# KTM-MB8A191P

KTM

**CONTRAST SENSORS**

**SICK**
Sensor Intelligence.

# KTM-MB8A191P | KTM

## CONTRAST SENSORS

## Ordering information

| Type | part no. |
|------|----------|
| KTM-MB8A191P | 1066885 |

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

Illustration may differ

## 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 1 mm (10 mm) |
| Light spot direction | Round |
| Receiving filters | None |
| Sensing distance | ≤ 11 mm |
| Sensing distance tolerance | ± 3 mm |
| Display | LED indicator green: power on<br>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 = $U_V \leq 2$ V / LOW approx. 0 V, NPN: HIGH = approx. $U_V$ / LOW $\leq 2$ 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<br>Output Q short-circuit protected<br>Interference pulse suppression |
| **Connection type** | Male connector M8, 4-pin |

[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.

## 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** | | |
| | Male connector M8, 4-pin | |
| **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
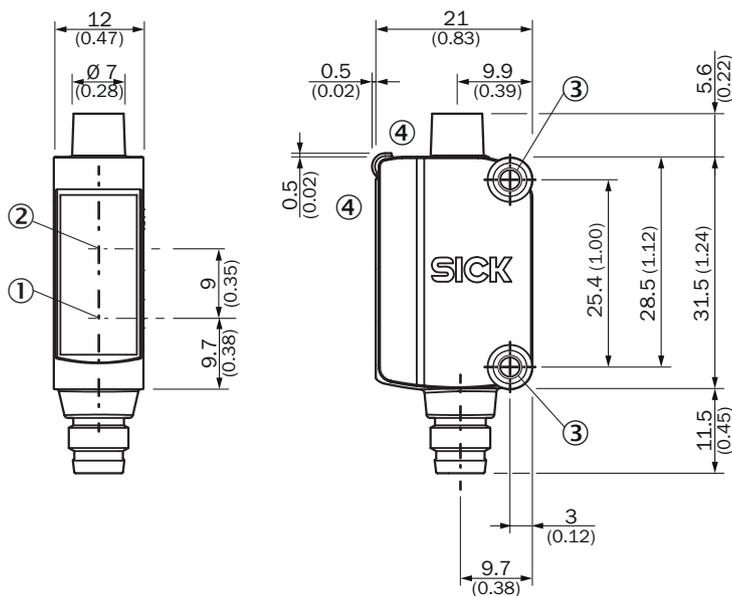


Dimensions in mm (inch)
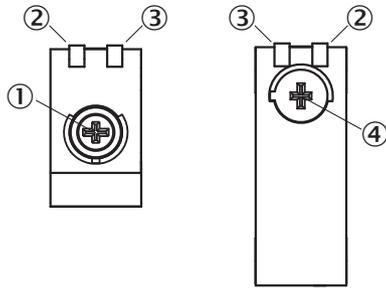① Center of optical axis, sender
② Center of optical axis, receiver
③ Mounting holes M3
④ display and adjustment elements

## Pinouts, see table Technical data: Connection type/pinouts
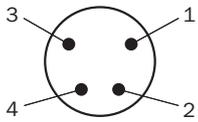


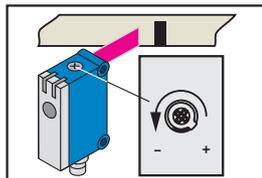Male connector, M8, 4-pin, uncoded

## display and adjustment elements



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

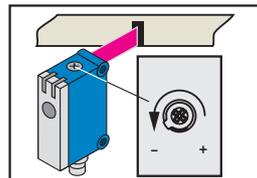## Setting the switching threshold

For example dark switching

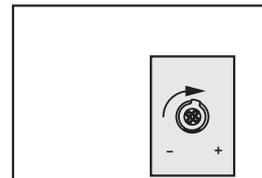**1. Position background**



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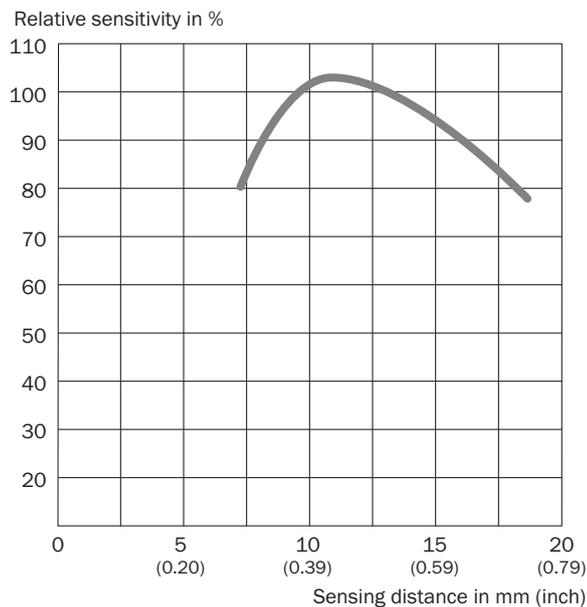Light switching: yellow LED ≠ switching output Q
Dark switching: yellow LED = switching output Q

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

Relative sensitivity in %



Sensing distance in mm (inch)

## 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<br>• **Material:** Stainless steel<br>• **Items supplied:** Mounting hardware included<br>• **Suitable for:** G6, KTM Core, KTM Prime, CSM, LUTM | BEF-SG-G6-01 | 2069044 |
| connectors and cables | | | |
| | • **Connection type head A:** Female connector, M8, 4-pin, straight, A-coded<br>• **Connection type head B:** Male connector, M12, 4-pin, straight, A-coded<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 5 m, 4-wire, PVC<br>• **Description:** Sensor/actuator cable, unshielded<br>• **Application:** Uncontaminated zones, Zones with chemicals | YF8U14-050VA3M2A14 | 2096609 |
| | • **Connection type head A:** Female connector, M8, 4-pin, straight, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 5 m, 4-wire, PVC<br>• **Description:** Sensor/actuator cable, unshielded<br>• **Application:** Uncontaminated zones, Zones with chemicals | YF8U14-050VA3XLEAX | 2095889 |

## 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."**

## WORLDWIDE PRESENCE:

Contacts and other locations –**www.sick.com**

SICK AG   |   Waldkirch   |   Germany   |   www.sick.com