

# Safety Light Curtain

## Hand Protection

### SEFG653

Part Number



- Higher levels of safety and availability thanks to intelligent muting functions
- Multifunctional thanks to measuring function
- Quick duplication of settings via microSD memory card
- Simple configuration and diagnosis with wTeach2 software

The safety light curtain can be flexibly integrated into systems thanks to the well-conceived mounting technology and the compact housing. Alignment of the emitter and the receiver is simplified by the visible red light and the signal strength display. User-friendly wTeach2 software make settings and diagnosis via the IO-Link interface extremely easy. Settings can be subsequently saved to a microSD card and quickly duplicated on other products. Extensive blanking and muting functions ensure an ideal solution for every application, in order to safely transport objects into and out of the danger zone.



### Technical Data

#### Optical Data

|                           |             |
|---------------------------|-------------|
| Range                     | 0,25...20 m |
| Housing Length (L)        | 559 mm      |
| Safety Field Height (SFH) | 460 mm      |
| Resolution                | 30 mm       |
| Light Source              | Red Light   |
| Max. Ambient Light        | 10000 Lux   |
| Opening Angle             | ± 2,5 °     |

#### Electrical Data

|                                             |                  |
|---------------------------------------------|------------------|
| Sensor Type                                 | Receiver         |
| Supply Voltage                              | 19,2...28,8 V DC |
| Current Consumption (U <sub>b</sub> = 24 V) | ≤ 350 mA         |
| Response Time                               | 10 ms            |
| Temperature Range                           | -30...55 °C      |
| Storage temperature                         | -30...70 °C      |
| No. Safety Outputs (OSSDs)                  | 2                |
| Safety Output Voltage Drop                  | ≤ 2,3 V          |
| PNP Safety Output/Switching Current         | ≤ 300 mA         |
| Number of Signal Outputs                    | 1                |
| Signal Output Voltage Drop                  | < 2,5 V          |
| Signal Output/Switching Current             | < 100 mA         |
| Short Circuit and Overload Protection       | yes              |
| Interface                                   | IO-Link V1.1     |
| Protection Class                            | III              |

#### Mechanical Data

|                      |                |
|----------------------|----------------|
| Housing Material     | Aluminum       |
| Disc Material        | Polycarbonate  |
| Degree of Protection | IP65/IP67      |
| Connection           | M12 × 1; 8-pin |

#### Safety-relevant Data

|                                    |             |
|------------------------------------|-------------|
| ESPE Type (EN 61496)               | 4           |
| Performance Level (EN ISO 13849-1) | Cat. 4 PL e |
| Mission Time TM (EN ISO 13849-1)   | 20 a        |
| Safety Integrity Level (EN 61508)  | SIL3        |
| Safety Integrity Level (EN 62061)  | SILCL3      |

#### Function

|                    |                  |
|--------------------|------------------|
| Hand Protection    | yes              |
| Scope of Functions | Muting           |
| Scope of delivery  | ZEFX001 mounting |

#### IO-Link

|                                   |             |
|-----------------------------------|-------------|
| Connection Diagram No.            | 1029 1030   |
| Control Panel No.                 | A39         |
| Suitable Connection Equipment No. | 89          |
| Suitable Mounting Technology No.  | 860 870 880 |

### Suitable Emitter

SEFG513

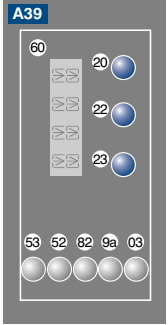
### Complementary Products

|                                                                      |
|----------------------------------------------------------------------|
| IO-Link Master                                                       |
| Laser Alignment Tool Z98G001                                         |
| microSD card ZNNG013                                                 |
| Protection Column with Protective Screen Z2SS001                     |
| Protection column with Z2SU001 path-folding mirror                   |
| Protection columns with/without protective screen (Z2SS001/ Z2SM001) |
| Safety Relay SG4-00VA000R2, SR4B3B01S, SR4D3B01S                     |
| ZEMG003 and ZEMG009 test rods                                        |
| ZFBB001 muting connection box                                        |
| ZMZG005 muting arm                                                   |

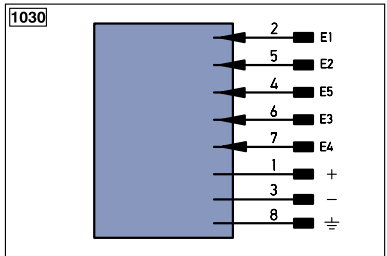
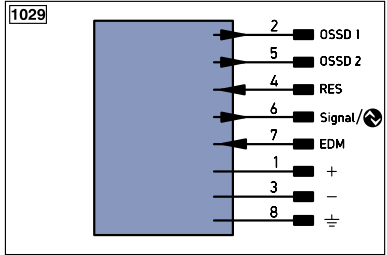


All dimensions in mm (1 mm = 0.03937 Inch)

## Ctrl. Panel



03 = Error Indicator  
20 = Enter Button  
22 = UP Button  
23 = Down Button  
52 = OSSD ON  
53 = OSSD OFF  
60 = Display  
82 = Acknowledgement Request  
9a = Weak signal



### Legend

|          |                                            |       |                                |                                    |                           |
|----------|--------------------------------------------|-------|--------------------------------|------------------------------------|---------------------------|
| +        | Supply Voltage +                           | PT    | Platinum measuring resistor    | EN0RS42Z                           | Encoder 0-pulse 0-0 (TTL) |
| -        | Supply Voltage 0 V                         | nc    | not connected                  | EN0RS42Z                           | Encoder B/B (TTL)         |
| ~        | Supply Voltage (AC Voltage)                | U     | Test Input                     | ENa                                | Encoder A                 |
| A        | Switching Output (NO)                      | U     | 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                     |
| EN0RS42Z | Encoder 0-pulse 0-0 (TTL)                  | RES   | Input confirmation             | PK                                 | Pink                      |
|          |                                            | EDM   | Contacting Monitoring          | GNYE                               | Green/Yellow              |

