MV-SC2004EM

0.4 MP Mono Vision Sensor

Introduction

With built-in positioning and measurement algorithms, MV-SC2004EM vision sensor can realize counting, existence, measurement detection, and recognition. It can be monitored and operated via the SCMVS client. It can output results via RS-232 and Ethernet, and cooperate with other processes via IO. The vision sensor supports multiple result output methods and customized result text output.

Key Feature

- Adopts embedded hardware platform for high-speed image processing.
- Adopts built-in positioning and measurement algorithms to for counting, existence, measurement detection, and recognition.
- Multiple IO interfaces for input and output signals.
- Multiple indicators for displaying device status.
- Adopts light source to ensure uniform brightness in the illuminated area.
- Supports multiple communication protocols, including RS-232, TCP, UDP, FTP, Profinet, Modbus, Ethernet/IP, etc.

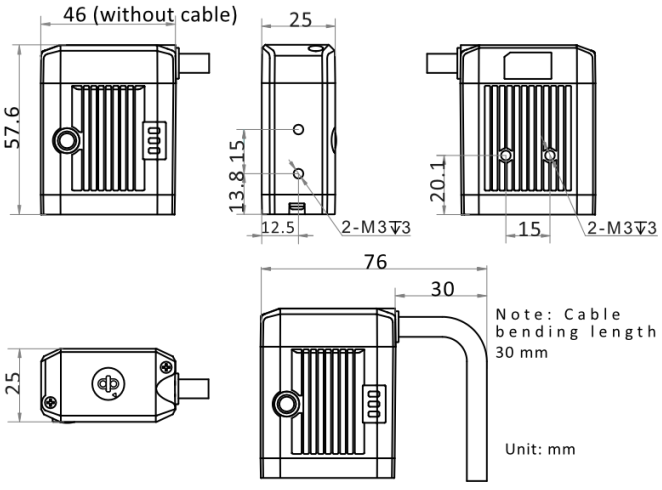
Available Model

- 8 mm focal length: MV-SC2004EM-08S-WBN
- 12.4 mm focal length: MV-SC2004EM-12S-WBN
- 14.8 mm focal length: MV-SC2004EM-15S-WBN

Applicable Industry

Consumer electronics, food and medical industry, automobile, etc.

Dimension



Specification

Model	MV-SC2004EM-08S-WBN	MV-SC2004EM-12S-WBN	MV-SC2004EM-15S-WBN
Tool			
Vision tool	● Count: Spot count , edge count, pattern count, and contour count ● Existence: Circle existence, line existence, spot existence, edge existence, pattern existence, and contour existence ● Location: Fixture ● Logic tool: Condition judge, logic judge, character comparison, calculator, and combination judge ● Measurement: L2L angle, diameter measurement, brightness average value, contrast measurement, width measurement, P2L measurement, greyscale size, line angle, and edge width measurement ● Recognition: OCR and classification registration		
Solution capacity	Supports solution importing and exporting, up to 8 solutions and 40 modules can be stored.		
Communication protocol	RS-232, TCP, UDP, FTP, PROFINET, ModBus, EtherNet/IP, MELSEC/SLMP, FINS, Keyence KV		
Camera			
Sensor type	CMOS, global shutter		
Pixel size	6.9 μm × 6.9 μm		
Sensor size	1/2.9"		
Resolution	704 × 540		
Max. frame rate	60 fps		
Dynamic range	74 dB		
SNR	41 dB		
Gain	0 dB to 15 dB		
Exposure time	16 μs to 1 sec		
Pixel format	Mono 8		
Mono/color	Mono		
Electrical features			
Data interface	Fast Ethernet (100 Mbit/s)		
Digital I/O	17-pin M12 connector provides power, Ethernet, serial port, and digital I/O, including non-isolated input × 1 (Line 2), non-isolated output × 1 (Line 3), configurable non-isolated I/O × 2 (Line 0/1), and RS-232 × 1		
Power supply	12 VDC to 24 VDC		
Max. power consumption	Approx. 22 W @ 24 VDC		
Mechanical			
Lens mount	M12-mount, adjusting focus manually supported		
Focal length	8 mm	12.4 mm	14.8 mm
Lens cap	Transparent lens cap		
Light source	White LED lamp		
Indicator	Power indicator (PWR), network indicator (LNK), and status indicator (STS)		
Dimension	46 mm × 57.6 mm × 25 mm (1.8" × 2.3" × 1.0")		
Weight	Approx. 220 g (0.5 lb.)		
Ingress protection	IP65 (under proper installation of lens and wiring)		
Temperature	Working temperature: 0 °C to 50 °C (32 °F to 122 °F) Storage temperature: –30 °C to 70 °C (–22 °F to 158 °F)		
Humidity	20% RH to 95% RH (no condensation)		
General			
Client software	SCMVS		
Certification	CE, KC		

Detection Range

Focal Length	Installation Distance	Field of View	Single Pixel Accuracy
8 mm	80 mm	47.62 mm × 36.53 mm	0.068 mm
	2000 mm	1190.59 mm × 913.24 mm	1.691 mm
12.4 mm	200 mm	78.35 mm × 60.10 mm	0.111 mm
	2000 mm	783.48 mm × 600.97 mm	1.113 mm
14.8 mm	270 mm	88.62 mm × 67.97 mm	0.126 mm
	2000 mm	656.43 mm × 503.51 mm	0.932 mm