

## 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
- PID Control
- High accuracy
- Low drift
- All standard Process Inputs accommodated
- 10 years data retention
- Digital programming, linearisation & display
- Choice of mountings
- 3 year guarantee



### Introduction

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

The unit comprises 8 digit 12.7mm LCD display, 8 button keypad with user configurable 4-20mA and 0-10V analogue outputs, with plug in module positions for inputs, power supply, relay and communications options.

The relay module provides for two set points, with settable hysteresis, inversion and latching, all of these facilities being set in engineering terms. Both relay and analogue outputs have a high level of isolation.

The optional communications provide for 20mA noise immune current loop, RS232 and multi drop RS485

connections to a PC, PLC or main frame. 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

- **Input Modules**
  - 4-20mA DC
  - 0-10V DC
  - ± 200mV DC
  - Types K & J      Temperature
  - Pt100              Temperature
  - Hi Res & High Speed Strain Gauge
  - Dual Channel Volts & Amps for A+B, A-B, AxB
  - LVDT
  - Rate/Totaliser
  - Remote Driver
- **Relay Set Points**
  - Programmed in engineering units, hysteresis and latching settings for control or alarm purposes.
- **Communications**
  - To read any value, change set points or any other parameter :
  - 20mA Current loop              (LC1)
  - RS232/RS485                      (LC3)
  - Format                              MANTRABUS, ASCII, MODBUS, RTU
- **Printers**
  - Activated by a function key will allow printer, if connected to display the current live value, with header message, engineering units, auto incrementing batch number and a real time if required.
- **Options**
  - 9-32V DC power supply (LS3)
  - Remote display module
  - LCD display back lighting
  - DIN rail mounting for the Motherboard
  - Programmable function key disabling
  - Fast Analogue Output Module in combination with a High Speed Strain Gauge input.

## Specifications

### Inputs

Input Modules Available		Input Modules Available	
UADCV1	0 to 10V	UAPT	Resistance Thermocouple (PT100)
UADCA1	0 to 20mA	UAFLC	Fast (10mS) Strain Gauge
UADCV2	± 200mV	UADIA	Dual Channel 4 to 20mA Input - (speed 800mS per Channel)
UALV1	LVDT	UADIV	Dual Channel 0 to 10V Input - (speed 800mS per Channel)
UALV2	Dual LVDT	UA12C	Remote Driver
UARTL	Rate/Totaliser		
UAT1	K Type Thermocouple	<i>Input Resolution</i>	<i>15 bit/4.5 digits</i>
UAT2	J Type Thermocouple	<i>Contact Inputs</i>	<i>Are available for print and peak hold reset and are volt free</i>

### Analogue Outputs

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

### 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

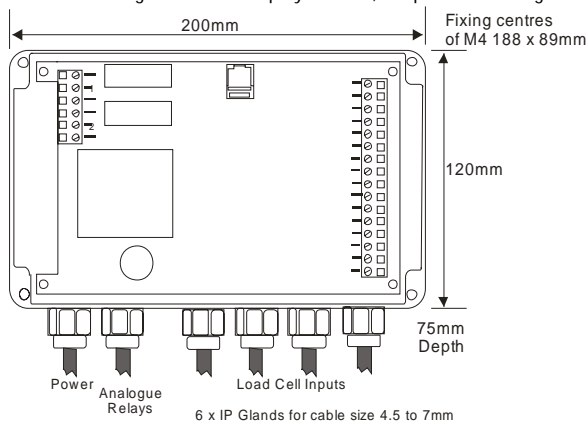
Retention:	10 years for set up values, minimum of 100,000 write cycles.
Protection of data and function(s):	Watchdog timer giving repeat auto resets. Impending power detection and hold off. Keypad security and time out.

### CE & Environmental

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

### Other Options & Accessories

2 Set Points	Output through 5A, 230V AC SPCO relays, with a latching option
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 and standard printer drive
Printer Operation	By front panel function key
Baud Rates	300, 600, 1200, 2400, 4800, 9600 (19200 MANTRABUS only) 9600 for MODBUS
Back Lighting	For the LCD display
DIN Rail Mounting	For the CPU, PSU and output option modules
DC Powering	9-32V DC
Remote Mounting	Display module, for panel mounting



Designed, Manufactured & Supported in the UK



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