

## Wall Mount Versatile Indicator/Controller

### Features

- Large LCD Display
- Wide Range of Input Options
- Digital & Communications Output Options
- Various 'Plug in' Options
- Wide Range of Power Supplies
- Isolated Inputs and Outputs
- 4-20mA & 0-10V Outputs
- High accuracy
- Low drift
- One Pass Digital Calibration
- 10 years data retention
- Digital programming, linearisation & display
- Choice of mountings



- 3 year guarantee

### Introduction

The surface mounted strain gauge display is housed in a light grey ABS case, sealed to IP65 with external dimensions of 200 x 120 x 75mm.

The unit comprises a 8 digit 12.7mm LCD display, on an intelligent base unit with user configurable 4-20mA and 0-10volt analogue outputs.

'Plug-in' module positions are available for power supply, relay and communications options.

The relay module provides for two set points, together with In Flight compensation. Relays can be inverted and latched, all of these facilities being set in engineering terms. Both relay and analogue outputs have a high level of isolation.

A facility is available to alter the default display for Gross or Net values.

The optional communications provide for 20mA noise immune current loop, RS232 and multi drop RS485 connections to a PC, PLC or mainframe. This allows for the input variable to be taken and the set up parameters changed.

Communications protocol options include ASCII, MODBUS RTU and MANTRABUS.

Additionally, multiple 20mA units can be connected via an IF25 current loop to RS232 interface which when included, allows for up to 250 units to be connected.

The RS232 port is also available for a Time/Date or Data only printer to be connected, to log all the desired activities Baud speeds of 300 to 19200 are programmable.

Power supplies options of 115 or 230VAC and 9 to 32VDC are available.

### 'Plug in' Options include

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>■ <b>Relay Set Points (LR1)</b><br/>Programmed in engineering units, hysteresis and latching settings for control or alarm purposes.</li> <li>■ <b>Communications</b><br/>To read any value, change set points or any other parameter :<br/>20mA Current loop (LC1)<br/>RS232/RS485 (LC3)<br/>Format MANTRABUS, ASCII or MODBUS RTU</li> </ul> | <ul style="list-style-type: none"> <li>■ <b>Printers</b><br/>Activated by a function key or contact will allow print, the current live value, with header message, engineering units, auto incrementing batch number and real time if required.</li> <li>■ <b>Options</b><br/>9-32V DC power supply (LS3)<br/>Remote display module<br/>LCD display back lighting<br/>DIN rail mounting for the Motherboard<br/>Fast Analogue Output Module<br/>High Speed Strain Gauge input.</li> </ul> |
|---|---|

## Specifications

### Inputs

Strain Gauge Input	The input is of the load cell/strain gauge type. A transducer excitation voltage of 9.6 volts @ 160mA
Compensation	by $\pm$ 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 $\pm$ 0.15mV (15uV/V) which is cancelled during auto calibration
Zero Temperature Coefficient	0.0005% FSO/ $^{\circ}$ C typical with 2.5 mV/V sensitivity selected
Span Temperature Coefficient	<0.0017% reading/ $^{\circ}$ C
Excitation	9.6V DC nominal, 150mA maximum
Repeatability	$\pm$ 0.002% reading over 90 days
Display Update Rate	Programmer keypad selectable between 0.1 and 25.5 seconds
Display Average	Set by programmer keypad, up to 64 standard up dates
Measurement Resolution	1:32,000

### Analog Output

Type	4-20mA and 0-10V
Drive	4-20mA up to 1Kohm and 0-10 volts up to 2mA
Accuracy	4-20mA + 0.15% of range, typical. 0-10V $\pm$ 2% before calibration
Resolution	as for display up to 13 bits/4.5 digits. Settling time 350mS to within 1% of step change.
Isolation	$\pm$ 130V RMS or DC max to analogue input or any other port
Fast Analog Output	For use with the UAFLC (FAST INPUT OPTION)

### Power Supplies

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

### Data Retention/Protection

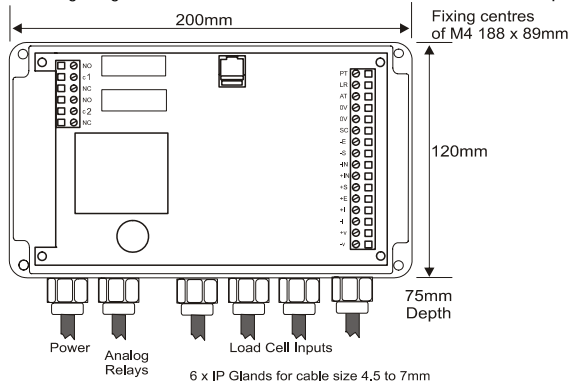
Retention:	10 years for set up values, minimum of 100,000 write cycles.
Protection of data and function(s):	Watchdog timer giving repeat auto resets. Impending power detection and hold off. Keypad security and time out.

### CE & Environmental

Storage temperature	-20 to +70 $^{\circ}$ C	EMC Emissions	BS EN 55011:1998
Operating temperature	-10 to 50 $^{\circ}$ C		
Relative humidity	95% maximum non condensing	EMC Immunity	BS EN 61000-42:1995
Safety/Low Voltage Directive	73/23/EEC amended by 93/68/EEC		BS EN 61000-4-3:2002
	BS EN 61010-1:2001, IEC 1010-1-1990		BS EN 61000-4-4:2004
EMC Directive	89/336/EEC		BS EN 61000-4-11:2004
	Basic Standard BS EN 61326:1998		

### Other Options & Accessories

2 Set Points	Output through 5A, 230V AC SPCO relays, with programmable latching inversion, hysteresis, In Flight (RL1)
Communications Port	For data transfer or print via :-
20mA loop	Enabling up to 254 units to be multi dropped to 1 x RS232 via IF25 interface(s)
RS485	Enabling up to 25 units to be multi dropped
RS232	For 1 to 1 connection or standard printer drive
Printer Operation	By front panel function key
Baud Rates	300, 600, 1200, 2400, 4800, 9600 (19200 MANTRABUS only) 9600 for MODBUS
DIN Rail Mounting	For the motherboard
DC Powering	9-32V DC
Remote Mounting	Display module, for panel mounting
Back Lighting	For the LCD display



Designed, Manufactured & Supported in the UK



CE In the interest of continued product development, Mantracourt Electronics Limited reserves the right to alter product specifications without prior notice.