



# Vision Sensor

## PHA200-F200A-R3-T-7090



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

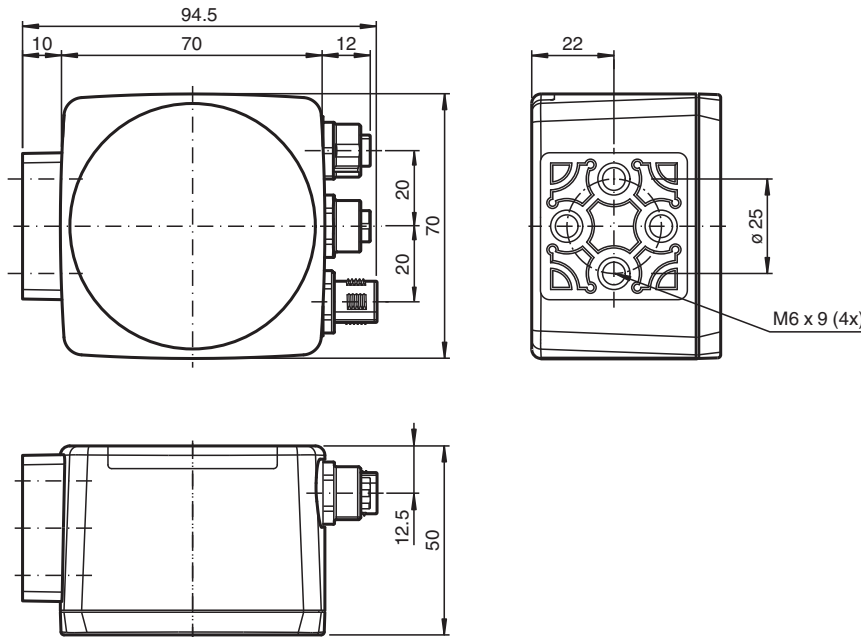
Precision positioning on hole in the 70 mm x 70 mm housing



### 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



Release date: 2024-02-07 Date of issue: 2024-02-07 Filename: 287020\_eng.pdf

### Technical Data

#### General specifications

Light source	LED
Light type	Integrated LED lightning (infrared)
Object size	Hole diameter 13 mm
Response delay	100 ms
Read distance	200 mm

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

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## Technical Data

Depth of focus		± 30 mm
Capture range		max. 120 mm x 100 mm
<b>Nominal ratings</b>		
Camera		
Type		CMOS , Global shutter
Number of pixels		752 x 480 pixels
Gray scale		256
<b>Functional safety related parameters</b>		
MTTF <sub>d</sub>		85 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
Function indicator		4 x LED yellow: +X, -X, +Y, -Y
<b>Electrical specifications</b>		
Operating voltage	U <sub>B</sub>	24 V DC ± 15% , PELV
No-load supply current	I <sub>0</sub>	max. 250 mA
Power consumption	P <sub>0</sub>	6 W
<b>Interface</b>		
Interface type		serial RS-422
Transfer rate		9600 ... 230400 Bit/s
<b>Interface 1</b>		
Interface type		Ethernet
Protocol		TCP/IP
Transfer rate		100 MBit/s
Cable length		max. 30 m
<b>Input</b>		
Input voltage		to be applied externally 24 V ± 15% PELV
Number/Type		Cycle stop, relative stroke
Input current		1.6 mA at 24 V
Switching threshold		low: < 10 V, high: > 15 V
Cable length		max. 30 m
<b>Output</b>		
Switching type		PNP , short-circuit/overload protected
Signal output		+X, -X, +Y, -Y
Switching voltage		24 V
Switching current		max. 100 mA each output
Cable length		max. 30 m
<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 61326-1:2013
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		-30 ... 60 °C (-22 ... 140 °F) , (noncondensing; prevent icing on the lens!)
Storage temperature		-30 ... 85 °C (-22 ... 185 °F)
Relative humidity		90 % , noncondensing
Shock resistance		< 50 g
Vibration resistance		< 3 G , 11 ... 200 Hz

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## Technical Data

Mechanical specifications		
Degree of protection		IP67
Connection		8-pin, M12x1 connector, standard (supply+IO) , 5-pin, M12x1 socket, A-coded ( RS-422 ) , 4-pin, M12x1 socket, standard (LAN)
Material		
Housing		PC/ABS
Optical face		Plastic pane
Installation		4 x M6 threading
Mass		approx. 160 g
Dimensions		
Height		70 mm
Width		70 mm
Depth		50 mm

## Connection

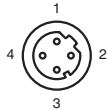
### RS-422



Pin	Signal
-----	--------

- |   |     |
|---|-----|
| 1 | RX+ |
| 2 | TX- |
| 3 | RX- |
| 4 | TX+ |
| 5 | NC  |

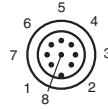
### LAN



Pin	Signal
-----	--------

- |   |              |
|---|--------------|
| 1 | TX+ Ethernet |
| 2 | RX+ Ethernet |
| 3 | TX- Ethernet |
| 4 | RX- Ethernet |

### 24 V DC+IO

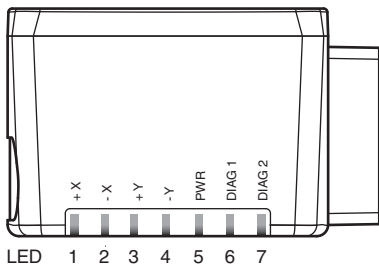
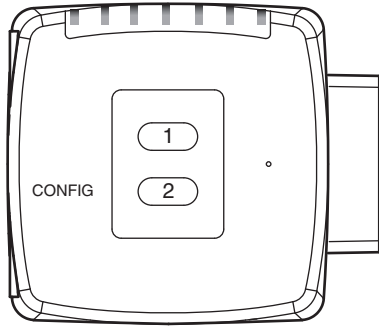


Pin	Signal
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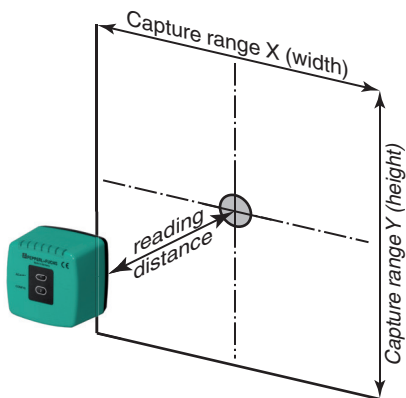
- |   |        |
|---|--------|
| 1 | OUT +X |
| 2 | +UB    |
| 3 | OUT -Y |
| 4 | OUT +Y |
| 5 | OUT -X |
| 6 | IN 1   |
| 7 | GND    |
| 8 | IN 2   |

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**Assembly**



**Characteristic Curve**



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