Product family overview



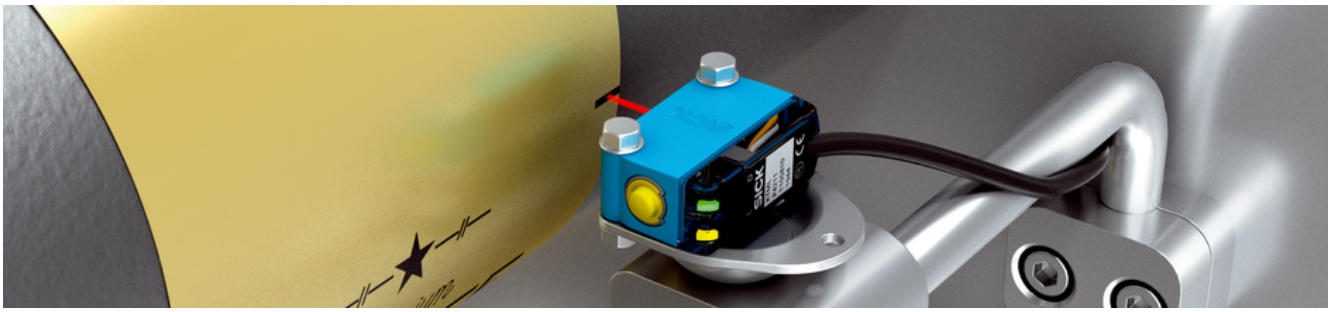
KTM Prime

Mini, easy, speedy, robust

CONTRAST SENSORS

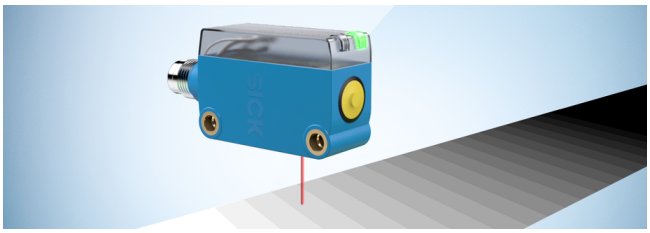
SICK
Sensor Intelligence.

Reliable and accurate detection

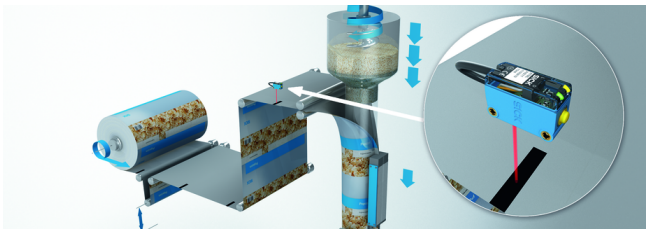


Detects minor differences in contrast and glossy materials

In addition to differentiating between black and white, this sensor can also detect different shades. Its high resolution of 20 gray tones guarantees it can detect even the smallest differences in contrast. With the new ASIC in the sensor, print marks on a wide range of materials are reliably detected, including glossy materials such as strongly reflecting foils as well as low-contrast materials.



Even the smallest differences in contrast can be detected without a problem



Print marks are also reliably detected on glossy and reflective surfaces

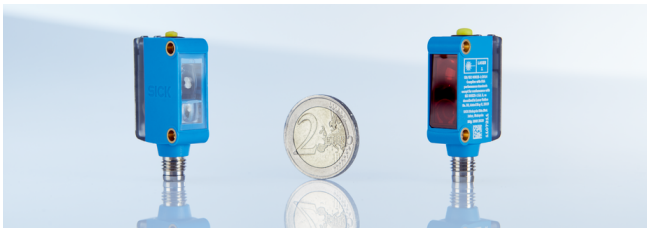
The KTM Prime enables reliable and accurate detection and thereby ensures optimal machine throughput

High level of mounting flexibility

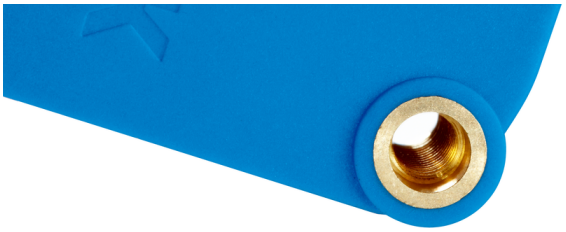


Compact, space-saving miniature housing

With a height of only 31.5 mm, the KTM Prime can also be mounted in tight spaces without a problem. The stable ABS housing and the rugged metal inserts with female thread allow for a high tightening torque for securely fixed screws.



All KTM Prime variants are at home in the space-saving miniature housing.



Metal inserts in the mounting holes allow for securely fixed screws.

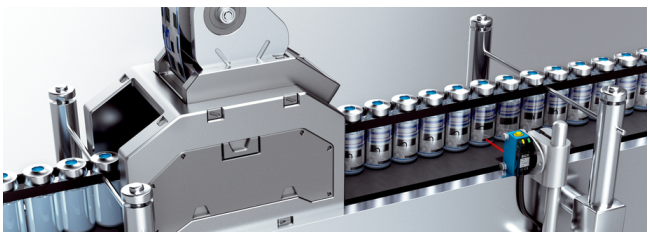
The KTM Prime offers a high level of mounting flexibility and is therefore more convenient and user-friendly

Different variants



The ideal variant for any application.

The KTM Core contrast sensor offers high performance for standard applications at a low price. Manual adjustment via potentiometer is easy and convenient. The KTM Prime combines 3-color LED technology, convenient adjustments and an IO-Link interface for additional functions. The KTM Prime is also available in the stainless-steel housing and is therefore ideal for use in harsh environments. For applications with large sampling intervals, the laser variant of the contrast sensor offers a sensing distance of up to 250 mm.



Large sampling intervals, glossy or low-contrast objects - the KTM Prime reliably masters the challenges.



Harsh ambient conditions despite the KTM Prime in a stainless steel housing Rough ambient conditions despite the KTM Prime in a stainless steel housing

The different variants of the KTM Prime fulfill all application requirements.



Technical data overview

Dimensions (W x H x D)	12 mm x 31.5 mm x 21 mm 15.25 mm x 48.6 mm x 22.2 mm
Sensing distance	12.5 mm 11 mm 50 mm 250 mm
Type of light	LED, white [1] LED, RGB [1] Laser, red [1]
Light spot size	1.5 mm x 6.5 mm Ø 2 mm (12.5 mm) 1.6 mm x 9.5 mm Ø 1.7 mm (50 mm) Ø 1.8 mm (250 mm)
Switching frequency	15 kHz [2] 4 kHz [2] 1.5 kHz [2]
Response time	32 µs [3] 35 µs [3] 0.125 ms [3] 0.333 ms [3]
Switching output	NPN PNP (depending on type)
Adjustment	2-point teach-in static/dynamic + proximity to mark ET: Teach-in dynamic ET: Teach-in dynamic: Q-signal switches during teach-in (up to 10 ms time delay for 1st mark) ET: Teach-in static + proximity to mark ET: Teach-in static (depending on type)
Connection type	Male connector M8, 4-pin Cable with M12 male connector, 4-pin 0.2 m Cable with M8 male connector, 4-pin 0.2 m Cable open end, 4-wire 2 m Cable with M12 male connector, 4-pin 0.3 m
Communication interface	- IO-Link (depending on type)

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

[2] With light/dark ratio 1:1.

[3] Signal transit time with resistive load.

Product description

Top performance for universal, space-saving use in the packaging industry, even in adverse conditions: The new KTM Prime contrast sensor from SICK features high grayscale resolution and is integrated into a small, tried-and-tested housing that is also available in stainless steel. The optimized OES4 ASIC technology and a response time of 35 µs ensure reliable and accurate detection of contrast marks, even on glossy materials. The various teach-in methods ensure greater flexibility during commissioning. The integrated IO-Link interface can be used to access the parameter settings. A KTM Prime laser variant with a sensing distance of up to 250 mm is available for long-distance applications.

At a glance

- High grayscale resolution
- Very large dynamic range means reliable detection of contrasts on glossy materials
- Static and dynamic teach-in in a single variant
- Switching frequency: Up to 15 kHz
- Sensing distance: 12.5 mm for RGB and white LED, up to 250 mm as laser variant
- IO-Link interface

Your benefits

- Small housing allows for installation even where space is limited
- Powerful, fast contrast sensor ensures high machine availability
- Three-color LED technology allows for a reliable process, with contrast marks detected even in conditions with weak contrast ratios or on glossy materials
- Various teach-in methods enable more flexible commissioning
- Long service life, even in harsh environments, thanks to stainless-steel housing; as a result, excellent plant availability and low spare parts costs
- Enhanced diagnostics and visualization as well as quick and easy format changes via IO-Link

Fields of application

- Universal use for contrast detection, even in harsh environments
- Packaging industry
- Print mark detection on continuous materials for controlling the cutting process
- Positioning tubes
- Label alignment on bottles
- Electronics industry
- Automotive industry

Ordering information

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

- **Communication interface:** -
- **Adjustment:** Teach-in button
- **Teach-in mode:** 2-point teach-in static/dynamic + proximity to mark, ET: Teach-in dynamic
- **Light emission:** Long side of housing

Light source	Sensing distance	Switching output	Light spot size	Connection type Detail	Type	Part no.
LED, RGB	≤ 11 mm	NPN	1.6 mm x 9.5 mm	Cable with M12 male connector, 4-pin	KTM-WN1A182V	1062148
		PNP	1.6 mm x 9.5 mm	Cable with M12 male connector, 4-pin	KTM-WP1A182V	1052956
					KTM-WP1A282V	1081373
	≤ 12.5 mm	NPN	1.6 mm x 9.5 mm	Cable open end, 4-wire	KTM-WN11184P	1077662
				Cable with M12 male connector, 4-pin	KTM-WN11182P	1062150
					KTM-WN11182PS03	1072045
				Male connector M8, 4-pin	KTM-WN11181P	1062200
		PNP	1.6 mm x 9.5 mm	Cable with M12 male connector, 4-pin	KTM-WP11182P	1062201
					KTM-WP11282P	1072002
				Male connector M8, 4-pin	KTM-WP11181P	1062199

Light source	Sensing distance	Switching output	Light spot size	Connection type Detail	Type	Part no.
LED, white	≤ 12.5 mm	NPN	1.5 mm x 6.5 mm	Male connector M8, 4-pin	KTM-MN11181P	1075592
			Ø 2 mm (12.5 mm)	Male connector M8, 4-pin	KTM-MN31181P	1071947
		PNP	1.5 mm x 6.5 mm	Male connector M8, 4-pin	KTM-MP11181P	1072473
			Ø 2 mm (12.5 mm)	Cable with M12 male connector, 4-pin	KTM-MP31182P	1070490
				Male connector M8, 4-pin	KTM-MP31181P	1065756
					KTM-MP31181PS01	1070701
Laser, red	≤ 50 mm	NPN	Ø 1.7 mm (50 mm)	Cable with M12 male connector, 4-pin	KTM-LN22182P	1107212
				Male connector M8, 4-pin	KTM-LN22181P	1109748
		PNP	Ø 1.7 mm (50 mm)	Cable with M12 male connector, 4-pin	KTM-LP22182P	1109747
				Male connector M8, 4-pin	KTM-LP22181P	1105835
	≤ 250 mm	NPN	Ø 1.8 mm (250 mm)	Cable with M12 male connector, 4-pin	KTM-LN55182P	1105838
				Male connector M8, 4-pin	KTM-LN55181P	1105837
		PNP	Ø 1.8 mm (250 mm)	Cable with M12 male connector, 4-pin	KTM-LP55182P	1105836
				Male connector M8, 4-pin	KTM-LP55181P	1109749

- **Communication interface:** IO-Link
- **Adjustment:** cable, IO-Link, Teach-in button
- **Teach-in mode:** 2-point teach-in static/dynamic + proximity to mark
- **Light emission:** Long side of housing

Light source	Sensing distance	Switching output	Light spot size	Connection type Detail	Type	Part no.
LED, RGB	≤ 11 mm	PNP	1.6 mm x 9.5 mm	Cable with M12 male connector, 4-pin	KTM-WP1A7A2V	1062147
	≤ 12.5 mm	NPN	1.6 mm x 9.5 mm	Male connector M8, 4-pin	KTM-WN117A1P	1061787
		PNP	1.6 mm x 9.5 mm	Male connector M8, 4-pin	KTM-WP117A1P	1061770
LED, white	≤ 12.5 mm	PNP	Ø 2 mm (12.5 mm)	Male connector M8, 4-pin	KTM-MP317A1P	1071482

- **Communication interface:** -
- **Adjustment:** Teach-in button
- **Teach-in mode:** 2-point teach-in static/dynamic + proximity to mark, ET: Teach-in dynamic: Q-signal switches during teach-in (up to 10 ms time delay for 1st mark)
- **Light source:** LED, RGB
- **Sensing distance:** ≤ 12.5 mm
- **Light spot size:** 1.6 mm x 9.5 mm
- **Connection type Detail:** male connector M8, 4-pin
- **Light emission:** Long side of housing

Switching output	Type	Part no.
NPN	KTM-WN11101PS07	1088011
PNP	KTM-WP11101PS08	1095813

- **Communication interface:** -
- **Adjustment:** Teach-in button
- **Teach-in mode:** 2-point teach-in static/dynamic + proximity to mark, ET: Teach-in static + proximity to mark, ET: Teach-in static + proximity to mark
- **Light source:** LED, RGB
- **Sensing distance:** ≤ 12.5 mm

Switching output	Light spot size	Connection type Detail	Light emission	Type	Part no.
NPN	1.6 mm x 9.5 mm	Male connector M8, 4-pin	Long side of housing	KTM-WN11101PS09	1095954

- **Communication interface:** -
- **Adjustment:** Teach-in button
- **Teach-in mode:** 2-point teach-in static/dynamic + proximity to mark, ET: Teach-in static
- **Light source:** LED, RGB
- **Sensing distance:** ≤ 12.5 mm
- **Light spot size:** 1.6 mm x 9.5 mm
- **Light emission:** Long side of housing

Switching output	Connection type Detail	Type	Part no.
NPN	Cable with M12 male connector, 4-pin	KTM-WN11172P	1082137
	Cable with M8 male connector, 4-pin	KTM-WN11173P	1084941
	Male connector M8, 4-pin	KTM-WN11171P	1082798

Switching output	Connection type Detail	Type	Part no.
PNP	Cable with M12 male connector, 4-pin	KTM-WP11172P	1082138
	Cable with M8 male connector, 4-pin	KTM-WP11173P	1084942
	Male connector M8, 4-pin	KTM-WP11171P	1082797

- **Communication interface:** IO-Link
- **Adjustment:** Teach-in button, Teach-in button
- **Teach-in mode:** 2-point teach-in static/dynamic + proximity to mark
- **Light source:** Laser, red
- **Light emission:** Long side of housing

Sensing distance	Switching output	Light spot size	Connection type Detail	Type	Part no.
≤ 50 mm	NPN	Ø 1.7 mm (50 mm)	Cable with M12 male connector, 4-pin	KTM-LN227A2P	1109744
			Male connector M8, 4-pin	KTM-LN227A1P	1105915
	PNP	Ø 1.7 mm (50 mm)	Cable with M12 male connector, 4-pin	KTM-LP227A2P	1109743
			Male connector M8, 4-pin	KTM-LP227A1P	1105832
≤ 250 mm	NPN	Ø 1.8 mm (250 mm)	Cable with M12 male connector, 4-pin	KTM-LN557A2P	1105834
			Male connector M8, 4-pin	KTM-LN557A1P	1105833
	PNP	Ø 1.8 mm (250 mm)	Cable with M12 male connector, 4-pin	KTM-LP557A2P	1109745
			Male connector M8, 4-pin	KTM-LP557A1P	1107211

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