



## Contrast sensors KT3, KT3

KT3W-N1116



**Model Name** > [KT3W-N1116](#)  
**Part No.** > [1019337](#)



#### At a glance

- Very small housing
- 3-color RGB technology or white LED
- Simple teach-in (when machine is stopped or during operation)
- Integrated switching threshold adjustment for high-gloss objects
- Reliable operation for jittering materials
- Switching frequency of 10 kHz

#### Your benefits

- Compact design fits in applications with limited space
- 3-color RGB technology enables universal operation with an extremely wide range of weak contrast combinations
- White LED model detects several different marks
- Simple teach-in to optimally set transmission color, switching point and surface shine
- Very good contrast resolution for detecting print marks, even where the variation between the mark and the background is minimal
- Automatic adaptation for high-gloss objects ensures high throughput
- Reliable operation for jittering materials
- Accurate positioning in rapid production processes



#### Features

|                                              |                         |
|----------------------------------------------|-------------------------|
| Dimensions (L x W x H):                      | 22 mm x 12 mm x 40 mm   |
| Sensing distance:                            | 12.5 mm                 |
| Sensing distance tolerance:                  | ± 2 mm                  |
| Light source <sup>1)</sup> , <sup>2)</sup> : | LED red, green, blue    |
| Light spot size:                             | 1.5 mm x 6.5 mm         |
| Light spot direction <sup>3)</sup> :         | Vertical                |
| Adjustment:                                  | Static 2-point teach-in |

<sup>1)</sup> Average service life of 100,000 h at  $T_A = +25\text{ °C}$  <sup>2)</sup> Wave length: 470 nm, 525 nm, 640 nm <sup>3)</sup> In relation to long side of housing

#### Mechanics/electronics

|                                      |                  |
|--------------------------------------|------------------|
| Supply voltage $V_s$ <sup>1)</sup> : | DC 12 V ... 24 V |
| Ripple <sup>2)</sup> :               | ≤ 5 Vpp          |
| Power consumption <sup>3)</sup> :    | < 35 mA          |
| Switching frequency <sup>4)</sup> :  | 10 kHz           |

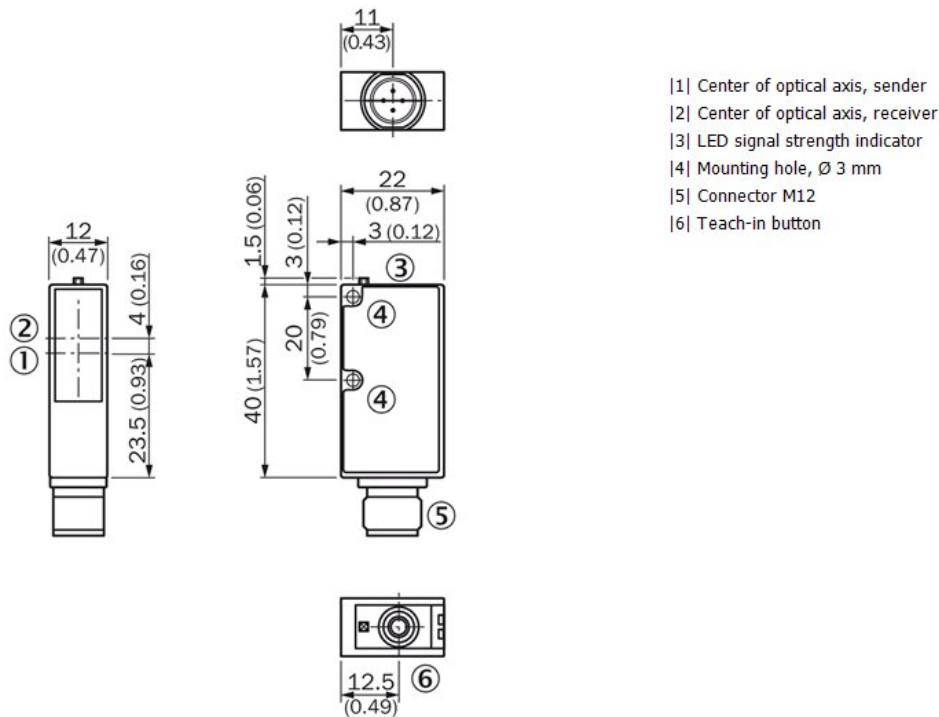
|                                    |                                                                                                       |
|------------------------------------|-------------------------------------------------------------------------------------------------------|
| Response time <sup>5)</sup> :      | 50 µs                                                                                                 |
| Output type:                       | NPN: HIGH = approx. VS / LOW ≤ 2 V                                                                    |
| Switching mode:                    | NPN                                                                                                   |
| Input, teach-in (ET):              | NPN:<br>Teach: U < 2 V<br>Run: U = 10 V ... < U <sub>V</sub>                                          |
| Retention time (ET):               | 25 ms, non-volatile memory                                                                            |
| Connection type:                   | Connector M12, 4-pin                                                                                  |
| Protection class <sup>6)</sup> :   | II                                                                                                    |
| Circuit protection:                | Output Q short-circuit protected, Interference suppression, VS connections reverse-polarity protected |
| Enclosure rating:                  | IP 67                                                                                                 |
| Weight:                            | Ca. 11 g                                                                                              |
| Housing material:                  | ABS (plastic)                                                                                         |
| Output current I <sub>max</sub> .: | 100 mA                                                                                                |

<sup>1)</sup> Extreme values: 12 V (- 10 %) ... 24 V (+ 20 %). Operation in short-circuit protected network max. 8 A <sup>2)</sup> May not exceed or fall short of V<sub>S</sub> tolerances <sup>3)</sup> Without load <sup>4)</sup> With light/dark ratio 1:1 <sup>5)</sup> Signal transit time with resistive load <sup>6)</sup> Reference voltage DC 50 V

## Ambient data

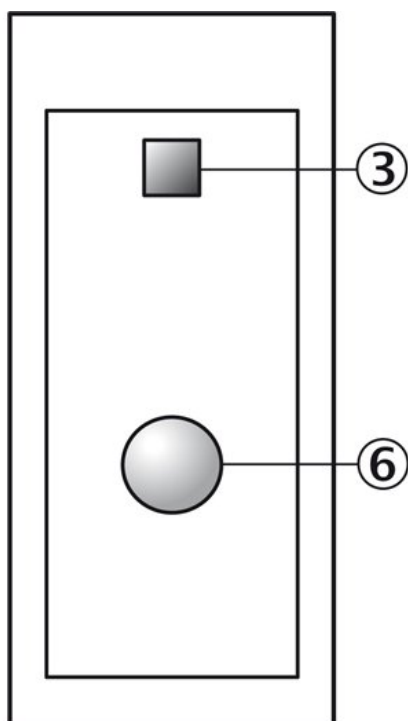
|                      |                                                    |
|----------------------|----------------------------------------------------|
| Ambient temperature: | Operation: -10 ... 55 °C<br>Storage: -20 ... 75 °C |
| Shock load:          | According to IEC 60068                             |

## Dimensional drawing



## Adjustments

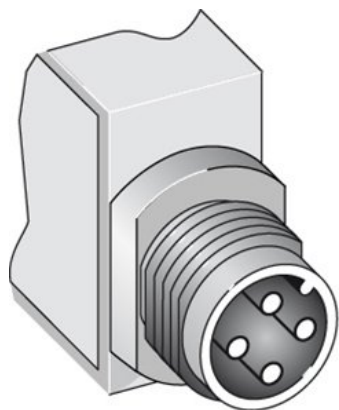
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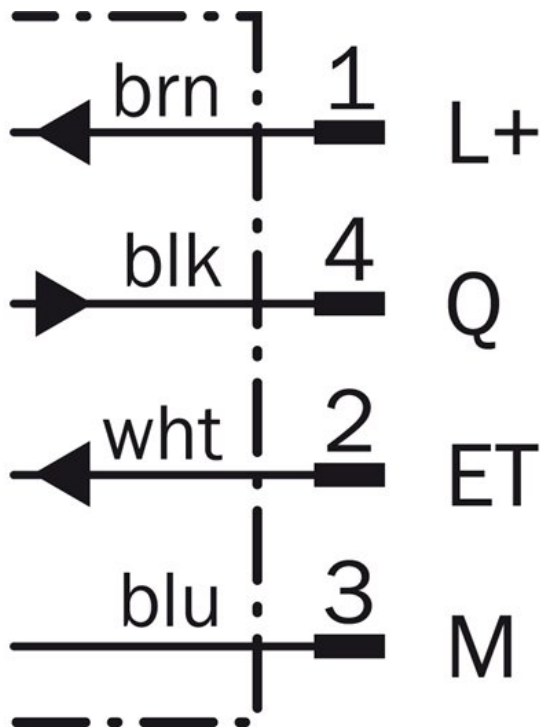
- |3| LED signal strength indicator
- |6| Teach-in button

## Connection type

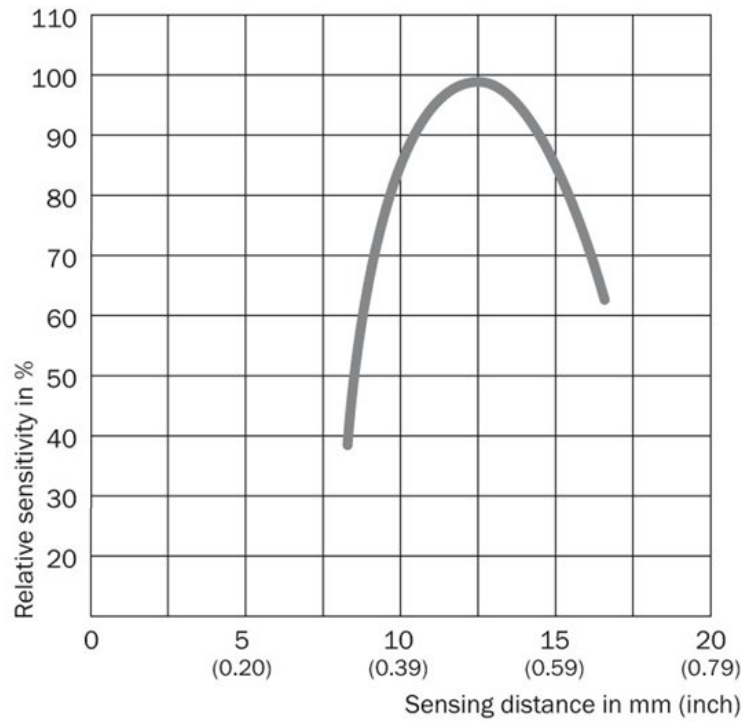
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Connection diagram



Sensing distance



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