

# 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

## Description

The RCA15 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 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:

RS232/RS485 (RC3)  
Formats MANTRABUS, ASCII, MODBUS RTU

Printing can be actioned by a contact closure. Printer can print the current live value, with header message, engineering units, auto incrementing batch number and a real time if required.

## 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 are 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. A transducer excitation voltage of 9.6 volts, 1.0A (is 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 $^{\circ}\text{C}$ @ 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



## Typical Applications

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

## 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	$\pm 130V$ 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.

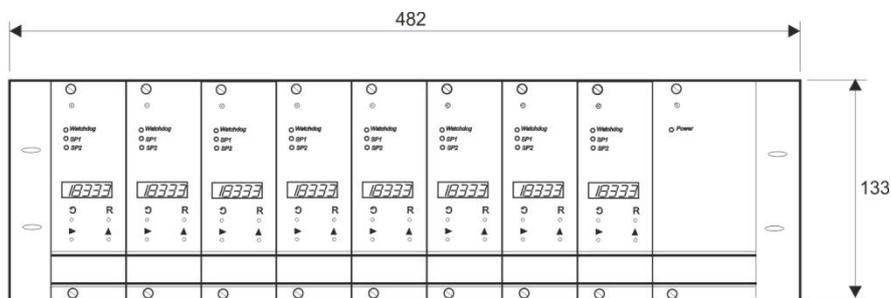
### Options Available

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

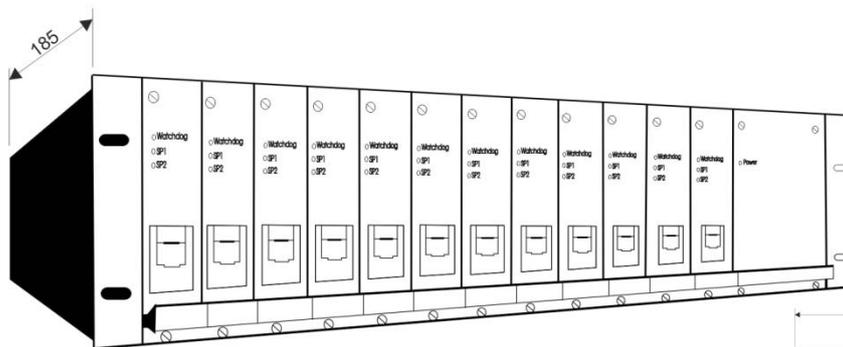
### CE & Environmental

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

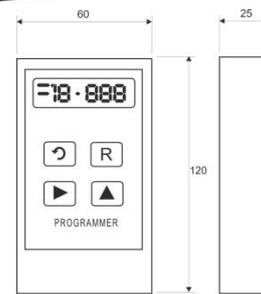
### Mechanical Dimensions All dimensions in millimeters



RL2 Rack Version



RL1 Rack Version



LP2 Handheld Programmer

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