

# Fiber-optic amplifier

## P1XD102

Part Number



- Intuitive setup using display
- LED red light
- NFC communication via the weCon app and IO-Link
- Tool-free assembly

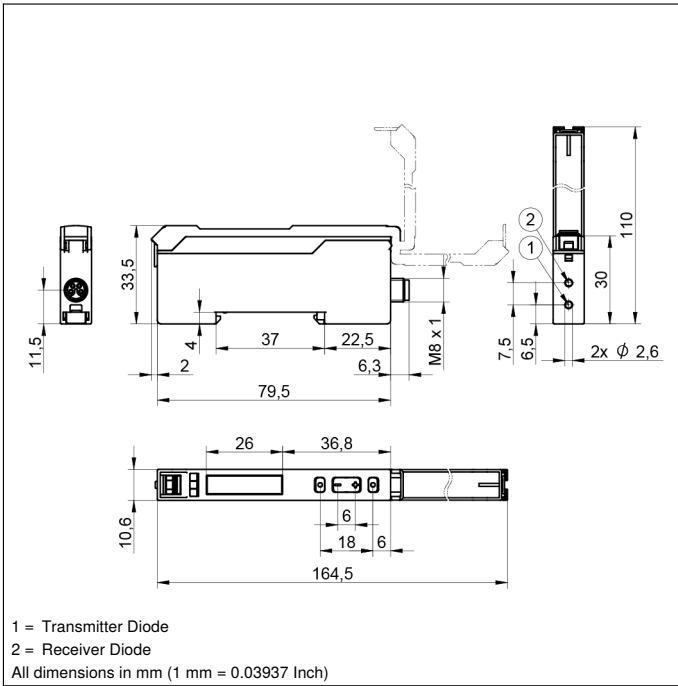
Fiber-optic sensors work according to the energetic principle in which light is emitted via one fiber-optic cable and received via another. The amplifier can be adapted to a wide range of application requirements through the use of flexible plastic fiber-optic cables or glass fiber-optic cables with adapter no. 7. The display shows both the switching threshold and the currently received signal, which means that the sensor can be set up intuitively and quickly using the buttons. More complex parameterizations can be conveniently carried out via the wenglor weCon app on a mobile device or via IO-Link. All sensor information is also provided via the IO-Link process data. Both the fiber-optic cable and the amplifier can be mounted without tools, which further simplifies handling.

### Technical Data

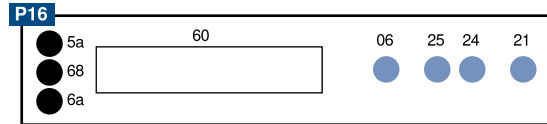
| Optical Data                                |  |
|---|--|
| Switching Hysteresis                        | < 15 %   |
| Light Source                                | Red Light  |
| Service Life (T = +25 °C)                   | > 100000 h   |
| Max. Ambient Light                          | 10000 Lux  |
| Electrical Data                             |  |
| Supply Voltage                              | 10...30 V DC   |
| Supply Voltage with IO-Link                 | 18...30 V DC   |
| Current Consumption (U <sub>b</sub> = 24 V) | < 40 mA  |
| Switching Frequency                         | 7 kHz  |
| Response Time                               | 71 μs  |
| On-/Off-Delay                               | 0...10000 ms   |
| Temperature Drift                           | < 10 %   |
| Temperature Range                           | -25...60 °C  |
| Switching Output Voltage Drop               | < 2 V  |
| Switching Output/Switching Current          | 100 mA   |
| Short Circuit Protection                    | yes  |
| Reverse Polarity Protection                 | yes  |
| Overload Protection                         | yes  |
| Teach Mode                                  | NT, MT, MT with dynamic readjustment, jump detection, DT, BT, WT |
| IO-Link transmission speed                  | COM3   |
| Interface                                   | IO-Link V1.1.3   |
| Protection Class                            | III  |
| Mechanical Data                             |  |
| Setting Method                              | Display  |
| Setting Method                              | NFC  |
| Housing Material                            | Plastic, ABS   |
| Housing Material                            | Plastic, PA  |
| Housing Material                            | Plastic, PC  |
| Degree of Protection                        | IP50   |
| Connection                                  | M8 × 1; 4-pin  |
| DIN-Rail mounting                           | 35 mm  |
| Safety-relevant Data                        |  |
| MTTFd (EN ISO 13849-1)                      | 640,47 a   |
| IO-Link                                     | ●  |
| PNP NO                                      | ●  |
| Connection Diagram No.                      | <b>247</b>   |
| Control Panel No.                           | <b>P16</b>   |
| Suitable Connection Equipment No.           | <b>7</b>   |

### Complementary Products

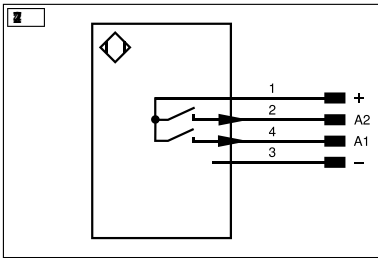
IO-Link Master  
Plastic Fiber-Optic Cable



### Ctrl. Panel



- 06 = Teach Button
- 21 = Mode Button
- 24 = Plus Button
- 25 = Minus Button
- 5a = Switching Status Indicator, A1
- 60 = display
- 68 = Power LED
- 6a = Switching Status Indicator, A2



| Legend              |  |                     |                                |  |                     |
|---------------------|--|---------------------|--------------------------------|--|---------------------|
| +                   | Supply Voltage +                           | nc                  | Not connected                  | EN <sub>RS422</sub>                    | Encoder B/B̄ (TTL)  |
| -                   | Supply Voltage 0 V                         | U                   | Test Input                     | ENA                                    | Encoder A           |
| ~                   | Supply Voltage (AC Voltage)                | Ū                   | Test Input inverted            | EN <sub>b</sub>                        | Encoder B           |
| A                   | Switching Output (NO)                      | W                   | Trigger Input                  | AMIN                                   | Digital output MIN  |
| Ā                   | Switching Output (NC)                      | W-                  | Ground for the Trigger Input   | AMAX                                   | Digital output MAX  |
| V                   | Contamination/Error Output (NO)            | O                   | Analog Output                  | AOK                                    | Digital output OK   |
| ȳ                   | Contamination/Error Output (NC)            | O-                  | Ground for the Analog Output   | SY In                                  | Synchronization In  |
| E                   | Input (analog or digital)                  | BZ                  | Block Discharge                | SY OUT                                 | Synchronization OUT |
| T                   | Teach Input                                | Amv                 | Valve Output                   | OLT                                    | Brightness output   |
| Z                   | Time Delay (activation)                    | a                   | Valve Control Output +         | M                                      | Maintenance         |
| S                   | Shielding                                  | b                   | Valve Control Output 0 V       | rsv                                    | Reserved            |
| RxD                 | Interface Receive Path                     | SY                  | Synchronization                | Wire Colors according to DIN IEC 60757 |                     |
| TxD                 | Interface Send Path                        | SY-                 | Ground for the Synchronization | BK                                     | Black               |
| RDY                 | Ready                                      | E+                  | Receiver-Line                  | BN                                     | Brown               |
| GND                 | Ground                                     | S+                  | Emitter-Line                   | RD                                     | Red                 |
| CL                  | Clock                                      | ±                   | Grounding                      | OG                                     | Orange              |
| E/A                 | Output/Input programmable                  | SnR                 | Switching Distance Reduction   | YE                                     | Yellow              |
|                     | IO-Link                                    | Rx+/-               | Ethernet Receive Path          | GN                                     | Green               |
| PoE                 | Power over Ethernet                        | Tx+/-               | Ethernet Send Path             | BU                                     | Blue                |
| IN                  | Safety Input                               | Bus                 | Interfaces-Bus A(+)/B(-)       | VT                                     | Violet              |
| OSSD                | Safety Output                              | La                  | Emitted Light disengageable    | GY                                     | Grey                |
| Signal              | Signal Output                              | Mag                 | Magnet activation              | WH                                     | White               |
| Bl_D+/-             | Ethernet Gigabit bidirect. data line (A-D) | RES                 | Input confirmation             | PK                                     | Pink                |
| EN <sub>RS422</sub> | Encoder 0-pulse 0/0̄ (TTL)                 | EDM                 | Contactors Monitoring          | GNYE                                   | Green/Yellow        |
| PT                  | Platinum measuring resistor                | EN <sub>RS422</sub> | Encoder A/Ā (TTL)              |  |                     |

