## IO-Link data table

### GENERAL INFORMATION

| | |
|---|---|
| Communication mode IO-Link | COM 2 |
| Min. cycle time | 2.3 ms |
| SIO mode | Supported |
| Length process data | 8 Bit |
| Vendor ID | 297 (0x0129) |
| Device ID | 125 (0x00007D) |
| Data storage | Supported |
| Specification IO-Link | 1.1 |

### PROCESS DATA PROFILE 0: SWITCHING OUTPUTS

| Byte 0 | | | | | | | | Byte 1 | | | | | | | | Byte 2 | | | | | | | | Byte 3 | | | | | | | | Byte 4 | | | | | | | | Byte 5 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| x | x | x | x | x | x | x | x | x | x | x | x | Quality MSB D11 | D10 | D9 | D8 | D7 | D6 | D5 | D4 | D3 | D2 | D1 | Quality LSB D0 | x | x | x | x | x | x | x | Q quality | x | x | x | x | x | x | x | x | x | Q5 | Q4 | Q3 | Q2 | Q1 | Q0 | Q1 |

Signal quality [0...100%]
Switching quality
Switching outputs

### PROCESS DATA PROFILE 1:COLOR VALUES

| Byte 0 | | | | | | | | Byte 1 | | | | | | | | Byte 2 | | | | | | | | Byte 3 | | | | | | | | Byte 4 | | | | | | | | Byte 5 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| Energy MSB D11 | D10 | D9 | D8 | D7 | D6 | D5 | D4 | D3 | D2 | D1 | Energy LSB D0 | Blue MSB D11 | D10 | D9 | D8 | D7 | D6 | D5 | D4 | D3 | D2 | D1 | Blue LSB D0 | Green MSB D11 | D10 | D9 | D8 | D7 | D6 | D5 | D4 | D3 | D2 | D1 | Green LSB D0 | Red MSB D11 | D10 | D9 | D8 | D7 | D6 | D5 | D4 | D3 | D2 | D1 | Red LSB D0 |

Energy [0...4095]
Ratio blue [0...4095]
Ratio green [0...4095]
Ratio red [0...4095]

### IDENTIFICATION DATA

| Index (dec/hex) | Access(1) | Data type | Length | Sub-index | Default value | Value Range | Object Name | Description |
|---|---|---|---|---|---|---|---|---|
| 16 / 0x10 | R | StringT | 64 Bytes | 0 | Schneider Electric | - | Vendor Name | The vendor name that is assigned to a Vendor ID |
| 17 / 0x11 | R | StringT | 64 Bytes | 0 | Life Is On | - | Vendor Text | Additional information about the vendor. |
| 18 / 0x12 | R | StringT | 64 Bytes | 0 | XUKCBLAYM12 | - | Product Name | Complete product name. |
| 19 / 0x13 | R | StringT | 64 Bytes | 0 | XUKCBLAYM12 | - | Product ID | Vendor-specific product or type identification (e.g., item number or model number). |
| 20 / 0x14 | R | StringT | 64 Bytes | 0 | PHOTO COMPACT COLOR IOL M12 | - | Product Text | The parameter Product Text contains additional product information for the device. |
| 21 / 0x15 | R | StringT | 16 Bytes | 0 | - | - | Serial Number | Unique, vendor-specific identifier of the individual device. |
| 22 / 0x16 | R | StringT | 64 Bytes | 0 | - | - | Hardware Revision | Unique, vendor-specific identifier of the hardware revision of the individual device (For example: HW-V1.0). |
| 23 / 0x17 | R | StringT | 64 Bytes | 0 | - | - | Firmware Revision | Unique, vendor-specific identifier of the firmware revision of the individual device (For example: FW-V1.0). |

### SYSTEM COMMAND

| Index (dec/hex) | Access(1) | Data type | Length | Sub-index | Default value | Value Range | Object Name | Description |
|---|---|---|---|---|---|---|---|---|
| 2 / 0x02 | W | UIntegerT | 8 Bit | 0 | - | 160 = Emitter OFF<br>161 = Emitter ON<br>162 = Reset switching-channel<br>175 = Detect sensor<br>128 = Device Reset<br>130 = Restore Factory Settings | System command | 160: Led emission OFF to test if the sensor output switches ON (or OFF if set in NC)<br>161: Led emission ON which is the normal sensor usage<br>162: Reset of current switching channel<br>175: Select the way to identify the sensor using their LEDs<br>1x activated - sensor flashes 60 s<br>2x activated - permanent flashing<br>3x activated - stop permanent flashing<br>128: Shutdown sensor with 200ms delay / Restart the sensor<br>130: Restore factory settings |

(1) R = Read / W = Write


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Telemecanique Sensors

## DIRECT PARAMETERS

| Index (dec/hex) | Access(1) | Data type | Length | Sub-index | Default value | Value Range | Object Name | Description |
|---|---|---|---|---|---|---|---|---|
| 0 / 0x00 | R/W | UIntegerT | 128 Bit | 0 | - | - | Direct Parameters - Page 1 | Contain the required parameters defining the communication characteristics and identifiers for device validation. |
| | R | UIntegerT | 8 Bit | 1 | - | - | Reserved | - |
| | | | 8 Bit | 2 | - | - | Master Cycle Time | Communication: Current communication cycle duration used by the master. This value defines the process data cycle. |
| | | | 8 Bit | 3 | - | - | Min Cycle Time | Communication: Minimum communication cycle duration supported by the device. This value defines the lowest possible process data cycle. |
| | | | 8 Bit | 4 | - | - | M-Sequence Capability | Communication: Information on the structure and the supported features of the communication messages. |
| | | | 8 Bit | 5 | 17 | - | IO-Link Revision ID | Communication: Revision Identification for the currently used communication protocol revision. |
| | | | 8 Bit | 6 | - | - | Process Data Input Length | Communication: Information on Length and characteristics of the process input data (Process Data from Device to Master). |
| | | | 8 Bit | 7 | - | - | Process Data Output Length | Communication: Information on Length of the process output data (Process Data from Master to Device). |
| | | | 8 Bit | 8 | - | - | Vendor ID 1 | Identification: Highest byte of the Vendor ID. Combined with the parameter Vendor ID 2, this parameter defines the 16-bit value of the unique Vendor ID as assigned by the IO-Link Community. |
| | | | 8 Bit | 9 | - | - | Vendor ID 2 | Identification: Lowest byte of the Vendor ID. Combined with the parameter Vendor ID 1, this parameter defines the 16-bit value of the unique Vendor ID as assigned by the IO-Link Community. |
| | | | 8 Bit | 10 | - | - | Device ID 1 | Identification: Highest byte of the Device ID. Combined with the parameters Device ID 2 and 3, this parameter defines the 24-bit value of the vendorspecific Device ID. |
| | | | 8 Bit | 11 | - | - | Device ID 2 | Identification: Middle byte of the Device ID. Combined with the parameters Device ID 1 and 3, this parameter defines the 24-bit value of the vendorspecific Device ID. |
| | | | 8 Bit | 12 | - | - | Device ID 3 | Identification: Lowest byte of the Device ID. Combined with the parameters Device ID 1 and 2, this parameter defines the 24-bit value of the vendorspecific Device ID. |
| | | | 8 Bit | 13 | - | - | Reserved | - |
| | | | 8 Bit | 14 | - | - | Reserved | - |
| | | | 8 Bit | 15 | - | - | Reserved | - |
| | W | UIntegerT | 8 Bit | 16 | - | - | System Command | Application: Command interface for devices without ISDU support. Validity and execution of commands are not confirmed. |

## DETECTION PARAMETERS (1/2)

| Index (dec/hex) | Access(1) | Data type | Length | Sub-index | Default value | Value Range | Object Name | Description |
|---|---|---|---|---|---|---|---|---|
| System Command | | | | | | | | |
| 2 / 0x02 | W | UIntegerT | 8 Bit | 0 | - | 208 = Teach Apply<br>209 = Single value teach<br>215 = Color scan start<br>216 = Color scan stop<br>223 = Teach cancel | System command | 208: Adopt teach values on sensor<br>209: Teaches the color seen at this moment<br>215 and 216: Detects all colors taught during the scan<br>223: Before applying the teach (using the value 208) it's possible to cancel it |
| Parameter | | | | | | | | |
| 128 / 0x80 | R/W | UIntegerT | 96 Bit | 0 | - | - | Color Tolerances C1 | C1 color tolerance setting |
| | | | 16 Bit | 1 | 1365 | 0...4095 | Ratio red | Defines the amount of color present in the target. Ratio blue = 4095 - red - green. |
| | | | 16 Bit | 2 | 1365 | 0...4095 | Ratio green | Defines the amount of color present in the target. Ratio blue = 4095 - red - green. |
| | | | 16 Bit | 3 | 4095 | 0...4095 | Energy | Defines the Energy tolerance. Energy replaces blue in the RGB colour space. The advantage of this is that the energy correction can be applied across the entire working range. This means that the sensor will emit the same colour value when you move your target within the working range. |
| | | | 16 Bit | 4 | 65 | 0...4095 | Red tolerance | Defines the tolerance of the percentage of color present |
| | | | 16 Bit | 5 | 65 | 0...4095 | Green tolerance | Defines the tolerance of the percentage of color present |
| | | | 16 Bit | 6 | 75 | 0...4095 | Energy tolerance | Defines the tolerance of the Energy |
| 129 / 0x81 | R/W | UIntegerT | 96 Bit | 0 | - | - | Color Tolerances C2 | C2 color tolerance setting |
| | | | 16 Bit | 1 | 1365 | 0...4095 | Ratio red | Defines the amount of color present in the target. Ratio blue = 4095 - red - green. |
| | | | 16 Bit | 2 | 1365 | 0...4095 | Ratio green | Defines the amount of color present in the target. Ratio blue = 4095 - red - green. |
| | | | 16 Bit | 3 | 4095 | 0...4095 | Energy | Defines the Energy tolerance. Energy replaces blue in the RGB colour space. The advantage of this is that the energy correction can be applied across the entire working range. This means that the sensor will emit the same colour value when you move your target within the working range. |
| | | | 16 Bit | 4 | 65 | 0...4095 | Red tolerance | Defines the tolerance of the percentage of color present |
| | | | 16 Bit | 5 | 65 | 0...4095 | Green tolerance | Defines the tolerance of the percentage of color present |
| | | | 16 Bit | 6 | 75 | 0...4095 | Energy tolerance | Defines the tolerance of the Energy |
| 130 / 0x82 | R/W | UIntegerT | 96 Bit | 0 | - | - | Color Tolerances C3 | C3 color tolerance setting |
| | | | 16 Bit | 1 | 1365 | 0...4095 | Ratio red | Defines the amount of color present in the target. Ratio blue = 4095 - red - green. |
| | | | 16 Bit | 2 | 1365 | 0...4095 | Ratio green | Defines the amount of color present in the target. Ratio blue = 4095 - red - green. |
| | | | 16 Bit | 3 | 4095 | 0...4095 | Energy | Defines the Energy tolerance. Energy replaces blue in the RGB colour space. The advantage of this is that the energy correction can be applied across the entire working range. This means that the sensor will emit the same colour value when you move your target within the working range. |
| | | | 16 Bit | 4 | 65 | 0...4095 | Red tolerance | Defines the tolerance of the percentage of color present |
| | | | 16 Bit | 5 | 65 | 0...4095 | Green tolerance | Defines the tolerance of the percentage of color present |
| | | | 16 Bit | 6 | 75 | 0...4095 | Energy tolerance | Defines the tolerance of the Energy |
| 131 / 0x83 | R/W | UIntegerT | 96 Bit | 0 | - | - | Color Tolerances C4 | C4 color tolerance setting |
| | | | 16 Bit | 1 | 1365 | 0...4095 | Ratio red | Defines the amount of color present in the target. Ratio blue = 4095 - red - green. |
| | | | 16 Bit | 2 | 1365 | 0...4095 | Ratio green | Defines the amount of color present in the target. Ratio blue = 4095 - red - green. |
| | | | 16 Bit | 3 | 4095 | 0...4095 | Energy | Defines the Energy tolerance. Energy replaces blue in the RGB colour space. The advantage of this is that the energy correction can be applied across the entire working range. This means that the sensor will emit the same colour value when you move your target within the working range. |
| | | | 16 Bit | 4 | 65 | 0...4095 | Red tolerance | Defines the tolerance of the percentage of color present |
| | | | 16 Bit | 5 | 65 | 0...4095 | Green tolerance | Defines the tolerance of the percentage of color present |
| | | | 16 Bit | 6 | 75 | 0...4095 | Energy tolerance | Defines the tolerance of the Energy |

*(1)* R = Read / W = Write

## DETECTION PARAMETERS (2/2)

| Index (dec/hex) | Access(1) | Data type | Length | Sub-index | Default value | Value Range | Object Name | Description |
|---|---|---|---|---|---|---|---|---|
| Parameter | | | | | | | | |
| 132 / 0x84 | R/W | UIntegerT | 96 Bit | 0 | - | - | Color Tolerances C5 | C5 color tolerance setting |
| | | | 16 Bit | 1 | 1365 | 0...4095 | Ratio red | Defines the amount of color present in the target. Ratio blue = 4095 - red - green. |
| | | | 16 Bit | 2 | 1365 | 0...4095 | Ratio green | Defines the amount of color present in the target. Ratio blue = 4095 - red - green. |
| | | | 16 Bit | 3 | 4095 | 0...4095 | Energy | Defines the Energy tolerance. Energy replaces blue in the RGB colour space. The advantage of this is that the energy correction can be applied across the entire working range. This means that the sensor will emit the same colour value when you move your target within the working range. |
| | | | 16 Bit | 4 | 65 | 0...4095 | Red tolerance | Defines the tolerance of the percentage of color present |
| | | | 16 Bit | 5 | 65 | 0...4095 | Green tolerance | Defines the tolerance of the percentage of color present |
| | | | 16 Bit | 6 | 75 | 0...4095 | Energy tolerance | Defines the tolerance of the Energy |
| 133 / 0x85 | R/W | UIntegerT | 96 Bit | 0 | - | - | Color Tolerances C6 | C6 color tolerance setting |
| | | | 16 Bit | 1 | 1365 | 0...4095 | Ratio red | Defines the amount of color present in the target. Ratio blue = 4095 - red - green. |
| | | | 16 Bit | 2 | 1365 | 0...4095 | Ratio green | Defines the amount of color present in the target. Ratio blue = 4095 - red - green. |
| | | | 16 Bit | 3 | 4095 | 0...4095 | Energy | Defines the Energy tolerance. Energy replaces blue in the RGB colour space. The advantage of this is that the energy correction can be applied across the entire working range. This means that the sensor will emit the same colour value when you move your target within the working range. |
| | | | 16 Bit | 4 | 65 | 0...4095 | Red tolerance | Defines the tolerance of the percentage of color present |
| | | | 16 Bit | 5 | 65 | 0...4095 | Green tolerance | Defines the tolerance of the percentage of color present |
| | | | 16 Bit | 6 | 75 | 0...4095 | Energy tolerance | Defines the tolerance of the Energy |
| 134 / 0x86 | R/W | UIntegerT | 96 Bit | 0 | - | - | Color Tolerances C7 | C7 color tolerance setting |
| | | | 16 Bit | 1 | 1365 | 0...4095 | Ratio red | Defines the amount of color present in the target. Ratio blue = 4095 - red - green. |
| | | | 16 Bit | 2 | 1365 | 0...4095 | Ratio green | Defines the amount of color present in the target. Ratio blue = 4095 - red - green. |
| | | | 16 Bit | 3 | 4095 | 0...4095 | Energy | Defines the Energy tolerance. Energy replaces blue in the RGB colour space. The advantage of this is that the energy correction can be applied across the entire working range. This means that the sensor will emit the same colour value when you move your target within the working range. |
| | | | 16 Bit | 4 | 65 | 0...4095 | Red tolerance | Defines the tolerance of the percentage of color present |
| | | | 16 Bit | 5 | 65 | 0...4095 | Green tolerance | Defines the tolerance of the percentage of color present |
| | | | 16 Bit | 6 | 75 | 0...4095 | Energy tolerance | Defines the tolerance of the Energy |
| 177 / 0xB1 | R/W | Record | 8 Bit | 0 | 0 | 0 = Color mode,<br>1 = Best fit | Detection mode | Select the detection mode |
| 196 / 0xC4 | R/W | UIntegerT | 8 Bit | 1 | 0 | 10...90 | Signal quality level | This value indicates the level at which the signal quality bit changes state. If the signal quality is lower than the signal quality level, the quality bit in the process data is set. |
| 204 / 0xCC | R | UIntegerT | 8 Bit | 0 | - | - | Teach-in-status | The parameter "Teach-in Status" provides feedback on the status and the results of the teach-in process |
| | | UIntegerT | 4 Bit | 1 | 0 | 0 = Idle,<br>1 = Teach successful,<br>2 = Teach successful,<br>3 = Teach successful,<br>4 = Wait for command,<br>5 = Busy,<br>7 = Error | Teach status | Indicates the status of the teach-in process |
| | | Boolean | 1 Bit | 2 | 0 | false = -,<br>true = Teach successful | Teach flag SP1 -> TP1 | Teach flag for SP1 TP1 |
| | | Boolean | 1 Bit | 3 | 0 | false = -,<br>true = Teach successful | Teach flag SP1 -> TP2 | Teach flag for SP1 TP2 |
| | | Boolean | 1 Bit | 4 | 0 | false = -,<br>true = Teach successful | Teach flag SP2 -> TP1 | Teach flag for SP2 TP1 |
| | | Boolean | 1 Bit | 5 | 0 | false = -,<br>true = Teach successful | Teach flag SP2 -> TP2 | Teach flag for SP2 TP2 |

## DATA PARAMETERS

| Index (dec/hex) | Access(1) | Data type | Length | Sub-index | Default value | Value Range | Object Name | Description |
|---|---|---|---|---|---|---|---|---|
| 82 / 0x52 | R | UIntegerT | 40 Bit | 0 | - | - | Temperature | The following parameters indicate different operating temperatures |
| | | | 8 Bit | 1 | - | - | Operating temperature | Read the current operating temperature |
| | | | 8 Bit | 2 | - | - | Max. operating temperature since restart | Read the maximum operating temperature recorded since last restart |
| | | | 8 Bit | 3 | - | - | Min. operating temperature since restart | Read the minimum operating temperature recorded since last restart |
| | | | 8 Bit | 4 | - | - | Max. lifetime temperature | Read the maximum operating temperature recorded since the first usage |
| | | | 8 Bit | 5 | - | - | Min. lifetime temperature | Read the minimum operating temperature recorded since the first usage |
| 88 / 0x58 | R | UIntegerT | 64 Bit | 0 | - | - | Operating data | The 2 following parameters indicate the operating hours counter and the switch cycle counter. |
| | | | 32 Bit | 1 | - | - | Counter operating hours | Number of operating hours. The data can be only read; no reset possible |
| | | | 32 Bit | 2 | - | - | Counter switch cycle | Number of output change status (On & Off) |
| 95 / 0x5F | R | StringT | 424 Bit | 0 | - | - | Electronic data sheet | Sensor datasheet |
| | | | 11 Bytes | 1 | 20 ... 150 mm | - | Measurement range | Read the sensor nominal sensing distance |
| | | | 10 Bytes | 2 | LED, white | - | Type of light and laser class | Type of emited light |
| | | | 8 Bytes | 3 | <= 60 mA | - | No-load current | Read the sensor nominal no-load current |
| | | | 8 Bytes | 4 | <= 3 kHz | - | Switching frequency | Read the sensor nominal switching frequency |
| | | | 5 Bytes | 5 | - | - | Warm-up time | Not applicable |
| | | | 11 Bytes | 6 | -20...55 °C | - | Ambient temperature | Read the sensor nominal operating temperature |
| 207 / 0xCF | R | UIntegerT | 9 Bit | 1 | - | 0...100 | Current signal quality | Indicates the signal quality value from the process data |

*(1)* R = Read / W = Write

## FUNCTION PARAMETERS

| Index (dec/hex) | Access(1) | Data type | Length | Sub-index | Default value | Value Range | Object Name | Description |
|---|---|---|---|---|---|---|---|---|
| 12 / 0x0C | R/W | Boolean | 16 Bit | 0 | - | - | Device Access Locks | The access to the device parameters can be restricted by setting appropriate flags within this parameter. |
| | | | | 1 | 0 | false = Unlocked, true = Locked | Parameter Write Access | This lock prevents the write access to all read/write parameters of the device except for the parameter 'Device Access Locks'. |
| | | | | 2 | 0 | false = Unlocked, true = Locked | Data Storage | This lock prevents the write access to the device parameters via the data storage mechanism. |
| | | | | 3 | - | - | Local Parameterization | This lock prevents the device settings from being changed via local operating elements on the device. (subindex access not supported) |
| | | | | 4 | 0 | false = Unlocked, true = Locked | Local User Interface | This lock prevents the access to the device settings and display via a local user interface. The user interface is disabled. |
| 24 / 0x18 | R/W | StringT | 32 Bytes | 0 | "***...***" | - | Application-specific Tag | Possibility to mark a device with user- or application-specific information. |
| 202 / 0xCA | R/W | UIntegerT | 8 Bit | 0 | 0 | 0 = Switching Channel, 1 = Color Values | Processdata profile | Select the Processdata profile |
| 203 / 0xCB | R/W | UIntegerT | 8 Bit | 0 | - | - | Switching output Teach-In | - |
| | | | 8 Bit | 1 | 1 | 0 = Q1, 1 = Q1, 2 = Q2, 3 = Q3, 4 = Q4, 5 = Q5, 6 = Q6, 7 = Q7 | Teach channel | Select switching output Teach-In |
| 224 / 0xE0 | R/W | UIntegerT | 16 Bit | 0 | - | - | Display | Display settings |
| | | | 8 Bit | 1 | 1 | 0 = Screensaver OFF, 1 = Screensaver ON | Screensaver | Enable or disable screen saver |
| | | | 8 Bit | 2 | 1 | 0 = Display read from back, 1 = Display read from front | Rotate display | Select display reading |

## OUTPUT PARAMETERS (1/3)

| Index (dec/hex) | Access(1) | Data type | Length | Sub-index | Default value | Value Range | Object Name | Description |
|---|---|---|---|---|---|---|---|---|
| System Command | | | | | | | | |
| 2 / 0x02 | W | UIntegerT | 8 Bit | 0 | - | 169 = Trigger Input Pin<br>170 = Trigger ON<br>171 = Trigger OFF | System command | To test function set Q2 as trigger input |
| Parameter | | | | | | | | |
| 96 / 0x60 | R/W | UIntegerT | 104 Bit | 0 | - | - | Color C1 at output Q1 | Settings of Q1 color at output Q1 |
| | | | 8 Bit | 1 | 3 | 0 = Finest tolerance level, 1 = 2nd tolerance level, 2 = 3rd tolerance level, 3 = 4th tolerance level, 4 = 5th tolerance level, 5 = 6th tolerance level, 6 = 7th tolerance level, 7 = 8th tolerance level, 8 = Roughest tolerance level | Tolerance | Define the level of the tolerance |
| | | | 8 Bit | 2 | 0 | 0 = NO, 1 = NC | NO / NC | The parameter "NO / NC" defines whether the switching information is transmitted in inverted or not inverted manner. Select the output function between NO (Normally Open) and NC (Normally Closed). |
| | | | 8 Bit | 3 | 0 | 0 = Disable, 1 = Output | Function switching output | Select the function switching output or disable |
| | | | 8 Bit | 4 | 1 | 0 = Off, 1 = On | Energy evaluation | Enable or disable the energy evaluation |
| | | | 16 Bit | 5 | 0 | 0...65535 | Counter | Switching only every nth defined cycle |
| | | | 16 Bit | 6 | 0 | 0...65535 | On-delay | In ms, adjustable in 1 ms |
| | | | 16 Bit | 7 | 0 | 0...65535 | Off-delay | In ms, adjustable in 1 ms |
| | | | 16 Bit | 8 | 0 | 0...65535 | Impulse (one shot) | In ms, adjustable in 1 ms |
| | | | 8 Bit | 9 | 0 | 0 = Not connected, 1 = Combine with color C4, 2 = Exclude with color C4 | Connect colors | Select color connection |

*(1)* R = Read / W = Write

| OUTPUT PARAMETERS (2/3) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Index (dec/hex) | Access(1) | Data type | Length | Sub-index | Default value | Value Range | Object Name | Description |
| 97 / 0x61 | R/W | UIntegerT | 104 Bit | 0 | - | - | Color C2 at output Q2 | Settings of Q2 color at output Q2 |
| | | | 8 Bit | 1 | 3 | 0 = Finest tolerance level, 1 = 2nd tolerance level, 2 = 3rd tolerance level, 3 = 4th tolerance level, 4 = 5th tolerance level, 5 = 6th tolerance level, 6 = 7th tolerance level, 7 = 8th tolerance level, 8 = Roughest tolerance level | Tolerance | Define the level of the tolerance |
| | | | 8 Bit | 2 | 0 | 0 = NO, 1 = NC | NO / NC | The parameter "NO / NC" defines whether the switching information is transmitted in inverted or not inverted manner. Select the output function between NO (Normally Open) and NC (Normally Closed). |
| | | | 8 Bit | 3 | 0 | 0 = Disable, 1 = Output, 3 = Input (Trigger) | Function switching output | Select the function switching output or disable |
| | | | 8 Bit | 4 | 1 | 0 = Off, 1 = On | Energy evaluation | Enable or disable the energy evaluation |
| | | | 16 Bit | 5 | 0 | 0...65535 | Counter | Switching only every nth defined cycle |
| | | | 16 Bit | 6 | 0 | 0...65535 | On-delay | In ms, adjustable in 1 ms |
| | | | 16 Bit | 7 | 0 | 0...65535 | Off-delay | In ms, adjustable in 1 ms |
| | | | 16 Bit | 8 | 0 | 0...65535 | Impulse (one shot) | In ms, adjustable in 1 ms |
| | | | 8 Bit | 9 | 0 | 0 = Not connected, 1 = Combine with color C5, 2 = Exclude with color C5 | Connect colors | Select color connection |
| 98 / 0x62 | R/W | UIntegerT | 104 Bit | 0 | - | - | Color C3 at output Q3 | Settings of Q3 color at output Q3 |
| | | | 8 Bit | 1 | 3 | 0 = Finest tolerance level, 1 = 2nd tolerance level, 2 = 3rd tolerance level, 3 = 4th tolerance level, 4 = 5th tolerance level, 5 = 6th tolerance level, 6 = 7th tolerance level, 7 = 8th tolerance level, 8 = Roughest tolerance level | Tolerance | Define the level of the tolerance |
| | | | 8 Bit | 2 | 0 | 0 = NO, 1 = NC | NO / NC | The parameter "NO / NC" defines whether the switching information is transmitted in inverted or not inverted manner. Select the output function between NO (Normally Open) and NC (Normally Closed). |
| | | | 8 Bit | 3 | 0 | 0 = Disable, 1 = Output, 2 = Input (KeyLock) | Function switching output | Select the function switching output or disable |
| | | | 8 Bit | 4 | 1 | 0 = Off, 1 = On | Energy evaluation | Enable or disable the energy evaluation |
| | | | 16 Bit | 5 | 0 | 0...65535 | Counter | Switches only every nth cycle |
| | | | 16 Bit | 6 | 0 | 0...65535 | On-delay | In ms, adjustable in 1 ms |
| | | | 16 Bit | 7 | 0 | 0...65535 | Off-delay | In ms, adjustable in 1 ms |
| | | | 16 Bit | 8 | 0 | 0...65535 | Impulse (one shot) | In ms, adjustable in 1 ms |
| | | | 8 Bit | 9 | 0 | 0 = Not connected, 1 = Combine with color C6, 2 = Exclude with color C6 | Connect colors | Select color connection |
| 99 / 0x63 | R/W | UIntegerT | 32 Bit | 0 | - | - | Color C4 at virtual output Q4 | Settings of Q4 color at virtual output Q4 |
| | | | 8 Bit | 1 | 3 | 0 = Finest tolerance level, 1 = 2nd tolerance level, 2 = 3rd tolerance level, 3 = 4th tolerance level, 4 = 5th tolerance level, 5 = 6th tolerance level, 6 = 7th tolerance level, 7 = 8th tolerance level, 8 = Roughest tolerance level | Tolerance | Define the level of the tolerance |
| | | | 8 Bit | 2 | 0 | 0 = NO, 1 = NC | NO / NC | The parameter "NO / NC" defines whether the switching information is transmitted in inverted or not inverted manner. Select the output function between NO (Normally Open) and NC (Normally Closed). |
| | | | 8 Bit | 3 | 0 | 0 = Disable, 1 = Output | Function switching output | Select the function switching output or disable |
| | | | 8 Bit | 4 | 1 | 0 = Off, 1 = On | Energy evaluation | Enable or disable the energy evaluation |

*(1)* R = Read / W = Write

## OUTPUT PARAMETERS (3/3)

| Index (dec/hex) | Access(1) | Data type | Length | Sub-index | Default value | Value Range | Object Name | Description |
|---|---|---|---|---|---|---|---|---|
| 100 / 0x64 | R/W | UIntegerT | 32 Bit | 0 | - | - | Color C5 at virtual output Q5 | Settings of Q5 color at virtual output Q5 |
| | | | 8 Bit | 1 | 3 | 0 = Finest tolerance level, 1 = 2nd tolerance level, 2 = 3rd tolerance level, 3 = 4th tolerance level, 4 = 5th tolerance level, 5 = 6th tolerance level, 6 = 7th tolerance level, 7 = 8th tolerance level, 8 = Roughest tolerance level | Tolerance | Define the level of the tolerance |
| | | | 8 Bit | 2 | 0 | 0 = NO, 1 = NC | NO / NC | The parameter "NO / NC" defines whether the switching information is transmitted in inverted or not inverted manner. Select the output function between NO (Normally Open) and NC (Normally Closed). |
| | | | 8 Bit | 3 | 0 | 0 = Disable, 1 = Output | Function switching output | Select the function switching output or disable |
| | | | 8 Bit | 4 | 1 | 0 = Off, 1 = On | Energy evaluation | Enable or disable the energy evaluation |
| 101 / 0x65 | R/W | UIntegerT | 32 Bit | 0 | - | - | Color C6 at virtual output Q6 | Settings of Q6 color at virtual output Q6 |
| | | | 8 Bit | 1 | 3 | 0 = Finest tolerance level, 1 = 2nd tolerance level, 2 = 3rd tolerance level, 3 = 4th tolerance level, 4 = 5th tolerance level, 5 = 6th tolerance level, 6 = 7th tolerance level, 7 = 8th tolerance level, 8 = Roughest tolerance level | Tolerance | Define the level of the tolerance |
| | | | 8 Bit | 2 | 0 | 0 = NO, 1 = NC | NO / NC | The parameter "NO / NC" defines whether the switching information is transmitted in inverted or not inverted manner. Select the output function between NO (Normally Open) and NC (Normally Closed). |
| | | | 8 Bit | 3 | 0 | 0 = Disable, 1 = Output | Function switching output | Select the function switching output or disable |
| | | | 8 Bit | 4 | 1 | 0 = Off, 1 = On | Energy evaluation | Enable or disable the energy evaluation |
| 102 / 0x66 | R/W | UIntegerT | 32 Bit | 0 | - | - | Color C7 at virtual output Q7 | Settings of Q7 color at virtual output Q7 |
| | | | 8 Bit | 1 | 3 | 0 = Finest tolerance level, 1 = 2nd tolerance level, 2 = 3rd tolerance level, 3 = 4th tolerance level, 4 = 5th tolerance level, 5 = 6th tolerance level, 6 = 7th tolerance level, 7 = 8th tolerance level, 8 = Roughest tolerance level | Tolerance | Define the level of the tolerance |
| | | | 8 Bit | 2 | 0 | 0 = NO, 1 = NC | NO / NC | The parameter "NO / NC" defines whether the switching information is transmitted in inverted or not inverted manner. Select the output function between NO (Normally Open) and NC (Normally Closed). |
| | | | 8 Bit | 3 | 0 | 0 = Disable, 1 = Output | Function switching output | Select the function switching output or disable |
| | | | 8 Bit | 4 | 1 | 0 = Off, 1 = On | Energy evaluation | Enable or disable the energy evaluation |
| 176 / 0xB0 | R/W | UIntegerT | 24 Bit | 0 | - | - | Function Q all | Settings for all Q outputs |
| | | | 8 Bit | 1 | 1 | 0 = NPN, 1 = PNP, 2 = Auto | PNP / NPN | Define the output function type of the sensor (NPN / Auto / PNP). |
| | | | 8 Bit | 2 | 1 | 0 = 3 Hz, 1 = 30 Hz, 2 = 100 Hz, 3 =300 Hz, 4 = 500 Hz, 5 = 1500 Hz, 6 = 3000 Hz | Swichting frequency/ Averaging | Select the function swichting frequency / Averaging |
| | | | 8 Bit | 3 | 0 | 0 = Disable, 1 = Enable | Binary output | Enable or disable the binary output |

## EVENTS

| Code (dec/hex) | Warning | Name | Description |
|---|---|---|---|
| 20480 / 0x5000 | Error | Device hardware fault | Exchange device |
| 16384 / 0x4000 | Error | Temperature fault | Overload |
| 16912 / 0x4210 | Warning | Device temperature overrun | Clear source of heat |
| 16928 / 0x4220 | Warning | Device temperature underrun | Insulate device |

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