

Turntide Smart Motor System Wiring with Venstar Surveyor Control

Introduction

This document is intended as a field reference guide following completion of the ***Turntide Control Wiring with Venstar Surveyor Control*** course. This guide should *not* be construed as a replacement for the course. Only qualified technicians that are familiar with electrical and mechanical safety procedures should use this guide. **The processes outlined here should only be performed with the unit power disconnected.**

Step 1: Power & Communication Verification

1. Verify the status of the Venstar Surveyor control green POWER LED and amber COMM STATUS LED.
 - a. POWER LED should be on.
 - b. Amber COMM STATUS LED should blink several times followed by steady on, then a brief off period and repeat
2. Document the status **BEFORE** starting the Turntide Smart Motor System Installation by recording a short video.
 - a. The video must show the LED sequence and pan to show the control wiring and original induction motor.
 - b. If the LEDs are not displayed as outlined above, include a video indicating the LED status.

Important: Technicians should not attempt to resolve any pre-existing communication issues.



Figure 1 Survey Control LEDs

Step 2: Remove Wires *from* Surveyor Control

Remove the wires attached to the G, Y1, Y2, W1 and W2 terminals of the Venstar Surveyor control.

Do Not remove any other wiring!

Pro Tip: Take a picture of the wiring before starting. The picture may be a useful resource during the step three.



Figure 2 Surveyor Control Wire Example

Step 3 - Connect White to Thermostat Wires

Connect the wires of the white **TO THERMOSTAT** motor controller harness as follows:

- **Green** wire to G terminal of Surveyor control
- **Yellow** wire to Y1 terminal of Surveyor control
- **Blue** wire to Y2 terminal of the Surveyor control
- **White** wire to the W1 terminal of the Surveyor control
- **Brown** wire to the W2 terminal of the Surveyor control

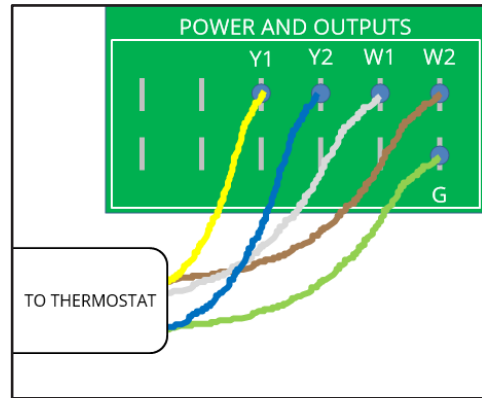


Figure 3 To Thermostat Wire Connections

Step 4 - Connect Black to Unit Terminal Board Wires

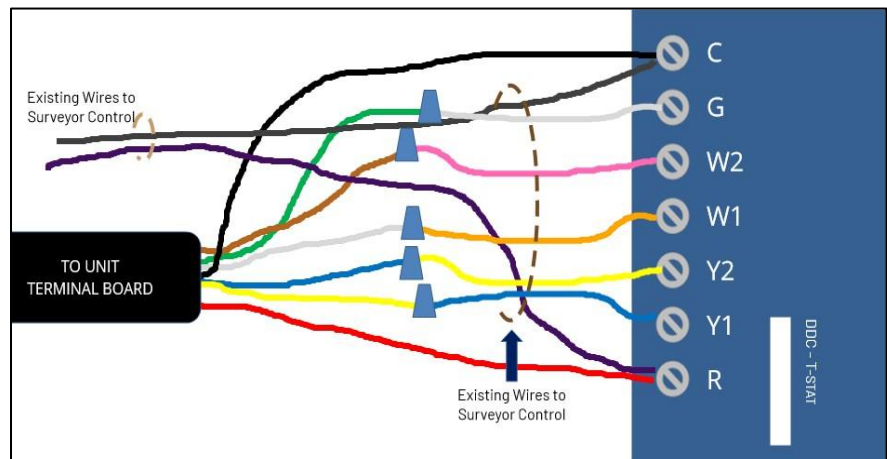
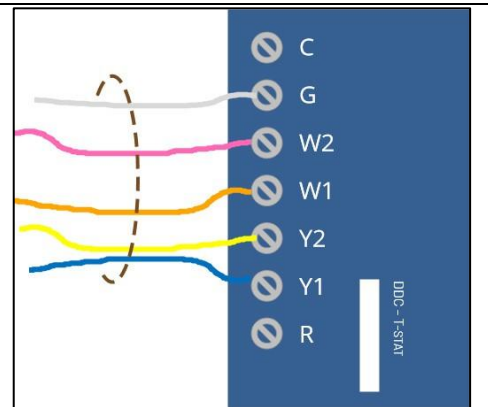
There are two scenarios for the wiring between the Surveyor control and the unit control. Select the scenario here that matches the unit on which you are working. Follow the directions exactly to avoid any erratic operation issues.

Scenario 1: Wires connected to terminal strip

In this situation the wire from the Surveyor control connects to the RTU control terminal strip. **Do Not remove any wiring from the RTU control.**

Connect the wires of the **black TO UNIT TERMINAL BOARD** motor controller harness as follows:

- **Green** wire to the wire removed from the G terminal of the Surveyor control.
- **Yellow** wire to the wire removed from the Y1 terminal of the Surveyor control.
- **Blue** wire to the wire removed from the Y2 terminal of the Surveyor control.
- **White** wire to the wire removed from the W1 terminal of the Surveyor control.
- **Brown** wire to the wire removed from the W2 terminal of the Surveyor control.
- **Red** wire to the "R" terminal of the unit control board.
- **Black** wire to the "C" terminal of the unit control board.



Scenario 2: Wires connected to DDC – Tstat Socket

In this situation, the wires from the Surveyor control connect to the RTU DDC – Tstat socket.

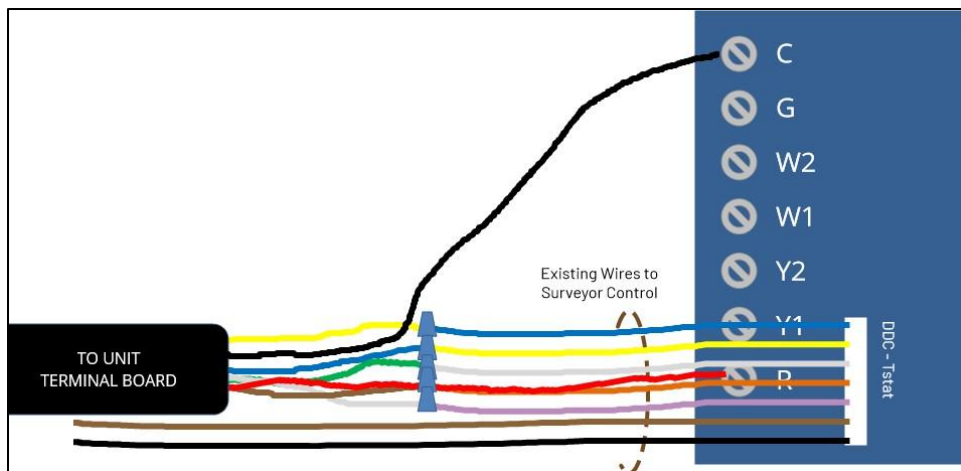
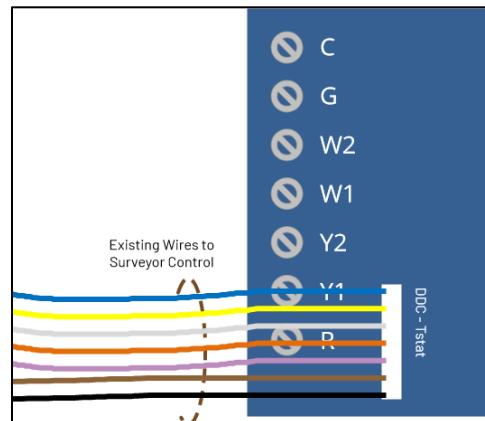
Do Not remove or cut any wires leading to the DDC – Tstat socket.

When the harness is between the Surveyor and DDC – Tstat socket exists *only* connect the **To Unit Terminal Board** red and black wire to the RTU control terminals.

DO NOT attach the other To Unit Terminal Board wires to the RTU control terminals. Doing so may yield unexpected results.

Connect the wires of the **black TO UNIT TERMINAL BOARD** motor controller harness as follows:

- **Green** wire to the wire removed from the G terminal of the Surveyor control.
- **Yellow** wire to the wire removed from the Y1 terminal of the Surveyor control.
- **Blue** wire to the wire removed from the Y2 terminal of the Surveyor control.
- **White** wire to the wire removed from the W1 terminal of the Surveyor control.
- **Brown** wire to the wire removed from the W2 terminal of the Surveyor control.
- **Red** wire to the “R” terminal of the unit control board.
- **Black** wire to the “C” terminal of the unit control board.



Step 5: Power & Communications Verification

1. Verify the Surveyor LED status to control was not impacted by the motor installation.
2. Record a video that shows the LED sequence and pan to show the Turntide motor installation is complete.
 - *If the LED sequence does not differ* from the initial inspection, no action is necessary.
 - *If the LED sequence has changed* since the initial inspection, contact Turntide Technical Support (support@turntide.com) BEFORE leaving the jobsite.



Figure 4 Surveyor Control LEDs

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