## 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.

## Indicating / Operating means
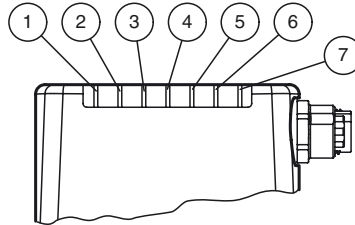
| | | |
|---|---|---|
| 1 | LED DIAG2 | yellow |
| 2 | LED DIAG1 | yellow |
| 3 | LED POWER | green |
| 4 | LED TEACH | yellow |
| 5 | LED BAD | yellow |
| 6 | LED GOOD | yellow |
| 7 | LED TRIGGER | yellow |

## Electrical connection

**IO**

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

**LAN**
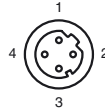
| Pin | Signal |
|-----|--------|
| 1 | TX+ Ethernet |
| 2 | RX+ Ethernet |
| 3 | TX- Ethernet |
| 4 | RX- Ethernet |

**24 V DC+IO**
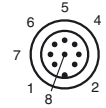
| Pin | Signal |
|-----|--------|
| 1 | IN Trigger |
| 2 | +UB |
| 3 | OUT Good |
| 4 | OUT Bad |
| 5 | IN Start Teach |
| 6 | OUT Ready |
| 7 | GND |
| 8 | OUT Teach Active |

## Model Number

### BIS510P-F201A-60

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

## Features

- 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

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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## 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 |
| Depth of focus | ± 5 mm |
| Reading field | 65 mm x 40 mm |
| Evaluation frequency | 10 Hz |
| Target velocity | triggered ≤ 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 indicator | 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<br>1 teach input<br>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 |

### 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 |
| Connection | 8-pin, M12x1 connector, standard (supply+IO) ,<br>5-pin, M12x1 socket, standard (IO) ,<br>4-pin, M12x1 socket, D-coded (LAN) |
| Material | |
| Housing | PC/ABS |
| Optical face | Plastic pane |
| Installation | 4 x M6 threading |
| Mass | approx. 160 g |

### Compliance with standards and directives

| | |
|---|---|
| Standard conformity | |
| Noise immunity | EN 61326-1 |
| Emitted interference | EN 61000-6-4 |
| Degree of protection | EN 60529 |
| Laser class | IEC 60825-1:2007 |

## Accessories

**V19-G-ABG-PG9**
Female connector, M12, 8-pin, shielded, field attachable

**V19-G-2M-PUR-ABG**
Female cordset, M12, 8-pin, shielded, PUR cable

**V19-G-5M-PUR-ABG**
Female cordset, M12, 8-pin, shielded, PUR cable

**V1S-G**
Male cordset, M12, 4-pin, field attachable

**V1SD-G-2M-PUR-ABG-V45X-G**
Connection cable, M12 to RJ-45, PUR cable 4-pin, CAT5e

**V1SD-G-2M-PUR-ABG-V45-G**
Connection cable, M12 to RJ-45, PUR cable 4-pin, CAT5e

**V15-G-2M-PUR**
Female cordset, M12, 5-pin, PUR cable

**V15-G-5M-PUR**
Female cordset, M12, 5-pin, PUR cable

**V15-G-2M-PUR-V15-G**
Connecting cable, M12 to M12, PUR cable 5-pin

**V15S-G-5M-PUR-ABG**
Male cordset, M12, 5-pin, shielded, PUR cable

**BIS-VISUALIZER**
User-Interface "BIS-Visualizer" for image display and basic parameters of the BIS devices
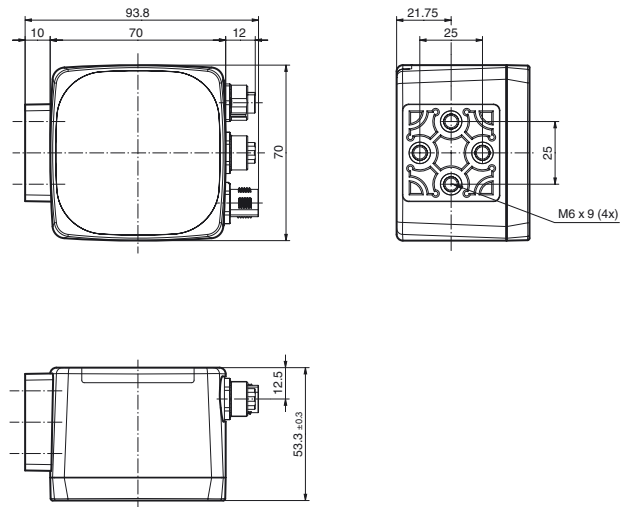
**PCV-MB1**
Mounting bracket for PCV* read head

Additional accessories can be found in the Internet.

## Dimensions



Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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