



**MICROTEC ENGINEERING**

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## Troubleshooting Tadano load cell faults

Disclaimer: This information is to be used at your own risk.

Tadano cranes commonly use a load cell at the end of the luffing cylinder to measure load. Problems with the load cell are common, especially in load cells older than 10 years old. It is difficult to conclusively determine if the load cell is faulty but the tests below will assist with diagnosing the problem.

To determine if the load cell needs reconditioning/replacing do the following:

1. Is the load cell more than 10 years old, if so then there is a good chance it needs reconditioning
2. Check the load cell bridge resistance as follows:
  - a. Between pins A and B on the load cell connector and between pins C and D should be 240 ohm
  - b. From pin E to each of the other four pins there should be infinite resistance (some meters display this as OL. The display should be the same as the reading you get with the probes connected to nothing and held apart on the highest resistance scale available on the multimeter). When doing the measurements do not let the fingers or other things that might affect the meter reading touch the probes.
  - c. The above two tests are not conclusive tests but if these readings are out of specification then the load cell will be in need of reconditioning.
3. Calibrate the load. The load zero is calibrated properly if the load reading is the same after luffing up to a higher angle or luffing down to a lower angle. After calibration if the calibration drifts so that recalibration is required then as long as the loom is okay the load cell is likely to blame. We have only had one case where the preamp in the computer was faulty.

Other useful information:

1. The load cell excitation from the computer is a square wave signal so do not expect to measure 24V at the computer side load cell connector.
2. Water is a problem with the load cells.
  - a. Make sure the sealing rubber O-ring is in good condition and is located in the load cell connector with the locking nut (connector on the load cell loom).
  - b. Try squeezing the cable with the connectors unplugged and see if any water can be seen coming out of the load cell connector.

Microtec Engineering can quickly recondition the load cells should they be diagnosed as faulty. Call us for further information.