



Contrast sensors KTM

KTM-MB31111P



Model Name > [KTM-MB31111P](#)
Part No. > [1062202](#)



At a glance

- Established mini housing
- High grayscale resolution
- Increased dynamic range means reliable detection of contrasts on shiny materials
- Static and dynamic teach-in in one variant
- Switching frequency 15 kHz (type-dependent)
- KTM Core for standard applications
- KTM Prime with IO-Link function

Your benefits

- For use in all contrast detection applications, particularly the packaging industry
- - Print mark detection on continuous materials for controlling the cutting process
- - Positioning of tubes
- - Label alignment on bottles



Features

Dimensions (L x W x H):	12 mm x 31.5 mm x 21 mm
Sensing distance:	12.5 mm
Sensing distance tolerance:	± 3 mm
Light source ¹⁾ :	LED, white
Light spot size:	2 mm x 2 mm
Light spot direction ²⁾ :	-
Adjustment:	Potentiometer, screw driver
Max. web speed tech-in (dynamic):	1 m/s ³⁾

¹⁾ Average service life of 100,000 h at T_A = +25 °C ²⁾ In relation to long side of housing ³⁾ At a mark size of 4 mm

Mechanics/electronics

Supply voltage V _s ¹⁾ :	DC 12 V ... 24 V
Ripple ²⁾ :	≤ 5 V _{pp}
Power consumption ³⁾ :	< 50 mA
Switching frequency ⁴⁾ :	10 kHz
Response time ⁵⁾ :	50 µs
Output type:	NPN: HIGH = approx. V _S / LOW ≤ 2 V PNP: HIGH = V _S - ≤ 2 V / LOW approx. 0 V
Switching mode:	PNP/NPN
Retention time (ET):	28 ms, non-volatile memory

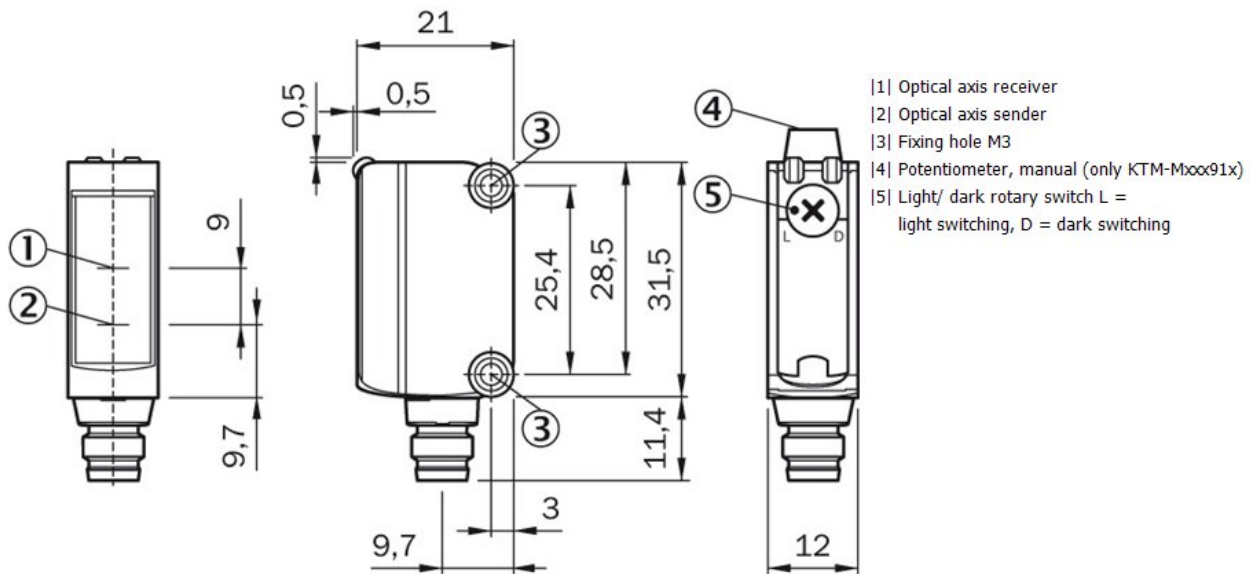
Connection type:	Connector M8, 4-pin
Protection class:	III
Circuit protection:	Output Q short-circuit protected, Interference suppression, VS connections reverse-polarity protected
Enclosure rating:	IP 67
Weight:	Ca. 20 g
Housing material:	ABS (plastic)
Output current I _{max} ..:	100 mA

¹⁾ Extreme values: 12 V (- 10 %) ... 24 V (+ 20 %). Operation in short-circuit protected network max. 8 A ²⁾ May not exceed or fall short of V_S tolerances ³⁾ Without load ⁴⁾ With light/dark ratio 1:1 ⁵⁾ Signal transit time with resistive load

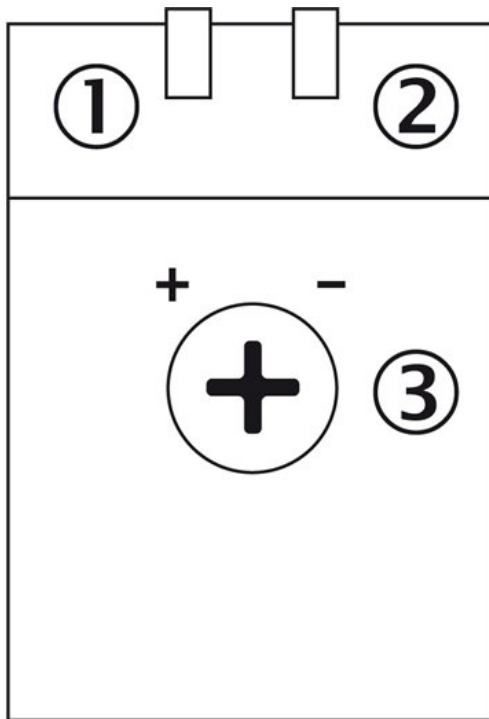
Ambient data

Ambient temperature:	Operation: -10 ... 55 °C, Storage: -20 ... 75 °C
Shock load:	According to IEC 60068
UL File No.:	NRKH.E348498

Dimensional drawing

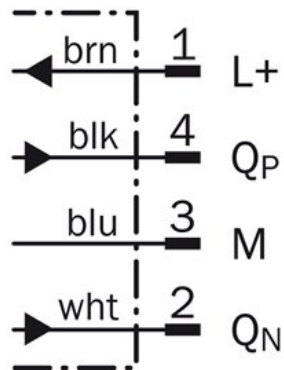
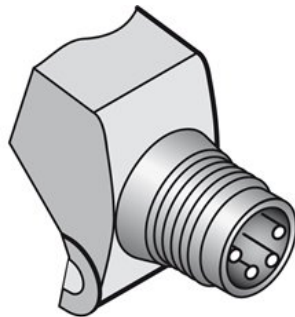


Adjustments



- |1| Status indicator LED, yellow:
Status switching output Q (dark-switching)
- |2| Status indicator LED green: power on
- |3| Switching threshold adjustment

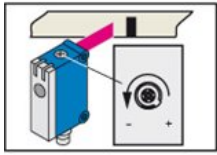
Anschlussart und -schema



Bedienhinweis

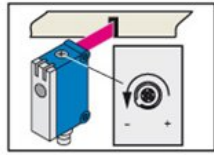
For example dark switching

1. Position background



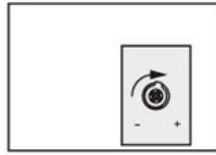
Start at "+" (right-hinged).
Turn potentiometer in direction
"-" until the yellow LED goes out.

2. Position mark



Yellow LED lights up.
Continue to turn the potentiometer
in direction "-" until the yellow LED
goes out again.

3. Set switching threshold



Turn between positions 1 and 2,
to ensure that the switching threshold
is optimally set.

Switching characteristics

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

Light switching: yellow LED ≠ switching output Q

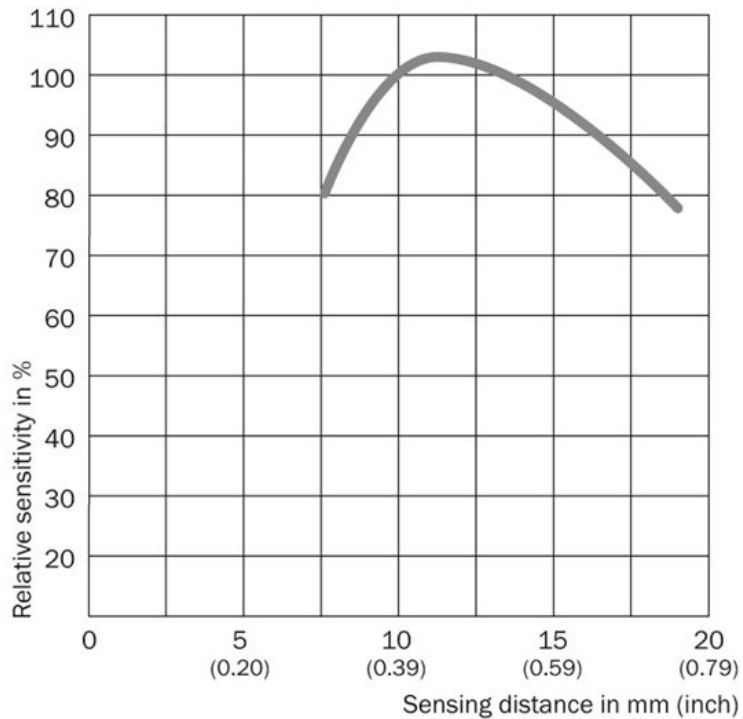
Dark switching: yellow LED = switching output Q

Light/dark switching selectable by means of rotary switch

KTM-MB31111P: potentiometer can be adjusted with a screwdriver

KTM-MB31191P: potentiometer can be adjusted with a screwdriver or by hand

Characteristic curve



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