



Contrast sensors  
KT5, KT5-2 Potentiometer

KT5M-2N1111



**Model Name** > [KT5M-2N1111](#)  
**Part No.** > [1048489](#)



**At a glance**

- Tough, metal housing
- Manual switching threshold adjustment with optical adjustment indicator
- Green or white LED technology
- Models with analog output
- Switching frequency of 10 kHz
- Various sensing distances and light spot directions
- M12 plug can be rotated 90°

**Your benefits**

- All standard print marks and contrasts are detected
- Reliable operation, even with jittering webs and high-gloss materials
- High positioning accuracy improves packaging quality
- Various sensing distances, light spot directions and light emissions make individual configuration and simple integration into the production process possible



**Features**

Sensing distance <sup>1)</sup> :	10 mm
Sensing distance tolerance:	± 3 mm
Light source <sup>2)</sup> :	LED
Wave length:	450 nm ... 650 nm
Light emission:	Long and short side of housing, exchangeable
Light spot size:	1.2 mm x 4.2 mm
Light spot direction <sup>3)</sup> :	Vertical
Output function:	Light/dark switching
Type of light:	Visible white light
Dimensions (W x H x D):	30.4 mm x 53 mm x 80 mm
Housing design (light emission):	Rectangular
Teach-in mode:	Manual adjustment, potentiometer

<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> In relation to long side of housing

**Mechanics/electronics**

Ripple <sup>1)</sup> :	≤ 5 Vpp
Power consumption <sup>2)</sup> :	< 80 mA
Switching frequency <sup>3)</sup> :	10 kHz

Response time <sup>4)</sup> :	50 $\mu$ s
Output type:	NPN: HIGH = approx. VS / LOW $\leq$ 2 V
Switching mode:	NPN
Connection type:	Connector M12, 4-pin
Protection class <sup>5)</sup> :	II
Circuit protection:	Output Q short-circuit protected, Interference suppression, VS connections reverse-polarity protected
Enclosure rating:	IP 67
Weight:	400 g
Housing material:	Metal, Zinc diecast
Output current I <sub>max.</sub> :	100 mA
Supply voltage:	10 V DC ... 30 V DC <sup>6)</sup>
Fieldbus interface:	-

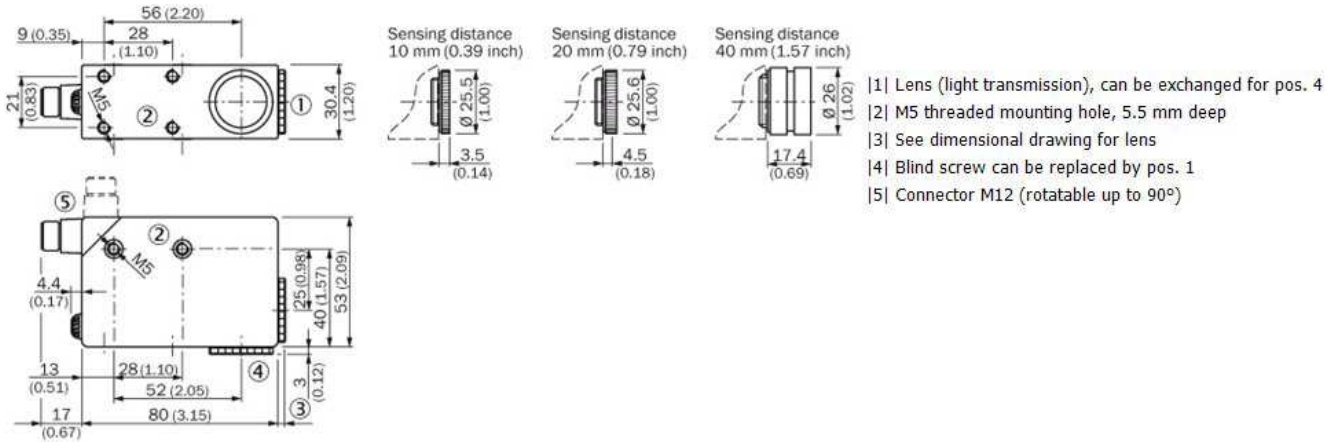
1) May not exceed or fall short of V<sub>S</sub> tolerances 2) Without load 3) With light/dark ratio 1:1 4) Signal transit time with resistive load 5) Reference voltage DC 50 V 6)

Limit values; operation in short-circuit protected network max. 8 A

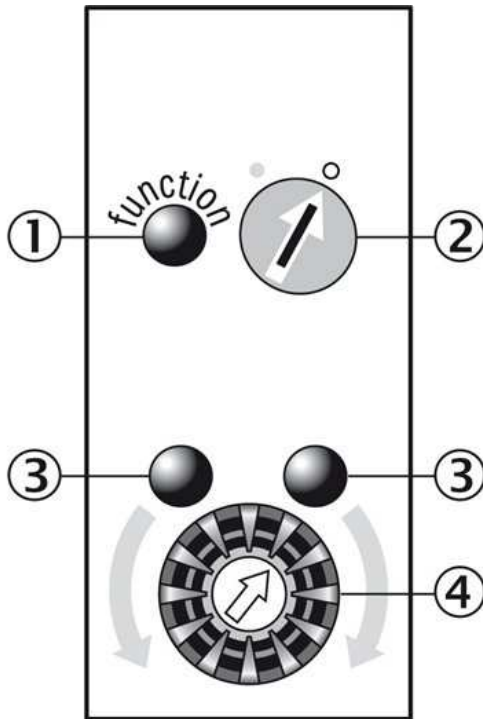
### Ambient data

Shock load:	According to IEC 60068
UL File No.:	NRKH.E181493 & NRKH7.E181493
Ambient operating temperature:	-10 °C ... +55 °C
Ambient storage temperature:	-25 °C ... +75 °C

### Dimensional drawing



## Adjustments



- |1| Function signal indicator (yellow)
- |2| Pre-selection switch (light/dark switching)
- |3| Switching threshold adjustment
- |4| Adjustment indicators (green)

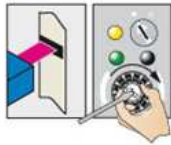
## Bedienhinweis

### 1. Select switching function (light/dark)



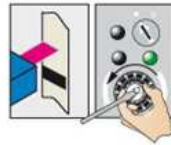
Turn the rotary switch to the desired position.  
 ○ = light switching  
 ● = dark switching

### 2. Position mark

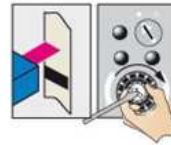


Turn potentiometer in the direction shown (green LED illuminates) until the yellow LED status changes and the green LED opposite illuminates.

### 3. Position background

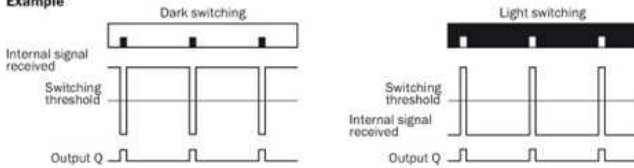


Gradually turn back the potentiometer (count the number of turns) until the yellow LED changes status again and illuminates.



Turn the potentiometer forward again by half the number of turns to ensure that the switching threshold is optimally set.

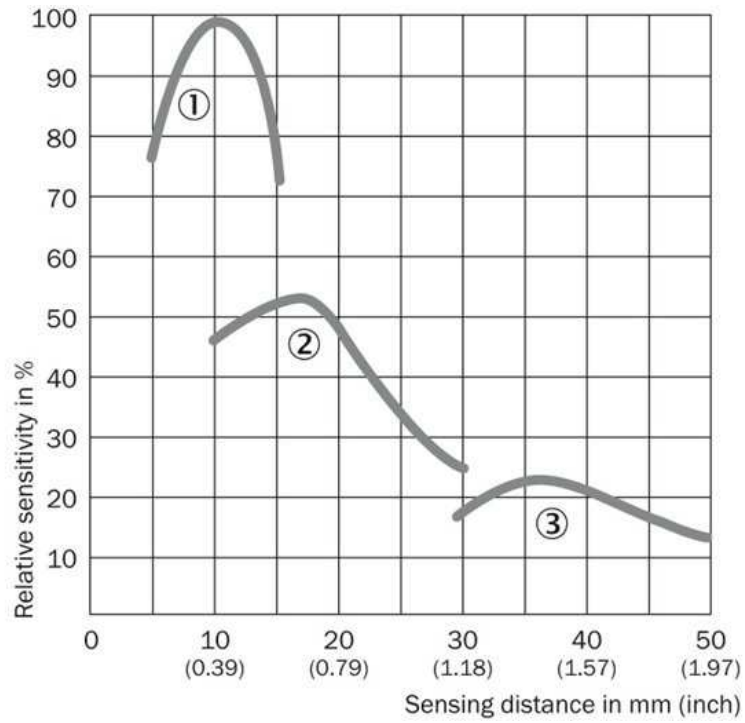
### Example



### Switching characteristics

The switching threshold is set in the center between the background and the mark.

## Sensing distance



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

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