**FT 55-CM**

High-end color sensor

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**PRODUCT HIGHLIGHTS**

- Stable processes thanks to intelligent color detection, regardless of distance
- Economical solutions through up to twelve storable colors or jobs
- Dependable switching behaviour through reliable glare suppression (depending on model)
- Intuitive sensor setup with integrated LCD display
- Customised adjustment to applications through digital color value output using IO-Link

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### Optical data

<table>
<thead>
<tr>
<th>Measurement range</th>
<th>Light used</th>
<th>LED class</th>
</tr>
</thead>
<tbody>
<tr>
<td>...CM-1: 18 ... 32 mm ...CM-3: 18 ... 60 mm ...CM-4: 20 ... 150 mm</td>
<td>LED, white</td>
<td>LED risk group 2. (EN 62471:2008)</td>
</tr>
</tbody>
</table>

### Functions

- Indicator LED 1, green
- Indicator LED 2, yellow
- Adjustment sensor
- Adjustment options:
  - Power supply indicator; IO-Link
  - Switching output indicator
  - Via display or IO-Link
  - Different detection modes; N.O / N.C.; binary output; auto-detect / NPN / PNP; keypad lock through control input; switch-on / switch-off delay; extensive IO-Link-functions; speed / averaging

### Electrical data

| Operating voltage, \( +U_s \) | No-load current, \( I_0 \) | Output current, \( I_e \) | Protective circuits | Protection class | Power on delay | Switching output, \( Q \) | Output function | Max. capacitive load | Switching frequency, \( f (t_{bi}/t_{pi} 1:1) \) | Response time \( Q \) | Warm-up time | Control input |
|-----------------------------|--------------------------|--------------------------|---------------------|-----------------|-----------------|----------------|---------------------|------------------|------------------|-----------------|-----------------|
| 18 ... 30 V DC             | \( \leq 60 \) mA / 24 V DC | < 100 mA                 | Reverse polarity protection \( U_s \) / short-circuit protection (\( Q \)) | 2               | < 150 ms       | Auto-Detect (\( Q_1 \)) / NPN / PNP | N.O/N.C.        | < 100 nF          | CM-1: \( \leq 500 \) Hz CM-3 / CM-4: \( \leq 3000 \) Hz | CM-1: \( \leq 540 \) µs (at 500 Hz) CM-3 / CM-4: \( \leq 180 \) µs (at \( \geq 1500 \) Hz) | 300 s          | Trigger; keylock |

### IO-Link

- Communication mode
- Min. cycle time
- SIO mode
- Length of process data
- Specification
- COM 2
- 4 ms
- Compatible
- 2 bytes / 6 bytes
- 1.1

### Mechanical data

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Enclosure rating(^1)</th>
<th>Material, housing</th>
<th>Material, front screen</th>
<th>Material, display</th>
<th>Type of connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 x 25 x 50,5 mm</td>
<td>IP 67, IP 69</td>
<td>Zinc die-cast, matt chrome</td>
<td>PMMA</td>
<td>PMMA</td>
<td>See selection table</td>
</tr>
</tbody>
</table>

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1 With automatic selection of PNP or NPN with \( Q_1 \)  
2 With connected IP 67 / IP 69 plug
### Table of Scanning Distances and Part Numbers

<table>
<thead>
<tr>
<th>Scanning distance</th>
<th>Switching output</th>
<th>Type of connection</th>
<th>Part Number</th>
<th>Article number</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 to 32 mm</td>
<td>3</td>
<td>Plug, M12, 5-pin, IO-Link</td>
<td>FT 55-CM-1-PNSDL-L5M1</td>
<td>625-11001</td>
</tr>
<tr>
<td>18 to 60 mm</td>
<td>5</td>
<td>Plug, M12, 8-pin</td>
<td>FT 55-CM-3-PNSDL-L8M</td>
<td>625-11010</td>
</tr>
<tr>
<td>18 to 60 mm</td>
<td>3</td>
<td>Plug, M12, 5-pin, IO-Link</td>
<td>FT 55-CM-3-PNSDL-L5M</td>
<td>625-11011</td>
</tr>
<tr>
<td>18 to 60 mm</td>
<td>1</td>
<td>Plug, M12, 4-pin, IO-Link</td>
<td>FT 55-CM-3-PNSDL-L4M</td>
<td>625-11012</td>
</tr>
<tr>
<td>20 to 150 mm</td>
<td>5</td>
<td>Plug, M12, 8-pin</td>
<td>FT 55-CM-4-PNSDL-L8M</td>
<td>625-11020</td>
</tr>
<tr>
<td>20 to 150 mm</td>
<td>3</td>
<td>Plug, M12, 5-pin, IO-Link</td>
<td>FT 55-CM-4-PNSDL-L5M</td>
<td>625-11021</td>
</tr>
<tr>
<td>20 to 150 mm</td>
<td>1</td>
<td>Plug, M12, 4-pin, IO-Link</td>
<td>FT 55-CM-4-PNSDL-L4M</td>
<td>625-11022</td>
</tr>
</tbody>
</table>

1. Not for black objects

### Plug Connection Diagrams

#### Connection, 4-pin, Auto-Detect

1. **Ux** 1 BN
2. **IN** 2 WH
3. Q1/IO-Link 4 BK
4. **-Ux** 3 BU

#### Connection, 5-pin, Auto-Detect

1. **Ux** 1 BN
2. Q1/IN TR 2 WH
3. Q1/IN KL 5 GY
4. Q1/IO-Link 4 BK
5. **-Ux** 3 BU

#### Connection, 8-pin, Auto-Detect

1. **Ux** 1 BN
2. Q IN TR 2 WH
3. Q1 5 GY
4. Q2 4 BK
5. **Ux** 3 BU
6. Q3 6 PK
7. Q IN KL 7 VT
8. GND 8 OG

Pin colors after EN 60947-5-2

2. In IO-Link mode, a 4-pin cable must be used
3. The sensor must be used with shielded cables
4. Can be used as output or input

### Size of Light Spot

<table>
<thead>
<tr>
<th>Size of light spot</th>
<th>Installation</th>
<th>Preferred direction</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>CM-1</td>
<td>√</td>
</tr>
<tr>
<td>10</td>
<td>CM-1</td>
<td>√</td>
</tr>
<tr>
<td>5</td>
<td>CM-1</td>
<td>√</td>
</tr>
</tbody>
</table>

### Accessories

For 8-pin types, use cables according to EN 60947-5-2

- Connection cable 8-pin to 4-pin for SensoIO (L8/L4-2m-PUR / 902-51857)  
  - From Page A-38
- Further connection cables  
  - From Page A-38
- Bracket SensoClip MB0 F 55ST2 (579-50012)  
  - From Page A-4
- SensoIO (901-01000)  
  - From Page A-4