Model number

PGV100-F200A-B16-V15

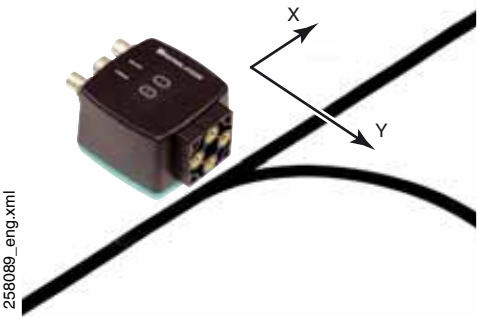
Read head for incident light positioning system

Features

- Mechanically rugged: no wearing parts, long operating life, maintenance-free
- CANopen interface
- Noncontact lane tracking of a colored strip
- Noncontact positioning along the colored strip using Data Matrix codes
- Reading of Data Matrix control codes

Diagramms

Coordinates



System components

PGV*-CA25-*

Data Matrix code tape

VAZ-V1S-B

Blind plug for M12 sockets

Technical data

General specifications	
Passage speed v	≤ 8 m/s
Measuring range	max. 10000 m
Light type	Integrated LED lightning (white/blue)
Read distance	100 mm
Depth of focus	± 20 mm
Reading field	120 mm x 80 mm
Ambient light limit	100000 Lux
Resolution	± 0.2 mm
Nominal ratings	
Camera	
Type	CMOS , Global shutter
Processor	
Clock pulse frequency	600 MHz
Speed of computation	4800 MIPS
Functional safety related parameters	
$MTTF_d$	99 a
Mission Time (T_M)	49 a
Diagnostic Coverage (DC)	0 %
Indicators/operating means	
LED indicator	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. 400 mA
Power consumption P_0	6 W
Interface	
Interface type	CANopen , galvanically isolated
Data output code	binary code
Transfer rate	max. 1 MBit/s
Interface 2	
Interface type	USB Service
Input	
Input type	1 funtion input 0-level: -$U_B$or unwired 1-level: +8 V ... +U_B , programmable
Input impedance	≥ 27 kΩ
Output	
Output type	1 to 3 switch outputs , programmable , short-circuit protected
Switching voltage	Operating voltage
Switching current	150 mA each output
Standard conformity	
Emitted interference	EN 61000-6-4:2007+A1:2011
Noise immunity	EN 61000-6-2:2005
Shock resistance	EN 60068-2-27:2009
Vibration resistance	EN 60068-2-6:2008
Ambient conditions	
Operating temperature	0 ... 60 °C (32 ... 140 °F) , -20 ... 60 °C (-4 ... 140 °F) (noncondensing; prevent icing on the lens!)
Relative humidity	90 % , noncondensing
Mechanical specifications	
Connection type	8-pin, M12x1 connector, standard (supply+IO) 5-pin, M12x1 socket, A-coded (bus out/termination) 5-pin, M12x1 connector, A-coded (bus in)
Housing width	70 mm
Housing height	70 mm
Housing depth	50 mm
Degree of protection	IP67
Material	
Housing	PC/ABS
Mass	approx. 200 g

Approvals and certificates	
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

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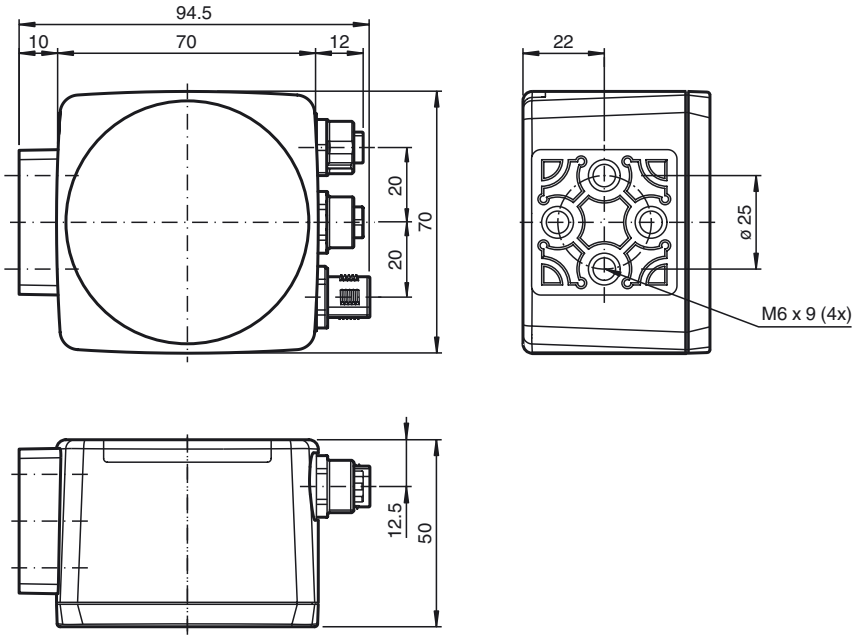
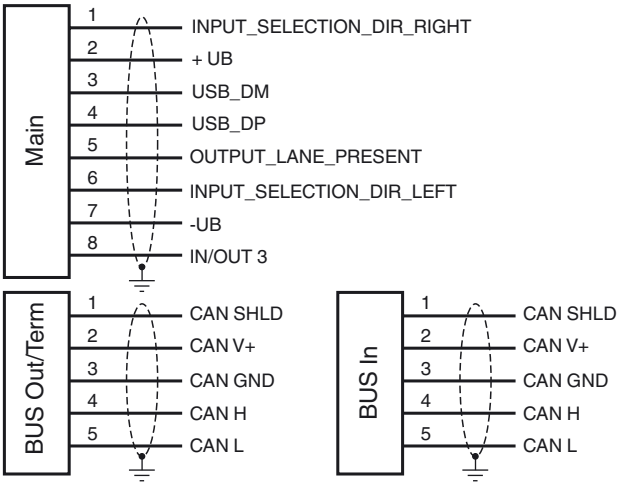
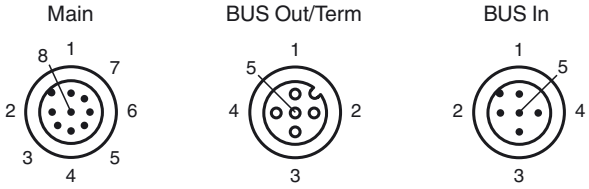
Dimensions



Electrical connection



Pinout



General

The PGV… reader forms part of the positioning system in the Pepperl+Fuchs incident light process. The read head'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 Data Matrix 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 and/or Data Matrix code tape.

System components

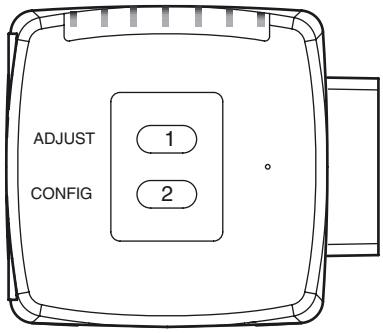
PGV*-CC25-*

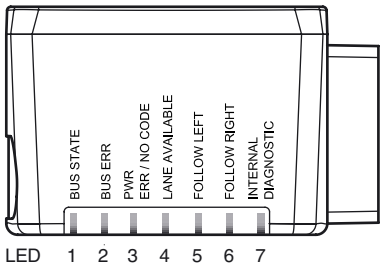
Control code tape für PGV System

PGV25M-CD100-CLEAR

Protective laminate for PGV code tape

Additional information





Accessories

PCV-SC12

Grounding clip for PCV system

ICZ-TR-CAN/DN-V15

Terminal resistor for DeviceNet, CANopen

PCV-LM25

Marker head for 25 mm code tape

PCV-MB1

Mounting bracket for PCV* read head

V15-G-2M-PUR-CAN

DeviceNet/CANopen bus cable, M12, PUR cable, 5-pin

V15-G-2M-PUR-CAN-V15-G

DeviceNet/CANOpen bus cable, M12 to M12, PUR cable 5-pin

V15-G-5M-PUR-CAN-V15-G

DeviceNet/CANOpen bus cable, M12 to M12, PUR cable 5-pin

V19-G-2M-PUR-ABG

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

V19-G-5M-PUR-ABG

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

V19-G-10M-PUR-ABG

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Accessories

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

PGV33M-CB19-BU

PGV color-tape blue

PGV33M-CB19-GN

PGV color-tape green

PGV33M-CB19-RD

PGV color-tape red

PGV33M-CB19-YE

PGV color-tape yellow

Vision Configurator

Operating software for camera-based sensors

PCV-KBL-V19-STR-USB

USB cable unit with power supply

Mounting and Commissioning

Mount the reader such that the optical surface of the device captures the optimum reading distance to the colored strip and/or 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 colored strip and/or Data Matrix code tape must not leave the maximum reading window for the reader during this process.
All readers can be adapted to optimally meet specific requirements through parameterization.

Displays and Local Controls

The PGV... reader is equipped with seven indicator LEDs for carrying out visual function checks and rapid diagnosis. 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	BUS STATE	CANopen communication active
2	Red	BUS ERR	CANopen communication error
3	Green/red	PWR ERR/NO CODE	Code detected/not detected, error
4	Yellow	LANE AVAILABLE	Lane available
5	Yellow	FOLLOW LEFT	"Follow left-hand lane" activated
6	Yellow	FOLLOW RIGHT	"Follow right-hand lane" activated
7	Red/green/yellow	INTERNAL DIAGNOSTIC	Internal diagnostics

External Parameterization

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 instruction manual 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, green/LED4, yellow/LED5, yellow/LED6, 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. LED4 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 LED3 lights up for one second. If the parameterization code is invalid, LED3 lights up in red for two seconds.
- Briefly pressing button 2 will exit parameterization mode.

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