



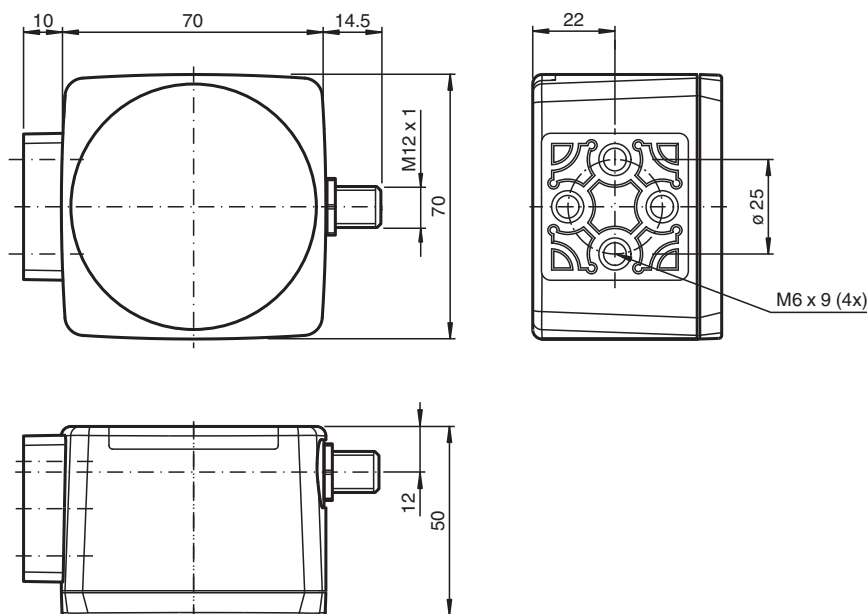
Optical reading head PGV100-F200A-R4-V19

- Mechanically rugged: no wearing parts, long operating life, maintenance-free
- RS-485 interface
- Non-contact positioning on Data Matrix code tape
- Noncontact positioning with Data Matrix TAGs
- Noncontact lane tracking of a colored strip
- Reading of Data Matrix control codes
- White-blue light

Read head for incident light positioning system



Dimensions



Technical Data

General specifications

Passage speed	v	≤ 8 m/s
Measuring range		max. 10000 m
Light type		Integrated LED lightning (white/blue)
Scan rate		25 s ⁻¹
Latency		60 ms
Read distance		100 mm
Depth of focus		± 20 mm
Reading field		120 mm x 80 mm
Ambient light limit		100000 Lux
Accuracy		± 0.2 mm
Nominal ratings		
Camera		

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

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PEPPERL+FUCHS

Technical Data

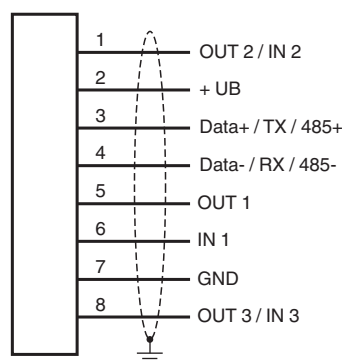
Type	CMOS , Global shutter		
Processor			
Clock pulse frequency			600 MHz
Speed of computation			4800 MIPS
Digital resolution			32 Bit
Functional safety related parameters			
MTTF _d			89 a
Mission Time (T _M)			10 a
Diagnostic Coverage (DC)			0 %
Indicators/operating means			
LED indication			7 LEDs (communication, alignment aid, status information)
Electrical specifications			
Operating voltage	U _B		15 ... 30 V DC , PELV
No-load supply current	I ₀		max. 200 mA
Power consumption	P ₀		3 W
Interface			
Interface type			RS 485 interface
Data output code			binary code
Transfer rate			38400 ... 230400 Bit/s
Termination			Switchable terminal resistor
Query cycle time			≥ 10 ms
Input			
Input type			1 to 3 functional inputs , programmable
Input impedance			≥ 27 kΩ
Output			
Output type			1 to 3 switch outputs , PNP , programmable , short-circuit protected
Switching voltage			Operating voltage
Switching current			150 mA each output
Conformity			
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			Risk group 1 according to EN 62471:2008
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
Ambient conditions			
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
Mechanical specifications			
Connection type			8-pin, M12 x 1 connector
Degree of protection			IP67
Material			
Housing			PC/ABS
Mass			approx. 160 g
Dimensions			
Height			70 mm
Width			70 mm
Depth			50 mm

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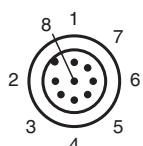
Technical Data

Factory settings		
X resolution (protocol)		0.1 mm
Y resolution (protocol)		0.1 mm
Speed resolution (protocol)		0.1 m/s
Angle resolution		0.1 °
Baud rate		115200 Bit/s
Extrapolation		On
Read head address		0

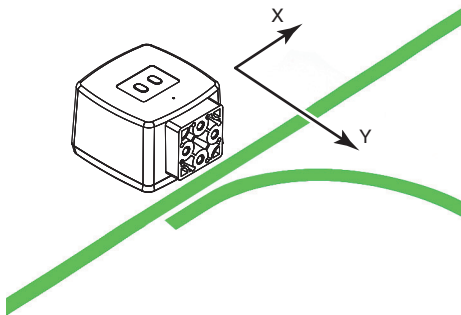
Connection



Connection Assignment

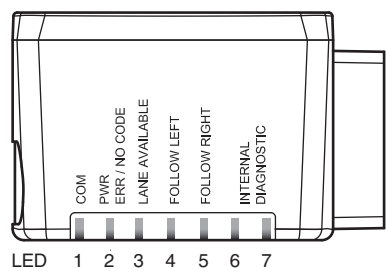
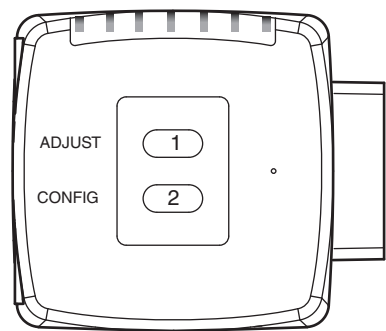


Function Principle



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Additional Information

General

The PGV... reader forms part of the positioning system in the Pepperl+Fuchs incident light process. The reader's features include a camera module and an integrated illumination unit. The reader uses these features to detect a colored strip stuck to the floor to track the lane. The reader also detects control codes and position markers in the form of Data Matrix codes attached to a self-adhesive code tape. The code tape is usually mounted in a fixed position instead of the colored strip or parallel to the colored strip. The reader is located on the front of an automated guided vehicle and guides this vehicle along the colored strip.

Mounting and Commissioning

Mount the reader such that the optical surface of the device captures the optimum reading distance to the colored strip (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 colored strip must not leave the maximum reading window for the reader during this process. All readers can be adapted to optimally meet specific requirements by means of parameterization.

Indicators and Operating Controls

The PGV... reader is equipped with seven indicator LEDs for carrying out visual function checks and rapid diagnostics. The reader is equipped with two buttons at the back for activating the alignment aid and parameterization mode.

LEDs

LED	Color	Label	Meaning
1	Yellow	COM	Communication active
2	Green/red	PWR ERR/NO CODE	Code detected/not detected, error
3	Yellow	LANE AVAILABLE	Lane available
4	Yellow	FOLLOW LEFT	"Follow left-hand lane" activated
5	Yellow	FOLLOW RIGHT	"Follow right-hand lane" activated
6	Red/green/yellow	INTERNAL DIAGNOSTIC	Internal diagnostics
7			

External Parameterization

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

The reader can be parameterized only within ten minutes of being switched on. If a key is pressed after ten minutes of the device being switched on, a visual signal is given by the LEDs (LED1, yellow/LED2, red/LED3, yellow/LED4, yellow/LED5, yellow, flashing for two seconds).

- The switchover from normal mode to parameterization mode is made by pressing button 2 on the back of the reader. To switch the device over, button 2 must be pressed and held for more than two seconds. LED3 then flashes.
Note: Parameterization mode is exited automatically if the device is inactive for one minute. In this case, the reader 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 LED2 lights up for one second. In the event of an invalid parameterization code, LED2 lights up red for two seconds.
- Briefly pressing button 2 will end parameterization mode.

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