



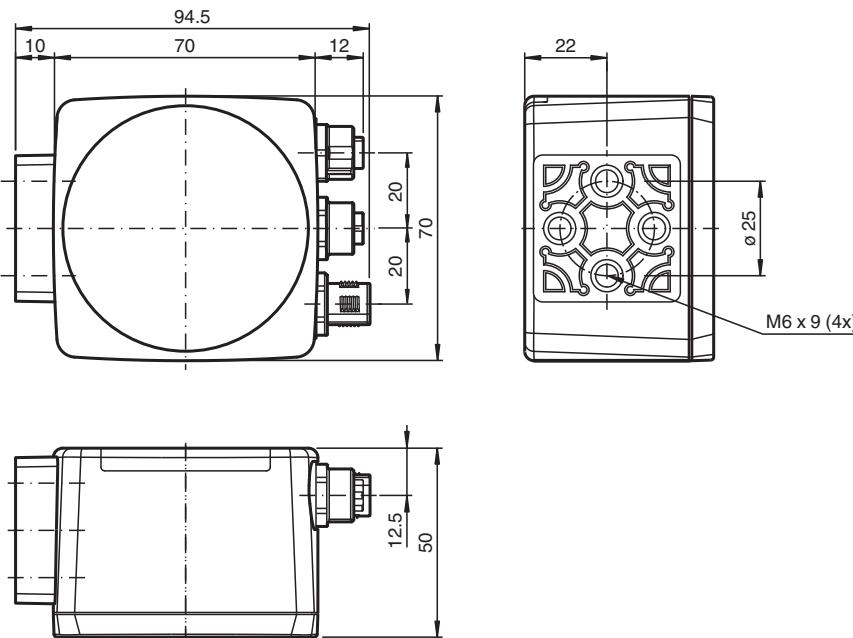
Optical reader - safePGV PGV100A-F200A-B28-V1D

- SIL 3 (EN 61508)
- Category 4 PL e (EN ISO 13849)
- PROFINET interface
- 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

Read head for incident light positioning system



Dimensions



Release date: 2023-07-10 Date of issue: 2023-07-10 Filename: 303883_eng.pdf

Technical Data

General specifications

Passage speed	v	$\leq 8 \text{ m/s}$
Measuring range		max. 100000 m
Light type		Integrated LED lightning (red/blue)
Read distance		100 mm
Depth of focus		$\pm 30 \text{ mm}$
Field of view		typ. 120 mm x 80 mm
Ambient light limit		30000 Lux
Accuracy		
Non safety-related X, Y		$\pm 0.2 \text{ mm}$

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

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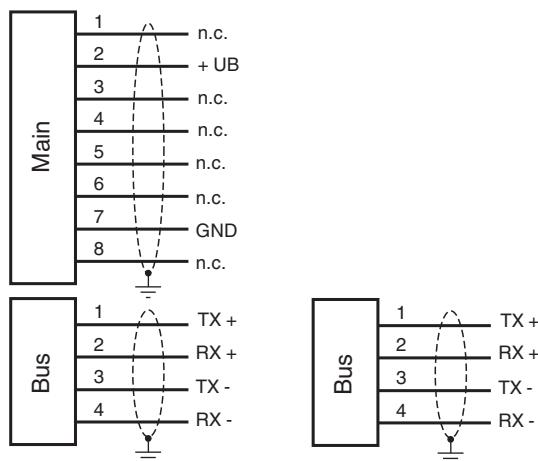
Technical Data

Non safety-related angle a	$\pm 0.5^\circ$	
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	
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 13849-1:2015 ; EN 61508:2010 part 1-7 ; EN 62061:2005 + AC:2010 + A1:2013 + A2:2015	
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	
Photobiological safety	Risk group 2 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 01/205/5669.01/20	
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 4-pin, M12x1 socket, D-coded (LAN) 4-pin, M12x1 socket, D-coded (LAN)	
Housing width	70 mm	
Housing height	70 mm	
Housing depth	50 mm	

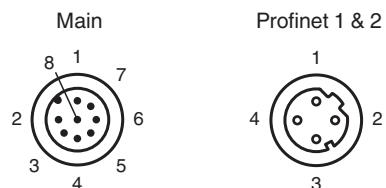
Technical Data

Degree of protection	IP67
Material	
Housing	PC/ABS
Mass	approx. 200 g

Connection

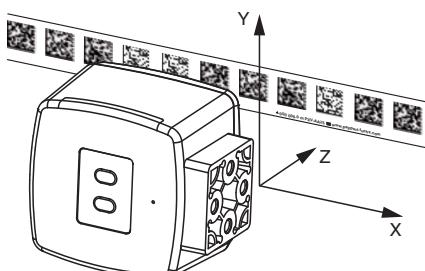


Connection Assignment

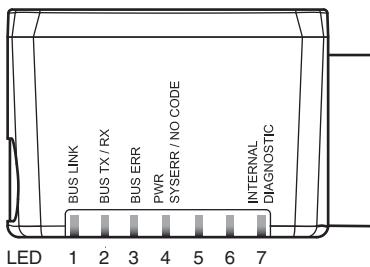
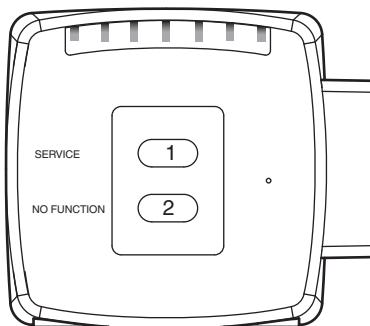


Characteristic Curve

Position Data



Characteristic Curve



Matching System Components

	PXV*-AA25-*	Data Matrix code tape
	VAZ-V1S-B	Blind plug for M12 sockets
	PGV25M-CD100-CLEAR	Protective laminate for PGV code tape
	PGV25M-CD160-CLEAR	Protective laminate for PGV code tape

Accessories

	PCV-AG100	Alignment guide for PCV100-* read head
	PCV-SC12	Grounding clip for PCV system
	PCV-SC12A	Grounding clip for PCV system
	PCV-LM25	Marker head for 25 mm code tape
	PCV-MB1	Mounting bracket for PCV* read head
	V19-G-ABG-PG9	Female connector M12 straight A-coded 8-pin, for cable diameter 5 - 8 mm, shielded, field-attachable

Accessories

	V19-G-ABG-PG9-FE	Female connector, M12, 8-pin, shielded, field attachable
	V19-G-2M-PUR-ABG	Female cordset single-ended M12 straight A-coded, 8-pin, PUR cable grey, shielded
	V19-G-5M-PUR-ABG	Female cordset single-ended M12 straight A-coded, 8-pin, PUR cable grey, shielded

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.