KTM-WN11182P

KTM

CONTRAST SENSORS

SICK
Sensor Intelligence.

Ordering information

Type	part no.
KTM-WN11182P	1062150

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

Illustration may differ

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	Small
Light source	LED, RGB [1]
Wave length	470 nm, 525 nm, 625 nm
Light emission	Long side of housing
Light spot size	1.6 mm x 9.5 mm
Light spot direction	Vertical [2]
Receiving filters	None
Adjustment	Teach-in button
Teach-in mode	2-point teach-in static/dynamic + proximity to markET: Teach-in dynamic

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

[2] In relation to long side of housing.

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 fall below or exceed 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	NPN
Switching output (voltage)	NPN: HIGH = approx. U_V / LOW ≤ 2 V
Switching mode	Light/dark switching
Output current I$_{max.}$	50 mA [6]
Input, dynamic teach-in (ET)	NPN: Teach: U < 2 VNPN: Run: U_V - 2 V or open
Retention time (ET)	28 ms, non-volatile memory
Time delay	None
Protection class	III
Circuit protection	U_V connections, reverse polarity protectedOutput Q short-circuit protectedInterference pulse suppression
Enclosure rating	IP67

[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] Signal transit time with resistive load.

[6] Total current of all Outputs.

Mechanics

Housing material	ABS
Display	LED indicator green: power onLED indicator, yellow: Status switching output Q
Optics material	PMMA
Connection type	Cable with M12 male connector, 4-pin, 0.2 m
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
UL File No.	NRKH.E348498 & NRKH7.E348498

Connection type/pinouts

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

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)	✓

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

Dimensional drawing KTM-Mxxxxx2P, KTM-Wxxxxx2P
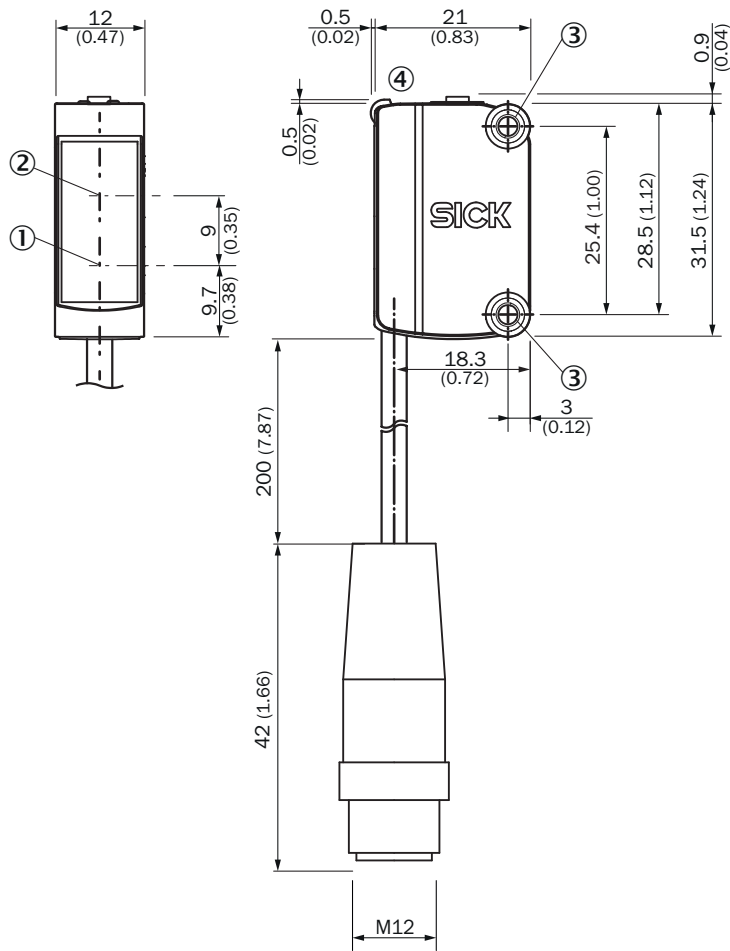
Dimensions in mm (inch)
① Center of optical axis, sender
② Center of optical axis, receiver
③ Mounting holes M3
④ display and adjustment elements

Pinouts, see table Technical data: Connection type/pinouts
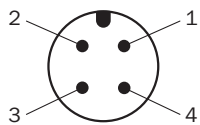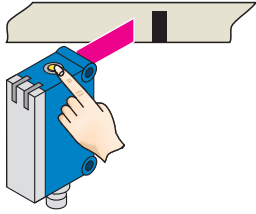
M12 male connector, 4-pin, A-coding

display and adjustment elements
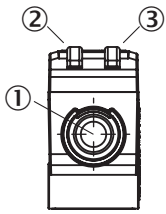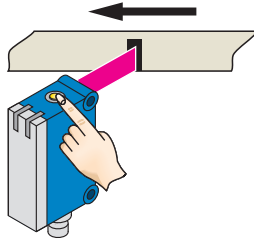
① Teach-in button
② LED yellow
③ LED green

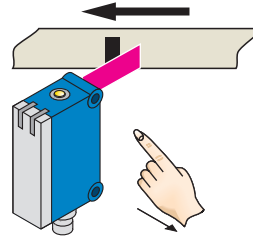## Setting the switching threshold (dynamic)

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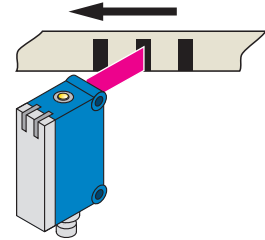
Yellow LED will illuminate, when emitted light is on the mark.

Example

Dark switching

Light switching

Internal signal received

Switching threshold

Output Q

Switching threshold

Internal signal received
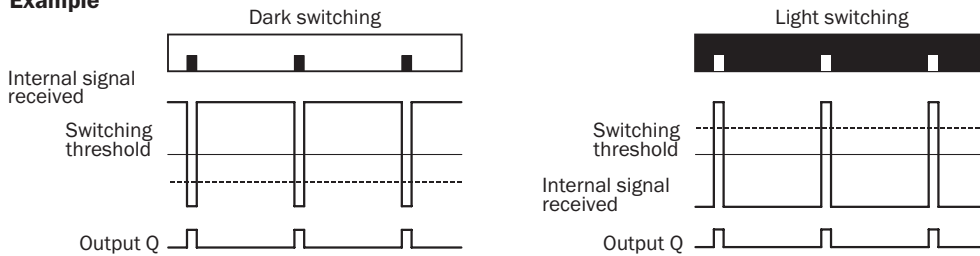
Output Q

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.
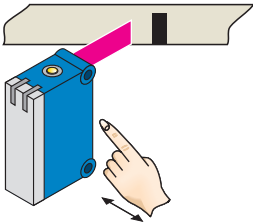For dynamic teach-in with ET signal (5 Hz) via switching output Q.

Setting the switching threshold (static)
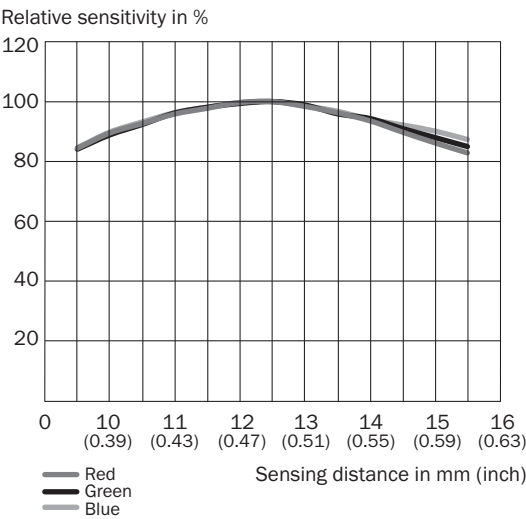
1. Position mark

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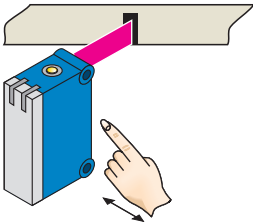
Press and hold teach-in
button > 1 < 3 s.
Yellow LED flashes slowly.

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

Sensing distance

Relative sensitivity in %

Red
Green
Blue

Sensing distance in mm (inch)

Recommended accessories

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

	Brief description	Type	part no.
Mounting systems			
	• **Description:** Mounting bracket for wall mounting • **Material:** Stainless steel • **Details:** Stainless steel • **Items supplied:** Mounting hardware included • **Suitable for:** W8, W8G, W8 Laser, W8 Inox, G6, G6 Inox, W100 Laser, W100-2, KTM Core, KTM Prime, CSM, LUTM, W4S	BEF-W100-A	5311520

Brief description	Type	part no.
connectors and cables		
• **Connection type head A:** Female connector, M12, 4-pin, straight, A-coded • **Connection type head B:** Male connector, M12, 4-pin, straight, A-coded • **Signal type:** Sensor/actuator cable • **Cable:** 5 m, 4-wire, PVC • **Description:** Sensor/actuator cable, unshielded • **Application:** Zones with chemicals, Uncontaminated zones	YF2A14-050VB3M2A14	2096600
• **Connection type head A:** Female connector, M12, 4-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 5 m, 4-wire, PVC • **Description:** Sensor/actuator cable, unshielded • **Application:** Zones with chemicals, Uncontaminated zones	YF2A14-050VB3XLEAX	2096235