A United Kingdom company

TYPE: LCA20

LCA20 Intelligent Strain Gauge Load Cell Amplifier

Features

- Variable gain strain gauge sensitivity from 0.5 to 7.8mV/V
- Simple one pass auto calibration
- Auto tare
- Isolated 4-20mA and 0-10V outputs
- 5V@160mA excitation to drive up to 10 x 350 ohm strain gauges
- High accuracy and low drift
- IP65 surface mounting case
- 20 years data retention
- Digital programming and calibration via keypad or PC

Typical Applications

- Vessel weighing
- Silo weighing
- Batch control
- Crane overload protection/ weighing
- Force measurement

Description

The LCA20 intelligent strain gauge amplifier can be used for multiple or single load cell applications, and offers very easy one pass calibration and fast set-up. It also provides both 4 to 20mA and 0 to10 volt analogue outputs from any standard strain gauge input, and the transducer excitation voltage of 5 volts @160mA will power up to ten 350ohm bridges connected in parallel. Auto Tare and Peak Hold (if set) on the analogue output are operated via volt free contact closures, and output options include relay set points programmed in engineering units, with in flight compensation and hysteresis settings are available for control or alarm purposes.

The LCA20 features RS232 and RS485 digital data output for communications and printing, and firmware now supports Mantrabus 1&2, Mantra ASCII 2 and Modbus RTU. Printing can be actioned by a contact closure, and the printer can print the current live value, with header message, engineering units, auto incrementing batch number and in real time if required (using a printer with time/date facility).

The LCA20 also enables selection of device parameters via a PC or keypad rather than using the traditional on-PCB switches.

Specification

Inputs

Speed	From 1 sample every 25 seconds to 80 samples per second (configured from keypad or communications port)
Non linearity before linearisation	±10 ppm
Factory mV/V calibration accuracy	±0.05% FSD typically
Drift	± 2 ppm per °C @ 2.5mV/V typical
Resolution	20 bit or 1 part in 1,000,000
Contact inputs	Available for auto tare, print and peak hold reset (volt free)

Outputs

Drive	4-20mA up to 1Kohm and 0-10V up to 2mA
Accuracy	±0.15% of range (typically)
Resolution	Up to 13 bits/4.5 digits. Setting time 350mS to within 1% of step change
Isolation	±130V RMS or DC max to analogue input or any other port

Power Supplies

LS1	110V - 120V AC or 220/230 V AC 50-60Hz 10 W
LS3	9-32 V DC 10 W isolated

Data Retention/Protection

Retention	20 years for set up values, minimum of 100,000 write cycles
Protection of data and function(s)	Watchdog timer giving repeat auto resets. Impending power detection and hold off. Calibration and toolkit lock feature

Environmental

Storage temperature	-20 to +70 C
Operating temperature	-10 to 50 C
Relative humidity	95% maximum non condensing
EC Environmental approvals	European EMC Directive 2004/108/EC Low Voltage Directive 2006/95/EC

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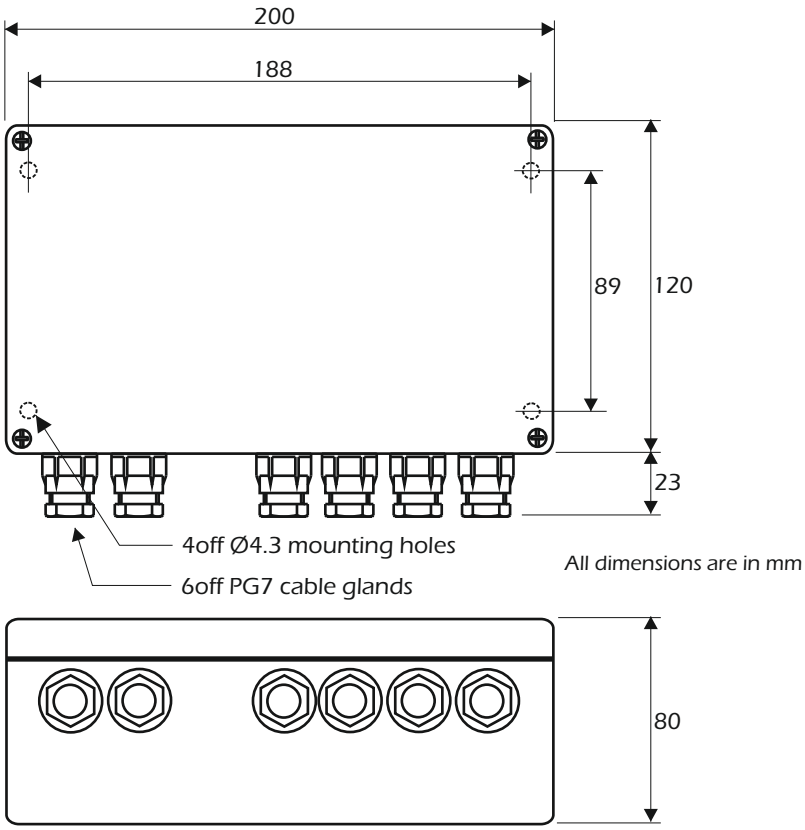
Available Options

- 2 Set Points (output through 5 A 240V AC relays, with a latching option)
- Communications port (for data transfer or print)
- RS232 (for 1 to 1 connection and standard printer drive and large displays)
- RS485 (enabling up to 253 units to be multi dropped)
- Printer option (by closure of volt free contact or continuous ASCII stream)
- Baud Rates (2400, 4800, 9600, 19200, 38400, 57600, 76800, 115200)
- Die cast case (sealed to IP65/NEMA 4 - see below for external dimensions)
- Stainless steel case (sealed to IP65/NEMA 4 - external dimensions 224 x 160 x 90mm)
- PCB Only (Eurocard) LCB20 - 100 x 160 x 57mm for rack or customers enclosure

Dimensions



All dimensions are in mm

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Solutions in Load Cell Technology