

## MULTI-FUNCTION M18 SENSORS



- *Wide versatility of optic functions and connections*
- *High operating distances for all functions*
- *Models with trimmer adjustment and stability LED*
- *Rugged and impermeable plastic housing*



## S5 SERIES

The **S5** series offers a range of plastic tubular M18 photoelectric sensors.

The most varied optic functions can be chosen amongst the fixed focus or diffuse proximity models with short, medium or long operating distances reaching 60 cm; the 4 m retroreflex, 3 m polarised retroreflex and 1 m for detection of transparent materials; the 12 m through beam and models with fibre-optic connection.

Different versions with either axial or radial optics are available. The series offers connector or cable connection, 3 wire Vac versions or 4 wire Vdc versions with complete configuration of the NPN/PNP output and dark/light mode.

A red LED indicating the output status is visible on the bottom side of the sensor.

The versions with trimmer adjustment present also a green LED signalling the switching stability according to the received signal's intensity.

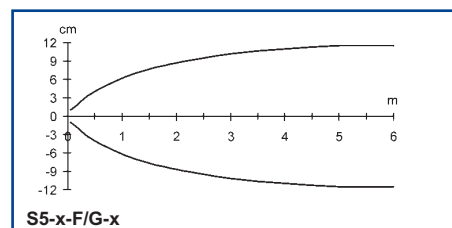
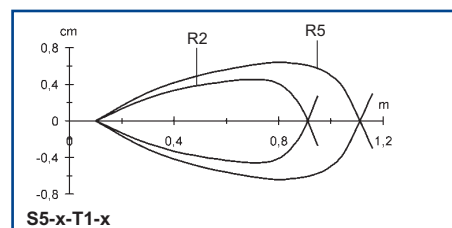
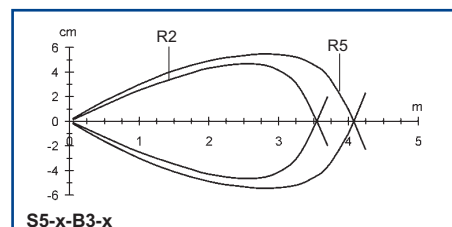
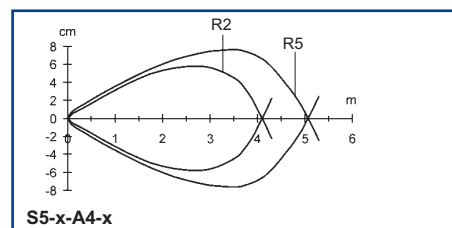
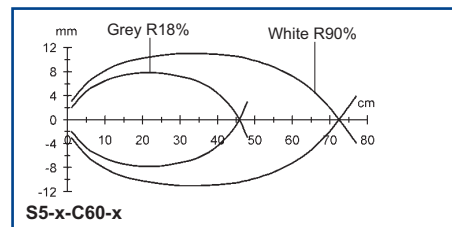
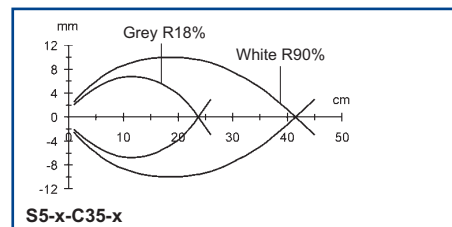
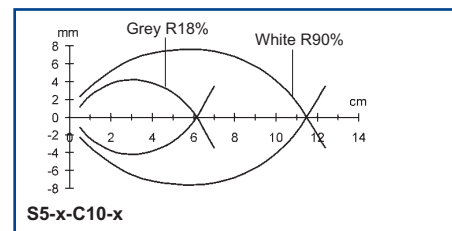
The rugged ABS housing always guarantees IP67 protection.

## TECHNICAL DATA

|  |   |
|--|---|
| <b>Power supply:</b> .....                           | 10 ... 30 Vdc (d.c. vers.), reverse polarity protection<br>15 ... 264 Vac (a.c. vers.)  |
| <b>Consumption:</b> .....                            | 30 mA max. (d.c. vers.)<br>10 mA max. (a.c. vers.)  |
| <b>Light emission:</b> .....                         | infrared LED 880 nm<br>red LED 660 nm (B, E1 vers.)   |
| <b>Diffuse proximity operating distance:</b> .....   | 1 ... 10 cm (C10 vers.), 1 ... 8 cm (C8 vers.)<br>1 ... 35 cm (C35 vers.), 1 ... 30 cm (C30 vers.)<br>1 ... 60 cm (C60 vers.) |
| <b>Fixed focus operating distance:</b> .....         | 15 mm with 1 mm spot (D15 vers.)  |
| <b>Retroreflex operating distance:</b> .....         | 0.1 ... 4 m (on R2)   |
| <b>Polarised retroreflex operating distance:</b> ..  | 0.1 ... 3 m (on R2)   |
| <b>Retroreflex for transparents op. distance:</b> .. | 0.1 ... 0.8 m (on R2)   |
| <b>Through beam operating distance:</b> .....        | 0 ... 12 m (F/G12 vers.), 0 ... 8 cm (F/G8 vers.)   |
| <b>Operating distance with fibre-optics:</b> .....   | 22 mm proximity (with OF-18-ST)<br>85 mm through beam (with OF-19-ST)<br><i>refer to OF series for other fibres</i>           |
| <b>Setting:</b> .....                                | sensitivity trimmer<br>(A4, C8, C10, D15, G vers. excluded)   |
| <b>Indicators:</b> .....                             | red OUTPUT LED<br>green STABILITY LED (d.c. vers.)<br>red POWER LED (G vers.)   |
| <b>Output type:</b> .....                            | NPN or PNP configurable (d.c. vers.)<br>SCR + bridge rectifier (a.c. vers.)   |
| <b>Saturation voltage:</b> .....                     | 2.5 V max. (vers. d.c.)   |
| <b>Output current:</b> .....                         | 150 mA max.(vers. d.c.), short-circuit prot.<br>100 mA max.(vers. a.c.)   |
| <b>Response time:</b> .....                          | 1 ms max.<br>2 ms (F vers. in d.c.)<br>20 ms max. (a.c. vers.)  |
| <b>Switching frequency:</b> .....                    | 500 Hz max.<br>250 Hz max. (F vers. in d.c.)<br>25 Hz max. (a.c. vers.)   |
| <b>Operating mode:</b> .....                         | dark/light (configurable in 4 wires d.c. vers.)   |
| <b>Auxiliary functions:</b> .....                    | 'test +' and 'test -' inputs (G vers. in d.c.)  |
| <b>Connection:</b> .....                             | 4-pole M12 connector<br>or 2 m Ø 5 mm cable   |
| <b>Electrical protection:</b> .....                  | class 1 (a.c. vers.)<br>class 2 (d.c. vers.)  |
| <b>Mechanical protection:</b> .....                  | IP67  |
| <b>Housing material:</b> .....                       | ABS   |
| <b>Lens material:</b> .....                          | PMMA plastic  |
| <b>Weight:</b> .....                                 | 25 g max. (connector vers.)<br>100 g max. (cable vers.)   |
| <b>Operating temperature:</b> .....                  | -25 ... +55°C   |
| <b>Storage temperature:</b> .....                    | -25 ... +70°C   |
| <b>Reference standard:</b> .....                     | EN 60947-5-2  |
| <b>Certifications:</b> .....                         | CE (cUL) US LISTED (vers.d.c.)  |

The operating distances indicate the detection distance with excess gain 2.

## DETECTION DIAGRAMS

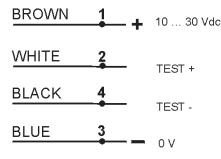


The detection diagrams indicate the typical operating distance with excess gain 1.

## CONNECTIONS



S5-5-x (4 wires)



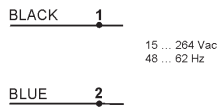
S5-5-G8/G12 (4 wires)



M12 CONNECTOR



S5-1-x



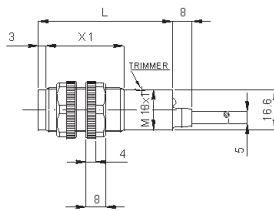
S5-1-G8

## DIMENSIONS

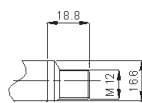
### AC AXIAL VERSION



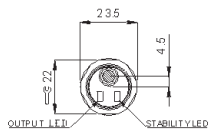
|    | MODELS       |                 |
|----|--------------|-----------------|
|    | with trimmer | without trimmer |
| X1 | 52           | 42              |
| L  | 75           | 85              |



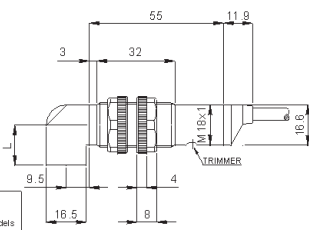
M12 CONNECTOR



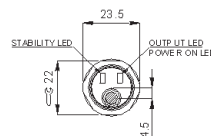
### RADIAL VERSION



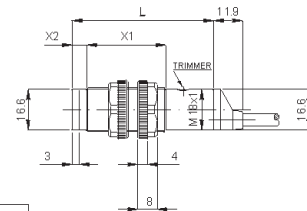
|   | MODELS |          |              |
|---|--------|----------|--------------|
|   | mod. B | mod. F10 | other models |
| L | 19.5   | 20.5     | 16.5         |



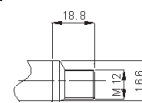
### DC AXIAL VERSION



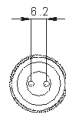
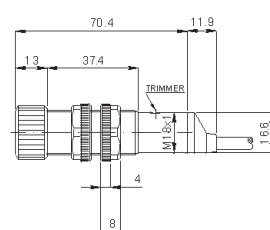
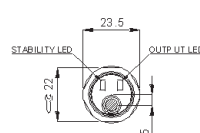
|    | MODELS          |                              |        |
|----|-----------------|------------------------------|--------|
|    | without trimmer | with trimmer (except mod. B) | mod. B |
| L  | 55              | 65                           | 88     |
| X1 | 32              | 42                           | 42     |
| X2 | 3               | 3                            | 6      |



M12 CONNECTOR



### FIBRE OPTIC VERSION



## MODEL SELECTION AND ORDER INFORMATION

| 4 WIRE CONNECTION<br>10 - 30 Vdc          | AXIAL OPTIC VERSIONS       |                            | RADIAL OPTIC VERSIONS      |                            |
|---|----------------------------|----------------------------|----------------------------|----------------------------|
|   | 4 POLE CABLE               | M12 CONN.                  | 4 POLE CABLE               | M12 CONN.                  |
| Short distance<br>diffuse proximity       | S5-5-C10-30<br>(G5210530)  | S5-5-C10-32<br>(G5210532)  | S5-5-C10-35<br>(G5210535)  | S5-5-C10-37<br>(G5210537)  |
| Medium distance<br>diffuse proximity      | S5-5-C35-30<br>(G5210630)  | S5-5-C35-32<br>(G5210632)  | S5-5-C35-35<br>(G5210635)  | S5-5-C35-37<br>(G5210637)  |
| Long distance<br>diffuse proximity        | S5-5-C60-30<br>(952051640) | S5-5-C60-32<br>(952051650) | S5-5-C60-35<br>(952051660) | S5-5-C60-37<br>(952051670) |
| Fixed focus proximity                     | S5-5-D15-30<br>(G5210430)  | S5-5-D15-32<br>(G5210432)  | S5-5-D15-35<br>(G5210435)  | S5-5-D15-37<br>(G5210437)  |
| Retroreflex                               | S5-5-A4-30<br>(G5210230)   | S5-5-A4-32<br>(G5210232)   | S5-5-A4-35<br>(G5210235)   | S5-5-A4-37<br>(G5210237)   |
| Polarised<br>Retroreflex                  | S5-5-B3-30<br>(G5210730)   | S5-5-B3-32<br>(G5210732)   | S5-5-B3-35<br>(G5210735)   | S5-5-B3-37<br>(G5210737)   |
| Retroreflex for<br>transparents           | S5-5-T1-30<br>(952051680)  | S5-5-T1-32<br>(952051690)  | -                          | -                          |
| Through beam receiver                     | S5-5-F12-30<br>(G5210130)  | S5-5-F12-32<br>(G5210132)  | S5-5-F8-35<br>(G5210135)   | S5-5-F8-37<br>(G5210137)   |
| Through beam emitter                      | S5-5-G12-00<br>(G5210000)  | S5-5-G12-02<br>(G5210002)  | S5-5-G8-05<br>(G5210005)   | S5-5-G8-07<br>(G5210007)   |
| Fibre-optic<br>amplifier                  | S5-5-E1-30<br>(G5210830)   | S5-5-E1-32<br>(G5210832)   | -                          | -                          |
| <b>3 WIRE CONNECTION<br/>15 - 264 Vac</b> | <b>CABLE - dark mode</b>   | <b>CABLE - light mode</b>  | <b>CABLE - dark mode</b>   | <b>CABLE - light mode</b>  |
| Short distance<br>diffuse proximity       | S5-1-C8-10<br>(G5110510)   | S5-1-C8-20<br>(G5110520)   | S5-1-C8-15<br>(G5110515)   | S5-1-C8-25<br>(G5110525)   |
| Medium distance<br>diffuse proximity      | S5-1-C30-10<br>(G5110610)  | S5-1-C30-20<br>(G5110620)  | S5-1-C30-15<br>(G5110615)  | S5-1-C30-25<br>(G5110625)  |
| Fixed focus proximity                     | S5-1-D15-10<br>(G5110410)  | S5-1-D15-20<br>(G5110420)  | -                          | -                          |
| Retroreflex                               | S5-1-A2-10<br>(G5110210)   | S5-1-A2-20<br>(G5110220)   | S5-1-A2-15<br>(G5110215)   | S5-1-A2-25<br>(G5110225)   |
| Through beam receiver                     | S5-1-F8-10<br>(G5110110)   | S5-1-F8-20<br>(G5110120)   | S5-1-F8-15<br>(G5110115)   | S5-1-F8-25<br>(G5110125)   |
| Through beam emitter                      | S5-1-G8-00<br>(G5110000)   |                            | S5-1-G8-05<br>(G5110005)   |                            |

## ACCESSORY SELECTION AND ORDER INFORMATION

| MODEL    | DESCRIPTION  | CODE N°   |
|----------|--|-----------|
| SP-40    | fixed support for tubular M18 sensors              | 95ACC1370 |
| SWING-18 | adjustable support for plastic tubular M18 sensors | 895000006 |

Please refer also to **Sensor Accessories**

Distributed by:

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# Mouser Electronics

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## IDEC:

[S5-1-A2-25](#) [S5-1-D15-10](#) [S5-1-F8-10](#) [S5-1-C30-10](#) [S5-1-D15-20](#) [S5-1-F8-20](#) [S5-5-A4-82](#) [S5-5-D15-35](#) [S5-5-F8-37](#) [S5-5-F8-90-ST4](#) [S5-5-G8-05](#) [S5-5-G8-60-ST2](#) [S5-5-L2-92](#) [S5-5-T1-30](#) [S5-1-A2-10](#) [S5-1-A2-20](#) [S5-1-G8-00](#) [S5-1-C8-10](#) [S5-1-C8-15](#) [S5-1-C30-20](#) [S5-1-A2-15](#) [S5-1-G8-05](#) [S5-1-C30-15](#) [S5-1-C30-25](#) [S5-1-C8-20](#) [S5-1-C8-25](#) [S5-5-A4-87](#) [S5-5-A4-92](#) [S5-5-C60-37](#) [S5-5-A4-62](#) [S5-5-D15-37](#) [S5-5-F8-35](#) [S5-5-G8-07](#) [S5-1-F8-25](#) [S5-5-C60-35](#) [S5-5-C10-30](#) [S5-5-C10-32](#) [S5-5-C35-37](#) [S5-5-F8-92-SG-ST2](#) [S5-5-F8-92-SG-ST4](#) [S5-5-F8-92-ST2](#) [S5-5-G12-00](#) [S5-5-B3-35](#) [S5-5-E1-32](#) [S5-5-G8-60-ST4](#) [S5-5-B3-32](#) [S5-5-C35-30](#) [S5-5-G8-62-ST4](#) [S5-5-E1-30](#) [S5-5-F12-30](#) [S5-5-T1-32](#) [S5-5-C10-37](#) [S5-5-C35-32](#) [S5-5-C10-35](#) [S5-5-C35-35](#) [S5-5-D15-30](#) [S5-5-B3-37](#) [S5-5-F12-32](#) [S5-5-A4-30](#) [S5-5-A4-32](#) [S5-5-A4-35](#) [S5-5-A4-37](#) [S5-5-C35-92](#) [S5-5-C60-30](#) [S5-5-C60-32](#) [S5-5-F8-92-ST4](#) [S5-5-G8-62-SG-ST2](#) [S5-5-G8-62-SG-ST4](#) [S5-5-G8-62-ST2](#) [S5-5-B3-30](#) [S5-5-F8-90-ST2](#) [S5-5-L2-72](#) [S5-5-D15-32](#) [S5-5-G12-02](#) [S5-1-F8-15](#)