



SZ-V04X

Multi-function type Camera



*Please note that accessories depicted in the image are for illustrative purposes only and may not be included with the product.

Specifications

Model	SZ-V04X *1			
Type	Multi-function Type			
Detection capability	Minimum detectable object size	Diameter 20, 30, 40, 50, 70, 150 mm 0.79", 1.18", 1.57", 1.97", 2.76", 5.91" (depends on the setting) Reflectance 1.8% min., Speed 1.6 m/s 5.25 ft/s max. *2		
	Detectable angle	190° (-5° to 185°)		
	Response time (ON to OFF)	Standard Mode	Scan Cycle A	160 ms (2scans) to 1280 ms (16scans) *3 *4
			Scan Cycle B	168 ms (2scans) to 1344 ms (16scans) *3 *4
			Scan Cycle C	176 ms (2scans) to 1408 ms (16scans) *3 *4
		High Speed Mode	Scan Cycle A	80 ms (2scans) to 640 ms (16scans) *3 *4
			Scan Cycle B	84 ms (2scans) to 672 ms (16scans) *3 *4
			Scan Cycle C	88 ms (2scans) to 704 ms (16scans) *3 *4
	Response time (OFF to ON)	Response time (ON to OFF) + 150 ms		
	Protection zone	Minimum detectable object size: 70 / 150 mm 2.76" / 5.91"	8.4 m 27.56' (Standard Mode) 5.7 m 18.70' (High Speed Mode)	
		Minimum detectable object size: 50 mm 1.97"	5.6 m 18.37' (Standard Mode) 3.8 m 12.47' (High Speed Mode)	
		Minimum detectable object size: 40 mm 1.57"	4.3 m 14.11' (Standard Mode) 2.9 m 9.51' (High Speed Mode)	
		Minimum detectable object size: 30 mm 1.18"	2.9 m 9.51' (Standard Mode) 2.0 m 6.56' (High Speed Mode)	
		Minimum detectable object size: 20 mm 0.79"	1.6 m 5.25' (Standard Mode) 1.1 m 3.61' (High Speed Mode)	
Warning zone	Minimum detectable object size: 70 / 150 mm 2.76" / 5.91"	26 m 85.30' (Standard Mode) 23 m 75.46' (High Speed Mode) *5		
	Minimum detectable object size: 50 mm 1.97"	25 m 82.02' (Standard Mode) 21 m 68.90' (High Speed Mode) *5		
	Minimum detectable object size: 40 mm 1.57"	24 m 78.74' (Standard Mode) 20 m 65.62' (High Speed Mode) *5		
	Minimum detectable object size: 30 mm 1.18"	23 m 75.46' (Standard Mode) 18 m 59.06' (High Speed Mode) *5		
	Minimum detectable object size: 20 mm 0.79"	21 m 68.90' (Standard Mode) 15 m 49.21' (High Speed Mode) *5		
Additional safety distance	100 mm 3.94" *6			
Maximum measurement distance	60 m 196.85" *7			
Maximum number of banks	Max. 4 banks			
Multiple scanner heads	Max. 3 scanner heads			
Camera monitoring area	Monitor area: over 190° (-5° to 185°) *8			
Display	QVGA 2.2inch color LCD			
Light source	Type, wavelength			
	Infrared laser diode, 905 nm			

	Laser Class	IEC	Class1 IEC/EN60825-1
		FDA	Class1 FDA 21CFR 1040.10, 1040.11 (Laser Notice No.50) *9
		JIS	Class1 JIS C6802
Control output (OSSD)	Output	Transistor outputs (NPN or PNP is selected in the software)	
	Number of outputs	4 outputs	
	Max. load current	500 mA *10	
	Residual voltage (during ON)	Max. 2.5 V (with a cable length of 5 m 16.40')	
	OFF-state voltage	Max. 2.0 V (with a cable length of 5 m 16.40')	
	Leakage current	Max. 1 mA *11	
	Max. capacitive load	2.2 μ F (with a load resistance of 100 Ω)	
	Load wiring resistance	Max. 2.5 Ω	
Inputs	PNP	ON-voltage: 10 to 30 V, OFF-voltage: Open or 0 to 3 V, Short-circuit current: Approx. 2.5 mA (Approx. 10 mA for EDM)	
	NPN	ON-voltage: 0 to 3 V, OFF-voltage: Open or 10 V to Power voltage, Short-circuit current: Approx. 2.5 mA (Approx. 10 mA for EDM)	
Non-safety related output (AUX output)	Output type	Transistor outputs (NPN or PNP is selected by the dedicated PC software)	
	Number of outputs	6 outputs	
	Max. load current	Max. 50 mA	
	Residual voltage (during ON)	Max. 2.5 V (with a cable length of 5 m 16.40')	
	Muting lamp	Incandescent lamp (24 VDC, 1 to 5.5 W) or LED lamp (load current: 10 to 230 mA) can be connected	
Interface	USB	USB2.0	
	Ethernet	Standard	-
		Transmission rate	
		Cable	
		Connector	
Network function			
Cable length	Power and I/O cable	30 m 98.43' or less *12	
	Between scanner head and display unit	20 m 65.62' or less each *13	
	Ethernet cable	-	
Approved standards	EMC	EMS	IEC61496-1, EN61496-1, UL61496-1 (Type 3 ESPE)
		EMI	EN55011 ClassA, FCC Part15B ClassA, ICES-003 ClassA
	Safety	IEC61496-1, EN61496-1, UL61496-1 (Type 3 ESPE), IEC61496-3, EN61496-3 (Type 3 AOPDDR), IEC61508, EN61508, EN ISO13849-1, 2015 (PLd, Category3), UL508, UL1998, CSA C22.2 No.14, CSA C22.2 No.0.8	
Rating	Power consumption	11.8 W (without load), 55.0 W (with load) *14	
	Power voltage	24 VDC \pm 10% (Ripple P-P 10% or less): When using a converter power supply, 24 VDC +20%/-30%: When using a battery	
Environmental resistance	Enclosure rating	IP65(IEC60529)	
	Ambient light	Incandescent lamp: 1500 lux or less *15	
	Operating ambient temperature	-10 to +50°C 14 to 122°F (No freezing)	
	Storage temperature	-25 to +60°C -13 to +140°F (No freezing)	
	Operating relative humidity	35% to 85% RH (No condensation)	
	Storage relative humidity	35% to 95% RH	
	Vibration resistance	10 to 55 Hz, 0.7 mm 0.03" compound amplitude, 20 sweeps each in X, Y, and Z directions	
	Shock resistance	100 m/s ² 328.08 ft/s² (Approx. 10 G) 16 ms pulse, in X, Y, Z directions 1000 times each axis	
Material	Scanner head	Main unit case	Magnesium
		Window	Polycarbonate, PEI

		Indicator part	Aluminum, PES
	Display unit	Case	Magnesium, PPS, Polycarbonate
	System memory		
Weight			Approx. 2100 g

*1 Integrated models include display unit, scanner head, system memory and a connection cable (SZ-VS005).

*2 If the object to be detected moves parallel to the detection plane, SZ-V cannot detect the object moving at speed over 1.6 m/s **5.25 ft/s**, regardless of the encoder setting.

*3 The response time, protection zone, and warning zone are affected by the operation mode.

*4 When using PROFI-safe, 6 ms is added to the response time. When using CIP Safety, 10ms is added to the response time.

*5 20% or more reflectance is necessary for the minimum detectable object in the warning zone.

*6 If there is a highly reflective background within 1.5 m **4.92'** from the boundary of the protection zone, 200 mm **7.87"** must be added as supplementary necessary distance to the protection zone when calculating the minimum safety distance.

*7 Even when using the network data output, the maximum measured output distance is 60 m **196.85'**.

*8 Only applicable for the type with a camera.

*9 The laser classification for FDA (CDRH) is implemented based on IEC60825-1 in accordance with the requirements of Laser Notice No.50.

*10 For the SZ-V04 type and the SZ-V32 type, the load current calculation of the OSSD output and AUX output is 1.5 A or less when using one scanner head, 1.0 A or less when using two scanner heads, and 0.5 A or less when using three scanner heads. For the SZ-V32N type, the load current calculation of the OSSD output and AUX output is 1.2 A or less when using one scanner head, 0.8 A or less when using two scanner heads, and 0.3 A or less when using three scanner heads.

*11 Includes when the power is OFF.

*12 10 m **32.81'** or less when supplying power from a battery.

*13 When supplying power from a battery, the length of each connection cable should be 10 m **32.81'** or less when using two scanner heads, and 5 m **16.40'** or less when using three scanner heads.

*14 When using the SZ-V with series connected sensor heads, it is necessary to add 9.4 W per scanner head. Also, power consumption may temporarily be higher (maximum 3.6 W). Power consumption will be within the specification after SZ-V moves to normal operation.

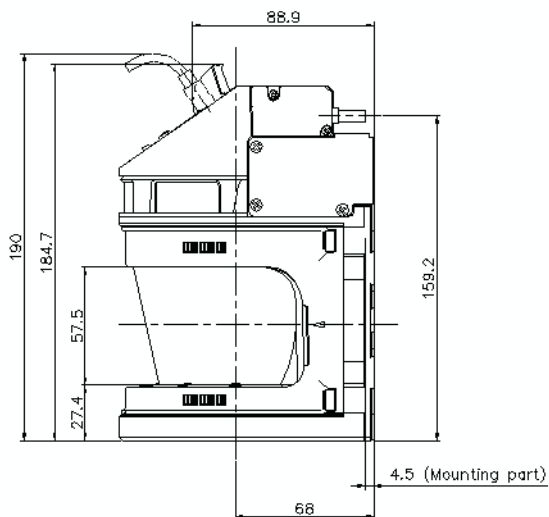
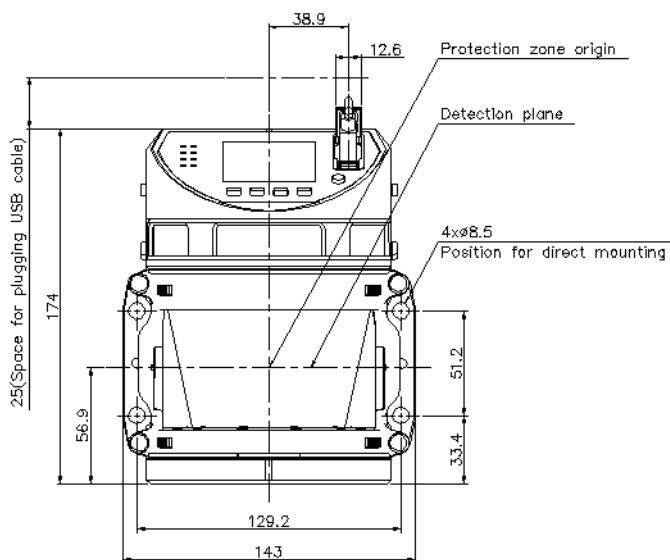
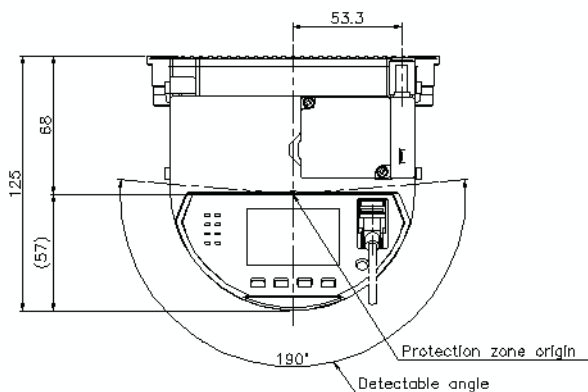
*15 An ambient light source should not be located within $\pm 5^\circ$ of the detection plane.

Dimensions

* Download CAD file or product manual for larger image/text and more detail.

sz-v04_x_v32_x_dimension_01.gif

SZ-V04(X)_V32(X)



szv04_v32_x_vb21_dimension_01.gif

SZ-V04(X)_V32(X)+SZ-VB21

When protection cover is mounted

