

# O5D152



## Laser distance sensor

O5DLCNKG/US



- 1: setting pushbuttons  
2: alphanumeric display 3-digit  
3: Tightening torque < 2 Nm when using a mounting screw M5

Receiver in upper lens  
transmitter in lower lens



### Product characteristics

|                        |             |
|------------------------|-------------|
| Type of light          | red light   |
| Laser protection class | 1           |
| Housing                | rectangular |

### Application

|        |                        |
|--------|------------------------|
| System | Background suppression |
|--------|------------------------|

### Electrical data

|                             |      |            |
|-----------------------------|------|------------|
| Operating voltage           | [V]  | 10...30 DC |
| Current consumption         | [mA] | 75; (24 V) |
| Protection class            |      | III        |
| Reverse polarity protection |      | yes        |
| Type of light               |      | red light  |
| Wave length                 | [nm] | 650        |
| Typ. lifetime               | [h]  | 50000      |

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| Inputs / outputs                    |       |                                                   |          |
|-------------------------------------|-------|---------------------------------------------------|----------|
| Number of inputs and outputs        |       | Number of digital outputs: 2                      |          |
| Outputs                             |       |                                                   |          |
| Total number of outputs             |       | 2                                                 |          |
| Electrical design                   |       | NPN                                               |          |
| Number of digital outputs           |       | 2                                                 |          |
| Output function                     |       | normally open / closed; (complementary)           |          |
| Max. current load per output        | [mA]  | 100                                               |          |
| Switching frequency DC              | [Hz]  | 11                                                |          |
| Short-circuit protection            |       | yes                                               |          |
| Type of short-circuit protection    |       | yes (non-latching)                                |          |
| Overload protection                 |       | yes                                               |          |
| Monitoring range                    |       |                                                   |          |
| Max. light spot diameter            | [mm]  | 5                                                 |          |
| Light spot dimensions refer to      |       | 2 m                                               |          |
| Detection range hysteresis          | [%]   | < 4                                               |          |
| Note on monitoring range hysteresis |       | black 6 % remission                               |          |
| Background suppression available    |       | yes                                               |          |
| Background suppression              | [m]   | < 20                                              |          |
| Measuring/setting range             |       |                                                   |          |
| Measuring range                     | [m]   | 0.03...2                                          |          |
| Sampling rate                       | [Hz]  | 33                                                |          |
| Interfaces                          |       |                                                   |          |
| Communication interface             |       | IO-Link                                           |          |
| Transmission type                   |       | COM2 (38,4 kBaud)                                 |          |
| IO-Link revision                    |       | 1.1                                               |          |
| SDCI standard                       |       | IEC 61131-9                                       |          |
| SIO mode                            |       | yes                                               |          |
| Process data binary                 |       | 2                                                 |          |
| Min. process cycle time             | [ms]  | 6.6                                               |          |
| Supported DeviceIDs                 |       | Type of operation                                 | DeviceID |
|                                     |       | default                                           | 372      |
| Operating conditions                |       |                                                   |          |
| Ambient temperature                 | [°C]  | -25...60                                          |          |
| Note on ambient temperature         |       | at ta < -10 °C warm-up is necessary, laser is off |          |
| Protection                          |       | IP 65; IP 67                                      |          |
| Max. immunity to extraneous light   | [klx] | 10; (on the object)                               |          |
| Tests / approvals                   |       |                                                   |          |
| EMC                                 |       | EN 60947-5-2                                      |          |
| Vibration resistance                |       | DIN EN 60068-2-6                                  |          |
| Shock resistance                    |       | DIN EN 60068-2-27                                 |          |

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|                           |              |                                                                                                                                     |
|---------------------------|--------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Laser protection class    | 1            |                                                                                                                                     |
| Notes on laser protection | Caution:     | Laser light                                                                                                                         |
|                           | laser class: | 1                                                                                                                                   |
|                           |              | EN / IEC60825-1:2007                                                                                                                |
|                           |              | EN / IEC60825-1:2014                                                                                                                |
|                           |              | Complies with 21 CFR 1040.10 except for conformance with IEC 60825-1 Ed. 3, as described in Laser Notice No. 56, dated May 8, 2019. |
| MTTF [years]              | 151          |                                                                                                                                     |

### Mechanical data

|                 |                                                                                                  |  |
|-----------------|--------------------------------------------------------------------------------------------------|--|
| Weight [g]      | 76.5                                                                                             |  |
| Housing         | rectangular                                                                                      |  |
| Dimensions [mm] | 56 x 18.2 x 46.8                                                                                 |  |
| Material        | housing: PA; Front framework: stainless steel;<br>operator interface: TPU (urethane); lens: PMMA |  |
| Lens alignment  | Side sensing                                                                                     |  |

### Displays / operating elements

|              |                  |                                    |
|--------------|------------------|------------------------------------|
| Display      | Switching status | LED, yellow Switching output PIN 4 |
|              | Power            | LED, green                         |
|              | Display          | alphanumeric display, 3-digit      |
| Display unit | cm               |                                    |

### Remarks

|               |        |
|---------------|--------|
| Pack quantity | 1 pcs. |
|---------------|--------|

### Electrical connection

Connector: 1 x M12; coding: A

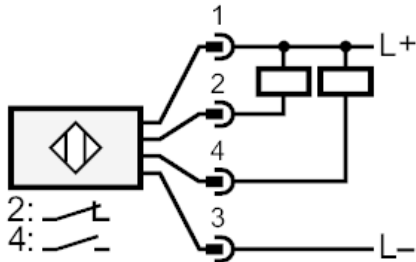




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Connection



4: OUT / IO-Link

Other data

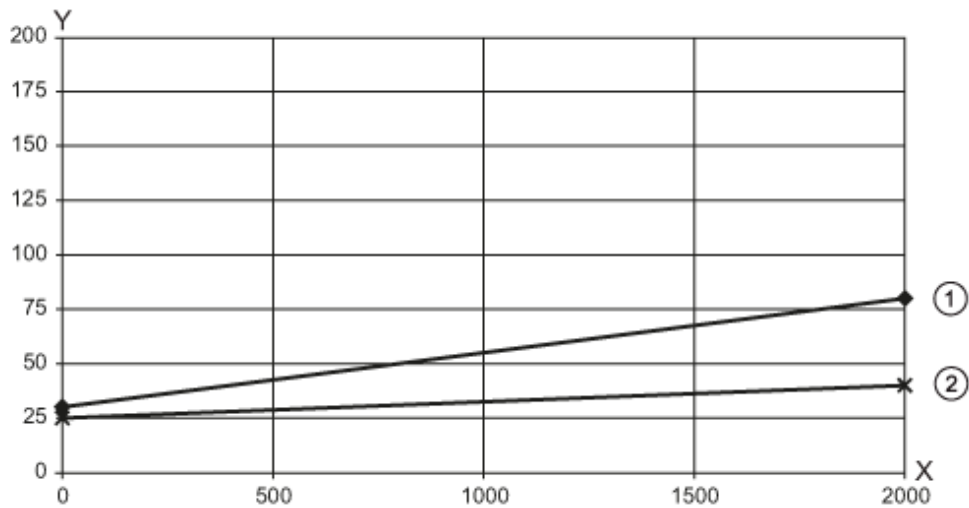
Accuracy

|          | Accuracy              |                        |  |  |
|----------|-----------------------|------------------------|--|--|
| distance | black (6 % remission) | white (90 % remission) |  |  |
| 0 mm     | ± 25 mm               | ± 25 mm                |  |  |
| 500 mm   | ± 25 mm               | ± 25 mm                |  |  |
| 1000 mm  | ± 25 mm               | ± 25 mm                |  |  |
| 1500 mm  | ± 40 mm               | ± 30 mm                |  |  |
| 2000 mm  | ± 50 mm               | ± 30 mm                |  |  |

Extraneous light on the object < 10 klx

Diagrams and graphs

Hysteresis graph



x: distance [mm]  
y: Hysteresis [mm]  
1 = background black 6 % remission  
2 = background white 90 % remission