

S80 SERIES

The **S80** series, in the compact sturdy metal housing, offers innovative class 2 laser distance sensors with time of flight measurement. This technology, based on the measurement of the time between the emission and receipt of the laser light pulses, effects accurate distance detection.

The **S80-Y0** and **S80-YL0** sensors function as proximity on respectively a 0.3 - 4 m distance, or from 0.3 to 7 m with scalable range, in object positioning or detection applications.

The **S80-Y1** and **S80-Y2** sensors, with operating distances reaching 20 or 100 m, function as retroflex measuring the distance from a reflector mounted on the object to detect. All models have two switching outputs, available in both the NPN and PNP models, that can be set at different distances, while the measurement value is supplied on the 4-20 mA analogue output and RS485 serial interface; the latter can be also used to set all the parameters.

Moreover the **S80-YL0** version offers the possibility to scale the 4-20 mA analogue output. This feature allows to set the minimum and maximum values of the operating distance and link the minimum and maximum current.

A 4-digit display visualises the distance, as well as all the parameters that can be set with the three push-buttons.



HIGHLIGHTS

- High precision and speed
- Proximity measurement range scalable from 0 to 7 m
- Retroreflex measurement range reaching 20 or 100 m on reflector
- 4 digit display and RS485 serial interface

APPLICATIONS

Automatic warehouse



Automotive



Wood



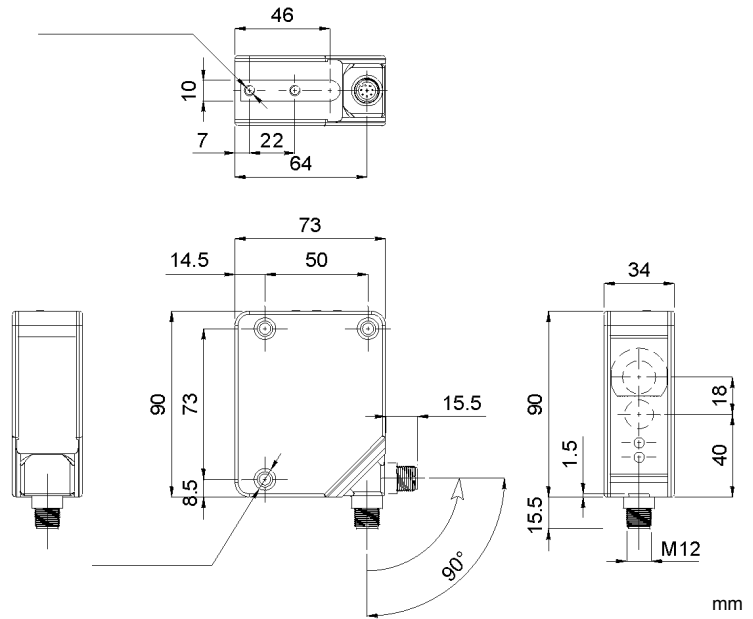
The laser distance sensors with time of flight measurement are suitable for long distance measurements offering constant performances on the entire range.

The linearity indicates the maximum deviation of the analogue output respect to the ideal value and is expressed in percentage of full range.

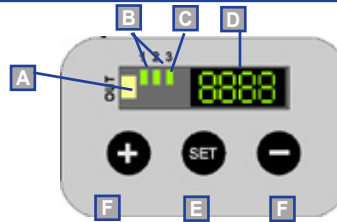
Whereas the temperature drift indicates the maximum deviation in relation to the sensor temperature variation and is expressed in mm/°C.

Lastly, the repeatability represents the variation interval of the measurement made different times on the target at the same distance. The product is not suitable to be used for OUTDOOR application.

DIMENSIONS



INDICATORS AND SETTINGS



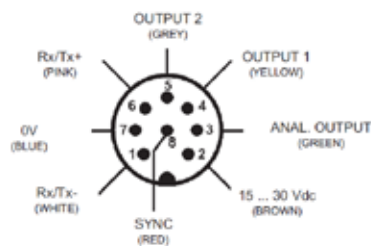
- A Output 'OR' function LED
- B Output status LED
- C Response time LED
- D 4-digit display
- E SET push-button
- F +/- selection push-buttons
- G Alarm LED
- H M12 connector output orientable on two positions

ACCESSORIES

For **dedicated accessories** refer to the **ACCESSORIES** section of this catalogue.

Refer also to **Connectors** and **Fixing Brackets** and **Supports** of the **General Catalogue**.

CONNECTIONS



NOTE: the wire colours refer to the cables manufactured according to the European standard

Versions and options: refer to **MODEL SELECTION TABLE**

TECHNICAL DATA

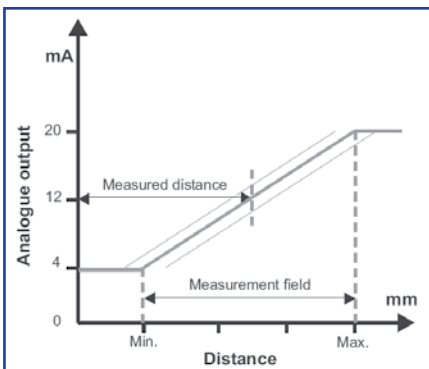
| | |
|---|---|
| Direct measurement range¹: | 0.3 - 4 m (Y0), 0.3 - 7 m scalable (YL0) |
| Retroreflex measurement range²: | 0.3 - 20.3 m (Y1), 0.3 - 100.3 m (Y2) |
| Linearity: | 0.3% (Y0/YL0), 0.75% (Y1), 0.3% (Y2) |
| Temperature drift: | ±0.6 mm/°C (Y0/YL0), <2mm/°C (Y1/Y2) |
| Warm Up: | 20 min for all models |
| Repeatability³: | <5 mm (Y0 FAST) |
| | 7 mm @ 7 m (YL0), 10 mm @ 20 m (Y1), 10 mm @ 100 m (Y2) |
| Switching output hysteresis³: | 5 mm (Y0/YL0), 25 mm (Y1), 40 mm (Y2) |
| Power supply: | 15 ... 30 Vdc (limit values) |
| Ripple: | 2 Vpp max. |
| Consumption: | 110 mA max. @ 24 Vdc |
| Light emission: | red Laser 658 nm, class 2 |
| Setting: | SET push-button |
| | +/- push-button |
| Indicators (on command panel): | 4-digit display |
| | yellow OUTPUT LED |
| | green OUTPUT STATUS LED |
| | green FAST mode LED |
| Indicators (on front): | yellow OUTPUT LED |
| | red ALARM LED |
| Output type: | 2 PNP NO or 2 NPN NO |
| | 4 ... 20 mA analogue |
| Output current: | ≤ 100 mA |
| Saturation voltage: | ≤ 2 V |
| Response time: | 5 ms (NORMAL) / 1 ms (FAST) |
| | 6 ms (YL0) |
| Switching frequency: | 100 Hz (NORMAL) / 500 Hz (FAST) |
| | 85 Hz (YL0) |
| Timing function: | selectable between 5, 10, 20, 30 e 40 ms |
| Auxiliary functions: | synchronism (SYNC) |
| | keylock ⁴ |
| | RS485 serial interface |
| Connection: | M12 8-pole connector ⁵ |
| Electrical protection: | class 2 |
| Mechanical protection: | IP67 |
| Protection devices: | A, B ⁶ |
| Housing material: | aluminium |
| Lens material: | glass |
| Weight: | 330 g max. |
| Operating temperature: | -10 ... +50°C |
| Storage temperature: | -25 ... +70°C |
| Reference standard: | EN 60947-5-2, EN 60825-1 |

TECHNICAL NOTES

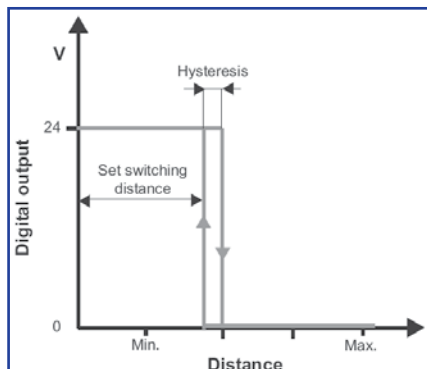
- ¹On target 90% white to 18% grey
- ²On reflector R80
- ³In Normal mode with 5 ms response time
- ⁴Active with SYNC wire connected to + Vdc for at least 1 s at powering
- ⁵Connector can be blocked in two positions
- ⁶A - reverse polarity protection
B - overload and short-circuit protection



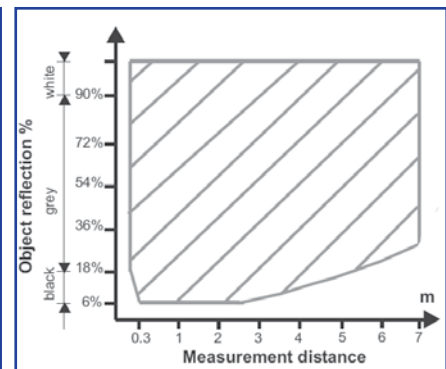
DETECTION DIAGRAMS



Analogue output



Digital outputs



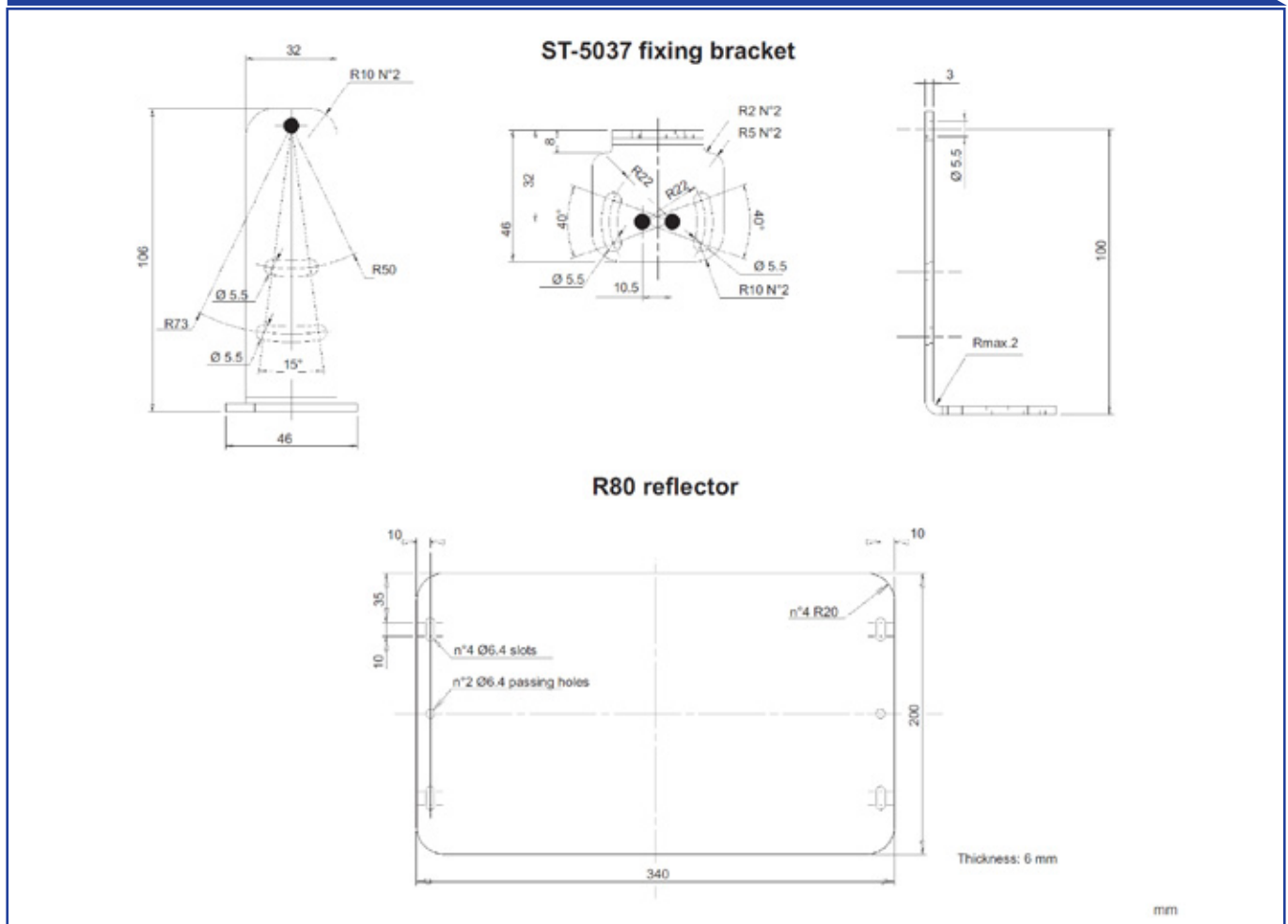
Direct measurement distance according to object reflection degree

MODEL SELECTION AND ORDER INFORMATION

| MODEL | MAX. DISTANCE | REFLECTOR | CONNECTION | OUTPUT | N° ORDER |
|--------------------|---------------|-----------|---------------|--------|-----------|
| S80-MH-5-Y09-PPIZ | 4 m | no | M12 connector | PNP | 951501080 |
| S80-MH-5-Y09-NNIZ | 4 m | no | M12 connector | NPN | 951501010 |
| S80-MH-5-YL09-PPIZ | 7 m | no | M12 connector | PNP | 951501060 |
| S80-MH-5-YL09-NNIZ | 7 m | no | M12 connector | NPN | 951501070 |
| S80-MH-5-Y19-PPIZ | 20 m | yes * | M12 connector | PNP | 951501020 |
| S80-MH-5-Y19-NNIZ | 20 m | yes * | M12 connector | NPN | 951501030 |
| S80-MH-5-Y29-PPIZ | 100 m | yes * | M12 connector | PNP | 951501040 |
| S80-MH-5-Y29-NNIZ | 100 m | yes * | M12 connector | NPN | 951501050 |

* supplied with the sensor

ACCESSORY DIMENSIONS



ACCESSORY SELECTION AND ORDER INFORMATION

| MODEL | DESCRIPTION | N° ORDER |
|--|---|-----------|
| ST-5037 | 'L' shaped fixing bracket | 95ACC2260 |
| R80 * | S80 distance sensor reflector | 95A151210 |
| Refer also to Accessories for Sensors | | |
| CS-A1-06-B-03 | M12 8-pole conn. with 3 m unshielded cable | 95ACC2230 |
| CS-A1-06-B-05 | M12 8-pole conn. with 5 m unshielded cable | 95ACC2240 |
| CS-A1-06-B-10 | M12 8-pole conn. with 10 m unshielded cable | 95ACC2250 |

* supplied with the sensor



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