



## Contrast sensors KT5, KT5-2 Display

KT5W-2P1216D



**Model Name** > [KT5W-2P1216D](#)  
**Part No.** > [1026577](#)



#### At a glance

- Intuitive 10-segment bar graph display indicates detection status
- Static 2-point teach-in of mark and background via the control cable
- Maximum detection reliability due to 3-color RGB LED technology
- Switching frequency of 10 kHz
- Automatic gloss adjustment for highly reflective materials
- A range of sensing distances and light spots for numerous applications
- M12 plug can be rotated 90°

#### Your benefits

- All print marks and color combinations are detected, ensuring high throughput
- Reliable operation, even with high-gloss materials
- Detects difficult marks, such as jittering and shiny materials
- High positioning accuracy improves packaging quality
- Application-specific teach-in processes reduce setup times
- Various sensing distances, light spot directions and light emissions make individual configuration and simple integration into the production system possible



#### Features

|                                      |                                                     |
|--------------------------------------|-----------------------------------------------------|
| Dimensions (L x W x H):              | 80 mm x 30.4 mm x 53 mm                             |
| Sensing distance <sup>1)</sup> :     | 20 mm                                               |
| Sensing distance tolerance:          | ± 3 mm                                              |
| Light source <sup>2), 3)</sup> :     | LED red, green, blue                                |
| Light emission:                      | Long and short side of housing, exchangeable        |
| Light spot size:                     | 1.5 mm x 5.5 mm                                     |
| Light spot direction <sup>4)</sup> : | Vertical                                            |
| Adjustment:                          | Static 2-point teach-in with manual fine adjustment |

<sup>1)</sup> From front edge of lens   <sup>2)</sup> Average service life of 100,000 h at T<sub>A</sub> = +25 °C   <sup>3)</sup> Wave length: 470 nm, 525 nm, 640 nm   <sup>4)</sup> In relation to long side of housing

#### Mechanics/electronics

|                                               |                                                      |
|-----------------------------------------------|------------------------------------------------------|
| Supply voltage V <sub>s</sub> <sup>1)</sup> : | DC 10 V ... 30 V                                     |
| Ripple <sup>2)</sup> :                        | ≤ 5 V <sub>pp</sub>                                  |
| Power consumption <sup>3)</sup> :             | < 130 mA                                             |
| Switching frequency <sup>4)</sup> :           | 10 kHz                                               |
| Response time <sup>5)</sup> :                 | 50 µs                                                |
| Output type:                                  | PNP: HIGH = V <sub>S</sub> - ≤ 2 V / LOW approx. 0 V |

|                                     |                                                                                                       |
|-------------------------------------|-------------------------------------------------------------------------------------------------------|
| Switching mode:                     | PNP                                                                                                   |
| Input, teach-in (ET):               | PNP:<br>Teach: $U = 10\text{ V} \dots < U_V$<br>Run: $U < 2\text{ V}$                                 |
| Retention time (ET):                | 25 ms, non-volatile memory                                                                            |
| Connection type:                    | Connector M12, 5-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. 400 g                                                                                             |
| Housing material:                   | Zinc diecast                                                                                          |
| Output current I <sub>max</sub> ..: | 100 mA <sup>7)</sup>                                                                                  |

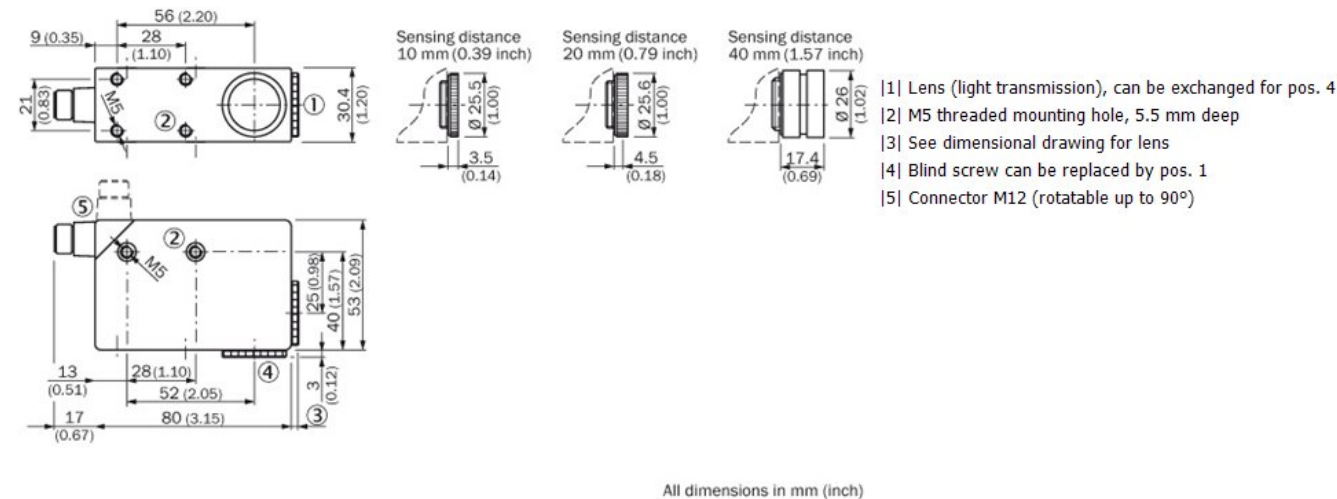
<sup>1)</sup> Limit values: operation in short-circuit protected network max. 8 A   
<sup>2)</sup> May not exceed or fall short of  $V_S$  tolerances   
<sup>3)</sup> Without load   
<sup>4)</sup> With light/dark ratio 1:1   
<sup>5)</sup>

<sup>6)</sup> Reference voltage DC 50 V   
<sup>7)</sup> Short-circuit protected

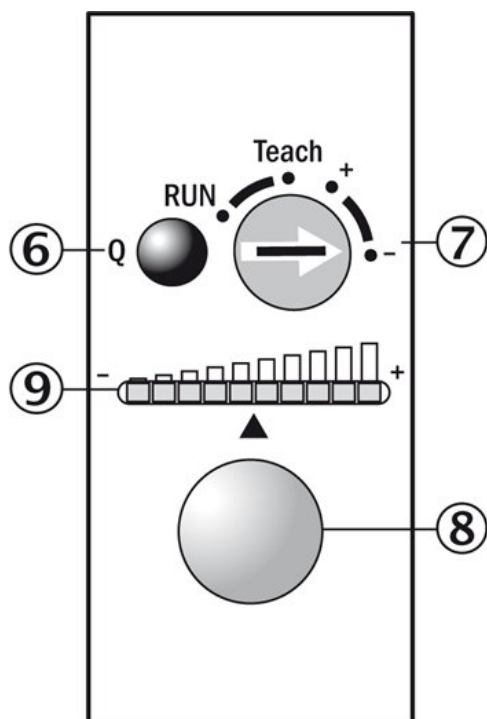
Ambient data

|                      |                                                    |
|----------------------|----------------------------------------------------|
| Ambient temperature: | Operation: -10 ... 55 °C<br>Storage: -25 ... 75 °C |
| Shock load:          | According to IEC 60068                             |

Dimensional drawing

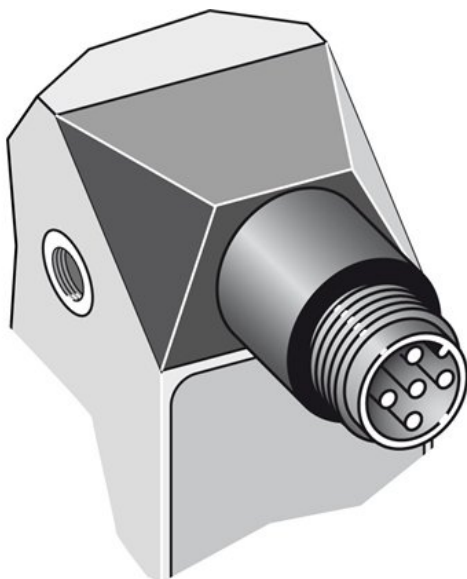


## Adjustments

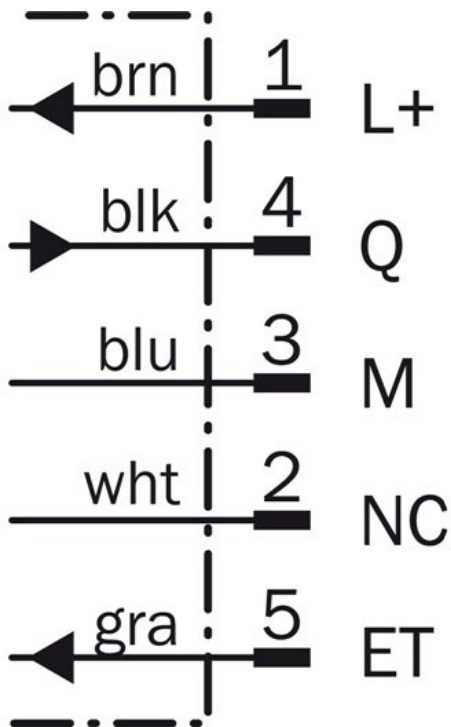


- |6| Function signal indicator (yellow)
- |7| Pre-selection switch
- |8| Teach-in button
- |9| Bar graph (green)

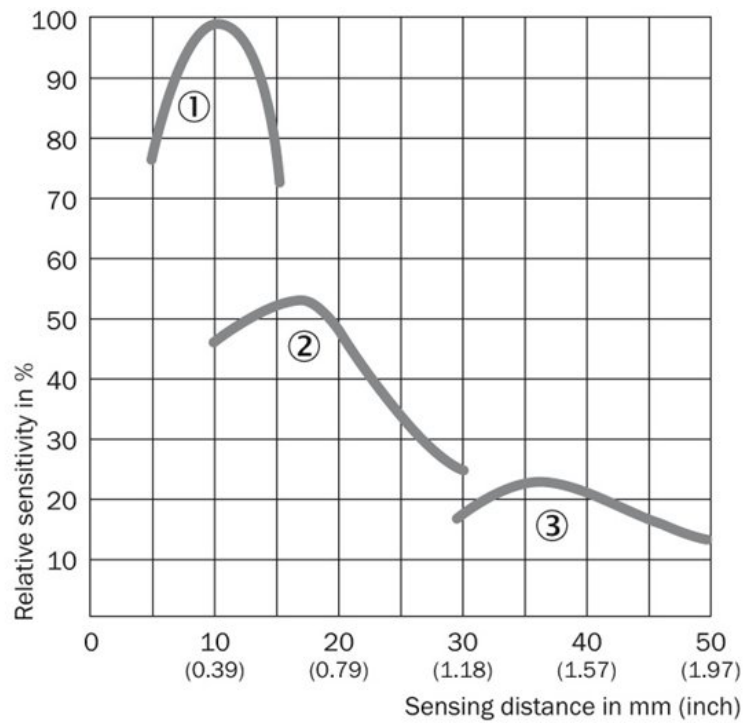
## Connection type



Connection diagram



Sensing distance



- |1| Sensing distance 10 mm
- |2| Sensing distance 20 mm
- |3| Sensing distance 40 mm

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