



Description

The intelligent Strain Gauge amplifier offers both 4 to 20mA and 0 to 10 volt analogue outputs, from any standard Strain Gauge input. Ease of calibration and setting of the analogue output range, make the modules extremely user friendly; being set up by a simple hand held plug in programmer or a built in programmer/display.

Auto Tare and Peak Hold (if set) on the analogue output are operated via volt free contact closures.

Output options include:

Relay Set Points

Programmed in engineering units; with In Flight compensation and Hysteresis settings available for control or alarm purposes.

Communications

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

- 20mA Current loop (RC1)
- RS232/RS485 (RC3)
- Formats MANTRABUS, ASCII,
- MODBUS RTU

Printer 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.

Typical Applications

- Vessel Weighing
- Tank farm weighing
- Multi channel force measurement
- Centre of Gravity systems

RCA15 Rack Mounted Intelligent Strain Gauge Amplifier



Features

- Selectable Strain Gauge sensitivity from 0.5 to 200mV/V
- Simple one pass auto calibration
- Auto Tare
- Isolated analogue outputs
4-20mA and 0-10V outputs
- 10V @ 1.4A excitation for each rack
- High accuracy/low drift
- 3U 19" rack frame
- 10 year data retention
- Digital programming, calibration & display
- Optional Communications for each channel include 20mA, RS485, RS232
- Optional 2 setpoints/relays for each channel

TYPE: RCA15

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Rack Mounted Strain Gauge Amplifier

Intelligent Strain Gauge Amplifier

Each module comprises an intelligent base unit with user configurable 4-20mA and 0-10V analogue outputs, with plug in module positions for the power supply, relay and communications options. The power supply is selectable 110/120 or 220/230V AC, connected via an IEC plug. Connections for input and output connected via 2.5mm screw field terminals mounted on the back panel.

Each Module/Channel Offers

A simple input Auto Calibration which is achieved by entering the values of the lowest and highest weights used. Analogue output is pre calibrated and can be ranged 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.

Specification

Input Details

The input is suitable for any full wheatstone bridge sensor and transducer excitation voltage 9.6 volts 1.0A (common to all channels).

Compensation	by \pm sense wires for cable connection, voltage drops and any variation in the excitation supply.
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	$\leq \pm 0.15\text{mV}$ (15 $\mu\text{V/V}$) which is cancelled during auto calibration.
Speed	10 readings per second with a digital filter to reduce speed.
Accuracy	is 90 days $\pm 0.08\%$ of reading, $\pm 0.05\%$ FSD (typically)
Drift	is $\pm 0.002\%$ per degree C @ 2.5mV/V (typically)
Resolution	15 bit (4.5 digits)
Contact inputs	Available for auto tare, print and peak hold reset and are volt free

Rack Mounted Load Cell Amplifiers

Two versions are available to mount in the standard 19" rack:

Version 1 (RL1)	comprises an amplifier which is programmed via a hand held, plug in programmer. This version allows for the fitting of the 12 amplifiers.
Version 2 (RL2)	comprises an amplifier which has a front panel mounted LCD display; program buttons are accessed through 2.2mm apertures in the panel. This version allows for the fitting of 8 amplifiers.

Analogue Outputs

Drive	4-20mA up to 1Kohm and 0-10 volts up to 2mA.
Accuracy	4-20mA $\pm 0.15\%$ of range (typically) 0-10V $\pm 2\%$ before calibration
Resolution	13 bit (Settling time 0.25 secs to 1% of step change)
Isolation	$\pm 130\text{V}$ RMS or DC max to analogue input or any other port.

Data Retention/Protection

Retention:	10 years for set up values, minimum of 100,000 write cycle
	Protection of data and function(s) Watchdog timer giving repeat auto resets.
	Impending power detection and hold off.
	Keypad security and time out.

Options Available

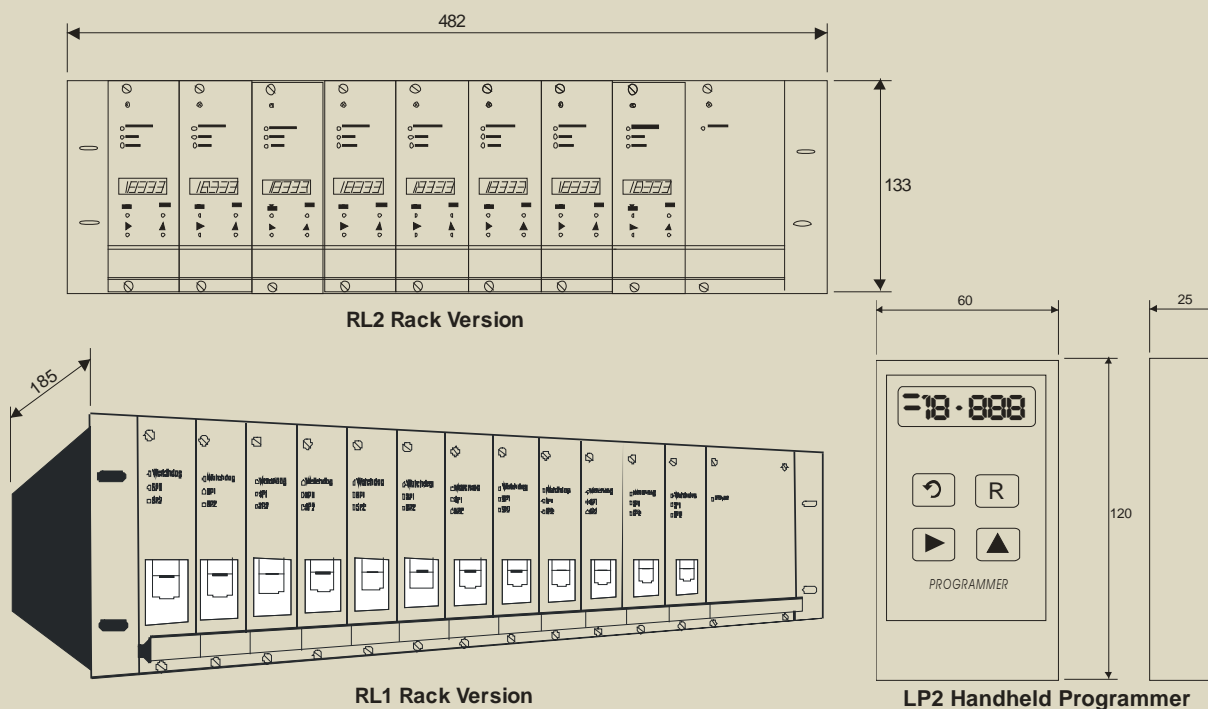
2 set points	Output through 5A, 230V ac SPCO relays (volt free contacts with latching and inversion options)		
Communications Port	20mA loop	-	enabling up to 254 to be multi dropped to 1 x RS232 via IF25 interface
	RS485	-	enabling up to 32 units to be multi dropped (isolated)
	RS232	-	for 1 to 1 connection and standard printer drive (isolated)
	Baud Rates	-	300, 600, 1200, 2400, 4800, 9600 (19200 MANTRABUS only)

CE & Environmental

Storage temperature	-20 to +70°C
Operating temperature	-10 to 50°C
Relative humidity	95% maximum non condensing
Safety/Low Voltage Directive	73/23/EEC amended by 93/68/EEC BS EN 61010-1:2001, IEC 1010-1-1990
EMC Directive	89/336/EEC Basic Standard BS EN 61326:1998
EMC Emissions	BS EN 55011:1998
EMC Immunity	BS EN 61000-4-2:1995 BS EN 61000-4-3:2002 BS EN 61000-4-4:2004 BS EN 61000-4-11:2004

Mechanical Dimensions

All dimensions in millimeters



Due to continual product development, LCM Systems Ltd. reserves the right to alter product specifications without prior notice.

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