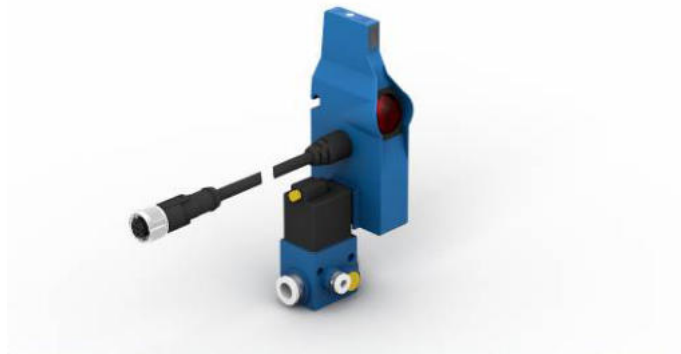


# Reflex Sensor with Background Suppression

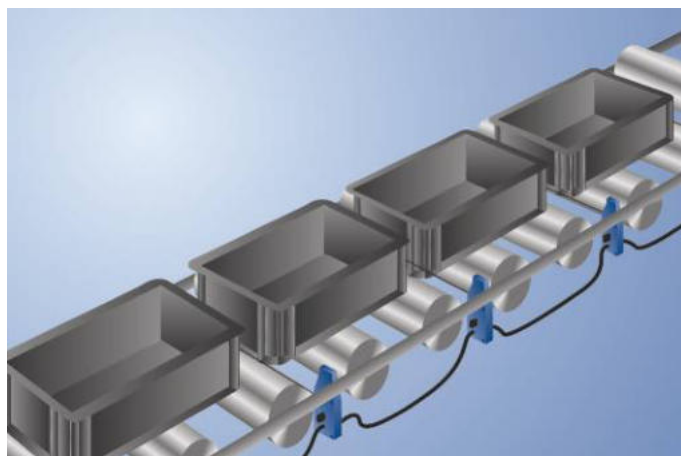
## OPT1541

Part Number



- Energy savings thanks to EcoMode
- Increased capacity thanks to intelligent functions
- Optimized performance
- Time-saving initial start-up with fast-clip mounting system and quick wiring
- Wireless settings via NFC

These sensors have been specially designed for use in accumulation roller conveyors. Their compact design allows for installation between rollers below the transport level. High-precision background suppression makes it possible to reliably detect even black objects at up to 900 mm. Settings are entered via wireless NFC, which is even possible in the de-energized state. Thanks to the innovative fast-clip mounting system and quick wiring, the sensors are installed and ready for use in no time flat.

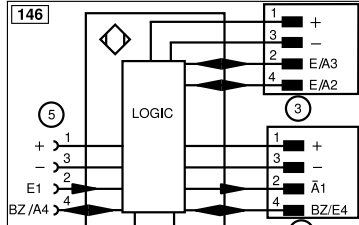
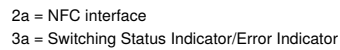
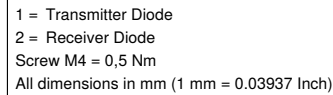


### Technical Data

| Optical Data                           |                |
|----------------------------------------|----------------|
| Range                                  | 900 mm         |
| Switching Hysteresis                   | < 5 %          |
| Light Source                           | Infrared Light |
| Wavelength                             | 860 nm         |
| Service Life (T = +25 °C)              | 100000 h       |
| Risk Group (EN 62471)                  | 1              |
| Max. Ambient Light                     | 90000 Lux      |
| Opening Angle                          | 3 °            |
| Electrical Data                        |                |
| Supply Voltage                         | 20,6...30 V DC |
| Current Consumption Sensor (Ub = 24 V) | < 16 mA        |
| EcoMode                                | yes            |
| Switching Frequency                    | 100 Hz         |
| Response Time                          | 5 ms           |
| Temperature Drift                      | < 5 %          |
| Temperature Range                      | -40...60 °C    |
| Number of Switching Outputs            | 2              |
| Switching Output Voltage Drop          | < 0,9 V        |
| PNP Switching Output/Switching Current | 200 mA         |
| Short Circuit Protection               | yes            |
| Reverse Polarity Protection            | yes            |
| Overload Protection                    | yes            |
| Logic                                  | yes            |
| Single Discharge                       | yes            |
| Block Forwarding                       | yes            |
| Solenoid Valve                         | yes            |
| Automatic Roller Shutdown              | yes            |
| Protection Class                       | III            |
| Mechanical Data                        |                |
| Setting Method                         | NFC            |
| Housing Material                       | Plastic        |
| Degree of Protection                   | IP65           |
| Connection                             | M12 × 1; 4-pin |
| Cable Length                           | 150 cm         |
| Pneumatic Solenoid Valve Unit          |                |
| Valve no.                              | K04            |
| Supply Voltage Valve                   | 19,2...28,8 V  |
| Current Consumption Valve              | 86 mA          |
| Valve temperature range                | -15...50 °C    |
| Operating Pressure                     | 4...7 bar      |
| Nominal Width                          | 0,8 mm         |
| Nominal flow rate 1 -> 2               | 20 NL/min      |
| Nominal flow rate 2 -> 3               | 100 NL/min     |
| Supply-Line Connector Pipe             | 2× 8×1         |
| Working-Line Connector Pipe            | 4×1            |
| Valve function                         | 3/2-Way        |
| Switching function                     | NC             |
| PNP NO/NC switchable                   | ●              |
| NFC Receiver Category 3                | ●              |
| Connection Diagram No.                 | 146            |
| Control Panel No.                      | OP3            |
| Suitable Connection Equipment No.      | 2   2s         |
| Suitable Mounting Technology No.       | 421            |

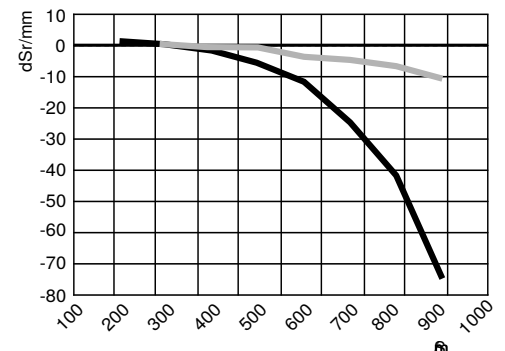
### Complementary Products

|                                |
|--------------------------------|
| Adapter OPT70N, OPT70S, OPT70P |
| Software                       |
| USB NFC Adapter                |
| ZPTX001 Quick Mount            |



| Legend                                                                              |                                            |          |                                |                                        |                     |
|-------------------------------------------------------------------------------------|--------------------------------------------|----------|--------------------------------|----------------------------------------|---------------------|
| +                                                                                   | Supply Voltage +                           | nc       | Not connected                  | ENBR5422                               | Encoder B/B̄ (TTL)  |
| -                                                                                   | Supply Voltage 0 V                         | U        | Test Input                     | ENa                                    | Encoder A           |
| ~                                                                                   | Supply Voltage (AC Voltage)                | Ů        | Test Input inverted            | ENb                                    | 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   |
| Ṽ                                                                                   | 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 |                                        |                     |
| RDY                                                                                 | Ready                                      | E+       | Receiver-Line                  | BK                                     | Black               |
| GND                                                                                 | Ground                                     | S+       | Emitter-Line                   | BN                                     | Brown               |
| CL                                                                                  | Clock                                      | ⊕        | Grounding                      | RD                                     | Red                 |
| E/A                                                                                 | Output/Input programmable                  | SnR      | Switching Distance Reduction   | OG                                     | Orange              |
|  | IO-Link                                    | Rx+/-    | Ethernet Receive Path          | YE                                     | Yellow              |
| PoE                                                                                 | Power over Ethernet                        | Tx+/-    | Ethernet Send Path             | GN                                     | Green               |
| IN                                                                                  | Safety Input                               | Bus      | Interfaces-Bus A(+)/B(-)       | BU                                     | Blue                |
| QSSD                                                                                | Safety Output                              | La       | Emitted Light disengageable    | VT                                     | Violet              |
| Signal                                                                              | Signal Output                              | Mag      | Magnet activation              | GY                                     | Grey                |
| BL_D+/-                                                                             | Ethernet Gigabit bidirect. data line (A-D) | RES      | Input confirmation             | WH                                     | White               |
| ENo RS422                                                                           | Encoder 0-pulse 0/Ů (TTL)                  | EDM      | Contact or Monitoring          | PK                                     | Pink                |
| PT                                                                                  | Platinum measuring resistor                | ENAR5422 | Encoder A/Ā (TTL)              | GNYE                                   | Green/Yellow        |

Typical characteristic curve based on white, 90 % remission



— black 6 % remission

grey 18 % remission

