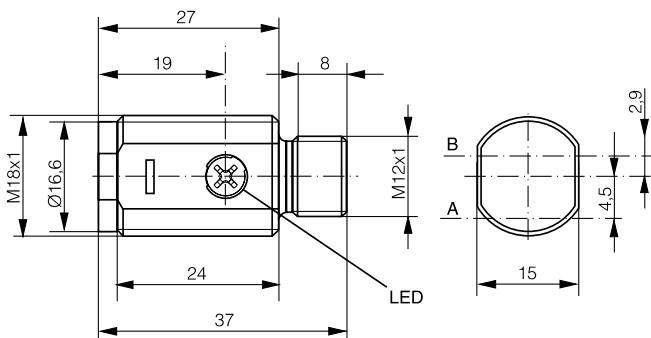
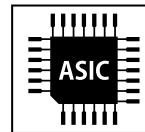


250 mm

- ✓ M18 short housing
- ✓ IO-Link
- ✓ Excellent black/white behavior
- ✓ Immunity to mutual interferences



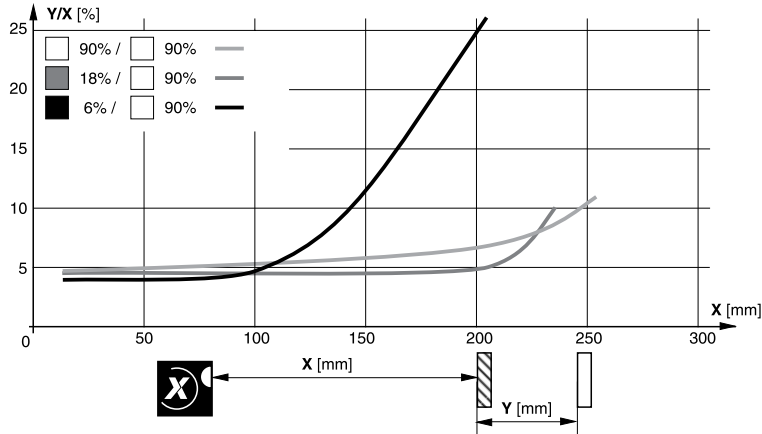
A: emitter axis B: receiver axis

| OPTICAL DATA | | INTERFACE | |
|------------------------------|----------------------------|-----------------|--------------------------|
| Sensing distance | 110% S_d | Output on pin 4 | SIO Selectable / IO-Link |
| Operating distance (S_d) | 10 ... 250 mm ¹ | Output on pin 2 | SIO Selectable |
| Sensitivity adjustment | 20 ... 250 mm | Output Polarity | PNP |
| Light source | Pinpoint LED, red 640 nm | IO-Link | ✓ |
| Light spot size (distance) | Ø 6 mm (100 mm) | MTTF (@40°C) | TBD |

¹Object with 90% reflectance (standard white paper)

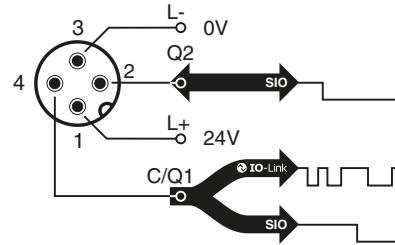
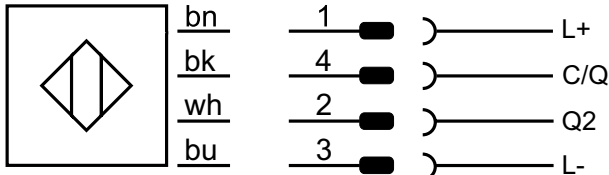
| ELECTRICAL DATA | | MECHANICAL DATA | |
|--------------------------------|----------------------------------|-------------------------------|---------------------|
| Supply voltage range (U_B) | 10 ... 30 VDC | Enclosure rating | IP67 |
| Residual ripple | ≤ 10% V_{pp} | Ambient temperature operation | -25 ... +65°C |
| Output current | ≤ 200 mA | Shock and vibration | IEC 60947-5-2 |
| Signal PNP high/low | ≤ (U_B -2.0 V)/approx. 0 V | Weight (connector version) | 14 g |
| Power consumption (no load) | ≤ 25 mA | Housing material | Stainless steel V2A |
| Response time | ≤ 1 ms | Window material | PMMA |
| SIO Switching frequency | ≤ 500 Hz | Connector type | M12 4-pin |
| Short circuit protection | ✓ | Max tightening torque | 20 Nm |
| Voltage reversal protection | ✓ | | |
| Cable length max. | ≤ 20 m (IO-Link) / ≤ 300 m (SIO) | | |

BACKGROUND SHIFT



WIRING DIAGRAM

PIN ASSIGNMENT



| IO-LINK CHARACTERISTICS | VALUE FOR ISHR-M18MP-NMS-A0 |
|-------------------------|------------------------------|
| Vendor ID | 0156 _n |
| Device ID | A0501 _n |
| IO-Link Protocol | 1.1 |
| SIO-Mode | Supported |
| Process data | 1 byte input / 1 byte output |
| Baudrate | COM2 (38.4 kBaud) |
| Minimum cycle time | 4 ms |



IODD files may be downloaded from
<https://www.contrinex.com/en-ch/collections/smart-photoelectric-basic>
 Select the product name to display the product page with corresponding downloads.
 Alternatively, just click/scan the QR code on the left.

AVAILABLE TYPES

| Part number | Part reference | Operating range | Switching Frequency SIO |
|-------------|-------------------|-----------------|-------------------------|
| 620-600-483 | ISHR-M18MP-NMS-A0 | 10...250mm | ≤ 500 Hz |

Note: additional suffix can appear to indicate a revision version or a special version.

Operators of the products we supply are responsible for compliance with measures for the protection of persons. The use of our equipment in applications where the safety of persons might be at risk is only authorized if the operator observes and implements separate, appropriate and necessary measures for the protection of persons and machines. Terms of delivery and rights to change design reserved.

CONFIGURATION PARAMETER (IO-LINK / SIO MODE)

| Index | Sub Hex | Name | Access | Data Type | Value | Default |
|---|-----------------|-------------------------------|--------|---------------|--|-------------------|
| SYSTEM | | | | | | |
| 02 _h | 00 _h | System Command ⁽¹⁾ | W | uint8 | 80 _h = Device Reset 81 _h = Application Reset 83 _h = Back-To-Box 7E _h = Locator Start 7F _h = Locator Stop 05 _h = ParamDownloadStore 40 _h = Teach Apply 41 _h = Single Value Teach SP1 42 _h = Single Value Teach SP2 43 _h = Two Value Teach SP1 TP1 44 _h = Two Value Teach SP1 TP2 45 _h = Two Value Teach SP2 TP1 46 _h = Two Value Teach SP2 TP2 47 _h = Dynamic Teach SP1 Start 48 _h = Dynamic Teach SP1 Stop 49 _h = Dynamic Teach SP2 Start 4A _h = Dynamic Teach SP2 Stop 4F _h = Teach Cancel Abort | N/A |
| DATA STORAGE | | | | | | |
| 03 _h | 01 _h | DS_Command ⁽¹⁾ | R/W | uint8 | 00 _h : Reserved 01 _h : DS_UploadStart 02 _h : DS_UploadEnd 03 _h : DS_DownloadStart 04 _h : DS_DownloadEnd 05 _h : DS_Break 06 _h – FF _h : Reserved | N/A |
| | 02 _h | State_Property ⁽¹⁾ | R | uint8 | Bit 0: Reserved Bit 1 and 2: State of Data Storage (00 _h : Inactive, 01 _h : Upload, 02 _h : Download, 03 _h : Data Storage Locked) Bit 3 to 6: Reserved Bit 7: DS_UPLOAD_FLAG (00 _h : no DS_UPLOAD_ FLAG, 01 _h : DS_UPLOAD_REQ pending) | N/A |
| | 03 _h | Data_Storage_Size | R | uint32 | – | N/A |
| | 04 _h | Parameter_Checksum | R | uint32 | – | N/A |
| | 05 _h | Index_List | R | array of byte | – | N/A |
| PROFILE PARAMETER | | | | | | |
| 0D _h | – | Profile Characteristic | R | array | <ProfileID1>, <ProfileID2>, .. <FCID> (Type 2.7) (AdSS), 0x000E, 0x4000, 0x800C, 0x8011, 0x8012, 0x8101 | – |
| PD DESCRIPTOR | | | | | | |
| 0E _h | – | PD Input Descriptor | R | array | (Type 2.7) (AdSS) <DataType><TypeLength><Bit offset> – [01] _h [08] _h [00] _h | – |
| 0F _h | – | PD Output Descriptor | R | array | (Type 2.7) (AdSS) <DataType><TypeLength><Bit offset> [01] _h [01] _h [00] _h [02] _h [07] _h [01] _h | – |
| FUNCTION CLASS – IDENTIFICATION (8000_h) | | | | | | |
| 10 _h | – | Vendor Name | R | char [16] | “Contrinex AG” | – |
| 11 _h | – | Vendor Text | R | char [32] | “www.contrinex.com” | – |
| 12 _h | – | Product Name | R | char [32] | ISHR-M18MP-NMS-A0 | – |
| 13 _h | – | Product ID | R | char [16] | 620-600-483 | – |
| 14 _h | – | Product Text | R | char [32] | AdSS photoelectric sensor | – |
| 15 _h | – | Serial Number | R | char [16] | 123456 | – |
| 16 _h | – | Hardware Revision | R | char [16] | 1.0.0 | – |
| 17 _h | – | Firmware Revision | R | char [16] | 1.0.0 | – |
| 18 _h | – | Application Specific Tag | R/W | char [32] | <user string, 32 bytes (variable length)> | <vendor specific> |

⁽¹⁾This parameter is stored in a volatile memory

FUNCTION & LOCATION TAG

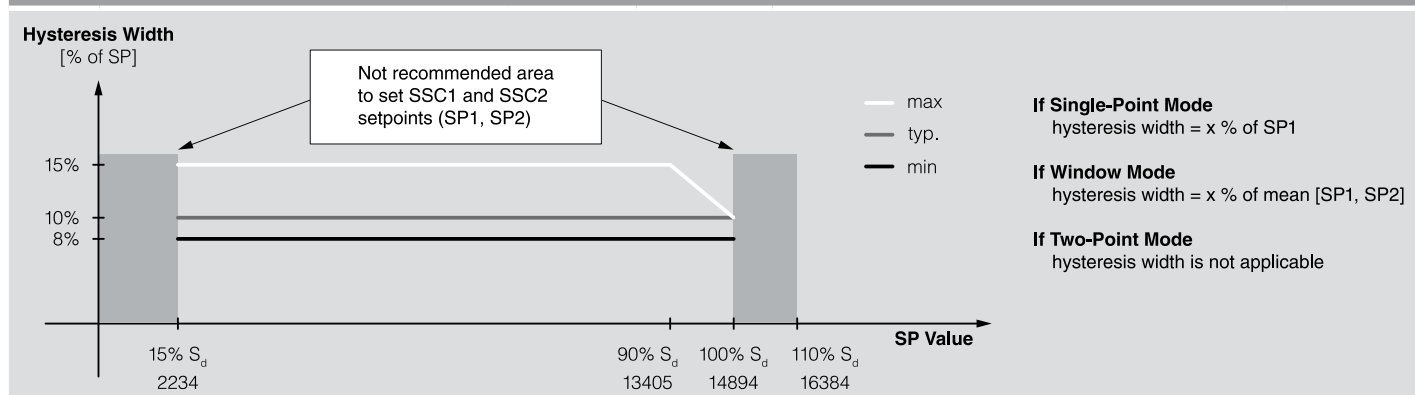
| | | | | | | |
|---|-----------------|---------------------------------------|-----|-----------|---|----------------------|
| 19 _h | – | Function Tag | R/W | char [32] | <user string, 32 bytes (variable length)> | *** |
| 1A _h | – | Location Tag | R/W | char [32] | <user string, 32 bytes (variable length)> | *** |
| FUNCTION CLASS – DIAGNOSIS (8003_h) | | | | | | |
| 24 _h | 00 _h | Device Status ⁽¹⁾ | R | uint8 | 0 = Device is OK, 1 = Maintenance required, 2 = Out of specification, 3 = Functional check, 4 = Failure, 5 ... 255 Reserved | – |
| 25 _h | 00 _h | Detailed Device Status ⁽¹⁾ | R | array | 1800 _h / EMC disturbance 1801 _h / Under IOL voltage 1803 _h / Short circuit 1804 _h / Under voltage 1805 _h / Disturbances on receiver 1806 _h / LED regulation limit 180C _h / Temperature limit | – |
| FUNCTION CLASS – TEACH-IN CHANNEL SELECT (8004_h) | | | | | | |
| 3A _h | – | Teach Select ⁽¹⁾ | R/W | uint8 | 00 _h : Default (SSC1) 01 _h : SSC1 02 _h : SSC2 FF _h : ALL | 00 _h |
| FUNCTION CLASS – TEACH STATUS (8007_h TO 8009_h) | | | | | | |
| 3B _h | 01 _h | Teach State ⁽¹⁾ | R | bool[4] | 0 _h = IDLE 1 _h = SP1 SUCCESS 2 _h = SP2 SUCCESS 3 _h = SP12 SUCCESS 4 _h = WAIT FOR COMMAND 5 _h = BUSY 6 _h = Reserved 7 _h = ERROR 8 _h ...11 _h = Reserved 12 _h ...15 _h = Vendor specific | 00 _h |
| | 02 _h | Flag SP1 → TP1 ⁽¹⁾ | R | bool | 00 _h : Teach point not taught or not successful 01 _h : Teach point successfully taught | 00 _h |
| | 03 _h | Flag SP1 → TP2 ⁽¹⁾ | R | bool | 00 _h : Teach point not taught or not successful 01 _h : Teach point successfully taught | 00 _h |
| | 04 _h | Flag SP2 → TP1 ⁽¹⁾ | R | bool | 00 _h : Teach point not taught or not successful 01 _h : Teach point successfully taught | 00 _h |
| | 05 _h | Flag SP2 → TP2 ⁽¹⁾ | R | bool | 00 _h : Teach point not taught or not successful 01 _h : Teach point successfully taught | 00 _h |
| SCU – SENSOR CONFIGURATION UNIT | | | | | | |
| 40 _h | 01 _h | Sensor Startup Time | R/W | uint16 | 0 ... 65535 ms | 0000 _h |
| | 02 _h | Sensor Mode | R/W | uint8 | 00 _h : Fast 02 _h : Medium 24 _h : Fine | 00 _h |
| SSC1 PARAMETER | | | | | | |
| 3C _h | 01 _h | Setpoint 1 | R/W | uint32 | Recommended value: (2234 ... 14894 = 15% S _d to 100% S _d) | 100% S _d |
| | 02 _h | Setpoint 2 | R/W | uint32 | Recommended value: (2234 ... 14894 = 15% S _d to 100% S _d), but must be lower than Setpoint 1. N/A if Single-Point mode is selected. | 0% S _d |
| SSC1 CONFIGURATION | | | | | | |
| 3D _h | 01 _h | Logic | R/W | uint8 | 00 _h : High active 01 _h : Low active | 00 _h |
| | 02 _h | Mode | R/W | uint8 | 00 _h : Deactivated 01 _h : Single Point 02 _h : Window Mode 03 _h : Two Points | 01 _h |
| | 03 _h | Hysteresis Width | R/W | uint32 | 0 ... 16383 (e.g. If SSC1 Configuration Mode = Single Point, SP1 = 50% S _d = 7447, Hysteresis Width = 10% of SP = 745) | 8% of S _d |
| | 04 _h | Hysteresis Selection | R/W | uint8 | 0 = User Hysteresis 1 = Internal Hysteresis | |

⁽¹⁾ This parameter is stored in a volatile memory

| SSC2 PARAMETER | | | | | | |
|-----------------|-----------------|------------|-----|--------|---|--------------------|
| 3E _h | 01 _h | Setpoint 1 | R/W | uint32 | Recommended value: (2234 ... 14894 = 15% S _d to 100% S _d) | 80% S _d |
| | 02 _h | Setpoint 2 | R/W | uint32 | Recommended value: (2234...14894 = 15% S _d to 100% S _d), but must be lower than Setpoint 1. N/A if Single-Point mode is selected. | 0% S _d |

| SSC2 CONFIGURATION | | | | | | |
|--------------------|-----------------|----------------------|-----|--------|--|----------------------|
| 3F _h | 01 _h | Logic | R/W | uint8 | 00 _h : High active 01 _h : Low active | 00 _h |
| | 02 _h | Mode | R/W | uint8 | 00 _h : Deactivated 01 _h : Single Point 02 _h : Window Mode 03 _h : Two Points | 01 _h |
| | 03 _h | Hysteresis Width | R/W | uint32 | 0 ... 16383 (e.g. If SSC1 Configuration Mode = Single Point, SP1 = 50% S _d = 7447, Hysteresis Width = 10% of SP = 745) | 8% of S _d |
| | 04 _h | Hysteresis Selection | R/W | uint8 | 0 = User Hysteresis 1 = Internal Hysteresis | |

HYSTERESIS WIDTH RECOMMENDED BY CONTRINEX



| OSS CONFIGURATION | | | | | | |
|-------------------|-----------------|--|-----|-------|---|-----------------|
| 42 _h | 01 _h | OSS1 Logic – Sensor Physical Output 1 Logic (PIN4) when used in SIO mode | R/W | uint8 | 0 = OUTPUT: High active (NO) 1 = OUTPUT: Low active (NC) 2 = OUTPUT: ON 3 = OUTPUT: OFF | 00 _h |
| | 02 _h | OSS2 Logic – Sensor Physical Output 2 Logic (PIN2) when used in SIO mode | R/W | uint8 | 0 = OUTPUT: High active (NO) 1 = OUTPUT: Low active (NC) 2 = OUTPUT: ON 3 = OUTPUT: OFF 4 = INPUT 5 = INPUT-TRIGGER Single Value Teach | 00 _h |
| | 03 _h | OSS1 Condition – Sensor Physical Output 1 Condition (PIN4) when used in SIO mode | R/W | uint8 | 0 = OSS1_A1 1 = OSS1_A1 AND OSS1_A2 2 = OSS1_A1 OR OSS1_A2 3 = OSS1_A1 XOR OSS1_A2 | 00 _h |
| | 04 _h | OSS2 Condition – Sensor Physical Output 2 Condition (PIN2) when used in SIO mode | R/W | uint8 | 0 = OSS2_A1 1 = OSS2_A1 AND OSS2_A2 2 = OSS2_A1 OR OSS2_A2 3 = OSS2_A1 XOR OSS2_A2 | 00 _h |
| | 05 _h | OSS1 Source A1 – Sensor Physical Output 1 Souce A1 (PIN4) when used in SIO mode | R/W | uint8 | 0 = SSC1 1 = SSC2 2 = TSSP 3 = ALR1 4 = ALR2 5 = ALR3 6 = INPUT ⁽¹⁾ 7 = Not INPUT ⁽¹⁾ | 00 _h |

⁽¹⁾ Only available if OSS2 Logic = 4 = INPUT

| | | | | | | |
|----------------------------------|-----------------|--|-----|--------|--|-----------------------|
| | 06 _h | OSS1 Source A2 – Sensor Physical Output 1 Source A2 (PIN4) when used in SIO mode | R/W | uint8 | 0 = SSC1 1 = SSC2 2 = TSSP 3 = ALR1 4 = ALR2 5 = ALR3 6 = INPUT ⁽¹⁾ 7 = Not INPUT ⁽¹⁾ | 00 _h |
| | 07 _h | OSS2 Source A1 – Sensor Physical Output 2 Source A2 (PIN2) when used in SIO mode | R/W | uint8 | 0 = SSC1 1 = SSC2 2 = TSSP 3 = ALR1 4 = ALR2 5 = ALR3 | 00 _h |
| | 08 _h | OSS2 Source A2 – Sensor Physical Output 2 Source A2 (PIN2) when used in SIO mode | R/W | uint8 | 0 = SSC1 1 = SSC2 2 = TSSP 3 = ALR1 4 = ALR2 5 = ALR3 | 00 _h |
| TMU – SENSOR TIMER UNIT | | | | | | |
| 43 _h | 01 _h | Timer Mode | R/W | uint8 | 0 = No Timer 1 = Stretch ON 2 = Delay ON 3 = Delay and Stretch ON 4 = One Shot | 00 _h |
| | 02 _h | Timer Value | R/W | uint16 | 0 ... 65535 ms | 0000 _h |
| | 03 _h | Timer Source | R/W | uint8 | 0 = SSC1 1 = SSC2 2 = ALR1 3 = ALR2 4 = ALR3 | 00 _h |
| CTU – SENSOR COUNTER UNIT | | | | | | |
| 44 _h | 01 _h | Counter Mode | R/W | uint8 | 0 = Falling Edge 1 = Rising Edge 2 = Both | 00 _h |
| | 02 _h | Counter Value ⁽²⁾ | R/W | uint16 | 0 ... 65535 | 0000 _h |
| | 03 _h | Counter Source | R/W | uint8 | 0 = SSC1 1 = SSC2 2 = TSSP 3 = ALR1 4 = ALR2 5 = ALR3 | 00 _h |
| | 04 _h | Counter Reset Source | R/W | uint8 | 0 = ALR1 1 = ALR2 2 = ALR3 | 01 _h |
| SMU – SENSOR MONITOR UNIT | | | | | | |
| 46 _h | 01 _h | Current Temperature ⁽¹⁾ | R | uint16 | – | 0000 _h |
| | 02 _h | Max. Lifetime Temperature | R | uint16 | – | 0000 _h |
| | 03 _h | Min. Lifetime Temperature | R | uint16 | – | 0000 _h |
| | 04 _h | Lifetime Temperature Cycle Count | R | uint8 | – | 00 _h |
| | 05 _h | Lifetime Operating Hours | R | uint32 | – | 00000000 _h |
| | 06 _h | Lifetime Power-On Cycles | R | uint32 | – | 00000000 _h |
| | 07 _h | Lifetime EMC Disturbances | R | uint32 | – | 00000000 _h |
| | 08 _h | EVENT FLAG ⁽²⁾⁽³⁾ | R | uint8 | B1 Short circuit on output B2 EMC disturbances B3 Disturbances on receiver B4 LED regulation limit B5 Under voltage B6 Over temperature B7 Under temperature | 00 _h |

⁽¹⁾ Only available if OSS2 Logic = 4 = INPUT

⁽²⁾ This parameter is stored in a volatile memory

⁽³⁾ A read on this subindex clears all flags

SMAU – SENSOR MEASUREMENT ALARM UNIT

| | | | | | | |
|-----------------|-----------------|------------------------------|-----|--------|---|--------------------|
| 47 _h | 01 _h | Sensor Alarm 1 Threshold | R/W | uint16 | 0 ... 110% S _d | 10% S _d |
| | 02 _h | Sensor Alarm 1 Hysteresis | R/W | uint16 | – | 5% |
| | 03 _h | Sensor Alarm 1 Configuration | R/W | uint8 | 0 = Always OFF 1 = High Active 2 = High Active / IO-Link event generation | 00 _h |
| | 04 _h | Sensor Alarm 1 Source | R/W | uint8 | 0 = Distance 1 = Counter 2 = Temperature | 00 _h |
| | 05 _h | Sensor Alarm 2 Threshold | R/W | uint16 | 0 ... 65535 | 100 |
| | 06 _h | Sensor Alarm 2 Hysteresis | R/W | uint16 | – | 0000 _h |
| | 07 _h | Sensor Alarm 2 Configuration | R/W | uint8 | 0 = Always OFF 1 = High Active 2 = High Active / IO-Link event generation | 00 _h |
| | 08 _h | Sensor Alarm 2 Source | R/W | uint8 | 0 = Distance 1 = Counter 2 = Temperature | 01 _h |
| | 09 _h | Sensor Alarm 3 Threshold | R/W | uint16 | –25 ... 65°C | 65°C |
| | 10 _h | Sensor Alarm 3 Hysteresis | R/W | uint16 | – | 0000 _h |
| | 11 _h | Sensor Alarm 3 Configuration | R/W | uint8 | 0 = Always OFF 1 = High Active 2 = High Active / IO-Link event generation | 00 _h |
| | 12 _h | Sensor Alarm 3 Source | R/W | uint8 | 0 = Distance 1 = Counter 2 = Temperature | 02 _h |

DEVICE CHARACTERISTIC

| | | | | | | |
|-----------------|-----------------|---|---|---------|------------------------|---|
| 49 _h | 01 _h | Profile Compatibility | R | char [] | SSP 2.7 AdSS | – |
| | 02 _h | Detection Range Max. | R | char [] | Depends on sensor type | – |
| | 03 _h | Supply Voltage Range (U _b) | R | char [] | “10 ... 30 VDC” | – |
| | 04 _h | Max. Output Current | R | char [] | “≤ 200 mA” | – |
| | 05 _h | Ambient Temperature Range (T _A) | R | char [] | “–25 ... +65°C” | – |
| | 06 _h | Storage Temperature Range (T _S) | R | char [] | “–25 ... +65°C” | – |
| | 07 _h | Enclosure Rating | R | char [] | IP67 | – |

LEDC - LED CONFIGURATION

| | | | | | | |
|-----------------|-----------------|------------------------------|-----|-------|---|---|
| 4B _h | 01 _h | Yellow ON - SIO | R/W | uint8 | 0 = OSS1 1 = OSS2 2 = OSS1 or OSS2 3 = OFF | 0 |
| | 02 _h | Green ON - SIO | R/W | uint8 | 0 = POWER 1 = OFF | 0 |
| | 03 _h | Blinking Alarm - SIO | R/W | uint8 | 0 = ALR1 or ALR2 or ALR3 1 = OFF | 0 |
| | 04 _h | LED IO-Link | R/W | uint8 | 0 = Green STD IO-Link 1Hz 1 = Id mode Green 5Hz 2 = Same as SIO | 0 |
| | | Blinking Alarm Short-circuit | | | | |

SEM - SENSOR ECO MODE

| | | | | | | |
|-----------------|-----------------|--------------------------|-----|-------|--|---|
| 4C _h | 01 _h | SEM - selection | R/W | uint8 | 0 = Always OFF 1 = Active - state LED | 1 |
| | 02 _h | SEM - yellow LED | R/W | uint8 | 0 = Disabled 1 = Enabled | 1 |
| | 03 _h | SEM - green LED | R/W | uint8 | 0 = Disabled 1 = Enabled | 1 |
| | 04 _h | SEM - Emission Frequency | R/W | uint8 | 0 = Normal 1 = Middle 2 = Low | 0 |

FUNCTION CLASS – MDC DESCRIPTION PARAMETER (8005_h)

| | | | | | | |
|-------------------|-----------------|-------------|---|--------|---|---|
| 4080 _h | 01 _h | Lower Limit | R | int32 | Lower value measurement range, see range definition in table A.5. According to SSP ⁽¹⁾ , Table D.14 page 78. | 0 |
| | 02 _h | Upper Limit | R | int32 | Upper value measurement range, see range definition in table A.5. According to SSP ⁽¹⁾ , Table D.14 page 78. | 0 |
| | 03 _h | Unit Code | R | uint16 | See Unit table defined in table A.7. According to SSP ⁽¹⁾ , Table D.14 page 78. | 0 |
| | 04 _h | Scale | R | int8 | See Table B.2. According to SSP ⁽¹⁾ , Table D.14 page 78. | 0 |

⁽¹⁾ https://io-link.com/share/Downloads/Smart-Sensor-Profile/IOL-Smart-Sensor-Profile-2ndEd_V1.1_Sep2021.zip

PROCESS DATA REPRESENTATION

PROCESS DATA STRUCTURE

PROCESS DATA INPUT

Bitoffset

| Byte | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|------|------|------|------|-------|-------|------|------|------|
| 0 | ALR3 | ALR2 | ALR1 | OSSC2 | OSSC1 | TSSP | SSC2 | SSC1 |

| Name | Value | Description |
|------|-------|----------------------------------|
| ALR3 | 0 | Alarm 3 is OFF |
| | 1 | Alarm 3 is ON |
| ALR2 | 0 | Alarm 2 is OFF |
| | 1 | Alarm 2 is ON |
| ALR1 | 0 | Alarm 1 is OFF |
| | 1 | Alarm 1 is ON |
| OSS2 | 0 | Output switching signal 2 is OFF |
| | 1 | Output switching signal 2 is ON |
| OSS1 | 0 | Output switching signal 1 is OFF |
| | 1 | Output switching signal 1 is ON |
| TSSP | 0 | Timered selected signal is OFF |
| | 1 | Timered selected signal is ON |
| SSC2 | 0 | Switching signal 2 is OFF |
| | 1 | Switching signal 2 is ON |
| SSC1 | 0 | Switching signal 1 is OFF |
| | 1 | Switching signal 1 is ON |

PROCESS DATA OUTPUT

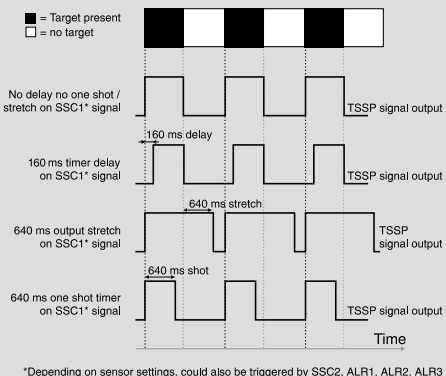
Bitoffset

| Byte | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|------|-----|---|---|---|---|---|---|-----|
| 0 | RFU | | | | | | | DIS |

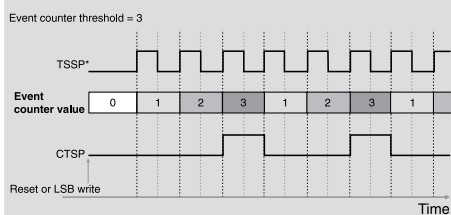
| Name | Value | Description |
|------|-------|--------------------|
| DIS | 0 | Sensor is enabled |
| | 1 | Sensor is disabled |

SMART SENSOR SIGNAL FLOWS

Sensor timer unit (TMU) parameter examples



Event counter (pulse divider) example



ERROR TYPES

| Code | Additional code | Name | Description |
|-----------------|-----------------|--|---|
| 80 _h | 11 _h | Index Not Available | Access occurs to a not existing index |
| 80 _h | 12 _h | Subindex Not Available | Access occurs to a not existing subindex |
| 80 _h | 20 _h | Service Temporarily Not Available | Parameter is not accessible due to the current state of the device application |
| 80 _h | 21 _h | Service Temporarily Not Available – Local Control | Parameter is not accessible due to an ongoing local operation at the device |
| 80 _h | 22 _h | Service Temporarily Not Available – Device Control | Parameter is not accessible due to a remote triggered state of the device application |
| 80 _h | 23 _h | Access Denied | Write access on a read-only parameter |
| 80 _h | 30 _h | Parameter Value Out Of Range | Written parameter value is outside its permitted value range |
| 80 _h | 31 _h | Parameter Value Above Limit | Written parameter value is above its specified value range |
| 80 _h | 32 _h | Parameter Value Below Limit | Written parameter value is below its specified value range |
| 80 _h | 33 _h | Parameter Length Overrun | Written parameter length is above its predefined length |
| 80 _h | 34 _h | Parameter Length Underrun | Written parameter length is below its predefined length |
| 80 _h | 35 _h | Function Not Available | Written command is not supported by the device application |
| 80 _h | 36 _h | Function temporarily Not Available | Written command is not available due to the current state of the device |
| 80 _h | 40 _h | Invalid Parameter Set | Written single parameter collides with other actual parameter settings |
| 80 _h | 41 _h | Inconsistent Parameter Set | Parameter inconsistencies were found at the end of the block parameter transfer, device plausibility check failed |
| 81 _h | 02 _h | OSS1 source not available | First select OSS2 Logic = INPUT |

EVENTS

| Code | Type | Name | Description |
|-------------------|--------------|--------------------------|---|
| 1800 _h | Warning | EMC Disturbances | EMC Disturbances detected by sensor |
| 1801 _h | Warning | Under IOL Voltage | Under IOL Voltage detected by sensor |
| 1803 _h | Warning | Short Circuit | Short Circuit detected by sensor |
| 1804 _h | Error | Under Voltage | Under Voltage detected by sensor |
| 1805 _h | Warning | Disturbances on Receiver | Disturbances on Receiver detected by sensor |
| 1806 _h | Warning | LED Regulation Limit | LED Regulation Limit detected by sensor |
| 1808 _h | Notification | Alarm 1 | Alarm 1 Threshold reached |
| 1809 _h | Notification | Alarm 2 | Alarm 2 Threshold reached |
| 180A _h | Notification | Alarm 3 | Alarm 3 Threshold reached |
| 180B _h | Notification | Trigger Teach | New SSC value is taught |
| 180C _h | Warning | Temperature Limit | Temperature limit reached |