

EN

OPT2170 OPT2171

High-Performance Distance Sensors



Interface Description

IO-Link OPT2170/OPT2171

Vendor ID

| Product | hex | dec | hex (Bytes) | dec (Bytes) |
|-----------------------|--------|-----|-------------|-------------|
| wenglor sensoric GmbH | 0x0057 | 87 | 00 57 | 0 87 |

Device ID

| Product | hex | dec | hex (Bytes) | dec (Bytes) |
|---------|----------|---------|-------------|-------------|
| OPT2170 | 0x3B0F1F | 3870495 | 3B 0F 1F | 59 15 31 |
| OPT2171 | 0x3B0F1F | 3870495 | 3B 0F 1F | 59 15 31 |

| | |
|--------------------------------------|--------|
| IO-Link Version: | V1.1 |
| Data Storage: | Yes |
| Blockparameter: | Yes |
| Min Cycle time: | 2,3 ms |
| SIO-Mode: | Ja |
| COM-Mode: | COM2 |
| ISDU: | No |
| Process data In (Device to Master): | 16 Bit |
| Process data Out (Master to Device): | — |

Process data (length: 16 Bit)

If Parameter "Processdatatype" = 0

| Subindex | Name | Bit Offset | Length | Range |
|----------|----------------------|------------|--------|-----------------------|
| 1 | A1 Output | 0 | 1 Bit | 0 = false 1 = true |
| 2 | A2 Output | 1 | 1 Bit | 0 = false 1 = true |
| 3 | Contamination Output | 2 | 1 Bit | 0 = false 1 = true |
| 4 | Error Output | 3 | 1 Bit | 0 = false 1 = true |
| 5 | Measured Value | 4...15 | Uint12 | 200...3000 mm |

Octet 0

| Subindex | 5 | | | | | | | |
|------------|----|----|----|----|----|----|---|---|
| Bit Offset | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 |

Octet 1

| Subindex | 5 | | | | 4 | 3 | 2 | 1 |
|------------|---|---|---|---|---|---|---|---|
| Bit Offset | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |

| | |
|-----------------------|------------------|
| Measured Value = 0 mm | Object too close |
| 4 093 mm | Laser off |
| 4 094 mm | Object too far |
| 4 095 mm | No signal |

If Parameter "Processdatatype" = 1

| Subindex | Name | Bit Offset | Length | Range |
|----------|----------------|------------|--------|---------------|
| 1 | Measured Value | 0...11 | 12 Bit | 200...3000 mm |

Octet 0

| Subindex | 0 | | | | 1 (MSB) | | | |
|------------|----|----|----|----|---------|----|---|---|
| Bit Offset | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 |

Octet 1

| Subindex | 1 (LSB) | | | | | | | |
|------------|---------|---|---|---|---|---|---|---|
| Bit Offset | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |

| | |
|-----------------------|------------------|
| Measured Value = 0 mm | Object too close |
| 4 093 mm | Laser off |
| 4 094 mm | Object too far |
| 4 095 mm | No signal |

Parameter

| Name | Index (hex) | Index (dec) | Sub-index | R/W | Datatype | Data Storage | dynamic | modify others | Default value | Range |
|---|-------------|-------------|-----------|-----|----------------|--------------|---------|---------------|----------------------------------|--|
| Identification | | | | | | | | | | |
| Vendor Name | 0x0010 | 16 | 0 | R | String | | | | wenglor sensoric GmbH | |
| Vendor Text | 0x0011 | 17 | 0 | R | String | | | | the innovative family | |
| Product Name | 0x0012 | 18 | 0 | R | String | | | | OPT217x | |
| Product ID | 0x0013 | 19 | 0 | R | String | | | | OPT217x | |
| Product Text | 0x0014 | 20 | 0 | R | String | | | | High-Performance Distance Sensor | |
| Serial Number | 0x0015 | 21 | 0 | R | String | | | | — | |
| Hardware Revision | 0x0016 | 22 | 0 | R | String | | | | — | |
| Firmware Revision | 0x0017 | 23 | 0 | R | String | | | | — | |
| Application Specific Tag | 0x0018 | 24 | 0 | R/W | String 32 Byte | X | | | *** | |
| Parameter Device Settings | | | | | | | | | | |
| System Command | 0x0002 | 2 | 0 | W | UInt8 | | | X | — | Factory Reset = 0x82 (130) |
| Device Access Locks.Parameter (write) Access Lock | 0x000C | 12 | 1 | R/W | Bool | X | | | 0 | 0 = unlocked 1 = Parameter Access locked |
| Device Access Locks.Data Storage Lock | 0x000C | 12 | 2 | R/W | Bool | X | | | 0 | 0 = unlocked 1 = Data Storage Locked |
| Device Access Locks.Local Parameterization | 0x000C | 12 | 3 | R/W | Bool | X | | | 0 | 0 = unlocked 1 = Local Parameterization locked |
| Mesasured Value Settings | | | | | | | | | | |
| Processdatatype | 0x005A | 90 | 0 | R/W | UInt8 | X | | X | 0 = Outputs and Measured Value | 0 = Outputs and Measured Value 1 = Measured Value only |
| Emitted Light | 0x00E0 | 224 | 0 | R/W | UInt8 | X | | | 0 | 0 = On 1 = Off |
| Pin Function | | | | | | | | | | |
| E/A1 Pin Function | 0x0040 | 64 | 0 | R/W | UInt8 | X | | X | 0 = Switching Output | 0 = Switching Output 1 = Error Output 2 = Contamination Output 3 = Emitted Light Disengageable 4 = Extern Teach |
| E/A2 Pin Function | 0x0041 | 65 | 0 | R/W | UInt8 | X | | X | 0 = Switching Output | 0 = Switching Output 1 = Error Output 2 = Contamination Output 3 = Emitted Light Disengageable 4 = Extern Teach 6 = Antivalent Switching Output |
| E3 Pin Function | 0x0042 | 66 | 0 | R/W | UInt8 | X | | X | 3 = Emitted Light Disengageable | 0 = Disabled 3 = Emitted Light Disengageable 4 = Extern Teach |
| A1 (Switching Output) | | | | | | | | | | |
| A1_Teach_in | 0x0200 | 512 | 0 | W | UInt8 | | | X | — | 1 = Do Teach |
| A1 Teach Mode | 0x0290 | 656 | 0 | W | UInt8 | X | | X | 0 = Foreground Teach-in | 0 = Foreground Teach-in 1 = Background Teach-in 2 = Window Teach-in |
| A1 Switch Point | 0x0270 | 624 | 0 | R/W | UInt16 | X | | | 3000 mm | 200...3000 mm |
| A1 Window Near | 0x0271 | 625 | 0 | R/W | UInt16 | X | | | 30 mm | 1..500 mm |
| A1 Window Far | 0x0272 | 626 | 0 | R/W | UInt16 | X | | | 30 mm | 1..500 mm |
| A1_Hysteresis | 0x0300 | 768 | 0 | R/W | UInt16 | X | | | 15 mm | 15...500mm |
| A1 ON Delay | 0x0050 | 80 | 0 | R/W | UInt16 | X | | | 0 ms | 0...10000 ms |
| A1 OFF Delay | 0x0060 | 96 | 0 | R/W | UInt16 | X | | | 0 ms | 0...10000 ms |
| A1 NO/NC | 0x0210 | 528 | 0 | R/W | UInt8 | X | | | 0 = Normally open | 0 = Normally open 1 = Normally closed |
| A1 NPN/PNP | 0x0220 | 544 | 0 | R/W | UInt8 | X | | | OPT2170: 0 OPT2171: 1 | 0 = PNP 1 = NPN 2 = Pushpull |

| Name | Index (hex) | Index (dec) | Sub-index | R/W | Datatype | Data Storage | dynamic | modify others | Default value | Range |
|--|-------------|-------------|-----------|-----|----------|--------------|---------|---------------|--------------------------|---|
| A1 (Error or Contamination Output) | | | | | | | | | | |
| A1 ON Delay | 0x0050 | 80 | 0 | R/W | Uint16 | X | | | 0 ms | 0...10000 ms |
| A1 OFF Delay | 0x0060 | 96 | 0 | R/W | Uint16 | X | | | 0 ms | 0...10000 ms |
| A1 NO/NC | 0x0210 | 528 | 0 | R/W | Uint8 | X | | | 0 = Normally open | 0 = Normally open 1 = Normally closed |
| A1 NPN/PNP | 0x0220 | 544 | 0 | R/W | Uint8 | X | | | OPT2170: 0 OPT2171: 1 | 0 = PNP 1 = NPN 2 = Pushpull |
| E1 (Teach Input or Emitted Light) | | | | | | | | | | |
| E1 Input Ub active/inactive | 0x0260 | 608 | 0 | R/W | Uint8.. | X | | | 0 | 0 = Ub active 1 = Ub inactive |
| A2 (Switching Output) | | | | | | | | | | |
| A2 Teach_in | 0x0201 | 513 | 0 | W | Uint8 | | | X | — | 1 = Do Teach |
| A2 Teach Mode | 0x0291 | 657 | 0 | R/W | Uint8 | X | | X | 0 = Foreground Teach-in | 0 = Foreground Teach-in 1 = Background Teach-in 2 = Window Teach-in |
| A2 Switch Point | 0x0280 | 640 | 0 | R/W | Uint16 | X | | X | 3000 mm | 200...3000 mm |
| A2 Window Near | 0x0281 | 641 | 0 | R/W | Uint16 | X | | | 30 mm | 1...500 mm |
| A2 Window Far | 0x0282 | 642 | 0 | R/W | Uint16 | X | | | 30 mm | 1...500 mm |
| A2 Hysteresis | 0x0301 | 769 | 0 | R/W | Uint16 | X | | | 15 mm | 15...500mm |
| A2 ON Delay | 0x0051 | 81 | 0 | R/W | Uint16 | X | | | 0 ms | 0...10000 ms |
| A2 OFF Delay | 0x0061 | 97 | 0 | R/W | Uint16 | X | | | 0 ms | 0...10000 ms |
| A2 NO/NC | 0x0211 | 529 | 0 | R/W | Uint8 | X | | | 0 = Normally open | 0 = Normally open 1 = Normally closed |
| A2 NPN/PNP | 0x0221 | 545 | 0 | R/W | Uint8 | X | | | OPT2170: 0 OPT2171: 1 | 0 = PNP 1 = NPN 2 = Pushpull |
| A2 (Error or Contamination Output) | | | | | | | | | | |
| A2 ON Delay | 0x0051 | 81 | 0 | R/W | Uint16 | X | | | 0 ms | 0...10000 ms |
| A2 OFF Delay | 0x0061 | 97 | 0 | R/W | Uint16 | X | | | 0 ms | 0...10000 ms |
| A2 NO/NC | 0x0211 | 529 | 0 | R/W | Uint8 | X | | | 0 = Normally open | 0 = Normally open 1 = Normally closed |
| A2 NPN/PNP | 0x0221 | 545 | 0 | R/W | Uint8 | X | | | OPT2170: 0 OPT2171: 1 | 0 = PNP 1 = NPN 2 = Pushpull |
| E2 (Teach Input or Emitted Light Disengageable) | | | | | | | | | | |
| E2 Input Ub active/inactive | 0x0261 | 609 | 0 | R/W | Uint8 | X | | | 0 | 0 = Ub active 1 = Ub inactive |
| E3 | | | | | | | | | | |
| E3 Input Ub active/inactive | 0x0262 | 610 | 0 | R/W | Uint8 | X | | | 0 | 0 = Ub active 1 = Ub inactive |
| Device Test | | | | | | | | | | |
| Test Mode | 0x0310 | 784 | 0 | R/W | Uint8 | | X | | 0 | 0 = Aus 1 = An |
| Test Output A1 | 0x0317 | 791 | 0 | R/W | Uint8 | | X | | 0 | 0 = Aus 1 = An |
| Test Output A2 | 0x0311 | 785 | 0 | R/W | Uint8 | | X | | 0 | 0 = Aus 1 = An |
| Test Input E2 | 0x0313 | 787 | 0 | R | Uint8 | | X | | 0 | 0 = Aus 1 = An |
| Test Input E3 | 0x0318 | 792 | 0 | R | Uint8 | | X | | 0 | 0 = Aus 1 = An |
| Test Error | 0x0314 | 788 | 0 | R/W | Uint8 | | X | | 0 | 0 = Aus 1 = An |
| Test Contamination | 0x0315 | 789 | 0 | R/W | Uint8 | | X | | 0 | 0 = Aus 1 = An |
| Test Distance | 0x0316 | 790 | 0 | R/W | Uint16 | | X | | 1000 | 200...3000 mm |