

Special Binary Input Message Display Model LD-DIP User Guide

AMALGAMATED INSTRUMENT CO PTY LTD

ACN: 001 589 439

*Unit 5, 28 Leighton Place Hornsby
NSW 2077 Australia*

*Telephone: +61 2 9476 2244
Facsimile: +61 2 9476 2902*

*e-mail: sales@aicpl.com.au
Internet: www.aicpl.com.au*

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1 Introduction

This instruction booklet covers the setup and operation of the LD-DIP message display with 4 bit binary input.

The instrument setup functions can accessed via the PC software provided.

This message display allows binary inputs 0000 to 1111 to display pre set messages. The configuration can be altered via the setup software provided. RS485 communications are provided as standard with RS232 being available to order.

A space for recording your display selection is given below.

Input	Display
0000	
0001	
0010	
0011	
0100	
0101	
0110	
0111	
1000	
1001	
1010	
1011	
1100	
1101	
1110	
1111	

Some characters such as K and X cannot be displayed, U an V will always appear as the same character and some characters will appear the same in both upper and lower case. Characters which can be viewed on this display are:

Capital letters which will appear as **A B C d E F G H I J L ã Ñ O P Q R S t U U Û Y Z**

Lower case letters which will appear as **A b c d E F G h i j l ã ñ o P q r S t u u Û y z**

Numbers which will appear as **0 1 2 3 4 5 6 7 8 9**

Other characters include full stop, colon (only in displays fitted with colons), , “degrees” symbol (use @ sign to generate the degrees symbol e.g. 24@C will display as **24°C**) and hyphen.

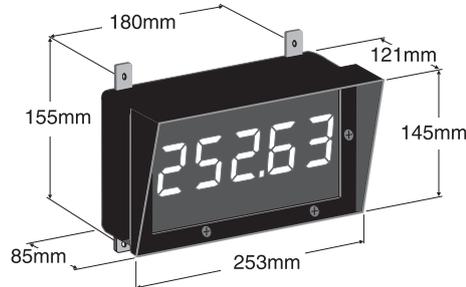
If other characters are entered they may simply cause a blank to appear in that position or may cause an unrecognisable character to be displayed.

Moving the display values - the display values can be moved to the left of the display by placing spaces after the values. Note that too many spaces may push the display too far left and digits could be lost. Spaces can also be put at the beginning and/or end to centre the display or a space can be used to give a gap between display characters.

2 Mechanical installation

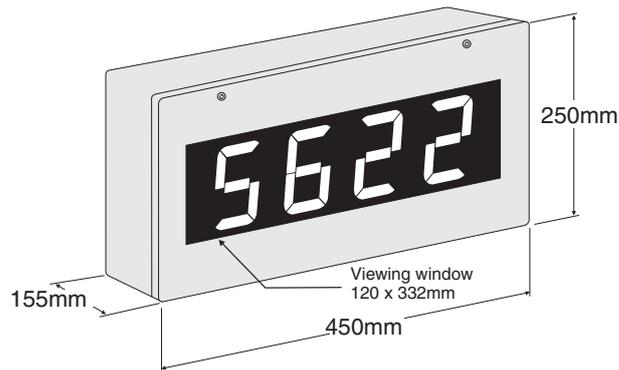
2.1 38mm, 45mm, 57mm and 58mm LED

An optional panel mount kit is available for these size displays. Panel cut out size is 240 x 130mm (-0.0mm / +0.5mm). Weight: All types 1.6kg approx.



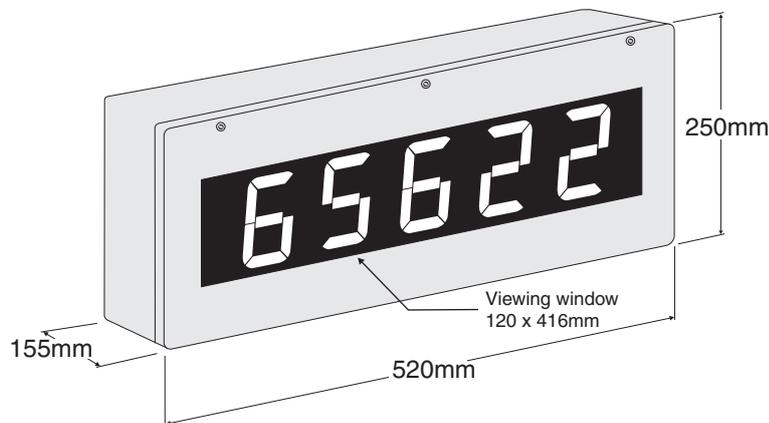
2.2 100mm 4 digit LED or electromagnetic

Weight 10kg (LED), 10.5kg (electromagnetic)



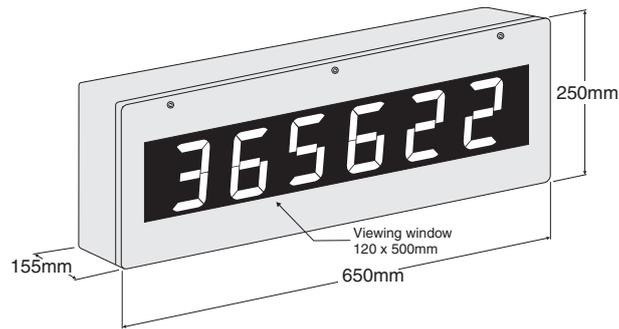
2.3 100mm 5 digit electromagnetic

Weight 12kg.



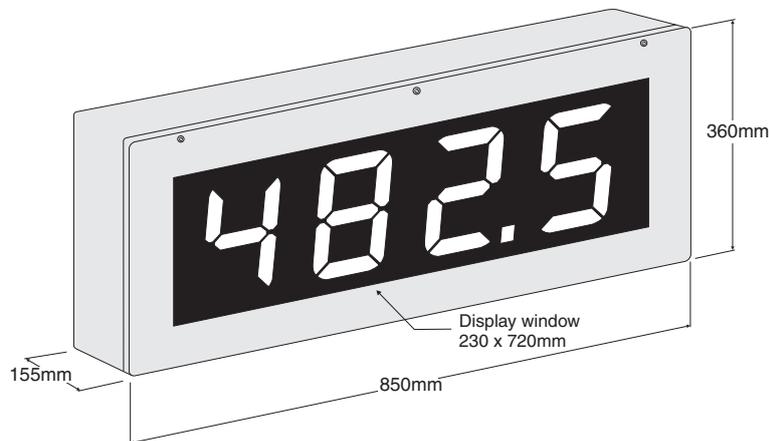
2.4 100mm 6 digit LED or electromagnetic

Weight 13kg (LED), 13.5k (electromagnetic)



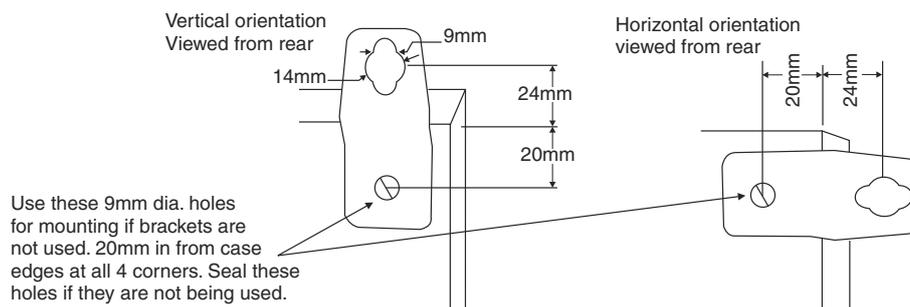
2.5 200mm 4 digit LED

Weight 13kg.



2.6 Cable entry and Mounting brackets

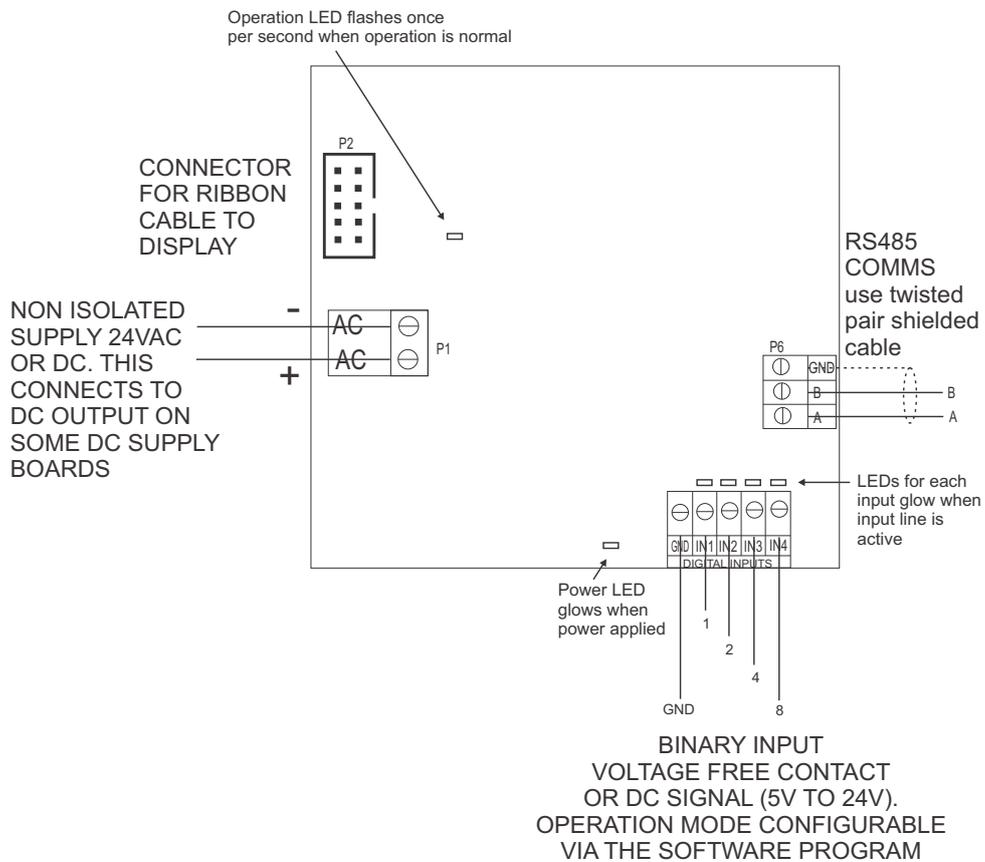
For 38 to 58mm displays no holes are pre drilled. For all 100mm and 200mm displays 3 off 20mm holes are drilled at the bottom of the case, these are fitted with 2 x IP65 grommets and 1 x air vent which allows moisture to exit the case but not enter. Four mounting brackets and four blind grommets are supplied for use with all metal case large digit displays. Diagrams below illustrate vertical and horizontal installation for mounting brackets. If mounting without the brackets is preferred then the 9mm dia. case holes provided for the brackets can be used as alternative mounting holes. Any rear holes not used for mounting should be sealed.



3 Electrical installation

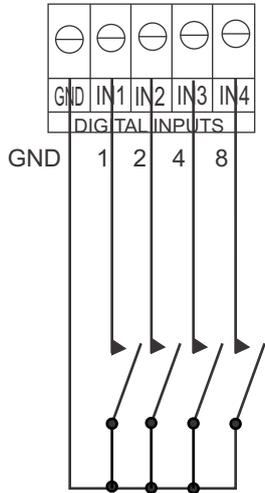
The LD-DIP instrument is designed for continuous operation and no power switch is fitted to the unit. It is recommended that an external switch and fuse be provided to allow the unit to be removed for servicing. The terminal blocks are plug in screw type for ease of installation and allow for wires of up to 1.5mm² for serial communications and binary input or 2.5mm² for power supply connections to be fitted. Connect the wires to the appropriate terminals as indicated below. Refer to other details provided in this manual to confirm proper selection of voltage, polarity and input type before applying power to the instrument. When power is applied the instrument will cycle through a display sequence, indicating the software version and other status information.

3.1 Main circuit board layout

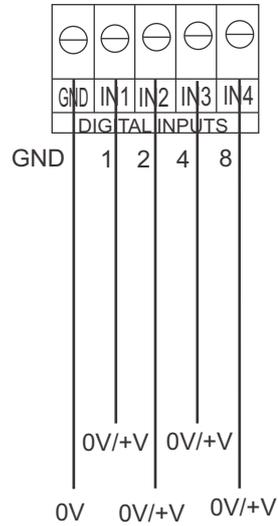


3.2 Signal wiring examples

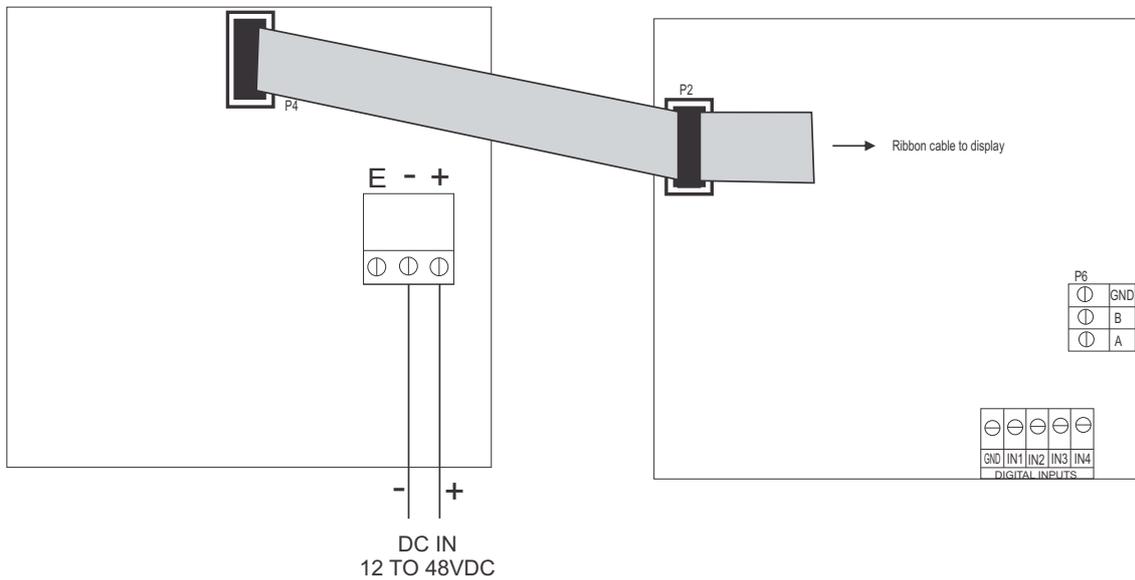
Voltage free input type



Voltage input type.
GND terminal at 0V
IN1 to IN4 switched
between +V and 0V
(+V range 5V to 24V)



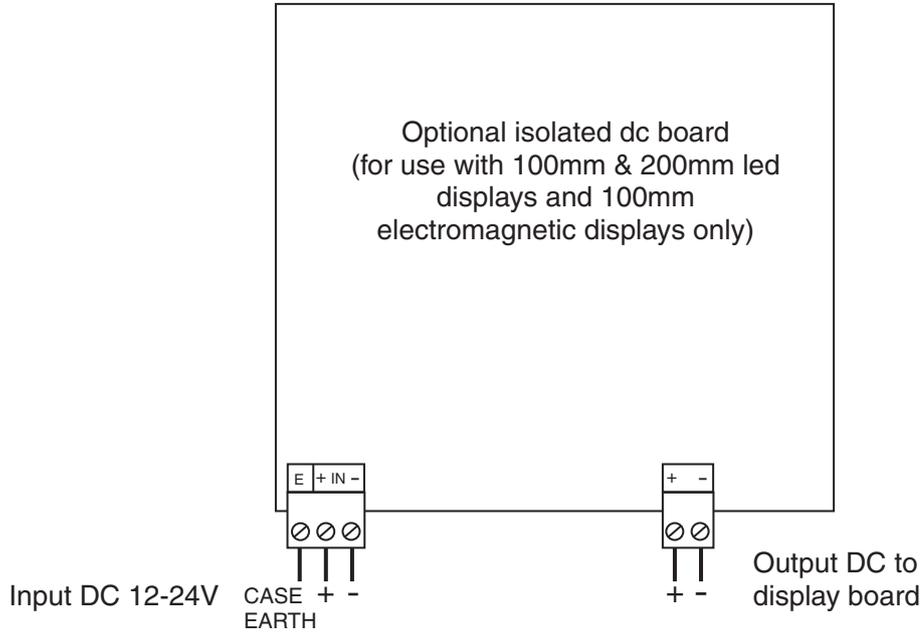
3.3 Isolated DC supplies for 38, 45, 57 and 58mm display types



3.4 100mm and 200mm LED display power supplies

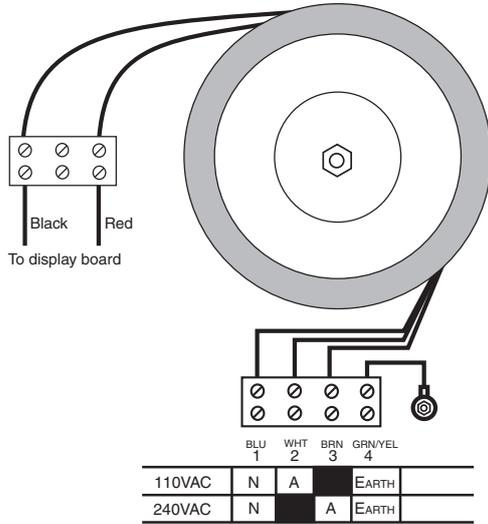
Isolated DC supplies (12 to 24VDC) connect to the isolated supply pcb on the base board. AC supplies connect to the transformer primary on the base board. The base board is located under the input circuit board, see wiring diagram for AC supplies on the next page.

Optional isolated DC supply

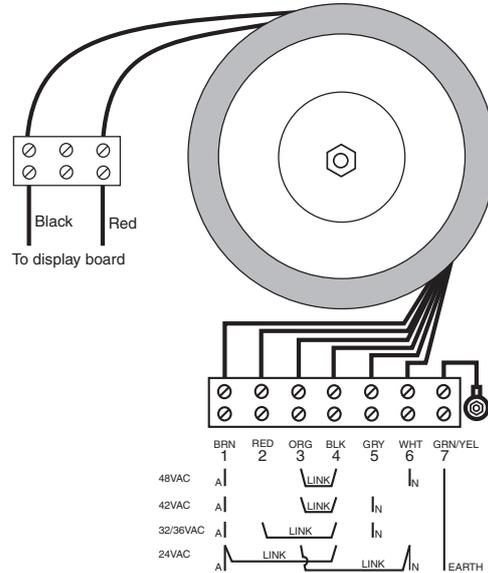


AC supplies - 100mm and 200mm displays. AC supplies connect to the transformer primary on the base board inside the case. Supply type is factory configured.

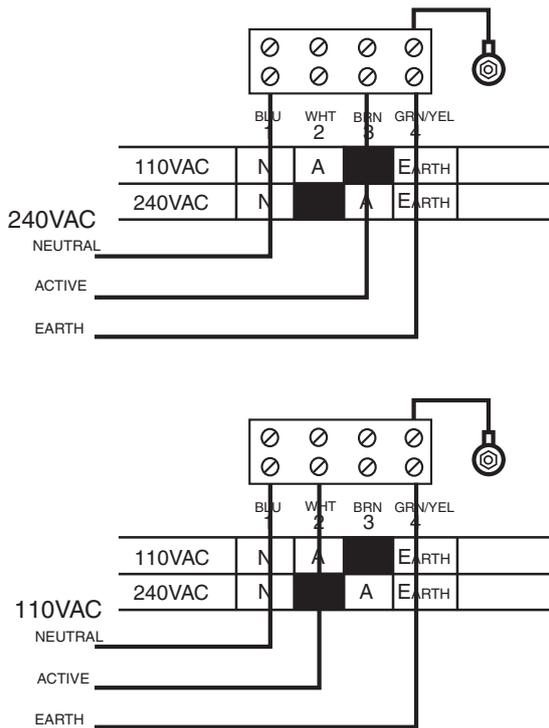
240 & 110VAC supplies.
For 100mm/200mm LED or 100mm electromagnetic display types only.



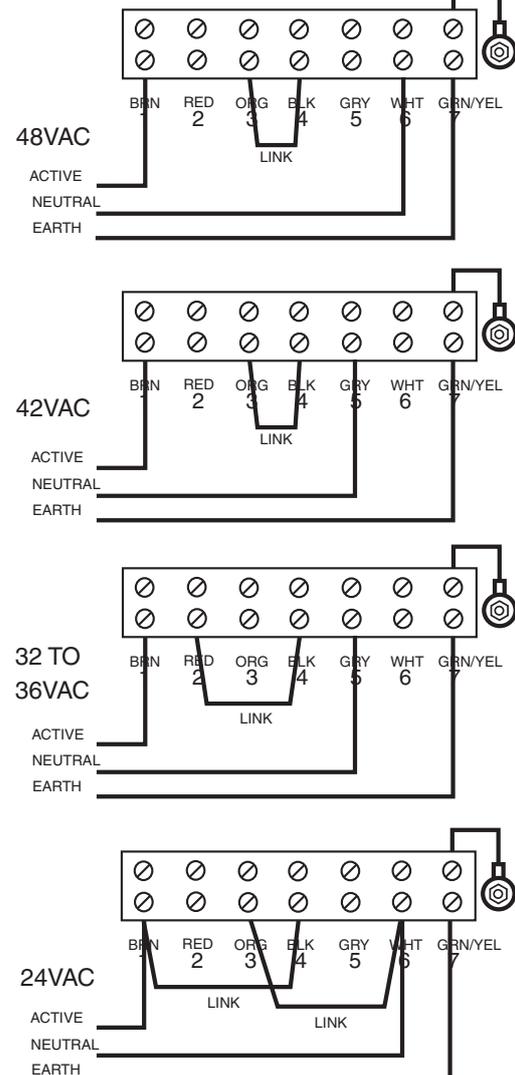
Low voltage AC supplies.
For 100mm/200mm LED or 100mm electromagnetic display types only.



Wiring examples 240VAC & 110VAC

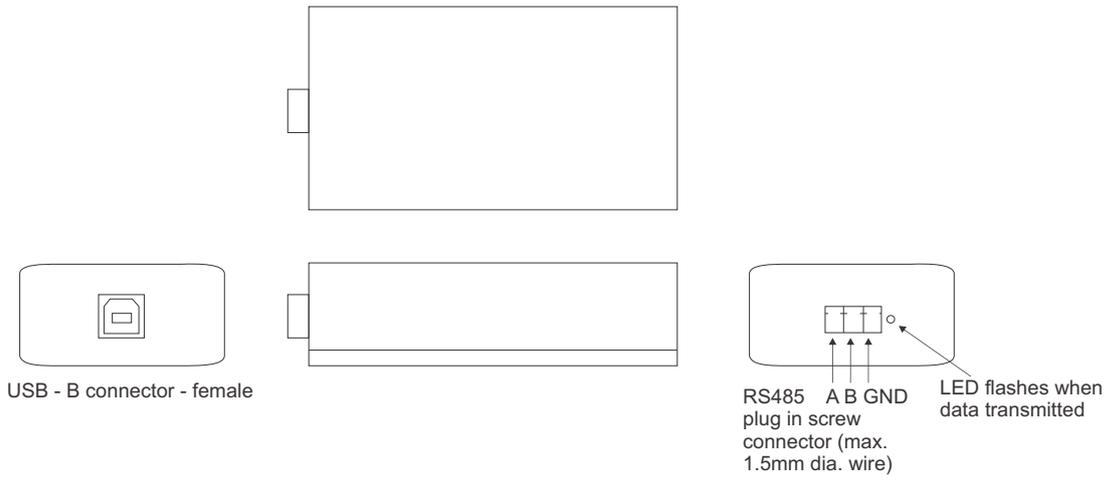


Wiring examples low voltage AC



Important note: the 240V & 110V supplies use the same transformer, low voltage instruments use a different transformer. Do not use a low voltage transformer for 240V or 110V or vice versa.

3.5 Optional USB to RS485 converter



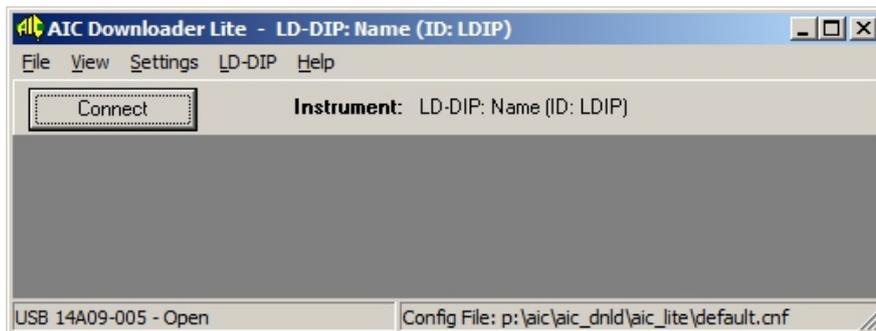
4 Using the setup software

This software is a generic software to which the configuration menus for this special display have been added. Parts of this software not described in this section have no particular use in this special display.

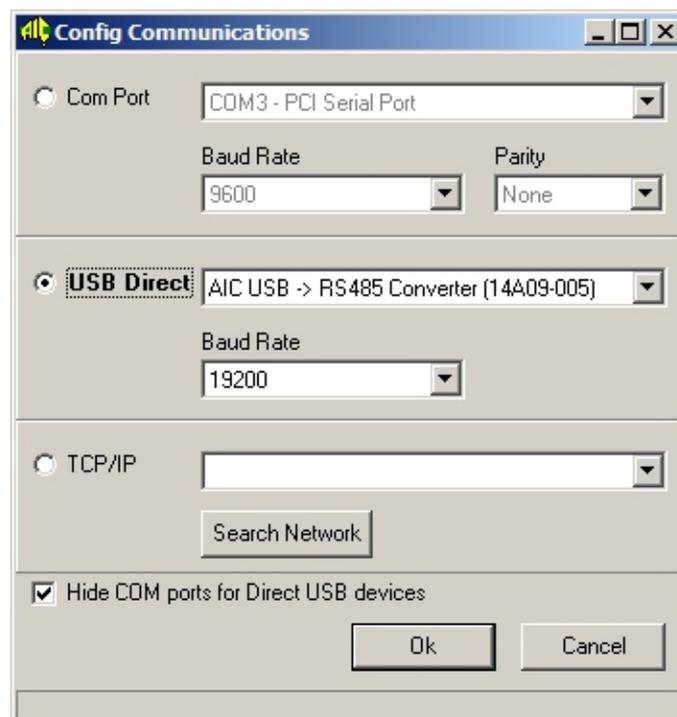
The LD-DIP configuration software allows modification of display messages and control of other items such as display brightness.

Installation and operation of the software

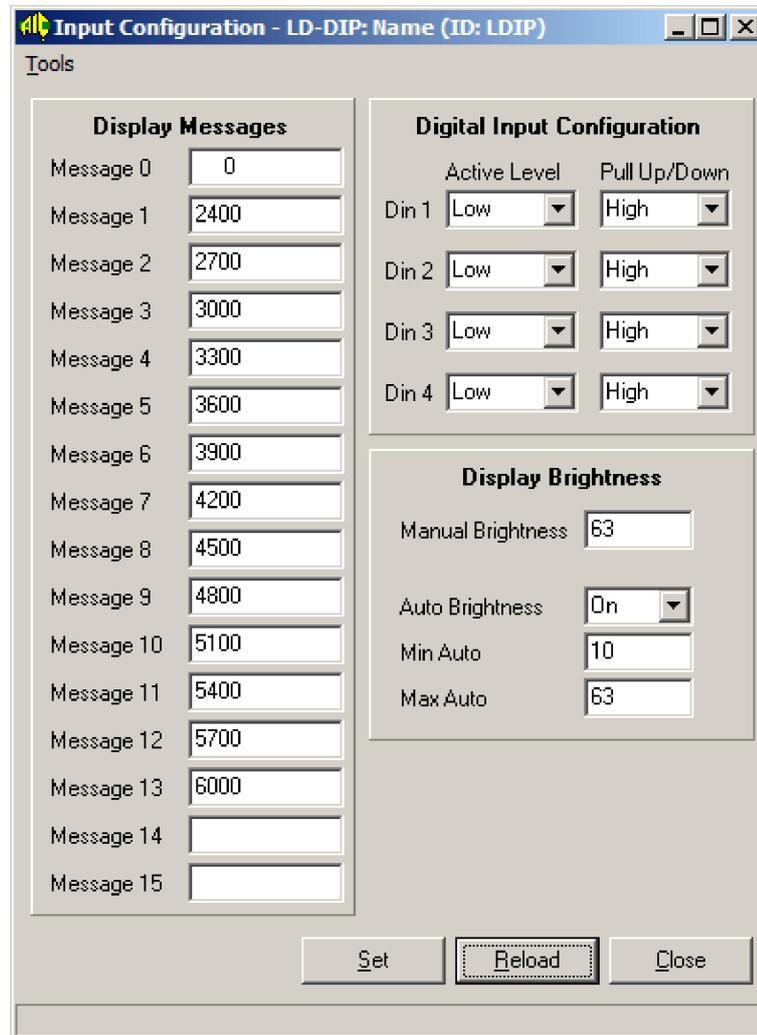
Create a directory on your PC or laptop for the software then download the software from the web address you have been given to this directory and then run the “.exe” file. A window similar to the one below should appear.



Connect the USB converter to a USB port on the computer and the other end to the RS485 port on the display (see Electrical Installation chapter) then click on **Settings** > **Comms** a new window similar to the one below should appear. Ensure that **USB Direct** is selected and that the converter is selected as shown in the window. Note the value shown in brackets in this window e.g. (14A09-005) in this example will be the serial number of the particular USB converter being used.



Once the USB communications has been selected close down this window and click on **Connect**, the software will then look for the display and if it cannot find it may ask if you want to try different baud rates. Once the display has been found click on **LD-DIP** which is the “plugin” section for this display then select **Config**. A new window similar to the one below should now appear.



The main parts of this window are:

- **Tools** - Under **Enter Password** the password can be entered if used. The default level 1 password is blank i.e. no password but this can be changed if required. To set a password the level 2 password must be entered first. The default level 2 password is **Password**. This must be entered at the **Tools > Enter Password** window. Once this has been set to set a new password go to the main window and select **View > Password Configuration**. Once a password has been set entry of the password will be required before any changes can be made to settings. The level 2 password may also be changed at this time but if this password is forgotten the display will have to be returned to the manufacturer for reprogramming.

The **Form Capture** allows the **Input Configuration** window being viewed to be sent to a printer or captured on the clipboard or saved as a bitmap file. This could be used to record the settings.

The **Auto Refresh** sections simply set the refresh times for the forms being viewed and have no particular application in this software.

- **Display Messages** - use the keyboard to type in the required display message for each binary input. Message 0 is for a 0000 binary input. Message 15 is for a 1111 binary input.

Leading spaces will be ignored but trailing spaces will push the message towards the left of the display.

- **Digital Input Configuration** - this section allows configuration of the digital input type. In the window all Active Levels are set to High and all Pull Up/Pull Down levels are set to Low, these are the settings required for active high inputs using DC volts e.g. 5V, 12V or 24V. For voltage free contact input the Pull Up/Down sections should all be set to High.
- **Display Brightness** - this section allows control of the brightness level of the display. If **Auto Brightness** is set to **Off** then the brightness level can be set from 0 (minimum) to 63 (maximum) at the **Manual Brightness** window. If the **Auto Brightness** is set to **On** then the brightness levels are set at the **Min.Auto** and **Max.Auto** windows. The minimum should be set for the value required at the darkest viewing conditions e.g. a dark room and the maximum for the level required in the brightest viewing conditions.

When a change has been made to any of these settings click on the **Set** button to send the new settings to the display.

5 Specifications

5.1 Technical specifications

Input types:	4 bit binary selectable as either voltage free or 5 to 24V signal voltage RS485 serial comms for setup
Ambient temperature:	LED -10 to 60° C
Humidity:	5 to 95% non condensing
Power supply:	100 and 200mm LED: AC 240 or 110V selectable, 50/60Hz or AC 48/42/32/24 selectable, 50/60Hz or DC isolated wide range 12 to 24V. 38mm, 45mm, 57mm or 58mm LED: AC 240 or 110V 50/60Hz or DC 12 to 48V isolated DC 24V non isolated Supply type is factory configured

5.2 Physical characteristics

Refer to “Mechanical installation”, chapter 2 page 4 for size and weight specifications.

6 Guarantee and service

The product supplied with this manual is guaranteed against faulty workmanship for a period of 2 years from the date of dispatch.

Our obligation assumed under this guarantee is limited to the replacement of parts which, by our examination, are proved to be defective and have not been misused, carelessly handled, defaced or damaged due to incorrect installation. This guarantee is VOID where the unit has been opened, tampered with or if repairs have been made or attempted by anyone except an au authorised representative of the manufacturing company.

Products for attention under guarantee (unless otherwise agreed) must be returned to the manufacturer freight paid and, if accepted for free repair, will be returned to the customers address in Australia free of charge.

When returning the product for service or repair a full description of the fault and the mode of operation used when the product failed must be given. In any event the manufacturer has no other obligation or liability beyond replacement or repair of this product.

Modifications may be made to any existing or future models of the unit as it may deem necessary without incurring any obligation to incorporate such modifications in units previously sold or to which this guarantee may relate.

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This product is designed and manufactured in Australia.