

**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

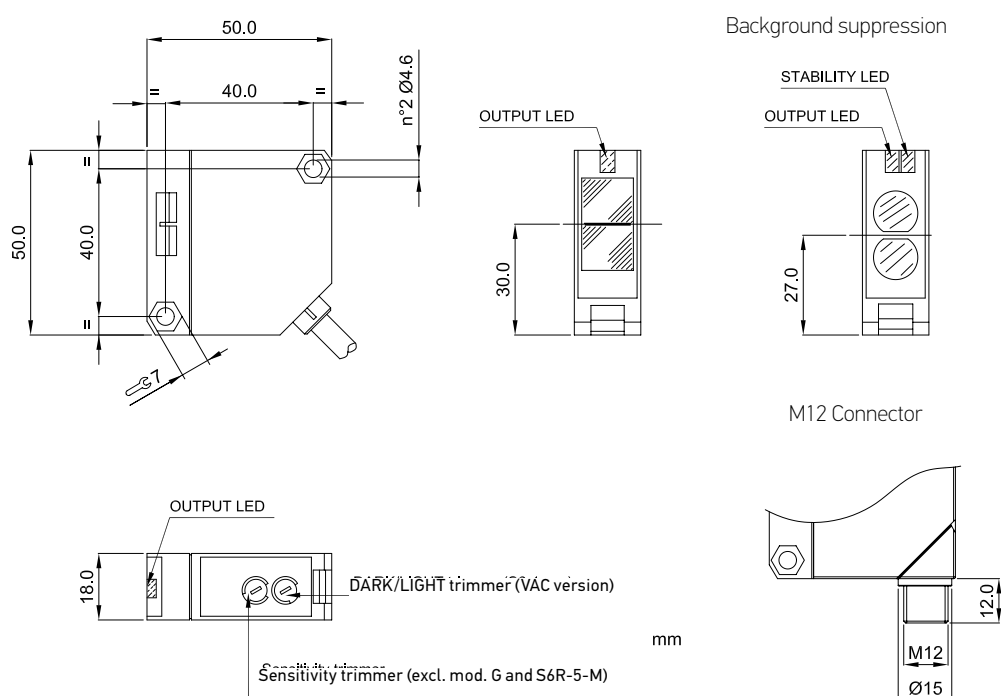


| S6                                                 |           |                  |
|----------------------------------------------------|-----------|------------------|
| <b>Through beam</b>                                |           | 0...20 m         |
| <b>Retroreflective (on R2 reflector)</b>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

# TECHNICAL DATA

|                                              |                                                                                                                                                                          |
|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Power supply</b>                          | 10 ... 30 Vdc limit values (mod. S6/S6T/S6R-5)<br>15 ... 264 Vac/Vdc (48 ... 60 Hz) limit values (mod. S6-1)                                                             |
| <b>Ripple</b>                                | 2 Vpp max.                                                                                                                                                               |
| <b>Consumption (output current excluded)</b> | 30 mA max. (mod. S6/S6T/S6R-5)<br>40 mA max. (mod. S6-1)                                                                                                                 |
| <b>Light emission</b>                        | IR LED 880 nm<br>red LED 660 nm (mod. S6/S6R/S6T...B/M10)                                                                                                                |
| <b>Setting</b>                               | sensitivity trimmer (excl. mod. S6...G, S6R-5-M)<br>adjustment screw (mod. S6/S6T/S6R-5-M)                                                                               |
| <b>Operating mode</b>                        | LIGHT/DARK selection by cable or connector (mod. S6/S6T/S6R-5)<br>LIGHT/DARK selection by N.O./N.C. output (mod. S6R-5-M)<br>LIGHT/DARK selection by trimmer (mod. S6-1) |
| <b>Indicators</b>                            | red OUTPUT LED (excl. mod. S6...G), POWER LED (mod. S6...G)<br>green STABILITY LED (mod. S6-5-M25)                                                                       |
| <b>Output</b>                                | NPN/PNP (mod. S6)<br>PNP (mod. S6T)<br>NPN or PNP; NC; NO (mod. S6R)<br>Relay 1 NO and NC contact 250 Vac, 30 Vdc min. applicable load 5 Vdc, 10 mA (mod. S6-1)          |
| <b>Output current</b>                        | 100 mA max., 3 A max. (mod. S6-1)                                                                                                                                        |
| <b>Saturation voltage</b>                    | 1,5 V max. (NPN/PNP output)                                                                                                                                              |
| <b>Response time</b>                         | 1 ms max.<br>2 ms max. (mod. S6/S6R/S6T...F/G)<br>30 ms max. (mod. S6-1)                                                                                                 |
| <b>Switching frequency</b>                   | 500 Hz<br>250 Hz max. (mod. S6/S6R/S6T...F/G)<br>16 Hz (mod. S6-1)                                                                                                       |
| <b>Connection</b>                            | 2 m cable – 6 mm (mod. S6-1), 2 m cable – 5 mm (mod. S6-5), M12 4-pole connector (mod. S6T-S6R)                                                                          |
| <b>Dielectric strength</b>                   | 500 Vac, 1 min between electronics and housing                                                                                                                           |
| <b>Insulating resistance</b>                 | >20 MΩ, 500 Vdc between electronics and housing                                                                                                                          |
| <b>Electrical protection</b>                 | class 2, class 1 (mod. S6-1)                                                                                                                                             |
| <b>Mechanical protection</b>                 | IP65                                                                                                                                                                     |
| <b>Ambient light rejection</b>               | according to EN 60947-5-2                                                                                                                                                |
| <b>Vibrations</b>                            | 0,5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6)                                                                                                   |
| <b>Shock resistance</b>                      | 11 ms (30 G) 6 shock for every axis (EN60068-2-27)                                                                                                                       |
| <b>Housing material</b>                      | ABS UL 94V-0                                                                                                                                                             |
| <b>Lens material</b>                         | PMMA plastic                                                                                                                                                             |
| <b>Operating temperature</b>                 | -25 ... 55 °C                                                                                                                                                            |
| <b>Storage temperature</b>                   | -25 ... 70 °C                                                                                                                                                            |
| <b>Weight</b>                                | 160 g max. cable vers., 40 g max. conn. vers.                                                                                                                            |

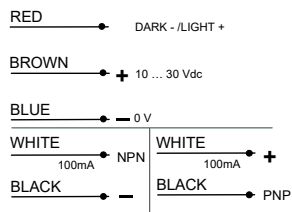
# DIMENSIONS



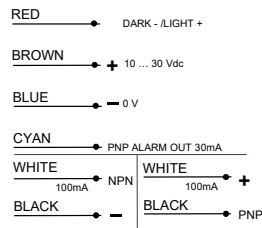
# CONNECTIONS

## VDC MODELS

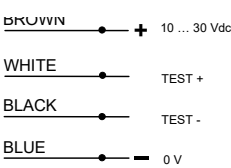
NPN/PNP version



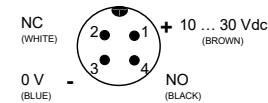
Through beam receiver - NPN/PNP version



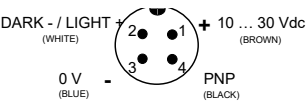
Through beam emitter - NPN/PNP version



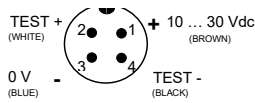
NPN or PNP and NC/NO version



PNP version

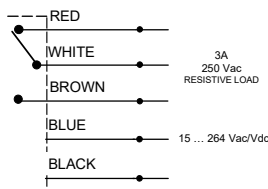
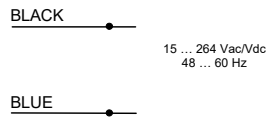


Through beam emitter - PNP version



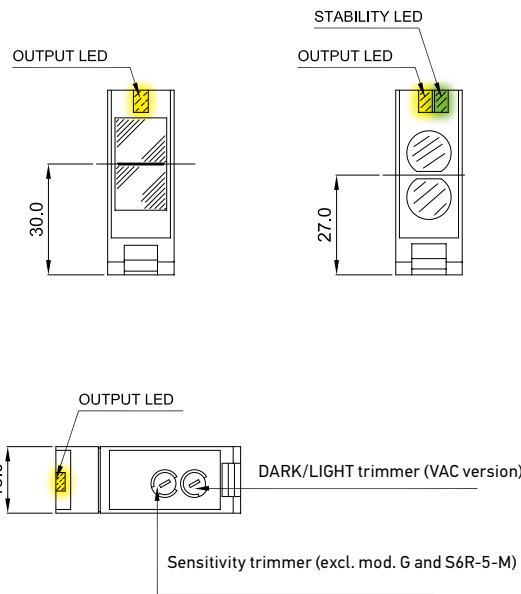
## VAC MODELS

Through beam emitter

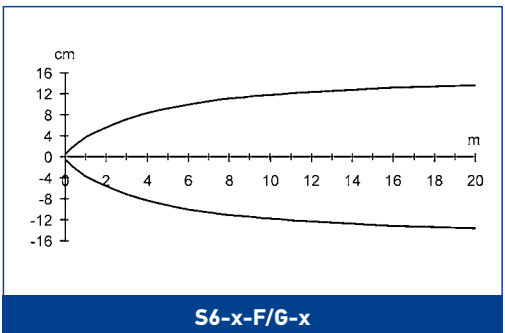
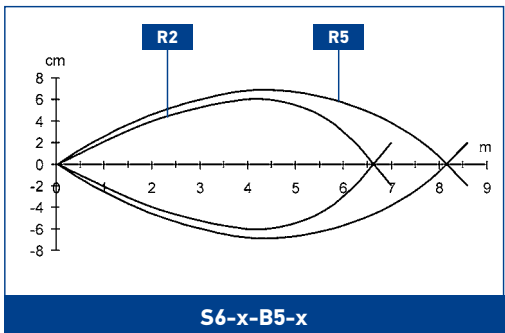
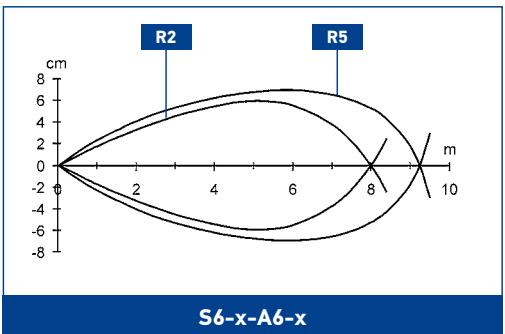
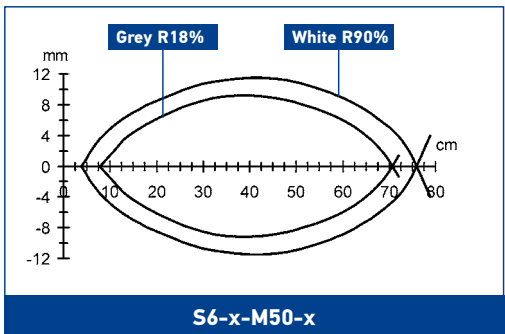
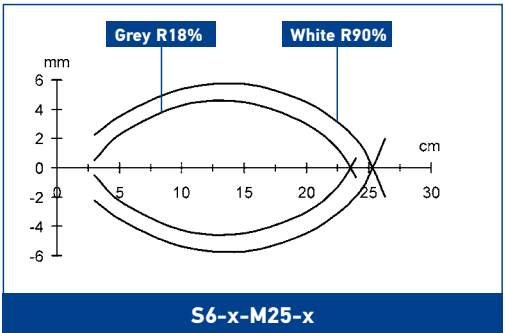
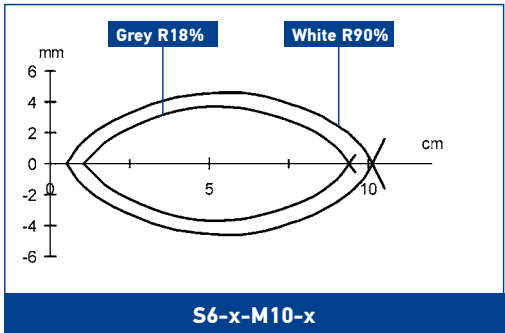
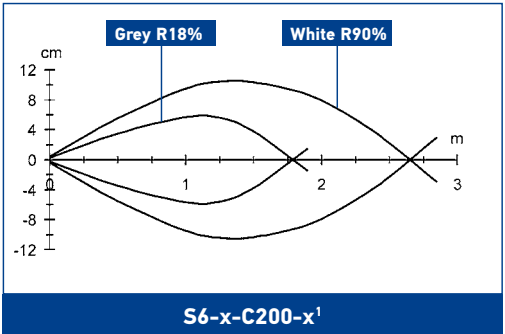
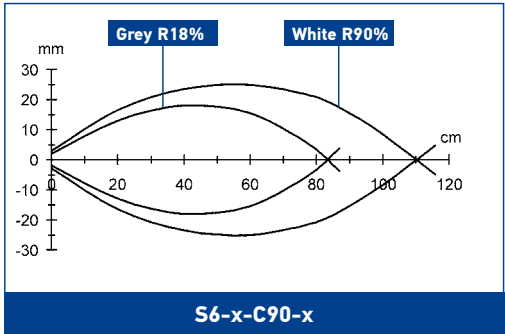


# INDICATORS AND SETTINGS

Background suppression



# DETECTION DIAGRAMS

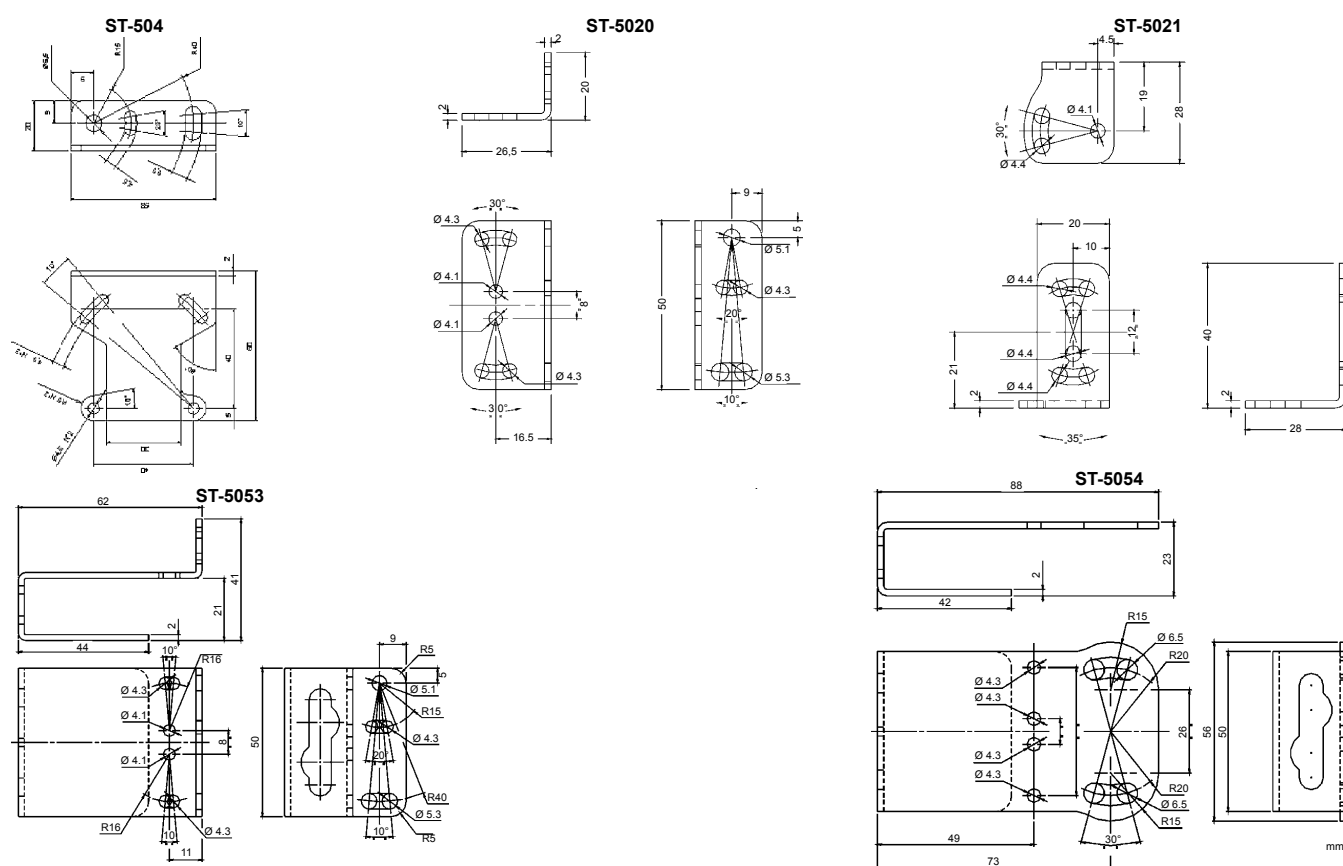


The detection diagrams indicate the typical operating distance with excess gain 1.

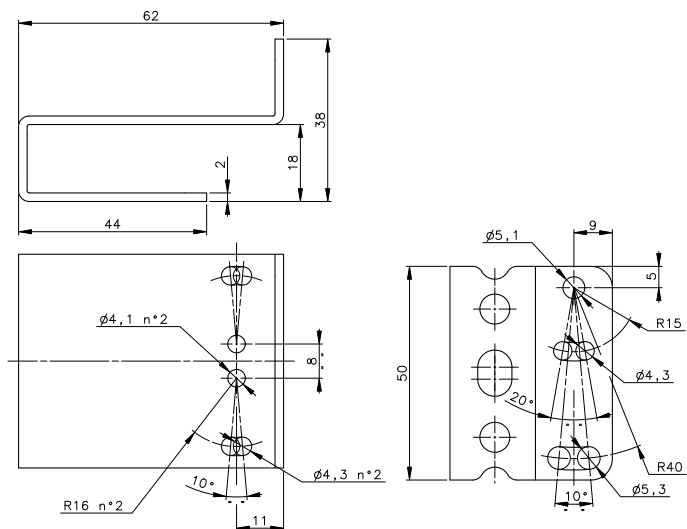
## MODEL SELECTION AND ORDER INFORMATION

| 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 |
|                            |                             |                 | PNP N.O./N.C.      | S6R-5-C90-P  | 950201190  |
|                            |                             |                 | PNP                | S6T-5-C90-P  | 961031020  |
| Long diffuse proximity     | 10...2000 mm                | 15...264 V A.C. | relay SPDT 250V/3A | S6-1-C200    | 950151140  |
|                            |                             | 10...30 V D.C.  | NPN/PNP            | S6-5-C200    | 950201150  |
|                            |                             |                 | PNP N.O./N.C.      | S6R-5-C200-P | 950201200  |
|                            |                             |                 | NPN N.O./N.C.      | S6R-5-C200-N | 956101050  |
| Retroreflective            | 0,1...6 m (on R2 reflector) | 15...264 V A.C. | relay SPDT 250V/3A | S6-1-A6      | S937330090 |
|                            |                             | 10...30 V D.C.  | NPN/PNP            | S6-5-A6      | S937330000 |
|                            |                             |                 | 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 |
|                            |                             | 10...30 V D.C.  | NPN/PNP            | S6-5-B5      | S937420000 |
|                            |                             |                 | 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  |
|                            |                             |                 | NPN N.O./N.C.      | S6R-5-M25-N  | 956101080  |
|                            |                             |                 | PNP                | S6T-5-M25-P  | 961041000  |
|                            | 100...500 mm                |                 | PNP N.O./N.C.      | S6R-5-M50-P  | 950201250  |
| Through beam<br>(Receiver) | 0...20 m                    | 15...264 V A.C. | relay SPDT 250V/3A | S6-1-F20     | S937200090 |
|                            |                             | 10...30 V D.C.  | NPN/PNP            | S6-5-F20     | S937200010 |
|                            |                             |                 | PNP N.O./N.C.      | S6R-5-F20-P  | 950201160  |
|                            |                             |                 | PNP                | S6T-5-F20-P  | 961211010  |
| Through beam<br>(Emitter)  | -                           | 15...264 V A.C. | -                  | S6-1-G20     | S937130090 |
|                            |                             | 10...30 V D.C.  | -                  | S6-5-G20     | S937130000 |
|                            |                             |                 | -                  | S6T-5-G20    | 961211000  |

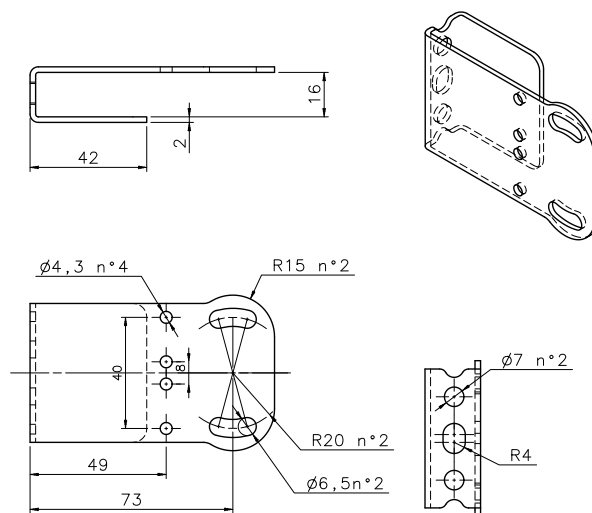
## ACCESSORIES



## 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<br>(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                                    |                                 | 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  |

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