KTX Prime

Contrast detection with TwinEye-Technology in tried-and-tested housing. Innovation in familiar housing for the very best sensor performance

CONTRAST SENSORS

SICK
Sensor Intelligence.

Technical data overview

Dimensions (W x H x D)	30 mm x 53 mm x 78.5 mm
Sensing distance	13 mm 40 mm 25 mm 150 mm 70 mm 200 mm
Type of light	LED, RGB [1]
Light spot size	0.9 mm x 3.8 mm 3.8 mm x 0.9 mm 0.9 mm x 3.9 mm Ø 0.9 mm 1.2 mm x 5.3 mm 3.9 mm x 0.9 mm 5.3 mm x 1.2 mm Ø 3.3 mm Ø 10 mm Ø 12 mm 30 mm x 35 mm
Switching frequency	11.5 kHz [2] [3] 50 kHz [2] [4] 70 kHz [2] [5] 6.25 kHz [2] [6] 25 kHz [2] [7]
Response time	42 µs [8] [9] 10 µs [10] [8] 3 µs [11] [8] 80 µs [12] [8] 20 µs [13] [8]
Switching output	Push-pull: PNP/NPN NPN PNP PNP, NPN (depending on type)
Adjustment	N-point teach-in, 2-point teach-in, teach-in dynamic, auto mode 1-point teach-in, 2-point teach-in, teach-in dynamic, auto mode 2-point teach-in (depending on type)
Connection type	Male connector M12, 5-pin / male connector M12, 4-pin (depending on type)
Communication interface	IO-Link - Analog (depending on type)

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

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

[3] Contrast mode: 35 kHz.

[4] 1-point teach-in (color mode): 16 kHz.

[5] 1-point teach-in (color mode): 23 kHz.

[6] 1-point teach-in (color mode): 2 kHz.

[7] 1-point teach-in (color mode): 8 kHz.

[8] Signal transit time with resistive load.

[9] Contrast mode: 14 µs.

[10] 1-point teach-in (color mode): 30 µs.

[11] 1-point teach-in (color mode): 9 µs.

[12] 1-point teach-in (color mode): 240 µs.

[13] 1-point teach-in (color mode): 60 µs.

Product description

Outstanding performance for a variety of applications, even with difficult framework conditions: The new KTX Prime with familiar hole pattern, high-precision RGB LED and VISTAL® housing impresses with TwinEye-Technology, color mode, high switching frequency, excellent gray line resolution, 7-segment display and IO-Link. The response time of 10 μs and a jitter of 5 μs ensure accurate detection of contrast differences, even at high machine speeds. Thanks to various teach-in processes, integrated color mode and variable sensor adjustment, commissioning is more flexible and the processes more stable. The KTX Prime provides additional diagnosis and analysis data via IO-Link. The new KTX Prime - it can easily do more.

At a glance

- TwinEye-Technology for increased depth of field and sensing distance tolerance
- 50 kHz switching frequency and 5 μs jitter
- Large dynamic range means reliable detection of contrasts on glossy materials
- 7-segment display
- Color mode
- Assembly feedback
- IO-Link and automation functions
- Flexible sensor setting thanks to various sensor parameters

Your benefits

- 1:1 replacement for existing KT series - assembly compatibility
- TwinEye-Technology for better performance on glossy or jittering materials - less machine downtime and more process stability
- Multi-functional sensor adjustment for individual sensor adjustment
- Excellent contrast resolution and a large dynamic range for good performance on complex materials
- High flexibility thanks to a range of teach-in processes
- Integrated color mode - stable detection even with complex color differences
- Job storage in sensor - flexible process design and format change
- Diagnostics and visualization as well as easy format change via IO-Link

Fields of application

- Applications in which contrast is a distinguishing feature
- Print mark detection for controlling the cutting process
- Print control in the printing industry
- Positioning tubes
- Label alignment on bottles
- Monitoring of wafers
- Roll end monitoring
- Color control in yarn or line production

Ordering information

- **Special applications:** Color Sequence
- **Communication interface:** IO-Link
- **Teach-in mode:** n-point teach-in, 2-point teach-in, teach-in dynamic, auto mode
- **Light source:** LED, RGB
- **Sensing distance:** ≤ 13 mm
- **Switching output:** push-pull: PNP/NPN
- **Light spot size:** 0.9 mm x 3.8 mm
- **Connection type Detail:** male connector M12, 5-pin
- **Device type:** standard

Light emission	Type	Part no.
Long side of housing	KTX-WB-N114125AZZZZ	1220056
Short device side	KTX-WB-N114225AZZZZ	1220042

- **Special applications:** Color Sequence
- **Communication interface:** -
- **Teach-in mode:** n-point teach-in, 2-point teach-in, teach-in dynamic, auto mode
- **Light source:** LED, RGB
- **Sensing distance:** ≤ 13 mm
- **Switching output:** push-pull: PNP/NPN
- **Light spot size:** 0.9 mm x 3.8 mm
- **Connection type Detail:** male connector M12, 5-pin
- **Device type:** standard

Light emission	Type	Part no.
Long side of housing	KTX-WB-N1141252ZZZZ	1220055
Short device side	KTX-WB-N1142252ZZZZ	1220041

- **Special applications:** standard
- **Communication interface:** IO-Link
- **Teach-in mode:** 1-point teach-in, 2-point teach-in, teach-in dynamic, auto mode
- **Light source:** LED, RGB
- **Connection type Detail:** male connector M12, 5-pin

Sensing distance	Switching output	Light spot size	Device type	Light emission	Type	Part no.
≤ 13 mm	PNP	3.8 mm x 0.9 mm	Standard	Short device side	KTX-WP9214225AZZZZ	1078081
	Push-pull: PNP/NPN	0.9 mm x 3.8 mm	Automation function, AFC90 (time stamp)	Short device side	KTX-WB9114225AA90Z	1078086
			Standard	Long side of housing	KTX-WB9114125AZZZZ	1081721
				Short device side	KTX-WB9114225AZZZZ	1078080
		3.8 mm x 0.9 mm	Standard	Long side of housing	KTX-WB9214125AZZZZ	1081722
				Short device side	KTX-WB9214225AZZZZ	1078082
					KTX-WB9214225AZZZZZZZZDZZZ	1221531
		Ø 0.9 mm	Standard	Long side of housing	KTX-WB9414125AZZZZ	1113486
≤ 25 mm	Push-pull: PNP/NPN	1.2 mm x 5.3 mm	Standard	Short device side	KTX-WB9124225AZZZZ	1078083
						1221672
		5.3 mm x 1.2 mm	Standard	Short device side	KTX-WB9224225AZZZZ	1078084
≤ 40 mm	Push-pull: PNP/NPN	3.9 mm x 0.9 mm	Standard	Long side of housing	KTX-WB9134125AZZZZ	1220792
				Short device side	KTX-WB9134225AZZZZ	1220791
≤ 70 mm	Push-pull: PNP/NPN	Ø 10 mm	Standard	Long side of housing	KTX-WB9A64125AZZZZ	1220796
				Short device side	KTX-WB9A64225AZZZZ	1220795
≤ 150 mm	Push-pull: PNP/NPN	Ø 12 mm	Standard	Long side of housing	KTX-WB9A94125AZZZZ	1220802
				Short device side	KTX-WB9A94225AZZZZ	1220801
		Ø 3.3 mm	Standard	Long side of housing	KTX-WB9494125AZZZZ	1220799
				Short device side	KTX-WB9494225AZZZZ	1220798

- **Special applications:** standard
- **Communication interface:** Analog
- **Teach-in mode:** 1-point teach-in, 2-point teach-in, teach-in dynamic, auto mode
- **Light source:** LED, RGB
- **Device type:** standard

Sensing distance	Switching output	Light spot size	Connection type Detail	Light emission	Type	Part no.
≤ 13 mm	NPN	0.9 mm x 3.8 mm	Male connector M12, 4-pin	Short device side	KTX-WN9114224IZZZZ	1078088
			Male connector M12, 5-pin	Short device side	KTX-WN9114225UZZZZ	1218271
		Ø 0.9 mm	Male connector M12, 4-pin	Short device side	KTX-WN9414224IZZZZ	1078089
	PNP	0.9 mm x 3.8 mm	Male connector M12, 4-pin	Long side of housing	KTX-WP9114124IZZZZ	1078109
				Short device side	KTX-WP9114224IZZZZ	1078087
					KTX-WP9114224UZZZZ	1078163
			Male connector M12, 5-pin	Long side of housing	KTX-WP9114125UZZZZ	1078110
				Short device side	KTX-WP9114225UZZZZ	1078090
						1078164
		3.8 mm x 0.9 mm	Male connector M12, 5-pin	Short device side	KTX-WP9214225UZZZZ	1078154
	Push-pull: PNP/NPN	0.9 mm x 3.8 mm	Male connector M12, 4-pin	Long side of housing	KTX-WB9114124UZZZZ	1084196
				Short device side	KTX-WB9114224IZZZZ	1078160
					KTX-WB9114224UZZZZ	1084195
						1219610
			Male connector M12, 5-pin	Long side of housing	KTX-WB91141259ZZZZ	1079090
					KTX-WB9114125UZZZZ	1078111
				Short device side	KTX-WB91142259ZZZZ	1078096
					KTX-WB9114225UZZZZ	1078091
						1219608
		3.8 mm x 0.9 mm	Male connector M12, 5-pin	Long side of housing	KTX-WB9214125UZZZZ	1078112
				Short device side	KTX-WB9214225UZZZZ	1078092
						1219609
≤ 25 mm	Push-pull: PNP/NPN	1.2 mm x 5.3 mm	Male connector M12, 5-pin	Long side of housing	KTX-WB9124125UZZZZ	1078113
				Short device side	KTX-WB9124225UZZZZ	1078093

Sensing distance	Switching output	Light spot size	Connection type Detail	Light emission	Type	Part no.
≤ 40 mm	NPN	0.9 mm x 3.9 mm	Male connector M12, 4-pin	Short device side	KTX-WN9234224IZZZZ	1078139
	PNP	3.9 mm x 0.9 mm	Male connector M12, 4-pin	Short device side	KTX-WP9134224IZZZZ	1078138
	Push-pull: PNP/NPN	3.9 mm x 0.9 mm	Male connector M12, 5-pin	Long side of housing	KTX-WB9134125UZZZZ	1220793
				Short device side	KTX-WB9134225UZZZZ	1078140
≤ 70 mm	Push-pull: PNP/NPN	Ø 10 mm	Male connector M12, 5-pin	Long side of housing	KTX-WB9A64125UZZZZ	1078148
				Short device side	KTX-WB9A64225UZZZZ	1078141
≤ 200 mm	PNP	30 mm x 35 mm	Male connector M12, 4-pin	Long side of housing	KTX-WP9GA4124IZZZZ	1078157

- **Special applications:** transmission color selection via cable
- **Communication interface:** Analog
- **Teach-in mode:** 2-point teach-in
- **Light source:** LED, RGB
- **Sensing distance:** ≤ 13 mm
- **Switching output:** PNP

Light spot size	Connection type Detail	Device type	Light emission	Type	Part no.
0.9 mm x 3.8 mm	Male connector M12, 5-pin	Standard	Long side of housing	KTX-WP9114125UZZZZ	1223321

- **Special applications:** transmission color selection via cable
- **Communication interface:** Analog
- **Teach-in mode:** 1-point teach-in, 2-point teach-in, teach-in dynamic, auto mode
- **Light source:** LED, RGB
- **Sensing distance:** ≤ 13 mm
- **Switching output:** PNP

Light spot size	Connection type Detail	Device type	Light emission	Type	Part no.
3.8 mm x 0.9 mm	Male connector M12, 5-pin	Standard	Long side of housing	KTX-WP9214125UZZZZ	1223322

- **Special applications:** High Precision
- **Communication interface:** IO-Link
- **Teach-in mode:** 1-point teach-in, 2-point teach-in, teach-in dynamic, auto mode
- **Light source:** LED, RGB
- **Sensing distance:** ≤ 13 mm
- **Switching output:** push-pull: PNP/NPN
- **Light spot size:** 0.9 mm x 3.8 mm
- **Connection type Detail:** male connector M12, 5-pin
- **Device type:** standard

Light emission	Type	Part no.
Long side of housing	KTX-WB9114125AZZZZ	1081728
Short device side	KTX-WB9114225AZZZZ	1081727

- **Special applications:** standard
- **Communication interface:** -
- **Teach-in mode:** 1-point teach-in, 2-point teach-in, teach-in dynamic, auto mode
- **Light source:** LED, RGB
- **Device type:** standard

Sensing distance	Switching output	Light spot size	Connection type Detail	Light emission	Type	Part no.
≤ 13 mm	NPN	0.9 mm x 3.8 mm	Male connector M12, 4-pin	Long side of housing	KTX-WN91141242ZZZZ	1078102
				Short device side	KTX-WN91142242ZZZZ	1078071
			Male connector M12, 5-pin	Long side of housing	KTX-WN91141252ZZZZ	1078098
					KTX-WN91141252ZZZZZ	1109467

Sensing distance	Switching output	Light spot size	Connection type Detail	Light emission	Type	Part no.
				Short device side	KTX-WN91142252ZZZZ	1078067
						1219737
		3.8 mm x 0.9 mm	Male connector M12, 4-pin	Short device side	KTX-WN92142242ZZZZ	1078073
			Male connector M12, 5-pin	Long side of housing	KTX-WN92141252ZZZZ	1078100
				Short device side	KTX-WN92142252ZZZZ	1078069
		Ø 0.9 mm	Male connector M12, 5-pin	Short device side	KTX-WN94142252ZZZZ	1078153
	PNP	0.9 mm x 3.8 mm	Male connector M12, 4-pin	Long side of housing	KTX-WP91141242ZZZZ	1078101
				Short device side	KTX-WP91142242ZZZZ	1078070
			Male connector M12, 5-pin	Long side of housing	KTX-WP91141252ZZZZ	1078097
					KTX-WP91141252ZZZZZ	1109466
				Short device side	KTX-WP91142252ZZZZ	1078066
						1078155
						1078158
						1219607
						1219605
		3.8 mm x 0.9 mm	Male connector M12, 4-pin	Long side of housing	KTX-WP92141242ZZZZ	1078103
				Short device side	KTX-WP92142242ZZZZ	1078072
			Male connector M12, 5-pin	Long side of housing	KTX-WP92141252ZZZZ	1078099
				Short device side	KTX-WP92142252ZZZZ	1078068
						1128351
	PNP, NPN	0.9 mm x 3.8 mm	Male connector M12, 4-pin	Long side of housing	KTX-WS91141242ZZZZ	1078167
				Short device side	KTX-WS91142242ZZZZ	1078166
	Push-pull: PNP/NPN	0.9 mm x 3.8 mm	Male connector M12, 5-pin	Short device side	KTX-WB91142252ZZZZ	1219736
		Ø 0.9 mm	Male connector M12, 5-pin	Long side of housing	KTX-WB94141252ZZZZ	1078095
				Short device side	KTX-WB94142252ZZZZ	1078094

Sensing distance	Switching output	Light spot size	Connection type Detail	Light emission	Type	Part no.
≤ 25 mm	NPN	1.2 mm x 5.3 mm	Male connector M12, 4-pin	Long side of housing	KTX-WN91241242ZZZZ	1078107
				Short device side	KTX-WN91242242ZZZZ	1078078
			Male connector M12, 5-pin	Long side of housing	KTX-WN91241252ZZZZ	1078105
				Short device side	KTX-WN91242252ZZZZ	1078075
	PNP	1.2 mm x 5.3 mm	Male connector M12, 4-pin	Long side of housing	KTX-WP91241242ZZZZ	1078106
				Short device side	KTX-WP91242242ZZZZ	1078077
			Male connector M12, 5-pin	Long side of housing	KTX-WP91241252ZZZZ	1078104
				Short device side	KTX-WP91242252ZZZZ	1078074
		5.3 mm x 1.2 mm	Male connector M12, 4-pin	Long side of housing	KTX-WP92241242ZZZZ	1078108
				Short device side	KTX-WP92242242ZZZZ	1078079
			Male connector M12, 5-pin	Short device side	KTX-WP92242252ZZZZ	1078076
≤ 40 mm	NPN	3.9 mm x 0.9 mm	Male connector M12, 4-pin	Long side of housing	KTX-WN91341242ZZZZ	1078145
				Short device side	KTX-WN91342242ZZZZ	1078136
			Male connector M12, 5-pin	Short device side	KTX-WN91342252ZZZZ	1078133
	PNP	0.9 mm x 3.9 mm	Male connector M12, 4-pin	Short device side	KTX-WP92342242ZZZZ	1078137
			Male connector M12, 5-pin	Short device side	KTX-WP92342252ZZZZ	1078134
		3.9 mm x 0.9 mm	Male connector M12, 4-pin	Long side of housing	KTX-WP91341242ZZZZ	1078146
				Short device side	KTX-WP91342242ZZZZ	1078135
			Male connector M12, 5-pin	Long side of housing	KTX-WP91341252ZZZZ	1078147
				Short device side	KTX-WP91342252ZZZZ	1078132

- **Special applications:** High Precision
- **Communication interface:** -
- **Teach-in mode:** 1-point teach-in, 2-point teach-in, teach-in dynamic, auto mode
- **Light source:** LED, RGB
- **Sensing distance:** ≤ 13 mm
- **Connection type Detail:** male connector M12, 5-pin
- **Device type:** standard

Switching output	Light spot size	Light emission	Type	Part no.
NPN	0.9 mm x 3.8 mm	Long side of housing	KTX-WN91141252ZZZZ	1081726
		Short device side	KTX-WN91142252ZZZZ	1081724
PNP	0.9 mm x 3.8 mm	Long side of housing	KTX-WP91141252ZZZZ	1081725
		Short device side	KTX-WP91142252ZZZZ	1081723
	3.8 mm x 0.9 mm	Short device side	KTX-WP92142252ZZZZ	1220994

- **Special applications:** blinking patter if teach-in is faulty
- **Communication interface:** -
- **Teach-in mode:** 1-point teach-in, 2-point teach-in, teach-in dynamic, auto mode
- **Light source:** LED, RGB
- **Sensing distance:** ≤ 13 mm
- **Switching output:** PNP

Light spot size	Connection type Detail	Device type	Light emission	Type	Part no.
0.9 mm x 3.8 mm	Male connector M12, 5-pin	Standard	Long side of housing	KTX-WP91141252ZZZZ	1222540

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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