Warning

The sensor is not a safety component according to the EU Machinery Directive.

Proper Environment

Storage temperature range: -40 ... +70 °C

Operating temperature range: -30 ... +60 °C

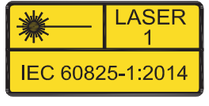
Humidity: 5 ... 95 % RH (non-condensing)

Laser Safety

The sensor works with a semiconductor laser at a wavelength of 660 nm (visible/red). Maximum optical power is ≤ 1 mW. The sensors fall within laser class 1.

The accessible radiation is harmless under predictable conditions. Class 1 laser devices therefore may be used without further protective measures.

A laser information sticker is enclosed:



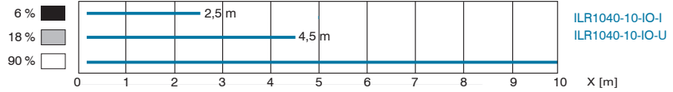
Technical Data

Model		ILR1040-10-IO-I	ILR1040-10-IO-U	ILR1041-60-IO-I	ILR1041-60-IO-U
Measuring range	Start of measuring range	0.03 m	0.03 m	-	-
	End of measuring range	10 m	10 m	-	-
	Start of measuring range with reflector film ILR-RF250	-	-	0.2 m	0.2 m
	Start of measuring range with reflector film ILR-RF250	-	-	60 m	60 m
Measuring rate [1) 2)]		adjustable up to 333 Hz			
Maximum traversing speed		10 m/s			
Permissible ambient light		50,000 lx @ 2.5m standard white 90%, 10,000 lx @ 2.5m black 6%			
Supply voltage		18 ... 30 VDC, typ. 25 mA			
Digital interface		IO-Link 1.1 (via C/Q pin 4)			
Analog output		4 … 20 mA (12 bits DA)	0 … 10 V (12 bits DA)	4 … 20 mA (12 bits DA)	0 … 10 V (12 bits DA)
Switching output		Q1 (max. 100 mA) push-pull output (configurable) reverse polarity protected, overvoltage resistant			

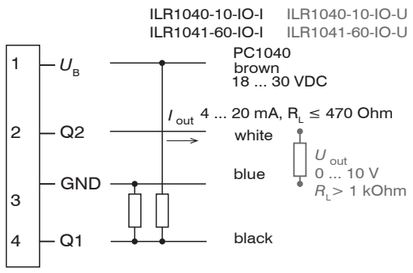
1) The data listed apply at a constant room temperature of 20°C, with the sensor operating constantly. Measured on a white, diffusely reflective surface (reference ceramic material).

2) Depends on the reflectivity of the target, ambient light interference and atmospheric conditions.

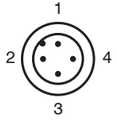
Measuring Range, Object Color



Electrical Connection



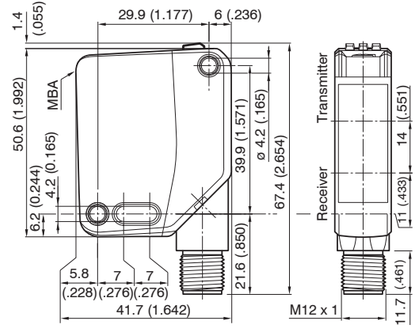
Cable socket, view onto socket side



You can find more information in the interface instructions:

https://www.micro-epsilon.de/download-file/man--optoNCDT-ILR1040-Schnittstellen--en.pdf

Sensor Dimensions



Dimensions in mm (inches, rounded off)

Your local contact:
www.micro-epsilon.com/contact/worldwide/

MICRO-EPSILON Eltrotec GmbH
Manfred-Wörner-Straße 101

73037 Göppingen / Germany

Tel. +49 (0) 7161/98872-300
Fax +49 (0) 7161/98872-303

eltrotec@micro-epsilon.de

https://www.micro-epsilon.com

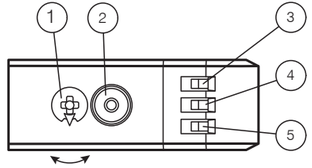
X9770493-A012114TSw

MICRO-EPSILON

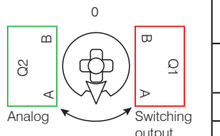
Setup Guide

optoNCDT ILR1040-10-IO-I
optoNCDT ILR1040-10-IO-U
optoNCDT ILR1041-60-IO-I
optoNCDT ILR1041-60-IO-U

Distance Sensor Design



1	Mode rotary switch	
2	SET button	
3	LED analog output	Yellow
4	LED switching output	Yellow
5	Operating display	Green



Q1B	Switching output / switching point B
Q1A	Switching output / switching point A
Q2A	Teach point A
Q2B	Teach point B
0	Key lock

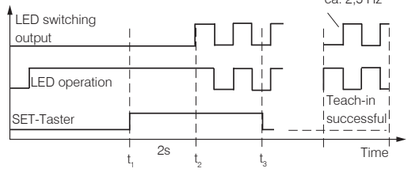
Switching Output, Switching Points

The relevant switching threshold A and/or B can be selected using the rotary switch for the switching output Q1. The yellow LEDs indicate the current status of the selected output. After successful teach-in, the output and LED change their status.

Incorrect teach-in is indicated by alternating flashing (8 Hz). After incorrect teach-in and the corresponding error message, the sensor continues to operate with the last valid setting (repeatable for all switching points).

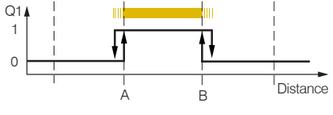
Each taught-in value can be overwritten by pressing the SET button again.

The selected taught-in value can be deleted by pressing and holding the SET button for > 5 s. The LEDs will go out when the relevant value has been deleted.
The different switching points allow for different switching behaviors.

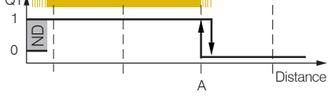


Factory Setting:
- High active (= light switching)
- Hysteresis 15 mm (0 ... 500 mm)

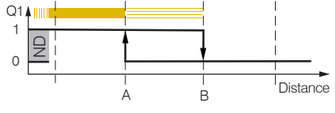
Window (Factory Setting)
- Switching point Q1 is 1 when the detected distance is ≥ A and ≤ B
- A higher value for A or B defines an upper threshold value (no change in switching behavior/ polarity)
- Values A and B define threshold values



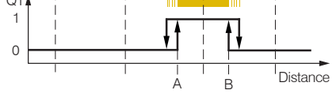
Single Point
- Q1 is 1 when the detected distance is ≤ A
- A defines a threshold value



Two Point
- Q1 is 1 when the detected distance is ≤ B and 0 and ≥ A
- In the range between A and B switching point, depending on the previous status
- A higher value for A or B defines an upper threshold value (no change in switching behavior/polarity)
- Signal hysteresis is not applied



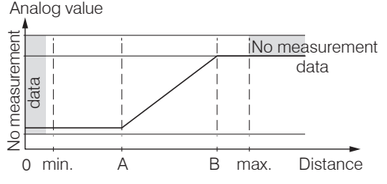
Centered Window
- Q1 is 1 when the detected distance is within the range B +/- switching point 0
- For distance sensors with a defined target position (reflection sensor)
- B +/- switching point 0 defines the threshold value



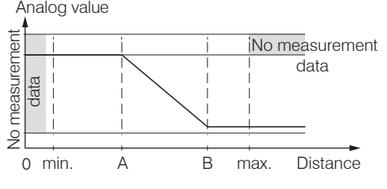
SET Button, Analog Output

The respective scaling points A and/or B can be selected using the rotary switch for the analog output Q2.

Rising ramp (A < B), factory setting



Falling ramp (A > B)



Factory setting analog output Q2:
A = 200 mm
B = 5000 mm

i It is not possible to delete value B.
You can change to “Zero-point line” mode by deleting value A.

Resetting the factory setting:

➡ Set the rotary switch to the position 0.

➡ Press and hold the SET button until the LED stops flashing in-phase (approx. 10 s).

When the green LED lights up, the procedure is complete.

Error messages:
Short circuit: In the event of a short circuit, the green LED flashes at a frequency of approx. 4 Hz.

SET error: In the event of an SET error, both LEDs flash alternately at a frequency of approx. 8 Hz.

ILR 1041-60-IO-I and ILR 1041-60-IO-U achieve a measuring range of 60 m with the reflector ILR-RF250. The sensor only works with a suitable reflector target plate (ILR-RF250).