

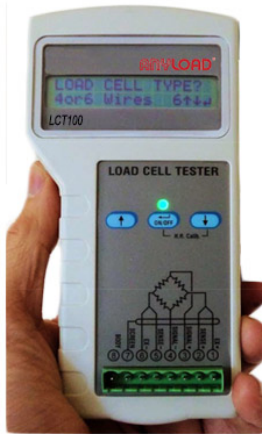
LCT100

Load Cell Tester

User's Guide (v1702)



LCT100 Load Cell Tester



1. Connect the load cell cable to the right pins in the connector
2. Make sure that the shield and body are not connected
3. Turn on the unit by pressing on/off key for a few seconds
4. The display will show the welcome screen for a few seconds and change to ask for load cell type (4 or 6 wires)
5. For the most accurate results for the high resistance (leakage), this is the time to run the calibration. Hold both the right key and on/off key, the display will show Calibrating... After 2 seconds the unit is calibrated
6. Now connect the shield and body (if available) to the connector
7. Choose type of Load Cell (4 or 6 wires) and press Enter
8. Choose L/C rated output with the up and down keys and press Enter
9. Press Enter for full testing or, down arrow for continuous display

If continuous mode was chosen:

The LED will blink in various colors and the Load Cell signal will be displayed continuously in percentage of the full L/C capacity.

For example: applying 10Kg on a 100Kg load cell will show of 10%

Note: To save the battery the unit will shut off after 6 minutes

If full testing cycle was chosen:

The LCD shows “ Test in progress” and the LED blinks for a few seconds. Once the test is finished you may scroll the results by pressing the up arrow key. The results will be displayed in the following order:

Input – Resistance between Ex+ and Ex- (Max 5000Ohm)

Output - Resistance between Signal+ and Signal- (Max 5000Ohm)

Sense+ - Resistance between Ex+ and Sense+ (applicable for 6 wires load cell) (Max 5000Ohm)

Sense- - Resistance between Ex- and Sense- (applicable for 6 wires load cell) (Max 5000Ohm)

Signal Output – Load cell signal in percentage of full L/C capacity. Note: in case of a broken cable or a very high input/output resistance the display will show “ Cannot measure”

Shield to Brdg – Resistance between the cable shielding (screen) and the bridge

Body to Brdg – Resistance between the load cell body and the bridge

Shield to Body – Resistance between the load cell body and the cable’s shielding

Tips for trouble shooting Load Cell and scales

Load cells might be damaged due to many reasons: Overloading, lightning strikes, moisture or chemical ingress, vibrations, corrosion, pulling the cable etc. As a result, the scale may provide unstable readings, zero drifting, error reading, non-linearity etc.

The LCT100 is the only measuring tool required to perform the tests either on site or in the lab. Before you start, make sure to have the Load cell spec and the cable color code (usually you get it with the load cell, or it can be downloaded from the manufacture web site).

How to test a weighing platform with a few load cells:

1. First stage: Leave all load cells connected to the summing box. Disconnect the cable from the weighing indicator, connect it to the LCT100 and perform a test.
2. Expected results for a good scale are as per the following example: If you have 4 load cells of 1000Ω, 100kg each and 40kg are applied on the scale than you would expect to see around 250Ω for the input and

output (total of the Input resistance divide by 4 and the same for the Output resistance). In case of six wires cable, you should expect to get very low resistance between the sense lines and the inputs those are shorted inside the L/C. Signal output must be around 10% (full scale capacity is 400kg) and the Shield to bridge resistance must remain very high.e. >1000MΩ

3. If some of the expected results are not in the required range, or you get erratic / unstable readings when testing in Continuous (Gain) mode: Check the cable integrity between the summing box and the tester. If it looks fine, disconnect each Load Cell cable and check each Load Cell separately. Note: there is no need to remove the load cell from the scale.
4. If all results seem to be in range, you may check for scale linearity, by choosing Continuous mode (Gain) on the LCT100 and applying various weights on the scale.

Understanding the LCT100 results:

Testing result with LCT	Possible reasons	What to do?
Input / Output resistance not in range	Cable or connector problem	Check cable integrity and the connectors
	Problems inside the load cell	Replace or send for repair
Sense is Too high (6 wires cell)	Not connected inside L/C, or it can be 4 wires Load Cell	Replace or send for repair
Signal Output from the scale is not in the expected range	Corrosion, force shunts, accumulated dust below the L/C or a faulty L/C	Clean the dust and check force shunts and alignment. Replace L/C if necessary
Signal Output not in the expected range (Unloaded Load Cell it should be around 0%)	Load cell zero balance damaged because of shock or overload	If the output signal is still low, the load cell can be used. A new calibration will be required.
Shield to bridge is too low	Water or chemical ingress to the cable or into the L/C	Replace the cable or repair the L/C