



CALOG - LC DISPLAY

Loadcell Display

English Users Manual

Rev. 1.10

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1.0 Introduction

The CALOG - LC DISPLAY is a portable hand-held unit which is able to display a load cell value.

The Li-Ion battery makes it possible to use the display for a reasonable period of time as a portable load cell indicator in industrial plant or emergency situations. For longer applications, such as with cattle scales, auxiliary power can be supplied via an external 12 volt battery, charger or car cigarette lighter socket. In order to display mass, force, strain or torque from load cells the unit allows you to set the sensitivity in mV/V, range, decimal points and units. Zero trim can offset deadweight and span trim is available to increase the reading accuracy with the help of calibrated weights. Selections of software options such as tare, peak hold and auto zero maintenance are included.

The **CALOG - LC DISPLAY** can be used for one 350 Ohm or three 1000 Ohm load cells with a fixed 5 Volt DC excitation. Datalogging via SD card is an additional feature whereby the user is able to instantly log and enter tag numbers whilst in LC Display mode or alternatively can choose to datalog at a preset time and date. The on board USB port makes downloading and accessing saved data, simple.

2.0 Getting Started

2.1 Keypad



2.2 Display

The Main Menu (Icon Based)



A Submenu (Text Based)



Your display unit is not suitable for use in explosive atmospheres. Sparks at the terminals could cause ignition.

Electric shock injury may result from improper use while connected to the mains power supply.

To ensure reliability of the unit please use anti-static equipment when working with the circuit boards.

Press and hold down the enter key for approx. 2 seconds to switch the unit on. Press and hold down the enter key for approx. 4 seconds to switch the unit off.

2.4 Charging the Battery

- 1. Connect the lead from the charger into the side of your instrument.
- Plug the charger into the AC wall socket. The mains power icon will appear and the power bar will start scrolling if the pack requires charging.
- 3. When the power bar stops scrolling, remove the charger from the unit and the wall socket.



- 4. The charging voltage can be between 8 15 VDC with the inner pin as +ve. This means that the display can be charged from a DC source, such as a car cigarette lighter socket using a suitable cable.
- 5. The AC charger supplied with the display is only sufficient to charge the LI-Ion batteries. If you want to run the unit from AC, whilst taking measurements, a stronger bench power supply is required (e.g. 12V, 1Amp). This power supply should be of a good quality with a small AC ripple.

3.0 Flow Diagram



4.0 Wiring Schematics

This section shows examples of wiring configurations. These are also found in the Help Menu.

4.1 LC Display

From one load cell for a 4-wire use Binder pins 1 - 4 (no Links) For a 6-wire use Binder pins 1-4 and connect sense +/- to corresponding excitation pins



- 1. Millivolts + 2. Excitation (S- for 6-wire)
- 3. Millivolt 4. Excitation + (S+ for 6 Wire)

Note : The screen wire from the load cell is not connected

5.0 Loadcell Display

Select LC Display in the main menu then press the enter key.

LC Display

Will go to final Load cell display screen



For an instant datalog whilst in the LC Display mode, insert the SD card and press enter. Now enter the tag number(if used) by pressing the 5 set value keys and the left and right scroll keys.

Note, that **By**, **Tag**, **Item** and **Interval** will be the same as selected in the **Datalog** menu

6.0 Loadcell Setup

With Setup selected, press enter to enter the information below

mV/V

Set to sensitivity value on load cellor datasheet



Decimal Point (left or right keys to change)

Display Zero Set zero value

Display Span Set span value (Maximum expected value according to load cell datasheet) (i.e if 3000kg load cell used then enter 3000.0)

Unit (left or right keys to change) Select unit of mass required, eg. Kg, oz, lb, ton (US short), N, None, g

Increment (count by) (left or right keys to change) or 10 or

100

Filter Band (left or right keys to set band value) 0000 to 9999 If sudden change greater than filter band

value display will follow actual value without delay to band value.

(use 0000 if you do not want this function)

Filter Time

Set value for 1, 3, 5, 10 or 20 seconds















Zero Trim

Use to tare off deadweight Press enter to trim zero wait 10 seconds to trim

After Zero Trim is completed the unit proceeds to Span Trim

Span Trim

Press enter, load test weights and key in value, press enter to trim span. Wait approx 10 sec. Press C key to go back to the main menu, scroll up to LC Display and select enter to display weight

Use left or right keys to turn TARE function ON or OFF.

mV Display(left or right keys to change) Turn mV Display on or off

7.0 Datalog

This menu allows the user to setup the display so it may be used to datalog it's load cell display values. Downloading is done via a SD card and the onboard USB port. Set Date and Time in the Settings menu before continuing.

<u>Please note</u>: Do not remove the SD card whilst Datalogging as this will corrupt any data logged on the SD card

By: Use Left and Right keys to select block of five characters and use the Set Value keys to scroll

This identifies who was responsible for the datalogging









Tag: Use Left and Right keys to select block of five characters and use the Set Value keys to scroll

This identifies the tag number, usually also the plant location

Item: Use Left and Right keys to select block of five characters and use the Set Value keys to scroll

This identifies the type of instrument, e.g. Cattle scale

Start time: Press enter and use up or down arrows and set value keys to change year, month, day, hour, minute and seconds.

Press enter to set and return to data logging menu

Stop time: Press enter and use up or down arrows and set value keys to change year, month, day, hour, minute and seconds.

Press enter to set and return to data logging menu

Interval: Use set value keys to set logging intervals H:MM:SS from 01 second to 9H:59M:59Sec

Note: Write protect symbol on left of screen when datalogging must be \Box



is write protected



DATALOGGING

For an instant datalog whilst in the LC Display mode, insert the SD card and press enter. Now enter the tag number(if used) by pressing the 5 set value keys and the left and right scroll keys.

Note, that **By**, **Tag**, **Item** and **Interval** will be the same as selected in the **Datalog** menu

8.0 Datalogging Interface

After Datalogging is complete, the SD card can be removed from the display and inserted into a card reader to download the logged data to a PC. Alternatively the .csv files can be downloaded directly from the display via a USB cable plugged into the USB port. The SD card MUST remain inserted in the display.

Once downloaded to a PC, the directory for pre-selected datalogging is the start time. The datalogging file name for individual tag number entries (logged whilst in LC Display mode) is saved as "CalogLC".

Click once to list the files.

Double click to open the .csv file (comma separated variables)



Use a suitable program to read the .csv files such as Excel or Open Office. Display the file as a spreadsheet or graph.

In Spreadsheet format the text will appear as: Name - Tag - Description - Date and Time - Value

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3	ENT	ER NAME F	HERE	12345678901234	INSTRUMENT DESC	2010/09/29	07:07:01	1623	Kg			
4	ENT	ER NAME F	HERE	12345678901234	INSTRUMENT DESC	2010/09/29	07:07:02	1623	Kg			
5	ENT	ER NAME F	HERE	12345678901234	INSTRUMENT DESC	2010/09/29	07:07:03	1623	Kg			
6	ENT	ER NAME H	HERE	12345678901234	INSTRUMENT DESC	2010/09/29	07:07:04	1623	Kg			
7	ENT	ER NAME F	HERE	12345678901234	INSTRUMENT DESC	2010/09/29	07:07:05	1623	Kg			
8	ENT	ER NAME H	HERE	12345678901234	INSTRUMENT DESC	2010/09/29	07:07:06	1623	Kg			
9	ENT	ER NAME H	HERE	12345678901234	INSTRUMENT DESC	2010/09/29	07:07:07	1623	Kg			
10	ENT	ER NAME H	HERE	12345678901234	INSTRUMENT DESC	2010/09/29	07:07:08	1623	Kg			
11	ENT	ER NAME H	IERE	12345678901234	INSTRUMENT DESC	2010/09/29	07:07:09	1623	Kg			

9.0 Settings

This section will let you customise the instrument to your personal work style.

Auto Power Off (left or right keys to change) On: the unit switches off after 15 minutes of inactivity,

or

Off: the unit will stay on until switched off or the batteries run flat.

Language (left or right keys to change)

English or German

Backlight (left or right keys to change) On: the backlight stays on constantly, or

Auto: the backlight switches off after 30 seconds of inactivity,

or

Off: the backlight stays off permanently.

Sound (left or right keys to change) On: the unit gives audible warnings and confirmations,

or

Off: the unit is silent.

Contrast

Press the enter key to gain access to the contrast screen.

Use the left and right keys to change the display contrast. When satisfied press enter.











	-
CONTRAST	
	1
LIGHTER DHRKER	
PRESS (KEYS TO CHANGE THE SETTING	i

Set Date and Time

Press enter, then use the set value keys to change the year, month, day, hour, minute and seconds.

Press enter to set and return to the setting menu

Battery Information

Press the enter key to view the battery type and voltage level.

Type: shows the type of battery which is used, Lithium-Ion Status: the battery charge status Remaining: the charge remaining in the battery

Unit information

Press enter to view the units serial number, model type, firmware version, the date it was last calibrated and SD card capacity, if one is inserted.

Ser Num: the units' serial number. Model: the hardware version of the unit. Firmware Ver: the software version of the unit. Last Cal: when the unit was last calibrated SD Card: whether a SD Card is present in the unit or not.

Enter Access Code

Press the enter key to gain access to the access code screen.















10.0 Help

Displays a wiring diagram to aid the user in connecting the load cell/s to the Binder connector on the display



11.0 Convert

Converts different mass units



Up scroll key changes upper mass unit



Down scroll key changes lower mass unit



Left or right moves the decimal of the upper mass unit value



Row of set value keys changes the value of the mass unit



12.0 Maintenance

12.1 Opening your Instrument

There are a few cases in which you may have to open your display.

- 1. To change the battery pack.
- 2. To change the fuse.

In order to open it, place it face down on a flat, hard surface and unscrew the four screws as shown. Then gently pull the two halves apart.

Caution: be very careful not to tear the keypad ribbon or damage the electronics.



12.2 Changing the Batteries

If the battery pack fails you must order a new pack from your dealer. Use only the factory supplied lithium Ion battery pack as it contains a temperature sensor. Open the display as shown above and then disconnect the old pack and replace it with the new one. Be careful not to damage the electronics while the unit is open, an anti-static mat and wrist band should be used. Do not force the connector.

When you have finished, charge 5 hours.

12.3 Resetting the Unit

The unit may fail if it passes through a strong electro-magnetic field or is subjected to high voltages or current. In this event there is a reset switch within the unit that should restart it. Press the button through the small hole in the housing (near the power connector) using a paper clip.

12.4 Battery Care

Your display is powered by rechargeable Lithium Ion batteries.

1. The batteries can be recharged hundreds of times but will eventually fail.

2. Only use dealer approved batteries that contain a temperature sensor.

3. Do not store your display in extreme heat, above 50°C as the batteries may become unstable and rupture .

12.5 Cleaning

Do not clean the unit while it is switched on. Do not use harsh abrasives or solvents on the unit especially on the display window. The outside of the unit may be safely wiped using a damp cloth. Do not attempt to clean the inside of this unit.

13.0 Technical Specifications

13.1 General

Physical Size: 145X34X75mm without rubber boot, 155X43X86 with rubber boot. Weight: approx 340 g **Environmental Ranges** Working temperature: 0°C to 30°C Storage temperature (battery included): -20°C to 50°C Humidity: < 85% (non-condensing) Battery Pack Type: Lithium Ion (Li-ion) 2100mAH. Charge time: 5 hours. Battery run life: approximately 6 hours. Charger: Mains charger Euro plug, 12V DC @ 1A, 100 - 240V AC, 0.5A, 47 - 63Hz. Car Charger, 12V DC @ 1A with a cigarette lighter plug. The AC charger supplied with the display is only sufficient to charge the LI-lon batteries. If you want to run the unit from AC, whilst taking measurements, a stronger bench power supply is required (e.g. 12V, 1Amp). This power supply should be of a good quality with a small AC ripple. Protection:

IP54 dust and splash proof. UL94V-0 flame retardant ABS plastic

13.2 Measuring

<u>LC Display:</u> -5 to 35.000mV, impedance <300Ω, error limit 0.01% FS, Resolution 5 Digit

For use with:

1 x 350 Ω load cell or 3 x 1000 Ω load cells, with a fixed 5Vdc excitation

14.0 Accessories

The following items can all be ordered from your dealer or purchased separately.

Item Battery Pack (Li-Ion) Charger (100 - 240VAC Mains) Charger (12VDC Car Lighter) Rubber Boot Plastic Kit case, with foam Keypad Female binder, straight Part Number BA 041 HW 418 + HW422 RALLY-12VCABLE HW 033 HW 180-A KEY 008 INSC 001

15.0 Notes



www.instrotech.com.au

Your Distributor