

KTL180 Contrast sensors



Illustration may differ

CONTRAST SENSORS

KTL180-MM4P41ZZZZZ

ORDERING INFORMATION

Type	part no.
KTL180-MM4P41ZZZZZ	6068616

Further device versions and accessories at www.sick.com/KTL180



DETAILED TECHNICAL DATA

FEATURES

Parameter presettings	None
Special applications	-
Device type	Base unit
Housing design	For fiber-optic
Dimensions (W x H x D)	10.5 mm x 33.2 mm x 71.9 mm
Light source	LED, White ¹⁾
Wave length	400 nm ... 750 nm
Angle of dispersion	Approx. 65° ²⁾
Sensing range	0 mm ... 30 mm, Proximity system ³⁾
Sensing distance	≤ 30 mm ⁴⁾
Display	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
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
Safety-related parameters	MTTF ₀ 294.7 years

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

²⁾ See LL3 fiber-optic data.

³⁾ Objects to be sensed with 90% reflectivity (based on DIN 5033 white standard). Sensing range depends on fiber-optic cable.

⁴⁾ Depending on the optical fiber cable used.

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
Time delay	None
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
Connection type	Male connector M8, 4-pin

¹⁾ ± 10%.

²⁾ May not fall below or exceed U_v tolerances.

³⁾ Total current of all Outputs.

⁴⁾ Minimum pulse 300 µs.

MECHANICS

Housing material	VISTAL®
Weight	25 g

AMBIENT DATA

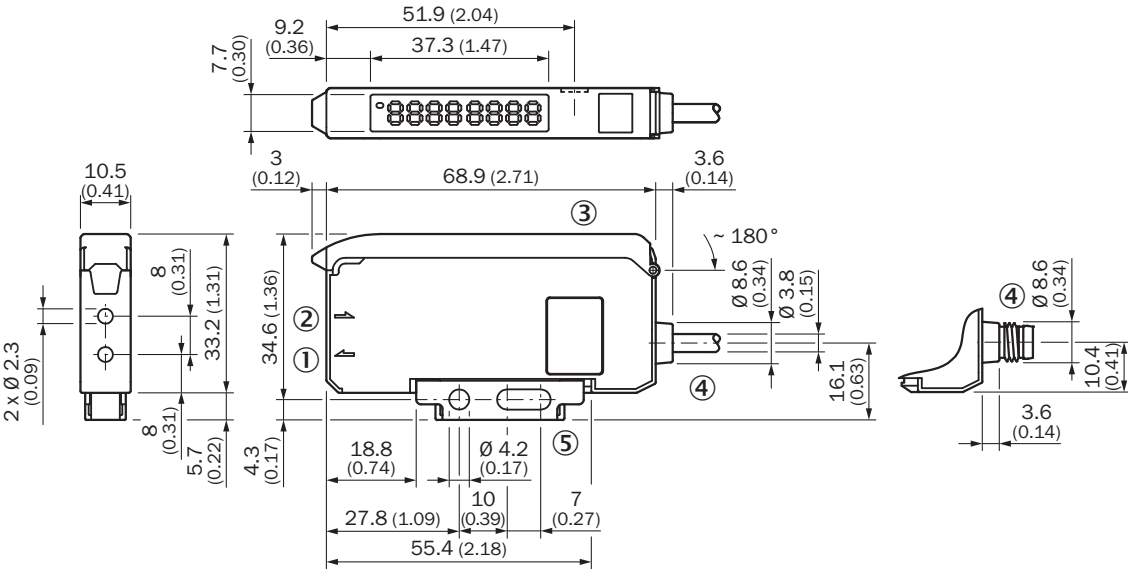
Ambient operating temperature	-25 °C ... +55 °C
Ambient temperature, storage	-40 °C ... +70 °C
Shock load	IEC 60068-2-27
Enclosure rating	IP50
UL File No.	EN 60947-5-2

CERTIFICATES

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
China Compulsory Product Certification (CCC) exempt	✓
cULus certificate	✓

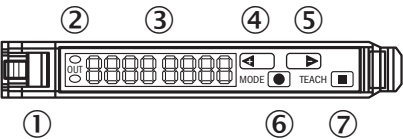
Photobiological safety (IEC EN 62471)	✓
Optical radiation safety (GB 44703:2024) declaration of manufacturer (medium risk)	✓
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)	✓

DIMENSIONAL DRAWING BUS TYPE



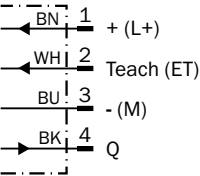
- Dimensions in mm (inch)
- ① Sender LED, installation of LL3 fibre-optic cable (sender fibre)
 - ② Receiver, installation of LL3 fibre optic cable (receiver fibre)
 - ③ protective hood opens approx. 180°
 - ④ Connection
 - ⑤ Mounting bracket, included with delivery

ADJUSTMENTS

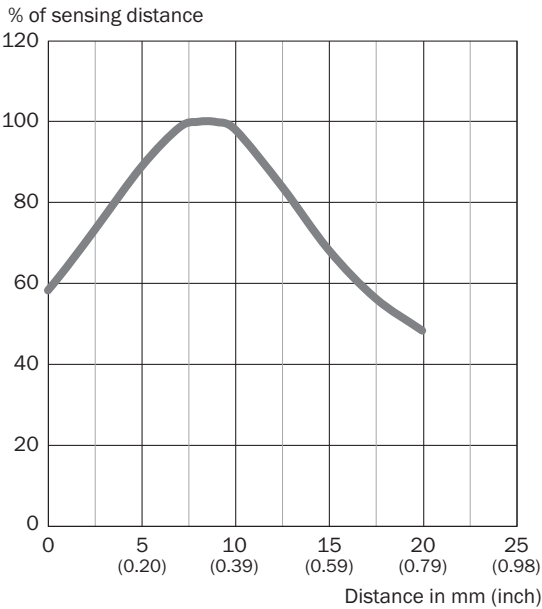


- ① Locking the fiber-optic cables
- ② LED indicator orange, lights up when switching output is active
- ③ Numeric display 2 x 4-digit; green: switching threshold, operating mode; red: actual value, Teach-in and function parameter
- ④ step pushbutton > (manual switching threshold: higher/next function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

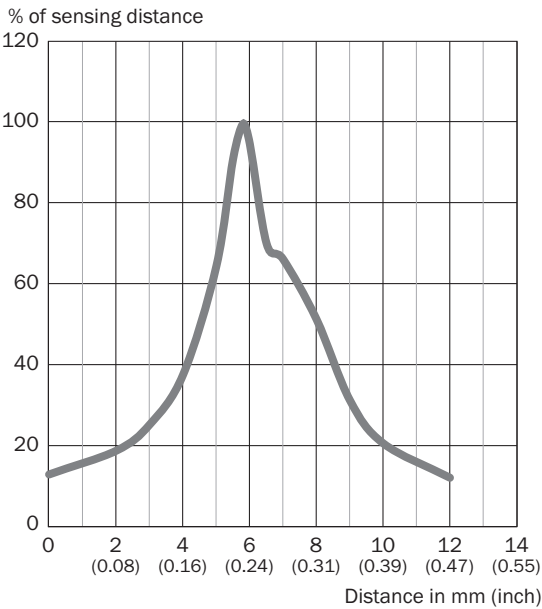
CONNECTION DIAGRAM CD-380



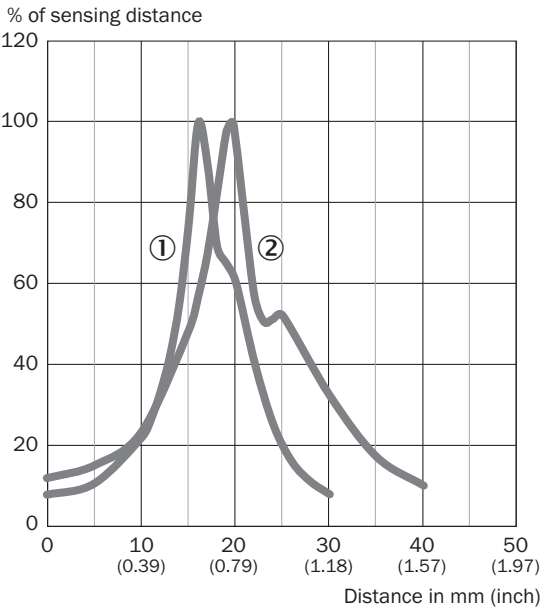
SENSING DISTANCE LL3-DZ01



SENSING DISTANCE LL3-DM02 (LL3-DA09)

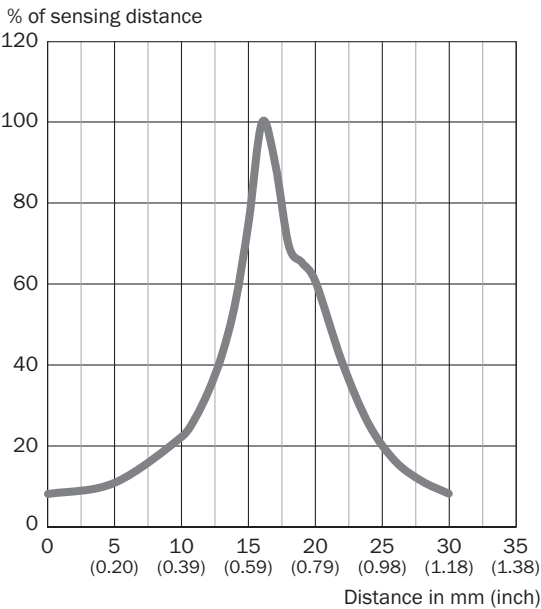


SENSING DISTANCE LL3-DM02 (LL3-DA06)

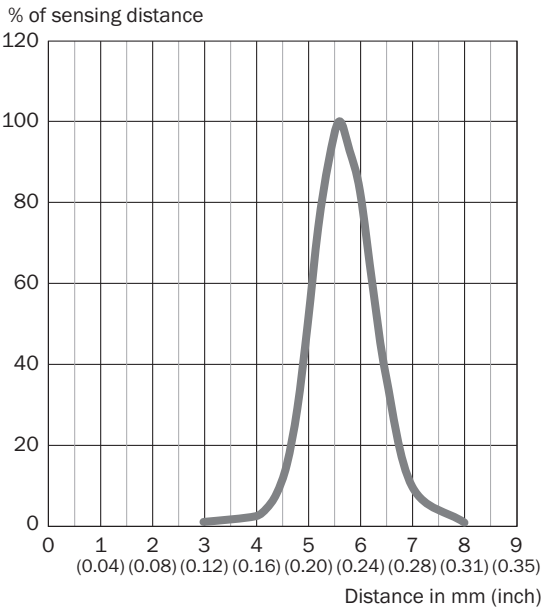


- ① thread with 3 mm distance
- ② Thread screwed flush with the nut

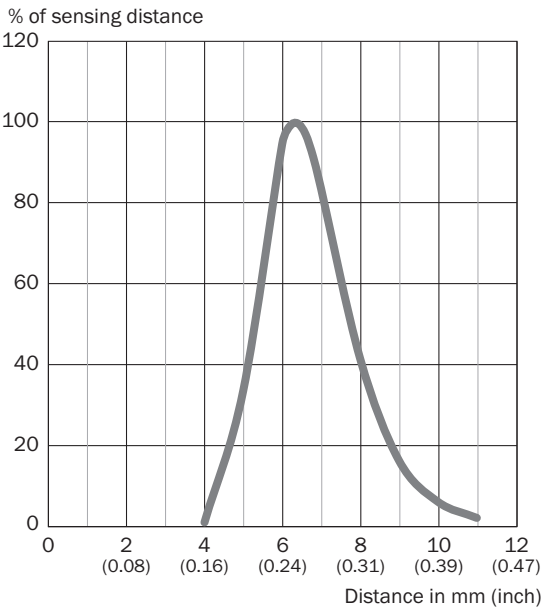
SENSING DISTANCE LL3-DM02 (LL3-DA06)



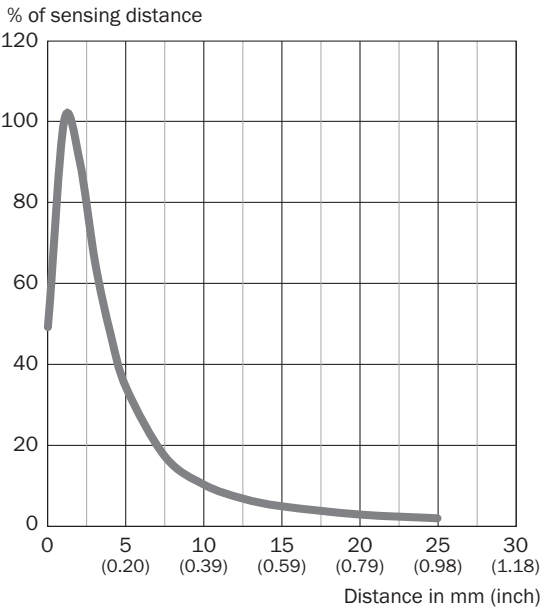
SENSING DISTANCE LL3-DC38



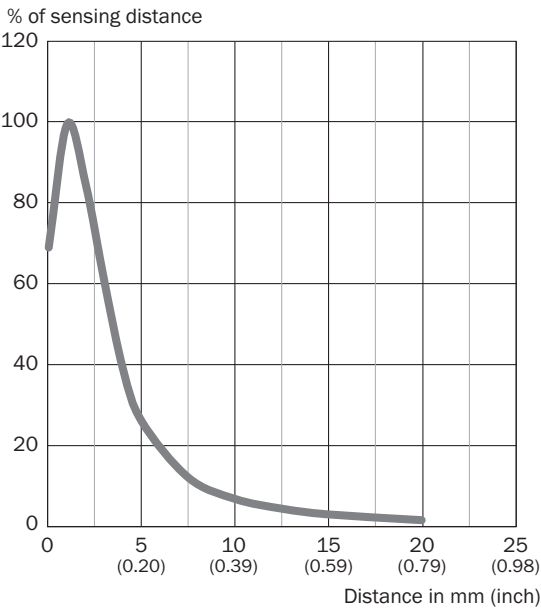
SENSING DISTANCE LL3-DC09



SENSING DISTANCE LL3-DB09, LL3-DK04, LL3-DY01



SENSING DISTANCE LL3-DB01, LL3-DB04, LL3DM02



Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/6068616



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