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

-V Configurator	>
Configuration / Monitoring	
\bigcirc Read out the configuration data	from SZ-V,
Create a new configuration file.	
O Open a configuration file.	
O Start monitoring for SZ-V.	
○ See detection history	
Connection	
Connect by US8	
O Connect by Ethernet	
	Select device
Language	OK Cancel

Figure 2

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

Kead unit config	uration from Sa	-V.	
Type			
SZ-V04			
○ SZ-V32			
O SZ-V32N			
O SZ-V32NC			
Cascading settings			
	5		
Head1	O Head2	O Head3	

Figure 3

1. In the ${\ensuremath{\mathsf{Setting}}}$ menu, select on ${\ensuremath{\mathsf{Operation}}}$

Setting Mo
Unit
Config.
•
Operation
•
Zone
•
Others

Transfer



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	PNP	~		
Interlock (Start/Restart)	Automatic / Automat	tic ~	ON-delay	Enable
EDM	Not used	~		



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

Reference points monitoring	Not used 🗸 🗸				
Multi-OSSD function (OSSD 3/4)	Not used \sim				
Bank switching function	Apply ~				
	Bank switching method	Binary	~		
	incurve	Independent bar	k switching		
	Number of banks	2 ~	(Bank number 0 to 1)		
	Bank transition time	0.10 s ~			
	Laser shutdown				
	Laser shutdown:	Disable		Change settings	



Reference points monitoring	Not used V		
Multi-OSSD function (OSSD 3/4)	Not used 🗸		
Bank switching function	Not used 😔		
Muting	Apply ~		
	Muting configuration		
	Time period between muting inputs	0.04 s to 3 s	×
	Sequence of muting inputs	1 -> 2 Fixed (Default)	~
	Maximum muting period of time	5 min	~
	Muting lamp error	Alert	~
	Override configuration		
	Maximum override period of time	1 min	~

Figure 7 - Diagram shows muting enabled

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





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

Auxiliary outputs		
AUX1	Not used	~
AUX2	Not used	~
AUX3	Not used	~
AUX4	Not used	~
AUX5	Not used	~
AUX6	Muting lamp	~

1. Next, click on Transfer as shown below

Setting	Monitoring	History				
Unit Config.	State inform Sta	ation output te information output	Not used	~		
•	Auxiliary out	puts				
Operation		AUX1	Not used	~		
	J	AUX2	Not used	~		
7000) I	AUX3	Not used	~		
Zone	J	AUX4	Not used	SZ-V Configurator		×
	n	AUX5	Not used	The configuration data will be tra	ensferred to SZ-V.	
Others		AUX6	Muting lamp	(Detection history is cleared after data)	transferring the new configuration	
-			Wire color and a	Is it OK?		
Transfer	Display settir	ngs				
		Power saving mode	Not used		OK Cancel	
		Camera blur	Not used	~		

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

SZ-V Configurator	
	$\Rightarrow\Rightarrow\Rightarrow\Rightarrow\textcircled{3}$
Transfer in process. * Do not disconnect USB	cable.

Figure 13

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

SZ-V Configurator	\times
Transfer completed	d.
Do you start monit	toring?
Yes	No

Figure 14