Online data sheet



KTM-MP11181P

KTM Prime

CONTRAST SENSORS

SICK
Sensor Intelligence.



Ordering information

Type	Part no.
KTM-MP11181P	1072473

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

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 spot size	1.5 mm x 6.5 mm
Light spot direction	Vertical [2]
Max. web speed	1 m/s [3]
Adjustment	Teach-in button
Teach-in mode	2-point teach-in static/dynamic + proximity to mark
Output function	Light/dark switching

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

Mechanics/electronics

Supply voltage	12 V DC ... 24 V DC [1]
Ripple	≤ 5 V_{pp} [2]
Power consumption	< 50 mA [3]
Switching frequency	15 kHz [4]
Response time	32 µs [5]

[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] At supply voltage > 24 V, I_{max} = 30 mA. I_{max} is consumption count of all Q_n.

Jitter	15 µs
Switching output	PNP
Switching output (voltage)	PNP: HIGH = V_S– ≤ 2 V / LOW approx. 0 V
Switching output	Light/dark switching
Output current $I_{max.}$	50 mA [6]
Input, dynamic teach-in (ET)	PNP: Teach: U = 10,8 V ... < U_V Run: U < 2 V or open
Retention time (ET)	28 ms, non-volatile memory
Connection type	Male connector M8, 4-pin
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	ABS

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Ambient data

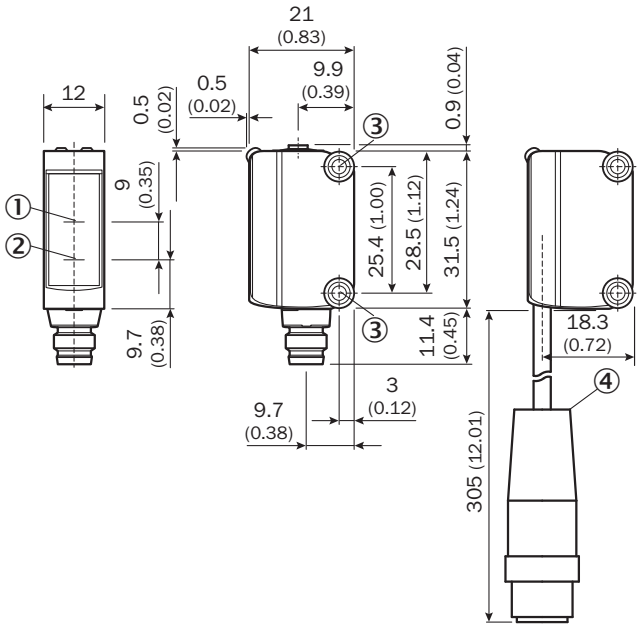
Ambient operating temperature	–10 °C ... +55 °C
Ambient storage temperature	–20 °C ... +75 °C
Shock load	According to IEC 60068
UL File No.	NRKH.E348498 & NRKH7.E348498

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

Dimensional drawing (Dimensions in mm (inch))

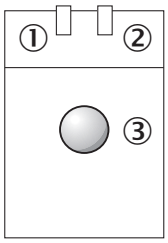
KTM Prime



① Optical axis receiver
② Optical axis sender
③ M3 mounting hole
④ Cable with male connector M12 (only KTM-xxxxx2x)

Adjustments

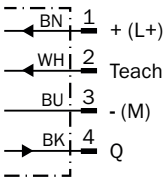
KTM Prime



① Status indicator LED, yellow: Status switching output Q (dark switching)
② LED indicator green: Supply voltage active
③ Teach-in button

Connection diagram

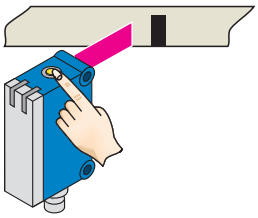
cd-092



Concept of operation

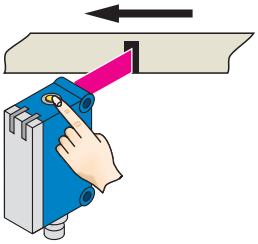
Teach-in dynamic

1. Position background

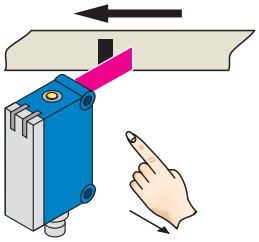


Press the teach-in button and keep it pressed. LED flashing slowly.

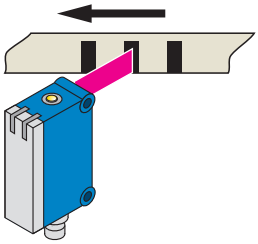
2. Move at least the mark and background using the light spot.



Keep the teach-in button > 3 < 30 s pressed.

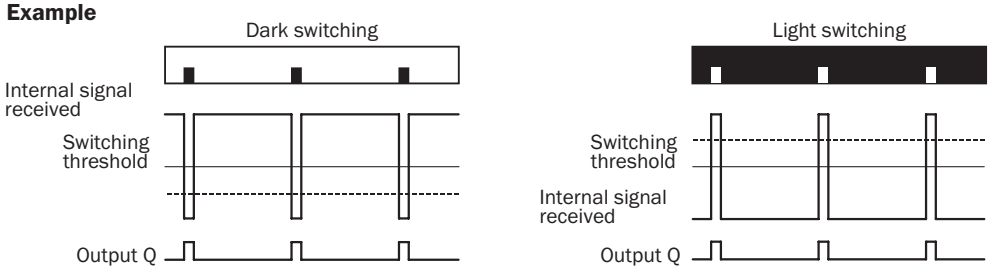


Release the teach-in button.



Yellow LED will illuminate, when emitted light is on the mark.

Example



Switching characteristics
The optimum emitted light is selected automatically (at RGB variants).
Static teach-in: light/dark setting is defined using teach-in sequence.
Dynamic teach-in: switching output active on mark, if background is longer in the field of view during the teach-in.
The switching threshold is set in the center between the background and the mark.

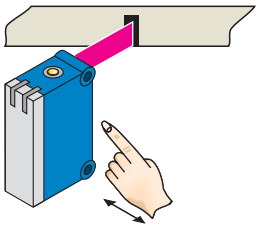
If the button is pressed again within 10 s of the teach (> 20 ms < 10 s), the relative switching threshold is placed 75 % between mark (100 %) and background (0 %) (dotted line in Figure).
Teach-in can also be performed using an external control signal.

Keylock activation and deactivation: hold down teach-in button > 30 s.

Teach-in failure: yellow LED indicator and the transmitted light of the sensor flashing quickly.
For dynamic teach-in with ET signal (5 Hz) via switching output Q.

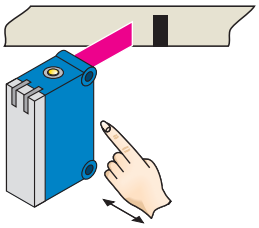
Teach-in static

1. Position mark



Press and hold teach-in button > 1 < 3 s.
Yellow LED flashes slowly.

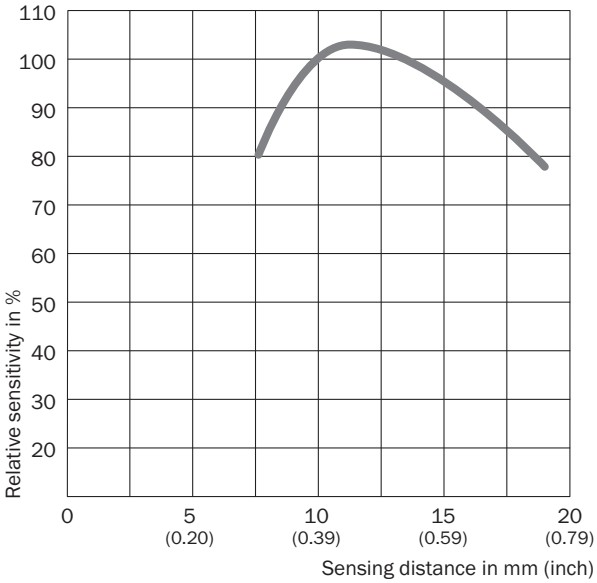
2. Position background



Press and hold teach-in button < 3 s.
Yellow LED goes out.

Characteristic curve

Sensing distance



Recommended accessories

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

	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

	Brief description	Type	Part no.
Mounting brackets and plates			
	Mounting bracket for wall mounting, stainless steel, mounting hardware included	BEF-W100-A	5311520
	Mounting bracket for floor mounting, steel, zinc coated, mounting hardware included	BEF-W100-B	5311521
	Adapter plate KT3 to KTM, steel, zinc coated, fastening screws included	BEF-AP-KTMS01	2068786
Plug connectors and cables			
	Head A: female connector, M8, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YF8U14-050VA3XLEAX	2095889
	Head A: female connector, M8, 4-pin, straight, A-coded Head B: male connector, M12, 4-pin, straight, A-coded Cable: Sensor/actuator cable, PVC, unshielded, 0.6 m	YF8U14-C60VA3M2A14	2096607

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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