



ELEMENTAL MACHINES EB1 For Toxgard II Oxygen Monitor Installation Guide

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Element-B Installation Guide

Models: EB1, EB2

For Toxgard II Oxygen Monitor



Applicable Toxgard II Models

- ✓ O₂ monitor

Package Contents

- ✓ Element-B
- ✓ Connection Cable

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Safety Information



Review and abide by the safety information found in the Element-B and Toxgard II Oxygen Monitor user manuals. Ensure compliance with your company safety best practices, which may include de-energizing equipment before working with electrical connections. Tidy connection cable to prevent tripping hazards.

Installation Instructions

Receiving the Shipment

1. If this is your first time setting up the Elemental Machines system, you will receive an email for your dashboard account verification. Save this email for when the devices arrive.
2. When devices are shipped, they will be added to your Elemental Insights Dashboard™ with default names. When you first log in you will see all your devices with a 'disconnected' status.
3. When devices arrive, carefully remove the contents from the packaging. If any of the contents look damaged, please send a picture to help@elementalmachines.com.
4. If you have ordered multiple Element-B's, ensure the Element-B being used is configured as Normally Closed (NC). This can be verified by checking the device label, the dashboard under 'Machine Model', or the packing list sent with your shipment.
 - a. Element-B's can either be configured as Normally Closed (NC) or Normally Open (NO) by our team here at Elemental Machines. Different assets require different configurations. If you have ordered Element-B's for multiple assets, you may have a mix and need to be aware of attaching the correctly configured device to the correct asset.
5. Ensure there is an Elemental Machines Gateway set up in the vicinity of the Element-B.
 - a. Depending on your location and application, your Gateway type may vary. Please follow the setup instructions in the relevant Element-B User Manual, GW2 User Manual, or GW3 User Manual.
 - b. Note: 'Vicinity' is within wireless connection range. This is usually up to 30 meters but can depend on the lab's layout.

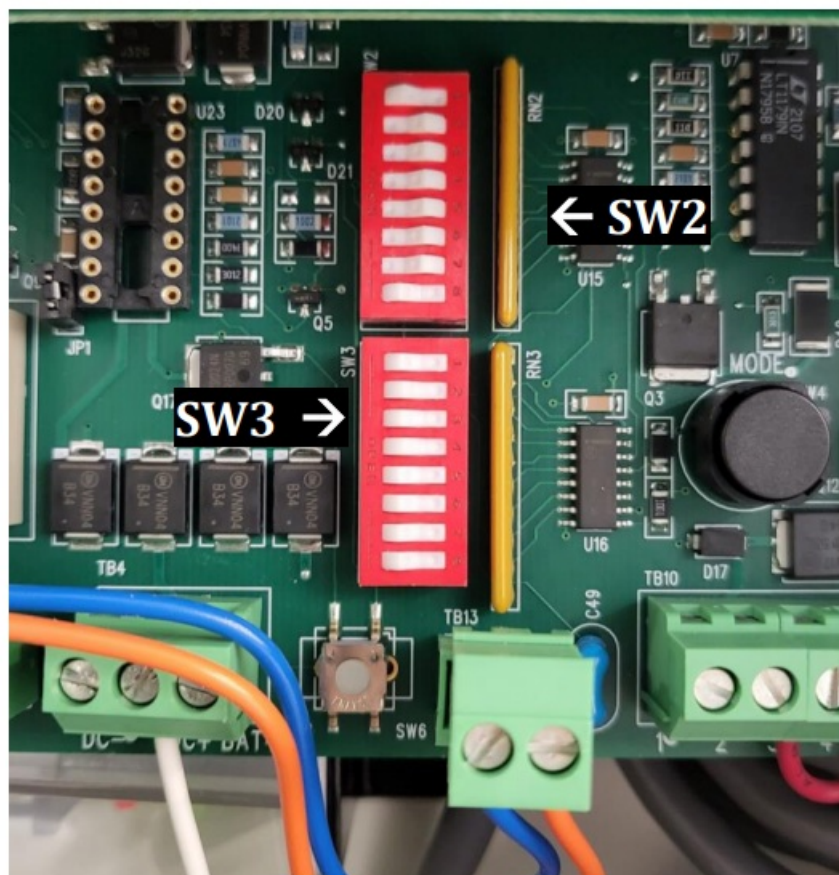
Attaching Connection Cable to Asset

6. Open the monitor housing by turning the latch as labeled on the device.



Figure 1: Latch on front of enclosure

7. Verify the DIP switches are in correct positions as shown below and in the manual. For oxygen monitors, 'warning' must be set to 'negative action' (the default setting). This is controlled by SW2 number 7. This switch should be in the OFF position (LEFT) as described in the manual.



2.25 Dip Switch Settings

Many of the Toxgard 11 features can be set with the SW2 and SW3 Dip Switches located on the main monitor printed circuit board (Fig. 1 "Toxgard 11 Monitor"). Tab. 5 "SW2 Switch Settings" and Tab. 6 'SW3 Switch Settings' show the positions for user-selectable settings (Fig. 5 "Remote Sensor Mounting Method"):

NOTE: LEFT side of each SW2 Dip Switch indicates the ON position and RIGHT side of each SW2 Dip Switch indicates the OFF position.

Number	Function
1	Spare
2	Fault activates horn
3*	Caution activates horn
4*	Warning activates horn
5*	Alarm activates horn
6	Caution positive/negative action (OFF = positive)
7	Warning positive/negative action (OFF = positive)
8	Alarm positive/negative action (OFF = positive)
1,`No audible alarm will sound if-s witches3, 4 and 5 are all off	

Fig. 13 Pump Wiring

NOTE: LEFT side of each SW3 Dip Switch indicates the ON position and RIGHT side of each SW3 Dip Switch indicates the OFF position.

Number	Function
1	Spare (Leave in OFF-position)
2	Spare
3	OFF Delay ON/OFF – Caution
4	OFF Delay ON/OFF – Warning
5	OFF Delay ON/OFF – Alarm
6	'OFF Delay time – BIT2
7	'OFF Delay time – BIT1
8	'OFF Delay time – BIT0

NOTE: The delay time selected via switches 6 – 8 will apply to any delay switch(es) 3 – 5 in the ON position.

Figure 2: DIP switch setting information. “Toxgard II Instruction Manual – EN.” MSA, 2019.

8. Locate the terminal block labeled 'WARNING' (see Figure 3). Loosen center and right slots of the terminal blocks to accept Element-B wires.

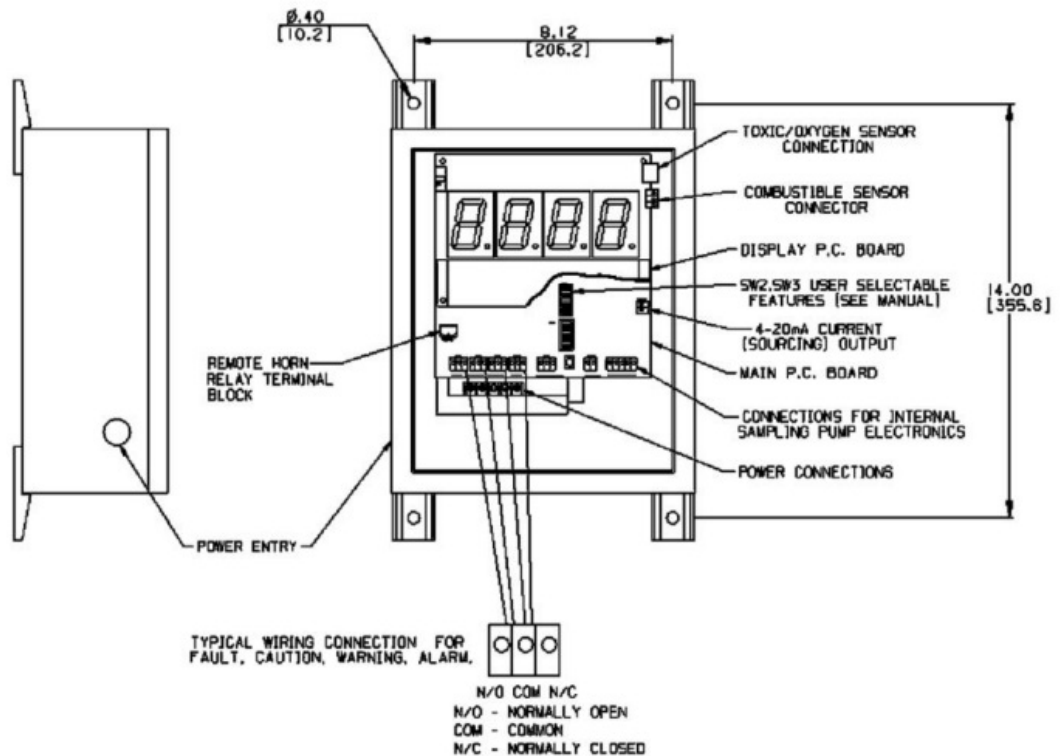
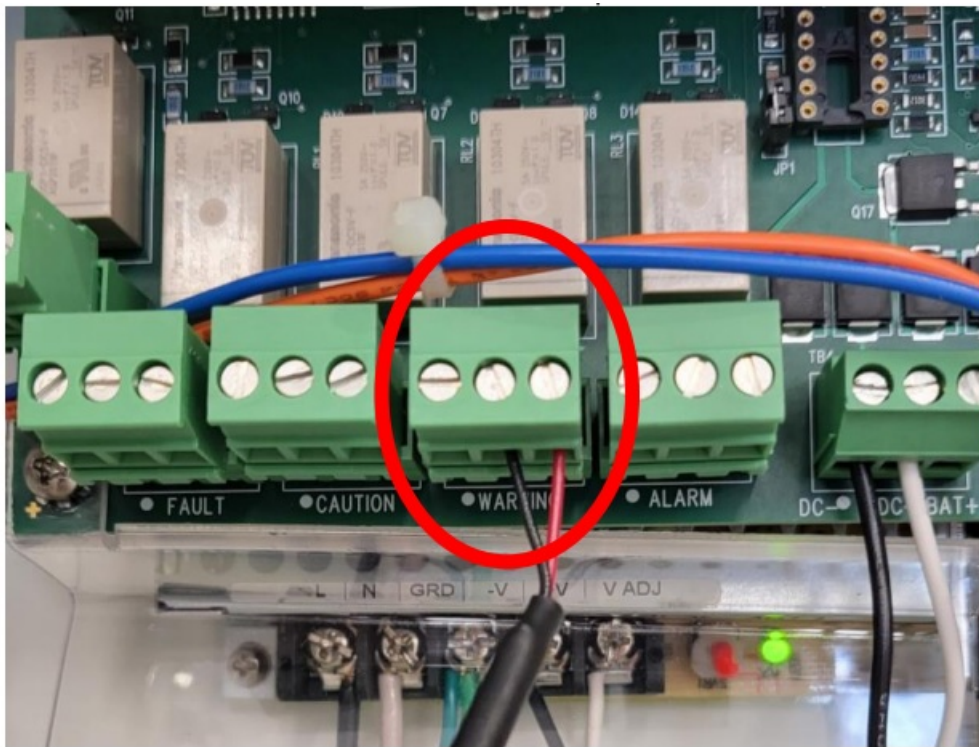


Figure 3: Top: Terminal Block circled. Bottom: Reference for terminal block pin assignments. “Toxgard II Instruction Manual – EN.” MSA, 2019.

9. Pass the provided cable through one of the existing cable glands/ports available on the Toxgard II. Then insert leads into open terminal block connections and tighten the screws. (Either wire can go into either slot.) Available ports may vary depending on the original installation process. See Figure 4 below for example:

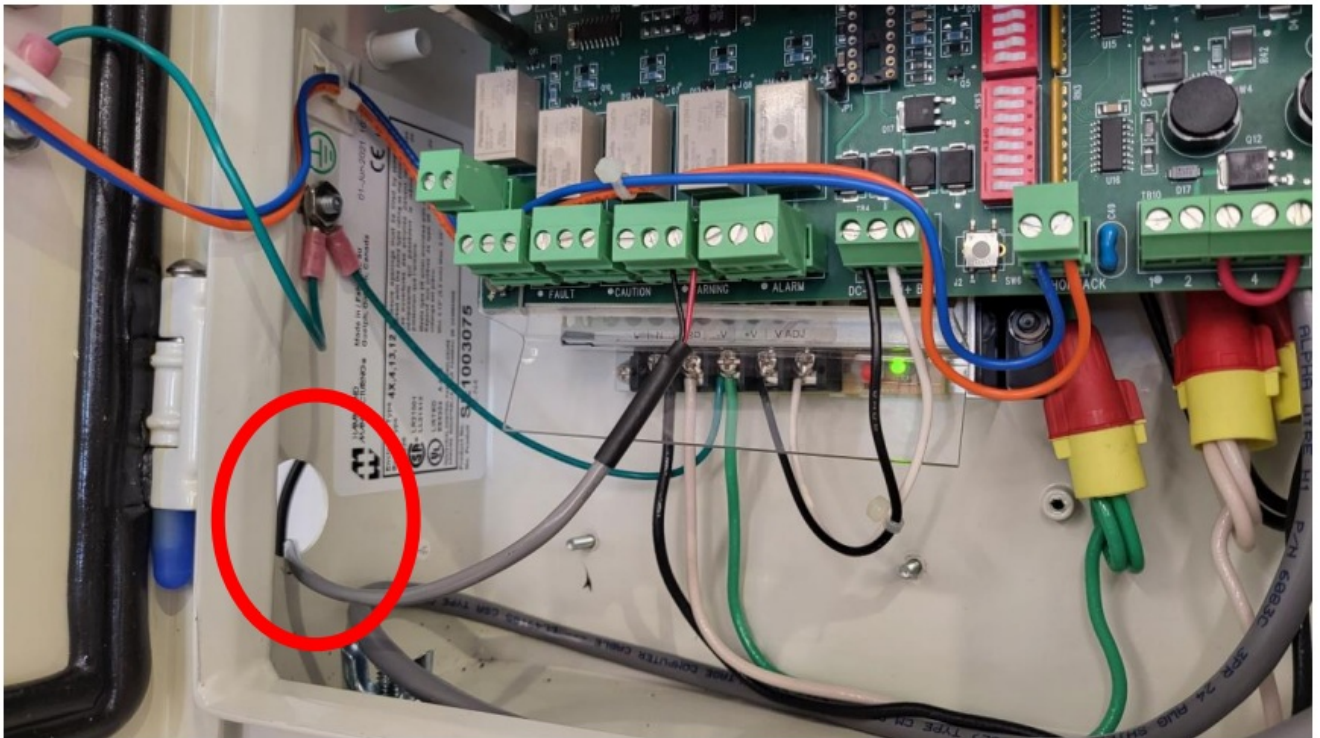


Figure 4: Example of cable passthrough from interior of Toxgard II unit. Plastic cover has been removed.

10. Make sure the wires are securely held in the slots.

11. Once cable has been connected, port should be re-covered. Provided cover may need to be modified to fit alarm cable, at installers' discretion.

Attaching Connection Cable to Element

12. Per your discretion, write the name and/or location of the equipment being monitored on the Element-B. This can be particularly helpful if multiple devices are being installed.

Use of a Sharpie is recommended.

13. Plug the thermocouple end (Figure 5) of the connection cable into the Element-B.

a. Note Ensure the (-) and (+) prongs of the thermocouple end are properly matched.



Figure 5 Thermocouple end of Element-B connection cable

14. Pull the battery tab on the Element-B.

Positioning the Element-B

15. Determine where the Element-B should be placed so that it is not blocked, which allows a better wireless

connection, and so that the connection cable is tidy.

16. Securely position the Element-B in the chosen location. The Element-B has magnets which make it easily mountable to magnetic surfaces.
 - a. Note: If applicable, an adhesive metal mounting plate available from EM may be used.


Programming Alerts

17. Program alerts on the gas monitor, as desired. Refer to the Toxgard II user manual for default conditions that trigger the WARNING relay (<18% oxygen) and for additional information on changing parameter settings.
18. Set up alert rules on the Elemental Insights Dashboard™ for the Element-B. Guidance on how to do so is available in the Support section of the dashboard.

NOTE: Alerts must be programmed on both the Toxgard II Oxygen Monitor and the Elemental Insights Dashboard™ to receive remote alerts through the Elemental Machines platform.

**772-00048 rev 01 Element-B, EB1 EB2 Toxgard II
Oxygen Warning Level Monitor Installation Guide**
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Documents / Resources

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