

LASERMET

MINIATURE WARNING SIGN INSTRUCTION MANUAL



Two-Way Illuminated Sign 'LEDS'

Lasermet Miniature Warning Sign Instruction Manual

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**CE Declaration of Conformity**

Manufacturer: Lasermet Ltd.
Lasermet House, 137 Hankinson Road,
Bournemouth BH9 1HR U.K.

Equipment: Miniature Illuminated Signs type 'LEDS' using the
following units:
LEDS-1WB 00900-00-000
LEDS-1WY 00542-00-000
LEDS-2WRG 00563-00-000

Year of Manufacture: 2012

Applicable Directives: Low Voltage Directive 73/23/EEC
CE Directive 93/68/EEC
EMC Directive 89/336/EEC

European Standards to which conformity is declared:
EN 60950-1:2006 + A12:2012
EN 55015: 2006+A2 2009
EN 61547:2009
EN 62471:2008

I hereby declare that the above listed products conform to the relevant sections of
73/23/EEC, 93/68/EEC and 89/336/EEC.

Signed:

A handwritten signature in black ink, appearing to read 'Kevin Bowers', written over a horizontal line.

Name: Kevin Bowers

Position: Quality Assurance Manager

Date: 20 March 2012

Concept

The Miniature Warning Sign is intended to be used in an indoor position to indicate messages to personnel. Typically the sign is fitted in a room, adjacent to a door or on a piece of equipment. The high quality moulded case is pleasing to the eye and the gloss finish makes the unit easy to clean.

The sign offers a red danger and a green safe indication and is powered by 24VDC. LED's are used to give a long service life. Different red and green messages may be displayed in the same area of the sign. Messages may include text and/or symbols. Standard and custom messages are available.

No message is visible when the sign is switched off.

When fitted adjacent to a door, the sign is intended to be located adjacent to the door handle, approximately in line of sight as a person reaches for the door handle to open the door.

The sign offers significant safety advantages over traditional warning signs which tend to be erected over the top of the door, such as:

- Safer low voltage operation- no working on live equipment;
- Ground level access for installation and maintenance- no working at height;
- Fitted beside the door, not over it- no obstruction of the doorway during installation and maintenance.

The Miniature Warning Sign can be directly operated by Lasermet's interlock systems. A matching access keypad is available. Lasermet provides a full range of laser interlock equipment including control systems, interlock switches, laser shutters, door locks, access signs, external power supplies etc. Full support, design and installation is available from Lasermet, please contact us for any queries. Contact details are given at the end of this manual.



Installation

The Miniature Warning Sign is designed to be permanently attached to a wall or other fixed vertical surface.

Positioning

The Miniature Warning Sign should be mounted in a convenient position for use and wiring.

Normally it is located on the outside ('safe') side of the entry door of the controlled area, on the wall adjacent to the door handle, approximately 1.4m up from floor level.

During installation, wired connections will need to be made from the Miniature Warning Sign to the Interlock Control System and allowance should be made for the installation of electrical conduit or trunking if required to make entry to the unit.

Ideally the sign should be attached directly to the wall with the cables being fed from within the wall. For hollow walls this should be straightforward. For solid walls it may be easiest and neatest to feed the cables right through the wall from the other side.

Alternatively the sign may be attached to a round BESA conduit box which may be buried or surface-mounted, though this last option will result in the unit projecting further from the wall, making it less stable and more vulnerable.

It is recommended that the centre of mounting is at least 100mm horizontally from the door surround/architrave and at least 150mm from the edge of the door. There must be a flat unobstructed area of wall extending at least 70mm above and 110mm below the mounting centre to allow fitment and removal.

If a Lasermet ICS-KP12 keypad is being fitted below the sign the centres should be at least 140mm apart vertically.

Refer to Figure 1 for details of the fixing holes and cable entry. The backplate is secured using preferably four screws on a 35.4mm square around the cable entry point. The backplate may be used as a marking template. If using a BESA round conduit box, the holes will align with the cover fixing holes.

Once all the holes have been made, secure the backplate as shown in figure 1.

Feed the cables through the hole in the centre of the backplate.

NOTE: Make the electrical connections before attaching the unit to the backplate, see the Wiring section.

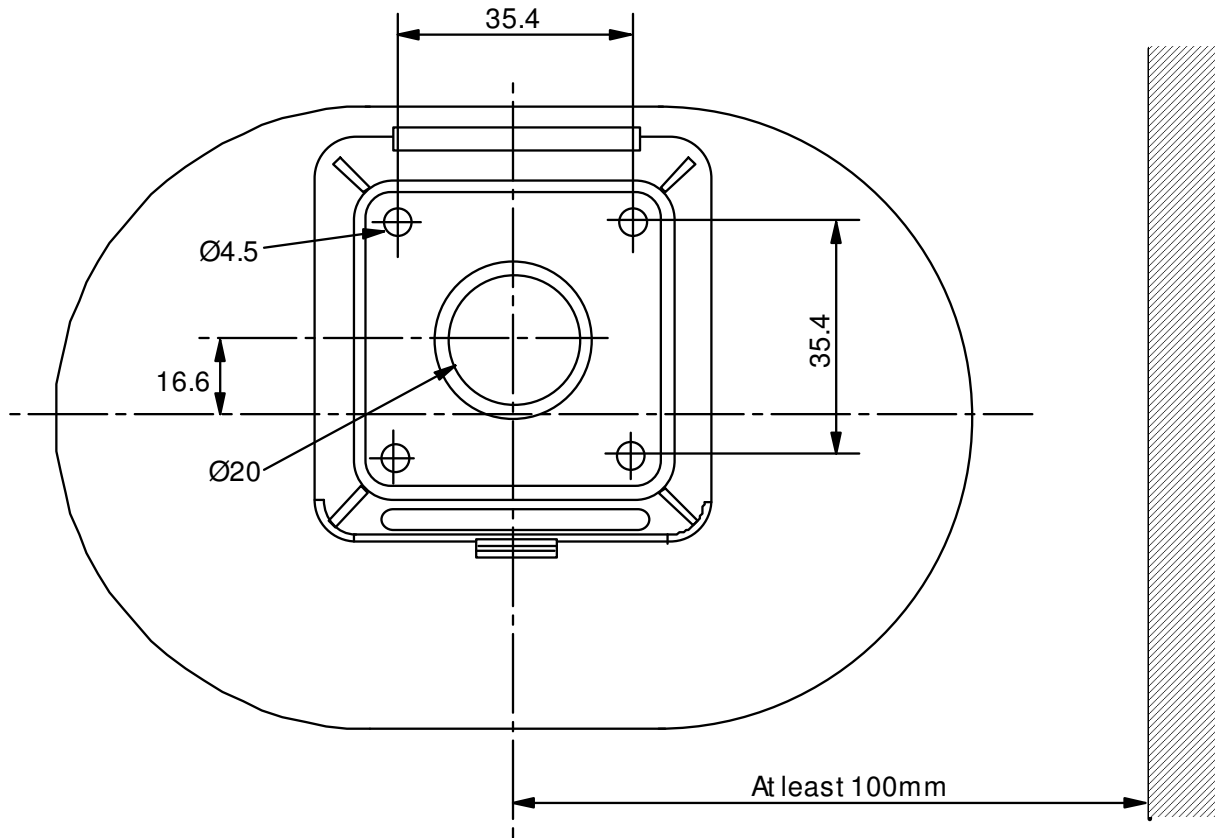


Figure 1: Wall Drilling Details

Wiring

The sign is powered by 24VDC. A four-way terminal block is provided for the connections to the red and green elements. The connections are shown in figure 2.

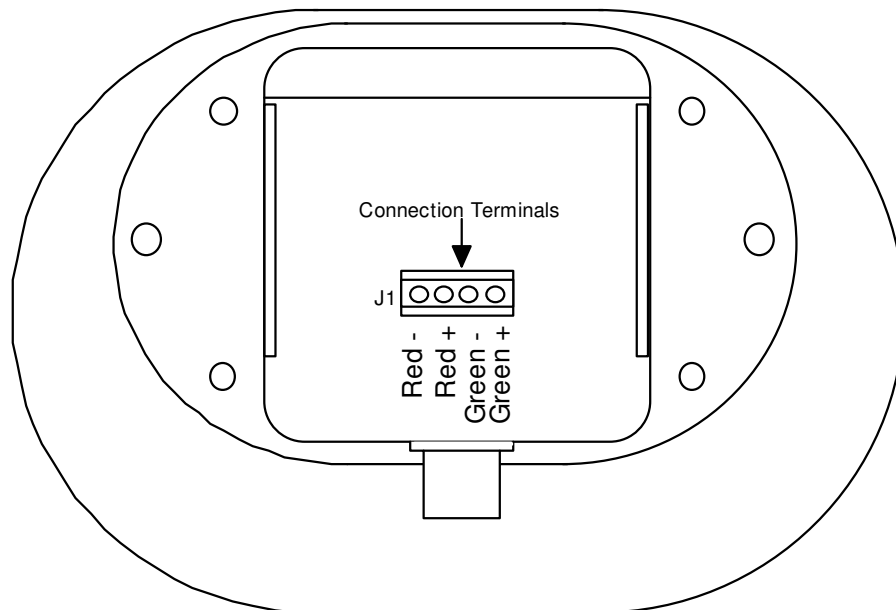


Figure 2: Terminal Identification

The supply to the green safe element is connected with the positive to the GN+ terminal and negative to the GN- terminal.

The supply to the red danger element is connected with the positive to the RD+ terminal and negative to the RD- terminal.

Low voltage four-core flexible wire such as burglar alarm wire is ideal for connecting to the sign.

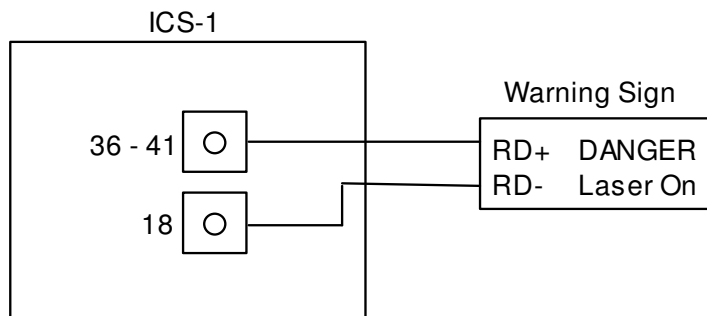
The sign typically draws less than 0.2A per colour. To protect the wiring and terminals the supply should have an overcurrent protection device rated at 1A maximum.

Wiring diagrams are given below for connecting the sign to Lasermet's ICS-1 and ICS-5 Interlock Controllers.

Connecting to ICS-1

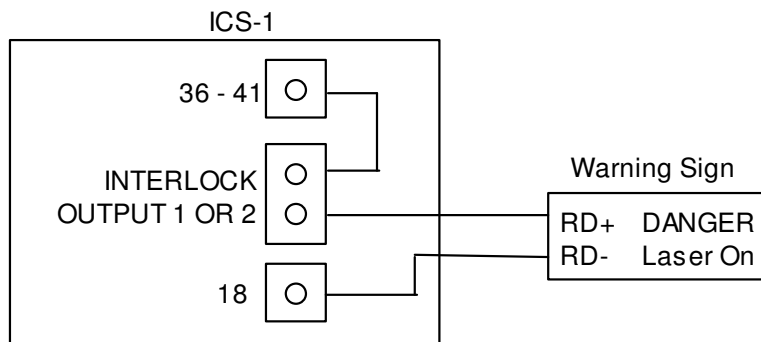
Option 1 - One Way Illuminated Sign

The red warning sign will come on as soon as the mains switch of the ICS-1 is turned on.



Option 2 - One Way Illuminated Sign

The red warning sign will come on when the 'Enable' button is pressed.



Option 3 - Two Way Illuminated Sign

The green sign will come on when the ICS-1 mains switch is turned on. The green indication will go off and the red warning sign will illuminate when the 'Enable' button is pressed.

This option requires the ICS-1 Sign and Keypad Adaptor PCB and is only available in the following conditions:

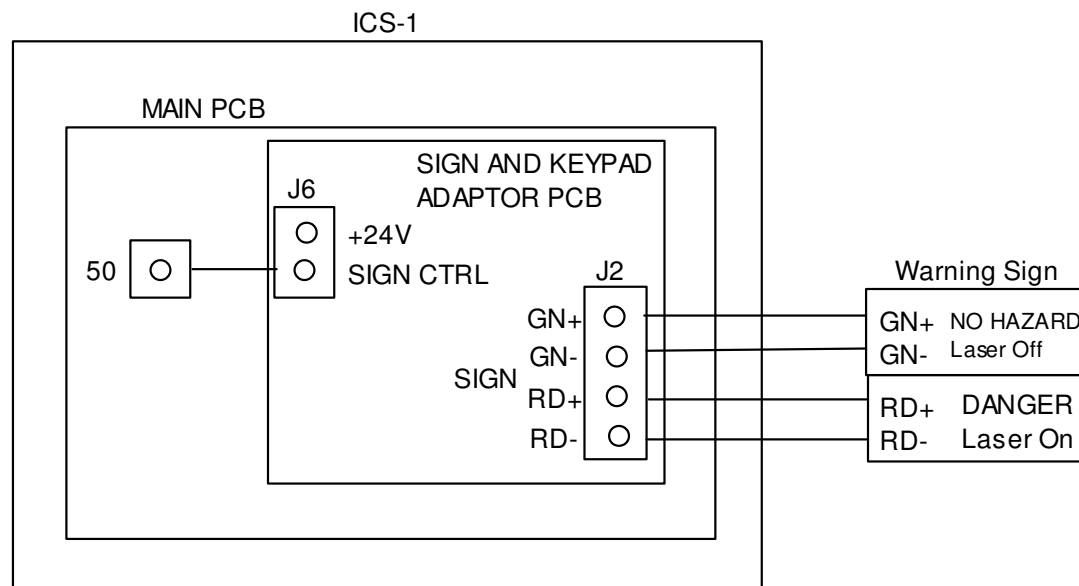
- 1) No override facility is used, or
- 2) An ICS-KP12 keypad is used.

To install the adaptor board, first switch off mains power to the ICS-1. Now open the ICS-1 and fit the adaptor board in the space near the top of the main circuit board inside the ICS-1. If there is already a circuit board fitted in the space which has more components than the adaptor board this is probably an Override Board. This may be removed if the override function is not used or if an ICS-KP12 keypad is to be installed at the same time.

Ensure that the pins on the adaptor board are correctly aligned and inserted into the socket strip on the main circuit board, and secure the opposite end of the adaptor board using the M3 screw provided.

Connect the terminal labelled 'Sign CTRL' on the adaptor board to terminal 50 on the ICS-1 Main PCB.

Using four-core cable connect the four terminals on the Adaptor PCB labelled GN+, GN-, RD+, RD- to the corresponding terminals inside the sign.

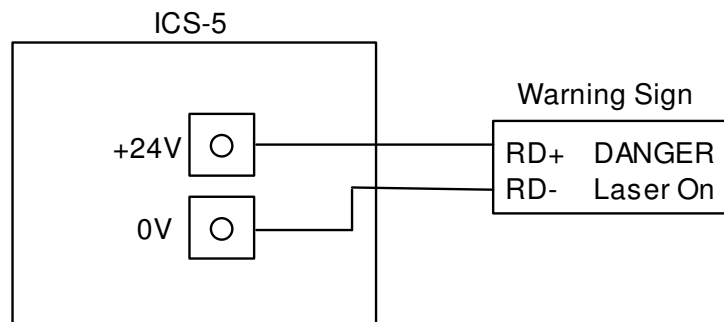


Once the wiring connections have been made, attach the sign to the backplate as described in the next section.

Connecting to ICS-5

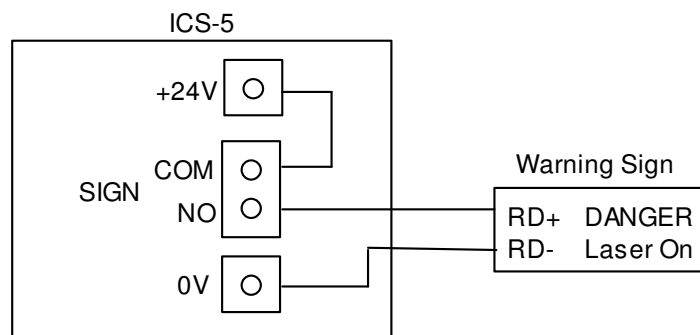
Option 1 - One Way Illuminated Sign

The red warning sign will come on as soon as the mains switch of the ICS-5 is turned on.



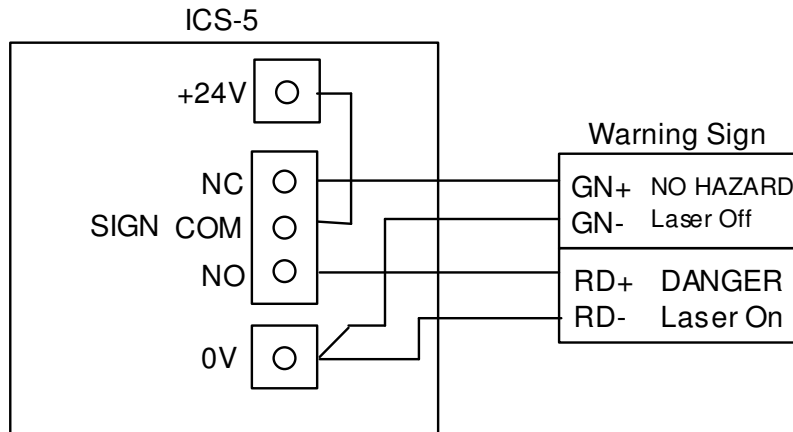
Option 2 - One Way Illuminated Sign

The red warning sign will come on when the 'Arm Laser' button is pressed.



Option 3 Two way Illuminated Warning Sign

The green warning sign will come on when the ICS-5 mains switch is turned on. The green warning sign will go off and the red warning sign will come on when the 'Arm Laser' button is pressed.



Once the wiring connections have been made, attach the sign to the backplate as described in the below.

Attaching the Sign to the Backplate

Once all the wiring connections have been made, attach the sign to the backplate by hooking the top of the sign onto the backplate and swinging the bottom against the wall. Press the sign firmly until it clicks into place.

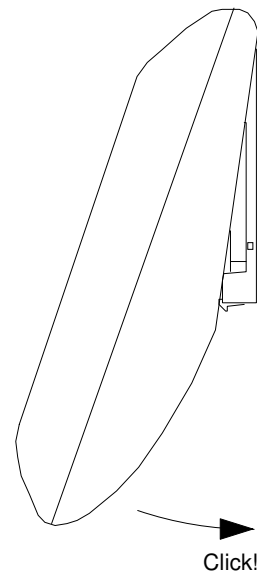
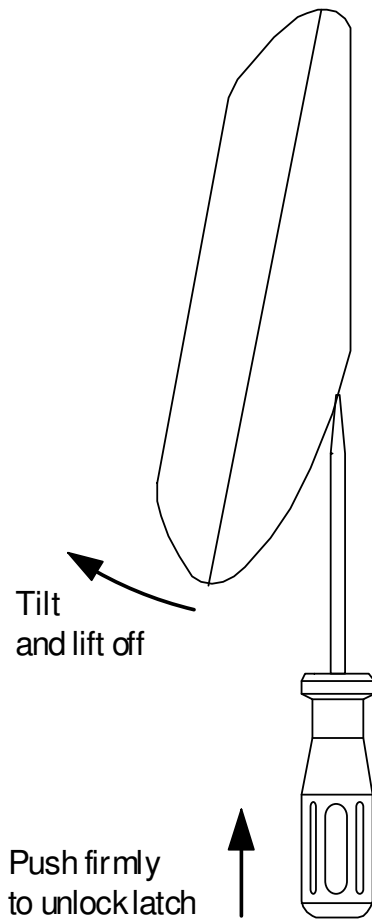


Figure 5: Locking Case onto Backplate

Removing the Sign from the wall

Once the sign has been locked to the wall, a 5mm flat screwdriver is required to release the locking latch before it can be removed, see figure 6.



Ensure that the supply is turned off.

Insert the screwdriver into the recess in the bottom of the sign at the back and push the latch upwards to disengage it from the case. Note that the latch is quite secure and some force may be needed before it releases. When the latch is released it will be possible to tilt the bottom of the sign forwards and then lift it off the backplate.

Use a 3mm flat screwdriver to disconnect the wires from the terminals.

Figure 6: Releasing
Locking Pin

Indications

Danger and Safe Indications

The sign is normally wired to show a red message for danger or 'stop' condition and a green message for safe or 'go' condition.

Various standard messages are available, and custom messages may be produced on request. Messages may include text and symbols.

No Indication

When no power is applied to either element the face of the sign appears black.

Product Disposal

To help protect the environment do not dispose of this product with landfill waste. Take it to a waste recycling facility that processes electrical and electronic items, or return it to Lasermet or your local distributor for proper disposal.



Specifications

Dimensions:
160 mm wide X 108mm high X 39mm deep.

Weight:
145g.

Power Consumption:
150mA per colour at 24VDC (3.6W).

All figures quoted are approximate. Lasermet reserve the right to alter specifications without prior notice.

Contact Details

For sales and technical support::

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