



## Load Cell DIN Rail Signal Amplifier with Relays

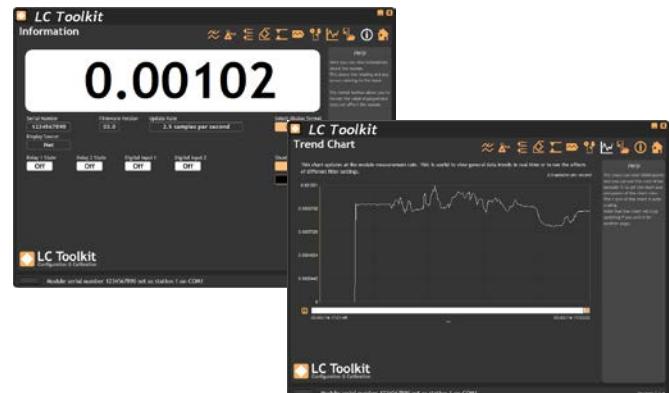


### Introduction

Our intelligent strain gauge bridge amplifier is a compact stackable microprocessor based unit specifically designed to control and monitor process applications. Flexible connection to most load cells, pressure or strain gauges over a wide range of sensitivities. The unit provides isolated current 4-20mA and voltage 0-10V analogue outputs and two digital inputs. Two set point relays can be configured to set thresholds such as net, gross, peak and valley. Powered from a wide ranging DC supply, the DIN rail amplifier is supplied with 2 part screw connectors for ease of installation.

Suitable for strain gauges and other ratio-metric sensors and will support 6 wire input to compensate for barrier and cable losses. Factory calibrated to mV/V and supporting 10 point user calibration to desired engineering units. Configuration options via handheld programmer or PC Toolkit software.

The analogue outputs and relays interface to existing acquisition and control systems making this unit an ideal partner for any integrated instrumentation system.



### Accessories



**PGM1**  
Remote Handheld Programmer



**PGM1**  
PC Communication Cable



**LC Toolkit**  
Toolkit software



## Specifications

### Electrical Specifications

<b>Isolated Power Supply</b>	9 to 32 V DC
<b>Power</b>	2.5W typical
<b>Bridge excitation</b>	4.75 to 5.25 V
<b>Bridge resistance (minimum for 10V Excitation)</b>	85 Ohms
<b>Bridge sensitivity</b>	0.5 to 7.0 mV/V
<b>Resolution</b>	1:180,000 (17.5 Bits)
<b>Analogue outputs</b>	4-20mA and 0-10V
<b>Analogue output resolution</b>	1:8000 (13 Bits)
<b>Relays</b>	2 off SPNO
<b>Relay contacts rating</b>	3A 240V AC / 3A 30V DC
<b>Isolation</b>	+/- 130V RMS or DC to any port

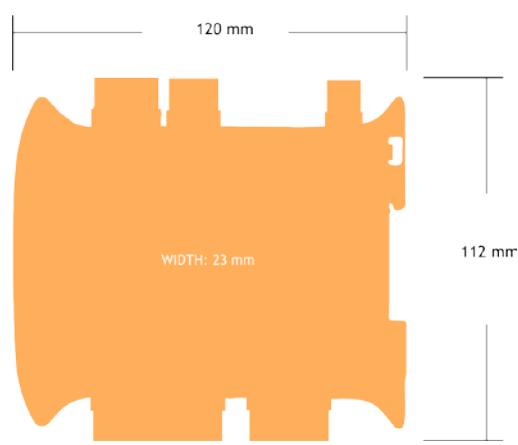
### Environmental

<b>Operating temperature range</b>	-20 to 50 °C
<b>Storage temperature range</b>	-20 to 70 °C
<b>Maximum Humidity</b>	95% Non-Condensing
<b>IP Rating</b>	IP20

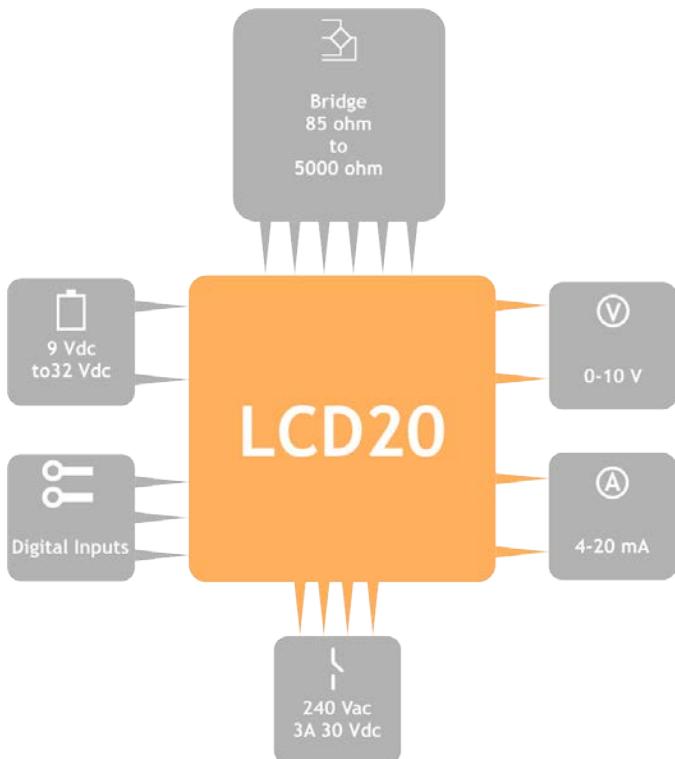
### Approvals

<b>EMC Directive</b>	2014/30/EU
<b>Low Voltage Directive</b>	2014/35/EU
<b>EMC Standards</b>	BSEN 61326-1:2013
<b>Low Voltage Standard</b>	BSEN 61010-1:2010

## Mechanical



## Electrical



## Order Codes

### LCD20

Load Cell Amplifier In DIN Enclosure

### LP2

Handheld Programmer

### PGM1

Programming Cable for Toolkit

Manual Reference: 517-939

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ETSI

FCC

CE



Industry Canada  
Industrie Canada



Designed, manufactured  
and supported in the UK





# LCD20

**mE**mantracourt

## LC TOOLKIT SOFTWARE

### EASY TO USE, INTUITIVE TOOLKIT SOFTWARE FOR SPEEDY AND PAINLESS SET-UP

- **CONNECT IN SECONDS** with pc auto detection there's no scrolling through lists of product codes.
- **INTUITIVE INTERFACE** means you don't have to read a manual to get started. Our well-designed interface gives you highlighted options so you know what's click-able.
- **LOGICAL** our toolkits configure, calibrate and create systems for reporting or monitoring.
- **WE DO THE THINKING FOR YOU** don't worry if you enter the wrong data, our toolkits have useful help panels at each stage of the process and flag up false selections.
- **USE ONE, USE THEM ALL** our icon based navigation is common to all toolkits. If you're familiar with one toolkit you'll quickly pick up the others.
- **FREE** all of our software is freely available.

### TAKE A TOUR



#### WHAT CAN IT DO?

The LC Toolkit software for Windows connects with the LCD20 via an optional programming cable PGM1. The toolkit allows all aspects of the LCD20 to be configured:

- Configure settings
- Calibrate inputs
- Calibrate analogue outputs
- Save and restore settings to a file
- Log data to a CSV file
- View data on a chart
- Use as a large display

#### THE DASHBOARD

- Icon based intuitive navigation
- Help panels in 'plain English'
- Interactive elements highlighted orange

#### DOWNLOAD & TEST-DRIVE

Visit [mantracourt.com](http://mantracourt.com)





## FUNCTIONALITY SCREEN SHOTS

### CALIBRATE 10-POINT LINEARISATION

LC Toolkit  
Calibration

Input Sensitivity: 0.5 to 3.7 mV/V Decimal Point: 19.999

Automatic Table Advanced Shunt Calibration Cal Info

Automatic calibration allows calibration by the application of known weights

Measurement Points: 2

Applied Weight	Acquire	Applied Weight	Acquire
1 0.000000	Acquire	6 0.000000	Acquire
2 0.000000	Acquire	7 0.000000	Acquire
3 0.000000	Acquire	8 0.000000	Acquire
4 0.000000	Acquire	9 0.000000	Acquire
5 0.000000	Acquire	10 0.000000	Acquire

Underrange Value: -19.99900 Overrange Value: 19.99900 mV/V Input: 0.000836 Calibrated Value: 0.000836 Units:

Start Again

LC Toolkit Configuration & Calibration

Module serial number 1234567890 set as station 1 on COM1 Version: 1.1.4

Calibration can be achieved by applying known weights or by entering values from the load cell calibration certificate. You can also calibrate the shunt calibration function so a valid system will give a known value of 100.

### RELAY OUTPUT CONFIGURATION

LC Toolkit  
Relays

Relay 1: Off

Source: Net	Setpoint: 0.000000	Inflight: 0.000000
Hysteresis: 0.000000	Inverted: No	Latched: No

Relay 2: Off

Source: Net	Setpoint: 0.000000	Inflight: 0.000000
Hysteresis: 0.000000	Inverted: No	Latched: No

Help: Here you can configure the pair of relays. A graphical representation is shown to aid in understanding the effect of different settings. Note: In LC4S mode the two relays share the same hysteresis setting.

Reset

LC Toolkit Configuration & Calibration

Module serial number 1234567890 set as station 1 on COM1 Version: 1.1.4

Configure the pair of relays with a graphical representation to aid understanding the effects of different settings.

### DIGITAL INPUT SELECTION

LC Toolkit  
Digital Inputs

Digital Input 1: Action: Zero (AT), State: Off

Digital Input 2: Action: Relay Reset, State: Off

Help: This page allows you to configure the functions of the digital inputs. The state of the inputs can also be viewed.

LC Toolkit Configuration & Calibration

Module serial number 1234567890 set as station 1 on COM1 Version: 1.1.4

This page allows you to configure the functions of the digital inputs. The state of the inputs can also be viewed.

### CONFIGURE DISPLAY TO GENERATED OUTPUT

LC Toolkit  
Trend Chart

This chart updates at the module measurement rate. This is useful to view general data trends in real time or to see the effects of different filter settings. 2.5 updates per second

Help: The chart can hold 10000 points and you can use the control bar beneath it to set the start and end points of the chart view. The Y axis of the chart is auto scaling, however the chart will stop updating if you switch to another page.

LC Toolkit Configuration & Calibration

Module serial number 1234567890 set as station 1 on COM1 Version: 1.1.4

Features a real-time scrolling graphic display. The chart can hold 10000 points and you can use the control bar beneath it to set the start and end points of the chart view. The Y axis of the chart is auto scaling.