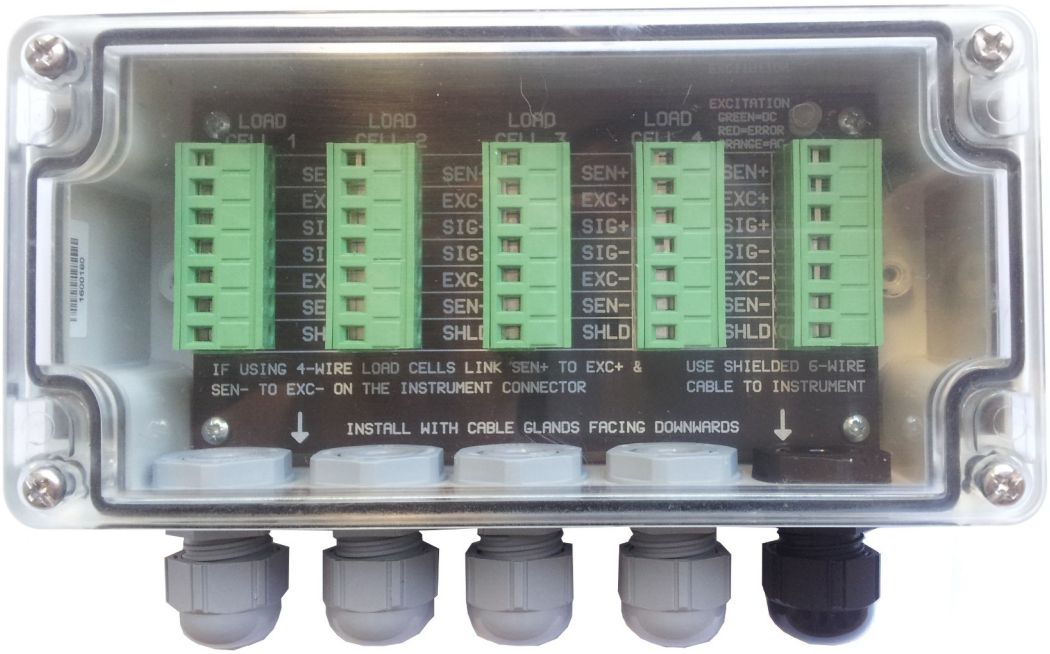
LT540

4 Way Load cell Junction box

Manual – English 1.05



Introduction

The load cell junction box allows for easy connection of up to 4 load cells to be connected in parallel to the load cell instrumentation.

Most industrial load cells are used in a multiple load cell configuration. Load cells should be electrically connected together such that signal output lines, excitation power lines, and sense (if present) are connected in parallel. The load cells are normally not connected at the instrumentation but in a separate junction box.

Features of the junction box include removable connectors for easy connection and fault finding, a bi-color LED for load cell voltage excitation indication and a clear lid for easy fault finding.

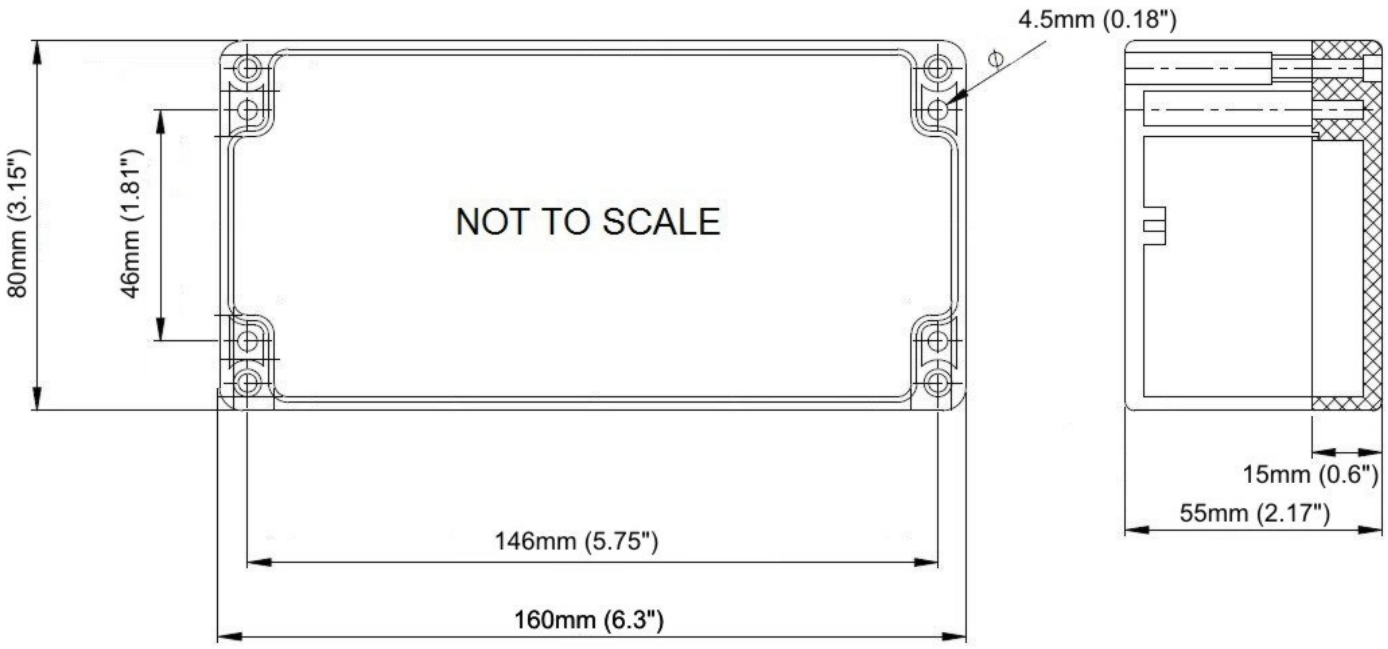
1 Features

- **Easy connection of up to 4 load cells in parallel**
- **Bi-color LED indicating the presence of ac/dc load cell excitation voltage or incorrect dc polarity**
- **Supports 4 or 6 wire load cells**
- **Clear lid for easy fault finding**
- **Shielded 6-wire connection to the load cell instrumentation**
- **Removable connectors for easy fault finding**
- **Color coded cable glands**
- **1 year limited warranty**

2 Specifications

Enclosure:	
Unit Dimensions	160x80x55mm (6.3x3.15x2.17”)
Enclosure Sealing	Tongue and groove with Neoprene seal
Enclosure Material	Polycarbonate (grey base, clear lid)
Electrical:	
Maximum excitation voltage	15Vac/dc
Connector Ratings: (7 Way plug-in terminal blocks)	
Wire range	0.2-2.5mm2
Wire stripping length	7mm
Gland Ratings:	
Clamping/sealing range	4-8mm (0.157-0.314”) Diameter wire
Environmental Conditions:	
Operating and Storage temperature	-40°C to 80°C (-40°F to 176°F)
Operating and storage humidity	<85%, RH (non-condensing)

3 Dimension & Template Drawing



4 Installation

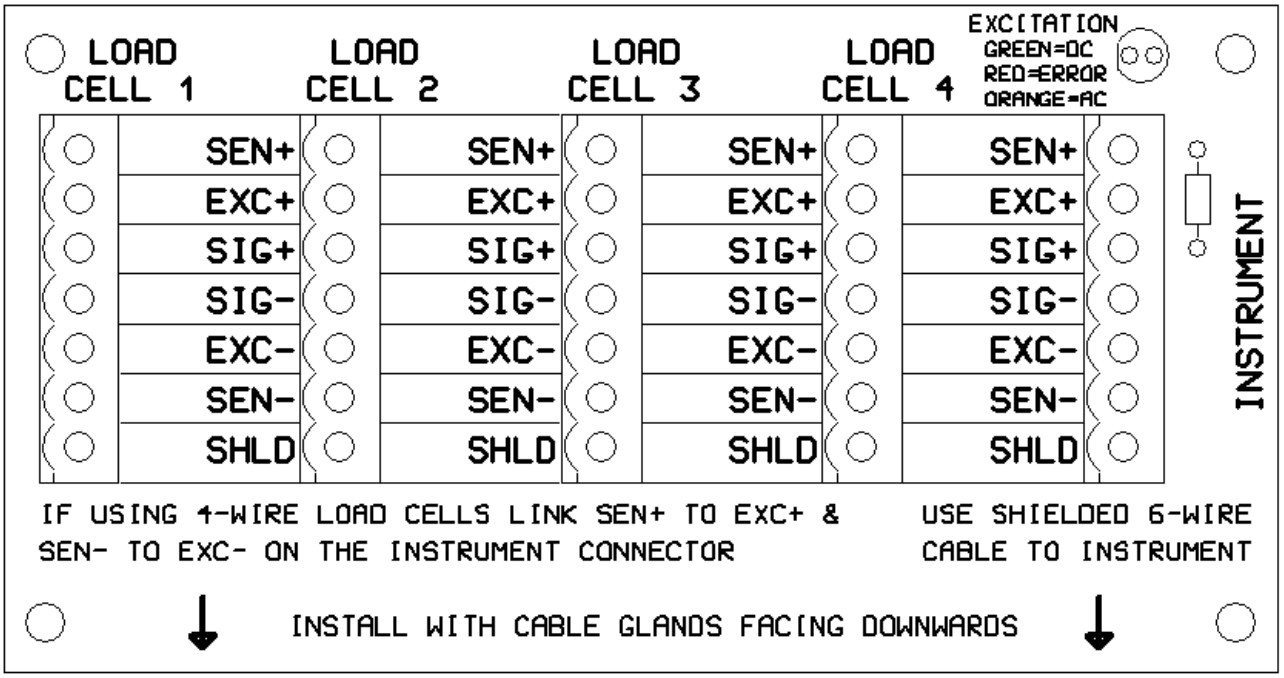
Connect load cells “LOAD CELL 1” to “LOAD CELL 4” noting the load cells correct wiring positions (Use the grey glands). Connect a suitable shielded cable from the load cell instrumentation to the junction box connector marked “INSTRUMENT” (Use the black gland).

Excitation LED

LED Color	Excitation Voltage
Green	dc Excitation (Correct Polarity)
Red	dc Excitation (Incorrect Polarity). Turn off instrumentation and double check connections.
Orange	ac Excitation

Notes:

- Tighten the gland nut until the rubber touches the cable completely and then tighten the nut with ½ turn (180 degrees)
- For unused glands either replace the glands with blank glands or insert a small off cut of wire to represent a “Dummy load cell” to block the hole.
- Install the junction box with the cable glands pointing downwards with cable drip loops (If the cables and junction box is exposed to water then bend a short downward loop in all cables near the cord grips so any water draining down the cables will drip off before reaching the junction box.



Note: Install with cable glands facing downwards and with cable drip loops

4.1 4-Wire and 6-Wire Load Cells

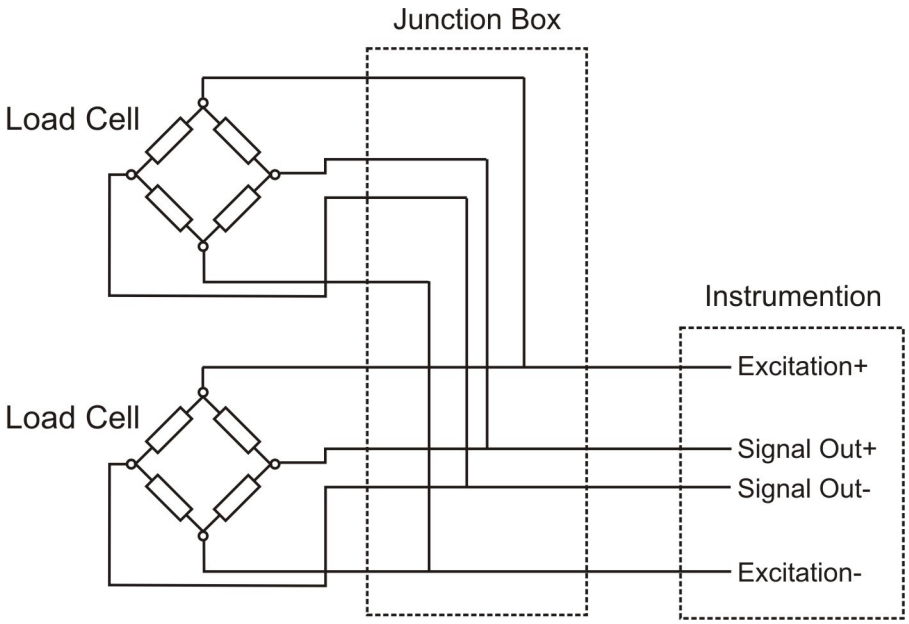
A load cell may have 4 or 6 wires. A 6 wire load cell includes the sense wires for excitation voltage feedback of the load cells. The instrumentation can then either use the feedback voltage to adjust the excitation voltage or it can adjust the amplifier to compensate for any resistance change to the cable.

A 6 wire load cell cable can be cut. A 4 wire load cell cable is normally calibrated to include the cable resistance and should therefore not be cut.

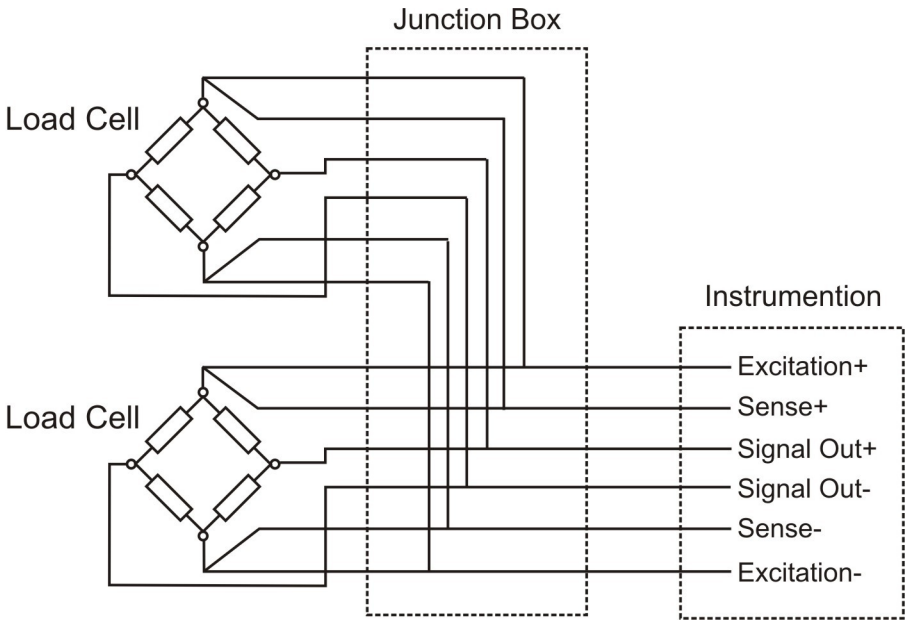
If using 4-wire load cells then link the SEN+ to EXC+ and SEN- to EXC- on the instrument load cell connector.

All Load cells should be placed on the same horizontal level.

4-Wire Connection



6-Wire Connection

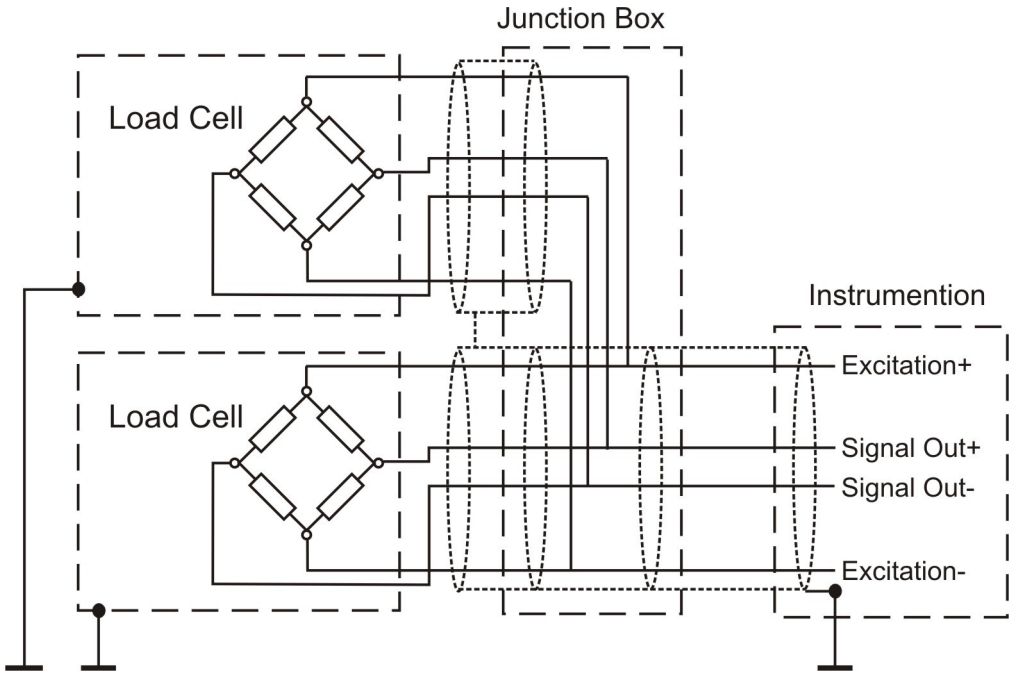


4.2 Grounding and Shielding

Proper grounding and shielding is critical to the successful application of load cells.

In order to avoid continuous ground loops, the load cell system should not be grounded at multiple points. Meaning the load cell shield cable should not be connected to earth at both ends, but rather at the instrument which is then grounded through the instruments power cord or enclosure. The shield at the load cell is floating (not connected).

In order to avoid interference, load cells cables and extension cables should be kept away from power circuits, with a recommended distance of at least one meter. Power supply cables should be crossed at 90 right angles.



5 Ordering Information

LT540 – 4 way Junction box

LT540-PCB – 4 way Junction box PCB only

6 Notice

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7 Warranty

This product carries a warranty for a period of one year from date of purchase against faulty workmanship or defective materials, provided there is no evidence that the unit has been mishandled or misused. Warranty is limited to the replacement of faulty components and includes the cost of labor. Shipping costs are for the account of the purchaser.

Note: Product warranty excludes damages caused by unprotected, unsuitable or incorrectly wired electrical supplies and or sensors, and damage caused by inductive loads.

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