Detailed technical data

Features

<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sensor/detection principle</strong></td>
<td>Photoelectric retro-reflective sensor</td>
</tr>
<tr>
<td><strong>Housing design (light emission)</strong></td>
<td>Cylindrical, straight</td>
</tr>
<tr>
<td><strong>Housing length</strong></td>
<td>78 mm</td>
</tr>
<tr>
<td><strong>Thread diameter (housing)</strong></td>
<td>M18 x 1</td>
</tr>
<tr>
<td><strong>Optical axis</strong></td>
<td>Axial</td>
</tr>
<tr>
<td><strong>Sensing range max.</strong></td>
<td>0.05 m ... 3.7 m 1)</td>
</tr>
<tr>
<td><strong>Sensing range</strong></td>
<td>0.05 m ... 3 m 1)</td>
</tr>
<tr>
<td><strong>Type of light</strong></td>
<td>Visible red light</td>
</tr>
<tr>
<td><strong>Light source</strong></td>
<td>LED 2)</td>
</tr>
<tr>
<td><strong>Light spot size (distance)</strong></td>
<td>Ø 150 mm (3 m)</td>
</tr>
<tr>
<td><strong>Angle of dispersion</strong></td>
<td>Approx. 2.8°</td>
</tr>
<tr>
<td><strong>Adjustment</strong></td>
<td>Fix</td>
</tr>
</tbody>
</table>

1) C110A.
2) Average service life: 100,000 h at Tu = +25 °C.

Mechanics/electronics

<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Supply voltage</strong></td>
<td>10 V DC ... 30 V DC 1)</td>
</tr>
<tr>
<td><strong>Ripple</strong></td>
<td>≤ 10 % 2)</td>
</tr>
<tr>
<td><strong>Power consumption</strong></td>
<td>≤ 30 mA 3)</td>
</tr>
<tr>
<td><strong>Output type</strong></td>
<td>PNP, open collector 4)</td>
</tr>
</tbody>
</table>

1) Limit values.
2) May not exceed or fall below U_v tolerances.
3) Without load.
4) Control wire open: dark switching D.ON.
5) Signal transit time with resistive load.
7) A = V_s connections reverse-polarity protected.
8) B = inputs and output reverse-polarity protected.
9) C = interference suppression.
10) D = outputs overcurrent and short-circuit protected.
<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switching mode</td>
<td>Light/dark switching (^4)</td>
</tr>
<tr>
<td>Switching mode selector</td>
<td>Selectable via L/D control wire</td>
</tr>
<tr>
<td>Output current (I_{\text{max.}})</td>
<td>100 mA</td>
</tr>
<tr>
<td>Response time</td>
<td>(\leq 2 \text{ ms} (^5)</td>
</tr>
<tr>
<td>Switching frequency</td>
<td>250 Hz (^6)</td>
</tr>
<tr>
<td>Connection type</td>
<td>Connector M12, 4-pin</td>
</tr>
<tr>
<td>Circuit protection</td>
<td>A (^7), B (^8), C (^9), D (^10)</td>
</tr>
<tr>
<td>Protection class</td>
<td>III</td>
</tr>
<tr>
<td>Weight</td>
<td>120 g</td>
</tr>
<tr>
<td>Polarisation filter</td>
<td>✔</td>
</tr>
<tr>
<td>Housing material</td>
<td>Nickel-plated brass, Metal</td>
</tr>
<tr>
<td>Optics material</td>
<td>PMMA</td>
</tr>
<tr>
<td>Enclosure rating</td>
<td>IP 67</td>
</tr>
<tr>
<td>Ambient operating temperature</td>
<td>–25 °C ... +70 °C</td>
</tr>
<tr>
<td>UL File No.</td>
<td>NMFT2.E175606</td>
</tr>
</tbody>
</table>

1) Limit values.
2) May not exceed or fall below \(U_v\) tolerances.
3) Without load.
4) Control wire open: dark switching D.ON.
5) Signal transit time with resistive load.
7) \(A = V_S\) connections reverse-polarity protected.
8) \(B = \) inputs and output reverse-polarity protected.
9) \(C = \) interference suppression.
10) \(D = \) outputs overcurrent and short-circuit protected.
**Dimensional drawing (dimensions in mm (inch))**

![Dimensional Drawing Diagram]

1. Connecting cable or connector
2. Fastening nut, 22 mm hex, made of plastic for equipment with plastic housing
3. Fastening nut, 24 mm hex, made of metal for equipment with metal housing
4. Sensitivity adjustment
5. Signal strength indicator, LED, yellow

**Adjustments possible**

![Adjustments Possible Diagram]

**Connection diagram**

Cd-087

```
1  + (L+)
whl  2  L/D
blu  3  - (M)
blk  4  Q
```
Characteristic curve

Sensing range diagram

Sensing range

Sensing range typ. max.

Distance in m (feet)

1 (3.28)

2 (6.56)

3 (9.84)

4 (13.12)

0.05

3

3.7

Distance in m (feet)

0

1 (3.28)

2 (6.56)

3 (9.84)

4 (13.12)

Operating range

Scanning range typ. max.

Reflector type C110
Australia
Phone +61 3 9457 0600
1800 33 48 02 – tollfree
E-Mail sales@sick.com.au
Belgium/Luxembourg
Phone +32 (0)2 466 55 66
E-Mail info@sick.be
Brasil
Phone +55 11 3215-4900
E-Mail marketing@sick.com.br
Canada
Phone +1 905 771 14 44
E-Mail information@sick.com
Česká republika
Phone +420 2 57 91 18 50
E-Mail sick@sick.cz
China
Phone +86 4000 121 000
E-Mail info.china@sick.net.cn
Phone +852-2153 6300
E-Mail ghk@sick.com.hk
Danmark
Phone +45 45 82 64 00
E-Mail sick@sick.dk
Deutschland
Phone +49 211 5301-301
E-Mail info@sick.de
España
Phone +34 93 480 31 00
E-Mail info@sick.es
France
Phone +33 1 64 62 35 00
E-Mail info@sick.fr
Great Britain
Phone +44 (0)1727 831121
E-Mail info@sick.co.uk
India
Phone +91–22–4033 8333
E-Mail info@sick-india.com
Israel
Phone +972-4-6801000
E-Mail info@sick-sensors.com
Italia
Phone +39 02 27 43 41
E-Mail info@sick.it
Japan
Phone +81 (0)3 5309 2112
E-Mail support@sick.jp
Magyarország
Phone +36 1 371 2680
E-Mail office@sick.hu
Nederland
Phone +31 (0)30 229 25 44
E-Mail info@sick.nl
Norge
Phone +47 67 81 50 00
E-Mail sick@sick.no
Österreich
Phone +43 (0)22 36 62 28 80
E-Mail office@sick.at
Polska
Phone +48 22 837 40 50
E-Mail info@sick.pl
România
Phone +40 356 171 120
E-Mail office@sick.ro
Russia
Phone +7-495-775-05-30
E-Mail info@sick.ru
Schweiz
Phone +41 41 619 29 39
E-Mail contact@sick.ch
Singapore
Phone +65 6744 3732
E-Mail sales.gsg@sick.com
Slovenija
Phone +386 (0)1-47 69 990
E-Mail office@sick.si
South Africa
Phone +27 11 472 3733
E-Mail info@sickautomation.co.za
South Korea
Phone +82 2 786 6321/4
E-Mail info@sickkorea.net
Suomi
Phone +358-9-25 15 800
E-Mail sick@sick.fi
Sverige
Phone +46 10 110 10 00
E-Mail info@sick.se
Taiwan
Phone +886-2-2375-6288
E-Mail sales@sick.com.tw
Türkiye
Phone +90 (216) 528 50 00
E-Mail info@sick.com.tr
United Arab Emirates
Phone +971 (0) 4 8865 878
E-Mail info@sick.ae
USA/México
Phone +1(952) 941-6780
1 800-325-7425 – tollfree
E-Mail info@sickusa.com

More representatives and agencies at www.sick.com