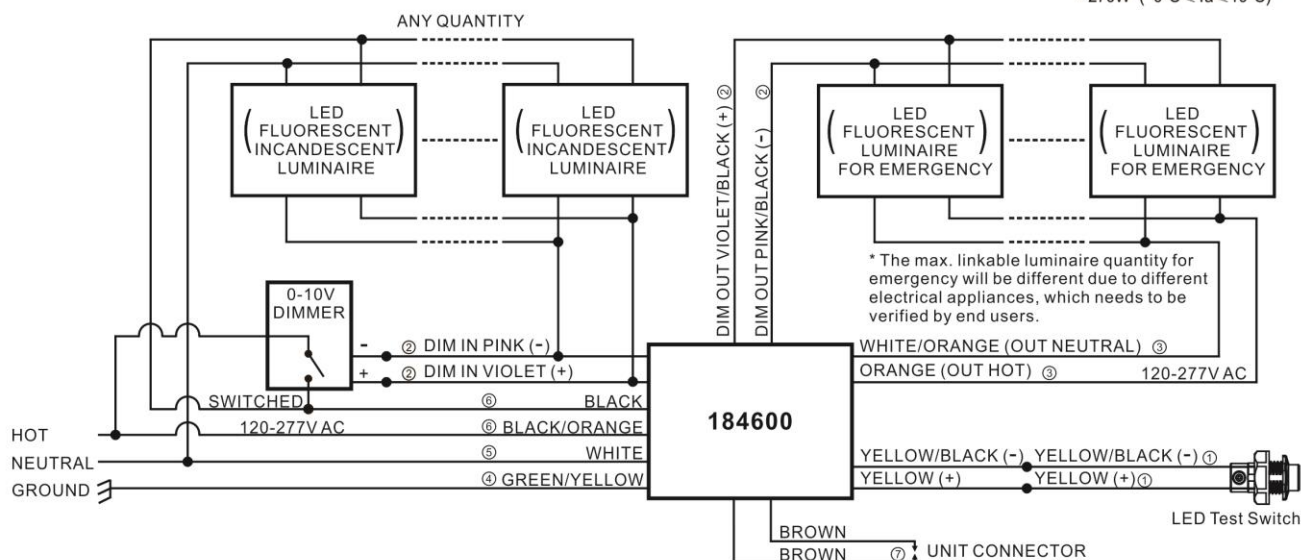
## LED TEST SWITCH


 Dimension unit: mm [inch] / Tolerance:  $\pm 1$  [0.04]

## WIRING DIAGRAM

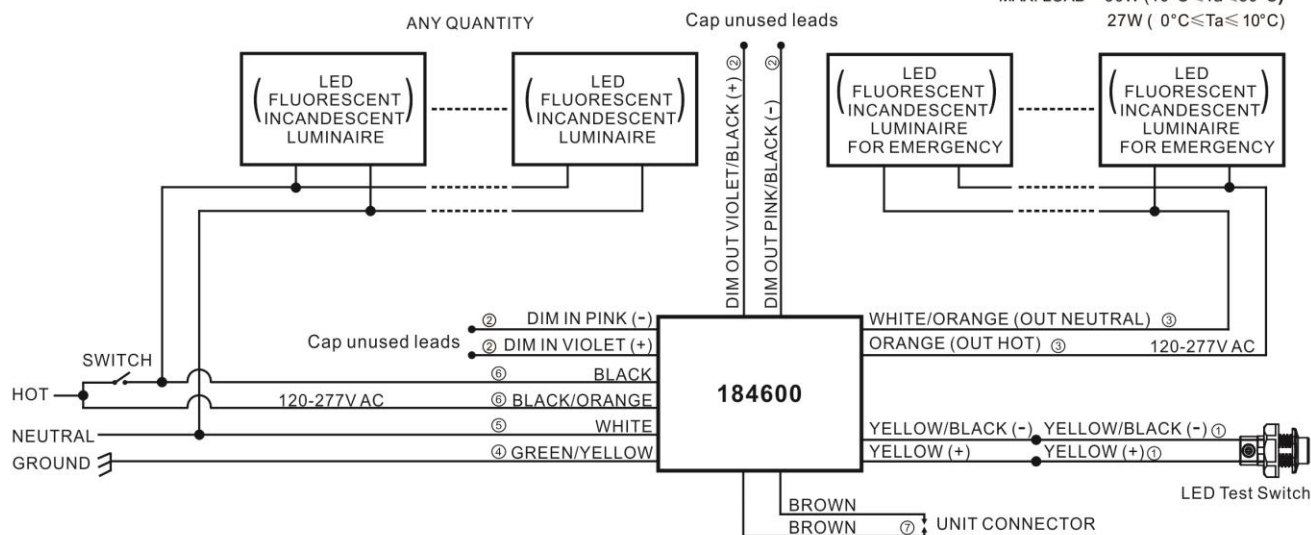
### WIRING DIAGRAM FOR 0-10V DIMMABLE EMERGENCY LIGHTING SYSTEM

MAX. DIMMABLE LOAD = 360W ( $10^{\circ}\text{C} \leq T_a \leq 50^{\circ}\text{C}$ )  
 = 270W ( $0^{\circ}\text{C} \leq T_a \leq 10^{\circ}\text{C}$ )



### WIRING DIAGRAM FOR NON-DIMMABLE EMERGENCY LIGHTING SYSTEM

MAX. LOAD = 36W ( $10^{\circ}\text{C} \leq T_a \leq 50^{\circ}\text{C}$ )  
 27W ( $0^{\circ}\text{C} \leq T_a \leq 10^{\circ}\text{C}$ )



## **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 184600 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

184600 switches the system back to normal mode of operation and resumes battery charging. The minimum emergency operation time is 90 minutes. The charging time for a full discharge is 24 hours. A short term discharge test may be conducted after the 184600 has been charging for 1 hour. Charge for 24 hours before conducting a long term discharge test.

### **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 60-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**

The 184600 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, the 184600 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.

#### **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 30 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 2 times continuously within 3 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 3 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.

## **OPERATION/TESTING/MAINTENANCE**

### **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

### **PRESET DIMMING TECHNOLOGY**

The 184600 utilizes customized preset dimming technology which allows for multiple 0-10 Vdc controlled dimmable luminaires (up to 360W) to automatically adjust and shares the total 36W emergency power evenly between 2 or more luminaires. The luminaires must be controlled by a single (0-10Vdc) dimming control device. When non dimmable loads are used, the normal and emergency output will be limited to a max. of 36W at operating temperatures range of  $0^{\circ}\text{C} \leq T_a \leq 50^{\circ}\text{C}$ .

## **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 un-switched 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. Use this product in 0°C minimum, 50°C maximum ambient temperatures (Ta). It can provide minimum 90 minutes illumination under the emergency mode.
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. As this product contains batteries, please be sure to store it in an indoor environment of -20°C ~30°C. It must be fully charged and discharged every 6 months from the date of purchase until it is officially put into use, then recharged 30-50% and stored for another 6 months, and so on. If the battery is not used for more than 6 months, it may cause excessive self-discharge of the battery, and the resulting reduction of battery capacity is irreversible. For products with separate battery and emergency module, please disconnect the connection between battery and module for storage. Due to its chemical properties, it is a normal situation for the battery capacity to decline naturally during use. Users should take this into account when choosing products.
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 readily be subjected to tampering by unauthorized personnel.
14. Ensure product compatibility before final installation. Make sure the polarity is correct when connecting the batteries. Wiring should be strictly in accordance with the wiring diagram, wiring errors will damage the product. A case of safety accident or product failure caused by users' illegal operation does not belong to the scope of customer complaint acceptance, compensation or product quality assurance.