FT 25-C
RGB colour sensor in miniature housing
FT 25-C
RGB colour sensor in miniature housing with high switching frequency

TYPICAL FT 25-C

• Smallest cubic colour sensor on the market (34 x 20 x 12 mm³)
• High switching frequency of 10 kHz for rapid applications
• Detection of a taught-in colour
• Detection of “non-colours”, e.g. black, white and grey
• Bright light spot with sharp contour for easy alignment and precise front-edge detection
• Static or external teach-in
• “Communicating” light spot for simplest setup
• Hermetically sealed housings (IP 69K & IP 67)

Reliable colour detection:
The main task of the FT 25-C RGB colour sensor is the detection of a defined colour. It is also suitable for very rapid applications thanks to its high switching frequency. Mounting by means of a dovetail and the MBD F25ST mounting rod, available as an accessory, allows easy and precise fine alignment.
The FT 25-C RGB colour sensor is not only the smallest cubic colour sensor currently available on the market, but is also one of the quickest: with a switching frequency of up to 10 kHz it is as fast as a contrast sensor and thus also suitable for the most rapid printed mark applications. The FT 25-C can identify any colour in the visible spectrum including all the “non-colours” and also very reliably detects the smallest of colour differences. It keeps even the narrowest print marks and smallest markings in view thanks to its bright light spot with a sharp elongated contour (1 x 5 mm²).

**Fits into every space**

Thanks to its miniature design, SensoPart’s smallest colour sensor is also easily accommodated in very restricted installation spaces, whereby the patented dovetail mounting allows user-friendly fine alignment. The operating concept is also clever: the FT 25-C is rapidly and easily configured via teach-in or control line. The quality of the colour detection is signalled via a “communicating” light spot: the blinking of the red, blue or green transmission LED provides you with a clear statement on the stability of your process.

As a result of its space-saving design and rapidity, the FT 25-C is suitable for use in numerous sectors and applications, for example, packaging and labeling machines as well as bottling lines.

### FT 25-C – Product Overview

<table>
<thead>
<tr>
<th>Type of light</th>
<th>Scanning distance</th>
<th>Special features</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>FT 25-C</td>
<td>Red LED, green LED, blue LED</td>
<td>The world’s smallest RGB colour sensor with a switching frequency of ≤ 10 kHz</td>
<td>4</td>
</tr>
</tbody>
</table>
FT 25-C
RGB colour sensor

PRODUCT HIGHLIGHTS

- Smallest RGB colour sensor with high switching frequency ≤ 10 kHz
- Precise detection of the slightest of contrast differences
- Very robust operation despite fluttering and glossy objects
- Feedback via „responding light spot” about quality of taught-in colour value

### Optical data

<table>
<thead>
<tr>
<th>Scanning distance</th>
<th>12 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depth of field</td>
<td>± 3 mm</td>
</tr>
<tr>
<td>Type of light</td>
<td>Red LED, 633 nm, Green LED, 525 nm, Blue LED, 460 nm</td>
</tr>
<tr>
<td>Light spot size</td>
<td>1 x 5 mm²</td>
</tr>
</tbody>
</table>

### Functions

- Indicator LED, green
- Indicator LED, yellow
- Sensitivity adjustment
- Adjustment possibilities
- Operating voltage indicator
- Switching output indicator
- Via Teach-in button and control input
- N.O./N.C. via Teach-in button and control input
- Button lock via control input
- N.O.

### Electrical data

- Operating voltage, +Uₚ: 10 … 30 V DC¹
- No-load current, I₀: ≤ 30 mA
- Output current, Iₑ: ≤ 100 mA
- Protective circuits: Reverse-polarity protection, Uₚ / short-circuit protection (Q)
- Protection class: 2
- Standby time: < 300 ms
- Switching output, Q: Push-Pull
- Output function: N.O., N.C.
- Switching frequency, f (tᵢ/tp 1:1)²: ≤ 10000 Hz
- Response time: ≤ 50 µs

### Mechanical data

- Dimensions: 34 x 20 x 12 mm³
- Enclosure rating: IP 67 / IP 69K²
- Material, housing: ABS
- Material, front screen: PMMA
- Type of connection: (See Selection Table)
- Ambient temperature: operation: -20 ... +55 °C
- Ambient temperature: storage: -20 ... +80 °C
- Weight (metal plug device): 10 g
- Vibration and impact resistance: EN 60947-5-2

### Table

<table>
<thead>
<tr>
<th>Switching frequency, f (tᵢ/tp 1:1)²</th>
<th>Response time</th>
<th>Scanning distance</th>
<th>Type of connection</th>
<th>Part number</th>
<th>Article number</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 10000 Hz</td>
<td>≤ 50 µs</td>
<td>12 ± 3 mm</td>
<td>Metal plug, M8x1, 4-pin</td>
<td>FT 25-C1-GS-M4M</td>
<td>607-21020</td>
</tr>
<tr>
<td>≤ 2500 Hz</td>
<td>≤ 200 µs</td>
<td>12 ± 3 mm</td>
<td>Metal plug, M8x1, 4-pin</td>
<td>FT 25-C2-GS-M4M</td>
<td>607-21021</td>
</tr>
</tbody>
</table>

¹ Max. 10 % ripple, within Uₚ: ~ 50 Hz / 100 Hz ² f = 1 / (T x Nyq x 2) ³ With connected IP 67 / IP 69K plug ⁴ UL: -20 ... +50 °C
Plug connection

Connection, 4-pin

Signal process

Installation

Accessories

Connection cables
Brackets

See product catalogue/ accessories
## Brackets

<table>
<thead>
<tr>
<th>Part number / Article number</th>
<th>Description</th>
<th>Suitable for</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSP F 20-11 / 558-41006</td>
<td>Protective sensor angle bracket with screws, very robust</td>
<td>F 20 UT 20-150, F 25 UT 20-5150, FL 20 UT 20-240</td>
</tr>
<tr>
<td>MSP F 20-23 / 558-41011</td>
<td>Protective sensor angle bracket with screws, very robust</td>
<td>F 20 UT 20-150, F 25 UT 20-5150, FL 20 UT 20-240</td>
</tr>
<tr>
<td>MSP F 20-13 / 558-41008</td>
<td>Protective sensor angle bracket with screws, very robust</td>
<td>F 20 UT 20-150, F 25 UT 20-5150, FL 20 UT 20-240</td>
</tr>
<tr>
<td>MBD F 25 / 661-01000</td>
<td>Dovetail clamp mounting, adjustable ± 15°, with screws</td>
<td>F 25</td>
</tr>
<tr>
<td>MS F 20 / 558-41000</td>
<td>Mounting bracket with screws</td>
<td>F 20, F 25, UT 20, FL 20</td>
</tr>
<tr>
<td>MSP F 20-21 / 558-41009</td>
<td>Protective sensor angle bracket with screws, very robust</td>
<td>F 20 UT 20-150, F 25 UT 20-5150, FL 20 UT 20-240</td>
</tr>
</tbody>
</table>
### Brackets

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<tr>
<th>Part number / Article number</th>
<th>Description</th>
<th>Suitable for</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBF 25ST / 661-01001</td>
<td>Bracket for dovetail on mounting rod, with clamping screw</td>
<td>F 25FT 25-RGB1-GS-KL4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>x</th>
<th>MST</th>
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<tbody>
<tr>
<td>200</td>
<td>MST 45-20</td>
</tr>
<tr>
<td>300</td>
<td>MST 45-30</td>
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<tr>
<td>400</td>
<td>MST 45-40</td>
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</table>

### Cables

<table>
<thead>
<tr>
<th>Part number</th>
<th>Article number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>M8, 4-pin</td>
<td>K4-2m-G-PUR</td>
<td>2 m, straight, PUR</td>
</tr>
<tr>
<td></td>
<td>K4-5m-G-PUR</td>
<td>5 m, straight, PUR</td>
</tr>
<tr>
<td></td>
<td>K4-10m-G-PUR</td>
<td>10 m, straight, PUR</td>
</tr>
<tr>
<td></td>
<td>K4-2m-W-PUR</td>
<td>2 m, 90°, PUR</td>
</tr>
<tr>
<td></td>
<td>K4-5m-W-PUR</td>
<td>5 m, 90°, PUR</td>
</tr>
<tr>
<td></td>
<td>K4-10m-W-PUR</td>
<td>10 m, 90°, PUR</td>
</tr>
<tr>
<td></td>
<td>K4-2m-W-PL-PUR</td>
<td>2 m, 90°, PUR, with indicator LED</td>
</tr>
<tr>
<td></td>
<td>K4-5m-W-PL-PUR</td>
<td>5 m, 90°, PUR, with indicator LED</td>
</tr>
<tr>
<td></td>
<td>CM4 FG-E-5m-PVC</td>
<td>5 m, straight, PVC, with hex nut SW 9 stainless steel (IP 69K)</td>
</tr>
<tr>
<td></td>
<td>CM4 FW-E-5m-PVC</td>
<td>5 m, 90°, PVC, with hex nut SW 9 stainless steel (IP 69K)</td>
</tr>
</tbody>
</table>

For further accessories see SensoPart’s Complete Catalogue, chapter Accessories or www.sensopart.com
We look ahead.
Yesterday, today and in the future.

“We gauge ourselves not by what is possible today, but by our vision of what can be achieved” – this has been our motto since the foundation of SensoPart in 1994. Our goal is to always be a step ahead and to be able to offer our customers the most innovative sensor for industrial automation.

With our easy to integrate VISOR® Vision sensors and our compact laser sensors with an amazing background suppression made in Germany, we stick up to this motto.

Get ready – we still have a lot of ideas for the future.

SENSOR TECHNOLOGY
Light barriers
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Laser sensors
Miniature sensors
Distance sensors
Colour sensors
Contrast sensors
Anti-collision sensors
Slot sensors
Fibre-optic amplifiers
Inductive sensors
Capacitive sensors
Ultrasonic sensors

VISION
Vision sensors
Smart cameras
Vision systems
Object detection
Object measurement
Colour detection
Code reading OCR
Lighting
Lenses

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