Product data sheet

KTM-WP11172P

KTM Prime

CONTRAST SENSORS

SICK
Sensor Intelligence.

Ordering information

Type	Part no.
KTM-WP11172P	1082138

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, RGB [1]
Wave length	470 nm, 525 nm, 625 nm
Light emission	Long side of housing
Light spot size	1.5 mm x 6.5 mm
Light spot direction	Vertical [2]
Receiving filters	None
Adjustment	Teach-in button
Teach-in mode	2-point teach-in static/dynamic + proximity to mark ET: Teach-in static

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

[2] In relation to long side of housing.

Mechanics/electronics

Supply voltage	12 V DC ... 24 V DC [1]
Ripple	≤ 5 V_{pp} [2]
Current consumption	< 50 mA [3]
Switching frequency	15 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 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.

Response time	32 µs [5]
Jitter	15 µs
Switching output	PNP
Switching output (voltage)	PNP: HIGH = V_S– ≤ 2 V / LOW approx. 0 V
Switching mode	Light/dark switching
Output current $I_{max.}$	50 mA [6]
Input, static teach-in (ET)	PNP: Teach: U = 10,8 V ... < U_V PNP: Run: U < 2 V or open
Retention time (ET)	28 ms, non-volatile memory
Time delay	None
Connection type	Cable with M12 male connector, 4-pin, 0.2 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
Indication	LED indicator green: power on LED indicator, yellow: Status switching output Q

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[3] Without load.
[4] With light/dark ratio 1:1.
[5] Signal transit time with resistive load.
[6] Total current of all Outputs.

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
ECl@ss 10.0	27270906
ECl@ss 11.0	27270906

ETIM 5.0	EC001820
ETIM 6.0	EC001820
ETIM 7.0	EC001820
UNSPSC 16.0901	39121528

Connection/PIN assignment

Connection type	Cable with M12 male connector, 4-pin, 0.2 m
PIN assignment	
BN 1	+ (L+)
WH 2	ET
BU 3	- (M)
BK 4	Q

Dimensional drawing (Dimensions in mm (inch))

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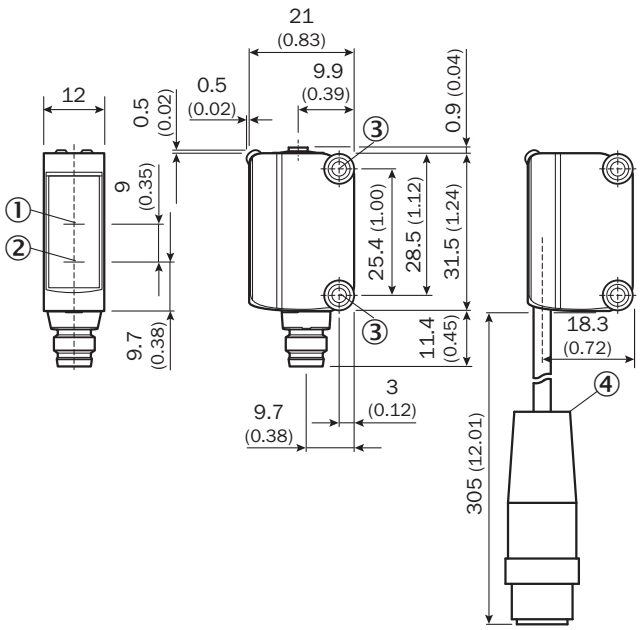

① Optical axis, receiver
② Optical axis, sender
③ M3 mounting hole
④ Cable with male connector M12 (only KTM-xxxxx2x)

Adjustments

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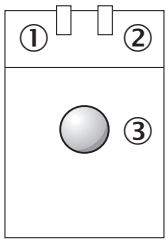
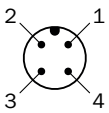


① Status indicator LED, yellow: Status switching output Q (dark switching)
② LED indicator green: Supply voltage active
③ Teach-in button

Connection type

See table: Connection/PIN assignment

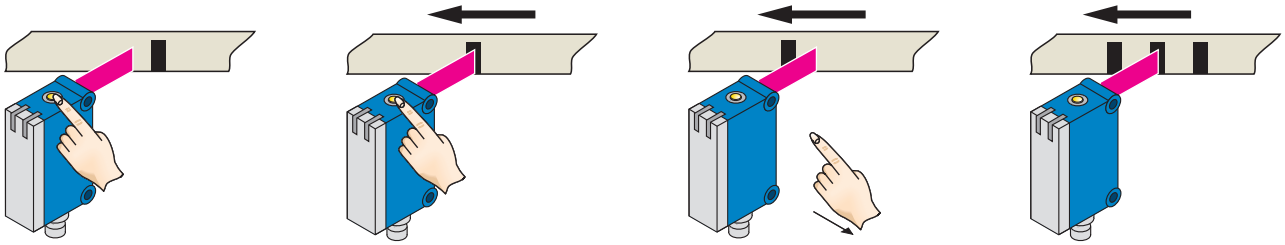


Concept of operation

Setting the switching threshold (dynamic)

1. Position background

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



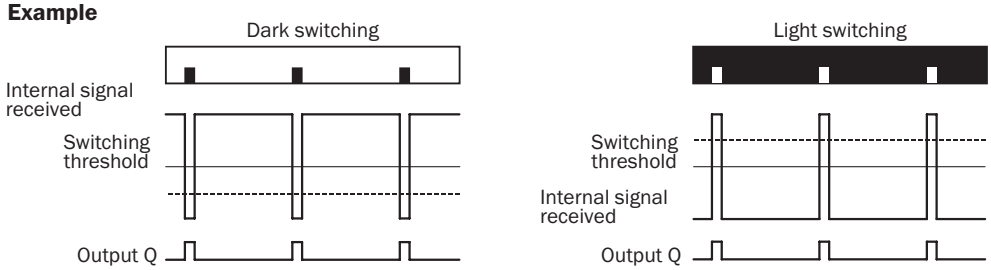
Press the teach-in button and keep it pressed. LED flashing slowly.

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.

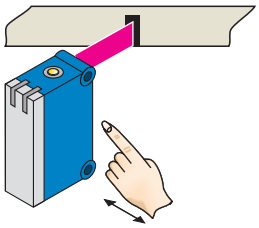
If the button is pressed again within 10 s of the teach (> 20 ms < 10 s), the relative switching threshold is placed 75 % between mark (100 %) and background (0 %) (dotted line in Figure).
Teach-in can also be performed using an external control signal.

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.

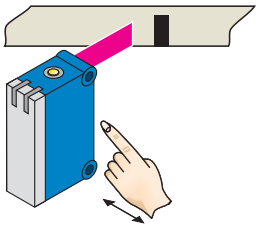
Setting the switching threshold (static)

1. Position mark



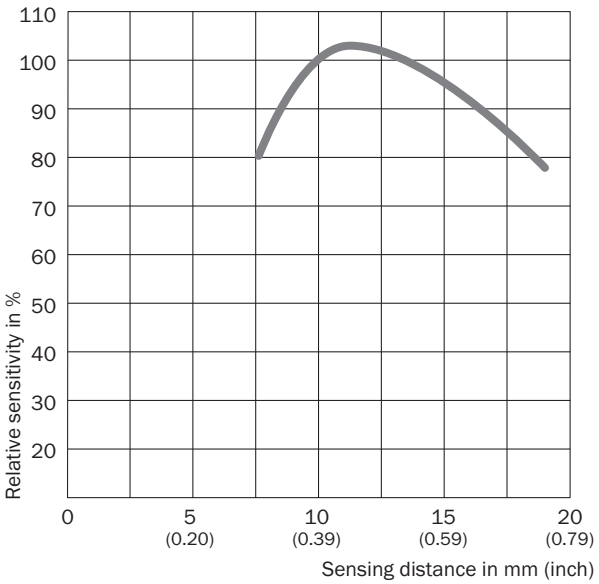
Press and hold teach-in button > 1 < 3 s.
Yellow LED flashes slowly.

2. Position background



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

Sensing distance



Recommended accessories

	Brief description	Type	Part no.
Mounting brackets and plates			
	Mounting bracket for wall mounting, stainless steel, mounting hardware included	BEF-W100-A	5311520
Plug connectors and cables			
	Head A: female connector, M12, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YF2A14-050VB3XLEAX	2096235

	Brief description	Type	Part no.
	Head A: male connector, M12, 4-pin, straight Head B: - Cable: unshielded	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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Sensor Intelligence.