

**S85** 











## LASER DISTANCE SENSOR FOR PRECISE MEASUREMENT UP TO 20 M WITH MILLIMETRIC RESOLUTION AND REPEATABILITY THROUGH THE TIME OF FLIGHT TECHNOLOGY

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

### **APPLICATIONS**

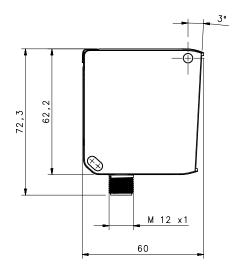
- · Automated warehousing
- Processing and Packaging machinery
- Industrial vehicles
- Automotive

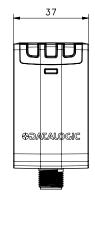
S85			
Distance sensor (90% White target)		0,220 m (S85Y13)	
		0,210 m (S85Y03)	
Repeatability		12 mm	
Accuracy		710 mm	
Resolution		1 mm	
Light emission		red LASER (class 2)	
Response time		30 ms (S85Y03)	
		1530 ms (S85Y13)	
Serial interface		RS485 (S85Y13)	
Setting		Display (S85Y13)	
		push-buttons (S85Y03)	
Power supply	Vdc	24 Vdc +/- 20%	
	PNP	•	
Quénué	NPN	•	
Output	Push pull	•	
	other	Analog output: 420 mA or 010 V	
Connection	connector	•	
Approximate dimensions (mm)		60x72x37	
Housing material		Zamak	
Mechanical protection		IP67	

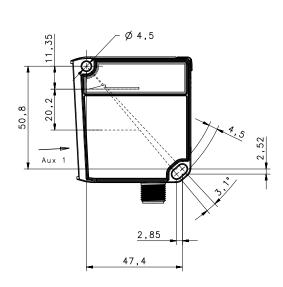
# TECHNICAL DATA

Power supply	24 Vdc ± 20%	
Consumption (output current excluded)	2,8 W max. (mod. S85Y03) 3 W max. (mod. S85Y13)	
Light emission	red Laser 658 nm	
Setting	push-buttons (mod. S85Y03) push-buttons and display (mod. S85Y13)	
Operating distance	90% white target 0,210 m (mod. S85Y03), 0,220 m (mod. S85Y13) 18% grey target 0,25 m (mod. S85Y03), 0,28 m (mod. S85Y13) 6% black target 0,23 m (mod. S85Y03), 0,25 m (mod. S85Y13)	
Indicators	yellow Q1 LED, Q2 LED green/red POWER/OUT OF RANGE LED 5-digit multi display (mod. S85Y13)	
Output	push pull/Q (mod. S85Y03) PNP, NPN, push pull, Q, Qneg (mod. S85Y13)	
Analog output	0-10 V (mod. S85Y03-00V) 4-20 mA (mod. S85Y03-00I) 0-10 V/4-20 mA (mod. S85Y13-00IVY)	
Response time	slow 45 ms (mod. S85Y13) medium 30 ms fast 15 ms (mod. S85Y13)	
Connection	M12 5-pole connector (mod. S85Y03), M12 8-pole connector (mod. S85Y13)	
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, >40 Klux DC ambient light	
Vibrations	0,5 mm amplitude, 10 55 Hz frequency, for every axis (EN60068-2-6)	
Shock resistance	11 ms (30 G) 6 shock for every axis (EN60068-2-27)	
Housing material	ZINC ALLOY ZAMA 13 EN-1774/PC LEXAN 121R display	
Lens material	PMMA	
Operating temperature	-15 50 °C	
Storage temperature	-25 70 °C	
Weight	250 g max.	

# **DIMENSIONS**







### CONNECTIONS

#### M12 CONNECTOR - STANDARD

S85-Y03-00V Voltage version



1 (BROWN): +24 V ±20 % 2 (WHITE): 3 (BLUE): Q2 100mA max. οv

4 (BLACK): Q1 100mA max. 5 (GREY): ANALOG, OUT 0-10V

S85-Y03-00I Current version



1 (BROWN): +24 V ±20 % 2 (WHITE): 3 (BLUE): Q2 100mA max.

4 (BLACK): Q1 100mA max. 5 (GREY): ANALOG. OUT 4-20mA

#### M12 CONNECTOR - ADVANCED

S85-Y13-00IVY Analog version



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

MULTIFUNC.INPUT

S85-Y13-00Y



1 (WHITE): RS485 -2 (BROWN): +24 V ±20 % (GREEN): RESERVED 4 (YELLOW): Q1 100mA max. 5 (GREY): Q2 100mA max. (PINK): (BLUE): RS485 +

8 (RED): MULTIFUNC.INPUT

## INDICATORS AND SETTINGS

8 (RED):

Without the procedure setting the sensor is configured to measure distances on a white target from a minimum value of 200 mm and a maximum of 20000 mm, with both switching point placed at 500 mm.

The parameters can be changed by the menu on the display pointing the LASER on the target in the different interested points.

#### **INDICATORS**

DISPLAY

LED 1 Q1 (yellow) LED 2 Q2 (yellow) LED 3 POWER ON (green), OUT OF RANGE (red)



Run/W.UP → Run mode or Warm-up mode  $Q+Q \rightarrow Digital Output setting \rightarrow PNP/NPN/Push-Pull$ I/V → Analog Output Setting → Ampere/Volt Lock Symbol → Keylock or unlock

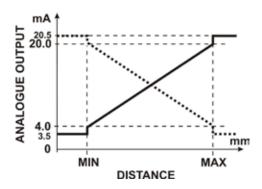
5-digit display → Value corresponds to Distance in mm

MENU	FUNCTIONS	
OUT 1	Switching point1: Light/Dark; Switching point value; PNP, NPN, Push-pull; Alarm	
OUT 2	Switching point 2: Light/Dark; Switching point value; PNP, NPN, Push-pull; Alarm	
HYSTERESIS	Hysteresis level: 51000 mm	
ANALOG OUT	Voltage (010 V); Current (420 mA)	
MULTIFUNCTION IN	LASER OFF; Teach IN (Thresholds); RS485 Send Data	
AVERAGE	Response time: SLOW; MEDIUM; FAST	
RS485	Node N°; Enable; Termination; Output mode; Delay (0254 ms	
SCALABLE OUT	Analog output range: Reset, MIN and MAX distance	
FACTORY RESET	Factory default values	
INFO	Software version	

## **DETECTION DIAGRAMS**

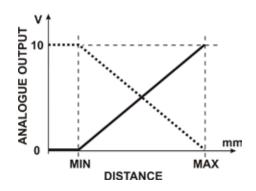
CURRENT ANALOG OUTPUT

MEASUREMENT RANGE (4...20 mA) OUT OF RANGE ( 3,95...4 mA; 20...20,5 mA)



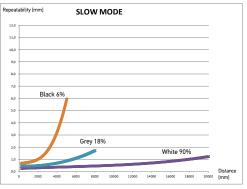
**VOLTAGE ANALOG OUTPUT** 

MEASUREMENT RANGE (0...10 V)



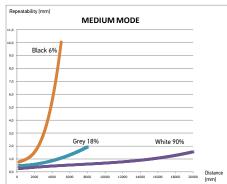
S85-...-Y13 ADVANCED REPEATABILITY (SLOW MODE)

[WHITE 90%; GREY 18%; BLACK 6%]



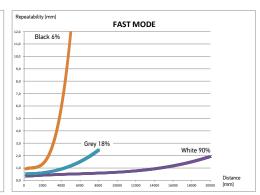
#### S85-...-Y13 ADVANCED REPEATABILITY (MEDIUM MODE)

[WHITE 90%; GREY 18%; BLACK 6%]



#### S85-...-Y13 ADVANCED REPEATABILITY (FAST MODE)

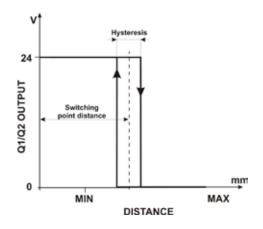
[WHITE 90%; GREY 18%; BLACK 6%]



### S85-...-Y13 ADVANCED REPEATABILITY/RESPONSE TIME (90% WHITE TARGET @ 20 m)

MODE		
Slow	45 ms	< 1,5 mm
Medium	30 ms	1,5 mm
Fast	15 ms	< 2 mm

### **HYSTERESIS**

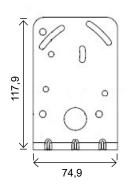


# MODEL SELECTION AND ORDER INFORMATION

OPTIC FUNCTION	OPERATING DISTANCE	CONNECTION OUTPUT & INPUT		MODELS	ORDER No.
Distance sensor	10	M12 5-pole	2 Digital outputs; Analog output: Voltage (010 V)	S85-MH-5-Y03-00V	951511010
(Standard)	10 m	connector	2 Digital outputs; Analog output: Current (4 20mA)	S85-MH-5-Y03-00I	951511030
Distance sensor (Advanced)	20 m	M12 8-pole connector	2 Digital outputs; Analog output: Current (4 20mA) or Voltage (010 V); RS485; Multifunction input	S85-MH-5-Y13-00IVY	951511020
			2 Digital outputs; RS485; Multifunction input	S85-MH-5-Y13-00Y	951511040

# **ACCESSORIES**

ST-S85-STD

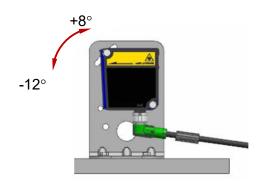












MODEL	DESCRIPTION	ORDER No.
ST-S85-STD	mounting bracket	95ACC7840

## **CABLES**

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

### **DATALOGIC PRODUCT OFFERING**



Sensors Hand Held













Hand Held Mobile scanners

Laser Marking Safety Laser Systems Scanner

Vision Systems

Stationary Industrial Scanners

Safety Light Curtains

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