FHS2-UNV-56S

SPECIFICATIONS

RoHS COMPLIANT

LiFePO4

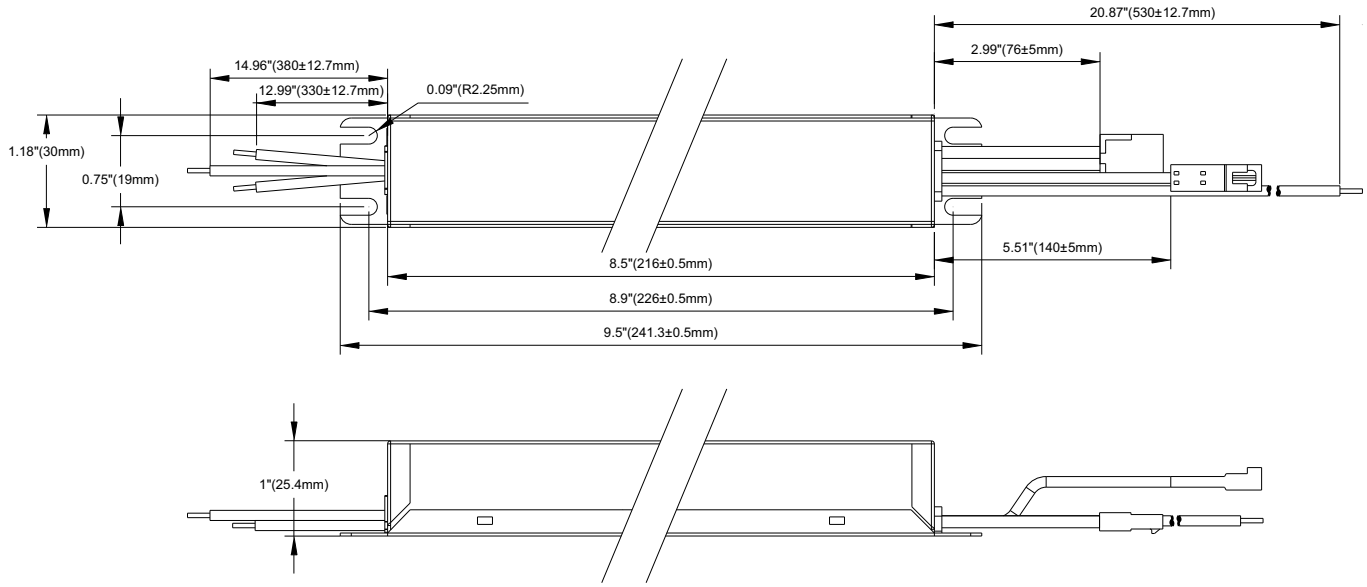
- Emergency LED Driver
- Universal Voltage: 100-277VAC, 50/60Hz
- Output Wattage: 1.2-20W
- Output Current range of 100mA - 700mA
- Output voltage range of 12-55VDC

This Driver Will Operate The Following LED Modules: Any LED module designed to accept an input voltage range of 12-55VDC and can operate up to a current of 700mA.

General Specifications

Input Voltage	100-277VAC, 50/60Hz
Input Current	0.1A Max.
Input Power	6W Max.
Red Lead	3A,60V Max.
White/Black Lead	2A Max.
Standby Input Power	<0.8W
Driver Type	Constant Current
Output Current	100mA -700mA Initial (Programable with help of TPSB-100)
Output Voltage Range	12-56VDC
Output Power	20W Max.
Number of Output Channels	1 Channel
RFI/EMI	NA
Output Type	LED Class 2
Battery Type	LiFePO4 9.6VDC
Battery Capacity Available	LiFePO4 6000mAh
Battery Recharge Time	24-32 Hours
Battery Discharge Time	90 Minutes Min.
Test Switch Remote Mounting Distance	20' (6m) Max.
Ambient Operating Temperature Range	0°C to 45°C
Max Case Temperature	65°C
Battery Pack Max Case Temperature	45°C
Input Surge Protection	2.5KV Ring Wave
Protections	Battery Over Discharge Protection Output Short Circuit Protection
Service Life	50,000 hours
Approvals / Class	RoHS, Dry and Damp Locations

Mechanical Data



Case Tolerance=±0.02"

FOR INDIA MARKET ONLY

Important and Safety Instructions

When using electrical equipment and this lighting device basic safety precaution should be followed at all times including but not limited to the following:

PLEASE READ CAREFULLY AND FOLLOW ALL INSTRUCTIONS FOR YOUR OWN SAFETY

·**IMPORTANT: Do not connect battery until fixture is installed.**

·**IMPORTANT: An un-switched AC power source of 100VAC to 277VAC is required.**

·This device is designed for use in fixtures listed for **dry and damp locations**.

·**CAUTION:** Make sure all electrical connections conform to the National Electrical Code and all applicable local regulations.

·**CAUTION**: Do not let power supply cords touch hot surfaces.

·**CAUTION**: Do not mount near gas or electric heaters.

·**CAUTION:** Battery is rechargeable Ni-Cd or LiFePO4 type and must be recycled or disposed of properly.
Do not use this emergency driver with accessory equipment other than recommended by manufacturer; failure to follow this may cause an unsafe condition. Servicing should only be performed by qualified service personnel.
Do not use this emergency driver for other than intended use.
Not suitable for high-risk task area lighting.

Equipment should be mounted in locations and at heights where it will not readily be subjected to tampering by unauthorized personnel.

IMPORTANT: Indicator (LED light) illuminated indicates battery in charge mode when AC power is applied. It is recommended and required by applicable code to test emergency ballast to ensure proper function of the system; push the test switch for thirty (30) seconds every thirty (30) days to ensure the emergency driver is functioning by illuminating the light source. Conduct a ninety (90) minutes discharge test one (1) time per year; LED light source should be illuminated for a minimum of ninety (90) minutes .

ASSEMBLY and FIELD INSTALLATION WIRING: WARNINGAC power must be off before proceeding with assembly or installation of emergency driver.

TESTING SYSTEM: The emergency battery requires a charge minimum of one (1) hour before testing the circuit. A full charge requires twenty four (24) or thirty two (32) hours, depending upon battery pack. Please refer to battery chart for charging time.

IMPORTANT: In order to maintain proper operation and warranty coverage, the battery must be recharged once per year prior to installation.

Fulham Head Quarters:
Fulham Co., Inc
12705 South Van Ness Ave.

Manufacturer:
North China
Fulham Electronic Co. Ltd.
No. 9 Xingchang Road, Nanshao Zhen Changping Science Park, Beijing, P.R. China

SAVE THESE INSTRUCTIONS

FOR INDIA MARKET ONLY

FHS2-UNV-56S

SPECIFICATIONS

RoHS COMPLIANT

LiFePO4

Wiring Diagrams 1

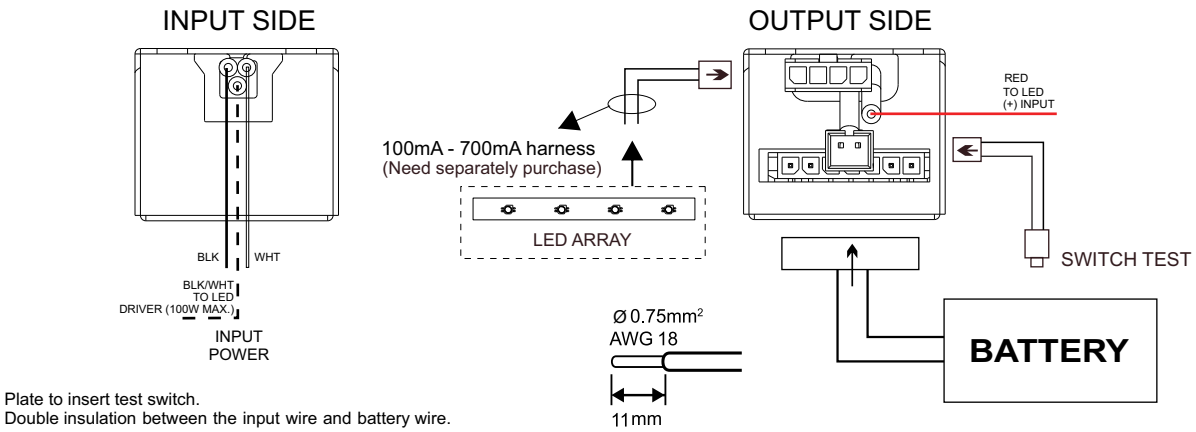
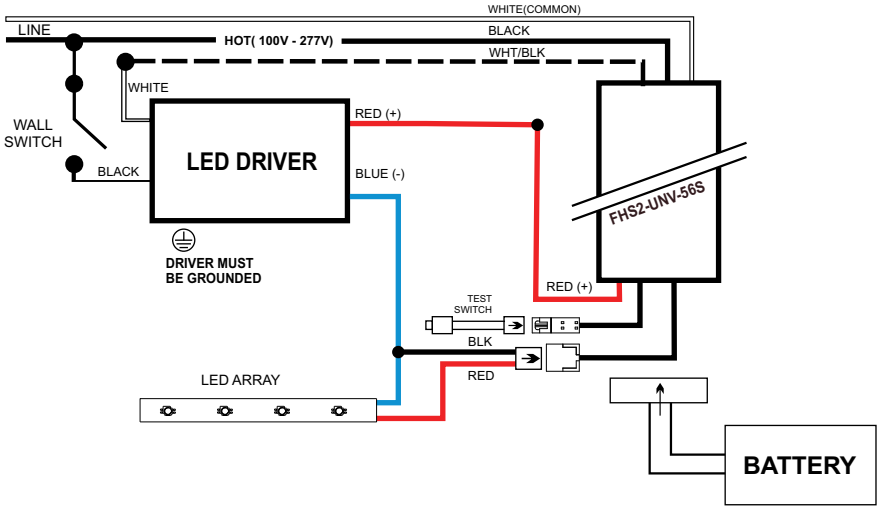
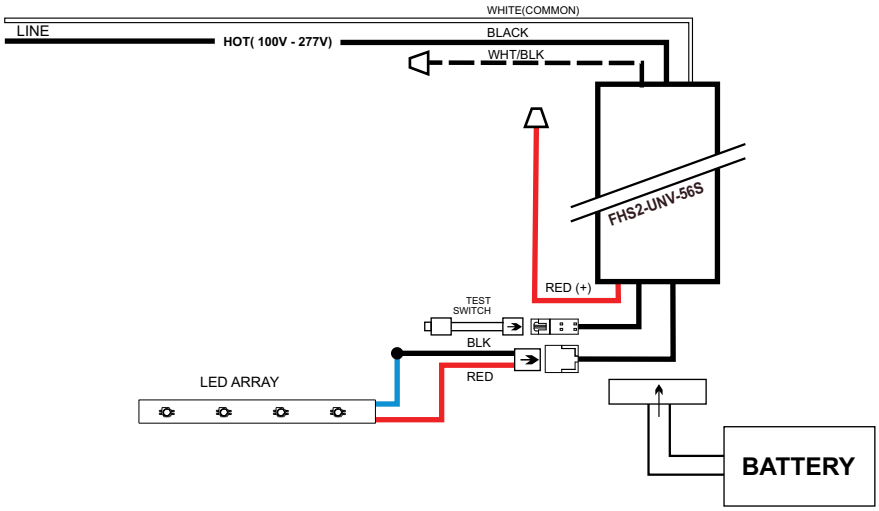


Plate to insert test switch.
Double insulation between the input wire and battery wire.

Wiring Diagram (TYP)



WIRING DIAGRAM (EMERGENCY ONLY)



FOR INDIA MARKET ONLY

FHS2-UNV-56S

SPECIFICATIONS

RoHS COMPLIANT

LiFePO4

Battery Chart

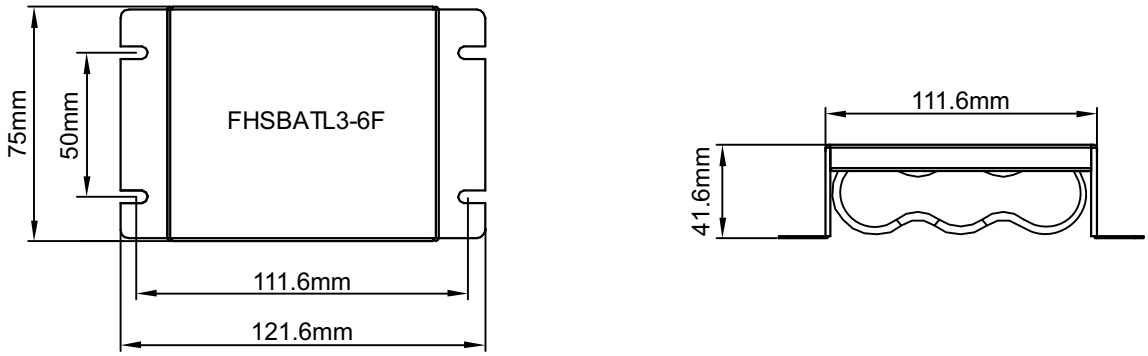
Fulham Model No.	Chemistry	Pack Capacity	Max Load for 90 min.	Battery Voltage	Recharge Time
FHSBATL3-6F	LiFePo4	6000mAh	20W	9.6V	24Hrs
FHSBATL3-6FX*	LiFePo4	6000mAh	20W	9.6V	24Hrs
FHSBATL3-6S	LiFePo4	6000mAh	20W	9.6V	24Hrs
FHSBATL3-6SX*	LiFePo4	6000mAh	20W	9.6V	24Hrs

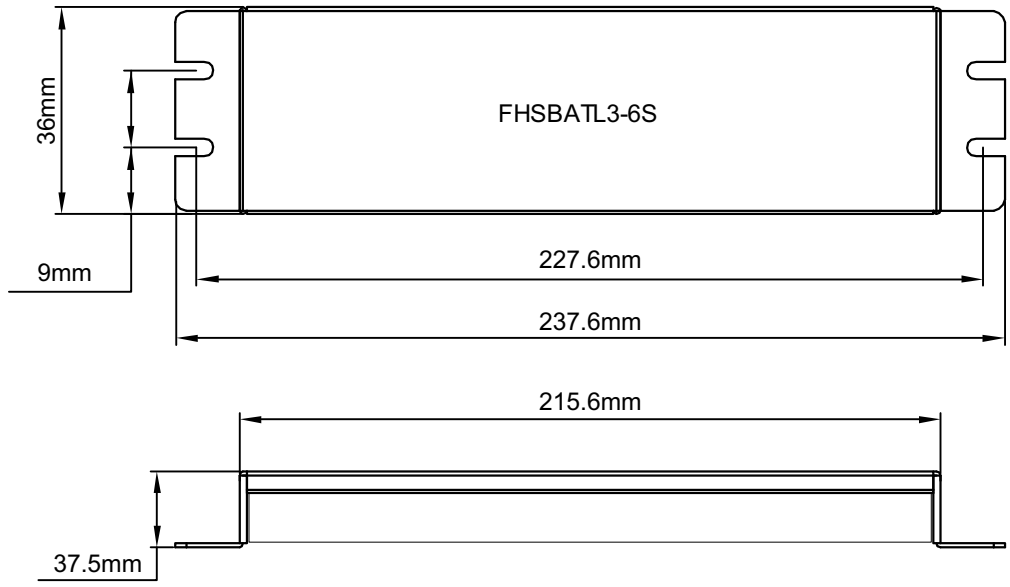
CAUTION:

Replace battery only with corresponding part number.

***Note:** These batteries do not include mounting means.

Battery Dimensions





Max Battery Temperature - 45°C

FOR INDIA MARKET ONLY

TEST SWITCH INDICATOR STATUS:

Indicators Type	LED Indicators Status	EM Driver Status/Mode
Bi-Color Indicator	● Solid Green	System OK/AC OK (Self-diagnostic Enabled or Disabled).
Single Color Indicator	● Solid RED ON	
Bi-Color Indicator	● Flashing Green, 0.1s on/3s off	System OK / EM Mode
Single Color Indicator	● Flashing RED, 0.1s on/3s off	
Bi-Color Indicator	● Slow Flashing Red, 4s on/1s off	Battery not detected, check battery switch or connection.
Single Color Indicator	● Slow Flashing Red, 4s on/1s off	
Bi-Color Indicator	● Flashing Red, 1s on/1s off	Replace battery.
Single Color Indicator	● Flashing Red, 1s on/1s off	
Bi-Color Indicator	● Flashing Green, 2s on/2s off	Self-Diagnostic test underway.
Single Color Indicator	● Flashing Red, 2s on/2s off	
Bi-Color Indicator	● Fast Flashing Red, 0.1s on/0.1s off	Abnormal driver performance, replace driver.
Single Color Indicator	● Fast Flashing Red, 0.1s on/0.1s off	
Bi-Color Indicator	● Very Slow Flashing Red, 1s on/7s off	Over temperature.
Single Color Indicator	● Very Slow Flashing Red, 1s on/7s off	
Bi-Color Indicator	● Very Slow Flashing Red, 4s on/4s off	LED output load is Short/Over Current/Over Voltage/Open Circuit in EM Mode.
Single Color Indicator	● Very Slow Flashing Red, 4s on/4s off	

TEST SWITCH OPERATIONS:

1. EM Test: Press and hold test button (>1s)to enter EM mode for testing in normal AC powered .

2. Manual Self-Diagnostic: After charging twelve (12) hours or battery fully charged, quickly press the test button three times within two seconds to force the controller to enter a Self-Diagnostic cycle. To quit the self-diagnostic cycle after engaged press and hold the test button for ten seconds.

3. Enable/Disable Auto Self-Diagnostic: Press and hold the test button for one second, then release and quickly press the test button two times, then release and press and hold the test button for two seconds. When properly executed the indicator on the test button will display the appropriate color for the Enable/Disable status. A flashing of 2.5s ON/0.5s OFF means "Enabled", while a flashing of 0.5s ON/2.5s off means "Disabled". Once Enable/Disable is set the status color on the test button will remain the same throughout normal operation (refer to Indicator Status Table).

4. Enable/Disable Self-Diagnostic Status: Fast click 2 times within 2s to query the Self-Diagnostic Enabled/Disabled status. The indicator would blink for current status for 3 cycles. 2.5s ON/0.5s OFF stands for Enabled. 0.5s ON/2.5s OFF stands for Disabled.

5. Exit Output Short Circuit/No Load/Over Voltage Protection: When the test button flashes red for 4s on/4s off, press and hold the test switch for 10 seconds.

6. Turn off EM output: Press and hold the test switch for 10 seconds during EM output condition to turn off EM output. This is useful for production environment to turn off the EM output once a luminaire has completed functionality testing. This applies to products with Serial Number starting with Date code: S12016 or higher.

Programming:
Unless otherwise programmed the output will self-program to the rated output of the harness. This driver can be programmed using Fulham SmartSet TPSB-100 or TPSM-100E. Programming features include the following:

Enable/Disable Self-Diagnostic
Output EM Current : 0mA,100-700mA

* When programmed to 0mA; output current defaults to rating of output harness(Refer to accessory harness chart).

FOR INDIA MARKET ONLY