

REFERENCE GUIDE



>Photoelectric
Sensors



Datalogic Industrial Automation is an industry-leader in products and solutions for material handling, traceability, inspection and detection applications.

With the acquisitions of Accu-Sort and PPT Vision in 2012, the company offers a comprehensive portfolio of products, technologies and solutions delivered by a team of skilled professionals dedicated in providing superior service to customers.

Datalogic is the partner of choice for organizations in the Industrial Automation market.

Factory Automation

- AUTOMOTIVE
- ELECTRONICS
- FOOD & BEVERAGE
- GENERAL MANUFACTURING
- HEALTHCARE - PHARMACEUTICAL

Transportation & Logistics

- AIRPORTS
- COURIER, EXPRESS PARCEL (CEP)
- POSTAL
- RETAIL DISTRIBUTION

Product portfolio

Datalogic Industrial Automation has the most comprehensive offering of products and solutions for traceability, inspection and detection applications in factory automation and logistics processes: industrial LASER scanners, cameras and vision systems, sensors, machine safety devices and LASER markers.

Identification

Even the most demanding and efficient automation of identification processes can leverage Datalogic Industrial Automation's leadership in the market. We manufacture the world's most comprehensive family of fixed-mount line and omnidirectional scanners.

We also offer the latest CCD vision technology with the world's largest installed base of CCD systems for bar code reading and dimensioning.

All of our AUTO-ID products and solutions leverage the broadest decoding library that has been developed through the years. Datalogic's comprehensive AUTO-ID portfolio is used in a wide range of applications and machines which are behind many of the everyday processes that keeps the global economy running.

Sensors & Safety

Datalogic Industrial Automation offers a best-in-class, comprehensive product portfolio of photoelectric and proximity sensors, rotary encoders, temperature controllers and measurement devices, as well as type 2 and type 4 safety light curtains.

These product lines provide solutions for applications involving color, contrast and luminescence, label detection, dimensional and distance measurement, in addition to machine safeguarding and access control in dangerous areas.

Machine Vision

The Datalogic Industrial Automation machine vision product line encompasses both hardware and software while covering a wide range of performance and price point requirements. The vision portfolio of products and solutions ranges from simple vision sensors to smart cameras and embedded vision systems.

Laser Marking

Laser Marking sources and systems provide value driven marking solutions for automotive, metal tools, medical, electronics and packaging. Datalogic Industrial Automation offers an extensive range of state-of-the-art technology, excellent performance and high reliability marking equipment.



PHOTOELECTRIC SENSORS

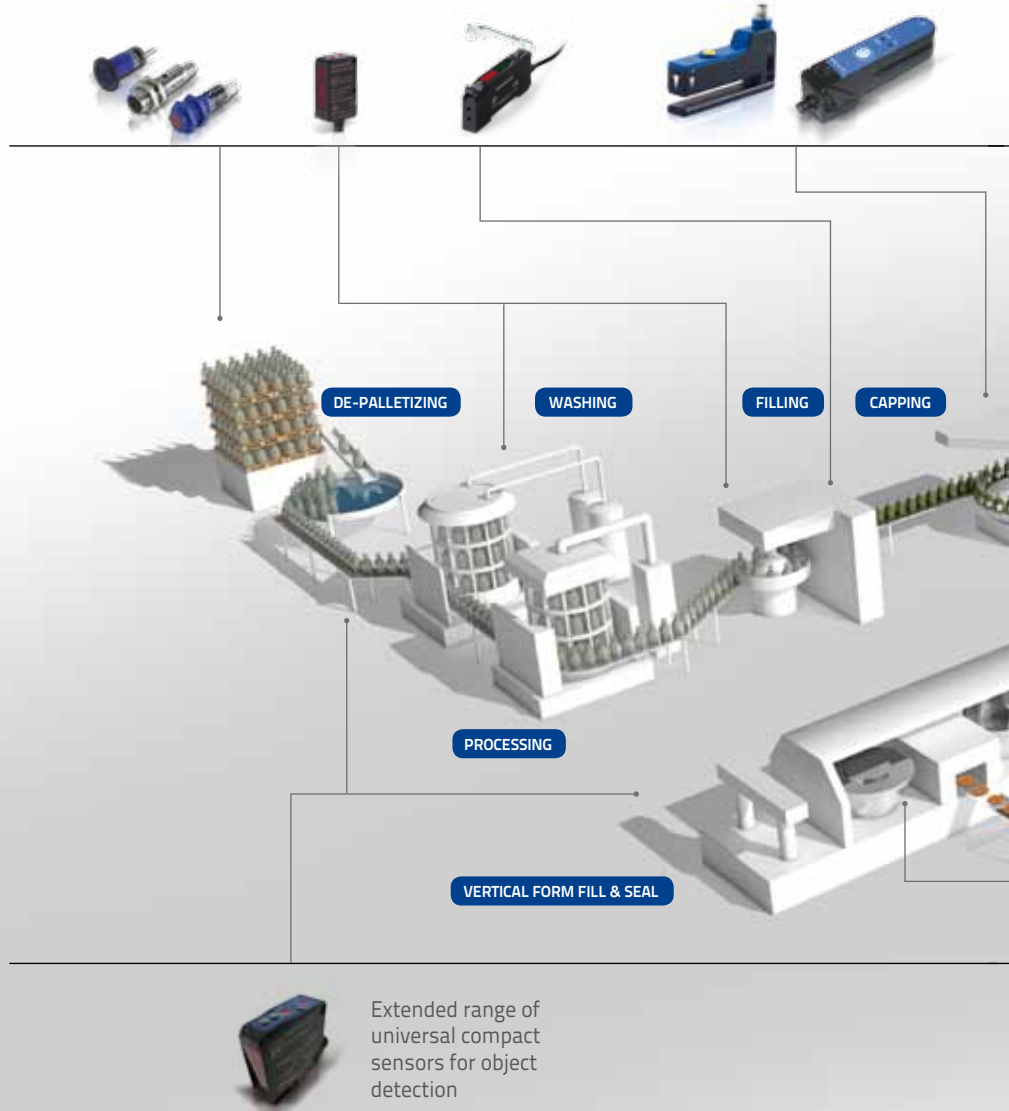
Datalogic has more than 40 years of experience in the sensors and safety sector, developing their first product, a **Photoelectric Sensor**, in 1972. Today, Datalogic is one of the largest manufacturers of sensor and safety products worldwide.

Datalogic is the market leader in Italy for photoelectric sensors and safety light curtains, ranking among the **top-10 manufacturers** in Europe by market share.

Datalogic's **Sensors and Safety** portfolio solves customer applications in **Factory Automation**, specializing in Processing and Packaging machinery, and Automated Material Handling Systems related to manufacturing industries such as Automotive, Electronics, Pharmaceutical, Food & Beverage, Paper and Printing, Wood-working, Ceramics, Glass, and Textiles.

Tubular, Miniature and Fiber Optic sensors for object detection in reduced space

Fork sensors for label detection

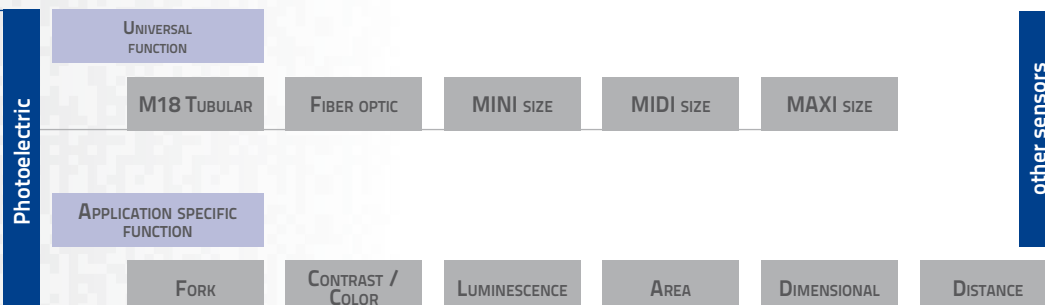


| | | |
|---------------------|------------------|---------------------------|
| APPLICATIONS | De-Palletizing | Storage & Retrieval |
| | Washing | Cartoning |
| | Filling | Wrapping |
| | Capping | Vertical Form Fill & Seal |
| | Labeling | Processing |
| | Case Packing | |
| | Stretch-wrapping | |
| | Palletizing | |

Extended range of universal compact sensors for object detection

SENSOR PRODUCTS

SENSORS PRODUCT RANGE



other sensors

- Inductive
- Ultrasonic
- Capacitive
- Temperature

Contrast and Luminescence sensors for registration marks detection



Area sensors for the detection of objects with different shape and dimensions



Maxi and Compact sensors for object detection



LABELING

CASE PACKING

STRETCH-WRAPPING

PALLETIZING

STORAGE & RETRIEVAL

WRAPPING

CARTONING



Dimensional sensors for height/width measurement and object positioning



TOF distance sensors for measurement and object positioning

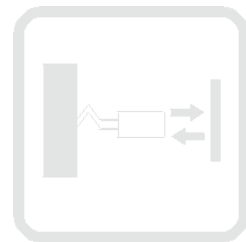
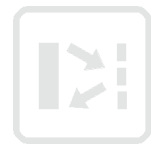
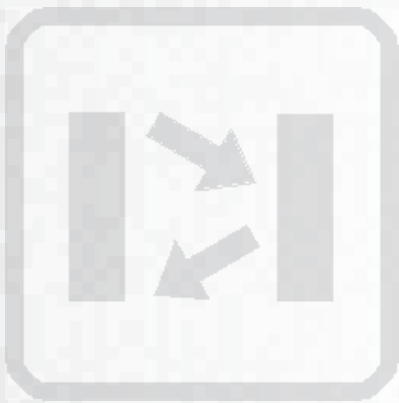
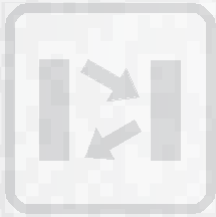
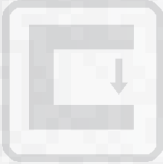




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PHOTOELECTRIC SENSORS





A Photoelectric sensor is a device used to detect the distance, absence or presence of an object, as well as to distinguish different items on the basis of their light absorption and reflection properties.

A photoelectric sensor consists of an emitter and receiver unit, coupled by either a modulated LED or LASER light beam. Photoelectric sensors are available in three different functional types depending the environment and the detection objects physical properties: through beam, retroreflective, and proximity.

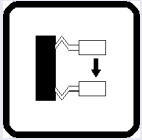
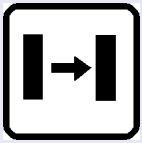
These sensors are ideal for generic industrial applications such as counting, presence control, or automatic positioning.

In addition, Datalogic offers solutions in a variety of applications such as contrast reading, distance and area measuring, as well as luminescence and color detection.

PHOTOELECTRIC SENSORS

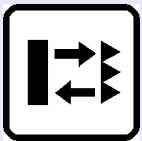
PHOTOELECTRIC SENSORS

THROUGH BEAM



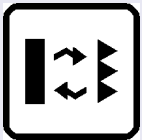
The light emitter and receiver are contained in two different housings and installed facing each other. The light beam released by the emitter directly hits the receiver; every object interrupting the beam is therefore detected. This system is used to obtain significant signal differences (when the light directly hits the receiver and when the object interrupts the beam) with the highest Excess Gain and the largest operating distance (up to 60 m). Moreover, these sensors can operate in the harshest working conditions, such as dirty or dusty environments. The through beam optic function typically operates in the dark mode: the output is activated when the object interrupts the light beam between emitter and receiver.

RETROREFLECTIVE



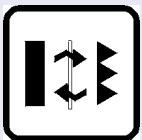
Both emitter and receiver are located inside the same housing for retro-reflective photoelectric sensors. Utilizing a prismatic reflector, the emitted light beam is reflected onto the receiver, detecting the object when it interrupts the light beam.

POLARIZED RETROREFLECTIVE



In polarized retroreflective sensors, the emitted light is polarized on a vertical plane through a polarization filter. The prismatic reflector rotates the light plane by 90°. A polarization filter placed on the receiver selects only the horizontal plane reflected by the prismatic reflector, ignoring the light reflected by other light sources. This technique guarantees a reliable signal reception, reaching significant distances.

RETROREFLECTIVE FOR TRANSPARENT



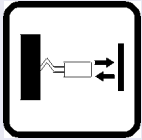
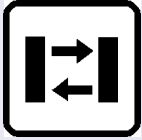
For the detection of transparent objects, such as PET bottles or Mylar sheets, a low-hysteresis polarized retroreflective model (which detects small signal differences) can be used.

These sensors elaborate the slight signal differences received when the light beam passes through a transparent object, avoiding false detections due to the nature of this kind of targets.

This technique mostly suits applications for the detection of objects positioned at considerable distances, where a prismatic reflector can be installed.

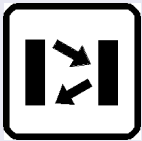
Typically, the operating distance proportionally increases with the reflector's dimensions.

DIFFUSE PROXIMITY



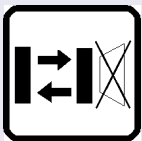
In photoelectric sensors with this optic function, both emitter and receiver are placed inside the same housing. These sensors work with weaker signals because the emitted light beam is reflected to the receiver by the object. As a consequence, the excess gain and the operating distance are reduced. However objects are detected without a prismatic reflector, making installations quick and easy.

FIXED FOCUS PROXIMITY



Fixed focus proximity sensors have a simple fixed background suppression distance, beyond which no objects are detected. The fixed triangulation of the optics greatly reduces the detection distance of reflective objects. The visible red emission simplifies the sensor's installation.

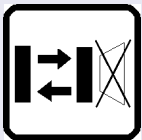
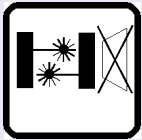
BACKGROUND SUPPRESSION



Background suppression sensors detect objects while avoiding reflections from the background. When the sensor is used for the first time, the proper background suppression distance has to be set through a distance adjustment trimmer. Once the background has been acquired, the objects can be detected regardless of their color. Background suppression sensors are not very reliable with highly clear, transparent or shiny objects.

BACKGROUND SUPPRESSION

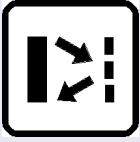
FOR CLEAR DETECTION



Background suppression technology often has difficulty reliably detecting transparent, clear, or shiny objects. These objects generate false detections due to their highly reflective surfaces. Datalogic's patented background suppression technology guarantees reliable and repeatable detection, ignoring the false detections. Models are available with LED emission, ideal for reflections caused by moving surfaces such as conveyor belts, or with LASER emission for the detection of small objects on fixed or highly reflective backgrounds. Since background suppression sensors do not require a prismatic reflector, these sensors can substitute for a polarized retroreflective sensor for transparent objects for shorter distances.

PHOTOELECTRIC SENSORS

CONTRAST



Contrast sensors distinguish the received light beams on the basis of their degrees of intensity, which depend on the color or material of the detected surfaces. A typical application of these sensors is the detection of colored registration marks used in packaging machines to synchronize the folding, cutting and welding phases. In presence of colored surfaces, the contrast is highlighted using a LED with colored light emission, typically a selectable red, green or blue LED. The white light emission allows to detect very slight contrasts in similar materials and colors.

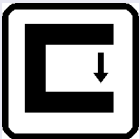
LUMINESCENCE



Luminescence sensors emit invisible ultraviolet light, which is reflected at a higher wavelength (minor energy) on the fluorescent and phosphorescent surface, shifting into the visible light spectrum.

The ultraviolet emission is modulated and the visible light reception is synchronized. The maximum immunity against external interferences, like reflections caused by very shiny surfaces, is obtained and fluorescent targets, invisible to the human eye, can be detected. Luminescence sensors are used in several industrial fields to detect items containing phosphorous such as labels on glass or mirrors, fluorescent marks marked on tiles, fluorescent glues on paper, cutting and sewing guides, as well as fluorescent paints or lubricants.

FORK



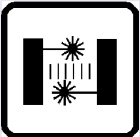
A fork sensor, is based on a particular model of the through beam sensor, where emitter and receiver are placed opposite to each other on the internal sides of an 'U-shaped' housing. Any target passing through the internal slot interrupts the beam and is detected. The most typical fork sensor applications are hole/teeth detection on wheels, label detection on thin supports, and control of edge and continuity of sheets of labels or tapes. The emission is generally infrared or red light in order to detect colored registration marks on translucent films.

COLOR



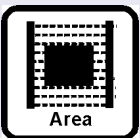
The color of an object is identified according to the different reflection coefficients obtained with the red (R), green (G) and blue (B) light emissions. For instance, yellow is characterized by R=50% G=50% B=0% reflections, orange by R=75% G=25% B=0%, pink by R=50% G=0% B=0%, the combinations are infinite. Color sensors cover a wide variety of applications, ranging from quality and process controls to automatic material handling for the identification, orientation, and selection of objects according to their color.

DISTANCE



Datalogic distance sensors are based on Time of Flight (T.O.F.): the distance is calculated on the basis of the time between the moment the LASER pulse is generated and the moment the emitted light is reflected off the object, back to the sensor. These sensors are generally used to measure an object's distance within a selected range, while the output is linearly scaled to the analog signal (4...20mA). This technology provides high precision and fast measurements in many applications, such as automatic warehousing (to drive industrial vehicles and avoid collisions), packaging and material handling.

AREA/DIMENSION LIGHT GRIDS



Area and Dimension light grids utilize several light beams for area or dimensional measurements of objects. An object's area and size are measured using parallel cross-beams, which identify obscured beams, providing accurate information to a host GUI or PC. Models of light grids vary by length to match each application requirements.

SELECTION CHART

UNIVERSAL PHOTO

| | TUBULAR | | MINIATURE | | | | |
|--|---|---|---|--|--|--|---|
| | S15 | S50/S51 | S100 | S3Z | S45 | S40 | S41 |
| MAX OPERATING DISTANCE |  |  |  |  |  |  |  |
| Through beam   | 0...20 m | 0...30 m  0...60 m | 0...12 m | 0...15 m  0...30 m  | 0...15 m  0...20 m  | | 0,1...6 m |
| Retroreflective  | 0,1...5 m | 0,1...5 m | 0,01...8 m | | | | |
| Polarized retroreflective  | 0,1...4 m | 0,1...4,5 m  0,1...16 m  | 0,01...3 m 0,01...5,5 m | 0,05...4 m  0,3...10 m  | 0,1...7 m 0,5...2 m (coaxial)  0,1...15 m  | 0,1...2,5 m  0,1...6 m  | 0,1...2,5 m |
| Retroreflective for transparent  | 0,1...0,8 m | 0,1...1,7 m | | 0...2 m | 0,5...2 m | 100...700 mm | 100...700 mm |
| Diffuse proximity  | 1...100 mm 1...350 mm 1...1000 mm | 0...100 mm 0...400 mm 0...700 mm 0...350 mm  | 2...300 mm 2...500 mm | 5...150 mm 0...700 mm | 0...800 mm  1...250 mm  | 5...300 mm  5...150 mm  | 2...350 mm |
| Fixed focus  | 0...50 mm | 100 mm | 70 mm | | | | 110 mm |
| Background suppression  | 40...120 mm | 0...100 mm | 0...100 mm | 0...300 mm 0...300 mm  | 1...200 mm 3...400 mm 4...120 mm  | 15...100 mm 15...60 mm  | |
| Fiber optic  | | 0...100 mm (through beam) 0...30 mm (diffuse proximity) | | | | | |
| Contrast  | | 10 ±2 mm | | | 10 ±2 mm | | |
| Luminescence  | | 0...20 mm | | | | | |
| Page | 20 | 26 | 38 | 42 | 48 | 52 | 56 |

(*) The maximum operating distance is determined by the optic fiber and accessory lens used and the response speed selected in the specific model














The table shows the maximum operating distance reached by different sensors models. Some measures indicate only the highest performances obtained by the corresponding sensor. Other operating distance values might be available for the same series and some optic functions might be carried out through LED or LASER emission, reaching different distances. For more specific information refer to the dedicated product page in this guide or download datasheets and manuals from our website (www.datalogic.com)

ELECTRIC SENSORS

| ELECTRIC SENSORS | | | | | | | | |
|--|--|--|---|--|---|---|---|---|
| | COMPACT | | | | MAXI | | FIBER OPTIC | |
| SMall | S8 | S62 | S6 | S90 | S300 PA | S300 PR | S7 | S70 |
|  |  |  |  |  |  |  |  |  |
| 0...2 m | 0...25 m | 0...25 m | 20 m | 0...60 m  | 0...50 m | 0...60 m | 0...300 mm (*) | 0...1740 mm (*) |
| 0,05...1,5 m | | 0,1...13 m | 0,1...6 m | | 0,1...15 m | | | |
| 0,1...1 m | 0...5 m 0...10 m  | 0,1...8 m 0,3...20 m  | 0,1...5 m | 0...3 m 0,1...6 m 0,1...20 m  | 0,1...10 m | 0,1...22 m | | |
| | 0...0,8 m 0...2 m | | | 0...1,5 m | | | | |
| | 0...500 mm | 0...900 mm 0...2000 mm  0...900 mm  | 10...900 mm 10...2000 mm | 10...1000 mm 50...2000 mm  0...600 mm  | 50...2000 m | 0...5000 mm | 0...100 mm (*) | 0...550 mm (*) |
| 3...15 mm 3...20 mm 3...30 mm 3...50 mm | | | | | | | | |
| | 50...300 mm 20...200 mm  | 30...300 mm 60...600 mm 60...1200 mm 200...2000 mm 30...1500 mm  50...350 mm  | 10...100 mm 30...250 mm 100...500 mm | 20...200 mm 5...100 mm  | 0,2...2 m | 400...2500 mm | | |
| | | | | | | | | |
| | 9 ±2 mm | | | 19 ±2 mm | | | | |
| | 10...20 mm | | | 0...40 mm | | | | |
| 60 | 64 | 70 | 76 | 82 | 88 | 92 | 92 | 100 |

SELECTION CHART





APPLICATION PHOTO

| | | FORK | | | | CONTRAST | |
|------------------------|---|---|---|--|---|---|---|
| | | SR23 | SR21 | SRX3 | SRF | TLμ | TL46 |
| MAX OPERATING DISTANCE | |  |  |  |  |  |  |
| Slot (width) |  | 5 mm | 2 mm | 3 mm | 30, 50, 80, 120 mm | | |
| Contrast |  | | | | | 6...60 mm (*) | 9 ±3 mm (*) |
| Luminescence |  | | | | | | |
| Color & Contrast |  | | | | | | |
| Area |  | | | | | | |
| Dimensional |  | | | | | | |
| Distance |  | | | | | | |
| Page | | 106 | 110 | 114 | 118 | 122 | 126 |




(*) The maximum operating distance is determined by the lens used in the specific model

The table shows the maximum operating distance reached by different sensors models. Some measures indicate only the highest performances obtained by the corresponding sensor. Other operating distance values might be available for the same series and some optic functions might be carried out through LED or LASER emission, reaching different distances. For more specific information refer to the dedicated product page in this guide or download datasheets and manuals from our website (www.datalogic.com)

DELECTRIC SENSORS

| LUMINESCENCE | COLOR & CONTRAST | AREA | DIMENSION LIGHT GRIDS | | DISTANCE | | |
|--|---|---|---|---|--|---|---|
| LD-46 | S65 | AS1 | DS1 | DS2 | S85 | S80 | S81 |
|  |  |  |  |  |  |  |  |
| | 12...20 mm | | | | | | |
| 10...50 mm (*) | | | | | | | |
| | 5...45 mm | | | | | | |
| | | 0,3...3 m | | | | | |
| | | | 0,15...4 m | 0,3...10 m | | | |
| | | | | | 0,2...20 m | 0,3...100,3 m | 0,3...4 m |
| 130 | 134 | 138 | 142 | 146 | 150 | 154 | 158 |

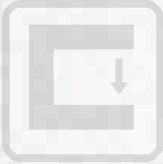
ACCESSORIES

| | FIBER OPTIC | CONNECTORS | REFLECTORS |
|------|--|---|---|
| | OF/OFA | CS | R |
| |  |  |  |
| Page | 104 | 162 | 164 |

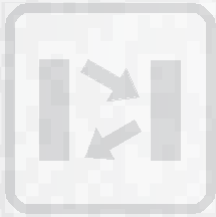
REFERENCE GUIDE



Tubular
Miniature
Compact
Maxi



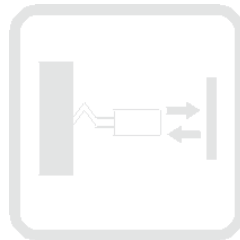
Fiber optic
Fork

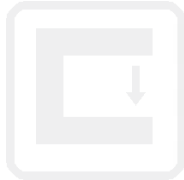
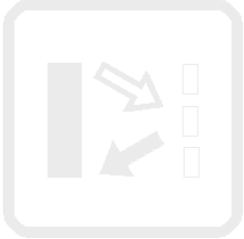


Contrast
Luminescence
Color & Contrast



Area
Dimension light grids
Distance
Accessories





REFERENCE GUIDE

TUBULAR SENSORS

S15

Plastic and stainless steel tubular M18 photoelectric sensors every environment

- Short case models for cost and space savings
- Plastic and stainless steel case with IP69K protection
- All optic functions at optimal operating distances
- Models with fixed settings or adjustment trimmer
- Cable, M12 connector and pig-tail models



APPLICATIONS

- Processing and Packaging machinery
- Assembling and Conveyor lines



(*) Stainless steel models.
ATEX II 3DG

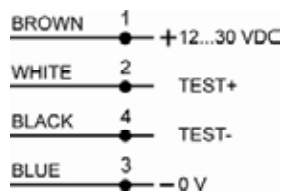
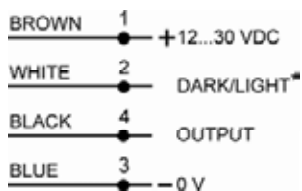
| S15 | | |
|---|-----------|--|
| Through beam | | 0...20 m |
| Retroreflective (on R2 reflector) | | 0,1...5 m |
| Polarized retroreflective | | 0,1...4 m |
| Retroreflective for transparent (on R2 reflector) | | 0,1...08 m |
| Diffuse proximity | | short distance 0...100 mm medium distance 0...350 mm long distance 1 m |
| Fixed focus | | 0...50 mm |
| Background suppression | | 40...120 mm |
| Power supply | Vdc | 10...30 V |
| | Vac | |
| | Vac/dc | |
| Output | PNP | ▪ |
| | NPN | ▪ |
| | NPN/PNP | |
| | relay | |
| | other | |
| Connection | cable | ▪ |
| | connector | ▪ |
| | pig-tail | ▪ |
| Approximate dimensions (mm) | | M18x44/48 |
| Housing material | | ABS, INOX AISI 316L |
| Mechanical protection | | IP65 - IP67 - IP69K |

| TECHNICAL DATA | |
|-------------------------|--|
| Power supply | 12 ... 30 Vdc (limit values) |
| Ripple | 2 Vpp max. |
| Consumption | 25 mA max. |
| Light emission | red LED 660 nm (mod. S15...B/D/T/M) IR LED 880 nm (mod. S15...A/C/G) |
| Setting | mono-turn trimmer (mod. S15...A01/B01/Cx1/T01/F01) and 4 turns (mod. S15...M01) |
| Operating mode | white wire or pin 2 not connected: LIGHT mode (mod. S15...C/D/M)/DARK mode (mod. S15...A/B/T/F) white wire or pin 2 connected to: 0 V DARK mode, +Vcc LIGHT mode |
| Indicators | yellow OUTPUT LED green STABILITY LED, POWER LED (mod. S15...G) |
| Output | PNP or NPN |
| Output current | 100 mA max. |
| Saturation voltage | 2 V max. |
| Response time | 1 ms (mod. S15...A/B/C/T/M) 2 ms (mod. S15...F) 500 µs (mod. S15...D) |
| Switching frequency | 500 Hz (mod. S15...A/B/C/T/M) 250 Hz (mod. S15...F) 1 kHz (mod. S15...D) |
| Connection | M12 4-pole connector, 2 m cable Ø 4 mm, 150 mm length Ø 4 mm cable with M12 4-pole connector (pig-tail vers.) |
| Dielectric strength | 500 Vac 1 min., between electronics and housing |
| Insulation resistance | >20 MΩ 500 Vdc, between electronics and housing |
| Mechanical protection | IP65, IP67, IP69K |
| Ambient light rejection | according to EN 60947-5-2 |
| Vibrations | 0.5 mm amplitude, 10 ... 55 Hz frequency, for each axis (EN60068-2-6) |
| Housing material | ABS TERLURAN, INOX AISI 316L (mod. S15-PA) - (mod. S15-NA) |
| Lens material | plastic PMMA |
| Operating temperature | -25 ... 55°C |
| Storage temperature | -25 ... 70°C |
| Weight | 40 g max. conn. vers., 55 g max. cable vers., 35 g max. pig-tail vers. |

CONNECTIONS

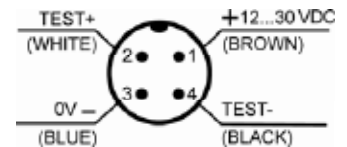
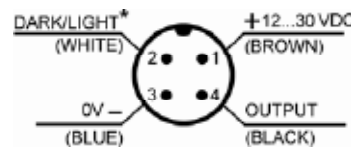
CABLE AND PIG-TAIL

Through beam emitter



M12 CONNECTOR

Through beam emitter

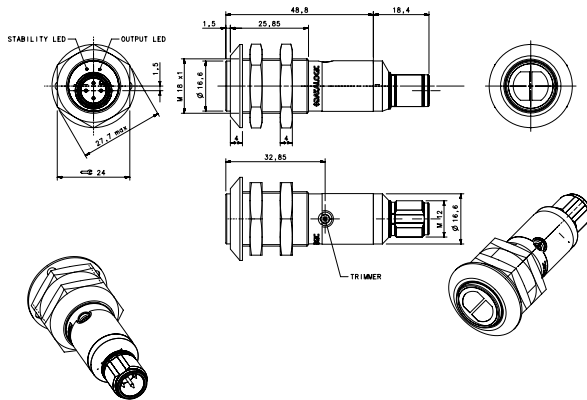


TUBULAR SENSORS

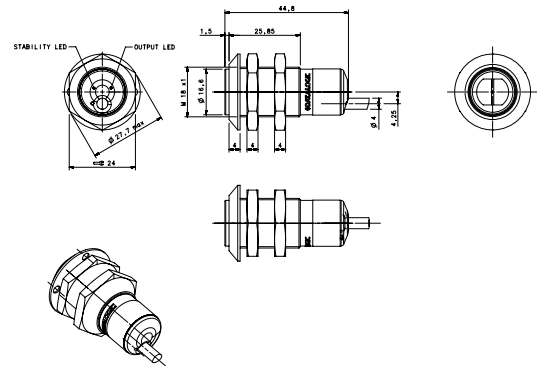
DIMENSIONS

PLASTIC

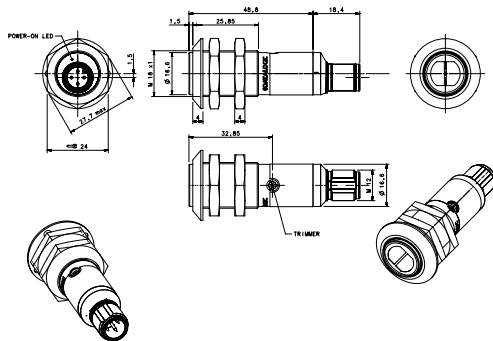
M12 connector version



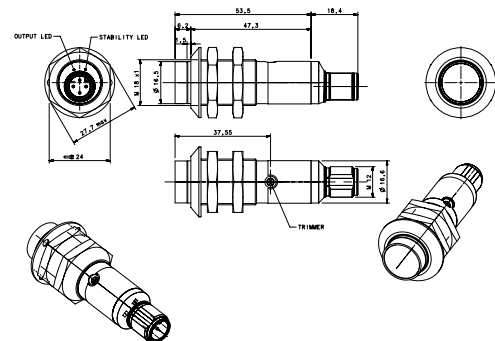
Cable version



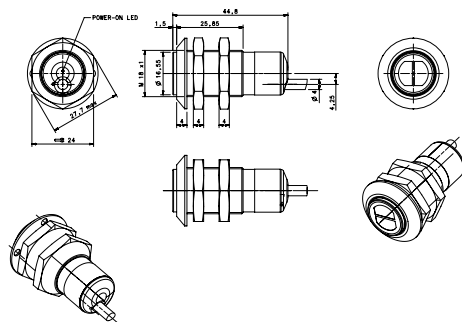
Through beam emitter - M12 connector version



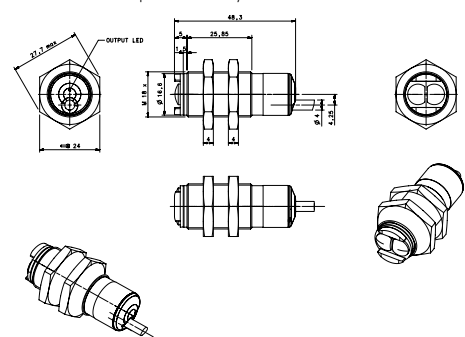
Background suppression - M12 connector version



Through beam emitter - cable version

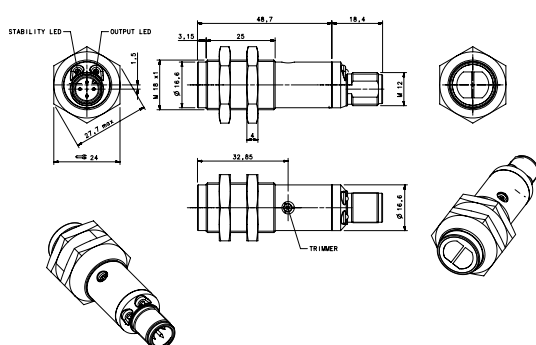


Diffuse proximity - cable version

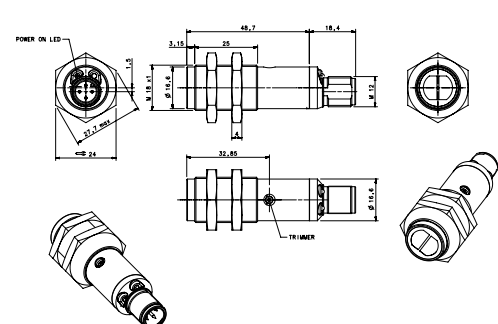


STAINLESS STEEL

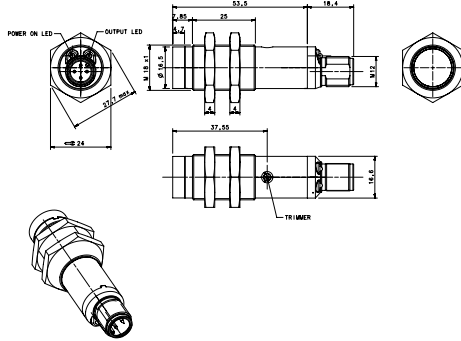
M12 connector version



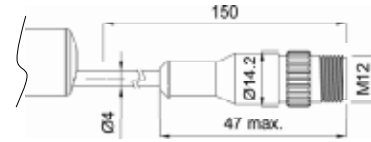
Through beam emitter - M12 connector version



Background suppression - M12 connector version



Pig-tail version



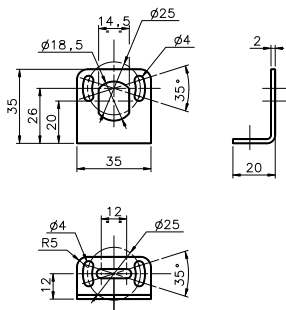
MODEL SELECTION AND ORDER INFORMATION

| OPTIC FUNCTION | HOUSING | CONNECTION | OUTPUT | MODEL | ORDER No. | |
|------------------------------------|-------------------------------------|-----------------|-----------------|-----------------|-----------------|-----------|
| Retroreflective | Plastic | 2 m cable | NPN | S15-PA-2-A00-NK | 952301051 | |
| | | | PNP | S15-PA-2-A00-PK | 952301001 | |
| | | M12 connector | NPN | S15-PA-5-A01-NK | 952301300 | |
| | PNP | | S15-PA-5-A01-PK | 952301220 | | |
| | Stainless Steel | M12 connector | NPN | S15-PA-3-A00-NK | 952301161 | |
| | | | PNP | S15-PA-3-A00-PK | 952301111 | |
| Polarized Retroreflective | Plastic | 2 m cable | NPN | S15-PA-2-B00-NK | 952301061 | |
| | | | PNP | S15-PA-2-B00-PK | 952301011 | |
| | | M12 connector | NPN | S15-PA-5-B01-NK | 952301310 | |
| | PNP | | S15-PA-5-B01-PK | 952301230 | | |
| | Stainless Steel | M12 connector | NPN | S15-PA-3-B00-NK | 952301171 | |
| | | | PNP | S15-PA-3-B00-PK | 952301121 | |
| NPN | | | S15-NA-5-B01-NK | 952301460 | | |
| Diffuse proximity (short distance) | Plastic | 2 m cable | NPN | S15-PA-2-C00-NK | 952301071 | |
| | | | PNP | S15-PA-2-C00-PK | 952301021 | |
| | | pig-tail | NPN | S15-PA-3-C00-NK | 952301181 | |
| | PNP | | S15-PA-3-C00-PK | 952301131 | | |
| | Diffuse proximity (medium distance) | Plastic | 2 m cable | NPN | S15-PA-2-C10-NK | 952301081 |
| | | | | PNP | S15-PA-2-C10-PK | 952301031 |
| M12 connector | | | NPN | S15-PA-5-C11-NK | 952301330 | |
| | | PNP | S15-PA-5-C11-PK | 952301250 | | |
| Stainless Steel | | M12 connector | NPN | S15-PA-3-C10-NK | 952301191 | |
| | | | PNP | S15-PA-3-C10-PK | 952301141 | |
| | NPN | | S15-NA-5-C11-NK | 952301480 | | |
| Diffuse proximity (long distance) | Plastic | M12 connector | PNP | S15-NA-5-C11-PK | 952301400 | |
| | | | NPN | S15-PA-5-C31-NK | 952301340 | |
| | | Stainless Steel | M12 connector | PNP | S15-PA-5-C31-PK | 952301260 |
| | NPN | | | S15-NA-5-C31-NK | 952301490 | |
| | PNP | | | S15-NA-5-C31-PK | 952301410 | |
| | Fixed focus | Plastic | 2 m cable | NPN | S15-PA-2-D50-NK | 952301530 |
| pig-tail | | | PNP | S15-PA-2-D50-PK | 952301520 | |
| | | | NPN | S15-PA-3-D50-NK | 952301550 | |
| Through beam receiver | Plastic | 2 m cable | PNP | S15-PA-3-D50-PK | 952301540 | |
| | | | NPN | S15-PA-2-F00-NK | 952301091 | |
| | | M12 connector | PNP | S15-PA-2-F00-PK | 952301041 | |
| | NPN | | S15-PA-5-F01-NK | 952301360 | | |
| | Stainless Steel | M12 connector | PNP | S15-PA-5-F01-PK | 952301280 | |
| | | | NPN | S15-PA-3-F00-NK | 952301201 | |
| PNP | | | S15-PA-3-F00-PK | 952301151 | | |
| Through beam emitter | Plastic | 2 m cable | NPN | S15-NA-5-F01-NK | 952301510 | |
| | | | PNP | S15-NA-5-F01-PK | 952301430 | |
| | | Stainless Steel | M12 connector | - | S15-PA-2-G00-XG | 952301101 |
| | - | | | S15-PA-5-G01-XG | 952301290 | |
| | - | | | S15-PA-3-G00-XG | 952301211 | |
| | Background suppression | Plastic | M12 connector | - | S15-NA-5-G01-XG | 952301440 |
| NPN | | | | S15-PA-5-M01-NK | 952301350 | |
| PNP | | | S15-PA-5-M01-PK | 952301270 | | |
| Stainless Steel | | M12 connector | NPN | S15-NA-5-M01-NK | 952301500 | |
| | | | PNP | S15-NA-5-M01-PK | 952301420 | |
| | | | NPN | S15-PA-5-T01-NK | 952301320 | |
| Transparent | Stainless Steel | M12 connector | PNP | S15-PA-5-T01-PK | 952301240 | |
| | | | NPN | S15-NA-5-T01-NK | 952301470 | |
| | | | PNP | S15-NA-5-T01-PK | 952301390 | |

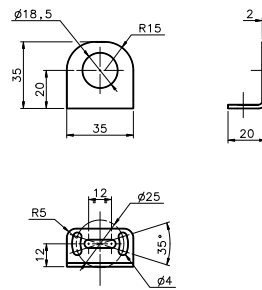
TUBULAR SENSORS

ACCESSORIES

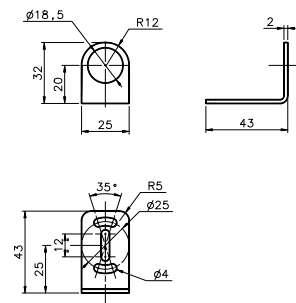
ST-5010



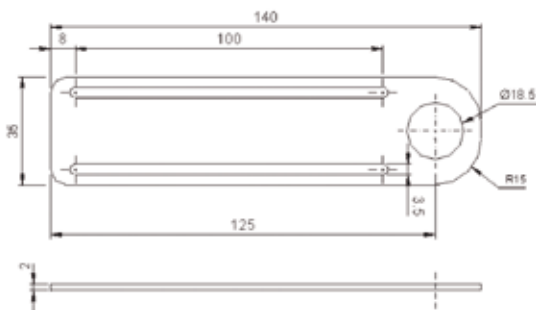
ST-5011



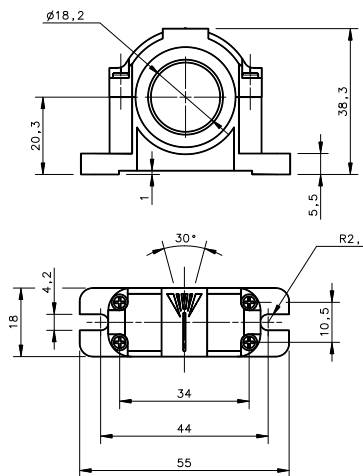
ST-5012



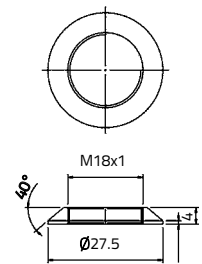
ST-5017



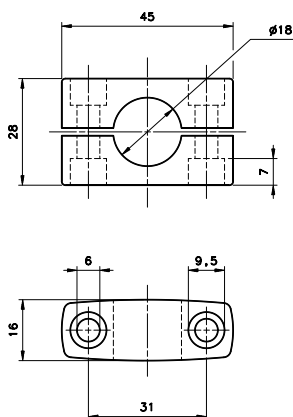
SWING-18



PLASTIC NUT



SP-40



mm

| MODEL | DESCRIPTION | ORDER No. |
|-------------|--|-----------|
| ST-5010 | M18/14 mounting bracket | 95ACC5230 |
| ST-5011 | M18 mounting bracket short | 95ACC5240 |
| ST-5012 | M18 mounting bracket long | 95ACC5250 |
| ST-5017 | M18 mounting bracket | 95ACC5270 |
| ST1218 | M12/M18 mounting brackets | 95ACC3340 |
| ST1830 | M18/M30 mounting brackets | 95ACC3350 |
| SP-40 | mounting bracket tubular | 95ACC1370 |
| SWING-18 | Adjustable support for M18 tubular sensors | 895000006 |
| PLASTIC NUT | flared mounting nut | 95ACC2630 |

CABLES

| TYPE | DESCRIPTION | LENGTH | MODEL | ORDER No. |
|----------------------|---------------------------------|-----------------------|---------------|-----------|
| Axial M12 Connector | 4-pole, grey, P.V.C. | 3 m | CS-A1-02-G-03 | 95A251380 |
| | | 5 m | CS-A1-02-G-05 | 95A251270 |
| | | 7 m | CS-A1-02-G-07 | 95A251280 |
| | | 10 m | CS-A1-02-G-10 | 95A251390 |
| | 4-pole, P.U.R. | 2 m | CS-A1-02-R-02 | 95A251540 |
| | | 5 m | CS-A1-02-R-05 | 95A251560 |
| Radial M12 Connector | 4-pole, grey, P.V.C. | 3 m | CS-A2-02-G-03 | 95A251360 |
| | | 5 m | CS-A2-02-G-05 | 95A251240 |
| | | 7 m | CS-A2-02-G-07 | 95A251245 |
| | | 10 m | CS-A2-02-G-10 | 95A251260 |
| | 4-pole, P.U.R. | 2 m | CS-A2-02-R-02 | 95A251550 |
| | | 5 m | CS-A2-02-R-05 | 95A251570 |
| Axial M12 Connector | 4-pole, shielded, black, P.V.C. | 3 m | CV-A1-22-B-03 | 95ACC1480 |
| | | 5 m | CV-A1-22-B-05 | 95ACC1490 |
| | | 10 m | CV-A1-22-B-10 | 95ACC1500 |
| | | 15 m | CV-A1-22-B-15 | 95ACC2070 |
| | | 25 m | CV-A1-22-B-25 | 95ACC2090 |
| Radial M12 Connector | 4-pole, shielded, black, P.V.C. | 3 m | CV-A2-22-B-03 | 95ACC1540 |
| | | 5 m | CV-A2-22-B-05 | 95ACC1550 |
| | | 10 m | CV-A2-22-B-10 | 95ACC1560 |
| Axial M12 Connector | 4-pole, U.L., black, P.V.C. | 3 m | CS-A1-02-U-03 | 95ASE1120 |
| | | 5 m | CS-A1-02-U-05 | 95ASE1130 |
| | | 10 m | CS-A1-02-U-10 | 95ASE1140 |
| | | 15 m | CS-A1-02-U-15 | 95ASE1150 |
| | | 25 m | CS-A1-02-U-25 | 95ASE1160 |
| Radial M12 Connector | 4-pole, black | Connector- not cabled | CS-A1-02-B-NC | G5085002 |
| Radial M12 Connector | 4-pole, black | Connector- not cabled | CS-A2-02-B-NC | G5085003 |

TUBULAR SENSORS

S50/S51

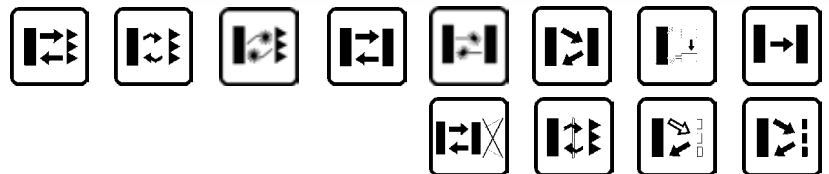
Extended range of standard "One for All" photoelectric tubular M18 sensors

- All optic functions and LASER models
- M18 flat plastic with universal mounting
- Available in M18 metal housing
- Axial or radial optics, cable or connector
- Standard 4-wire NO-NC NPN or PNP output



APPLICATIONS

- Processing and Packaging machinery
- Conveyor lines, material handling
- Ceramics intralogistics
- Automated warehousing



(*) Axial models.
ATEX II 3DG

| S50/S51 | | |
|---|-----------|--|
| Through beam | | 0...20 m 0...60 m (class 1 LASER) (S50) |
| Retroreflective (on R2 reflector) | | 0,1...4 m |
| Polarized retroreflective | | 0,1...4 m (S50) 0,1...3 m (S51) |
| Retroreflective for transparent (on R2 reflector) | | 0,1...16 m (class 1 LASER) (S50) 0,1...1,3 m (S50) |
| Diffuse proximity | | short distance 0...100 mm medium distance 0...400 mm (S50) 0...450 mm (S51) long distance 0...700 mm long distance LASER 0...350 mm |
| Fixed focus | | 100 mm (S50) |
| Background suppression | | 50...100 mm (S50) |
| Through beam with fiber optic | | 0...100 mm (S50) |
| Diffuse proximity with fiber optic | | 0...30 mm (S50) |
| Contrast sensor | | 10 ±2 mm |
| Luminescence sensor | | 0...20 mm |
| Power supply | Vdc | 10...30 V |
| | Vac | |
| | Vac/dc | |
| Output | PNP | ▪ |
| | NPN | ▪ |
| | NPN/PNP | |
| | relay | |
| | other | |
| Connection | cable | ▪ |
| | connector | ▪ |
| | pig-tail | |
| Approximate dimensions (mm) | | M18x 55/68 |
| Housing material | | PBT, nickel plated brass |
| Mechanical protection | | IP67 |

TECHNICAL DATA

| | |
|---------------------------------------|---|
| Power supply | 10 ... 30 Vdc (limit values) |
| Ripple | 2 Vpp max. |
| Consumption (output current excluded) | 35 mA max. (mod. S50...A00/B01/C01/C10/C21/D00/E01/T01) 30 mA max. (mod. S50...F01/M03, S51...A00/B01/C01/C10/C20/F00) 25 mA max. (mod. S50...W03/U03) |
| Light emission | red LED 630 nm (mod. S50...D00/E01, S50-PA/MA...M03) red LED 660 nm (mod. S50...B01/T01, S51...B01) red LED 670 nm (mod. S50-PS/MS...M03) IR LED 880 nm (mod. S50/51...A00/C01/C10/C20/C21/G00) white LED 400-700 nm (mod. S50...W03) UV LED 370 nm (mod. S50...U03) red Laser 650 nm (mod. S50...G00/F01/B01/C01) |
| Setting | sensitivity trimmer (mod. B01/C01/C21/E01/F01/T01) teach-in push-button (mod. M03/W03/U03) |
| Operating mode | LIGHT mode on N.O. output / DARK mode on N.C. output (mod. S50...C01/C10/C21/D00/M03/U03) DARK mode on N.O. output / LIGHT mode on N.C. output (mod. S50...A00/B01/E01/F01/T01/W03) white wire or pin 2 connected to +10...30V LIGHT mode/ to 0V DARK mode (mod. S51) white wire or pin 2 not connected LIGHT mode (mod. S51...C01/C10/C20) / DARK mode (mod. S51...A00/B01/F00) |
| Indicators | yellow OUTPUT LED (S50, S51, excl. mod. G00) green STABILITY LED (mod. S50...B01/C01/C21/E01/F01), POWER LED (mod. S50...G00, S51) green/red READY/ERROR LED (mod. S50...M03/W03/U03) |
| Output | PNP or NPN; NO; NC (mod. S50) |
| Output current | 100 mA max. |
| Saturation voltage | 2 V max. |
| Response time | 0,5 ms (mod. S50...A00/B01/T01/C10/C21/C01/D00/E01/U03) 2 ms (mod. S50...F01/G00) 1 ms (mod. S50...M03, S51...A00/B01/C01/C10/G00) 4 ms (mod. S51...F00) 100 µs (mod. S50...W03) 333 µs (Laser mod. S50) |
| Switching frequency | 1 kHz (mod. S50...A00/B01/T01/C10/C21/C01/D00/E01/U03) 250 Hz (mod. S50...F01/G00) 500 Hz (mod. S50...M03, S51...A00/B01/C01/C10/G00) 120 Hz (mod. S51...F00) 5 kHz (mod. S50...W03) 1,5 kHz (Laser mod. S50) |
| Connection | 2 m cable Ø 4 mm, M12 4-pole connector |
| Dielectric strength | 500 Vac, 1 min between electronics and housing |
| Insulating resistance | >20 MΩ, 500 Vdc between electronics and housing |
| Electrical protection | class 2 |
| Mechanical protection | IP67 |
| Ambient light rejection | according to EN 60947-5-2 |
| Vibrations | 0,5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6) |
| Shock resistance | 11 ms (30 G) 6 shock for every axis (EN60068-2-27) |
| Housing material | Plastic version PBT Metal version nickel plated brass |
| Lens material | PMMA |
| Operating temperature | -25 ... 55 °C (Laser mod.) -10 ... 50 °C |
| Storage temperature | -25 ... 70 °C |
| Weight | Plastic version 75 g max. cable vers. (90 g max. mod. M03), 25 g max. conn. vers. (40 g max. mod. M03) Metal version 110 g max. cable vers. (125 g max. mod. M03), 60 g max. conn. vers. (75 g max. mod. M03) |

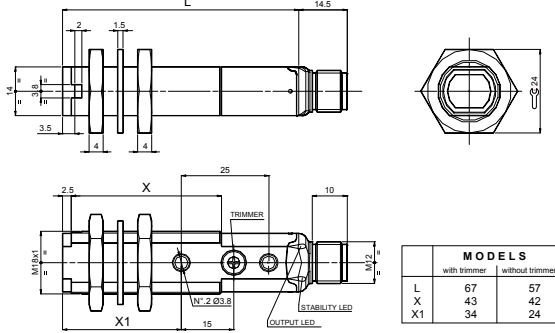
TUBULAR SENSORS

S50

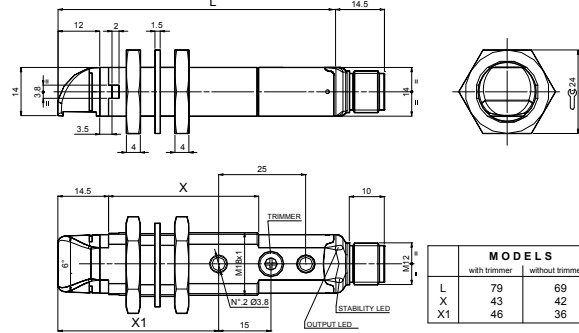
DIMENSIONS

PLASTIC

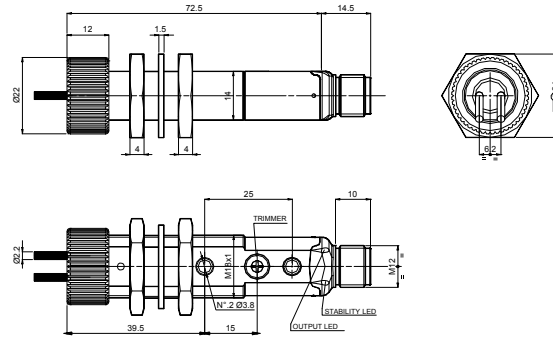
AXIAL VERSION



RADIAL VERSION

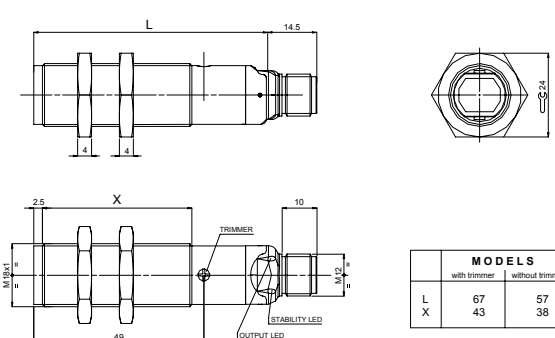


FIBRE OPTIC VERSION

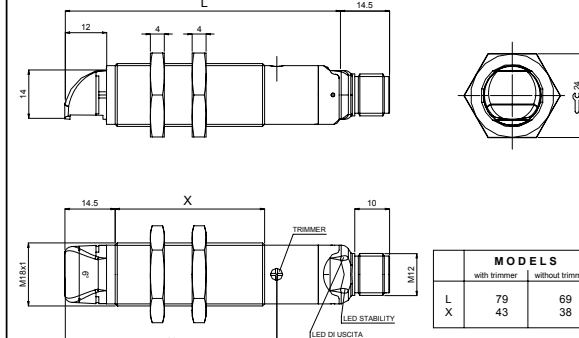


METAL

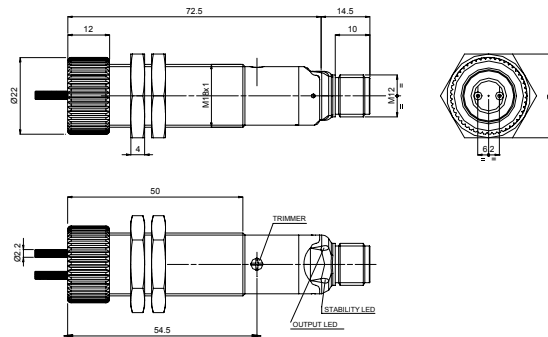
AXIAL VERSION



RADIAL VERSION

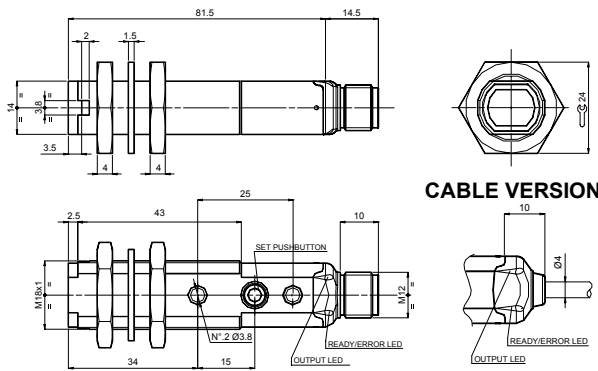


FIBRE OPTIC VERSION

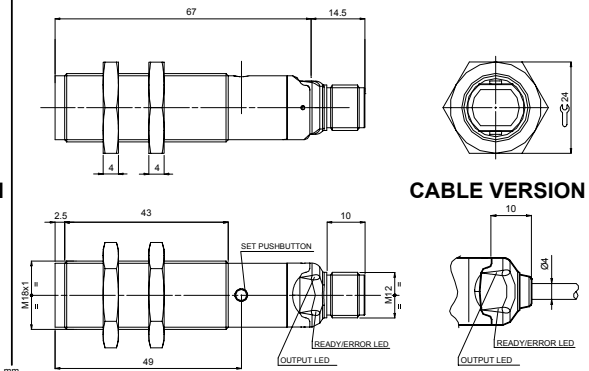


BACKGROUND SUPPRESSION AXIAL VERSION

PLASTIC

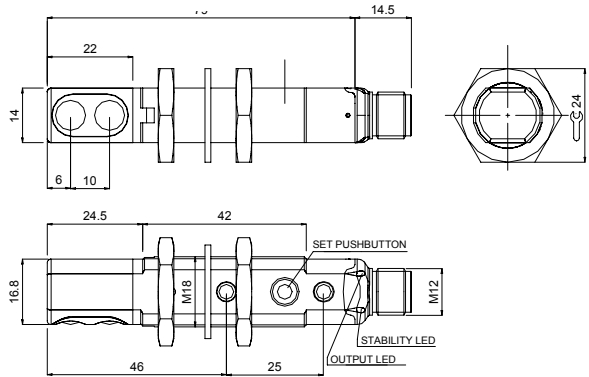


METAL

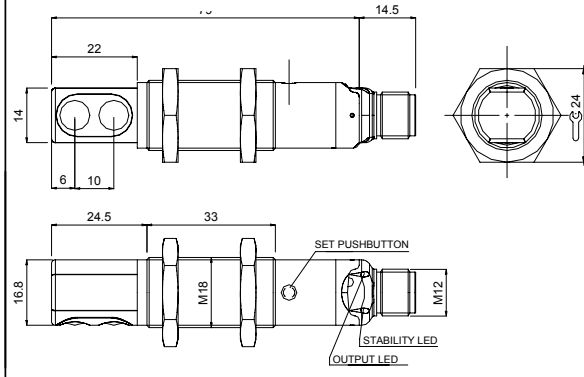


BACKGROUND SUPPRESSION RADIAL VERSION

PLASTIC

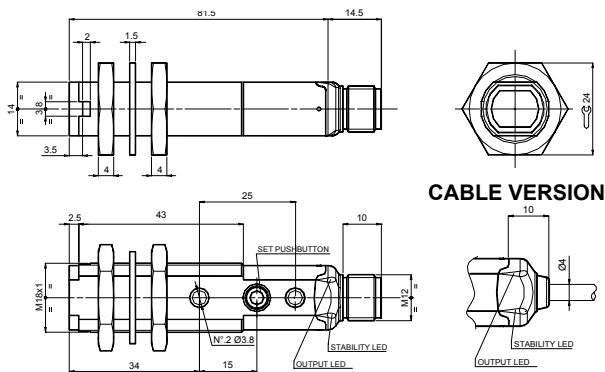


METAL

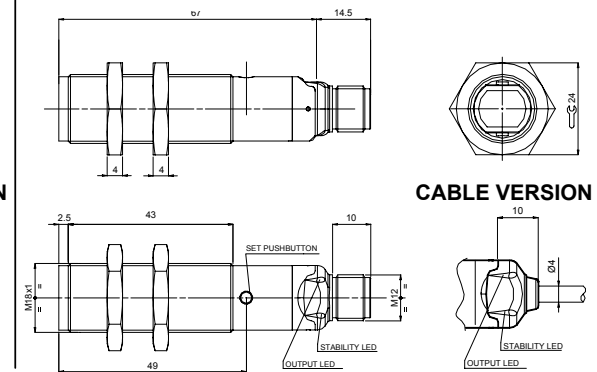


LUMINESCENCE AND CONTRAST

PLASTIC

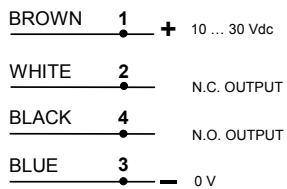


METAL

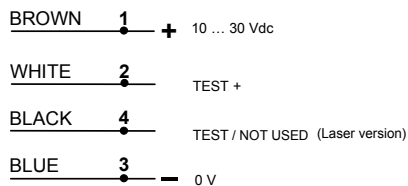


CONNECTIONS

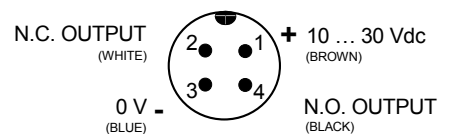
CABLE



Through beam emitter



M12 CONNECTOR



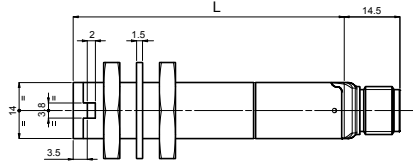
TUBULAR SENSORS

S51

DIMENSIONS

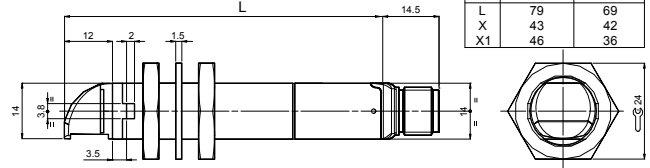
PLASTIC

AXIAL VERSION

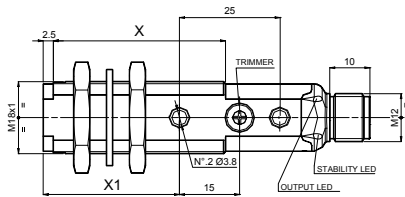


| MODELS | | |
|--------|--------------|-----------------|
| | with trimmer | without trimmer |
| L | 67 | 57 |
| X | 43 | 42 |
| X1 | 34 | 24 |

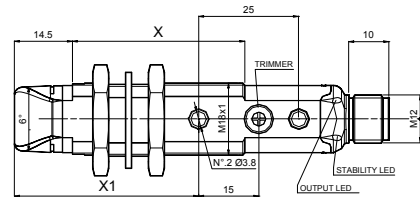
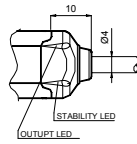
RADIAL VERSION



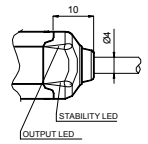
| MODELS | | |
|--------|--------------|-----------------|
| | with trimmer | without trimmer |
| L | 79 | 69 |
| X | 43 | 42 |
| X1 | 46 | 36 |



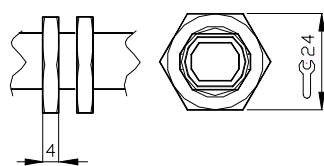
CABLE VERS.



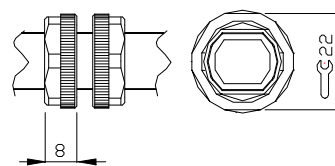
CABLE VERS.



CH.24 PLASTIC NUTS

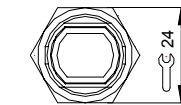
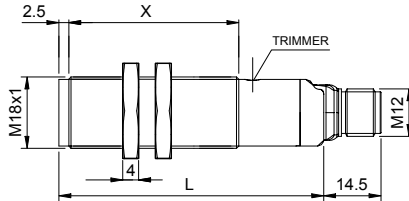


CH.22 PLASTIC NUTS



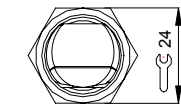
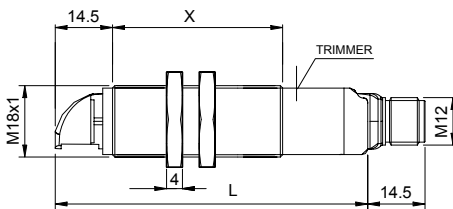
METAL

AXIAL VERSION



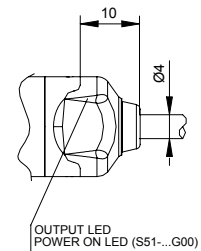
| MODELS | | |
|--------|-------------|-------------|
| | B01/C01/F00 | A00/C10/G00 |
| L | 67 | 57 |
| X | 43 | 38 |

RADIAL VERSION



| MODELS | | |
|--------|-------------|-------------|
| | B01/C01/F00 | A00/C10/G00 |
| L | 79 | 69 |
| X | 43 | 38 |

CABLE VERSION



CONNECTIONS

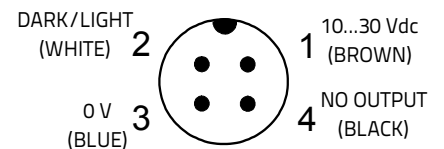
CABLE

| | | |
|-------|---|-----------------|
| BROWN | 1 | + 10 ... 30 Vdc |
| WHITE | 2 | DARK- / LIGHT+ |
| BLACK | 4 | N.O. OUTPUT |
| BLUE | 3 | 0 V |

Through beam emitter

| | | |
|-------|---|-----------------|
| BROWN | 1 | + 10 ... 30 Vdc |
| WHITE | 2 | TEST + |
| BLACK | 4 | TEST - |
| BLUE | 3 | 0 V |

M12 CONNECTOR



MODEL SELECTION AND ORDER INFORMATION

| S50 PLASTIC MODELS | | | | | |
|---------------------------|---------------------|-----------------|-----------------|-----------------|-----------|
| OPTIC FUNCTION | EMISSION | CONNECTION | OUTPUT | MODEL | ORDER No. |
| Retroreflective | LED, Axial optic | 2m Cable | NPN | S50-PA-2-A00-NN | 952002090 |
| | | | PNP | S50-PA-2-A00-PP | 952002080 |
| | | M12 Connector | NPN | S50-PA-5-A00-NN | 952002110 |
| | | | PNP | S50-PA-5-A00-PP | 952002100 |
| Polarized retroreflective | LED, Axial optic | 2m Cable | NPN | S50-PA-2-B01-NN | 952001610 |
| | | | PNP | S50-PA-2-B01-PP | 952001010 |
| | | M12 Connector | NPN | S50-PA-5-B01-NN | 952001500 |
| | | | PNP | S50-PA-5-B01-PP | 952001020 |
| | LED, Radial optic | 2m Cable | NPN | S50-PR-2-B01-NN | 952001780 |
| | | | PNP | S50-PR-2-B01-PP | 952001030 |
| | | M12 Connector | NPN | S50-PR-5-B01-NN | 952001720 |
| | | | PNP | S50-PR-5-B01-PP | 952001040 |
| | LASER, Axial optic | 2m Cable | NPN | S50-PL-2-B01-NN | 952001870 |
| | | | PNP | S50-PL-2-B01-PP | 952001360 |
| | | M12 Connector | NPN | S50-PL-5-B01-NN | 952001840 |
| | | | PNP | S50-PL-5-B01-PP | 952001370 |
| | LASER, Radial optic | 2m Cable | NPN | S50-PH-2-B01-NN | 952001950 |
| | | | PNP | S50-PH-2-B01-PP | 952001940 |
| | | M12 Connector | NPN | S50-PH-5-B01-NN | 952001970 |
| | | | PNP | S50-PH-5-B01-PP | 952001960 |
| Long Diffuse proximity | LED, Axial optic | 2m Cable | NPN | S50-PA-2-C01-NN | 952001620 |
| | | | PNP | S50-PA-2-C01-PP | 952001050 |
| | | M12 Connector | NPN | S50-PA-5-C01-NN | 952001510 |
| | | | PNP | S50-PA-5-C01-PP | 952001060 |
| | LED, Radial optic | 2m Cable | NPN | S50-PR-2-C01-NN | 952001790 |
| | | | PNP | S50-PR-2-C01-PP | 952001070 |
| | | M12 Connector | NPN | S50-PR-5-C01-NN | 952001730 |
| | | | PNP | S50-PR-5-C01-PP | 952001080 |
| | LASER, Axial optic | 2m Cable | NPN | S50-PL-2-C01-NN | 952001880 |
| | | | PNP | S50-PL-2-C01-PP | 952001380 |
| | | M12 Connector | NPN | S50-PL-5-C01-NN | 952001850 |
| | | | PNP | S50-PL-5-C01-PP | 952001390 |
| | LASER, Radial optic | 2m Cable | NPN | S50-PH-2-C01-NN | 952001990 |
| | | | PNP | S50-PH-2-C01-PP | 952001980 |
| | | M12 Connector | NPN | S50-PH-5-C01-NN | 952002010 |
| | | | PNP | S50-PH-5-C01-PP | 952002000 |
| Short Diffuse proximity | LED, Axial optic | 2m Cable | NPN | S50-PA-2-C10-NN | 952001630 |
| | | | PNP | S50-PA-2-C10-PP | 952001240 |
| | | M12 Connector | NPN | S50-PA-5-C10-NN | 952001520 |
| | PNP | | S50-PA-5-C10-PP | 952001250 | |
| | LED, Radial optic | 2m Cable | NPN | S50-PR-2-C10-NN | 952001800 |
| | | | PNP | S50-PR-2-C10-PP | 952001490 |
| M12 Connector | | NPN | S50-PR-5-C10-NN | 952001740 | |
| | PNP | S50-PR-5-C10-PP | 952001480 | | |
| Medium Diffuse proximity | LED, Axial optic | 2m Cable | NPN | S50-PA-2-C21-NN | 952002170 |
| | | | PNP | S50-PA-2-C21-PP | 952002160 |
| | | M12 Connector | NPN | S50-PA-5-C21-NN | 952002190 |
| | | | PNP | S50-PA-5-C21-PP | 952002180 |
| Fixed focus | LED, Axial optic | 2m Cable | NPN | S50-PA-2-D00-NN | 952001640 |
| | | | PNP | S50-PA-2-D00-PP | 952001090 |
| | | M12 Connector | NPN | S50-PA-5-D00-NN | 952001530 |
| | | | PNP | S50-PA-5-D00-PP | 952001100 |
| | LED, Radial optic | 2m Cable | NPN | S50-PR-2-D00-NN | 952001810 |
| | | | PNP | S50-PR-2-D00-PP | 952001110 |
| | | M12 Connector | NPN | S50-PR-5-D00-NN | 952001750 |
| | | | PNP | S50-PR-5-D00-PP | 952001120 |
| Fiber optic | LED, Axial optic | 2m Cable | NPN | S50-PA-2-E01-NN | 952001650 |
| | | | PNP | S50-PA-2-E01-PP | 952001130 |
| | | M12 Connector | NPN | S50-PA-5-E01-NN | 952001540 |
| | | | PNP | S50-PA-5-E01-PP | 952001140 |

TUBULAR SENSORS

| | | | | | |
|---------------------------------|--------------------|---------------|-----------------|-----------------|-----------|
| Through beam receiver | LED, Axial optic | 2m Cable | NPN | S50-PA-2-F01-NN | 952001660 |
| | | | PNP | S50-PA-2-F01-PP | 952001150 |
| | | M12 Connector | NPN | S50-PA-5-F01-NN | 952001550 |
| | | | PNP | S50-PA-5-F01-PP | 952001160 |
| | LED, Radial optic | 2m Cable | NPN | S50-PR-2-F01-NN | 952001820 |
| | | | PNP | S50-PR-2-F01-PP | 952001170 |
| | | M12 Connector | NPN | S50-PR-5-F01-NN | 952001760 |
| | | | PNP | S50-PR-5-F01-PP | 952001180 |
| | LASER, Axial optic | 2m Cable | NPN | S50-PL-2-F01-NN | 952001890 |
| | | | PNP | S50-PL-2-F01-PP | 952001400 |
| | | M12 Connector | NPN | S50-PL-5-F01-NN | 952001860 |
| | | | PNP | S50-PL-5-F01-PP | 952001410 |
| LASER, Radial optic | 2m Cable | NPN | S50-PH-2-F01-NN | 952002030 | |
| | | PNP | S50-PH-2-F01-PP | 952002020 | |
| | M12 Connector | NPN | S50-PH-5-F01-NN | 952002050 | |
| | | PNP | S50-PH-5-F01-PP | 952002040 | |
| Through beam emitter | LED, Axial optic | 2m Cable | - | S50-PA-2-G00-XG | 952001190 |
| | | M12 Connector | - | S50-PA-5-G00-XG | 952001200 |
| | LED, Radial optic | 2m Cable | - | S50-PR-2-G00-XG | 952001210 |
| | | M12 Connector | - | S50-PR-5-G00-XG | 952001220 |
| | LASER, Axial optic | 2m Cable | - | S50-PL-2-G00-XG | 952001420 |
| | | M12 Connector | - | S50-PL-5-G00-XG | 952001430 |
| LASER, Radial optic | 2m Cable | - | S50-PH-2-G00-XG | 952002060 | |
| | M12 Connector | - | S50-PH-5-G00-XG | 952002070 | |
| Background suppression | LED, Axial optic | 2m Cable | NPN | S50-PA-2-M03-NN | 952001670 |
| | | | PNP | S50-PA-2-M03-PP | 952001230 |
| | | M12 Connector | NPN | S50-PA-5-M03-NN | 952001560 |
| | | | PNP | S50-PA-5-M03-PP | 952001000 |
| | LED, Radial optic | 2m Cable | NPN | S50-PS-2-M03-NN | 952001900 |
| | | | PNP | S50-PS-2-M03-PP | 952001910 |
| | M12 Connector | NPN | S50-PS-5-M03-NN | 952001920 | |
| | | PNP | S50-PS-5-M03-PP | 952001930 | |
| Retroreflective for transparent | LED, Axial optic | 2m Cable | NPN | S50-PA-2-T01-NN | 952001690 |
| | | | PNP | S50-PA-2-T01-PP | 952001260 |
| | | M12 Connector | NPN | S50-PA-5-T01-NN | 952001580 |
| | | | PNP | S50-PA-5-T01-PP | 952001270 |
| | LED, Radial optic | 2m Cable | NPN | S50-PR-2-T01-NN | 952001830 |
| | | | PNP | S50-PR-2-T01-PP | 952001280 |
| | M12 Connector | NPN | S50-PR-5-T01-NN | 952001770 | |
| | | PNP | S50-PR-5-T01-PP | 952001290 | |
| Luminescence | LED, Axial optic | 2m Cable | NPN | S50-PA-2-U03-NN | 952001700 |
| | | | PNP | S50-PA-2-U03-PP | 952001300 |
| | M12 Connector | NPN | S50-PA-5-U03-NN | 952001590 | |
| | | PNP | S50-PA-5-U03-PP | 952001310 | |
| Contrast | LED, Axial optic | 2m Cable | NPN | S50-PA-2-W03-NN | 952001710 |
| | | | PNP | S50-PA-2-W03-PP | 952001320 |
| | M12 Connector | NPN | S50-PA-5-W03-NN | 952001600 | |
| | | PNP | S50-PA-5-W03-PP | 952001330 | |

| S50 METAL MODELS | | | | | |
|---------------------------|---------------------|---------------|--------|-----------------|-----------|
| OPTIC FUNCTION | EMISSION | CONNECTION | OUTPUT | MODEL | ORDER No. |
| Retroreflective | LED, Axial optic | 2m Cable | NPN | S50-MA-2-A00-NN | 952022090 |
| | | | PNP | S50-MA-2-A00-PP | 952022080 |
| | | M12 Connector | NPN | S50-MA-5-A00-NN | 952022110 |
| | | | PNP | S50-MA-5-A00-PP | 952022100 |
| Polarized retroreflective | LED, Axial optic | 2m Cable | NPN | S50-MA-2-B01-NN | 952021500 |
| | | | PNP | S50-MA-2-B01-PP | 952021000 |
| | | M12 Connector | NPN | S50-MA-5-B01-NN | 952021660 |
| | | | PNP | S50-MA-5-B01-PP | 952021200 |
| | LED, Radial optic | 2m Cable | NPN | S50-MR-2-B01-NN | 952021600 |
| | | | PNP | S50-MR-2-B01-PP | 952021140 |
| | | M12 Connector | NPN | S50-MR-5-B01-NN | 952021760 |
| | | | PNP | S50-MR-5-B01-PP | 952021340 |
| | LASER, Axial optic | 2m Cable | NPN | S50-ML-2-B01-NN | 952021820 |
| | | | PNP | S50-ML-2-B01-PP | 952021400 |
| | | M12 Connector | NPN | S50-ML-5-B01-NN | 952021850 |
| | | | PNP | S50-ML-5-B01-PP | 952021440 |
| | LASER, Radial optic | 2m Cable | NPN | S50-MH-2-B01-NN | 952021950 |
| | | | PNP | S50-MH-2-B01-PP | 952021940 |
| | | M12 Connector | NPN | S50-MH-5-B01-NN | 952021970 |
| | | | PNP | S50-MH-5-B01-PP | 952021960 |
| Long Diffuse proximity | LED, Axial optic | 2m Cable | NPN | S50-MA-2-C01-NN | 952021510 |
| | | | PNP | S50-MA-2-C01-PP | 952021010 |
| | | M12 Connector | NPN | S50-MA-5-C01-NN | 952021670 |
| | | | PNP | S50-MA-5-C01-PP | 952021210 |
| | LED, Radial optic | 2m Cable | NPN | S50-MR-2-C01-NN | 952021610 |
| | | | PNP | S50-MR-2-C01-PP | 952021150 |
| | | M12 Connector | NPN | S50-MR-5-C01-NN | 952021770 |
| | | | PNP | S50-MR-5-C01-PP | 952021350 |
| | LASER, Axial optic | 2m Cable | NPN | S50-ML-2-C01-NN | 952021830 |
| | | | PNP | S50-ML-2-C01-PP | 952021410 |
| | | M12 Connector | NPN | S50-ML-5-C01-NN | 952021860 |
| | | | PNP | S50-ML-5-C01-PP | 952021450 |
| | LASER, Radial optic | 2m Cable | NPN | S50-MH-2-C01-NN | 952021990 |
| | | | PNP | S50-MH-2-C01-PP | 952021980 |
| | | M12 Connector | NPN | S50-MH-5-C01-NN | 952022010 |
| | | | PNP | S50-MH-5-C01-PP | 952022000 |
| Short Diffuse proximity | LED, Axial optic | 2m Cable | NPN | S50-MA-2-C10-NN | 952021520 |
| | | | PNP | S50-MA-2-C10-PP | 952021020 |
| | | M12 Connector | NPN | S50-MA-5-C10-NN | 952021680 |
| | | | PNP | S50-MA-5-C10-PP | 952021220 |
| | LED, Radial optic | 2m Cable | NPN | S50-MR-2-C10-NN | 952021620 |
| | | | PNP | S50-MR-2-C10-PP | 952021490 |
| | | M12 Connector | NPN | S50-MR-5-C10-NN | 952021780 |
| | | | PNP | S50-MR-5-C10-PP | 952021480 |
| Medium Diffuse proximity | LED, Axial optic | 2m Cable | NPN | S50-MA-2-C21-NN | 952022130 |
| | | | PNP | S50-MA-2-C21-PP | 952022120 |
| | | M12 Connector | NPN | S50-MA-5-C21-NN | 952022150 |
| | | | PNP | S50-MA-5-C21-PP | 952022140 |
| Fixed focus | LED, Axial optic | 2m Cable | NPN | S50-MA-2-D00-NN | 952021530 |
| | | | PNP | S50-MA-2-D00-PP | 952021030 |
| | | M12 Connector | NPN | S50-MA-5-D00-NN | 952021690 |
| | | | PNP | S50-MA-5-D00-PP | 952021230 |
| | LED, Radial optic | 2m Cable | NPN | S50-MR-2-D00-NN | 952021630 |
| | | | PNP | S50-MR-2-D00-PP | 952021160 |
| | | M12 Connector | NPN | S50-MR-5-D00-NN | 952021790 |
| | | | PNP | S50-MR-5-D00-PP | 952021360 |
| Fiber optic | LED, Axial optic | 2m Cable | NPN | S50-MA-2-E01-NN | 952021880 |
| | | | PNP | S50-MA-2-E01-PP | 952021040 |
| | | M12 Connector | NPN | S50-MA-5-E01-NN | 952021890 |
| | | | PNP | S50-MA-5-E01-PP | 952021240 |

TUBULAR SENSORS

| | | | | | |
|---------------------------------|---------------------|-------------------|-----------------|-----------------|-----------------|
| Through beam receiver | LED, Axial optic | 2m Cable | NPN | S50-MA-2-F01-NN | 952021540 |
| | | | PNP | S50-MA-2-F01-PP | 952021050 |
| | | M12 Connector | NPN | S50-MA-5-F01-NN | 952021700 |
| | | | PNP | S50-MA-5-F01-PP | 952021250 |
| | LED, Radial optic | 2m Cable | NPN | S50-MR-2-F01-NN | 952021640 |
| | | | PNP | S50-MR-2-F01-PP | 952021170 |
| | | M12 Connector | NPN | S50-MR-5-F01-NN | 952021800 |
| | | | PNP | S50-MR-5-F01-PP | 952021370 |
| | LASER, Axial optic | 2m Cable | NPN | S50-ML-2-F01-NN | 952021840 |
| | | | PNP | S50-ML-2-F01-PP | 952021420 |
| | | M12 Connector | NPN | S50-ML-5-F01-NN | 952021870 |
| | | | PNP | S50-ML-5-F01-PP | 952021460 |
| LASER, Radial optic | 2m Cable | NPN | S50-MH-2-F01-NN | 952022030 | |
| | | PNP | S50-MH-2-F01-PP | 952022020 | |
| | M12 Connector | NPN | S50-MH-5-F01-NN | 952022050 | |
| | | PNP | S50-MH-5-F01-PP | 952022040 | |
| Through beam emitter | LED, Axial optic | 2m Cable | - | S50-MA-2-G00-XG | 952021060 |
| | | M12 Connector | - | S50-MA-5-G00-XG | 952021260 |
| | LED, Radial optic | 2m Cable | - | S50-MR-2-G00-XG | 952021180 |
| | | M12 Connector | - | S50-MR-5-G00-XG | 952021380 |
| | LASER, Axial optic | 2m Cable | - | S50-ML-2-G00-XG | 952021430 |
| | | M12 Connector | - | S50-ML-5-G00-XG | 952021470 |
| | LASER, Radial optic | 2m Cable | - | S50-MH-2-G00-XG | 952022060 |
| | | M12 Connector | - | S50-MH-5-G00-XG | 952022070 |
| Background suppression | LED, Axial optic | 2m Cable | NPN | S50-MA-2-M03-NN | 952021550 |
| | | | PNP | S50-MA-2-M03-PP | 952021070 |
| | M12 Connector | PNP | S50-MA-5-M03-PP | 952021270 | |
| | | LED, Radial optic | 2m Cable | PNP | S50-MS-2-M03-PP |
| M12 Connector | PNP | | S50-MS-5-M03-PP | 952021930 | |
| Retroreflective for transparent | LED, Axial optic | 2m Cable | NPN | S50-MA-2-T01-NN | 952021570 |
| | | | PNP | S50-MA-2-T01-PP | 952021090 |
| | | M12 Connector | NPN | S50-MA-5-T01-NN | 952021730 |
| | | | PNP | S50-MA-5-T01-PP | 952021290 |
| | LED, Radial optic | 2m Cable | NPN | S50-MR-2-T01-NN | 952021650 |
| | | | PNP | S50-MR-2-T01-PP | 952021190 |
| | | M12 Connector | NPN | S50-MR-5-T01-NN | 952021810 |
| | | | PNP | S50-MR-5-T01-PP | 952021390 |
| Luminescence | LED, Axial optic | M12 Connector | PNP | S50-MA-5-U03-PP | 952021300 |
| Contrast | LED, Axial optic | 2m Cable | PNP | S50-MA-2-W03-PP | 952021110 |
| | | M12 Connector | NPN | S50-MA-5-W03-NN | 952021750 |
| | | | PNP | S50-MA-5-W03-PP | 952021310 |

| S51 MODELS | | | | | |
|-----------------|-----------------------------|---------------|--------|-----------------|-----------|
| OPTIC FUNCTION | HOUSING/OPTIC | CONNECTION | OUTPUT | MODEL | ORDER No. |
| Retroreflective | Nickel Plated Brass, Axial | 2m Cable | NPN | S51-MA-2-A00-NK | 952701601 |
| | | | PNP | S51-MA-2-A00-PK | 952701541 |
| | | M12 Connector | NPN | S51-MA-5-A00-NK | 952701801 |
| | | | PNP | S51-MA-5-A00-PK | 952701531 |
| | Nickel Plated Brass, Radial | 2m Cable | NPN | S51-MR-2-A00-NK | 952701711 |
| | | | PNP | S51-MR-2-A00-PK | 952701651 |
| | | M12 Connector | NPN | S51-MR-5-A00-NK | 952701911 |
| | | | PNP | S51-MR-5-A00-PK | 952701851 |
| | Plastic, Axial | 2m Cable | NPN | S51-PA-2-A00-NK | 952701071 |
| | | | PNP | S51-PA-2-A00-PK | 952701001 |
| | | M12 Connector | NPN | S51-PA-5-A00-NK | 952701331 |
| | | | PNP | S51-PA-5-A00-PK | 952701261 |
| | Plastic, Radial | 2m Cable | NPN | S51-PR-2-A00-NK | 952701201 |
| | | | PNP | S51-PR-2-A00-PK | 952701131 |
| | | M12 Connector | NPN | S51-PR-5-A00-NK | 952701461 |
| | | | PNP | S51-PR-5-A00-PK | 952701391 |

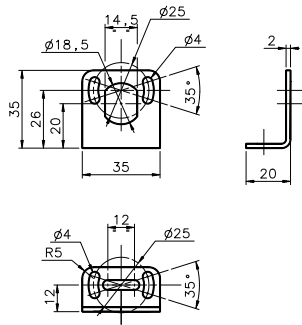
| | | | | | |
|---------------------------|-----------------------------|---------------|-----------------|-----------------|-----------|
| Polarized retroreflective | Nickel Plated Brass, Axial | 2m Cable | NPN | S51-MA-2-B01-NK | 952701611 |
| | | | PNP | S51-MA-2-B01-PK | 952701551 |
| | M12 Connector | | NPN | S51-MA-5-B01-NK | 952701811 |
| | | | PNP | S51-MA-5-B01-PK | 952701761 |
| | Nickel Plated Brass, Radial | 2m Cable | NPN | S51-MR-2-B01-NK | 952701721 |
| | | | PNP | S51-MR-2-B01-PK | 952701661 |
| | M12 Connector | | NPN | S51-MR-5-B01-NK | 952701921 |
| | | | PNP | S51-MR-5-B01-PK | 952701861 |
| | Plastic, Axial | 2m Cable | NPN | S51-PA-2-B01-NK | 952701081 |
| | | | PNP | S51-PA-2-B01-PK | 952701011 |
| | M12 Connector | | NPN | S51-PA-5-B01-NK | 952701341 |
| | | | PNP | S51-PA-5-B01-PK | 952701271 |
| Plastic, Radial | 2m Cable | NPN | S51-PR-2-B01-NK | 952701211 | |
| | | PNP | S51-PR-2-B01-PK | 952701141 | |
| M12 Connector | | NPN | S51-PR-5-B01-NK | 952701471 | |
| | | PNP | S51-PR-5-B01-PK | 952701401 | |
| Medium diffuse proximity | Nickel Plated Brass, Axial | 2m Cable | NPN | S51-MA-2-C01-NK | 952701621 |
| | | | PNP | S51-MA-2-C01-PK | 952701561 |
| | M12 Connector | | NPN | S51-MA-5-C01-NK | 952701821 |
| | | | PNP | S51-MA-5-C01-PK | 952701771 |
| | Nickel Plated Brass, Radial | 2m Cable | NPN | S51-MR-2-C01-NK | 952701731 |
| | | | PNP | S51-MR-2-C01-PK | 952701671 |
| | M12 Connector | | NPN | S51-MR-5-C01-NK | 952701931 |
| | | | PNP | S51-MR-5-C01-PK | 952701871 |
| | Plastic, Axial | 2m Cable | NPN | S51-PA-2-C01-NK | 952701091 |
| | | | PNP | S51-PA-2-C01-PK | 952701021 |
| | M12 Connector | | NPN | S51-PA-5-C01-NK | 952701351 |
| | | | PNP | S51-PA-5-C01-PK | 952701281 |
| Plastic, Radial | 2m Cable | NPN | S51-PR-2-C01-NK | 952701221 | |
| | | PNP | S51-PR-2-C01-PK | 952701151 | |
| M12 Connector | | NPN | S51-PR-5-C01-NK | 952701481 | |
| | | PNP | S51-PR-5-C01-PK | 952701411 | |
| Short diffuse proximity | Nickel Plated Brass, Axial | 2m Cable | NPN | S51-MA-2-C10-NK | 952701631 |
| | | | PNP | S51-MA-2-C10-PK | 952701571 |
| | M12 Connector | | NPN | S51-MA-5-C10-NK | 952701831 |
| | | | PNP | S51-MA-5-C10-PK | 952701521 |
| | Nickel Plated Brass, Radial | 2m Cable | NPN | S51-MR-2-C10-NK | 952701741 |
| | | | PNP | S51-MR-2-C10-PK | 952701681 |
| | M12 Connector | | NPN | S51-MR-5-C10-NK | 952701941 |
| | | | PNP | S51-MR-5-C10-PK | 952701881 |
| | Plastic, Axial | 2m Cable | NPN | S51-PA-2-C10-NK | 952701101 |
| | | | PNP | S51-PA-2-C10-PK | 952701031 |
| | M12 Connector | | NPN | S51-PA-5-C10-NK | 952701361 |
| | | | PNP | S51-PA-5-C10-PK | 952701291 |
| Plastic, Radial | 2m Cable | NPN | S51-PR-2-C10-NK | 952701231 | |
| | | PNP | S51-PR-2-C10-PK | 952701161 | |
| M12 Connector | | NPN | S51-PR-5-C10-NK | 952701491 | |
| | | PNP | S51-PR-5-C10-PK | 952701421 | |
| Narrow beam proximity | Nickel Plated Brass, Axial | M12 Connector | PNP | S51-MA-5-C20-PK | 952701961 |
| Through beam receiver | Nickel Plated Brass, Axial | 2m Cable | NPN | S51-MA-2-F00-NK | 952701641 |
| | | | PNP | S51-MA-2-F00-PK | 952701581 |
| | M12 Connector | | NPN | S51-MA-5-F00-NK | 952701841 |
| | | | PNP | S51-MA-5-F00-PK | 952701781 |
| | Nickel Plated Brass, Radial | 2m Cable | NPN | S51-MR-2-F00-NK | 952701751 |
| | | | PNP | S51-MR-2-F00-PK | 952701691 |
| | M12 Connector | | NPN | S51-MR-5-F00-NK | 952701951 |
| | | | PNP | S51-MR-5-F00-PK | 952701891 |
| | Plastic, Axial | 2m Cable | NPN | S51-PA-2-F00-NK | 952701121 |
| | | | PNP | S51-PA-2-F00-PK | 952701051 |
| | M12 Connector | | NPN | S51-PA-5-F00-NK | 952701381 |
| | | | PNP | S51-PA-5-F00-PK | 952701311 |
| Plastic, Radial | 2m Cable | NPN | S51-PR-2-F00-NK | 952701251 | |
| | | PNP | S51-PR-2-F00-PK | 952701181 | |
| M12 Connector | | NPN | S51-PR-5-F00-NK | 952701511 | |
| | | PNP | S51-PR-5-F00-PK | 952701441 | |
| Through beam emitter | Nickel Plated Brass, Axial | 2m Cable | - | S51-MA-2-G00-XG | 952701591 |
| | | M12 Connector | - | S51-MA-5-G00-XG | 952701791 |
| | Nickel Plated Brass, Radial | 2m Cable | - | S51-MR-2-G00-XG | 952701701 |
| | | M12 Connector | - | S51-MR-5-G00-XG | 952701901 |
| | Plastic, Axial | 2m Cable | - | S51-PA-2-G00-XG | 952701061 |
| | | M12 Connector | - | S51-PA-5-G00-XG | 952701321 |
| Plastic, Radial | 2m Cable | - | S51-PR-2-G00-XG | 952701191 | |
| | M12 Connector | - | S51-PR-5-G00-XG | 952701451 | |

TUBULAR SENSORS

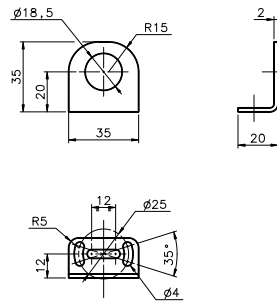
S50/S51

ACCESSORIES

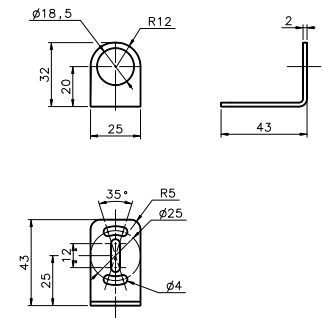
ST-5010



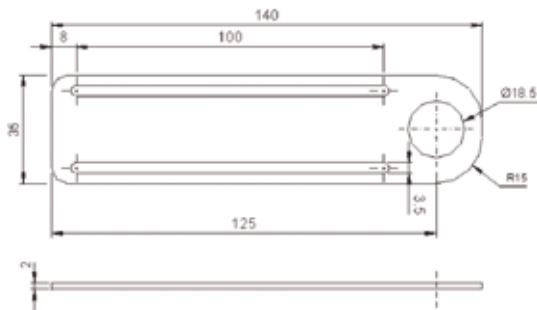
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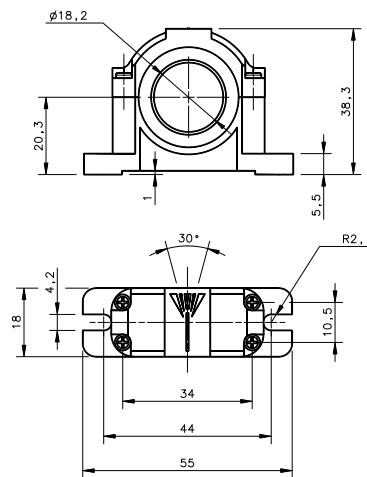
ST-5012



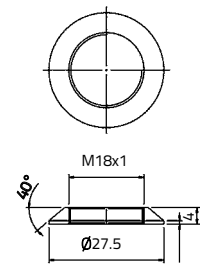
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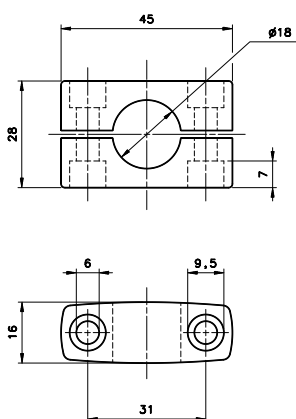
SWING-18



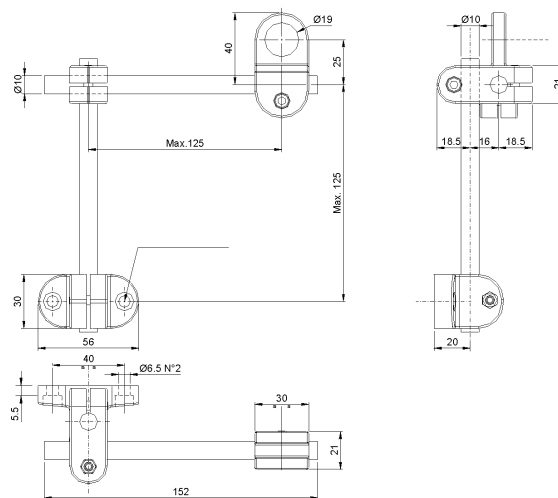
PLASTIC NUT



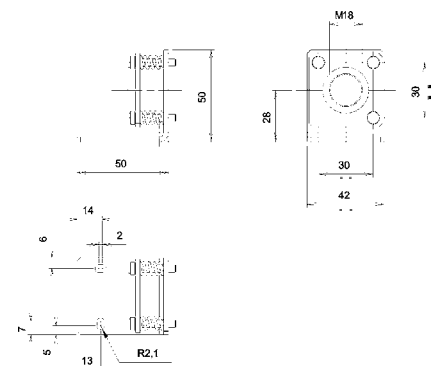
SP-40



JOINT 18



MICRO 18



mm

| MODEL | DESCRIPTION | ORDER No. |
|--------------|---|------------|
| ST-5010 | M18/14 mounting bracket | 95ACC5230 |
| ST-5011 | M18 mounting bracket short | 95ACC5240 |
| ST-5012 | M18 mounting bracket long | 95ACC5250 |
| ST-5017 | M18 mounting bracket | 95ACC5270 |
| S50 EASY -IN | M18/14 EASY in™ adjustable mounting support | 95ACC 5300 |
| JOINT -18 | M18 jointed support | 95ACC 5220 |
| MICRO -18 | support with micrometric regulation for tubular M18 sensors | 95ACC 1380 |
| ST1218 | M12/M18 mounting brackets | 95ACC3340 |
| ST1830 | M18/M30 mounting brackets | 95ACC3350 |
| SP-40 | mounting bracket tubular | 95ACC1370 |
| SWING-18 | adjustable support for M18 tubular sensors | 895000006 |
| PLASTIC NUT | flared mounting nut | 95ACC2630 |
| MEK -PROOF | front protection (only for metal models) | G5000001 |

CABLES

| TYPE | DESCRIPTION | LENGTH | MODEL | ORDER No. |
|--|---------------------------------|-----------------------|---------------|-----------|
| Axial M12 Connector | 4-pole, grey, P.V.C. | 3 m | CS-A1-02-G-03 | 95A251380 |
| | | 5 m | CS-A1-02-G-05 | 95A251270 |
| | | 7 m | CS-A1-02-G-07 | 95A251280 |
| | | 10 m | CS-A1-02-G-10 | 95A251390 |
| | 4-pole, P.U.R. | 2 m | CS-A1-02-R-02 | 95A251540 |
| | | 5 m | CS-A1-02-R-05 | 95A251560 |
| Radial M12 Connector | 4-pole, grey, P.V.C. | 3 m | CS-A2-02-G-03 | 95A251360 |
| | | 5 m | CS-A2-02-G-05 | 95A251240 |
| | | 7 m | CS-A2-02-G-07 | 95A251245 |
| | | 10 m | CS-A2-02-G-10 | 95A251260 |
| | 4-pole, P.U.R. | 2 m | CS-A2-02-R-02 | 95A251550 |
| | | 5 m | CS-A2-02-R-05 | 95A251570 |
| Radial M12 Connector with LED (for PNP N.O. sensors) | 4-pole, grey, P.V.C. | 3 m | CS-A2-12-G-03 | 95A251400 |
| | | 5 m | CS-A2-12-G-05 | 95A251350 |
| | | 10 m | CS-A2-12-G-10 | 95A251370 |
| Axial M12 Connector | 4-pole, shielded, black, P.V.C. | 3 m | CV-A1-22-B-03 | 95ACC1480 |
| | | 5 m | CV-A1-22-B-05 | 95ACC1490 |
| | | 10 m | CV-A1-22-B-10 | 95ACC1500 |
| | | 15 m | CV-A1-22-B-15 | 95ACC2070 |
| | | 25 m | CV-A1-22-B-25 | 95ACC2090 |
| Radial M12 Connector | | 3 m | CV-A2-22-B-03 | 95ACC1540 |
| | | 5 m | CV-A2-22-B-05 | 95ACC1550 |
| | | 10 m | CV-A2-22-B-10 | 95ACC1560 |
| Axial M12 Connector | 4-pole, U.L., black, P.V.C. | 3 m | CS-A1-02-U-03 | 95ASE1120 |
| | | 5 m | CS-A1-02-U-05 | 95ASE1130 |
| | | 10 m | CS-A1-02-U-10 | 95ASE1140 |
| | | 15 m | CS-A1-02-U-15 | 95ASE1150 |
| | | 25 m | CS-A1-02-U-25 | 95ASE1160 |
| Radial M12 Connector | 4-pole, black | Connector- not cabled | CS-A1-02-B-NC | G5085002 |
| | | Connector- not cabled | CS-A2-02-B-NC | G5085003 |

MINIATURE SENSORS

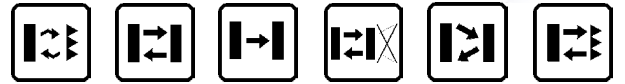
S100

The universal miniature photoelectric sensor

- Two threaded front mounting holes
- Two slotted rear mounting holes
- Anti-tampering sensor (no adjustment)
- Standard optic functions
- M8 connector and cable models
- PNP or NPN models with LIGHT/DARK selection by wire
- Plastic housing, IP67 mechanical protection

APPLICATIONS

- Processing and packaging machines
- Conveyors
- Automatic warehousing
- Intralogistic lines

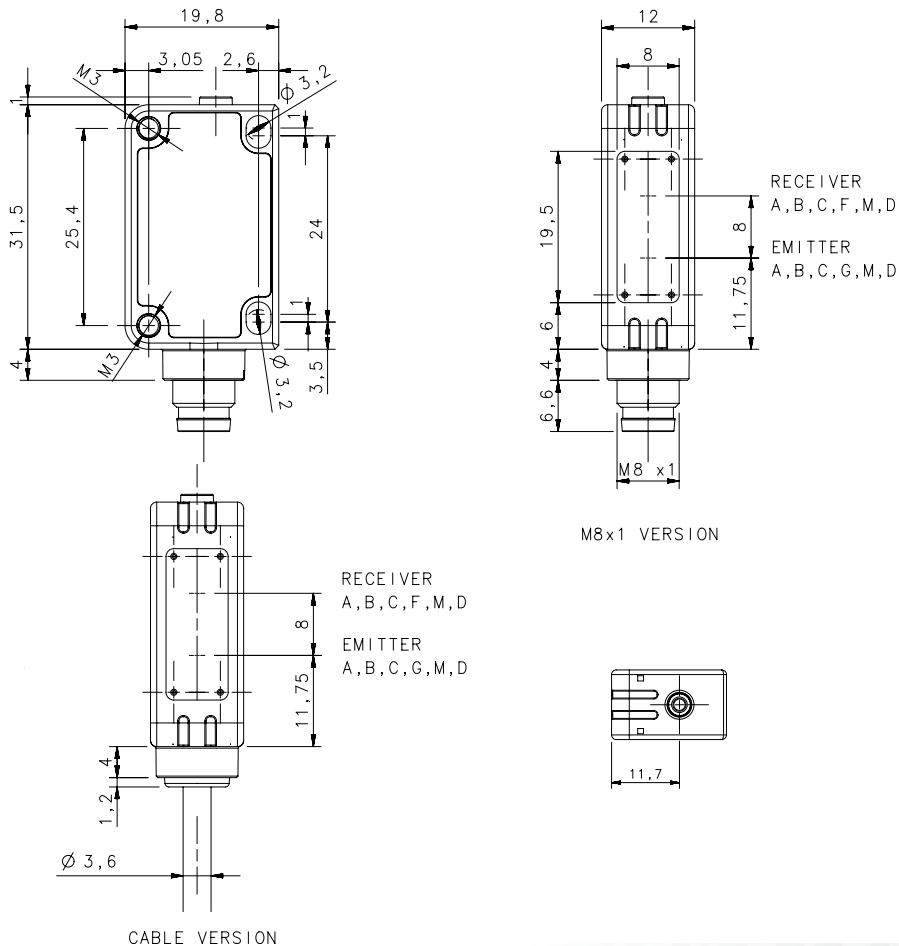


| S100 | | |
|---|-----------|--------------------|
| Through beam | | 12 m |
| Retroreflective | | 7 m |
| Polarized Retroreflective (long range) | | 5 m |
| Polarized Retroreflective (short range) | | 2 m |
| Diffused proximity (short range) | | 300 mm |
| Diffused proximity (long range) | | 500 mm |
| Fixed focus | | 70 mm |
| Background suppression | | 30...100 mm |
| Power supply | Vdc | 10...30 Vdc |
| Output | PNP | ▪ |
| | NPN | ▪ |
| Connection | cable | 2 m cable, 4 wires |
| | connector | M8 conn., 4-pole |
| Approximate dimensions (mm) | | 32x20x12 |
| Housing material | | Plastic |
| Mechanical protection | | IP67 |

TECHNICAL DATA

| | |
|---------------------------------------|--|
| Power supply | 10 ... 30 Vdc |
| Ripple | 10% max. |
| Consumption (output current excluded) | 20 mA max. |
| Light emission | red LED 632 nm (mod. S100...B/C/D/M) IR LED 860 nm (mod. S100...A/G) remote teach-in (mod. S100...M) |
| Setting | LIGHT/DARK selectable by wire (mod. S100...A/B/C/D/F) |
| Operating mode | yellow OUTPUT LED (excl. mod. G) green POWER LED (mod. S100...G) |
| Indicators | PNP or NPN |
| Output | 100 mA |
| Output current | 2 V max. |
| Saturation voltage | 2 ms (mod. S100...FG) |
| Response time | 1 ms (mod. S100...A/B/C/D/M) 250 Hz (mod. S100...FG) |
| Switching frequency | 500 Hz (mod. S100...A/B/C/D/M) |
| Connection | 2 m cable 3,5 mm, M8 4-pole connector |
| Dielectric strength | 500 Vac, 1 min between electronics and housing |
| Insulating resistance | >20 MΩ, 500 Vdc between electronics and housing |
| Mechanical protection | IP67 |
| Ambient light rejection | according to EN 60947-5-2 |
| Vibrations | 0,5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6) |
| Shock resistance | 11 ms (30 G) 6 shock for every axis (EN60068-2-27) |
| Housing material | ABS body, PMMA indicators cover |
| Lens material | PC lens, PMMA window |
| Operating temperature | -25 ... 55 °C |
| Storage temperature | -25 ... 70 °C |
| Weight | 50 g max. cable vers., 10 g max. connector vers. |

DIMENSIONS



MINIATURE SENSORS

CONNECTIONS



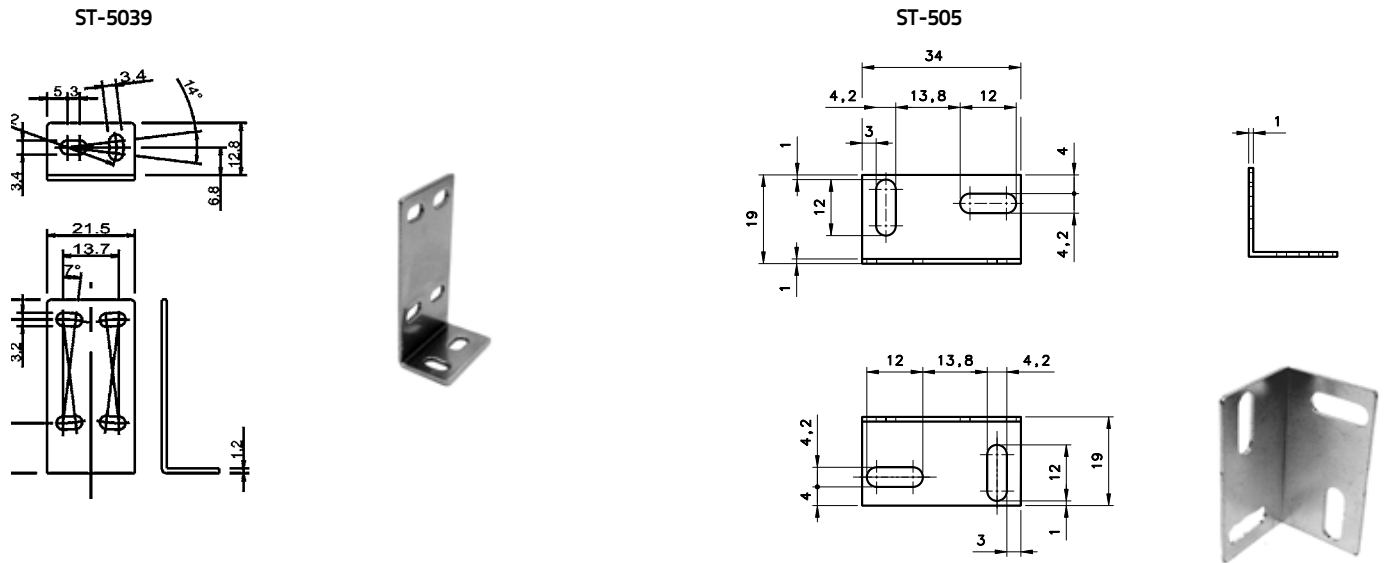
*REMOTE: Light/Dark selection (S100-...-A-B-C-D-F), External Teach-in (S100-...-M)

**OUTPUT: PNP or NPN depends on the model

MODEL SELECTION AND ORDER INFORMATION

| OPTIC FUNCTION | EMISSION | OPERATING DISTANCE | CONNECTION | OUTPUT | MODEL | ORDER No. |
|-----------------------------------|----------|--------------------|--------------|--------|-------------------|-----------|
| Through beam | IR | 12 m | 2 m cable | NPN | S100-PR-2-FG00-NK | 950811100 |
| | | | | PNP | S100-PR-2-FG00-PK | 950811110 |
| | | | M8 connector | NPN | S100-PR-5-FG00-NK | 950811240 |
| | | | | PNP | S100-PR-5-FG00-PK | 950811250 |
| Retroreflective | IR | 7 m | 2 m cable | NPN | S100-PR-2-A00-NK | 950811000 |
| | | | | PNP | S100-PR-2-A00-PK | 950811010 |
| | | | M8 connector | NPN | S100-PR-5-A00-NK | 950811140 |
| | | | | PNP | S100-PR-5-A00-PK | 950811150 |
| Polarized Retroreflective (short) | RED | 2 m | 2 m cable | NPN | S100-PR-2-B00-NK | 950811020 |
| | | | | PNP | S100-PR-2-B00-PK | 950811030 |
| | | | M8 connector | NPN | S100-PR-5-B00-NK | 950811160 |
| | | | | PNP | S100-PR-5-B00-PK | 950811170 |
| Polarized Retroreflective (long) | RED | 5 m | 2 m cable | NPN | S100-PR-2-B10-NK | 950811280 |
| | | | | PNP | S100-PR-2-B10-PK | 950811290 |
| | | | M8 connector | NPN | S100-PR-5-B10-NK | 950811300 |
| | | | | PNP | S100-PR-5-B10-PK | 950811310 |
| Diffuse proximity (short) | RED | 300 mm | 2 m cable | NPN | S100-PR-2-C00-NK | 950811040 |
| | | | | PNP | S100-PR-2-C00-PK | 950811050 |
| | | | M8 connector | NPN | S100-PR-5-C00-NK | 950811180 |
| | | | | PNP | S100-PR-5-C00-PK | 950811190 |
| Diffuse proximity (long) | RED | 500 mm | 2 m cable | NPN | S100-PR-2-C10-NK | 950811060 |
| | | | | PNP | S100-PR-2-C10-PK | 950811070 |
| | | | M8 connector | NPN | S100-PR-5-C10-NK | 950811200 |
| | | | | PNP | S100-PR-5-C10-PK | 950811210 |
| Fixed focus | RED | 70 mm | 2 m cable | NPN | S100-PR-2-D00-NK | 950811080 |
| | | | | PNP | S100-PR-2-D00-PK | 950811090 |
| | | | M8 connector | NPN | S100-PR-5-D00-NK | 950811220 |
| | | | | PNP | S100-PR-5-D00-PK | 950811230 |
| Background suppression | RED | 30...100 mm | 2 m cable | NPN | S100-PR-2-M00-NH | 950811120 |
| | | | | PNP | S100-PR-2-M00-PH | 950811130 |
| | | | M8 connector | NPN | S100-PR-5-M00-NH | 950811260 |
| | | | | PNP | S100-PR-5-M00-PH | 950811270 |

ACCESSORIES



M18 ADAPTER NOSE

SLIT



| TYPE | MODEL | DESCRIPTION | Order No. |
|------------------|--------------|---------------------------|-----------|
| Mounting bracket | ST-505 | lateral mounting | 95ACC2800 |
| | ST-5039 | L-shaped bracket | 95ACC2270 |
| Slit | S100-SLIT-05 | 0,5x19 mm SLIT | 95ACC3450 |
| | S100-SLIT-1 | 1x19 mm SLIT | 95ACC3460 |
| | S100-SLIT-2 | 2x19 mm SLIT | 95ACC3470 |
| M18 adapter | ST-S3Z-M18 | M18 THREADED ADAPTER NOSE | 95ACC7850 |

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 |
| | | 5 m | CS-B1-02-R-05 | 95A251640 |
| Radial M8 Connector | 4-pole, grey, P.V.C. | 3 m | CS-B2-02-G-03 | 95A251450 |
| | | 5 m | CS-B2-02-G-05 | 95A251460 |
| | | 7 m | CS-B2-02-G-07 | 95A251470 |
| | | 10 m | CS-B2-02-G-10 | 95A251530 |
| | 4-pole, P.U.R. | 2 m | CS-B2-02-R-02 | 95A251630 |
| | | 5 m | CS-B2-02-R-05 | 95A251650 |

MINIATURE SENSORS

S3Z

Advanced line of miniature Asian style of photoelectric sensors

- 50-250 mm background suppression
- 0.7 m proximity, 150 mm with narrow beam
- 4 m polarized retroreflective
- 15 m through beam
- Standard 3-wire output configuration



APPLICATIONS

- Processing and Packaging machinery
- Electronics assembling

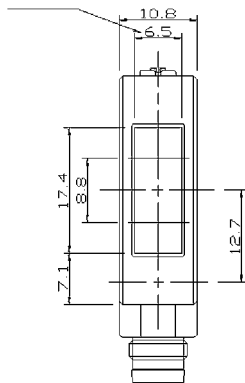


| S3Z | | |
|---|-----------|--|
| Through beam | | 0...15 m 0...30 m (class 1 LASER) |
| Polarized retroreflective | | 0.05...4 m 0,3...10 m (class 1 LASER) |
| Retroreflective for transparent (on R2 reflector) | | 0...2 m |
| Diffuse proximity | | 0...700 mm 50...150 mm (narrow beam) |
| Background suppression | | 50...250 mm 40...300 mm (class 1 LASER) |
| Power supply | Vdc | 10...30 V |
| | Vac | |
| | Vac/dc | |
| Output | PNP | ▪ |
| | NPN | ▪ |
| | NPN/PNP | |
| | relay | |
| | other | |
| Connection | cable | ▪ |
| | connector | ▪ |
| | pig-tail | |
| Approximate dimensions (mm) | | 11x31x19 |
| Housing material | | PC/PBT |
| Mechanical protection | | IP67 |

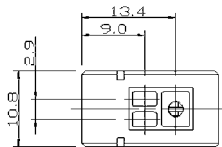
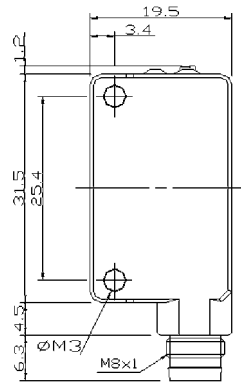
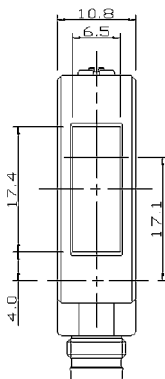
TECHNICAL DATA

| | |
|---------------------------------------|--|
| Consumption (output current excluded) | 30 mA max. (LED mod.) 35 mA max. (Laser mod.) |
| Light emission | red LED 650 nm (mod. S3Z...T51) red LED 665 nm (mod. S3Z...B01/C01) red LED 670 nm (mod. S3Z...M01) IR LED 850 nm (mod. S3Z...C11) IR LED 870 nm (mod. S3Z...F01/G00) red Laser 650 nm (mod. S3Z...B01/F01/G00/M01) |
| Setting | sensitivity trimmer, 6 turns screw (mod. S3Z...M01) |
| Operating mode | LIGHT/DARK trimmer (Laser mod.), LIGHT (mod. S3Z...-PL, -NL), DARK (mod. S3Z...-PD, -ND) |
| Indicators | yellow OUTPUT LED, green STABILITY LED (mod. S3Z...B01/C01/C11/F01), POWER ON LED (mod. S3Z...G00) |
| Output | PNP or NPN (short circuit protection) |
| Output current | 100 mA max. |
| Saturation voltage | 2 V max. (LED mod.) 1,5 V max. (Laser mod.) |
| Response time | 1 ms max. (LED mod.) 250 μ s max. (Laser mod.) |
| Switching frequency | 500 Hz max. (LED mod.) 2 kHz max. (Laser mod.) |
| Connection | 2 m cable \varnothing 3,5 mm, M8 4-pole connector |
| Dielectric strength | 500 Vac 1 min., between electronics and housing |
| Insulating resistance | >20 M Ω 500 Vdc, between electronics and housing |
| Mechanical protection | IP67 |
| Ambient light rejection | according to EN 60947-5-2 |
| Vibration | 0,5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6) |
| Shock resistance | 11 ms (30 G) 6 shock for every axis (EN60068-2-27) |
| Housing material | body PBT, indicators cover PC |
| Lens material | PMMA, PC (mod. S3Z...B01) |
| Operating temperature | -25 ... 55 °C (LED mod.), -10 ... 55 °C (Laser mod.) |
| Storage temperature | -40 ... 70 °C (LED mod.), -25 ... 70 °C (Laser mod.) |
| Weight | 50 g max. cable vers. , 10 g max. conn. vers. |

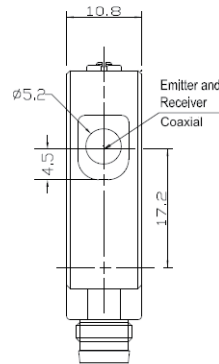
DIMENSIONS



Through beam



Polarized retroreflective for transparent

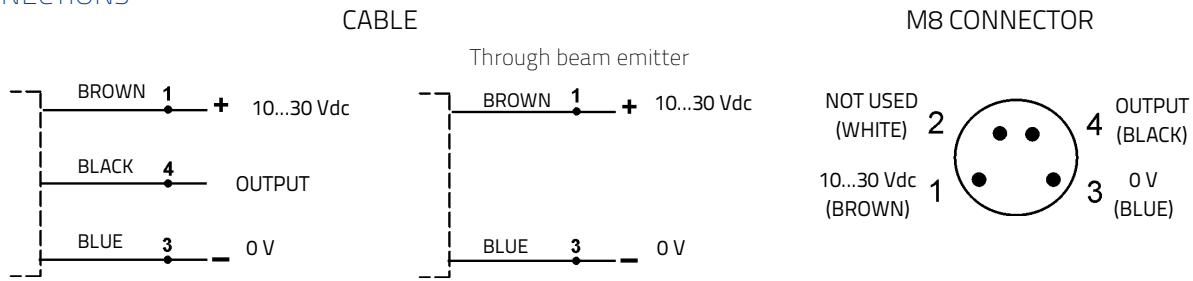


Cable version



MINIATURE SENSORS

CONNECTIONS

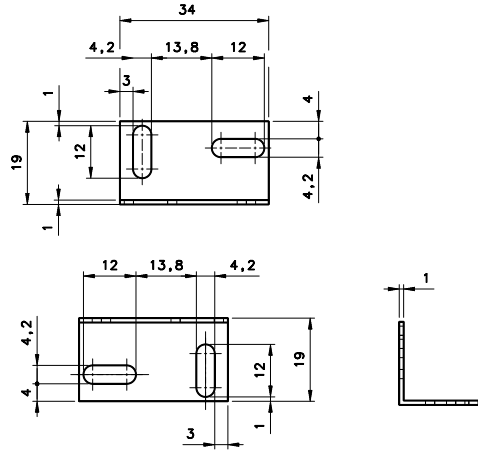


MODEL SELECTION AND ORDER INFORMATION

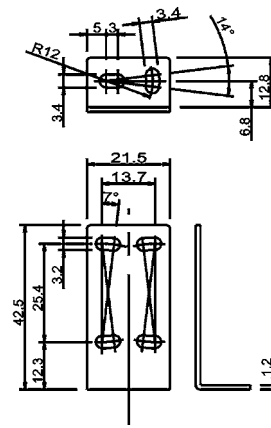
| OPTIC FUNCTION | EMISSION | CONNECTION | OUTPUT | MODEL | ORDER No. | |
|---|----------|--------------|------------------|------------------|------------------|-----------|
| Narrow beam diffuse proximity | LED | 2 m Cable | PNP - LIGHT | S3Z-PR-2-C01-PL | 95B010040 | |
| | | M8 Connector | PNP - LIGHT | S3Z-PR-5-C01-PL | 95B010050 | |
| | | 2 m Cable | PNP - DARK | S3Z-PR-2-C01-PD | 95B010060 | |
| | | M8 Connector | PNP - DARK | S3Z-PR-5-C01-PD | 95B010070 | |
| | | 2 m Cable | NPN - LIGHT | S3Z-PR-2-C01-NL | 95B010200 | |
| | | M8 Connector | NPN - LIGHT | S3Z-PR-5-C01-NL | 95B010210 | |
| | | 2 m Cable | NPN - DARK | S3Z-PR-2-C01-ND | 95B010220 | |
| Long diffuse proximity | LED | M8 Connector | NPN - DARK | S3Z-PR-5-C01-ND | 95B010230 | |
| | | 2 m Cable | PNP - LIGHT | S3Z-PR-2-C11-PL | 95B010001 | |
| | | M8 Connector | PNP - LIGHT | S3Z-PR-5-C11-PL | 95B010011 | |
| | | 2 m Cable | PNP - DARK | S3Z-PR-2-C11-PD | 95B010021 | |
| | | M8 Connector | PNP - DARK | S3Z-PR-5-C11-PD | 95B010031 | |
| | | 2 m Cable | NPN - LIGHT | S3Z-PR-2-C11-NL | 95B010161 | |
| | | M8 Connector | NPN - LIGHT | S3Z-PR-5-C11-NL | 95B010171 | |
| Polarized retroreflective | LED | 2 m Cable | NPN - DARK | S3Z-PR-2-C11-ND | 95B010181 | |
| | | M8 Connector | NPN - DARK | S3Z-PR-5-C11-ND | 95B010191 | |
| | | 2 m Cable | PNP - LIGHT | S3Z-PR-2-B01-PL | 95B010081 | |
| | | M8 Connector | PNP - LIGHT | S3Z-PR-5-B01-PL | 95B010091 | |
| | | 2 m Cable | PNP - DARK | S3Z-PR-2-B01-PD | 95B010101 | |
| | | M8 Connector | PNP - DARK | S3Z-PR-5-B01-PD | 95B010111 | |
| | LASER | | 2 m Cable | NPN - LIGHT | S3Z-PR-2-B01-NL | 95B010241 |
| | | | M8 Connector | NPN - LIGHT | S3Z-PR-5-B01-NL | 95B010251 |
| | | | 2 m Cable | NPN - DARK | S3Z-PR-2-B01-ND | 95B010261 |
| | | | M8 Connector | NPN - DARK | S3Z-PR-5-B01-ND | 95B010271 |
| Through beam | LED | 2 m Cable | PNP - DARK/LIGHT | S3Z-PH-2-B01-PP | 95B010440 | |
| | | M8 Connector | PNP - DARK/LIGHT | S3Z-PH-5-B01-PP | 95B010460 | |
| | | 2 m Cable | NPN - DARK/LIGHT | S3Z-PH-2-B01-NN | 95B010450 | |
| | | M8 Connector | NPN - DARK/LIGHT | S3Z-PH-5-B01-NN | 95B010470 | |
| | | 2 m Cable | PNP - LIGHT | S3Z-PR-2-FG01-PL | 95B010121 | |
| | | M8 Connector | PNP - LIGHT | S3Z-PR-5-FG01-PL | 95B010131 | |
| | | 2 m Cable | PNP - DARK | S3Z-PR-2-FG01-PD | 95B010141 | |
| | LASER | | M8 Connector | PNP - DARK | S3Z-PR-5-FG01-PD | 95B010151 |
| | | | 2 m Cable | NPN - LIGHT | S3Z-PR-2-FG01-NL | 95B010281 |
| | | | M8 Connector | NPN - LIGHT | S3Z-PR-5-FG01-NL | 95B010291 |
| | | | 2 m Cable | NPN - DARK | S3Z-PR-2-FG01-ND | 95B010301 |
| | | | M8 Connector | NPN - DARK | S3Z-PR-5-FG01-ND | 95B010311 |
| | | | 2 m Cable | PNP - DARK/LIGHT | S3Z-PH-2-FG01-PP | 95B010520 |
| | | | M8 Connector | PNP - DARK/LIGHT | S3Z-PH-5-FG01-PP | 95B010540 |
| Background suppression | LED | 2 m Cable | NPN - DARK/LIGHT | S3Z-PH-2-FG01-NN | 95B010530 | |
| | | M8 Connector | NPN - DARK/LIGHT | S3Z-PH-5-FG01-NN | 95B010550 | |
| | | 2 m Cable | PNP - LIGHT | S3Z-PR-2-M01-PL | 95B010331 | |
| | LASER | | M8 Connector | PNP - LIGHT | S3Z-PR-5-M01-PL | 95B010351 |
| | | | 2 m Cable | NPN - LIGHT | S3Z-PR-2-M01-NL | 95B010321 |
| | | | M8 Connector | NPN - LIGHT | S3Z-PR-5-M01-NL | 95B010341 |
| | | | 2 m Cable | PNP - DARK/LIGHT | S3Z-PH-2-M01-PP | 95B010480 |
| Polarized retroreflective for transparent | LED | M8 Connector | PNP - DARK/LIGHT | S3Z-PH-5-M01-PP | 95B010500 | |
| | | 2 m Cable | NPN - DARK/LIGHT | S3Z-PH-2-M01-NN | 95B010490 | |
| | | M8 Connector | NPN - DARK/LIGHT | S3Z-PH-5-M01-NN | 95B010510 | |
| | | 2 m Cable | NPN - DARK | S3Z-PR-2-T51-ND | 95B010390 | |
| | | M8 Connector | NPN - DARK | S3Z-PR-5-T51-ND | 95B010370 | |
| | | M8 Connector | PNP - DARK | S3Z-PR-5-T51-PD | 95B010360 | |

ACCESSORIES

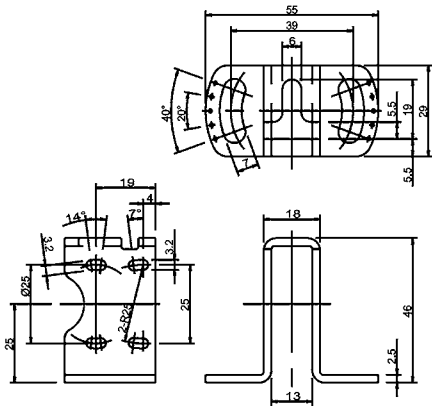
ST-505



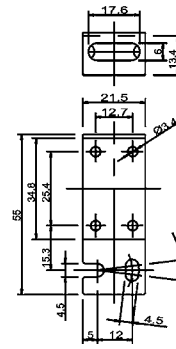
ST-5039



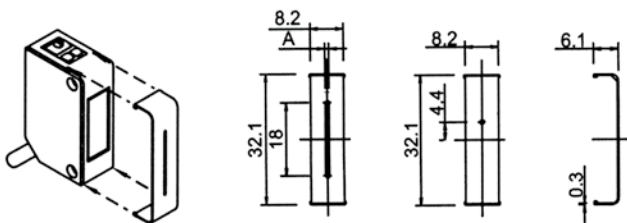
ST-5046



ST-5040



SLIT



M18 ADAPTER NOSE



MINIATURE SENSORS

| MODEL | DESCRIPTION | ORDER NO. |
|------------|--|-----------|
| ST-505 | lateral mounting | 95ACC2800 |
| ST-5039 | L-shaped fixing bracket | 95ACC2270 |
| ST-5040 | protection bracket with vertical fixing (only for cable versions) | 95ACC2280 |
| ST-5046 | protection bracket with horizontal fixing | 95ACC2370 |
| S3Z-SLIT1 | Ø 0,5 mm slit for through beam | 95ACC2470 |
| S3Z-SLIT2 | Ø 1 mm slit for through beam | 95ACC2480 |
| S3Z-SLIT3 | Ø 2 mm slit for through beam | 95ACC2490 |
| S3Z-SLIT4 | 0,5x18 mm slit for through beam | 95ACC2500 |
| S3Z-SLIT5 | 1x18 mm slit for through beam | 95ACC2510 |
| S3Z-SLIT6 | 2x18 mm slit for through beam | 95ACC2520 |
| ST-S3Z-M18 | S3Z FIX BRK M18 THREADED NOSE | 95ACC7850 |

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 |
| | | 5 m | CS-B1-02-R-05 | 95A251640 |
| Radial M8 Connector | 4-pole, grey, P.V.C. | 3 m | CS-B2-02-G-03 | 95A251450 |
| | | 5 m | CS-B2-02-G-05 | 95A251460 |
| | | 7 m | CS-B2-02-G-07 | 95A251470 |
| | | 10 m | CS-B2-02-G-10 | 95A251530 |
| | 4-pole, P.U.R. | 2 m | CS-B2-02-R-02 | 95A251630 |
| | | 5 m | CS-B2-02-R-05 | 95A251650 |



MINIATURE SENSORS

S45

High Performance european style miniature sensor all-in-one family

- Red LED and Laser emissions
- Precise risk free laser class 1 emission
- Diffused LED proximity 800mm
- Background Suppression 400mm
- Retroreflective Class 1 Laser 15m/Red LED 7m
- Through beam Class 1 Laser 20m/Red LED 15m
- IP69K housing
- 2m Cable or metal M8 4 pole version
- PNP or NPN output with remote teach in input
- High speed RGB and white emission contrast sensor
- High precision distance sensor up to 200 mm



APPLICATIONS

- Processing and Packaging machinery
- Cosmetic and Pharmaceutical industry
- Electronics assembling
- Conveyor lines, material handling
- Automotive industry
- Print and paper industry
- Small part detection with maximum accuracy

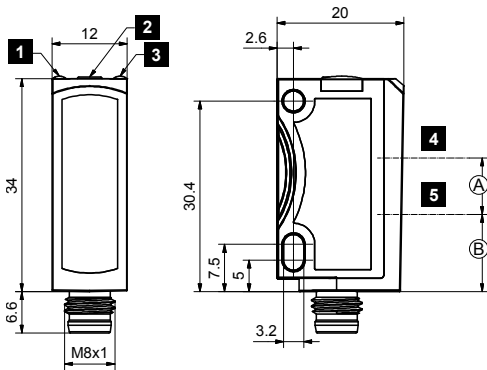


| S45 | | |
|--|-----------|--|
| Through beam | | 20m. (Laser Class1) 15m. (Red Led) |
| Polarized Retroreflex | | 15m. (Laser Class1) 7m. (Red Led) |
| Autocollimated Retroreflective for Transparent objects | | 2m. (Red Led) |
| Autocollimated Retroreflective | | 2m. (Red Led) |
| Diffused proximty | | 250mm. (Laser Class1) 800mm. (Red Led) |
| Background suppressor | | 120mm. (Laser Class 1) 200mm. (Red Led) 400mm. (Red Led) |
| Distance sensor | | 80mm. (Red Led) 200mm. (Red Led) |
| Contrast Sensor | | 12mm. (White) 12mm. (RGB) |
| Pwer Supply | Vdc | 10...30 V |
| | Vac | |
| | Vac/Vdc | |
| Output | PNP | ▪ |
| | NPN | ▪ |
| | NPN/PNP | |
| | relay | |
| | other | Push Pull (Wxx, Yxx), Analog 0...10 V (Yxx) |
| Connection | cable | ▪ |
| | connector | ▪ |
| | pig-tail | |
| Approximate dimensions (mm) | | 34mm. x 20mm. X 12mm. |
| Housing material | | ABS(Housing), PMMA (Optics) |
| Mechanical protection | | IP67 & IP69K |

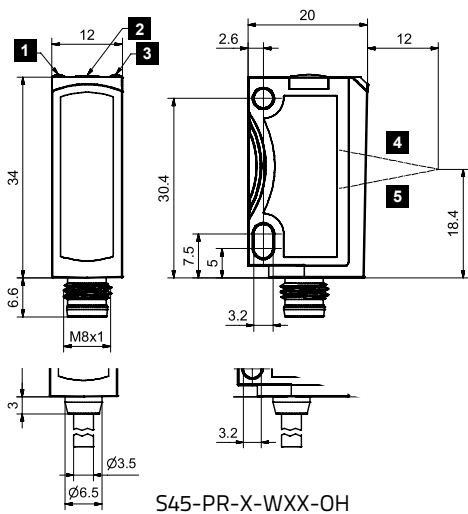
TECHNICAL DATA

| | |
|-------------------------------------|---|
| Power supply | 10...30 Vdc |
| Ripple | 10% max. |
| Consumption (Load current excluded) | ≤ 30 mA |
| Light emission | Red LED 632 nm, Red Laser 650 nm |
| Setting | Push Button TEACH-IN |
| Indicators | LED Green Operating Voltage LED Yellow Output Status |
| Output | NPN, PNP, Push Pull |
| Output current | 100 mA |
| Saturation voltage | 2 V max |
| Response time | 500 μs 333 μs (C03 Laser) 250 μs (F/G Laser) 50 μs (W03, W33) 20 μs (W13, W43) |
| Switching frequency | ≤ 1000Hz ≤ 1500Hz (C03 Laser) ≤ 2000 Hz (F/G Laser) ≤ 10 kHz (W03, W33) ≤ 25 kHz (W13, W43) |
| Connection | Plastic M8 4-pole connector, Metal M8 4-pole connector 2 m cable |
| Dielectric strength | 500 Vac, 1min between electronic and housing |
| Insulating resistance | >20M OHM, 500 Vdc between electronic and housing |
| Electrical protection | class 2 |
| Mechanical protection | IP67 & IP69K |
| Ambient light rejection | according to EN 60947-5-2 |
| Vibrations | 0,5mm amplitude, 10...55Hz frequency, for every axis (EN60068-2-6) |
| Shock resistance | 11 ms (30G) 6 shock for every axis (EN60068-2-27) |
| Housing material | ABS |
| Lens material | PMMA |
| Operating temperature | -20...+60 °C |
| Storage temperature | -20...+80 °C |
| Weight | 10g. with connector, 40g. with cable |

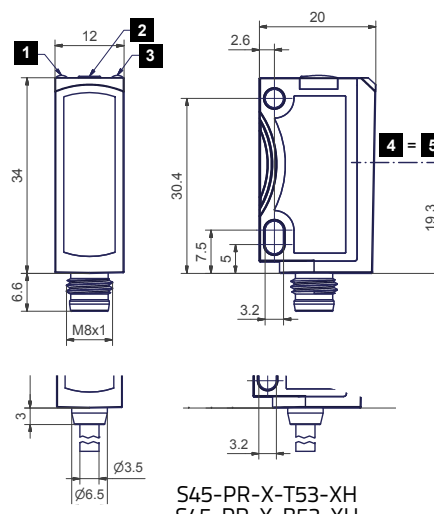
DIMENSIONS



| | S45-PR-2(5)-M03 S45-PR-5-Y03 | S45-PR-2(5)-M13 S45-PR-5-Y13 | S45-PR-2(5)-C03 S45-PR-B03 | S45-PH-5-M03 | S45-PH-5-C03 S45-PH-B03 | S45-PR-G00 | S45-PH-G00 | S45-PR(PH)-F03 |
|----------|---------------------------------|---------------------------------|-------------------------------|--------------|----------------------------|------------|------------|----------------|
| A | 9 | 11.75 | 10.8 | 8.8 | 8.8 | 11.5 | 13.5 | |
| B | 12.3 | 11 | 11.5 | 12.5 | 13.5 | | | 22.3 |



S45-PR-X-WXX-OH



S45-PR-X-T53-XH
S45-PR-X-B53-XH

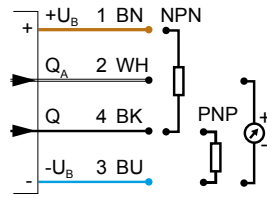
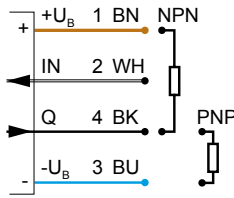
| | |
|----------|---------------|
| 1 | Yellow LED 1) |
| 2 | Button |
| 3 | Green LED 2) |
| 4 | Receiver axis |
| 5 | Emitter axis |

- 1) switching output indicator
- 2) operating voltage indicator

MINIATURE SENSORS

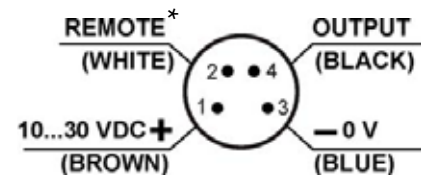
CONNECTIONS

CABLE



WXX, YXX

M8 CONNECTOR

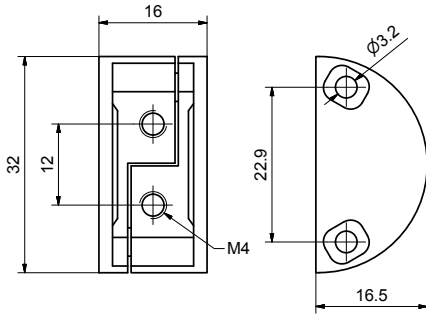


* Analog out YXX

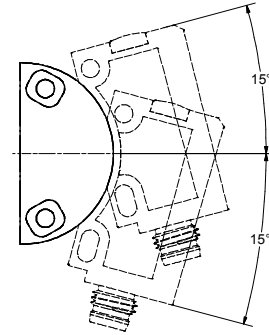
MODEL SELECTION AND ORDER INFORMATION

| OPTIC FUNCTION | EMISSION | CONNECTION | OUTPUT | MODEL | ORDER NO. | |
|--|--|------------|-----------|-----------------|-----------------|-----------|
| Diffused proximity | LED | 2m Cable | PNP | S45-PR-2-C03-PH | 950411220 | |
| | | | NPN | S45-PR-2-C03-NH | 950411210 | |
| | LASER | M8 | PNP | S45-PR-5-C03-PH | 950411240 | |
| | | | NPN | S45-PR-5-C03-NH | 950411230 | |
| Polarized Retroreflex | LED | 2m Cable | PNP | S45-PR-2-B03-PH | 950411100 | |
| | | | NPN | S45-PR-2-B03-NH | 950411090 | |
| | LASER | M8 | PNP | S45-PR-5-B03-PH | 950411120 | |
| | | | NPN | S45-PR-5-B03-NH | 950411110 | |
| | Polarized retroreflective autocollimated for transparent | LED | 2m Cable | PNP | S45-PH-5-C03-PH | 950411260 |
| | | | | NPN | S45-PH-5-C03-NH | 950411250 |
| Polarized retroreflective autocollimated | LED | M8 | PNP | S45-PH-5-B03-PH | 950411140 | |
| | | | NPN | S45-PH-5-B03-NH | 950411130 | |
| Through beam | LED | 2m Cable | PNP | S45-PR-2-T53-PH | 950411160 | |
| | | | NPN | S45-PR-2-T53-NH | 950411150 | |
| Background suppressor 200mm | LED | 2m Cable | PNP | S45-PR-5-T53-PH | 950411180 | |
| | | | NPN | S45-PR-5-T53-NH | 950411170 | |
| Background suppressor 400mm | LED | M8 | PNP | S45-PR-5-B53-PH | 950411200 | |
| | | | NPN | S45-PR-5-B53-NH | 950411190 | |
| Background suppressor laser | LED | 2m Cable | - | S45-PR-2-G00-XE | 950411000 | |
| | | | PNP | S45-PR-2-F03-PH | 950411020 | |
| | LASER | M8 | NPN | S45-PR-2-F03-NH | 950411010 | |
| | | | - | S45-PR-5-G00-XE | 950411030 | |
| | Distance sensor | LED | M8 | PNP | S45-PR-5-F03-PH | 950411050 |
| | | | | NPN | S45-PR-5-F03-NH | 950411040 |
| Contrast Sensor 10kHz | WHITE | M8 | - | S45-PH-5-G00-XE | 950411060 | |
| | | | PNP | S45-PH-5-F03-PH | 950411080 | |
| Contrast Sensor 25kHz | RGB | M8 | NPN | S45-PH-5-F03-NH | 950411070 | |
| | | | - | S45-PR-2-M03-PH | 950411280 | |
| Background suppressor 200mm | LED | 2m Cable | NPN | S45-PR-2-M03-NH | 950411270 | |
| | | | PNP | S45-PR-5-M03-PH | 950411300 | |
| Background suppressor 400mm | LED | 2m Cable | NPN | S45-PR-5-M03-NH | 950411290 | |
| | | | PNP | S45-PR-2-M13-PH | 950411320 | |
| Background suppressor laser | LASER | M8 | NPN | S45-PR-2-M13-NH | 950411310 | |
| | | | PNP | S45-PR-5-M13-PH | 950411340 | |
| Distance sensor | LED | M8 | NPN | S45-PR-5-M13-NH | 950411330 | |
| | | | PNP | S45-PH-5-M03-PH | 950411360 | |
| Distance sensor | LED | M8 | NPN | S45-PH-5-M03-NH | 950411350 | |
| | | | PNP | S45-PR-5-Y03-PV | 950411380 | |
| Contrast Sensor 10kHz | WHITE | M8 | NPN | S45-PR-5-Y03-NV | 950411370 | |
| | | | PNP | S45-PR-5-Y13-PV | 950411400 | |
| Contrast Sensor 25kHz | RGB | M8 | NPN | S45-PR-5-Y13-NV | 950411390 | |
| | | | PUSH-PULL | S45-PR-5-W03-OH | 950411420 | |
| Contrast Sensor 10kHz | RGB | M8 | PUSH-PULL | S45-PR-5-W33-OH | 950411410 | |
| | | | PUSH-PULL | S45-PR-5-W13-OH | 950411440 | |
| Contrast Sensor 25kHz | RGB | M8 | PUSH-PULL | S45-PR-5-W43-OH | 950411430 | |

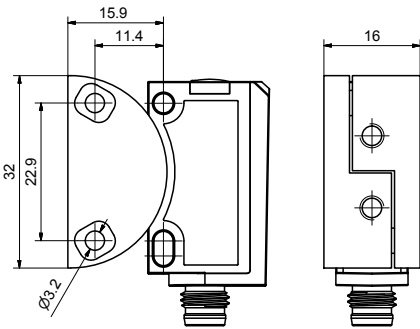
ACCESSORIES



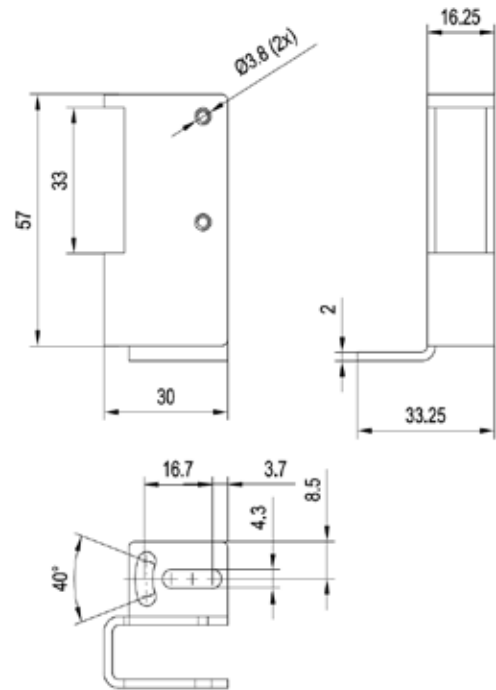
ST-S45-DVT



ST-S45-DVT



ST-S45-DVT



ST-MINI-PRO

| MODEL | DESCRIPTION | ORDER NO. |
|-------------|-------------------------|-----------|
| ST-S45-DVT | S45 DOVE TAIL BRACKET | 95ACC7970 |
| ST-MINI-PRO | MINI PROTECTIVE BRACKET | 95ACC7980 |

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 |
| Radial M8 Connector | 4-pole, grey, P.V.C. | 2 m | CS-B1-02-R-02 | 95A251620 |
| | | 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 |
| Radial M8 Connector | 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 |

MINIATURE SENSORS

S40

High performance miniature European style photoelectric sensors

- High-performance models with Teach-in function
- Background suppression and LASER retroreflective models
- Polarized retroreflective for transparent objects
- 4-wire NO/NC output or Remote teach input



APPLICATIONS

- Processing and Packaging machinery
- Conveyor lines, material handling
- Automated warehousing



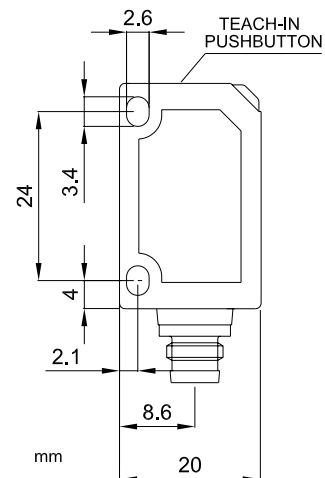
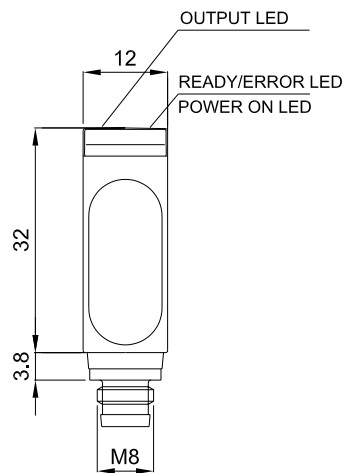
| S40 | | |
|---|-----------|---|
| Polarized retroreflective | | 0,1...2,5 m 0,1...6 m (class 2 LASER) |
| Retroreflective for transparent (on R2 reflector) | | 100...700 mm |
| Diffuse proximity | | 5...300 mm 40...150 mm (class 2 LASER) |
| Background suppression | | 15...100 mm 20...60 mm (class 2 LASER) |
| Power supply | Vdc | 10...30 V |
| | Vac | |
| | Vac/dc | |
| Output | PNP | ▪ |
| | NPN | ▪ |
| | NPN/PNP | |
| | relay | |
| | other | |
| Connection | cable | ▪ |
| | connector | ▪ |
| | pig-tail | |
| Approximate dimensions (mm) | | 12x32x20 |
| Housing material | | ABS |
| Mechanical protection | | IP67 |

TECHNICAL DATA

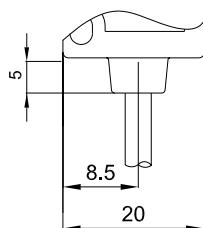
| | |
|---------------------------------------|--|
| Power supply | 10 ... 30 Vdc (reverse polarity protection) |
| Ripple | 10% max. |
| Consumption (output current excluded) | 35 mA max. |
| Light emission | red LED 660 nm, 640 nm (mod. S40...M03) red Laser 650 nm |
| Setting | teach-in push-button and remote by cable |
| Indicators | yellow OUTPUT LED green READY/ERROR LED |
| Output | NPN or PNP, 22 kΩ pull down/up resistance (short-circuit protection) |
| Output current | 100 mA max. |
| Saturation voltage | 2,4 V max. |
| Response time | 0,5 ms 125 μs (Laser mod. S40...B03/C03) |
| Switching frequency | 1 kHz 4 kHz (Laser mod. S40...B03/C03) |
| Connection | M8 4-pole connector, 2 m cable 3,5 mm |
| Dielectric strength | 500 Vac, 1 min between electronics and housing |
| Insulating resistance | >20 MΩ, 500 Vdc between electronics and housing |
| Electrical protection | class 2 |
| Mechanical protection | IP67 |
| Ambient light rejection | according to EN 60947-5-2 |
| Vibrations | 0,5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6) |
| Shock resistance | 11 ms (30 G) 6 shock for every axis (EN60068-2-27) |
| Housing material | ABS UL 94V-0 |
| Lens material | Methacrylic PMMA |
| Operating temperature | -20 ... +60 °C |
| Storage temperature | -20 ... +80 °C |
| Weight | 40 g max. cable vers., 10 g max. conn. vers. |

DIMENSIONS

M8 CONNECTOR VERSION



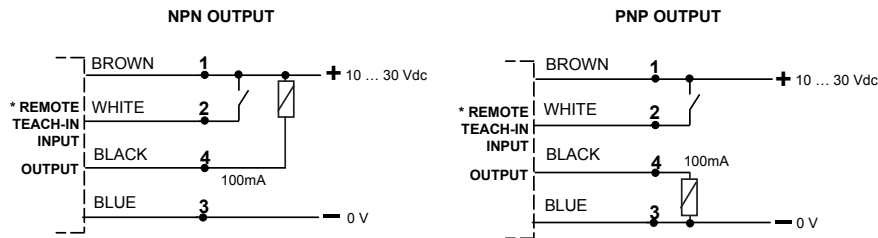
CABLE VERSION



MINIATURE SENSORS

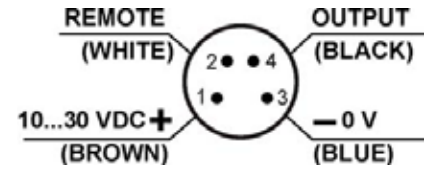
CONNECTIONS

CABLE



* Connect REMOTE wire to 0V if not used

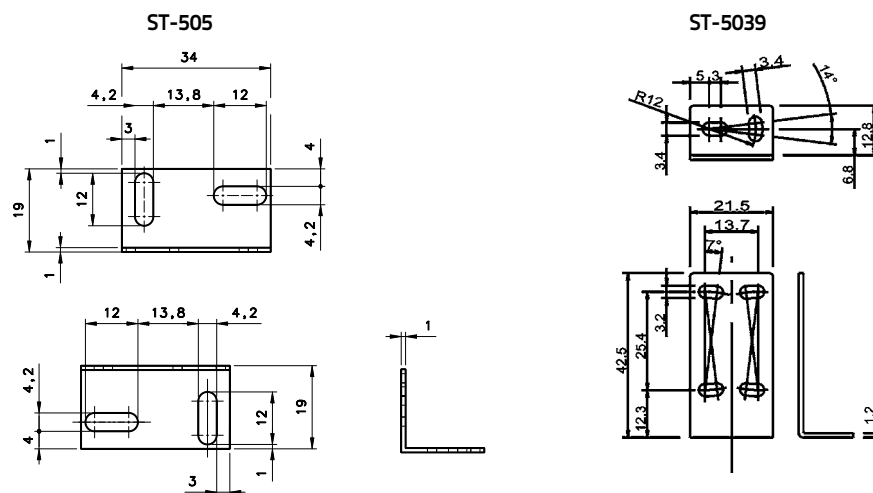
M8 CONNECTOR



MODEL SELECTION AND ORDER INFORMATION

| OPTIC FUNCTION | EMISSION | CONNECTION | OUTPUT | MODEL | ORDER No. |
|---------------------------------|----------|-----------------|-----------------|-----------------|-----------------|
| Polarized retroreflective | LASER | M8 connector | NPN | S40-PH-5-B03-NH | 950401240 |
| | | | PNP | S40-PH-5-B03-PH | 950401250 |
| | LED | 2m Cable | NPN | S40-PR-2-B03-NH | 950401360 |
| | | | PNP | S40-PR-2-B03-PH | 950401300 |
| | | M8 connector | NPN | S40-PR-5-B03-NH | 950401480 |
| | | | PNP | S40-PR-5-B03-PH | 950401420 |
| Diffuse proximity | LASER | M8 connector | NPN | S40-PH-5-C03-NH | 950401260 |
| | | | PNP | S40-PH-5-C03-PH | 950401270 |
| | LED | 2m Cable | NPN | S40-PR-2-C03-NH | 950401370 |
| | | | PNP | S40-PR-2-C03-PH | 950401310 |
| | | M8 connector | NPN | S40-PR-5-C03-NH | 950401490 |
| | | | PNP | S40-PR-5-C03-PH | 950401430 |
| Background suppression | LASER | 2m Cable | PNP | S40-PH-2-M03-PH | 950401540 |
| | | | M8 connector | NPN | S40-PH-5-M03-NH |
| | PNP | S40-PH-5-M03-PH | | 950401290 | |
| | LED | 2m Cable | NPN | S40-PR-2-M03-NH | 950401380 |
| | | | PNP | S40-PR-2-M03-PH | 950401320 |
| | | M8 connector | NPN | S40-PR-5-M03-NH | 950401500 |
| PNP | | | S40-PR-5-M03-PH | 950401440 | |
| Retroreflective for transparent | LED | 2m Cable | NPN | S40-PR-2-T03-NH | 950401410 |
| | | | PNP | S40-PR-2-T03-PH | 950401350 |
| | | M8 connector | NPN | S40-PR-5-T03-NH | 950401530 |
| | | | PNP | S40-PR-5-T03-PH | 950401470 |

ACCESSORIES



| MODEL | DESCRIPTION | ORDER NO. |
|---------|-------------------------|-----------|
| ST-505 | lateral mounting | 95ACC2800 |
| ST-5039 | L-shaped fixing bracket | 95ACC2270 |

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 |
| | 10 m | CS-B2-02-G-10 | 95A251530 | |
| | 4-pole, P.U.R. | 2 m | CS-B2-02-R-02 | 95A251630 |
| | | 5 m | CS-B2-02-R-05 | 95A251650 |

MINIATURE SENSORS

S41

Basic line of miniature European style photoelectric sensors

- Cost-effective universal models with adjustment trimmer
- Polarized retroreflective for transparent objects
- 4-wire connection NO/NC output or Remote teach



APPLICATIONS

- Processing and Packaging machinery
- Conveyor lines, material handling
- Automated warehousing



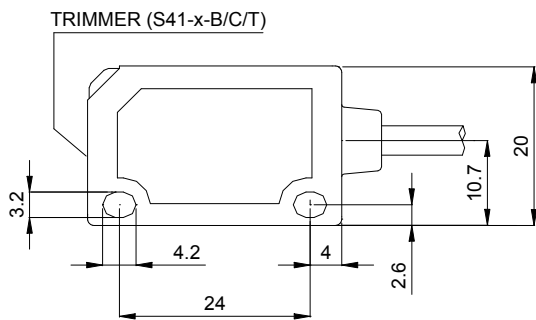
| S41 | | |
|---|-----------|--------------|
| Through beam | | 0,1...6 m |
| Polarized retroreflective (on R2 reflector) | | 0,1...2,5 m |
| Retroreflective for transparent (on R2 reflector) | | 100...700 mm |
| Diffuse proximity | | 2...350 mm |
| Fixed focus | | 110 mm |
| Power supply | Vdc | 10...30 V |
| | Vac | |
| | Vac/dc | |
| Output | PNP | ▪ |
| | NPN | ▪ |
| | NPN/PNP | |
| | relay | |
| | other | |
| Connection | cable | ▪ |
| | connector | ▪ |
| | pig-tail | |
| Approximate dimensions (mm) | | 12x32x20 |
| Housing material | | ABS |
| Mechanical protection | | IP67 |

TECHNICAL DATA

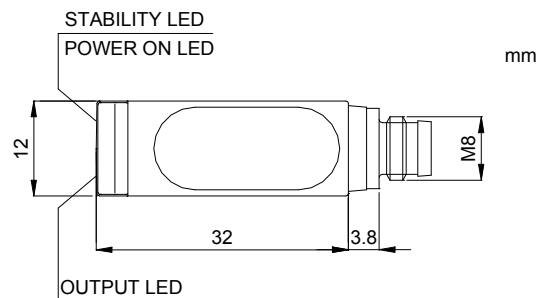
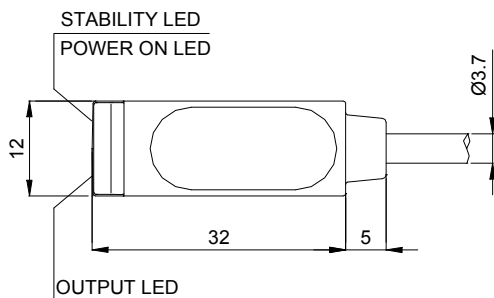
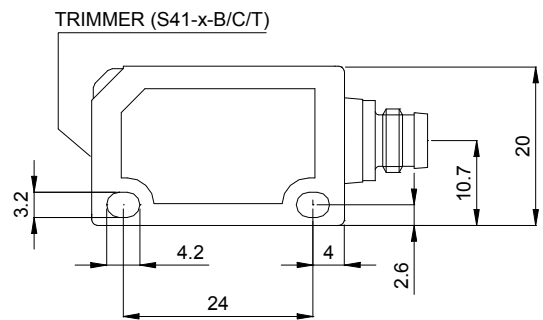
| | |
|---------------------------------------|---|
| Power supply | 10 ... 30 Vdc (reverse polarity protection) |
| Ripple | 10% max. |
| Consumption (output current excluded) | 35 mA max. |
| Light emission | red LED 660 nm (mod. S41...B/D/P/T) IR LED 880 nm (mod. S41...C/G/H) |
| Setting | sensitivity trimmer (mod. S41...B/C/T) |
| Operating mode | LIGHT mode (mod. S41...C/D); DARK mode (mod. S41...B/F/P/T) |
| Indicators | yellow OUTPUT LED green STABILITY LED (mod. S41...B/D/C/F/P), POWER LED (mod. S41...G/H) |
| Output | NPN or PNP, NO; NC |
| Output current | 100 mA max. |
| Saturation voltage | 2 V max. |
| Response time | 1 ms |
| Switching frequency | 500 Hz max. |
| Connection | M8 4-pole connector, 2 m cable \varnothing 3,5 mm |
| Dielectric strength | 500 Vac, 1 min between electronics and housing |
| Insulating resistance | >20 M Ω , 500 Vdc between electronics and housing |
| Electrical protection | class 2 |
| Mechanical protection | IP66 (mod. S41...B/C/T), IP67 (mod. S41...D/F/G/P/H) |
| Ambient light rejection | according to EN 60947-5-2 |
| Vibrations | 0,5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6) |
| Shock resistance | 11 ms (30 G) 6 shock for every axis (EN60068-2-27) |
| Housing material | ABS UL 94V-0 |
| Lens material | PMMA plastic |
| Operating temperature | -25 ... +55 °C |
| Storage temperature | -25 ... +70 °C |
| Weight | 40 g max. cable vers., 10 g max. conn. vers. |

DIMENSIONS

CABLE VERSION



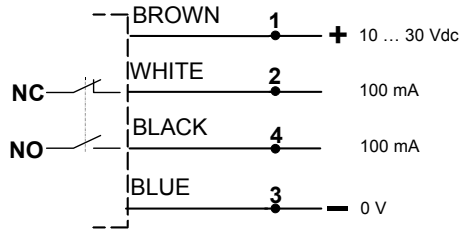
M8 CONNECTOR VERSION



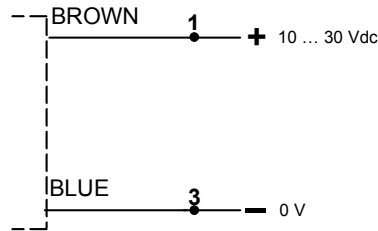
MINIATURE SENSORS

CONNECTIONS

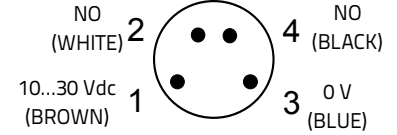
CABLE



Through beam emitter



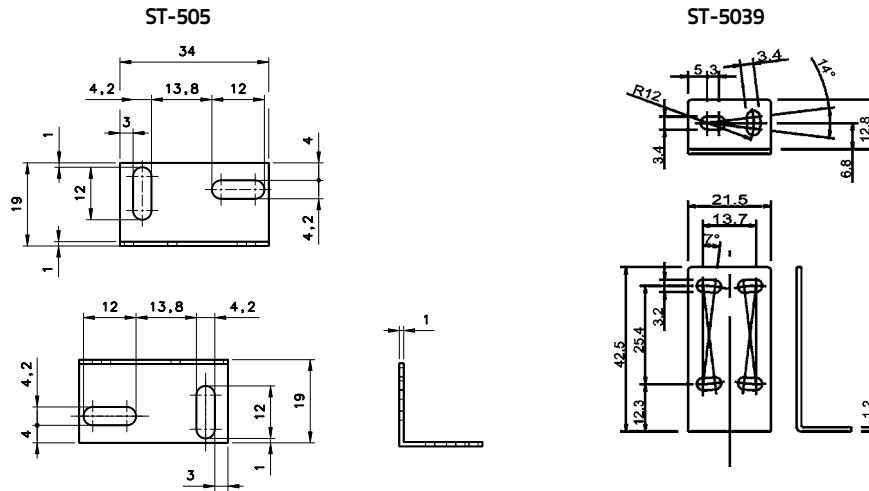
M8 CONNECTOR



MODEL SELECTION AND ORDER INFORMATION

| OPTIC FUNCTION | ADJUSTMENT TRIMMER | CONNECTION | OUTPUT | MODEL | ORDER No. |
|---------------------------------------|--------------------|--------------|--------|-----------|-----------|
| Polarized retroreflective | Present | 2m Cable | NPN | S41-2-B-N | 950701150 |
| | | | PNP | S41-2-B-P | 950701000 |
| | | M8 Connector | NPN | S41-5-B-N | 950701210 |
| | | | PNP | S41-5-B-P | 950701050 |
| Polarized retroreflective | Absent | 2m Cable | NPN | S41-2-P-N | 950701190 |
| | | | PNP | S41-2-P-P | 950701100 |
| | | Connector | NPN | S41-5-P-N | 950701250 |
| | | | PNP | S41-5-P-P | 950701110 |
| Diffuse proximity | Present | 2m Cable | NPN | S41-2-C-N | 950701160 |
| | | | PNP | S41-2-C-P | 950701010 |
| | | M8 Connector | NPN | S41-5-C-N | 950701120 |
| | | | PNP | S41-5-C-P | 950701060 |
| Fixed focus | Absent | 2m Cable | NPN | S41-2-D-N | 950701170 |
| | | | PNP | S41-2-D-P | 950701020 |
| | | M8 Connector | NPN | S41-5-D-N | 950701230 |
| | | | PNP | S41-5-D-P | 950701070 |
| Through beam receiver | Absent | 2m Cable | NPN | S41-2-F-N | 950701180 |
| | | | PNP | S41-2-F-P | 950701030 |
| | | M8 Connector | NPN | S41-5-F-N | 950701240 |
| | | | PNP | S41-5-F-P | 950701080 |
| Through beam emitter | Absent | 2m Cable | - | S41-2-G | 950701040 |
| | | M8 Connector | - | S41-5-G | 950701090 |
| Through beam emitter with narrow beam | Absent | M8 Connector | - | S41-2-H | 950701045 |
| | | M8 Connector | - | S41-5-H | 950701095 |
| Retroreflective for transparent | Present | 2m Cable | NPN | S41-2-T-N | 950701200 |
| | | | PNP | S41-2-T-P | 950701130 |
| | | M8 Connector | NPN | S41-5-T-N | 950701260 |
| | | | PNP | S41-5-T-P | 950701140 |

ACCESSORIES



| MODEL | DESCRIPTION | ORDER NO. |
|---------|-------------------------|-----------|
| ST-505 | lateral mounting | 95ACC2800 |
| ST-5039 | L-shaped fixing bracket | 95ACC2270 |

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 |
| | 10 m | CS-B2-02-G-10 | 95A251530 | |
| | 4-pole, P.U.R. | 2 m | CS-B2-02-R-02 | 95A251630 |
| | | 5 m | CS-B2-02-R-05 | 95A251650 |

MINIATURE SENSORS

SMall

Complete line of amplified subminiature photoelectric sensors

- 15mm, 20mm, 30mm and 50mm fixed focus proximity
- 1,5m retroreflective and 1m polarized retroreflective
- 2m through beam models
- Amplified NPN or PNP output with NO-NC output



APPLICATIONS

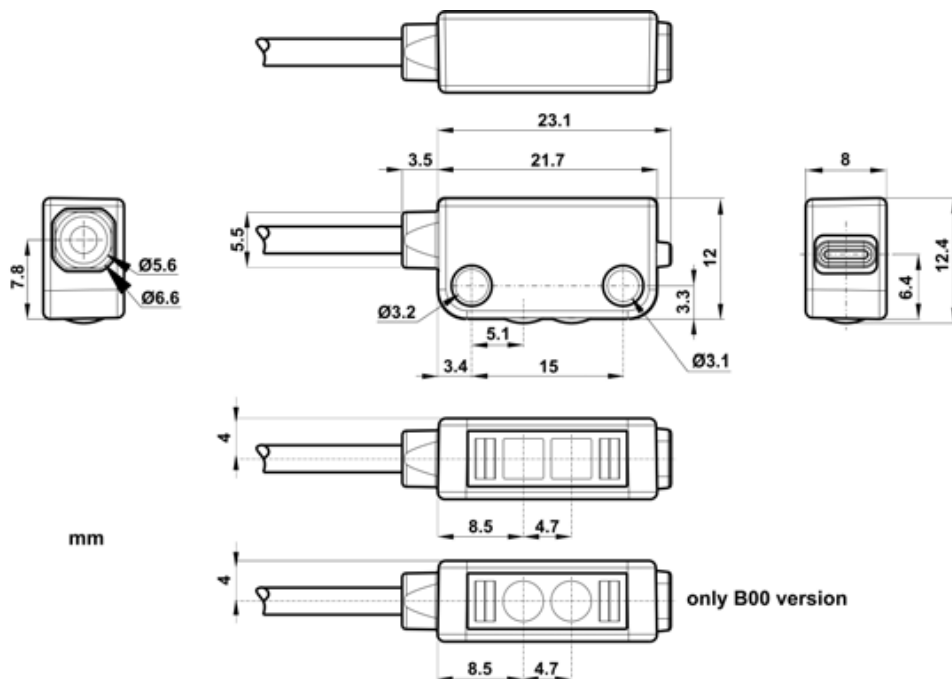
- Processing and Packaging machinery
- Automotive
- Beverage & Bottling
- Vending machines

| SM-all | | |
|-----------------------------------|-----------|---------------|
| Through beam | | 0...2 m |
| Retroreflective (on R2 reflector) | | 0,05...1,5 m |
| Polarized retroreflective | | 0,1...1 m |
| Fixed focus | | 3...15 mm |
| | | 3...20 mm |
| | | 3...30 mm |
| | | 3...50 mm |
| Power supply | Vdc | 10...30 V |
| | Vac | |
| | Vac/dc | |
| Output | PNP | ▪ |
| | NPN | ▪ |
| | NPN/PNP | |
| | relay | |
| | other | |
| Connection | cable | ▪ |
| | connector | |
| | pig-tail | |
| Approximate dimensions (mm) | | 8x23x12 |
| Housing material | | Polycarbonate |
| Mechanical protection | | IP67 |

TECHNICAL DATA

| | |
|---------------------------------------|--|
| Power supply | 10 ... 30 Vdc (limit values) |
| Ripple | 10% max. |
| Consumption (output current excluded) | 20 mA max. |
| Light emission | red LED 640 nm |
| Operating mode | LIGHT mode on N.O. output / DARK mode on N.C. output |
| Indicators | yellow OUTPUT LED excl. mod. G00 green POWER LED |
| Output | PNP or NPN; NO; NC |
| Output current | 50 mA max. |
| Saturation voltage | 1,25 V max. (NPN), 1,45 V max. (PNP) |
| Response time | 700 µs 1,3 ms (mod. SM...F00/G00) |
| Switching frequency | 700 Hz 385 Hz (mod. SM...F00/G00) |
| Connection | 2 m cable Ø2,5 mm |
| Dielectric strength | 500 Vac, 1 min between electronics and housing |
| Insulating resistance | >20 MΩ, 500 Vdc between electronics and housing |
| Electrical protection | class 2 |
| Mechanical protection | IP67 |
| Ambient light rejection | according to EN 60947-5-2 |
| Vibrations | 0,5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6) |
| Shock resistance | 11 ms (30 G) 6 shock for every axis (EN60068-2-27) |
| Housing material | Polycarbonate |
| Lens material | PMMA, glass (mod. B00) |
| Operating temperature | -20 ... 55 °C |
| Storage temperature | -30 ... 75 °C |
| Weight | 22 g |

DIMENSIONS

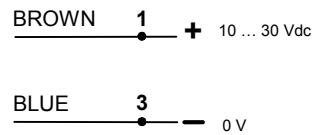
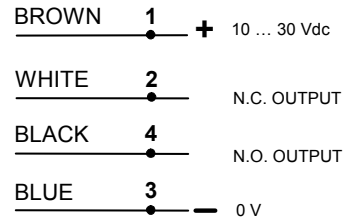


MINIATURE SENSORS

CONNECTIONS

CABLE

Through beam emitter

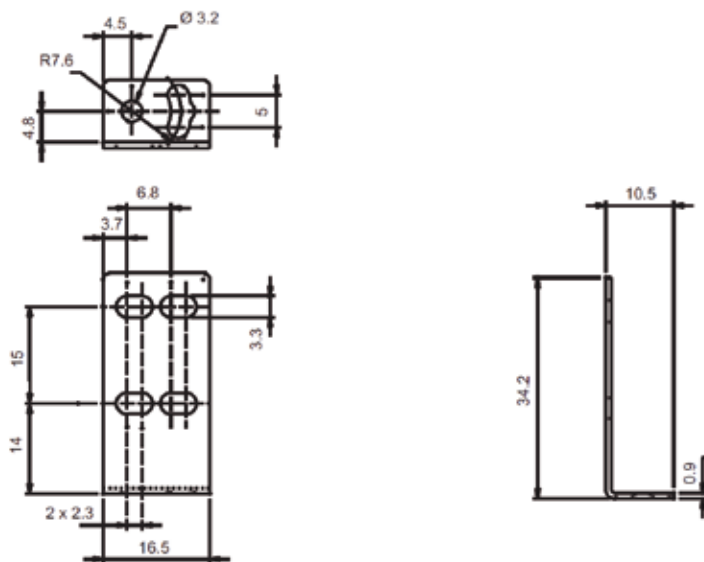


MODEL SELECTION AND ORDER INFORMATION

| OPTIC FUNCTION | OPERATING DISTANCE | CONNECTION | OUTPUT | MODEL | ORDER No. |
|-------------------------------|--------------------|------------|----------|----------------|----------------|
| Retroreflective | 0,05...1,5 m | 2m Cable | PNP | SM-PR-2-A00-PP | 95B000060 |
| | | | NPN | SM-PR-2-A00-NN | 95B000070 |
| Polarized retroreflective | 0,1...1 m | 2m Cable | PNP | SM-PR-2-B00-PP | 95B000080 |
| | | | NPN | SM-PR-2-B00-NN | 95B000090 |
| Fixed focus (short distance) | 15 mm | 2m Cable | PNP | SM-PR-2-D00-PP | 95B000020 |
| Fixed focus (normal distance) | 20 mm | | NPN | SM-PR-2-D00-NN | 95B000030 |
| | | | PNP | SM-PR-2-D10-PP | 95B000140 |
| Fixed focus (medium distance) | 30 mm | | NPN | SM-PR-2-D10-NN | 95B000150 |
| | | | PNP | SM-PR-2-D20-PP | 95B000040 |
| Fixed focus (long distance) | 50 mm | | NPN | SM-PR-2-D20-NN | 95B000050 |
| | | | PNP | SM-PR-2-D30-PP | 95B000000 |
| Through beam receiver | 0...2 m | | 2m Cable | NPN | SM-PR-2-D30-NN |
| | | PNP | | SM-PR-2-F00-PP | 95B000120 |
| | | - | | SM-PR-2-G00-XG | 95B000160 |

ACCESSORIES

ST-5049



mm

| MODEL | DESCRIPTION | ORDER NO. |
|---------|---------------------|-----------|
| ST-5049 | right angle bracket | 95ACC6650 |



COMPACT SENSORS

S8

Compact size and high performance for the most challenging detection applications

- Compact dimensions (14x42x25 mm)
- Background suppression for transparent and shiny objects
- Contrast sensors up to 10 kHz switching frequency
- Extremely focused spot, under 1 mm (LASER model)
- Very high resolution LASER models
- INOX AISI 316L model



APPLICATIONS

- Processing and Packaging machinery
- Beverage/Food/ Cosmetics/ Pharmaceutical industries
- Electronics assembling



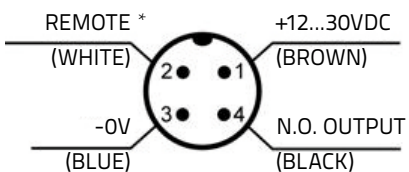
(*) Stainless steel models.
ATEX II 3DG

| S8 | | |
|--|-----------|-------------------------------------|
| Through beam | | 0...25 m |
| Polarized retroreflective | | 0,1...5 m |
| Retroreflective for transparent (coaxial) | | 0...10 m (class 2 LASER) |
| Diffuse proximity | | 0...0,8 m (T51), 0...2 m (T53, T50) |
| Background suppression | | 0...500 mm |
| Background suppression for clear detection | | 50...300 mm |
| Contrast sensor | | 20...200 mm (class 2 LASER) |
| Luminescence sensor | | 100...300 mm (LED) |
| | | 50...150 mm (class 2 LASER) |
| Power supply | Vdc | 10...30 V |
| | Vac | |
| | Vac/dc | |
| Output | PNP | ▪ |
| | NPN | ▪ |
| | NPN/PNP | |
| | relay | |
| | other | |
| Connection | cable | ▪ |
| | connector | ▪ |
| | pig-tail | ▪ |
| Approximate dimensions (mm) | | 14x42x25 |
| Housing material | | ABS, Stainless Steel AISI 316L |
| Mechanical protection | | IP69K (Stainless Steel vers.), IP67 |

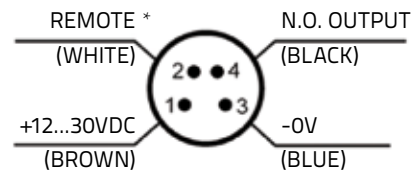
| TECHNICAL DATA | |
|---------------------------------------|---|
| Power supply | 12 ... 30 Vdc (short-circuit protection) |
| Ripple | 2 Vpp max. |
| Consumption (output current excluded) | 30 mA; 35 mA (mod. S8...M01); 20 mA (mod. S8...F), 15 mA (mod. S8...G) max. red LED 660 nm (mod. S8...B/C/M/G/T) |
| Light emission | RGB LEDs: blue 465 nm, green 520 nm, red 630nm with automatic selection (mod. S8...W) UV LED 375 nm (mod. S8...U) red Laser 645.665 nm (mod. S8...B/M) |
| Setting | 8-turn distance adjustment trimmer (mod. S8...M53/M) LIGHT / DARK mono-turn trimmer (mod. S8...B/C/F/T51) teach-in push button (mod. S8...M53/W03/W13/T53/U) remote input (mod. S8...W/U/T50/T53) |
| Operating mode | mono-turn trimmer (mod. S8...B/C/F/M/T/U/W13) automatic (mod. S8...W/T50) remote input (mod. S8...M53) |
| Indicators | yellow OUTPUT LED (excl. mod. S8...G), OUTPUT/ALARM LED (mod. S8...M53/M/C) green POWER LED |
| Output | PNP or NPN N.O. |
| Output current | 100 mA (overload protection) |
| Saturation voltage | 2 V max. |
| Response time | 1 ms (mod. S8...M53/M) 500 µs (mod. S8...B/F/C) 250 µs (mod. S8...T) 100 µs (Laser vers. mod. S8...M) 50 µs (mod. S8...W00/W03 e Laser mod. S8...B) 20 µs (mod. S8...W13) 250 µs...1 ms (mod. S8...U) |
| Switching frequency | 500 Hz (mod. S8...M53/M) 1 kHz (mod. S8...B/F/C) 2 kHz (mod. S8...T) 5 kHz (Laser vers. mod. S8...M) 10 kHz (mod. S8...W00/W03 e Laser mod. S8...B) 25 kHz (mod. S8...W13) 500 Hz...2 kHz (mod. S8...U) |
| Connection | M8 4-pole connector, 150 mm length Ø 4 mm cable with M12 4-pole connector (pig-tail vers.) |
| Dielectric strength | 1500 VAC 1 min between electronic parts and housing |
| Insulating resistance | >20 MΩ 500 VDC between electronic parts and housing |
| Mechanical protection | IP67, IP69K (mod. S8-M) |
| Ambient light rejection | according to EN 60947-5-2 |
| Vibrations | 0.5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6) |
| Shock resistance | 11 ms (30 G) 6 shocks per every axis (EN60068-2-27) |
| Housing material | ABS, Stainless Steel AISI346L |
| Lens material | window in PMMA; lens in PC |
| Operating temperature | -10 ... 55 °C |
| Storage temperature | -20 ... 70 °C |
| Weight | 12 g max. conn. vers., 50 g pig-tail vers., 70 g max. (mod. S8-M) |

CONNECTIONS

M12 PIGTAIL



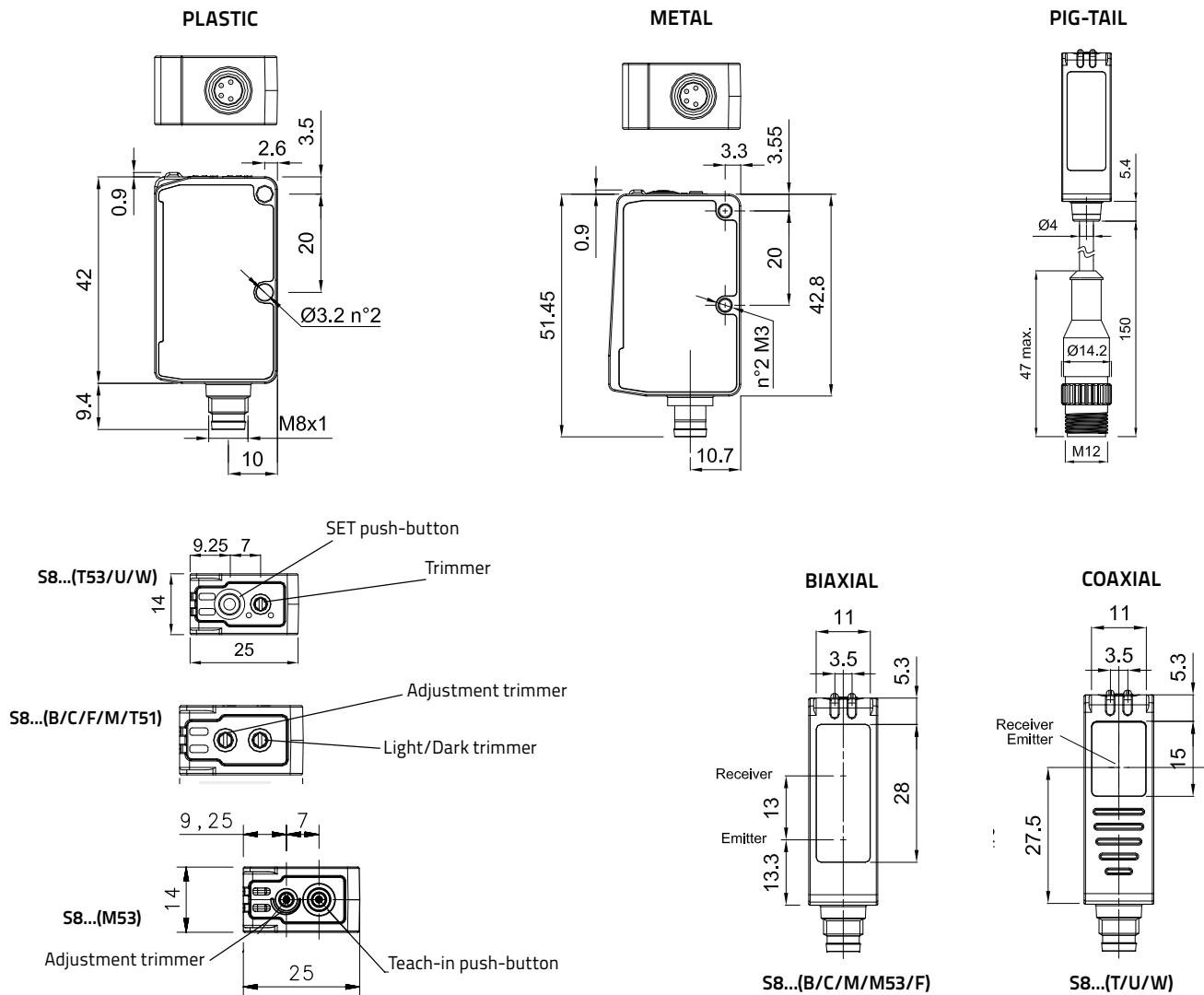
M8 CONNECTOR



* REMOTE INPUT (mod. S8...W, U, T50, T53), LIGHT / DARK INPUT (mod. S8...M53), DELAY (mod. S8...M Laser), TEST INPUT (mod. S8...G), ALARM OUTPUT (mod. S8...B, T51), NOT USED (mod. S8...C, M, F)

COMPACT SENSORS

DIMENSIONS



MODEL SELECTION AND ORDER INFORMATION

| CLEAR DETECTION | | | | | |
|--|----------------|--|--------|----------------|-----------|
| HOUSING | LIGHT EMISSION | CONNECTION | OUTPUT | MODEL | ORDER NO. |
| METAL Stainless Steel (INOX AISI346L) | LASER | M8 connector | PNP | S8-MH-5-M53-PP | 950801450 |
| | LED | | | S8-MR-5-M53-PP | 950801600 |
| PLASTIC ABS | LASER | | | S8-PH-5-M53-PP | 950801380 |
| | LED | | | S8-PR-5-M53-PP | 950801590 |
| RETROREFLECTIVE FOR TRANSPARENT | | | | | |
| HOUSING | LIGHT EMISSION | CONNECTION | OUTPUT | MODEL | ORDER NO. |
| METAL Stainless Steel (INOX AISI346L) | LED | M8 connector | NPN | S8-MR-5-T50-NH | 950801330 |
| | | | PNP | S8-MR-5-T50-PH | 950801320 |
| | | M8 connector with auto-adjustment function | NPN | S8-MR-5-T53-NN | 950801310 |
| | | | PNP | S8-MR-5-T53-PP | 950801300 |
| | | pig-tail | NPN | S8-PR-3-T51-NN | 950801130 |
| | | | PNP | S8-PR-3-T51-PP | 950801120 |
| PLASTIC ABS | LED | M8 connector | NPN | S8-PR-5-T51-NN | 950801050 |
| | | | PNP | S8-PR-5-T51-PP | 950801040 |
| | | M8 connector with auto-adjustment function | NPN | S8-PR-5-T53-NN | 950801290 |
| | | | PNP | S8-PR-5-T53-PP | 950801280 |

| POLARIZED RETROREFLECTIVE | | | | | |
|---|----------------|----------------|----------------|----------------|-----------|
| HOUSING | LIGHT EMISSION | CONNECTION | OUTPUT | MODEL | ORDER NO. |
| METAL Stainless Steel (INOX AISI346L) | LASER | M8 connector | NPN | S8-MH-5-B51-NN | 950801490 |
| | | | PNP | S8-MH-5-B51-PP | 950801480 |
| | LED | | NPN | S8-MR-5-B01-NN | 950801420 |
| PLASTIC ABS | LASER | pig-tail | PNP | S8-MR-5-B01-PP | 950801410 |
| | | | NPN | S8-PH-3-B51-NN | 950801090 |
| | | PNP | S8-PH-3-B51-PP | 950801080 | |
| | LED | M8 connector | NPN | S8-PH-5-B51-NN | 950801010 |
| | | | PNP | S8-PH-5-B51-PP | 950801000 |
| | | pig-tail | NPN | S8-PR-3-B01-NN | 950801190 |
| | | | PNP | S8-PR-3-B01-PP | 950801180 |
| M8 connector | NPN | S8-PR-5-B01-NN | 950801170 | | |
| | PNP | S8-PR-5-B01-PP | 950801160 | | |

| BACKGROUND SUPPRESSION | | | | | |
|---|----------------|--------------|--------|----------------|-----------|
| HOUSING | LIGHT EMISSION | CONNECTION | OUTPUT | MODEL | ORDER NO. |
| METAL Stainless Steel (INOX AISI346L) | LASER | M8 connector | NPN | S8-MH-5-M01-NN | 950801470 |
| | | | PNP | S8-MH-5-M01-PP | 950801460 |
| | LED | | NPN | S8-MR-5-M01-NN | 950801400 |
| | | | PNP | S8-MR-5-M01-PP | 950801390 |
| PLASTIC ABS | LASER | pig-tail | NPN | S8-PH-3-M01-NN | 950801110 |
| | | | PNP | S8-PH-3-M01-PP | 950801100 |
| | | M8 connector | NPN | S8-PH-5-M01-NN | 950801030 |
| | | | PNP | S8-PH-5-M01-PP | 950801020 |
| | LED | pig-tail | NPN | S8-PR-3-M01-NN | 950801230 |
| | | | PNP | S8-PR-3-M01-PP | 950801220 |
| | | M8 connector | NPN | S8-PR-5-M01-NN | 950801210 |
| | | | PNP | S8-PR-5-M01-PP | 950801200 |

| THROUGH BEAM | | | | | |
|---|----------------|--------------|-----------|----------------|-----------|
| HOUSING | LIGHT EMISSION | CONNECTION | OUTPUT | MODEL | ORDER NO. |
| METAL Stainless Steel (INOX AISI346L) | LED | M8 connector | NPN | S8-MR-5-F01-NN | 950801570 |
| | | | PNP | S8-MR-5-F01-PP | 950801560 |
| | | | emitter | S8-MR-5-G00-XG | 950801580 |
| PLASTIC ABS | | pig-tail | NPN | S8-PR-3-F01-NN | 950801530 |
| | | | PNP | S8-PR-3-F01-PP | 950801520 |
| | | M8 connector | emitter | S8-PR-3-G00-XG | 950801550 |
| NPN | S8-PR-5-F01-NN | | 950801510 | | |
| PNP | S8-PR-5-F01-PP | | 950801500 | | |
| | | | emitter | S8-PR-5-G00-XG | 950801540 |

| DIFFUSE | | | | | |
|--|----------------|--------------|--------|----------------|-----------|
| HOUSING | LIGHT EMISSION | CONNECTION | OUTPUT | MODEL | ORDER NO. |
| METAL Stainless Steel (INOX AISI346L) | LED | M8 connector | NPN | S8-MR-5-C01-NN | 950801440 |
| | | | PNP | S8-MR-5-C01-PP | 950801430 |
| PLASTIC ABS | | pig-tail | NPN | S8-PR-3-C01-NN | 950801270 |
| | | | PNP | S8-PR-3-C01-PP | 950801250 |
| M8 connector | | pig-tail | NPN | S8-PR-5-C01-NN | 950801260 |
| | | | PNP | S8-PR-5-C01-PP | 950801240 |

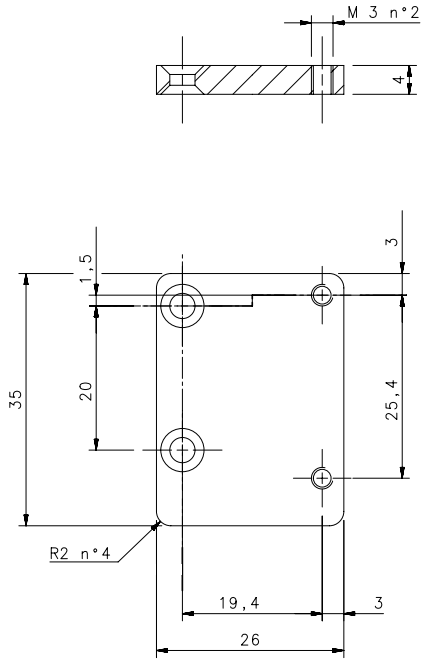
| CONTRAST | | | | | |
|---------------------|--------------------------|------------------------------|--------|----------------|-----------|
| SWITCHING FREQUENCY | HOUSING | CONNECTION | OUTPUT | MODEL | ORDER NO. |
| 10 kHz | METAL Stainless Steel | M8 connector without trimmer | PNP | S8-MR-5-W00-PH | 950801360 |
| | | | NPN | S8-MR-5-W00-NH | 950801370 |
| | | M8 connector | PNP | S8-MR-5-W03-PP | 950801340 |
| | PLASTIC ABS | M12 pig-tail (150 mm) | NPN | S8-MR-5-W03-NN | 950801350 |
| | | | PNP | S8-PR-3-W03-PP | 950801140 |
| | | M8 connector | NPN | S8-PR-3-W03-NN | 950801150 |
| 25 kHz | METAL Stainless Steel | M8 connector | PNP | S8-PR-5-W03-PP | 950801060 |
| | | | NPN | S8-PR-5-W03-NN | 950801070 |
| | | M8 connector | PNP | S8-MR-5-W13-PP | 950801670 |
| | PLASTIC ABS | M8 connector | NPN | S8-MR-5-W13-NN | 950801680 |
| | | | PNP | S8-PR-5-W13-PP | 950801650 |
| | | M12 pig-tail (150 mm) | NPN | S8-PR-5-W13-NN | 950801660 |
| | | | PNP | S8-PR-3-W13-PP | 950801690 |
| | | | NPN | S8-PR-3-W13-NN | 950801700 |

| LUMINESCENCE | | | | | |
|--------------------------|--|--------------|----------------|----------------|-----------|
| HOUSING | SETTINGS | CONNECTION | OUTPUT | MODEL | ORDER NO. |
| METAL Stainless Steel | Teach-in push-button; L/D trimmer selector; Remote input | M8 connector | PNP | S8-MR-5-U03-PP | 950801630 |
| | | | NPN | S8-MR-5-U03-NN | 950801640 |
| PNP | | | S8-PR-5-U03-PP | 950801610 | |
| PLASTIC ABS | | pig-tail | NPN | S8-PR-5-U03-NN | 950801620 |
| | | | PNP | S8-PR-3-U03-PP | 950801710 |
| | | M8 connector | NPN | S8-PR-3-U03-NN | 950801720 |

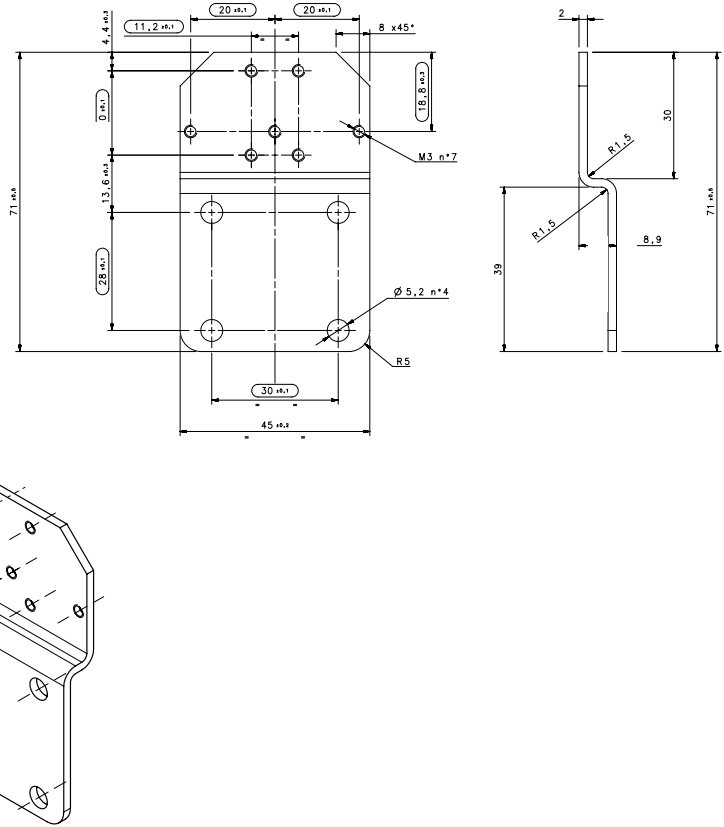
COMPACT SENSORS

ACCESSORIES

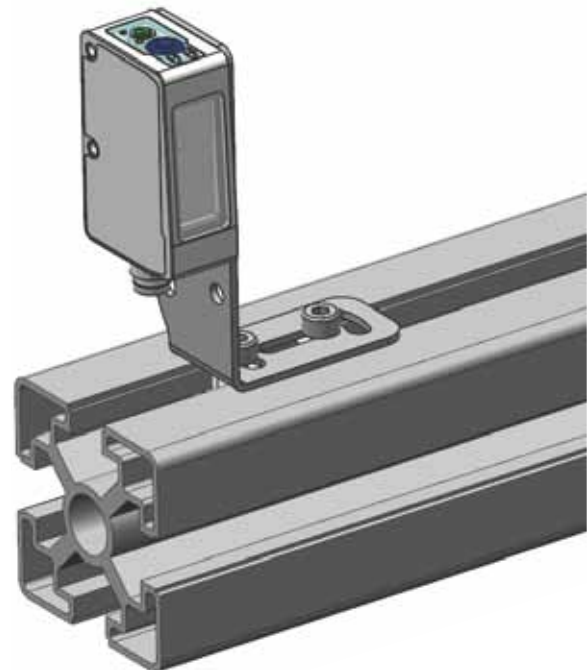
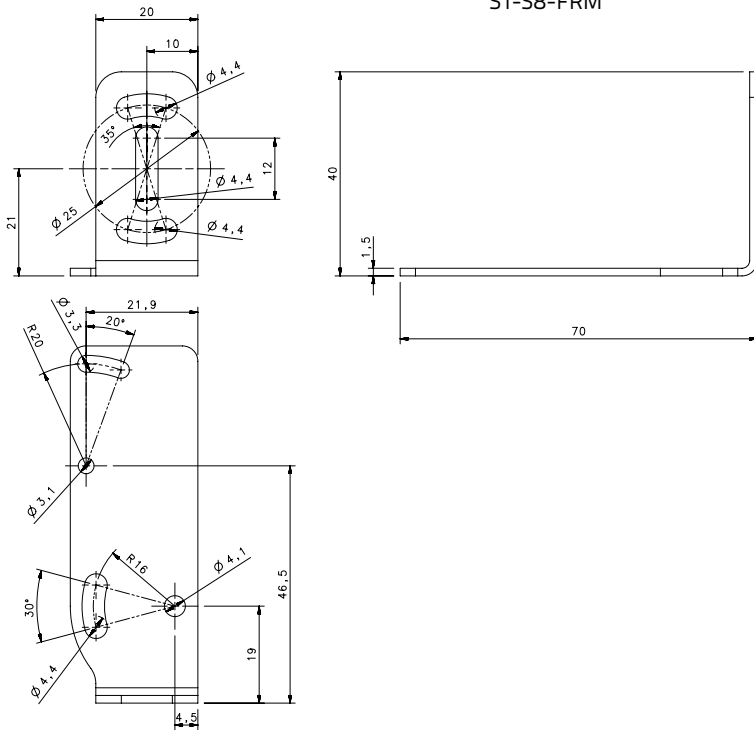
ST-S8-S3Z



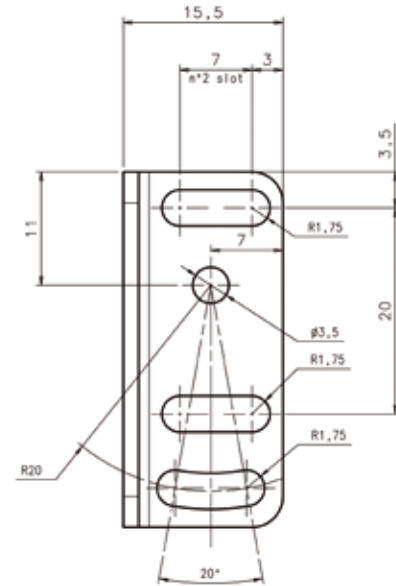
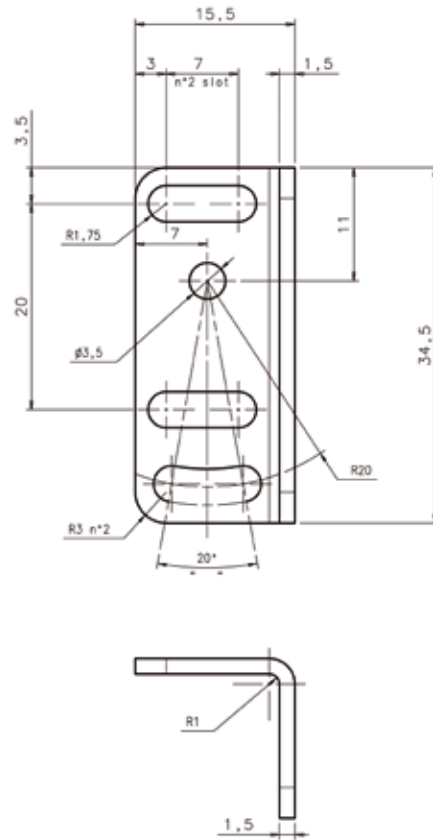
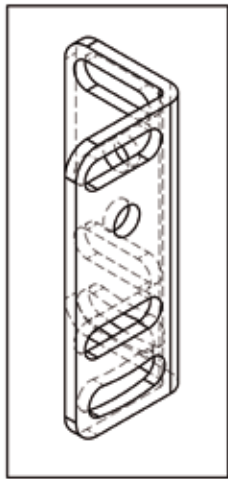
ST-S8-TL-LD46



ST-S8-FRM



ST-5072



| MODEL | FUNCTION | ORDER No. |
|---------------|---------------------------------------|-----------|
| ST-S8-FRM | mounting bracket for standard frame | 95ACC7860 |
| ST-5072 | mounting bracket | 95ACC1470 |
| R4K | IP69K plastic reflector 51 x 61 mm | 95A151220 |
| ST-S8-TL-LD46 | TL-LD46 adapting bracket | 95ACC3430 |
| ST-S8-S3Z | S8-miniature sensors adapting bracket | 95ACC3440 |

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 |
| | | 5 m | CS-B1-02-R-05 | 95A251640 |
| Radial M8 Connector | 4-pole, grey, P.V.C. | 3 m | CS-B2-02-G-03 | 95A251450 |
| | | 5 m | CS-B2-02-G-05 | 95A251460 |
| | | 7 m | CS-B2-02-G-07 | 95A251470 |
| | | 10 m | CS-B2-02-G-10 | 95A251530 |
| | 4-pole, P.U.R. | 2 m | CS-B2-02-R-02 | 95A251630 |
| | | 5 m | CS-B2-02-R-05 | 95A251650 |

COMPACT SENSORS

S62

*The most complete universal sensor
in a compact 50x50 mm housing*

- Sensors with red, infrared LED or LASER emission
- Background suppression from 3 cm to 2 m
- Polarized retroreflective up to 20 m
- Multivoltage 24-240Vac/24-60Vdc with Relay output
- NPN/PNP output NO-NC configuration



APPLICATIONS

- Processing and Packaging machinery
- Conveyor lines, material handling

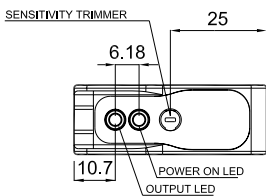
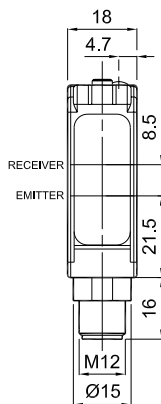
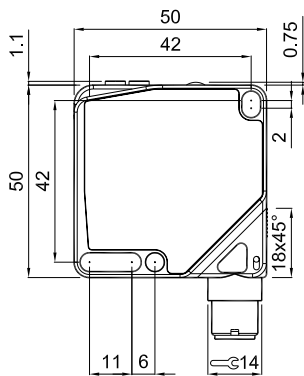


| S62 | | |
|-----------------------------------|-----------|--|
| Through beam | | 0...25 m |
| Retroreflective (on R2 reflector) | | 0,1...13 m |
| Polarized retroreflective | | 0,1...8 m 0,3...20 m (class 2 LASER) |
| Diffuse proximity | | short 0...900 mm, long 0...2000 mm 0...900 mm (class 2 LASER) |
| Background suppression | | short 30...300 mm medium 60...600 mm long 60...1200 mm very long 200...2000 mm short LASER 30...150 mm (class 2 LASER) long LASER 50...350 mm (class 2 LASER) |
| Power supply | Vdc | 10...30 V |
| | Vac | |
| | Vac/dc | 24/240 Vac/24...60 Vdc |
| Output | PNP | ▪ |
| | NPN | ▪ |
| | NPN/PNP | ▪ |
| | relay | ▪ |
| | other | |
| Connection | cable | ▪ |
| | connector | ▪ |
| | pig-tail | |
| Approximate dimensions (mm) | | 18x50x50 |
| Housing material | | ABS |
| Mechanical protection | | IP67 |

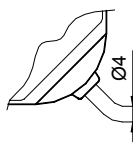
TECHNICAL DATA

| | |
|---------------------------------------|---|
| Power supply | 10 ... 30 Vdc (mod. S62...2/5) 24...240 Vac/ 24...60 Vdc (mod. S62...1) |
| Ripple | 2 Vpp max. (mod. S62...2/5), 10% max. (mod. S62...1) |
| Consumption (output current excluded) | 30 mA max. (mod. S62...2/5) 3 VA max. (mod. S62...1) |
| Light emission | red LED 640 nm (mod. S62-PA...A/B/C/G/M01/M05/M11/M15) IR LED 880 nm (mod. S62-PA...M21/M25/M31/M35) red Laser 645...665 nm (mod. S62-PL) |
| Setting | sensitivity adjustment trimmer |
| Operating mode | mono-turn LIGHT/DARK trimmer (mod. S62...RX/PN) |
| Indicators | yellow OUTPUT LED green STABILITY LED, POWER LED (S62...G) |
| Output | PNP or NPN N.O./N.C. (mod. S62...PP/NN); NPN/PNP (mod. S62...PN); electromechanical SPDT 250 Vac/30 Vdc (mod. S62...RX) |
| Output current | 100 mA max. (mod. S62...2/5), 2 A max. (mod. S62...1) |
| Saturation voltage | 2 V max. (mod. S62...2/5) |
| Response time | 25 ms (mod. S62...1) 1,5 ms (mod. S62...M3x) 1 ms (mod. S62...2/5-F/G/M2x) 500 µs (mod. S62-PA...2/5-A/B/C/M0x/M1x) 200 µs (mod. S62-PL...B/C/M11) 140 µs (mod. S62-PL...M01) |
| Switching frequency | 20 Hz (mod. S62...1) 330 Hz (mod. S62...M3x) 500 Hz (mod. S62...2/5-F/G/M2x) 1 kHz (mod. S62-PA...2/5-A/B/C/M0x/M1x) 2,5 kHz (mod. S62-PL...B/C/M11) 3,5 kHz (mod. S62-PL...M01) |
| Connection | M12 4-pole connector, 2 m Ø 4 mm cable vers., 2 m Ø 5 mm cable vers. |
| Dielectric strength | 500 Vac 1 min., between electronics and housing |
| Insulation resistance | >20 MΩ 500 Vdc, between electronics and housing |
| Mechanical protection | IP67 |
| Ambient light rejection | According to EN 60947-5-2 |
| Vibrations | 0.5 mm amplitude, 10 ... 55 Hz frequency, for each axis (EN60068-2-6) |
| Shock resistance | 11ms (30G) 6 shock for every axis (EN60068-2-27) |
| Housing material | ABS |
| Lens material | PMMA window, polycarbonate lens |
| Operating temperature | -10 ... 55 °C |
| Storage temperature | -20 ... 70 °C |
| Weight | 40 g max. conn. vers., 90 max. cable vers. |

DIMENSIONS



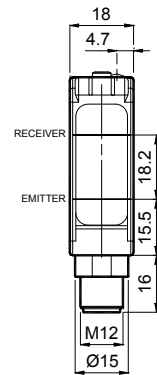
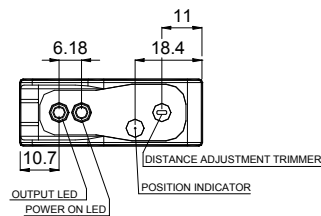
Cable version



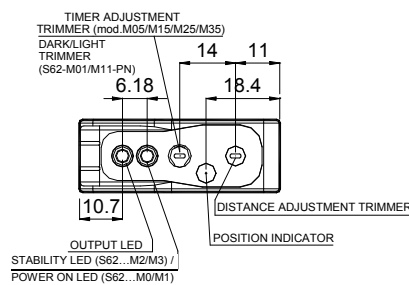
mm

Background suppression

Laser version



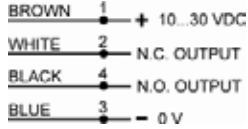
Led version



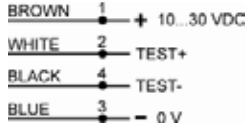
COMPACT SENSORS

CONNECTIONS

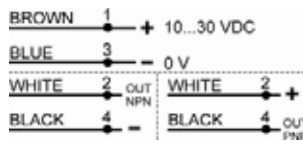
VDC MODELS



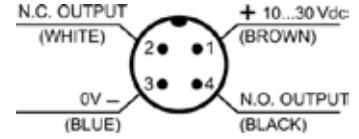
Through beam emitter



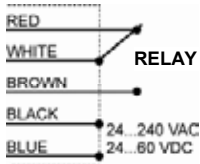
NPN/PNP version



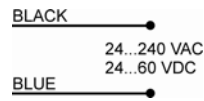
M12 CONNECTOR



VAC MODELS



Through beam emitter

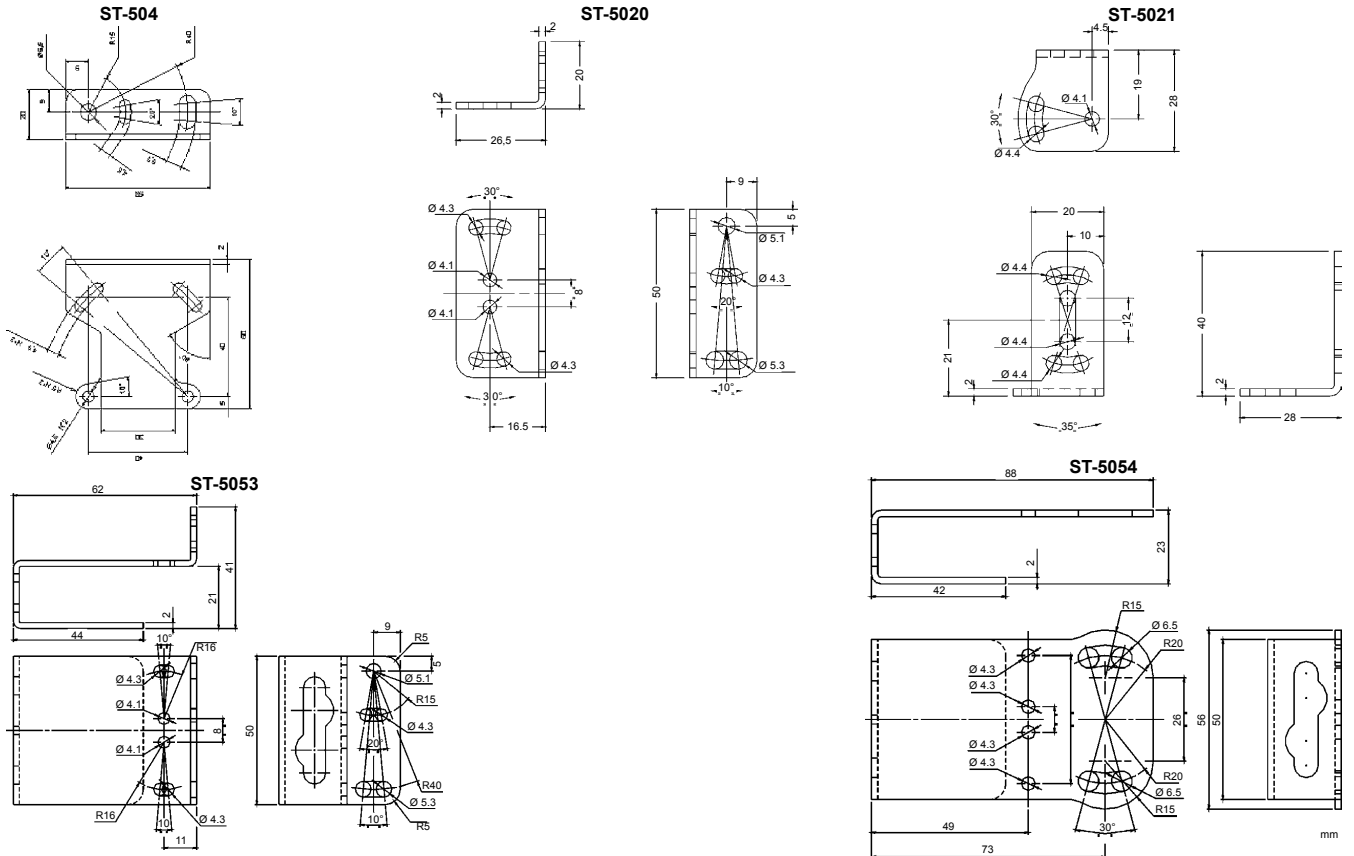


MODEL SELECTION AND ORDER INFORMATION

| OPTIC FUNCTION | EMISSION | CONNECTION | OUTPUT | MODEL | ORDER No. |
|---------------------------|-----------------|---------------|-----------------|-----------------|-----------|
| Retroreflective | LED (red 640nm) | 2m Cable | PNP/NPN | S62-PA-2-A01-PN | 956211240 |
| | | M12 Connector | PNP/NPN | S62-PA-5-A01-PN | 956211310 |
| | | Vac relay | Relay | S62-PA-1-A01-RX | 956211180 |
| Polarized retroreflective | LED (red 640nm) | 2m Cable | PNP/NPN | S62-PA-2-B01-PN | 956211250 |
| | | | PNP | S62-PA-2-B01-PP | 956211010 |
| | | M12 Connector | NPN | S62-PA-5-B01-NN | 956211020 |
| | PNP/NPN | | S62-PA-5-B01-PN | 956211320 | |
| | LASER | M12 Connector | PNP | S62-PA-5-B01-PP | 956211000 |
| | | | Relay | S62-PA-1-B01-RX | 956211190 |
| NPN | | | S62-PL-5-B01-NN | 956211100 | |
| Short diffused proximity | LED (red 640nm) | 2m Cable | PNP/NPN | S62-PA-2-C01-PN | 956211260 |
| | | | PNP | S62-PA-2-C01-PP | 956211380 |
| | | | NPN | S62-PA-5-C01-NN | 956211500 |
| | | M12 Connector | PNP/NPN | S62-PA-5-C01-PN | 956211330 |
| | | | PNP | S62-PA-5-C01-PP | 956211460 |
| | | | Relay | S62-PA-1-C01-RX | 956211200 |
| | LASER | 2m Cable | NPN | S62-PL-2-C01-NN | 956211440 |
| | | | PNP | S62-PL-2-C01-PP | 956211400 |
| | | | NPN | S62-PL-5-C01-NN | 956211520 |
| | | M12 Connector | PNP | S62-PL-5-C01-PP | 956211480 |
| | | | NPN | S62-PA-2-C11-NN | 956211430 |
| | | | PNP/NPN | S62-PA-2-C11-PN | 956211270 |
| Long diffused proximity | LED (red 640nm) | 2m Cable | PNP | S62-PA-2-C11-PP | 956211390 |
| | | | NPN | S62-PA-5-C11-NN | 956211510 |
| | | | PNP/NPN | S62-PA-5-C11-PN | 956211340 |
| | | M12 Connector | PNP | S62-PA-5-C11-PP | 956211470 |
| | | | Relay | S62-PA-1-C11-RX | 956211210 |
| | | | NPN | S62-PA-2-F01-NN | 956211450 |
| Through beam receiver | - | 2m Cable | PNP/NPN | S62-PA-2-F01-PN | 956211290 |
| | | | PNP | S62-PA-2-F01-PP | 956211410 |
| | | | NPN | S62-PA-5-F01-NN | 956211530 |
| | | M12 Connector | PNP/NPN | S62-PA-5-F01-PN | 956211360 |
| | | | PNP | S62-PA-5-F01-PP | 956211490 |
| | | | Relay | S62-PA-1-F01-RX | 956211220 |
| Through beam emitter | LED (red 640nm) | 2m Cable | - | S62-PA-2-G00-XG | 956211300 |
| | | M12 Connector | - | S62-PA-5-G00-XG | 956211370 |
| | | Vac relay | - | S62-PA-1-G00-XX | 956211230 |

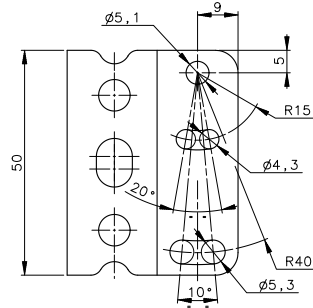
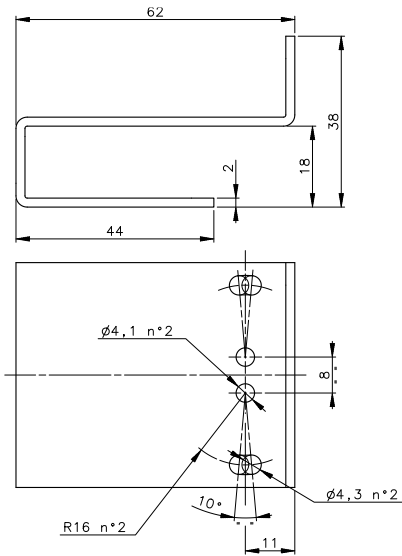
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|---|----------------------|---------------|---------|-----------------|-----------|
| Background suppression (short distance) | LED (red 640nm) | 2m Cable | PNP/NPN | S62-PA-2-M01-PN | 956211280 |
| | | | PNP | S62-PA-2-M01-PP | 956201841 |
| | | | NPN | S62-PA-5-M01-NN | 956201811 |
| | | M12 Connector | PNP/NPN | S62-PA-5-M01-PN | 956211350 |
| | | | PNP | S62-PA-5-M01-PP | 956201831 |
| | | | NPN | S62-PA-5-M05-NN | 956201801 |
| | | | PNP | S62-PA-5-M05-PP | 956201821 |
| Background suppression (medium distance) | LASER | 2m Cable | NPN | S62-PL-5-M01-NN | 956211120 |
| | | | PNP | S62-PL-5-M01-PP | 956211130 |
| | | | NPN | S62-PA-2-M11-PP | 956201891 |
| | | M12 Connector | NPN | S62-PA-5-M11-NN | 956201861 |
| | | | PNP | S62-PA-5-M11-PP | 956201881 |
| | | | NPN | S62-PA-5-M15-NN | 956201851 |
| | | | PNP | S62-PA-5-M15-PP | 956201871 |
| Background suppression (long distance) | LASER | 2m Cable | NPN | S62-PL-5-M11-NN | 956211140 |
| | | | PNP | S62-PL-5-M11-PP | 956211150 |
| | | | NPN | S62-PA-2-M21-PP | 956201940 |
| | | M12 Connector | NPN | S62-PA-5-M21-NN | 956201910 |
| | | | PNP | S62-PA-5-M21-PP | 956201900 |
| | | | NPN | S62-PA-5-M25-NN | 956201930 |
| | | | PNP | S62-PA-5-M25-PP | 956201920 |
| Background suppression (very long distance) | LED (infrared 880nm) | 2m Cable | PNP | S62-PA-2-M31-PP | 956211050 |
| | | | NPN | S62-PA-5-M31-NN | 956211060 |
| | | | PNP | S62-PA-5-M31-PP | 956211070 |
| | | M12 Connector | NPN | S62-PA-5-M35-NN | 956211080 |
| | | | PNP | S62-PA-5-M35-PP | 956211090 |

ACCESSORIES

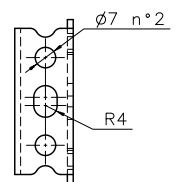
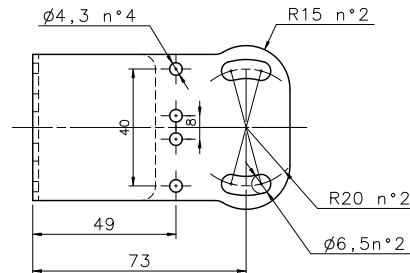
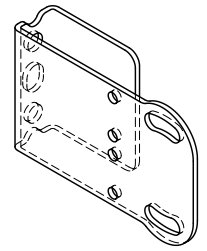
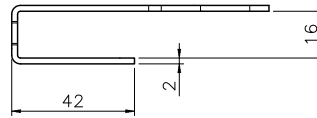


COMPACT SENSORS

ST-5018



ST-5019



| MODEL | DESCRIPTION | ORDER No. |
|-----------|---|-----------|
| ST-5018 | protective bracket | 95ACC5310 |
| ST-5019 | protective bracket | 95ACC5320 |
| ST-5020 | mounting bracket | 95ACC5330 |
| ST-5021 | mounting bracket | 95ACC5340 |
| ST-504 | mounting bracket | 95ACC2820 |
| ST-5053 | protective bracket | 95ACC2410 |
| ST-5054 | protective bracket | 95ACC2420 |
| JOINT-S62 | protective bracket with jointed support | 95ACC2430 |

CABLES

| TYPE | DESCRIPTION | LENGTH | MODEL | ORDER No. |
|--|---------------------------------|---------------|-----------------------|---------------|
| Axial M12 Connector | 4-pole, grey, P.V.C. | 3 m | CS-A1-02-G-03 | 95A251380 |
| | | 5 m | CS-A1-02-G-05 | 95A251270 |
| | | 7 m | CS-A1-02-G-07 | 95A251280 |
| | | 10 m | CS-A1-02-G-10 | 95A251390 |
| | 4-pole, P.U.R. | 2 m | CS-A1-02-R-02 | 95A251540 |
| | | 5 m | CS-A1-02-R-05 | 95A251560 |
| Radial M12 Connector | 4-pole, grey, P.V.C. | 3 m | CS-A2-02-G-03 | 95A251360 |
| | | 5 m | CS-A2-02-G-05 | 95A251240 |
| | | 7 m | CS-A2-02-G-07 | 95A251245 |
| | | 10 m | CS-A2-02-G-10 | 95A251260 |
| | 4-pole, P.U.R. | 2 m | CS-A2-02-R-02 | 95A251550 |
| | | 5 m | CS-A2-02-R-05 | 95A251570 |
| Radial M12 Connector with LED (for PNP N.O. sensors) | 4-pole, grey, P.V.C. | 3 m | CS-A2-12-G-03 | 95A251400 |
| | | 5 m | CS-A2-12-G-05 | 95A251350 |
| | | 10 m | CS-A2-12-G-10 | 95A251370 |
| Axial M12 Connector | 4-pole, shielded, black, P.V.C. | 3 m | CV-A1-22-B-03 | 95ACC1480 |
| | | 5 m | CV-A1-22-B-05 | 95ACC1490 |
| | | 10 m | CV-A1-22-B-10 | 95ACC1500 |
| | | 15 m | CV-A1-22-B-15 | 95ACC2070 |
| | | 25 m | CV-A1-22-B-25 | 95ACC2090 |
| Radial M12 Connector | 4-pole, shielded, black, P.V.C. | 3 m | CV-A2-22-B-03 | 95ACC1540 |
| | | 5 m | CV-A2-22-B-05 | 95ACC1550 |
| | | 10 m | CV-A2-22-B-10 | 95ACC1560 |
| Axial M12 Connector | 4-pole, U.L., black, P.V.C. | 3 m | CS-A1-02-U-03 | 95ASE1120 |
| | | 5 m | CS-A1-02-U-05 | 95ASE1130 |
| | | 10 m | CS-A1-02-U-10 | 95ASE1140 |
| | | 15 m | CS-A1-02-U-15 | 95ASE1150 |
| | | 25 m | CS-A1-02-U-25 | 95ASE1160 |
| | Radial M12 Connector | 4-pole, black | Connector- not cabled | CS-A1-02-B-NC |
| Connector- not cabled | | | CS-A2-02-B-NC | G5085003 |

COMPACT SENSORS

S6

Multivoltage 50x50 mm compact sensors series

- 50x50 mm compact dimensions
- Free voltage Vac/Vdc models with relay output
- 10-30 Vdc model with transistor output
- Standard cable or M12 4-pole connection



APPLICATIONS

- Automatic machines
- Packaging lines
- Transportation lines
- Automatic warehouses

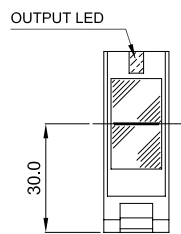
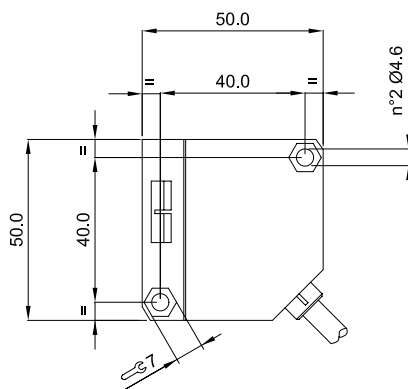


| S6 | | |
|---|-----------|------------------|
| Through beam | | 0...20 m |
| Retroreflective (on R2 reflector) | | 0,1...6 m |
| Polarized retroreflective (on R2 reflector) | | 0,1...5 m |
| Diffuse proximity | | 10...900 mm |
| | | 10...2000 mm |
| Background suppression | | 30...100 mm |
| | | 30...250 mm |
| | | 100...500 mm |
| Power supply | Vdc | 10...30 V |
| | Vac | |
| | Vac/dc | 15...264 Vac/Vdc |
| | PNP | ▪ |
| Output | NPN | ▪ |
| | NPN/PNP | ▪ |
| | relay | ▪ |
| | other | |
| Connection | cable | ▪ |
| | connector | ▪ |
| | pig-tail | |
| Approximate dimensions (mm) | | 18x50x50 |
| Housing material | | ABS |
| Mechanical protection | | IP65 |

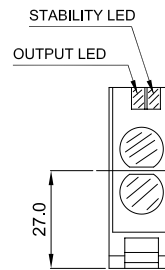
TECHNICAL DATA

| | |
|---------------------------------------|--|
| Power supply | 10 ... 30 Vdc limit values (mod. S6/S6T/S6R-5) 15 ... 264 Vac/Vdc (48 ... 60 Hz) limit values (mod. S6-1) |
| Ripple | 2 Vpp max. 30 mA max. (mod. S6/S6T/S6R-5) |
| Consumption (output current excluded) | 40 mA max. (mod. S6-1) |
| Light emission | IR LED 880 nm red LED 660 nm (mod. S6/S6R/S6T...B/M10) |
| Setting | sensitivity trimmer (excl. mod. S6...G, S6R-5-M) adjustment screw (mod. S6/S6T/S6R-5-M) |
| Operating mode | LIGHT/DARK selection by cable or connector (mod. S6/S6T/S6R-5) LIGHT/DARK selection by N.O./N.C. output (mod. S6R-5-M) LIGHT/DARK selection by trimmer (mod. S6-1) |
| Indicators | red OUTPUT LED (excl. mod. S6...G), POWER LED (mod. S6...G) green STABILITY LED (mod. S6-5-M25) |
| Output | NPN/PNP (mod. S6) PNP (mod. S6T) NPN or PNP, NC, NO (mod. S6R) |
| Output current | Relay 1 NO and NC contact 250 Vac, 30 Vdc min. applicable load 5 Vdc, 10 mA (mod. S6-1) 100 mA max., 3 A max. (mod. S6-1) |
| Saturation voltage | 1,5 V max. (NPN/PNP output) 1 ms max. |
| Response time | 2 ms max. (mod. S6/S6R/S6T...F/G) 30 ms max. (mod. S6-1) 500 Hz |
| Switching frequency | 250 Hz max. (mod. S6/S6R/S6T...F/G) 16 Hz (mod. S6-1) |
| Connection | 2 m cable Ø 6 mm (mod. S6-1), 2 m cable Ø 5 mm (mod. S6-5), M12 4-pole connector (mod. S6T-S6R) |
| Dielectric strength | 500 Vac, 1 min between electronics and housing |
| Insulating resistance | >20 MΩ, 500 Vdc between electronics and housing |
| Electrical protection | class 2, class 1 (mod. S6-1) |
| Mechanical protection | IP65 |
| Ambient light rejection | according to EN 60947-5-2 |
| Vibrations | 0,5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6) |
| Shock resistance | 11 ms (30 G) 6 shock for every axis (EN60068-2-27) |
| Housing material | ABS UL 94V-0 |
| Lens material | PMMA plastic |
| Operating temperature | -25 ... 55 °C |
| Storage temperature | -25 ... 70 °C |
| Weight | 160 g max. cable vers., 40 g max. conn. vers. |

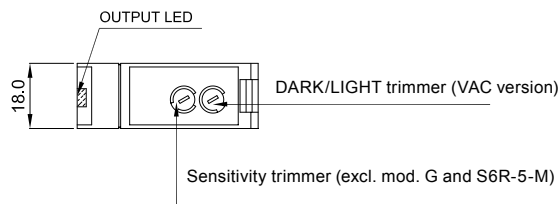
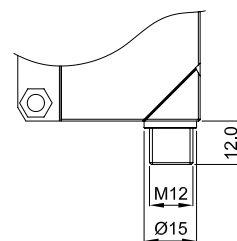
DIMENSIONS



Background suppression



M12 Connector



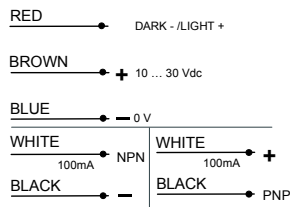
mm

COMPACT SENSORS

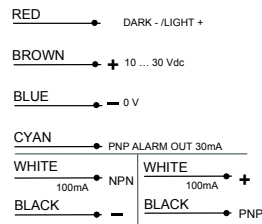
CONNECTIONS

VDC MODELS

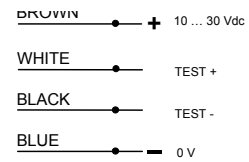
NPN/PNP version



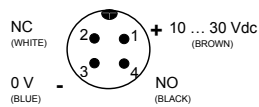
Through beam receiver - NPN/PNP version



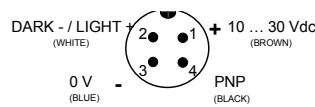
Through beam emitter - NPN/PNP version



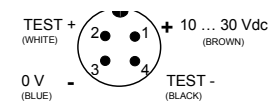
NPN or PNP and NC/NO version



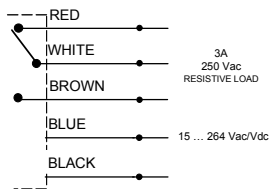
PNP version



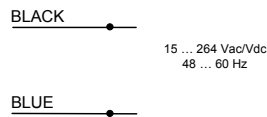
Through beam emitter - PNP version



VAC MODELS



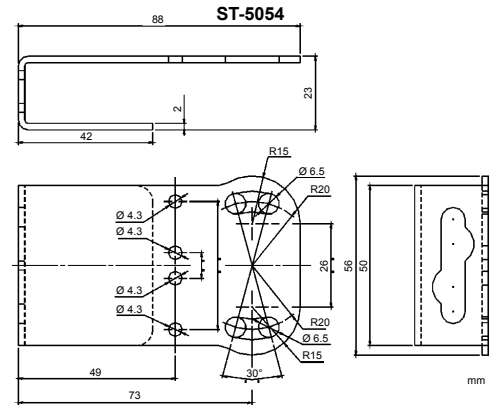
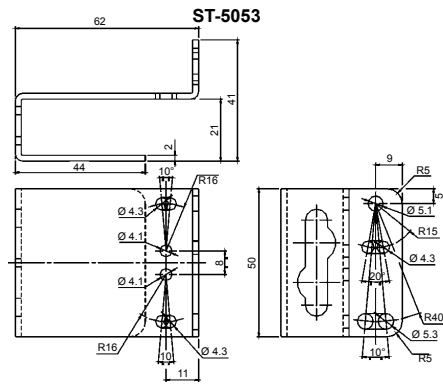
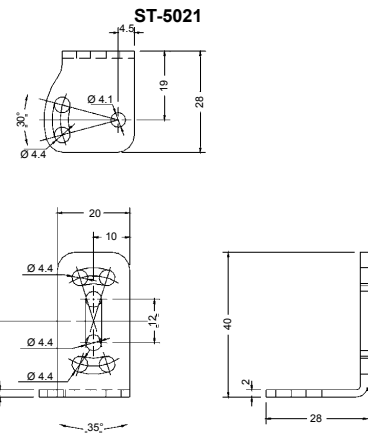
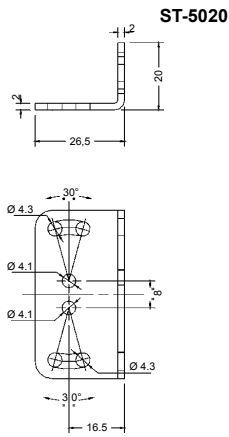
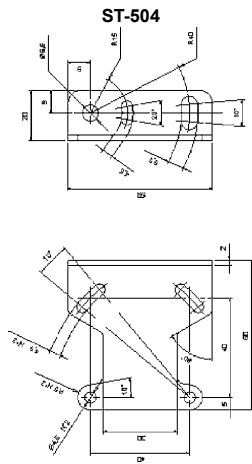
Through beam emitter



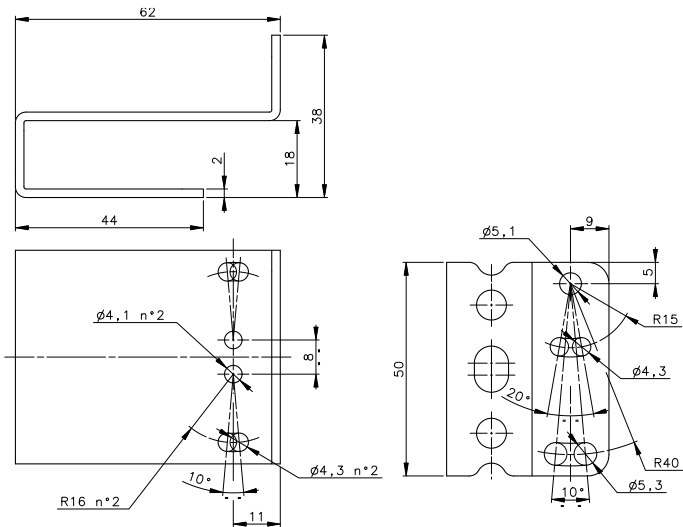
MODEL SELECTION AND ORDER INFORMATION

| OPTIC FUNCTION | OPERATING | POWER SUPPLY | OUTPUT | MODEL | ORDER No. |
|---------------------------|-----------------------------|-----------------|--------------------|-----------------|--------------------|
| Short diffuse proximity | 10...900 mm | 15...264 V A.C. | relay SPDT 250V/3A | S6-1-C90 | S937530090 |
| | | 10...30 V D.C. | NPN/PNP | S6-5-C90 | S937530000 |
| | | | PNP N.O./N.C. | S6R-5-C90-P | 950201190 |
| Long diffuse proximity | 10...2000 mm | 15...264 V A.C. | relay SPDT 250V/3A | S6-1-C200 | 950151140 |
| | | 10...30 V D.C. | NPN/PNP | S6-5-C200 | 950201150 |
| | | | PNP N.O./N.C. | S6R-5-C200-P | 950201200 |
| | | | NPN N.O./N.C. | S6R-5-C200-N | 956101050 |
| | | | PNP | S6T-5-C90-P | 961031020 |
| Retroreflective | 0,1...6 m (on R2 reflector) | 15...264 V A.C. | relay SPDT 250V/3A | S6-1-A6 | S937330090 |
| | | 10...30 V D.C. | NPN/PNP | S6-5-A6 | S937330000 |
| | | | PNP | S6T-5-A6-P | 961031000 |
| | | | PNP N.O./N.C. | S6R-5-A6-P | 950201170 |
| | | | PNP | S6T-5-A6-P | 961031000 |
| Polarized retroreflective | 0,1...5 m (on R2 reflector) | 15...264 V A.C. | relay SPDT 250V/3A | S6-1-B5 | S937420090 |
| | | 10...30 V D.C. | NPN/PNP | S6-5-B5 | S937420000 |
| | | | PNP N.O./N.C. | S6R-5-B5-P | 950201180 |
| | | | PNP | S6T-5-B5-P | 961031010 |
| | | | PNP N.O./N.C. | S6R-5-M10-P | 950201230 |
| Background suppression | 30...100 mm | 10...30 V D.C. | NPN/PNP | S6-5-M25 | S937830000 |
| | 30...250 mm | | PNP N.O./N.C. | S6R-5-M25-P | 950201220 |
| | | | NPN N.O./N.C. | S6R-5-M25-N | 956101080 |
| | 100...500 mm | | PNP | S6T-5-M25-P | 961041000 |
| | | | PNP N.O./N.C. | S6R-5-M50-P | 950201250 |
| | | | PNP | S6T-5-M25-P | 961041000 |
| | Through beam (Receiver) | | 0...20 m | 15...264 V A.C. | relay SPDT 250V/3A |
| 10...30 V D.C. | | NPN/PNP | | S6-5-F20 | S937200010 |
| | | PNP N.O./N.C. | | S6R-5-F20-P | 950201160 |
| | | PNP | | S6T-5-F20-P | 961211010 |
| Through beam (Emitter) | - | 15...264 V A.C. | - | S6-1-G20 | S937130090 |
| | | 10...30 V D.C. | - | S6-5-G20 | S937130000 |
| | | | - | S6T-5-G20 | 961211000 |

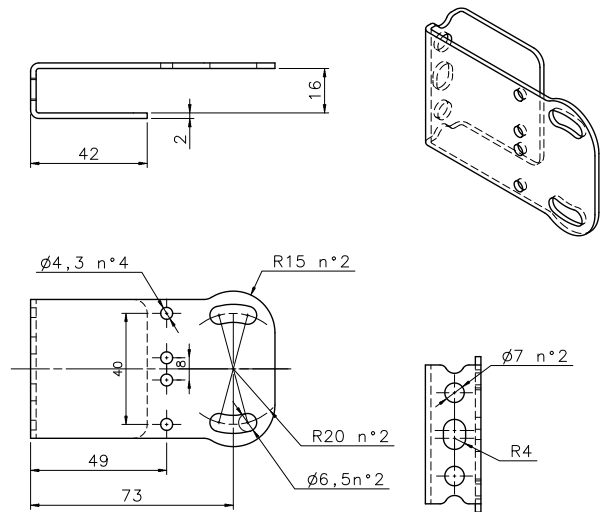
ACCESSORIES



ST-5018



ST-5019



COMPACT SENSORS

| MODEL | DESCRIPTION | ORDER No. |
|-----------|---|-----------|
| ST-5018 | protective bracket | 95ACC5310 |
| ST-5019 | protective bracket | 95ACC5320 |
| ST-5020 | mounting bracket | 95ACC5330 |
| ST-5021 | mounting bracket | 95ACC5340 |
| ST-504 | mounting bracket | 95ACC2820 |
| ST-5053 | protective bracket | 95ACC2410 |
| ST-5054 | protective bracket | 95ACC2420 |
| JOINT-S62 | protective bracket with jointed support | 95ACC2430 |

CABLES

| TYPE | DESCRIPTION | LENGTH | MODEL | ORDER No. |
|--|---------------------------------|-----------------------|---------------|-----------|
| Axial M12 Connector | 4-pole, grey, P.V.C. | 3 m | CS-A1-02-G-03 | 95A251380 |
| | | 5 m | CS-A1-02-G-05 | 95A251270 |
| | | 7 m | CS-A1-02-G-07 | 95A251280 |
| | | 10 m | CS-A1-02-G-10 | 95A251390 |
| | 4-pole, P.U.R. | 2 m | CS-A1-02-R-02 | 95A251540 |
| | | 5 m | CS-A1-02-R-05 | 95A251560 |
| Radial M12 Connector | 4-pole, grey, P.V.C. | 3 m | CS-A2-02-G-03 | 95A251360 |
| | | 5 m | CS-A2-02-G-05 | 95A251240 |
| | | 7 m | CS-A2-02-G-07 | 95A251245 |
| | | 10 m | CS-A2-02-G-10 | 95A251260 |
| | 4-pole, P.U.R. | 2 m | CS-A2-02-R-02 | 95A251550 |
| | | 5 m | CS-A2-02-R-05 | 95A251570 |
| Radial M12 Connector with LED (for PNP N.O. sensors) | 4-pole, grey, P.V.C. | 3 m | CS-A2-12-G-03 | 95A251400 |
| | | 5 m | CS-A2-12-G-05 | 95A251350 |
| | | 10 m | CS-A2-12-G-10 | 95A251370 |
| Axial M12 Connector | 4-pole, shielded, black, P.V.C. | 3 m | CV-A1-22-B-03 | 95ACC1480 |
| | | 5 m | CV-A1-22-B-05 | 95ACC1490 |
| | | 10 m | CV-A1-22-B-10 | 95ACC1500 |
| | | 15 m | CV-A1-22-B-15 | 95ACC2070 |
| | | 25 m | CV-A1-22-B-25 | 95ACC2090 |
| Radial M12 Connector | 4-pole, shielded, black, P.V.C. | 3 m | CV-A2-22-B-03 | 95ACC1540 |
| | | 5 m | CV-A2-22-B-05 | 95ACC1550 |
| | | 10 m | CV-A2-22-B-10 | 95ACC1560 |
| Axial M12 Connector | 4-pole, U.L., black, P.V.C. | 3 m | CS-A1-02-U-03 | 95ASE1120 |
| | | 5 m | CS-A1-02-U-05 | 95ASE1130 |
| | | 10 m | CS-A1-02-U-10 | 95ASE1140 |
| | | 15 m | CS-A1-02-U-15 | 95ASE1150 |
| | | 25 m | CS-A1-02-U-25 | 95ASE1160 |
| Radial M12 Connector | 4-pole, black | Connector- not cabled | CS-A1-02-B-NC | G5085002 |
| | | Connector- not cabled | CS-A2-02-B-NC | G5085003 |

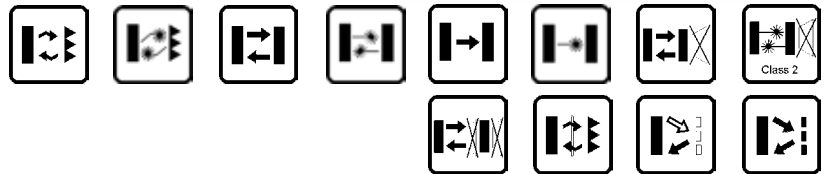


COMPACT SENSORS

S90

Extended range of compact photoelectric sensors in a metal housing

- Background suppression and polarized retroreflective
- Class 1 LASER models for long distance detection
- Contrast and UV Luminescence sensors
- Industrial IP67 metal housing
- Standard 4-wire NO-NC NPN or PNP output



APPLICATIONS

- Processing and Packaging machinery
- Conveyor lines, material handling
- Automotive assembling lines
- Automated warehousing



| S90 | | |
|---|-----------|---|
| Through beam | | 0...20 m 0...60 m (class 1 LASER) |
| Polarized retroreflective | | 0...3,2 m (coaxial) 0,1...6,5 m 0,1...20 m (class 1 LASER) |
| Retroreflective for transparent (on R2 reflector) | | 0...1,7 m (coaxial) |
| Diffuse proximity | | short 0,01...1 m long 0,05...2 m 0...600 mm (class 1 LASER) |
| Background suppression | | 70...200 mm 50...100 mm (class 1 LASER) |
| Foreground suppression | | 70...200 mm |
| Luminescence | | 0...40 mm |
| Contrast | | 19 ± 2 mm |
| Power supply | Vdc | 10...30 V |
| | Vac | |
| | Vac/dc | |
| Output | PNP | ▪ |
| | NPN | ▪ |
| | NPN/PNP | |
| | relay | |
| | other | |
| Connection | cable | |
| | connector | ▪ |
| | pig-tail | |
| Approximate dimensions (mm) | | 15x50x41 |
| Housing material | | Zama |
| Mechanical protection | | IP67 |

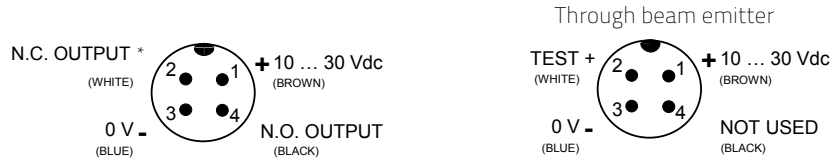
TECHNICAL DATA

| | |
|---------------------------------------|--|
| Power supply | 10 ... 30 Vdc (limit values) |
| Ripple | 2 Vpp max. |
| Consumption (output current excluded) | 35 mA max. 35 mA max. (mod. S90...B01/B51/C01/C11/F01/T51) 30 mA max. (mod. S90...W08/U08) 50 mA max. (mod. S90...M08/N03) 60 mA max. (Laser mod. S90...M08) |
| Light emission | red LED 660 nm (mod. S90...B01/B51/C01/T51) red LED 670 nm (mod. S90...M08) IR LED 880 nm (mod. S90...C11/G00) white LED 400-700 nm (mod. S90...W08) UV LED 370 nm (mod. S90...U08) red Laser 650 nm |
| Setting | sensitivity trimmer (mod. S90...B01/B51/C01/C11/F01/T51) SET push-button (mod. S90...M08/N03/W08/U08) |
| Operating mode | LIGHT mode on N.O. output/DARK mode on N.C. output (mod. S90...C01) DARK mode on N.O. output/LIGHT mode on N.C. output (mod. S90...B01/F01) LIGHT mode with EASY TOUCH™/automatic with fine detection (mod. S90...M08/N03/U08) DARK mode with EASY TOUCH/automatic with fine detection (mod. S90...W08) |
| Indicators | yellow OUTPUT LED (excl. mod. S90...G00) green STABILITY LED (mod. S90...B01/B51/C01/C11/F01), POWER LED (mod. S90...G00, Laser mod. S90...B01/C01/F01/G00) green/red READY/ERROR LED (mod. S90...M08/N03/W08/U08) yellow/orange OUTPUT LED, green/red LASER ON/ERROR LED (Laser mod. S90...M08) |
| Output | PNP or NPN; NO and NC (mod. S90...B01/C01/F01/T51) |
| Output current | 100 mA max. |
| Saturation voltage | 2 V max. |
| Response time | 0,5 ms (mod. S90...B01/B51/T51) 1 ms (mod. S90...C01/C11/F01) 100 µs (mod. S90...W08) 500 µs max. (mod. S90...M08/N03) 250 µs (mod. S90...U08, Laser mod. S90...B01/C01) 333 µs (Laser mod. S90...F01) |
| Switching frequency | 1 kHz (mod. S90...B01/B51/T51) 500 Hz (mod. S90...C01/C11/F01) 5 kHz (mod. S90...W08) 1 kHz (mod. S90...M08/N03) 2 kHz (mod. S90...U08, Laser mod. S90...B01/C01) 1,5 kHz (Laser mod. S90...F01) |
| Connection | M12 4-pole connector |
| Dielectric strength | 500 Vac, 1 min between electronics and housing |
| Insulating resistance | >20 MΩ, 500 Vdc between electronics and housing |
| Electrical protection | class 2 |
| Mechanical protection | IP67 (type 1 enclosure) |
| Ambient light rejection | according to EN 60947-5-2 |
| Vibrations | 0,5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6) |
| Shock resistance | 11 ms (30 G) 6 shock for every axis (EN60068-2-27) |
| Housing material | ZAMA |
| Lens material | PMMA window and polycarbonate lens (mod. S90...B01/C01/C11/F01/G00/M08/N03) glass window and lens (mod. S90...B51/T51) glass window skewed anti-reflection and glass lens (mod. S90...W08/U08) PMMA window, polycarbonate and glass lens (Laser mod. S90...M08) |
| Operating temperature | -25 ... 55 °C (mod. S90...B01/B51/C01/C11/F01/G00) -10 ... 55 °C (mod. S90...M08/N03/W08/U08) -10 ... 50 °C (Laser mod.) |
| Storage temperature | -25 ... 70 °C (mod. S90...B01/B51/C01/C11/F01/G00, Laser mod. S90...B01/C01/F01/G00) -20 ... 70 °C (mod. S90...M08/N03/W08/U08, Laser mod. S90...M08) |
| Weight | 77 g |

COMPACT SENSORS

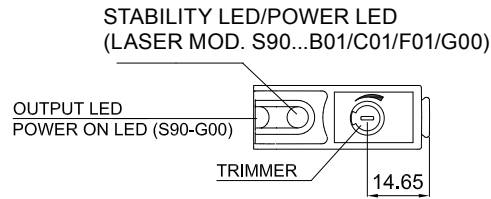
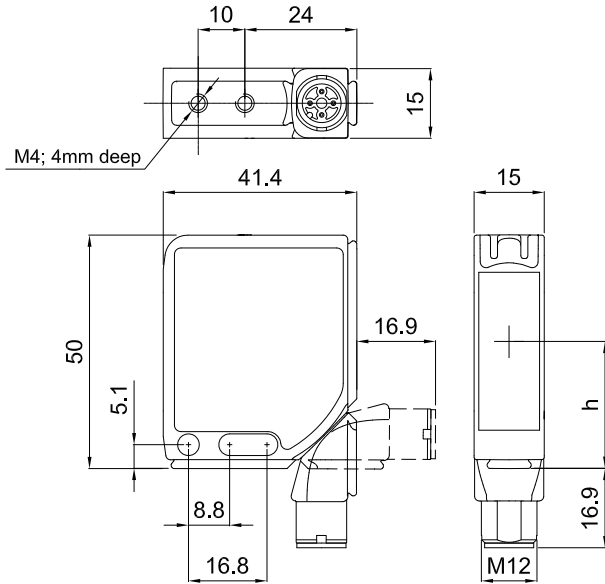
CONNECTIONS

M12 CONNECTOR

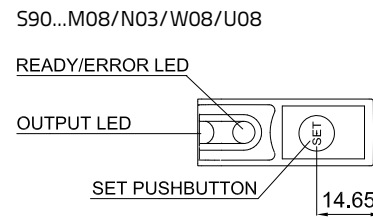


* N.C. OUTPUT (mod. S90...B, C, F, T), REMOTE (mod. S90...M, N, U, W)

DIMENSIONS



| VERSION | h |
|---------------------------------|------|
| B01 C01 C11 F01 G00 | 26.7 |
| M08 N03 | 27.2 |
| B51 T51 W08 U08 | 29.7 |



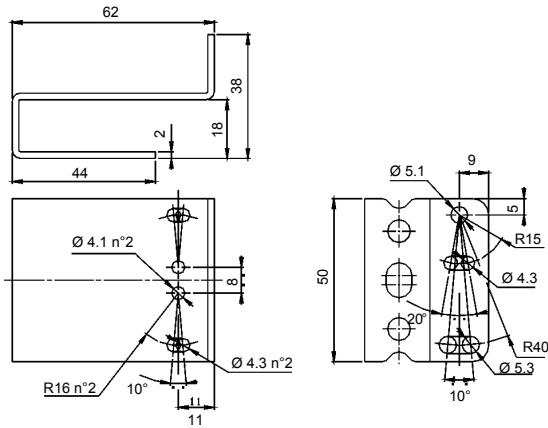
mm

MODEL SELECTION AND ORDER INFORMATION

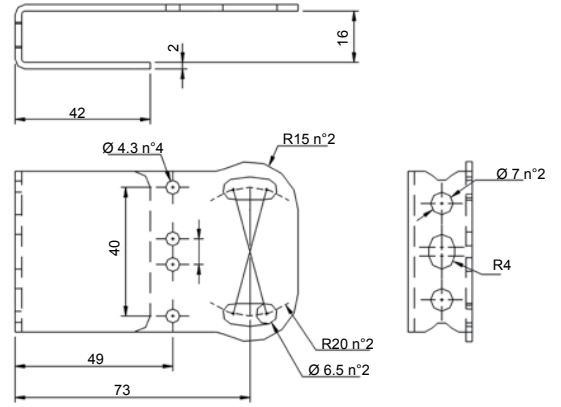
| OPTIC FUNCTION | EMISSION | SETTING | OUTPUT | MODEL | ORDER No. |
|---------------------------------------|----------|-----------------------------|--------|-----------------|-----------|
| Polarized retroreflective | LASER | Trimmer | NPN | S90-ML-5-B01-NN | 956301260 |
| | | | PNP | S90-ML-5-B01-PP | 956301090 |
| Coaxial polarized retroreflective | LED | Trimmer | NPN | S90-MA-5-B01-NN | 956301160 |
| | | | PNP | S90-MA-5-B01-PP | 956301000 |
| Short diffuse proximity | LASER | Trimmer | NPN | S90-MA-5-B51-NN | 956301170 |
| | | | PNP | S90-MA-5-B51-PP | 956301030 |
| Long diffuse proximity | LED | Trimmer | NPN | S90-ML-5-C01-NN | 956301270 |
| | | | PNP | S90-ML-5-C01-PP | 956301100 |
| Through beam receiver | LASER | Trimmer | NPN | S90-MA-5-C01-NN | 956301190 |
| | | | PNP | S90-MA-5-C01-PP | 956301010 |
| Through beam emitter | LED | Trimmer | NPN | S90-MA-5-C11-NN | 956301200 |
| | | | PNP | S90-MA-5-C11-PP | 956301020 |
| Background suppression | LASER | Teach-in, delay-off, remote | NPN | S90-ML-5-F01-NN | 956301280 |
| | | | PNP | S90-ML-5-F01-PP | 956301110 |
| Background and foreground suppression | LED | Teach-in, remote | NPN | S90-MA-5-F01-NN | 956301210 |
| | | | PNP | S90-MA-5-F01-PP | 956301050 |
| Retroreflective for transparent | LASER | - | - | S90-ML-5-G00-XG | 956301120 |
| | | | - | S90-MA-5-G00-XG | 956301060 |
| Luminescence | LED | Teach-in, delay-off, remote | NPN | S90-ML-5-M08-NH | 956301290 |
| | | | PNP | S90-ML-5-M08-PH | 956301130 |
| Contrast | LED | Teach-in, delay-off, remote | NPN | S90-MA-5-M08-NH | 956301220 |
| | | | PNP | S90-MA-5-M08-PH | 956301070 |
| | LED | Teach-in, remote | NPN | S90-MA-5-N03-NH | 956301230 |
| | | | PNP | S90-MA-5-N03-PH | 956301080 |
| | LED | Teach-in, delay-off, remote | NPN | S90-MA-5-T51-NN | 956301180 |
| | | | PNP | S90-MA-5-T51-PP | 956301040 |
| | LED | Teach-in, delay-off, remote | NPN | S90-MA-5-U08-NH | 956301240 |
| | | | PNP | S90-MA-5-U08-PH | 956301140 |
| | LED | Teach-in, delay-off, remote | NPN | S90-MA-5-W08-NH | 956301250 |
| | | | PNP | S90-MA-5-W08-PH | 956301150 |

ACCESSORIES

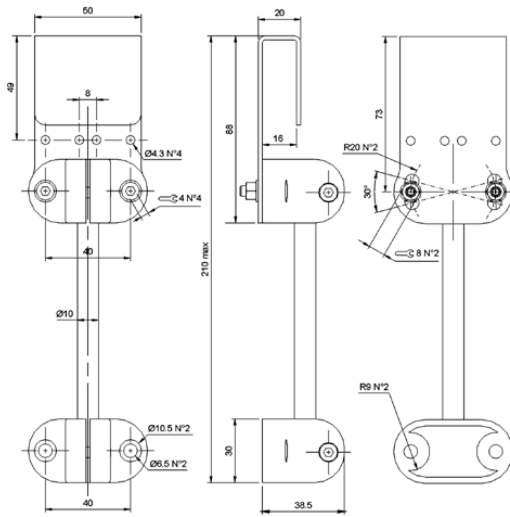
ST-5018



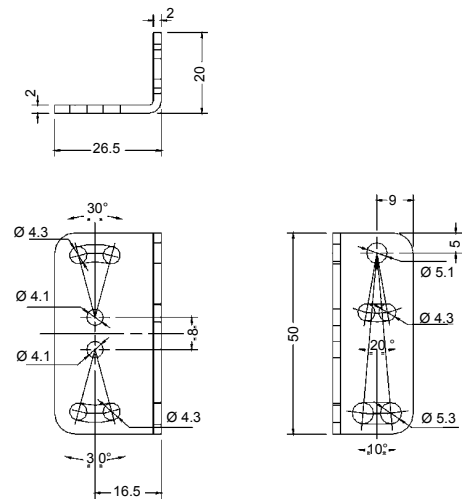
ST-5019



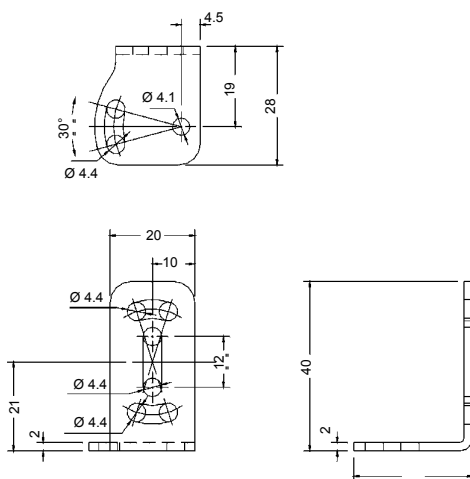
JOINT-60



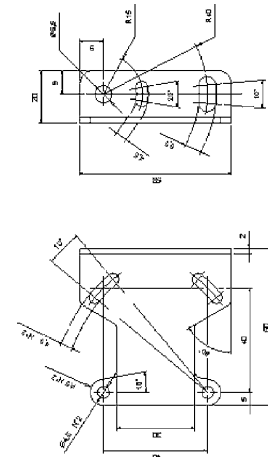
ST-5020



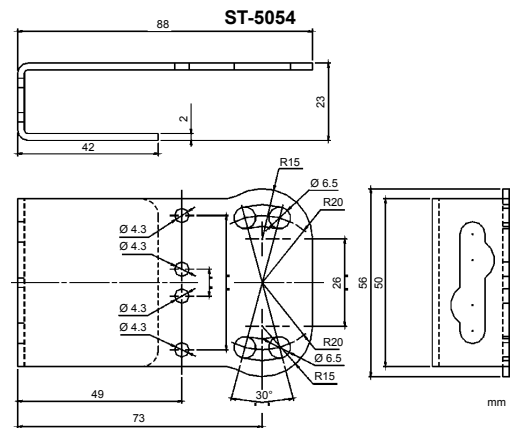
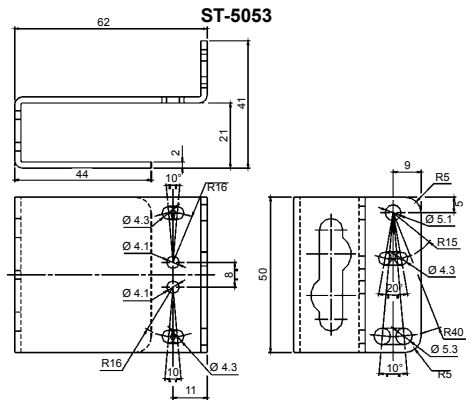
ST-5021



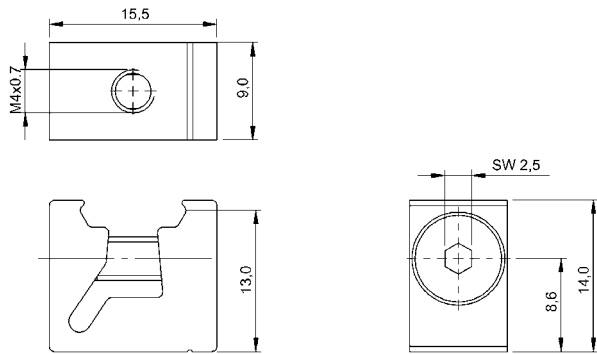
ST-504



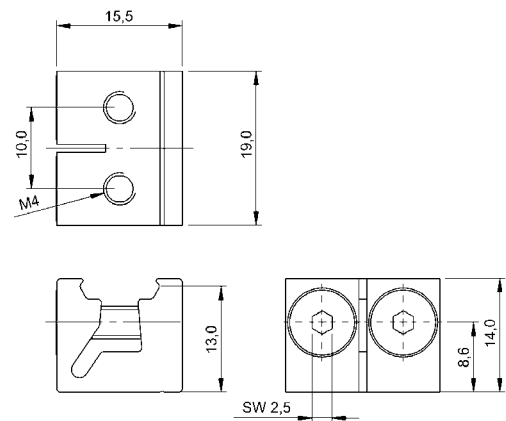
COMPACT SENSORS



ST-5041



ST-5042



| MODEL | DESCRIPTION | ORDER No. |
|-----------|---|------------|
| ST-5018 | protective bracket | 95ACC5310 |
| ST-5019 | protective bracket | 95ACC5320 |
| ST-5020 | mounting bracket | 95ACC5330 |
| ST-5021 | mounting bracket | 95ACC5340 |
| ST-504 | mounting bracket | 95ACC2820 |
| ST-5053 | protective bracket | 95ACC2410 |
| ST-5054 | protective bracket | 95ACC2420 |
| ST-5041 | short dove-tail bracket | 95ACC2300 |
| ST-5042 | long dove-tail bracket | 95ACC2310 |
| JOINT -60 | protective bracket with jointed support | 95ACC 5350 |

CABLES

| TYPE | DESCRIPTION | LENGTH | MODEL | ORDER No. |
|--|---------------------------------|-----------------------|---------------|-----------|
| Axial M12 Connector | 4-pole, grey, P.V.C. | 3 m | CS-A1-02-G-03 | 95A251380 |
| | | 5 m | CS-A1-02-G-05 | 95A251270 |
| | | 7 m | CS-A1-02-G-07 | 95A251280 |
| | | 10 m | CS-A1-02-G-10 | 95A251390 |
| | 4-pole, P.U.R. | 2 m | CS-A1-02-R-02 | 95A251540 |
| | | 5 m | CS-A1-02-R-05 | 95A251560 |
| Radial M12 Connector | 4-pole, grey, P.V.C. | 3 m | CS-A2-02-G-03 | 95A251360 |
| | | 5 m | CS-A2-02-G-05 | 95A251240 |
| | | 7 m | CS-A2-02-G-07 | 95A251245 |
| | | 10 m | CS-A2-02-G-10 | 95A251260 |
| | 4-pole, P.U.R. | 2 m | CS-A2-02-R-02 | 95A251550 |
| | | 5 m | CS-A2-02-R-05 | 95A251570 |
| Radial M12 Connector with LED (for PNP N.O. sensors) | 4-pole, grey, P.V.C. | 3 m | CS-A2-12-G-03 | 95A251400 |
| | | 5 m | CS-A2-12-G-05 | 95A251350 |
| | | 10 m | CS-A2-12-G-10 | 95A251370 |
| Axial M12 Connector | 4-pole, shielded, black, P.V.C. | 3 m | CV-A1-22-B-03 | 95ACC1480 |
| | | 5 m | CV-A1-22-B-05 | 95ACC1490 |
| | | 10 m | CV-A1-22-B-10 | 95ACC1500 |
| | | 15 m | CV-A1-22-B-15 | 95ACC2070 |
| | | 25 m | CV-A1-22-B-25 | 95ACC2090 |
| Radial M12 Connector | 4-pole, shielded, black, P.V.C. | 3 m | CV-A2-22-B-03 | 95ACC1540 |
| | | 5 m | CV-A2-22-B-05 | 95ACC1550 |
| | | 10 m | CV-A2-22-B-10 | 95ACC1560 |
| Axial M12 Connector | 4-pole, U.L., black, P.V.C. | 3 m | CS-A1-02-U-03 | 95ASE1120 |
| | | 5 m | CS-A1-02-U-05 | 95ASE1130 |
| | | 10 m | CS-A1-02-U-10 | 95ASE1140 |
| | | 15 m | CS-A1-02-U-15 | 95ASE1150 |
| | | 25 m | CS-A1-02-U-25 | 95ASE1160 |
| Radial M12 Connector | 4-pole, black | Connector- not cabled | CS-A1-02-B-NC | G5085002 |
| | | Connector- not cabled | CS-A2-02-B-NC | G5085003 |

MAXI SENSORS

S300 PA

Advanced MAXI photoelectric multivoltage sensors

- Industrial plastic housing with IP67 mechanical protection
- Timing function from 0.6-16 s ON delay, OFF delay and ONE SHOT
- Terminal block for both Vdc and Vac/ Vdc free voltage
- Distance trimmer for mechanical background suppression models



APPLICATIONS

- Packaging end of line, palletizers
- Outdoor or indoor gates control
- Manufacturing plants



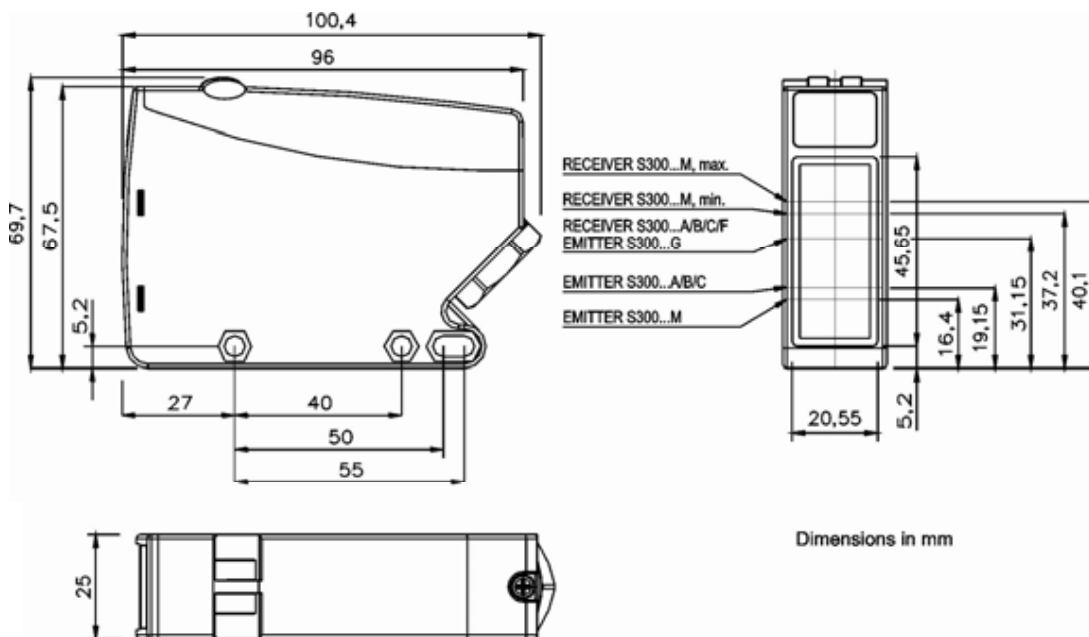
(*)DC models:
ATEX II 3DG

| S300 PA | | |
|-----------------------------------|-----------|--------------------------|
| Through beam | | 0...50 m |
| Retroreflective (on R2 reflector) | | 0,1...15 m |
| Polarized retroreflective | | 0,1...10 m |
| Diffuse proximity | | 0,05...2 m |
| Background suppression | | 0,2...2 m |
| Power supply | Vdc | 12...30 V |
| | Vac | |
| | Vac/dc | 24...240 Vac/24...60 Vdc |
| | PNP | |
| Output | NPN | |
| | NPN/PNP | ▪ |
| | relay | ▪ |
| | other | |
| Connection | cable | |
| | connector | ▪ |
| | pig-tail | |
| Approximate dimensions (mm) | | 25x100x70 |
| Housing material | | PBT |
| Mechanical protection | | IP67 |

TECHNICAL DATA

| | |
|---------------------------------------|--|
| Power supply | 12 ... 30 Vdc (mod. S300...2) 24...240 Vac/24...60 Vdc (mod. S300...1) |
| Ripple | 10% max. |
| Consumption (output current excluded) | 35 mA max. (mod. S300...2) 3 VA max. (mod. S300...1) |
| Light emission | red LED 660 nm (mod. S300...B) IR LED 940 nm (mod. S300...C) IR LED 880 nm (mod. S300...A/G/M) |
| Setting | sensitivity trimmer (mod. S300...A/B/C/F), DARK/LIGHT dip-switch (mod. S300...A/B/C/F/M) 7-turns distance adjustment trimmer (mod. S300...M) dip-switch mode ON delay/OFF delay/ON-OFF delay/single pulse (ONE-SHOT) (mod. S300...x06) timing trimmer (mod. S300...x06) |
| Indicators | yellow OUTPUT LED (excl. mod. S300...G) green STABILITY LED, POWER LED (mod. S300...G) |
| Output | PNP or NPN open collector (mod. S300...2); electromechanical SPDT 250 Vac/30 Vdc (mod. S300...1) |
| Output current | 100 mA (mod. S300...2) 3 A max. (mod. S300...1) |
| Saturation voltage | 2,4 V max. |
| Response time | 1 ms (mod. S300...2-A/B/C/M) 2 ms (mod. S300...2-F/G) 25 ms (mod. S300...1) |
| Switching frequency | 500 Hz (mod. S300...2-A/B/C/M) 250 Hz (mod. S300...2-F/G) 20 Hz max. (mod. S300...1) |
| Connection | terminal block |
| Dielectric strength | 500 Vac, 1 min between electronics and housing |
| Insulating resistance | >20 MΩ, 500 Vdc between electronics and housing |
| Electrical protection | class 2 (mod. S300...2) |
| Mechanical protection | IP67 (IEC/EN60529) |
| Ambient light rejection | according to EN 60947-5-2 |
| Vibrations | 0,5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6) |
| Shock resistance | 11 ms (30 G) 6 shock for every axis (EN60068-2-27) |
| Housing material | PBT 30% glass fiber-reinforced |
| Lens material | frontal window and lens in PC |
| Operating temperature | -25 ... 55 °C |
| Storage temperature | -25 ... 70 °C |
| Weight | 120 g (mod. S300...2), 130 g (mod. S300...1) |

DIMENSIONS

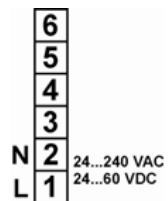
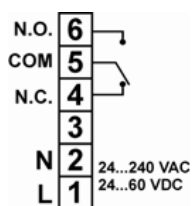


MAXI SENSORS

CONNECTIONS

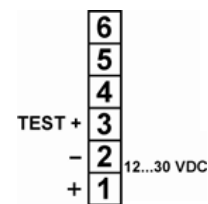
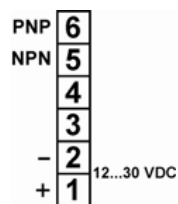
VAC MODELS

Through beam emitter



VDC MODELS

Through beam emitter

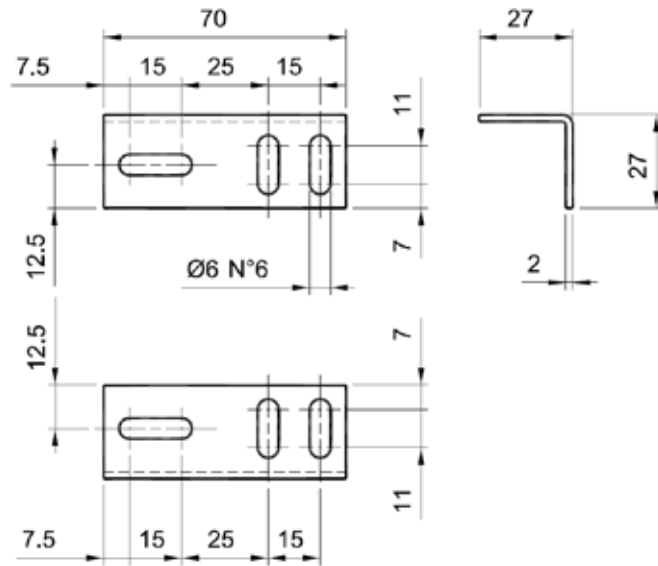


MODEL SELECTION AND ORDER INFORMATION

| OPTIC FUNCTION | POWER SUPPLY | OUTPUT | SETTING | MODEL | ORDER No. |
|---|--------------------------|---------|---|------------------|-----------|
| Retroreflective (IR LED 880 nm) | 12...30 Vdc | NPN/PNP | Sensitivity trimmer and D/L dip-switch | S300-PA-2-A01-OC | 951451500 |
| | | | Timing and sensitivity trimmers, D/L dip-switch | S300-PA-2-A06-OC | 951451510 |
| | 24...240 Vac/24...60 Vdc | Relay | Sensitivity trimmer and D/L dip-switch | S300-PA-1-A01-RX | 951451480 |
| | | | Timing and sensitivity trimmers, D/L dip-switch | S300-PA-1-A06-RX | 951451490 |
| Polarized retroreflective (red LED 660 nm) | 12...30 Vdc | NPN/PNP | Sensitivity trimmer and D/L dip-switch | S300-PA-2-B01-OC | 951451540 |
| | | | Timing and sensitivity trimmers, D/L dip-switch | S300-PA-2-B06-OC | 951451550 |
| | 24...240 Vac/24...60 Vdc | Relay | Sensitivity trimmer and D/L dip-switch | S300-PA-1-B01-RX | 951451520 |
| | | | Timing and sensitivity trimmers, D/L dip-switch | S300-PA-1-B06-RX | 951451530 |
| Diffused proximity (IR LED 940 nm) | 12...30 Vdc | NPN/PNP | Sensitivity trimmer D/L dip-switch | S300-PA-2-C01-OC | 951451420 |
| | | | Timing and sensitivity trimmers, D/L dip-switch | S300-PA-2-C06-OC | 951451430 |
| | 24...240 Vac/24...60 Vdc | Relay | Sensitivity trimmer and D/L dip-switch | S300-PA-1-C01-RX | 951451400 |
| | | | Timing and sensitivity trimmers, D/L dip-switch | S300-PA-1-C06-RX | 951451410 |
| Through beam receiver | 12...30 Vdc | NPN/PNP | Sensitivity trimmer and D/L dip-switch | S300-PA-2-F01-OC | 951451600 |
| | | | Timing and sensitivity trimmers, D/L dip-switch | S300-PA-2-F06-OC | 951451610 |
| | 24...240 Vac/24...60 Vdc | Relay | Sensitivity trimmer and D/L dip-switch | S300-PA-1-F01-RX | 951451580 |
| | | | Timing and sensitivity trimmers, D/L dip-switch | S300-PA-1-F06-RX | 951451590 |
| Through beam emitter (IR LED 880 nm) | 12...30 Vdc | - | - | S300-PA-2-G00-EX | 951451570 |
| | 24...240 Vac/24...60 Vdc | | S300-PA-1-G00-EX | 951451560 | |
| Background suppression (IR LED 880 nm) | 12...30 Vdc | NPN/PNP | 7-turns distance adjustment trimmer and D/L dip-switch | S300-PA-2-M01-OC | 951451460 |
| | | | Timing and 7-turns distance adj. trimmers, D/L dip-switch | S300-PA-2-M06-OC | 951451470 |
| | 24...240 Vac/24...60 Vdc | Relay | 7-turns distance adjustment trimmer and D/L dip-switch | S300-PA-1-M01-RX | 951451440 |
| | | | Timing and 7-turns distance adj. trimmers, D/L dip-switch | S300-PA-1-M06-RX | 951451450 |

ACCESSORIES

ST-511



| MODEL | DESCRIPTION | ORDER No. |
|--------|------------------|-----------|
| ST-511 | mounting bracket | 95ACC2810 |



MAXI SENSORS

S300 PR

Heavy duty sensor for outdoor applications and harsh environments

- Industrial plastic housing with IP67 mechanical protection
- Defogging system function
- Double independent timing functions with double time scale from 0-2s or 0-10s, One-Delay, Off Delay, ONE SHOT



APPLICATIONS

- Packaging end of line, palletizers
- Outdoor or indoor gates control
- Automotive plants
- Automated warehousing



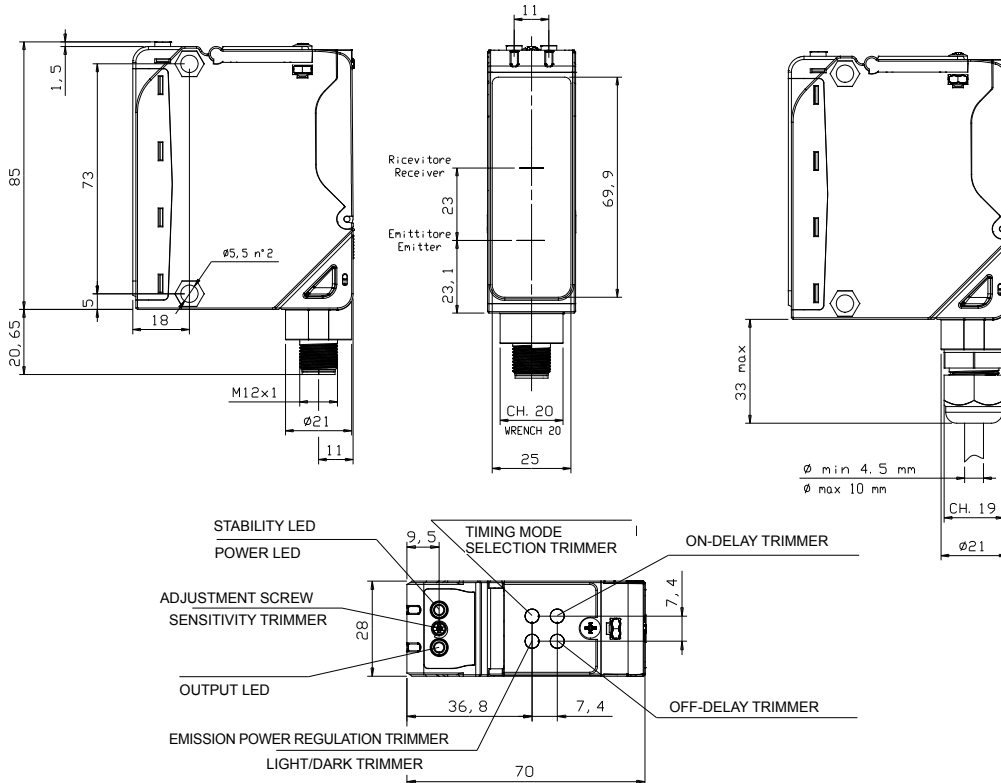
(*)DC models:
ATEX II 3DG

| S300 PA | | |
|-----------------------------|-----------|----------------------------|
| Through beam | | 0...60 m |
| Polarized retroreflective | | 0,1...22 m |
| Diffuse proximity | | 0,05...5 m |
| Background suppression | | 0,4...2,5 m |
| Power supply | Vdc | 10...30 V |
| | Vac | |
| | Vac/dc | 24...240 Vac / 24...60 Vdc |
| Output | PNP | |
| | NPN | |
| | NPN/PNP | ▪ |
| | relay | ▪ |
| | other | |
| Connection | cable | |
| | connector | ▪ |
| | pig-tail | |
| Approximate dimensions (mm) | | 25x100x70 |
| Housing material | | PBT |
| Mechanical protection | | IP67 |

TECHNICAL DATA

| | |
|---------------------------------------|--|
| Power supply | 10 ... 30 Vdc (mod. S300...2/5) 24...240 Vac/24...60 Vdc (mod. S300...1) |
| Ripple | 10% max. 30 mA max. (mod. S300...2/5-B/C) 35 mA max. (mod. S300...2/5-M) 25 mA max. (mod. S300...2/5-F) 20 mA max. (mod. S300...2/5-G) |
| Consumption (output current excluded) | 3 VA max. (mod. S300...1) red LED 660 nm (mod. S300...B) IR LED 880 nm (mod. S300...C/G/M) sensitivity trimmer, DARK/LIGHT trimmer (mod. S300...F/C/B) |
| Light emission | 15 turns adjustment screw/DARK/LIGHT trimmer (mod. S300...M) emission power regulation trimmer (mod. S300...G) versions with timing functions: time base selection and one shot trimmer/ON DELAY trimmer/OFF DELAY trimmer (mod. S300...x06) |
| Setting | yellow OUTPUT LED (excl. mod. S300...G) green STABILITY LED, POWER LED (mod. S300...G) |
| Indicators | PNP or NPN open collector (mod. S300...2/5); Electromechanical SPDT 250 Vac/30 Vdc (mod. S300...1) |
| Output | 100 mA (mod. S300...2/5) 3 A max. (mod. S300...1) 2,4 V max. |
| Output current | 1 ms (mod. S300...2/5-B/C/F/G) 2 ms (mod. S300...2/5-M) 20 ms (mod. S300...1) |
| Saturation voltage | 500 Hz (mod. S300...2/5-B/C/F/G) 250 Hz (mod. S300...2/5-M) 25 Hz (mod. S300...1) |
| Response time | terminal block, M12 4-pole connector (only DC mod.) 500 Vac, 1 min between electronics and housing >20 MΩ, 500 Vdc between electronics and housing class 2 (mod. S300...2/5) IP67 (IEC/EN60529)/cable gland EN50262 according to EN 60947-5-2 |
| Switching frequency | 0,5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6) 11 ms (30 G) 6 shock for every axis (EN60068-2-27) |
| Connection | PBT 30% glass fiber-reinforced frontal window and lens in PC |
| Dielectric strength | -40 ... 55 °C |
| Insulating resistance | -40 ... 70 °C |
| Electrical protection | 140 g (mod. S300...2/5), 150 g (mod. S300...1) |
| Mechanical protection | |
| Ambient light rejection | |
| Vibrations | |
| Shock resistance | |
| Housing material | |
| Lens material | |
| Operating temperature | |
| Storage temperature | |
| Weight | |

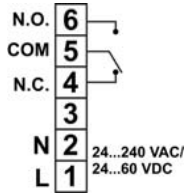
DIMENSIONS



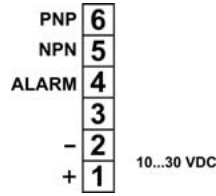
MAXI SENSORS

CONNECTIONS

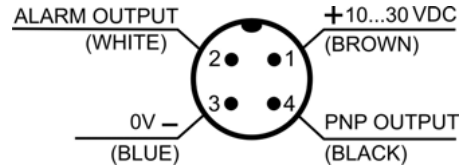
AC MODELS



DC MODELS

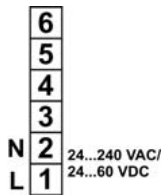


M12 CONNECTOR (only DC models)

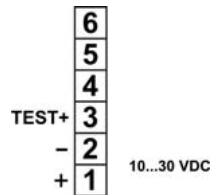


Through beam emitter

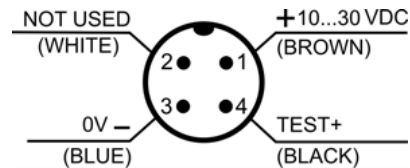
AC MODELS



DC MODELS



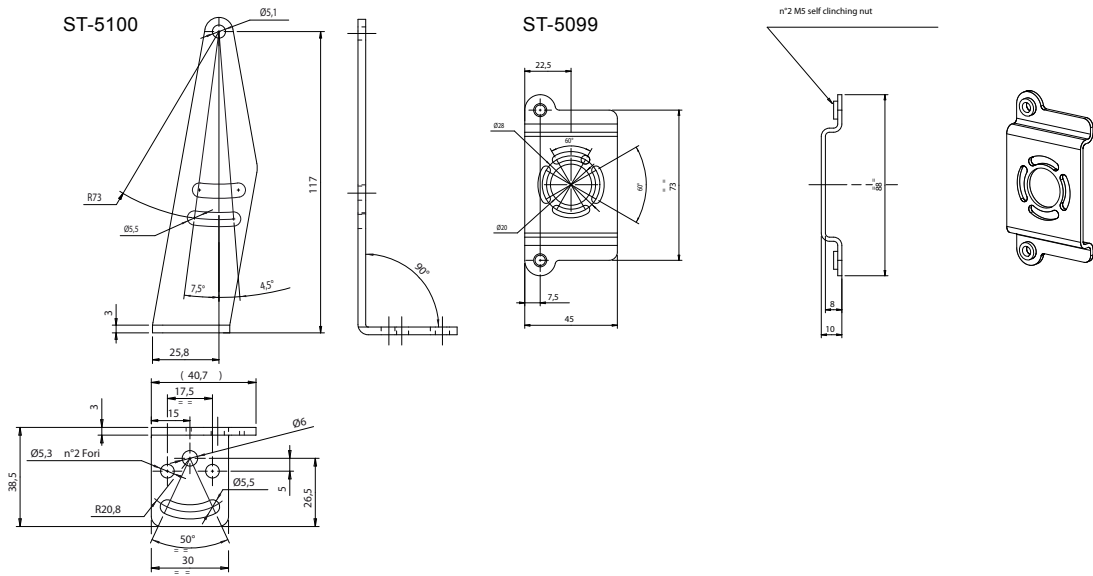
M12 CONNECTOR (only DC models)



MODEL SELECTION AND ORDER INFORMATION

| OPTIC FUNCTION | OUTPUT | CONNECTION | SETTING | MODEL | ORDER No. |
|--------------------------------------|--------------------------------------|--|--|--------------------|----------------------|
| Polarized retroreflective | NPN/PNP | Vdc - Terminal block | Sensitivity and D/L trimmers | S300-PR-2-B01-OC | 951451000 |
| | | | Timing, sensitivity and D/L trimmers | S300-PR-2-B06-OC | 951451010 |
| | | Vdc - M12 Connector | Sensitivity and D/L trimmers | S300-PR-5-B01-OC | 951451020 |
| | | | Timing, sensitivity and D/L trimmers | S300-PR-5-B06-OC | 951451030 |
| | Relay | Vac - Terminal block | Sensitivity and D/L trimmers | S300-PR-1-B01-RX | 951451040 |
| | | | Timing, sensitivity and D/L trimmers; defogging function | S300-PR-1-B06-RX-M | 951451050 |
| Diffused proximity | NPN/PNP | Vdc - Terminal block | Sensitivity and D/L trimmers | S300-PR-2-C01-OC | 951451070 |
| | | | Timing, sensitivity and D/L trimmers | S300-PR-2-C06-OC | 951451080 |
| | | Vdc - M12 Connector | Sensitivity and D/L trimmers | S300-PR-5-C01-OC | 951451090 |
| | | | Timing, sensitivity and D/L trimmers | S300-PR-5-C06-OC | 951451100 |
| | Relay | Vac - Terminal block | Sensitivity and D/L trimmers | S300-PR-1-C01-RX | 951451110 |
| | | | Timing, sensitivity and D/L trimmers | S300-PR-1-C06-RX | 951451120 |
| | | | Timing, sensitivity and D/L trimmers; defogging function | S300-PR-1-C06-RX-M | 951451130 |
| | | | Through beam receiver | NPN/PNP | Vdc - Terminal block |
| Timing, sensitivity and D/L trimmers | S300-PR-2-F06-OC | 951451220 | | | |
| Vdc - M12 Connector | Sensitivity and D/L trimmers | S300-PR-5-F01-OC | | | 951451230 |
| | Timing, sensitivity and D/L trimmers | S300-PR-5-F06-OC | | | 951451240 |
| Relay | Vac - Terminal block | Sensitivity and D/L trimmers | | S300-PR-1-F01-RX | 951451250 |
| | | Timing, sensitivity and D/L trimmers; defogging function | | S300-PR-1-F06-RX-M | 951451270 |
| Through beam emitter | - | Vdc - Terminal block | Emission power regulation trimmer | S300-PR-2-G00-EX | 951451280 |
| | | | | S300-PR-5-G00-EX | 951451290 |
| | | Vdc - M12 Connector | Defogging function | S300-PR-1-G00-EX | 951451300 |
| | | | | S300-PR-1-G00-EX-M | 951451310 |
| Background suppression | NPN/PNP | Vdc - Terminal block | Sensitivity and D/L trimmers | S300-PR-2-M01-OC | 951451140 |
| | | | Timing, sensitivity and D/L trimmers | S300-PR-2-M06-OC | 951451150 |
| | | Vdc - M12 Connector | Sensitivity and D/L trimmers | S300-PR-5-M01-OC | 951451160 |
| | | | Timing, sensitivity and D/L trimmers | S300-PR-5-M06-OC | 951451170 |
| | Relay | Vac - Terminal block | Sensitivity and D/L trimmers | S300-PR-1-M01-RX | 951451180 |
| | | | Timing, sensitivity and D/L trimmers; defogging function | S300-PR-1-M06-RX-M | 951451200 |

ACCESSORIES



| MODEL | DESCRIPTION | ORDER No. |
|---------|------------------|-----------|
| ST-5099 | mounting BRACKET | 95ACC2830 |
| ST-5100 | mounting BRACKET | 95ACC2840 |

CABLES

| TYPE | DESCRIPTION | LENGTH | MODEL | ORDER No. |
|----------------------|---------------------------------|-----------------------|---------------|-----------|
| Axial M12 Connector | 4-pole, grey, P.V.C. | 3 m | CS-A1-02-G-03 | 95A251380 |
| | | 5 m | CS-A1-02-G-05 | 95A251270 |
| | | 7 m | CS-A1-02-G-07 | 95A251280 |
| | | 10 m | CS-A1-02-G-10 | 95A251390 |
| | 4-pole, P.U.R. | 2 m | CS-A1-02-R-02 | 95A251540 |
| Radial M12 Connector | 4-pole, grey, P.V.C. | 5 m | CS-A1-02-R-05 | 95A251560 |
| | | 3 m | CS-A2-02-G-03 | 95A251360 |
| | | 5 m | CS-A2-02-G-05 | 95A251240 |
| | | 7 m | CS-A2-02-G-07 | 95A251245 |
| | 4-pole, P.U.R. | 10 m | CS-A2-02-G-10 | 95A251260 |
| | | 2 m | CS-A2-02-R-02 | 95A251550 |
| | | 5 m | CS-A2-02-R-05 | 95A251570 |
| Axial M12 Connector | 4-pole, shielded, black, P.V.C. | 3 m | CV-A1-22-B-03 | 95ACC1480 |
| | | 5 m | CV-A1-22-B-05 | 95ACC1490 |
| | | 10 m | CV-A1-22-B-10 | 95ACC1500 |
| | | 15 m | CV-A1-22-B-15 | 95ACC2070 |
| | | 25 m | CV-A1-22-B-25 | 95ACC2090 |
| Radial M12 Connector | 4-pole, shielded, black, P.V.C. | 3 m | CV-A2-22-B-03 | 95ACC1540 |
| | | 5 m | CV-A2-22-B-05 | 95ACC1550 |
| | | 10 m | CV-A2-22-B-10 | 95ACC1560 |
| Axial M12 Connector | 4-pole, U.L., black, P.V.C. | 3 m | CS-A1-02-U-03 | 95ASE1120 |
| | | 5 m | CS-A1-02-U-05 | 95ASE1130 |
| | | 10 m | CS-A1-02-U-10 | 95ASE1140 |
| | | 15 m | CS-A1-02-U-15 | 95ASE1150 |
| | | 25 m | CS-A1-02-U-25 | 95ASE1160 |
| Radial M12 Connector | 4-pole, black | Connector- not cabled | CS-A1-02-B-NC | G5085002 |
| | | Connector- not cabled | CS-A2-02-B-NC | G5085003 |

FIBER OPTIC SENSORS

S7

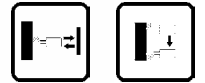
Fiber optic amplifiers in a DIN rail compatible format for small object detection in limited spaces

- High-resolution models with integrated display
- 12 bit resolution and 50 μ 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

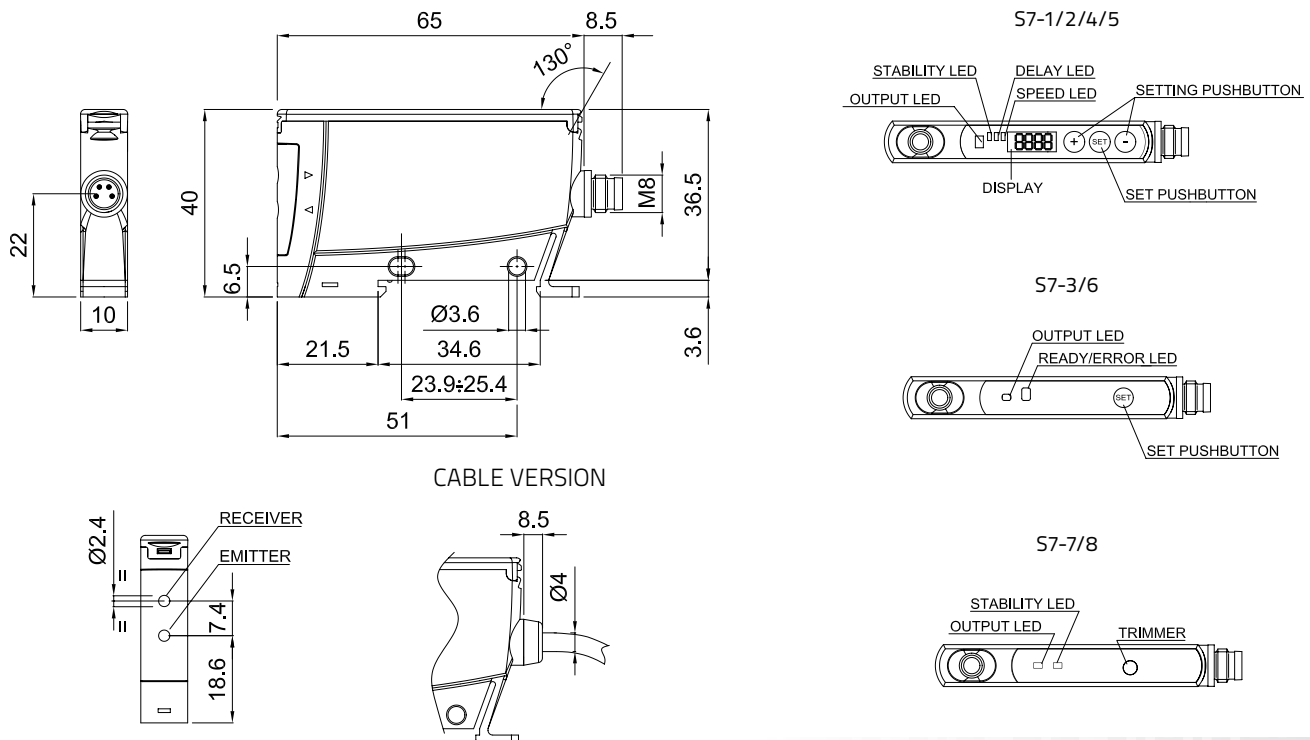


| S7 | | |
|------------------------------------|-----------|----------------------------|
| Through beam with fiber optic | | 0...300 mm |
| | | 0...150 mm |
| | | 0...75 mm |
| Diffuse proximity with fiber optic | | 0...100 mm |
| | | 0...50 mm |
| | | 0...25 mm |
| Power supply | Vdc | 12...24 V |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

TECHNICAL DATA

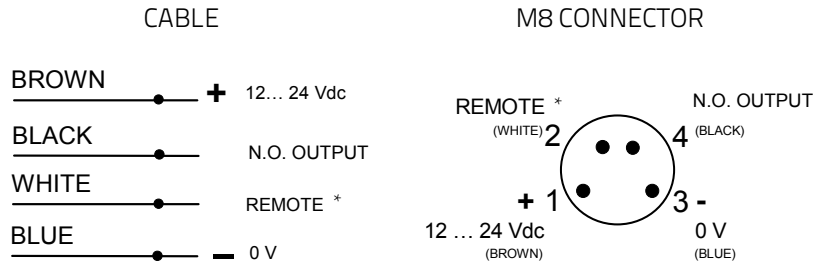
| | |
|---------------------------------------|---|
| Power supply | 12 ... 24 Vdc ± 10% (reverse polarity protection) |
| Ripple | 2 Vpp max. |
| Consumption (output current excluded) | 50 mA max. (mod. S7-1/2/4/5) 40 mA (mod. S7-3/6) 30 mA max. (mod. S7-7/8) |
| Light emission | red 670 nm (mod. S7-2/3/5/6/7/8)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

DIMENSIONS



FIBER OPTIC SENSORS

CONNECTIONS



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

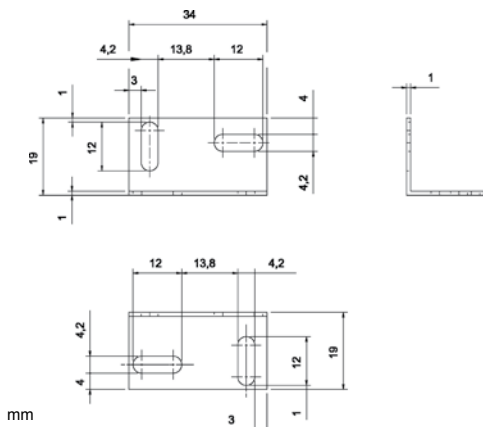
MODEL SELECTION AND ORDER INFORMATION

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

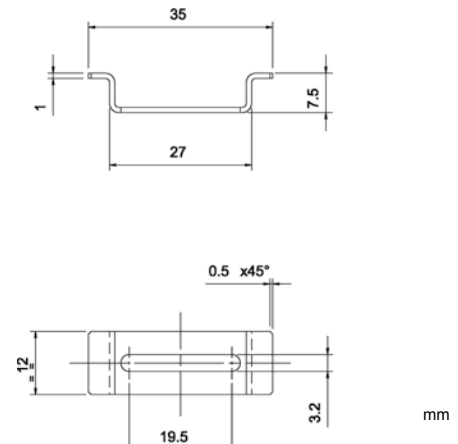
Datalogic Automation offers a wide range of fiber optic cables available in two different lines: OF series for standard applications and OFA series for specialistic applications, such as 90° optics as well as fixed focus optics. These accessories allow to carry out the diffuse proximity and through beam 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 |
| | | 5 m | CS-B1-02-R-05 | 95A251640 |
| Radial M8 Connector | 4-pole, grey, P.V.C. | 3 m | CS-B2-02-G-03 | 95A251450 |
| | | 5 m | CS-B2-02-G-05 | 95A251460 |
| | | 7 m | CS-B2-02-G-07 | 95A251470 |
| | | 10 m | CS-B2-02-G-10 | 95A251530 |
| | 4-pole, P.U.R. | 2 m | CS-B2-02-R-02 | 95A251630 |
| | | 5 m | CS-B2-02-R-05 | 95A251650 |

FIBER OPTIC SENSORS

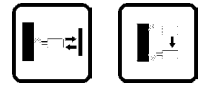
S70

Advanced fiber optic amplifiers for high speed and low contrast applications

- DIN rail mountable models with dual digital displays
- High speed models: 200 μ s...5 ms
- Super high speed models: 10 μ s...1ms
- Teach-in setting via +/SET/- push-button/switch, remote input or IO-Link
- Standard 2 m cable or M8 4-pole connection

APPLICATIONS

- Processing and Packaging machinery
- Electronics assembling
- Pharmaceutical industry

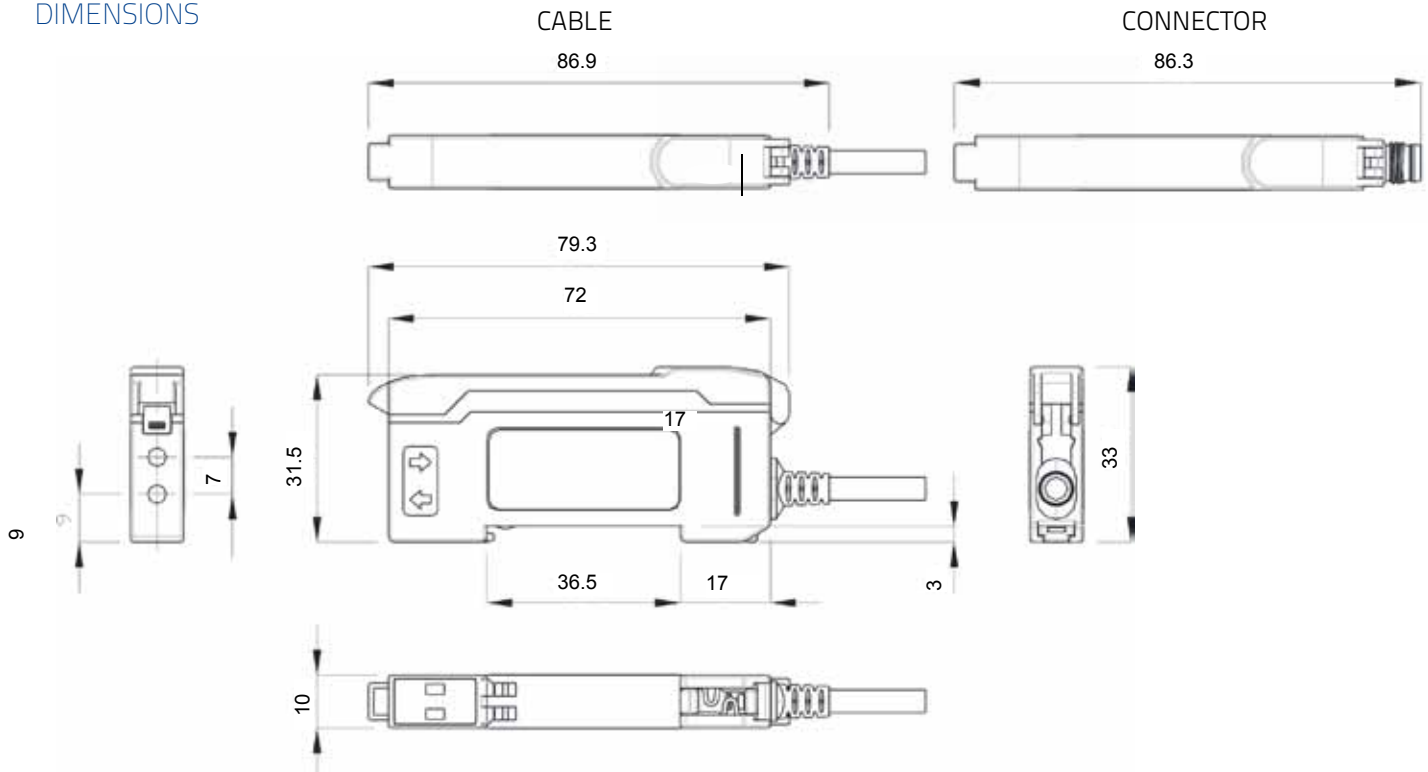


| S70 | | |
|-----------------------------|-----------|--|
| Response time | | Super high speed: 10 μ s (S70...E2) High speed: 200 μ s (S70...E1), 15 μ s (S70...E2) Fast: 50 μ s (S70...E2) Standard: 500 μ s (S70...E1), 250 μ s (S70...E2) Medium range: 500 μ s (S70...E2) Long range: 2 ms (S70...E1), 1 ms (S70...E2) Extra long range: 5 ms (S70...E1) |
| Repeatability | | Super high speed: 5 μ s (S70...E2) High speed: 66 μ s (S70...E1), 5 μ s (S70...E2) Fast: 12 μ s (S70...E2) Standard: 100 μ s (S70...E1), 50 μ s (S70...E2) Medium range: 80 μ s (S70...E2) Long range: 100 μ s (S70...E1), 165 μ s (S70...E2) Extra long range: 100 μ s (S70...E1) |
| Power supply | Vdc | 10...30 V, 18...30 V (IO-Link mod.) |
| | Vac | |
| | Vac/dc | |
| Output | PNP | ▪ |
| | NPN | ▪ |
| | NPN/PNP | |
| | relay | |
| | other | IO-Link |
| Connection | cable | ▪ |
| | connector | ▪ |
| | pig-tail | |
| Approximate dimensions (mm) | | 10x79x31.5 |
| Housing material | | ABS and polycarbonate |
| Mechanical protection | | IP50, NEMA 1 |

TECHNICAL DATA

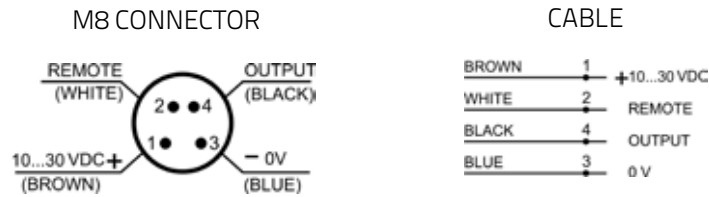
| | |
|---------------------------------------|--|
| Power supply | 10...30 Vdc (reverse polarity protection) 18...30 Vdc (IO-Link mod. S70...PZ) |
| Ripple | 10% max. |
| Consumption (output current excluded) | 40 mA max. (standard display mode), 30 mA max. (ECO display mode) |
| Light emission | red 660 nm (mod. S70...E1) red 635 nm (mod. S70...E2) |
| Setting | + / SET / - push-button, LIGHT / DARK switch, RUN / PRG / ADJ mode switch |
| Indicators | yellow OUTPUT LED red SIGNAL LEVEL 4-digit display green THRESHOLD 4-digit display |
| Output | PNP or NPN PNP and push-pull (IO-Link mod. S70...PZ) |
| Output current | 100 mA max. |
| Saturation voltage | 1,5 V max. (mod. S70...N) 2 V max. (mod. S70...P/PZ) |
| Response time | S70...E1: 200 µs (High Speed), 500 µs (Standard), 2 ms (Long Range), 5 ms (Extra Long Range) S70...E2: 10 µs (Super High Speed), 15 µs (High Speed), 50 µs (Fast), 250 µs (Standard), 500 µs (Medium Range), 1 ms (Long Range) |
| Switching frequency | S70...E1: 2,5 kHz (High Speed), 1 kHz (Standard), 250 Hz (Long Range), 100 Hz (Extra Long Range) S70...E2: 50 kHz (Super High Speed), 33 kHz (High Speed), 10 kHz (Fast), 2 kHz (Standard), 1 kHz (Medium Range), 500 Hz (Long Range) |
| IO-Link interface | baud rate: 38400 bps (COM2) process data width: 16 bits IODD files: provide all programming options of top panel interface, plus additional functionality |
| Connection | 2 m cable, M8 4-pole connector |
| Dielectric strength | 500 Vac, 1 min between electronics and housing |
| Insulating resistance | >20 MΩ, 500 Vdc between electronics and housing |
| Electrical protection | class 2 |
| Mechanical protection | IP50, NEMA 1 |
| Ambient light rejection | according to EN 60947-5-2 |
| Vibrations | 0,5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6) |
| Shock resistance | 11 ms (30 G) 6 shock for every axis (EN60068-2-27) |
| Housing material | ABS and polycarbonate |
| Operating temperature | -10 ... 55 °C |
| Storage temperature | -25 ... 85 °C |
| Weight | 69 g max. cable vers., 21 g max. conn. vers. |

DIMENSIONS



FIBER OPTIC SENSORS

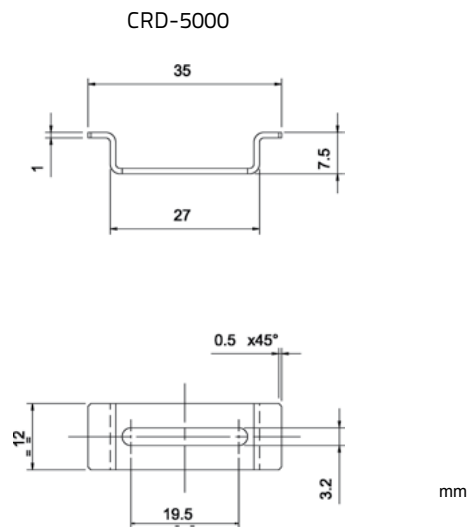
CONNECTIONS



MODEL SELECTION AND ORDER INFORMATION

| OPTIC FUNCTION | RESPONSE TIME | CONNECTION | OUTPUT | MODEL | ORDER No. |
|----------------|----------------------|--------------|------------------------|-------------|-----------|
| Optic fiber | 200 μ s ... 5 ms | 2 m Cable | NPN | S70-2-E1-N | 950561000 |
| | | | PNP | S70-2-E1-P | 950561010 |
| | | M8 Connector | NPN | S70-5-E1-N | 950561060 |
| | | | PNP | S70-5-E1-P | 950561020 |
| | 10 μ s ... 1 ms | M8 Connector | PNP, push-pull IO-Link | S70-5-E1-PZ | 950561030 |
| | | | NPN | S70-5-E2-N | 950561040 |
| | | | PNP | S70-5-E2-P | 950561050 |

ACCESSORIES



| MODEL | DESCRIPTION | ORDER No. |
|----------|---------------------------|-----------|
| CRD-5000 | DIN rail mounting bracket | 95ACC2790 |

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 |
| | | 5 m | CS-B1-02-R-05 | 95A251640 |
| Radial M8 Connector | 4-pole, grey, P.V.C. | 3 m | CS-B2-02-G-03 | 95A251450 |
| | | 5 m | CS-B2-02-G-05 | 95A251460 |
| | | 7 m | CS-B2-02-G-07 | 95A251470 |
| | | 10 m | CS-B2-02-G-10 | 95A251530 |
| | 4-pole, P.U.R. | 2 m | CS-B2-02-R-02 | 95A251630 |
| | | 5 m | CS-B2-02-R-05 | 95A251650 |



FIBER OPTIC SENSORS

OF/OFA series

Complete range of optic fibers: universal or advanced models

- Flexible models
- High temperature models (up to 125 °C)
- Fiber array with parallel beams for proximity or through beam detection
- Fixed focus proximity with axial, radial or lateral optics
- Proximity with 90° optics self-contained
- Focusing, collimating and deviating lenses



| OF/OFA | |
|-----------------------------|---|
| Through beam | Mechanical characteristics, length, diameter of the optic fiber, as well as the switching frequencies, light emitted and resolution of the optic fiber amplifier, affect the operating distances. Refer to the manuals to find the proper operating distance. |
| Diffuse proximity | |
| Fixed focus | |
| OF diameter | M3, M4, M6 |
| OFA number of emitted beams | 1, 16, 32 |
| Cable lengths | 1, 2 m |
| Operating temperature | -40...+60 °C (OF) -40...125 °C (OF-...-HT) -30...+70 °C (OFA) |
| Core material | PMMA plastic |
| Sheath material | PE plastic |
| Terminal material | Nickel-plated brass (OF), Stainless steel, Aluminium, ABS (OFA) |
| Mechanical protection | IP67 |

| OF series | | | | | |
|----------------|-------------------|----------|-------------|-------------|-------------|
| OPTIC FUNCTION | FIBER TYPE | LENGTH | TERMINAL | MODEL | ORDER No. |
| Through beam | standard | 1 m | M4x0.7 mm | OF-19-ST-10 | 576021901 |
| | standard | 2 m | M4x0.7 mm * | OF-23-ST-20 | 576022300 |
| | thin (Ø 1 mm) | 1 m | M2x0.4 mm | OF-25-TN-10 | 576022500 |
| | standard | 2 m | M4x0.7 mm | OF-43-ST-20 | 95A201350 |
| | high-temperature | 2 m | M4x0.7 mm | OF-43-HT-20 | 95A201280 |
| | ultra-flexible | 2 m | M4x0.7 mm | OF-43-UF-20 | 95A201290 |
| | high-efficiency | 2 m | M4x0.7 mm | OF-43-HP-20 | 95A201300 |
| Proximity | standard | 1 m | M6x1 mm | OF-18-ST-10 | 576021801 |
| | standard | 2 m | M6x1 mm * | OF-22-ST-20 | 576022200 |
| | standard | 2 m | M4x0.7 mm | OF-24-ST-20 | 576022400 |
| | thin (Ø 1 mm) | 1 m | M3x0.5 mm | OF-26-TN-10 | 576022600 |
| | thin (Ø 1 mm) | 1 m | M3x0.5 mm * | OF-28-TN-10 | 576022800 |
| | standard | 2 m | Ø 3x15 mm | OF-38-ST-20 | 95A201070 |
| | standard | 2 m | M6x0.75 mm | OF-42-ST-20 | 95A201340 |
| | high-temperature | 2 m | M6x0.75 mm | OF-42-HT-20 | 95A201250 |
| | ultra-flexible | 2 m | M6x0.75 mm | OF-42-UF-20 | 95A201260 |
| | high-efficiency | 2 m | M6x0.75 mm | OF-42-HP-20 | 95A201270 |
| | Coaxial proximity | standard | 2 m | M6x1 mm | OF-36-ST-20 |
| extra-flexible | | 2 m | M6x1 mm | OF-36-XF-20 | 95A201330 |
| standard | | 2 m | M4x0.7 mm | OF-44-ST-20 | 95A201310 |
| extra-flexible | | 2 m | M4x0.7 mm | OF-44-XF-20 | 95A201320 |

* a bendable stainless steel extension 90mm long protrudes from the threaded optic head



| OFA series | | | | | |
|-----------------------|-----------------------|--------|----------|-------------|-----------|
| OPTIC FUNCTION | FIBER TYPE | LENGTH | TERMINAL | MODEL | ORDER No. |
| Through beam | axial, 16 beam array | 2 m | 15x15 mm | OFA-1-AE-20 | 95A201170 |
| | radial, 16 beam array | 2 m | 15x15 mm | OFA-1-AS-20 | 95A201180 |
| Proximity | axial, 32 beam array | 2 m | 20x20 mm | OFA-2-AE-20 | 95A201150 |
| | radial, 32 beam array | 2 m | 20x20 mm | OFA-2-AS-20 | 95A201160 |
| | radial | 2 m | 5x65 mm | OFA-6-RA-20 | 95A201140 |
| Fixed focus proximity | axial | 2 m | 15x20 mm | OFA-4-FE-20 | 95A201200 |
| | lateral | 2 m | 15x20 mm | OFA-4-FF-20 | 95A201210 |
| | radial | 2 m | 15x20 mm | OFA-4-FS-20 | 95A201190 |



| OF Accessories | | | |
|---|-----------------|-------|-----------|
| DESCRIPTION | SUITABLE FIBRES | MODEL | CODE N° |
| 2 pcs 90° deviating lenses | OF-43-XX | AF-1 | 95ACC2690 |
| 2 pcs long distance collimating lenses (x 4) | OF-43-XX | AF-2 | 95ACC2700 |
| 1 pc focusing lens with 4 mm resolution | OF-44-XX | AF-3 | 95ACC2710 |
| 1 pc focusing lens with 0.4 mm resolution | OF-44-XX | AF-4 | 95ACC2720 |
| 2 pcs adapters Ø 2.2 mm for thin fibres | OF-XX-TN | AF-5 | 95ACC2730 |
| 1 pc metal sheath for m6 x 0.75 fibres | OF-42-XX | AF-7 | 95ACC2750 |
| 1 pc metal sheath for m4 x 07 fibres | OF-43-XX (*) | AF-9 | 95ACC2770 |
| fibre-cutting tool with Ø 2.2 mm and Ø 1.1 mm holes | ALL | AF-11 | 95ACC2780 |

* 2 sheaths have to be ordered for both the emitter-receiver sections

FORK SENSORS

SR23

High efficiency fork sensor for booklet and multilayer labels detection

- Multilayer labels detection
- Up to 0,5 mm of minimum size labels/gap
- 5 mm slot width
- 50 mm slot depth
- Dynamic or static setting through single push-button
- 12 kHz switching frequency
- Compact and robust housing, IP65
- M8 connector or 2 m cable models
- PNP or NPN models



APPLICATIONS

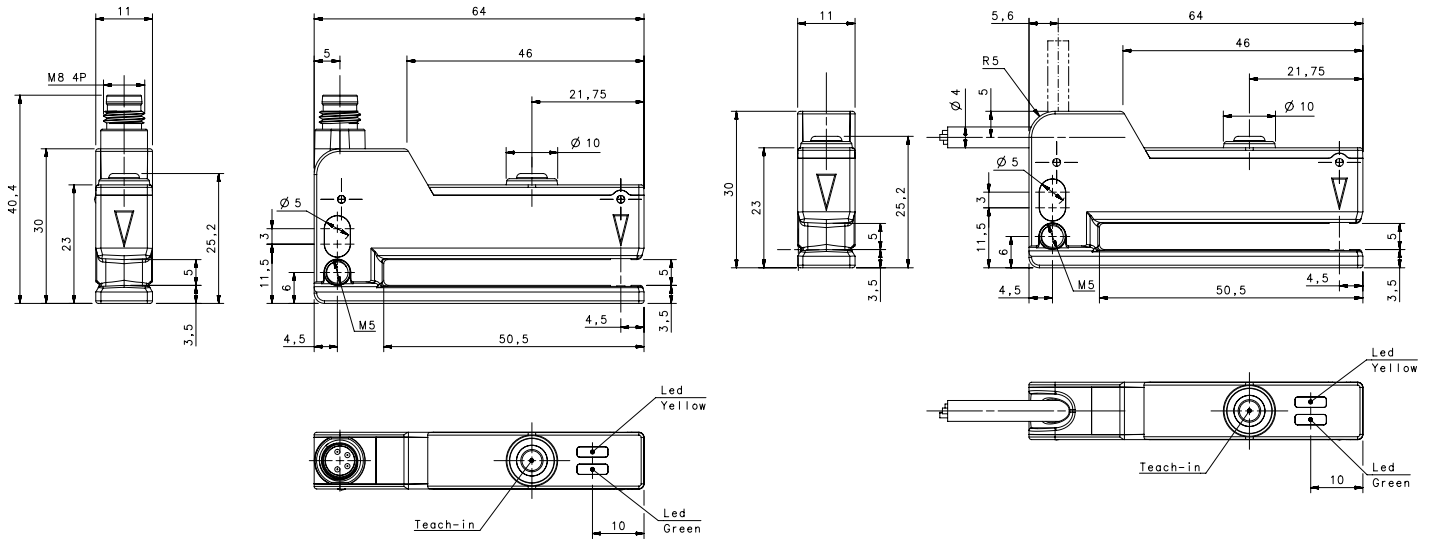
- Processing and Packaging machinery
- Automatic labelers

| SR23 | | |
|-----------------------------|-----------|---------------------------------|
| Slot width | | 5 mm |
| Slot depth | | 50 mm |
| Switching frequency | | 12 kHz |
| Light emission | | IR LED |
| Setting | | push button |
| Power supply | Vdc | 10...30 Vdc |
| | Vac | |
| | Vac/dc | |
| Output | PNP | ▪ |
| | NPN | ▪ |
| | NPN/PNP | |
| | relay | |
| | other | |
| Connection | cable | ▪ |
| | connector | ▪ |
| | pig-tail | |
| Approximate dimensions (mm) | | 30x63x10 |
| Housing material | | Alluminum (Zama), Plastic (PBT) |
| Mechanical protection | | IP65 |

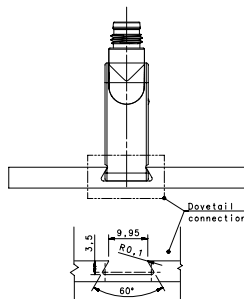
TECHNICAL DATA

| | |
|--|--|
| Power supply | 10 ... 30 Vdc (reverse polarity protection) |
| Ripple | 2 Vpp max. |
| Consumption (output current excluded) | 30 mA max. |
| Light emission | IR LED 850 nm |
| Setting | SET push-button |
| Indicators | yellow OUTPUT LED green READY LED |
| Output | PNP or NPN |
| Output current | 100 mA max. |
| Saturation voltage | 2 V max. |
| Slot width | 5 mm |
| Slot depth | 50 mm |
| Minimum label width | 0,5...2 mm |
| Minimum space between labels | 0,5...2 mm |
| Speed of the conveyor during setting procedure | 20 m/min (30 cm/s) max. |
| Response time | 40 µs max. |
| Switching frequency | 12 kHz max. |
| Connection | M8 4-pole connector, 2 m cable |
| Dielectric strenght | 500 Vac, 1 min between electronics and housing |
| Insulating resistance | > 20 MΩ, 500 Vdc between electronics and housing |
| Mechanical protection | IP65 |
| Ambient light rejection | according to EN 60947-5-2 |
| Vibrations | 0,5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6) |
| Shock resistance | 11 ms (30 G) 6 shock for every axis (EN60068-2-27) |
| Housing material | Aluminum (Zama) |
| Cover material | PBT |
| Lens material | PC |
| Operating temperature | -20 ... 55°C |
| Storage temperature | -20 ... 70°C |
| Weight | 85 g cable vers., 46 g M8 conn. vers. |

DIMENSIONS



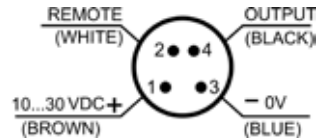
DOVETAIL GUIDE MOUNTING



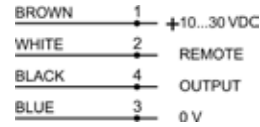
FORK SENSORS

CONNECTIONS

M8 CONNECTOR



CABLE

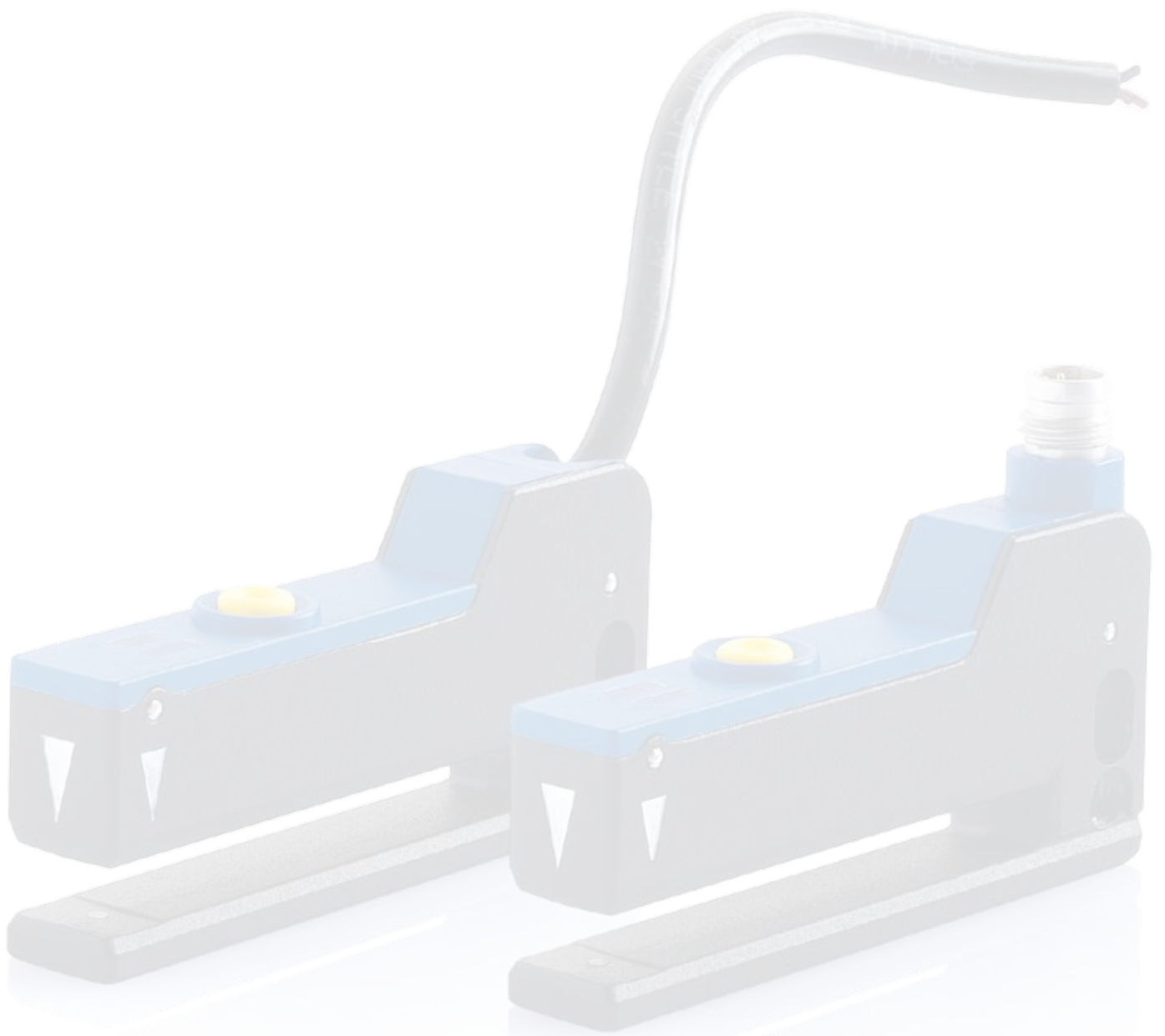


MODEL SELECTION AND ORDER INFORMATION

| OPTIC FUNCTION | CONNECTION | OUTPUT | MODEL | ORDER No. |
|----------------|--------------|--------|--------------|-----------|
| Fork Sensor | 2m Cable | PNP | SR23-2-IR-PH | 953161000 |
| | | NPN | SR23-2-IR-NH | 953161020 |
| | M8 Connector | PNP | SR23-5-IR-PH | 953161010 |
| | | NPN | SR23-5-IR-NH | 953161030 |

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 |
| | | 5 m | CS-B1-02-R-05 | 95A251640 |
| Radial M8 Connector | 4-pole, grey, P.V.C. | 3 m | CS-B2-02-G-03 | 95A251450 |
| | | 5 m | CS-B2-02-G-05 | 95A251460 |
| | | 7 m | CS-B2-02-G-07 | 95A251470 |
| | | 10 m | CS-B2-02-G-10 | 95A251530 |
| | 4-pole, P.U.R. | 2 m | CS-B2-02-R-02 | 95A251630 |
| | | 5 m | CS-B2-02-R-05 | 95A251650 |



FORK SENSORS

SR21

2mm high-resolution fork sensors for labeling and packaging

- 25 kHz high switching frequency
- IR or red/green light models
- Detection of labels (SR21-IR) or print register mark on transparent films (SR21-RG)
- 4 wire NPN and PNP output



APPLICATIONS

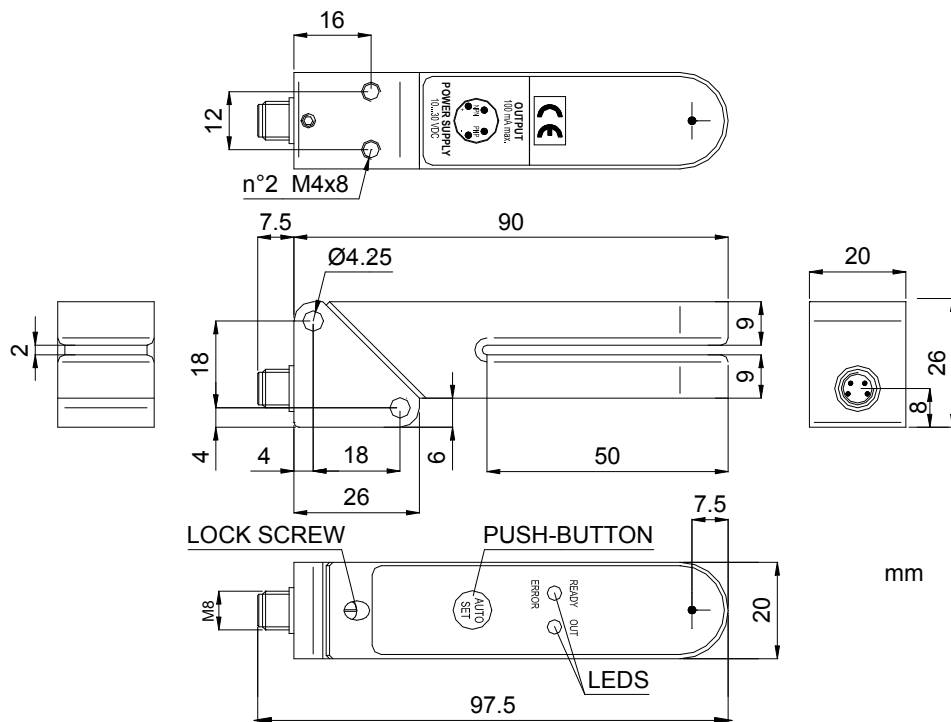
- Packaging and labeling machinery
- Print and apply systems



| SR21 | | |
|-----------------------------|-----------|-------------------------|
| Slot width | | 2 mm |
| Slot depth | | 50 mm |
| Switching frequency | | 25 kHz |
| Light emission | | IR LED red/green LED |
| Setting | | push button |
| Power supply | Vdc | 10...30 V |
| | Vac | |
| | Vac/dc | |
| Output | PNP | ▪ |
| | NPN | ▪ |
| | NPN/PNP | |
| | relay | |
| Connection | other | |
| | cable | |
| | connector | ▪ |
| | pig-tail | |
| Approximate dimensions (mm) | | 20x90x26 |
| Housing material | | Zama |
| Mechanical protection | | IP65 |

| TECHNICAL DATA | |
|---------------------------------------|--|
| Power supply | 10 ... 30 Vdc (limit values) |
| Ripple | 2 Vpp max. |
| Consumption (output current excluded) | 55 mA max. |
| Light emission | red LED 633 nm/green LED 570 nm IR LED 880 nm |
| Setting | AUTO-SET push-button |
| Operating mode | LIGHT/DARK configurable |
| Indicators | yellow OUTPUT LED green/red READY/ERROR LED |
| Output | PNP and NPN |
| Output current | 100 mA max. |
| Saturation voltage | 2 V max. |
| Response time | 20 µs max. |
| Switching frequency | 25 kHz max. |
| Connection | M8 4-pole connector |
| Dielectric strength | 500 Vac, 1 min between electronics and housing |
| Insulating resistance | >20 MΩ, 500 Vdc between electronics and housing |
| Electrical protection | class 1 |
| Mechanical protection | IP65 |
| Ambient light rejection | according to EN 60947-5-2 |
| Vibrations | 0,5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6) |
| Shock resistance | 11 ms (30 G) 6 shock for every axis (EN60068-2-27) |
| Slot width | 2 mm |
| Resolution | 0,5 mm |
| Housing material | ZAMA |
| Lens material | glass |
| Operating temperature | -20 ... 60 °C |
| Storage temperature | -20 ... 70 °C |
| Weight | 115 g |

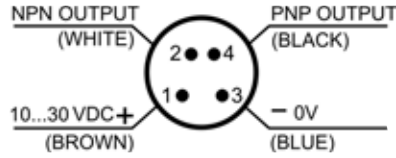
DIMENSIONS



FORK SENSORS

CONNECTIONS

M8 CONNECTOR



MODEL SELECTION AND ORDER INFORMATION

| OPTIC FUNCTION | EMISSION | CONNECTION | OUTPUT | MODEL | ORDER No. |
|----------------|---------------|--------------|---------|---------|-----------|
| Fork sensor | Infrared LED | M8 Connector | PNP/NPN | SR21-IR | 953151070 |
| | Red/Green LED | | | SR21-RG | 953151080 |

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 |
| | | 5 m | CS-B1-02-R-05 | 95A251640 |
| Radial M8 Connector | 4-pole, grey, P.V.C. | 3 m | CS-B2-02-G-03 | 95A251450 |
| | | 5 m | CS-B2-02-G-05 | 95A251460 |
| | | 7 m | CS-B2-02-G-07 | 95A251470 |
| | | 10 m | CS-B2-02-G-10 | 95A251530 |
| | 4-pole, P.U.R. | 2 m | CS-B2-02-R-02 | 95A251630 |
| | | 5 m | CS-B2-02-R-05 | 95A251650 |



FORK SENSORS

SRX3

High performance ultrasonic fork sensors for transparent label detection

- Dynamic or static teach models
- Slot size 3mm
- High resolution up to 2 mm label gap
- M8 connector with PNP or NPN output
- M12 connector with PNP/NPN output and external teach-in
- Rugged and sturdy aluminium housing



APPLICATIONS

- Detection of transparent, opaque, or metallic ink labels
- Double sheet detection
- Adhesive surface detection



| SRX3 | | |
|-----------------------------|-----------|--------------------|
| Slot width | | 3 mm |
| Slot depth | | 68 mm |
| Switching frequency | | 500 hz |
| Emission type | | Ultrasonic 300 Khz |
| Setting | | 300 mm |
| Power supply | Vdc | 10...30 Vdc |
| Output | PNP | • |
| | NPN | • |
| Connection | Connector | M12 5-pin |
| | Connector | M8 4-pin |
| Approximate dimensions (mm) | | 90 x 55 x 22 |
| Housing material | | Aluminium |
| Mechanical protection | | IP54 |

TECHNICAL DATA

SPECIFICATION

| | |
|----------------------|---------|
| Minimum pulse time | 1ms |
| Detectable size | > 2mm |
| Max. tape speed | 60m/min |
| Tape size | > 16mm |
| Ultrasonic frequency | 300 KHz |

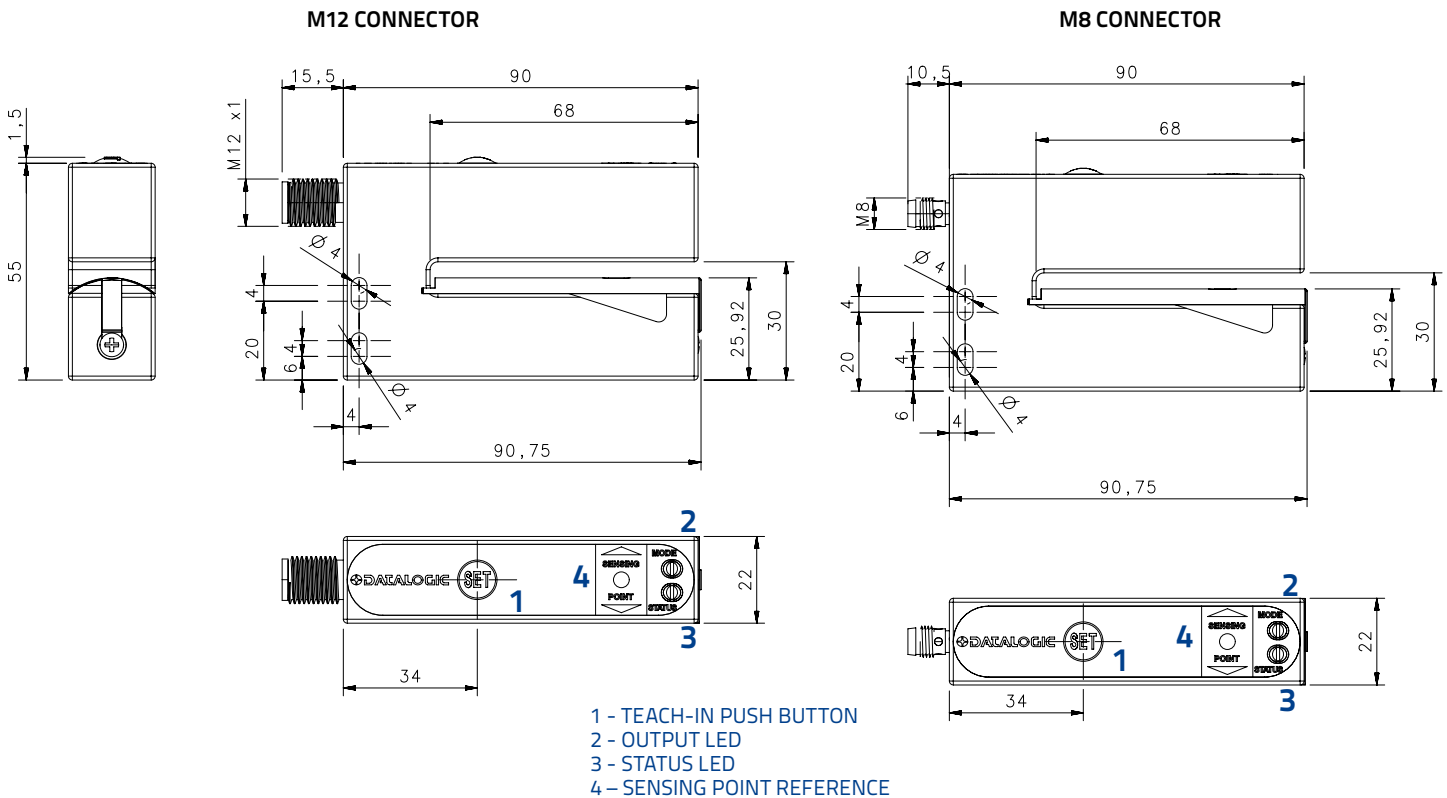
ELECTRICAL DATA

| | |
|---------------------------|----------------|
| Power supply | 12...30 Vdc |
| Current consumption | < 55mA |
| Ripple | 10% |
| Output current | 250 mA max. |
| Output saturation voltage | < 1,5V @ 100mA |
| Rising time | 0,8 us max |
| Falling time | 1,6 us max |
| Power On delay | 325 ms |
| Response time | 1ms |
| Switching frequency | 500 hz |
| Output | PNP / NPN |

MECHANICAL DATA

| | |
|-----------------------|--|
| Connection | M12 5 pin |
| Operating temperature | 0 °C ... +50 °C |
| Storage temperature | -25 °C ... +75 °C |
| Humidity | 35...85% rH non condensing |
| Vibration | 0.5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6) |
| Shock resistance | 11 ms (30 G) 6 shock for every axis (EN60068-2-27) |
| Housing material | Aluminium |
| Protection class | IP54 |
| Weight | 300g |

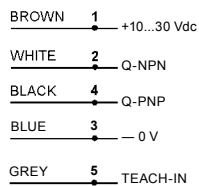
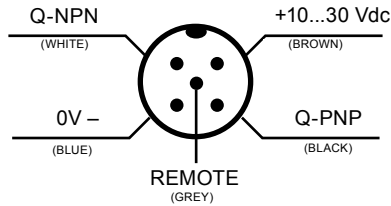
DIMENSIONS



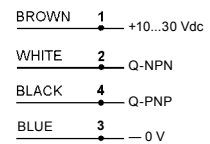
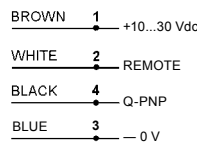
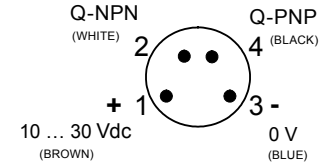
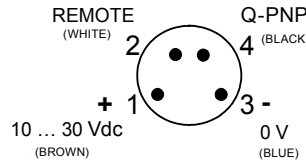
FORK SENSORS

CONNECTIONS

M12 CONNECTOR – 5 PIN



M8 CONNECTOR – 8 PIN



MODEL SELECTION AND ORDER INFORMATION

| ADJUSTMENT | OUTPUT | CONNECTION | MODEL | ORDER No. |
|------------------|-------------|------------|---------------------|-----------|
| Dynamic Teach-in | PNP/NPN+EXT | M12 5 pin | SRX3-5-US-M12-PNH | 953171000 |
| Static Teach-in | PNP/NPN+EXT | M12 5 pin | SRX3-5-US-3-M12-PNH | 953171010 |
| Dynamic Teach-in | PNP+EXT | M8 4 pin | SRX3-6-US-M8-PH | 953171020 |
| Static Teach-in | PNP+EXT | M8 4 pin | SRX3-6-US-3-M8-PH | 953171030 |
| Dynamic Teach-in | PNP/NPN | M8 4 pin | SRX3-6-US-M8-PN | 953171040 |
| Static Teach-in | PNP/NPN | M8 4 pin | SRX3-6-US-3-M8-PN | 953171050 |

CABLES

| TYPE | No. Of POLES | SHEAT | LENGTH | DESCRIPTION | ORDER No. |
|------------------------------|--------------|------------------|--------|----------------|-----------|
| Female M12 Connector (Axial) | 5-poles | Grey, P.V.C. | 3 m | CS-A1-03-G-03 | 95ACC2110 |
| | | | 5 m | CS-A1-03-G-05 | 95ACC2120 |
| | | | 10 m | CS-A1-03-G-10 | 95ACC2140 |
| | | Black, P.V.C. UL | 3 | CS-A1-03-U-03 | 95ASE1170 |
| | | | 5 | CS-A1-03-U-05 | 95ASE1180 |
| | | | 10 | CS-A1-03-U-10 | 95ASE1190 |
| M8 Connector (Axial) | 4-poles | Grey, P.V.C. | 3 m | CS-B-1-02-G-03 | 95A251420 |
| | | | 5 m | CS-B-1-02-G-05 | 95A251430 |
| | | | 7 m | CS-B-1-02-G-07 | 95A251440 |
| | | | 10 m | CS-B-1-02-G-10 | 95A251480 |
| | | P.U.R. | 2 m | CS-B-1-02-R-02 | 95A251500 |
| | | | 5 m | CS-B-1-02-R-05 | 95A251520 |
| M8 Connector (radial 90°) | 4-poles | Grey, P.V.C. | 3 m | CS-B2-02-G-03 | 95A251450 |
| | | | 5 m | CS-B2-02-G-05 | 95A251480 |
| | | | 7 m | CS-B2-02-G-07 | 95A251470 |
| | | P.U.R. | 5 m | CS-B2-02-R-05 | 95ACC2110 |



FORK SENSORS

SRF

Ultimate precision using LED or LASER emissions for high resolution

- Visible red emission models
- High resolution LASER models
- Sensitivity adjustment trimmer and DARK/LIGHT selectors
- Industrial metal housing with glass lenses



APPLICATIONS

- Packaging and labeling machinery
- Automotive
- Packaging lines

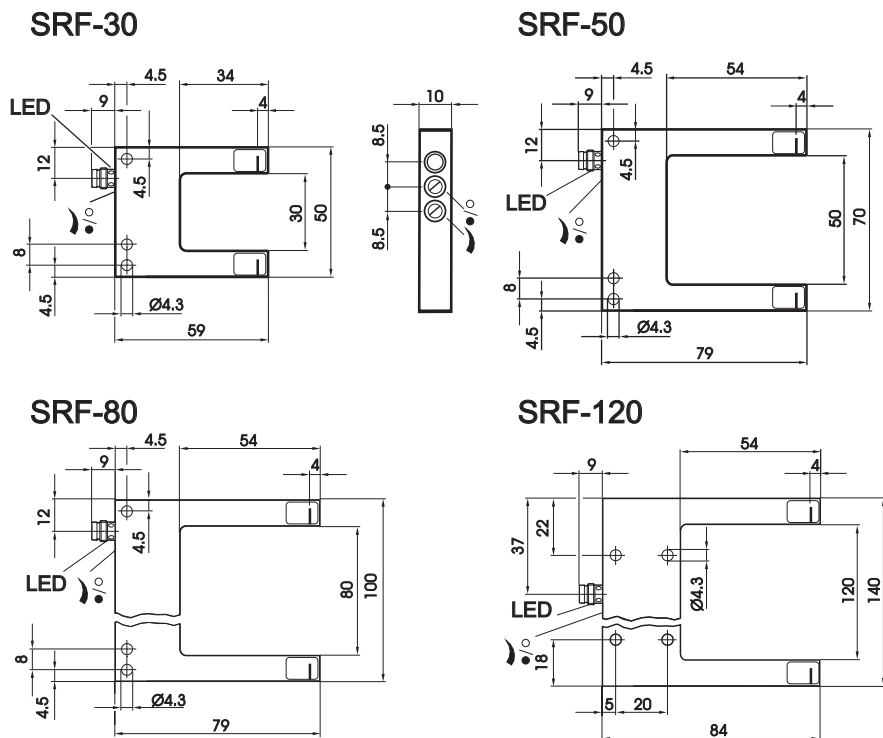


| SRF-30/50/80/120 | | |
|-----------------------------|-----------|-----------------------|
| Slot width | | 30 mm (SRF-30) |
| | | 50 mm (SRF-50) |
| | | 80 mm (SRF-80) |
| | | 120 mm (SRF-120) |
| Slot depth | | 34 mm (SRF-30) |
| | | 54 mm (SRF-50/80/120) |
| Switching frequency | | 1,5 kHz |
| | | 5 kHz (class 2 LASER) |
| Light emission | | red LED |
| | | red LASER (class 2) |
| Setting | | trimmer |
| Power supply | Vdc | 10...30 V |
| | Vac | |
| | Vac/dc | |
| Output | PNP | ▪ |
| | NPN | ▪ |
| | NPN/PNP | |
| | relay | |
| | other | |
| Connection | cable | |
| | connector | ▪ |
| | pig-tail | |
| Approximate dimensions (mm) | | 10x50x59 (SRF-30) |
| | | 10x70x79 (SRF-50) |
| | | 10x100x79 (SRF-80) |
| | | 10x140x84 (SRF-120) |
| Housing material | | Aluminium |
| Mechanical protection | | IP65 |

TECHNICAL DATA

| | |
|---------------------------------------|--|
| Power supply | 10 ... 30 Vdc (reverse polarity protection) |
| Ripple | 2 Vpp max. 35 mA max. |
| Consumption (output current excluded) | 20 mA max. (Laser mod.) |
| Light emission | red LED 640 nm red Laser 650 nm |
| Setting | sensitivity trimmer and N.O./N.C. trimmer |
| Operating mode | LIGHT/DARK configurable |
| Indicators | yellow LED |
| Output | PNP or NPN; NO; NC |
| Output current | 200 mA max. |
| Saturation voltage | 3 V max. PNP, 2,5 V max. NPN |
| Response time | 333 µs 100 µs (Laser mod.) |
| Switching frequency | 1,5 kHz 5 kHz (Laser mod.) |
| Connection | M8 3-pole connector |
| Dielectric strength | 500 Vac, 1 min between electronics and housing |
| Insulating resistance | >20 MΩ, 500 Vdc between electronics and housing |
| Electrical protection | class 1 |
| Mechanical protection | IP67 |
| Ambient light rejection | 5 kLux |
| Vibrations | 0,5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6) |
| Shock resistance | 11 ms (30 G) 6 shock for every axis (EN60068-2-27) |
| Slot width | 30, 50, 80, 120 mm |
| Resolution | 0,3 mm (mod. SRF...30), 0,5 mm (mod. SRF...50/80), 0,8 mm (mod. SRF...120) 0,05 mm (Laser mod. SRF...30), 0,08 mm (Laser mod. SRF...50), 0,1 mm (Laser mod. SRF...80), 0,15 mm (Laser mod. SRF...120) |
| Housing material | GDZn |
| Lens material | glass |
| Operating temperature | -10 ... 60 °C |
| Storage temperature | -20 ... 70 °C |
| Weight | 36 g (mod. SRF...30), 54 g (mod. SRF...50), 77 g (mod. SRF...80), 118 g (mod. SRF...120) 66 g (Laser mod. SRF...30), 110 g (Laser mod. SRF...50), 135 g (Laser mod. SRF...80), 210 g (Laser mod. SRF...120) |

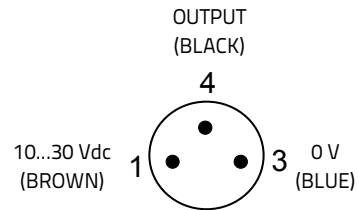
DIMENSIONS



FORK SENSORS

CONNECTIONS

M8 CONNECTOR

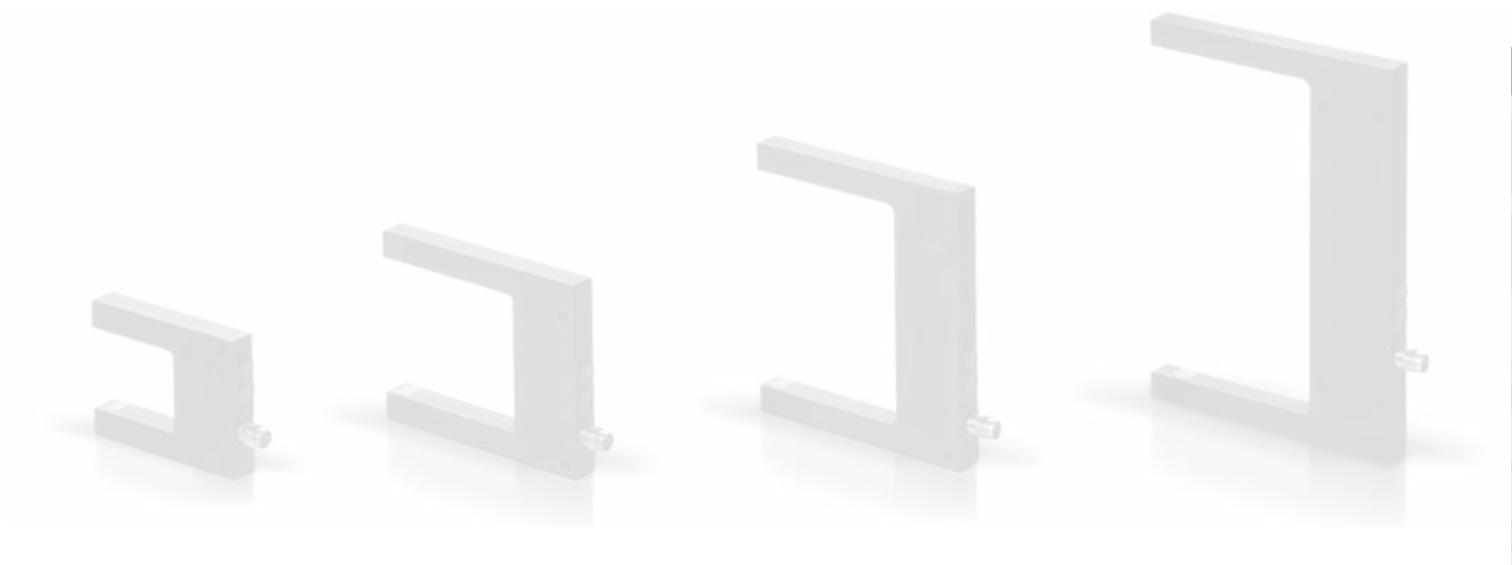


MODEL SELECTION AND ORDER INFORMATION

| OPTIC FUNCTION | EMISSION | CONNECTION | OUTPUT | MODEL | ORDER No. |
|----------------------|----------|--------------|--------|---------------|-----------|
| Fork sensor (30 mm) | Red LED | M8 Connector | PNP | SRF-30-5-P | 95B020050 |
| | LASER | | NPN | SRF-30-5-N | 95B020090 |
| Fork sensor (50 mm) | Red LED | M8 Connector | PNP | SRF-50-5-P | 95B020060 |
| | LASER | | NPN | SRF-50-5-N | 95B020100 |
| | | | PNP | SRF-L-50-5-P | 95B020140 |
| Fork sensor (80 mm) | Red LED | M8 Connector | PNP | SRF-80-5-P | 95B020070 |
| | LASER | | NPN | SRF-80-5-N | 95B020110 |
| | | | PNP | SRF-L-80-5-P | 95B020150 |
| Fork sensor (120 mm) | Red LED | M8 Connector | PNP | SRF-120-5-P | 95B020080 |
| | LASER | | NPN | SRF-120-5-N | 95B020120 |
| | | | PNP | SRF-L-120-5-P | 95B020160 |

CABLES

| TYPE | DESCRIPTION | LENGTH | MODEL | ORDER No. |
|---------------------|----------------------|--------|----------------|-----------|
| Axial M8 connector | 3-pole, Grey, P.V.C. | 3 m | CS -B1-01-G-03 | 95A251490 |
| | | 5 m | CS -B1-01-G-05 | 95A251510 |
| Radial M8 connector | | 3 m | CS -B2-01-G-03 | 95A251500 |
| | | 5 m | CS -B2-01-G-05 | 95A251520 |

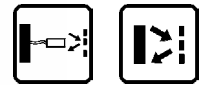


CONTRAST SENSORS

TL μ

All registration mark detection applications

- Teach-in, Remote settings
- Red/green or white LED emission
- Various interchangeable lenses and fiber-optic models
- Metal housing with orientable optics and connector



APPLICATIONS

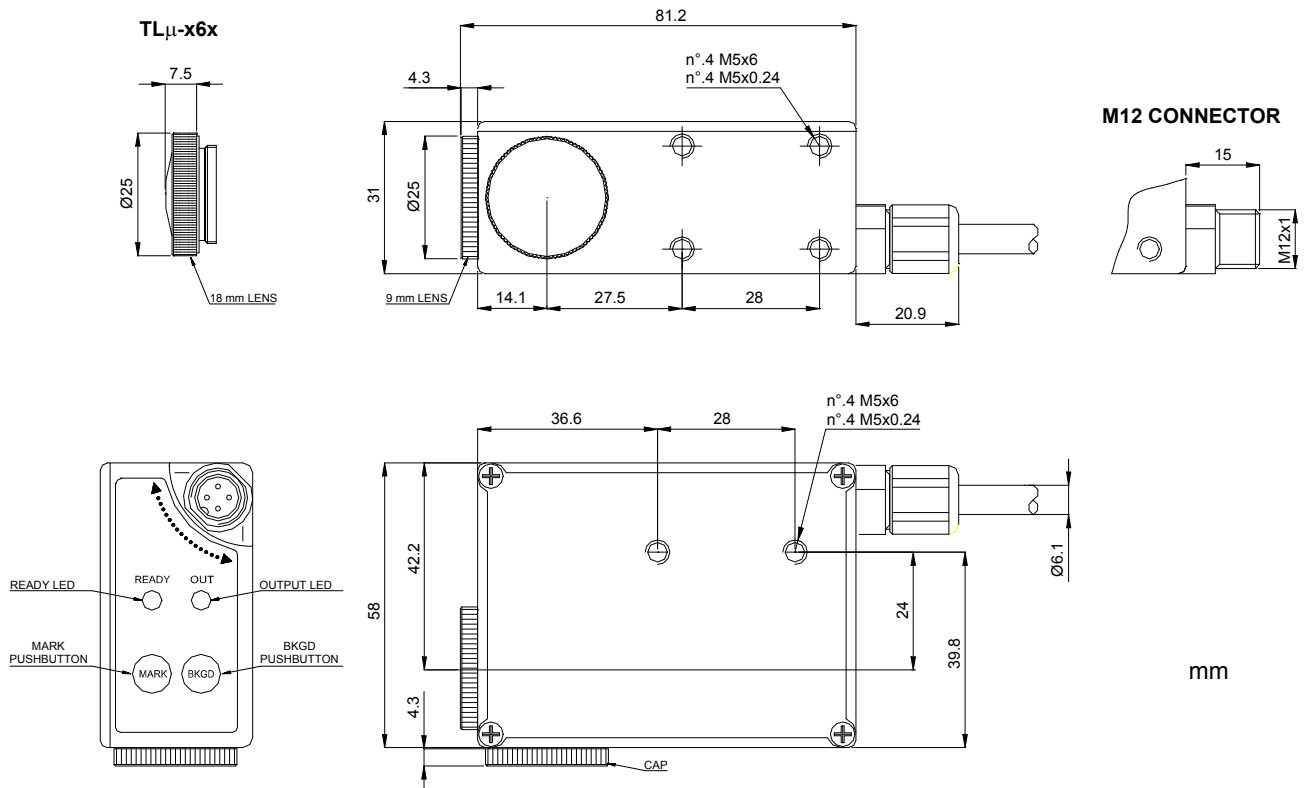
- Packaging and labeling machinery
- Beverage/Food/Cosmetic/Pharmaceutical industries
- Printing machinery

| TL μ | | |
|----------------------------------|-----------|--|
| Contrast sensor | | 6...12 mm (9 mm lens) 14...22 mm (18 mm lens) 22...34 mm (28 mm lens) 40...60 mm (50 mm lens) |
| Contrast sensor with fiber optic | | 0...3 mm (proximity) 0...10 mm (through beam) |
| Switching frequency | | 10 kHz 20 kHz |
| Light emission | | red/green LED white LED |
| Setting | | push buttons remote |
| Power supply | Vdc | 10...30 V |
| | Vac | |
| | Vac/dc | |
| | PNP | ▪ |
| Output | NPN | ▪ |
| | NPN/PNP | |
| | relay | |
| | other | 0...5 V Analog Output |
| Connection | cable | ▪ |
| | connector | ▪ |
| | pig-tail | |
| Approximate dimensions (mm) | | 31x81x58 |
| Housing material | | Zama |
| Mechanical protection | | IP67 |

TECHNICAL DATA

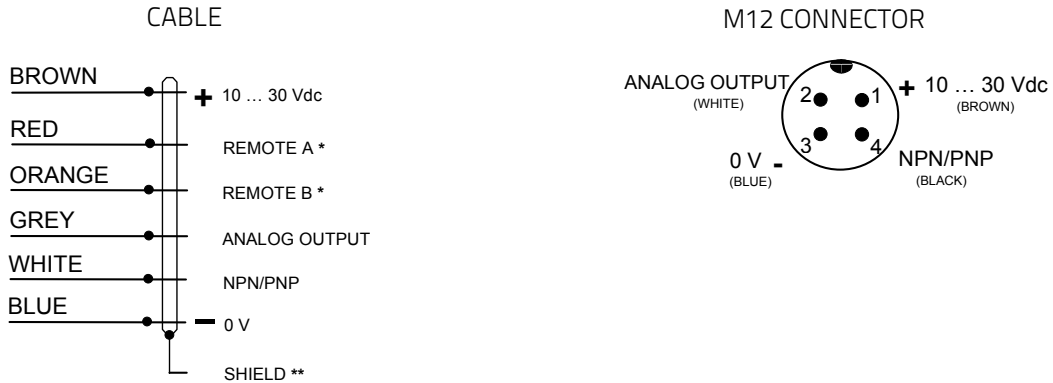
| | |
|---------------------------------------|---|
| Power supply | 10 ... 30 Vdc (limit values; reverse polarity protection) |
| Ripple | 2 Vpp max. |
| Consumption (output current excluded) | 80 mA max. |
| Light emission | green LED 526 nm/red LED 630 nm (mod. TL μ -0/1xx) white LED 400-700 nm (mod. TL μ -4/5xx) |
| Setting | teach-in push-buttons/remote by 2 wires, 4 settings storage cable version |
| Operating mode | Light/Dark automatic setting with teach-in procedure |
| Indicators | red OUTPUT LED green READY LED |
| Output | PNP or NPN; analog output |
| Output current | 200 mA max. |
| Saturation voltage | 1 V max. NPN vers., 2 V max. PNP vers. |
| Response time | 50 μ s max. (mod. TL μ -4xx) 25 μ s max. (mod. TL μ -5xx) |
| Switching frequency | 10 kHz max. (mod. TL μ -4xx) 20 kHz max. (mod. TL μ -5xx) |
| Connection | 3 m shielded cable \varnothing 6.1 mm, M12 4-pole connector |
| Dielectric strength | 500 Vac, 1 min between electronics and housing |
| Insulating resistance | >20 M Ω , 500 Vdc between electronics and housing |
| Electrical protection | class 1 |
| Mechanical protection | IP67 |
| Ambient light rejection | according to EN 60947-5-2 |
| Vibrations | 0,5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6) |
| Shock resistance | 11 ms (30 G) 6 shock for every axis (EN60068-2-27) |
| Minimum spot dimension | 1,5 x 5 mm (TL μ -x1x), 2 x 7 mm (TL μ -x6x), \varnothing 3 mm (TL μ -4xx/5xx) |
| Depth of field | \pm 3 mm (TL μ -x1x/4xx/5xx) / \pm 4 mm (TL μ -x6x) |
| Housing material | ZAMA |
| Lens material | glass |
| Operating temperature | -10 ... 55 °C |
| Storage temperature | -20 ... 70 °C |
| Weight | 450 g max. cable vers., 310 g max. connector vers. |

DIMENSIONS



CONTRAST SENSORS

CONNECTIONS

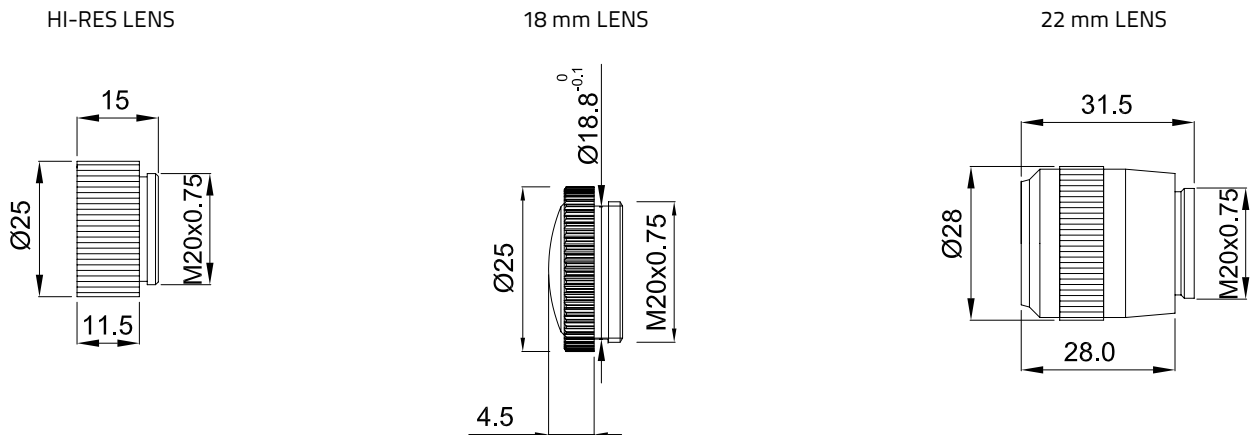


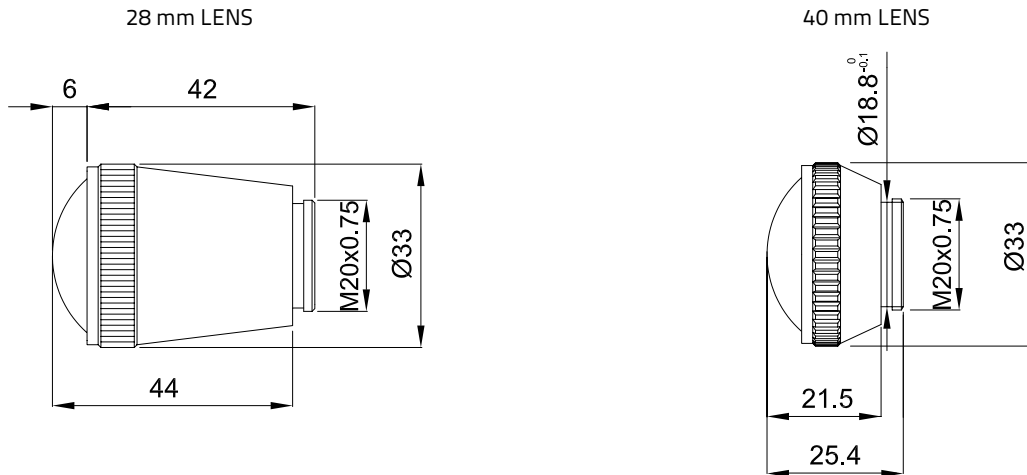
- * = Connect the unused REMOTE wires to 0 V.
- ** = The cable shield is insulated from the sensor housing; it is recommended to connect the shield to 0 V.

MODEL SELECTION AND ORDER INFORMATION

| OPTIC FUNCTION | EMISSION | OPTICS | CONNECTION | OUTPUT | MODEL | ORDER No. |
|-----------------------------|-----------------------------|---------------|---------------|----------------|----------------|-----------|
| Contrast sensor | Red/Green (Vertical spot) | 9 mm | 3m Cable | NPN | TL μ -011 | 964401000 |
| | | | | PNP | TL μ -111 | 964401080 |
| | | | M12 Connector | NPN | TL μ -015 | 964401020 |
| | | | | PNP | TL μ -115 | 964401100 |
| | Red/Green (Horizontal spot) | 9 mm | 3m Cable | NPN | TL μ -011L | 964401010 |
| | | | | PNP | TL μ -111L | 964401090 |
| | | | M12 Connector | NPN | TL μ -015L | 964401030 |
| | | | | PNP | TL μ -115L | 964401110 |
| | Red/Green (Vertical spot) | 18 mm | M12 Connector | NPN | TL μ -065 | 964401060 |
| | | | | PNP | TL μ -165 | 964401140 |
| M12 Connector | | | NPN | TL μ -415C | 954151330 | |
| | | | PNP | TL μ -515C | 954151360 | |
| White (Circular spot) | 9 mm | M12 Connector | NPN | TL μ -411C | 954151410 | |
| | | | PNP | TL μ -511C | 954151420 | |
| | | 3m Cable | NPN | TL μ -545 | 954151380 | |
| | | | PNP | TL μ -445 | 954151350 | |
| Fiber optic contrast sensor | White | Fiber optics | M12 Connector | | | |

ACCESSORIES





| MODEL | DESCRIPTION | ORDER No. |
|-------------|--|-----------|
| Lens Hi-Res | additional focussing glass lens with 9 mm focus (*) | 95ACC1050 |
| Lens No.18 | glass lens with 18 mm focus | 95ACC2680 |
| Lens No.22 | glass lens with 22 mm focus | 95ACC1100 |
| Lens No.28 | glass lens with 28 mm focus | 890000194 |
| Lens No.40 | glass lens with 40 mm focus | 95ACC2740 |
| Lens No.50 | glass lens with 50 mm focus | 573030511 |
| OF -30-5 | plastic fibre-optic L 50 cm - point-shaped spot proximity | 96B001070 |
| OF -31-10 | glass fibre-optic L 100 cm - point-shaped spot proximity | 96B201000 |
| OF -32-10 | glass fibre-optic L 100 cm - rectangular spot proximity | 96B211000 |
| OF -33-10 | glass fibre-optic L 100 cm - through beam | 96B221000 |
| OF -34-10 | glass fibre-optic L 100 cm - horizontal spot 90° proximity | 96B231000 |
| OF -35-10 | glass fibre-optic L 100 cm - vertical spot 90° proximity | 96B241000 |

* focussing lens to screw between the sensor and the normal 9 mm lens

CABLES

| TYPE | DESCRIPTION | LENGTH | MODEL | ORDER No. |
|----------------------|---------------------------------|-----------------------|---------------|-----------|
| Axial M12 Connector | 4-pole, grey, P.V.C. | 3 m | CS-A1-02-G-03 | 95A251380 |
| | | 5 m | CS-A1-02-G-05 | 95A251270 |
| | | 7 m | CS-A1-02-G-07 | 95A251280 |
| | | 10 m | CS-A1-02-G-10 | 95A251390 |
| | 4-pole, P.U.R. | 2 m | CS-A1-02-R-02 | 95A251540 |
| | | 5 m | CS-A1-02-R-05 | 95A251560 |
| Radial M12 Connector | 4-pole, grey, P.V.C. | 3 m | CS-A2-02-G-03 | 95A251360 |
| | | 5 m | CS-A2-02-G-05 | 95A251240 |
| | | 7 m | CS-A2-02-G-07 | 95A251245 |
| | | 10 m | CS-A2-02-G-10 | 95A251260 |
| | 4-pole, P.U.R. | 2 m | CS-A2-02-R-02 | 95A251550 |
| | | 5 m | CS-A2-02-R-05 | 95A251570 |
| Axial M12 Connector | 4-pole, shielded, black, P.V.C. | 3 m | CV-A1-22-B-03 | 95ACC1480 |
| | | 5 m | CV-A1-22-B-05 | 95ACC1490 |
| | | 10 m | CV-A1-22-B-10 | 95ACC1500 |
| | | 15 m | CV-A1-22-B-15 | 95ACC2070 |
| | | 25 m | CV-A1-22-B-25 | 95ACC2090 |
| Radial M12 Connector | 4-pole, shielded, black, P.V.C. | 3 m | CV-A2-22-B-03 | 95ACC1540 |
| | | 5 m | CV-A2-22-B-05 | 95ACC1550 |
| | | 10 m | CV-A2-22-B-10 | 95ACC1560 |
| Axial M12 Connector | 4-pole, U.L., black, P.V.C. | 3 m | CS-A1-02-U-03 | 95ASE1120 |
| | | 5 m | CS-A1-02-U-05 | 95ASE1130 |
| | | 10 m | CS-A1-02-U-10 | 95ASE1140 |
| | | 15 m | CS-A1-02-U-15 | 95ASE1150 |
| | | 25 m | CS-A1-02-U-25 | 95ASE1160 |
| Radial M12 Connector | 4-pole, black | Connector- not cabled | CS-A1-02-B-NC | G5085002 |
| | | Connector- not cabled | CS-A2-02-B-NC | G5085003 |

CONTRAST SENSORS

TL46

High performance contrast sensor for colored registration mark detection

- Wide-spectrum RGB or white LED emission
- 3 different models: basic, standard and enhanced
- Automatic, manual and dynamic settings
- 15, 20 or 30 kHz switching frequencies
- NPN/PNP and analog outputs
- Standard mounting, M12 connector rotatable to 5 positions



APPLICATIONS

- Packaging and labeling machinery
- Beverage/Food/Cosmetic/Pharmaceutical industries
- Printing machinery



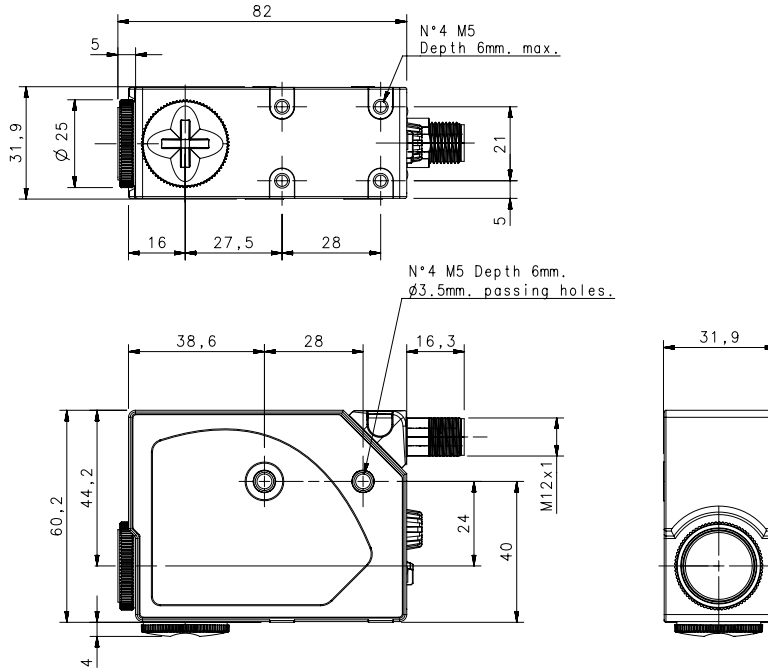
(*) ATEX II 3DG

| TL46 | | |
|-----------------------------|-----------|--------------------------|
| Contrast sensor | | 9 ±3 mm |
| | | 18 mm (Lens No.18 glass) |
| | | 22 mm (Lens No.22 glass) |
| | | 28 mm (Lens No.28 glass) |
| | | 40 mm (Lens No.40 glass) |
| Switching frequency | | 15 kHz |
| | | 20 kHz |
| | | 30 kHz |
| Light emission | | RGB LED |
| | | white LED |
| Setting | | push buttons |
| | | trimmer |
| Power supply | Vdc | 10...30 V |
| | Vac | |
| | Vac/dc | |
| Output | PNP | ▪ |
| | NPN | ▪ |
| | NPN/PNP | ▪ |
| | relay | |
| | other | 0...5 V Analog Output |
| Connection | cable | |
| | connector | ▪ |
| | pig-tail | |
| Approximate dimensions (mm) | | 31x81x58 |
| Housing material | | Aluminium |
| Mechanical protection | | IP67 |

| TECHNICAL DATA | |
|---------------------------------------|---|
| Power supply | 10 ... 30 Vdc (limit values) |
| Ripple | 2 Vpp max. |
| Consumption (output current excluded) | 40 mA max. at 24 Vdc (mod. TL46-A) 50 mA max. at 24 Vdc (mod. TL46-W) 85 mA max. at 24 Vdc 24 Vdc with bargraph ON in threshold adjustment mode, 55 mA max at 24 Vdc with bargraph OFF in normal functioning mode (mod. TL46-WL) 35 mA max. at 24 Vdc (mod. TL46-WLF) |
| Light emission | white LED 400-700 nm (mod. TL46-A-4xx) red LED 630 nm (mod. TL46-A-6xx) blu LED 465nm/green LED 520 nm/red LED 630 nm (mod. TL46-W/WL/WLF) |
| Setting | SET push-buttons (mod. TL46-W/WL/WLF) sensitivity trimmer (mod. TL46-A) |
| Operating mode | DARK/LIGHT selection by switch (mod. TL46-A) automatic DARK/LIGHT selection (mod. TL46-W/WL) automatic DARK/LIGHT selection in the target/background detection, selectable via wire in the dynamic detection (mod. TL46-WLF) |
| Indicators | yellow OUTPUT LED green READY LED, 4-digit display/DELAY LED/KEYLOCK LED (mod. TL46-WLF) orange ARROWS (mod. TL46-A), DELAY LED and KEYLOCK LED 5-segment bargraph (mod. TL46-WL) |
| Output | PNP or NPN; PNP/NPN (mod. TL46-W/WL/WLF); analog output (mod. TL46-A/W/WL) |
| Output current | 100 mA max. |
| Saturation voltage | 2 V max. |
| Response time | 33 μ s (mod. TL46-W) 25 μ s (mod. TL46-A/WL) 16 μ s (mod. TL46-WLF) |
| Switching frequency | 15 kHz (mod. TL46-W) 20 kHz (mod. TL46-A/WL) 30 kHz (mod. TL46-WLF) |
| Connection | M12 5-pole connector |
| Dielectric strength | 500 Vac, 1 min between electronics and housing |
| Insulating resistance | >20 M Ω , 500 Vdc between electronics and housing |
| Electrical protection | class 2, double insulation |
| Mechanical protection | IP67 |
| Ambient light rejection | according to EN 60947-5-2 |
| Vibrations | 0,5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6) |
| Shock resistance | 11 ms (30 G) 6 shock for every axis (EN60068-2-27) |
| Minimum spot dimension | 1,5 x 5 mm |
| Depth of field | \pm 3 mm |
| Housing material | aluminium |
| Lens material | mirror (mod. TL46-A), PMMA (mod. TL46-W), glass (mod. TL46-WL/WLF) |
| Operating temperature | -10 ... 55 °C |
| Storage temperature | -20 ... 70 °C |
| Weight | 170 g max. |

CONTRAST SENSORS

DIMENSIONS

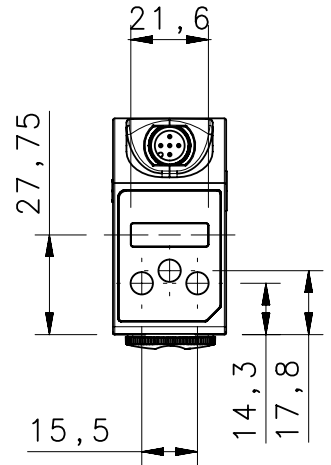
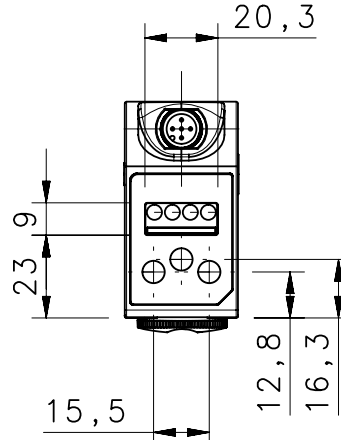
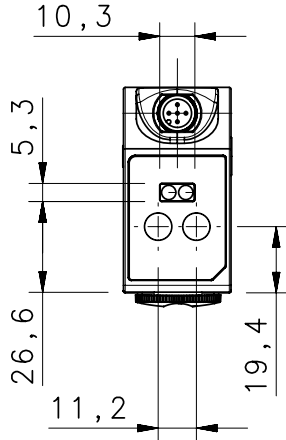
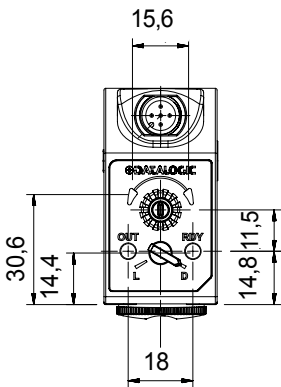


TL46-A

TL46-W

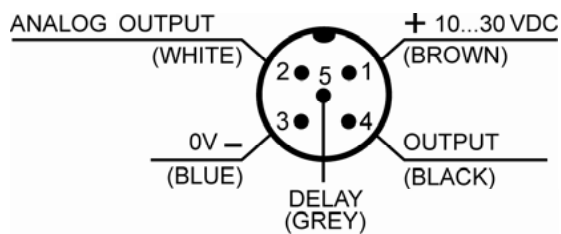
TL46-WL

TL46-WLF



CONNECTIONS

M12 CONNECTOR

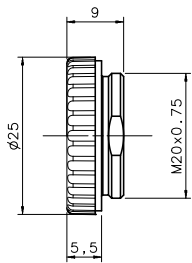


MODEL SELECTION AND ORDER INFORMATION

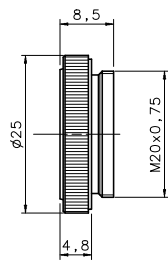
| OPTIC FUNCTION | SETTING & INDICATORS | EMISSION | OUTPUT | MODEL | ORDER No. |
|-----------------|---------------------------------|------------------------|---------|---------------|-----------|
| Contrast sensor | Trimmer 2 LEDs | WHITE vertical spot | PNP | TL46-A-415 | 954601070 |
| | | | NPN | TL46-A-425 | 954601080 |
| | | RED vertical spot | PNP | TL46-A-615 | 954601090 |
| | | | NPN | TL46-A-625 | 954601100 |
| | Push-buttons 2 LEDs | R.G.B. vertical spot | PNP/NPN | TL46-W-815 | 954601000 |
| | | R.G.B. horizontal spot | | TL46-W-815L | 954601010 |
| | Push buttons 4 LEDs bargraph | R.G.B. vertical spot | | TL46-WL-815 | 954601020 |
| | | R.G.B. horizontal spot | | TL46-WL-815L | 954601030 |
| | Push buttons 4 LEDs display | R.G.B. vertical spot | | TL46-WLF-815 | 954601040 |
| | | R.G.B. horizontal spot | | TL46-WLF-815L | 954601050 |

ACCESSORIES

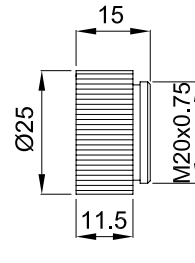
9 mm PMMA



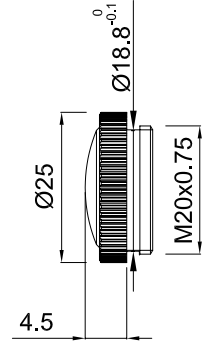
9 mm



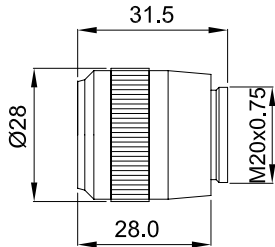
HI-RES LENS



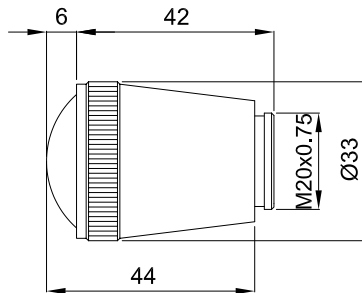
18 mm LENS



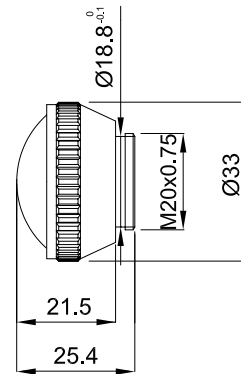
22 mm LENS



28 mm LENS



40 mm LENS



| MODEL | DESCRIPTION | ORDER No. |
|----------------|---|-----------|
| Lens No.9 | glass lens with 9 mm focus | 95ACC2670 |
| Lens No.9 PMMA | plastic lens with 9 mm focus | 95ACC2540 |
| Lens Hi-Res | additional focussing glass lens with 9 mm focus (*) | 95ACC1050 |
| Lens No.18 | glass lens with 18 mm focus | 95ACC2680 |
| Lens No.22 | glass lens with 22 mm focus | 95ACC1100 |
| Lens No.28 | glass lens with 28 mm focus | 890000194 |
| Lens No.40 | glass lens with 40 mm focus | 95ACC2740 |

* focussing lens to screw between the sensor and the normal 9 mm lens

CABLES

| TYPE | DESCRIPTION | LENGTH | MODEL | ORDER No. |
|---------------------|-----------------------------|--------|---------------|-----------|
| Axial M12 Connector | 5-pole, grey, P.V.C. | 3 m | CS-A1-03-G-03 | 95ACC2110 |
| | | 5 m | CS-A1-03-G-05 | 95ACC2120 |
| | | 10 m | CS-A1-03-G-10 | 95ACC2140 |
| | 5-pole, U.L., black, P.V.C. | 3 m | CS-A1-03-U-03 | 95ASE1170 |
| | | 5 m | CS-A1-03-U-05 | 95ASE1180 |
| | | 10 m | CS-A1-03-U-10 | 95ASE1190 |
| | | 15 m | CS-A1-03-U-15 | 95ASE1200 |
| | | 25 m | CS-A1-03-U-25 | 95ASE1210 |
| | | 50 m | CS-A1-03-U-50 | 95A252700 |

LUMINESCENCE SENSORS

LD46

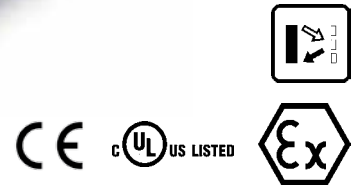
Luminescence sensor line in standard metal housing

- UV high power LED emission
- High sensitivity on fluorescent marks
- 10 - 50 mm detection distance
- 2 kHz switching frequency
- NPN/PNP and 0-5 V analog outputs



APPLICATIONS

- Packaging and labeling machinery
- Food, Cosmetic and Pharmaceutical
- Ceramic tiles selection and sorting



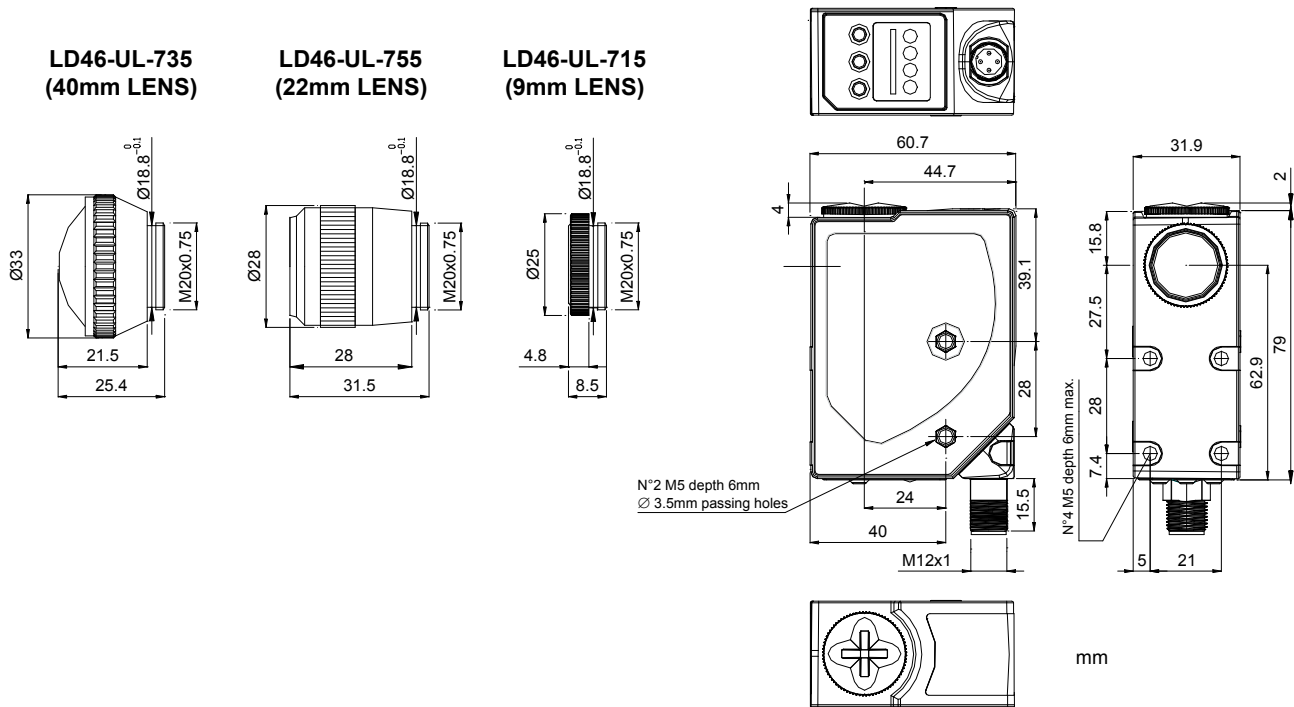
(*) ATEX II 3DG

| LD46 | | |
|-----------------------------|-----------|--|
| Luminescence sensor | | 10...20 mm (LD46-UL-715) 20...40 mm (LD46-UL-755) 30...50 mm (LD46-UL-735) |
| Spot dimension | | 2x8 mm at 10 mm 3x11 mm at 24 mm 4x15 mm at 50 mm |
| Switching frequency | | 2 kHz |
| Response Time | | 250 µs |
| Light emission | | UV-HP LED |
| Setting | | push buttons |
| Power supply | Vdc | 15...30 V |
| | Vac | |
| | Vac/dc | |
| Output | PNP | |
| | NPN | |
| | NPN/PNP | ▪ |
| | relay | |
| | other | 0...5 V Analog output |
| | cable | |
| Connection | connector | ▪ |
| | pig-tail | |
| Approximate dimensions (mm) | | 31x81x58 |
| Housing material | | aluminium |
| Mechanical protection | | IP67 |

TECHNICAL DATA

| | |
|---------------------------------------|--|
| Power supply | 15 ... 30 Vdc (limit values) |
| Ripple | 2 Vpp max. |
| Consumption (output current excluded) | 50 mA max. at 24 Vdc |
| Light emission | UV LED 375 nm |
| Setting | SET push-buttons |
| Indicators | yellow OUTPUT LED green READY LED orange DELAY LED and KEYLOCK LED 5-segment bargraph |
| Output | PNP/NPN; analog output |
| Output current | 100 mA max. |
| Saturation voltage | 2 V max. |
| Response time | 250 µs |
| Switching frequency | 2 kHz |
| Connection | M12 5-pole connector |
| Dielectric strength | 500 Vac, 1 min between electronics and housing |
| Insulating resistance | >20 MΩ, 500 Vdc between electronics and housing |
| Electrical protection | class 2, double insulation |
| Mechanical protection | IP67 |
| Ambient light rejection | according to EN 60947-5-2 |
| Vibrations | 0,5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6) |
| Shock resistance | 11 ms (30 G) 6 shock for every axis (EN60068-2-27) |
| Minimum spot dimension | 2 x 8 mm at 10 mm (mod. LD46-UL-715) 3x11 mm at 24 mm (mod. LD46-UL-755) 4x15 mm at 50 mm (mod. LD46-UL-735) |
| Housing material | aluminium |
| Lens material | glass |
| Operating temperature | -10 ... 55 °C |
| Storage temperature | -20 ... 70 °C |
| Weight | 180 g max. |

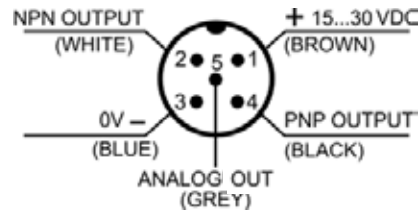
DIMENSIONS



LUMINESCENCE SENSORS

CONNECTIONS

M12 CONNECTOR

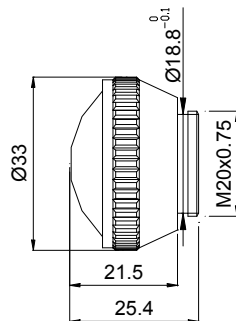


MODEL SELECTION AND ORDER INFORMATION

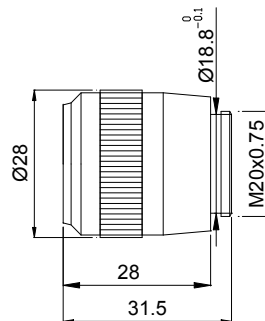
| OPTIC FUNCTION | EMISSION | CONNECTION | OUTPUT | MODEL | ORDER No. |
|---------------------|------------------------|---------------|---------|-------------|-----------|
| Luminescence sensor | 10-20 mm Vertical spot | M12 Connector | NPN/PNP | LD46-UL-715 | 955201000 |
| | 20-40 mm Vertical spot | | | LD46-UL-755 | 955201010 |
| | 30-50 mm Vertical spot | | | LD46-UL-735 | 955201020 |

ACCESSORIES

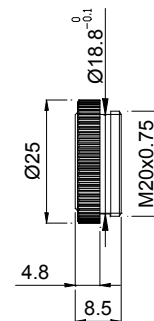
40 mm LENS
(LD46-UL-735)



22 mm LENS
(LD46-UL-755)



9 mm LENS
(LD46-UL-715)



| MODEL | DESCRIPTION | ORDER No. |
|------------|-----------------------------|-----------|
| Lens No.9 | glass lens with 9 mm focus | 95ACC2670 |
| Lens No.22 | glass lens with 22 mm focus | 95ACC1100 |
| Lens No.40 | glass lens with 40 mm focus | 95ACC2740 |

CABLES

| TYPE | DESCRIPTION | LENGTH | MODEL | ORDER No. |
|---------------------|----------------------------|--------|---------------|-----------|
| Axial M12 Connector | 5-pole, grey, P.V.C. | 3 m | CS-A1-03-G-03 | 95ACC2110 |
| | | 5 m | CS-A1-03-G-05 | 95ACC2120 |
| | | 10 m | CS-A1-03-G-10 | 95ACC2140 |
| | 5-pole, U.L., black, P.V.C | 3 m | CS-A1-03-U-03 | 95ASE1170 |
| | | 5 m | CS-A1-03-U-05 | 95ASE1180 |
| | | 10 m | CS-A1-03-U-10 | 95ASE1190 |
| | | 15 m | CS-A1-03-U-15 | 95ASE1200 |
| | | 25 m | CS-A1-03-U-25 | 95ASE1210 |
| | | 50 m | CS-A1-03-U-50 | 95A252700 |



COLOR & CONTRAST SENSORS

S65

Advanced color and contrast sensors in compact case

Color S65-V:

- 3 independent NPN or PNP outputs and RS 485 serial interface
- 3 channel color sensor with 10 tolerance levels
- Wide spectrum white light LED emission and RGB photo-receiver
- 2 push button setting with 4 digit display indicator

Contrast S65-W:

- High 12 bit resolution and 30 kHz switching frequency
- PNP or NPN output and RS 485 serial interface



APPLICATIONS

- Packaging lines
- Contrast reading
- Automatic machine

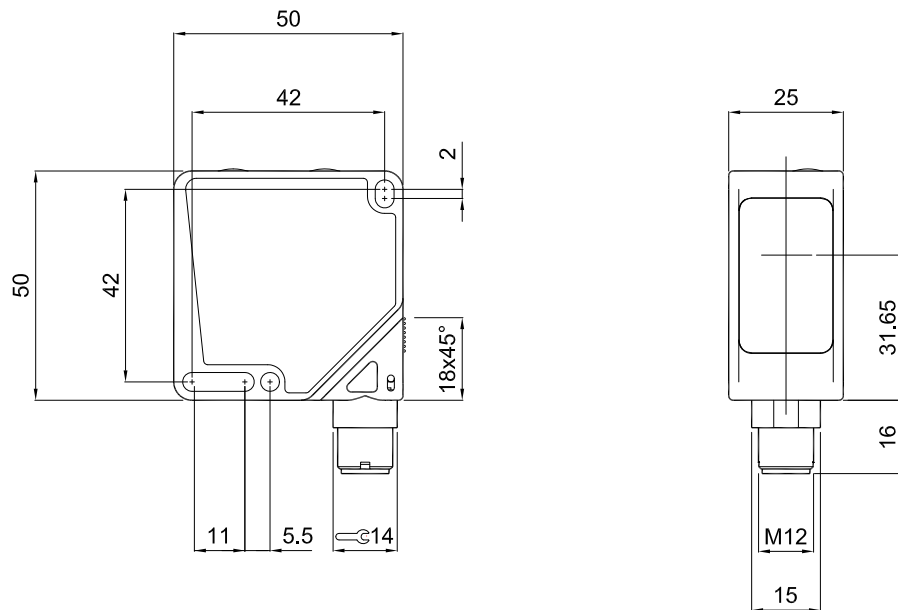


| S65 | | |
|-----------------------------|-----------|---|
| Contrast sensor | | 12...20 mm (S65-W) |
| Color sensor | | 5...45 mm (S65-V) |
| Switching frequency | | 30 kHz (S65-W) |
| | | 500 Hz (S65-V19 vers.) 1,5 kHz (S65-V09 vers.) |
| Light emission | | white LED |
| Serial interface | | RS485 |
| Setting | | push-buttons |
| Power supply | Vdc | 10...30 V |
| | Vac | |
| | Vac/dc | |
| Output | PNP | ▪ |
| | NPN | ▪ |
| | NPN/PNP | |
| | relay | |
| | other | 0...5 V Analog output (S65-W) |
| Connection | cable | |
| | connector | ▪ |
| | pig-tail | |
| Approximate dimensions (mm) | | 50x50x25 |
| Housing material | | ABS |
| Mechanical protection | | IP67 |

TECHNICAL DATA

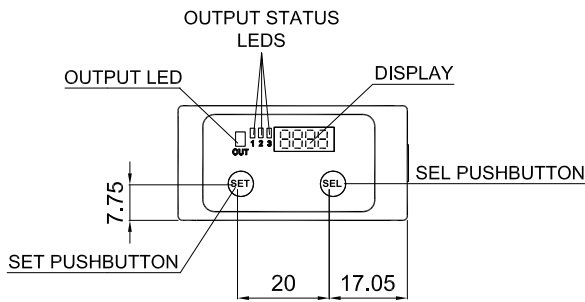
| | |
|---------------------------------------|---|
| Power supply | 10 ... 30 Vdc (limit values) |
| Ripple | 2 Vpp max. |
| Consumption (output current excluded) | 50 mA max. at 24 Vdc (mod. S65-W) 60 mA max. at 24 Vdc (mod. S65-V) |
| Light emission | white LED 400-700 nm |
| Setting | SET push-buttons SEL push-buttons (mod. S65-V) |
| Indicators | yellow OUTPUT LED green 4-digit display, 3 OUTPUT STATUS LEDs (S65-V), STABILITY and 2 OUTPUT DELAY LEDs (mod. S65-W) |
| Output | 1 PNP or NPN; analog output (mod. S65-W) 3 PNP or NPN; RS485 serial interface (mod. S65-V) |
| Output current | 100 mA max. |
| Saturation voltage | 2 V max. |
| Response time | 5 ms (norm) and 1 ms (fast) (mod. S65-V19) 335 μ s (mod. S65-V09) 16 μ s (mod. S65-W) |
| Switching frequency | 100 Hz (norm) and 500 Hz (fast) (mod. S65-V19) 1,5 kHz (mod. S65-V09) 30 kHz (mod. S65-W) |
| Connection | M12 5-pole connector (mod. S65-W standard vers.), M12 8-pole connector (mod. S65-W vers. with RS485 serial interface) M12 8-pole connector (mod. S65-V) |
| Dielectric strength | 500 Vac, 1 min between electronics and housing |
| Insulating resistance | >20 M Ω , 500 Vdc between electronics and housing |
| Electrical protection | class 2 |
| Mechanical protection | IP67 |
| Ambient light rejection | according to EN 60947-5-2 |
| Vibrations | 0,5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6) |
| Shock resistance | 11 ms (30 G) 6 shock for every axis (EN60068-2-27) |
| Minimum spot dimension | 3x1 mm at 19 mm (mod. S65-W) \varnothing 4 mm (mod. S65-V) |
| Depth of field | \pm 2 mm (mod. S65-W) |
| Housing material | ABS |
| Lens material | window and lenses in glass |
| Operating temperature | -10 ... 55 °C |
| Storage temperature | -20 ... 70 °C |
| Weight | 100 g max. |

DIMENSIONS

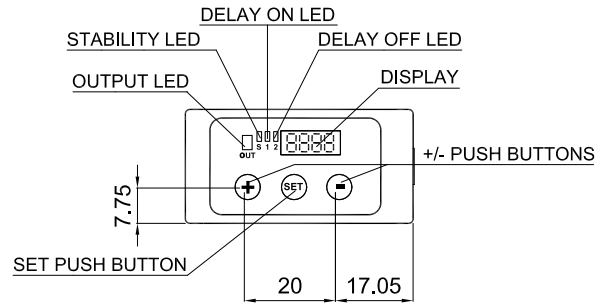


COLOR & CONTRAST SENSORS

Color sensor S65-V



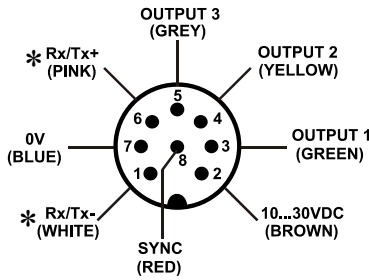
Contrast sensor S65-W



mm

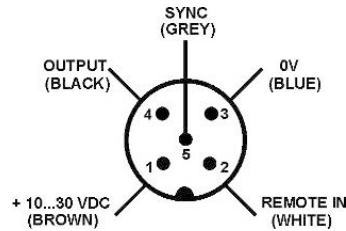
CONNECTIONS

M12 CONNECTOR - COLOR SENSOR S65-V

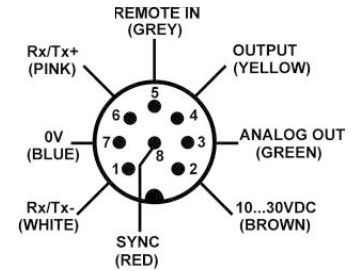


M12 CONNECTOR - CONTRAST SENSOR S65-W

standard versions



versions with RS485 serial interface



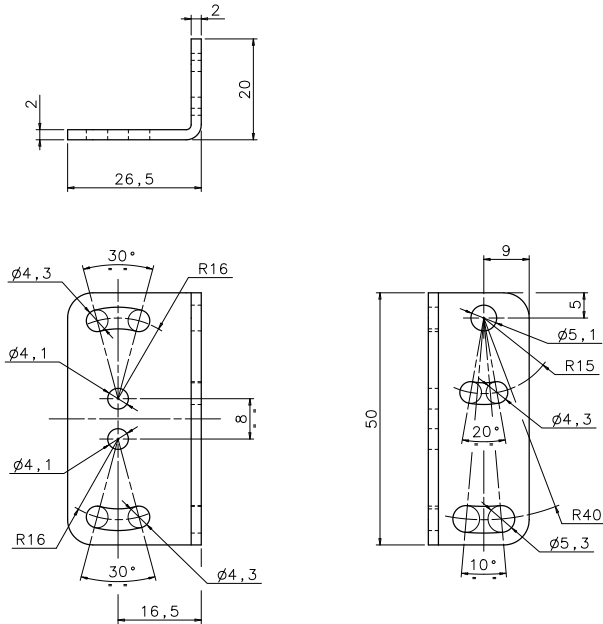
* Available only for version with RS485 serial connection (S65-PA-5-V09-xxxZ).

MODEL SELECTION AND ORDER INFORMATION

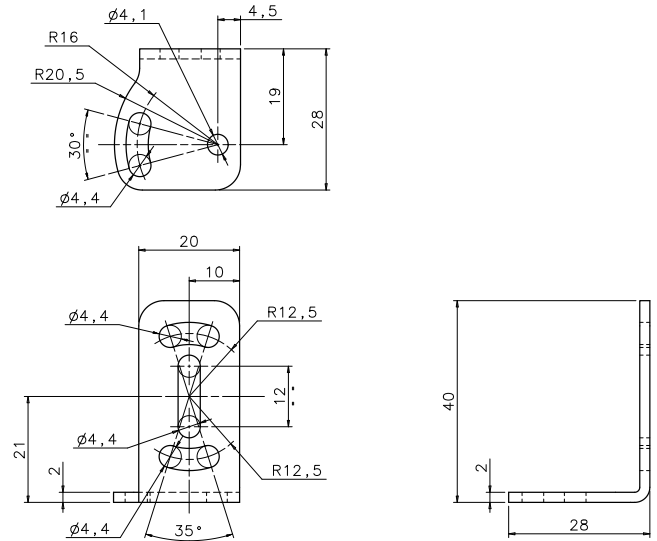
| OPTIC FUNCTION | HOUSING | CONNECTION | OUTPUT | MODEL | ORDER No. |
|-----------------|----------------------------|----------------------|------------|-------------------|-----------|
| Color sensor | 335 μ s | M12 8-pole Connector | PNP, RS485 | S65-PA-5-V09-PPPZ | 956251000 |
| | | | NPN, RS485 | S65-PA-5-V09-NNNZ | 956251010 |
| | | | PNP | S65-PA-5-V09-PPP | 956251020 |
| | | | NPN | S65-PA-5-V09-NNN | 956251030 |
| | 5 ms (norm) or 1 ms (fast) | | PNP, RS485 | S65-PA-5-V19-PPPZ | 956251080 |
| | | | NPN, RS485 | S65-PA-5-V19-NNNZ | 956251090 |
| | | | PNP | S65-PA-5-V19-PPP | 956251100 |
| | | | NPN | S65-PA-5-V19-NNN | 956251110 |
| Contrast sensor | 16 μ s | M12 5-pole Connector | NPN | S65-PA-5-W09-NH | 954201000 |
| | | M12 8-pole Connector | NPN, RS485 | S65-PA-5-W09-NHZ | 954201010 |
| | | M12 5-pole Connector | PNP | S65-PA-5-W09-PH | 954201020 |
| | | M12 8-pole Connector | PNP, RS485 | S65-PA-5-W09-PHZ | 954201030 |

ACCESSORIES

ST-5020



ST-5021



| MODEL | DESCRIPTION | ORDER No. |
|---------|----------------------------------|-----------|
| ST-5020 | mounting bracket 50 x 27 x 20 mm | 95ACC5330 |
| ST-5021 | mounting bracket 20 x 40 x 28 mm | 95ACC5340 |

CABLES

| TYPE | DESCRIPTION | LENGTH | MODEL | ORDER No. |
|----------------------|---------------------------------|---------------|---------------|-----------|
| Axial M12 connector | 5-pole, grey, P.V.C. | 3 m | CS-A1-03-G-03 | 95ACC2110 |
| | | 5 m | CS-A1-03-G-05 | 95ACC2120 |
| | | 10 m | CS-A1-03-G-10 | 95ACC2140 |
| | 5-pole, U.L., black, P.V.C. | 3 m | CS-A1-03-U-03 | 95ASE1170 |
| | | 5 m | CS-A1-03-U-05 | 95ASE1180 |
| | | 10 m | CS-A1-03-U-10 | 95ASE1190 |
| | | 15 m | CS-A1-03-U-15 | 95ASE1200 |
| | | 25 m | CS-A1-03-U-25 | 95ASE1210 |
| | | 50 m | CS-A1-03-U-50 | 95A252700 |
| | 8-pole, black, P.V.C. | 3 m | CS-A1-06-B-03 | 95ACC2260 |
| 5 m | | CS-A1-06-B-05 | 95ACC2270 | |
| 10 m | | CS-A1-06-B-10 | 95ACC2280 | |
| Radial M12 Connector | 8-pole, shielded, black, P.V.C. | 3 m | CV-A2-26-B-03 | 95ACC1600 |
| | | 5 m | CV-A2-26-B-05 | 95ACC1610 |
| | | 10 m | CV-A2-26-B-10 | 95ACC1620 |
| Axial M12 Connector | 8-pole, shielded, black, P.V.C. | 3 m | CV-A1-26-B-03 | 95ACC1510 |
| | | 5 m | CV-A1-26-B-05 | 95ACC1520 |
| | | 10 m | CV-A1-26-B-10 | 95ACC1530 |
| | | 15 m | CV-A1-26-B-15 | 95ACC2080 |
| | | 25 m | CV-A1-26-B-25 | 95ACC2100 |
| | | 50 m | CV-A1-26-B-50 | 95A252710 |
| | 8-pole, U.L., black, P.V.C. | 3 m | CS-A1-06-U-03 | 95ASE1220 |
| | | 5 m | CS-A1-06-U-05 | 95ASE1230 |
| | | 10 m | CS-A1-06-U-10 | 95ASE1240 |
| | | 15 m | CS-A1-06-U-15 | 95ASE1250 |
| 8-pole, black | 25 m | CS-A1-06-U-25 | 95ASE1260 | |
| | 50 m | CS-A1-06-U-50 | 95A252710 | |
| | Connector-not cabled | | CS-A1-06-B-NC | 95ACC2550 |

AREA SENSORS

AS1

AREAscan™ high-resolution detection photoelectric light grids

- Crossed beam area sensors
- 100mm controlled height
- Adjustment trimmer
- Optical synchronism
- Scan Mode input



APPLICATIONS

- Processing lines
- Food, Cosmetic and Pharmaceutical
- Electronics and mechanical assembling
- Conveyor lines and sorting systems

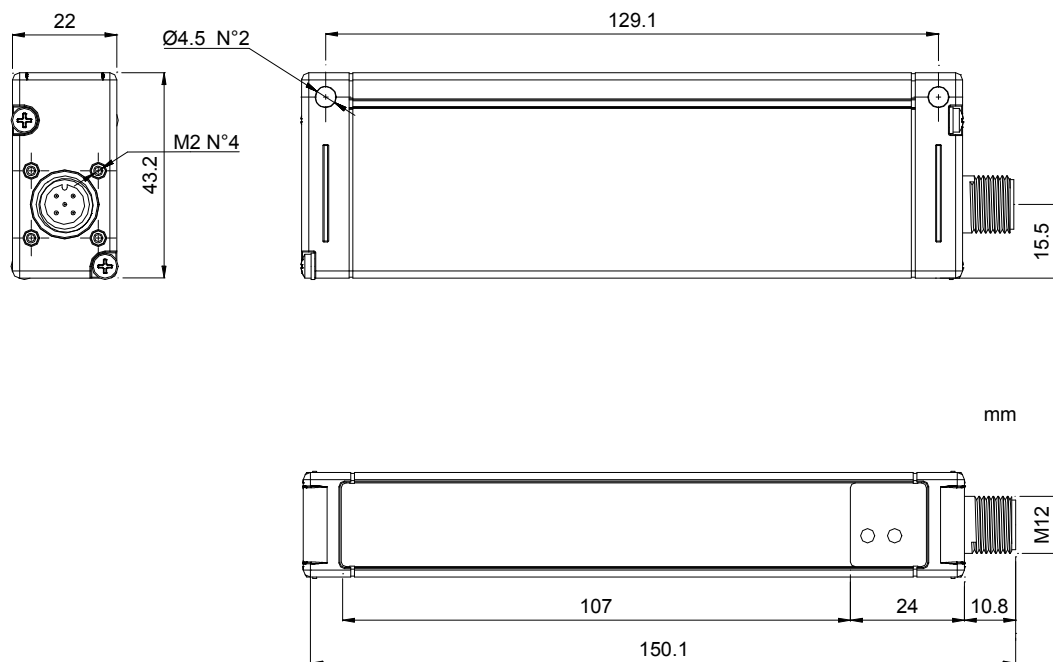


| AS1 | | |
|-----------------------------|-----------|---|
| Area sensing | | 100 mm |
| Operating Distance | | 0,3...2,1 m (AS1-LD) 0,8...3 m (AS1-HD) |
| Resolution | | Flat: 0,2x75mm Cylindrical: Ø 6mm (AS1-HR) Flat: 0,2x200mm Cylindrical: Ø18mm (AS1-SR) |
| Response Time | | 1,75 ms (AS1-SR) 2,75...8 ms (AS1-HR) |
| Light emission | | IR LED |
| Power supply | Vdc | 24 V |
| | Vac | |
| | Vac/dc | |
| | PNP | ▪ |
| Output | NPN | |
| | NPN/PNP | |
| | relay | |
| | other | |
| Connection | cable | |
| | connector | ▪ |
| | pig-tail | |
| Approximate dimensions (mm) | | 20x41x150 |
| Housing material | | aluminium |
| Mechanical protection | | IP67 |

TECHNICAL DATA

| | |
|-----------------------------------|--|
| Power supply | 24 Vdc ± 15% |
| Consumption on emitter unit (TX) | 150 mA max. |
| Consumption on receiver unit (RX) | 40 mA max. load excluded |
| Light emission | IR LED 880 nm |
| Setting | adjustment trimmer (mod. AS1...P) |
| Indicators | yellow OUTPUT LED green POWER ON LED |
| Output | PNP |
| Output current | 100 mA max. |
| Saturation voltage | 1,5 V max. |
| Response time | 2,75 - 8 ms (mod. AS1-HR) 1,75 ms (mod. AS1-SR) |
| Connection | M12 4-pole connector (TX), M12 5-pole connector (RX) |
| Dielectric strength | 500 Vac, 1 min between electronics and housing |
| Insulating resistance | >20 MΩ, 500 Vdc between electronics and housing |
| Mechanical protection | IP65 (EN 60529) |
| Vibrations | 0,5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6) |
| Shock resistance | 11 ms (30 G) 6 shock for every axis (EN60068-2-27) |
| Housing material | black electro-painted aluminium |
| Lens material | PMMA |
| Operating temperature | 0 ... 50 °C |
| Storage temperature | -25 ... 70 °C |
| Weight | 300 g |

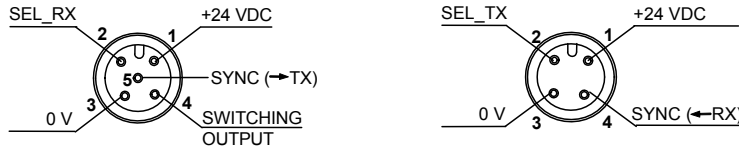
DIMENSIONS



AREA SENSORS

CONNECTIONS

M12 CONNECTOR



| | | AS1-HR | AS1-SR | | | AS1-HR | AS1-SR |
|---|------------|------------------|------------------|--|------------|---------|----------|
| RECEIVER (RX): M12 5-pole connector | 1 – brown: | +24 VDC | +24 VDC | EMITTER (TX): M12 4-pole connector | 1 – brown: | +24 VDC | +24 VDC |
| | 2 – white: | SEL_RX | Not used | | 2 – white: | SEL_TX | Not used |
| | 3 – blue: | 0 V | 0 V | | 3 – blue: | 0 V | 0 V |
| | 4 – black: | Switching output | Switching output | | 4 – black: | SYNC ** | SYNC * |
| | 5 – grey: | SYNC * | SYNC * | | | | |

* not used in trimmer version
** SEL_TX2 in trimmer version

MODEL SELECTION AND ORDER INFORMATION

| OPTIC FUNCTION | OPERATING DISTANCE | RESOLUTION | SETTING | MODEL | ORDER No. |
|----------------|--------------------|------------|--------------------|-----------------|-----------|
| Area sensor | 2 m | High | n/a | AS1-LD-HR-010-J | 958101000 |
| | | | Adjustment Trimmer | AS1-LD-HR-010-P | 958101040 |
| | | Standard | n/a | AS1-LD-SR-010-J | 958101010 |
| | | | Adjustment Trimmer | AS1-LD-SR-010-P | 958101050 |
| | 3 m | High | n/a | AS1-HD-HR-010-J | 958101020 |
| | | Standard | | AS1-HD-SR-010-J | 958101030 |

CABLES

| TYPE | DESCRIPTION | LENGTH | MODEL | ORDER No. |
|---------------------|-----------------------------|---------------|---------------|-----------|
| Axial M12 Connector | 4-pole, grey, P.V.C. | 3 m | CS-A1-02-G-03 | 95A251380 |
| | | 5 m | CS-A1-02-G-05 | 95A251270 |
| | | 10 m | CS-A1-02-G-10 | 95A251390 |
| | 4-pole, U.L., black, P.V.C. | 3 m | CS-A1-02-U-03 | 95ASE1120 |
| | | 5 m | CS-A1-02-U-05 | 95ASE1130 |
| | | 10 m | CS-A1-02-U-10 | 95ASE1140 |
| | | 15 m | CS-A1-02-U-15 | 95ASE1150 |
| | | 25 m | CS-A1-02-U-25 | 95ASE1160 |
| | | 3 m | CS-A1-03-G-03 | 95ACC2110 |
| | 5-pole, grey, P.V.C. | 5 m | CS-A1-03-G-05 | 95ACC2120 |
| | | 10 m | CS-A1-03-G-10 | 95ACC2140 |
| | | 3 m | CS-A1-03-U-03 | 95ASE1170 |
| | 5-pole, U.L., black, P.V.C. | 5 m | CS-A1-03-U-05 | 95ASE1180 |
| | | 10 m | CS-A1-03-U-10 | 95ASE1190 |
| | | 15 m | CS-A1-03-U-15 | 95ASE1200 |
| | | 25 m | CS-A1-03-U-25 | 95ASE1210 |
| 50 m | | CS-A1-03-U-50 | 95A252700 | |



DIMENSION LIGHT GRIDS

DS1

AREAscan™ detection and measurement light grids with analog output

- 4 mm resolution and 1 ms response time
- 100 to 300 mm controlled height
- Operating distance up to 4 m
- PNP digital and 0-10 V analog outputs
- Adjustment trimmer



APPLICATIONS

- Processing and Packaging machinery
- Food, Cosmetic, Pharmaceutical
- Electronics and mechanical assembling
- Conveyor lines and sorting systems

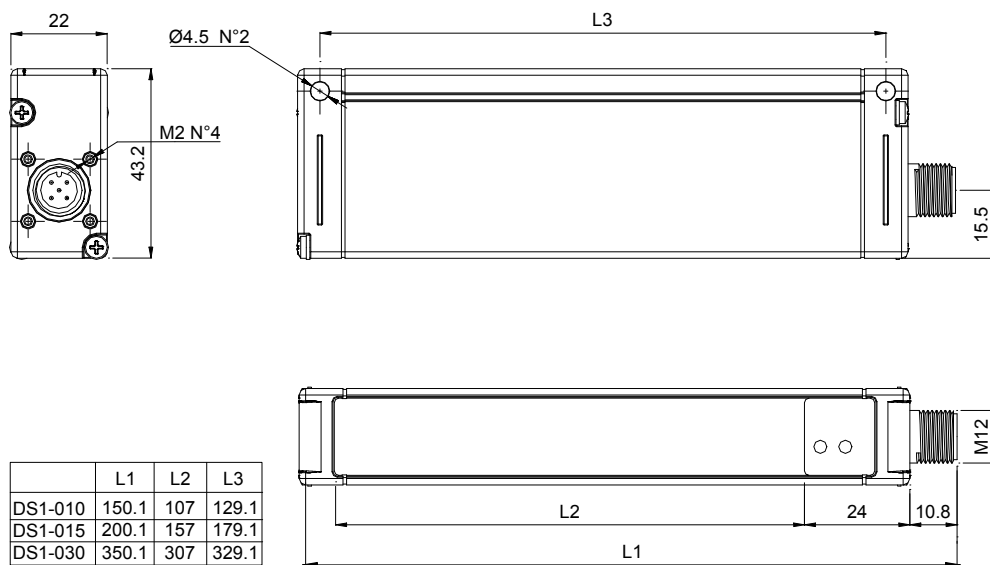


| DS1 | | |
|---------------------------------|-----------|------------------------|
| Light array (controlled height) | | 100...300 mm |
| Resolution | | 4...7 mm |
| Number of beams | | 16...48 |
| Light emission | | IR LED |
| Response time | | 1...2,75 ms |
| Setting | | Trimmer |
| Operating distance | | 0,15...0,8 m (SD) |
| | | 0,15...2,1 m (LD) |
| | | 0,2...4 m (HD) |
| Power supply | Vdc | 10...30 V |
| | Vac | |
| | Vac/dc | |
| | PNP | ▪ |
| Output | NPN | |
| | NPN/PNP | |
| | relay | |
| | other | 0...10 V Analog output |
| | cable | |
| Connection | connector | ▪ |
| | pig-tail | |
| Approximate dimensions (mm) | | 20x41x(150/350) |
| Housing material | | aluminium |
| Mechanical protection | | IP65 |

TECHNICAL DATA

| | |
|-----------------------------------|--|
| Power supply | 24 Vdc ± 15% |
| Consumption on emitter unit (TX) | 150 mA max. |
| Consumption on receiver unit (RX) | 50 mA max. load excluded |
| Light emission | IR LED 880 nm |
| Setting | adjustment trimmer (mod. DS1...PV) |
| Indicators | yellow OUTPUT LED green POWER ON LED |
| Output | PNP; analog output |
| Output current | 100 mA max. |
| Saturation voltage | 1,5 V max. |
| Response time | 1 - 2,75 ms |
| Connection | M12 4-pole connector (TX), M12 5-pole connector (RX) |
| Dielectric strength | 500 Vac, 1 min between electronics and housing |
| Insulating resistance | >20 MΩ, 500 Vdc between electronics and housing |
| Mechanical protection | IP65 (EN 60529) |
| Vibrations | 0,5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6) |
| Shock resistance | 11 ms (30 G) 6 shock for every axis (EN60068-2-27) |
| Housing material | black electro-painted aluminium |
| Lens material | PMMA |
| Operating temperature | 0 ... 50 °C |
| Storage temperature | -25 ... 70 °C |
| Weight | 300 g (mod. DS1...010) 400 g (mod. DS1...015) 600 g (mod. DS1...030) |

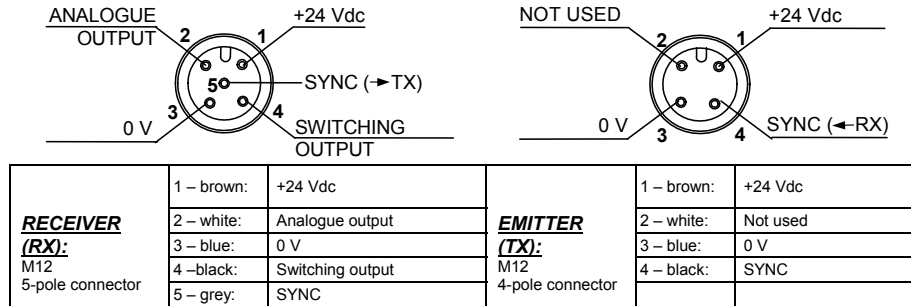
DIMENSIONS



DIMENSION LIGHT GRIDS

CONNECTIONS

M12 CONNECTOR



MODEL SELECTION AND ORDER INFORMATION

| OPTIC FUNCTION | OPERATING DISTANCE | SETTING | CONTROLLED HEIGHT & RESOLUTION | MODEL | ORDER NO | |
|---------------------------|--------------------|--------------------|--------------------------------|---------------------|------------------|-----------|
| Measurement light curtain | 0,8 m | n/a | 100 mm (res.: 7 mm) | DS1-SD-SR-010-JV | 957701170 | |
| | | | 100 mm (res.: 4 mm) | DS1-SD-HR-010-JV | 957701200 | |
| | | | 150 mm (res.: 7 mm) | DS1-SD-SR-015-JV | 957701180 | |
| | | | 150 mm (res.: 4 mm) | DS1-SD-HR-015-JV | 957701210 | |
| | | | 300 mm (res.: 7 mm) | DS1-SD-SR-030-JV | 957701190 | |
| | 2 m | | 100 mm (res.: 7 mm) | DS1-LD-SR-010-JV | 957701130 | |
| | | | 100 mm (res.: 4 mm) | DS1-LD-HR-010-JV | 957701120 | |
| | | | 150 mm (res.: 7 mm) | DS1-LD-SR-015-JV | 957701150 | |
| | | | 150 mm (res.: 4 mm) | DS1-LD-HR-015-JV | 957701140 | |
| | | | 300 mm (res.: 7 mm) | DS1-LD-SR-030-JV | 957701160 | |
| | 4 m | Adjustment trimmer | 100 mm (res.: 7 mm) | DS1-LD-SR-010-PV | 957701250 | |
| | | | 150 mm (res.: 7 mm) | DS1-LD-SR-015-PV | 957701260 | |
| | | | 300 mm (res.: 7 mm) | DS1-LD-SR-030-PV | 957701270 | |
| | | | n/a | 100 mm (res.: 7 mm) | DS1-HD-SR-010-JV | 957701220 |
| | | | | 150 mm (res.: 7 mm) | DS1-HD-SR-015-JV | 957701230 |
| 300 mm (res.: 7 mm) | DS1-HD-SR-030-JV | 957701240 | | | | |

CABLES

| TYPE | DESCRIPTION | LENGTH | MODEL | ORDER No. |
|---------------------|-----------------------------|--------|---------------|-----------|
| Axial M12 Connector | 4-pole, grey, P.V.C. | 3 m | CS-A1-02-G-03 | 95A251380 |
| | | 5 m | CS-A1-02-G-05 | 95A251270 |
| | | 10 m | CS-A1-02-G-10 | 95A251390 |
| | 4-pole, U.L., black, P.V.C. | 3 m | CS-A1-02-U-03 | 95ASE1120 |
| | | 5 m | CS-A1-02-U-05 | 95ASE1130 |
| | | 10 m | CS-A1-02-U-10 | 95ASE1140 |
| | | 15 m | CS-A1-02-U-15 | 95ASE1150 |
| | | 25 m | CS-A1-02-U-25 | 95ASE1160 |
| | 5-pole, grey, P.V.C. | 3 m | CS-A1-03-G-03 | 95ACC2110 |
| | | 5 m | CS-A1-03-G-05 | 95ACC2120 |
| | | 10 m | CS-A1-03-G-10 | 95ACC2140 |
| | 5-pole, U.L., black, P.V.C | 3 m | CS-A1-03-U-03 | 95ASE1170 |
| | | 5 m | CS-A1-03-U-05 | 95ASE1180 |
| | | 10 m | CS-A1-03-U-10 | 95ASE1190 |
| | | 15 m | CS-A1-03-U-15 | 95ASE1200 |
| | | 25 m | CS-A1-03-U-25 | 95ASE1210 |
| | | 50 m | CS-A1-03-U-50 | 95A252700 |



DIMENSION LIGHT GRIDS

DS2

AREAscan™ detection and measurement light grids with serial or Ethernet interface

- 6 or 25 mm digital resolution
- Relative measurement precision ± 6 mm or ± 22.5 mm
- 150 - 1650 mm controlled heights
- Operating distance up to 10 m
- PNP and 0-10 V Analog output and RS485 or Ethernet interface



APPLICATIONS

- Processing and Packaging machinery
- Food, Cosmetic, Pharmaceutical
- Electronics and mechanical assembling
- Conveyor lines and sorting systems

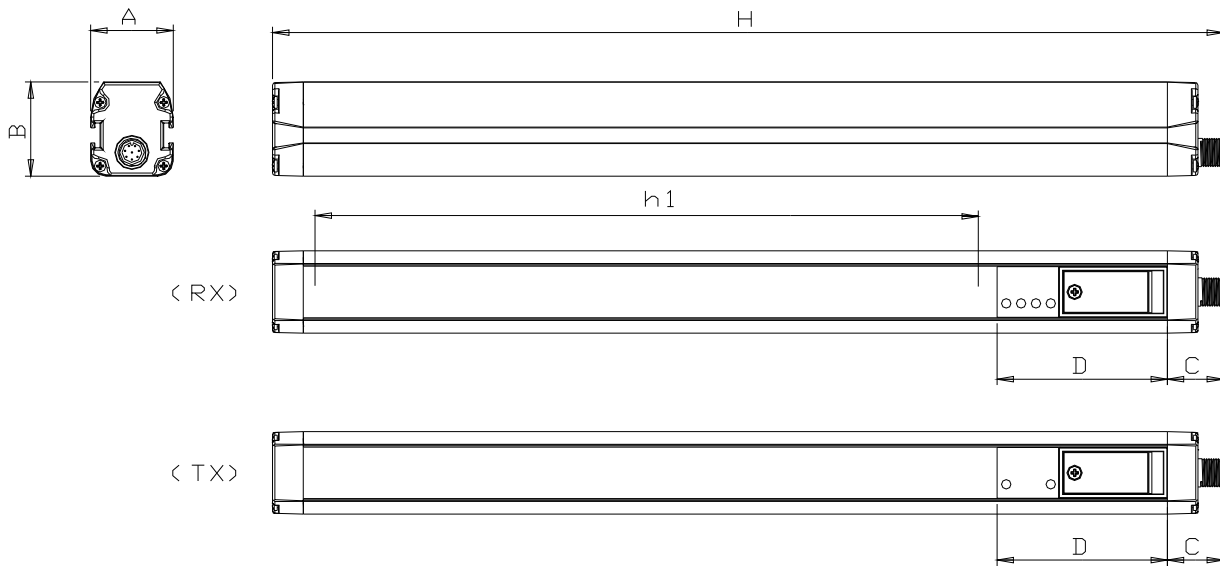


| DS2 | | |
|---------------------------------|-----------|--------------------------|
| Light array (controlled height) | | 150...1650 mm |
| Resolution | | 6..25 mm |
| Number of beams | | 21...231 (res= 6mm) |
| | | 6..66 (res= 25mm) |
| Light emission | | IR LED |
| Response time | | 5...90 ms |
| Interface | | serial RS485 or Ethernet |
| Setting | | Dip-switches |
| | | Graphic interface |
| Operating distance | | 0,3...5 m (res= 6mm) |
| | | 0,3...10 m (res=25mm) |
| Power supply | Vdc | 10...30 V |
| | Vac | |
| | Vac/dc | |
| Output | PNP | ▪ |
| | NPN | |
| | NPN/PNP | |
| | relay | |
| | other | 0...10 V Analog output |
| Connection | cable | |
| | connector | ▪ |
| | pig-tail | |
| Approximate dimensions (mm) | | 35x40x(256...1726) |
| Housing material | | aluminium |
| Mechanical protection | | IP65 |

TECHNICAL DATA

| | |
|----------------------------------|--|
| Power supply | 24 Vdc \pm 20% |
| Consumption on emitter unit (TX) | 250 mA max. load excluded |
| Light emission | IR LED 880 nm |
| Output | PNP; analog output |
| Output current | 100 mA |
| Saturation voltage | 1,5 V max. |
| Connection | M12 4-pole connector (TX), M12 8-pole and M12 4-pole type "D" connector (RX) |
| Dielectric strength | 500 Vac, 1 min between electronics and housing |
| Insulating resistance | >20 M Ω , 500 Vdc between electronics and housing |
| Electrical protection | class I |
| Mechanical protection | IP65 (EN 60529) |
| Vibrations | 0,5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6) |
| Shock resistance | 11 ms (30 G) 6 shock for every axis (EN60068-2-27) |
| Housing material | painted aluminium (Pulverit 5121/0085 Black) |
| Lens material | PMMA |
| Operating temperature | 0 ... 50 °C |
| Storage temperature | -25 ... 55 °C |
| Weight | 1,9 - 4,6 kg |

DIMENSIONS



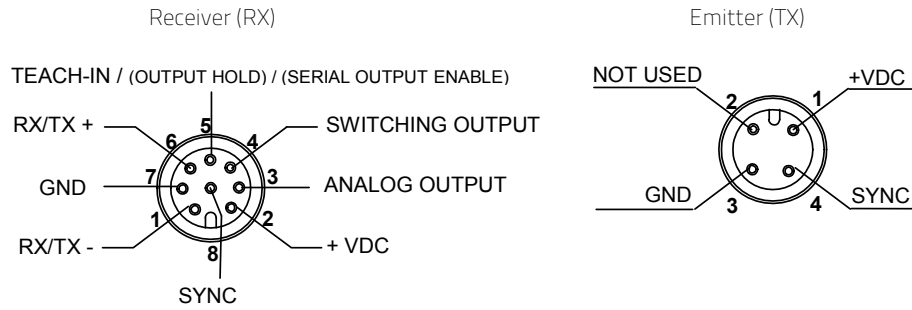
| MODEL | A x B (mm) | H (mm) | C (mm) | D (mm) |
|------------------|------------|--------|--------|--------|
| DS2-05-07-015-XX | 35 x 40 | 256 | 23.8 | 72.5 |
| DS2-05-07-030-XX | 35 x 40 | 403 | 23.8 | 72.5 |
| DS2-05-07-045-XX | 35 x 40 | 550 | 23.8 | 72.5 |
| DS2-05-07-060-XX | 35 x 40 | 697 | 23.8 | 72.5 |
| DS2-05-07-075-XX | 35 x 40 | 844 | 23.8 | 72.5 |
| DS2-05-07-090-XX | 35 x 40 | 991 | 23.8 | 72.5 |
| DS2-05-07-105-XX | 35 x 40 | 1138 | 23.8 | 72.5 |
| DS2-05-07-120-XX | 35 x 40 | 1285 | 23.8 | 72.5 |
| DS2-05-07-135-XX | 35 x 40 | 1432 | 23.8 | 72.5 |
| DS2-05-07-150-XX | 35 x 40 | 1579 | 23.8 | 72.5 |
| DS2-05-07-165-XX | 35 x 40 | 1726 | 23.8 | 72.5 |
| DS2-05-07-045-XX | 35 x 40 | 562 | 23.8 | 72.5 |
| DS2-05-07-060-XX | 35 x 40 | 713 | 23.8 | 72.5 |
| DS2-05-07-075-XX | 35 x 40 | 864 | 23.8 | 72.5 |
| DS2-05-07-090-XX | 35 x 40 | 1015 | 23.8 | 72.5 |

XX: JV for serial models or JE for ETHERNET models

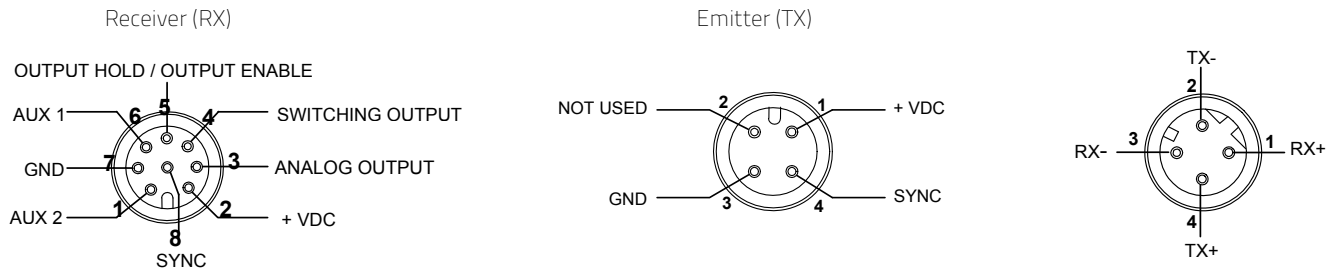
DIMENSION LIGHT GRIDS

CONNECTIONS

M12 CONNECTOR - SERIAL VERSION



M12 CONNECTOR - ETHERNET VERSION



RESPONSE TIME - SERIAL AND ETHERNET VERSION

| MODEL | Tmin (msec) → Tmax (msec) | | | | | | | Tmax (msec) |
|------------------|---------------------------|-----------|------------|-----------|-----------------------|-----------|------------|-------------|
| | CONFIGURATION | | | | | | | |
| | Top beam | | | | Complete beams status | | | |
| | Binary | Binary | ASCII | ASCII | Binary | Binary | ASCII | ASCII |
| | 57600 baud | 9600 baud | 57600 baud | 9600 baud | 57600 baud | 9600 baud | 57600 baud | 9600 baud |
| DS2-05-07-015-JV | 5.5 | 12.5 | 5.05 | 13 | 5.5 | 15 | 6.5 | 10 |
| DS2-05-07-030-JV | 7 | 14 | 7 | 14.5 | 7 | 18 | 8.5 | 21 |
| DS2-05-07-045-JV | 8.5 | 15.5 | 8.5 | 16 | 8.5 | 21 | 10 | 24 |
| DS2-05-07-060-JV | 10 | 17 | 10 | 18 | 10 | 26 | 12 | 38 |
| DS2-05-07-075-JV | 11.5 | 18.5 | 11.5 | 19 | 11.5 | 31 | 15 | 44 |
| DS2-05-07-090-JV | 13 | 20 | 13 | 20 | 13 | 36 | 17 | 54 |
| DS2-05-07-105-JV | 14.5 | 21.5 | 14.5 | 22 | 14.5 | 40 | 19 | 62 |
| DS2-05-07-120-JV | 17 | 24 | 17 | 24 | 17 | 44 | 21 | 70 |
| DS2-05-07-135-JV | 18.5 | 25 | 19 | 26 | 19 | 48 | 23 | 80 |
| DS2-05-07-150-JV | 20 | 26.5 | 21 | 28 | 21 | 53 | 25 | 84 |
| DS2-05-07-165-JV | 22 | 28 | 23 | 30 | 23 | 56 | 28 | 91 |
| DS2-05-07-045-JV | 5 | 11 | 5 | 11 | 5 | 13 | 6 | 18 |
| DS2-05-07-060-JV | 5.5 | 12 | 5.5 | 12.5 | 5.5 | 14.5 | 6.5 | 19.5 |
| DS2-05-07-075-JV | 6 | 13 | 6 | 13.5 | 6 | 16 | 7 | 21 |
| DS2-05-07-090-JV | 6.5 | 13.5 | 6.5 | 14.5 | 6.5 | 17.5 | 7.5 | 22.5 |

| MODEL | CONFIGURATION | | | |
|------------------|---------------|-------|-----------------------|-------|
| | Top beam | | Complete beams status | |
| | Binary | ASCII | Binary | ASCII |
| DS2-05-07-060-JE | 10 | 10 | 10 | 12 |
| DS2-05-07-075-JE | 11.5 | 11.5 | 11.5 | 15 |
| DS2-05-07-090-JE | 13 | 13 | 13 | 17 |
| DS2-05-07-120-JE | 17 | 17 | 17 | 21 |
| DS2-05-07-150-JE | 20 | 21 | 21 | 25 |
| DS2-05-07-165-JE | 22 | 23 | 23 | 28 |

MODEL SELECTION AND ORDER INFORMATION

| OPTIC FUNCTION | CONTROLLED AREA (mm) | OPTICS INTERAXIS (mm) | OUTPUT | MODEL | ORDER No. |
|---------------------------|----------------------|-----------------------|-----------------------------|------------------|--------------------------|
| Measurement light curtain | 147 | 6.75 | Voltage Analog and RS485 | DS2-05-07-015-JV | 957501040 |
| | 294 | | | DS2-05-07-030-JV | 957501050 |
| | 441 | | | DS2-05-07-045-JV | 957501060 |
| | 588 | | | DS2-05-07-060-JV | 957501000 |
| | 735 | | | DS2-05-07-075-JV | 957501070 |
| | 882 | | | DS2-05-07-090-JV | 957501010 |
| | 1029 | | | DS2-05-07-105-JV | 957501080 |
| | 1176 | | | DS2-05-07-120-JV | 957501020 |
| | 1323 | | | DS2-05-07-135-JV | 957501090 |
| | 1470 | | | DS2-05-07-150-JV | 957501100 |
| | 1617 | | | DS2-05-07-165-JV | 957501030 |
| | 453 | | | 25 | Voltage Analog and RS485 |
| | 604 | DS2-05-25-060-JV | 957501140 | | |
| | 755 | DS2-05-25-075-JV | 957501120 | | |
| | 912 | DS2-05-25-090-JV | 957501130 | | |
| | 588 | 6.75 | Voltage Analog and Ethernet | DS2-05-07-060-JE | 957501150 |
| | 735 | | | DS2-05-07-075-JE | 957501160 |
| | 882 | | | DS2-05-07-090-JE | 957501170 |
| | 1176 | | | DS2-05-07-120-JE | 957501180 |
| | 1470 | | | DS2-05-07-150-JE | 957501190 |
| | 1617 | | | DS2-05-07-165-JE | 957501200 |

CABLES

| TYPE | DESCRIPTION | LENGTH | MODEL | ORDER No. |
|---------------------|---------------------------------|---------------|---------------|-----------|
| Axial M12 Connector | 4-pole, grey, P.V.C. | 3 m | CS-A1-02-G-03 | 95A251380 |
| | | 5 m | CS-A1-02-G-05 | 95A251270 |
| | | 10 m | CS-A1-02-G-10 | 95A251390 |
| | 4-pole, P,U.R. | 2 m | CS-A1-02-R-02 | 95A251540 |
| | | 5 m | CS-A1-02-R-05 | 95A251560 |
| | | 10 m | CS-A1-02-R-10 | 95A251570 |
| | 8-pole, black, P.V.C. | 3 m | CS-A1-06-B-03 | 95ACC2230 |
| | | 5 m | CS-A1-06-B-05 | 95ACC2240 |
| | | 10 m | CS-A1-06-B-10 | 95ACC2250 |
| | 4-pole, shielded, grey, P.V.C. | 3 m | CV-A1-22-B-03 | 95ACC1480 |
| | | 5 m | CV-A1-22-B-05 | 95ACC1490 |
| | | 10 m | CV-A1-22-B-10 | 95ACC1500 |
| | 8-pole, shielded, black, P.V.C. | 3 m | CV-A1-26-B-03 | 95ACC1510 |
| | | 5 m | CV-A1-26-B-05 | 95ACC1520 |
| | | 10 m | CV-A1-26-B-10 | 95ACC1530 |
| | | 15 m | CV-A1-26-B-15 | 95ACC2080 |
| | | 25 m | CV-A1-26-B-25 | 95ACC2100 |
| | 4-pole, U.L., black, P.V.C. | 3 m | CS-A1-02-U-03 | 95ASE1120 |
| | | 5 m | CS-A1-02-U-05 | 95ASE1130 |
| | | 10 m | CS-A1-02-U-10 | 95ASE1140 |
| | | 15 m | CS-A1-02-U-15 | 95ASE1150 |
| | | 25 m | CS-A1-02-U-25 | 95ASE1160 |
| | 8-pole, U.L., black, P.V.C. | 3 m | CS-A1-06-U-03 | 95ASE1220 |
| | | 5 m | CS-A1-06-U-05 | 95ASE1230 |
| | | 10 m | CS-A1-06-U-10 | 95ASE1240 |
| | | 15 m | CS-A1-06-U-15 | 95ASE1250 |
| | | 25 m | CS-A1-06-U-25 | 95ASE1260 |
| 50 m | | CS-A1-06-U-50 | 95A252710 | |
| 4-pole, black | Connector-not cabled | CS-A1-02-B-NC | G5085002 | |
| 8-pole, black | Connector-not cabled | CS-A1-06-B-NC | 95ACC2550 | |

DISTANCE SENSORS

S85

LASER distance sensor for precise measurement up to 20 m with a millimeter of resolution and repeatability through the Time of Flight technique

- Time of Flight technology
- Class 2 visible red LASER for an easy alignment with the target
- Measuring range up to 10m or 20m in the advanced model
- 1 mm resolution, 7 mm accuracy, 1 mm repeatability
- 4-20 mA or 0-10 V scalable analog output and 2 digital outputs
- RS485 serial interface in the advanced model
- Standard M12 connector
- IP67 Industrial metal housing



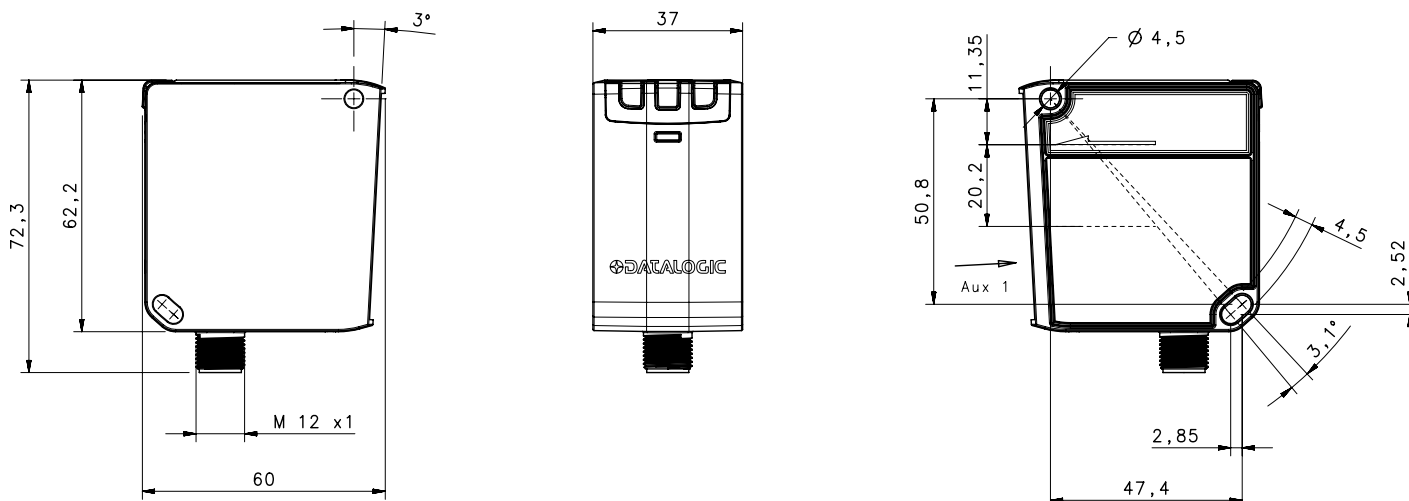
APPLICATIONS

- Automated warehousing
- Processing and Packaging machinery
- Industrial vehicles
- Automotive

| S85 | | |
|------------------------------------|-----------|--|
| Distance sensor (90% White target) | | 0,2...20 m (S85...Y13) 0,2...10 m (S85...Y03) |
| Repeatability | | 1...2 mm |
| Accuracy | | 7...10 mm |
| Resolution | | 1 mm |
| Light emission | | red LASER (class 2) |
| Response time | | 30 ms (S85...Y03) 15...30 ms (S85...Y13) |
| Serial interface | | RS485 (S85...Y13) |
| Setting | | Display (S85...Y13) push-buttons (S85...Y03) |
| Power supply | Vdc | 24 V |
| | PNP | ▪ |
| | NPN | ▪ |
| | Push pull | ▪ |
| | other | Analog output: 4...20 mA or 0...10 V |
| Connection | connector | ▪ |
| Approximate dimensions (mm) | | 60x62x37 |
| Housing material | | Zamak |
| Mechanical protection | | IP65, IP67 |

| TECHNICAL DATA | |
|---------------------------------------|---|
| Power supply | 24 Vdc \pm 20% |
| Consumption (output current excluded) | 2,8 W max. (mod. S85...Y03) 3 W max. (mod. S85...Y13) |
| Light emission | red Laser 658 nm |
| Setting | push-buttons (mod. S85...Y03) push-buttons and display (mod. S85...Y13) |
| Operating distance | 90% white target 0,2...10 m (mod. S85...Y03), 0,2...20 m (mod. S85...Y13) 18% grey target 0,2...5 m (mod. S85...Y03), 0,2...8 m (mod. S85...Y13) 6% black target 0,2...3 m (mod. S85...Y03), 0,2...5 m (mod. S85...Y13) |
| Indicators | yellow Q1 LED, Q2 LED green/red POWER/OUT OF RANGE LED 5-digit multi display (mod. S85...Y13) |
| Output | push pull/Q (mod. S85...Y03) PNP, NPN, push pull, Q, Qneg (mod. S85...Y13) |
| Analog output | 0-10 V (mod. S85...Y03-OOV) 4-20 mA (mod. S85...Y03-OOI) 0-10 V/4-20 mA (mod. S85...Y13-OOIVY) |
| Response time | slow 45 ms (mod. S85...Y13) medium 30 ms fast 15 ms (mod. S85...13) |
| Connection | M12 5-pole connector (mod. S85...Y03), M12 8-pole connector (mod. S85...Y13) |
| Dielectric strength | 500 Vac, 1 min between electronics and housing |
| Insulating resistance | >20 M Ω , 500 Vdc between electronics and housing |
| Mechanical protection | IP67 |
| Ambient light rejection | according to EN 60947-5-2, >40 Klux DC ambient light |
| Vibrations | 0,5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6) |
| Shock resistance | 11 ms (30 G) 6 shock for every axis (EN60068-2-27) |
| Housing material | ZINC ALLOY ZAMA 13 EN-1774/PC LEXAN 121R display |
| Lens material | PMMA |
| Operating temperature | -15 ... 50 °C |
| Storage temperature | -25 ... 70 °C |
| Weight | 250 g max. |

DIMENSIONS

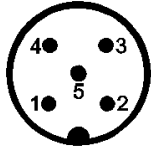


DISTANCE SENSORS

CONNECTIONS

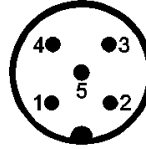
M12 CONNECTOR - BASIC

S85-Y03-00V
Voltage version



- 1 (BROWN): +24 V \pm 20 %
- 2 (WHITE): Q2 100mA max.
- 3 (BLUE): 0 V
- 4 (BLACK): Q1 100mA max.
- 5 (GREY): ANALOG. OUT 0-10V

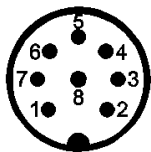
S85-Y03-00I
Current version



- 1 (BROWN): +24 V \pm 20 %
- 2 (WHITE): Q2 100mA max.
- 3 (BLUE): 0 V
- 4 (BLACK): Q1 100mA max.
- 5 (GREY): ANALOG. OUT 4-20mA

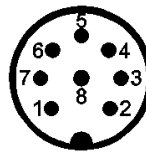
M12 CONNECTOR - ADVANCED

S85-Y13-00IVY
Analog version



- 1 (WHITE): RS485 -
- 2 (BROWN): +24 V \pm 20 %
- 3 (GREEN): ANALOGUE OUT
- 4 (YELLOW): Q1 100mA max.
- 5 (GREY): Q2 100mA max.
- 6 (PINK): RS485 +
- 7 (BLUE): 0 V
- 8 (RED): MULTIFUNC.INPUT

S85-Y13-00Y



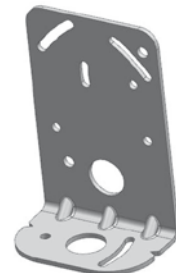
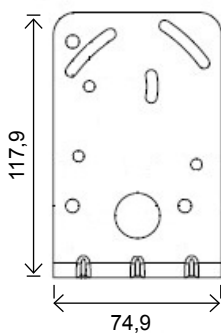
- 1 (WHITE): RS485 -
- 2 (BROWN): +24 V \pm 20 %
- 3 (GREEN): RESERVED
- 4 (YELLOW): Q1 100mA max.
- 5 (GREY): Q2 100mA max.
- 6 (PINK): RS485 +
- 7 (BLUE): 0 V
- 8 (RED): MULTIFUNC.INPUT

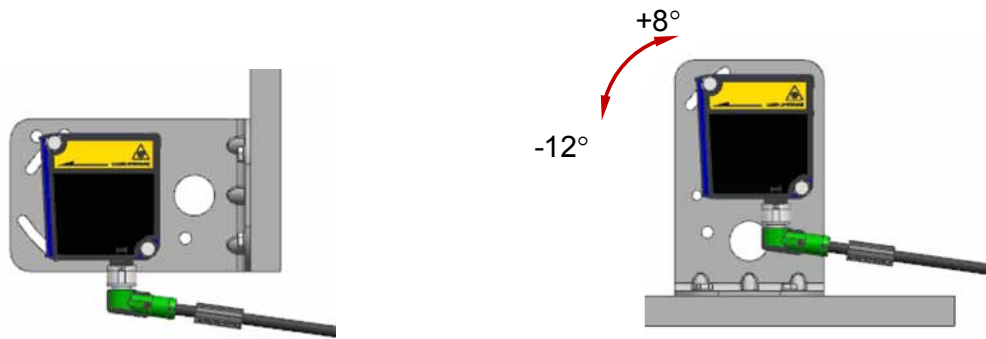
MODEL SELECTION AND ORDER INFORMATION

| OPTIC FUNCTION | OPERATING DISTANCE | CONNECTION | OUTPUT & INPUT | MODELS | ORDER No. |
|----------------------------|--------------------|----------------------|---|--------------------|-----------|
| Distance sensor (Basic) | 10 m | M12 5-pole connector | 2 Digital outputs; Analog output: Voltage (0...10 V) | S85-MH-5-Y03-00V | 951511010 |
| | | | 2 Digital outputs; Analog output: Current (4... 20mA) | S85-MH-5-Y03-00I | 951511030 |
| Distance sensor (Advanced) | 20 m | M12 8-pole connector | 2 Digital outputs; Analog output: Current (4... 20mA) or Voltage (0...10 V); RS485; Multifunction input | S85-MH-5-Y13-00IVY | 951511020 |
| | | | 2 Digital outputs; RS485; Multifunction input | S85-MH-5-Y13-00Y | 951511040 |

ACCESSORIES

ST-S85-STD





| MODEL | DESCRIPTION | ORDER No. |
|------------|------------------|-----------|
| ST-S85-STD | mounting bracket | 95ACC7840 |

CABLES

| TYPE | DESCRIPTION | LENGTH | MODEL | ORDER No. |
|----------------------|---------------------------------|----------------------|---------------|-----------|
| Axial M12 connector | 5-pole, grey, P.V.C. | 3 m | CS-A1-03-G-03 | 95ACC2110 |
| | | 5 m | CS-A1-03-G-05 | 95ACC2120 |
| | | 10 m | CS-A1-03-G-10 | 95ACC2140 |
| | 5-pole, U.L., black, P.V.C | 3 m | CS-A1-03-U-03 | 95ASE1170 |
| | | 5 m | CS-A1-03-U-05 | 95ASE1180 |
| | | 10 m | CS-A1-03-U-10 | 95ASE1190 |
| | | 15 m | CS-A1-03-U-15 | 95ASE1200 |
| | | 25 m | CS-A1-03-U-25 | 95ASE1210 |
| Axial M12 Connector | 8-pole, black, P.V.C. | 50 m | CS-A1-03-U-50 | 95A252700 |
| | | 3 m | CS-A1-06-B-03 | 95ACC2230 |
| Axial M12 Connector | 8-pole, black, P.V.C. | 5 m | CS-A1-06-B-05 | 95ACC2240 |
| | | 10 m | CS-A1-06-B-10 | 95ACC2250 |
| | | 3 m | CV-A2-26-B-03 | 95ACC1600 |
| Radial M12 Connector | 8-pole, shielded, black, P.V.C. | 5 m | CV-A2-26-B-05 | 95ACC1610 |
| | | 10 m | CV-A2-26-B-10 | 95ACC1620 |
| | | 3 m | CV-A1-26-B-03 | 95ACC1510 |
| Axial M12 Connector | 8-pole, shielded, black, P.V.C. | 5 m | CV-A1-26-B-05 | 95ACC1520 |
| | | 10 m | CV-A1-26-B-10 | 95ACC1530 |
| | | 15 m | CV-A1-26-B-15 | 95ACC2080 |
| | | 25 m | CV-A1-26-B-25 | 95ACC2100 |
| | | 3 m | CS-A1-06-U-03 | 95ASE1220 |
| | | 5 m | CS-A1-06-U-05 | 95ASE1230 |
| | 8-pole, U.L., black, P.V.C. | 10 m | CS-A1-06-U-10 | 95ASE1240 |
| | | 15 m | CS-A1-06-U-15 | 95ASE1250 |
| | | 25 m | CS-A1-06-U-25 | 95ASE1260 |
| | | 50 m | CS-A1-06-U-50 | 95A252710 |
| | 8-pole, black | Connector-not cabled | CS-A1-06-B-NC | 95ACC2550 |

DISTANCE SENSORS

S80

Time Of Flight measurement LASER distance sensor

- Class 2 visible red LASER emission
- Direct proximity measurement from 4 m to 7 m
- 20 m to 100 m retroflex measurement
- High precision and measurement speed
- PNP or NPN, 4-20 mA analog output and RS 485 serial interface



APPLICATIONS

- Automated warehousing
- Trans-elevator and crane positioning
- Automotive assembling lines
- Non-LFT measurement in logistics

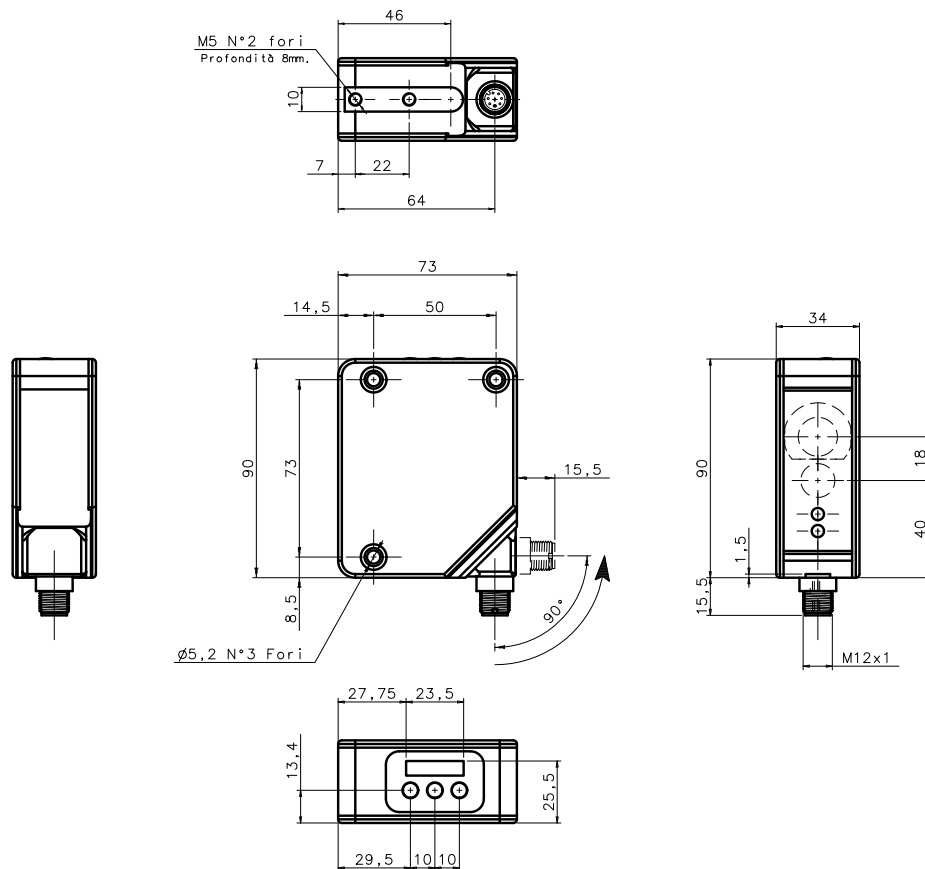


| S80 | | |
|-----------------------------|-----------|--|
| Distance sensor | | 0,3...4 m (S80-Y0) 0,3...7 m (S80-YL0) 0,3...20,3 m (S80-Y1) 0,3...100,3 m (S80-Y2) |
| Repeatability | | < 5mm (S80-Y0) 7 mm @7m (S80-YL0) 10 mm @20m (S80-Y1) 10 mm @100m (S80-Y2) |
| Switching frequency | | 100 Hz (Normal), 500 Hz(Fast) |
| Light emission | | red LASER (class 2) |
| Response time | | 5 ms (Normal), 1 ms(Fast) |
| Serial interface | | RS485 |
| Setting | | Teach-in |
| Power supply | Vdc | 15...30 V |
| | Vac | |
| | Vac/dc | |
| | PNP | ▪ |
| Output | NPN | ▪ |
| | NPN/PNP | |
| | relay | |
| | other | 4...20 mA Analog output , RS485 serial interface |
| Connection | cable | |
| | connector | ▪ |
| | pig-tail | |
| Approximate dimensions (mm) | | 34x90x73 |
| Housing material | | aluminium |
| Mechanical protection | | IP67 |

TECHNICAL DATA

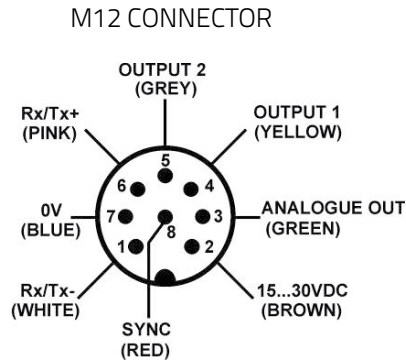
| | |
|---------------------------------------|---|
| Power supply | 15 ... 30 Vdc (limit values) |
| Ripple | 2 Vpp max. |
| Consumption (output current excluded) | 130 mA max. (110 mA at 24 V) (mod. S80...Y19/Y29) 170 mA max. (110 mA at 24 V) (mod. S80...Y09/YL09) |
| Light emission | red Laser 658 nm |
| Setting | SET push-buttons +/- push-buttons |
| Indicators | command panel: yellow OUTPUT LED green 4-digit display, 2 OUT1, OUT2 LEDs green FAST LED (mod. S80...Y09/Y19/Y29) indicators LED: yellow OUTPUT LED red ALARM LED |
| Output | 2 PNP or NPN; analog output with 4-20 mA; RS485 serial interface |
| Output current | 100 mA max. |
| Saturation voltage | 2 V max. |
| Response time | 5 ms (norm) and 1 ms (fast) (mod. S80...Y09/Y19/Y29) 6 ms (mod. S80...YL09) |
| Switching frequency | 100 Hz (norm) and 500 Hz (fast) (mod. S80...Y09/Y19/Y29) 85 Hz (mod. S80...YL09) |
| Connection | M12 8-pole connector |
| Dielectric strength | 500 Vac, 1 min between electronics and housing |
| Insulating resistance | >20 MΩ, 500 Vdc between electronics and housing |
| Electrical protection | class 2 |
| Mechanical protection | IP67 |
| Ambient light rejection | according to EN 60947-5-2 |
| Vibrations | 0,5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6) |
| Shock resistance | 11 ms (30 G) 6 shock for every axis (EN60068-2-27) |
| Housing material | aluminium |
| Lens material | window and lenses in glass |
| Operating temperature | -10 ... 50 °C |
| Storage temperature | -20 ... 70 °C |
| Weight | 330 g max. |

DIMENSIONS



DISTANCE SENSORS

CONNECTIONS



MODEL SELECTION AND ORDER INFORMATION

| OPTIC FUNCTION | HOUSING | CONNECTION | OUTPUT | MODEL | ORDER No. |
|-------------------------|----------|---------------|------------------------------|--------------------|-----------|
| Distance sensor (4 m) | Aluminum | M12 Connector | PNP, Analog 4...20 mA, RS485 | S80-MH-5-Y09-PPIZ | 951501080 |
| | | M12 Connector | NPN, Analog 4...20 mA, RS485 | S80-MH-5-Y09-NNIZ | 951501010 |
| Distance sensor (7 m) | | M12 Connector | PNP, Analog 4...20 mA, RS485 | S80-MH-5-YL09-PPIZ | 951501060 |
| | | M12 Connector | NPN, Analog 4...20 mA, RS485 | S80-MH-5-YL09-NNIZ | 951501070 |
| Distance sensor (20 m) | | M12 Connector | PNP, Analog 4...20 mA, RS485 | S80-MH-5-Y19-PPIZ | 951501020 |
| Distance sensor (100 m) | | M12 Connector | NPN, Analog 4...20 mA, RS485 | S80-MH-5-Y19-NNIZ | 951501030 |
| | | M12 Connector | PNP, Analog 4...20 mA, RS485 | S80-MH-5-Y29-PPIZ | 951501040 |
| | | M12 Connector | NPN, Analog 4...20 mA, RS485 | S80-MH-5-Y29-NNIZ | 951501050 |

ACCESSORIES

| MODEL | DESCRIPTION | ORDER No. |
|---------|---------------------------|-----------|
| ST-5037 | L-SHAPED mounting bracket | 95ACC2260 |

CABLES

| TYPE | DESCRIPTION | LENGTH | MODEL | ORDER No. | |
|----------------------|---------------------------------|-----------------------------|---------------|---------------|-----------|
| Axial M12 Connector | 8-pole, black, P.V.C. | 3 m | CS-A1-06-B-03 | 95ACC2230 | |
| | | 5 m | CS-A1-06-B-05 | 95ACC2240 | |
| | | 10 m | CS-A1-06-B-10 | 95ACC2250 | |
| Radial M12 Connector | 8-pole, shielded, black, P.V.C. | 3 m | CV-A2-26-B-03 | 95ACC1600 | |
| | | 5 m | CV-A2-26-B-05 | 95ACC1610 | |
| | | 10 m | CV-A2-26-B-10 | 95ACC1620 | |
| | | 3 m | CV-A1-26-B-03 | 95ACC1510 | |
| Axial M12 Connector | 8-pole, shielded, black, P.V.C. | 5 m | CV-A1-26-B-05 | 95ACC1520 | |
| | | 10 m | CV-A1-26-B-10 | 95ACC1530 | |
| | | 15 m | CV-A1-26-B-15 | 95ACC2080 | |
| | | 25 m | CV-A1-26-B-25 | 95ACC2100 | |
| | | 8-pole, U.L., black, P.V.C. | 3 m | CS-A1-06-U-03 | 95ASE1220 |
| | | | 5 m | CS-A1-06-U-05 | 95ASE1230 |
| | 10 m | | CS-A1-06-U-10 | 95ASE1240 | |
| | 15 m | | CS-A1-06-U-15 | 95ASE1250 | |
| | 8-pole, black | 25 m | CS-A1-06-U-25 | 95ASE1260 | |
| | | 50 m | CS-A1-06-U-50 | 95A252710 | |
| Connector-not cabled | | CS-A1-06-B-NC | 95ACC2550 | | |



DISTANCE SENSORS

S81

Cost effective T.O.F. LASER distance sensor

- Class 2 visible red LASER emission
- Plastic housing and optics
- 2 PNP or NPN digital outputs
- 0-10 V analog output or alarm output



APPLICATIONS

- Packaging end of lines
- Carton stacking control
- Paper reel unwinding control
- Automotive assembling line

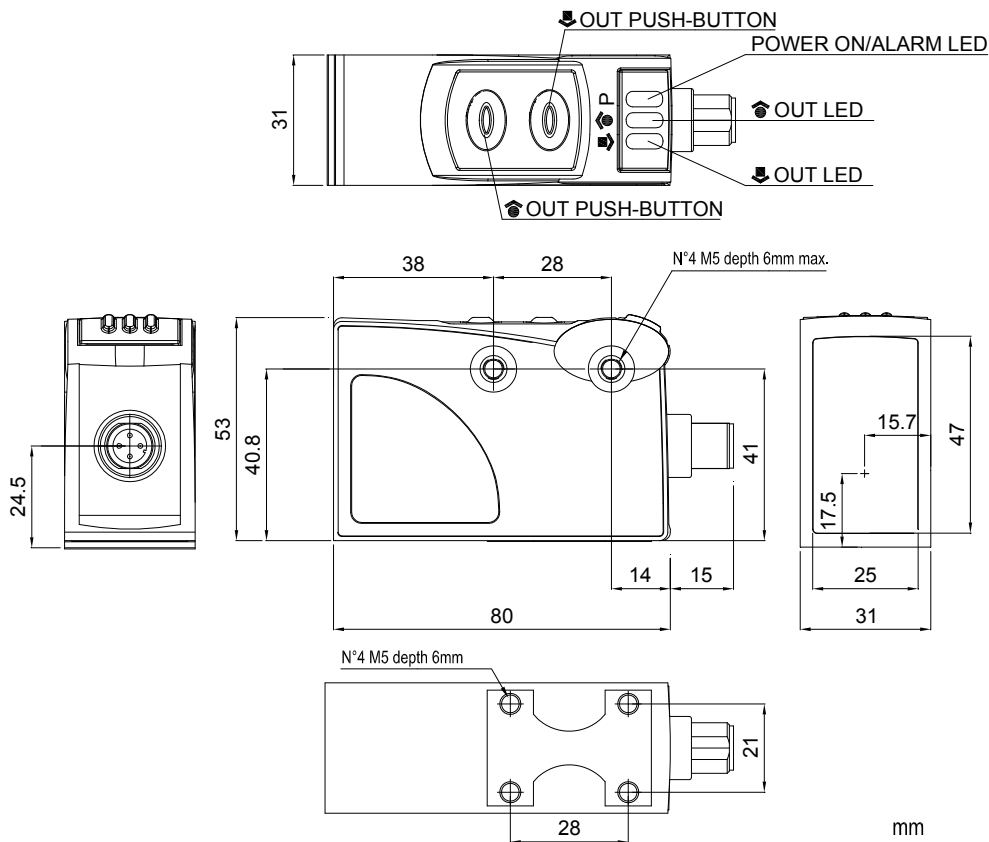


| S81 | | |
|-----------------------------|-----------|--|
| Distance sensor | | 0,3...4 m |
| Repeatability | | ± 4 mm |
| Switching frequency | | 80 Hz |
| Light emission | | red LASER (class 2) |
| Response time | | 5 ms |
| Setting | | push buttons |
| Power supply | Vdc | 24 V |
| | Vac | |
| | Vac/dc | |
| Output | PNP | ▪ |
| | NPN | ▪ |
| | NPN/PNP | |
| | relay | |
| | other | 0...10 V Analog output (S81-Y), Alarm output (S81-M) |
| Connection | cable | |
| | connector | ▪ |
| | pig-tail | |
| Approximate dimensions (mm) | | 31x53x80 |
| Housing material | | ABS |
| Mechanical protection | | IP67 |

TECHNICAL DATA

| | |
|---------------------------------------|--|
| Power supply | 24 Vdc \pm 20% (limit values) |
| Ripple | 2 Vpp max. |
| Consumption (output current excluded) | 120 mA max. (100 mA at 24 V) |
| Light emission | red Laser 665 nm |
| Setting | OUT1 and OUT2 push-buttons |
| Indicators | yellow OUTPUT1 and OUTPUT2 LEDs green POWER/READY LED |
| Output | 2 PNP or NPN analog output with 0-10 V (mod. S81-Y), alarm output (S81-M) |
| Output current | 100 mA max. |
| Response time | 5 ms |
| Switching frequency | 80 Hz |
| Connection | M12 5-pole connector |
| Dielectric strength | 500 Vac, 1 min between electronics and housing |
| Insulating resistance | 20 M Ω , 500 Vdc between electronics and housing |
| Electrical protection | class 2 |
| Mechanical protection | IP67 |
| Ambient light rejection | according to EN 60947-5-2 |
| Vibrations | 0,5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6) |
| Shock resistance | 11 ms (30 G) 6 shock for every axis (EN60068-2-27) |
| Housing material | ABS |
| Lens material | PMMA |
| Operating temperature | 0 ... 50 °C |
| Storage temperature | -20 ... 70 °C |
| Weight | 92 g max. |

DIMENSIONS

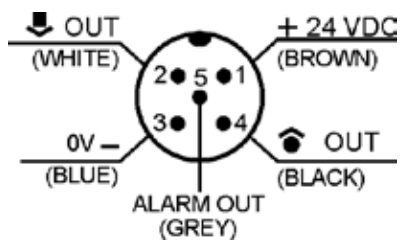


DISTANCE SENSORS

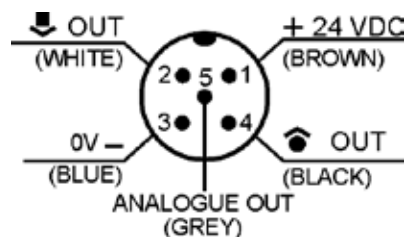
CONNECTIONS

M12 Connector

Background suppression S81-M



Distance S81-Y

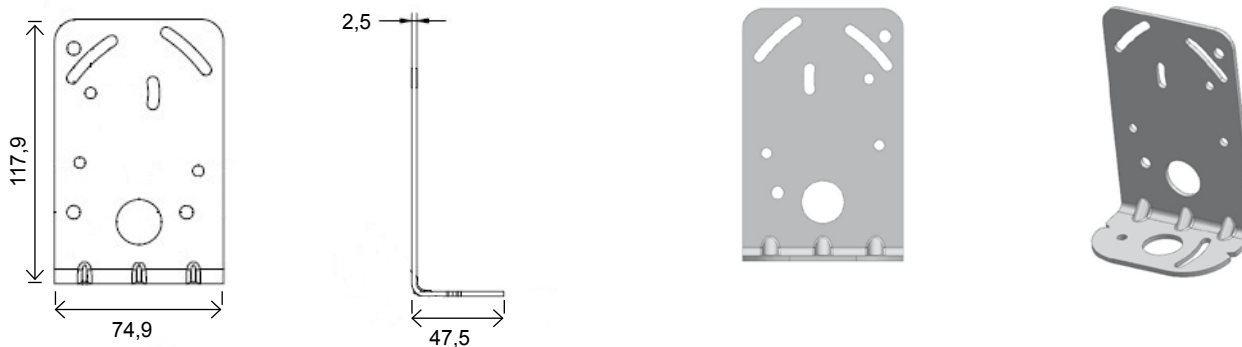


MODEL SELECTION AND ORDER INFORMATION

| OPTIC FUNCTION | HOUSING | CONNECTION | OUTPUT | MODEL | ORDER No. |
|------------------------|---------|---------------|-------------------------------|-------------------|-----------|
| Background suppression | Plastic | M12 Connector | NPN, Alarm | S81-PL-5-M03-NNC | 951551000 |
| | | | PNP, Alarm | S81-PL-5-M03-PPC | 951551110 |
| Distance | | | NPN, Analog 0...10V | S81-PL-5-Y03-NNV | 951551120 |
| | | | PNP, Analog 0...10V | S81-PL-5-Y03-PPV | 951551030 |
| | | | PNP, Analog 0...10V, Scalable | S81-PL-5-Y03-PPVK | 951551040 |

ACCESSORIES

ST-S85-STD



| MODEL | DESCRIPTION | ORDER No. |
|------------|------------------|-----------|
| ST-S85-STD | mounting bracket | 95ACC7840 |

CABLES

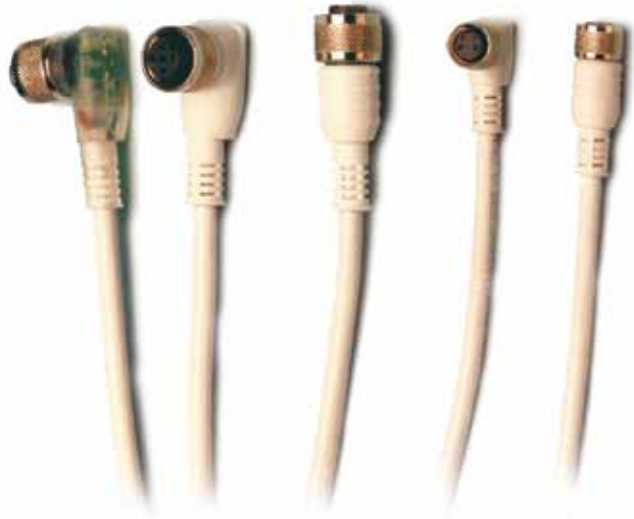
| TYPE | DESCRIPTION | LENGTH | MODEL | ORDER No. |
|---------------------|----------------------------|--------|---------------|-----------|
| Axial M12 connector | 5-pole, grey, P.V.C. | 3 m | CS-A1-03-G-03 | 95ACC2110 |
| | | 5 m | CS-A1-03-G-05 | 95ACC2120 |
| | | 10 m | CS-A1-03-G-10 | 95ACC2140 |
| | 5-pole, U.L., black, P.V.C | 3 m | CS-A1-03-U-03 | 95ASE1170 |
| | | 5 m | CS-A1-03-U-05 | 95ASE1180 |
| | | 10 m | CS-A1-03-U-10 | 95ASE1190 |
| | | 15 m | CS-A1-03-U-15 | 95ASE1200 |
| | | 25 m | CS-A1-03-U-25 | 95ASE1210 |
| | | 50 m | CS-A1-03-U-50 | 95A252700 |



CS series – Cables & Connectors

The right connection for your photoelectric sensors

- M8 and M12, axial or radial female connectors
- Standard length cables: 3, 5, 7, 10, 15 or 25 m
- 3, 4, 5 or 8 poles
- Shielded or unshielded models
- P.U.R. coated models for use in harsh environments
- P.V.C. coated models for standard use
- Standard M12 4 pole non-cabled connectors



| CS | |
|-----------------------|--|
| Connectors | M8 axial or radial(90°) 3 poles M12 axial or radial(90°) 3 poles M8 axial or radial(90°) 4 poles M12 axial or radial(90°) 4 poles M12 axial 5 poles M12 axial 8 poles |
| Cable lengths | 3, 5, 7, 10, 15, 25 m |
| Conductor diameter | 42 x 0.10 mm - 0.35 mm≈ (m12 3-pole) 32 x 0.10 mm - 0.25 mm≈ (m12 4-pole) 32 x 0.10 mm - 0.25 mm≈ (m8 4-pole) |
| Conductor material | annealed non-tinned electrolytic copper |
| Flammability class | CEI 20-22, IEC 332/3 flame-retardant and non-propagate |
| Housing material | P.U.R., P.V.C. |
| Mechanical protection | IP67, with locked ring |

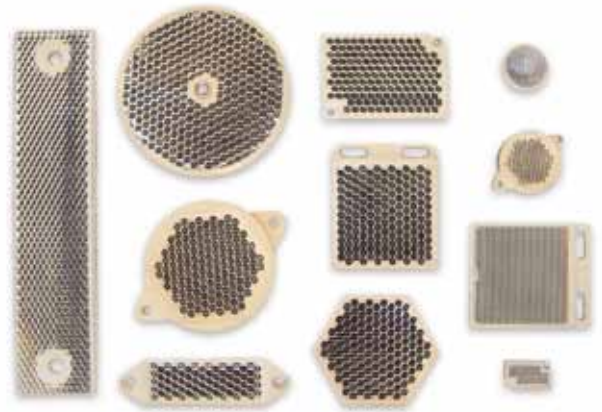
| CONNECTOR & DIRECTION | POLES | STYLE | CABLE LENGTH | MODEL | ORDER No. | |
|--------------------------|--------|---------------|--------------|---------------|---------------|-----------|
| M12 Connector (Axial) | 3-pole | Grey, P.V.C. | 3 m | CS-A1-01-G-03 | 95A251290 | |
| | | | 5 m | CS-A1-01-G-05 | 95A251300 | |
| | | | 7 m | CS-A1-01-G-07 | 95A251320 | |
| | | | 10 m | CS-A1-01-G-10 | 95A251340 | |
| | 4-pole | Grey, P.V.C. | 3 m | CS-A1-02-G-03 | 95A251380 | |
| | | | 5 m | CS-A1-02-G-05 | 95A251270 | |
| | | | 7 m | CS-A1-02-G-07 | 95A251280 | |
| | | | 10 m | CS-A1-02-G-10 | 95A251390 | |
| | | | P.U.R. | 2 m | CS-A1-02-R-02 | 95A251540 |
| | | | | 5 m | CS-A1-02-R-05 | 95A251560 |
| | 5-pole | Grey, P.V.C. | 3 m | CS-A1-03-G-03 | 95ACC2110 | |
| | | | 5 m | CS-A1-03-G-05 | 95ACC2120 | |
| | | | 10 m | CS-A1-03-G-10 | 95ACC2140 | |
| | 8-pole | Black, P.V.C. | 3 m | CS-A1-06-B-03 | 95ACC2230 | |
| | | | 5 m | CS-A1-06-B-05 | 95ACC2240 | |
| | | | 10 m | CS-A1-06-B-10 | 95ACC2250 | |

| | | | | | | | |
|--|--|--------------------------------|-----------------------|---------------------|---------------|---------------|-----------|
| M12 Connector (Radial 90°) | 3-pole | Grey, P.V.C. | 3 m | CS-A2-01-G-03 | 95A251200 | | |
| | | | 5 m | CS-A2-01-G-05 | 95A251210 | | |
| | | | 7 m | CS-A2-01-G-07 | 95A251220 | | |
| | | | 10 m | CS-A2-01-G-10 | 95A251230 | | |
| | 4-pole | OIL resistant (CEI 2034-01) | Grey, P.V.C. | 3 m | CS-A2-01-O-03 | 95A251660 | |
| | | | | 5 m | CS-A2-01-O-05 | 95A251670 | |
| | | | | 10 m | CS-A2-01-O-10 | 95A251680 | |
| | | | | 3 m | CS-A2-02-G-03 | 95A251360 | |
| | | Grey, P.V.C. | Grey, P.V.C. | 5 m | CS-A2-02-G-05 | 95A251240 | |
| | | | | 7 m | CS-A2-02-G-07 | 95A251245 | |
| 10 m | | | | CS-A2-02-G-10 | 95A251260 | | |
| 2 m | | | | CS-A2-02-R-02 | 95A251550 | | |
| 5 m | | | | CS-A2-02-R-05 | 95A251570 | | |
| 5 m | | | | CS-A2-02-O-05 | 95A251690 | | |
| OIL resistant (CEI 2034-01) | Grey, P.V.C. | 10 m | CS-A2-02-O-10 | 95A251700 | | | |
| | | 5 m | CS-A2-11-G-05 | 95A251310 | | | |
| M12 Connector with LED (for PNP N.O. sensors) (Radial 90°) | 3-pole | Grey, P.V.C. | 10 m | CS-A2-11-G-10 | 95A251330 | | |
| | | | 3 m | CS-A2-12-G-03 | 95A251400 | | |
| | 4-pole | Grey, P.V.C. | 5 m | CS-A2-12-G-05 | 95A251350 | | |
| | | | 10 m | CS-A2-12-G-10 | 95A251370 | | |
| M8 Connector (Axial) | 3-pole | Grey, P.V.C. | 3 m | CS-B1-01-G-03 | 95A251490 | | |
| | | | 5 m | CS-B1-01-G-05 | 95A251510 | | |
| | | P.U.R. | 2 m | CS-B1-01-R-02 | 95A251580 | | |
| | | | 5 m | CS-B1-01-R-05 | 95A251600 | | |
| | 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 | | |
| | | P.U.R. | 2 m | CS-B1-02-R-02 | 95A251620 | | |
| | | | 5 m | CS-B1-02-R-05 | 95A251640 | | |
| | OIL resistant (CEI 2034-01) | Grey, P.V.C. | 5 m | CS-B1-02-O-05 | 95A251730 | | |
| | | | 10 m | CS-B1-02-O-10 | 95A251100 | | |
| | | | 3 m | CS-B2-01-G-03 | 95A251500 | | |
| | | | 5 m | CS-B2-01-G-05 | 95A251520 | | |
| M8 Connector (Radial 90°) | 3-pole | Grey, P.V.C. | 2 m | CS-B2-01-R-02 | 95A251590 | | |
| | | | 5 m | CS-B2-01-R-05 | 95A251610 | | |
| | | P.U.R. | 3 m | CS-B2-02-G-03 | 95A251450 | | |
| | | | 5 m | CS-B2-02-G-05 | 95A251460 | | |
| | 4 pole | Grey, PVC | 7 m | CS-B2-02-G-07 | 95A251470 | | |
| | | | 10 m | CS-B2-02-G-10 | 95A251530 | | |
| | | | 2 m | CS-B2-02-R-02 | 95A251630 | | |
| | | | 5 m | CS-B2-02-R-05 | 95A251650 | | |
| | | OIL resistant (CEI 2034-01) | Grey, PVC | 5 m | CS-B2-02-O-05 | 95A251720 | |
| | | | | 10 m | CS-B2-02-O-10 | 95A251110 | |
| Shielded M12 Connector (Axial) | 3-pole | Grey, P.V.C. | 10 m | CV-A1-21-G-10 | 95ACC2060 | | |
| | | | 3 m | CV-A1-22-B-03 | 95ACC1480 | | |
| | | | 5 m | CV-A1-22-B-05 | 95ACC1490 | | |
| | | | 10 m | CV-A1-22-B-10 | 95ACC1500 | | |
| | 4-pole | Black, P.V.C. | 15 m | CV-A1-22-B-15 | 95ACC2070 | | |
| | | | 25 m | CV-A1-22-B-25 | 95ACC2090 | | |
| | | | 3 m | CV-A1-26-B-03 | 95ACC1510 | | |
| | | | 5 m | CV-A1-26-B-05 | 95ACC1520 | | |
| | | Black, P.V.C. | 10 m | CV-A1-26-B-10 | 95ACC1530 | | |
| | | | 15 m | CV-A1-26-B-15 | 95ACC2080 | | |
| | Shielded M12 Connector (Radial 90°) | 4-pole | Black, P.V.C. | 25 m | CV-A1-26-B-25 | 95ACC2100 | |
| | | | | 3 m | CV-A2-22-B-03 | 95ACC1540 | |
| | | | | 5 m | CV-A2-22-B-05 | 95ACC1550 | |
| | | | | 10 m | CV-A2-22-B-10 | 95ACC1560 | |
| 8-pole | | Black, P.V.C. | 3 m | CV-A2-26-B-03 | 95ACC1600 | | |
| | | | 5 m | CV-A2-26-B-05 | 95ACC1610 | | |
| | | | 10 m | CV-A2-26-B-10 | 95ACC1620 | | |
| | | | 3 m | CS-A1-02-U-03 | 95ASE1120 | | |
| | | M12 Connector (Axial) | 4-pole | U.L., Black, P.V.C. | 5 m | CS-A1-02-U-05 | 95ASE1130 |
| | | | | | 10 m | CS-A1-02-U-10 | 95ASE1140 |
| 15 m | CS-A1-02-U-15 | | | | 95ASE1150 | | |
| 25 m | CS-A1-02-U-25 | | | | 95ASE1160 | | |
| 3 m | CS-A1-03-U-03 | | | | 95ASE1170 | | |
| 5 m | CS-A1-03-U-05 | | | | 95ASE1180 | | |
| 5-pole | U.L., Black, P.V.C. | | 10 m | CS-A1-03-U-10 | 95ASE1190 | | |
| | | | 15 m | CS-A1-03-U-15 | 95ASE1200 | | |
| | | | 25 m | CS-A1-03-U-25 | 95ASE1210 | | |
| | | | 50 m | CS-A1-03-U-50 | 95A252700 | | |
| 8-pole | U.L., Black, P.V.C. | 3 m | CS-A1-06-U-03 | 95ASE1220 | | | |
| | | 5 m | CS-A1-06-U-05 | 95ASE1230 | | | |
| | | 10 m | CS-A1-06-U-10 | 95ASE1240 | | | |
| | | 15 m | CS-A1-06-U-15 | 95ASE1250 | | | |
| | | 25 m | CS-A1-06-U-25 | 95ASE1260 | | | |
| | | 50 m | CS-A1-06-U-50 | 95A252710 | | | |
| M12 Connector (Axial) | 4-pole | Black | Connector- not cabled | CS-A1-02-B-NC | G5085002 | | |
| M12 Connector (Radial 90°) | 8-pole | Black | Connector- not cabled | CS-A1-06-B-NC | 95ACC2550 | | |
| | 4-pole | Black | Connector- not cabled | CS-A2-02-B-NC | G5085003 | | |

R series – REFLECTORS

Excellent performance with infrared, red light and polarized emission

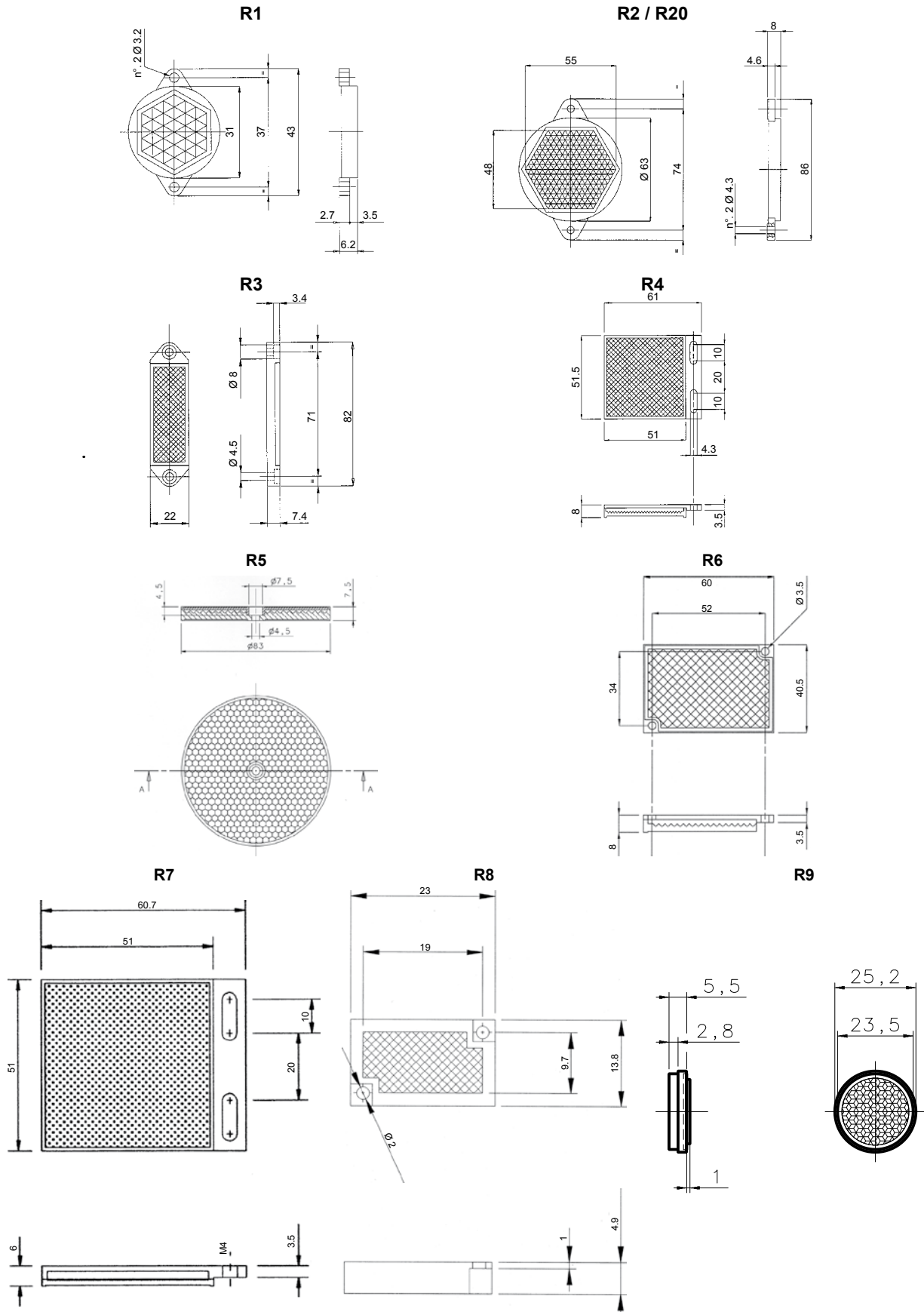
- Prismatic reflectors for retroreflective sensors
- High efficiency models for long operating distances
- Microprism reflectors for sensors with LASER emission
- Self-adhesive reflectors and reflector tape



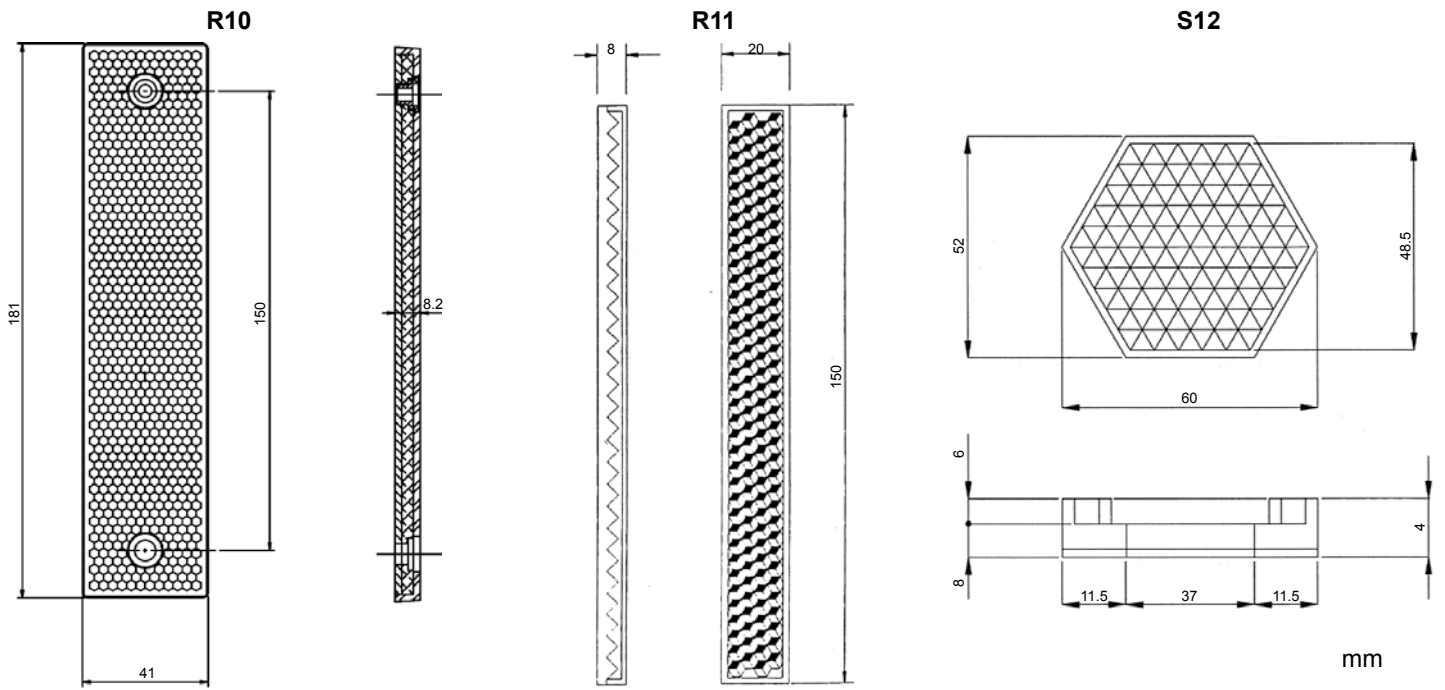
| REFLECTORS | |
|------------------------------|---------------------------|
| Prismatic reflector material | Reflector in PMMA plastic |
| Support material | Support in ABS |
| Mechanical protection | IP67, IP69K (R4K) |
| Operating temperature | -30 ... +70° c |

| MODELS | DESCRIPTION | ORDER No. |
|--------|--|------------|
| R1 | Ø 23 mm with Ø 31 mm support | S940700023 |
| R2 | Ø 48 mm with Ø 63 mm support | S940700048 |
| R3 | 18 x 54 mm with 22 x 82 mm support | S940700972 |
| R4 | 47x 47 mm with 51.5 x 61 mm support | 95A151340 |
| R4K | 51X61 mm IP69K protection | 95A151220 |
| R5 | Ø 75 mm with Ø 82 mm support | S940700075 |
| R6 | 36 x 55 mm with 40.5 x 60 mm support | 95A151350 |
| R7 | 47x47 mm microprism reflector with 51 x 61 mm support | 95A151360 |
| R8 | 9.7 x 19 mm microprism reflector with 13.8 x 23 mm support | 95A151370 |
| R9 | Ø 23 mm with Ø 25 mm self-adhesive support | 95A151080 |
| R10 | 36 x 176 mm with 41 x 181 mm support | S19120000 |
| R11 | 146 x 15 mm with 150 x 18 mm support | 95A155050 |
| R14 | Ø 24 mm with Ø 25 mm support | 95A151310 |
| R16 | 9.7 x 19 mm reflector with 14 x 23 mm support | 95A151330 |
| R20 | Ø 48 mm microprism reflector with Ø 63 mm support | 95A151090 |
| R35 | Ø 33 mm with Ø 35 mm support | 95A151530 |
| S12 | Ø 48 mm with ch.52 mm hexagon support | S940710048 |
| RT3870 | 200 x 300 mm self-adhesive reflective tape | S940000600 |
| RT3970 | 200 x 300 mm self-adhesive reflective tape for polarized light | S940000900 |
| RT3970 | 60 x 40 mm self-adhesive reflective tape for polarized light | S940000604 |

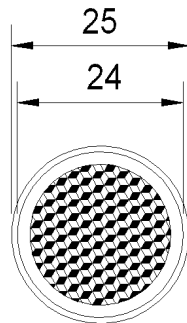
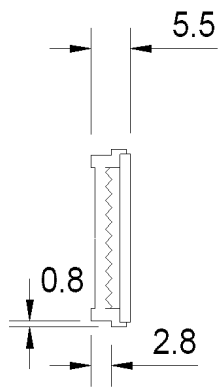
DIMENSIONS



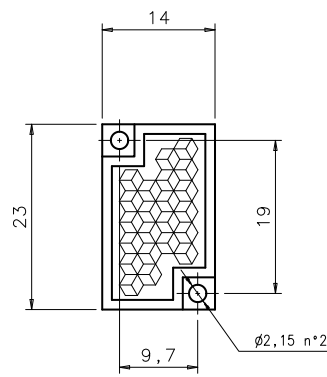
ACCESSORIES



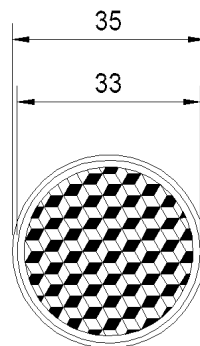
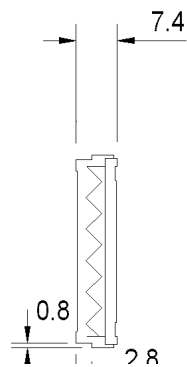
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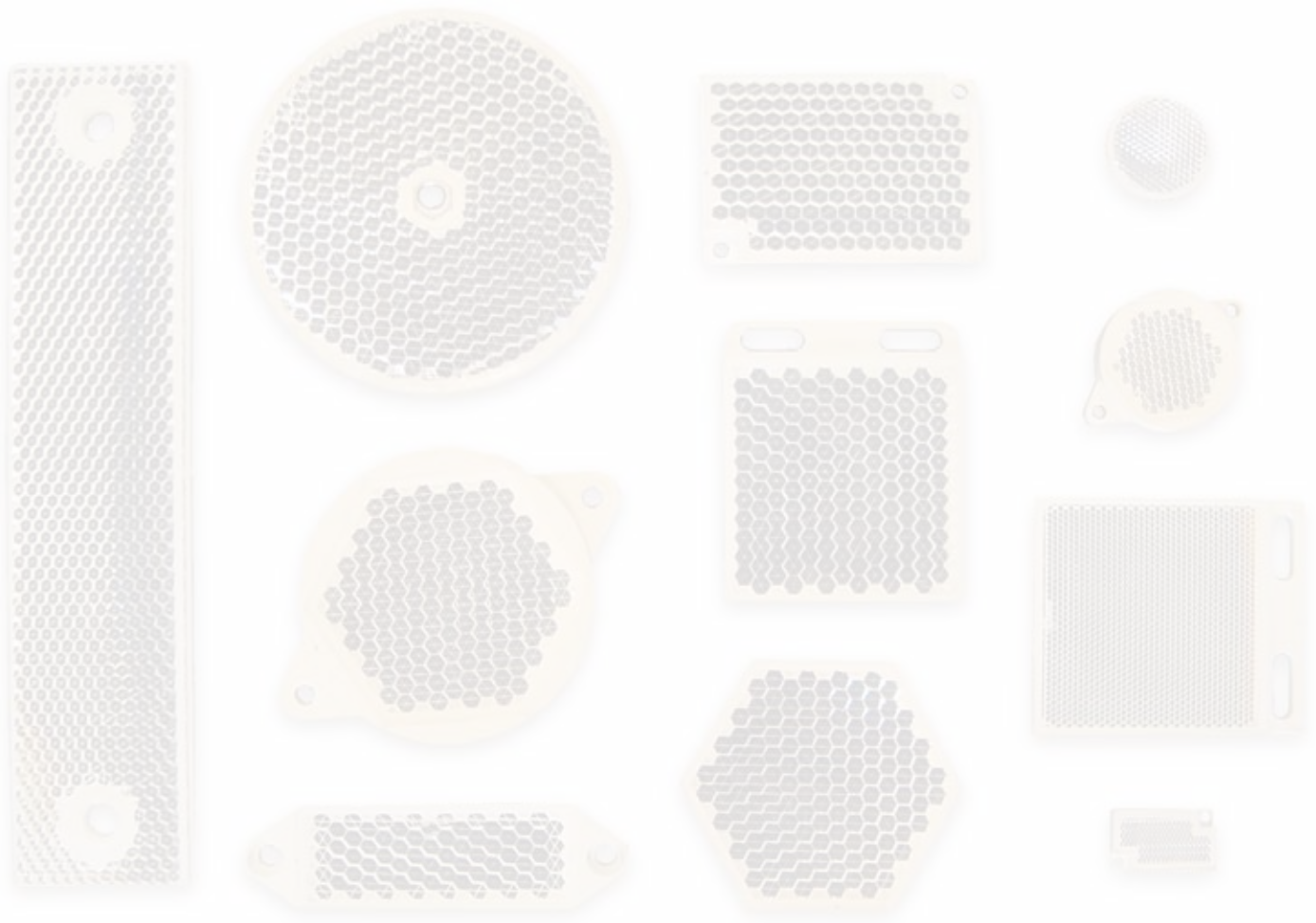


R16



R35







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