



HT110L1.3/L6T-M12

50139843 DOC DS IO-Link HT110

| GENERAL INFORMATION | |
|----------------------------|---------------|
| Communication mode IO-Link | COM 2 |
| Min. cycle time | 2.3 ms |
| SIO mode | supported |
| Length process data | 16 Bit |
| Vendor ID | 338/0x0152 |
| Device ID | 2173/0x00087D |
| Data storage | supported |
| Specification IO-Link | 1.1 |

| PROCESS DATA | | | | | | | | | | | | | | | |
|---|----|----|----|----|----|----|--------|--------|---|---|---|---|----------------|---------------------------------|---------------------------------|
| SMART SENSOR PROFILE | | | | | | | | | | | | | | | |
| Byte 0 | | | | | | | | Byte 2 | | | | | | | |
| 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| MSB D7 | D6 | D5 | D4 | D3 | D2 | D1 | LSB D0 | X | X | X | X | X | Signal quality | Switching output Q ₂ | Switching output Q ₁ |
| Signal quality 0 ... 100 % | | | | | | | | | | | | | | | |
| Signal quality score - adjustable via index 0xC4 | | | | | | | | | | | | | | | |
| Switching output 2 - corresponds to Q ₂ in SIO-mode | | | | | | | | | | | | | | | |
| Switching output 1 - corresponds to switching output Q ₁ in SIO-mode | | | | | | | | | | | | | | | |

| IDENTIFICATION DATA | | | | | | |
|---------------------|--------|-----------|--------------|-------------------|--|-----------------------------|
| Index dec / hex | Access | Data type | Length | | Description | Comment |
| 16 / 0x10 | Read | String | Max. 64 Byte | | Vendor name | Leuze electronic GmbH+Ko.KG |
| 17 / 0x11 | | | | Vendor text | www.leuze.com | |
| 18 / 0x12 | | | | Product name | HT110L1.3/L6T-M12 | |
| 19 / 0x13 | | | | Product ID | 50138062 | |
| 20 / 0x14 | | | | Product text | 0 ... 5000 mm, Q ₁ , (Q ₂), IN, Auto / PNP / NPN, M12, 5-pin, 4-pin | |
| 23 / 0x17 | | | | Firmware revision | 1.0 | |

| SMART SENSOR PROFILE PARAMETER | | | | | | | | |
|--------------------------------|--------------|-----------|---------------|----------|---------------|------------|------------------|---|
| Index in dec / hex | Access | Data type | Length | Subindex | Default value | Range | Description | Comment |
| 12 / 0x0C | Read / write | Uint | 16 Bit | | 0x00 0x00 | D1, D3 | Lock functions | D1 - data storage lock D3 - local user interface lock |
| 24 / 0x18 | Read / write | StringT | 32 characters | | ****...**** | | Application text | Free text, e.g. item designation |
| 58 / 0x3A | Read / write | Uint | 8 Bit | | 0 | 0 ... 2 | Teach channel | 0/1 = switching channel 1 2 = switching channel 2 |
| 59 / 0x3B | Read | Uint | 8 Bit | | | | Teach-in status | |
| | | | | | | | | Define switching output Q ₁ |
| 60 / 0x3C | Read / write | Uint | 16 Bit | 1 | 3000 | 0 ... 5000 | Switchpoint 1 | Needed for single, window and two-point mode, indicated in mm |
| | | | | 2 | 3100 | 0 ... 5000 | Switchpoint 2 | Needed for window and two-point mode, indicated in mm |
| | | | | | | | | Set-up switching output Q ₁ |
| 61 / 0x3D | Read / write | Uint | 8 Bit | 1 | 0 | 0, 1 | NO / NC | 0 = NO, 1 = NC |
| | | | | 2 | 1 | 0 ... 3 | Switching mode | 0 - disable 1 - single-point mode 2 - window mode ¹⁾ 3 - two-point mode ¹⁾ |
| | | | 16 Bit | 3 | 0 | 0 | Hysteresis | Not adjustable |
| | | | | | | | | Define switching output Q ₂ |
| 62 / 0x3E | Read / write | Uint | 16 Bit | 1 | 3000 | 0 ... 5000 | Switchpoint 1 | Needed for single, window and two-point mode, indicated in mm |
| | | | | 2 | 3100 | 0 ... 5000 | Switchpoint 2 | Needed for window and two-point mode, indicated in mm |
| | | | | | | | | Set-up switching output Q ₂ |
| 63 / 0x3F | Read / write | Uint | 8 Bit | 1 | 0 | 0, 1 | NO / NC | 0 = NO, 1 = NC |
| | | | | 2 | 1 | 0 ... 3 | Switching mode | 0 - disable 1 - single-point mode 2 - window mode ¹⁾ 3 - two-point mode ¹⁾ |
| | | | 16 Bit | 3 | 0 | 0 | Hysteresis | Not adjustable |

| PARAMETER | | | | | | | | |
|-----------------|--------------|-----------|--------|----------|---------------------------|-------------|--|---------------------------------------|
| Index dec / hex | Access | Data type | Length | Subindex | Default value | Range | Description | Comment |
| 88 / 0x58 | Read | Uint | 32 Bit | 1 | | | Read operating data | |
| | | | | 2 | | | Counter operating hours | No reset possible |
| | | | | | | | Counter switch cycle | No reset possible |
| 95 / 0x5F | Read | String | | 1 | 0 ... 5000 mm | | Read sensor characteristics | |
| | | | | 4 | 20 mm | | Measurement range | |
| | | | | 5 | Laser, red 655 nm class 1 | | Hysteresis Q _A / Q | |
| | | | | 6 | ≤ 60 mA | | Type of light | |
| | | | | 7 | ≤ 500 Hz | | No-load current | |
| | | | | 8 | 20 min. | | Switching frequency | |
| | | | | 9 | -40 ... +60 °C | | Warm-up time | |
| 196 / 0xC4 | Read / write | Uint | 8 Bit | | 10 | 10 ... 90 | Signal quality level | % |
| 207 / 0xCF | Read | Uint | 8 Bit | | | 0 ... 100 | Current signal quality | % |
| 208 / 0xD0 | Read / write | Uint | 16 Bit | 1 | 0 | 0 ... 65535 | Smart functions Q ₁ | |
| | | | | 2 | 0 | 0 ... 65535 | Counter | |
| | | | | 3 | 0 | 0 ... 65535 | On delay | In ms, adjustable in 1ms |
| | | | | 4 | 0 | 0 ... 65535 | Off delay | In ms, adjustable in 1ms |
| | | | | 5 | 0 | 0 ... 50 | Impulse | In ms, adjustable in 1ms |
| 209 / 0xD1 | Read / write | Uint | 16 Bit | 1 | 0 | 0 ... 65535 | Smart functions Q ₂ | |
| | | | | 2 | 0 | 0 ... 65535 | Counter | |
| | | | | 3 | 0 | 0 ... 65535 | On delay | In ms, adjustable in 1ms |
| | | | | 4 | 0 | 0 ... 65535 | Off delay | In ms, adjustable in 1ms |
| | | | | 5 | 0 | 0 ... 50 | Impulse | In ms, adjustable in 1ms |
| 213 / 0xD5 | Read / write | Uint | 8 Bit | 1 | 2 | 0 ... 2 | Function switching output Q ₁ | |
| | | | | | | | PNP / NPN | 0 = NPN 1 = PNP 2 = auto-detect |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| 214 / 0xD6 | Read / write | Uint | 8 Bit | 1 | 2 | 0 ... 2 | Function switching output Q ₂ | |
| | | | | 2 | 0 | 0, 1 | PNP / NPN | 0 = NPN, 1 = PNP, 2 = auto-detect |
| 221 / 0xDD | Read / write | Uint | 16 Bit | 1 | 1 | 0, 1 | Control input | |
| | | | | | | | Activation control input | 0 = PIN 2 disable 1 = PIN 2 active |

| SYSTEM COMMANDS | | | | | | | | |
|-----------------|--------------|-----------|------------------|---|--------------------|-------|--|--|
| Index dec / hex | Access | Data type | Length | Subindex | Function dec / hex | Range | Description | Comment |
| 2 / 0x02 | Read / write | Uint | 8 Bit | | 64 / 0x40 | | Teach apply | Adopt teach values on sensor |
| | | | | | 65 / 0x41 | | Single value teach - switchpoint 1 | The switchpoint is on the teach value |
| | | | | | 66 / 0x42 | | Single value teach - switchpoint 2 | |
| | | | | | 67 / 0x43 | | Two value teach - teachpoint 1 for switchpoint 1 | |
| | | | | | 68 / 0x44 | | Two value teach - teachpoint 2 for switchpoint 1 | The switchpoint is in the middle of both teachpoints |
| | | | | | 69 / 0x45 | | Two value teach - teachpoint 1 for switchpoint 2 | |
| | | | | | 70 / 0x46 | | Two value teach - teachpoint 2 for switchpoint 2 | |
| | | | | | 71 / 0x47 | | Dynamic teach - switchpoint 1 - start | The switchpoint is between the min. / max. value |
| | | | | | 72 / 0x48 | | Dynamic teach - switchpoint 1 - stop | |
| | | | | | 73 / 0x49 | | Dynamic teach - switchpoint 2 - start | |
| | | | | | 74 / 0x4A | | Dynamic teach - switchpoint 2 - stop | |
| | | | | | 79 / 0x4F | | Teach cancel | |
| | | | | | 160 / 0xA0 | | Emitter off | |
| | | | | | 161 / 0xA1 | | Emitter on | |
| | | | | | 162 / 0xA2 | | Reset switching channel | Reset of current switching channel |
| | | | | | 224 / 0xE0 | | Offset teach | |
| | 175 / 0xAF | | Detect sensor | 1x activated - sensor flashes 60 s 2x activated - permanent flashing 3x activated - stop permanent flashing | | | | |
| | 128 / 0x80 | | Reset sensor | | | | | |
| | 130 / 0x82 | | Factory settings | | | | | |

| EVENTS | | | | |
|----------------|--------------|---------|-------------------------------|----------------------------|
| Event | Status value | Warning | | |
| 20480 / 0x5000 | 4 | Error | Device hardware fault | Laser failure |
| 20497 / 0x5011 | 4 | Error | Non-volatile memory loss | |
| 65425 / 0xFF91 | 0 | Notice | Data storage - upload request | |
| 16384 / 0x4000 | 4 | Error | Temperature fault | Temperature range exceeded |

¹ Min. difference between both switchpoints 60 mm.

² Differs to real frequency ±10 %