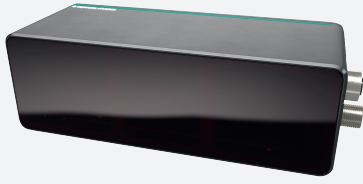


## 3-D stereo sensor

### SmartRunner Explorer 3-D

#### VSE1000-F400-B12-A1000

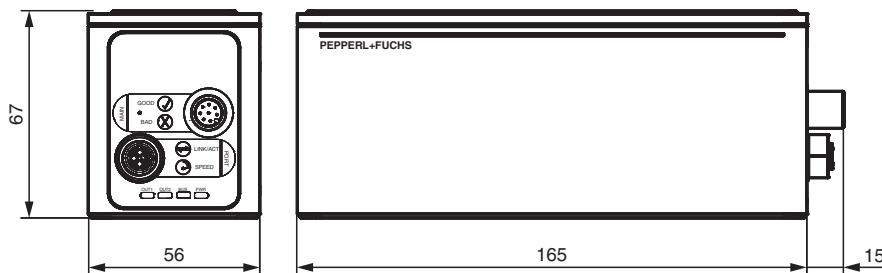


- Resolution 1300 x 1080 pixel
- Gigabit-Ethernet (GigE) interface
- Measurement data preprocessing
- Simple and fast mounting
- Intuitive and user-friendly operating software ViSolution
- Sturdy metallic housing
- C# API

The sensor uses stereo-vision technology and structured light to capture objects in 3-D. It can acquire raw 3-D data at a range of 600 to 950 mm with an image resolution of 1.4 MP and a frame rate of 10 fps. The sensor features a Gigabit Ethernet interface, intuitive operating software, rugged metal housing, and an API interface. As a raw data sensor, it is suitable for a variety of applications that require detailed contour detection.



### Dimensions



### Technical Data

#### General specifications

|                     |                                                                                                                                                          |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Detection range     | 600 ... 950 mm                                                                                                                                           |
| Measuring range     | X: 430 mm and Y: 360 mm at 600 mm distance<br>X: 650 mm and Y: 550 mm at 900 mm distance                                                                 |
| Light source        | LED projector                                                                                                                                            |
| Light type          | Infrared<br>Wave length 850 nm                                                                                                                           |
| Light direction     | Structured light                                                                                                                                         |
| Target velocity     | max. 1 m/s                                                                                                                                               |
| Object reflectivity | > 18 %                                                                                                                                                   |
| Picture detail      | dependant of operating distance                                                                                                                          |
| Resolution          | point spacing X/Y: 0.3 mm and Z noise: 0.6 mm at 600 mm distance<br>point spacing X/Y: 0.5 mm and Z noise: 1 mm at 900 mm distance<br>(18% reflectivity) |

#### Nominal ratings

|                  |                    |
|------------------|--------------------|
| Camera           |                    |
| Number of pixels | 1300 x 1080 pixels |
| Shutter          | Global shutter     |
| Frame rate       | 10 fps             |
| Image resolution | 1.4 MP             |
| Disparity        | 128                |

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

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 **PEPPERL+FUCHS**

## Technical Data

### Functional safety related parameters

|                                |  |      |
|--------------------------------|--|------|
| MTTF <sub>d</sub>              |  | 20 a |
| Mission Time (T <sub>M</sub> ) |  | 10 a |
| Diagnostic Coverage (DC)       |  | 0 %  |

### Indicators/operating means

|                     |  |                                 |
|---------------------|--|---------------------------------|
| Operation indicator |  | 4 LEDs (OUT 1, OUT 2, BUS, PWR) |
|---------------------|--|---------------------------------|

### Electrical specifications

|                        |                |                                  |
|------------------------|----------------|----------------------------------|
| Operating voltage      | U <sub>B</sub> | 24 V ± 20 % , PELV               |
| No-load supply current | I <sub>0</sub> | max. 450 mA                      |
| Power consumption      | P <sub>0</sub> | max. 10 W , Outputs without load |

### Interface

|                |  |                 |
|----------------|--|-----------------|
| Interface type |  | Ethernet TCP/IP |
| Transfer rate  |  | 1 GBit/s        |

### Input

|               |  |                                      |
|---------------|--|--------------------------------------|
| Control input |  | 1 digital input and External trigger |
|---------------|--|--------------------------------------|

### Conformity

|                        |  |                                     |
|------------------------|--|-------------------------------------|
| Photobiological safety |  | Risk group 0 according to IEC 62471 |
|------------------------|--|-------------------------------------|

### Compliance with standards and directives

|                             |  |                           |
|-----------------------------|--|---------------------------|
| Standard conformity         |  |                           |
| Noise immunity              |  | EN 61000-6-2:2005         |
| Emitted interference        |  | EN 61000-6-4:2007/A1:2011 |
| Degree of protection        |  | EN 60529                  |
| Shock and impact resistance |  | EN 60068-2-27:2009        |

### Function and system design

|                     |  |                                                     |
|---------------------|--|-----------------------------------------------------|
| Measuring principle |  | 3-D image data<br>Stereo vision<br>Structured light |
| Application         |  | 3-D raw data                                        |

### Approvals and certificates

|                 |  |                                                              |
|-----------------|--|--------------------------------------------------------------|
| CE conformity   |  | CE                                                           |
| UKCA conformity |  | UKCA                                                         |
| CCC approval    |  | CCC approval / marking not required for products rated ≤36 V |

### Ambient conditions

|                       |  |                                                                             |
|-----------------------|--|-----------------------------------------------------------------------------|
| Operating temperature |  | -20 ... 45 °C (-4 ... 113 °F) , (noncondensing; prevent icing on the lens!) |
| Relative humidity     |  | < 99 % , noncondensing                                                      |

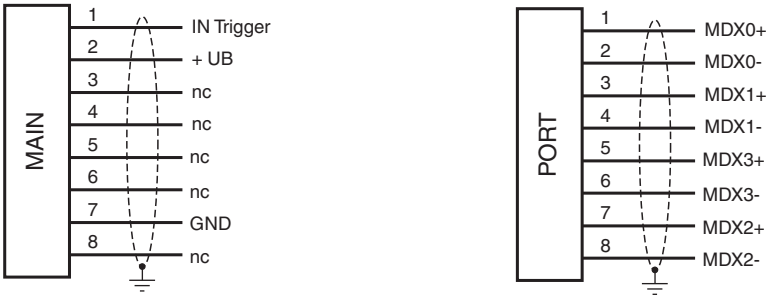
### Mechanical specifications

|                                     |  |                                                              |
|-------------------------------------|--|--------------------------------------------------------------|
| Degree of protection                |  | IP65 / IP67                                                  |
| Connection                          |  | M12 connector, 8-pin , A-coded<br>8-pin M12 socket , X-coded |
| Material                            |  |                                                              |
| Housing                             |  | metal                                                        |
| Optical face                        |  | Plastic pane                                                 |
| Installation                        |  | M5 screws                                                    |
| Mass                                |  | approx. 800 g                                                |
| Tightening torque, fastening screws |  | max. 2 Nm                                                    |
| Dimensions                          |  |                                                              |
| Height                              |  | 180 mm                                                       |
| Width                               |  | 56 mm                                                        |
| Depth                               |  | 67 mm                                                        |

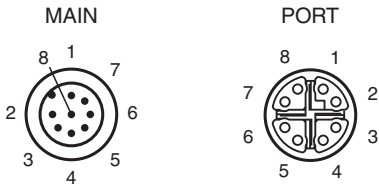
### General information

|      |  |                                                                                         |
|------|--|-----------------------------------------------------------------------------------------|
| Note |  | INVISIBLE LED , DO NOT STARE INTO BEAM<br>DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS |
|------|--|-----------------------------------------------------------------------------------------|

Connection Assignment



Connection



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