



Fiber optic amplifiers in a DIN rail compatible format for small object detection in limited spaces

- High-resolution models with integrated display
- 12 bit resolution and 50  $\mu$ s response time
- Trimmer or teach-in models
- Wide range of accessory fiber optics
- 4 wire NO/NC output or Remote teach input

### APPLICATIONS

- Processing and Packaging machinery
- Electronics assembling
- Pharmaceutical industry

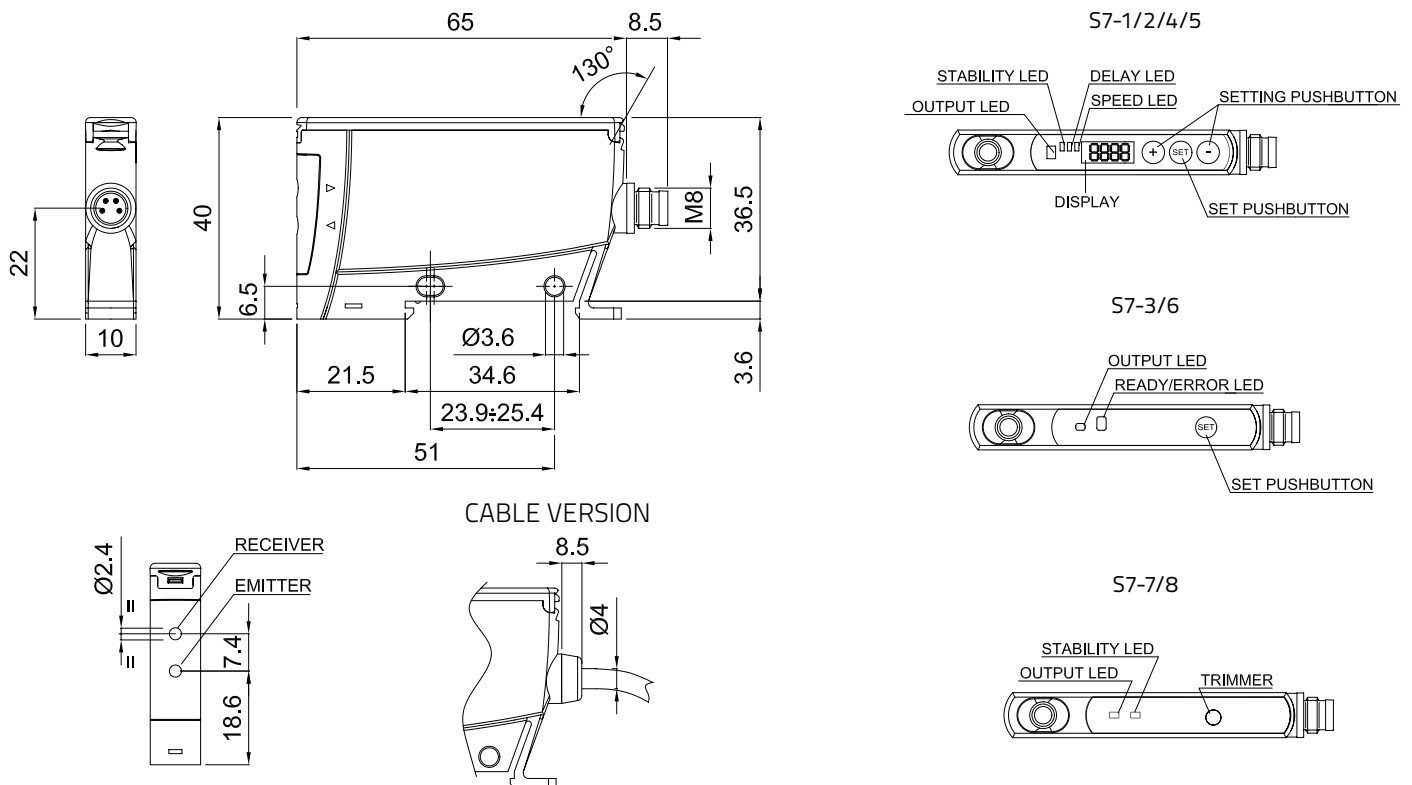


| S7  |                            |           |
|---|----------------------------|-----------|
| <b>Through beam with fiber optic</b>      | 0...300 mm                 |           |
|   | 0...150 mm                 |           |
|   | 0...75 mm                  |           |
| <b>Diffuse proximity with fiber optic</b> | 0...100 mm                 |           |
|   | 0...50 mm                  |           |
|   | 0...25 mm                  |           |
| <b>Power supply</b>                       | Vdc                        | 12...24 V |
|   | Vac                        |           |
|   | Vac/dc                     |           |
| <b>Output</b>                             | PNP                        | •         |
|   | NPN                        | •         |
|   | NPN/PNP                    |           |
|   | relay                      |           |
|   | other                      |           |
| <b>Connection</b>                         | cable                      | •         |
|   | connector                  | •         |
|   | pig-tail                   |           |
| <b>Approximate dimensions (mm)</b>        | 10x65x40                   |           |
| <b>Housing material</b>                   | ABS                        |           |
| <b>Mechanical protection</b>              | IP65, IP60 (trimmer vers.) |           |

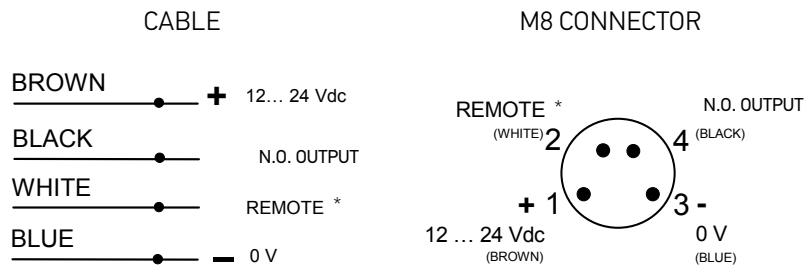
# TECHNICAL DATA

|  |   |
|--|---|
| <b>Power supply</b>                          | 12 ... 24 Vdc ± 10% (reverse polarity protection)   |
| <b>Ripple</b>                                | 2 Vpp max.  |
| <b>Consumption (output current excluded)</b> | 50 mA max. (mod. S7-1/2/4/5)<br>40 mA (mod. S7-3/6)<br>30 mA max. (mod. S7-7/8)   |
| <b>Light emission</b>                        | red 670 nm (mod. S7-2/3/5/6/7/8)<br>white 400-700 nm (mod. S7-1/4)  |
| <b>Setting</b>                               | SET pushbutton, + pushbutton, - pushbutton (mod. S7-1/2/4/5)<br>1 SET pushbutton (mod. S7-3/6)<br>12 multiturn trimmer (mod. S7-7/8)        |
| <b>Indicators</b>                            | yellow OUTPUT LED<br>green STABILITY LED, DELAY LED and SPEED LED (mod. S7-1/2/4/5)<br>green/red READY/ERROR LED (mod. S7-3/6/7/8)          |
| <b>Output</b>                                | PNP or NPN  |
| <b>Output current</b>                        | 100 mA max.   |
| <b>Saturation voltage</b>                    | 1,2 V max. (mod. S7-3/6/7/8)<br>2 V max. (mod. S7-1/2/4/5)  |
| <b>Response time</b>                         | 500 µs max. (at low speed for mod. S7-1/2/7/8)<br>100 µs max. (at fast speed for mod. S7-2/5)<br>50 µs max. (at fast speed for mod. S7-1/4) |
| <b>Switching frequency</b>                   | 1 kHz (at low speed for mod. S7-1/2/7/8)<br>5 kHz (at fast speed for mod. S7-2/5)<br>10 kHz (at fast speed for mod. S7-1/4)                 |
| <b>Connection</b>                            | 2 m Ø 4 mm cable (S7-1/2/3/7), M8 4-pole connector (S7-4/5/6/8)   |
| <b>Dielectric strength</b>                   | 500 Vac, 1 min between electronics and housing  |
| <b>Insulating resistance</b>                 | >20 MΩ, 500 Vdc between electronics and housing   |
| <b>Electrical protection</b>                 | class 2   |
| <b>Mechanical protection</b>                 | IP65<br>IP60 (mod. S7-7/8)  |
| <b>Ambient light rejection</b>               | according to EN 60947-5-2   |
| <b>Vibrations</b>                            | 0,5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6)  |
| <b>Shock resistance</b>                      | 11 ms (30 G) 6 shock for every axis (EN60068-2-27)  |
| <b>Housing material</b>                      | ABS   |
| <b>Operating temperature</b>                 | -10 ... 55 °C   |
| <b>Storage temperature</b>                   | -25 ... 70 °C   |
| <b>Weight</b>                                | 115 g max. cable vers., 30 g max. conn. vers.   |

# DIMENSIONS

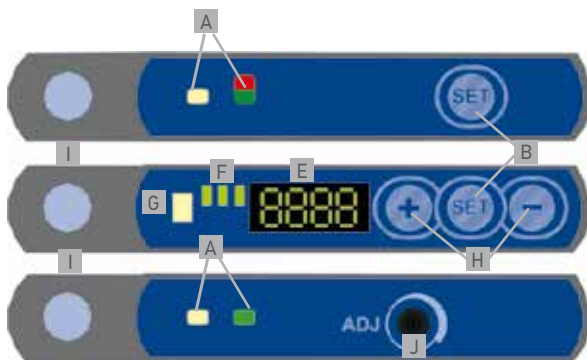


# CONNECTIONS



\* N.C. OUTPUT on S7-7/8 models

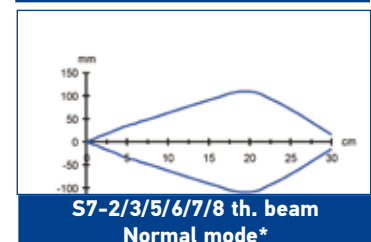
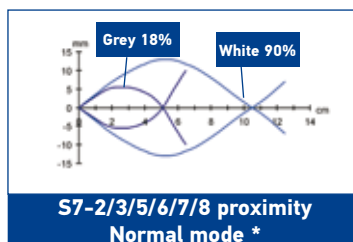
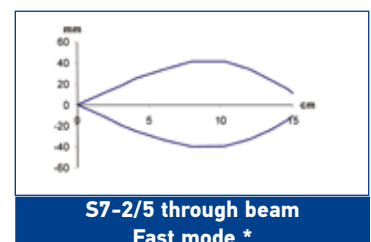
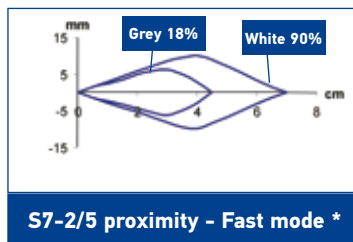
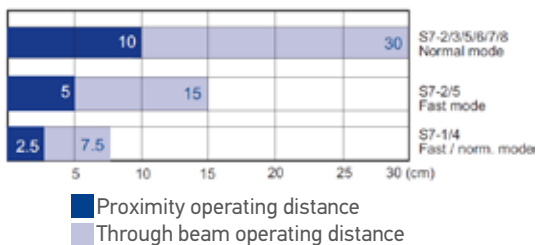
# INDICATOR AND SETTINGS



- A OUTPUT status and READY/ERROR LEDs
- B Teach-in push-button
- C M8 connector output
- D Cable output
- E 4 digit display
- F STATUS signalling LEDs
- G OUTPUT status LED
- H '+' e '-' buttons
- I Fiber lock/unlock button
- J Multiturn trimmer

Teach-in button for setting.  
EASyTouch™ provides two setting modes: standard or fine.  
Please refer to instructions manual for operating details

# DETECTION DIAGRAMS



High efficiency Fiber-optics or accessory lenses can be used to obtain larger operating distances.

**Note:** the detection diagrams of the S7-1/4 models in normal and fast mode, corresponds to the values of the S7-2/5 models in fast mode, but with half the operating distance

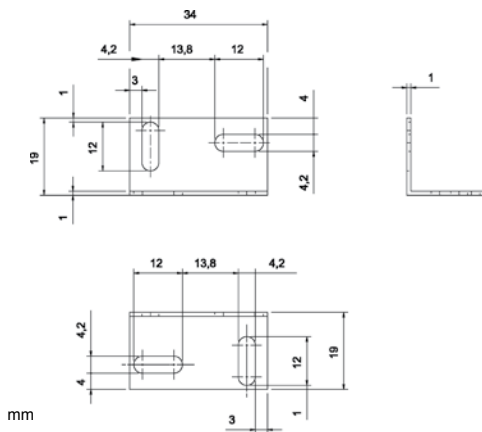
# MODEL SELECTION AND ORDER INFORMATION

| OPTIC FUNCTION             | SETTING                  | CONNECTION   | OUTPUT       | MODEL    | ORDER No. |           |
|----------------------------|--------------------------|--------------|--------------|----------|-----------|-----------|
| OPTIC FIBER<br>(white LED) | display,<br>push-button  | 2m Cable     | PNP          | S7-1-E-P | 950551090 |           |
|                            |                          |              | NPN          | S7-1-E-N | 950551080 |           |
|                            |                          | M8 Connector | PNP          | S7-4-E-P | 950551110 |           |
|                            |                          |              | NPN          | S7-4-E-N | 950551100 |           |
| OPTIC FIBER<br>(red LED)   | display,<br>push-button  | 2m Cable     | PNP          | S7-2-E-P | 950551010 |           |
|                            |                          |              | NPN          | S7-2-E-N | 950551000 |           |
|                            |                          |              | push-buttons | PNP      | S7-3-E-P  | 950551050 |
|                            |                          |              |              | NPN      | S7-3-E-N  | 950551040 |
|                            | display,<br>push-buttons | M8 Connector | PNP          | S7-5-E-P | 950551030 |           |
|                            |                          |              | NPN          | S7-5-E-N | 950551020 |           |
|                            | push-buttons             | M8 Connector | PNP          | S7-6-E-P | 950551070 |           |
|                            |                          |              | NPN          | S7-6-E-N | 950551060 |           |
|                            | trimmer                  | 2m Cable     | PNP          | S7-7-E-P | 950551120 |           |
|                            |                          |              | NPN          | S7-7-E-N | 950551130 |           |
|                            |                          | M8 Connector | PNP          | S7-8-E-P | 950551140 |           |
|                            |                          |              | NPN          | S7-8-E-N | 950551150 |           |

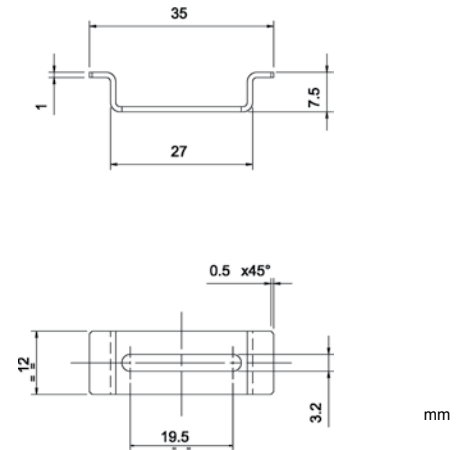
Datalogic Automation offers a wide range of fiber optic cables available in two different lines: OF series for standard applications and OFA series for specialistic applications, such as 90° optics as well as fixed focus optics. These accessories allow to carry out the diffuse proximity and through beam detection of small object in difficult point of the machine. Refer to the next page for the complete list.

## ACCESSORIES

**ST-505**



**CRD-5000**



| MODEL     | DESCRIPTION               | ORDER No.  |
|-----------|---------------------------|------------|
| ST -505   | L-shaped mounting bracket | 95ACC 2800 |
| CRD -5000 | DIN rail mounting bracket | 95ACC 2790 |

## CABLES

| TYPE                | DESCRIPTION          | LENGTH | MODEL         | ORDER No. |
|---------------------|----------------------|--------|---------------|-----------|
| Axial M8 Connector  | 4-pole, grey, P.V.C. | 3 m    | CS-B1-02-G-03 | 95A251420 |
|                     |                      | 5 m    | CS-B1-02-G-05 | 95A251430 |
|                     |                      | 7 m    | CS-B1-02-G-07 | 95A251440 |
|                     |                      | 10 m   | CS-B1-02-G-10 | 95A251480 |
|                     | 4-pole, P.U.R.       | 2 m    | CS-B1-02-R-02 | 95A251620 |
| Radial M8 Connector | 4-pole, grey, P.V.C. | 5 m    | CS-B1-02-R-05 | 95A251640 |
|                     |                      | 3 m    | CS-B2-02-G-03 | 95A251450 |
|                     |                      | 5 m    | CS-B2-02-G-05 | 95A251460 |
|                     |                      | 7 m    | CS-B2-02-G-07 | 95A251470 |
|                     | 4-pole, P.U.R.       | 10 m   | CS-B2-02-G-10 | 95A251530 |
|                     |                      | 2 m    | CS-B2-02-R-02 | 95A251630 |
|                     |                      | 5 m    | CS-B2-02-R-05 | 95A251650 |