Narrow profile sensors

MINI-BEAM Expert™ series with automatic sensitivity adjustment

**Dimensions** [mm]

- **Cable**
  - 12.3
  - 30.7
  - 38.6
  - 24.1
  - 68
  - 7
  - 51.8
  - TEACH-in function
  - AF 24 8 thick
  - M18x1

- **Connector**
  - M12x1
  - 18
  - green/red LED
  - yellow LED
  - push button

**Wiring**

- **Cable**
  - 12.3
  - 30.7
  - 38.6
  - 24.1
  - 68
  - 7
  - 51.8
  - SME312W...

**Wave length**
- IR (infrared) 880 nm
- Red 650 nm
- Green 525 nm
- Blue 475 nm
- White 450-650 nm

**Adjustments**
- sensitivity
- light and dark operate

**Supply**
- Supply voltage 10…30 V dc
- Ripple \( V_{pp} \) \( \leq \) 10 %
- No load current \( \leq \) 45 mA
- Delay upon power up 100 ms

**Protection**
- reverse polarity
- short-circuit (pulsed)

**Output**
- Continuous load current \( \leq \) 150 mA
- Overload trip point \( \geq \) 220 mA typical at 20 °C
- Switching frequency 1 kHz

**Material**
- Housing PBT
- Lens acrylic
- Protection class IP67 (IEC 60529/EN 60529)
- Temperature range -20…+70 °C
- Cable 2 m, PVC, 4 x 0.5 mm²
- Connector eurocon (M12 x 1)

**Indicator LED’s**
- Red flashing AID (alignment indicating device) in TEACH mode
- Green supply voltage
- Yellow light sensed
- Yellow flashing TEACH mode

**Accessories**

- **Brackets**
  - SMB312B 37 093 bottom mounting
  - SMB312S 37 092 side mounting
  - SMB18A 34 702 00 front mounting
  - SMB18SF 30 525 19 swivel mount bracket

- **Connectors**
  - WAK4.5-2/P00 80 085 76 straight type
  - WWAK4.5-2/P00 80 085 83 right-angled type

- **Apertures**
  - see page 157

\(^1\) external programming cable

\(^2\) ..LPC models include BRT46 reflector
MINI-BEAM Expert™
with automatic sensitivity adjustment

Excess gain curve:
Excess gain in relation to the distance

--- Retro-reflective ---

<table>
<thead>
<tr>
<th>Max. range/Fibre type</th>
<th>Light source</th>
<th>Output function</th>
<th>Connection</th>
<th>Type</th>
<th>Ident number</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 m</td>
<td>red</td>
<td>pnp, npn</td>
<td>cable</td>
<td>with polarising filter</td>
<td>30 537 16</td>
</tr>
<tr>
<td>3 m</td>
<td>red</td>
<td>pnp, npn</td>
<td>connector</td>
<td>SME312LP</td>
<td>30 537 17</td>
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<tr>
<td>2 m</td>
<td>red</td>
<td>pnp, npn</td>
<td>cable</td>
<td>clear object detection</td>
<td>30 537 10</td>
</tr>
<tr>
<td>2 m</td>
<td>red</td>
<td>pnp, npn</td>
<td>connector</td>
<td>SME312LPC</td>
<td>30 537 11</td>
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</tbody>
</table>

--- Diffuse ---

<table>
<thead>
<tr>
<th>Light source</th>
<th>Max. range</th>
<th>Output function</th>
<th>Connection</th>
<th>Type</th>
<th>Ident number</th>
</tr>
</thead>
<tbody>
<tr>
<td>IR</td>
<td>130 mm</td>
<td>pnp, npn</td>
<td>cable</td>
<td>SME312W</td>
<td>30 537 19</td>
</tr>
<tr>
<td>IR</td>
<td>380 mm</td>
<td>pnp, npn</td>
<td>cable</td>
<td>SME312WQD</td>
<td>30 537 20</td>
</tr>
<tr>
<td>IR</td>
<td>380 mm</td>
<td>pnp, npn</td>
<td>connector</td>
<td>SME312D</td>
<td>30 537 07</td>
</tr>
<tr>
<td>IR</td>
<td>380 mm</td>
<td>pnp, npn</td>
<td>connector</td>
<td>SME312DQD</td>
<td>30 537 08</td>
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</tbody>
</table>

--- Convergent ---

<table>
<thead>
<tr>
<th>Glass/Plastic</th>
<th>Max. range</th>
<th>Output function</th>
<th>Connection</th>
<th>Type</th>
<th>Ident number</th>
</tr>
</thead>
<tbody>
<tr>
<td>green</td>
<td>16 mm</td>
<td>pnp, npn</td>
<td>cable</td>
<td>SME312CV</td>
<td>30 537 01</td>
</tr>
<tr>
<td>red</td>
<td>16 mm</td>
<td>pnp, npn</td>
<td>connector</td>
<td>SME312CVQD</td>
<td>30 537 02</td>
</tr>
<tr>
<td>green</td>
<td>16 mm</td>
<td>pnp, npn</td>
<td>cable</td>
<td>SME312CVG</td>
<td>30 537 22</td>
</tr>
<tr>
<td>red</td>
<td>16 mm</td>
<td>pnp, npn</td>
<td>connector</td>
<td>SME312CVGD</td>
<td>30 537 23</td>
</tr>
<tr>
<td>blue</td>
<td>16 mm</td>
<td>pnp, npn</td>
<td>cable</td>
<td>SME312CVB</td>
<td>30 537 25</td>
</tr>
<tr>
<td>red</td>
<td>16 mm</td>
<td>pnp, npn</td>
<td>connector</td>
<td>SME312CVBD</td>
<td>30 537 26</td>
</tr>
<tr>
<td>white</td>
<td>16 mm</td>
<td>pnp, npn</td>
<td>cable</td>
<td>SME312CVW</td>
<td>30 555 26</td>
</tr>
<tr>
<td>red</td>
<td>16 mm</td>
<td>pnp, npn</td>
<td>connector</td>
<td>SME312CVWQD</td>
<td>30 555 27</td>
</tr>
<tr>
<td>glass</td>
<td>43 mm</td>
<td>pnp, npn</td>
<td>cable</td>
<td>SME312CV2</td>
<td>30 537 04</td>
</tr>
<tr>
<td>plastic</td>
<td>43 mm</td>
<td>pnp, npn</td>
<td>connector</td>
<td>SME312CV2QD</td>
<td>30 537 05</td>
</tr>
</tbody>
</table>

--- Fibre-optic ---

<table>
<thead>
<tr>
<th>Material</th>
<th>Max. range</th>
<th>Output function</th>
<th>Connection</th>
<th>Type</th>
<th>Ident number</th>
</tr>
</thead>
<tbody>
<tr>
<td>glass</td>
<td>43 mm</td>
<td>pnp, npn</td>
<td>cable</td>
<td>SME312F</td>
<td>30 537 13</td>
</tr>
<tr>
<td>plastic</td>
<td>43 mm</td>
<td>pnp, npn</td>
<td>connector</td>
<td>SME312FQD</td>
<td>30 537 14</td>
</tr>
<tr>
<td>glass</td>
<td>380 mm</td>
<td>pnp, npn</td>
<td>cable</td>
<td>SME312FV</td>
<td>30 537 28</td>
</tr>
<tr>
<td>plastic</td>
<td>380 mm</td>
<td>pnp, npn</td>
<td>connector</td>
<td>SME312FVD</td>
<td>30 537 29</td>
</tr>
<tr>
<td>glass</td>
<td>130 mm</td>
<td>pnp, npn</td>
<td>cable</td>
<td>SME312FP</td>
<td>30 537 31</td>
</tr>
<tr>
<td>plastic</td>
<td>130 mm</td>
<td>pnp, npn</td>
<td>connector</td>
<td>SME312FPQD</td>
<td>30 537 32</td>
</tr>
</tbody>
</table>

1) Spot size at focus (convergent mode): SME312CV: ø 1,3 mm, SME312CVG: ø 1 mm, SME312CVB: ø 1,8 mm, SME312CVW: ø 1,8 mm, SME312CV2: ø 3 mm.
2) Available LED colours: infrared, red, green, blue and white.
3) Available LED colours: red, green, blue and white.

TEACH-in configuration

<table>
<thead>
<tr>
<th>Status</th>
<th>Action</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>RUN (green LED ON)</td>
<td>Push and hold button for &gt; 2 s</td>
<td>Green LED goes OFF, yellow LED comes ON, red LED flashes (see AID™)</td>
</tr>
<tr>
<td>Teach condition 1</td>
<td>Present ON condition; click once</td>
<td>Green LED stays OFF, yellow LED goes OFF, red LED flashes (see AID™)</td>
</tr>
<tr>
<td>Teach condition 2</td>
<td>Present OFF condition; click once</td>
<td>If contrast is acceptable: green LED comes ON, sensor goes into RUN mode. If contrast is too low: yellow LED comes ON, sensor goes back to teach condition 1.</td>
</tr>
</tbody>
</table>

Subject to changes without notice • Edition 02.02 • P/N ED040 – excerpt from EC001/0102

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.