



# Vision Sensor

## PHA300-F200-B17-V1D



- Detects the position of an index hole
- Large capture range
- High operating range
- Integrated contrast compensation
- Compact design
- PROFINET interface
- Integrated illumination

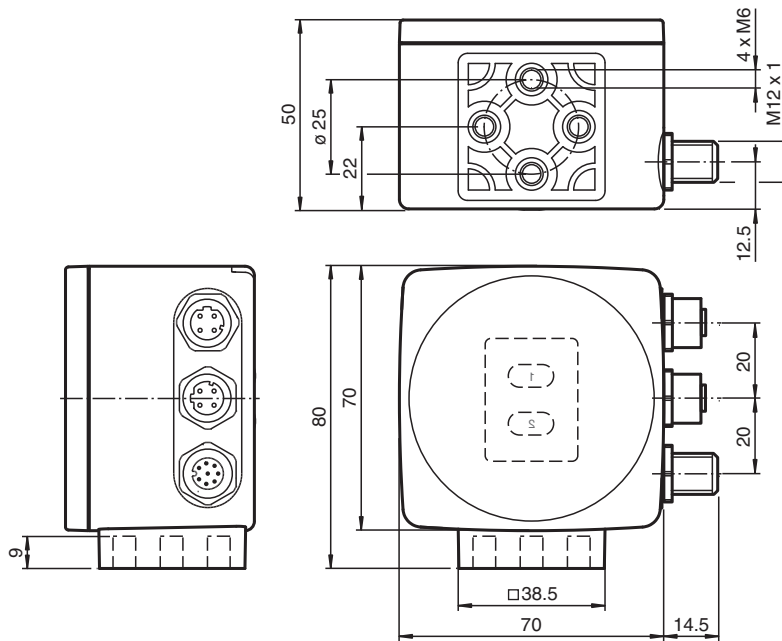
Precision positioning on hole in the 70 mm x 70 mm housing



### Function

The sensor has been developed for the precision positioning of high-bay racking operating equipment. It detects circular holes in the racking structure and their positional deviation from the nominal position. The sensor operates in two dimensions.

### Dimensions



### Technical Data

#### General specifications

Light type	Integrated LED lightning (infrared)
Read distance	300 mm
Depth of focus	± 50 mm

#### Nominal ratings

Camera

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

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## Technical Data

Type		CMOS , Global shutter
<b>Functional safety related parameters</b>		
MTTF <sub>d</sub>		95 a
Mission Time (T <sub>M</sub> )		10 a
Diagnostic Coverage (DC)		0 %
<b>Indicators/operating means</b>		
Operation indicator		LED green: Ready for operation
<b>Electrical specifications</b>		
Operating voltage	U <sub>B</sub>	24 V DC +/- 15 %, PELV
No-load supply current	I <sub>0</sub>	max. 400 mA
Power consumption	P <sub>0</sub>	6 W
<b>Interface</b>		
Interface type		100 BASE-TX PROFINET
Protocol		PROFINET IO Real-Time (RT) Conformance class A
Transfer rate		100 MBit/s
<b>Interface 2</b>		
Interface type		USB (serial comport)
Transfer rate		... 12000 kBit/s
<b>Conformity</b>		
Shock resistance		EN 60068-2-27:2009
Vibration resistance		EN 60068-2-6:2008
Emitted interference		EN 61000-6-4:2007+A1:2011
Noise immunity		EN 61000-6-2:2005
Photobiological safety		exempt group according to EN 62471:2008
<b>Approvals and certificates</b>		
CE conformity		CE
CCC approval		CCC approval / marking not required for products rated ≤36 V
<b>Ambient conditions</b>		
Operating temperature		0 ... 60 °C (32 ... 140 °F) , -20 ... 60 °C (-4 ... 140 °F) (noncondensing; prevent icing on the lens!)
Storage temperature		-30 ... 85 °C (-22 ... 185 °F)
Relative humidity		90 % , noncondensing
<b>Mechanical specifications</b>		
Connection type		8-pin, M12x1 connector, standard (supply+IO) 5-pin, M12x1 socket, B-coded (Bus Out) 5-pin, M12x1 connector, B-coded (Bus In)
Degree of protection		IP67
Material		
Housing		PC/ABS
Mass		approx. 200 g
Dimensions		
Height		70 mm
Width		70 mm
Depth		50 mm

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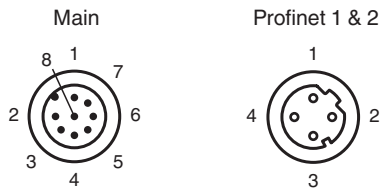
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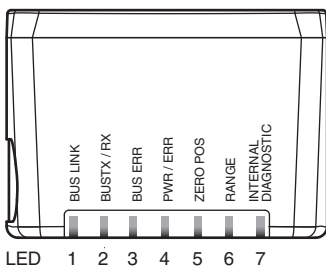
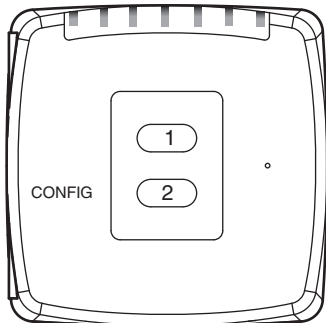
**Connection**



**Connection Assignment**

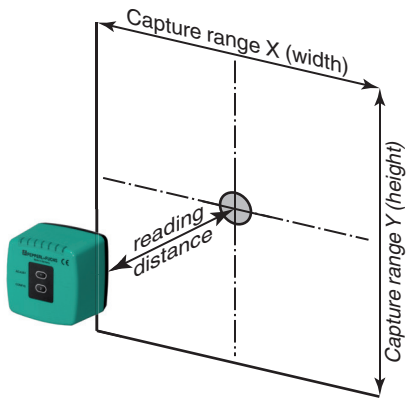


**Indication**



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## Characteristic Curve



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## Additional Information

### General

The PHA... Vision Sensor has been developed for the rack fine positioning of stock feeders. This device detects circular holes in the rack structure and determines the position deviation of these holes in relation to the target position. The Vision Sensor operates in two dimensions.

### Mounting and Commissioning

Mount the PHA... Vision Sensor in such a way that the optical surface of the device captures the optimum distance to the carrier/hole (see "Technical Data"). The stability of the Vision Sensor mounting and the manner in which the vehicle is guided must ensure that the device is not operated outside of its depth of focus range.

All Vision Sensors can be adapted to optimally meet specific requirements by means of parameterization.

### Indicators and Controls

The PHA... Vision Sensor is equipped with seven indicator LEDs for carrying out visual function checks and rapid diagnostics. The read head is equipped with two buttons at the back for activating the parameterization mode.

### LEDs

LED	Color	Labeling	Meaning
1	yellow	BUS LINK	PROFINET communication active
2	yellow	BUS TX / RX	Data transfer
3	red	BUS ERR	PROFINET communication error
4	green/red	PWR/ERR	Fault with power supply/general error
5	yellow	ZERO POS	Zero position reached
6	yellow	RANGE	Within detection/capture range
7	red/green/yellow	INTERNAL DIAGNOSTIC	Internal diagnostics

### External Parameterization

In order to parameterize the device externally, the parameterization code is required in the form of a data matrix containing the desired parameters. Data matrix code cards detailing the step-by-step process for externally parameterizing the device are printed in the operating instructions for the Vision Sensor.

- The Vision Sensor is switched over from normal operation to parameterization mode using button 2 on the back of the device. To switch the device over, button 2 must be pressed and held for more than two seconds. LED5 then flashes.  
**Note:** Parameterization mode is exited automatically if the device is inactive for one minute. In this case, the Vision Sensor reverts to normal mode and operates without the settings having been changed.
- Place the parameterization code in the field of vision of the camera module. After the parameterization code is detected, the green LED4 lights up for one second. In the event of an invalid parameterization code, LED4 lights up red for two seconds.
- Briefly pressing button 2 will end parameterization mode. Unsaved changes will be lost.