**EZ-BEAM™ sensors**

**Dimensions [mm]**

- **Cable**
  - M18x1 AF 24 8 thick
  - yellow LED
  - green LED
  - S18S...6FF...
  - 37
  - 59.2
  - 65

- **Connector**
  - green LED
  - yellow LED
  - M12x1
  - 78.7
  - 84.1
  - S18S...6FF...Q

**Wiring**

- pnp complementary
- nnp complementary
- emitter
- pnp light op. + alarm
- nnp light op. + alarm
- *alarm

**S18 series
dc operation**

**Wave length**
- IR (infrared)
- Red
- 880 nm
- 950 nm (opposed, retro)
- 680 nm

**Supply**
- Supply voltage
- Ripple \( V_{pp} \)
- No load current
- \( \leq 10 \% \)
- \( \leq 25 \text{ mA} \)
- \( \leq 20 \text{ mA} \) (receiver)
- \( \leq 30 \text{ mA} \) (polarised retro)
- \( \leq 35 \text{ mA} \) (background suppression)
- \( \leq 10 \text{ V dc} \)
- \( \leq 150 \text{ mA} \)
- \( \geq 220 \text{ mA} \) typical at 20 °C
- \( \leq 160 \text{ Hz} \)
- 100 ms

**Protection**
- reverse polarity
- short-circuit (pulsed)
- light and dark operate
- or light operate and alarm
- Continuous load current
- Overload trip point
- Switching frequency
- Housing
- Lens
- Protection class (IEC 60529/EN 60529)
- Temperature range
- Cable
- Connector
- Indicator LED’s
- Yellow
- Green
- Yellow flashing
- Green flashing
- PBT
- acrylic
- Lexan® (PC) (opposed)
- IP67
- \(-40\ldots+70 \text{ °C} \)
- 2 m, PVC, 4 x 0.5 mm²
- eurocon (M12 x 1)
- light sensed
- supply voltage
- low gain
- output overload

**Accessories**

**Brackets**
- SMB18A 34 702 00 angle bracket
- SMB18SF 30 525 19 swivel mount bracket
- SMB18C 34 700 00 split clamp bracket

**Connectors**
- WAK4-2/P00 80 070 46 straight type
- WWAK4-2/P00 80 071 48 right-angled type
- WAKE4-2/P00 80 161 41 straight type, VA stainless, PVC
- WWAKE4-2/P00 80 119 24 right-angled type, VA stainless, PVC
- WAKE4-2/S90 80 177 14 straight type, VA stainless, PUR
- WWAKE4-2/S90 80 142 34 right-angled type, VA stainless, PUR
### S18 series
dc operation

Excess gain curve:
Excess gain in relation to the distance

<table>
<thead>
<tr>
<th>Max. range</th>
<th>Light source</th>
<th>Output function</th>
<th>Connection</th>
<th>Type</th>
<th>Ident number</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 m</td>
<td>IR</td>
<td>pnp</td>
<td>cable</td>
<td>S18SP6L</td>
<td>38 450 00</td>
</tr>
<tr>
<td>2 m</td>
<td>IR</td>
<td>pnp</td>
<td>connector</td>
<td>S18SP6LQ</td>
<td>38 452 00</td>
</tr>
<tr>
<td>2 m</td>
<td>IR</td>
<td>npn</td>
<td>cable</td>
<td>S18SN6L</td>
<td>38 451 00</td>
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<tr>
<td>2 m</td>
<td>IR</td>
<td>npn</td>
<td>connector</td>
<td>S18SN6LQ</td>
<td>38 453 00</td>
</tr>
<tr>
<td>2 m</td>
<td>red</td>
<td>pnp</td>
<td>cable</td>
<td>S18SP6LP</td>
<td>38 442 00</td>
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<tr>
<td>2 m</td>
<td>red</td>
<td>pnp</td>
<td>connector</td>
<td>S18SP6LPQ</td>
<td>38 443 00</td>
</tr>
<tr>
<td>2 m</td>
<td>red</td>
<td>npn</td>
<td>cable</td>
<td>S18SN6LP</td>
<td>38 440 00</td>
</tr>
<tr>
<td>2 m</td>
<td>red</td>
<td>npn</td>
<td>connector</td>
<td>S18SN6LPQ</td>
<td>38 441 00</td>
</tr>
</tbody>
</table>

**Retro-reflective**

| 100 mm     | IR           | pnp             | cable      | S18SP6D | 38 454 00    |
| 300 mm     | IR           | pnp             | connector  | S18SP6DL | 38 454 00    |
| 300 mm     | IR           | npn             | cable      | S18SN6D | 38 455 00    |
| 100 mm     | IR           | npn             | connector  | S18SN6DQ | 38 457 00    |
| 300 mm     | IR           | npn             | cable      | S18SN6DL | 38 444 00    |
| 300 mm     | IR           | npn             | connector  | S18SN6DLQ | 38 445 00   |

**Diffuse**

| 25 mm      | IR           | pnp             | cable      | S18SP6FF25 | 30 584 15  |
| 25 mm      | IR           | pnp             | connector  | S18SP6FF25Q | 30 505 61  |
| 50 mm      | IR           | pnp             | cable      | S18SP6FF50 | 38 465 00    |
| 50 mm      | IR           | pnp             | connector  | S18SP6FF50Q | 38 465 00    |
| 100 mm     | IR           | pnp             | cable      | S18SP6FF100 | 38 464 00   |
| 25 mm      | IR           | npn             | cable      | S18SN6FF25 | 30 566 07    |
| 25 mm      | IR           | npn             | connector  | S18SN6FF25Q | 30 372 98    |
| 50 mm      | IR           | npn             | cable      | S18SN6FF50 | 38 466 00    |
| 50 mm      | IR           | npn             | connector  | S18SN6FF50Q | 38 466 00    |
| 100 mm     | IR           | npn             | cable      | S18SN6FF100 | 38 467 00    |
| 100 mm     | IR           | npn             | connector  | S18SN6FF100Q | 38 468 00   |

**Fixed-field**

| 20 m       | IR           | (emitter)       | cable      | S186E | 38 462 00    |
| 20 m       | IR           | (emitter)       | connector  | S186EQ | 38 463 00    |
| 20 m       | IR           | pnp             | cable      | S18SP6R | 38 458 00    |
| 20 m       | IR           | pnp             | connector  | S18SN6R | 38 460 00    |
| 20 m       | IR           | npn             | connector  | S18SN6RQ | 38 459 00    |
| 20 m       | IR           | npn             | connector  | S18SN6RQ | 38 461 00    |

These sensors do not include the self-checking redundant circuitry necessary to allow their use in personnel safety applications. A sensor failure or malfunction can result in either an energised or de-energised output condition. These products should not be used as sensing devices for personnel safety.