

ONLINE DATA SHEET
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Contrast sensors
KT5, KT5-2 Teach-in

KT5W-2N1113



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Contrast sensors
KT5, KT5-2 Teach-in

Model Name > KT5W-2N1113
Part No. > 1016630





At a glance

- Tough, metal housing
- Various teach-in methods via control panel or control cable
- Maximum detection reliability due to 3-color RGB LED technology
- Switching frequency of 10 kHz
- Various sensing distances and light spot directions
- M12 plug can be rotated 90°

Your benefits

- All print marks and color combinations are reliably detected, ensuring high machine throughput
- 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 [1]:	10 mm
Sensing distance tolerance:	± 3 mm
Light source [2]:	LED
Wave length:	470 nm, 525 nm, 640 nm
Light emission:	Long and short side of housing, exchangeable
Light spot size:	1.2 mm x 4.2 mm
Light spot direction [3]:	Vertical
Type of light:	Visible blue light, Visible green light, Visible red light
Dimensions (W x H x D):	30.4 mm x 53 mm x 80 mm
Housing design (light emission):	Rectangular
Teach-in mode:	Dynamic teach-in

[1] From front edge of lens [2] Average service life of 100,000 h at T_A = +25 °C [3] In relation to long side of housing

Mechanics/electronics

Ripple [1]:	≤ 5 Vpp
Current consumption [2]:	< 80 mA
Switching frequency [3]:	10 kHz
Response time [4]:	50 µs

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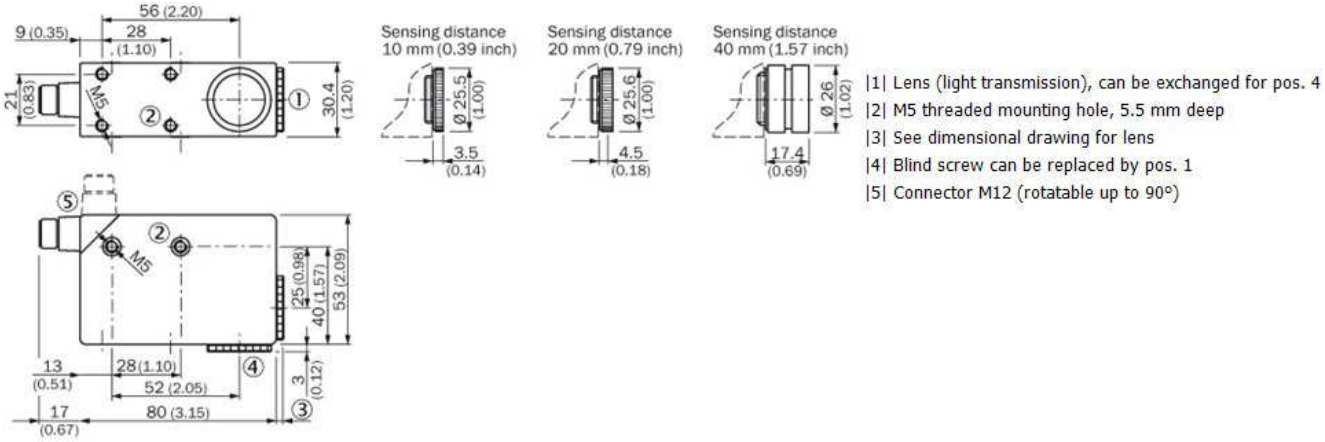
Output type:	NPN: HIGH = approx. VS / LOW ≤ 2 V
Switching mode:	NPN
Input, teach-in (ET):	NPN:, Run: U = 10 V ... < U_V, Teach: U < 2 V
Input, light/dark (L/D):	Dark: U = 0 V, Light: U = U_V, NPN:
Retention time (ET):	25 ms, non-volatile memory
Connection type:	Connector M12, 5-pin
Protection class [5]:	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 Imax.:	100 mA
Supply voltage:	10 V DC ... 30 V DC [6]
Fieldbus interface:	-

[1] May not exceed or fall short of V_S 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

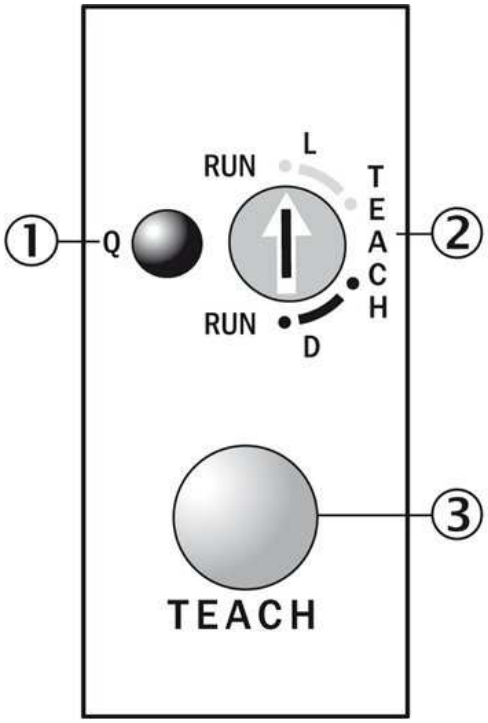
Shock load:	According to IEC 60068
UL File No.:	NRKH.E181493 & NRKH7.E181493
Ambient operating temperature:	-10 °C ... +55 °C
Ambient storage temperature:	-25 °C ... +75 °C

Dimensional drawing



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Adjustments



|1| Function signal indicator (yellow)
|2| Pre-selection switch
|3| Teach-in button

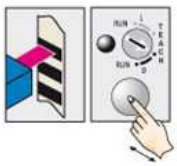
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1. Select switching function (light/dark)



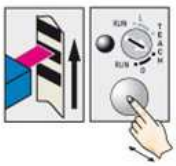
Turn rotary switch to desired teach position:
D = dark switching
L = light switching

2. Position mark or background



Press the teach-in button and keep it pressed.

3. Move at least one repeat length using the light spot

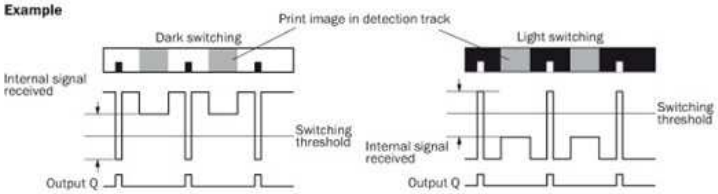


Keep the teach-in button pressed.



Release the teach-in button. Yellow LED will illuminate, when emitted light is on the mark.

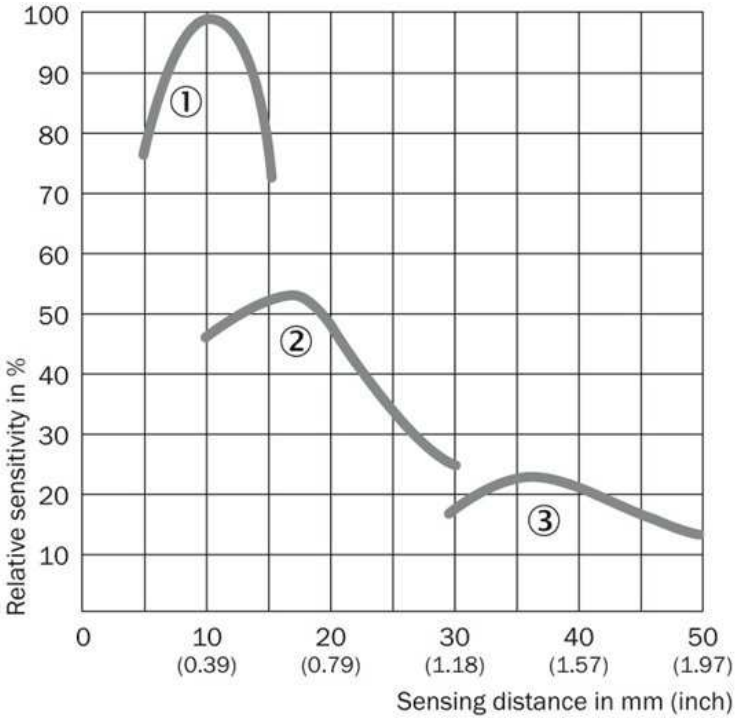
Example



Switching characteristics
The optimum emitted light is selected automatically.
The switching threshold is set in the center between the lowest and the second-lowest reflectivity.
Teach-in can also be performed using an external control signal.
Light/dark setting can also be configured using an external control signal.
Observe the minimum speed (25 mm/s ... 300 mm/s).

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Sensing distance



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

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