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LCA15 & LCB In Line Intelligent Strain Gauge Amplifier



Introduction

The intelligent Strain Gauge amplifier offers both 4 to 20mA and 0 to 10 volt analogue outputs, from any standard Strain Gauge input. 1 pass calibration and setting of the analogue output range, make the unit

extremely user friendly; being set up by a simple hand held or on board programmer/display. Auto Tare and Peak Hold (if set) on the analogue output are operated via volt free contact closures.

Features

- Variable gain Strain Gauge sensitivity from 0.5 to 200mV/V
- Simple one pass Auto Calibration
- Auto Tare
- 4-20mA and 0-10V outputs
- 10V @ 160mA excitation to drive up to 6/350 ohm Strain Gauges

Output options include

Relay Set Points

Programmed in engineering units, with In Flight compensation and Hysterisis Settings available for control or alarm purposes.

Communications

 To read any value, change set points or any other parameter via:

 20mA Current loop
 (LC1)

 RS232/RS485
 (LC3)

 Format
 MANTRABUS, ASCII, MODBUS,RTU

Printer Activated by a contact

High accuracy

Low drift

Activated by a contact closure, displays the current live value, with header message, engineering units, auto incrementing batch number and a real time if required.

Digital programming, calibration & display

Options (LS3) 9-32V DC power supply (LS3) Stainless Steel case sealed to IP65 (LSS) Available without its case as a separate (LCB) Eurocard PCB assembly (LCB)

Wide range of power supplies

IP65 surface mounting case

Isolated analogue outputs

10 years data retention

Intelligent Strain Gauge Amplifier

The Strain Gauge amplifier is housed in a light grey ABS case, sealed to IP65 with external dimensions of 200 x 120 x 75mm

The unit comprises an intelligent base unit with 4-20mA and 0-10V analogue outputs, and plug in module positions for the power supply, relay and communications options.

The AC power supply is a selectable 115 or 230V AC.

Connections for input, output and power supply are through cable glands sealed to IP65. Internal 2.5mm screw field terminals are provided.

The Unit offers

Calibration

A simple 1 Pass Auto Calibration is achieved by entering the values of the lowest and highest weights used. Analogue output is pre calibrated and can be set over any part of the displayed range.

Both input and output are calibrated by use of the programmer module.

The programmer defaults to weight display to ease calibration checks.

Auto Tare (zero) and Peak Hold are actioned by volt free contacts.

Input Details

The input is of the Load Cell/Strain Gauge type. With transducer excitation voltage of 9.6 volts @ 160mA to drive 6 x 350R bridges.Compensation by ± sense wires for cable and safety barrier losses down to 3V excitation.Load cell sensitivity is preset via DIL switches to 0.5, 0.8, 1.0 1.25, 1.5, 2.0, 2.5, 3.5, 5, 10, 20, 50, 100 or 200mV/V.Initial offset is no greater than ± 0.15mV (15uV/V) which is cancelled during auto calibration.SpeedUp to 10 readings per second with a digital filter to reduce speed.Accuracy/RepeatabilityUp to 90 days ± 0.08% of reading, ± 0.05% FSD typicalDriftUp to 0.002% per degree C @ 2.5mV/V typicalResolution15 bit.Contact inputsavailable for auto tare, print and peak hold reset (volt free).

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Analogue Outputs Drive 4-20mA up to 1Kohm and 0-10 volts up to 2mA. Accuracy 4-20mA 40.15% of range, typical. 0-10V ±2% before calibration. Resolution as for display up to 13 bits. Settling time 0.25 secs to 1% of step change. Isolation ±130V RMS or DC max to analogue input or any other port. Data Retention/Protection 10 years for set up values, minimum of 100,000 write cycles. Protection of data and function(s): 10 years for set up values, minimum of 100,000 write cycles. Data Retention/Protection 0utput through 5A, 230V AC SPCO relays, with a latching option Portions Available 0utput through 5A, 230V AC SPCO relays, with a latching option Port For data transfer or print via :- 20mA loop Enabling up to 254 units to be multi dropped to 1 x RS232 via IF25interface(s) (isolated). RS232 For 1 to 1 connection and standard printer drive (isolated). Printer Operation By closure of volt free contact. Baud Rates Solo (1200, 2400, 4800, 9600 (19200 MANTRABUS only) Die Cast Case Sealed to IP65 with external dimensions of 220 x 120 x 80mm max Stainless Steel Case Sealed to IP65 with external dimensions of 224 x 160 x 90mm C Powering 9-32V dc POB Case Dimensions 120 x 200 x 7		
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Clearance above the top of LS1 ac power supply 52mm

Clearance above the top of keypad 50mm

Clearance above the LS3 dc power supply 42mm

Clearance below the LCB 3mm, but needs to be insulated to allow 6mm



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