



**Model Number**

**PHA300-F200A-R2-5301**

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

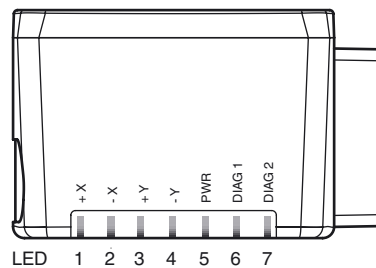
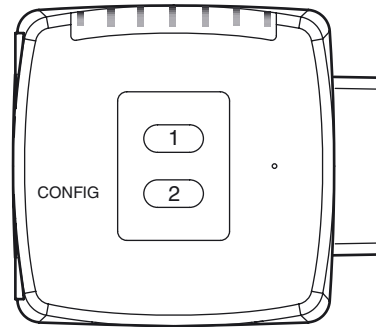
**Features**

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

**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.

**Indicating / Operating means**



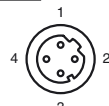
**Electrical connection**

**RS 232**



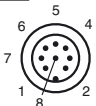
| Pin | Signal   |
|-----|----------|
| 1   | +UB      |
| 2   | TX RS232 |
| 3   | GND      |
| 4   | RX RS232 |
| 5   | NC       |

**LAN**



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

**24 V DC+IO**



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

**Technical data**

**General specifications**

|              |                                     |
|--------------|-------------------------------------|
| Light source | LED                                 |
| Light type   | Integrated LED lightning (infrared) |

Release date: 2016-07-15 15:17 Date of issue: 2016-07-15 240747\_eng.xml

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

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|   |   |                      |
|---|---|----------------------|
| Object size                                     | Hole diameter 13 mm   |                      |
| Response delay                                  | 100 ms  |                      |
| Read distance                                   | 300 mm  |                      |
| Depth of focus                                  | ± 50 mm   |                      |
| Capture range                                   | max. 90 mm x 90 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>                               | 70 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  |                      |
| Control elements                                | none  |                      |
| <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 232   |                      |
| <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>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                             | -20 ... 85 °C (-4 ... 185 °F)   |                      |
| Relative humidity                               | 90 % , noncondensing  |                      |
| Shock resistance                                | < 50 g  |                      |
| Vibration resistance                            | < 3 G , 11 ... 200 Hz   |                      |
| <b>Mechanical specifications</b>                |   |                      |
| Degree of protection                            | IP67  |                      |
| Connection                                      | 8-pin, M12x1 connector, standard (supply+IO) ,<br>5-pin, M12x1 socket, standard (RS 232) ,<br>4-pin, M12x1 socket, standard (LAN) |                      |
| Material  |   |                      |
| Housing   | PC/ABS  |                      |
| Optical face                                    | Plastic pane  |                      |
| Installation                                    | 4 x M6 threading  |                      |
| Mass  | approx. 160 g   |                      |
| <b>Compliance with standards and directives</b> |   |                      |
| Directive conformity                            |   |                      |
| EMC Directive 2004/108/EC                       | EN 61326-1 , EN 61000-6-4   |                      |
| Standard conformity                             |   |                      |
| Noise immunity                                  | EN 61326-1:2006   |                      |
| Emitted interference                            | EN 61000-6-4:2007/A1:2011   |                      |
| <b>Approvals and certificates</b>               |   |                      |
| UL approval                                     | cULus Listed, General Purpose, Class 2 Power Source, Type 1 enclosure   |                      |
| CCC approval                                    | CCC approval / marking not required for products rated ≤36 V  |                      |
| Approvals                                       | CE  |                      |

**Accessories****V19-G-5M-PUR-ABG**

Female cordset, M12, 8-pin, shielded, PUR cable

**V15S-G-5M-PUR-ABG**

Male cordset, M12, 5-pin, shielded, PUR cable

**V1SD-G-2M-PUR-ABG-V45-G**

Connection cable, M12 to RJ-45, PUR cable 4-pin, CAT5e

**V1SD-G-2M-PUR-ABG-V45X-G**

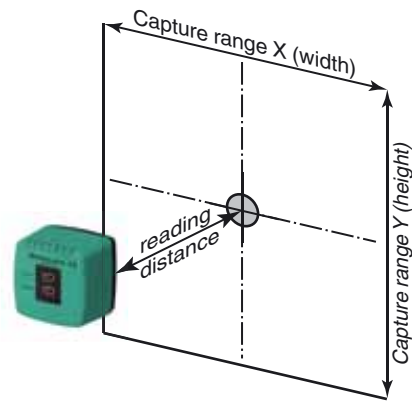
Connection cable, M12 to RJ-45, PUR cable 4-pin, CAT5e

**PCV-MB1**

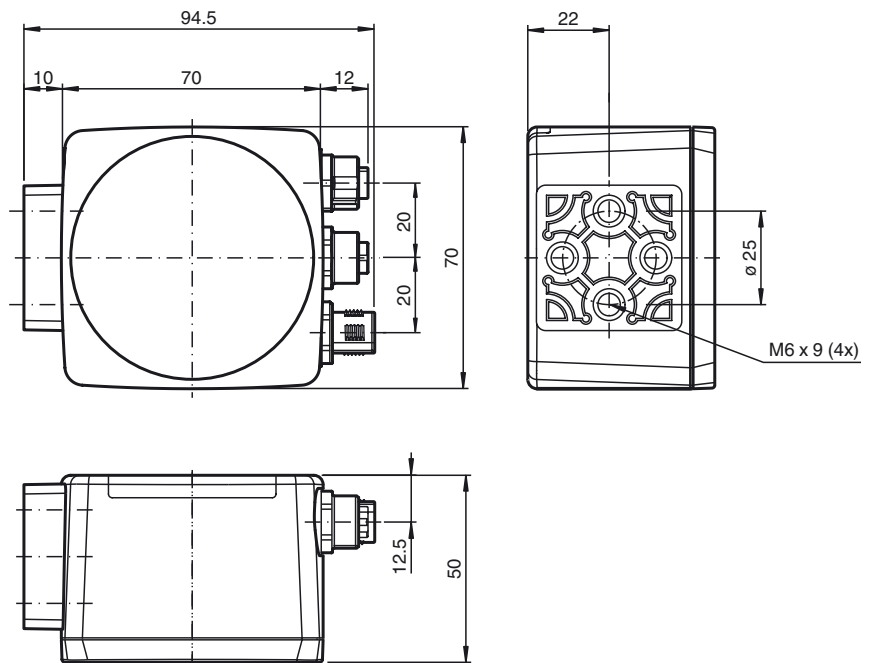
Mounting bracket for PCV\* read head

Other suitable accessories can be found at [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)

Curves / Diagrams



Dimensions



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