



## Optical reading head

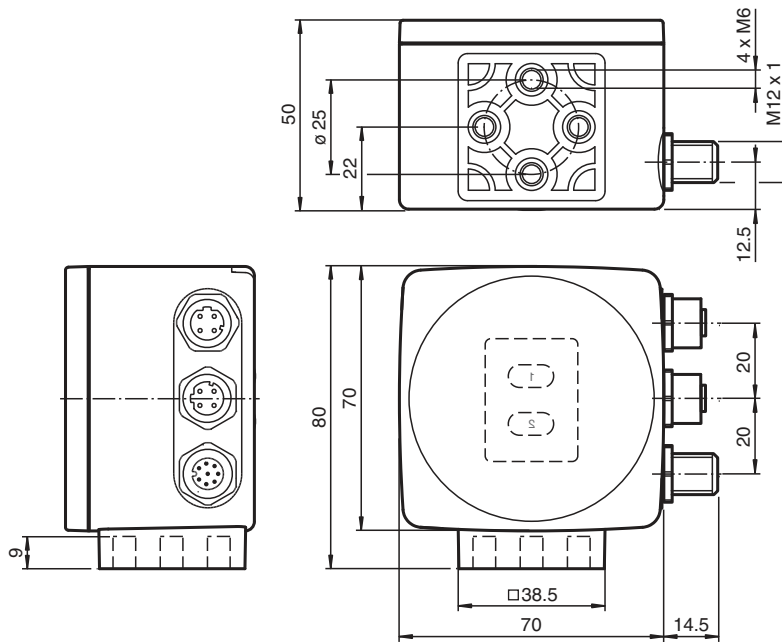
### PCV100-F200-B25-V1D-6011

- Non-contact positioning on Data Matrix code tape
- Mechanically rugged: no wearing parts, long operating life, maintenance-free
- High resolution and precise positioning, especially for facilities with curves and switch points as well as inclines and declines.
- Travel ranges up to 10 km, in X and Y direction
- Integrated switch
- EtherNet/IP

Read head for incident light positioning system



## Dimensions



## Technical Data

### General specifications

Passage speed	v	≤ 6 m/s
Measuring range		max. 10000 m
Light type		Integrated LED lightning (red)
Read distance		100 mm
Depth of focus		± 40 mm
Reading field		60 mm x 40 mm
Ambient light limit		100000 Lux
Resolution		± 0.1 mm

### Nominal ratings

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

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## Technical Data

<b>Camera</b>		
Type	CMOS , Global shutter	
<b>Processor</b>		
Clock pulse frequency	600 MHz	
Speed of computation	4800 MIPS	
<b>Functional safety related parameters</b>		
MTTF <sub>d</sub>	99 a	
Mission Time (T <sub>M</sub> )	20 a	
Diagnostic Coverage (DC)	0 %	
<b>Indicators/operating means</b>		
LED indication	7 LEDs (communication, alignment aid, status information)	
<b>Electrical specifications</b>		
Operating voltage	U <sub>B</sub>	15 ... 30 V DC , PELV
No-load supply current	I <sub>0</sub>	max. 400 mA
Power consumption	P <sub>0</sub>	6 W
<b>Interface</b>		
Interface type	100 BASE-TX	
Protocol	EtherNet/IP	
Transfer rate	100 MBit/s	
<b>Interface 2</b>		
Interface type	USB Service	
<b>Input</b>		
Input type	1 function input 0-level: -U <sub>B</sub> or unwired 1-level: +8 V ... +U <sub>B</sub> , programmable	
Input impedance	≥ 27 kΩ	
<b>Output</b>		
Output type	1 to 3 switch outputs , programmable , short-circuit protected	
Switching voltage	Operating voltage	
Switching current	150 mA each output	
<b>Standard conformity</b>		
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	
<b>Approvals and certificates</b>		
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	
<b>Ambient conditions</b>		
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	
<b>Mechanical specifications</b>		
Connection type	8-pin, M12x1 connector, standard (supply+IO) 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	
Degree of protection	IP67	
<b>Material</b>		
Housing	PC/ABS	
Mass	approx. 200 g	

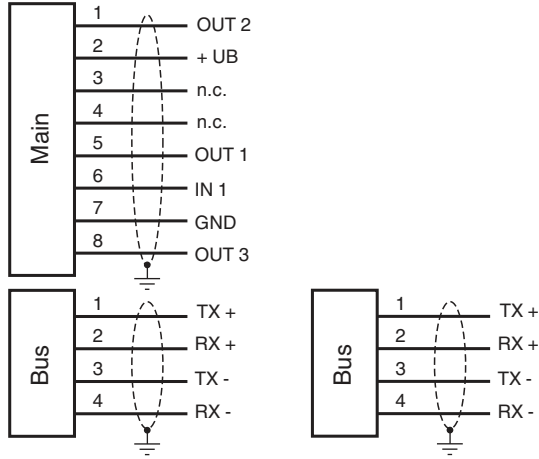
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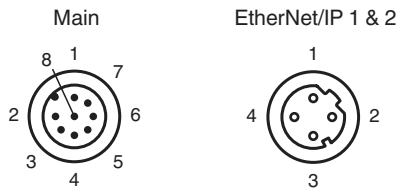
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**Connection**

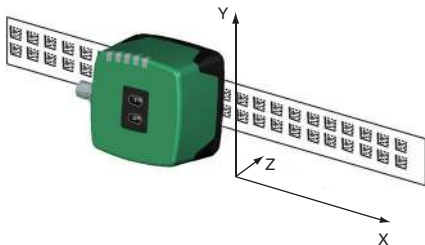


**Connection Assignment**



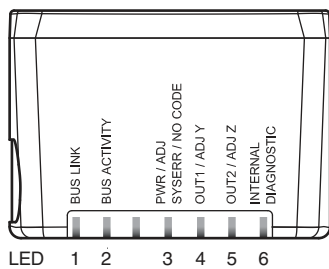
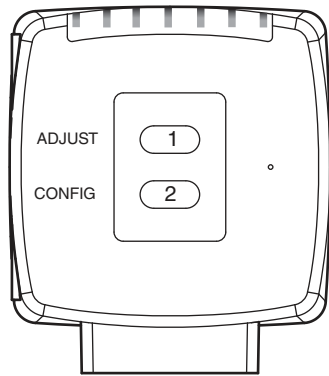
**Characteristic Curve**

**Coordinates**





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## Characteristic Curve



## Matching System Components

	<b>PCV-CR40</b>	Coded repair tape for PCV system
	<b>PCV-CR20</b>	Coded repair tape for PCV system

## Accessories

	<b>PCV-SC12</b>	Grounding clip for PCV system
	<b>PCV-LM25</b>	Marker head for 25 mm code tape
	<b>PCV-AG100</b>	Alignment guide for PCV100-* read head
	<b>PCV-MB1</b>	Mounting bracket for PCV* read head
	<b>V19-G-ABG-PG9-FE</b>	Female connector, M12, 8-pin, shielded, field attachable
	<b>V19-G-ABG-PG9</b>	Female connector M12 straight A-coded 8-pin, for cable diameter 5 - 8 mm, shielded, field-attachable
	<b>PCV-SC12A</b>	Grounding clip for PCV system
	<b>Vision Configurator</b>	Operating software for camera-based sensors

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## Accessories

	<b>PCV-KBL-V19-STR-USB</b>	USB cable unit with power supply
	<b>V1SD-G-GN2M-PUR-E1S-V45-G</b>	Ethernet bus cable M12 plug straight D-coded to RJ45 Ethernet-coded, 4-pin, PUR cable green, Cat5e, shielded, drag chain suitable
	<b>V1SD-G-GN5M-PUR-E1S-V45-G</b>	Ethernet bus cable M12 plug straight D-coded to RJ45 Ethernet-coded, 4-pin, PUR cable green, Cat5e, shielded, drag chain suitable
	<b>V1SD-G-GN10M-PUR-E1S-V45-G</b>	Ethernet bus cable M12 plug straight D-coded to RJ45 Ethernet-coded, 4-pin, PUR cable green, Cat5e, shielded, drag chain suitable
	<b>V1SD-G-GN30M-PUR-E1S-V45-G</b>	Ethernet bus cable M12 plug straight D-coded to RJ45 Ethernet-coded, 4-pin, PUR cable green, Cat5e, shielded, drag chain suitable
	<b>V1SD-G-GN2M-PUR-E1S-V1D-G</b>	Ethernet bus cable M12 plug straight to M12 plug straight D-coded, 4-pin, PUR cable green, Cat5e, shielded, UL approved, drag chain suitable
	<b>V1SD-G-GN3M-PUR-E1S-V1D-G</b>	Ethernet bus cable M12 plug straight to M12 plug straight D-coded, 4-pin, PUR cable green, Cat5e, shielded, UL approved, drag chain suitable
	<b>V1SD-G-GN5M-PUR-E1S-V1D-G</b>	Ethernet bus cable M12 plug straight to M12 plug straight D-coded, 4-pin, PUR cable green, Cat5e, shielded, UL approved, drag chain suitable
	<b>V1SD-G-GN15M-PUR-E1S-V1D-G</b>	Ethernet bus cable M12 plug straight to M12 plug straight D-coded, 4-pin, PUR cable green, Cat5e, shielded, UL approved, drag chain suitable
	<b>V19-G-10M-PUR-ABG</b>	Female cordset single-ended M12 straight A-coded, 8-pin, PUR cable grey, shielded
	<b>V19-G-2M-PUR-ABG</b>	Female cordset single-ended M12 straight A-coded, 8-pin, PUR cable grey, shielded
	<b>V19-G-5M-PUR-ABG</b>	Female cordset single-ended M12 straight A-coded, 8-pin, PUR cable grey, shielded

## Additional Information

### General

The reading head is part of the positioning system in the method for measurement by Pepperl+Fuchs. It consists of a camera module and an integrated illumination unit among other things. The reading head detects position marks, which are put on an adhesive code band in the form of Data Matrix code. The mounting of the code band is as a rule stationary on a firm part of the plant (elevator shaft, overhead conveyor mounting rails...); that of the reading head is parallel on the moving "vehicle" (elevator car, overhead conveyor chassis...).

### Mounting and commissioning

Mount the reading head such that its optical surface captures the optimal read distance to the code band (see Technical Data). The stability of the mounting and the guidance of the vehicle must be provided such that the depth of field of the reading head is not closed during operation. All reading heads can be optimally customized by parameterization for specific requirements.

### Displays and Controls

The reading head allows visual function check and fast diagnosis with 6 indicator LEDs. The reading head has 2 buttons on the reverse of the device to activate the alignment aid and parameterization mode.

### LEDs

LED	Color	Label	Meaning
1	green	BUS LINK	Communication status
2	yellow	BUS ACTIVITY	Data transfer
3	red / green	PWR / ADJ SYSERR / NO CODE	Code recognized / not recognized, Error
4	yellow	OUT1/ADJ Y	Output 1, Alignment aid Y
5	yellow	OUT2/ADJ Z	Output 2, Alignment aid Z
6	red/green/yellow	INTERNAL DIAGNOSTIC	Internal diagnostics

### Alignment aid for the Y and Z coordinates

The activation of the alignment aid is only possible within 10 minutes of switching on the reading head. The switchover from normal operation to "alignment aid operating mode" is via button 1 on the reverse of the reading head.

- Press the button 1 for longer than 2 s. LED3 flashes green for a recognized code band. LED3 flashes red for an unrecognized code band.
- **Z coordinate:** If the distance of the camera to the code band is too small, the yellow LED5 lights up. If the distance of the camera to the code band is too large, the yellow LED5 lights up. Within the target range, the yellow LED5 flashes at the same time as the green LED3.
- **Y coordinate:** If the optical axis of the camera is too deep in relation to the middle of the code band, the yellow LED4 lights up. If the optical axis is too high, the yellow LED4 extinguishes. Within the target range, the yellow LED4 flashes at the same time as the green LED3.
- A short press on button 1 ends the alignment aid and the reading head changes to normal operation.