Product data sheet

KTM-MB31194P

KTM Core

CONTRAST SENSORS

SICK
Sensor Intelligence.

Ordering information

Type	Part no.
KTM-MB31194P	1078048

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

Detailed technical data

Features

Dimensions (W x H x D)	12 mm x 31.5 mm x 21 mm
Sensing distance	12.5 mm
Sensing distance tolerance	± 3 mm
Housing design (light emission)	Rectangular
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
Adjustment	Potentiometer

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

Mechanics/electronics

Supply voltage	12 V DC ... 24 V DC [1]
Ripple	≤ 5 V_{pp} [2]
Power consumption	< 50 mA [3]
Switching frequency	10 kHz [4]
Response time	50 µs [5]
Jitter	25 µs
Switching output	PNP, NPN
Switching output (voltage)	PNP: HIGH = V_S– ≤ 2 V / LOW approx. 0 V

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

	NPN: HIGH = approx. V_S / LOW ≤ 2 V
Switching output	Light/dark switching
Output current $I_{max.}$	50 mA [6]
Connection type	Cable open end, 4-wire, 2 m
Protection class	III
Circuit protection	U_V connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression
Enclosure rating	IP67
Weight	20 g
Housing material	Plastic, ABS
Optics material	Plastic, PMMA

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Ambient data

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

Classifications

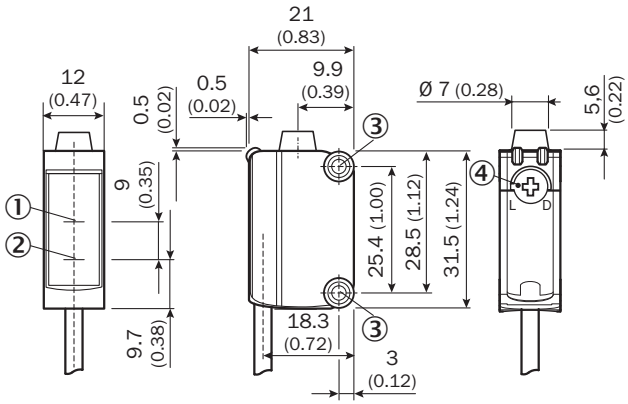
ECl@ss 5.0	27270906
ECl@ss 5.1.4	27270906
ECl@ss 6.0	27270906
ECl@ss 6.2	27270906
ECl@ss 7.0	27270906
ECl@ss 8.0	27270906
ECl@ss 8.1	27270906
ECl@ss 9.0	27270906
ETIM 5.0	EC001820
ETIM 6.0	EC001820
UNSPSC 16.0901	39121528

Connection/pin out

Connection type	Cable open end, 4-wire, 2 m
Pin out	
BN 1	+ (L+)
WH 2	Q $_{NPN}$
BU 3	- (M)
BK 4	Q $_{PNP}$

Dimensional drawing (Dimensions in mm (inch))

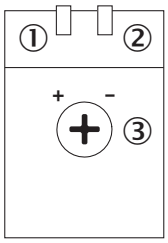
KTM-xBxxx94x



① Optical axis, receiver
② Optical axis, sender
③ M3 mounting hole
④ Light/ dark rotary switch: L = light switching, D = dark switching

Adjustments

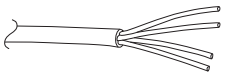
KTM Core



① Status indicator LED, yellow: Status switching output Q (dark switching)
② LED indicator green: Supply voltage active
③ Light/ dark rotary switch: L = light switching, D = dark switching

Connection type

See table: **Connection/pin out**

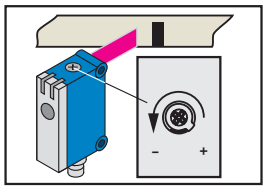


Concept of operation

Setting the switching threshold

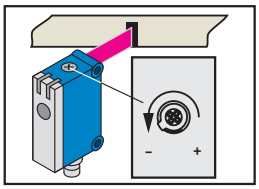
For example dark switching

1. Position background



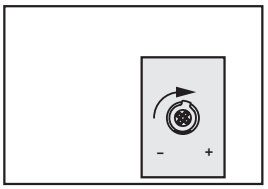
Start at "+" (right-hinged).
Turn potentiometer in direction "-" until the yellow LED goes out.

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.

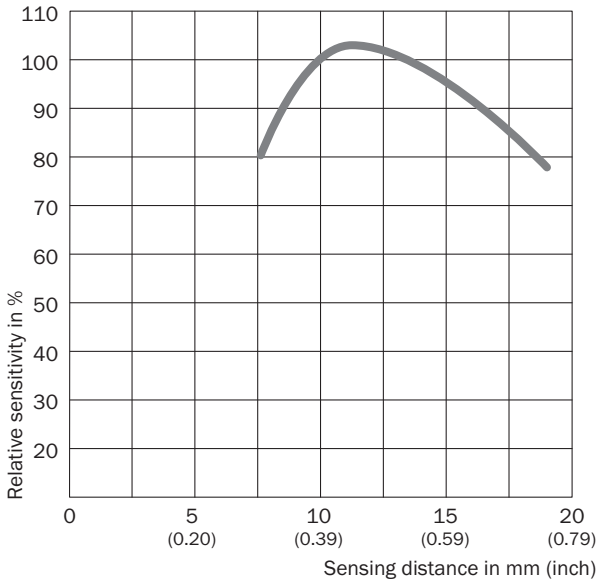
Switching characteristics

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

Sensing distance



Recommended accessories

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

	Brief description	Type	Part no.
Device protection (mechanical)			
	Stainless steel 1.4301 (SVS 304), 3 mm thick protective sleeve for G6, stainless steel 1.4301, mounting hardware included	BEF-SG-G6-01	2069044
Plug connectors and cables			
	Head A: male connector, M8, 4-pin, straight Head B: - Cable: unshielded	STE-0804-G	6037323
	Head A: male connector, M12, 4-pin, straight Head B: - Cable: unshielded	STE-1204-G	6009932

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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.

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