



# KTL180-ML4P51ZZZZZ

KTL180

CONTRAST SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

Type	Part no.
KTL180-ML4P51ZZZZZ	6068619

Other models and accessories → [www.sick.com/KTL180](http://www.sick.com/KTL180)

### Detailed technical data

#### Features

<b>Special applications</b>	-
<b>Device type</b>	Base unit
<b>Indication</b>	Display
<b>Display</b>	LED status display / 2x 4-character digital dual displays. Set value (green indicator) and actual value (red indicator) are displayed simultaneously, display of parameters
<b>Dimensions (W x H x D)</b>	10.5 mm x 33.2 mm x 71.9 mm
<b>Sensing range</b>	0 mm ... 30 mm, Proximity system <sup>1)</sup>
<b>Sensing distance</b>	≤ 30 mm <sup>2)</sup>
<b>Housing design</b>	For fiber-optic
<b>Light source</b>	LED, white <sup>3)</sup>
<b>Angle of dispersion</b>	Approx. 65° <sup>4)</sup>
<b>Wave length</b>	400 nm ... 750 nm
<b>Teach-in mode</b>	1-point teach-in, 2-point teach-in, teach-in dynamic
<b>Delay time</b>	Adjustable
<b>Special features</b>	Multi-function input, base unit for BUS mode
<b>Delivery status</b>	Teach-in dynamic
<b>Parameter presets</b>	None

<sup>1)</sup> Objects to be sensed with 90% reflectivity (based on DIN 5033 white standard). Sensing range depends on fiber-optic cable.

<sup>2)</sup> Depends on the fiber used.

<sup>3)</sup> Average service life: 100,000 h at T<sub>U</sub> = +25 °C.

<sup>4)</sup> See LL3 fiber-optic data.

#### Mechanics/electronics

<b>Supply voltage</b>	12 V DC ... 24 V DC <sup>1)</sup>
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<sup>1)</sup> +/- 10%.

<sup>2)</sup> May not exceed or fall below U<sub>V</sub> tolerances.

<sup>3)</sup> Total current of all Outputs.

<sup>4)</sup> Minimum pulse 300 μs.

<b>Ripple</b>	$\leq 10\%$ <sup>2)</sup>
<b>Current consumption</b>	$\geq 50$ mA (at 24 V)
<b>Switching frequency</b>	31.2 kHz
<b>Response time</b>	16 $\mu$ s
<b>Jitter</b>	8 $\mu$ s
<b>Number of switching outputs</b>	2
<b>Switching output</b>	NPN
<b>Switching mode</b>	Light/dark switching
<b>Output current I<sub>max.</sub></b>	100 mA <sup>3)</sup>
<b>Input, blanking input (AT)</b>	Blanked: $U < 1$ V; free-running: $U = 1.5$ V ... $< U_V$ <sup>4)</sup>
<b>Input, light/dark (L/D)</b>	Light: $U = 1.5$ V; light: $U < 1$ V <sup>4)</sup>
<b>Retention time (ET)</b>	25 ms, non-volatile memory
<b>Connection type</b>	Cable with plug M12, 5-pin, 300 mm
<b>Protection class</b>	III
<b>Circuit protection</b>	$U_V$ connections, reverse polarity protected In-/outputs short-circuit protected Interference pulse suppression Outputs overcurrent and short-circuit protected
<b>Enclosure rating</b>	IP50
<b>Weight</b>	71 g
<b>Housing material</b>	Plastic, VISTAL®

<sup>1)</sup> +- 10%.

<sup>2)</sup> May not exceed or fall below  $U_V$  tolerances.

<sup>3)</sup> Total current of all Outputs.

<sup>4)</sup> Minimum pulse 300  $\mu$ s.

## Ambient data

<b>Ambient operating temperature</b>	-25 °C ... +55 °C
<b>Ambient temperature, storage</b>	-40 °C ... +70 °C
<b>Shock load</b>	IEC 60068-2-27
<b>UL File No.</b>	EN 60947-5-2

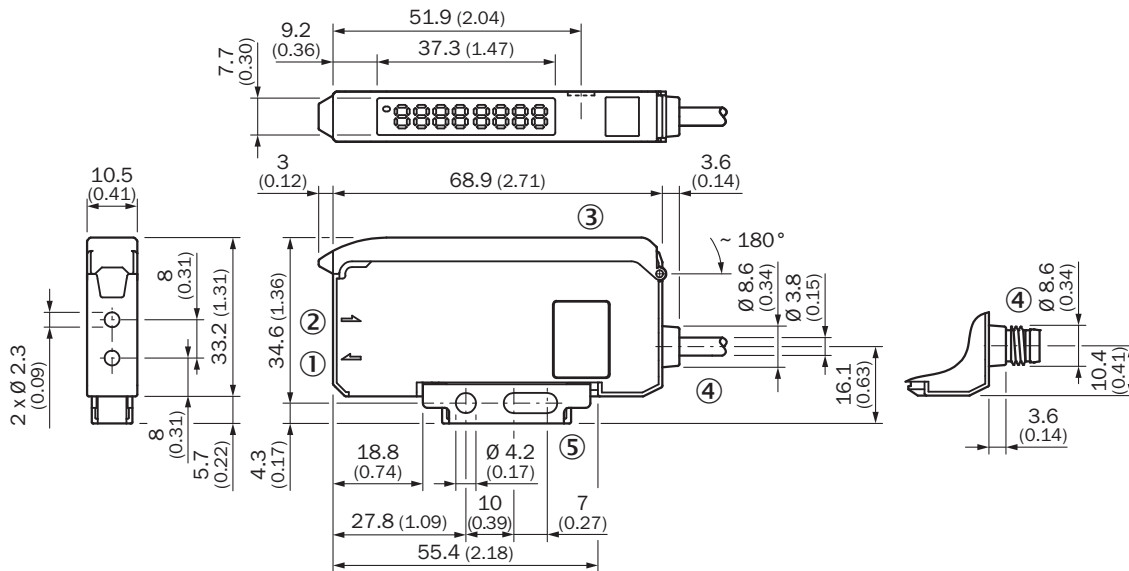
## Classifications

<b>ECLASS 5.0</b>	27270906
<b>ECLASS 5.1.4</b>	27270906
<b>ECLASS 6.0</b>	27270906
<b>ECLASS 6.2</b>	27270906
<b>ECLASS 7.0</b>	27270906
<b>ECLASS 8.0</b>	27270906
<b>ECLASS 8.1</b>	27270906
<b>ECLASS 9.0</b>	27270906
<b>ECLASS 10.0</b>	27270906
<b>ECLASS 11.0</b>	27270906
<b>ECLASS 12.0</b>	27270906

<b>ETIM 5.0</b>	EC001820
<b>ETIM 6.0</b>	EC001820
<b>ETIM 7.0</b>	EC001820
<b>ETIM 8.0</b>	EC001820
<b>UNSPSC 16.0901</b>	39121528

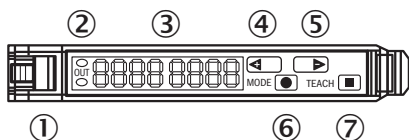
### Dimensional drawing (Dimensions in mm (inch))

Bus type



- ① Sender LED, installation of LL3 fibre-optic cable (sender fibre)
- ② Receiver, installation of LL3 fibre optic cable (receiver fibre)
- ③ Protective hood opens approx. 180°
- ④ Connection
- ⑤ Mounting bracket, included with delivery

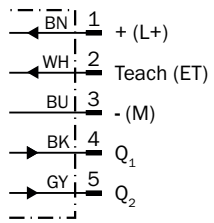
### Adjustments



- ① Locking the fiber-optic cables
- ② LED indicator orange, lights up when switching output is active
- ③ Numeric display 2 x 4-digit; green: switching threshold, operating mode; red: actual value, Teach-in and function parameter
- ④ Step pushbutton > (manual switching threshold: higher/next function parameter)
- ⑤ Step pushbutton < (manual switching threshold: lower/previous function parameter)
- ⑥ Mode/Enter-button
- ⑦ Teach-in button

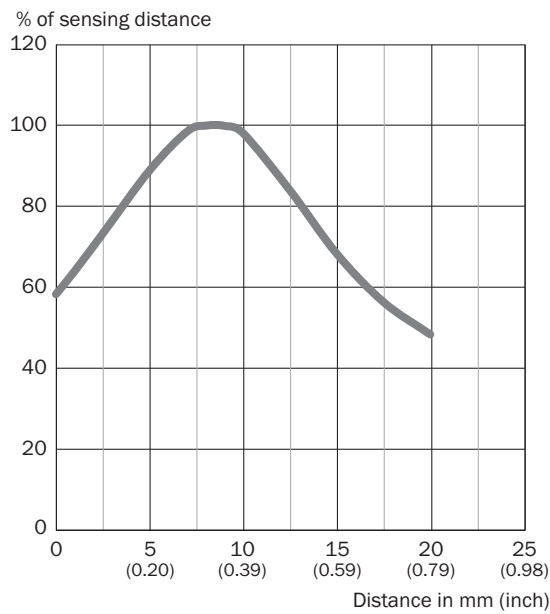
### Connection diagram

Cd-418

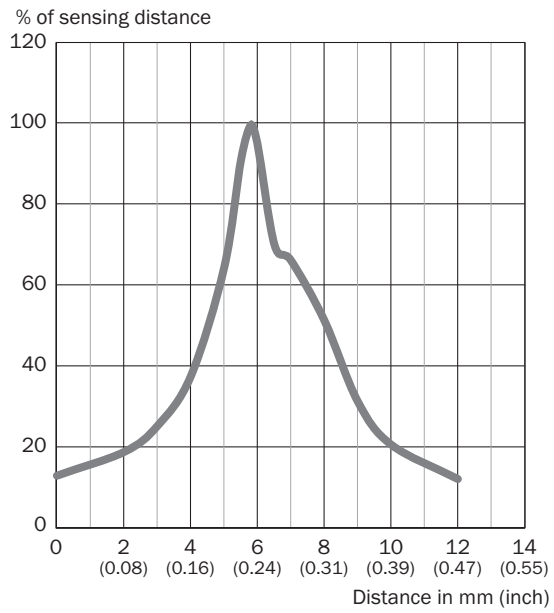


### Sensing distance

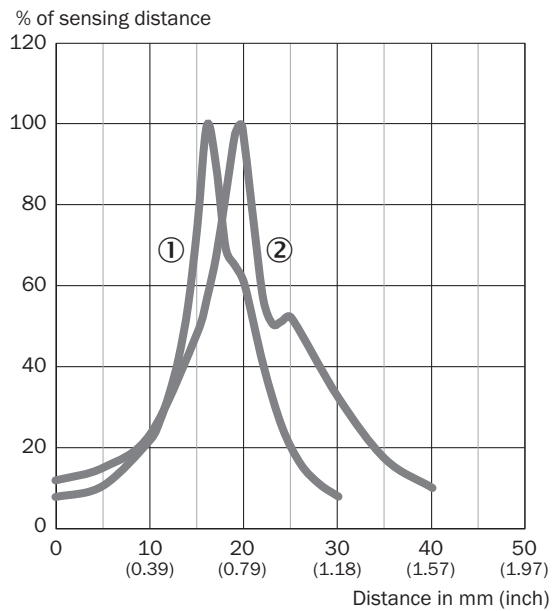
LL3-DZ01



### LL3-DM02 (LL3-DA09)

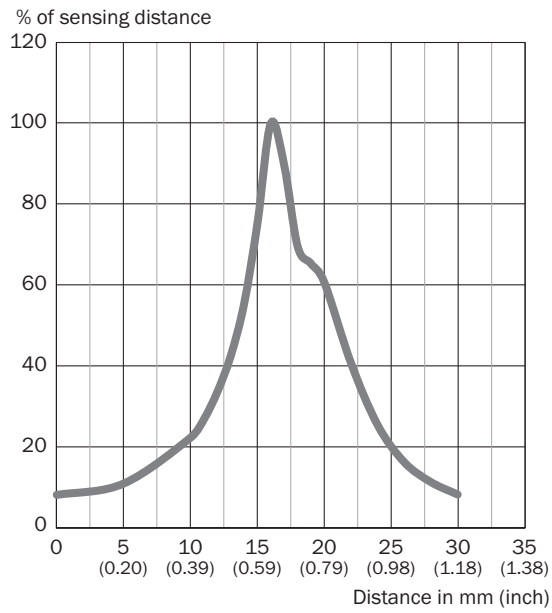


### LL3-DM02 (LL3-DA06)

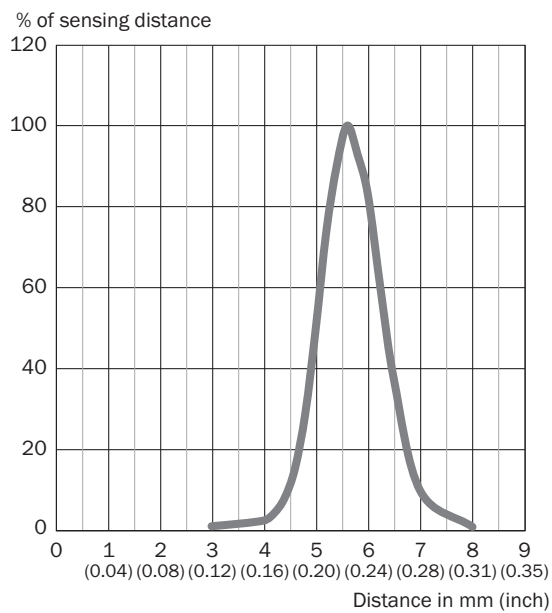


- ① Thread with 3 mm distance
- ② Thread screwed flush with the nut

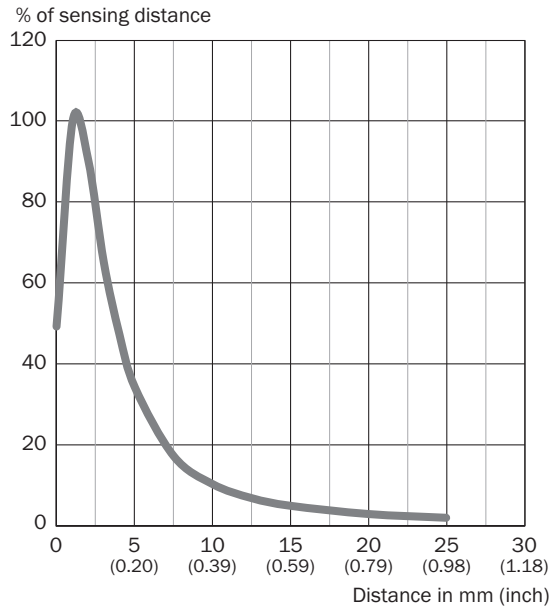
LL3-DM02 (LL3-DA06)



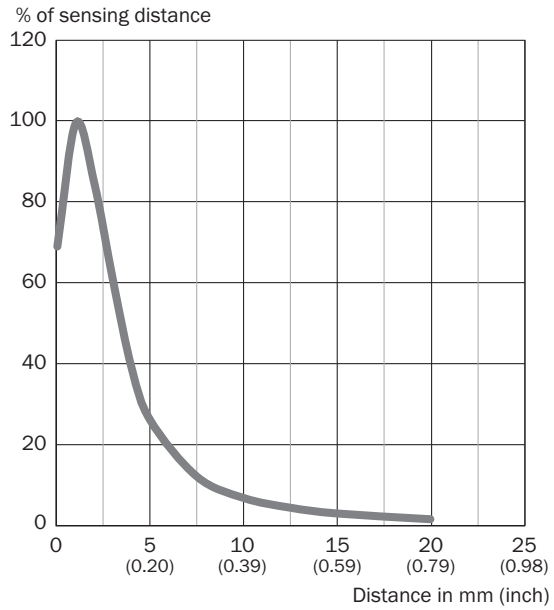
LL3-DC38



LL3-DB09, LL3-DK04, LL3-DY01

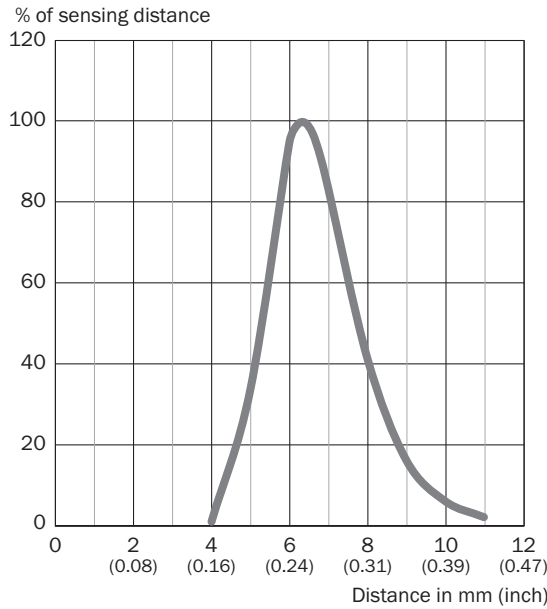


LL3-DB01, LL3-DB04, LL3DM02







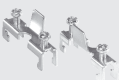





LL3-DC09



### Recommended accessories

Other models and accessories → [www.sick.com/KTL180](http://www.sick.com/KTL180)

	Brief description	Type	Part no.
<b>Fieldbus modules</b>			
	EtherCAT coupler for WLL180T, KTL180 and AOD1. Features: EtherCAT; transmission rates of up to 100 Mbaud; M12 EtherCAT connection; M8 voltage supply connection, 4-pin; full read/write functionality for the process and service data of the connected sensors. See operating instructions for additional information and technical details	WI180C-EC	6068089
	PROFINET coupler for WLL180T, KTL180 and AOD1. Features: PROFINET IRT; transmission rates 10 Mbaud – 100 Mbaud; M12 PROFINET connection; M8 voltage supply connection, 4-pin; full read/write functionality for the process and service data of the connected sensors. See operating instructions for additional information and technical details	WI180C-PN	6068088
	IO-Link Smart Sensor Gateway for WLL180T, KTL180 and AOD1; Features: IO-Link; COM3; M8 connection, 4-pin; full read/write functionality for the process and service data of the connected sensors. See operating instructions for additional information and technical details	WI180C-IOA00	6071650
	Fiber optic cable adaptor kit	Fiber Optic Adaptor Kit	2062854
<b>Mounting brackets and plates</b>			
	Mounting bracket, steel, zinc coated, without mounting hardware	BEF-WLL180	5325812
<b>Other mounting accessories</b>			
	Rail end piece for block mounting, stainless steel, mounting hardware included	BEF-EB01-W190	5313011

	Brief description	Type	Part no.
	Fiber cutter, included with delivery of selected fibers	FC	5304141
Plug connectors and cables			
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 5 m, 5-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals</li> </ul>	YF2A15-050VB5XLEAX	2096240
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Male connector, M12, 5-pin, straight</li> <li>• <b>Description:</b> Unshielded, Head A: male connector, M12, 5-pin, straight, unshielded, for cable diameter 4 mm ... 6 mm Head B: -</li> <li>• <b>Connection systems:</b> Screw-type terminals</li> <li>• <b>Permitted cross-section:</b> ≤ 0.75 mm<sup>2</sup></li> <li>• <b>Note:</b> For field bus technology</li> </ul>	STE-1205-G	6022083
Fibers			
	LL3-DA06	LL3-DA06	5326468
	LL3-DA09	LL3-DA09	5334040
	LL3-DB01	LL3-DB01	5308074
	LL3-DB04	LL3-DB04	5325990
	LL3-DB09	LL3-DB09	5325991
	LL3-DC09	LL3-DC09	5326028
	LL3-DC38	LL3-DC38	5322472
	LL3-DK04	LL3-DK04	5313020
	LL3-DM02	LL3-DM02	5308077
	LL3-DV01	LL3-DV01	5308088
	LL3-DY01	LL3-DY01	5308093
	LL3-DZ01	LL3-DZ01	5326013
	LL3-TS40	LL3-TS40	5323971

## 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](http://www.sick.com)