## Fiber-optic amplifier

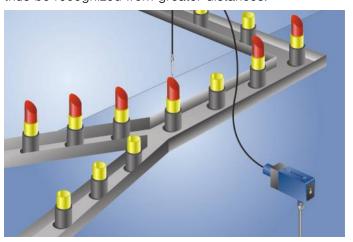
## UM55PCT2

Part Number



- Switching frequency: 1 kHz
- Teach-in, external teach-in

These sensors are equipped for use with glass fiber optic cables but can be used with or without one. The transmitter and receiver are located in a single housing. The sensor evaluates transmitted light reflected back from the object and the output is switched as soon as an object passes the selected range. Bright objects reflect more light than dark objects, and can thus be recognized from greater distances.



#### **Technical Data**

| Range 500 mm  Switching Hysteresis   | Optical Data                           |                |  |  |  |
|--|--|----------------|--|--|--|
| Switching Hysteresis         < 15 %  |  | 500 mm         |  |  |  |
| Light Source         Infrared Light           Wavelength         880 nm           Service Life (T = +25 °C)         100000 h           Max. Ambient Light         100000 Lux           Opening Angle         12 °           Electrical Data         1030 V DC           Supply Voltage         1030 V DC           Current Consumption (Ub = 24 V)         < 40 mA   |  |                |  |  |  |
| Wavelength       880 nm         Service Life (T = +25 °C)       100000 h         Max. Ambient Light       10000 Lux         Opening Angle       12 °         Electrical Data       1030 V DC         Supply Voltage       1030 V DC         Current Consumption (Ub = 24 V)       < 40 mA  |  |                |  |  |  |
| Service Life (T = +25 °C) 100000 h  Max. Ambient Light 10000 Lux  Opening Angle 12 °  Electrical Data  Supply Voltage 1030 V DC  Current Consumption (Ub = 24 V) 40 mA  Switching Frequency 1 kHz  Response Time 500 µs  On-/Off-Delay (RS-232) 05 s  Temperature Drift < 10 %  Temperature Range -2560 °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  Teach Mode NT, MT  Protection Class III  Mechanical Data  Setting Method Teach-In  Housing Material Plastic  Full Encapsulation yes  Degree of Protection PNP NO/NC switchable  RS-232 with Adapterbox  Connection Diagram No. 152  Control Panel No. 360  Suitable Connection Equipment No. 2  Suitable Mounting Technology No. 360  |  |                |  |  |  |
| Electrical Data         Supply Voltage       1030 V DC         Current Consumption (Ub = 24 V)       < 40 mA   | •                                      | 100000 h       |  |  |  |
| Electrical Data         Supply Voltage       1030 V DC         Current Consumption (Ub = 24 V)       < 40 mA   | Max. Ambient Light                     | 10000 Lux      |  |  |  |
| Supply Voltage  Current Consumption (Ub = 24 V)  Available Switching Frequency  Response Time  Con-/Off-Delay (RS-232)  Temperature Drift  Temperature Range  -2560 °C  Switching Output Voltage Drop  PNP Switching Output/Switching Current  Residual Current Switching Output  Short Circuit Protection  Personal Protection  Ves  Verload Protection  Yes  Setting Method  Housing Material  Full Encapsulation  Pogree of Protection  PNP NO/NC switchable  RS-232 with Adapterbox  Connection Diagram No.  Suitable Connection Equipment No.  Suitable Mounting Technology No.   | Opening Angle                          | 12 °           |  |  |  |
| Current Consumption (Ub = 24 V)  Switching Frequency  Response Time  On-/Off-Delay (RS-232)  Temperature Drift  Temperature Range  -2560 °C  Switching Output Voltage Drop  PNP Switching Output/Switching Current  Residual Current Switching Output  Short Circuit Protection  Reverse Polarity Protection  yes  Overload Protection  Teach Mode  NT, MT  Protection Class  III  Mechanical Data  Setting Method  Housing Material  Full Encapsulation  Degree of Protection  PNP NO/NC switchable  RS-232 with Adapterbox  Connection Diagram No.  Control Panel No.  Suitable Connection Equipment No.  Suitable Connection Equipment No.  Suitable Mounting Technology No.  | Electrical Data                        |                |  |  |  |
| Switching Frequency       1 kHz         Response Time       500 μs         On-/Off-Delay (RS-232)       05 s         Temperature Drift       < 10 %  | Supply Voltage                         | 1030 V DC      |  |  |  |
| Response Time 500 µs  On-/Off-Delay (RS-232) 05 s  Temperature Drift < 10 %  Temperature Range -2560 °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  Teach Mode NT, 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  Control Panel No. 152  Suitable Connection Equipment No. 2  Suitable Mounting Technology No. 360  | Current Consumption (Ub = 24 V)        | < 40 mA        |  |  |  |
| On-/Off-Delay (RS-232) | Switching Frequency                    | 1 kHz          |  |  |  |
| Temperature Drift  Temperature Range  -2560 °C  Switching Output Voltage Drop  PNP Switching Output/Switching Current  Residual Current Switching Output  Short Circuit Protection  Reverse Polarity Protection  yes  Ves  Overload Protection  Teach Mode  NT, MT  Protection Class  III  Mechanical Data  Setting Method  Teach-In  Housing Material  Pulstic  Full Encapsulation  Degree of Protection  PNP NO/NC switchable  RS-232 with Adapterbox  Connection Diagram No.  Control Panel No.  Suitable Connection Equipment No.  Suitable Mounting Technology No.  | Response Time                          | 500 μs         |  |  |  |
| Temperature Range -2560 °C Switching Output Voltage Drop PNP Switching Output/Switching Current 200 mA Residual Current Switching Output Short Circuit Protection Peverse Polarity Protection yes Ves Overload Protection Yes Teach Mode NT, MT Protection Class III  Mechanical Data Setting Method Teach-In Housing Material Plastic Full Encapsulation Pegree of Protection Uper of Protection PNP NO/NC switchable RS-232 with Adapterbox Connection Diagram No. Control Panel No. Suitable Connection Equipment No. Suitable Mounting Technology No.  | On-/Off-Delay (RS-232)                 | 05 s           |  |  |  |
| 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 Teach Mode NT, 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 Control Panel No. M3 Suitable Connection Equipment No. 2 Suitable Mounting Technology No. 360   | Temperature Drift                      | < 10 %         |  |  |  |
| PNP Switching Output/Switching Current  Residual Current Switching Output  Short Circuit Protection  Reverse Polarity Protection  Overload Protection  Yes  Teach Mode  NT, MT  Protection Class  III  Mechanical Data  Setting Method  Housing Material  Full Encapsulation  Degree of Protection  PNP NO/NC switchable  RS-232 with Adapterbox  Connection Equipment No.  Suitable Connection Equipment No.  Suitable Mounting Technology No.  | Temperature Range                      | -2560 °C       |  |  |  |
| Residual Current Switching Output  Short Circuit Protection  Reverse Polarity Protection  Overload Protection  Teach Mode  NT, MT  Protection Class  III  Mechanical Data  Setting Method  Housing Material  Full Encapsulation  Degree of Protection  Connection  N12 × 1; 4-pin  PNP NO/NC switchable  RS-232 with Adapterbox  Control Panel No.  Suitable Connection Equipment No.  Suitable Mounting Technology No.  | Switching Output Voltage Drop          | < 2,5 V        |  |  |  |
| Short Circuit Protection  Reverse Polarity Protection  Overload Protection  Teach Mode  NT, MT  Protection Class  III  Mechanical Data  Setting Method  Housing Material  Full Encapsulation  Degree of Protection  Connection  N12 × 1; 4-pin  PNP NO/NC switchable  RS-232 with Adapterbox  Control Panel No.  Suitable Connection Equipment No.  Suitable Mounting Technology No.   | PNP Switching Output/Switching Current | 200 mA         |  |  |  |
| Reverse Polarity Protection  Overload Protection  Teach Mode  Protection Class  III  Mechanical Data  Setting Method  Housing Material  Full Encapsulation  Degree of Protection  Connection  PNP NO/NC switchable  RS-232 with Adapterbox  Control Panel No.  Suitable Connection Equipment No.  Suitable Mounting Technology No.   | Residual Current Switching Output      | < 50 μA        |  |  |  |
| Overload Protection  Teach Mode  NT, MT  Protection Class  III  Mechanical Data  Setting Method  Housing Material  Full Encapsulation  Degree of Protection  Connection  N12 × 1; 4-pin  PNP NO/NC switchable  RS-232 with Adapterbox  Control Panel No.  Suitable Connection Equipment No.  Suitable Mounting Technology No.  | Short Circuit Protection               | yes            |  |  |  |
| Teach Mode Protection Class III  Mechanical Data  Setting Method Housing Material Full Encapsulation Degree of Protection Connection PNP NO/NC switchable RS-232 with Adapterbox Connection Diagram No. Control Panel No. Suitable Connection Equipment No. Suitable Mounting Technology No.   | Reverse Polarity Protection            | yes            |  |  |  |
| Protection Class  Mechanical Data  Setting Method Housing Material Full Encapsulation Degree of Protection Connection PNP NO/NC switchable RS-232 with Adapterbox Connection Diagram No. Control Panel No. Suitable Connection Equipment No. Suitable Mounting Technology No.  | Overload Protection                    | yes            |  |  |  |
| 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. I52  Control Panel No. M3  Suitable Connection Equipment No. 2  Suitable Mounting Technology No. 360  | Teach Mode                             | NT, MT         |  |  |  |
| Setting Method Teach-In Housing Material Plastic Full Encapsulation Degree of Protection IP67 Connection M12 × 1; 4-pin PNP NO/NC switchable RS-232 with Adapterbox Connection Diagram No. Control Panel No. Suitable Connection Equipment No. 2 Suitable Mounting Technology No.  | Protection Class                       | III            |  |  |  |
| 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.  Control Panel No.  Suitable Connection Equipment No.  2  Suitable Mounting Technology No.  | Mechanical Data                        |                |  |  |  |
| Full Encapsulation  Degree of Protection  Connection  M12 × 1; 4-pin  PNP NO/NC switchable  RS-232 with Adapterbox  Connection Diagram No.  Control Panel No.  Suitable Connection Equipment No.  2  Suitable Mounting Technology No.  | Setting Method                         | Teach-In       |  |  |  |
| Degree of Protection IP67  Connection M12 × 1; 4-pin  PNP NO/NC switchable  RS-232 with Adapterbox  Connection Diagram No.  Control Panel No.  Suitable Connection Equipment No.  2  Suitable Mounting Technology No.  | Housing Material                       | Plastic        |  |  |  |
| Connection M12 × 1; 4-pin  PNP NO/NC switchable  RS-232 with Adapterbox  Connection Diagram No.  Control Panel No.  Suitable Connection Equipment No.  2  Suitable Mounting Technology No.  360  | Full Encapsulation                     | yes            |  |  |  |
| PNP NO/NC switchable RS-232 with Adapterbox  Connection Diagram No.  Control Panel No.  Suitable Connection Equipment No.  2  Suitable Mounting Technology No.  360  | Degree of Protection                   | IP67           |  |  |  |
| RS-232 with Adapterbox  Connection Diagram No.  Control Panel No.  Suitable Connection Equipment No.  2  Suitable Mounting Technology No.  360   | Connection                             | M12 × 1; 4-pin |  |  |  |
| Connection Diagram No.         152           Control Panel No.         M3           Suitable Connection Equipment No.         2           Suitable Mounting Technology No.         360   | PNP NO/NC switchable                   | •              |  |  |  |
| Control Panel No.  Suitable Connection Equipment No.  2  Suitable Mounting Technology No.  360   | RS-232 with Adapterbox                 |                |  |  |  |
| Suitable Connection Equipment No. 2 Suitable Mounting Technology No. 360   | Connection Diagram No.                 | 152            |  |  |  |
| Suitable Mounting Technology No. 360   | Control Panel No.                      | M3             |  |  |  |
| 0 0,   | Suitable Connection Equipment No.      | 2              |  |  |  |
| Suitable Fiber-Optic Cable Adapter No.   | Suitable Mounting Technology No.       | 360            |  |  |  |
|  | Suitable Fiber-Optic Cable Adapter No. | 002            |  |  |  |

### **Complementary Products**

Adapterbox A232
Glass Fiber-Optic Cable
PNP-NPN Converter BG2V1P-N-2M
Software

# M 12 x1 13,5 7,1 25 1 = Transmitter Diode 1 = 1781ISTITUTE DIOGE 2 = Receiver Diode Screw M4 = 1 Nm All dimensions in mm (1 mm = 0.03937 Inch)

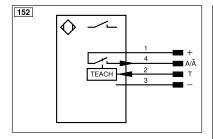
#### Ctrl. Panel

М3



06 = Teach Button

30 = Switching Status/Contamination Warning



| Legend            |  |          |                                |           |  |  |
|-------------------|--|----------|--------------------------------|-----------|--|--|
| +                 | Supply Voltage +                           | nc       | Not connected                  | ENBRS422  | Encoder B/B (TTL)                      |  |
| -                 | Supply Voltage 0 V                         | U        | Test Input                     | ENA       | Encoder A                              |  |
| ~                 | Supply Voltage (AC Voltage)                | Ū        | Test Input inverted            | ENв       | Encoder B                              |  |
| Α                 | 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)            | 0        | Analog Output                  | Аок       | Digital output OK                      |  |
| $\overline{\vee}$ | 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)                    | а        | Valve Control Output +         | M         | Maintenance                            |  |
| S                 | Shielding                                  | b        | Valve Control Output 0 V       | rsv       | Reserved                               |  |
| RxD               | Interface Receive Path                     | SY       | Synchronization                | Wire Colo | 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                                 |  |
| <b>②</b>          | IO-Link                                    | Rx+/-    | Ethernet Receive Path          | GN        | Green                                  |  |
| PoE               | ower 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                                  |  |
| BI_D+/-           | Ethernet Gigabit bidirect. data line (A-D) | RES      | Input confirmation             | PK        | Pink                                   |  |
| ENo RS422         | Encoder 0-pulse 0/0 (TTL)                  | EDM      | Contactor Monitoring           | GNYE      | Green/Yellow                           |  |
| PT                | Platinum measuring resistor                | ENARS422 | Encoder A/Ā (TTL)              |           | •                                      |  |





