

MNTCB Turbine Control Box Installation Instructions (continued)



MNTCB
Turbine Control Box

The MNTCB Turbine Control Box is designed for use with three phase turbines.

Applications:

- Turbine Braking
- Three phase AC to DC converter
- Turbine disconnect

Features:

- Heavy Duty three phase bridge rectifier
- Converts three phase AC to DC
- Provides disconnect protected by circuit breakers
- Chassis ground bus bar with 14 useable openings (10 #14-6 and 4#1/0-14)
- Knockouts for in and out on bottom and sides
- Top surface is available to bring conduit in from directly above the enclosure

IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS - These instructions contain important safety and operating instructions for the MidNite Solar MNTCB Turbine Control Box boxes.

Before installing and using this product read all instructions and safety information contained in this manual.

If you do not fully understand any of the concepts, terminology, or hazards outlined in these instructions, please refer installation to a qualified dealer, electrician or installer. These instructions are not meant to be a complete explanation of a renewable energy system.

GENERAL PRECAUTIONS

WORKING WITH OR IN THE VICINITY OF A LEAD ACID BATTERY, SEALED OR VENTED IS DANGEROUS. VENTED BATTERIES GENERATE EXPLOSIVE GASES DURING NORMAL OPERATION. FOR THIS REASON, IT IS VERY IMPORTANT THAT BEFORE SERVICING EQUIPMENT IN THE VICINITY OF LEAD-ACID BATTERIES YOU REVIEW AND FOLLOW THESE INSTRUCTIONS CAREFULLY.

If service or repair should become necessary, contact MidNite Solar Inc. Improper servicing may result in a risk of shock, fire or explosion. To reduce these risks, disconnect all wiring before attempting any maintenance or cleaning.

Do not work alone. Someone should be in the range of your voice or close enough to come to your aid when you work with or near electrical equipment.

Remove rings, bracelets, necklaces, watches etc. when working with batteries, photovoltaic modules or other electrical equipment. Power from an illuminated photovoltaic array makes a very effective arc welder with dire consequences if one of the welded pieces is on your person.

All electrical work must be performed in accordance with local, state and federal electrical codes. Always disconnect all sources of energy prior to installing or performing maintenance on the Turbine Control Box.

Disclaimer

Unless specifically agreed to in writing, MidNite Solar Inc.

- (a) Makes no warranty as to the accuracy, sufficiency or suitability of any technical or other information provided in its manuals or other documentation.
- (b) Assumes no responsibility or liability for loss or damage whether direct, indirect, consequential or incidental, which might arise out of use of such information. The use of any such information will be entirely at the user's risk.

MNTCB Turbine Control Box Installation Instructions (continued)

Installation:

You will need:

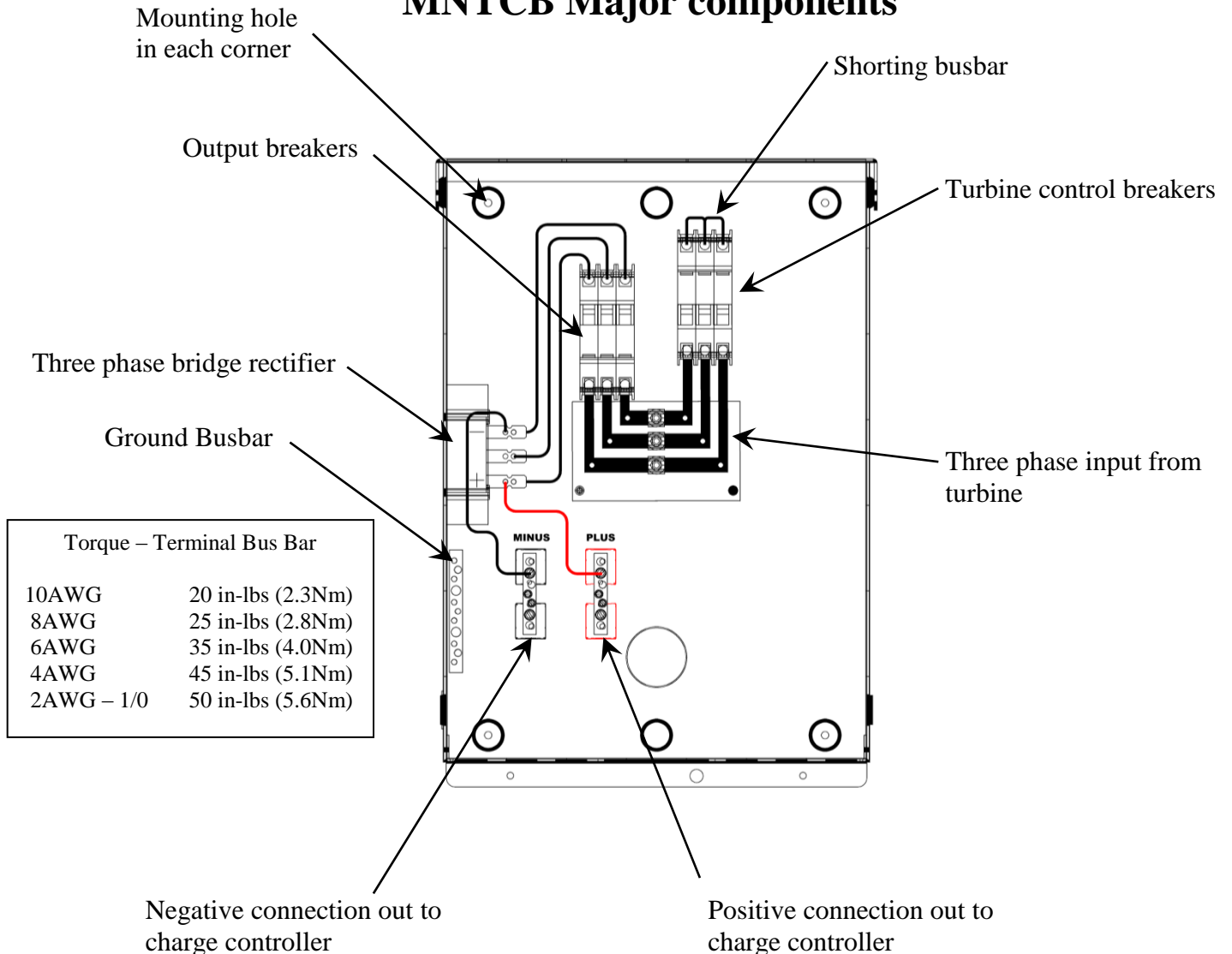
A #2 Phillips screwdriver, #10 or larger hardware for mounting the MNTCB to the wall and a slotted screwdriver to complete wiring the MNTCB into your system. A drill may be required to drill pilot holes.

The MNTCB Turbine Control Box should be located in a conveniently accessible area and secured to the wall or other mounting surface with #10 or larger screws. If mounting to a non-wood surface wall anchors (not included) may be used to provide a stronger more secure installation. The MNTCB has a type 3R enclosure but all openings should be sealed with silicone sealant if it is to be installed in an exposed area.

It is the installer's responsibility to ensure compliance with all applicable codes.

DANGER: High voltage!
Disconnect all sources of power before opening cover.

MNTCB Major components



MNTCB Turbine Control Box Installation Instructions (continued)

DANGER: High voltage! Disconnect all sources of power before opening cover.

Wiring:

First verify that the turbine is stopped or disconnected and that no power is present, then, remove the desired knockout(s) on the side or bottom and route the three phase output wires from the turbine to the three box lugs just below the breakers (Page 3).

Connect phase 1 to the top box lug, phase 2 to the middle box lug and phase three to the bottom box lug. The order of the phases is not critical so if desired phase 1,2 and 3 can actually be in any order. Be sure to use a heavy enough gauge of wire to carry all the current from the turbine.

Now connect the DC output from the MNTCB (Page 3) to the input of the charge controller (refer to the documentation that came with your controller). Be sure to observe proper polarity. Be sure to use a heavy enough gauge of wire to carry all the current from the turbine.

Connect an earth ground to the ground terminal block at the lower left side of the MNTCB (Page 3) The installer must ensure compliance with all applicable wiring codes including ANSI/NFPA 70. **Check your work before applying power!**

Operating the MNTCB:

The three ganged circuit breakers to the left connect and disconnect power from the turbine to the charge controller.

The three ganged breakers to the right connect the turbine to the shorting busbar to slow the turbine to a near stop.

To operate the turbine and charge batteries push all breakers to the up position.

Notice that one set of breakers is upside down. This is so that when all the breakers are up the turbine is not slowed and power is presented to the charge controller.

When all breakers are down the turbine is slowed and the charge controller is disconnected.

The breakers should typically be all up or all down however, if the left breakers are down and the right ones are up then the turbine would be free-wheeling with no load from the shorting busbar or the charge controller. This is not recommended because the turbine could overspeed in a high wind.

If the right breakers are down and the left ones are up then the turbine is slowed and the charge controller is connected. This is not recommended or useful.

