

Load Cell Junction Box & Fault Alarm



For the protection of multi-load cell installations such as silos and tanks gives immediate alarm & indication of a load cell malfunction

Introduction

The LCI Load Cell Junction Box with fault alarm monitoring is designed for the protection of multi-load cell installations such as silos, tanks and other systems where the failure of an individual load cell can have serious consequences such as overflow or incorrect production batching. The device constantly samples the individual load cell channels and activates an alarm if any failure conditions are detected.

For a simple summing circuit with no trimming and no corner compensation, use the Load Cell Junction PCB, model JPP Load Cell Junction PCB, and for trimming and corner compensation, use the Active Junction Box, model JBA Load Cell Junction Box.

Specification at a Glance

Faults monitored:

- One or more load cells are out of balance
- Any or more load cell is operated outside a preset mV/V
- Excitation voltage deviates from preset range
- Any connection is lost (open circuit detection)
- Any short circuit is detected
- Environmentally sealed to IP65 / NEMA 4 enclosure with a transparent plastic clear lid dimensions 200 x 120 x 75 mm

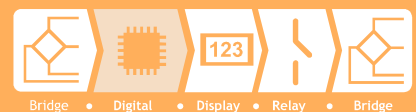


User Benefits

- Avoids incorrect material levels due to load cell or cable faults
- Continuous assurance of product quality
- Avoids batch wastage or product recall
- Increased safety in critical applications
- Reduction of down-time by quick fault diagnosis
- Aids installation & commissioning

Ideal Applications

- Food Industry



Related Product



LCB

Digital load cell amplifier with data & relay outputs

Case Study

The Application:

A bakery ordered and took delivery of a tanker of flour, only to find that not all the flour would fit into the silo it was intended for. It was discovered that one of the load cells fitted to the silo had been severely damaged when a fork lift truck had hit the structure several weeks earlier. Returning the un-used flour back to the depot was a cost the bakery had to endure and highlighted the need for a warning system. When two or more load cells are used in a single structure for weighing, the result is reliant on each load cell contributing the correct electrical signal for the force applied to it. Should a load cell or its cabling fail, then the indicated weight of the associated instrument will be incorrect, causing quality, safety and inventory issues.

The Solution:

The LCI Load cell junction box & fault monitoring alarm is an intelligent junction box for fault monitoring of up to four load cells. It is directly powered from the instrument that is providing the measurement as it scavenges power from the load cell excitation voltage, normally 10 Volts. The LCI has the same functionality as a summing junction box, but also provides individual measurements and integrity checks on each of the connected load cells and its cable. Should a fault condition arise, an alarm relay contact is used to warn of probable measurement failure. The display indicates which cell or cells are at fault allowing quick diagnosis and repair to be carried out.



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The LCI performs the following checks:

- Open circuits on any load cell cable
- Short circuits on any load cell cable
- Excitation voltage error on any load cell
- Internal load cell fault such as bridge imbalance
- Load cell out of pre-set balance range where one cell is reporting more load than another
- Load cell out of range where one load cell is reporting greater or less than what is expected

The easy-to-use configuration and display allows the device to be used to aid installation as the individual mV/V and total mV/V can be displayed.

CE & Environmental

Storage temperature	- 20 to +70°C
Operating temperature	- 10 to +50°C
Relative humidity	95% maximum non condensing

CE Environmental Approvals	
European EMC Directive	2004/108/EC
Low Voltage Directive	2006/95/EC

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In the interests of continued product development, Mantracourt Electronics Limited reserves the right to alter product specifications without prior notice

