

Optical reading head PCV100-F200-B16-V15-6011

- Non-contact positioning on Data Matrix code tape
- Mechanically rugged: no wearing parts, long operating life, maintenancé-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
- CANopen interface

Read head for incident light positioning system

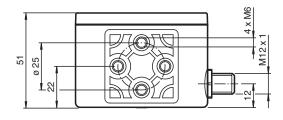


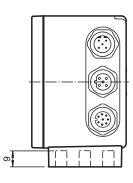


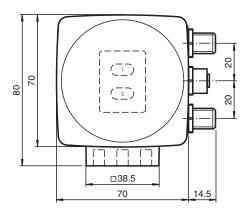




Dimensions







Technical Data

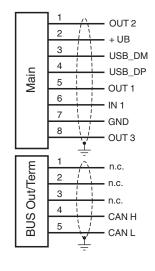
| General specifications | | |
|------------------------|---|--------------------------------|
| Passage speed | V | ≤ 6 m/s |
| Measuring length | | max. 10000 m |
| Light type | | Integrated LED lightning (red) |
| Scan rate | | 40 s ⁻¹ |
| Read distance | | 100 mm |
| Depth of focus | | ± 40 mm |
| Reading field | | 60 mm x 35 mm |
| Ambient light limit | | 100000 Lux |
| Resolution | | ± 0.1 mm |
| Nominal ratings | | |

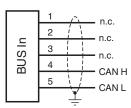
Camera

| on the lens!) Storage temperature -20 85 °C (-4 185 °F) 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) Degree of protection IP67 Material Housing PC/ABS | Technical Data | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Processor | Type | | CMOS , Global shutter |
| Clock pulse frequency 800 MHz Speed of computation 800 MHz 820 Bt 820 Bt | | | |
| Speed of computation 4800 MIPS | Clock pulse frequency | | 600 MHz |
| Digital resolution 32 Bit | | | 4800 MIPS |
| ### Functional safety related parameters ### MITF₄ | · · | | |
| MTFs 100 a Mission Time (T₂₂) 20 a Diagnostic Coverage (DC) 0 % Indicators/operating means IED indication Electrical specifications 7 LEDs (communication, alignment aid, status information) Operating voltage Up 15 30 V DC , PEL V No-load supply current Ip max. 400 mA Power consumption Pg 6 W Interface Interface Interface Interface Interface type CANopen , galvanically isolated Data output code binary code Transfer rate max. 1 MB/Us Interface bye USB Service Input 1 function input Input 1 function input Input 2 T KΩ Output type 1 function input Input impedance 2 Z T KΩ Output type 1 to 3 switch outputs , programmable , short-circuit protected Switching outpage Operating voltage Switching outpage Operating voltage Switching outpage Operating voltage | - | | |
| Mission Time (T _a) 20 a Diagnostic Coverage (DC) 0 % Indicators/operating means LED indication Deprivating voltage Us 15 30 V DC , PELV No-load supply current 0 0 max 400 mA Power consumption Power consumption Interface bype Data output code Transfer rate | | | 100 a |
| Diagnostic Coverage (DC) 0 % | - | | |
| Indicators/operating means ILED inclication 7 LEDs (communication, alignment aid, status information) Electricial psecifications Total part of the properties of the prope | | | |
| LED indication 7 LEDs (communication, alignment aid, status information) | <u> </u> | | |
| Departing voltage | - | | 7 LEDs (communication, alignment aid, status information) |
| Operating voltage U _a 1530 V DC , PELV No-load supply current U _b max. 400 mA Power consumption P _e 6 W Interface Interface type CANopen , galvanically isolated Data output code binary code Transfer rate max. 1 MBit/s Interface 2 Interface Preserve Interface 1 USB Service Input Input type USB Service Input impedance 2 27 kG Ustput type 1 funtion input (-level - 4g · unwired (-level - 4g · unw | | | |
| No-load supply current No max. 400 mA | | U _R | 15 30 V DC . PELV |
| Power consumption P₀ 6 W Interface Interface type CANopen, galvanically isolated Data output code binary code Interface 1 max. 1 MBit/s Interface 2 Interface 2 Input USB Service Input Input type 1 funtion input O-level: -U _b or unwired 1-level: +0 V +U _b , programmable Input impedance ≥ 27 kΩ 20 Output 1 to 3 switch outputs , programmable , short-circuit protected Switching outred 1 to 3 switch outputs , programmable , short-circuit protected Switching voltage Operating voltage Switching voltage Operating voltage Switching current 150 mA each output Conformity Photobiological safety Standard conformity EN 61000-6-42007+A1:2011 Emitted interference EN 61000-6-22005 Noise immunity EN 61000-8-22009 Shock resistance EN 60068-2-27:2009 Vibration resistance EN 60068-2-6:2008 Approvals and certificates EN 60068-2-6:2008 CE conformity UKCA UK CA con | | | |
| Interface Interface type | ** * | | |
| Interface type | | . 0 | |
| Data output code binary code max. 1 MBit/s Interface 2 Interface type USB Service Input Input type 1 function input O-levei: -U _a or unwired 1-levei: -10 | | | CANopen galvanically isolated |
| Transfer rate max. 1 MBit/s Interface 2 Interface type USB Service Input Input type 1 funtion input Olevet: -U _p or unwired 1-level: +8 V + U _B , programmable Input mpedance ≥ 27 kΩ Output Output type 1 to 3 switch outputs , programmable , short-circuit protected Switching voltage Operating voltage Switching current 150 mA each output Conformity Photobiological safety exempt group according to EN 62471:2008 Standard conformity Emitted interference | • • | | |
| Interface 2 | · | | |
| Input Input Input Input 1 funtion input 1 | | | max. i vidius |
| Input type 1 funtion input olevel: -Ugor unwired filevel: +8 V +Ug , programmable 1 funtion input olevel: -Ugor unwired filevel: +8 V +Ug , programmable 1 funtion input impedance | | | LISB Sonico |
| Input type 1 funtion input O-level: 1 bg or unwired O-level: 1 bg | • • | | USB Service |
| O-level: -V _o or unwired flevel: 48 V +V _o , programmable | | | 4 function input |
| Output type 1 to 3 switch outputs , programmable , short-circuit protected Switching voltage Operating voltage Switching current 150 mA each output Conformity Photobiological safety exempt group according to EN 62471:2008 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 Approvals and certificates CE conformity UKCA UL approval CCC approval CCC approval / marking not required for products rated ≤36 V Ambient conditions Operating temperature 20 85 °C (-4 140 °F) , -20 60 °C (-4 140 °F) (noncondensing; prevent iciron the lens!) Storage temperature 20 85 °C (-4 185 °F) Relative humidity 90 % , noncondensing Mechanical specifications Connection type \$8-pin, M12x1 connector, standard (supply+IO) 5-pin, M12x1 socket, A-coded (bus out/termination) S-pin, M12x1 connector, A-coded (bus out/termination) | три туре | | 0-level: -U _B or unwired |
| Output type 1 to 3 switch outputs , programmable , short-circuit protected Switching voltage 150 mA each output Conformity Photobiological safety exempt group according to EN 62471:2008 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 Approvals and certificates CE conformity UKCA UL approval CCC approval CCC approval / marking not required for products rated ≤36 V Ambient conditions Operating temperature 20 85 °C (-4 185 °F) Relative humidity 90 % , noncondensing Mechanical specifications Connection type \$ 8-pin, M12x1 connector, standard (supply+IO) 5-pin, M12x1 connector, A-coded (bus out/termination) Degree of protection IP67 Material Housing PCABS | Input impedance | | ≥ 27 kΩ |
| Switching voltage Switching current Conformity Photobiological safety Emitted interference Noise immunity Shock resistance Vibration resistance EN 61000-6-2:2005 Shock resistance EN 60068-2-6:2008 Approvals and certificates CE conformity UKCA CCC approval CCC approval Ambient conditions Operating temperature Storage temperature Pelative humidity Separation Connection type Separation S | Output | | |
| Switching current Conformity Photobiological safety exempt group according to EN 62471:2008 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 Approvals and certificates CE conformity CE UKCA conformity UKCA UL approval CULus Listed, General Purpose, Class 2 Power Source, Type 1 enclosure CCC approval Ambient conditions Operating temperature 060 °C (32 140 °F) , -20 60 °C (-4 140 °F) (noncondensing; prevent icir on the lensl) Storage temperature 2.0 85 °C (-4 185 °F) Relative humidity 90 % , noncondensing 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) Degree of protection IP67 Material Housing PC/ABS | Output type | | 1 to 3 switch outputs, programmable, short-circuit protected |
| Photobiological safety exempt group according to EN 62471:2008 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 Approvals and certificates CE conformity CE UKCA conformity UKCA UL approval CCC approval CCC approval Amarking not required for products rated ≤36 V Ambient conditions Operating temperature 060 °C (32 140 °F) , -20 60 °C (-4 140 °F) (noncondensing; prevent icir on the lens!) Storage temperature 2.0 85 °C (-4 185 °F) Relative humidity 90 % , noncondensing Mechanical specifications Connection type 8-pin, M12x1 connector, standard (supply+IO) 5-pin, M12x1 connector, A-coded (bus out/termination) 5-pin, M12x1 connector, A-coded (bus out/termination) 5-pin, M12x1 connector, A-coded (bus out/termination) 5-pin, M12x1 connector, A-coded (bus in) Degree of protection IP67 | Switching voltage | | Operating voltage |
| Photobiological safety exempt group according to EN 62471:2008 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 Approvals and certificates CE conformity CE UKCA conformity UKCA UL approval CCC approval Purpose, Class 2 Power Source, Type 1 enclosure CCC approval CCC approval / marking not required for products rated ≤36 V Ambient conditions Operating temperature 060 °C (32 140 °F) , -20 60 °C (-4 140 °F) (noncondensing; prevent icir on the lens!) Storage temperature 2.0 65 °C (-4 185 °F) 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 out/termination) 5-pin, M12x1 connector, A-coded (bus out/termination) Material Housing PC/ABS | Switching current | | 150 mA each output |
| Standard conformity Emitted interference | 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 Approvals and certificates CE conformity CE UKCA conformity UKCA 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 Ambient conditions Operating temperature 060 °C (32 140 °F), -20 60 °C (-4 140 °F) (noncondensing; prevent icir on the lens!) Storage temperature -20 85 °C (-4 185 °F) Relative humidity 90 %, noncondensing Mechanical specifications Connection type 8-pin, M12x1 connector, standard (supply+IO) 5-pin, M12x1 connector, A-coded (bus out/termination) 5-pin, M12x1 connector, A-coded (bus in) Degree of protection IP67 Material Housing PC/ABS | Photobiological safety | | exempt group according to EN 62471:2008 |
| Noise immunity EN 61000-6-2:2005 Shock resistance EN 60068-2-6:2008 Approvals and certificates CE conformity UKCA UL CA conformity UL approval CCC approval / marking not required for products rated ≤36 V Ambient conditions Operating temperature O 60 °C (32 140 °F) , -20 60 °C (-4 140 °F) (noncondensing; prevent icir on the lens!) Storage temperature -20 85 °C (-4 185 °F) Relative humidity 90 % , noncondensing Mechanical specifications Connection type 8-pin, M12x1 connector, standard (supply+IO) 5-pin, M12x1 connector, A-coded (bus out/termination) 5-pin, M12x1 connector, A-coded (bus in) Degree of protection IP67 Material Housing PC/ABS | Standard conformity | | |
| Shock resistance EN 60068-2-27:2009 Vibration resistance EN 60068-2-6:2008 Approvals and certificates CE conformity CE UKCA conformity UKCA 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 Ambient conditions Operating temperature 060 °C (32140 °F), -2060 °C (-4 140 °F) (noncondensing; prevent icir on the lens!) Storage temperature -20 85 °C (-4 185 °F) 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) Degree of protection IP67 Material Housing PC/ABS | Emitted interference | | EN 61000-6-4:2007+A1:2011 |
| Vibration resistance EN 60068-2-6:2008 Approvals and certificates CE conformity CE UKCA conformity UKCA 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 Ambient conditions Operating temperature 060 °C (32 140 °F) , -2060 °C (-4 140 °F) (noncondensing; prevent icir on the lens!) Storage temperature -20 85 °C (-4 185 °F) 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) Degree of protection IP67 Material Housing PC/ABS | Noise immunity | | EN 61000-6-2:2005 |
| Approvals and certificates CE conformity CE UKCA conformity UL approval CCC approval CCC approval CCC approval CCC approval Ambient conditions Operating temperature 0 60 °C (32 140 °F) , -20 60 °C (-4 140 °F) (noncondensing; prevent icir on the lens!) Storage temperature -20 85 °C (-4 185 °F) 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) Degree of protection Material Housing PC/ABS | Shock resistance | | EN 60068-2-27:2009 |
| CE conformity CE UKCA conformity UKCA 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 Ambient conditions 0 60 °C (32 140 °F) , -20 60 °C (-4 140 °F) (noncondensing; prevent icir on the lens!) Storage temperature -20 85 °C (-4 185 °F) 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) Degree of protection IP67 Material Housing | Vibration resistance | | EN 60068-2-6:2008 |
| UKCA conformity UKCA UL approval CCC approval Ambient conditions Operating temperature Storage temperature Connection type Sepin, M12x1 connector, standard (supply+IO) 5-pin, M12x1 connector, A-coded (bus in) Degree of protection Material Housing PC/ABS | 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 Ambient conditions Operating temperature 0 60 °C (32 140 °F) , -20 60 °C (-4 140 °F) (noncondensing; prevent icir on the lens!) Storage temperature -20 85 °C (-4 185 °F) 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) Degree of protection IP67 Material Housing PC/ABS | CE conformity | | CE |
| 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 icir on the lens!) Storage temperature -20 85 °C (-4 185 °F) 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) Degree of protection IP67 Material Housing PC/ABS | UKCA conformity | | UKCA |
| 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 icir on the lens!) Storage temperature -20 85 °C (-4 185 °F) 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) Degree of protection IP67 Material Housing PC/ABS | • | | cULus Listed, General Purpose, Class 2 Power Source, Type 1 enclosure |
| Ambient conditions Operating temperature O 60 °C (32 140 °F), -20 60 °C (-4 140 °F) (noncondensing; prevent icir on the lens!) Storage temperature -20 85 °C (-4 185 °F) 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) Degree of protection IP67 Material Housing PC/ABS | ., | | |
| Operating temperature O 60 °C (32 140 °F), -20 60 °C (-4 140 °F) (noncondensing; prevent icir on the lens!) Storage temperature -20 85 °C (-4 185 °F) 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) Degree of protection IP67 Material Housing PC/ABS | | | ., , , , , , , , , , , , , , , , , , , |
| 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) Degree of protection IP67 Material Housing PC/ABS | Operating temperature | | $0 \dots 60 ^{\circ}\text{C} (32 \dots 140 ^{\circ}\text{F}) , \; \; \text{-20} \dots 60 ^{\circ}\text{C} (\text{-4} \dots 140 ^{\circ}\text{F}) (\text{noncondensing; prevent icing on the lens!})$ |
| 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) Degree of protection IP67 Material Housing PC/ABS | Storage temperature | | -20 85 °C (-4 185 °F) |
| 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) Degree of protection IP67 Material Housing PC/ABS | • , | | |
| 5-pin, M12x1 socket, A-coded (bus out/termination) 5-pin, M12x1 connector, A-coded (bus in) Degree of protection IP67 Material Housing PC/ABS | · · · · · · · · · · · · · · · · · · · | | |
| Material Housing PC/ABS | Connection type | | 5-pin, M12x1 socket, A-coded (bus out/termination) |
| 3 | | | IP67 |
| Maga | Housing | | PC/ABS |
| iviass approx. 200 g | Mass | | approx. 200 g |

| Dimensions | | |
|------------|-------|--|
| Height | 70 mm | |
| Width | 70 mm | |
| Depth | 50 mm | |

Connection





Connection Assignment



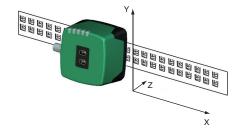


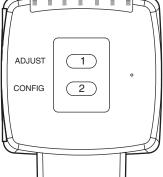


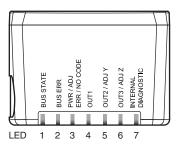


Characteristic Curve

Coordinates







Additional Information

General

The PCV... 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 PCV... reading head allows visual function check and fast diagnosis with 7 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 | Yellow | BUS STATE | CANopen communication active |
| 2 | Red | BUS ERR | CANopen communication Error |
| 3 | Green/red | PWR/ADJ ERR/NO CODE | Code recognized/not recognized, Error |
| 4 | Yellow | OUT1 | Output 1, configuration |
| 5 | Yellow | OUT2/ADJ Y | Output 2, Alignment aid Y |
| 6 | Yellow | OUT3/ADJ Z | Output 3, Alignment aid Z |
| 7 | red/green/yellow | INTERNAL DIAGNOSTICS | Internal diagnostics |

External parameterization

For external parameterization you require the parameterization code as Data Matrix with the desired reading head parameters. Data Matrix code cards for step-by-step external parameterization are printed in the reading heads operating instructions.

Parameterization is only possible within 10 minutes of switching on the reading head. If a button is pressed after 10 minutes subsequent to switching on, there is visual signaling via the LEDs (LED1, yellow/LED2, red/LED3, green/LED4, yellow/LED5, yellow/LED6, yellow flash for 2 seconds)

- The switchover from normal operation to parameterization mode is via button 2 on the reverse of the reading head. Button 2 must be pressed
 for more than 2 seconds. LED4 now flashes.
 - **Note:**Parameterization mode automatically ends after 1 minute of inactivity. The reading head returns to normal operation and works with unchanged settings.
- Place the parameterization code in the view of the camera module. After recognition of the parameterization code, the green LED3 lights up
 for 1s. In the event of an invalid parameterization code, the red LED3 lights up for 2 s.
- A short press on button 2 ends the parameterization mode and the changed parameters are not stored volatile in the reading head.

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 too small, the yellow LED6 lights up. If the distance of the camera to the code band too large, the yellow LED6 lights up. Within the target range, the yellow LED6 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 LED5 lights up. If the optical axis is too high, the yellow LED5 extinguishes. Within the target range, the yellow LED5 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.