FV105 V2.0
Industrial Fixed-Mount Liquid Focusing Barcode Scanner

Innovative design of new illumination unit modules, achieving fast on-site switching of different illumination schemes (polarized light/atomized light/combined light); Significant improvement in lighting brightness and computing power; Enriched liquid lens specifications and configurations to meet more requirements of visual field and distance. It can widely meet various reading scenarios such as DPM challenging barcodes, multiple codes reading, high-speed, high-frequency, diverse fields of view and distance.

Product Features

■ Innovative Illumination Units for DPM Reading

Illumination cover options provided: atomization/polarization/atomization+polarization
Quick disassembly and installation, switching lighting schemes in just a few seconds
Optimize the layout and brightness of the body Illumination, for more uniform lighting

■ Provide a Variety of Liquid Focusing Lens

The optional lens specifications are as follows: 6mm/12mm/16mm
long-term use of liquid lenses, accumulated rich experience in applications

■ Good Dynamic Reading Performance

High performance CMOS, providing an acquisition rate of 60 frames per second
60% Improvement in lighting brightness compared with the last generation products
Provide enhanced decoding mode for more efficient shooting and decoding

■ Meet Various Industrial Scenarios, With Better Versatility

Support NPN and PNP trigger signals; Graphical setting of interface logic, for complex signal and data interaction
Support multiple industrial Ethernet protocols to cope with mainstream PLC communication integration
Rich software functions such as one-click automatic parameters adjustment, multiple sets of exposure polling, 10 sets built-in configurations, etc.

Industry Applications

- Device integration
- Electronics manufacturing
- Automobile manufacturing
- Product traceability
- Solar energy industry
- Laser marking and ink-jet marking

Technical Parameters

Sensor	1/3 inch CMOS sensor, global shutter	Power Consumption	2.2W (Standby), 12W (Peak), 4W (Average)
Image Resolution	1280×960	Operating Current	Standby: 110mA, Peak: 600mA, Average: 200mA
Frame Rate	Up to 60 frame/s	Number of Input Signals	2
Lens Type	Liquid lens, auto-focus	Type of Input Signal	NPN or PNP
Focal Length	FV105N: 6mm; FV105S: 12mm; FV105L: 16mm	Effective Voltage of Input Signal	NPN: ≤16V PNP: ≥5V (Max: 24V)
Angle of View	FV105N: 45° (horizontal), 33.8° (vertical), FV105S: 22° (horizontal) 16.5° (vertical) FV105L: 15° (horizontal) 11.25° (vertical)	Number of Output Signals	4
Roll/ Pitch/ Yaw	360° (roll) / 65° (pitch) / 65° (yaw)	Output Load Capacity	Single Maximum: 100mA@24VDC Total Maximum: 200mA@24VDC
Trigger Mode	Command trigger; I/O trigger; Continuous reading mode; Key trigger, etc.	Shell Material	Aluminum alloy
LED Indicator	4pcs LED indicator lights (power, reading success, reading failure, automatic parameter adjustment)	Weight	FV105N: 192.5g (excluding cables) FV105S: 195.4g (excluding cables) FV105L: 191.3g (excluding cables)
Illumination Source	12pcs LED lights / Can be controlled in groups / High-brightness light source / Polarized light source	Dimensions (L×W×H)	88.9mm×52.8mm×37.8mm
Illumination Source Colour	Red / White LED light source available	Operating Temperature	-25℃ ~ 60℃
Front Cover of Illumination	Atomization Cover / Polarization Cover / Atomization+Polarization Cover (combined use with high-brightness illumination)	Storage Temperature	-40℃ ~ 70℃
Aiming Mode	Laser cross aiming	Relative Humidity	5% ~ 95% non-condensing
Laser Safety Level	Class 2	Ambient Light Immunity	0 ~ 100,000 Lux
Maximum Output Power of Laser	0.81mW	Vibration Resistance	10 ~ 55 Hz, double amplitude 0.75mm, 3 hours in x, y or z direction
Laser Wavelength	650nm	IP Rating	IP65
Communication Interface	Ethernet, Serial port	ESD Protection	±10KV Indirect coupling surface, ±16KV Direct air discharge
Communication Protocol	Ethernet: TCP/IP, FTP, Profinet, Modbus TCP,EtherNet/IP Serial port: RS232	Explosion Proof Grade (specified model)	Exib IIA T4 Gb
Power Supply	20 ~ 30 VDC	Certification	CE, UL, RoHS, etc.
		Readable Code Symbologies	1D, 2D and stacking codes that meet national and international standards
		Maximum Reading Accuracy	FV105N 1D code: 1.67 mil 2D code: 2.5 mil FV105S 1D code: 3.3 mil 2D code: 5 mil FV105L 1D code: 0.67 mil 2D code: 1mil

Reading Distance and Reading Field of Vision

Unit： (mm)

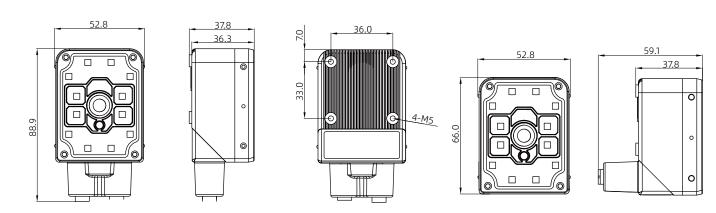| Barcode Specifications	FV105N nearest	farthest	FV105S nearest	farthest	FV105L nearest	farthest
Code 128						
3.34mil	50	108	50	228	50	337
5mil	50	162	50	342	50	505
6.67mil	50	216	50	456	50	674
10mil	50	324	50	684	50	1010
15mil	50	487	50	1026	50	1516
DataMatrix						
5mil	50	88	50	186	50	275
6.67mil	50	118	50	248	50	367
10mil	50	177	50	373	50	551
15mil	50	265	50	559	50	827

Reading Distance	FV105N X-axis field of view	Y-axis field of view	FV105S X-axis field of view	Y-axis field of view	FV105L X-axis field of view	Y-axis field of view
50	42	32	24.5	18	17	12.8
100	85	63	45	34	29	22
150	126	93	65	48	42	32
200	167	124	85	64	55	42
300	248	183	126	94	81	61
500	400	300	208	156	133	101
1000	790	590	408	305	268	202

Standard Models Configuration Table

FV105 (V2.0) Liquid Automatic Focusing Series	
Model	Descriptions
FV105N-1110 V2.0	1.2 megapixel, 6mm liquid lens, red LED high-brightness light source, laser aiming
FV105S-1110 V2.0	1.2 megapixel, 12mm liquid lens, red LED high-brightness light source, laser aiming
FV105L-1110 V2.0	1.2 megapixel, 16mm liquid lens, red LED high-brightness light source, laser aiming

FV105 (V2.0) Dedicated Illumination Kits	
Model	Descriptions
FT10012PD	High-brightness light source dedicated, semi-polarized with semi-atomized illumination kit
FT10012PP	High-brightness light source dedicated, fully-polarized illumination kit
FT10012DD	High-brightness light source dedicated, fully-atomized illumination kit

Dimensions

Unit：(mm)

52.8　37.8　36.3　7.0　36.0　33.0　4-M5　52.8　66.0　59.1　37.8　88.9

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