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TSC

Totalcomp Signal Conditioner

Totalcomp Inc. 99 Reagent Lane, Fair Lawn, N.J. 07410 Tel.: (800)-631-0347 (201)-797-2718

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TSC Signal Conditioner Manual

Contents

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2. Precautions

WARNING

Disconnect all power to this unit before installing, cleaning, or servicing. Failure to do so could result in bodily harm or damage the unit.

CAUTION

- Permit only qualified person to service the instrument
- Before connecting or disconnecting any components, remove the power.
- Failure to observe these precautions may result in bodily harm, damage to or destruction of the equipment.

- **The TSC Totalcomp signal conditioner is a precision electronic instrument, handle it carefully.**
- **Do not install the device in extreme heat.**
- **Verify the local voltage and receptacle type are correct for the TSC instrument.**
- **Only use Verified DC input voltage**
- **Avoid unstable power sources. Do not use near large power consuming equipment such as Welding equipment or large motors.**
- **Avoid sudden temperature changes, vibration and water.**
- **Avoid heavy RF noise.**

3. Specifications

Model	TSC
Housing	Stainless Steel
Operating Temperature	- 10 °C – 40°C / 14°F - 104°F
Power	External 12-24 VDC (not provided)
Interface	0-10VDC Output or 4-20mA output
Excitation Voltage	Max: 5V/150mA
Load cells	Up to (4) 350 ohm load cell
IP Rating	IP65 (protected against low pressure jets of water)

4. Introduction

- TSC signal conditioner is a weighing instrument that amplifies analog signals from load cells and converts them into a modified output such as 0-10VDC or 4-20mA output
- Output can be utilized to signal other devices.
- Output is selectable with toggle switch from Current to Voltage as needed.
- Power should be supplied between 12-24 VDC from a stable power source.

5. Installation

When you receive the TSC signal conditioner inspect it to make sure that it has not been damaged during shipping. Please contact the carrier to file a claim for any damage during shipping.

Item you will need During Installation and Calibration

- Phillips Screw drivers
- Small flat head screw driver
- Digital Multimeter with capability to measure DC Voltage and mA current
- Power source 12-24VDC for TSC instrument
- known weights to calibrate Span and set Zero
- This manual

Additional items might be required according to your application.

Load cell Terminal Block

- 2 rows of screw terminal blocks on board. Labeled #1 load cell; #2 load cell; #3 load cell; #4 load cell. Wire each load cell into the appropriate screw terminal. EXC+ ; SIG+; SHLD; SIG-; SIG+

Output Terminal Block

- 1 Row of Screw terminal block on board. Labeled XP9. Wiring to cable into the appropriate screw terminal DC+; DC- is for input DC voltage.
- AN-; AN+ is for Analog output. This is used for both Current or DC Voltage output.
- GRD shield or ground.
- TXD and RXD is not used on this board.

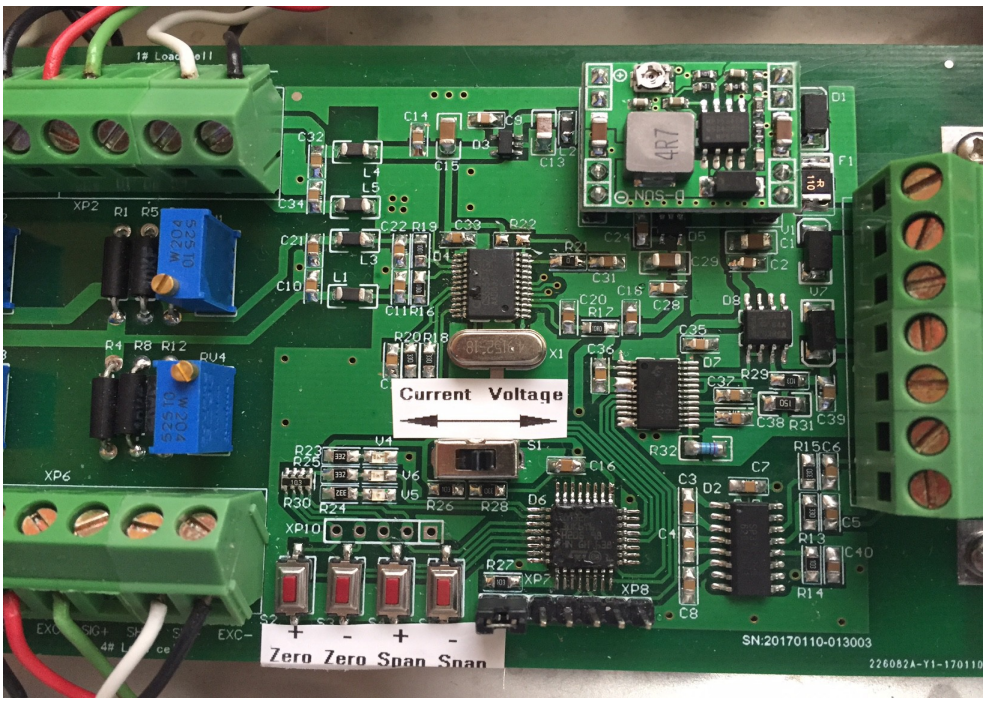
6. Initial Setup

After you have made all your connections.

- Load cells wired into the appropriate Terminal block.
- Output has been wired.
- Power source has been wired.

Choose the required output.

- Find Toggle switch on board Current ---- Voltage.
- Move the toggle switch into appropriate output position.



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7. Calibration

TSC instrument remembers prior settings and saves settings automatically in memory. To change output to your specifications you will use push button switches on the board. Buttons are surface mounted and top of the buttons are dark red. As Labeled Zero+; Zero-; Span+; Span-

Calibrating the board will require Multimeter that is able to measure Current and DC Voltage. Before applying power attach the leads of the multimeter to the AN+ and AN- output wire.

Check list:

1. Make sure you are in the required output mode Current --- Voltage Toggle switch is at the correct position.
2. Make sure you have attached the Multimeter to AN+ and AN- to measure output.
3. Make sure you have known weights for Span calibration.
4. Make sure you have a small object to push the surface mount push button switches.
5. Load cells are properly installed and wired.
6. Weighing vessel is empty and ready for calibration.

Calibrate and update program.

1. Turn on the power source 12-24 VDC, you will see component V4 Red light comes on continuesly. Second Red light V6 or V5 according to selected output will come on and blink.
2. ZERO calibration. Press and Hold Zero+ and SPAN- (about 3 seconds) at the same time wait until all Red lights come on, then let the buttons go. V4 light is on continuesly ON, V5 and V6 Red light both flashing.

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3. While the lights are on V4 (cont.), V5(flashing), V6 (flashing) you can change the output by pressing Zero + or Zero – after setting the appropriate Zero output wait for 5 seconds the TSC card will save the parameter and goes back to weighing mode automatically V4 RED light will be on and V5 or V6 RED light (according to chosen output) will flash.
4. Set SPAN output. Load known weights on the vessel or scale.
   Press and Hold Zero+ and Span- for about 3 seconds all Red lights V4 (cont.) V5 and V6 (flashing) will be on. Adjust output by pressing Span+ increasing or Span- decreasing set appropriate output and wait for 5 seconds until the TSC card will save the set parameter. Than the TSC card will go back to weighing mode and you are ready to weigh.

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TSC card is only in calibration mode if V4 (continnous); V5(flashing); V6(flashing) lights are on. If you don't touch the push buttons within 5 seconds the TSC card will go back to normal weighing mode automatically.

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