

2014

JUNCTION BOX INSTALLATION MANUAL



Part # BWJCT Junction Box Installation Manual

Junction Box Installation Manual

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Junction Box Installation Manual

1. Introduction

A junction box is required when the integrator (primary scale controller) must be mounted greater than 30 ft. from the scale components. **We strongly recommend wireless communications to a remote display whenever possible to alleviate the long term maintenance issues associated with junction boxes and long cable installations.** If it is not feasible to use wireless equipment, then our new digital junction box will offer the best option to remotely monitor a single scale. The new Digital Junction box converts sensitive analog signals (load cell, speed sensor, angle sensor) to a digital format. The robust RS485 communication system allows cable runs that are less susceptible to electrical noise and interference. All scale information can be transmitted over one 3 pair cable (6 wires).

It is critical that you follow all Company and government **SAFETY** procedures when installing this component in the field.

After reading this manual you require any assistance with the installation, wiring, and setup of the junction box please contact our technical support department.

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2. What is in the Box?

The following items are included:

1. 1 - Junction box
2. 4 - Mounting Screws
3. 3 pair extension cable
(if ordered with the Junction Box)



3. Tools Needed

The following basic tools will be needed:

1. 1 QTY – Phillips / Star Head Screw Driver
2. 1 QTY - Small Flat Head Screw Driver
3. Wire Strippers
4. Lock-Out Tag

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4. Installation Procedure

Before you start

Disconnect power to the integrator at the breaker or disconnect panel. Lock out the supply power while mounting the junction box and working inside the integrator.

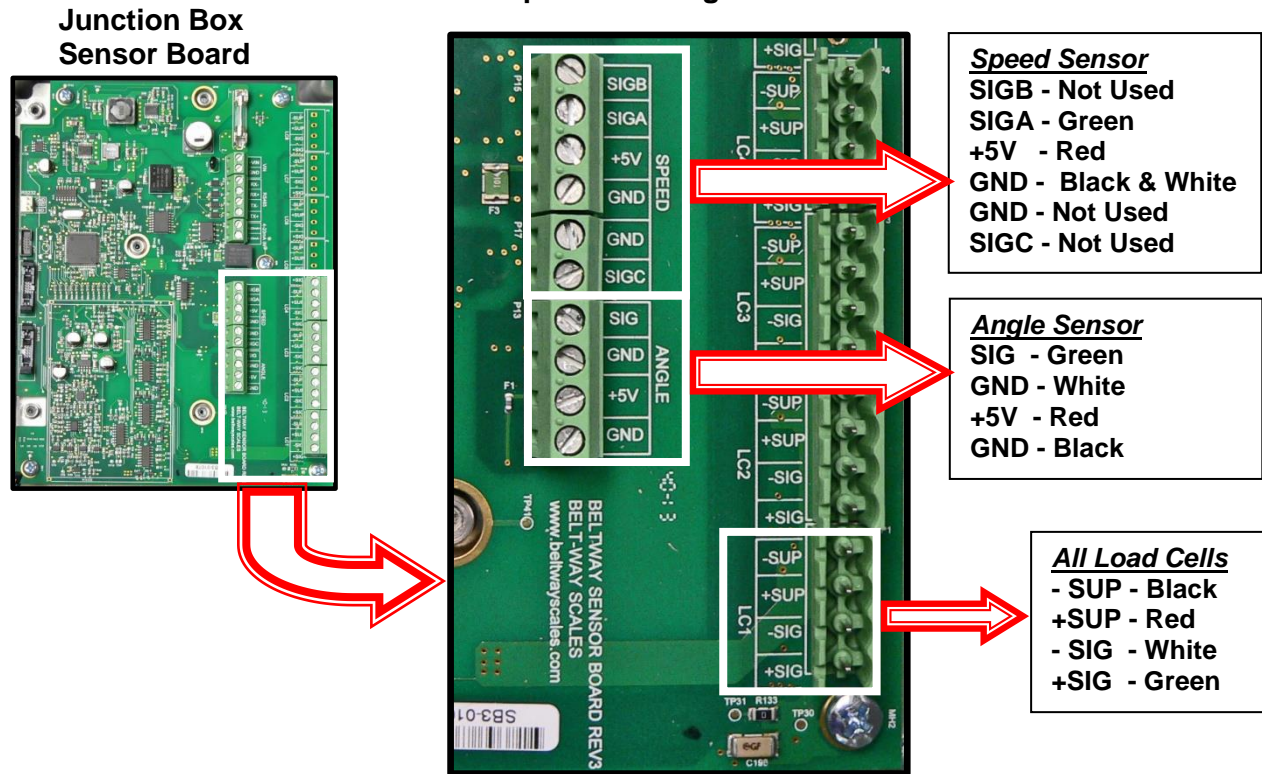
STEP 1 Label and Mount Junction Box



Label the junction box on the provided spaces to specify the type and capacity of the scale. Mount the junction box in a secure location within 30 feet of the scale components. Use the attached drawing to drill mounting holes. Make sure the cables are long enough to easily reach the junction box location. Excess cable may be trimmed. Route the component cables so they are away from sources of high voltage. Be sure they are protected from falling material and the moving belt.

Step 2 Connect Component Cables

Component Wiring Terminals



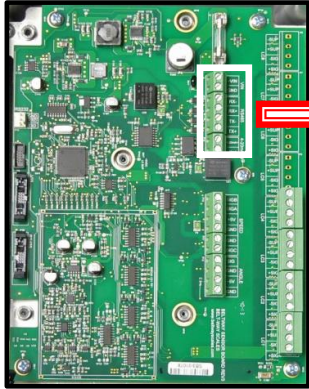
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STEP 3

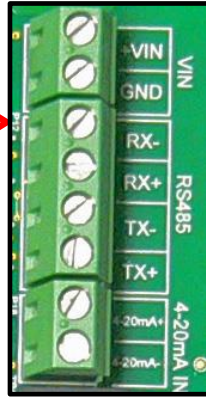
Connect RS485 Cable to Junction Box and Integrator Control Box
This Wiring diagram assumes a shielded 3 pair (6 wire) cable is used.
BE SURE TO ROUTE THE CABLE AWAY FROM SOURCES OF HIGH VOLTAGE!

JUNCTION BOX WIRING:

Junction Box Board



RS485 Terminal



VIN (Power input)

+VIN - White
GND - Black (White & Black pair)

RS485

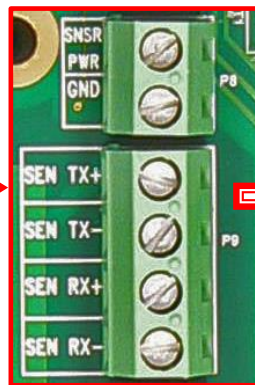
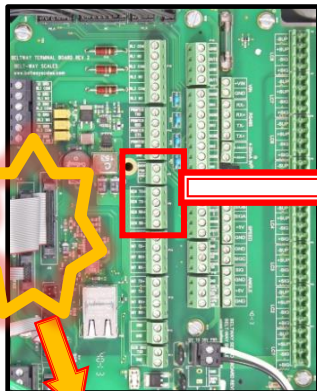
RX- Black (Green & Black pair)
RX+ Green
TX- Black (Red & Black pair)
TX+ Red

Do **NOT** connect the shield wire at the junction box end!

3 Pair Cable between
Junction Box and Control Box

INTEGRATOR (CONTROL BOX) WIRING:

Terminal Board (Inside Control Box)



Power Output

SNSR PWR - White
GND - Black (White & Black pair)

RS485

TX+ Green
TX - Black (Green & Black pair)
RX+ Red
RX - Black (Red & Black pair)

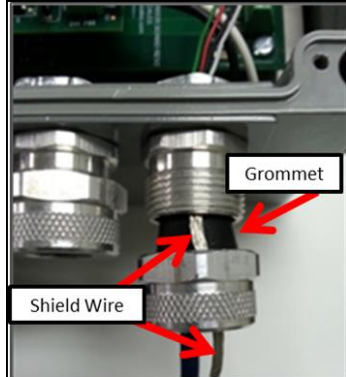
Connect the shield wire **ONLY** at the Integrator end!

Make sure there are NO cables connected to the SENSOR POWER and SEN RS485 INTERFACE terminals. (located under the main large ribbon cable) Cable Locations: P4 & P4_A

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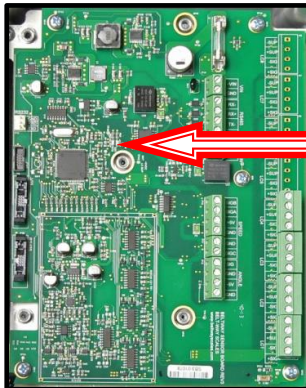
The shield wires on all components must be connected as shown below.

Installing the shield wire as shown will ground it to the box and reduce interference from electrical noise. When installing 3 or more load cells you will need to strip the wiring back to get additional length and keep the shield wire out of the Integrator.



1. The complete cable needs to be fed through the grommet hole.
2. The shield then needs to be wrapped backwards over the grommet and fed through the cord grip nut.
3. Insert the cable through the hole in the integrator enclosure so that the cord grip presses the shield against the housing as the nut is tightened.

5. Connect Integrator Power



Make sure the green LED's on the junction box board are illuminated to show it is powered up.

Return to the integrator and proceed with the calibration as described in the belt scale manual.

Contact Belt-Way technical support with further questions.