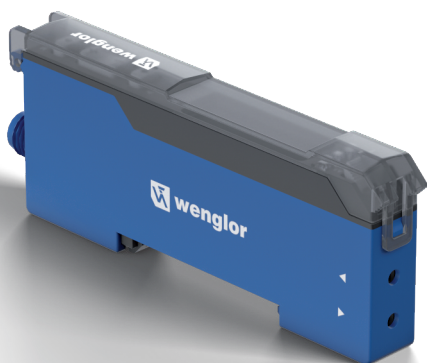


EN

P1XD1x5/1x6

Fiber-optic amplifier



Interface Description

IO-Link P1XD1x5/1x6

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) |
|---------|----------|-----|-------------|-------------|
| P1XD105 | 0x00007A | 122 | 00 00 7A | 0 0 122 |
| P1XD106 | 0x00007B | 123 | 00 00 7B | 0 0 123 |
| P1XD115 | 0x00007C | 124 | 00 00 7C | 0 0 124 |
| P1XD116 | 0x00007D | 125 | 00 00 7D | 0 0 125 |
| P1XD125 | 0x00007E | 126 | 00 00 7E | 0 0 126 |
| P1XD126 | 0x00007F | 127 | 00 00 7F | 0 0 127 |
| P1XD135 | 0x000080 | 128 | 00 00 80 | 0 0 128 |
| P1XD136 | 0x000081 | 129 | 00 00 81 | 0 0 129 |

IO-Link Information

| | |
|--------------------------------------|---------|
| IO-Link Version: | V 1.1.3 |
| Data Storage: | Yes |
| Blockparameter: | Yes |
| Min Cycle Time: | 2 ms |
| SIO-Mode: | Yes |
| COM-Mode: | COM3 |
| ISDU: | Yes |
| Process data In (Device to Master): | 56 Bit |
| Process data Out (Master to Device): | 8 Bit |

IO-Link Profiles

Common Profile
Function Class Identification
Function Class Diagnosis
Smart Sensor Profil - Transducer Disable

Process Data Input (Device -> Master)

| Subindex | Name | Bit Offset | Length | Range |
|----------|---------------------------|------------|--------|-----------------------|
| 1 | Signal | 40 | 16 Bit | 0...9999 |
| 2 | SSC1 Switch Point | 24 | 16 Bit | 0...9999 |
| 3 | SSC2 Switch Point | 8 | 16 Bit | 0...9999 |
| 4 | not used | 4 | 4 Bit | |
| 5 | Error | 3 | 1 Bit | 0 = false 1 = true |
| 6 | Warning | 2 | 1 Bit | 0 = false 1 = true |
| 7 | SSC2 - Switching Signal 2 | 1 | 1 Bit | 0 = false 1 = true |
| 8 | SSC1 - Switching Signal 1 | 0 | 1 Bit | 0 = false 1 = true |

| | Octet 0 (MSB) | Octet 1 (LSB) | Octet 2 (MSB) | Octet 3 (LSB) | Octet 4 (MSB) | Octet 5 (LSB) |
|------------|---|-------------------------------|-------------------------------|-------------------------------|---------------|---------------|
| Sub-index | 1 | | 2 | | 3 | |
| Bit Offset | 55 54 53 52 51 50 49 48 47 46 45 44 43 42 41 40 | 39 38 37 36 35 34 33 32 31 30 | 29 28 27 26 25 24 23 22 21 20 | 19 18 17 16 15 14 13 12 11 10 | 9 | 8 |

| | Octet 8 (MSB) | | | | | | | | |
|------------|---------------|---|---|---|---|---|---|---|--|
| Sub-index | 4 | 5 | 6 | 7 | 8 | | | | |
| Bit Offset | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | |

Process Data Output (Master -> Device)

| Subindex | Name | Bit Offset | Length | Range |
|----------|------------------------------|------------|--------|-----------------------------|
| 1 | Control Signal (LED Control) | 0 | 1 Bit | 0 = Enabled 1 = Disabled |
| 2 | Find Me | 1 | 1 Bit | 0 = Off 1 = Blinking |
| 3 | not used | 2 | 6 Bit | |

| | Octet 0 (MSB) | | | | | | | | |
|------------|---------------|---|---|---|---|---|---|---|--|
| Sub-index | 3 | | | 2 | 1 | | | | |
| Bit Offset | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | |

Identification

| Name | Index (hex) | Index (dec) | Sub-index | R/W | Datatype | Data Storage | Dynamic | Modify others | Default value | Range |
|----------------------------|-------------|-------------|-----------|-----|----------------|--------------|---------|---------------|--------------------------|-------------------------|
| Information | | | | | | | | | | |
| 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 | | | | P1XD1xx | |
| Product ID | 0x0013 | 19 | 0 | R | String | | | | P1XD1xx | |
| Product Text | 0x0014 | 20 | 0 | R | String | | | | Fiber Optic Cable Sensor | |
| Serial Number | 0x0015 | 21 | 0 | R | String | | | | - | |
| Hardware Version | 0x0016 | 22 | 0 | R | String | | | | - | |
| Firmware Version | 0x0017 | 23 | 0 | R | String | | | | - | |
| Tags | | | | | | | | | | |
| Application Specific Tag | 0x0018 | 24 | 0 | R/W | String 32 Byte | X | | | *** | |
| Function Tag | 0x0019 | 25 | 0 | R/W | String 32 Byte | X | | | *** | |
| Location Tag | 0x001A | 26 | 0 | R/W | String 32 Byte | X | | | *** | |
| Sensor Localisation | | | | | | | | | | |
| Find Me | 0x1200 | 4608 | 0 | R/W | UInt8 | | X | | 0 = Off | 0 = Off 1 = Blinking |

Parameter

| Name | Index (hex) | Index (dec) | Sub-index | R/W | Datatype | Data Storage | dynamic | modify others | NFC | Default value | Range |
|---|-------------|-------------|-----------|-----|----------|--------------|---------|---------------|-----|---------------|--|
| Reset Functions | | | | | | | | | | | |
| System Commands | 0x0002 | 2 | 0 | W | UInt8 | | | X | | - | Device Reset = 0x80 (128) Application Reset = 0x81 (129) Restore Factory Settings = 0x82 (130) Back-to-box = 0x83 (131) |
| Device Settings | | | | | | | | | | | |
| Device Access Locks.Local Parameterization Lock | 0x000C | 12 | 3 | R/W | Bool | X | | | | 0 = Unlocked | 0 = Unlocked 1 = Locked |
| NFC Disable | 0x0305 | 773 | 0 | R/W | UInt8 | X | | | | 0 = Unlocked | 0 = Unlocked 1 = Read Only 2 = Locked |
| Installation Assist | 0x0307 | 775 | 0 | R/W | UInt8 | | | X | | 0 = Off | 0 = Off 1 = On |
| winTec | 0x0308 | 776 | 0 | R/W | UInt8 | X | | X | | 0 = Off | 0 = Off 1 = On |
| Display Orientation | 0x0403 | 1027 | 0 | R/W | UInt8 | X | | X | | 0 = Normal | 0 = Normal 1 = Flipped |
| Measurement Value Settings | | | | | | | | | | | |
| Emitted Light | 0x00E0 | 224 | 0 | R/W | UInt8 | X | | X | | 0 = On | 0 = On 1 = Off |
| Noise Filter | 0x00D0 | 208 | 0 | R/W | UInt8 | X | | X | | 2 = Minimum | 0 = Maximum 1 = Medium 2 = Minimum |

| Name | Index (hex) | Index (dec) | Sub-index | R/W | Datatype | Data Storage | dynamic | modify others | NFC | Default value | Range |
|--|-------------|-------------|-----------|-----|----------|--------------|---------|---------------|-----|------------------|---|
| Emitting Power | 0x0116 | 278 | 0 | R/W | UInt8 | X | | | X | 0 = Maximum | 0 = Maximum 1 = Medium 2 = Minimum 3 - Custom |
| Custom Power | 0x0119 | 281 | 0 | R/W | UInt8 | X | | | X | 50 | 5 ... 100 % |
| SSC1 | | | | | | | | | | | |
| Teach Mode | 0x0290 | 656 | 0 | R/W | UInt8 | X | | | X | 0 = Normal Teach | 0 = Normal Teach 1 = Jump detection 2 = Minimal Teach 3 = Minimal Teach with Dynamic Readjustment 4 = Dynamic Teach 5 = Background Teach 6 = Window Teach |
| Teach-In | 0x0200 | 512 | 0 | W | | | | X | | | 1 = Teach-In 2 = Dynamic Teach Start 3 = Dynamic Teach Stop |
| Teach Status | 0x01E0 | 480 | 0 | R | UInt8 | | | | | 0 = Idle | 0 = Idle 1 = Ongoing 2 = Last Teach Failed 3 = Last Teach Successful 4 = Last Teach Warning 5 = Teach Type Changed 6 = Last teach canceled 7 = Last teach not possible: emitter disabled 8 = Locked |
| Hysteresis | 0x0250 | 592 | 0 | R/W | UInt8 | X | | | X | 2 = Minimum | 0 = Maximum 1 = Medium 2 = Minimum |
| Switching Point | 0x0270 | 624 | 0 | R/W | UInt16 | X | | | X | | 0 ... 9999 |
| SSC1 (Teach Mode = Jump Detection) | | | | | | | | | | | |
| Signal Jump Minimum | 0x02A0 | 672 | 0 | R/W | UInt16 | X | | | X | 300 | 100 ... 5000 |
| Signal Jump Direction | 0x02A2 | 674 | 0 | R/W | UInt8 | X | | | X | 0 = Positive | 0 = Positive 1 = Negative 2 = Both |
| Signal Jump Impulse | 0x02A3 | 675 | 0 | R/W | UInt16 | X | | | X | 0 = Hold | 0 = Hold 1 ... 10000 ms |
| Signal Jump Time Offset | 0x02C1 | 705 | 0 | R/W | UInt16 | X | | | X | 34 | 1 ... 340 ms |
| Maximum Recorded Signal Jump | 0x02AF | 687 | 0 | R | UInt32 | | X | | | | 0 ... 9999 |
| Signal Jump Command | 0x02C0 | 704 | 0 | W | UInt8 | | | X | | | 1 = Reset Maximum Recorded Signal Jump SSC1 |
| SSC1 (Teach Mode = Minimum Teach with Dynamic Readjustment) | | | | | | | | | | | |
| Teach Percentage | 0x02F0 | 752 | 0 | R/W | UInt8 | X | | X | X | 10 | 3 ... 30 % |
| Dynamic Readjustment Storage | 0x0340 | 832 | 0 | R/W | UInt8 | X | | | X | 1 = On | 0 = Off 1 = On |
| Dynamic Readjustment Time | 0x0320 | 800 | 0 | R/W | UInt16 | X | | | X | 3600 | 5 ... 3600 s |
| Switch Point | 0x0278 | 632 | 0 | R | UInt16 | | | | X | | 0 ... 9999 |
| SSC1 (Teach Mode = Dynamic Teach) | | | | | | | | | | | |
| Dynamic Teach Duration | 0x02E0 | 736 | 0 | R/W | UInt16 | X | | | X | 60 | 10 ... 600 s |
| SSC1 (Teach Mode = Window Teach) | | | | | | | | | | | |
| Window Size High | 0x0261 | 609 | 0 | R/W | UInt16 | X | | | X | 1000 | 50 ... 7000 |
| Window Size Low | 0x0260 | 608 | 0 | R/W | UInt16 | X | | | X | 1000 | 50 ... 7000 |
| SSC2 | | | | | | | | | | | |
| Teach Mode | 0x0291 | 657 | 0 | R/W | UInt8 | X | | | X | 0 = Normal Teach | 0 = Normal Teach 1 = Jump detection 2 = Minimal Teach 3 = Minimal Teach with Dynamic Readjustment 4 = Dynamic Teach 5 = Background Teach 6 = Window Teach |
| Teach-In | 0x0201 | 513 | 0 | W | | | | X | | | 1 = Teach-In |

| Name | Index (hex) | Index (dec) | Sub-index | R/W | Datatype | Data Storage | dynamic | modify others | NFC | Default value | Range |
|--|-------------|-------------|-----------|-----|----------|--------------|---------|---------------|-----|--|---|
| Teach Status | 0x01E1 | 481 | 0 | R | UInt8 | | | | | 0 = Idle | 0 = Idle 1 = Ongoing 2 = Last Teach Failed 3 = Last Teach Successful 4 = Last Teach Warning 5 = Teach Type Changed 6 = Last teach canceled 7 = Last teach not possible: emitter disabled 8 = Locked |
| Hysteresis | 0x0251 | 593 | 0 | R/W | UInt8 | X | | | X | 2 = Minimum | 0 = Maximum 1 = Medium 2 = Low |
| Switching Point | 0x0271 | 625 | 0 | R/W | UInt16 | X | | | X | | 0 ... 9999 |
| SSC2 (Teach Mode = Jump Detection) | | | | | | | | | | | |
| Signal Jump Minimum | 0x02B0 | 688 | 0 | R/W | UInt16 | X | | | X | 300 | 100 ... 5000 |
| Signal Jump Direction | 0x02B2 | 690 | 0 | R/W | UInt8 | X | | | X | 0 = Positive | 0 = Positive 1 = Negative 2 = Both |
| Signal Jump Impulse | 0x02B3 | 691 | 0 | R/W | UInt16 | X | | | X | 0 = Hold | 0 = Hold 1 ... 10000 ms |
| Signal Jump Time Offset | 0x02C2 | 706 | 0 | R/W | UInt16 | X | | | X | 34 | 1 ... 340 ms |
| Maximum Recorded Signal Jump | 0x02BF | 703 | 0 | R | UInt32 | | X | | | | 0 ... 9999 |
| Signal Jump Command | 0x02C0 | 704 | 0 | W | UInt8 | | | | X | | 2 = Reset Maximum Recorded Signal Jump SSC2 |
| SSC2 (Teach Mode = Minimum Teach with Dynamic Readjustment) | | | | | | | | | | | |
| Teach Percentage | 0x02F1 | 753 | 0 | R/W | UInt8 | X | | X | X | 10 | 3 ... 30 % |
| Dynamic Readjustment Storage | 0x0341 | 833 | 0 | R/W | UInt8 | X | | | X | 1 = On | 0 = Off 1 = On |
| Dynamic Readjustment Time | 0x0321 | 801 | 0 | R/W | UInt16 | X | | | X | 60 | 5 ... 3600 s |
| Switch Point | 0x0279 | 633 | 0 | R | UInt16 | | | | X | | 0 ... 9999 |
| SSC2 (Teach Mode = Dynamic Teach) | | | | | | | | | | | |
| Dynamic Teach Duration | 0x02E1 | 737 | 0 | R/W | UInt16 | X | | | X | 60 | 10 ... 600 s |
| SSC2 (Teach Mode = Window Teach) | | | | | | | | | | | |
| Window Size High | 0x0263 | 611 | 0 | R/W | UInt16 | X | | | X | 1000 | 50 ... 7000 |
| Window Size Low | 0x0262 | 610 | 0 | R/W | UInt16 | X | | | X | 1000 | 50 ... 7000 |
| Pin Function | | | | | | | | | | | |
| A1 Pin Function | 0x0040 | 64 | 0 | R/W | UInt8 | X | | X | X | 0 = Switching Output SSC 1 | 0 = Switching Output SSC1 1 = Error Output 2 = Warning Output |
| Digital Outputs A1 (SSC) | | | | | | | | | | | |
| A1 NO/NC | 0x0210 | 528 | 0 | R/W | UInt8 | X | | | X | 0 = NO | 0 = NO 1 = NC |
| A1 NPN/PNP/P-P | 0x0220 | 544 | 0 | R/W | UInt8 | X | | | X | 0 = PNP for P1XD10x and P1XD12x 1 = NPN for P1XD11x and P1XD13x | 0 = PNP 1 = NPN 2 = Push-Pull |
| On Delay | 0x0050 | 80 | 0 | R/W | UInt16 | X | | | X | 0 | 0 ... 10000 ms |
| Off Delay | 0x0060 | 96 | 0 | R/W | UInt16 | X | | | X | 0 | 0 ... 10000 ms |
| Impulse | 0x0070 | 112 | 0 | R/W | UInt16 | X | | | X | 0 | 0 ... 10000 ms |

| Name | Index (hex) | Index (dec) | Sub-index | R/W | Datatype | Data Storage | dynamic | modify others | NFC | Default value | Range |
|-------------------------------------|-------------|-------------|-----------|-----|----------|--------------|---------|---------------|-----|--|--|
| A1 (Error or Warning Output) | | | | | | | | | | | |
| A1 NO/NC | 0x0210 | 528 | 0 | R/W | Uint8 | X | | | X | 0 = NO | 0 = NO 1 = NC |
| A1 NPN/PNP/P-P | 0x0220 | 544 | 0 | R/W | Uint8 | X | | | X | 0 = PNP for P1XD10x and P1XD12x 1 = NPN for P1XD11x and P1XD13x | 0 = PNP 1 = NPN 2 = Push-Pull |
| Analog Outputs | | | | | | | | | | | |
| O Analog Output | | | | | | | | | | | |
| O Analog Output Mode | 0x0083 | 131 | 0 | R/W | Uint8 | X | | | X | 0 = 0...10 V for P1XD1x5 1 = 4...20 mA for P1XD1x6 | 0 = 0...10 V 1 = 4...20 mA |
| Teach-In | 0x0201 | 513 | 0 | W | | | | X | | | 4 = Teach 0 V / 4 mA 5 = Teach 10 V / 20 mA |
| O Analog Point Low (0V/4mA) | 0x0081 | 129 | 0 | R/W | Uint16 | X | | | X | | 0 ... 9999 |
| O Analog Point High (10V/20mA) | 0x0082 | 130 | 0 | R/W | Uint16 | X | | | X | | 0 ... 9999 |

Diagnosis

| Name | Index (hex) | Index (dec) | Sub-index | R/W | Datatype | Data Storage | dynamic | modify others | Default value | Range |
|--|-------------|-------------|-----------|-----|-------------------|--------------|---------|---------------|---------------------------|---|
| Status | | | | | | | | | | |
| Device Status | 0x0024 | 36 | 0 | R | UInt8 | | X | | 0 | 0 = Device is OK 1 = Maintenance required 2 = Out of specification 3 = Functional check 4 = Failure |
| Detailed Device Status | 0x0025 | 37 | 0 | R | Array of StringT3 | | X | | 0 | Shows the pending Events (maximum 4) |
| Additional Status | | | | | | | | | | |
| Additional status Information | 0x1300 | 4864 | 1 | R | Bool | | X | | 0 | Contaminated Optics |
| | | | 2 | | | | | | | Emitted Light Off |
| | | | 3 | | | | | | | Fatal Error |
| | | | 4 | | | | | | | Temperature Error |
| | | | 5 | | | | | | | Temperature High |
| | | | 6 | | | | | | | Temperature Low |
| | | | 7 | | | | | | | Undervoltage |
| | | | 8 | | | | | | | Power Fault |
| | | | 9 | | | | | | | Short Circuit |
| Device Simulation | | | | | | | | | | |
| Simulation Mode | 0x0310 | 784 | 0 | R/W | UInt8 | | X | | 0 = off | 0 = off 1 = on |
| Device Simulation Enabled (Simulation Mode = 1) | | | | | | | | | | |
| Signal Value | 0x0315 | 789 | 0 | R/W | UInt16 | | X | | 65535 = Use Process Value | 0 ... 9999 65535 = Use Process Value |
| Simulation SSC1 | 0x0331 | 817 | 0 | R/W | UInt8 | | X | | 255 = Use Process Value | 0 = Off 1 = On 255 = Use process Value |
| Simulation SSC2 | 0x0332 | 818 | 0 | R/W | UInt8 | | X | | 255 = Use Process Value | 0 = Off 1 = On 255 = Use process Value |
| Simulation Contaminated Optics | 0x031C | 796 | 0 | R/W | UInt8 | | X | | 255 = Use Process Value | 0 = Off 1 = On 255 = Use process Value |
| Simulation Fatal Error | 0x0323 | 803 | 0 | R/W | UInt8 | | X | | 255 = Use Process Value | 0 = Off 1 = On 255 = Use process Value |
| Simulation Temperature Error | 0x0324 | 804 | 0 | R/W | UInt8 | | X | | 255 = Use Process Value | 0 = Off 1 = On 255 = Use process Value |
| Simulation Temperature High | 0x0325 | 805 | 0 | R/W | UInt8 | | X | | 255 = Use Process Value | 0 = Off 1 = On 255 = Use process Value |
| Simulation Temperature Low | 0x032C | 812 | 0 | R/W | UInt8 | | X | | 255 = Use Process Value | 0 = Off 1 = On 255 = Use process Value |
| Simulation Undervoltage | 0x0327 | 807 | 0 | R/W | UInt8 | | X | | 255 = Use Process Value | 0 = Off 1 = On 255 = Use process Value |
| Simulation Power Fault | 0x0329 | 809 | 0 | R/W | UInt8 | | X | | 255 = Use Process Value | 0 = Off 1 = On 255 = Use process Value |
| Simulation Short Circuit | 0x0328 | 808 | 0 | R/W | UInt8 | | X | | 255 = Use Process Value | 0 = Off 1 = On 255 = Use process Value |

Events

Supported Events

| Name | Event Code | Type | Specification |
|--|------------|--------------|------------------|
| General malfunction – unknown error | 0x1000 | Error | IO-Link |
| Short circuit – Check installation | 0x7710 | Error | IO-Link |
| Device temperature over-run – Clear source of heat | 0x4210 | Warning | IO-Link |
| Device temperature under-run – Insulate device | 0x4220 | Warning | IO-Link |
| Temperature fault – Overload | 0x4000 | Error | IO-Link |
| Primary supply voltage under-run – Check tolerance | 0x5111 | Warning | IO-Link |
| Cleaning Required | 0x8C40 | Warning | IO-Link |
| Emitter light changed (on/off) | 0x1811 | Notification | wenglor specific |
| Watchdog reset occurred | 0x1812 | Notification | wenglor specific |