Data sheet

KTM-MB31194P

KTM

CONTRAST SENSORS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	part no.
KTM-MB31194P	1078048

Other models and accessories ➜ www.sick.com/KTM

Detailed technical data

Features

Housing design	Small
Dimensions (W x H x D)	12 mm x 31.5 mm x 21 mm
Light source	LED, White [1]
Light emission	Long side of housing
Light spot size	Ø 2 mm (12.5 mm)
Light spot direction	Round
Receiving filters	None
Sensing distance	≤ 12.5 mm
Sensing distance tolerance	± 3 mm
Display	LED indicator green: power on LED indicator, yellow: Status switching output Q
Adjustment	Potentiometer

[1] Average service life: 100,000 h at T_U = +25 °C.

Electronics

Supply voltage	12 V DC ... 24 V DC [1]
Ripple	≤ 5 V_{pp} [2]
Current consumption	< 50 mA [3]
Switching frequency	10 kHz [4]

[1] Limit values: DC 12 V (–10 %) ... DC 24 V (+20 %). Operation in short-circuit protected network max. 8 A.
[2] May not fall below or exceed U_V tolerances.
[3] Without load.
[4] With light/dark ratio 1:1.
[5] Total current of all Outputs.

Response time	50 µs
Jitter	25 µs
Switching output	PNP, NPN
Switching output (voltage)	PNP: HIGH = U_V ≤ 2 V / LOW approx. 0 V, NPN: HIGH = approx. U_V / LOW ≤ 2 V
Switching mode	Light/dark switching
Output current $I_{max.}$	50 mA [5]
Time delay	None
Protection class	III
Circuit protection	U_V connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression
Connection type	
	Cable open end, 4-wire, 2 m

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Mechanics

Housing material	ABS
Optics material	PMMA
Weight	20 g

Ambient data

Ambient operating temperature	–10 °C ... +55 °C
Ambient temperature, storage	–20 °C ... +75 °C
Shock load	According to IEC 60068
Enclosure rating	IP67
UL File No.	NRKH.E348498 & NRKH7.E348498

Connection type/pinouts

Connection type	
	Cable open end, 4-wire, 2 m
Pinouts	
BN 1	+ (L+)
WH 2	Q_{NPN}
BU 3	- (M)
BK 4	Q_{PNP}

Classifications

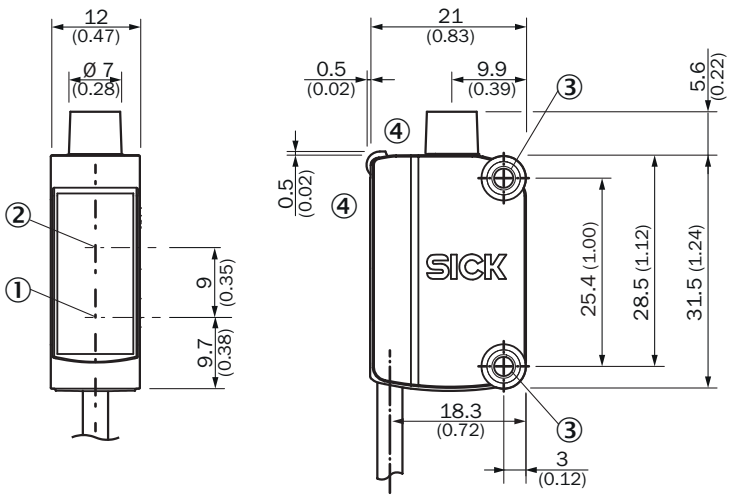
ECLASS 5.0	27270906
ECLASS 5.1.4	27270906
ECLASS 6.0	27270906
ECLASS 6.2	27270906
ECLASS 7.0	27270906

ECLASS 8.0	27270906
ECLASS 8.1	27270906
ECLASS 9.0	27270906
ECLASS 10.0	27270906
ECLASS 11.0	27270906
ECLASS 12.0	27270906
ETIM 5.0	EC001820
ETIM 6.0	EC001820
ETIM 7.0	EC001820
ETIM 8.0	EC001820
UNSPSC 16.0901	39121528

Certificates

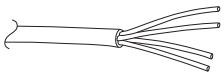
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
cULus certificate	✓
Photobiological safety (IEC EN 62471)	✓

Dimensional drawing



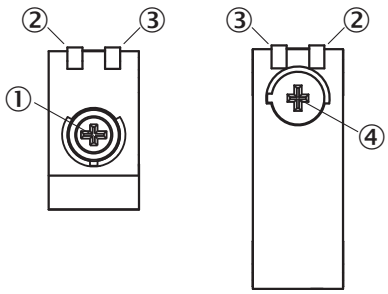
Dimensions in mm (inch)
① Center of optical axis, sender
② Center of optical axis, receiver
③ Mounting holes M3
④ display and adjustment elements

Pinouts, see table Technical data: Connection type/pinouts



Cable with flying leads, 4-wire, AWG 26, 0.15 mm²

display and adjustment elements

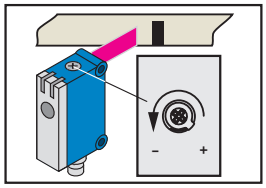


① potentiometer, adjustment of switching threshold
② LED yellow
③ LED green
④ Potentiometer, light/dark switching

Setting the switching threshold

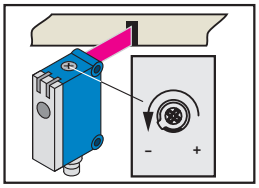
For example dark switching

1. Position background



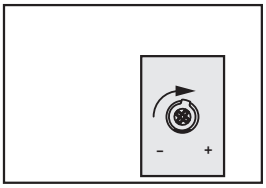
Start at "+" (right-hinged).
Turn potentiometer in direction "-" until the yellow LED goes out.

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



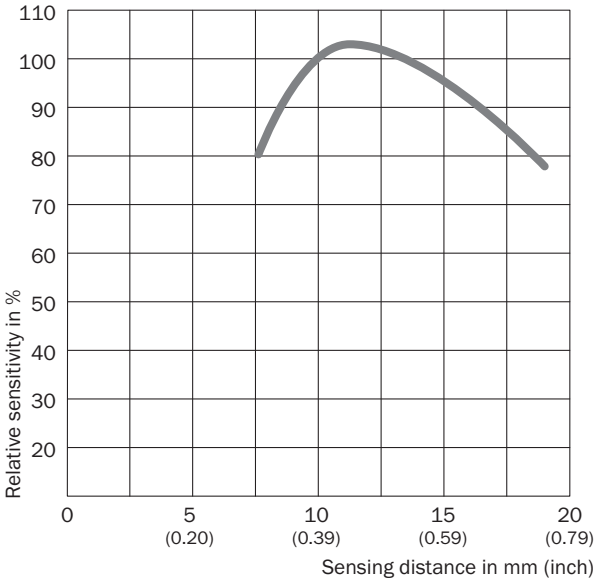
Turn between positions 1 and 2, to ensure that the switching threshold is optimally set.

Switching characteristics

Light switching: yellow LED ≠ switching output Q
Dark switching: yellow LED = switching output Q

Light/dark switching selectable by means of rotary switch
KTM-xBxxx1xx: potentiometer can be adjusted with a screwdriver
KTM-xBxxx9xx: potentiometer can be adjusted with a screwdriver or by hand

Sensing distance



Recommended accessories

Other models and accessories ➜ www.sick.com/KTM

	Brief description	Type	part no.
device protection and care			
	• **Description:** Stainless steel 1.4301 (SVS 304), 3 mm thick protective sleeve • **Material:** Stainless steel • **Items supplied:** Mounting hardware included • **Suitable for:** G6, KTM Core, KTM Prime, CSM, LUTM	BEF-SG-G6-01	2069044
connectors and cables			
	• **Connection type head A:** Male connector, M8, 4-pin, straight, A-coded • **Description:** Unshielded • **Connection systems:** Screw-type terminals • **Permitted cross-section:** 0.14 mm² ... 0.5 mm²	STE-0804-G	6037323
	• **Connection type head A:** Male connector, M12, 4-pin, straight, A-coded • **Description:** Unshielded • **Connection systems:** Screw-type terminals • **Permitted cross-section:** ≤ 0.75 mm²	STE-1204-G	6009932

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

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