



Contrast sensors
KTM Core, KTM Core

KTM-MB31191P



Model Name > [KTM-MB31191P](#)
Part No. > [1062203](#)



At a glance

- Small, tried-and-tested housing, also available in stainless steel
- High grayscale resolution
- Very large dynamic range means reliable detection of contrasts on glossy materials
- Static and dynamic teach-in
- Switching frequency: 15 kHz
- RGB light source
- Remote monitoring and rapid analysis thanks to IO-Link function (version 1.1)

Your benefits

- Small housing allows installation even where space is limited
- Powerful, fast contrast sensor ensures high machine throughput
- Three-color LED technology allows a reliable process, with contrast marks detected even in conditions with weak contrast ratios
- Good contrast resolution and a very large dynamic range ensure good detection performance on glossy materials, thus increasing the range of application possibilities
- Various teach-in methods enable more flexible commissioning
- IO-Link provides easy data access from the PLC
- Quick and easy configuration
- Long service life, even in harsh environments, thanks to stainless steel housing; as a result, excellent system throughput and low spare parts costs



Features

Sensing distance:	12.5 mm
Sensing distance tolerance:	± 3 mm
Light source ¹⁾ :	LED
Light spot size:	2 mm x 2 mm
Light spot direction:	-
Output function:	Light/dark switching
Max. web speed tech-in (dynamic):	1 m/s ²⁾
Type of light:	Visible white light
Dimensions (W x H x D):	31.5 mm x 21 mm x 12 mm
Housing design (light emission):	Rectangular
Teach-in mode:	Potentiometer, manual

1) Average service life: 100,000 h at $T_U = +25\text{ °C}$ 2) At a mark size of 4 mm

Mechanics/electronics

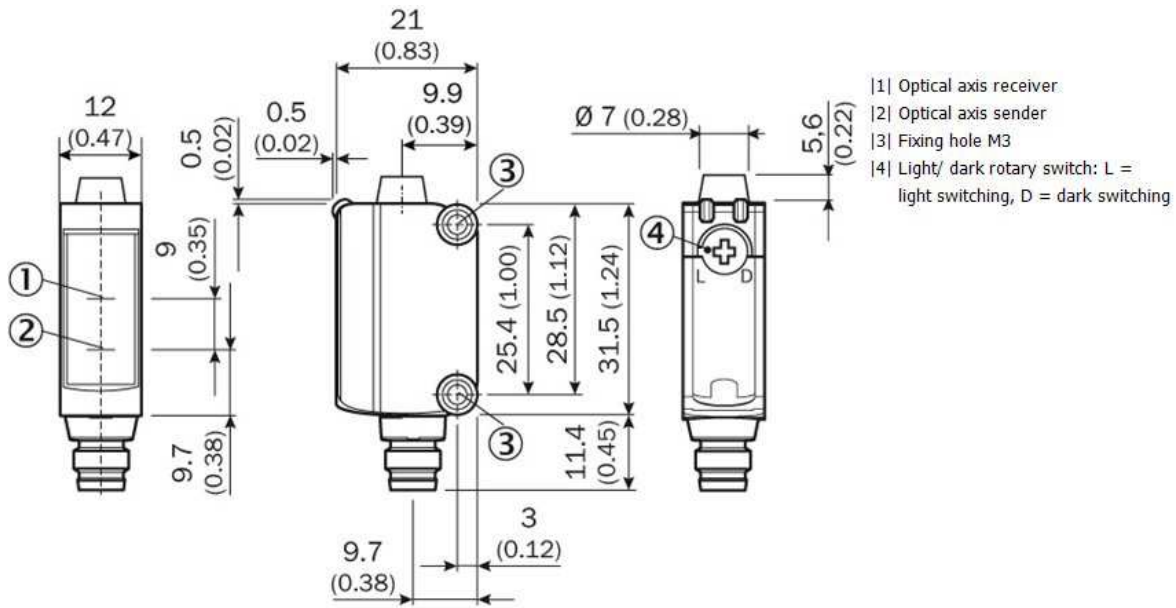
Ripple ¹⁾ :	≤ 5 Vpp
Power consumption ²⁾ :	< 50 mA
Switching frequency ³⁾ :	10 kHz
Response time ⁴⁾ :	50 μs
Jitter:	25 μs
Output type:	PNP: HIGH = VS- ≤ 2 V / LOW approx. 0 V NPN: HIGH = approx. VS / LOW ≤ 2 V
Switching mode:	PNP NPN
Retention time (ET):	28 ms, non-volatile memory
Connection type:	Connector M8, 4-pin
Protection class:	III
Circuit protection:	Output Q short-circuit protected, Interference suppression, VS connections reverse-polarity protected
Enclosure rating:	IP 67, IP 67
Weight:	20 g
Housing material:	ABS, Plastic
Output current I _{max} ·:	50 mA ⁵⁾
Supply voltage:	12 V DC ... 24 V DC ⁶⁾
Fieldbus interface:	-

¹⁾ May not exceed or fall below U_V tolerances ²⁾ Without load ³⁾ With light/dark ratio 1:1 ⁴⁾ Signal transit time with resistive load ⁵⁾ At supply voltage > 24 V, $I_{max} = 30\text{ mA}$. I_{max} is consumption count of all Q_n ⁶⁾ Limit values: DC 12 V (-10 %) ... DC 24 V (+20 %). Operation in short-circuit protected network max. 8 A

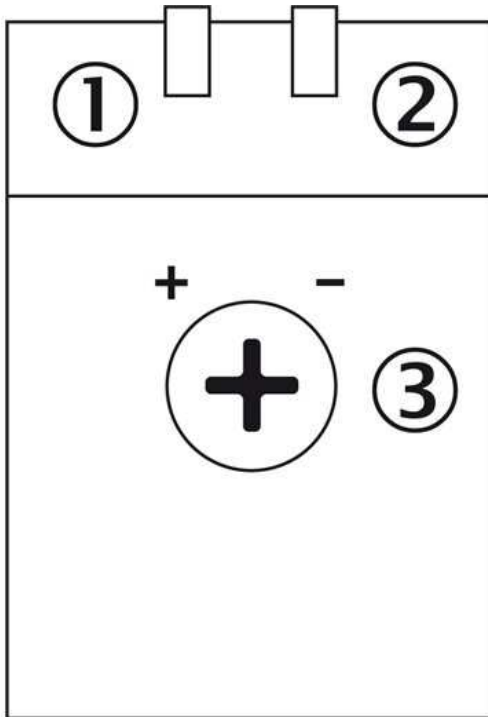
Ambient data

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

Dimensional drawing

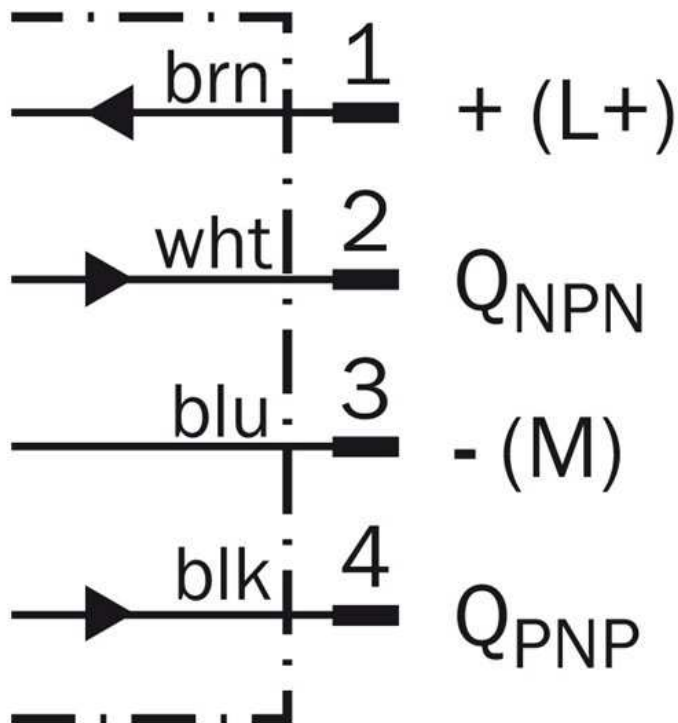


Adjustments



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

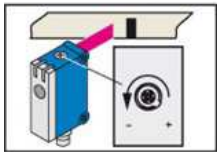
Connection diagram



Setting the switching threshold

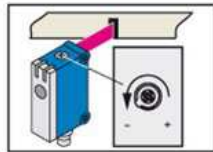
For example dark switching

1. Position background



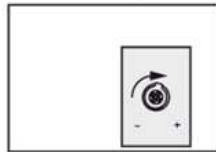
Start at "+" (right-hinged).
Turn potentiometer in direction "+" until the yellow LED goes out.

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

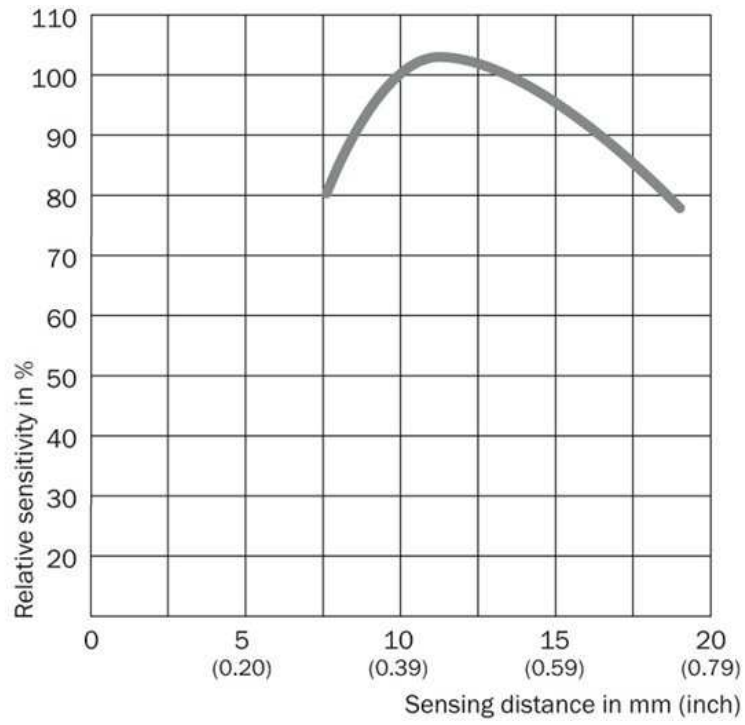
Dark switching: yellow LED = switching output Q

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



Australia

Phone +61 3 9457 0600
1800 33 48 02 – tollfree
E-Mail sales@sick.com.au

Belgium/Luxembourg

Phone +32 (0)2 466 55 66
E-Mail info@sick.be

Brasil

Phone +55 11 3215-4900
E-Mail marketing@sick.com.br

Canada

Phone +1 905 771 14 44
E-Mail information@sick.com

Česká republika

Phone +420 2 57 91 18 50
E-Mail sick@sick.cz

China

Phone +86 4000 121 000
E-Mail info.china@sick.net.cn
Phone +852-2153 6300
E-Mail ghk@sick.com.hk

Danmark

Phone +45 45 82 64 00
E-Mail sick@sick.dk

Deutschland

Phone +49 211 5301-301
E-Mail info@sick.de

España

Phone +34 93 480 31 00
E-Mail info@sick.es

France

Phone +33 1 64 62 35 00
E-Mail info@sick.fr

Great Britain

Phone +44 (0)1727 831121
E-Mail info@sick.co.uk

India

Phone +91-22-4033 8333
E-Mail info@sick-india.com

Israel

Phone +972-4-6881000
E-Mail info@sick-sensors.com

Italia

Phone +39 02 27 43 41
E-Mail info@sick.it

Japan

Phone +81 (0)3 5309 2112
E-Mail support@sick.jp

Magyarország

Phone +36 1 371 2680
E-Mail office@sick.hu

Nederland

Phone +31 (0)30 229 25 44
E-Mail info@sick.nl

Norge

Phone +47 67 81 50 00
E-Mail sick@sick.no

Österreich

Phone +43 (0)22 36 62 28 8-0
E-Mail office@sick.at

Polska

Phone +48 22 837 40 50
E-Mail info@sick.pl

România

Phone +40 356 171 120
E-Mail office@sick.ro

Russia

Phone +7-495-775-05-30
E-Mail info@sick.ru

Schweiz

Phone +41 41 619 29 39
E-Mail contact@sick.ch

Singapore

Phone +65 6744 3732
E-Mail sales.gsg@sick.com

Slovenija

Phone +386 (0)1-47 69 990
E-Mail office@sick.si

South Africa

Phone +27 11 472 3733
E-Mail info@sickautomation.co.za

South Korea

Phone +82 2 786 6321/4
E-Mail info@sickkorea.net

Suomi

Phone +358-9-25 15 800
E-Mail sick@sick.fi

Sverige

Phone +46 10 110 10 00
E-Mail info@sick.se

Taiwan

Phone +886 2 2375-6288
E-Mail sales@sick.com.tw

Türkiye

Phone +90 (216) 528 50 00
E-Mail info@sick.com.tr

United Arab Emirates

Phone +971 (0) 4 88 65 878
E-Mail info@sick.ae

USA/México

Phone +1(952) 941-6780
1 (800) 325-7425 – tollfree
E-Mail info@sickusa.com

More representatives and agencies
at www.sick.com