



# Industrial Weighing Systems

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## Summing

Typically summing boxes are located where all the load cells cables will reach, load cell extension can be



made where load cell cables falls short.

The summing board provides a termination point between the analog load cells and the instrument.

The most common summing board has provisions for up to 4 cells.

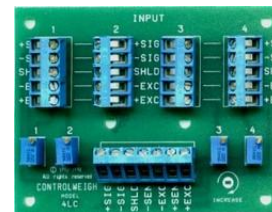
Load cell terminations: Usually 4 wires (+/-) Excitation, (+/-) Signal and shield.

Instrument Connection: Usually 6 wires (+/-) Excitation, (+/-) Sense, (+/-) Signal and shield.

The instrument +/- sense compensates for distance between the load cells and Instrument.

There are 2 main types of summing cards, SIGNAL trim or EXCITATION trim.

## Excitation trim

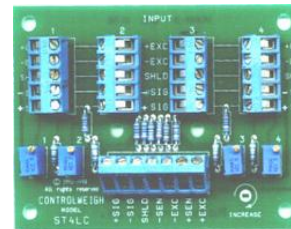


+ excitation goes through a trim pot to each load cells (+)EXC terminal.

To match cells a fixed weight is placed over each cell, by adjusting the trim pot the DC supply will increase or decrease in turn changing the displayed weight. Excitation trim can compensate for cells that vary as much as 10% in output. All load cells connect to a common (+) signal buss and (-) signal buss so you have to disconnect individual load cell signal leads to measure them when troubleshooting or balancing the dead load. Removing signal leads will disrupt the scale so be sure to lock out or disable any controls.

Excitation cards tend to be less expensive but typically require more time when troubleshooting, balancing dead load or testing for load cell faults.

## Signal trim



The instrument excitation is common to all cells on a signal trim card.

Isolation resistors separate each cell when connected to their + and - signal terminations.

A trim pot is placed across the +/- load cell input terminals prior to the isolation resistors to adjust each cell. The adjustment range for signal trim is limited.

The isolation resistors do not stop the cells from affecting each other but provide sufficient separation to measure the individual load cells in circuit without disrupting the weight display.

This is a valuable asset when trying to find a cell problem or when adjusting load distribution.

For factory precision load cells the pots may be removed or bypassed.