



KTL180-MM4P41ZZZZZ

KTL180

CONTRAST SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

| Type | Part no. |
|--------------------|----------|
| KTL180-MM4P41ZZZZZ | 6068616 |

Other models and accessories → www.sick.com/KTL180

Detailed technical data

Features

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

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

²⁾ Depends on the fiber used.

³⁾ Average service life: 100,000 h at T_U = +25 °C.

⁴⁾ See LL3 fiber-optic data.

Mechanics/electronics

| | |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Supply voltage | 12 V DC ... 24 V DC ¹⁾ |
| Ripple | ≤ 10 % ²⁾ |
| Current consumption | ≥ 50 mA (at 24 V) |
| Switching frequency | 31.2 kHz |
| Response time | 16 μs |
| Jitter | 8 μs |
| Number of switching outputs | 1 |
| Switching output | PNP |
| Switching mode | Light/dark switching |
| Output current I_{max} | 100 mA ³⁾ |
| Input, blanking input (AT) | Blanked: U = 6.5 V ... < U _v ; free-running: U < 5.5 V ⁴⁾ |
| Input, light/dark (L/D) | Light: U < 6.5 V; dark: U = 5.5 V ... < U _V ⁴⁾ |
| Retention time (ET) | 25 ms, non-volatile memory |
| Connection type | Male connector M8, 4-pin |
| Protection class | III |
| Circuit protection | U _v connections, reverse polarity protected In-/outputs short-circuit protected Interference pulse suppression Outputs overcurrent and short-circuit protected |
| Enclosure rating | IP50 |
| Weight | 25 g |
| Housing material | Plastic, VISTAL® |

¹⁾ +/- 10%.

²⁾ May not exceed or fall below U_v tolerances.

³⁾ Total current of all Outputs.

⁴⁾ Minimum pulse 300 μs.

Ambient data

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

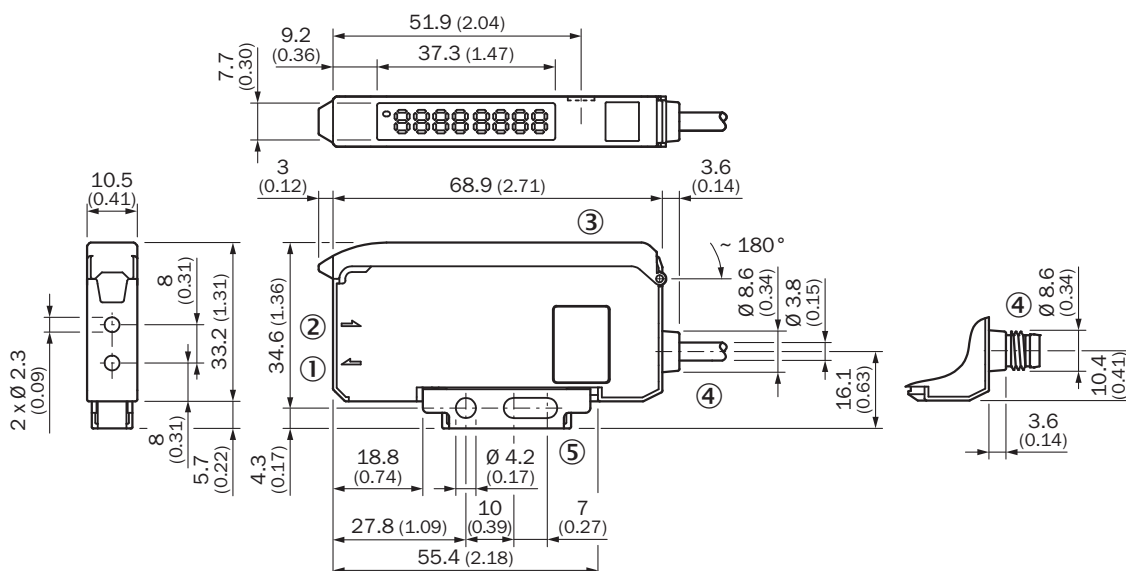
Classifications

| | |
|---------------------|----------|
| 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 |

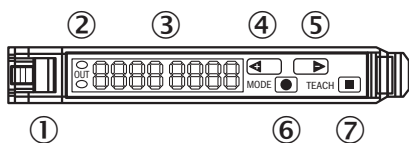
Dimensional drawing (Dimensions in mm (inch))

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

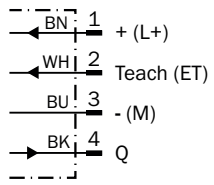
Adjustments



- 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

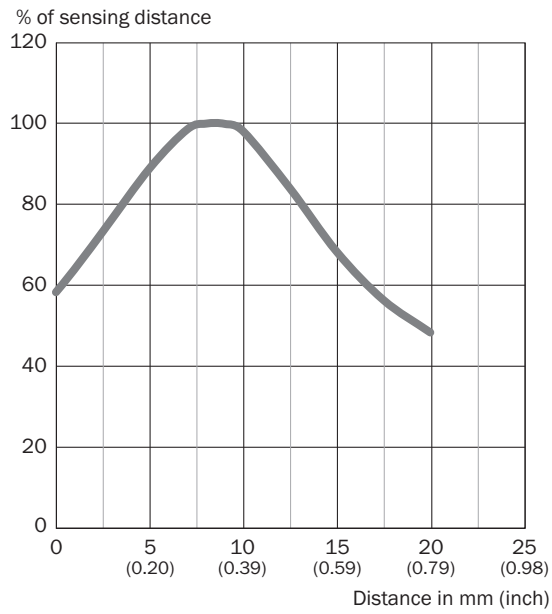
Connection diagram

Cd-380

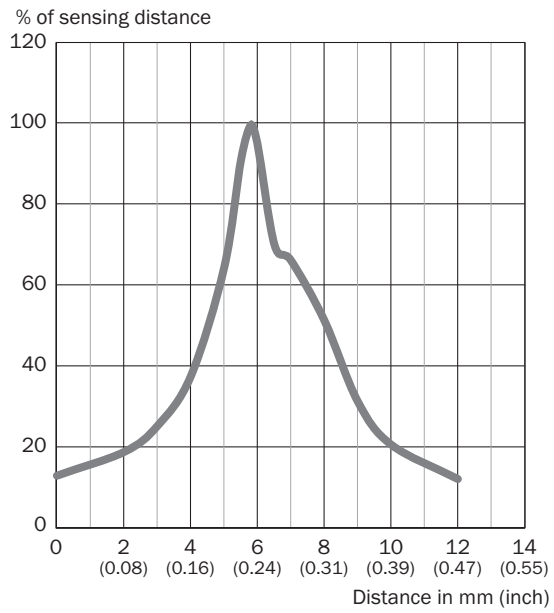


Sensing distance

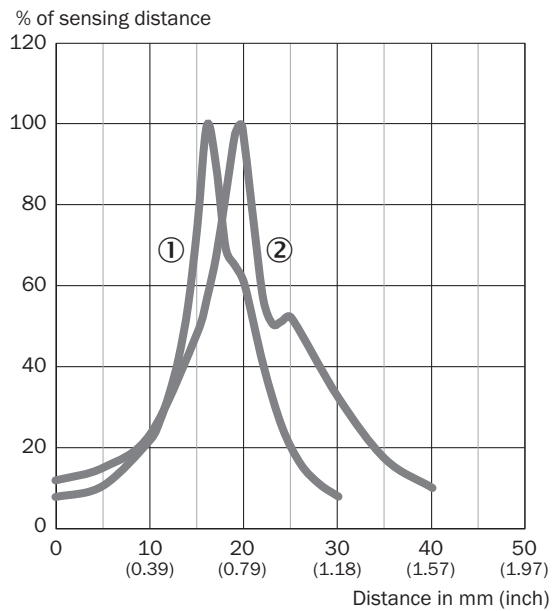
LL3-DZ01



LL3-DM02 (LL3-DA09)

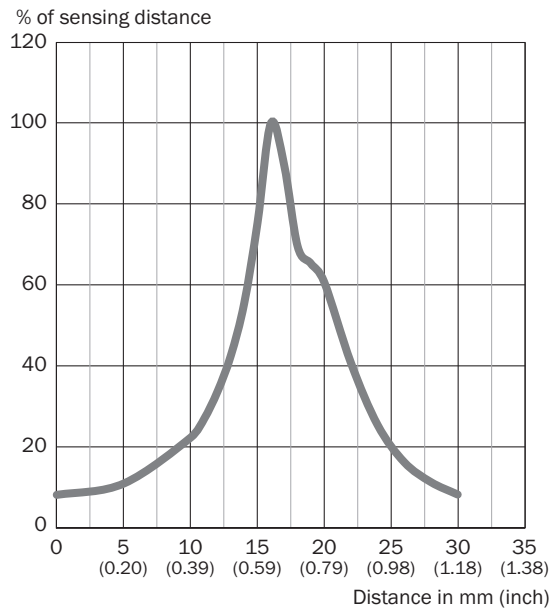


LL3-DM02 (LL3-DA06)

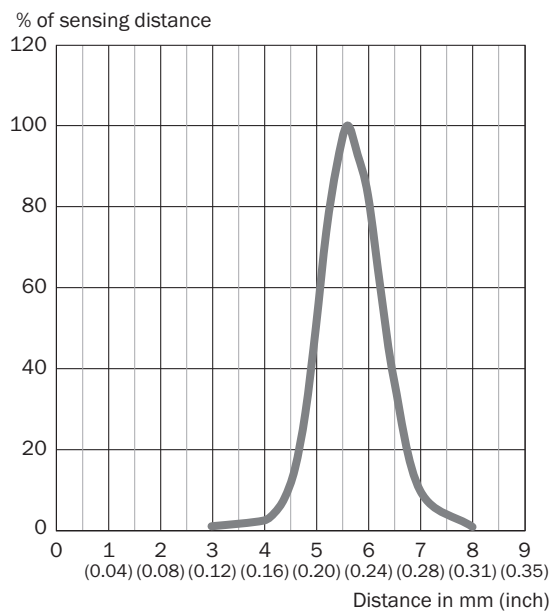


- ① Thread with 3 mm distance
- ② Thread screwed flush with the nut

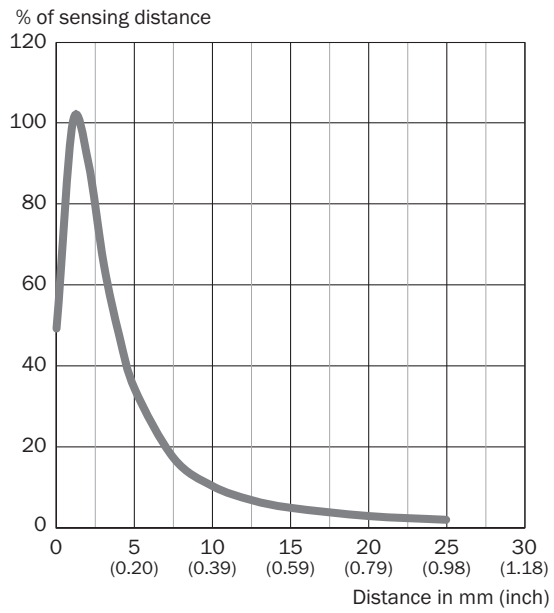
LL3-DM02 (LL3-DA06)



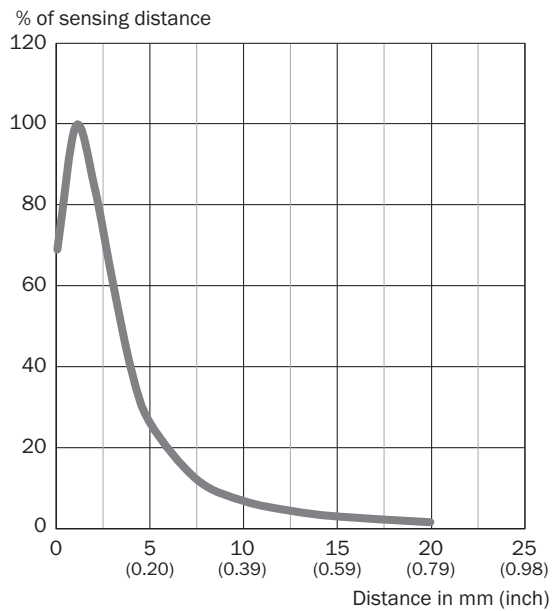
LL3-DC38



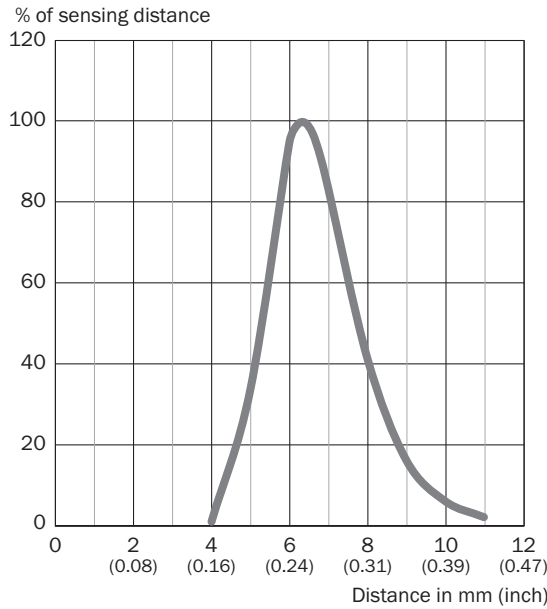
LL3-DB09, LL3-DK04, LL3-DY01



LL3-DB01, LL3-DB04, LL3DM02





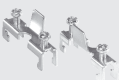





LL3-DC09



Recommended accessories

Other models and accessories → www.sick.com/KTL180

| | Brief description | Type | Part no. |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|----------|
| Fieldbus modules | | | |
|  | 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 |
| Mounting brackets and plates | | | |
|  | Mounting bracket, steel, zinc coated, without mounting hardware | BEF-WLL180 | 5325812 |
| Other mounting accessories | | | |
|  | 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"> • Connection type head A: Female connector, M8, 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 | YF8U14-050VA3XLEAX | 2095889 |
|  | <ul style="list-style-type: none"> • Connection type head A: Male connector, M8, 4-pin, straight • Description: Unshielded • Connection systems: Screw-type terminals • Permitted cross-section: 0.14 mm² ... 0.5 mm² | STE-0804-G | 6037323 |
| 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.”

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