

**S5 SERIES**

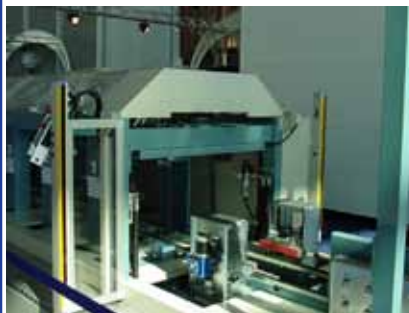
The **S5** series offers a range of plastic tubular M18 photoelectric sensors. The most varied optic functions can be chosen amongst the fixed focus or diffuse proximity models with short, medium or long operating distances reaching 60 cm; the 4 m retroreflex, 3 m polarised retroreflex and 1 m for detection of transparent materials; the 12 m through beam and models with fibre-optic connection. Different versions with either axial or radial optics are available. The series offers connector or cable connection, 3 wire Vac versions or 4 wire Vdc versions with complete configuration of the NPN/ PNP output and dark/light mode. A red LED indicating the output status is visible on the bottom side of the sensor. The versions with trimmer adjustment present also a green LED signalling the switching stability according to the received signal's intensity. The rugged ABS housing always guarantees IP67 protection.



SENSORS

**HIGHLIGHTS**

- Wide versatility of optic functions and connections
- High operating distances for all functions
- Models with trimmer adjustment and stability LED
- Rugged and impermeable plastic housing

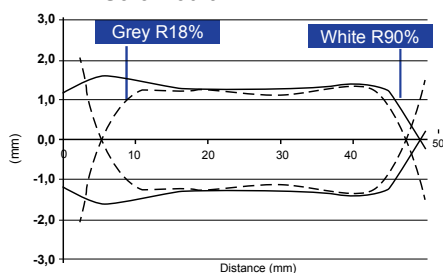
**APPLICATIONS****Ceramics****Transportation lines****Beverage & Bottling****Packaging lines**

## TECHNICAL DATA

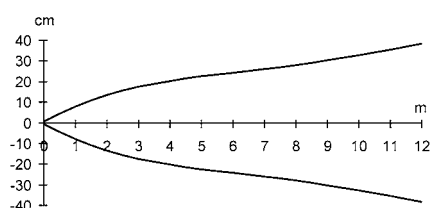
|                                                   |                                                                                                                               |
|---------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| <b>Power supply:</b>                              | 10 ... 30 VDC (D.C. VERS.),<br>REVERSE POLARITY PROTECTION<br>15 ... 264 Vac (a.c. vers.)                                     |
| <b>Consumption:</b>                               | 30 mA max. (d.c. vers.)<br>10 mA max. (a.c. vers.)                                                                            |
| <b>Light emission:</b>                            | infrared LED 880 nm<br>red LED 660 nm (B, E1 vers.)                                                                           |
| <b>Diffuse proximity operating distance:</b>      | 1 ... 10 cm (C10 vers.), 1 ... 8 cm (C8 vers.)<br>1 ... 35 cm (C35 vers.), 1 ... 30 cm (C30 vers.)<br>1 ... 60 cm (C60 vers.) |
| <b>Fixed focus operating distance:</b>            | 15 mm with 1 mm spot (D15 vers.)<br>50 mm with 2 mm spot (D50 vers.)                                                          |
| <b>Retroreflex operating distance:</b>            | 0.1 ... 4 m (on R2)                                                                                                           |
| <b>Polarised retroreflex operating distance:</b>  | 0.1 ... 3 m (on R2)                                                                                                           |
| <b>Retroreflex for transparents op. distance:</b> | 0.1 ... 0.8 m (on R2)                                                                                                         |
| <b>Through beam operating distance:</b>           | 0 ... 12 m (F/G12 vers.), 0 ... 8 cm (F/G8 vers.)                                                                             |
| <b>Operating distance with fibre-optics:</b>      | 22 mm proximity (with OF-18-ST)<br>85 mm through beam (with OF-19-ST)<br>refer to OF series for other fibres                  |
| <b>Setting:</b>                                   | sensitivity trimmer<br>(A4, C8, C10, D15, D50, G vers. excluded)                                                              |
| <b>Indicators:</b>                                | red OUTPUT LED<br>green STABILITY LED (d.c. vers.)<br>red POWER LED (G vers.)                                                 |
| <b>Output type:</b>                               | NPN or PNP configurable (d.c. vers.)<br>SCR + bridge rectifier (a.c. vers.)                                                   |
| <b>Saturation voltage:</b>                        | 2.5 V max. (vers. d.c.)                                                                                                       |
| <b>Output current:</b>                            | 150 mA max.(vers. d.c.), short-circuit prot.<br>100 mA max.(vers. a.c.)                                                       |
| <b>Response time:</b>                             | 500 µs (D50 vers. )<br>1 ms max.<br>2 ms (F vers. in d.c.)<br>20 ms max. (a.c. vers.)                                         |
| <b>Switching frequency:</b>                       | 1KHz (D50 vers.)<br>500 Hz max.<br>250 Hz max. (F vers. in d.c.)<br>25 Hz max. (a.c. vers.)                                   |
| <b>Operating mode:</b>                            | dark/light (configurable in 4 wires d.c. vers.)                                                                               |
| <b>Auxiliary functions:</b>                       | 'test +' and 'test -' inputs (G vers. in d.c.)                                                                                |
| <b>Connection:</b>                                | 4-pole M12 connector or 2 m Ø 5 mm cable                                                                                      |
| <b>Electrical protection:</b>                     | class 1 (a.c. vers.); class 2 (d.c. vers.)                                                                                    |
| <b>Mechanical protection:</b>                     | IP67                                                                                                                          |
| <b>Housing material:</b>                          | ABS                                                                                                                           |
| <b>Lens material:</b>                             | PMMA plastic                                                                                                                  |
| <b>Weight:</b>                                    | 25 g max. (connector vers.); 100 g max. (cable vers.)                                                                         |
| <b>Operating temperature:</b>                     | -25 ... +55°C                                                                                                                 |
| <b>Storage temperature:</b>                       | -25 ... +70°C                                                                                                                 |
| <b>Reference standard:</b>                        | EN 60947-5-2                                                                                                                  |
| <b>Certifications:</b>                            | (  vers.d.c.)                              |

The operating distances indicate the detection distance with excess gain 2.

**S5-5-D50-92**

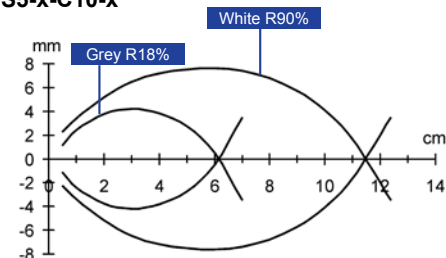


**S5-x-F/G-x**

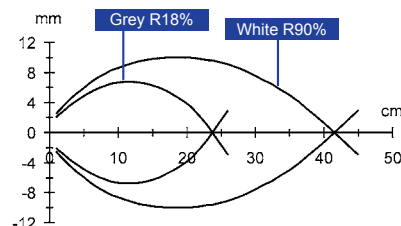


## DETECTION DIAGRAMS

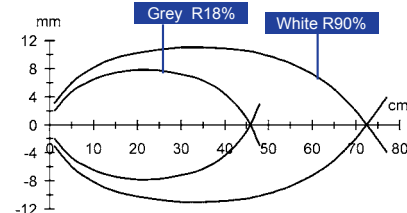
**S5-x-C10-x**



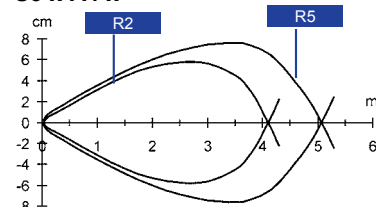
**S5-x-C35-x**



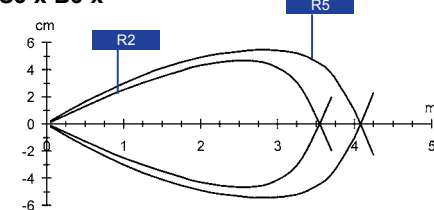
**S5-x-C60-x**



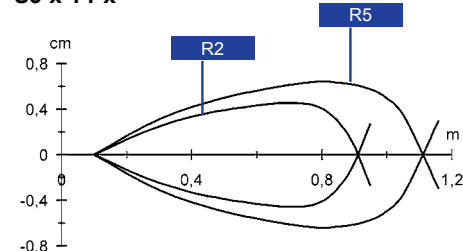
**S5-x-A4-x**



**S5-x-B3-x**



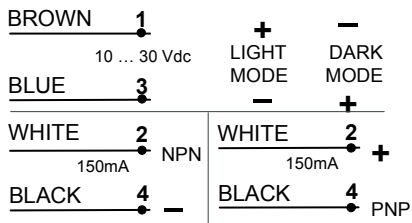
**S5-x-T1-x**



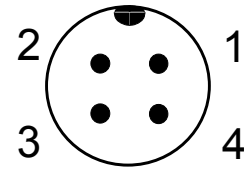
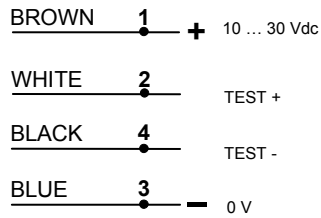
The detection diagrams indicate the typical operating distance with excess gain 1.

## CONNECTIONS

### S5-5-x (4 wires)

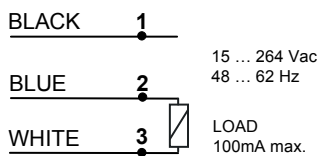


### S5-5-G8/G12 (4 wires)

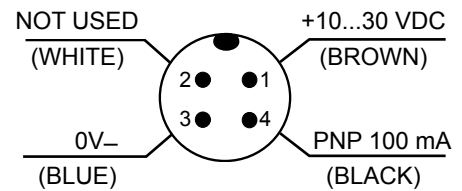
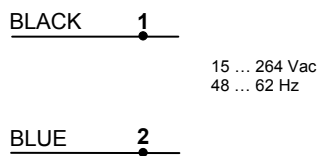


**M12 CONNECTOR**

### S5-1-x



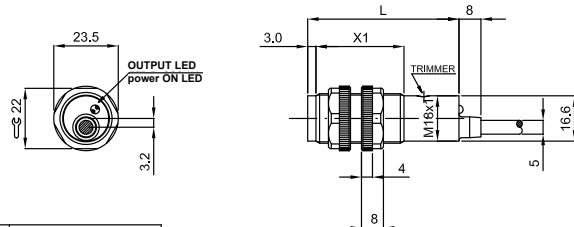
### S5-1-G8



**D50 model**

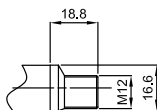
## DIMENSIONS

### AC AXIAL VERSION

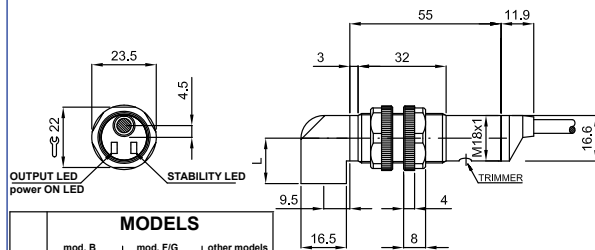


| MODELS |              |                 |
|--------|--------------|-----------------|
|        | with trimmer | without trimmer |
| X1     | 52           | 42              |
| L      | 75           | 65              |

**M12 CONNECTOR**

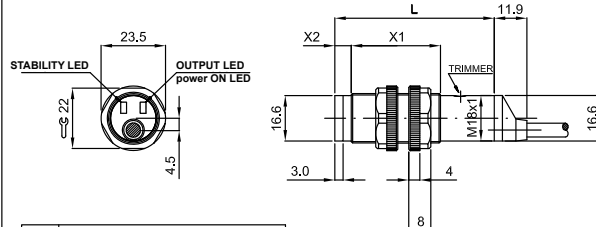


### RADIAL VERSION



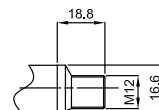
| MODELS |        |          |              |
|--------|--------|----------|--------------|
|        | mod. B | mod. F/G | other models |
| L      | 19,5   | 20,5     | 16,5         |

### DC AXIAL VERSION

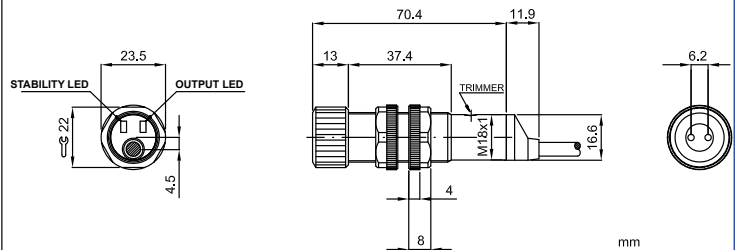


| MODELS |                 |                              |        |
|--------|-----------------|------------------------------|--------|
|        | without trimmer | with trimmer (except mod. B) | mod. B |
| L      | 55              | 65                           | 68     |
| X1     | 32              | 42                           | 42     |
| X2     | 3               | 3                            | 6      |

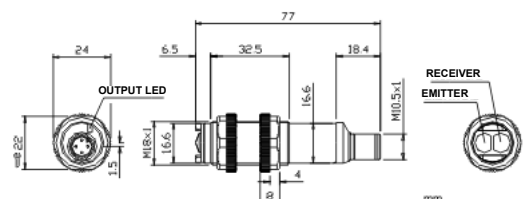
**M12 CONNECTOR**



### OPTIC FIBER VERSION



**D50 Model**



## MODEL SELECTION AND ORDER INFORMATION

|                                   | AXIAL OPTIC VERSIONS       |                            | RADIAL OPTIC VERSIONS     |                           |
|-----------------------------------|----------------------------|----------------------------|---------------------------|---------------------------|
| 4 WIRE CONNECTION<br>10-30Vdc     | 4 POLE CABLE               | M12 CONN.                  | 4 POLE CABLE              | M12 CONN.                 |
| Short distance diffuse proximity  | S5-5-C10-30<br>(G5210530)  | S5-5-C10-32<br>(G5210532)  | S5-5-C10-35<br>(G5210535) | S5-5-C10-37<br>(G5210537) |
| Medium distance diffuse proximity | S5-5-C35-30<br>(G5210630)  | S5-5-C35-32<br>(G5210632)  | S5-5-C35-35<br>(G5210635) | S5-5-C35-37<br>(G5210637) |
| Long distance diffuse proximity   | S5-5-C60-30<br>(952051640) | S5-5-C60-32<br>(952051650) | --                        | --                        |
| Fixed focus proximity             | S5-5-D15-30<br>(G5210430)  | S5-5-D15-32<br>(G5210432)  | S5-5-D15-35<br>(G5210435) | S5-5-D15-37<br>(G5210437) |
| Retroreflex                       | S5-5-A4-30<br>(G5210230)   | S5-5-A4-32<br>(G5210232)   | --                        | --                        |
| Polarised retroreflex             | S5-5-B3-30<br>(G5210730)   | S5-5-B3-32<br>(G5210732)   | S5-5-B3-35<br>(G5210735)  | S5-5-B3-37<br>(G5210737)  |
| Retroreflex for transparents      | S5-5-T1-30<br>(952051680)  | S5-5-T1-32<br>(952051690)  | --                        | --                        |
| Through beam receiver             | S5-5-F12-30<br>(G5210130)  | S5-5-F12-32<br>(G5210132)  | S5-5-F8-35<br>(G5210135)  | S5-5-F8-37<br>(G5210137)  |
| Through beam emitter              | S5-5-G12-00<br>(G5210000)  | S5-5-G12-02<br>(G5210002)  | S5-5-G8-05<br>(G5210005)  | S5-5-G8-07<br>(G5210007)  |
| Fibre-optic amplifier             | S5-5-E1-30<br>(G5210830)   | S5-5-E1-32<br>(G5210832)   | --                        | --                        |
| 3 WIRE CONNECTION<br>10-30Vdc     | 4 POLE CABLE               | M12 CONN.                  | 4 POLE CABLE              | M12 CONN.                 |
| Fixed focus proximity             | --                         | S5-5-D50-92<br>(952051940) | --                        | --                        |
| 3 WIRE CONNECTION<br>15 - 264 Vac | CABLE - dark mode          | CABLE - light mode         | CABLE - dark mode         | CABLE - light mode        |
| Short distance diffuse proximity  | S5-1-C8-10<br>(G5110510)   | S5-1-C8-20<br>(G5110520)   | S5-1-C8-15<br>(G5110515)  | S5-1-C8-25<br>(G5110525)  |
| Medium distance diffuse proximity | S5-1-C30-10<br>(G5110610)  | S5-1-C30-20<br>(G5110620)  | S5-1-C30-15<br>(G5110615) | S5-1-C30-25<br>(G5110625) |
| Fixed focus proximity             | S5-1-D15-10<br>(G5110410)  | S5-1-D15-20<br>(G5110420)  | --                        | --                        |
| Retroreflex                       | S5-1-A2-10<br>(G5110210)   | S5-1-A2-20<br>(G5110220)   | S5-1-A2-15<br>(G5110215)  | S5-1-A2-25<br>(G5110225)  |
| Through beam receiver             | S5-1-F8-10<br>(G5110110)   | S5-1-F8-20<br>(G5110120)   | --                        | --                        |
| Through beam emitter              | S5-1-G8-00<br>(G5110000)   |                            | S5-1-G8-05<br>(G5110005)  |                           |

## ACCESSORY SELECTION AND ORDER INFORMATION

| MODEL    | DESCRIPTION                                        | CODE N°   |
|----------|----------------------------------------------------|-----------|
| SP-40    | fixed support for tubular M18 sensors              | 95ACC1370 |
| SWING-18 | adjustable support for plastic tubular M18 sensors | 895000006 |

Please refer also to **Sensor Accessories**

The company endeavours to continuously improve and renew its products; for this reason the technical data and contents of this catalogue may undergo variations without prior notice. For correct installation and use, the company can guarantee only the data indicated in the instruction manual supplied with the products.

# SINGLE BEAM SAFETY SENSORS SAFETY CONTROL UNITS

Installation Flexibility

Long distance

Low temperature with defogging function

4 safety areas controlled with one unit

Double muting

## SENSORS:

- Emitter-receiver photocells with test input
- Type 2 and Type 4 models
- Plastic tubular and MAXI formats
- Up to 50m operating distance
- Class 1 red laser emission models up to 40
- Standard M12 connectors

## CONTROL UNITS:

- Integrated control of 4 single beams and 2 light curtains
- Simple DIP Switch configuration
- Muting functions can be assigned to light curtains or single beams

## APPLICATIONS

- Robots
- Automatic assembling lines
- Palletizers and Depalletizers



## S5-5-G8-62-SG-ST2

| EMITTER/RECEIVER |          |
|------------------|----------|
| G8-62            | Emitter  |
| F8-92            | Receiver |

| TYPE |        |
|------|--------|
| 2    | Type 2 |
| 4    | Type 4 |

## SL5-5-G-82-SG-ST4

| EMITTER/RECEIVER |          |
|------------------|----------|
| G-82             | Emitter  |
| F-92             | Receiver |

## S300-PR-5-G00-EX-M-SG-ST2

| EMITTER/RECEIVER |          |
|------------------|----------|
| G00-EX           | Emitter  |
| F00-OC           | Receiver |

| DEFOGGING FUNCTION |           |
|--------------------|-----------|
| ...                | Standard  |
| M                  | Defogging |

| TYPE |        |
|------|--------|
| 2    | Type 2 |
| 4    | Type 4 |

# TECHNICAL DATA

|                                      | S5                                                     | SL5                        | S300                                               |
|--------------------------------------|--------------------------------------------------------|----------------------------|----------------------------------------------------|
| GENERAL DATA                         |                                                        |                            |                                                    |
| Format                               | M18 Tubular                                            |                            | Rectangular                                        |
| Light Emission                       | Infrared LED 880 nm                                    | Class 1 Red laser (650 nm) | Infrared LED 880 nm                                |
| Type (EN61496-1)                     | 2/4 depending on model                                 | 4                          | 2/4 depending on model                             |
| Effective Aperture Angle (EN61496-2) | -/+ 2.5° for Type 4 models<br>-/+ 5° for Type 2 models |                            |                                                    |
| Operating distance                   | 0 ... 8 m                                              | 0 ... 40 m                 | 0 ... 50 m (S300...ST2)<br>9 ... 40 m (S300...ST4) |
| ELECTRICAL DATA                      |                                                        |                            |                                                    |
| Power supply (Vdc)                   | 24 Vdc ± 15%                                           |                            |                                                    |
| Outputs                              | PNP (short circuit protection)                         |                            |                                                    |
| Output current                       | 100 mA max.                                            |                            |                                                    |
| Response time                        | 1 ms max.                                              |                            |                                                    |
| MECHANICAL AND ENVIRONMENTAL DATA    |                                                        |                            |                                                    |
| Operating temperature                | -25 ... 55°C                                           | -10 ... 50 °C              | -40 ... 55 °C                                      |
| Mechanical protection (EN 60529)     | IP 67                                                  |                            |                                                    |

|                                                                 | SG-BWS-T4                     | SG-BWS-T4-MT      |
|-----------------------------------------------------------------|-------------------------------|-------------------|
| GENERAL DATA                                                    |                               |                   |
| PL (EN ISO 13849-1)                                             | e                             |                   |
| SIL (IEC 61508)                                                 | 3                             |                   |
| ELECTRICAL DATA                                                 |                               |                   |
| Power supply                                                    | 24 Vdc -15/+10%               |                   |
| PNP Outputs from S5/SL5/S300                                    | 4                             | 4                 |
| OSSDs couples from SLC                                          | ---                           | 2                 |
| Muting inputs                                                   | ---                           | 4                 |
| Test, Reset, Override, EDM,<br>Muting enable, Auto/Man Selector | 3                             | 9                 |
|                                                                 |                               |                   |
| Safety outputs                                                  | 2 PNP                         | 2 NO              |
| Muting lamps                                                    | ---                           | 2                 |
| Test outputs                                                    | 4                             | 4                 |
| Response time <sup>A</sup>                                      | 29 ms                         | 39 ms             |
| MECHANICAL AND ENVIRONMENTAL DATA                               |                               |                   |
| Operating temperature                                           | 0 ... +55°C                   |                   |
| Humidity                                                        | 15 ... 95 % (no condensation) |                   |
| Mechanical protection                                           | IP20                          |                   |
| FUNCTIONS <sup>B</sup>                                          |                               |                   |
|                                                                 | Automatic/Manual reset        |                   |
|                                                                 | External Device Monitoring    |                   |
|                                                                 | ---                           | L/T Muting        |
|                                                                 | ---                           | Double muting     |
|                                                                 | ---                           | Muting Enable     |
|                                                                 | ---                           | Muting timeout    |
|                                                                 | ---                           | Override          |
| COMPATIBILITY                                                   |                               |                   |
| Single beam photocells                                          | S5/SL5/S300                   |                   |
| Safety light curtains                                           | ---                           | All DATALOGIC SLC |

NOTES

<sup>A</sup> includes response time of photocells

<sup>B</sup> Functions setting is done through DIP switches in SG-BWS-T4-MT and through wiring in SG-BWS-T4

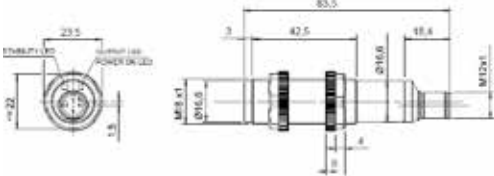
# CONNECTIONS

|                   | EMITTER | RECEIVER |
|-------------------|---------|----------|
| S5<br>SL5<br>S300 |         |          |

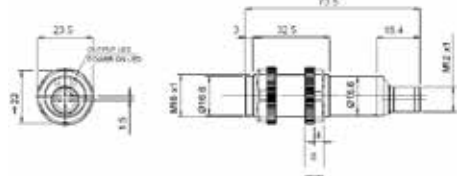
# DIMENSIONS (mm)

## S5

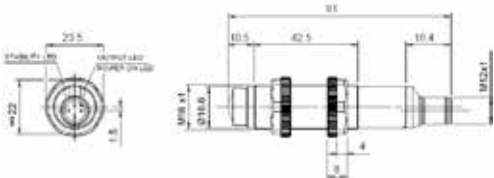
S5-5-F8-SG-ST2



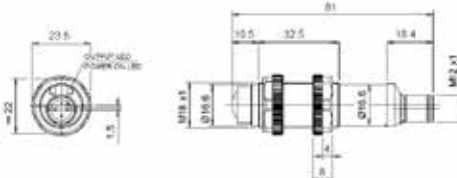
S5-5-G8-62-SG-ST2



S5-5-F8-92-SG-ST4

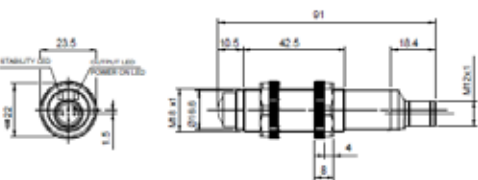


S5-5-G8-62-SG-ST4

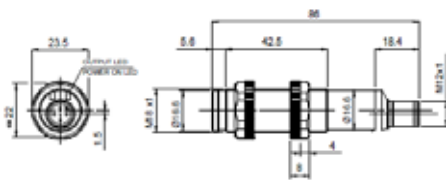


## SL5

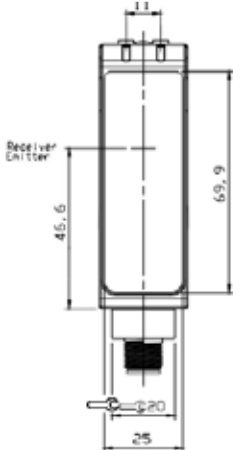
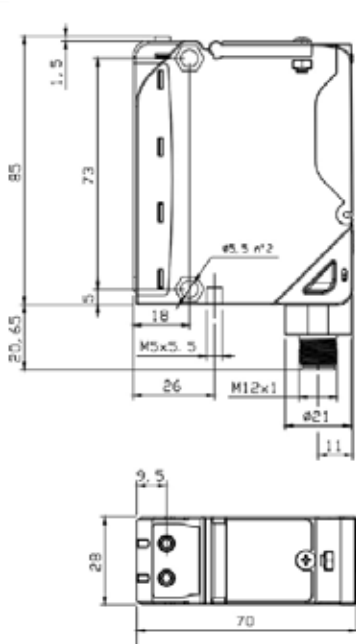
SL5-5-F-92-SG-ST4



SL5-5-G-82-SG-ST4



## S300





# ACCESSORIES

| MODEL        | DESCRIPTION                                                 | ORDER NUMBER |
|--------------|-------------------------------------------------------------|--------------|
| SP-40        | Fixed support for tubular M18 sensors                       | 95ACC1370    |
| SWING-18     | Adjustable support for plastic tubular M18 sensors          | 895000006    |
| MICRO-18     | Support with micrometric regulation for tubular M18 sensors | 95ACC1380    |
| ST-5099      | S300 Fixed bracket                                          | 95ACC2830    |
| ST-5100      | S300 Fixed bracket                                          | 95ACC2840    |
| DataVS-MK-01 | S300 Mounting kit                                           | 95A901380    |

# ORDER CODES

| SAFETY CONTROL UNITS |                                        |              |
|----------------------|----------------------------------------|--------------|
| MODEL                | DESCRIPTION                            | ORDER NUMBER |
| SG-BWS-T4            | Safety control unit pl=e auto/man edm  | 957051000    |
| SG-BWS-T4-MT         | Safety control unit pl=e double muting | 957051010    |

| SINGLE BEAM SAFETY SENSORS |      |                           |                  |              |
|----------------------------|------|---------------------------|------------------|--------------|
|                            | TYPE | MODEL                     | EMITTER/RECEIVER | ORDER NUMBER |
| S5                         | 2    | S5-5-G8-62-SG-ST2         | Emitter          | 952051870    |
|                            |      | S5-5-F8-92-SG-ST2         | Receiver         | 952051890    |
|                            | 4    | S5-5-G8-62-SG-ST4         | Emitter          | 952051910    |
|                            |      | S5-5-F8-92-SG-ST4         | Receiver         | 952051930    |
| SL5                        | 4    | SL5-5-G-82-SG-ST4         | Emitter          | 952501160    |
|                            |      | SL5-5-F-92-SG-ST4         | Receiver         | 952501170    |
| S300                       | 2    | S300-PR-5-G00-EX-SG-ST2   | Emitter          | 951451320    |
|                            |      | S300-PR-5-F00-OC-SG-ST2   | Receiver         | 951451340    |
|                            | 4    | S300-PR-5-G00-EX-SG-ST4   | Emitter          | 951451360    |
|                            |      | S300-PR-5-F00-OC-SG-ST4   | Receiver         | 951451380    |
| S300<br>DEFOGGING          | 2    | S300-PR-5-G00-EX-M-SG-ST2 | Emitter          | 951451330    |
|                            |      | S300-PR-5-F00-OC-M-SG-ST2 | Receiver         | 951451350    |
|                            | 4    | S300-PR-5-F00-OC-M-SG-ST4 | Emitter          | 951451390    |
|                            |      | S300-PR-5-G00-EX-M-SG-ST4 | Receiver         | 951451370    |

1) The photocells listed above are certified and must be used only with safety control units SG-BWS-T4 and SG-BWS-T4-MT.  
Neither technical and functioning compatibility nor certifications are guaranteed if they are used with other brand control units or old/obsolete DATALOGIC control units.

# CABLE ORDER CODES

| MODEL          | DESCRIPTION                   | ORDER NUMBER |
|----------------|-------------------------------|--------------|
| CS -A1-02-U-03 | 4-pole M12 cable (axial) 3 m  | 95ASE 1120   |
| CS -A1-02-U-05 | 4-pole M12 cable (axial) 5 m  | 95ASE 1130   |
| CS -A1-02-U-10 | 4-pole M12 cable (axial) 10 m | 95ASE 1140   |
| CS -A1-02-U-15 | 4-pole M12 cable (axial) 15 m | 95ASE 1150   |
| CS -A1-02-U-25 | 4-pole M12 cable (axial) 25 m | 95ASE 1160   |