Vision Sensor

BIS510P-F201A-60

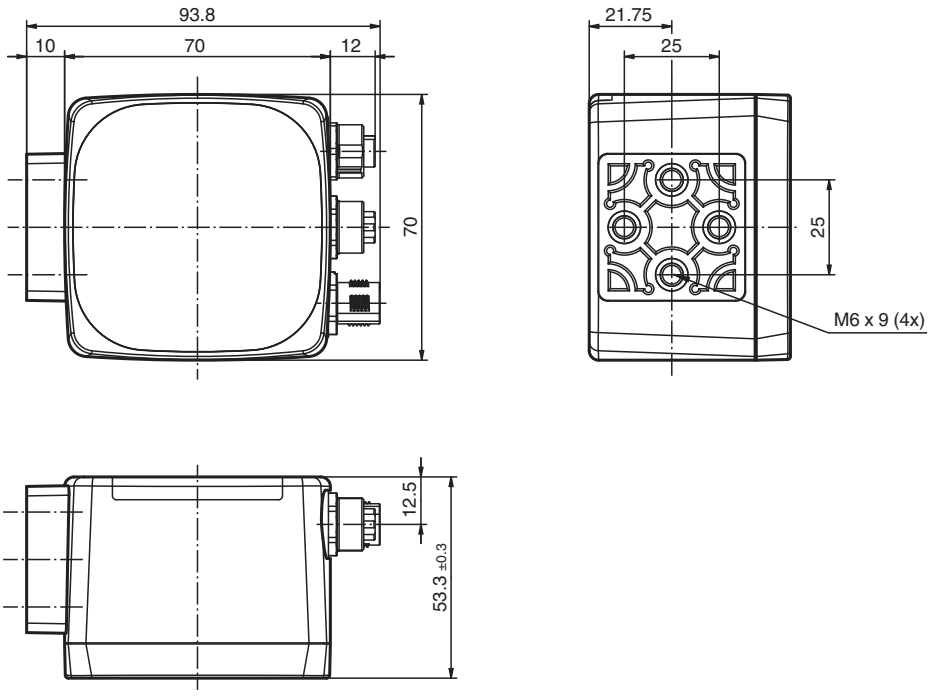
- Automatic learning of the reference image
- Automatic search for optimum image section
- Reliable on reflective surfaces through polarization filter technology
- Integrated error image memory
- Integrated illumination
- Image and barcode recognition with 10 page/s and a maximum sheet speed of 4 m/s

Sheet inspection sensor for monitoring print by comparing stored images or barcode evaluation

Function

The sheet identification sensor from Pepperl+Fuchs enables fast and simple monitoring of the correct sheet sequence in collating, folding and binding machines. Sheets can be monitored either by using the image comparison method or reading in barcodes printed on the sheets.
The device can be operated locally, as a stand-alone unit or in a network where several sensors are connected together. The sensor includes a camera, illumination unit and evaluating computer with digital input and output signals as well as a network interface.

Dimensions



Technical Data

General specifications		
Light type		Integrated LED lightning (white)
Symbologies		2/5 interleaved, Code13, Code39, Code128, Pharmacode
Object size		25 mm x 25 mm
Read distance		52 mm

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Technical Data

Depth of focus		± 5 mm
Reading field		65 mm x 40 mm
Evaluation frequency		10 Hz
Target velocity		triggered max. 4 m/s
Nominal ratings		
Camera		
Type		CMOS , Global shutter
Number of pixels		752 x 480 pixels
Gray scale		256
Image recording		real-time , Program-controlled or triggered externally
Indicators/operating means		
Operation indicator		LED green: Ready for operation
Control elements		2 x Button
LED indication		Trigger, Good, Bad, Teach, Diag1, Diag2, PWR
Electrical specifications		
Operating voltage	U_B	24 V DC ± 15% , PELV
No-load supply current	I_0	max. 250 mA
Power consumption	P_0	6 W
Interface 1		
Interface type		Ethernet
Protocol		TCP/IP
Transfer rate		100 MBit/s
Cable length		max. 30 m
Input		
Input voltage		to be applied externally 24 V ± 15% PELV
Number/Type		1 trigger input 1 teach input 2 input (IN1, IN2)
Input current		approx. 2 mA at 24 V DC
Switching threshold		low: < 10 V, high: > 15 V
Cable length		max. 30 m
Output		
Number/Type		Teach active, Good, Bad, Ready
Switching type		PNP , short-circuit/overload protected
Switching voltage		to be applied externally 24 V ± 15 % PELV
Switching current		max. 100 mA each output
Cable length		max. 30 m
Compliance with standards and directives		
Standard conformity		
Noise immunity		EN 61326-1
Emitted interference		EN 61000-6-4
Degree of protection		EN 60529
Photobiological safety		Risk group 1 according to IEC 62471
Approvals and certificates		
Approvals		CE
Ambient conditions		
Ambient temperature		0 ... 45 °C (32 ... 113 °F)
Storage temperature		-20 ... 60 °C (-4 ... 140 °F)
Relative humidity		80 % , noncondensing
Shock resistance		< 50 g
Vibration resistance		< 3 G , 11 ... 200 Hz
Mechanical specifications		
Degree of protection		IP67

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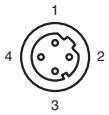
Connection		8-pin, M12x1 connector, standard (supply+IO) , 5-pin, M12x1 socket, standard (IO) , 4-pin, M12x1 socket, D-coded (LAN)
Material		
Housing		PC/ABS
Optical face		Plastic pane
Installation		4 x M6 threading
Mass		approx. 160 g
Dimensions		
Height tolerance		± 0.3 mm
Width		70 mm

Connection

IO

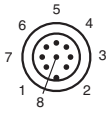
Pin	Signal
1	OUT +UB
2	IN 1
3	GND
4	IN 2
5	OUT 1

LAN



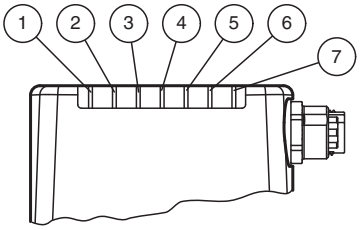
Pin	Signal
1	TX+ Ethernet
2	RX+ Ethernet
3	TX- Ethernet
4	RX- Ethernet

24 V DC+IO



Pin	Signal
1	IN Trigger
2	+UB
3	OUT Good
4	OUT Bad
5	IN Start Teach
6	OUT Ready
7	GND
8	OUT Teach Active

Assembly



1	LED DIAG2	yellow
2	LED DIAG1	yellow
3	LED POWER	green
4	LED TEACH	yellow
5	LED BAD	yellow
6	LED GOOD	yellow
7	LED TRIGGER	yellow

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