



## S65-M

### Time Of Flight long range background suppressor

- Long Range background suppression detection up to 5m
- Cost effective solution for precise and reliable detection
- Risk-free Infrared LED emission and embedded green LED pointer
- Two independent fully programmable outputs
- NPN/PNP or IO-Link connection models
- Rugged plastic housing in compact 50x50x24 mm format



SENSORS

#### APPLICATIONS

- Presence of all medium and large sized objects on conveyors
- Critical object detection in front of problematic background
- Positioning tasks in palletizing
- Position limiter for deck and robot in automotive manufacturing
- Collision prevention limit switch for AGV applications
- Checking filling level for liquid and objects

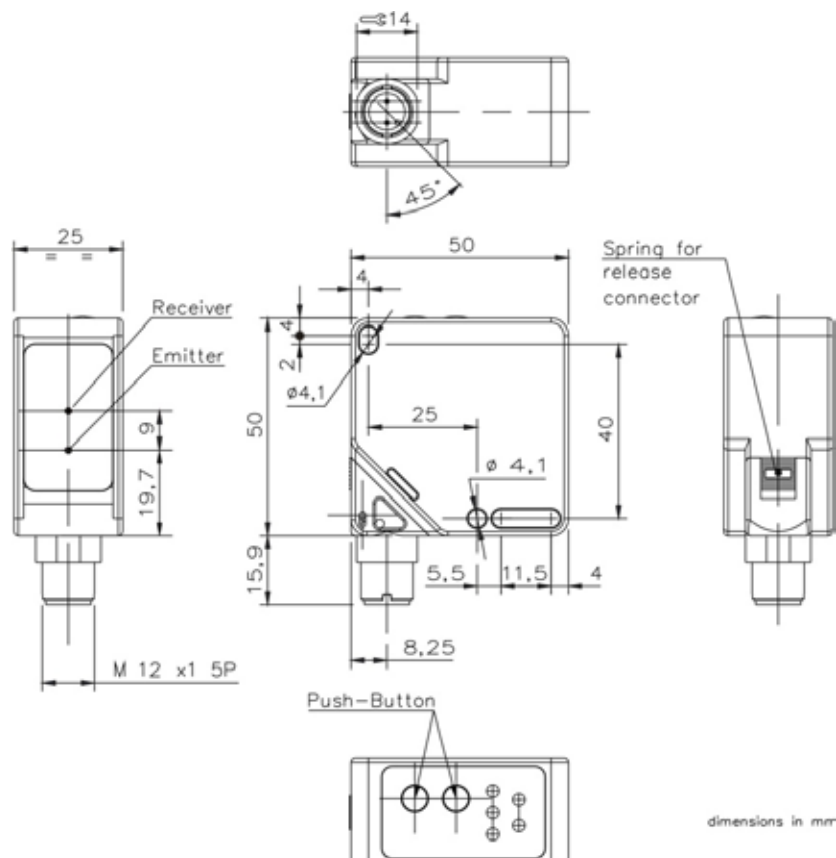


S65-M		
Operating Distance	0.1..5 m (90% white) / 0.1..4 m (18% grey) / 0.1..2.5 m (6 % black)	
Hysteresis	20mm / 50mm / 80mm	
Difference White 90%/Grey 18% and White 90%/Black 6%	see chart (value Typ, 1 , T=25°C, ambient light <1Klux)	
Repeatability error	20mm for distance > 750mm / 40mm for distance <= 750mm (1 , T=25°C)	
Response time	8.5 msec max.T=25°C	
Operating Frequency	<65Hz	
Setting	Teach-in buttons SET1, SET2	
Teach-in Input	Active High (+24V) 1 sec < t < 3 sec teach Q1 / > 3 sec teach Q2	
Supply voltage	Vdc	24 VDC ± 20%
	Vac	
	Vac/dc	
Switching output	PNP	
	NPN	
	NPN/PNP	Can be set up (PNP NPN / Light Dark) 100mA max.
	relay	
	other	IO-Link V1.1
Connections	cable	
	connector	M12 - 5 poles
Exposed material	Body	ABS / Display POLYESTER
	Front side	PMMA
Dimensions	50 x 50 x 25 mm	
Mechanical protection	IP67	
Weight	50 g.max.	
UL (requirements)	Class 2 power supply according to UL 508	

## TECHNICAL DATA

Supply voltage	24 VDC $\pm$ 20%
Consumption	< 2.2 W (excluding any loads)
Operating Distance	0.1..5 m (90% white) / 0.1..4 m (18% grey) / 0.1..2.5 m (6 % black)
Hysteresis	20mm / 50mm / 80mm
Response time	8.5 msec max.
Difference White 90%/Grey 18% and White 90%/Black 6%	see chart (value Typ, 1, T=25°C, ambient light <1Klux)
Repeatability error	20mm for distance > 750mm / 40mm for distance $\leq$ 750mm (1, T=25°C)
Thermal compensation error	1.5 mm / °C (T $\neq$ 25°C)
Switching output	Can be set up (PNP NPN / Light Dark) 100mA max.
Teach-in Input	Active High (+24V) 1 sec < t < 3 sec teach Q1 / > 3 sec teach Q2
Warming-up time	20 min typ
Warnings	Q1 (YELLOW) / Q2 (YELLOW) / ON PWR (GREEN) - PNP / NPN (GREEN)
Operating temperature	-15° ... +55 °C (with device ON)
Storage temperature	-25 ... +70 °C
Electrical strength	500 VAC, 1 min between electronics and case
Insulation resistance	> 20 M $\Omega$ , 500 VDC between electronics and case
Reading spot size	typ 200x200 mm @ 4m
Pointer spot size (green)	typ 250x250 mm @ 4m
Max. deviation of pointer/reading spot axes origin	+/- 40 mm
Emission and Wavelength	LED / 850 nm
Ambient light rejection	according to EN 60947-5-2,
Vibrations	width 0.5 mm, frequency 10 ... 55Hz, per axis (EN60068-2-6)
Shock resistance	11 ms (30 G) 6 shocks for each axis (EN60068-2-27)
Humidity	< 90% no condensation
Exposed material	Body ABS / Display POLYESTER
Front side material	PMMA
Mechanical protection	IP67
Connections	M12 - 5 poles
(Overall) Dimensions	50 x 50 x 25 mm
Weight	50 g,max.
I/O LINK Connection	NO (See parameter table on <a href="http://www.datalogic.com">www.datalogic.com</a> )
UL (requirements)	Class 2 power supply according to UL 508

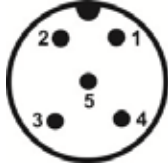
## DIMENSIONS



## CONNECTIONS

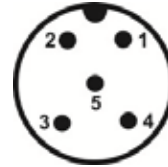
### M12 CONNECTOR

S65-PA-5-M13-OO



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

S65-PA-5-M13-OOZ



- 1 (BROWN) : +24 V  $\pm 20\%$
- 2 (WHITE) : Q2 100mA max.
- 3 (BLUE) : 0 V
- 4 (BLACK) : C/Q1 (I/O LINK)
- 5 (GREY) : REMOTE TEACH-IN

NOTE: Wire colour refers to European standard.

## INDICATORS AND SETTINGS



### OUTPUT LED (yellow)

Yellow LEDs on, numbered as 1 and 2, indicate activation of Q1 and Q2 outputs. LEDs blink at the same time if measurement is out of range or not available due to the presence of environmental contamination.

### POWER LED (green)

Green PWR LED on indicates that the device is switched on and operating.

### ACTIVE SETUP LED (green)

Green PNP/NPN LEDs on indicate that the device is in the selected setup.

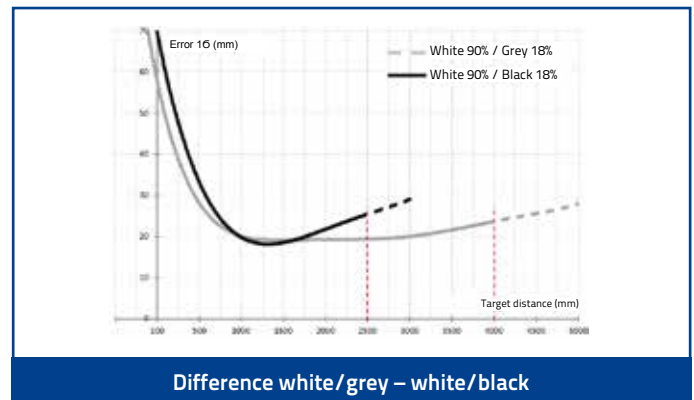
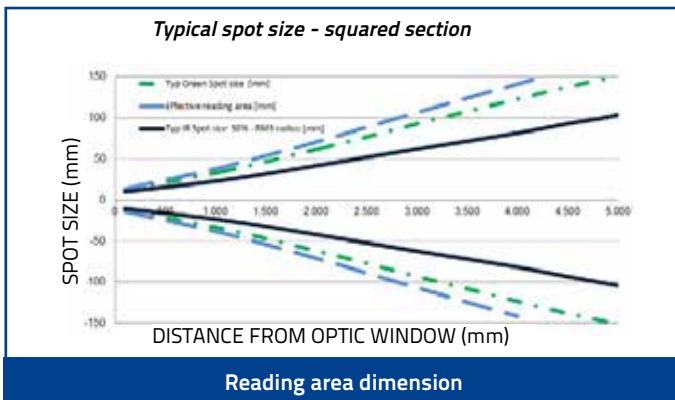
### SET1 Push Button

Teach-in push button for Q1 and setting parameter menu

### SET2 Push Button

Teach-in push button for Q2 and setting parameter menu

## DETECTION DIAGRAMS

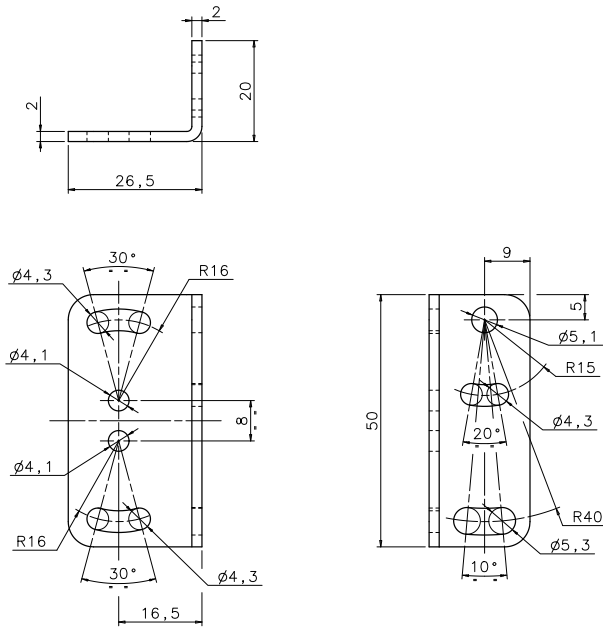


## MODEL SELECTION AND ORDER INFORMATION

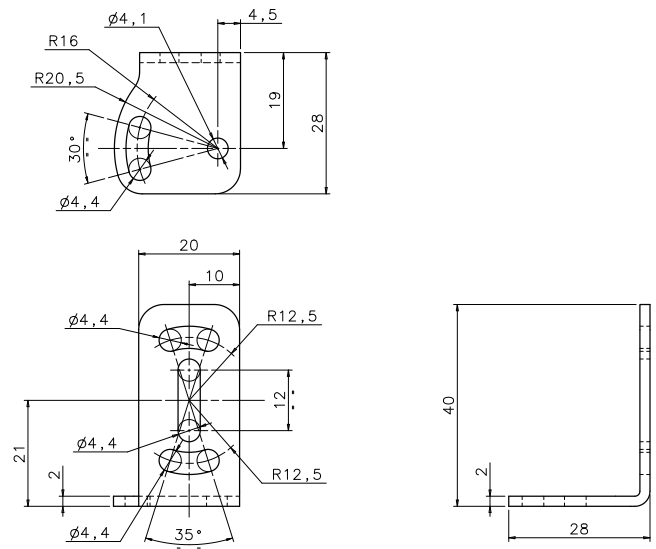
OPTIC FUNCTION	CONNECTION	OUTPUT	MODEL	ORDER No.
Background Suppression long range IR	M12 5 poles	NPN/PNP	S65-PA-5-M13-00	956251160
	M12 5 poles	IO-LINK	S65-PA-5-M13-00Z	956251170

## ACCESSORIES

ST-5020



ST-5021



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

## CABLES

TYPE	DESCRIPTION	LENGTH	MODEL	ORDER No.
Axial M12 Connector	M12 5-pole conn. with 3 m unshielded cable	3 m	CS-A1-03-G-03	95ACC2110
	M12 5-pole conn. with 5 m unshielded cable	5 m	CS-A1-03-G-05	95ACC2120
	M12 5-pole conn. with 10 m unshielded cable	10 m	CS-A1-03-G-10	95ACC2140