

# Retro-Reflex Sensor for Clear Glass Recognition

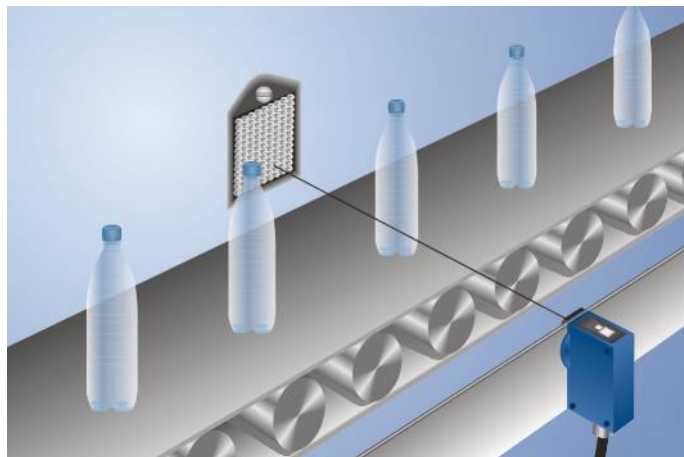
## K1R87PCT2

Part Number



- Dynamic readjustment of the switching threshold
- Recognition of clear glass
- Simple installation
- Teach-in, external teach-in

A reflector must be used in combination with these sensors. wenglor has the right retro-reflex light barrier for every application. Even crystal-clear objects and sheet products can be reliably recognized. The sensor is easy to install with its integrated M18 threaded fixation, and can be easily protected as well. Time delay can be activated by RS-232 interface.

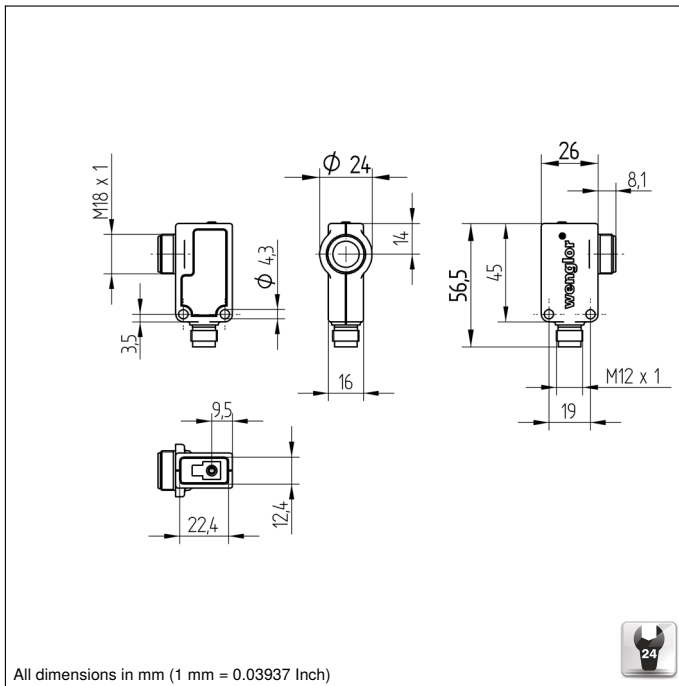


### Technical Data

| Optical Data                                |                |
|---|----------------|
| Range                                       | 4000 mm        |
| Reference Reflector/Reflector Foil          | RQ100BA        |
| Clear Glass Recognition                     | yes            |
| Switching Hysteresis                        | < 5 %          |
| Light Source                                | Red Light      |
| Polarization Filter                         | yes            |
| Service Life (T = +25 °C)                   | 100000 h       |
| Max. Ambient Light                          | 10000 Lux      |
| Opening Angle                               | 5 °            |
| Single-Lens Optic                           | yes            |
| Electrical Data                             |                |
| Supply Voltage                              | 10...30 V DC   |
| Current Consumption (U <sub>b</sub> = 24 V) | < 40 mA        |
| Switching Frequency                         | 1700 Hz        |
| Response Time                               | 250 μs         |
| On-/Off-Delay (RS-232)                      | 0...5 s        |
| Temperature Drift                           | < 5 %          |
| Temperature Range                           | -10...60 °C    |
| Switching Output Voltage Drop               | < 2,5 V        |
| PNP Switching Output/Switching Current      | 200 mA         |
| Residual Current Switching Output           | < 50 μA        |
| Short Circuit Protection                    | yes            |
| Reverse Polarity Protection                 | yes            |
| Overload Protection                         | yes            |
| Lockable                                    | yes            |
| Teach Mode                                  | MT             |
| Protection Class                            | III            |
| Mechanical Data                             |                |
| Setting Method                              | Teach-In       |
| Housing Material                            | Plastic        |
| Full Encapsulation                          | yes            |
| Degree of Protection                        | IP67           |
| Connection                                  | M12 × 1; 4-pin |
| PNP NO/NC switchable                        | ●              |
| RS-232 with Adapterbox                      | ●              |
| Connection Diagram No.                      | 152            |
| Control Panel No.                           | M7             |
| Suitable Connection Equipment No.           | 2              |
| Suitable Mounting Technology No.            | 150 370        |

### Complementary Products

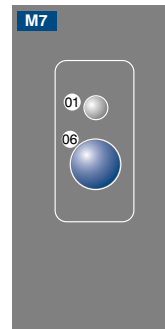
|                                    |
|------------------------------------|
| Adapterbox A232                    |
| Dust Extraction Tube STAUBTUBUS-01 |
| PNP-NPN Converter BG2V1P-N-2M      |
| Reflector, Reflector Foil          |
| Software                           |



All dimensions in mm (1 mm = 0.03937 Inch)

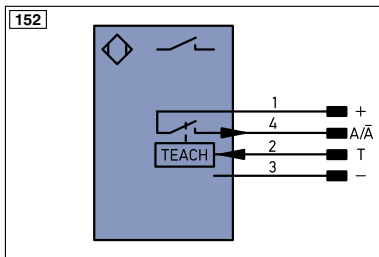


### Ctrl. Panel



01 = Switching Status Indicator  
 06 = Teach Button

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### Legend

|                       |  |                 |                                |                                      |                      |
|-----------------------|--|-----------------|--------------------------------|--------------------------------------|----------------------|
| +                     | Supply Voltage +                           | PT              | Platinum measuring resistor    | EN <sup>A/RS422</sup>                | Encoder A/Ā (TTL)    |
| -                     | Supply Voltage 0 V                         | nc              | not connected                  | EN <sup>B/RS422</sup>                | Encoder B/B̄ (TTL)   |
| ~                     | Supply Voltage (AC Voltage)                | U               | Test Input                     | EN <sub>A</sub>                      | Encoder A            |
| A                     | Switching Output (NO)                      | Ū               | Test Input inverted            | EN <sub>B</sub>                      | Encoder B            |
| Ā                     | Switching Output (NC)                      | W               | Trigger Input                  | A <sub>MIN</sub>                     | Digital output MIN   |
| V                     | Contamination/Error Output (NO)            | W-              | Ground for the Trigger Input   | A <sub>MAX</sub>                     | Digital output MAX   |
| Ṽ                     | Contamination/Error Output (NC)            | O               | Analog Output                  | A <sub>OK</sub>                      | Digital output OK    |
| E                     | Input (analog or digital)                  | O-              | Ground for the Analog Output   | SY <sub>in</sub>                     | Synchronization In   |
| T                     | Teach Input                                | BZ              | Block Discharge                | SY <sub>OUT</sub>                    | Synchronization OUT  |
| Z                     | Time Delay (activation)                    | A <sub>MV</sub> | Valve Output                   | OL <sub>T</sub>                      | Brightness output    |
| S                     | Shielding                                  | a               | Valve Control Output +         | M                                    | Maintenance reserved |
| RxD                   | Interface Receive Path                     | b               | Valve Control Output 0 V       | rsv                                  | reserved             |
| TxD                   | Interface Send Path                        | SY              | Synchronization                | Wire Colors according to DIN IEC 757 |                      |
| 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                                    | S <sub>nR</sub> | 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                              | L <sub>a</sub>  | Emitted Light disengageable    | GY                                   | Grey                 |
| Bl_D+/-               | Ethernet Gigabit bidirect. data line (A-D) | Mag             | Magnet activation              | WH                                   | White                |
| EN <sup>0/RS422</sup> | Encoder 0-pulse 0-0̄ (TTL)                 | RES             | Input confirmation             | PK                                   | Pink                 |
|                       |  | EDM             | Contactur Monitoring           | GNVE                                 | Green/Yellow         |

### Feasible reflector distance

Reflector type, mounting distance

|           |           |           |           |
|-----------|-----------|-----------|-----------|
| RQ100BA   | 0...4 m   | RR25_M    | 0...1,4 m |
| RE18040BA | 0...3 m   | RR25KP    | 0...1 m   |
| RQ84BA    | 0...4 m   | RR21_M    | 0...1 m   |
| RR84BA    | 0...4 m   | ZRAE02B01 | 0...2 m   |
| RE9538BA  | 0...1,5 m | ZRME01B01 | 0...0,6 m |
| RE6151BM  | 0...3,6 m | ZRME03B01 | 0...2,8 m |
| RR50_A    | 0...3 m   | ZRMR02K01 | 0...0,8 m |
| RE6040BA  | 0...3,5 m | ZRMS02_01 | 0...0,9 m |
| RE8222BA  | 0...2 m   | RF505     | 0...1,2 m |
| RR34_M    | 0...1,8 m | RF508     | 0...1,1 m |
| RE3220BM  | 0...1,8 m | RF258     | 0...1 m   |
| RE6210BM  | 0...1,2 m | ZRDF_K01  | 0...4 m   |

