Columbia Concrete Products
TROUBLESHOOTING LOAD CELLS

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WHEN DO YOU NEED TO TROUBLESHOOT A LOAD CELL?

- Following a lightning strike; either your scale doesn't register, or registers incorrectly after that.
- When an overly large weight hits the scale, and it doesn't read correctly thereafter.
- When you get erratic results from known weights.
- When your scale won't properly return to "zero" after weight is removed.

TROUBLESHOOTING THE SCALE

If the system powers up and gives some type of stable digital readout that varies with the load on the system, the system problems are probably caused by factors other than the load cells. Often, load cells are blamed for a malfunctioning system; 90% of the time the problem lies elsewhere. Look for mechanical problems first:

a) Are there any mechanical "hang-ups" preventing the mechanism or load cells from operating freely?
b) Does the system have good cable connections? (load cell to summing box and summing box to digital indicator panel)
c) Are load cells installed properly, on a clean surface, and with recommended torque on the mounting bolts?
d) Is the indicator working?
e) Is your power supply okay?

TROUBLESHOOTING PROCEDURE: LOAD CELL

To properly troubleshoot to load cells you will need the following tools;

1. A small screw driver
2. A digital DC voltmeter with ranges capable of reading from:
   (0-50 millivolts & 4–20 mA).

Then first check all cables for possible damage, then make sure that all wire terminations are tight in load cell summing box and in digital indicator panel. If damaged cables are found, replace load cell, if wire terminations are loose, then tighten and proceed to Step 1.

Step 1 *(at the load cell summing box) - see Figure 1*

Check excitation voltage (+-*EXC*), should be (+12*VDC*);
if **YES**, proceed to Step 2 , if **NO** voltage,
refer to *troubleshooting digital indicator panel*.

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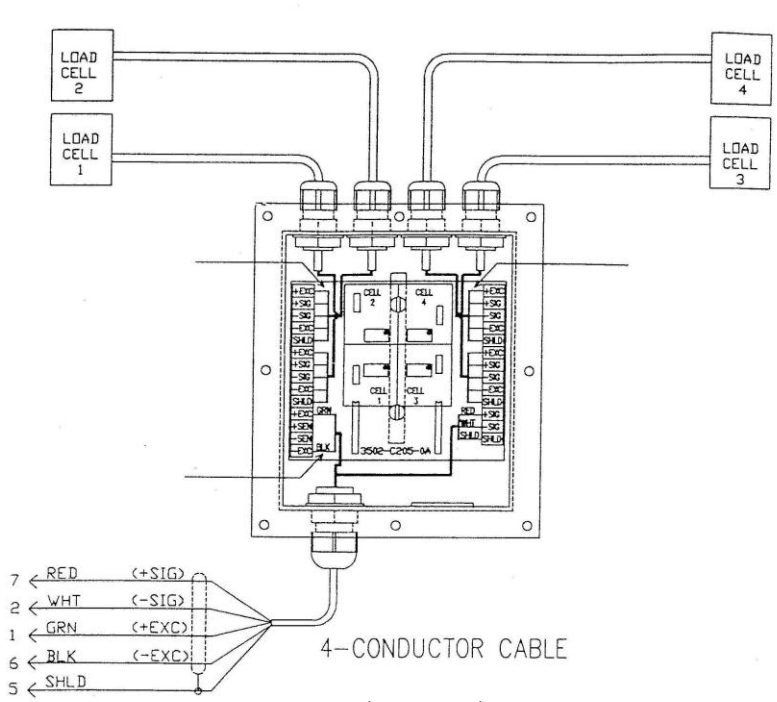
Step 2 *(at the load cell summing box) - see Figure 1*

Check signal voltage (+-*SIG*), should be (0 to 30*mV* using 3*mV/Volt* load cells – Columbia Standard) zero being no weight or structure weight on load cell. As weight is added to scale you should see an increase in millivolts; if **YES,** load cell is okay, if **NO** increase in millivolts, replace load cell.

TYPICAL LOAD CELL SUMMING BOX:



(Figure 1)

TYPICAL LOAD CELL CONFIGURATIONS:

S-Beam

Tank Weighing