



Contrast sensors KT5, KTL5-2 Fiber Optic

KTL5W-2P13



Model Name > [KTL5W-2P13](#)
Part No. > [1027562](#)



Illustration may differ

At a glance

- Various heat-resistant fiber-optic cable models are available
- Various teach-in methods, including potentiometer
- Analog output
- Switching frequency of 10 kHz

Your benefits

- Reliable contrast detection
- Flexible integration into machines due to minimal space requirements and various fiber-optic cable versions
- Durable, glass fiber-optic cables
- Reliable operation in adverse environmental conditions, such as extreme temperatures and moisture
- Resistant to aggressive cleaning agents
- Compact design fits in applications with limited space



Features

Sensing distance:	Dependent on the fiber-optic cable
Light source ¹⁾ :	LED
Wave length:	470 nm, 525 nm, 640 nm
Light spot size:	Dependent on the fiber-optic cable
Output function:	Light/dark switching
Type of light:	Visible blue light, Visible green light, Visible red light
Dimensions (W x H x D):	30.4 mm x 53 mm x 80 mm
Housing design (light emission):	Rectangular
Teach-in mode:	Dynamic teach-in

¹⁾ Average service life of 100,000 h at $T_A = +25\text{ °C}$

Mechanics/electronics

Ripple ¹⁾ :	≤ 5 Vpp
Power consumption ²⁾ :	< 80 mA
Switching frequency ³⁾ :	10 kHz
Response time ⁴⁾ :	50 μs
Output type:	PNP: HIGH = VS- ≤ 2 V / LOW approx. 0 V
Switching mode:	PNP
Input, teach-in (ET):	PNP: Run: $U < 2\text{ V}$, Teach: $U = 10\text{ V} \dots < U_V$

Input, light/dark (L/D):	Dark: $U > 10 \text{ V} \dots < U_V$, Light: $U = 0 \text{ V}$, PNP:
Retention time (ET):	25 ms, non-volatile memory
Connection type:	Connector M12, 5-pin
Protection class ⁵⁾ :	II
Circuit protection:	Output Q short-circuit protected, Interference suppression, VS connections reverse-polarity protected
Enclosure rating:	IP 67
Weight:	400 g
Housing material:	Metal, Zinc diecast
Output current I _{max.} :	100 mA
Supply voltage:	10 V DC ... 30 V DC ⁶⁾
Fieldbus interface:	-

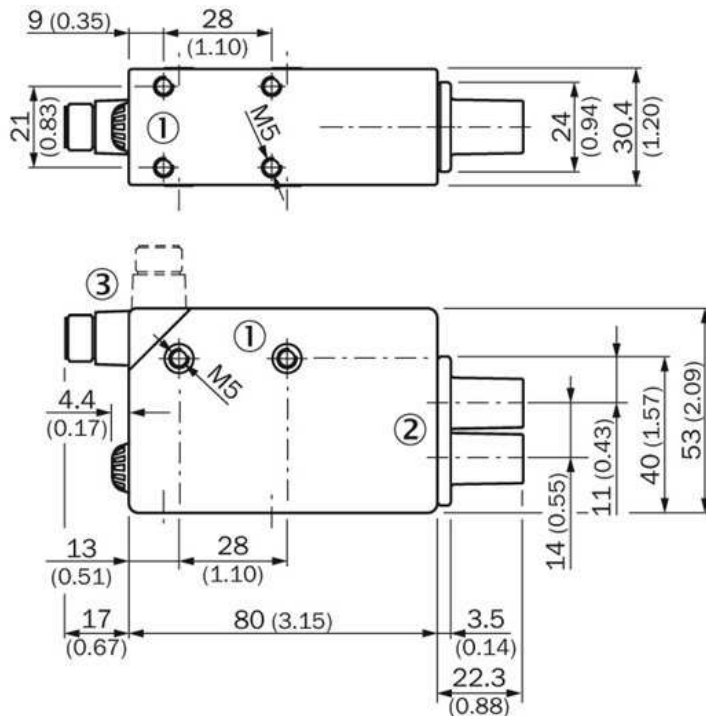
1) May not exceed or fall short of V_S tolerances 2) Without load 3) With light/dark ratio 1:1 4) Signal transit time with resistive load 5) Reference voltage DC 50 V 6)

Limit values; operation in short-circuit protected network max. 8 A

Ambient data

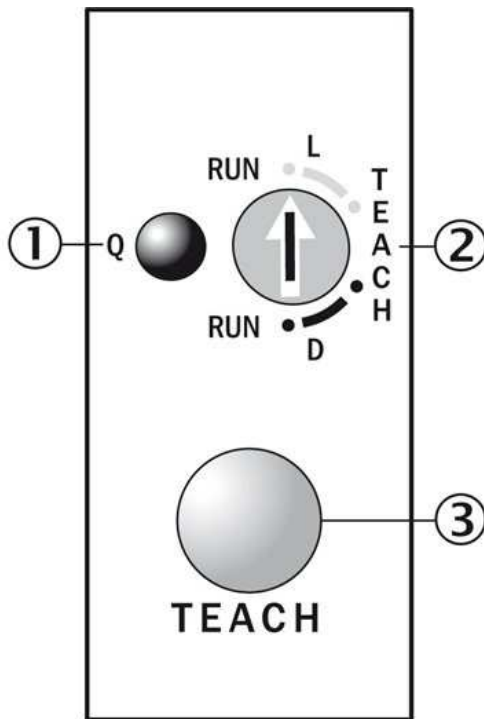
Shock load:	According to IEC 60068
Ambient operating temperature:	-10 °C ... +55 °C
Ambient storage temperature:	-25 °C ... +75 °C

Dimensional drawing



- [1] M5 threaded mounting hole, 5.5 mm deep
- [2] Fiber-optic adapter (M12 x 1 internal thread)
- [3] Connector M12 (rotatable up to 90°)

Adjustments



- |1| Function signal indicator (yellow)
- |2| Pre-selection switch (light/dark switching)
- |3| Teach-in button

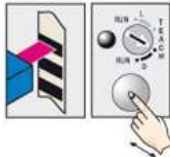
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1. Select switching function (light/dark)



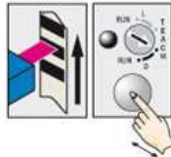
Turn the rotary switch to the desired teach position:
D = dark switching
L = light switching

2. Position mark or background

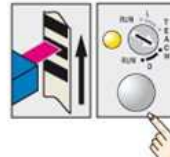


Press the teach-in button and keep it pressed.

3. Move at least one repeat length using the light spot

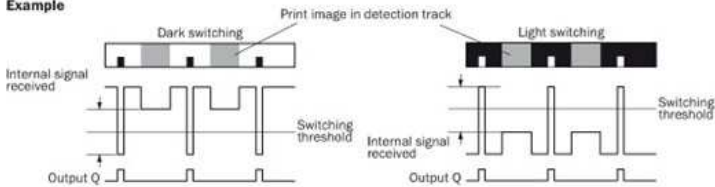


Keep the teach-in button pressed.



Release the teach-in button. Yellow LED will illuminate, when emitted light is on the mark.

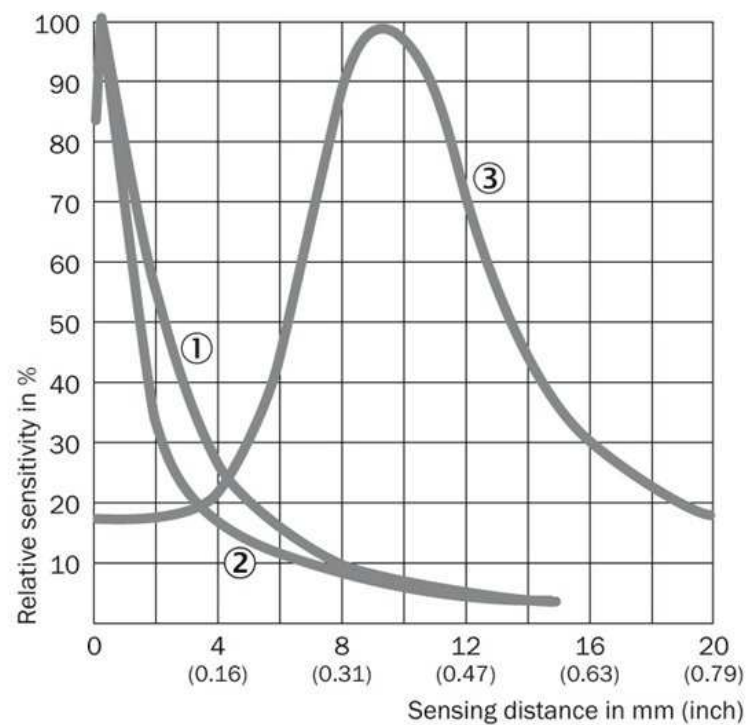
Example



Switching characteristics

The optimum emitted light is selected automatically.
The switching threshold is set in the center between the lowest and the second-lowest reflectivity.
Teach-in can also be performed using an external control signal.
Light/dark setting can also be configured using an external control signal.
Observe the minimum speed (25 mm/s ... 300 mm/s).

Sensing distance



- |1| Fiber-optic cable LBST 32900
- |2| Fiber-optic cable LBSR 32900
- |3| Fiber-optic cable OCSL

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