

KT8L-P3756







# Contrast sensors KT8, KT8L Laser

Model Name > KT8L-P3756 Part No. > 1041351



#### 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 mm<sup>2</sup>
- · Adjusts itself to specific applications, opening up a wide range of uses
- · Reliable operation, even with unsteady objects



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#### **Features**

Sensing distance <sup>1)</sup>: 150 mm Light source <sup>2)</sup>: Laser Wave length: 655 nm

Light emission:

Long side of housing

Light spot size: Ø 3 mm Staget Round

Operating distance: 30 mm ... 600 mm <sup>4)</sup>
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<sub>A</sub> = +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 $\frac{2}{3}$ :	< 80 mA
Switching frequency 3):	17 kHz
Response time <sup>4)</sup> :	30 µs
Jitter:	< 15 µs

Output type: PNP: HIGH = VS- ≤ 2 V/LOW approx. 0 V

**PNP** Switching mode:

Analog output QA: 0.3 mA ... 20 mA

PNP:, Run: U < 2 V, Teach: U = 10 V ... < U Input, teach-in (ET):

Retention time (ET): 25 ms, non-volatile memory

Time delay: 20 ms, adjustable Connection type: Connector M12, 5-pin

Protection class

Circuit protection: Output Q short-circuit protected, Interference suppression, VS

connections reverse-polarity protected

Enclosure rating: **IP 67** 400 g Weight:

Housing material: Metal, Zinc diecast

Output current Imax.: 100 mA

10 V DC ... 30 V DC  $^{6)}$ Supply voltage:

Fieldbus interface:

1) May not exceed or fall short of V 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)

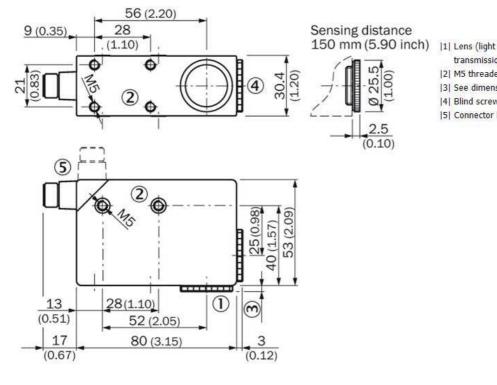
Limit values; operation in short-circuit protected network max. 8 A

#### **Ambient data**

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

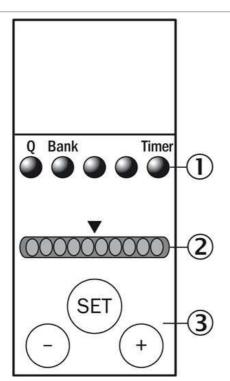
Ambient storage temperature: -10 °C ... +75 °C

## **Dimensional drawing**



- transmission), cannot be exchanged for pos. 4
- |2| M5 threaded mounting hole, 5.5 mm deep
- [3] See dimensional drawing of lens
- |4| Blind screw cannot be replaced by pos. 1
- [5] Connector M12 (rotatable up to 90°)

### **Adjustments**



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

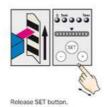
### Connection type and diagram

#### 1. Position background

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







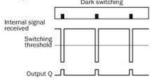
Press and hold SET button. Emitted light turns white.

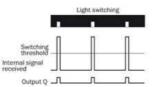
Hold down SET button.

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

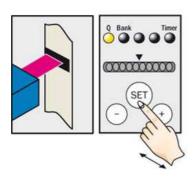




#### Switching characteristics

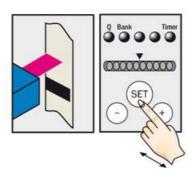
Light/dark setting is defined using teach-in sequence or menu, cf. operating instructions. The switching threshold is set in the center between the background and the mark. Teach-in and the light/dark setting can also be configured using an external control signal.

# 1. Position mark



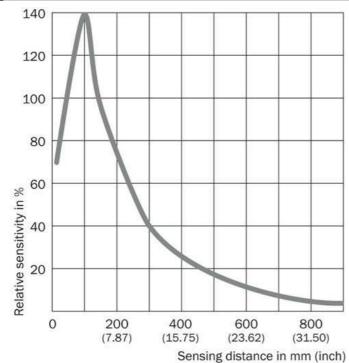
Press and hold SET button > 1 s. Yellow LED flashes.

# 2. Position background



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

# Sensing distance



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