

EcoLight[®]

T5 (Retrofit Emergency Fixture) User's Manual (EN & EP models)

for

Emergency Lighting



It is suggested to read this installation manual and follow instructions prior to installation. Incorrect installation and misuse may render the warranty invalid.

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Introduction:

Emergency Lighting systems are compulsory in many official buildings and in many workplaces so that in the unlikely event of a power failure people can find their way around safely. Safety lights can prevent panic and save lives, it also provide enough light to shut down machinery, give quick access to fire extinguishers and other safety equipment.

EcoLight® T5 (Retrofit Emergency Fixture) allow the use of emergency lighting in the normal existing light fittings. This has the advantage of using the same light source both for the emergency and standard lighting and means that they are practically invisible to the eye whilst guaranteeing practicality and efficiency.

EcoLight® T5 (Retrofit Emergency Fixture) is developed to provide the best solution to upgrade conventional emergency lighting to the very latest T5 system. It complies with T8, T9, T10 and T12 fluorescent lamp. It can so fit to the new lighting fittings. It provides numerous immediate and lasting benefits including: emergency lighting, normal lighting, energy saving, quick installation, better light quality, eye protection, high power factor, etc.

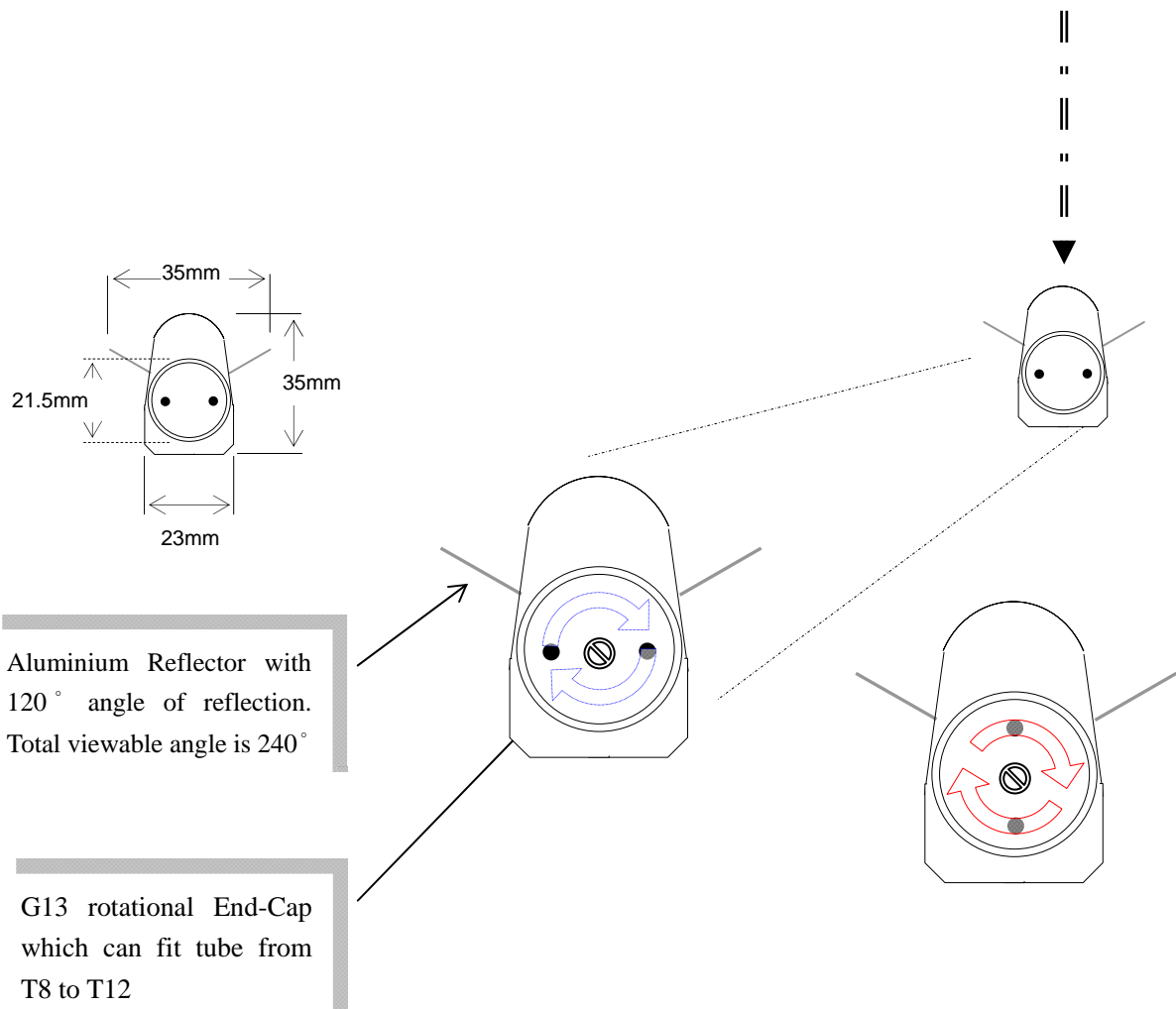
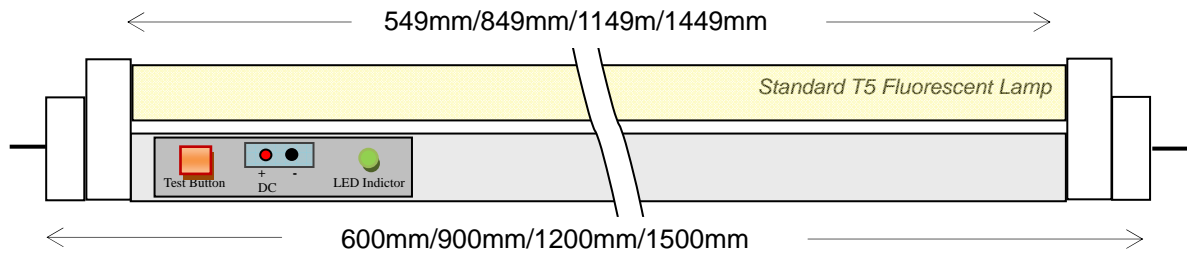
EcoLight® T5 (Retrofit Emergency Fixture) is brilliant in that initial investment is very low to put on emergency system. By using “**FIXTURE IN FIXTURE**” concept, installation is hassle-free. The patented design is created by mounting a standard T5 fluorescent tube on a slim aluminium housing to form a complete emergency unit. No starter is required and installation is as easy as retrofitting a normal fluorescent tube.

EcoLight® T5 (Retrofit Emergency Fixture) products can be regarded as standard T5 fixtures with special end-cap connector which facilitates the installation instantly. The end-caps unique rotational design makes the product suitable for all existing luminaries with different wall-mounting angle.

EcoLight® T5 (Retrofit Emergency Fixture) is designed to provide emergency lighting. It not only saves energy up to 50%, but also preserves the existing fixtures from being discarded. The new eye protection technology generates a high operation frequency up to 35,000 Hz. Without flickering, it will not harm human vision.

EcoPower provides a full range of T5 Retrofit Emergency Fixture products with **EP** and **EN** models and supply voltage ranging from 110V to 480V. Emergency Fixture products are designed totally to meet with market demands. By utilizing proven technology of T5 electronic ballast and inverter, it has been widely applied to emergency lighting fixtures/fittings/luminaries. Please refer to specification for product details.

Product Dimension:



Note: The unique G13 rotational End-Cap makes the product suitable for all existing luminaires with different lamp-holder orientation. Before rotating the bi-pin, the grub screw must be loosened Anti-clockwise by 1/4 turn. After rotation to the required position, the grub screw must be re fixed firmly.

Notices:

- 1) **EcoLight® T5 (Retrofit Emergency Fixture)** requires a permanent phase.
- 2) Please do not remove fluorescent lamp while voltage is applied / switched on.
- 3) The **EP** and **EN** models are “Not for use with dimmers” or “Not for use in fixtures controlled by a dimmer”.
- 4) CAUTION – Risk of Electric Shock – Use in Dry Locations Only.
- 5) WARNING – Risk of fire or electric shock. Do not alter, relocate, or remove wiring, lamp-holders, ballast, or any other electrical component.
- 6) To ensure safety, main power should be turned off during installation.
- 7) Installation of emergency fixture has to be performed by qualified electrical personnel in compliance with valid local standards (IEC 60598-2-22).
- 8) The wiring of mains and end-cap lead must comply with IEC60598.
- 9) Although the ballast and wires inside the fixture are built with double-insulation, earthing or grounding may be necessary in some countries by regulation.
- 10) The installation complies with the information contained in this publication.
- 11) **EcoLight® T5 (Retrofit Emergency Fixture)** is used together with standard T5 fluorescent lamp.
- 12) The **EP** models provide permanent lighting purpose, both normal lighting and emergency lighting. **EP** models are built with T5 electronic ballast and inverter. With the T5 electronic ballast, it can run individually as normal lighting. When fitting with battery pack, it runs as emergency lighting. The existing ballast in the fittings should be by-pass or removed.
- 13) The **EN** models provide non-permanent lighting purpose, only for emergency lighting. **EN** models are built with inverter. It can only run individually as emergency lighting when fitting with battery pack. The existing ballast in the fittings should be by-pass or removed.
- 14) The ballast and wires inside the fixture are built with double-insulation, but earthing or grounding may still be required in some countries.
- 15) The lifetime will be reduced under high temperature operation. Please be reminded the **EcoLight® T5** products should be fitted in environments with good ventilation. Suppliers are not responsible for any defect of the **EcoLight® T5** products caused outside the advised working temperature ranging from -15°C ~ +50°C. The working temperature of battery is from 5°C ~ +50°C.
- 16) Please contact us if there is any question.

EcoPower Electric Limited, or their agents do not assume any liability, expressed or implied, for any consequences resulting from inappropriate, negligent or incorrect installation, application, use or adjustment of the product or circuit design, or from the mismatch of the unit to a lamp.

Prior to Installation:

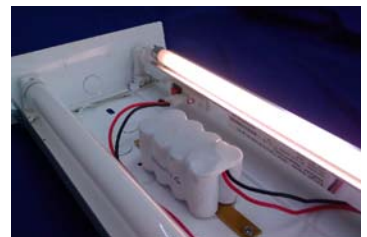
1. Take out the **EcoLight® T5 (Retrofit Emergency Fixture)** products carefully from the packaging and check that the products supplied identify with the delivery note and the purchase order; Check the products supplied identify with the existing fluorescent lamps and fixtures.
2. Check the **Voltage** ratings of the products corresponding to the existing system.
3. Check to ensure no loose parts or damage from shipping.
4. Make sure there is no ballast in the exiting lamp fixtures. If it does, the ballast should be by-pass or removed.
5. Make sure there is no **power factor correction capacitor** inside the existing system. If it does, the capacitor should be by-pass or removed.
6. Make sure the DC voltage of the battery pack is 9.6V

Installation for EP models

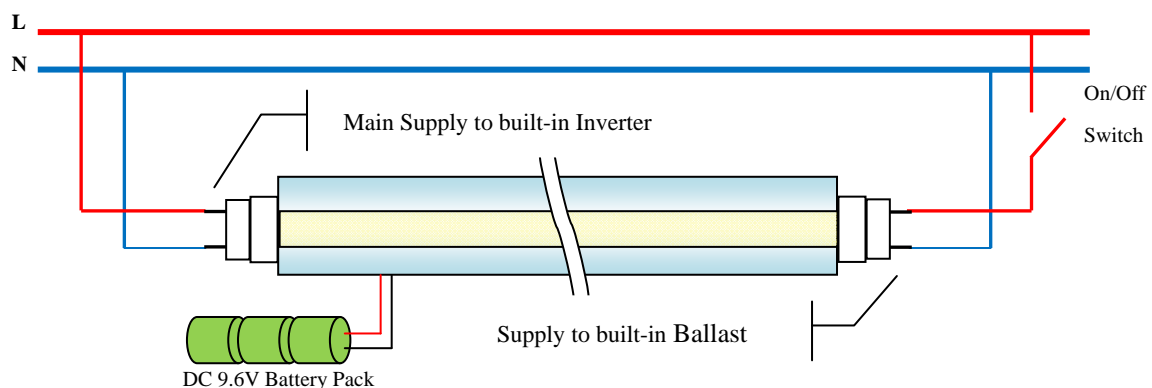
EP models provide permanent lighting purpose, both normal lighting and emergency lighting. When there is power supply, the EP models work as lighting purpose. When the supply is interrupted, battery supports the lamp as emergency purpose.

Procedure:

- 1) Install the unit by qualified persons.
- 2) Make sure the power supply of the existing fluorescent lamp is turned off before conducting installation.
- 3) Remove the existing fluorescent lamp and starter (if present).
- 4) Make the wiring work according to the follow connection diagram.
- 5) Fix the T5 tube to **EcoLight® T5 (Retrofit Emergency Fixture)** to form a complete unit.
- 6) Install the complete unit onto the existing lamp-holder.
- 7) Connect the grounding wire to the earth sign “≡” under the fixture (if required please refer to page8 for the instructions of grounding).
- 8) Fix the battery pack in a proper location near the emergency unit.
- 9) Connect the battery pack to the socket of the emergency unit and pay attention to the polarity. Positive (+) for **RED** and Negative (-) for **Black**.
- 10) Ensure the completed unit is fitted firmly.
- 11) Turn on the power and installation is complete.



Connection Diagram for EP models



Remarks:

- The existing ballast and capacitor should be removed or bypassed in the circuitry.
- Starter is not required. It should be removed or bypassed in the circuitry.

Installation for EN models

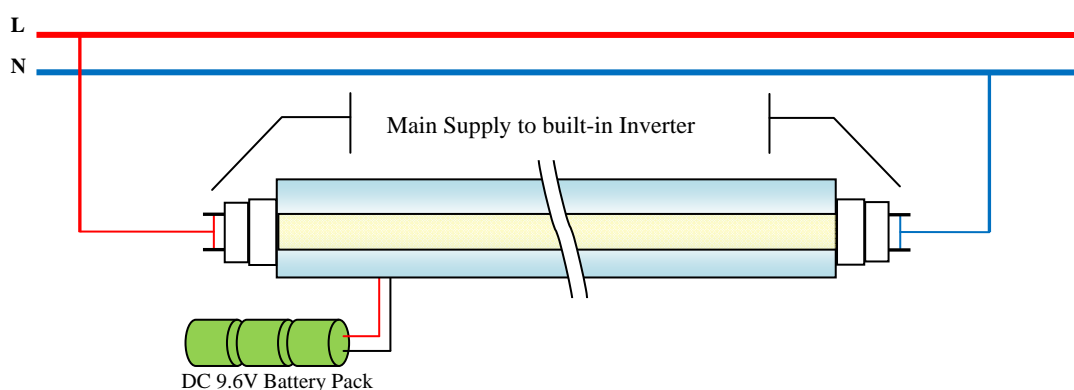
EN models provide non-permanent lighting purpose, only for emergency lighting. When the power supply is interrupted, battery supports the lamp as emergency purpose.

Procedure:

- 1) Install the unit by qualified persons.
- 2) Make sure the power supply of the existing fluorescent lamp is turned off before conducting installation.
- 3) Remove the existing fluorescent lamp and starter (if present).
- 4) Make the wiring work according to the follow connection diagram.
- 5) Fix the T5 tube to **EcoLight® T5 (Retrofit Emergency Fixture)** to form a complete unit.
- 6) Install the complete unit onto the existing lamp-holder.
- 7) Connect the grounding wire to the earth sign “ \equiv ” under the fixture (if required please refer to page8 for the instructions of grounding).
- 8) Fix the battery pack in a proper location near the emergency unit.
- 9) Connect the battery pack to the socket of the emergency unit and pay attention to the polarity. Positive (+) for **RED** and Negative (-) for **Black**.
- 10) Ensure the completed unit is fitted firmly.
- 11) Turn on the power and installation is complete.



Connection Diagram for EN models

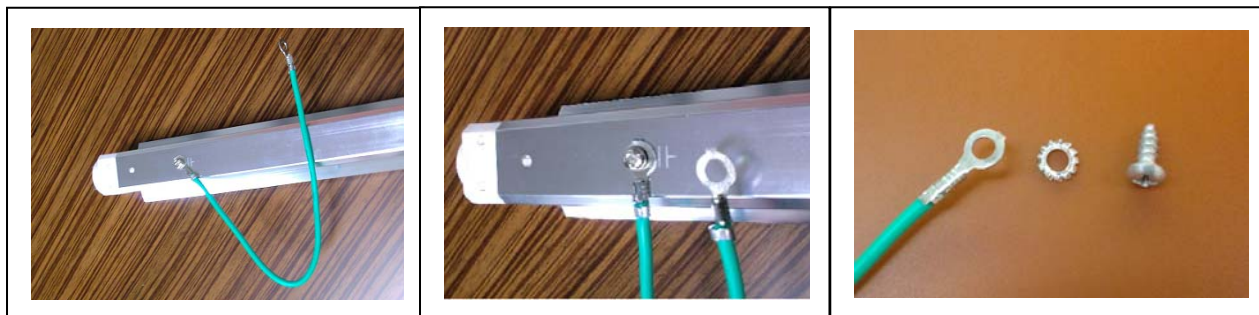


Remarks:

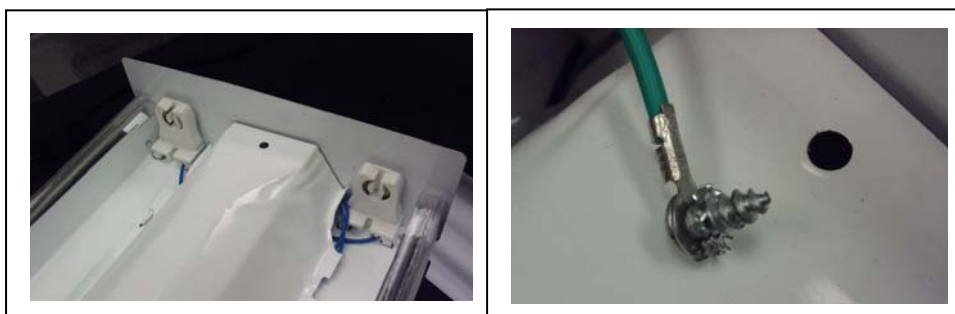
- The existing ballast and capacitor should be removed or bypassed in the circuitry.
- Starter is not required. It should be removed or bypassed in the circuitry.

Instructions for grounding:

- 1) The **EcoLight® T5 (Retrofit Emergency Fixture)** can provide with an external wire for grounding purpose. Both wire ends are connected to a ring terminal for easy installation to the existing luminaries. The products also come with a star washer for scratching the painted surface and a screw for fixing the wire.



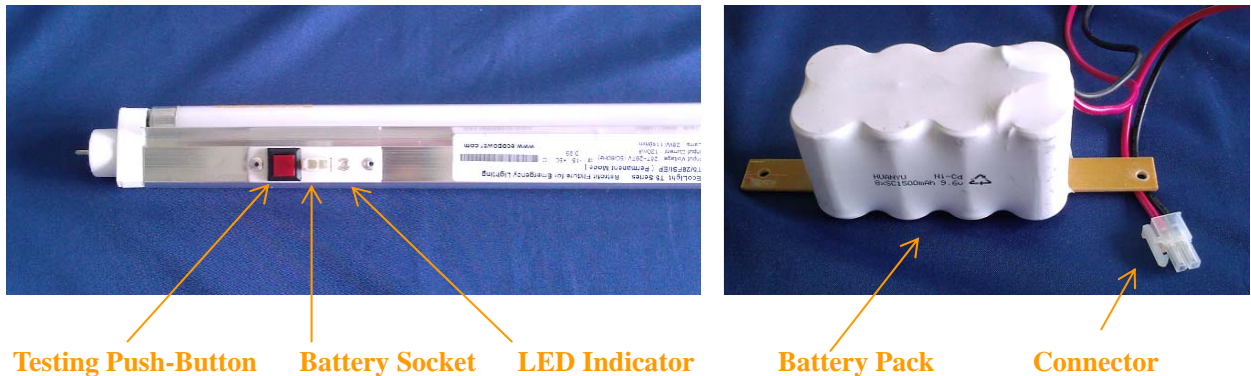
- 2) In general, the existing luminaries will build with a position for grounding application. If it does, connect the wire to that position with the star washer at the bottom, ring terminal at the middle and the screw is on top. If not, the installer has to drill a hole of $\Phi 4$ (mm) in proper position near the retrofit fixture.



- 3) By using a proper tool, fix the ring terminal to the grounding position or drilled hole. To ensure proper grounding, the star washer must scratch painted surface completely.



Instructions for LED indicator, Testing Push-Button & Battery Pack:



LED indicator

- 1) The LED indicator must be positioned in such a manner that LED signal is clearly visible at all times.
- 2) **GREEN** LED glows when the batteries are charged.
- 3) **RED** LED glows when the batteries are discharged.

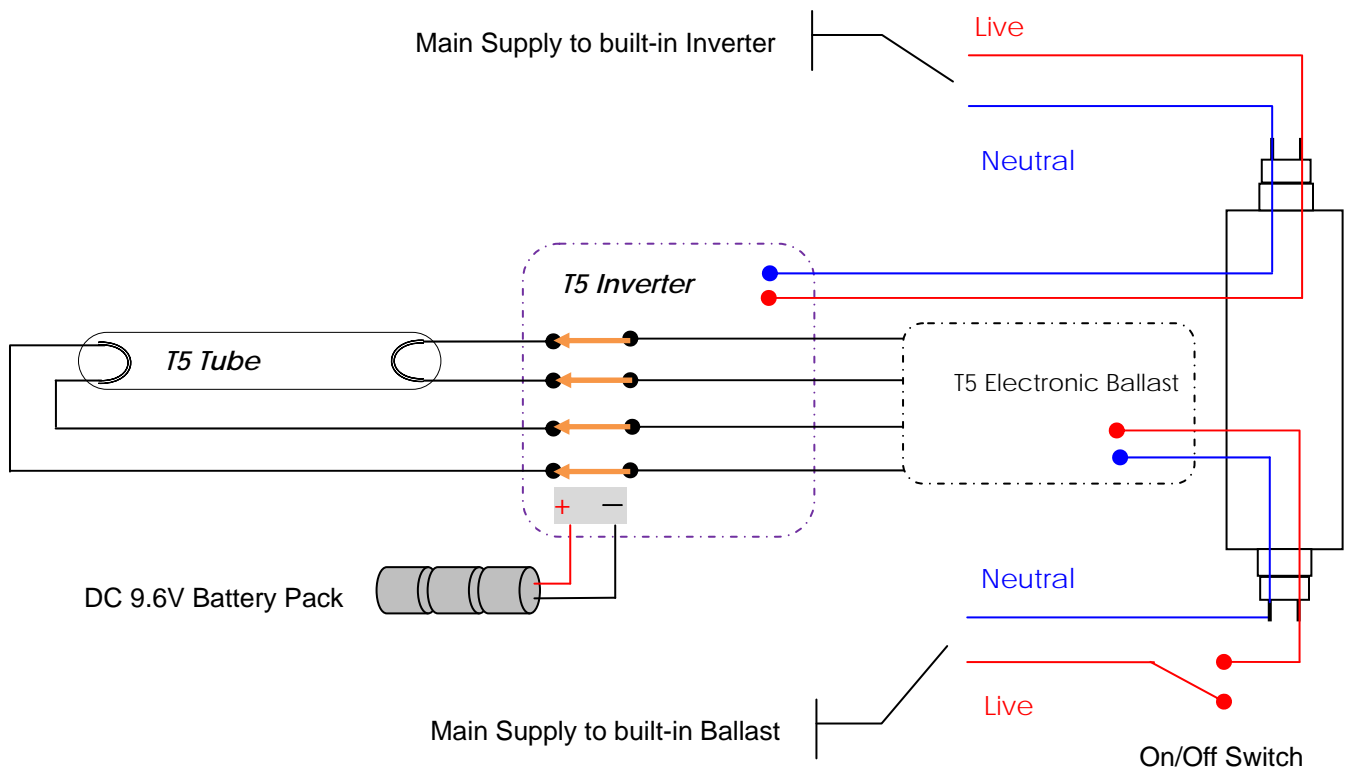
Testing Push-Button

- 1) **EcoLight® T5 (Retrofit Emergency Fixture)** is built with a Testing Push-Button. As long as the button is pressed, the retrofit fixture is switched to emergency lighting mode and the battery is discharging. When it is released, the system is charging.
- 2) When the Testing Push-Button is pressed, the LED indicator will switch from **GREEN** to **RED**. It will turn from **RED** to **GREEN** when it is released.
- 3) The Testing Push-Button serves as a short-cut to test the emergency lighting function. To ensure the battery capacity and system stability, we highly recommend the user conducting a full discharge test for every 4 months.

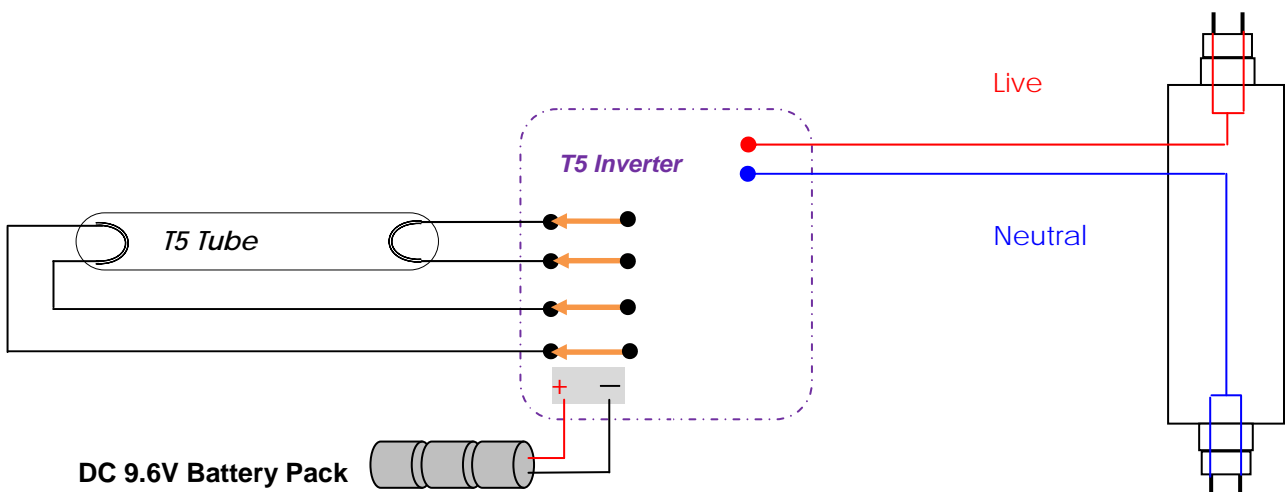
Battery Pack

- 1) The battery pack is connected to the socket of the emergency unit and it should pay attention to the polarity. Positive (+) for **RED** and Negative (-) for **Black**.
- 2) To ensure battery guarantee, the initial data of commissioning must be indicated on the battery.
- 3) Initial charging of batteries requires a minimum of 10 hours. Afterwards, 2 complete charging and discharging cycles must be carried out to achieve the full battery capacity.
- 4) Flat battery must be replaced by new battery when 2/3 of the nominal services period is not reached during the periodic checking according to local standards and/or during a full discharge every 4 months.
- 5) A battery's capacity shall be chosen so that the luminaire will achieve its rated duration up to the time of battery replacement.
- 6) The battery shall conform to IEC 60285. The maximum continuous ambient air temperature shall be 50 °C while the minimum continuous ambient air temperature shall be 5°C (occasional outage to 0°C).
- 7) In order to ensure a trouble-free operation over several years, the emergency system must be operated in emergency lighting mode using the full battery capacity of 1 or 3 hours for every 4 months.

Circuit Diagram for EP models:



Circuit Diagram for EN models:



Warning: Incorrect wiring of EP or EN would cause short-circuit!