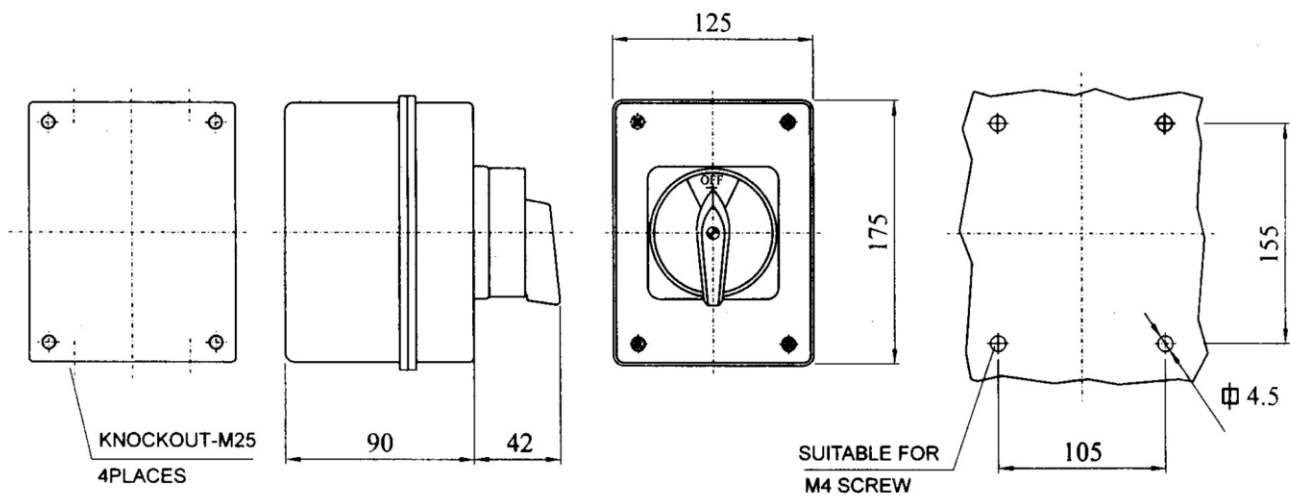




INSTRUCTIONS

FUTUREENERGY 1000 / 600 WATT WIND TURBINE STOP SWITCH

MOUNTING INFORMATION





WHEN THE SWITCH IS IN ' OFF ' POSITION
UNSCREW THE COVER SCREWS AND REMOVE THE COVER

The above diagram gives all the mounting dimensions for the switch box. Please also note that the lid will only come off when all 4 screws are undone **and** switch 'A' (see switch diagram) is in the **'OFF'** position.

CONNECTION INFORMATION

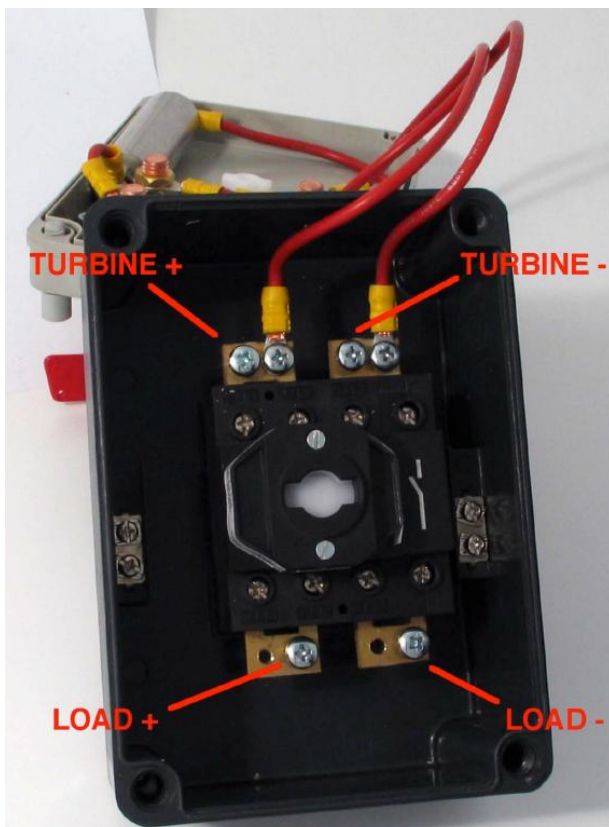
The turbine should be connected to the set of terminals in the switch box indicated in the diagram below.

 For safety reason we recommend that a fuse is placed inline after this box to protect batteries or other equipment from accidental shorting.

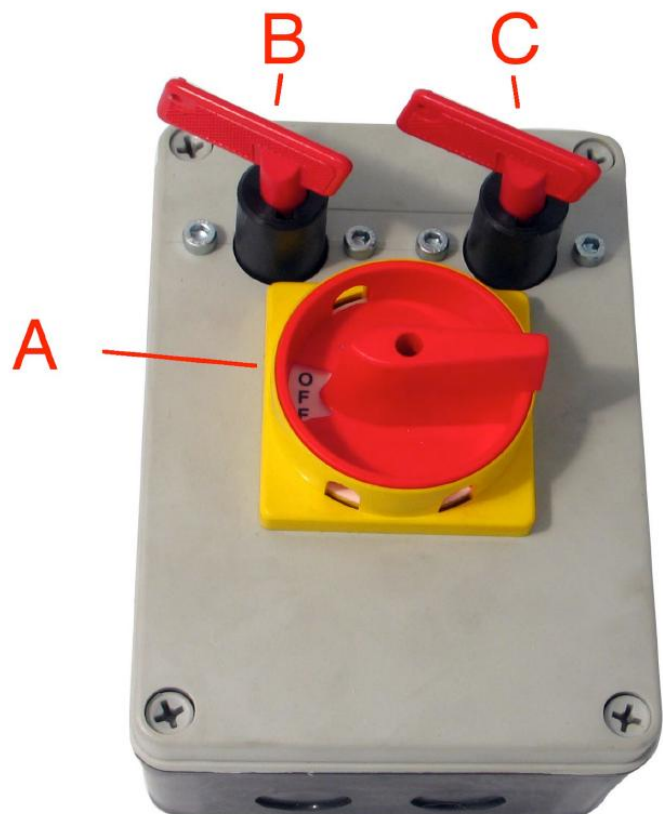
 Before installing the stop switch make sure the wind turbine is fully stopped and, if possible, fully isolated. Connecting equipment (load devices) should also be isolated to remove the risk of electrical shock injury.

Connection information

The turbine and load side equipment should be connected to the set of terminals in the switch box indicated in the diagram below. Ensure that positive and negative DC terminals are correctly connected to the corresponding positive and negative terminals of the turbine and load equipment – positive to positive and negative to negative.



Connection Diagram



Switch Diagram

TURBINE STOPPING PROCEDURE



CAUTION: There is a risk that the generator in the turbine can be damaged (burnt-out) by prolonged short-circuit whilst the turbine is spinning at high speed / winds. If the stopping sequence below is not having an effect due to very high wind speeds then the attempt to stop the turbine should be abandoned until a lull in wind speed occurs then the stopping procedure can be attempted again. (Normal load should be returned to the turbine if stopping is abandoned so that the turbine is not left free spinning).

Using short circuit to stop the turbine at high speed results in rapid heating of the generators windings and damage can be caused in as little as 15 seconds. The stop switch uses an internal dump load and is more effective than a full short for stopping the turbine because energy is taken away from the generators windings.

When should the turbine be shut down?

It is always best to use a weather forecast to predict wind speeds and shutdown the turbine in anticipation rather than in reaction to high winds. www.xcweather.co.uk is a good place for this information.

It is recommended that the turbine is parked in wind speeds above force 6 Beaufort (12 m/s, 28 mph). At these average wind speeds, gusts are likely to be damaging. If wind speeds are forecast above force 8 (18 m/s, 40 mph) then, if possible, the turbine should be taken down.

Stopping Procedure

1. Rotate switch 'A' anticlockwise into the 'OFF' position. This isolates the turbine from the circuit it's connected to, battery bank or grid tie inverter.



Failure to do this may result in damage to connected equipment when stopping the turbine as the turbines connection will be shorted during this procedure.

2. Insert the red key into switch 'B' and rotate clockwise. This will make the turbine slow down to a safe speed so that it can be shorted and fully stopped. This is achieved by placing a load on the turbine via an internal dump load in the switch.



The dump load should not be left engaged for longer than a couple of minutes as it will generate excess heat in the switch box.

3. When the turbine has slowed significantly, insert red key into switch 'C' and rotate clockwise. This will short the output terminals of the turbine making it stop.

If the turbine does not come to an almost full stop after 15 seconds then the attempt should be abandoned and the normal turbine load re-applied. (The turbine will continue to rotate slowly during full short – this is OK and will not damage the turbine) See the CAUTION note at the beginning of this section.

To restart the turbine, follow the above steps in reverse order.