



Worker
Safety

Helios W.E.S. 1000 & 2000

(Wireless Emergency Stop)

Installation and Hardware Guide

E5, Version 1.3



Contact Information

Helios Global Technologies
1920 Windsor Rd
Kelowna BC
V1Y 4R5

Website: <http://www.heliosglobaltech.com>

Warranty Information and Technical Support

Please inquire with the distributor of your W.E.S. system for any warranty and technical support related issue.

The W.E.S. System carries with it a one year limited warranty at time of purchase.

Legal Notice

CAUTION The E-Stop system is not a replacement to the emergency stop button; it is an addition to its functionality. The system uses commercial radio frequency network that MAY be subject to interference.



Contents

Contact Information.....	2
Preface	3
Purpose	3
1 Product Overview	3
1.1 W.E.S Series.....	3
1.2 Standard Equipment/Components	3
1.2.1 W.E.S Base.....	4
1.2.2 Signaling transmitter.....	4
2 Installation	4
2.1 Getting Started.....	4
2.2 Determine the Mounting Location & Installation.....	4
2.2.1 Base Location	4
2.2.2 Mounting the base.....	4
2.2.3 Conduit.....	5
2.3 Wiring.....	6
2.3.1 Power	7
2.3.2 Relay.....	8
3 Operation	8
3.1 General Guidelines.....	8
3.1.1 Testing Installation.....	8
3.2 Troubleshooting.....	8
4 Service.....	8
4.1 Fuse	8
4.2 Removal	9
5 Specifications	9
5.1 W.E.S. Base station 1000	9
Electrical W.E.S 1000.....	9
Radio Transceiver.....	9
5.2 W.E.S. Base station 2000	9
Electrical W.E.S 2000.....	9



Radio Transceiver..... 9

6 Documentation Version 10



Preface

Purpose

This document is an overview of installation procedures, usage and hardware specifications for W.E.S 1000 and 2000 models

1 Product Overview

1.1 W.E.S Series

The Helios W.E.S. is a supplemental emergency stop system allowing workers to stop machinery and equipment using a personally carried transmitter. The WES system enables a worker or supervisor to open a relay that can be used to immediately disconnect the power to equipment from where the individual is located or from the unit by activating the stop button.



Fig. 1.1 – W.E.S. 2000 Base panel

1.2 Standard Equipment/Components

Your system will come with the following equipment included:

1. W.E.S base station
2. Signaling transmitter



1.2.1 W.E.S Base

The W.E.S. base is a polycarbonate enclosure housing status lights, stop button, reset button antenna and mounting points.

Internally there is a user replaceable 250V 15A Fuse

1.2.2 Signaling transmitter

The signaling transmitter may be one of a handful of transmitters designed for functionality in different environments. See documentation specific to the handheld device assigned to your base unit.

Note: The handset and a W.E.S. unit are normally configured to work together. Some units are programmed to restrict which handsets will trigger the alarm state. Always test and ensure you are using the correct handset for your system. If in doubt test it to ensure it will work.

2 Installation

2.1 Getting Started

Installation must be performed by a qualified electrician.

2.2 Determine the Mounting Location & Installation

Consider the following guidelines for component mounting

2.2.1 Base Location

- Ideal placement will give the antenna good exposure to the surrounding area
- Must be accessible so users can access the stop and reset buttons safely
- A visible location so as to ensure the panel lights are visible
- Avoid placing the base station out of sight and or contained in a metal enclosure as this may affect radio communications.

2.2.2 Mounting the base

Consider the following points when mounting the base station

- Fasten the unit securely using the mounting flange to an appropriate surface, ensuring clearance on other side of surface if fasteners protrude through.
- Keep away from sources of heat, such as open flame, space heaters or exhaust piping.
- Do not mount where water may build up, the unit is not submergible/waterproof.



Fig 2.1 Mounting Flange

2.2.3 Conduit

The enclosure has two holes in the bottom to accommodate 3/4 conduit fitting. The specific fitting must be appropriate for the environment and location the W.E.S system will be operating in. Installer to determine correct conduit (RMC, GRC, PVC, LFMC, etc...).



Fig. 2.2 Sample Conduit attachments



2.3 Wiring

Each E-Stop is labeled on the bottom of the enclosure with the correct input power required to operate the unit. Eg:

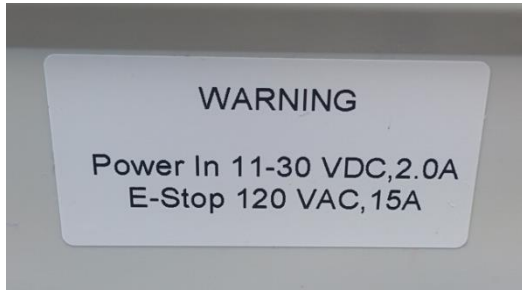


Fig 2.3 DC Voltage E-Stop



Fig 2.4 AC Voltage E-Stop

Layout inside a DC voltage 1000 W.E.S. Enclosure

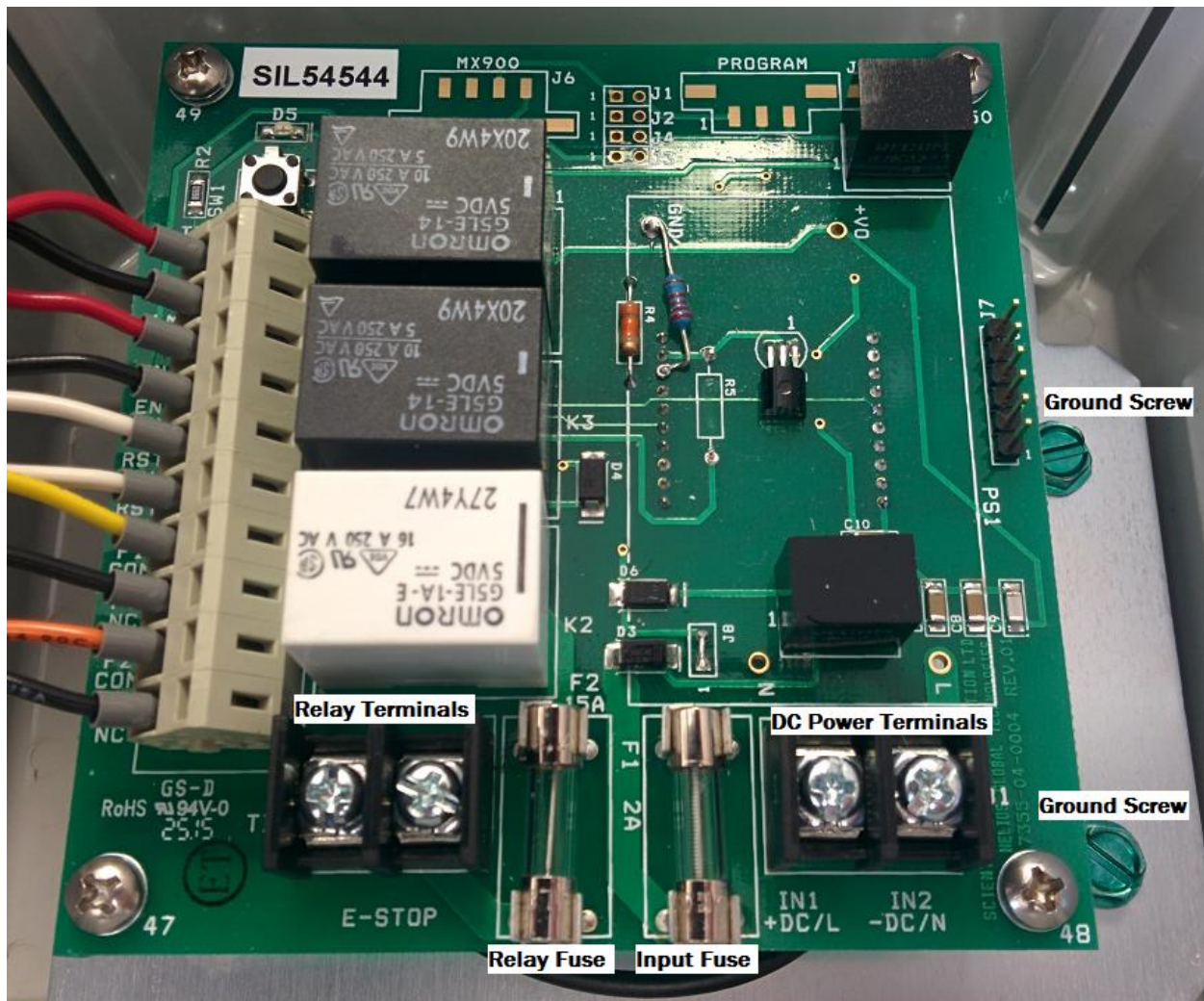


Fig 2.5- Shown: Internal components W.E.S 1000 DC



Layout inside an AC voltage W.E.S. 2000 Enclosure

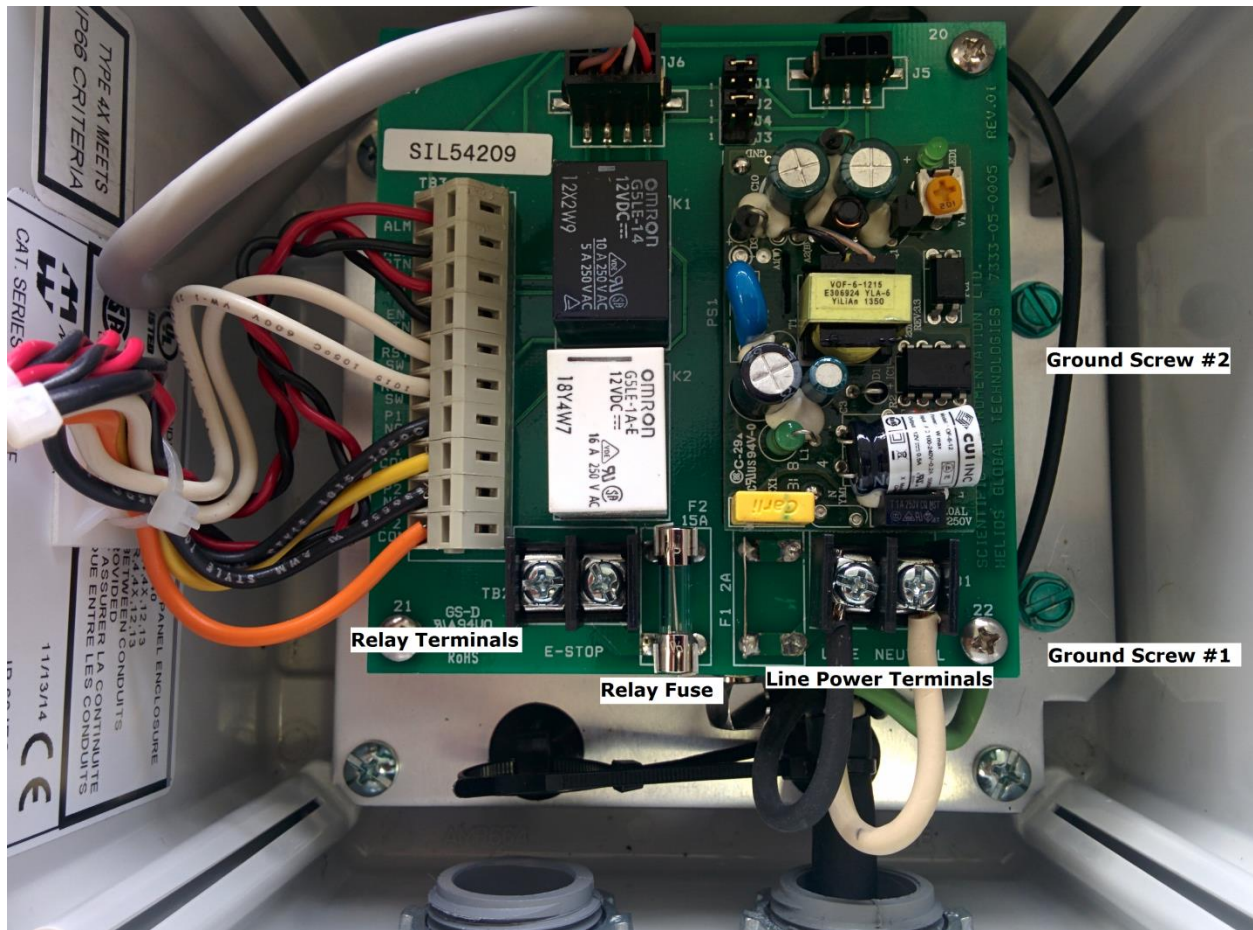


Fig 2.6- Shown: Internal components W.E.S 2000 AC

2.3.1 Power

2.3.1.1 Supply DC Voltage W.E.S Unit

DC 11-30Vdc is to be wired to the terminal block in the bottom right of the enclosure and then secured using a locking tie strap.

***Note 11-30V Direct current only, do not wire with 110v+ line voltage**

Terminal Block for supply voltage is IN1(+DC/L) & IN2(-DC/L)

IN1: Positive DC Voltage

IN2: Negative DC Voltage

2.3.1.2 Supply AC Voltage W.E.S Unit

AC Single phase 90-260Vac is to be wired to the terminal block on in the bottom right of the enclosure, and then secured using a locking tie strap.



Terminal Block for line voltage is labeled “LINE” and “NEUTRAL”, fix the matching wires under the terminal screws and secure with the screws.

Terminal Blocks may also be IN1(+DC/L) & IN2(-DC/L)

IN1: Line

IN2: Neutral

Two ground screws are provided on the right side on the aluminum plate to secure the ground wire.

2.3.2 Relay

Relay contact is located on the bottom left of the circuit board inside the enclosure, this can be used to power equipment using the relay directly up to a 15A draw. An external machine relay will be required if exceeding the 15A 250Vac specification.

Ensure equipment is grounded as necessary using the provided ground screws.

On completion of wiring enclosure must be fixed closed with both screws in the top and bottom of the cover on the right side of the enclosure.

3 Operation

3.1 General Guidelines

While the W.E.S. is weather resistant it is recommended to keep the unit protected from excessive dust and/or wet environments.

3.1.1 Testing Installation

3.2 Troubleshooting

Problem	Check/Solution
Relay contacts will not close	Check on board fuse, replace as necessary

4 Service

***CAUTION: Multiple sources of power – two. Disconnect all supplies before servicing.**

There is a possibility of both cables providing power inside the enclosure, ensure that both the line providing power to the circuitry and the line being used to control the equipment are disconnected before servicing.

4.1 Fuse

If fuse requires replacement, use 15A 250VAC 5X20MM Glass Fuse. Littlefuse part# 0218015. MXP or equivalent.



4.2 Removal

Removal procedure is reverse of installation with the exception that the cable ties holding the cables will have to be cut and replaced.

5 Specifications

5.1 W.E.S. Base station 1000

Electrical W.E.S 1000

DC version

Line Supply Voltage	11-30Vdc
Typical Power consumption	100mA
Max output current consumption	152 mA
Max E-Stop Relay current	15A
Max E-Stop Relay Voltage	250Vac

AC version

Line Supply Voltage	90-260Vac Single phase
Typical Power consumption	100mA
Max output current consumption	500 mA
Max E-Stop Relay current	15A
Max E-Stop Relay Voltage	250Vac

Radio Transceiver

Frequency Band	902 to 928 MHz
----------------	----------------

5.2 W.E.S. Base station 2000

Electrical W.E.S 2000

DC version

Line Supply Voltage	11-30Vdc
Typical Power consumption	100mA
Max output current consumption	152 mA
Max E-Stop Relay current	15A
Max E-Stop Relay Voltage	250Vac

AC version

Line Supply Voltage	90-260Vac Single phase
Typical Power consumption	100mA
Max output current consumption	500 mA
Max E-Stop Relay current	15A
Max E-Stop Relay Voltage	250Vac

Radio Transceiver

Frequency Band	902-928MHz (frequency hopping)
----------------	--------------------------------



	spread spectrum)
--	------------------

6 Documentation Version

Version	Date	Details
1.0	April 1, 2015	Initial Document Release
1.1	April 16, 2015	Minor Updates/Fixes
1.2	July 17, 2015	Updates to include 1000 and DC specification
1.3	August 13, 2015	Photos and wiring updates for 1000 and DC version