



LCA001 miniature load cell amplifier

Designed to be installed within the body of a transducer or load cell, the miniature LCA001 pcb module houses all of the required electronic components to enable a load cell to be connected directly to a PLC or data acquisition device.

In its standard format, the module is configured to provide a 0-10V d.c. output, relating directly to 0-100% of the maximum tension rating of the host transducer, in the direction of load.

Together with a stable, integrated linear amplifier, the module provides a regulated 5V d.c. excitation voltage for the transducer bridge.

There is an internal zero-set potentiometer, factory set, to minimise any offset in the bridge output at zero load.

Measuring just 23 x 16.5 x 12mm, 0.9 x 0.65 x 0.47 inches, the module is easily accommodated internally in a range of transducer / load cell bodies.

Once installed, the amplified transducer will typically draw just 15 - 20mA from a 12 - 24V d.c. supply. This supply could come from the PLC itself as most PLCs are powered by 24V d.c.

The buffered 0-10V output is capable of supplying up to 16.6mA into a 600R load, although most PLCs have high impedance inputs and would demand much less current.

The benefits of the LCA001 amplified transducer:

- Immunity to the interference generated by local powerful electromagnetic machine components
- The ability to use long cable runs with no noise pickup
- Universal 0-10V d.c. output compatible with almost all control and data acquisition equipment

LCA001 General Specification

Supply Voltage:

12 - 24V d.c. at nominal 20mA [max: 60mA]

Dimensions:

23 x 16.5 x 12mm [0.9 x 0.65 x 0.47inches]

Output:

0 - 10V d.c. at 16.6mA max. [600R load]

Installation criteria

This unit is suitable for installation into a semiconductor half-bridge transducer with an excitation voltage of 5V d.c.

One supply conductor is converted to the 12 or 24V d.c. input [a blocking diode may be fitted to protect against reverse polarity connection], the second conductor is converted to 0V supply / 0V output signal, the third conductor is converted to 0-10V d.c. output signal. Cable screening remains as before.

Installation to be carried out by CMC Controls Ltd or suitably qualified personnel. Full installation data available on request.

An optional format is available, the LCA001A which enables a transducer fitted with the load line in one direction to measure the web or wire tension at 180 degrees in the opposite direction and output a positive voltage compatible with PLCs and data acquisition devices. This is achieved by setting the zero load at 5V d.c. output, 100% load-cell output in the load-line direction would read 10V out and 100% load-cell output in the opposite direction would read 0V. Very useful for devices that cannot accept a negative voltage input.

