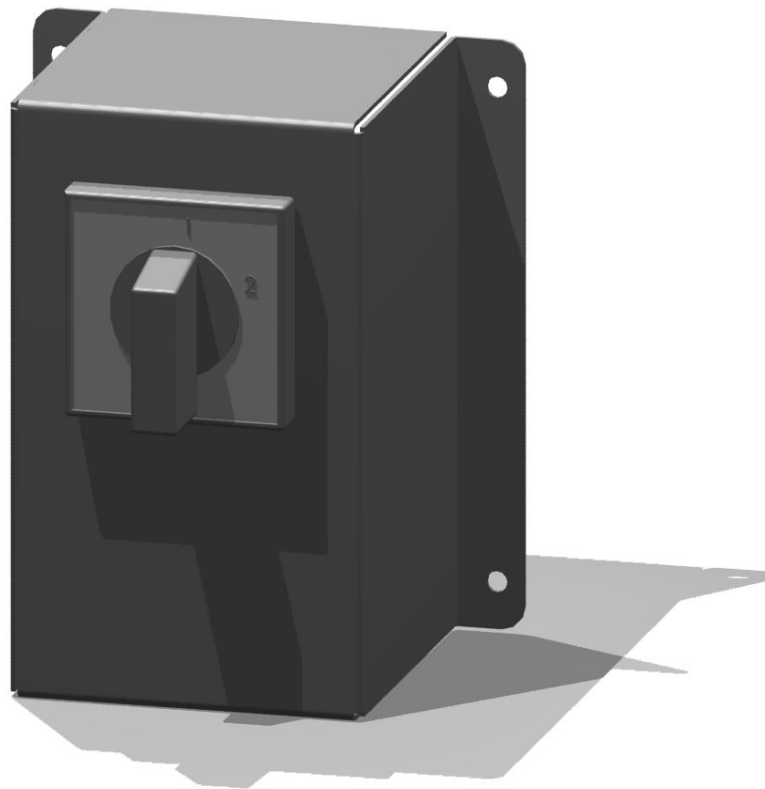


Universal Run / Stop Switch

Installation & Operation Guide



Heavy Duty 3 Pole, Double Throw Cam Action switch
for use on LE2000, LE1000, LE600, and LE300 Turbines

Contents

Disclaimer.....	3
Introduction.....	4
Operation & Specification.....	4
Safety Precautions.....	5
Installation.....	6
Warranty.....	8

Disclaimer

- All specifications are subject to change without prior notice.
- The information given in this user manual is believed to be accurate and reliable. Samrey assumes no responsibility for omissions or inaccuracies.
- The user of this information and product assumes full responsibility and risk.
- The Wren Micro-Turbine / Merlin turbine is a source of electrical power. It must be installed in accordance with local building and electrical regulations. Consult your local planning (zoning) office for details.
- The Wren Micro-Turbine / Merlin turbine has moving parts that may cause injury due to poor installation and unsafe operation. Samrey assumes no responsibility for problems caused by unsafe or unsatisfactory installation or operation.

Designed & Assembled in the UK by:
Leading Edge Turbines Ltd.

www.leturbines.com



Introduction

Please read this manual thoroughly before attempting to assemble, install or operate your Universal Run / Stop Switch. This will assure optimum performance and safety.

The Universal Run / Stop Switch is a solution designed to allow the user to dynamically brake a Wren Micro-turbine or Merlin turbine at will. This is achieved by disconnecting the power output of the turbine from the relevant load and diverting it to a short circuit which then applies the dynamic braking effect on the permanent magnet alternator of the turbine. This will bring the turbine to a near stop for maintenance or to allow the turbine to safely ride out high winds and storms.

The Universal Run / Stop Switch can be used with turbines of different manufacture as long as the relevant turbine has the following characteristics:

- 3-Phase Wild AC not exceeding 500v & 16a
- Wild DC not exceeding 150v & 10a
- Mechanically and Electrically capable of dynamic braking

Operation & Specification

The Universal Run / Stop Switch should ideally be operated during low speeds as repeated use at high speeds may cause damage if the turbine head (if it was not designed to withstand repeated dynamic braking operations).

The switch has 2 positions:

- Position 1: Turbine 'Stop' position. The turbine is dynamically braked and may be seen to rotate very slowly.
- Position 2: Turbine 'Run' position . The turbine output is allowed to flow straight through the switch to the relevant output.

Safety Precautions

Safety must always be your primary concern during the assembly, installation and operation of your turbine and other associated equipment. Always be aware of the risks involved with mechanical and electrical installation work. If in doubt about any issue regarding your turbine system, please seek further assistance before proceeding.

Mechanical Safety Hazards

- Whilst installing the Universal Run / Stop Switch, ensure that the turbine is suitable restrained and not allowed to operate during the installation.

Electrical Safety Hazards

- The Wren generates rectified DC voltage and the Universal Run / Stop Switch also operates at these voltages. Even at these low voltages there are inherent risks. Caution should always be used when connecting Wren or other equipment to the electrical system.
- The Merlin generates high voltage AC and the Universal Run / Stop Switch also operates at these voltages. At these high voltages there are significant risks. Caution should always be used when connecting Merlin or other equipment to the electrical system.
- Ensure that you have followed the cable-sizing guidelines to ensure that the correct size of cable has been selected. If a cable of insufficient cross-sectional area is used at any point in the electrical system, heat will build up in the cables causing a potential fire hazard. A properly sized fuse or circuit breaker should be used in the cables connected to the battery. This will stop the risk of short circuit currents.
- Batteries used in renewable energy systems can deliver a serious amount of current. A short circuit in the battery circuit can lead to hundreds of amps flowing through the battery cables. This will cause a heat build up and ultimately an electrical fire. Batteries are also susceptible to explode when shorted. Always use insulated electrical tools when working on the battery's electrical connections.
- Batteries are very heavy. Do not attempt to move batteries by yourself. Always use manual handling tools and an assistant.
- Always keep lead-acid batteries the correct way up. Do not allow the acidic electrolyte to spill or come into contact with your skin or face. Always follow the manufacturer's safety instructions when handling lead-acid batteries.
- Ensure that the Universal Run / Stop switch is correctly wired as per these instructions and wiring schematics. Incorrect wiring may lead to a short circuit being placed across the batteries which can lead to fire or explosion.

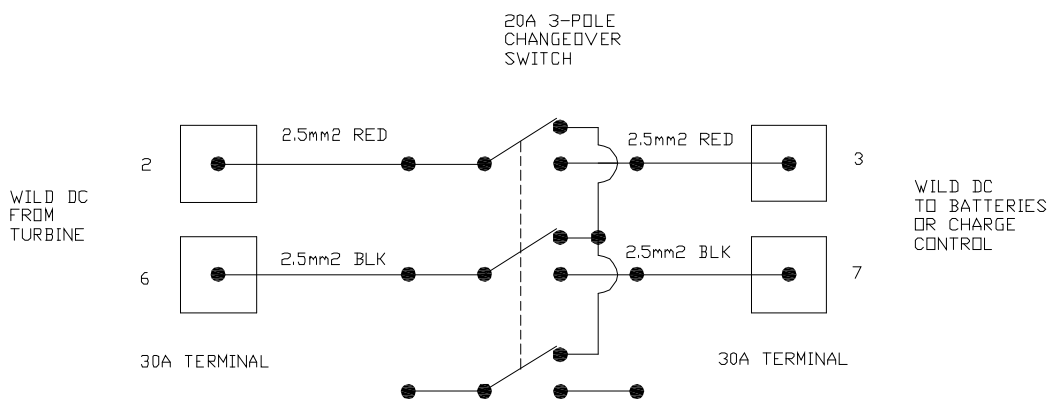
Please use common sense when installing and operating your turbine and associated equipment.

Installation

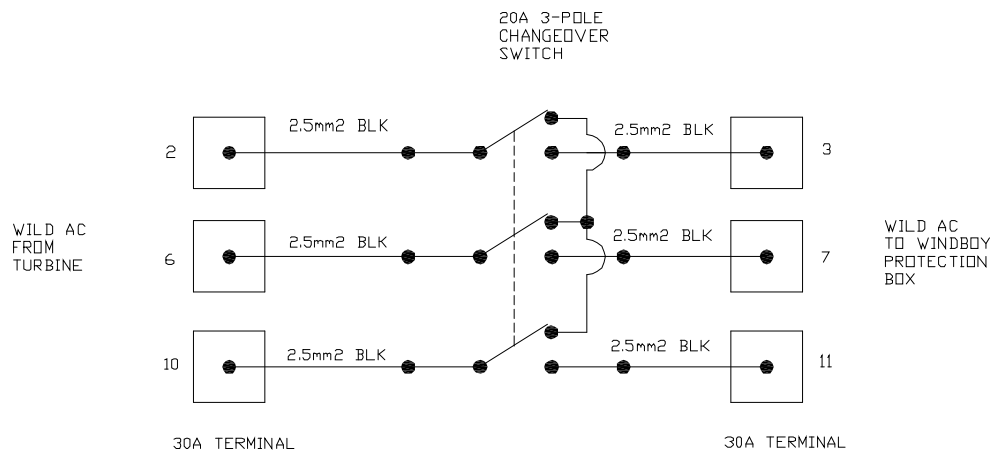
Please refer to electrical schematic for appropriate generic wiring diagrams.

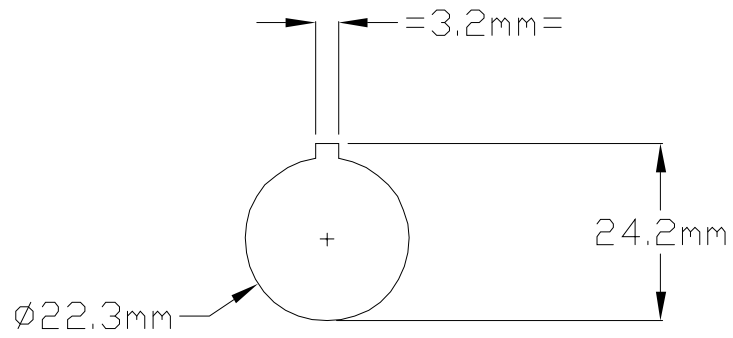
The Universal Run / Stop Switch can either be mounted in the enclosure box (supplied), which in turn can be mounted on an internal panel, or the switch can be integrated into an existing panel. If the unit is to be integrated into an existing panel, a suitable cut-out, as detailed on the wiring diagram will need to be made.

Switch Wiring for Wren Micro-turbine:



Switch Wiring for Merlin Turbine:





Panel Cut-out for Integrated Installation:

Warranty

Your Universal Run / Stop Switch carries a two-year warranty from the original purchase date.

During the warranty period, any component found to be defective in material or workmanship will, at the discretion of Samrey, be replaced or repaired at no charge.

This may be done on a 'return-to-base' arrangement for serious defects. For minor component failures, replacements may be sent directly to the customer / dealer for replacement. This can be negotiated at the time of the warranty claim to come to a mutually convenient arrangement for all parties. Samrey will take all reasonable action to ensure customer satisfaction. You will always receive a warm, courteous service in or out of your warranty period.

Your equipment must be installed and operated in accordance with this guide and local codes. Failure to do so will result in this warranty becoming null and void. Any unauthorised modifications to the equipment will void the warranty and may compromise the safety of the machine.