

LASERMET MINIATURE WARNING SIGN INSTRUCTION MANUAL



**TWO-WAY ILLUMINATED SIGN and
ONE-WAY ILLUMINATED SIGN**

LASERMET Miniature Warning Sign Instruction Manual

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1 Declaration of Conformity



LASERMET LIMITED

Miniature Illuminated Signs type 'LEDS' Mini Sign

Part no.	LEDS-1WB	00900-00-000
	LEDS-1WY	00542-00-000
	LEDS-2WRG	00563-00-000

DECLARATION OF CONFORMITY

This is to certify that the Miniature Illuminated Signs designated by the listed Lasernet Part Numbers have been tested in accordance with the following directives and standards and found to comply.

Lasernet certifies that this product complies with the basic requirements for health and safety as provided by the following directives and standards:

Directives: Low Voltage Directive 2014/35/EU
 CE Directive 93/68/EEC
 EMC Directive 2014/30/EU

Standards: EN 60950-1:2006 +A2:2013
 EN 55015:2006 +A2:2009
 EN 61547:2009
 EN 62471:2008

Supplier:
 Lasernet Limited
 Lasernet House
 137 Hankinson Road
 Bournemouth
 BH9 1HR
 Dorset
 United Kingdom

Country of Origin: England

Signed.

Paul Tozer
 Managing Director



Date: 10 June 2019



2 Safety Warnings

This device is intended to be used as part of a safety system which may be used to protect personnel and equipment from possible injury, damage, or loss.

As such it must be installed and wired according to these instructions and tested by suitably qualified persons. No attempt may be made to tamper with the parts, open them, or use them outside of the parameters contained herein.

The units are only designed to be fixed to surfaces using their inbuilt fixing holes. They must not come into contact with each other or any other moving part when in use. The parts should never be subject to impact or mechanical strain.

Safety switches should never be defeated or bypassed. It is imperative that all steps are taken to ensure that any spare actuators are made unavailable, such that they cannot be used to defeat the switch or reduce the protection offered by the system in any way.

3 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 or 48VDC. LEDs 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, illuminated warning signs, laser shutters, door locks, external power supplies etc. which can be connected to provide a complete laser interlock system. 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.

4 Installation

The Miniature Warning Sign is designed to be permanently attached to a wall or other fixed vertical surface. It is intended for indoor use and is not waterproof.

4.1 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 Lasernet ICS-KP12 or ICS-KP14 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.

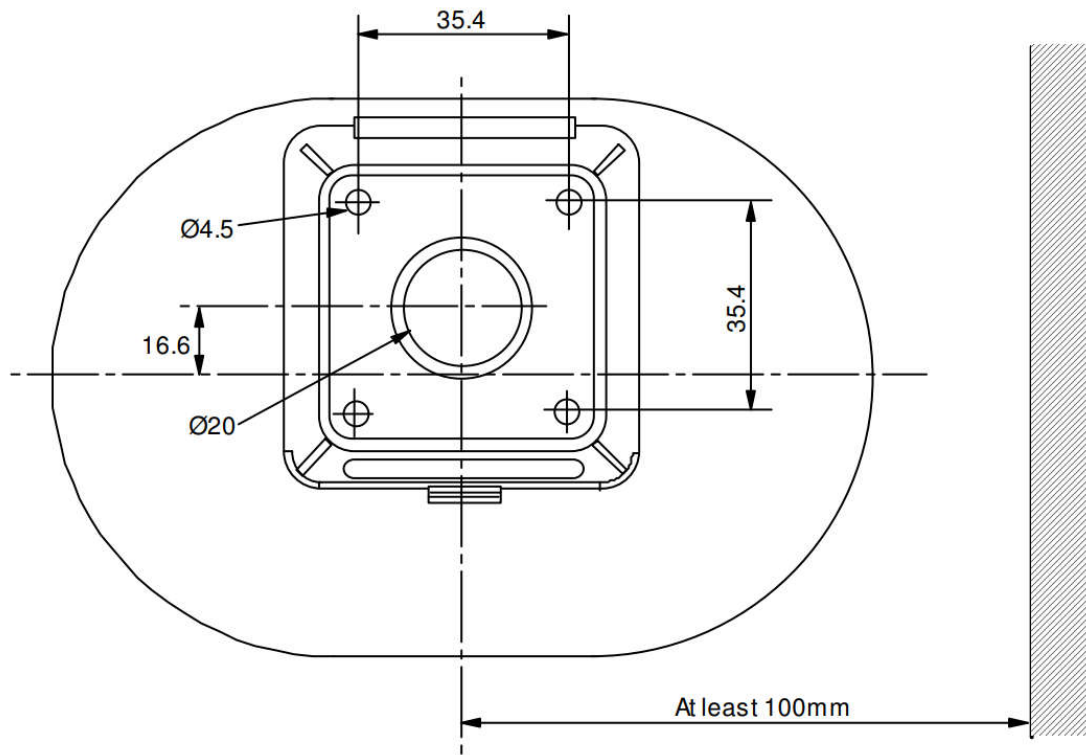


Figure 1. Wall Drilling Details

5 Wiring

The standard 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.

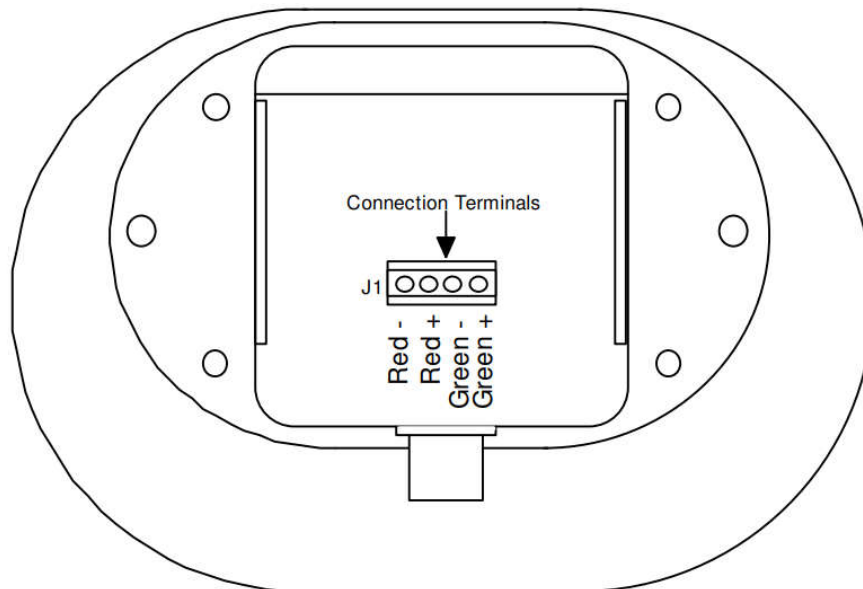


Figure 2. Terminal Identification

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-6 Interlock Controller.

Connecting to a 48VDC Supply

When fitted with a voltage converter, the sign can accept a 48VDC supply voltage.

Use the voltage converter terminals (to the far left and/or far right of the board) to connect the voltage supply. Do NOT directly connect the voltage supply to the connection terminals in Figure 2.

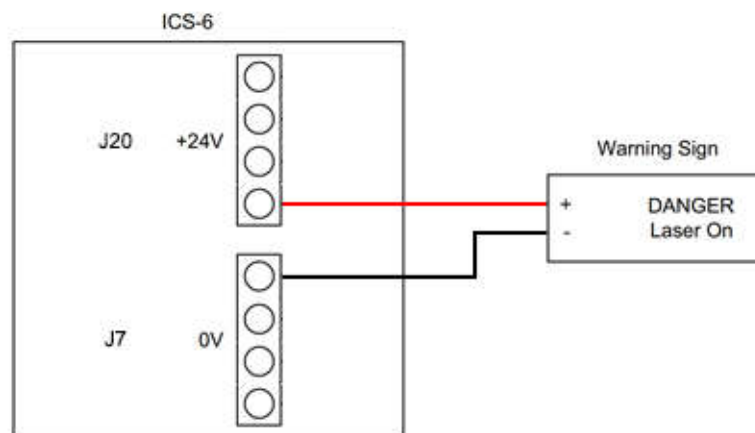
NOTE: Check the label indication at the back of the sign to determine if the sign can accept 48VDC.

5.1 Connecting to ICS-6

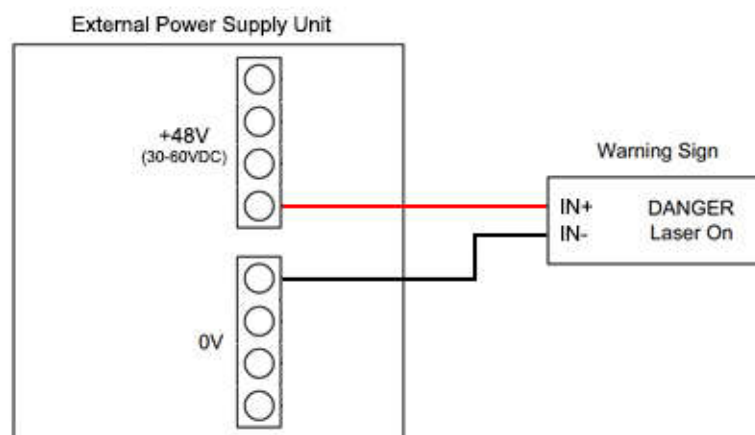
Option 1 – One Way Illuminated Sign

The red warning sign will come on as soon as the mains switch of the ICS-6 is turned on.

24V Power Supply



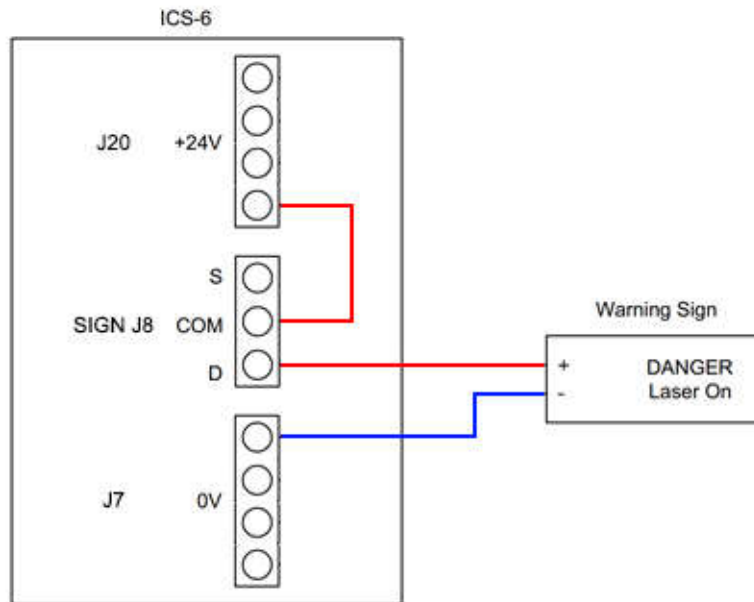
48V Power Supply



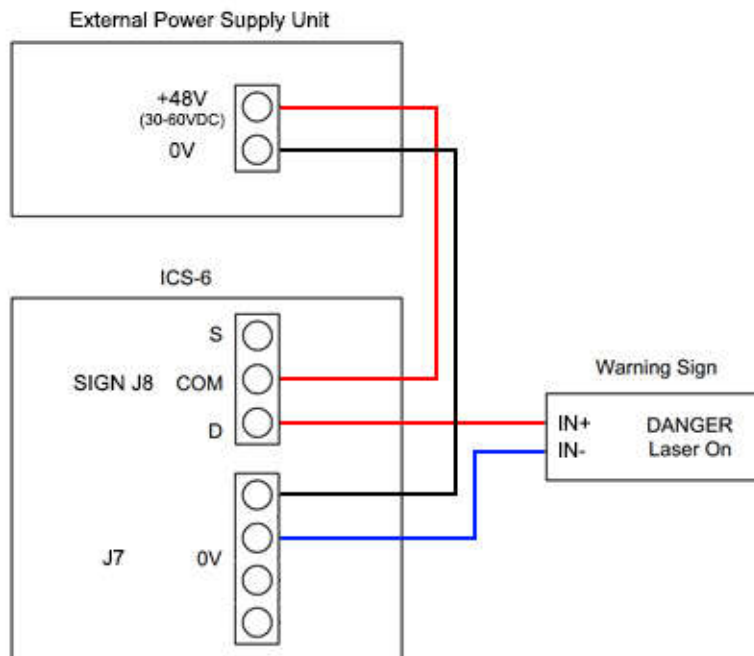
Option 2 – One Way Illuminated Sign

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

24V Power Supply



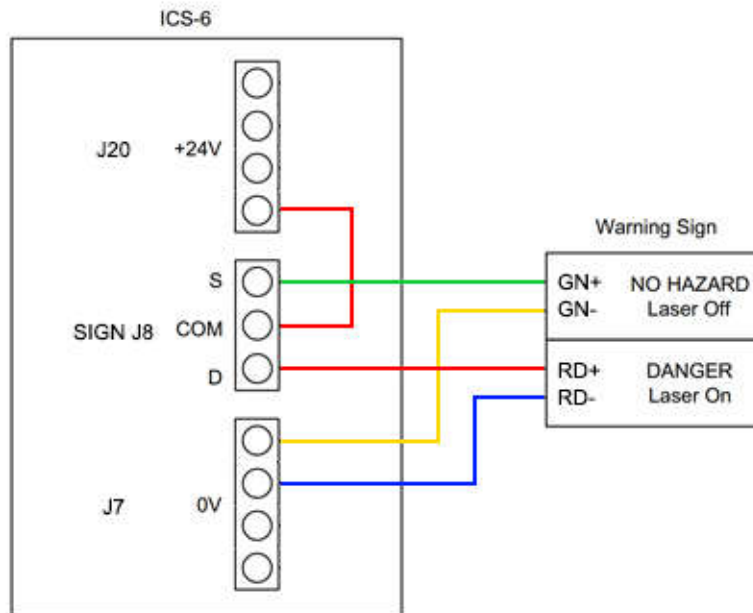
48V Power Supply



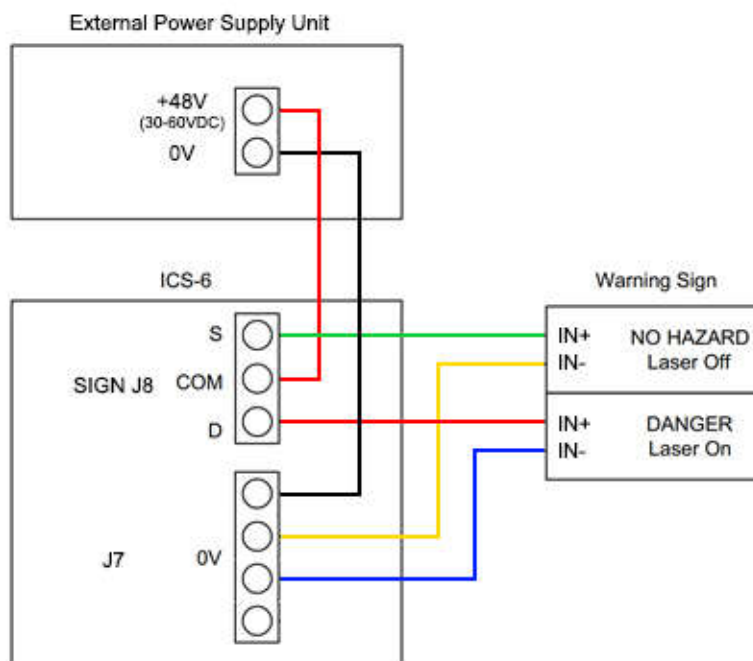
Option 3 – Two Way Illuminated Sign

The green sign will come on when the ICS-6 mains switch is turned on. The green indication will go off and the red warning sign will illuminate when the ‘Arm Laser’ button is pressed.

24V Power Supply



48V Power Supply



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

5.2 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.

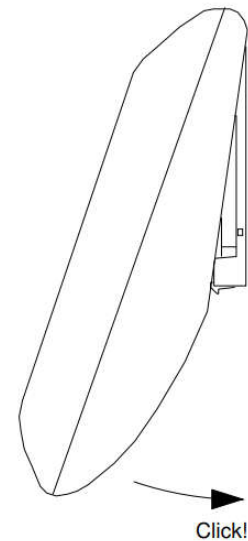


Figure 3. Locking Case onto Backplate

5.3 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 4.

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.

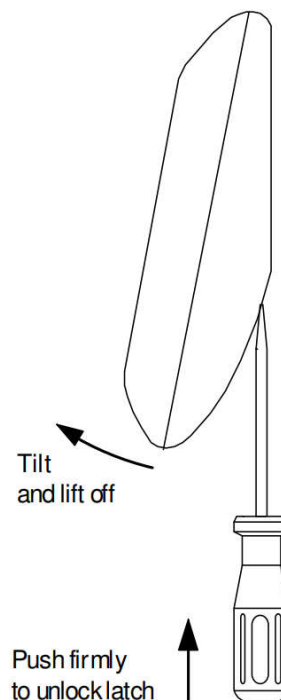


Figure 4. Releasing Locking Pin

6 Indicators

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.

7 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.



8 Specifications

Voltage Supply	24VDC or 48VDC (30-60V)		
Power Consumption	at +24V	<i>Red</i>	110mA (2.6W)
		<i>Green</i>	40mA (1.0W)
		<i>Amber</i>	100mA (2.4W)
	at +48V	<i>Red</i>	90mA (4.3W)
		<i>Green</i>	60mA (2.9W)
		<i>Amber</i>	100mA (4.8W)
Ingress Protection	IP50		
Size	160mm wide X 108mm high X 39mm deep		
Weight	145g		

Dimensions are approximate. Values given as 'typical' are average values measured across a number of samples and are not guaranteed. Lasernet reserve the right to alter any specification without prior notice.

9 Warranty

Lasermet provide a 12-month warranty for defects in materials and manufacture, from the date of installation or delivery. Installations completed by Lasermet are covered against defects in workmanship for 12 months.

Damage or defects caused by other factors are not covered. For example, industrial contamination, incorrect cleaning, storm damage. Consequential loss is not covered under warranty. Compensation for indirect or direct loss or damage is expressly excluded. Rectification of the defects or a replacement does not initiate a new warranty period.

For all deliveries, payments and other legal transactions, English law takes precedence for any litigation.

10 Contact Details

Lasernet provide a full range of laser interlock equipment including interlock switches, illuminated warning signs, laser shutters, entry keypads with built-in fail-safe override timer, door locks, external power supplies etc. which can be interconnected to provide a complete system. We also supply equipment and consultancy covering all aspects of laser safety. Full support, design, and installation is available from Lasernet, please contact us for any queries.

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