

# Contrast Sensor

## YM24PAH2ANZ

## LASER

Part Number

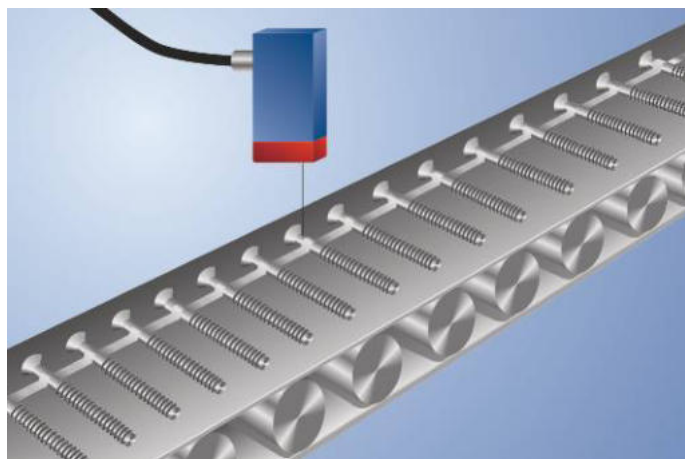


- High switching frequency
- Small light spot
- Time delay can be activated

### Technical Data

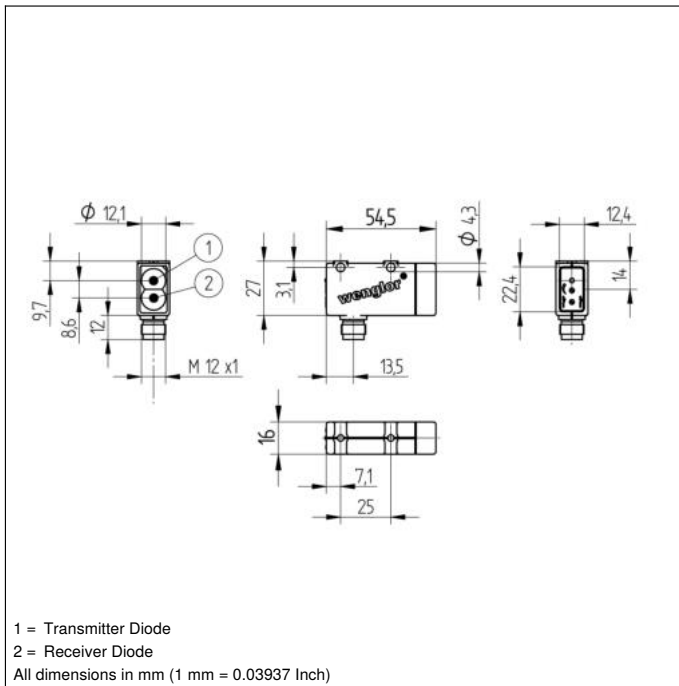
| Optical Data                                |                       |
|---------------------------------------------|-----------------------|
| Range                                       | 150 mm                |
| Adjustable Range                            | 60...150 mm           |
| Switching Hysteresis (Lateral Approach)     | < 50 $\mu$ m          |
| Light Source                                | Laser (red)           |
| Wavelength                                  | 660 nm                |
| Service Life (T = +25 °C)                   | 100000 h              |
| Laser Class (EN 60825-1)                    | 1                     |
| Max. Ambient Light                          | 10000 Lux             |
| Light Spot Diameter                         | 1 mm                  |
| Electrical Data                             |                       |
| Supply Voltage                              | 10...30 V DC          |
| Current Consumption (U <sub>b</sub> = 24 V) | < 30 mA               |
| Switching Frequency                         | 3 kHz                 |
| Response Time                               | 166 $\mu$ s           |
| On-Delay                                    | 5 ms                  |
| Temperature Drift                           | < 5 %                 |
| Temperature Range                           | -10...60 °C           |
| Switching Output Voltage Drop               | < 2,5 V               |
| PNP Switching Output/Switching Current      | 200 mA                |
| Short Circuit Protection                    | yes                   |
| Reverse Polarity Protection                 | yes                   |
| Protection Class                            | III                   |
| Mechanical Data                             |                       |
| Setting Method                              | Potentiometer         |
| Housing Material                            | Plastic               |
| Full Encapsulation                          | yes                   |
| Degree of Protection                        | IP67                  |
| Connection                                  | M12 $\times$ 1; 4-pin |
| PNP NO/NC antivalent                        | ●                     |
| Connection Diagram No.                      | 101                   |
| Control Panel No.                           | M6                    |
| Suitable Connection Equipment No.           | 2                     |
| Suitable Mounting Technology No.            | 360                   |

These sensors are especially well suited for high speed recognition of contrast differences.

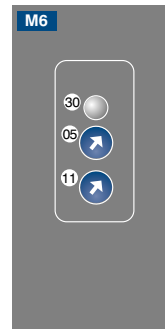


### Complementary Products

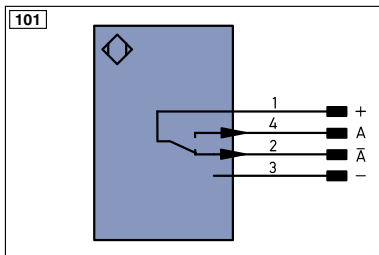
|                                  |
|----------------------------------|
| PNP-NPN Converter BG2V1P-N-2M    |
| Protective Housing ZSV-0x-01     |
| Set Protective Housing ZSM-NN-02 |



## Ctrl. Panel



05 = Switching Distance Adjuster  
11 = ON-Delay/OFF-Delay Adjuster  
30 = Switching Status/Contamination Warning



## Legend

|          |                                            |       |                                |                                    |                     |
|----------|--------------------------------------------|-------|--------------------------------|------------------------------------|---------------------|
| +        | Supply Voltage +                           | PT    | Platinum measuring resistor    | ENAR5422                           | Encoder A/Ā (TTL)   |
| -        | Supply Voltage 0 V                         | nc    | not connected                  | ENB5422                            | Encoder B/B̄ (TTL)  |
| ~        | Supply Voltage (AC Voltage)                | U     | Test Input                     | ENa                                | Encoder A           |
| A        | Switching Output (NO)                      | Ū     | Test Input inverted            | ENb                                | Encoder B           |
| Ā        | Switching Output (NC)                      | W     | Trigger Input                  | AMIN                               | Digital output MIN  |
| V        | Contamination/Error Output (NO)            | W-    | Ground for the Trigger Input   | AMAX                               | Digital output MAX  |
| V̄       | Contamination/Error Output (NC)            | O     | Analog Output                  | AOK                                | Digital output OK   |
| E        | Input (analog or digital)                  | O-    | Ground for the Analog Output   | SY In                              | Synchronization In  |
| T        | Teach Input                                | BZ    | Block Discharge                | SY OUT                             | Synchronization OUT |
| Z        | Time Delay (activation)                    | AMV   | Valve Output                   | OLt                                | Brightness output   |
| S        | Shielding                                  | a     | Valve Control Output +         | M                                  | Maintenance         |
| RxD      | Interface Receive Path                     | b     | Valve Control Output 0 V       | rsv                                | reserved            |
| TxD      | Interface Send Path                        | SY    | Synchronization                | Wire Colors according to IEC 60757 |                     |
| RDY      | Ready                                      | SY-   | Ground for the Synchronization | BK                                 | Black               |
| GND      | Ground                                     | E+    | Receiver-Line                  | BN                                 | Brown               |
| CL       | Clock                                      | S+    | Emitter-Line                   | RD                                 | Red                 |
| E/A      | Output/Input programmable                  | ±     | Grounding                      | OG                                 | Orange              |
| IO-Link  | IO-Link                                    | SnR   | Switching Distance Reduction   | YE                                 | Yellow              |
| PoE      | Power over Ethernet                        | Rx+/- | Ethernet Receive Path          | GN                                 | Green               |
| IN       | Safety Input                               | Tx+/- | Ethernet Send Path             | BU                                 | Blue                |
| OSSD     | Safety Output                              | Bus   | Interfaces-Bus A(+)/B(-)       | VT                                 | Violet              |
| Signal   | Signal Output                              | La    | Emitted Light disengageable    | GY                                 | Grey                |
| BL-D+/-  | Ethernet Gigabit bidirect. data line (A-D) | Mag   | Magnet activation              | WH                                 | White               |
| EN0R5422 | Encoder 0-pulse 0-0̄ (TTL)                 | RES   | Input confirmation             | PK                                 | Pink                |
|          |                                            | EDM   | Contact Monitoring             | GNYE                               | Green/Yellow        |