

Keyence Laser Scanner User Manual

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Overview

Safety devices are essential for a safe work environment. They can be used in various configurations to monitor safety zones where access is limited.

Keyence Laser Scanner SZ-V04 (Parent) & SZ-VH1 (Child)

Description

The Keyence Laser Scanner (SZ-V04) is an essential tool to ensure safety in the workplace. It can be used in multiple orientations to monitor large areas while remaining discreet and unobstructive. It will stop a machine if any undesired person or object crosses its safety zone. It features a couple of useful functionalities such as muting; automatically deactivates the safety status of the whole system (total muting) or part of it (partial muting) to let material pass through. Another useful function is bank switching; ability to switch between two zone configuration (useful for muting two zones independently). A PC with an Ethernet port is required for configuration.

In order to use the Laser Scanner with MachineMotion2, a Safety Module (CE-SA-008-0000__2) is required, please refer to the safety installation guideline section for the wiring.

The Laser Scanner specifications are as follows:

- Maximum safe zone: 8.4 m radius.
- Maximum warning zone: 26 m radius.
- Detection angle: 190°.
- Total/partial dynamic muting optional kit available (CE-AP-002-0000).
- Zone switching (bank switching) available with the purchase of the CE-CA-067-5000 cable.

Getting Started

1. Assemble the Laser Scanner bracket and mount it at the desired location.
2. Download the latest version of KEYENCE Safety Device Configurator software [here](#)
3. Install the KEYENCE Safety Device Configurator by following the installation instructions
4. Connect the laser scanner to PC using the provided USB cable

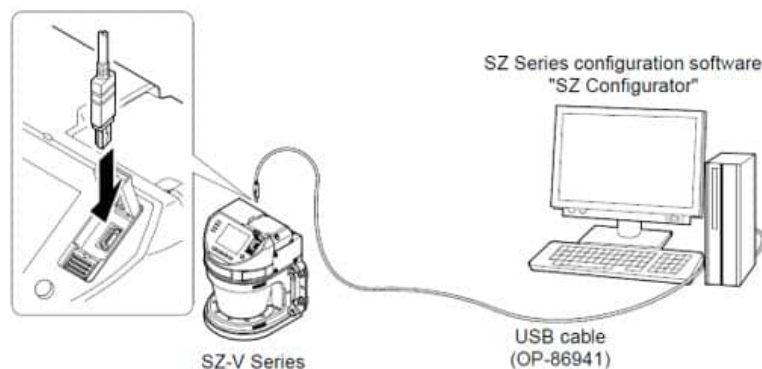


Figure 1

5. While the laser scanner is powered, open the KEYENCE Safety Device Configurator

6. Select **Create a new configuration file** and click **OK**

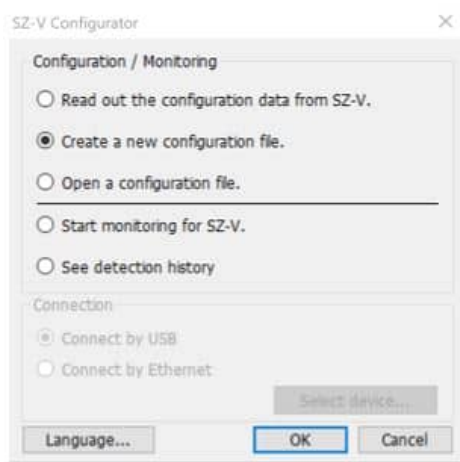


Figure 2

1. Select the model of the laser scanner you have (SZ-V04 for parent, SZ-VH1 for child) and click **OK**



Figure 3

1. In the **Setting** menu, select on **Operation**

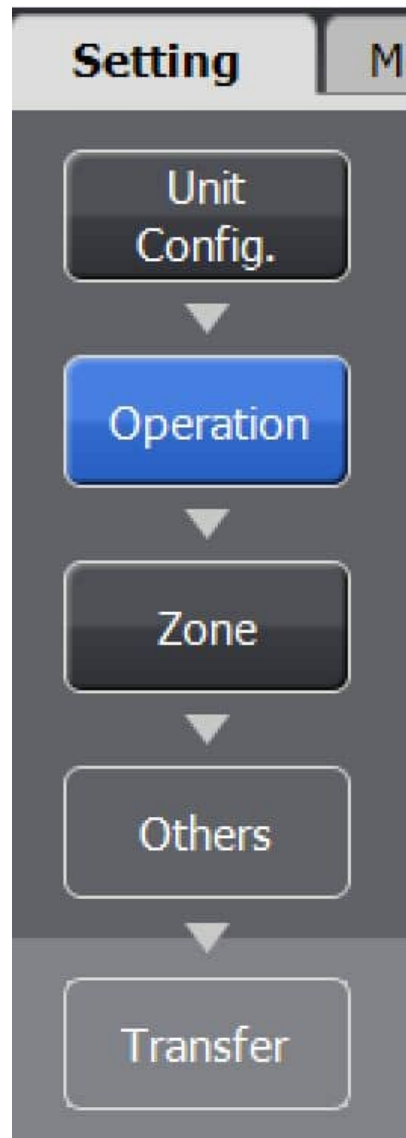


Figure 4

1. In the **Safety configuration** section, select the compatible input type as **PNP** and Interlock as **Automatic/Automatic** (when used with a Vention Safety Module), leave EDM as **Not used**

Safety configuration

PNP / NPN select	<input type="text" value="PNP"/>	
Interlock (Start/Restart)	<input type="text" value="Automatic / Automatic"/>	ON-delay <input type="checkbox"/> Enable
EDM	<input type="text" value="Not used"/>	

Figure 5

1. If Muting or Bank Switching functions are required and you have already purchased the optional kit that enables the functionality, enable these functions in the **Advanced functions** section. Note that Muting and Bank Switching functions cannot be enabled at the same time

Advanced functions

Reference points monitoring

Multi-OSSD function (OSSD 3/4)

Bank switching function

Bank switching method

Independent bank switching

Number of banks (Bank number 0 to 1)

Bank transition time

Laser shutdown

Laser shutdown:

Figure 6 - Diagram shows bank switching enabled

Advanced functions

Reference points monitoring

Multi-OSSD function (OSSD 3/4)

Bank switching function

Muting

Muting configuration

Time period between muting inputs

Sequence of muting inputs

Maximum muting period of time

Muting lamp error

Override configuration

Maximum override period of time

Figure 7 - Diagram shows muting enabled

1. In the **Setting** menu, select **Zone** to configure the safety zone of the scanner

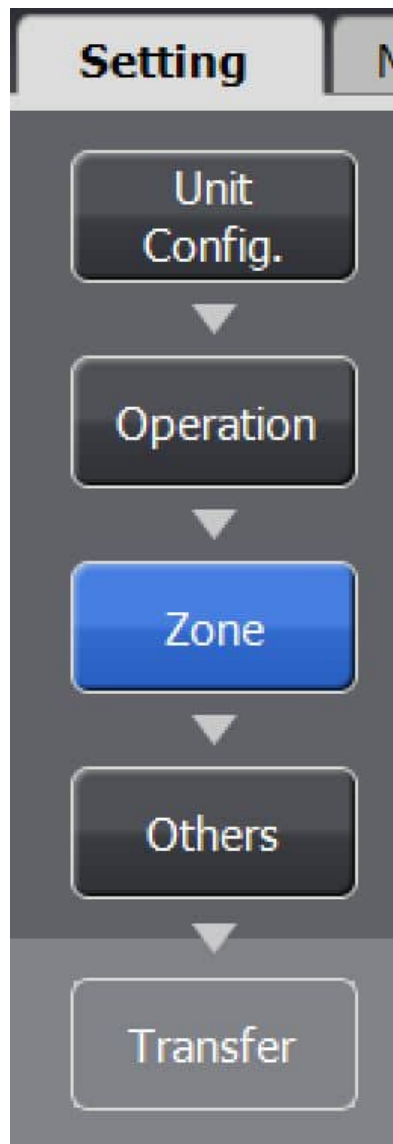
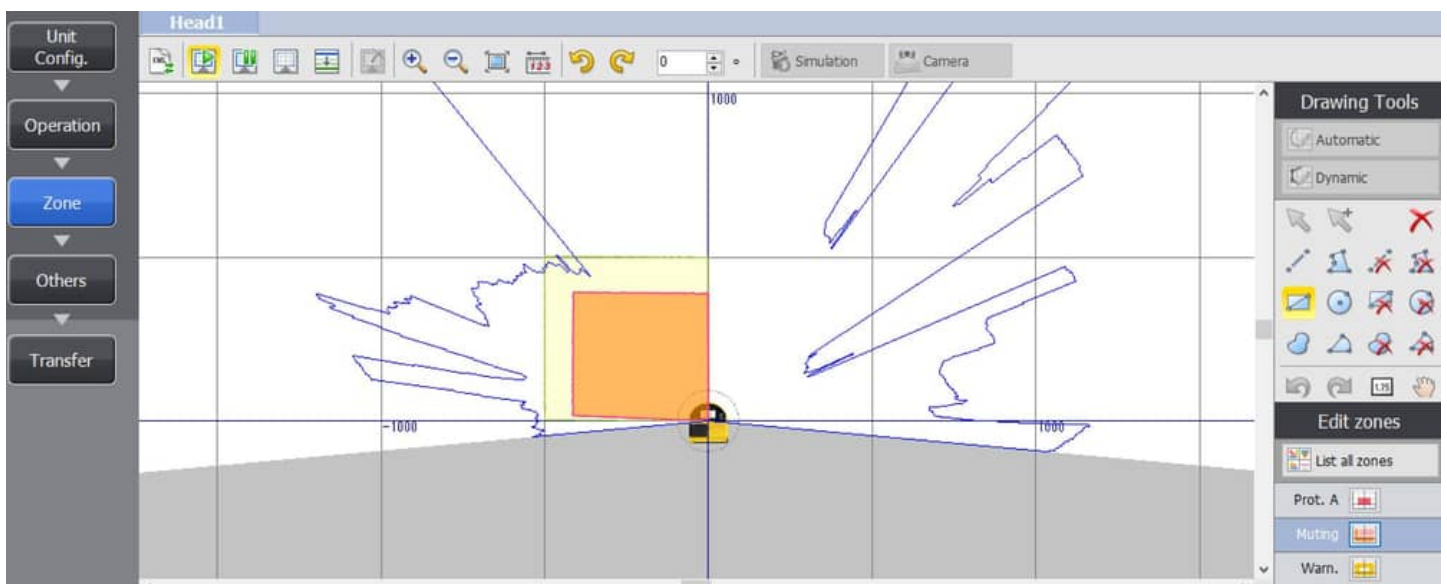


Figure 8

1. Draw the desired protection and warning zones using the Drawing Tools menu in the right side of the screen. If the Muting function is enabled, the muting zone should also be configured in this step using the tools on the right side menu



13. Once completed click on the **Setting** menu, select **Others**

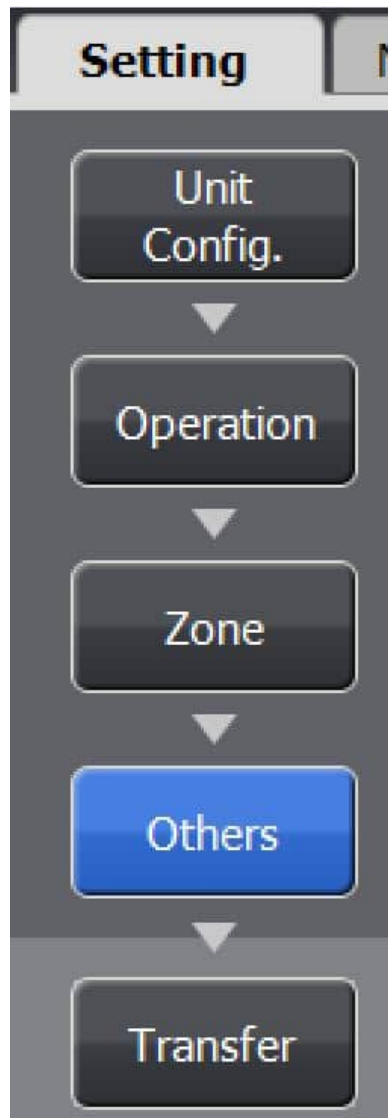


Figure 10

1. If the Muting function is available and enabled, **AUX6** should be set as a **Muting lamp** output in the **Auxiliary outputs** section otherwise, keep all selections as **Not used**

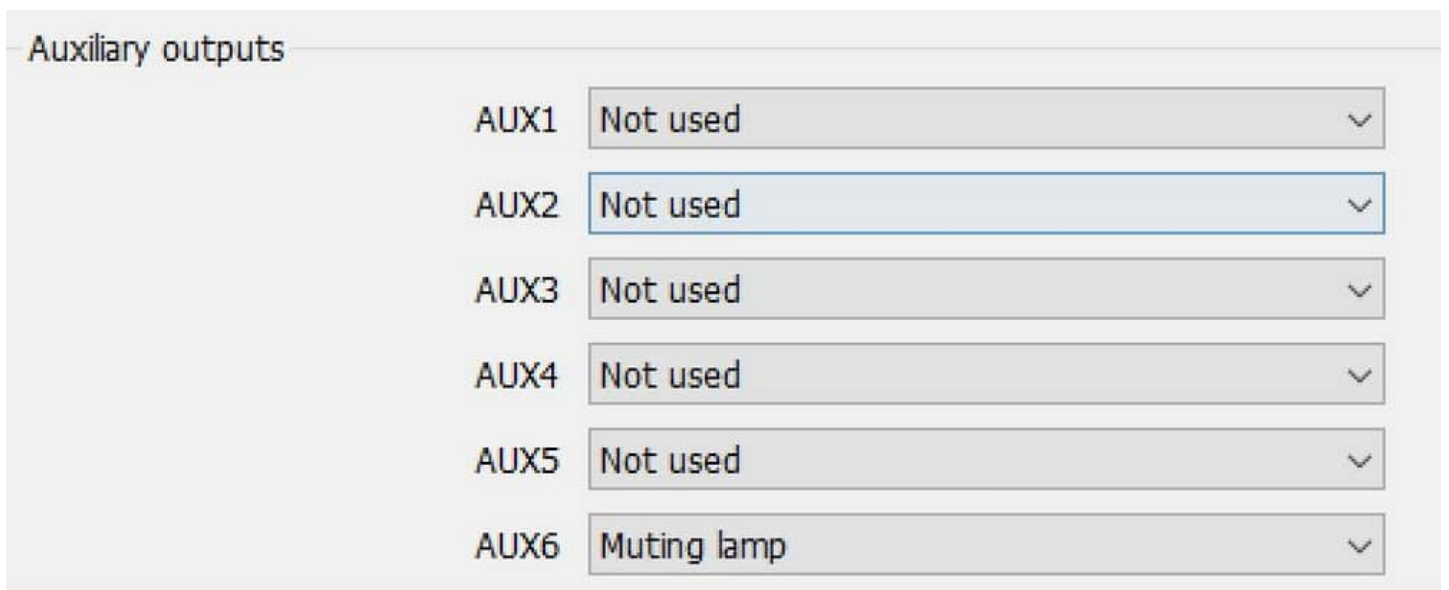


Figure 11

1. Next, click on **Transfer** as shown below

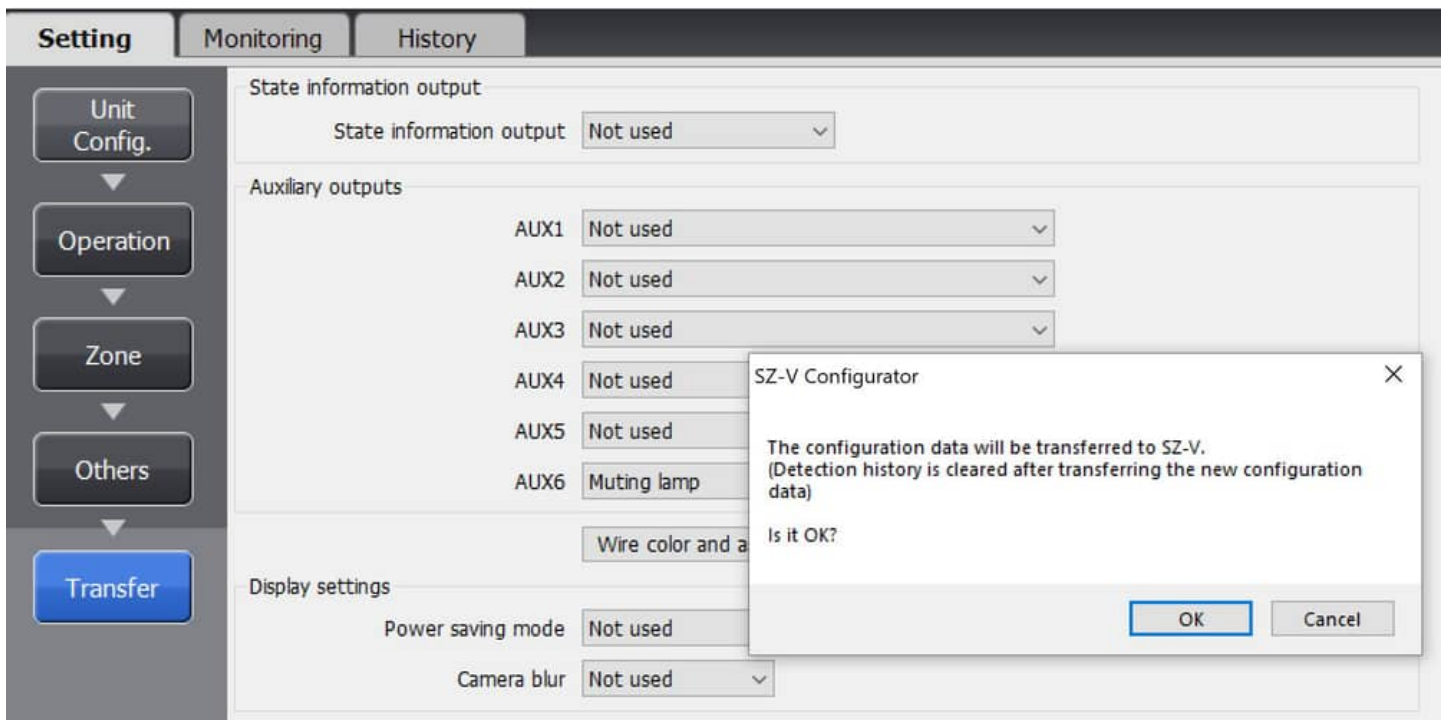


Figure 12

1. Click **OK**
2. Enter your new Password. (The default password is set to 1111)
3. Click **OK**
4. The configurator software will load the new configuration file onto your connected laser scanner



Figure 13

1. Select **OK** and **Accept** the configuration data
2. When the configuration file transfer is completed, select **Yes** to start monitoring

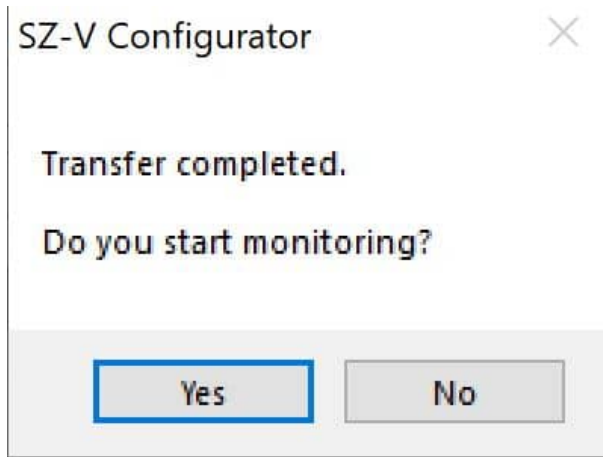


Figure 14