ONLINE DATA SHEET
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Contrast sensors
KT8, KT8L Laser

KT8L-N3756

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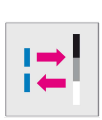
Contrast sensors
KT8, KT8L Laser

Model Name > KT8L-N3756
Part No. > 1041352



At a glance

- Wide range of operating distances between 30 mm and 800 mm
- Small and precise laser light spot (Class II)
- Fast switching frequency of 17 kHz
- Analog output
- Simple teach-in
- Detection reliability displayed in the bar graph display

Your benefits

- Wide range of applications with sensing distances up to 800 mm
- Precise detection of the smallest marks and objects, e.g., 1 x 1 mm²
- Adjusts itself to specific applications, opening up a wide range of uses
- Reliable operation, even with unsteady objects

Features

Sensing distance [1]:	150 mm
Light source [2]:	Laser
Wave length:	655 nm
Light emission:	Long side of housing
Light spot size:	Ø 3 mm [3]
Light spot direction:	Round
Operating distance:	30 mm ... 600 mm [4]
Function:	Automatic drift correction
Type of 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:	Static 2-point teach-in, Dynamic teach-in (min/max)

[1] From front edge of lens [2] Average service life 50,000 h at T_A = +25 °C [3] At focal point = sensing distance 150 mm [4] With respect to black-white contrast 6 %/90 %

Mechanics/electronics

Ripple [1]:	≤ 5 Vpp
Power consumption [2]:	< 80 mA
Switching frequency [3]:	17 kHz
Response time [4]:	30 µs
Jitter:	< 15 µs

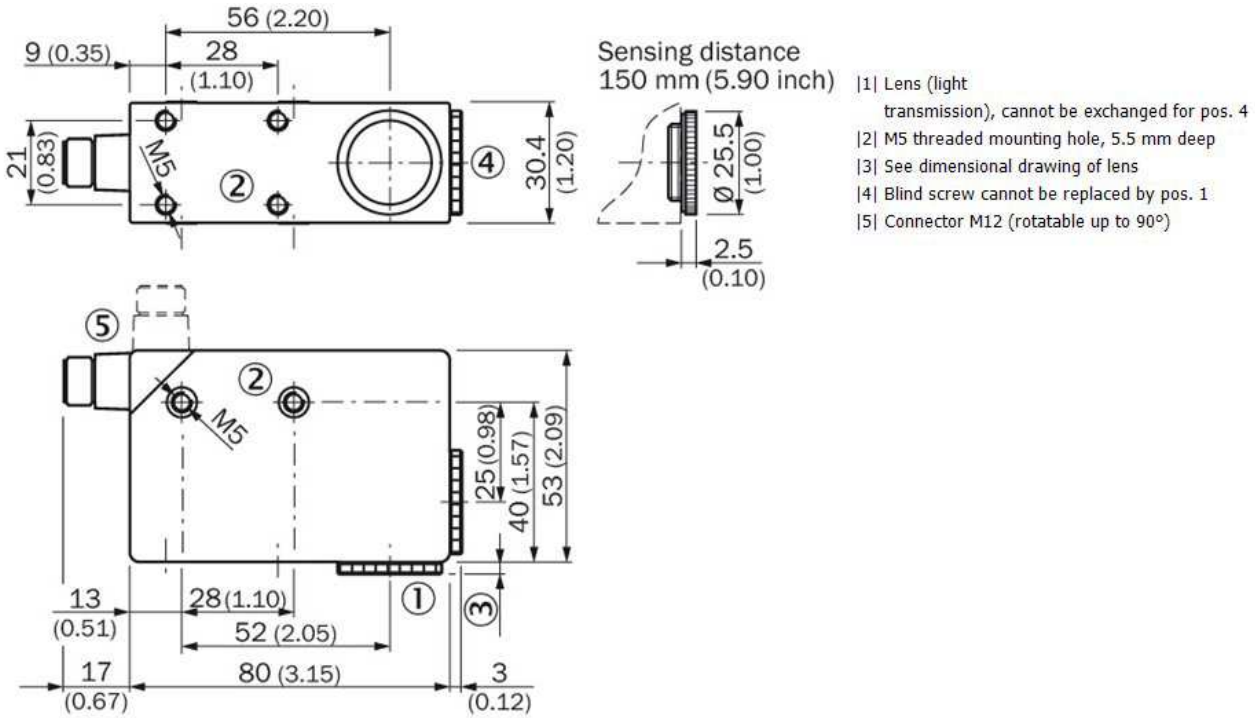
Output type:	NPN: HIGH = approx. VS / LOW ≤ 2 V
Switching mode:	NPN
Analog output QA:	0.3 mA ... 20 mA
Input, teach-in (ET):	NPN:, Run: U = 10 V ... < U_V, Teach: U < 2 V
Retention time (ET):	25 ms, non-volatile memory
Time delay:	20 ms, adjustable
Connection type:	Connector M12, 5-pin
Protection class [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

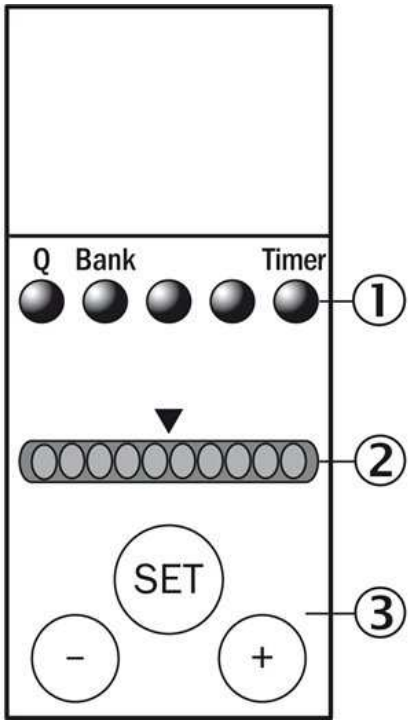
Ambient data

Shock load:	According to IEC 60068
UL File No.:	242368, CDRH-conform
Ambient operating temperature:	-10 °C ... +45 °C
Ambient storage temperature:	-10 °C ... +75 °C

Dimensional drawing

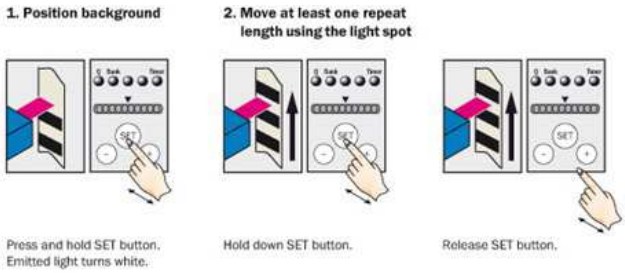


Adjustments



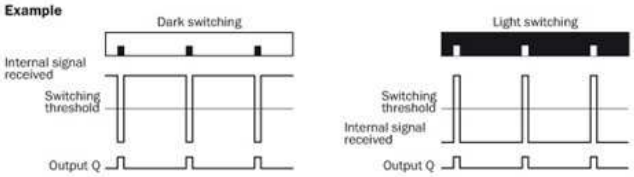
|1| Function signal indicators (yellow)
|2| Bar graph (green)
|3| Teach-in button/"+" and "–" button

Connection type and diagram



Note
The bar display visualizes the detection reliability during teach-in. The more LEDs that illuminate, the better the teach-in:
1 LED illuminates = operation not reliable – contrast difference too low
≤ 4 LEDs illuminate = operation OK – sufficient contrast difference
> 4 LEDs illuminate = reliable operation – high contrast difference

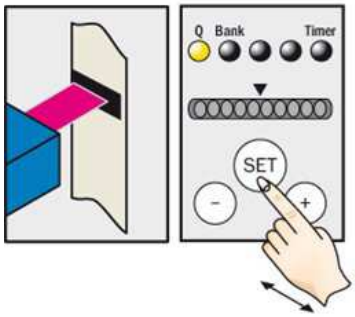
Example



Switching characteristics
Light/dark setting is defined using teach-in sequence or menu, cf. operating instructions.
The switching threshold is set in the center between the background and the mark.
Teach-in and the light/dark setting can also be configured using an external control signal.

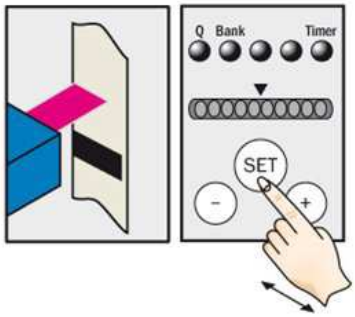
Connection type and diagram

1. Position mark



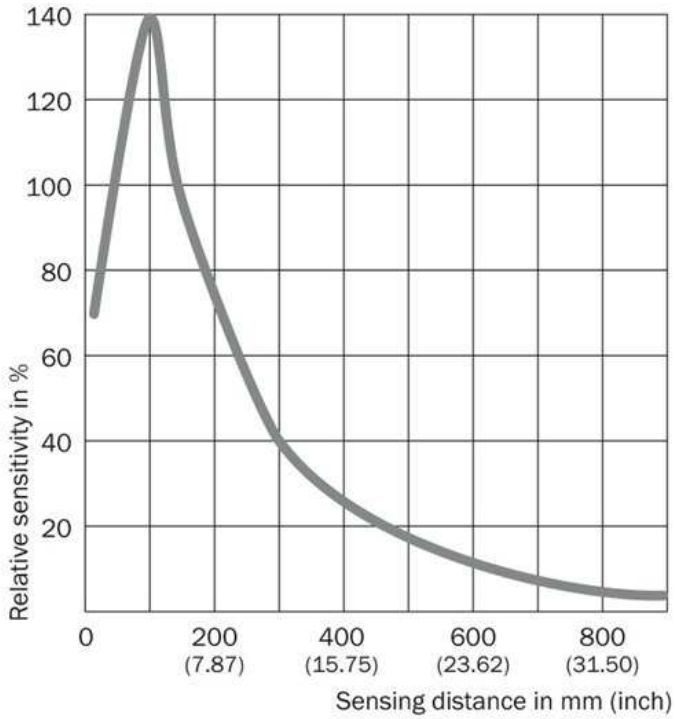
Press and hold SET button > 1 s.
Yellow LED flashes.

2. Position background



Press and hold SET button > 1 s.
Yellow LED goes out.

Sensing distance



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