

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

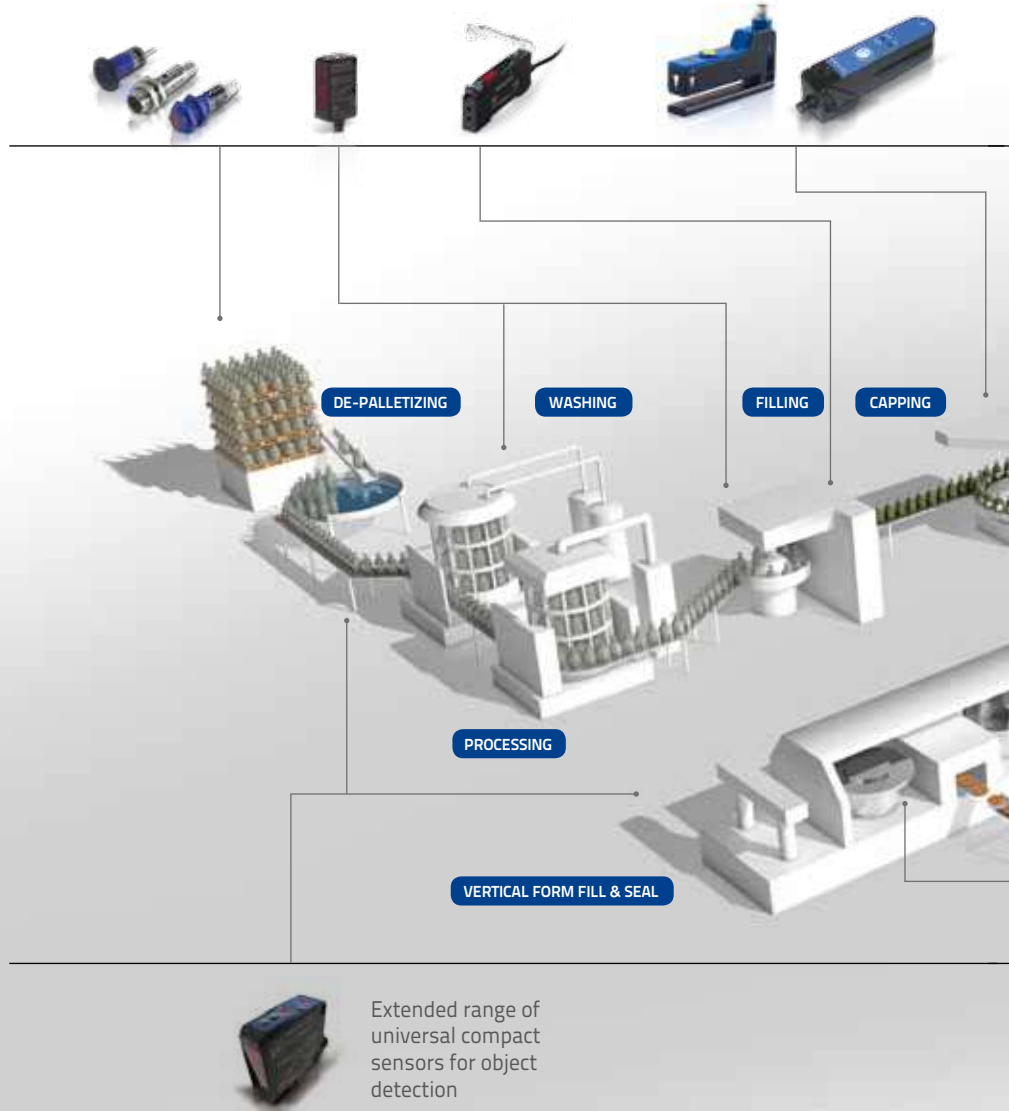
Datalogic has more than 40 years of experience in the sensors and safety sector, developing their first product, a **Photoelectric Sensor**, in 1972. Today, Datalogic is one of the largest manufacturers of sensor and safety products worldwide.

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



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



Dimensional sensors for height/width measurement and object positioning



TOF distance sensors for measurement and object positioning

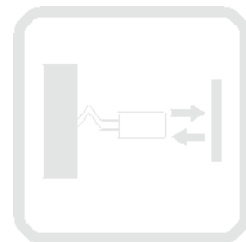
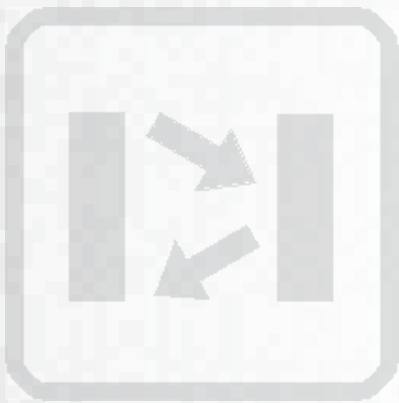
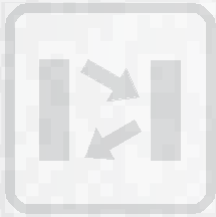




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PHOTOELECTRIC SENSORS





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.

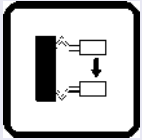
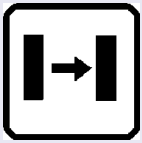
These sensors are ideal for generic industrial applications such as counting, presence control, or automatic positioning.

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

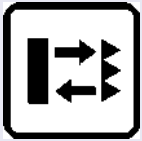
PHOTOELECTRIC SENSORS

THROUGH BEAM



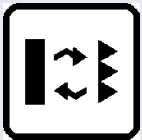
The light emitter and receiver are contained in two different housings and installed facing each other. The light beam released by the emitter directly hits the receiver; every object interrupting the beam is therefore detected. This system is used to obtain significant signal differences (when the light 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



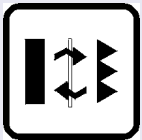
Both emitter and receiver are located inside the same housing for retro-reflective photoelectric sensors. Utilizing a prismatic reflector, the emitted light beam is reflected onto the receiver, detecting the object when it interrupts the light beam.

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



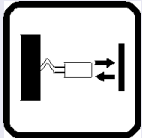
For the detection of transparent objects, such as PET bottles or Mylar sheets, a low-hysteresis polarized retroreflective model (which detects small signal differences) can be used.

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.

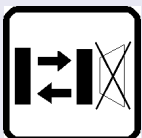
BACKGROUND SUPPRESSION



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

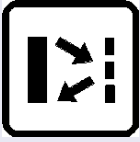
FOR CLEAR DETECTION



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.

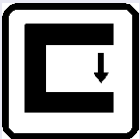
LUMINESCENCE



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



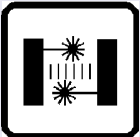
A fork sensor, is based on a particular model of the through beam sensor, where emitter and receiver are placed opposite to each other on the internal sides of an 'U-shaped' housing. Any target passing through the internal slot interrupts the beam and is detected. The most typical fork sensor applications 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	S40	S41
MAX OPERATING DISTANCE						
Through beam  	0...20 m	0...60 m	0...12 m	0...30 m		0,1...6 m
Retroreflective 	0,1...5 m	0,1...4 m	0,01...7 m			
Polarized retroreflective 	0,1...4 m	0,1...16 m	0,01...5,5 m	0,3...10 m	0,1...6 m	0,1...2,5 m
Retroreflective for transparent 	0,1...0,8 m	0,1...1,3 m		0...2 m	100...700 mm	100...700 mm
Diffuse proximity 	0...1 m	0...700 mm	2...500 mm	0...700 mm	5...300 mm	2...350 mm
Fixed focus 	0...50 mm	100 mm	70 mm			110 mm
Background suppression 	40...120 mm	50...100 mm	30...100 mm	40...300 mm	15...100 mm	
Fiber optic 		0...100 mm (through beam) 0...30 mm (diffuse proximity)				
Contrast 		10 ±2 mm				
Luminescence 		0...20 mm				
Page	20	26	38	42	48	52

(*) 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

	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...10 m	0,3...20 m	0,1...5 m	0,1...20 m	0,1...10 m	0,1...22 m		
	0...2 m			0...1,7 m				
	0...500 mm	0...2 m	0,01...2 m	0,05...2 m	0,05...2 m	0...5 m	0...100 mm (*)	0...550 mm (*)
3...50 mm								
	50...300 mm	60...600 mm (RED LED) 200...2000 mm (INFRARED LED)	100...500 mm	70...200 mm	0,2...2 m	0,4...2,5 m		
	9 ±2 mm			19 ±2 mm				
				0...40 mm				
56	60	66	72	78	84	88	92	96

SELECTION CHART

APPLICATION PHOTO

		FORK			CONTRAST	
MAX OPERATING DISTANCE		SR23	SR21	SRF	TLμ	TL46
Slot (width)		5 mm	2 mm	30, 50, 80, 120 mm		
Contrast					6...60 mm (*)	9 ±3 mm (*)
Luminescence						
Color & Contrast						
Area						
Dimensional						
Distance						
Page		102	106	110	114	118




(*) 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
122	126	130	134	138	142	146	150

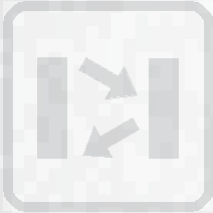
ACCESSORIES

	FIBER OPTIC	CONNECTORS	REFLECTORS
	OF/OFA 	CS 	R 
Page	100	154	156

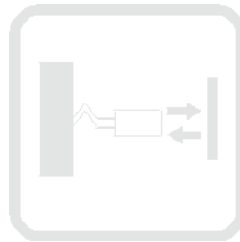
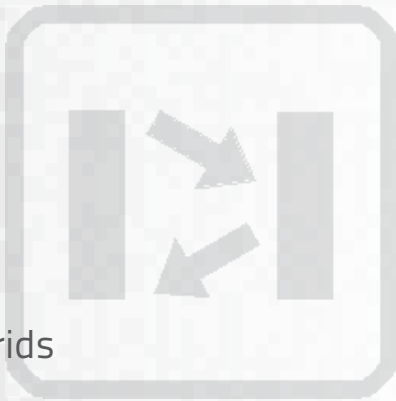
REFERENCE GUIDE



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

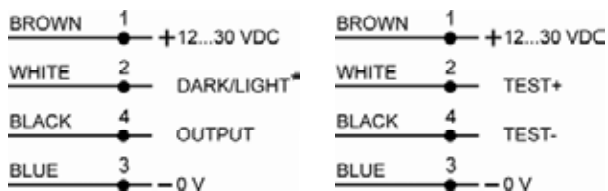
S15		
Through beam		0...20 m
Retroreflective (on R2 reflector)		0,1...5 m
Polarized retroreflective		0,1...4 m
Retroreflective for transparent (on R2 reflector)		0,1...0,8 m
Diffuse proximity		short distance 0...100 mm
		medium distance 0...350 mm
		long distance 1 m
Fixed focus		0...50 mm
Background 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 μ s (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 \varnothing 4 mm, 150 mm length \varnothing 4 mm cable with M12 4-pole connector (pig-tail vers.)
Dielectric strength	500 Vac 1 min., between electronics and housing
Insulation resistance	>20 M Ω 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

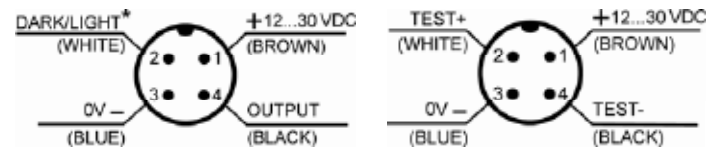
CABLE AND PIG-TAIL

Through beam emitter



M12 CONNECTOR

Through beam emitter

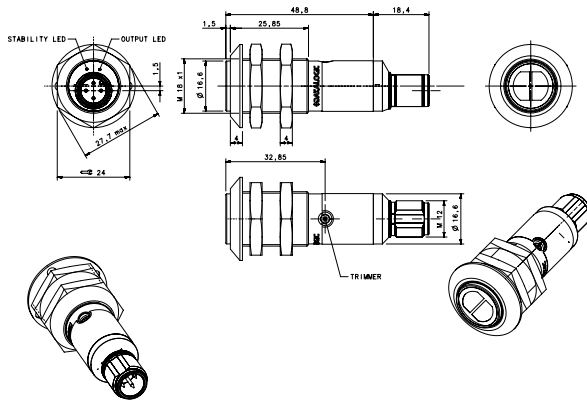


TUBULAR SENSORS

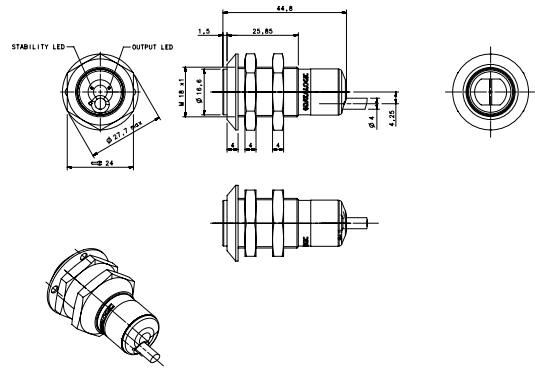
DIMENSIONS

PLASTIC

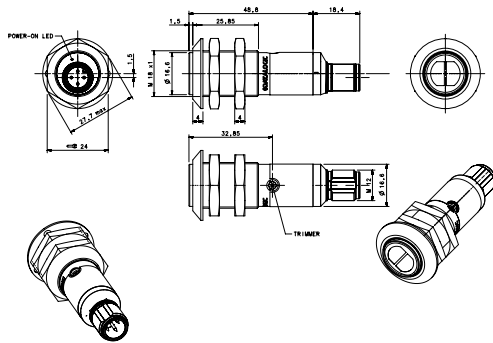
M12 connector version



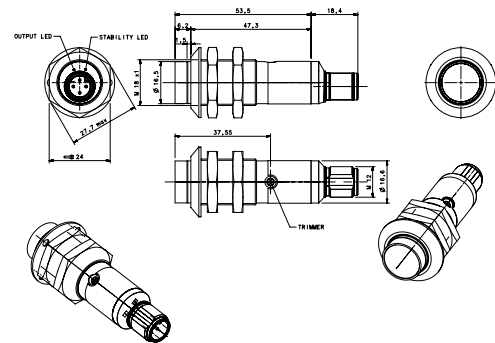
Cable version



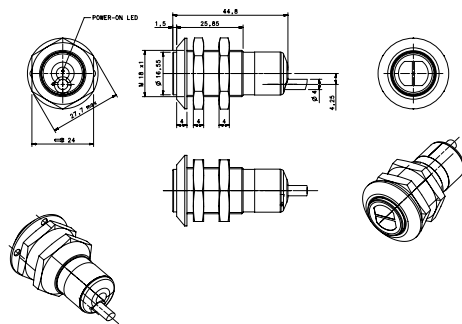
Through beam emitter - M12 connector version



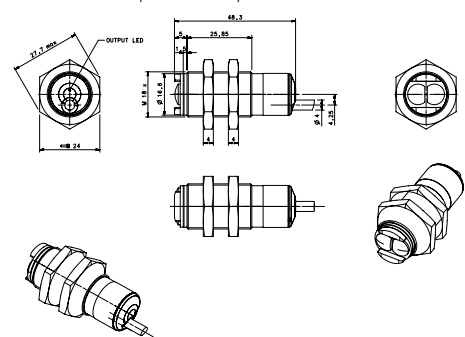
Background suppression - M12 connector version



Through beam emitter - cable version

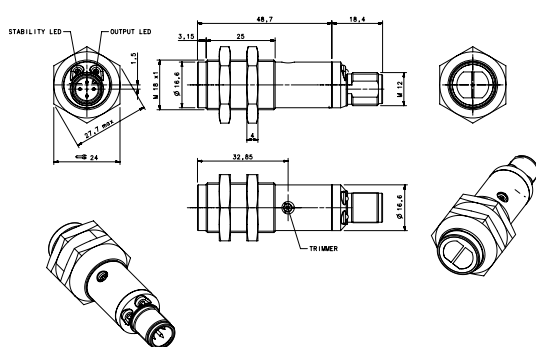


Diffuse proximity - cable version

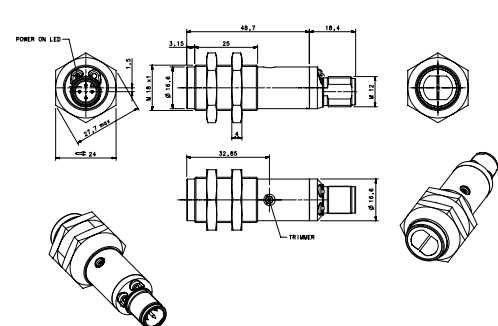


STAINLESS STEEL

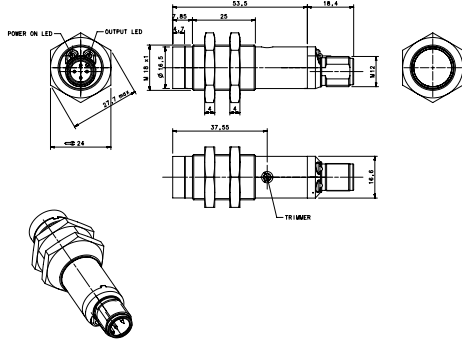
M12 connector version



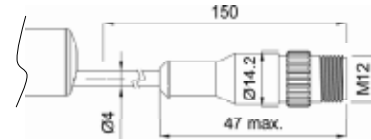
Through beam emitter - M12 connector version



Background suppression - M12 connector version



Pig-tail version



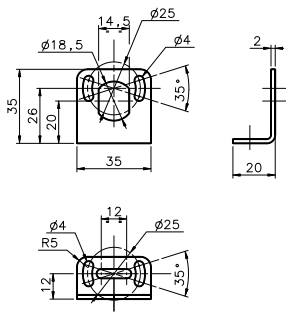
MODEL SELECTION AND ORDER INFORMATION

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	
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	
Diffuse proximity (long distance)	Plastic	M12 connector	NPN	S15-NA-5-C11-NK	952301480	
			PNP	S15-NA-5-C11-PK	952301400	
		Stainless Steel	M12 connector	NPN	S15-PA-5-C31-NK	952301340
	PNP			S15-PA-5-C31-PK	952301260	
	Stainless Steel	M12 connector	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	
Through beam emitter	Plastic	2 m cable	PNP	S15-PA-3-F00-PK	952301151	
			NPN	S15-NA-5-F01-NK	952301510	
		M12 connector	PNP	S15-NA-5-F01-PK	952301430	
	Stainless Steel		M12 connector	-	S15-PA-2-G00-XG	952301101
		-		S15-PA-5-G01-XG	952301290	
	Background suppression	Plastic	2 m cable	-	S15-PA-3-G00-XG	952301211
-				S15-NA-5-G01-XG	952301440	
M12 connector			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	
Transparent	Plastic	M12 connector	NPN	S15-PA-5-T01-NK	952301320	
			PNP	S15-PA-5-T01-PK	952301240	
	Stainless Steel	M12 connector	NPN	S15-NA-5-T01-NK	952301470	
PNP			S15-NA-5-T01-PK	952301390		

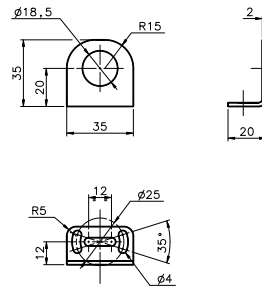
TUBULAR SENSORS

ACCESSORIES

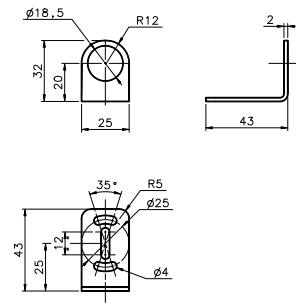
ST-5010



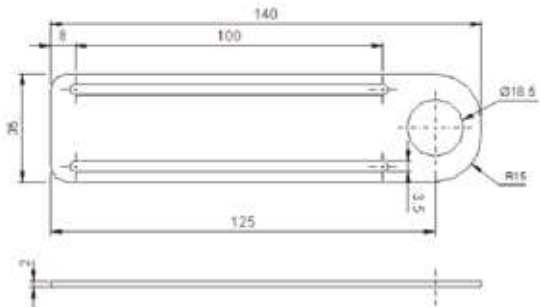
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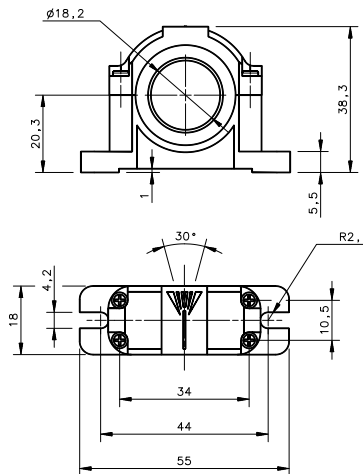
ST-5012



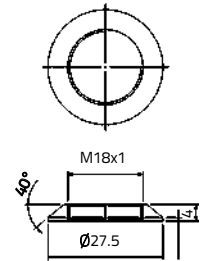
ST-5017



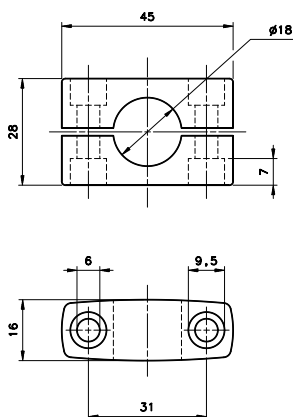
SWING-18



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

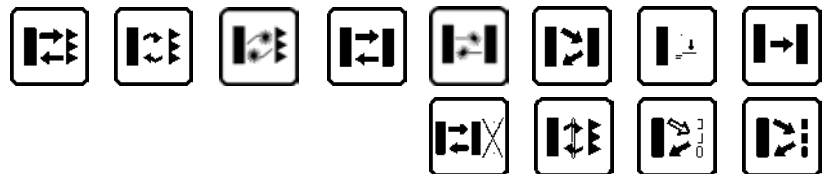
Extended range of standard "One for All" photoelectric tubular M18 sensors

- 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) 0,1...16 m (class 1 LASER) (S50)
Retroreflective for transparent (on R2 reflector)		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)

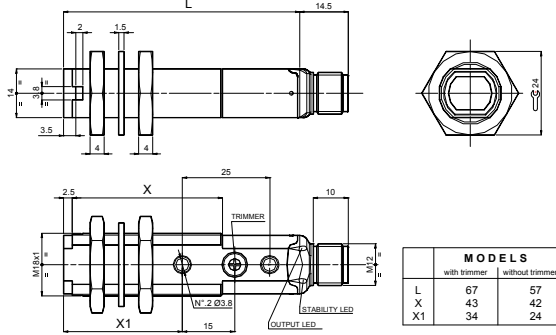
TUBULAR SENSORS

S50

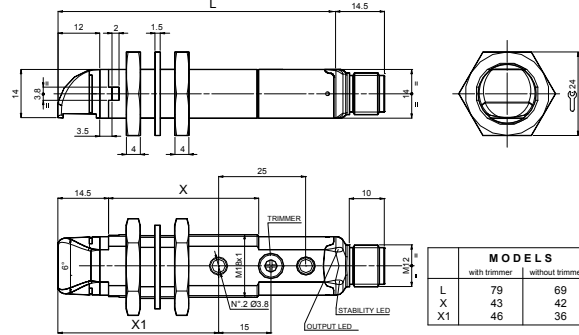
DIMENSIONS

PLASTIC

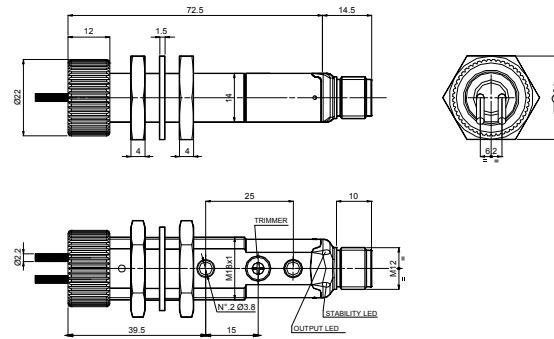
AXIAL VERSION



RADIAL VERSION

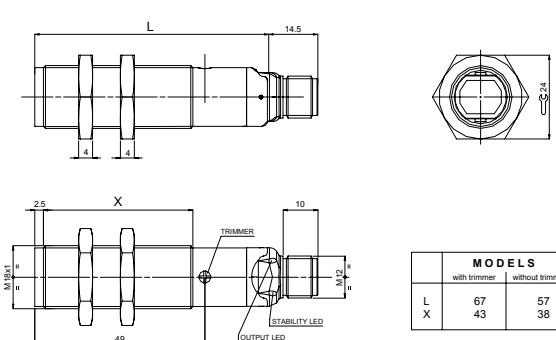


FIBRE OPTIC VERSION

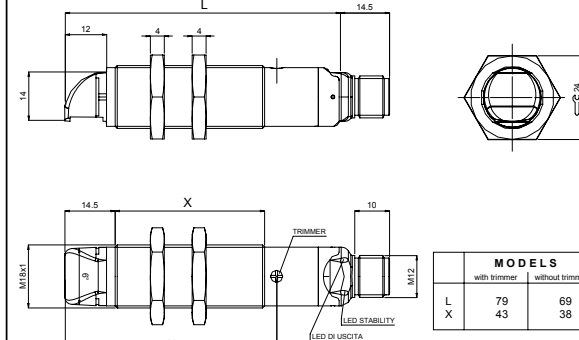


METAL

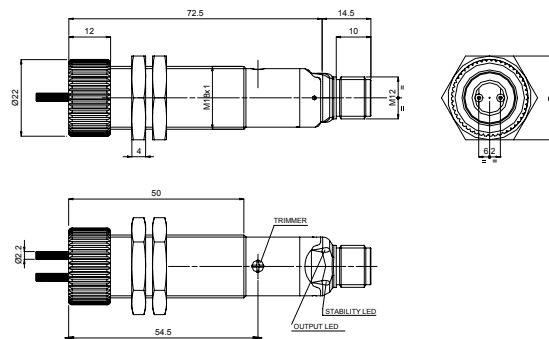
AXIAL VERSION



RADIAL VERSION

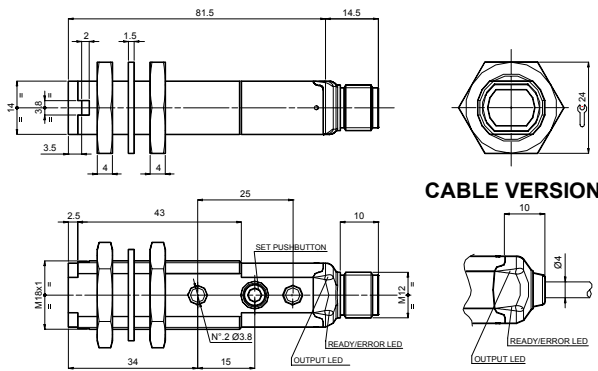


FIBRE OPTIC VERSION

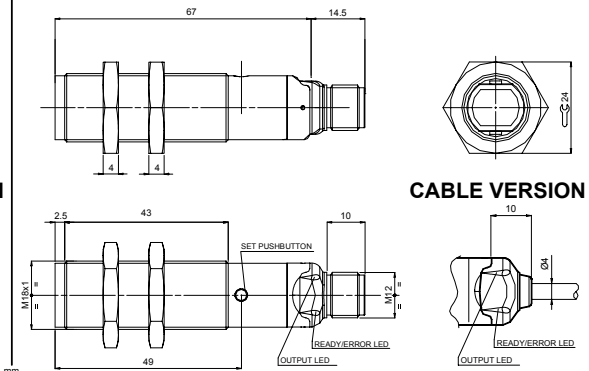


BACKGROUND SUPPRESSION AXIAL VERSION

PLASTIC

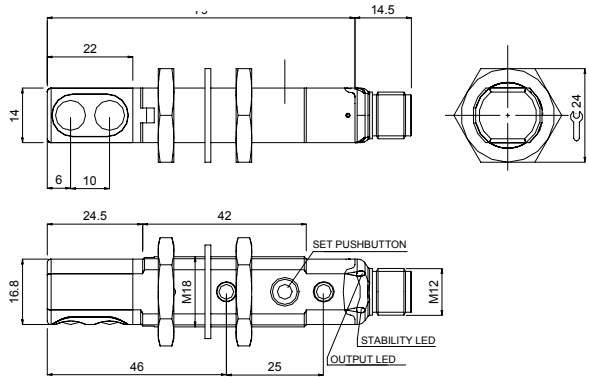


METAL

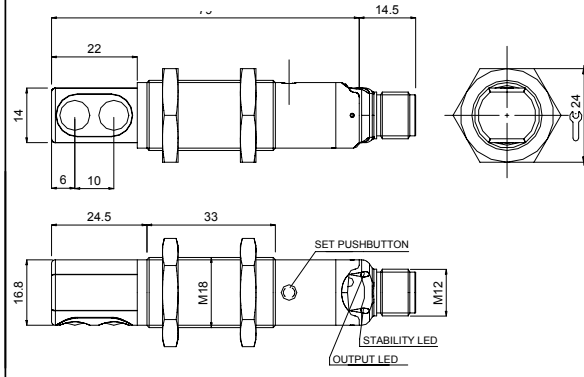


BACKGROUND SUPPRESSION RADIAL VERSION

PLASTIC

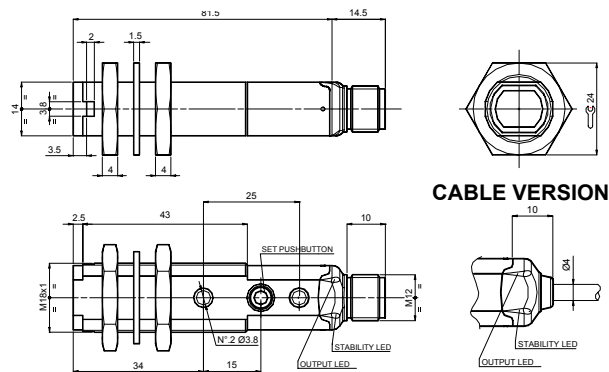


METAL

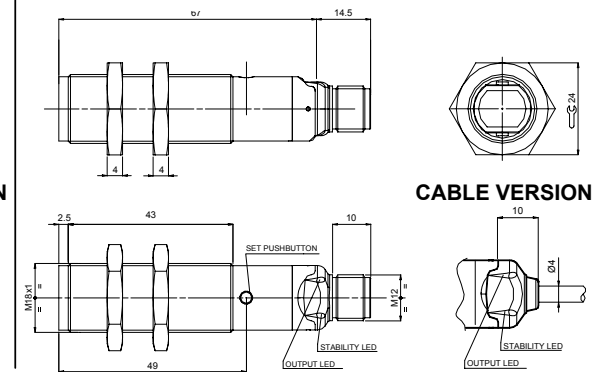


LUMINESCENCE AND CONTRAST

PLASTIC

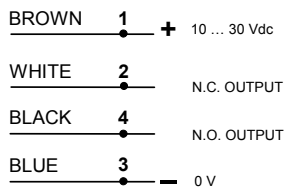


METAL

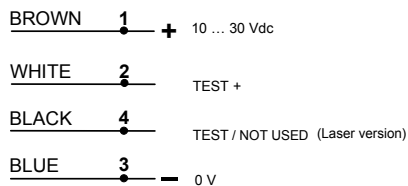


CONNECTIONS

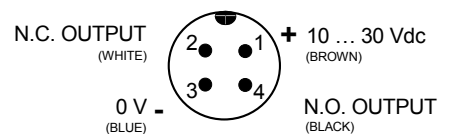
CABLE



Through beam emitter



M12 CONNECTOR



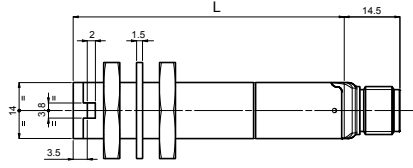
TUBULAR SENSORS

S51

DIMENSIONS

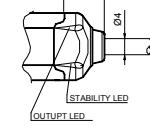
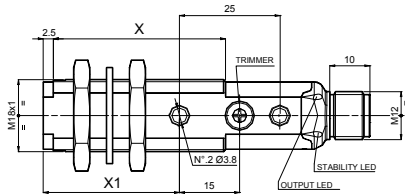
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AXIAL VERSION

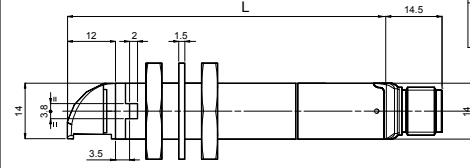


	MODELS	
	with trimmer	without trimmer
L	67	57
X	43	42
X1	34	24

CABLE VERS.

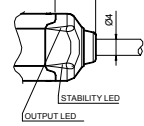
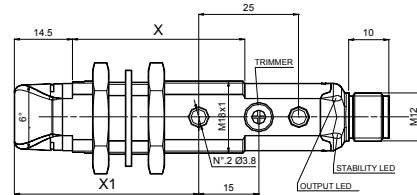


RADIAL VERSION

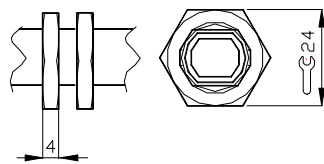


	MODELS	
	with trimmer	without trimmer
L	79	69
X	43	42
X1	46	36

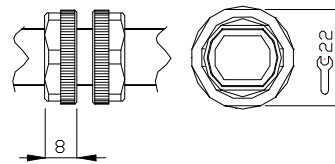
CABLE VERS.



CH.24 PLASTIC NUTS

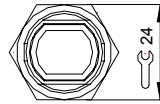
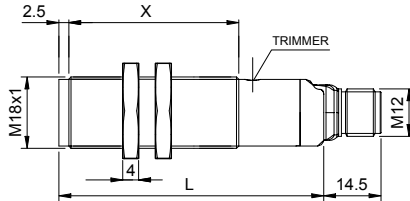


CH.22 PLASTIC NUTS



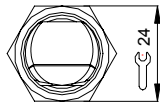
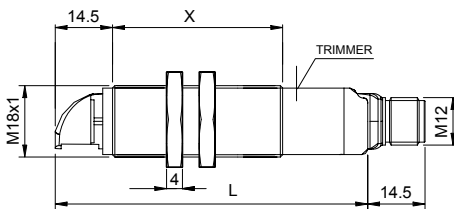
METAL

AXIAL VERSION



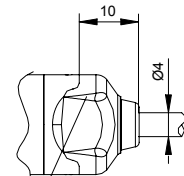
	MODELS	
	B01/C01/F00	A00/C10/G00
L	67	57
X	43	38

RADIAL VERSION



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

CABLE VERSION



OUTPUT LED
POWER ON LED (S51...G00)

CONNECTIONS

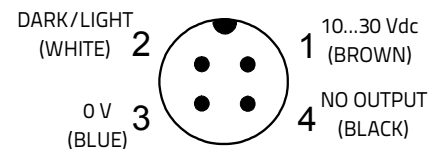
CABLE

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
		M12 Connector	PNP	S50-MA-5-M03-PP	952021070
	LED, Radial optic	2m Cable	PNP	S50-MS-2-M03-PP	952021910
		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

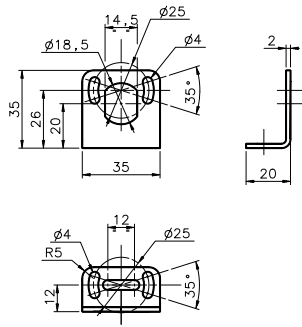
Polarized retroreflective	Nickel Plated Brass, Axial	2m Cable	NPN	S51-MA-2-B01-NK	952701611	
			PNP	S51-MA-2-B01-PK	952701551	
	M12 Connector		NPN	S51-MA-5-B01-NK	952701811	
			PNP	S51-MA-5-B01-PK	952701761	
	Nickel Plated Brass, Radial	2m Cable	NPN	S51-MR-2-B01-NK	952701721	
			PNP	S51-MR-2-B01-PK	952701661	
	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

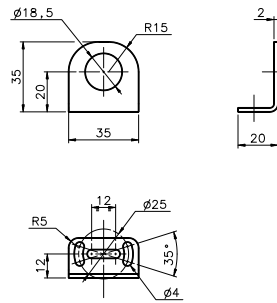
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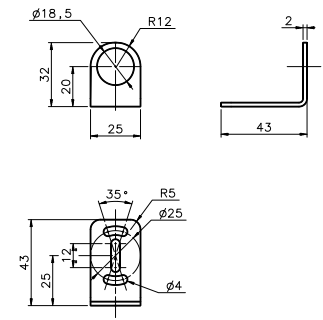
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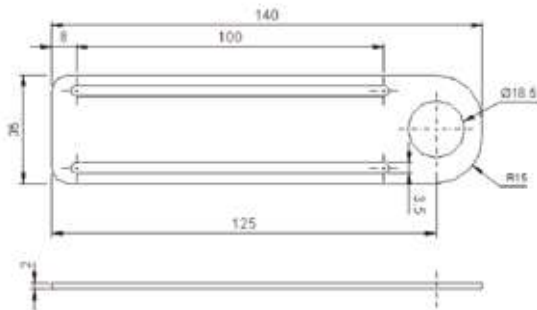
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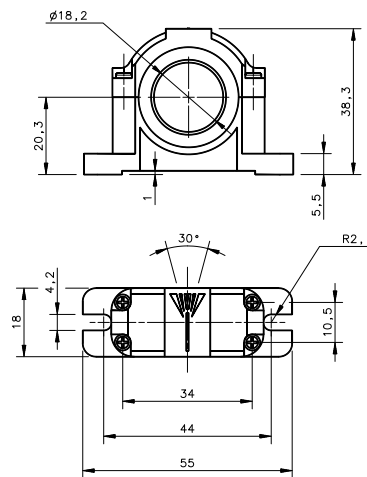
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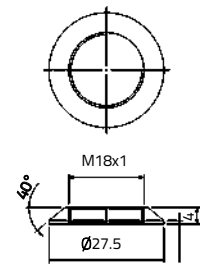
ST-5017



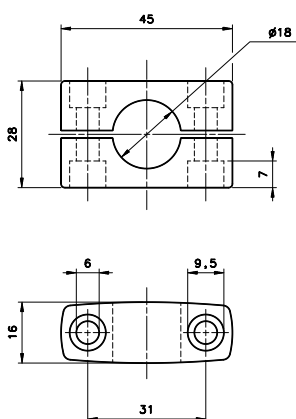
SWING-18



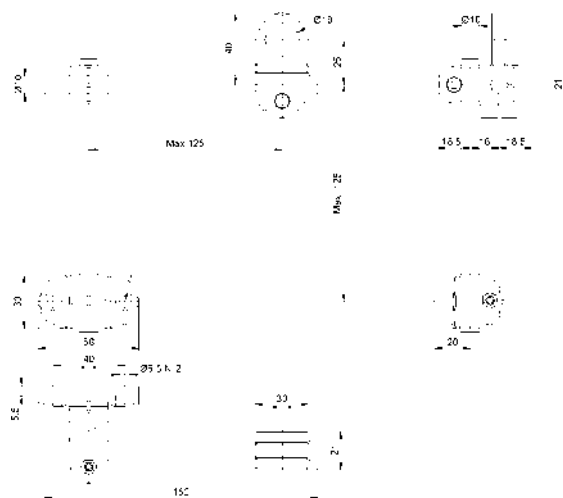
PLASTIC NUT



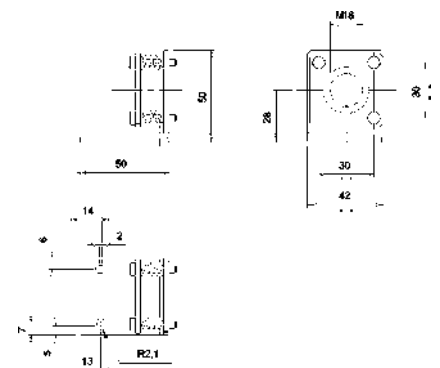
SP-40



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	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

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

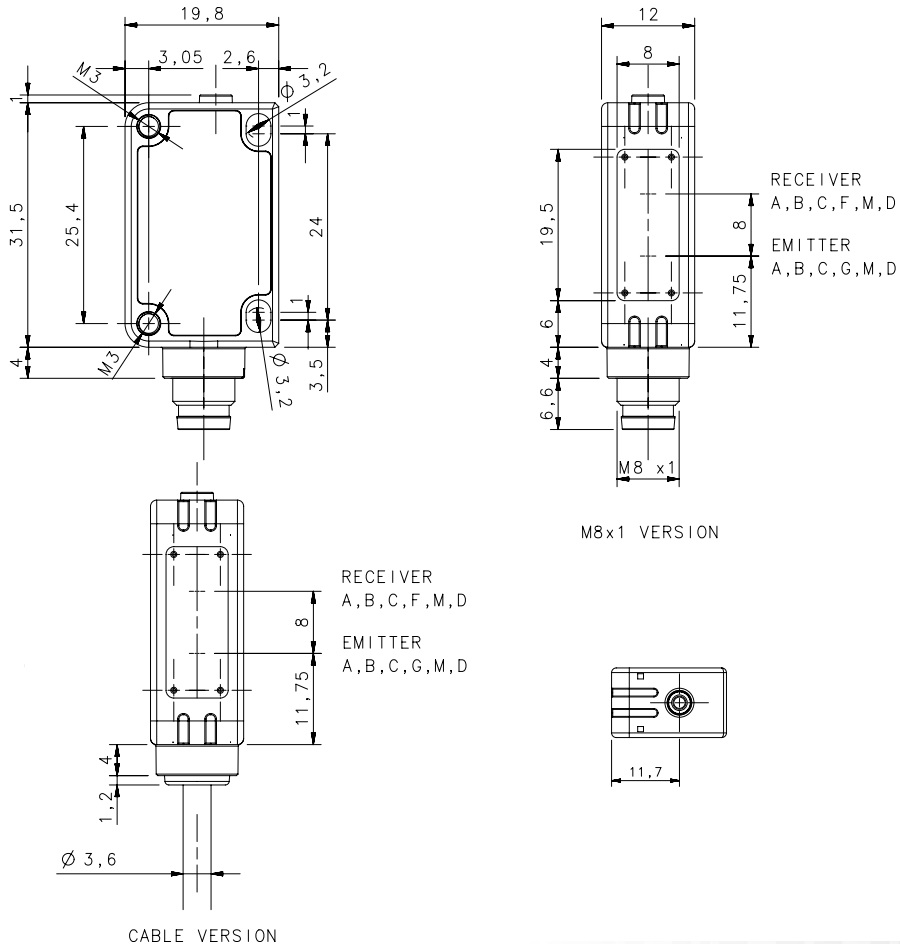


S100		
Through beam		12 m
Retroreflective		7 m
Polarized Retroreflective (long range)		5 m
Polarized Retroreflective (short range)		2 m
Diffused proximity (short range)		300 mm
Diffused proximity (long range)		500 mm
Fixed focus		70 mm
Background suppression		30...100 mm
Power supply	Vdc	10...30 Vdc
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

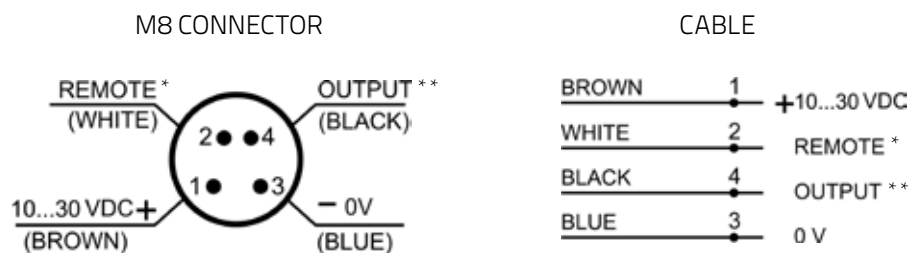
Power supply	10 ... 30 Vdc
Ripple	10% max.
Consumption (output current excluded)	20 mA max.
Light emission	red LED 632 nm (mod. S100...B/C/D/M) IR LED 860 nm (mod. S100...A/G) remote teach-in (mod. S100...M)
Setting	LIGHT/DARK selectable by wire (mod. S100...A/B/C/D/F)
Indicators	yellow OUTPUT LED (excl. mod. G) green POWER LED (mod. S100...G)
Output	PNP or NPN
Output current	100 mA
Saturation voltage	2 V max.
Response time	2 ms (mod. S100...FG) 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



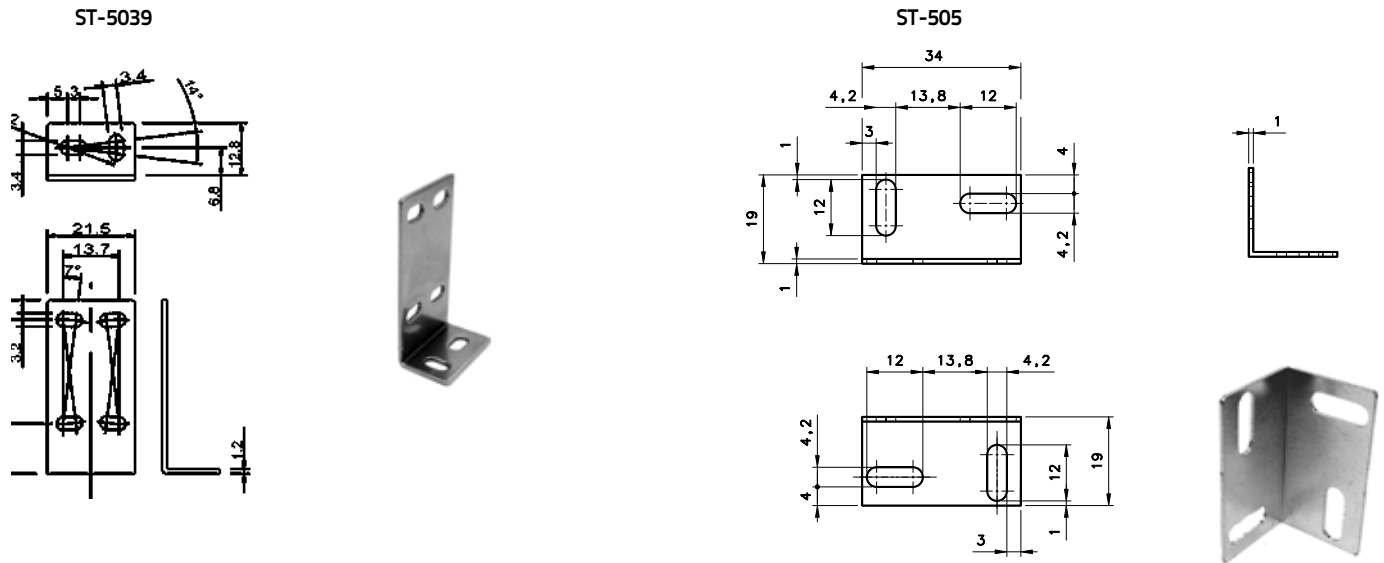
*REMOTE: Light/Dark selection (S100-...-A-B-C-D-F), External Teach-in (S100-...-M)

**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

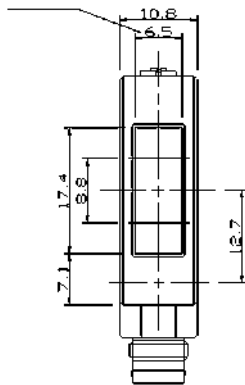


S3Z		
Through beam		0...15 m 0...30 m (class 1 LASER)
Polarized retroreflective		0.05...4 m 0,3...10 m (class 1 LASER)
Retroreflective for transparent (on R2 reflector)		0...2 m
Diffuse proximity		0...700 mm 50...150 mm (narrow beam)
Background suppression		50...250 mm 40...300 mm (class 1 LASER)
Power 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

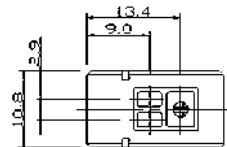
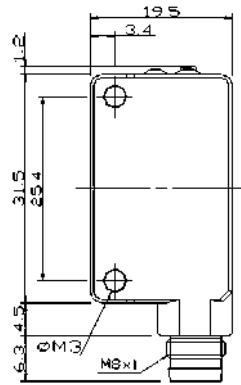
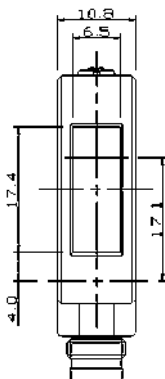
TECHNICAL DATA

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.

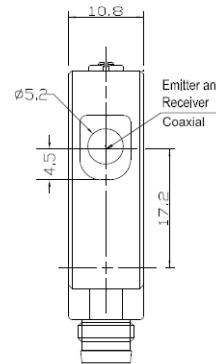
DIMENSIONS



Through beam



Polarized retroreflective for transparent

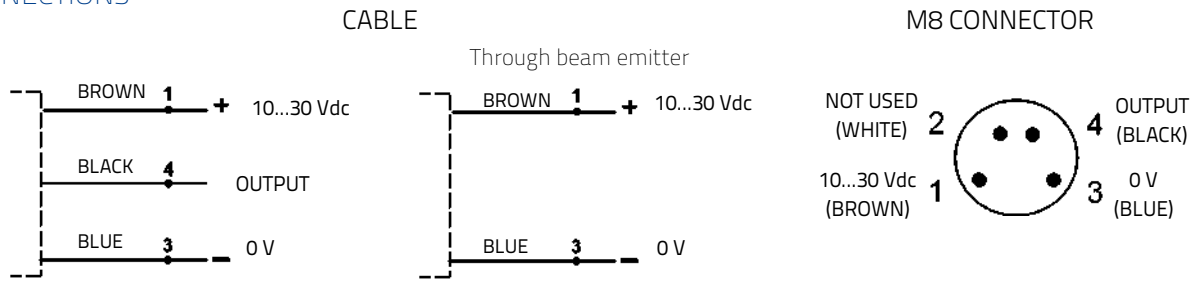


Cable version



MINIATURE SENSORS

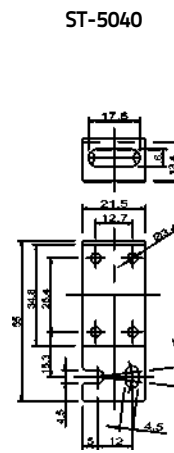
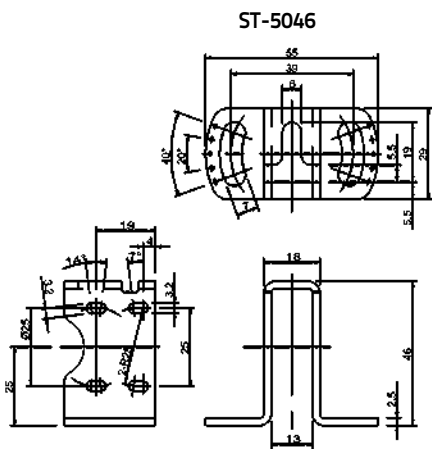
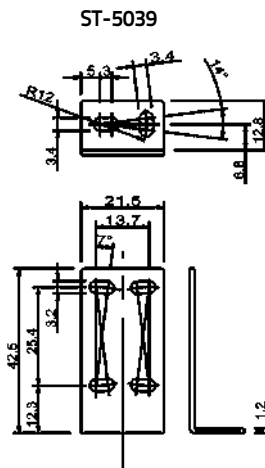
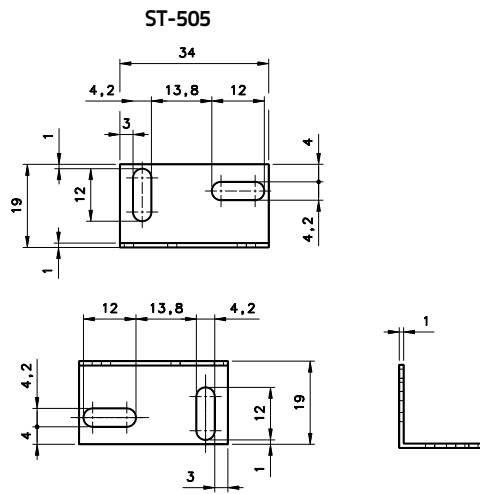
CONNECTIONS



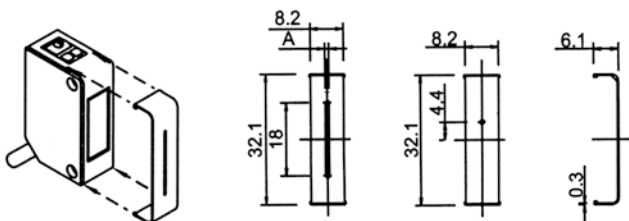
MODEL SELECTION AND ORDER INFORMATION

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	PNP - DARK	S3Z-PR-2-T51-PD	95B010380	
		M8 Connector	NPN - DARK	S3Z-PR-5-T51-ND	95B010370	
		M8 Connector	PNP - DARK	S3Z-PR-5-T51-PD	95B010360	

ACCESSORIES



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

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



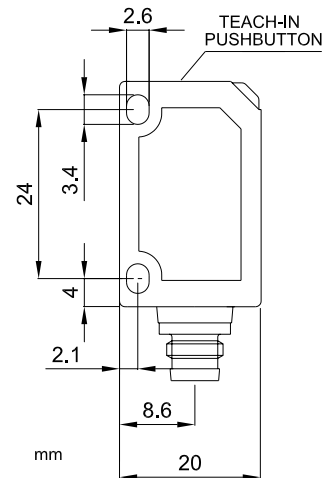
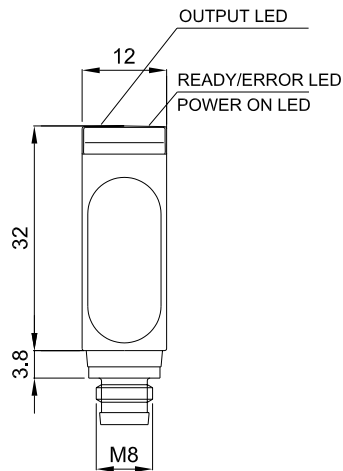
S40		
Polarized retroreflective		0,1...2,5 m 0,1...6 m (class 2 LASER)
Retroreflective for transparent (on R2 reflector)		100...700 mm
Diffuse proximity		5...300 mm 40...150 mm (class 2 LASER)
Background suppression		15...100 mm 20...60 mm (class 2 LASER)
Power supply	Vdc	10...30 V
	Vac	
	Vac/dc	
Output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

TECHNICAL DATA

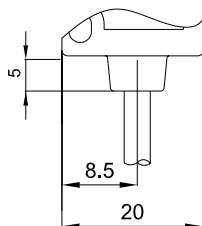
Power supply	10 ... 30 Vdc (reverse polarity protection)
Ripple	10% max.
Consumption (output current excluded)	35 mA max.
Light emission	red LED 660 nm, 640 nm (mod. S40...M03) red Laser 650 nm
Setting	teach-in push-button and remote by cable
Indicators	yellow OUTPUT LED green READY/ERROR LED
Output	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



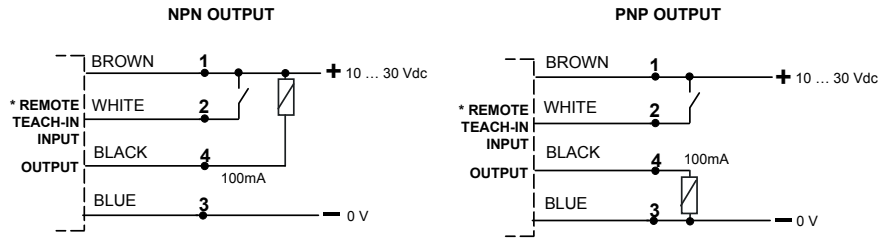
CABLE VERSION



MINIATURE SENSORS

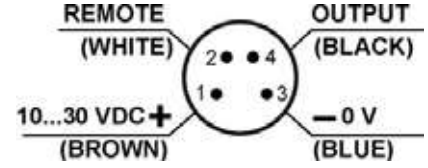
CONNECTIONS

CABLE



* Connect REMOTE wire to 0V if not used

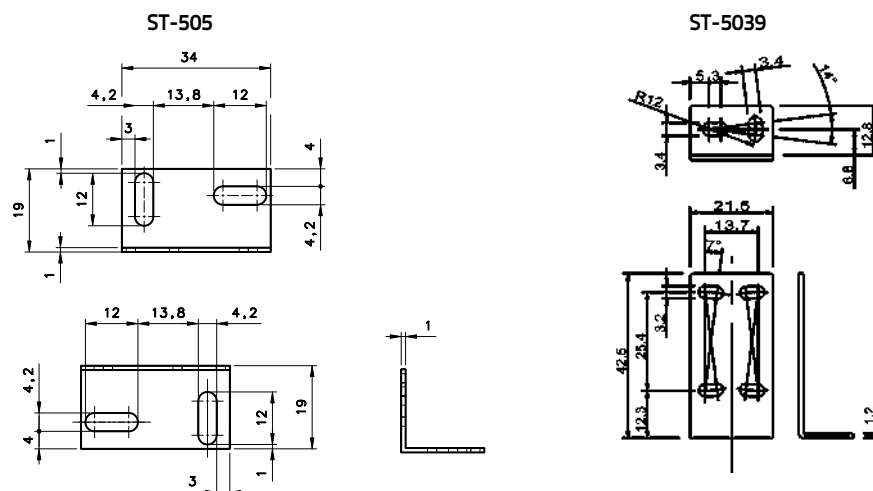
M8 CONNECTOR



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
			NPN	S40-PH-5-M03-NH	950401280
		M8 connector	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

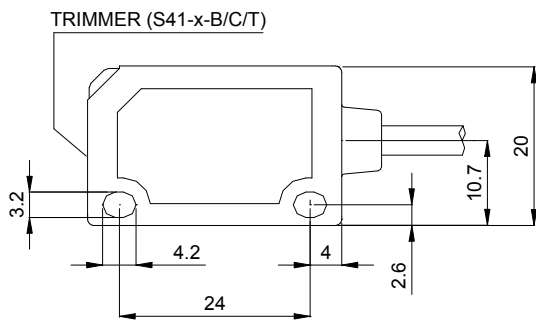
S41		
Through beam		0,1...6 m
Polarized retroreflective (on R2 reflector)		0,1...2,5 m
Retroreflective for transparent (on R2 reflector)		100...700 mm
Diffuse proximity		2...350 mm
Fixed focus		110 mm
Power supply	Vdc	10...30 V
	Vac	
	Vac/dc	
Output	PNP	▪
	NPN	▪
	NPN/PNP	
	relay	
	other	
Connection	cable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

TECHNICAL DATA

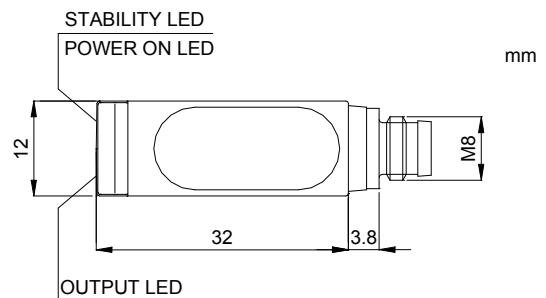
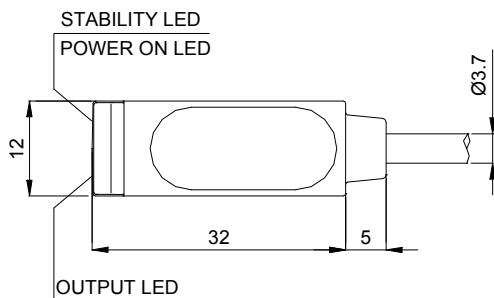
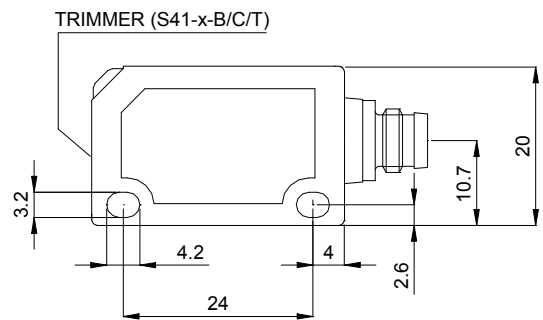
Power supply	10 ... 30 Vdc (reverse polarity protection)
Ripple	10% max.
Consumption (output current excluded)	35 mA max.
Light emission	red LED 660 nm (mod. S41...B/D/P/T) IR LED 880 nm (mod. S41...C/G/H)
Setting	sensitivity trimmer (mod. S41...B/C/T)
Operating mode	LIGHT mode (mod. S41...C/D); DARK 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



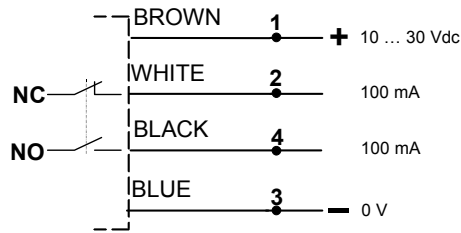
M8 CONNECTOR VERSION



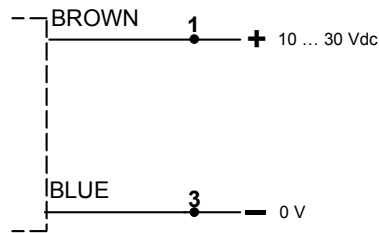
MINIATURE SENSORS

CONNECTIONS

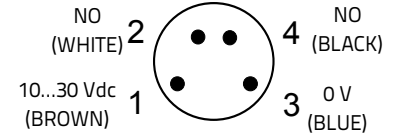
CABLE



Through beam emitter



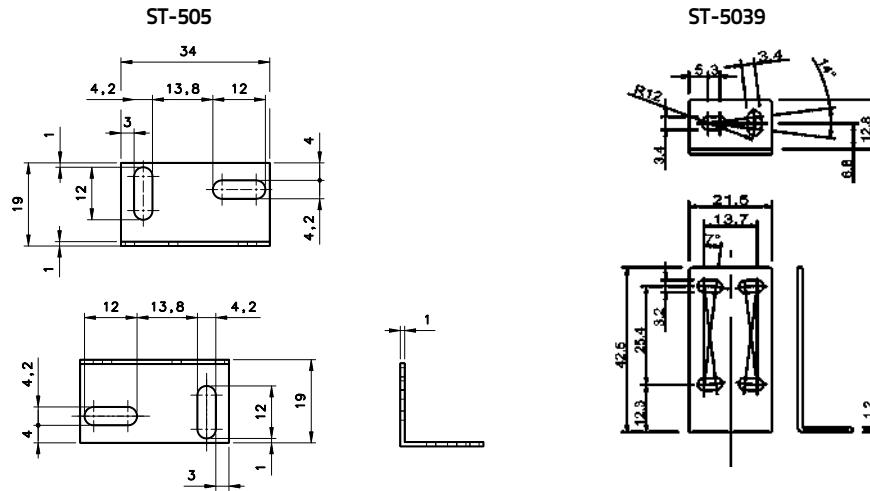
M8 CONNECTOR



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 retroflective and 1m polarized retroflective
- 2m through beam models
- Amplified NPN or PNP output with NO-NC output



APPLICATIONS

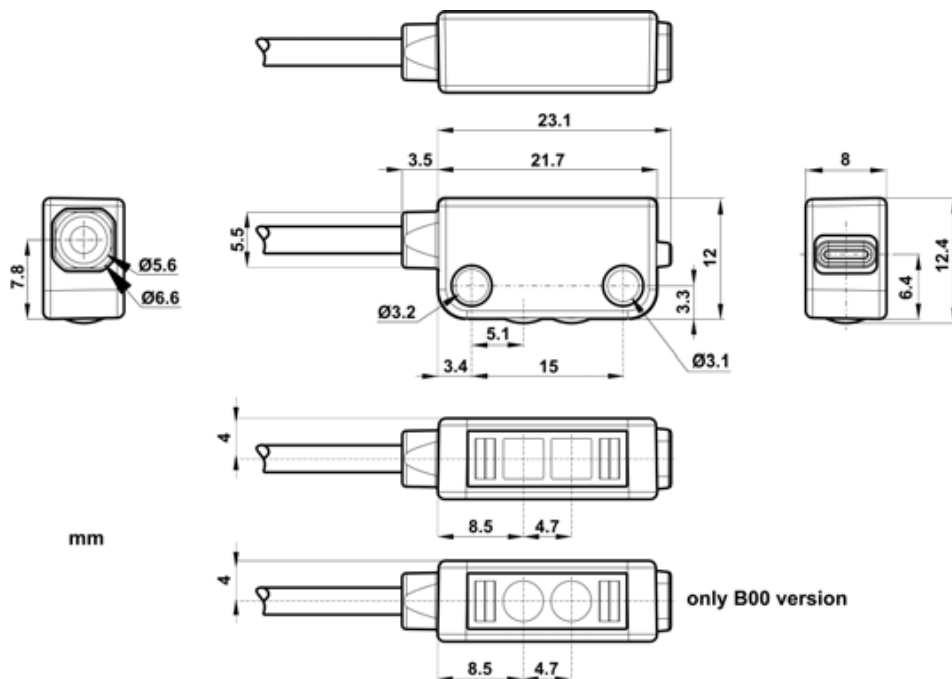
- Processing and Packaging machinery
- Automotive
- Beverage & Bottling
- Vending machines

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 μ s 1,3 ms (mod. SM...F00/G00)
Switching frequency	700 Hz 385 Hz (mod. SM...F00/G00)
Connection	2 m cable \varnothing 2,5 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	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 $^{\circ}$ C
Storage temperature	-30 ... 75 $^{\circ}$ C
Weight	22 g

DIMENSIONS

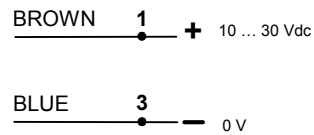
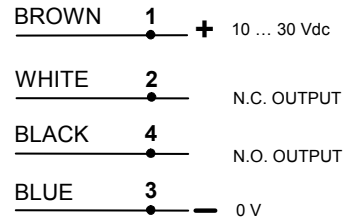


MINIATURE SENSORS

CONNECTIONS

CABLE

Through beam emitter

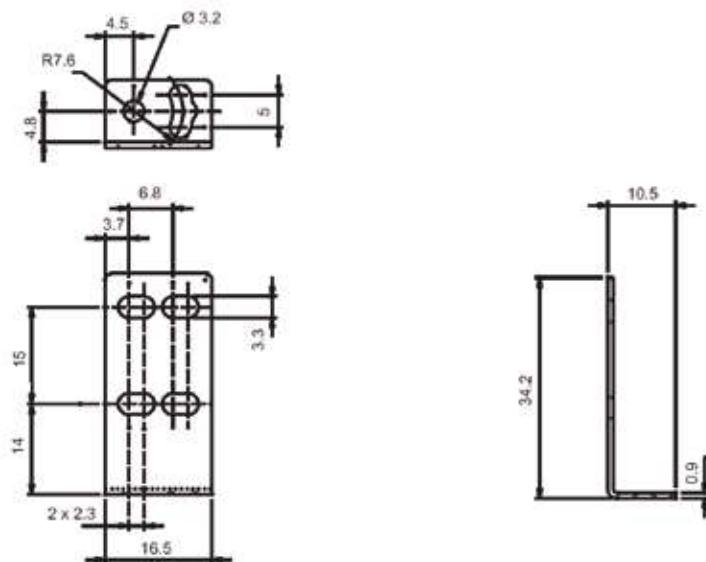


MODEL SELECTION AND ORDER INFORMATION

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
			NPN	SM-PR-2-D00-NN	95B000030
Fixed focus (normal distance)	20 mm		PNP	SM-PR-2-D10-PP	95B000140
			NPN	SM-PR-2-D10-NN	95B000150
Fixed focus (medium distance)	30 mm		PNP	SM-PR-2-D20-PP	95B000040
			NPN	SM-PR-2-D20-NN	95B000050
Fixed focus (long distance)	50 mm		PNP	SM-PR-2-D30-PP	95B000000
			NPN	SM-PR-2-D30-NN	95B000010
Through beam receiver	0...2 m	2m Cable	PNP	SM-PR-2-F00-PP	95B000120
			NPN	SM-PR-2-F00-NN	95B000130
			-	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

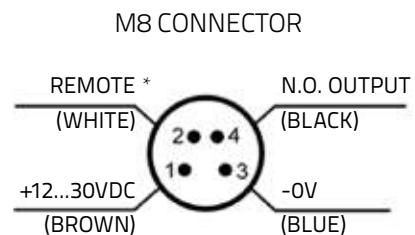
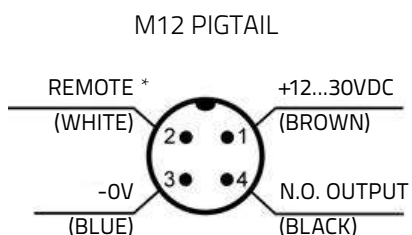


(*) Stainless steel models.
ATEX II 3DG

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)

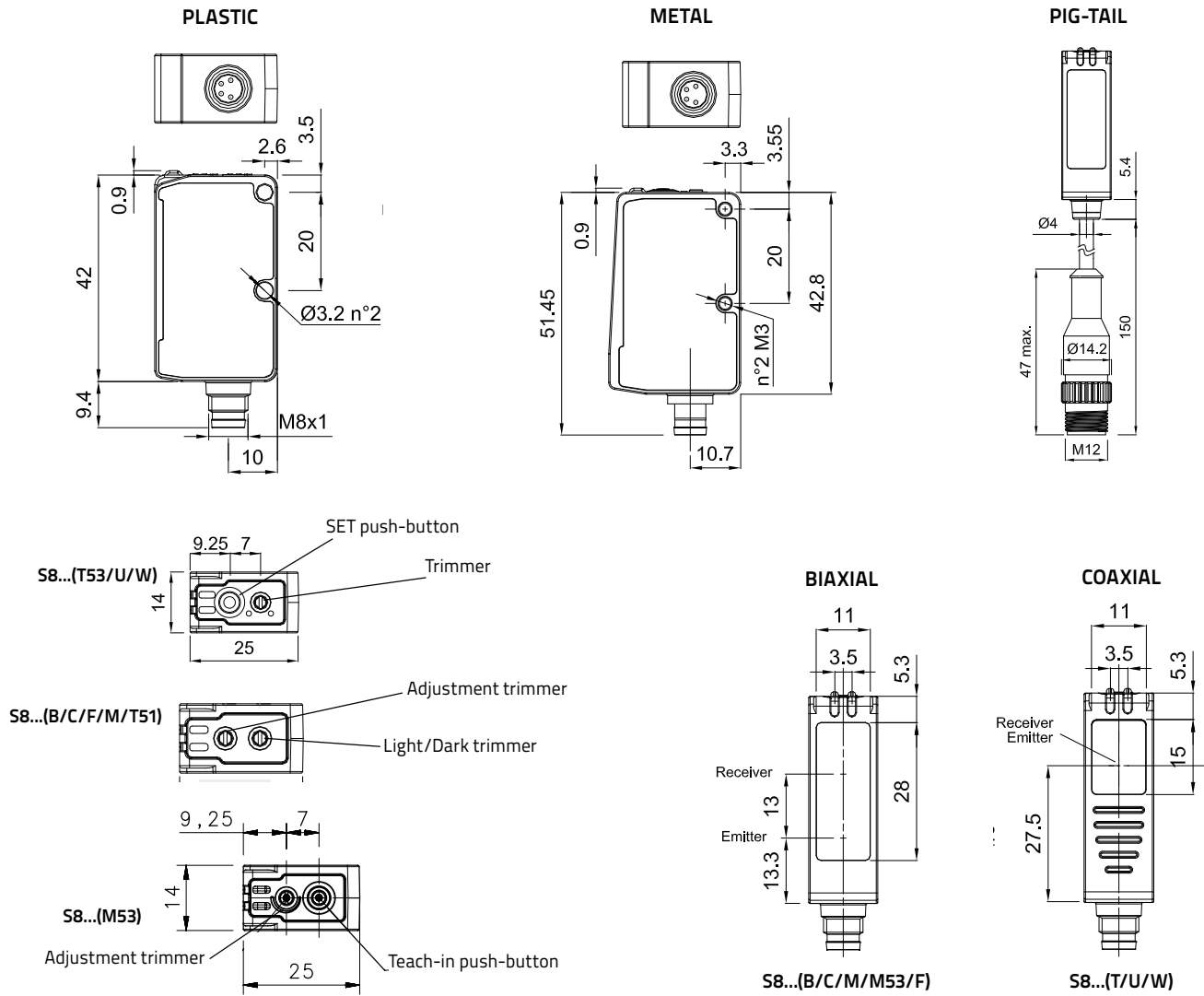
CONNECTIONS



* 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
PLASTIC ABS	LED	pig-tail	NPN	S8-PR-3-T51-NN	950801130
			PNP	S8-PR-3-T51-PP	950801120
		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
			PNP	S8-MR-5-B01-PP	950801410
PLASTIC ABS	LASER	pig-tail	NPN	S8-PH-3-B51-NN	950801090
			PNP	S8-PH-3-B51-PP	950801080
		M8 connector	NPN	S8-PH-5-B51-NN	950801010
			PNP	S8-PH-5-B51-PP	950801000
	LED	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
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		NPN		S8-PR-5-C01-NN	950801260		
		PNP		S8-PR-5-C01-PP	950801240		

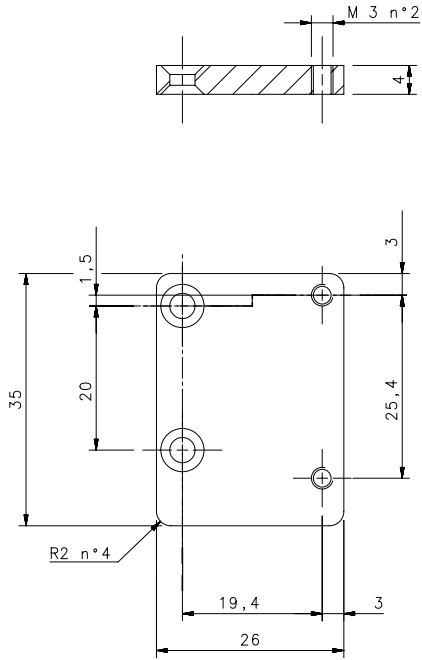
CONTRAST					
SWITCHING FREQUENCY	HOUSING	CONNECTION	OUTPUT	MODEL	ORDER NO.
10 kHz	METAL Stainless Steel	M8 connector without trimmer	PNP	S8-MR-5-W00-PH	950801360
			NPN	S8-MR-5-W00-NH	950801370
		M8 connector	PNP	S8-MR-5-W03-PP	950801340
			NPN	S8-MR-5-W03-NN	950801350
	PLASTIC ABS	M12 pig-tail (150 mm)	PNP	S8-PR-3-W03-PP	950801140
			NPN	S8-PR-3-W03-NN	950801150
		M8 connector	PNP	S8-PR-5-W03-PP	950801060
			NPN	S8-PR-5-W03-NN	950801070
25 kHz	METAL Stainless Steel	M8 connector	PNP	S8-MR-5-W13-PP	950801670
			NPN	S8-MR-5-W13-NN	950801680
			PNP	S8-PR-5-W13-PP	950801650
			NPN	S8-PR-5-W13-NN	950801660
	PLASTIC ABS	M12 pig-tail (150 mm)	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
			NPN	S8-PR-5-U03-NN	950801620
PLASTIC ABS		pig-tail	PNP	S8-PR-3-U03-PP	950801710
			NPN	S8-PR-3-U03-NN	950801720

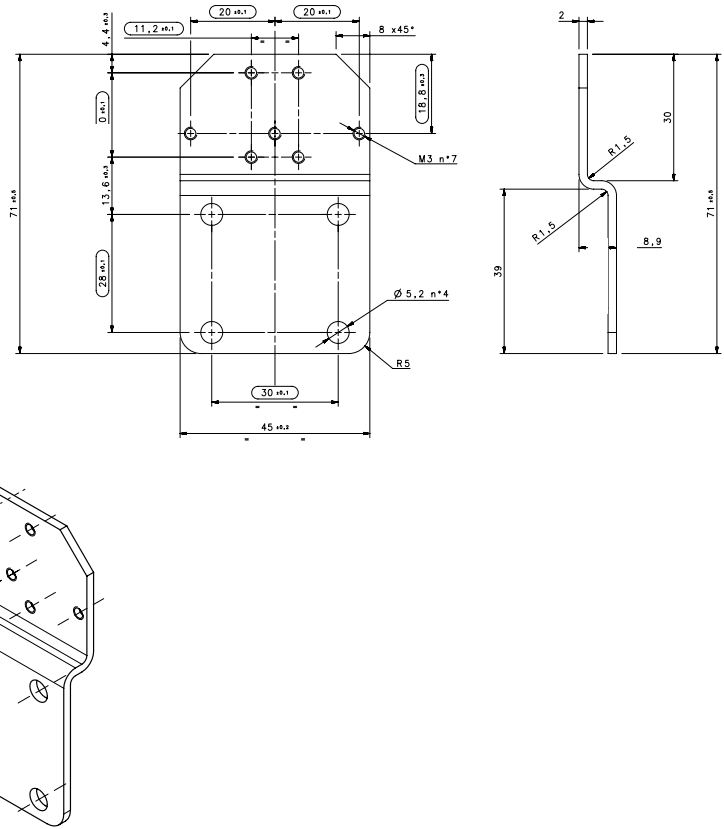
COMPACT SENSORS

ACCESSORIES

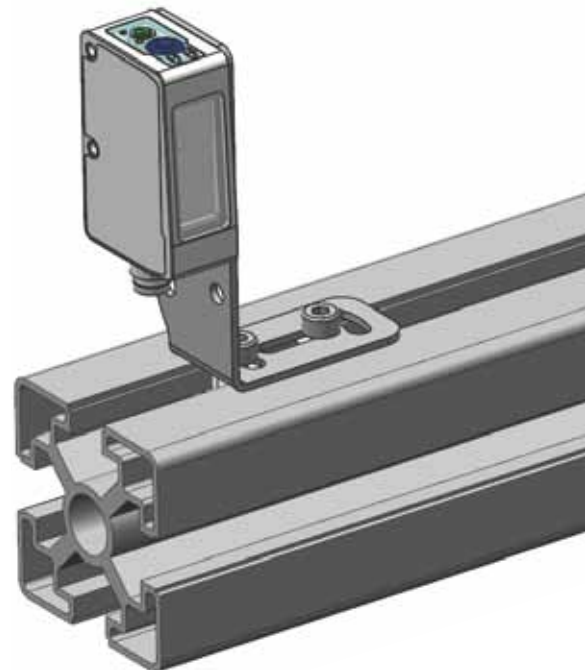
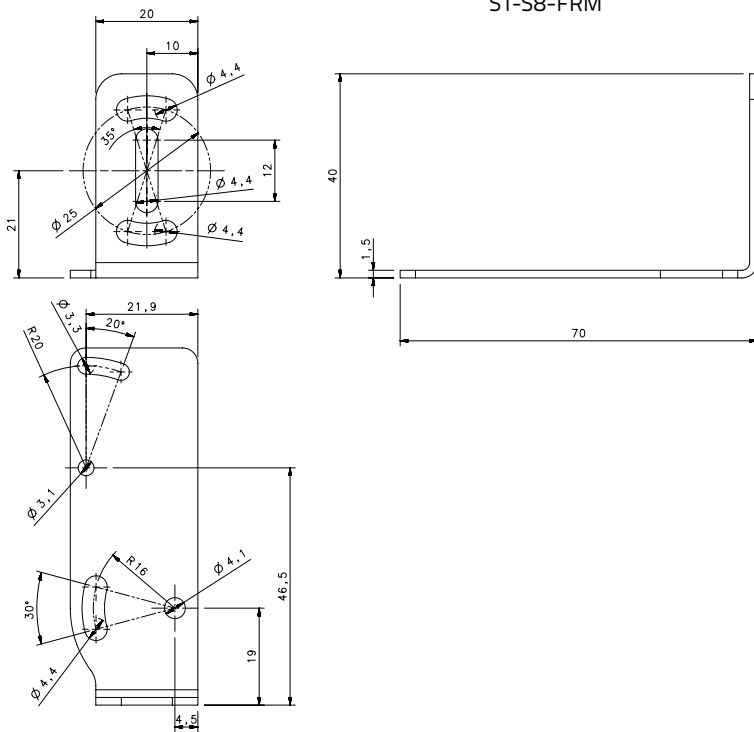
ST-S8-S3Z



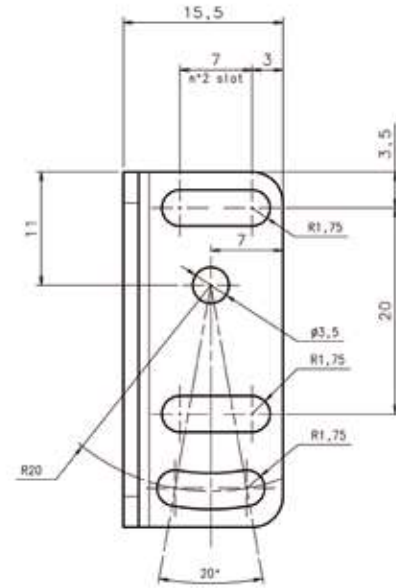
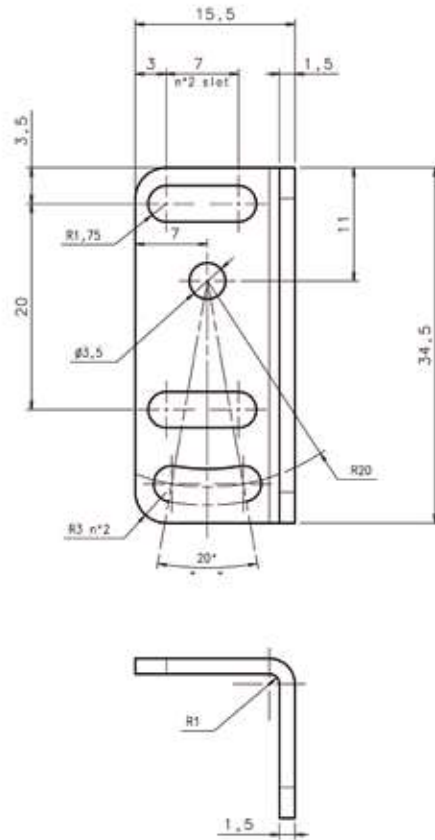
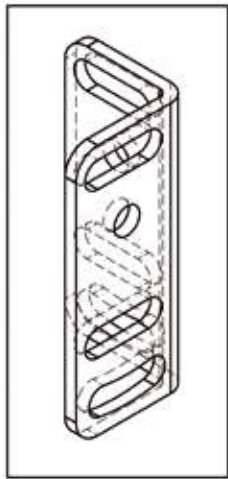
ST-S8-TL-LD46



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

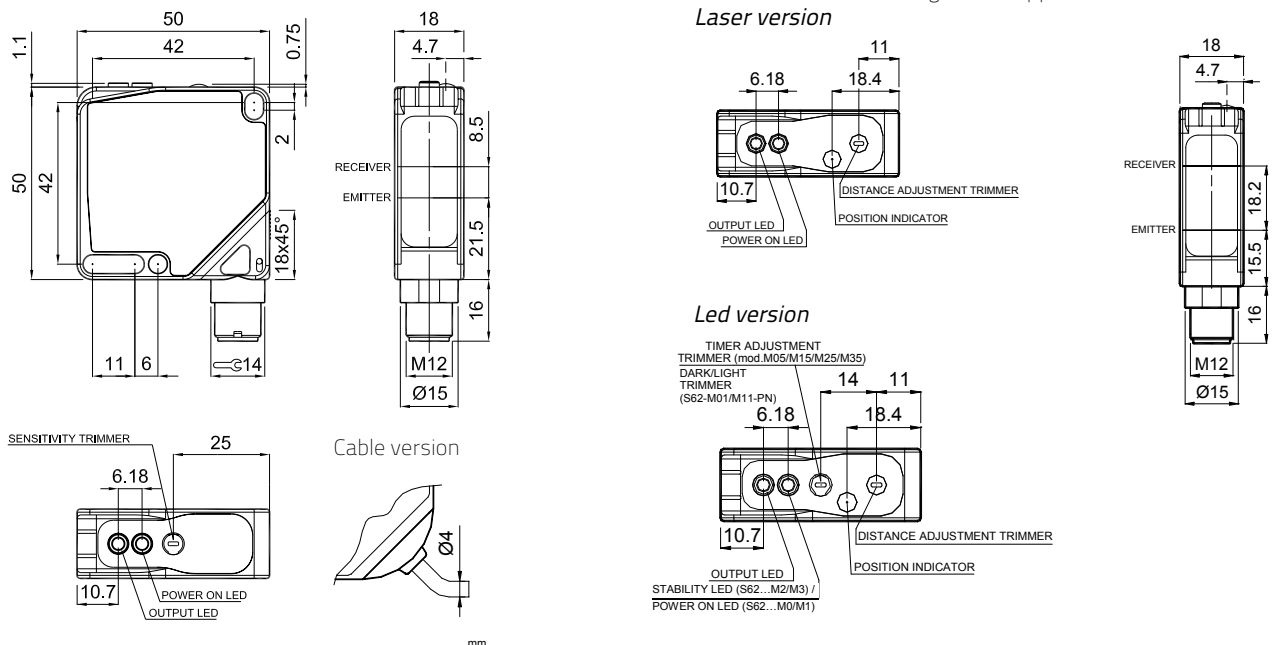


S62		
Through beam		0...25 m
Retroreflective (on R2 reflector)		0,1...13 m
Polarized retroreflective		0,1...8 m 0,3...20 m (class 2 LASER)
Diffuse proximity		short 0...900 mm, long 0...2000 mm 0...900 mm (class 2 LASER)
Background suppression		short 30...300 mm medium 60...600 mm long 60...1200 mm very 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

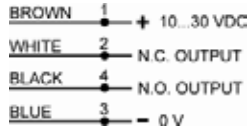


Background suppression

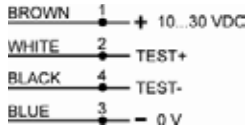
COMPACT SENSORS

CONNECTIONS

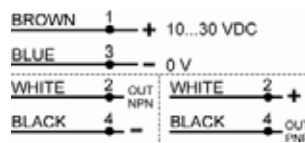
VDC MODELS



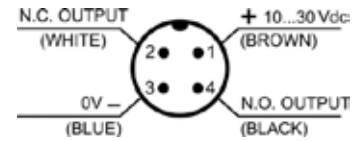
Through beam emitter



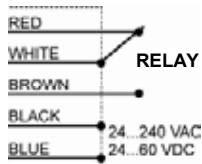
NPN/PNP version



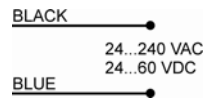
M12 CONNECTOR



VAC MODELS



Through beam emitter

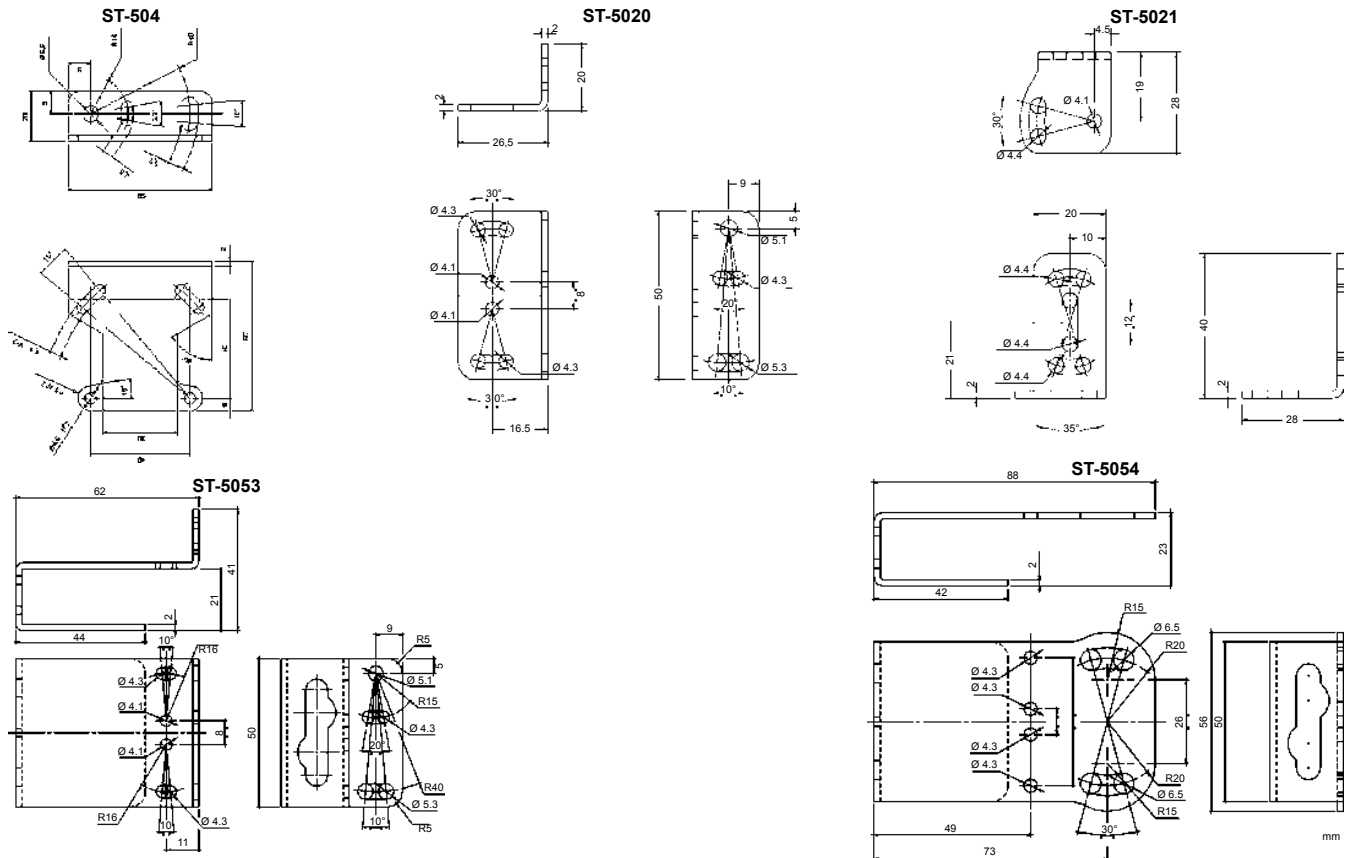


MODEL SELECTION AND ORDER INFORMATION

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	
	M12 Connector	PNP/NPN	S62-PA-5-B01-PN	956211320		
	M12 Connector	PNP	S62-PA-5-B01-PP	956211000		
	M12 Connector	Relay	S62-PA-1-B01-RX	956211190		
Short diffused proximity	LED (red 640nm)	2m Cable	NPN	S62-PA-2-C01-NN	956211420	
			PNP/NPN	S62-PA-2-C01-PN	956211260	
			PNP	S62-PA-2-C01-PP	956211380	
	M12 Connector	M12 Connector	NPN	S62-PA-5-C01-NN	956211500	
			PNP/NPN	S62-PA-5-C01-PN	956211330	
		M12 Connector	PNP	S62-PA-5-C01-PP	956211460	
	M12 Connector	LASER	Vac relay	Relay	S62-PA-1-C01-RX	956211200
			2m Cable	NPN	S62-PL-2-C01-NN	956211440
			M12 Connector	PNP	S62-PL-2-C01-PP	956211400
Long diffused proximity	LED (red 640nm)	2m Cable	NPN	S62-PA-2-C11-NN	956211430	
			PNP/NPN	S62-PA-2-C11-PN	956211270	
			PNP	S62-PA-2-C11-PP	956211390	
		M12 Connector	M12 Connector	NPN	S62-PA-5-C11-NN	956211510
				PNP/NPN	S62-PA-5-C11-PN	956211340
			M12 Connector	PNP	S62-PA-5-C11-PP	956211470
Through beam receiver	-	2m Cable	Vac relay	Relay	S62-PA-1-C11-RX	956211210
			NPN	S62-PA-2-F01-NN	956211450	
			PNP/NPN	S62-PA-2-F01-PN	956211290	
		M12 Connector	M12 Connector	PNP	S62-PA-2-F01-PP	956211410
				NPN	S62-PA-5-F01-NN	956211530
			M12 Connector	PNP/NPN	S62-PA-5-F01-PN	956211360
			M12 Connector	PNP	S62-PA-5-F01-PP	956211490
Through beam emitter	LED (red 640nm)	Vac relay	Relay	S62-PA-1-F01-RX	956211220	
		2m Cable	-	S62-PA-2-G00-XG	956211300	
		M12 Connector	-	S62-PA-5-G00-XG	956211370	
		Vac relay	-	S62-PA-1-G00-XX	956211230	

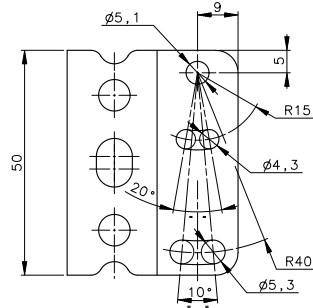
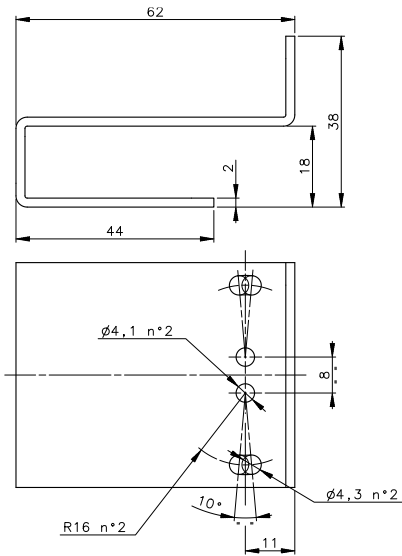
Background suppression (short distance)	LED (red 640nm)	2m Cable	PNP/NPN	S62-PA-2-M01-PN	956211280	
		M12 Connector	PNP	S62-PA-2-M01-PP	956201841	
			NPN	S62-PA-5-M01-NN	956201811	
	LASER	M12 Connector	PNP/NPN	S62-PA-5-M01-PN	956211350	
			PNP	S62-PA-5-M01-PP	956201831	
			NPN	S62-PA-5-M05-NN	956201801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

ACCESSORIES

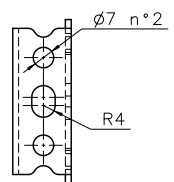
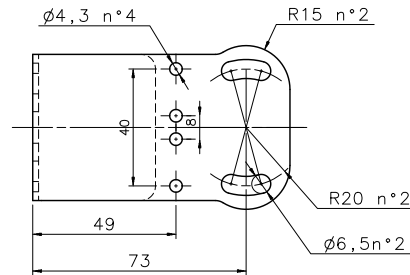
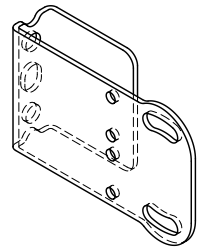
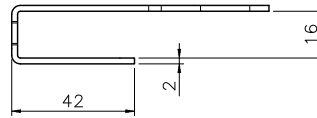


COMPACT SENSORS

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

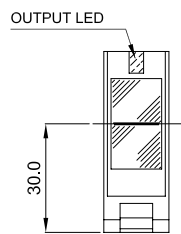
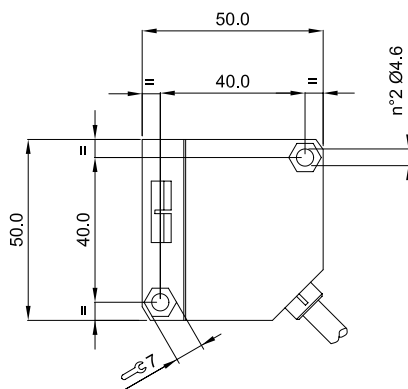


S6		
Through beam		0...20 m
Retroreflective (on R2 reflector)		0,1...6 m
Polarized retroreflective (on R2 reflector)		0,1...5 m
Diffuse proximity		10...900 mm
		10...2000 mm
Background suppression		30...100 mm
		30...250 mm
		100...500 mm
Power supply	Vdc	10...30 V
	Vac	
	Vac/dc	15...264 Vac/Vdc
	PNP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

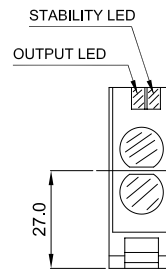
TECHNICAL DATA

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) 11 ms (30 G) 6 shock for every axis (EN60068-2-27)
Shock resistance	
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.

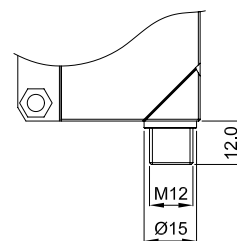
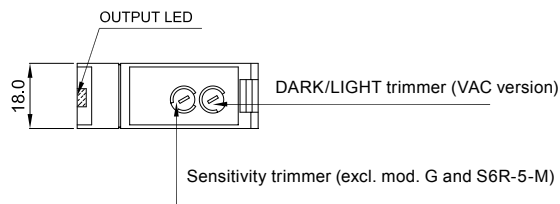
DIMENSIONS



Background suppression



M12 Connector



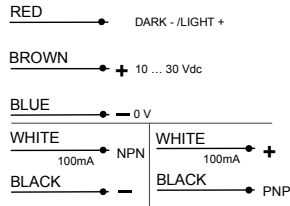
mm

COMPACT SENSORS

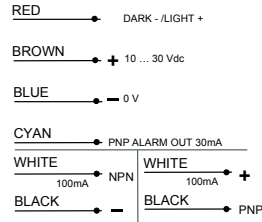
CONNECTIONS

VDC MODELS

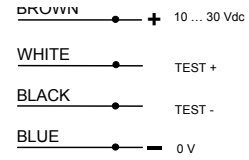
NPN/PNP version



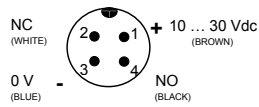
Through beam receiver - NPN/PNP version



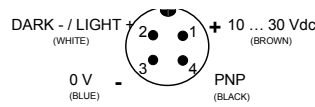
Through beam emitter - NPN/PNP version



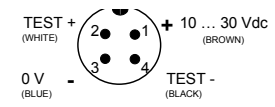
NPN or PNP and NC/NO version



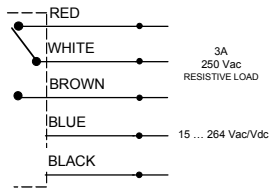
PNP version



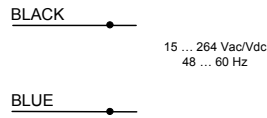
Through beam emitter - PNP version



VAC MODELS



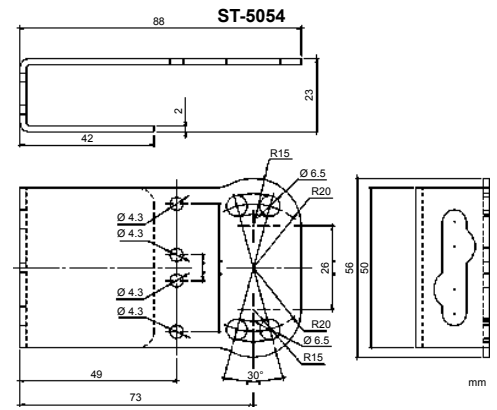
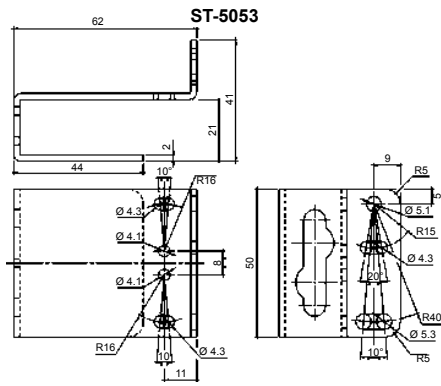
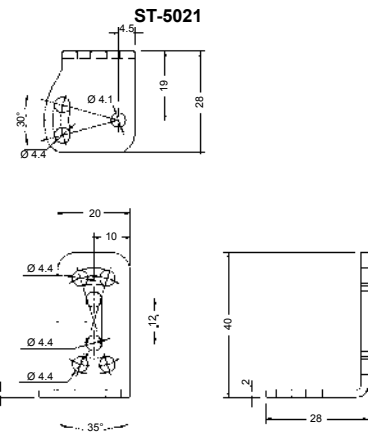
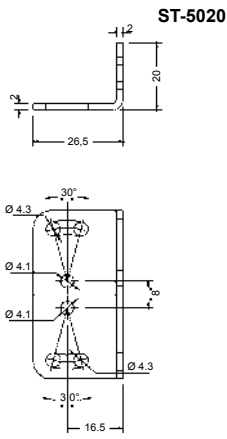
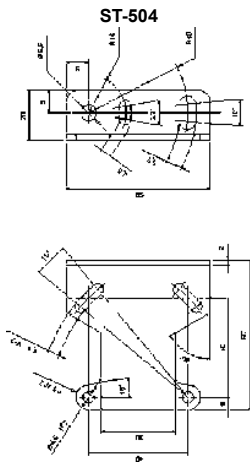
Through beam emitter



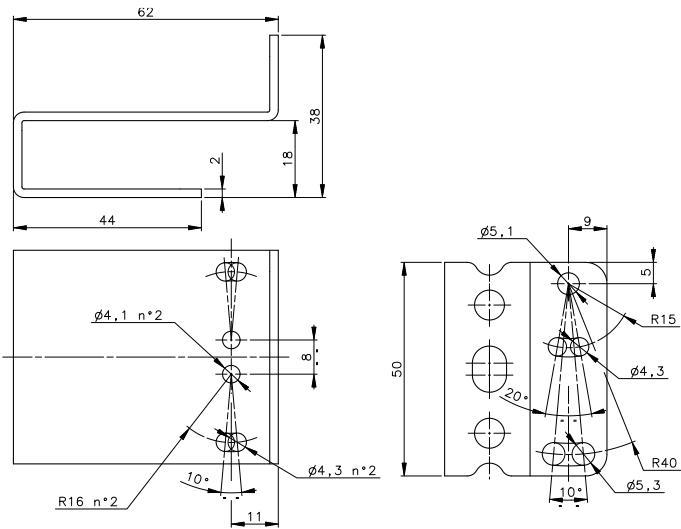
MODEL SELECTION AND ORDER INFORMATION

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
Long diffuse proximity	10...2000 mm	15...264 V A.C.	PNP N.O./N.C.	S6R-5-C90-P	950201190
			PNP	S6T-5-C90-P	961031020
		10...30 V D.C.	NPN/PNP	S6-5-C200	950201150
			PNP N.O./N.C.	S6R-5-C200-P	950201200
Retroreflective	0,1...6 m (on R2 reflector)	15...264 V A.C.	relay SPDT 250V/3A	S6-1-A6	S937330090
			NPN/PNP	S6-5-A6	S937330000
		10...30 V D.C.	PNP	S6T-5-A6-P	961031000
			PNP N.O./N.C.	S6R-5-A6-P	950201170
Polarized retroreflective	0,1...5 m (on R2 reflector)	15...264 V A.C.	relay SPDT 250V/3A	S6-1-B5	S937420090
			NPN/PNP	S6-5-B5	S937420000
		10...30 V D.C.	PNP N.O./N.C.	S6R-5-B5-P	950201180
			PNP	S6T-5-B5-P	961031010
Background suppression	30...100 mm	10...30 V D.C.	PNP N.O./N.C.	S6R-5-M10-P	950201230
	30...250 mm		NPN/PNP	S6-5-M25	S937830000
			PNP N.O./N.C.	S6R-5-M25-P	950201220
	100...500 mm		NPN N.O./N.C.	S6R-5-M25-N	956101080
			PNP	S6T-5-M25-P	961041000
	PNP N.O./N.C.		S6R-5-M50-P	950201250	
Through beam (Receiver)	0...20 m	15...264 V A.C.	relay SPDT 250V/3A	S6-1-F20	S937200090
			NPN/PNP	S6-5-F20	S937200010
		10...30 V D.C.	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
			-	S6-5-G20	S937130000
		10...30 V D.C.	-	S6T-5-G20	961211000

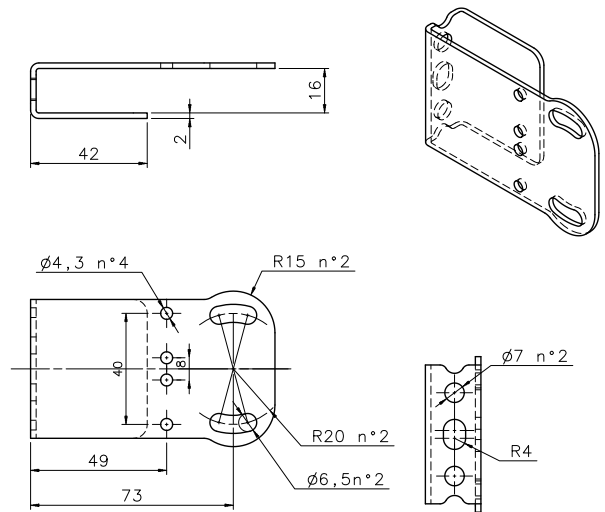
ACCESSORIES



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

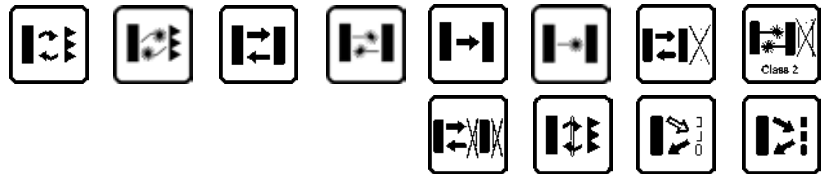


COMPACT SENSORS

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

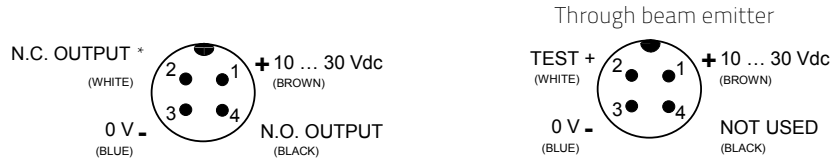
TECHNICAL DATA

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

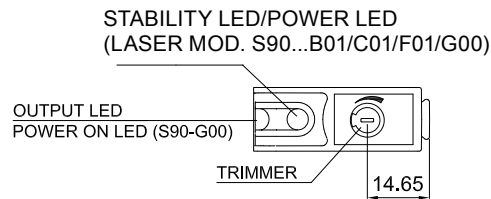
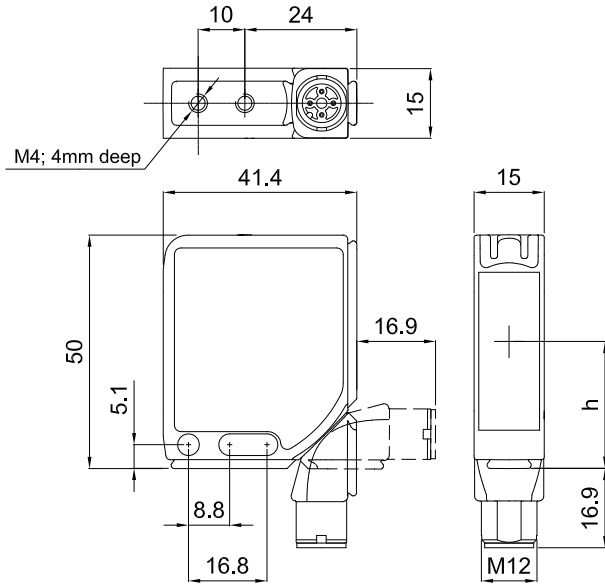
CONNECTIONS

M12 CONNECTOR

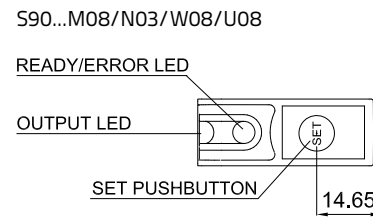


* N.C. OUTPUT (mod. S90...B, C, F, T), REMOTE (mod. S90...M, N, U, W)

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