50-400 Amp Trystar Tuff Box

Installation, Operation, and Maintenance Manual

IMPORTANT:

Save this instruction sheet for future use of the product

⚠ Warning

Electrical potentials hazardous to human life can exist within this equipment when energized. Disconnect all input power before opening case or touching internal parts. Use proper lock-out/tag-out procedures.

The Information contained herein may not cover all variations in equipment or provide for all contingencies. Failure to follow instructions may result in death or serious injury.

Introduction

This manual covers Trystar Tuff Boxes, 600V and less, 50-400 Amp, single and three phase. These instructions set out the limiting factors for satisfactory performance of the Tuff Boxes. The information contained herein outlines and describes the proper inspection, installation and maintenance of the Tuff Boxes.

Inspection upon Receiving

Tuff Boxes should be carefully inspected upon receipt to ensure that no damage has occurred during shipment. Any damage should be reported at once and a claim should be placed against the transportation company. If any problems are found or parts are missing please contact Trystar at 1-866.TRYSTAR.

Installation and operating safety

The Tuff Box is provided with a lid and breaker flip cover to facilitate installation and should never be operated without these covers securely mounted in place. A safety program must be established, verified and followed by all personnel involved with the Tuff Box.

Warning

Only qualified personnel should install, inspect, or maintain Tuff Boxes since the normal operating voltages can be hazardous.

Grounding

The Tuff Box should be grounded securely and effectively as a safety precaution. Grounding must be in accordance with NEC and local electrical codes.

Wire Selection

Connection cables must be rated for at least 90 degrees C insulation. Connection cables must meet NEC and local electrical codes.

Inspection during Installation

The Tuff Box should be carefully inspected for any damage due to handling after receipt. The nameplate rating on the unit should be checked against the job specifications to ensure installation of the correct unit. The unit should be connected only as described on its nameplate to match the available line voltage. All bolted electrical connection should be checked and tightened since fasteners may have loosened during shipment.

Installation and Operation Procedures

1. Ensure the area is well ventilated and free from explosive or corrosive gas or vapors. Keep unit away from areas that are subject to physical damage.
2. Check the unit nameplate and verify that it is the correct line and load voltage for the application.
3. Shut off primary voltage using approved lock-out/tag-out procedures. If the unit will be powered by a generator, keep the generator turned off until all connections are made.

4. Ground the unit in accordance with the NEC and local electrical codes.
5. Use properly sized cable determined by the NEC.
6. If unit is a feed thru design connect any Cam Lock or multi-conductor cord feed through loads at this time. Make sure all breakers in the unit are in the off position.
7. Some units will be powered by a multi-conductor cable and some will be powered by single conductor cables. Connect line wires to the appropriate labeled and color coded Cam Locks or male receptacle. Cam Locks should be connected in the order: Ground (Green) first, Neutral (White) second, and then any phase conductors.
8. Make sure the lid is securely fastened and all breakers are in the off position.
9. If for any reason you suspect the unit has been exposed to moisture during transit or storage, it should be dried out before being energized.
10. Re-energize the voltage powering the Tuff Box, or start a generator to supply power to the Tuff Box.
11. Turn circuit breakers to the on position and check voltage readings to make sure the Tuff Box has correct voltage for the application.
12. If voltage is correct, turn the circuit breakers back to the off position and plug in the desired receptacle loads. Once all desired loads are plugged in, you can return the desired circuit breakers to the on position.

Installation Outdoors

- Select appropriate location, cable, installation, and mounting hardware to meet applicable codes.

Maintenance

Trystar Tuff Boxes shall only be maintained, serviced and inspected by qualified personnel.

All power to the Tuff Box must be disconnected and tested to confirm that the box is safe to work on.

Torque Values for Screws and Bolts

When attaching the wires to the terminals use the recommended bolts for the wiring lugs. Torque 2S350 lugs to 375 IN. LBS and 2S600 lugs to 500 IN. LBS. The chart below shows recommended torque values for standard size bolts.

Torque Values for Screws and Bolts	
Screw/bolt Size (SAE Grade 5)	Torque Value (+/-5%)
1/4	8 ft-lbs
5/16	17 ft-lbs
3/8	30 ft-lbs
7/16	50 ft-lbs
1/2	75 ft-lbs

Check Integrity of the enclosure by visually inspecting it for any defects.

Check all badges and engravings

1. Make sure all badges and engravings are clean and legible.
2. If badges are losing adhesion, replace.
3. If engravings are unreadable, replace.

Maintenance Log