



## Load Cell Wiring Notes

Because load cells output tiny, tiny signals, the electronics that process these signals must have sensitive inputs. The electrical system of the overhead crane is the natural enemy of sensitive electronic inputs. Because of this, it is most important to take care when routing and connecting the cable from the load cell to the electronics.

Poor load cell wiring is the leading cause of installation problems with SoleDigital products. It is essential that the load cell cabling is installed as per the manuals, failure to do so nearly always result in unstable displays, false triggering of load limits, and poor quality remaining life data.

This document will, hopefully give some tips on the do's and don'ts of the process and help you to get the best result possible.

**The Liftlog should not be installed next to between large contactors because the magnetic field they generate can also cause hardware damage. Keep your Liftlog 25mm from any large coil.**

## Here are some examples of poor installations:

- Load cell upside down
- Clamp bridge upside down
- Spacers on wrong side of clamp bridge

Installer had failed to even open the instructions supplied with the load cell. (Yes, we get angry when you don't try!)

These mistakes caused incorrect reading of the load because the load cell was installed differently when it was precalibrated.





## More examples of poor installations:

- Load cell cable tied to cross travel motor wiring

Doing this will induce relatively large voltages into the load cell cable. These voltages can be orders of magnitude larger than the load cell voltage signal. This causes sporadic load readings, false overload triggering and can damage the device it is wired into.



- Load cell cable not cut to length
- Load cell cable installed in ducting along with other wires

In the control cabinet having the load cell cable coiled up or in a cable tray is just as bad as having load cell cable tied to the cross travel motor wiring, it causes all of the same problems.

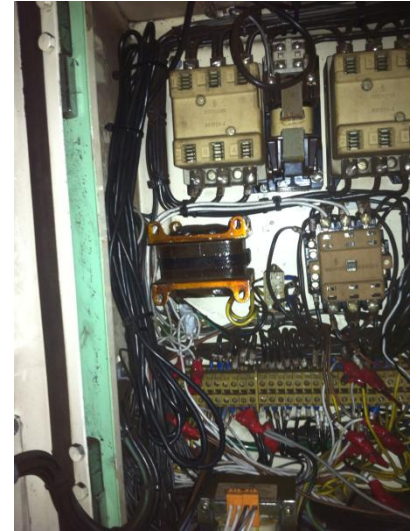




## More examples of poor installations:

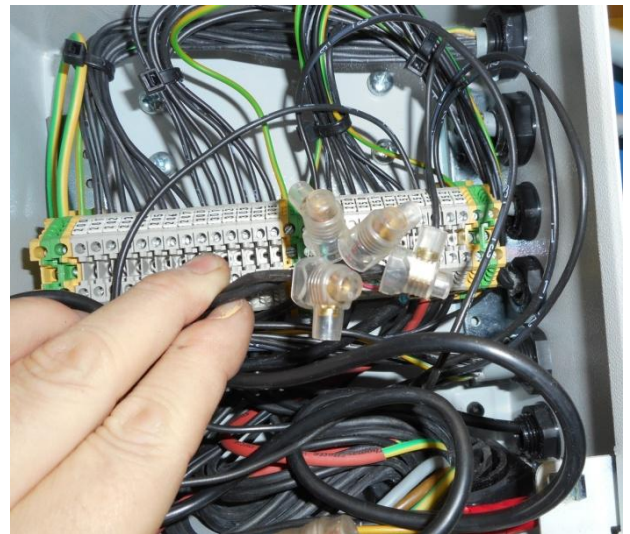
- Load cell cable not cut to length
- Screen not earthed
- Load cell cable coiled up and wrapped around other wires

The load cell cable shielding should be connected to an earth terminal as close to the Liftlog as possible. This protects the load cell signal for as long as possible.

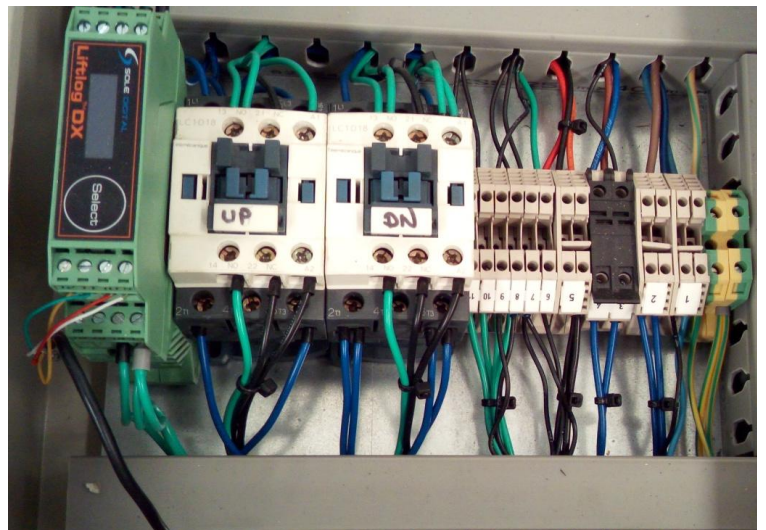


- Wire nuts used to run millivolt load signal down the entire length of the centenary cable

Load cell cable should be no longer than 3m in length. If you need it to go further a MaxOut Hoistnet Link is the correct way.



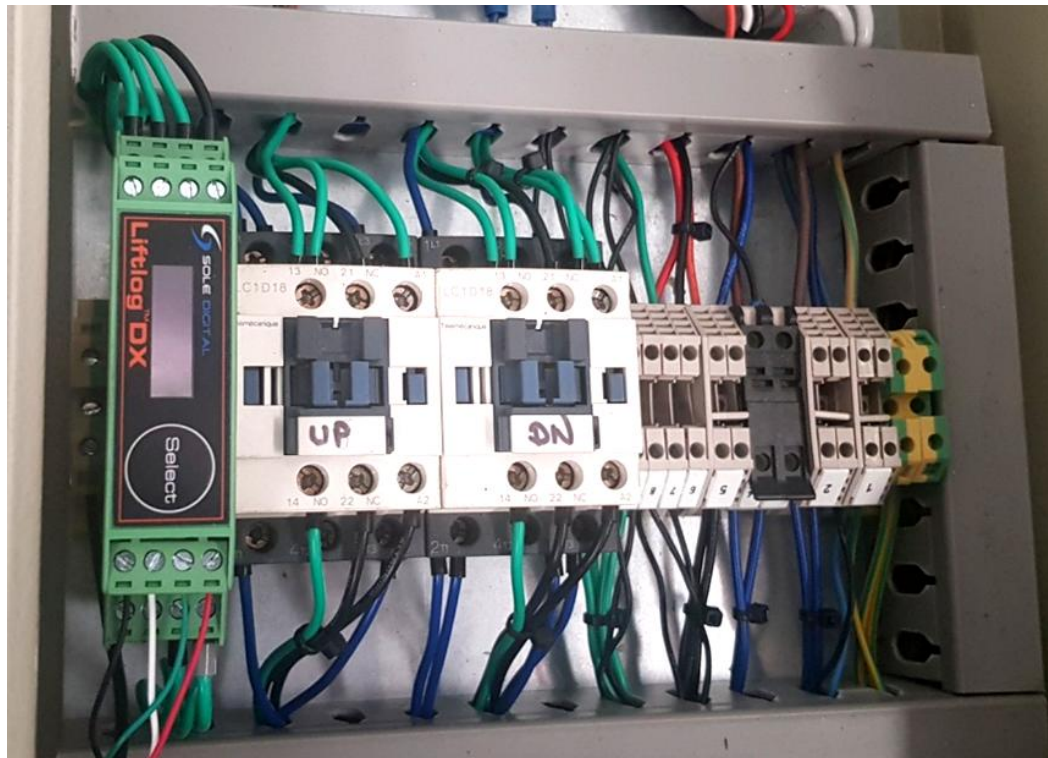
- Liftlog is installed next to a contactor





### How it should be done:

- ☑ The load cell cable should be kept as far away as possible from every other cable
- ☑ The load cell cable should enter the switch cabinet through a separate gland
- ☑ The load cell cable should not be run in the ducting
- ☑ The load cell cable should be cut as short as practicable
- ☑ The screen should be connected to an earth terminal



### How can you tell if you have electrical noise, the main indicators of electrical noise are:

- Indicated load varying largely when the crane is moved
- False overload triggering
- Incorrect loads in Liftlog logs
- Device functions for a short period of time before becoming faulty (reading zero load, not powering up etc.. )
- FSU drops connection to device often during commissioning
- False triggering of motion inputs