

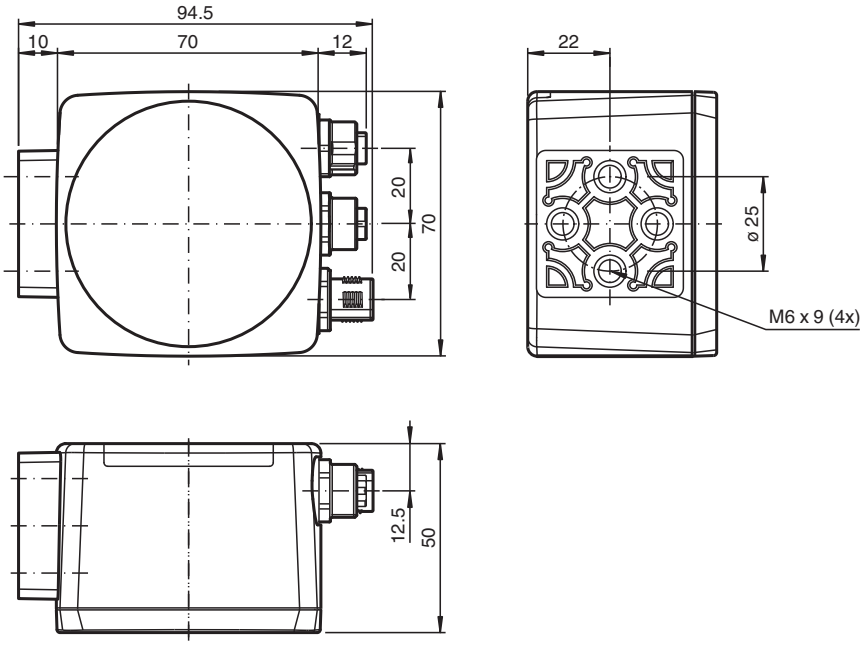
# Optical reader - safePGV

## PGV100AQ-F200A-B28-V1D

- SIL 3 (EN 61508)
- PROFINET interface
- Category 4 PL e (EN ISO 13849)
- PROFIsafe interface
- Safe, non-contact positioning on Data Matrix code tape
- Traverse distance up to 100 km
- Mechanically rugged: no wearing parts, long operating life, maintenance-free
- Output of code quality
- Pollution detection

Read head for incident light positioning system

## Dimensions




## Technical Data

| General specifications | | |
|---|---|---|
| Passage speed | v | ≤ 8 m/s |
| Measuring length | | max. 100000 m |
| Light type | | Integrated LED lightning (red/blue) |
| Read distance | | 100 mm |
| Depth of focus | | ± 30 mm |
| Field of view | | typ. 120 mm x 80 mm |
| Ambient light limit | | 30000 Lux |
| Accuracy | | |
| Non safety-related X, Y | | ± 0.2 mm |

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## Technical Data

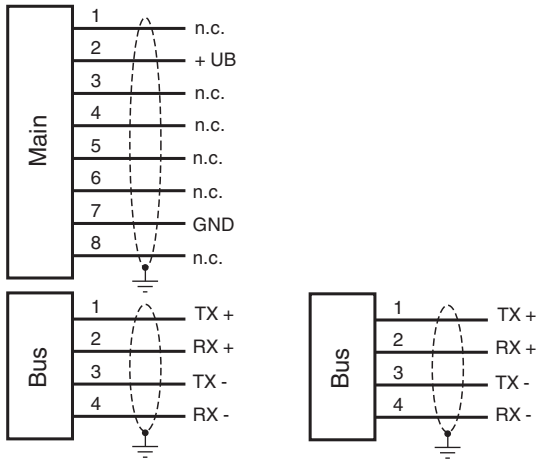
| | | |
|---|---|---|
| Non safety-related angle α | | ± 0.5 ° |
| Safety-related X | | See the original instructions |
| **Nominal ratings** | | |
| Camera | | |
| Type | | CMOS , Global shutter |
| Processor | | |
| Clock pulse frequency | | 600 MHz |
| Speed of computation | | 4800 MIPS |
| Digital resolution | | 32 Bit |
| **Functional safety related parameters** | | |
| Safety Integrity Level (SIL) | | SIL 3 |
| Performance level (PL) | | PL e |
| Category | | Cat. 4 |
| Reaction time | | 165 ms |
| MTTF | | 41 a |
| $MTTF_d$ | | 104.74 a |
| Mission Time ($T_M$) | | 20 a |
| PFH | | 1.09 E-8 typ. |
| **Indicators/operating means** | | |
| LED indication | | 7 LEDs (communication, status messages) |
| **Electrical specifications** | | |
| Operating voltage | $U_B$ | 20 ... 30 V DC , PELV |
| No-load supply current | $I_0$ | max. 300 mA |
| Power consumption | $P_0$ | 6 W |
| **Interface** | | |
| Interface type | | 100 BASE-TX |
| Protocol | | PROFINET IO Real-Time (RT) Conformance class B |
| Transfer rate | | 100 MBit/s |
| **Conformity** | | |
| Fieldbus standard | | PROFIsafe in accordance with IEC 61784-3-3; profile 2.4 |
| Functional safety | | EN ISO 13849-1:2023 EN 61508:2010 part 1-7 |
| 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 61000-6-7:2015 EN 61326-3-1:2017 |
| Photobiological safety | | Risk group 1 according to IEC 62471 |
| **Approvals and certificates** | | |
| CE conformity | | CE |
| UL approval | | cULus Listed, Class 2 Power Source, Type 1 enclosure |
| CCC approval | | CCC approval / marking not required for products rated ≤36 V |
| TÜV approval | | TÜV Rheinland 01/205/5669.02/25 |
| **Ambient conditions** | | |
| Operating temperature | | 0 ... 45 °C (32 ... 113 °F) , -20 ... 45 °C (-4 ... 113 °F) (noncondensing; prevent icing on the lens!) |
| Storage temperature | | -40 ... 85 °C (-40 ... 185 °F) |
| Relative humidity | | 90 % , noncondensing |
| Altitude | | max. 2000 m above MSL |
| **Mechanical specifications** | | |
| Connection type | | 8-pin, M12x1 connector, standard<br>4-pin, M12x1 socket, D-coded (LAN)<br>4-pin, M12x1 socket, D-coded (LAN) |
| Degree of protection | | IP67 |
| Material | | |
| Housing | | PC/ABS |

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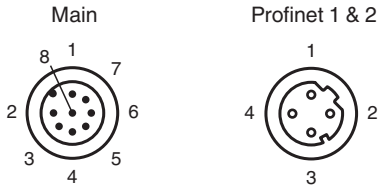
## Technical Data

| | |
|---|---|
| Mass | approx. 200 g |
| Dimensions | |
| Height | 70 mm |
| Width | 70 mm |
| Depth | 50 mm |

## Connection Assignment

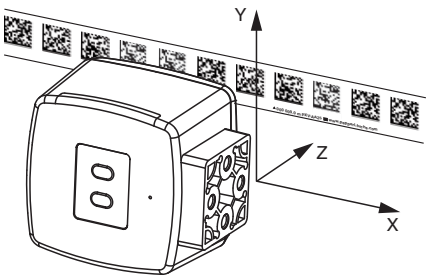



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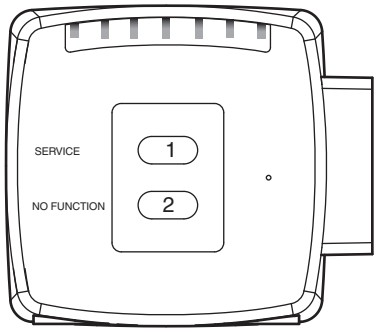

## Characteristic Curve

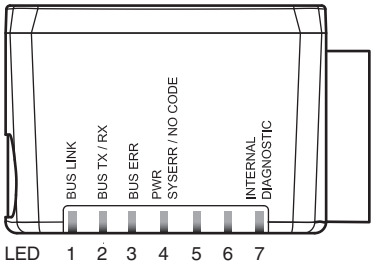
### Position Data




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## Additional Information

### Function

The reader forms part of the positioning system in the Pepperl+Fuchs incident light process, working with stationary Data Matrix code tapes mounted on the ground. The device's features include a camera module with an internal illumination unit, which follows a stationary Data Matrix code tape affixed to the ground in parallel in order to reliably detect the position. The device can be used in all applications where automated guided vehicles (AGV) are to be positioned precisely at marked positions along a given spur.

The positioning system issues position values that achieve the reliability required by SIL 3 and PL e, provided that the device is properly integrated into the plant according to the specifications given in the original instructions.

### Mounting and Commissioning

Mount the reader such that the optical surface of the device captures the optimal reading distance to the Data Matrix code tape (see "Technical Data"). The stability of the mounting and the manner in which the vehicle is guided ensure that the reader is not operated outside of its depth of focus range. The code tape must not leave the maximum reading window for the reader during this process.

### Displays and Operating Elements

The reader is equipped with the following indicator LEDs for carrying out visual function checks and quick diagnostics:

### LEDs

| LED | Color | Label | Meaning |
|---|---|---|---|
| 1 | Green | BUS LINK | PROFINET connection activated |
| 2 | Yellow | BUS TX/RX | Data transfer |
| 3 | Red | BUS ERR | PROFINET communication error |
| 4 | Red/green | PWR SYSERR/NO CODE | Code detected/not detected, error |
| 5 | - | - | No function |
| 6 | - | - | No function |
| 7 | Red/green/yellow | INTERNAL DIAGNOSTIC | Internal diagnostics |

The SERVICE button on the back of the device is used for internal service purposes.

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