EN

wenglor
the innovative family

OPT2012
OPT2013
OPT2014

High-Performance Distance Sensor

Operating Instructions

Available as PDF only
Status: 16.08.2018
www.wenglor.com

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Index

1. Use for Intended Purpose

This wenglor product has to be used according to the following functional principle:
High-performance distance sensors which use the principle of transit time measurement determine the distance between the sensor and the object according to the principle of transit time measurement. These sensors have a large working range and are therefore able to detect objects over large distances.
Selected sensors are distinguished by WinTec (wenglor interference free technology). This technology allows black or shiny surfaces to be reliably detected even in extremely inclined positions. It is possible to mount several sensors next to or across from each other without them influencing each other.

2. Safety Precautions

2.1. Safety Precautions

- This operating instruction is part of the product and must be kept during its entire service life.
- Read this operating instruction carefully before using the product.
- Installation, start-up and maintenance of this product has only to be carried out by trained personnel.
- Tampering with or modifying the product is not permissible.
- Protect the product against contamination during start-up.
- Not a safety component in accordance with the EU Machinery Directive.

2.2. Laser/LED warning

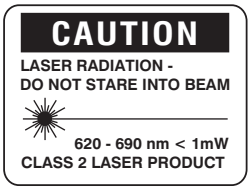
For the respective Laser/LED Class please view the technical data of the product.

Class Laser 1 (EN 60825-1)
Observe all applicable standards
and safety precautions.

Class Laser 2 (EN 60825-1)

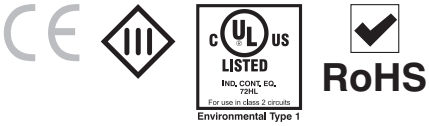
Observe all applicable standards and safety precautions.
The enclosed laser warning labels must be attached and
visible at all time. Do not stare into beam.

Caution: Use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure



3. EC Declaration of Conformity

The EC declaration of conformity can be found on our website at www.wenglor.com in download area.



4. Device Features

Optical Data	OPT2013	OPT2014	OPT2012
Working range	0,1…10,1 m	0,1…10,1 m	0,2…6,2 m
Measuring range	10 m	10 m	6 m
Linearity 0,1…5 m	0,05 %	0,2 %	0,2 %
Linearity 5…10 m	0,2 %	0,5 %	0,5 %
Switching hysteresis	3…20 mm	3…20 mm	3…20 mm
Light Source	Laser (red)	Laser (red)	Laser (red)
Wave Length	660 nm	660 nm	660 nm
Service life (amb. temp. = 25 °C)	100000 h	100000 h	100000 h
Laser Protection Class (EN60825-1)	2	2	1
Beam Divergence	<2 mrad	<2 mrad	<2 mrad
Electrical Data			
Supply Voltage*	18…30 V DC	18…30 V DC	18…30 V DC
Current Consumption (operating voltage = 24 V)	<100 mA	<100 mA	<100 mA
Switching Frequency	50 Hz	50 Hz	50 Hz
Response Time	10…200 ms	10…200 ms	10…200 ms
Measure Rate	1…100/s	1…100/s	1…100/s
Temperature Drift	<0,2 mm/k	<0,2 mm/k	<0,2 mm/k
Temperature Range	−25…60 °C	−25…60 °C	−25…60 °C
Number of switching outputs configurable as PNP NPN or push-pull	3	2	2
Switching Output Voltage Drop	<2,5 V	<2,5 V	<2,5 V
Switching Output Switching Current	200 mA	200 mA	200 mA
Error Output	yes	yes	yes
Error Output Switching Current	200 mA	200 mA	200 mA
Analog Output	0…10 V	0…10 V	0…10 V
Current Load Voltage Output	<1 mA	<0,5 mA	<0,5 mA
Analog Output	4…20 mA	4…20 mA	4…20 mA
Current Output Load Resistance	<500 Ω	<500 Ω	<500 Ω
Short Circuit Protection	yes	yes	yes
Reverse Polarity Protection	yes	yes	yes
Overload Protection	yes	yes	yes
Resolution	1…12 mm	1…12 mm	1…12 mm
Mechanical Data			
Adjustment	Teach-In	Teach-In	Teach-In
Housing	Plastic	Plastic	Plastic
Protection	IP68	IP68	IP68
Connection	M12 × 1, 8-pin	M12 × 1, 4-pin	M12 × 1, 4-pin
Protection Class	III	III	III

*Supply voltage residual ripple may not exceed 10 % (within the specified voltage range).
**Temperature Drift: 0,4 mm/k at ambient temperature < −10 °C and > 50 °C

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Measuring Range:
The Sensors' measuring range is determined by object remission.

Maximum range of

OPT2013, OPT2014
Up to 10 m on white (90 % remission)
Up to 5 m on gray (18 % remission)
Up to 3 m on black (6 % remission)

OPT2012
Up to 6 m on white (90 % remission)
Up to 5 m on gray (18 % remission)
Up to 3 m on black (6 % remission)

Light Spot Diameter

Working Distance	0	6 m	10 m
Light Spot Diameter	5 mm	< 12 mm	< 20 mm

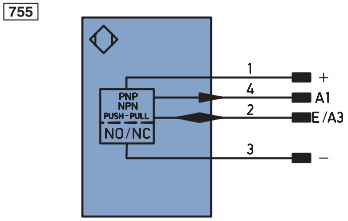
Dependence of Hysteresis and Resolution on the Sampling Rate on white (90 % Remission)

OPT2013, OPT2014				
Selected sampling rate in Hz	Default setting for min. hysteresis in mm	Resolution in mm		
		0,1…3 m	3…5 m	5…10,1 m
100	20	3	5	12
50	15	2	3	10
20	10	2	2	8
10	8	1	2	7
5	6	1	2	6
2	4	1	1	6
1	3	1	1	6

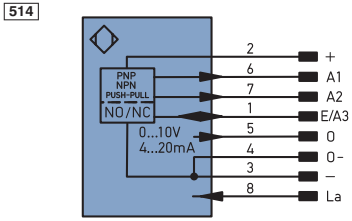
OPT2012				
Selected sampling rate in Hz	Default setting for min. hysteresis in mm	Resolution in mm		
		0,2…3 m	3…5 m	5…6 m
100	20	3	5	12
50	15	2	3	10
20	10	2	2	8
10	8	1	2	7
5	6	1	2	6
2	4	1	1	6
1	3	1	1	6

4.1. Connecting the Sensors

OPT2012/OPT2014



OPT2013



Switching laser light off via pin connection:

If the “La” pin is open or connected to negative, the laser is on.
If positive voltage is applied, the laser is off.
In the case of OPT2012 Pin “A1” can also be used as an analog output.
The reference to ground here is Pin “–” (supply voltage “0 V”).

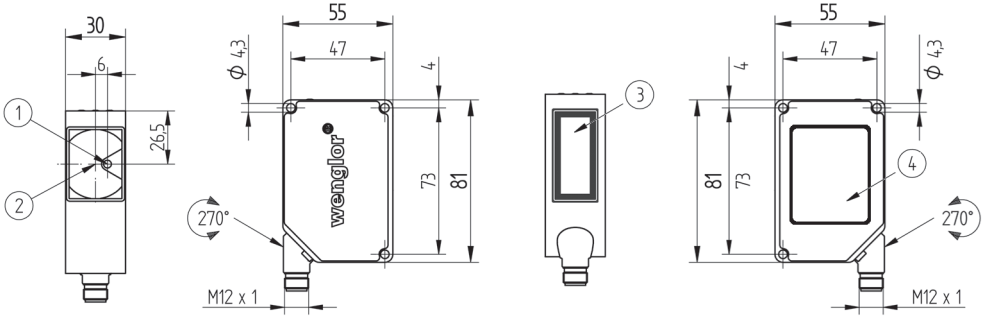
Legend

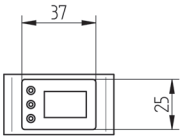
+	Supply Voltage +
–	Supply Voltage 0 V
~	Supply Voltage (AC Voltage)
A	Switching Output (NO)
Ā	Switching Output (NC)
V	Contamination/Error Output (NO)
V̄	Contamination/Error Output (NC)
E	Input (analog or digital)
T	Teach Input
Z	Time Delay (activation)
S	Shielding
RxD	Interface Receive Path
TxD	Interface Send Path
RDY	Ready
GND	Ground
CL	Clock
E/A	Output/Input programmable
	IO-Link
PoE	Power over Ethernet
IN	Safety Input
OSSD	Safety Output
Signal	Signal Output
BI_D+/-	Ethernet Gigabit bidirect. data line (A-D)
PT	Platinum measuring resistor
nc	not connected
U	Test Input
Ū	Test Input inverted
W	Trigger Input
O	Analog Output
O–	Ground for the Analog Output
BZ	Block Discharge
AMV	Valve Output
a	Valve Control Output +
b	Valve Control Output 0 V
SY	Synchronization
E+	Receiver-Line
S+	Emitter-Line
⏚	Grounding
SnR	Switching Distance Reduction
Rx+/–	Ethernet Receive Path
Tx+/–	Ethernet Send Path
Bus	Interfaces-Bus A(+)/B(–)
La	Emitted Light disengageable
Mag	Magnet activation
RES	Input confirmation
EDM	Contactor Monitoring
ENARS422	Encoder A/Ā (TTL)
ENA	Encoder A
ENB	Encoder B
AMIN	Digital output MIN
AMAX	Digital output MAX
AOK	Digital output OK
SY In	Synchronization In
SY OUT	Synchronization OUT
OLT	Brightness output
M	Maintenance
rsv	reserved

Wire Colors according to DIN IEC 757

BK	Black
BN	Brown
RD	Red
OG	Orange
YE	Yellow
GN	Green
BU	Blue
VT	Violet
GY	Grey
WH	White
PK	Pink

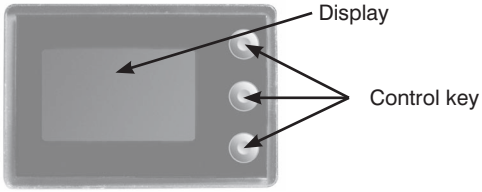
4.2. Housing Dimensions





1 = Laser Diode/Laser Aperture
2 = Receiver Diode
3 = Laser Warning Sign
4 = Name Plate incl. Laser Warning Sign

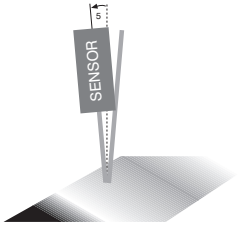
4.3. The Control Panel



A warning triangle in the display indicates that the Sensor receives a lot of light, e.g. through a glossy surface of the object. The measurement value could be around 400 mm too low in this case. To find a remedy, see the mounting instructions in case of glossy surfaces.

5. Installation Instructions

All applicable electrical and mechanical regulations, standards and safety precautions must be adhered to when installing and operating the Sensor. The Sensor must be protected against mechanical influences. Install the device such that its installation position cannot be inadvertently changed. The wenglor mounting system is recommended for installing the Sensor. In order to obtain best possible results, the device's optics should be aligned at a right angle to the direction in which the objects are conveyed.



At brilliant surfaces, mount the Sensor in an angle of 5° to avoid a direct reflexion beam into the lens.

6. Initial Start-Up

6.1. Initial Start-Up

Connect the Sensor to supply power (18 to 30 V DC). The display view appears.
The Sensor is ready for operation after 2 seconds. The following table provides an overview of typical, additional deviations during the warm-up phase.

Time (min.)	0	1	2	5	10	15
Deviation (mm)	±10	±7	±6	±2	±1	0

Switch to the configuration menu by pressing any key.

Note:
If no settings are adjusted in the configuration menu for a period of 30 s, the Sensor is automatically returned to the read-out view. The Sensor accesses the last used menu view when a key is once again activated.
If a setting is adjusted, it becomes active when the configuration menu is exited.

The keys are used for navigation, and for configuring settings.

Important:
Do not use any sharp objects to press the keys when configuring settings, because they might otherwise be damaged.

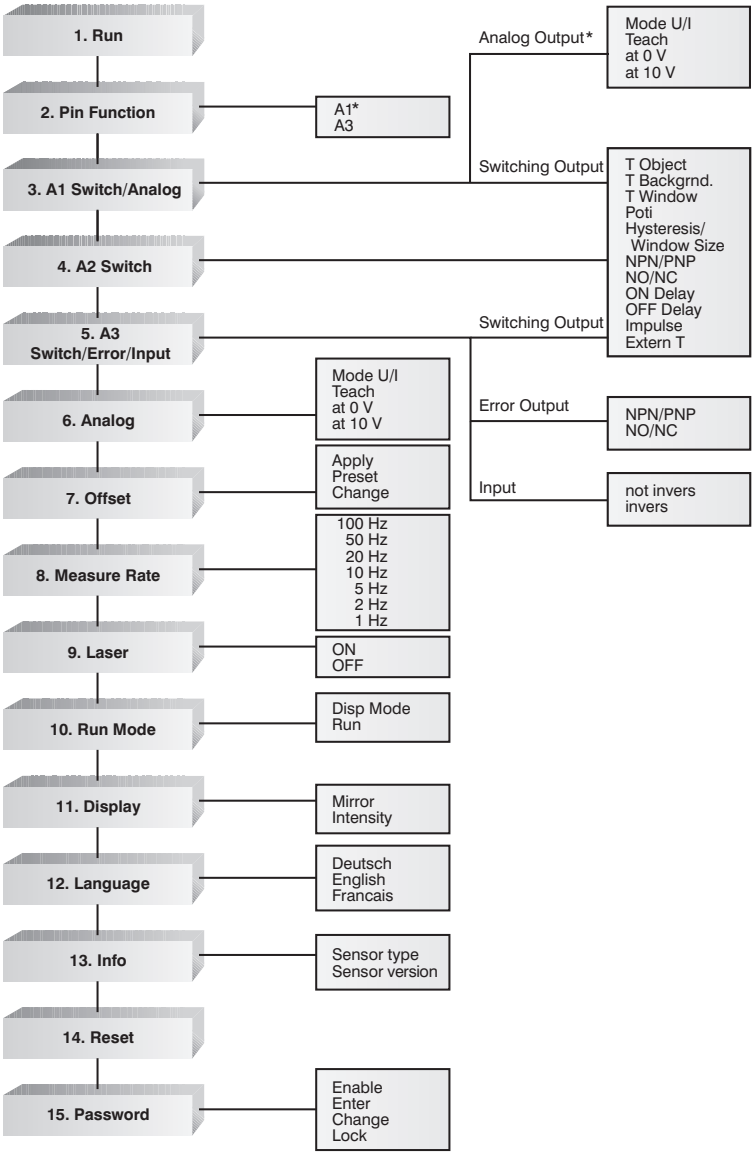
- ▲ Navigation up.
- ▼ Navigation down.
- ◄ Acknowledge the selected menu item (arrow points towards the display).
- ► Accept the selected setting, exit the menu (arrow points away from the display).

6.2. Default Settings

		OPT2012	OPT2013/OPT2014
Pin Function		A1: Switching output	A1: Switching output
			A2*: Switching output
		A3: Error output	A3: Error output
Outputs	Teach Mode	Object	Object
	Switching threshold	1000 mm	1000 mm
	Hysteresis	20 mm	20 mm
	Window Size	50 mm	50 mm
	PNP/NPN	PNP	PNP
	NO/NC	NO	NO
	ON Delay	0 ms	0 ms
	OFF Delay	0 ms	0 ms
	Impulse	0 ms	0 ms
Error output	PNP/NPN	PNP	PNP
	NO/NC	NO	NO
A3 Input	invers		
Analog	U/I	U	U
	0 V	200 mm	100 mm
	10 V	6200 mm	10100 mm
Offset	Specification Offset	0 mm	0 mm
Measure Rate		100 Hz	100 Hz
Laser		An	An
Run Mode	Display Mode	Distance	Distance
Display	Intensity	Screensaver	Screensaver
Language		German	German
Password	Enable	Off	Off
	Enter	0	0

* Does apply to OPT2013

7. Functional Overview



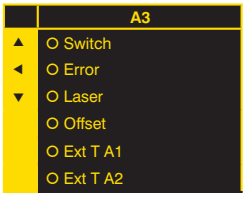
* only for OPT2012 and OPT2014

7.1. Run

The Sensor can be switched to the display mode by pressing the ▶ key.

7.2. Pin Function

The Pin Function serves to determine the function of the pins A1 or A3. The pins can each take on different functions.

Designation	Function
A1	**Configuration of Pin A1**
	(does apply to OPT2014 or OPT2012) By pressing the buttons ▲ and ▼ Pin A1 can be configured as a switching output or analog output.
A3	**Configuration of Pin A3**
	By pressing the button ▲ and ▼ Pin A3 can be configured as: O a switching output O an error output O an input for switching on/off the transmitted light O an input for application of the offset O a Teach-Input for A1 O a Teach-Input for A2 (if A2 available)

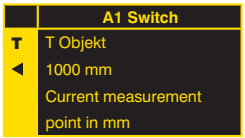
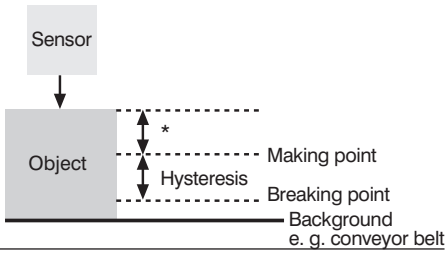
*Note: A1 applies only to OPT2012 and OPT2014. A3 applies only to OPT2012, OPT2014 and OPT2013

The adjusted function of the pins is displayed figuratively in the menu “Run Mode”:

(T1) (T2)	Teach-Input A3 for A1 or A2
(A1) (A2) (A3)	Switch output
(AN)	Analog output
(IN)	Input
(F)	Error output

7.3. A1/A2/A3 Switch

Basic settings for the individual switching outputs are selected in the A1/A2/A3 Switch menu.

Designation	Function
T Object	**Object Teach-In**
	Distance to the object is taught in by pressing the **T** key: • Align the spot to the object. • Briefly press the **T** key. ➔ Switching distance to the object is set. • If necessary, readjust the switching distance with the help of the **Potentiometer** menu item. * OPT201x: ($\frac{\text{Hysteresis}}{2}$) + 10 mm 

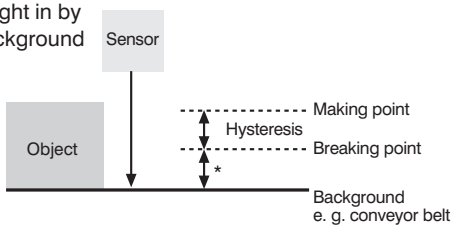
Designation	Function
T Backgrnd.	**Background-Teach-In**

	A1 Switch
T	T Background
◀	1000 mm
	Current measurement point in mm

Distance to the background is taught in by pressing the **T** key, so that the background can be suppressed:

- Align the spot to the background (e.g. conveyor belt).
- Briefly press the **T** key.
  → The background is suppressed.

* OPT201x: ($\frac{\text{Hysteresis}}{2}$) + 10 mm



T Window	**Teach-In a tolerance window**

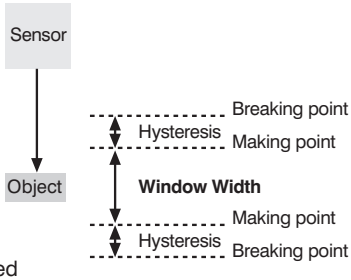
	A1 Switch
T	T Window
◀	1000 mm
	Current measurement point in mm

A window tolerance is taught in by pressing the **T** key:

- Align the spot to the object.
- Briefly press the **T** key.

→ A tolerance window is set up around the measured distance. The window width value is adjustable (see below). The default value is 50 mm. If the measuring distance lies within the window width, the sensor is activated.

When the window is taught in, the lower (L) and upper (H) switching points are displayed alternately in line 3.



Poti	**Readjusting the switching distance**

	Poti
+	T Poti
◀	1000 mm
–	Current measurement point in mm

The switching distance can be readjusted by pressing the + or the – key.

Hysteresis	**Adjusting switching hysteresis**

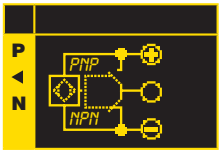
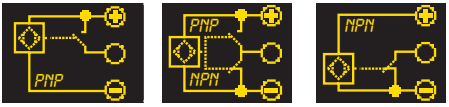
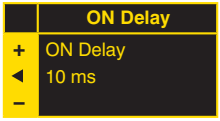
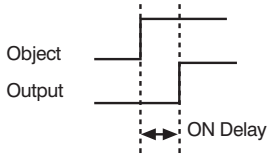
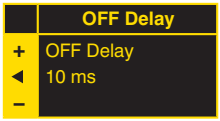
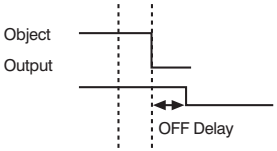
	Hysteresis
+	Hysteresis
◀	20 mm
–	

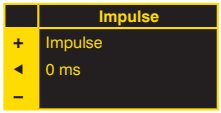
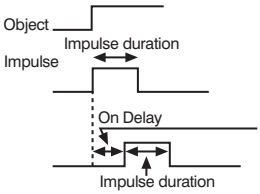
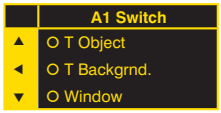
The hysteresis value is adjusted by pressing the + or the – key.
Minimum value: depends upon the measure rate (see table page 6)

Window Size	**Setting the desired window width**

	Window Size
+	WindowSize
◀	50 mm
–	

(Can only be adjusted after Teach Window).
The width (10 mm…1000 mm) of the tolerance window is selected by pressing the + or the – key. The default value is 50 mm.

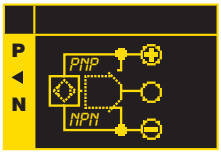
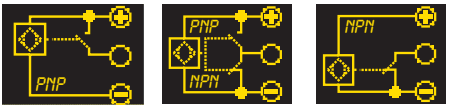
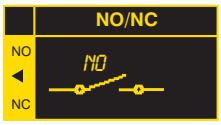
Designation	Function
NPN/PNP	**Configuring the outputs**
	The output is preset to PNP. Pressing the **N** key sets the output to push-pull. Pressing the **N** key again sets the output to NPN. The respective circuit diagram indicates how the output is set: **PNP** **Push-pull** **NPN** 
NO/NC	**Configuring the outputs**
	Outputs can be set up as normally open or normally closed by pressing the **NO** or the **NC** key. The respective circuit diagram is displayed.
ON Delay	**Adjusting ON Delay**
	ON Delay can be set to a value within a range of 10 to 10.000 ms by pressing the + or the – key. If the value is set to “0 ms” the function is deactivated. 
OFF Delay	**Adjusting OFF Delay**
	OFF Delay can be set to a value within a range of 10 to 10.000 ms by pressing the + or the – key. If the value is set to “0 ms” the function is deactivated. OFF Delay is disabled if a impulse duration has already been selected. If this is the case, Impulse! appears at the control panel. 

Designation	Function
Impulse	**Adjusting impulse duration**
	Impulse duration defines how long the output signal remains in the activated state. Impulse duration can be set to a value within a range of 0 to 10.000 ms by pressing the + or the – key. If the value is set to “0 ms” the function is deactivated. After the selected impulse duration has elapsed, the output signal is returned to the deactivated state..  Function can be combined with ON Delay.
Extern T	**External Teach-In**
	By pressing the button ▼ can be selected, if an “Object Teach-In”, a “Background Teach-In”, or “Teach-In of a tolerance window” is executed at the External Teach-In.

7.4. A3 Error/A3 Input

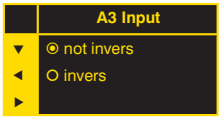
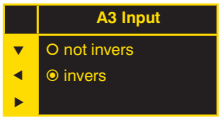
7.4.1. A3 Error

The error output is activated if no light signal is returned to the Sensor.

Designation	Function
NPN/PNP	**Configuring the error outputs**
	The error output is preset to PNP. Pressing the **N** key sets the error output to push-pull. Pressing the **N** key again sets the error output to NPN. The respective circuit diagram indicates how the output is set: **PNP** **Push-pull** **NPN** 
NO/NC	**Configuring the error outputs**
	Error Outputs can be set up as normally open or normally closed by pressing the **NO** or the **NC** key. The respective circuit diagram is displayed.

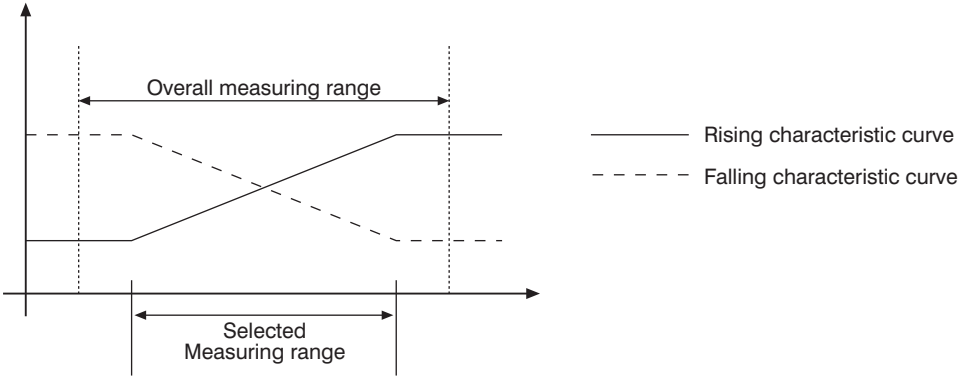
7.4.2 A3 Input

If Pin “A3” is used as input “Emitted light disengageable” or as input **“Offset”,** the input can be set as an inverted or non-inverted input.

Designation	Function
not invers	**Usage as non-inverted input**
	Normally, the input is at supply voltage “0”. The functionality of the input is triggered upon applying a voltage > 7 V.
invers	**Usage as inverted input**
	The input is normally at a voltage of > 7 V. The functionality of the input is triggered upon applying a voltage < 7 V.

7.5. A1 Analog/Analog

The measuring range for the analog output can be feely selected within the specified working range with rising of falling characteristic curve.
The adjusted measuring range must have a value of at least 2 % of the total measuring range.



Note: The menu item is only present for the Sensors OPT2014 and OPT2012 if pin function “Analog” is set.

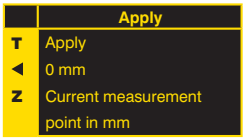
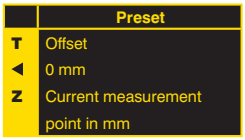
	Analog	Settings of the analog output	
▼	Mode U/I	**Mode U/I:**	Analog output as current or voltage output. The analog output can be set up as either a current or a voltage output by pressing the **U** or the **I** key. The corresponding symbol is displayed.
▶	Teach-In	**Teach-In:**	Teach in the distances which correspond to the upper and lower voltage values. The momentary actual distance is assigned to a voltage value of **10 V** or a current value of **20 mA** by pressing the 10 V or the 20 mA key.The momentary actual distance is assigned to a voltage value of **0 V** or a current value of **4 mA** by pressing the 0 V or the 4 mA key. If necessary, the assigned distances can be readjusted with the help of menu items At **0 V** or at **10 V**.
◀	At 0 V	**At 0 V:**	Distance at 0 V (visible in U mode) The distance assigned to the value 0 V can be recalibrated by pressing the “+” key or the “–” key.
	At 10 V	**At 10 V:**	Distance at 10 V (visible in U mode) The distance assigned to the value 10 V can be recalibrated by pressing the “+” key or the “–” key.
	At 4 mA	**At 4 mA:**	Distance at 4 mA (visible in I mode) The distance assigned to the value 4 mA can be recalibrated by pressing the “+” key or the “–” key.
	At 20 mA	**At 20 mA:**	Distance at 20 mA (visible in I mode) The distance assigned to the value 20 mA can be recalibrated by pressing the “+” key or the “–” key.

7.6. Offset

The function Offset serves to change the current measurement value to a certain other value. Here, the switching thresholds and the analog measurement ranges are changed as well.

The offset can take place optionally via a menu or externally via Pin A3.

Via menu

Designation	Function
Apply*	**Accepting the value set in “Specification” as the distance.**
	Upon pressing the button **T**, the offset value set in the menu option **Specification** is accepted as the distance. Upon pressing the button **Z**, the offset function is reset and the real distance is displayed.
Preset*	**Teaching the offset value**
	Upon pressing the button **T,** the current distance is accepted as the specification offset. Upon pressing the button **Z,** the offset specification value is set to 0 (the offset is activated in the menu option **Apply**)
Change	**Changing the offset value that has been set in steps**
	By pressing the keys + or – the adjusted specification offset (menu point Preset) can be changed stepwise upwards or downwards.

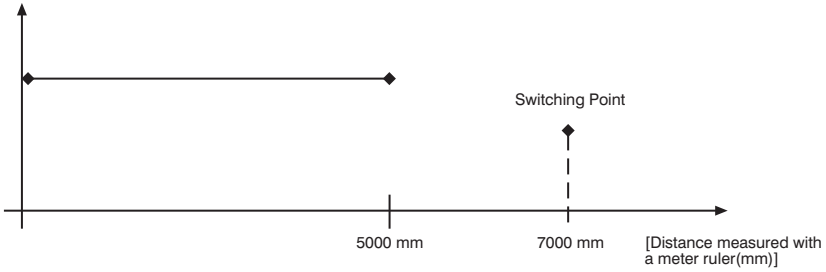
*The currently set specification offset is displayed in line 3. The current distance is displayed in line 4.

Via Pin “A3”

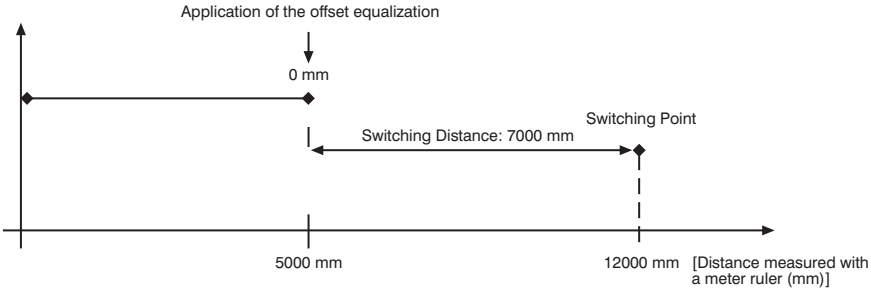
Via the multifunctional pin A3, the offset equalization can be applied through an external trigger Sensor (corresponds to the menu **Offset → Apply → T.** Here, **A3** must be configured by means of the setting Offset as input (see chapter 7.2 – Pin Function).

In order to apply the Offset equalization, a voltage > 7 V should be applied at the input pin to trigger a positive flank. Here, the value set in the menu option **Preset** is accepted as the current distance.

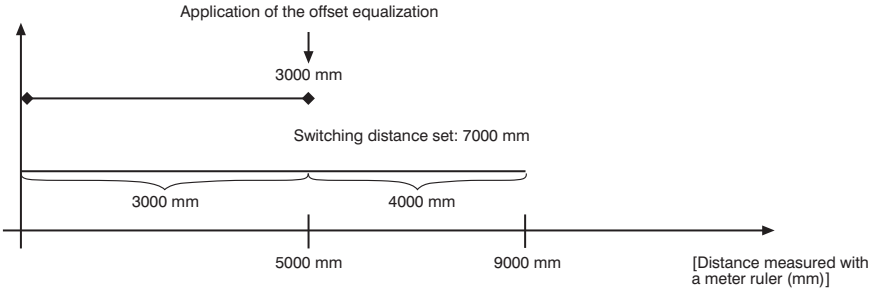
Without Offset equalization:
In the diagram, the Sensor measures a distance of 5000 mm.
The switching point is located 2000 mm distant, at 7000 mm.



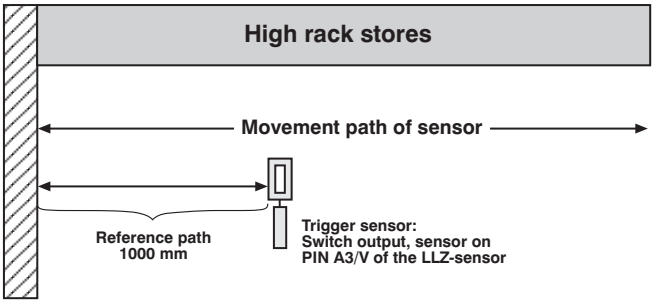
With application of the offset equalization: Specification offset: 0 mm
In the diagram, the Sensor measures a distance of 5000 mm. The switching point is located 2000 mm distant, at 7000 mm. After application of the offset equalization, from the distance 5000 mm the distance becomes 0 mm. The switching distance thus gets displaced by 7000 mm to the actual 12000 mm.



Application of the offset equalization: Specification offset: 3000 mm
In the diagram, the Sensor measures a distance of 5000 mm. The switching point is located 2000 mm distant, at 7000 mm. After application of the offset equalization, from the distance 5000 mm the distance becomes 3000 mm. The switching distance thus gets displaced by 4000 mm to the actual 9000 mm.



Example of application:
A OPT2013 is used in a high rack warehouse with varying ambient temperatures. To eliminate the temperature drift, a reference path of 1000 mm is specified to the Sensor as the specification offset. Through an external trigger Sensor, the specification offset is applied and given to the Sensor as the current distance. This ensures that the distance tallies with the value of the reference route with every trigger signal and thus, the varying ambient temperature has no influence on the measurement values of the Sensor.



7.7. Measure Rate

Reducing the measure rate improves resolution and reduces minimum selectable switching hysteresis.
The respective minimum and maximum values are in the table on page 6.

Designation	Function
MeasureRate ▼ O 100 Hz ▶ O 50 Hz ◀ O 20 Hz O 10 Hz O 5 Hz O 2 Hz O 1 Hz	Measure rate value
The measure rate which is best suited for the respective application can be selected from the predefined values by pressing the ▼ or the ▶ key.	

7.8. Laser

Transmitted light can be either deactivated or activated with the help of the **Laser** menu.

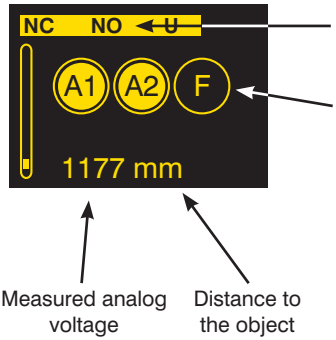
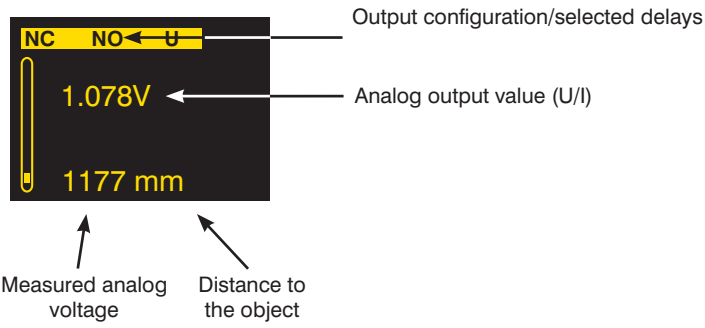
Designation	Function
Laser ▼ O ON ▶ O OFF ◀	ON: Switch transmitted light on OFF: Switch transmitted light off
Transmitted light is deactivated or activated by pressing the ▼ or the ▶ key.	

In case of the OPT2013 the laser diode can be switched off via pin 8, by connecting pin 8 to 24 V.

7.9. Run Mode

Which data will be read out to the display as measurement results are selected in the **Run Mode** menu.

Note: The menu item is only present for the Sensors OPT2014 and OPT2012 if pin function “Analog” is set. The option “Analog” in only present for the sensor OPT2013.

Designation	Function
	**DispMode:** What will appear at the monitor during display mode operation is selected by pressing the ▼ or the ▶ key: **<u>Distance:</u> The states of the individual outputs appear at the display.**  **<u>Analog:</u> The analog output value appears at the display.**  **Run:** The device is switched to the display mode by pressing the ▶ key.

7.10. Display

The display can be rotated and brightness can be adjusted with the help of the **Display** menu.

	Display	Set the display	
▼	rotated	**rotated:**	The display is rotated 180° by pressing the ▶ key. The display can be returned to its original position by pressing the same key once again.
▶	Intensity	**Intensity:**	To adjust the display Intensity (see chapter 7.10.1)
◀			

7.10.1. Intensity

	Intensity	Set the display intensity	
▲	O Min	**Min:**	The intensity of the display is set to a minimum value.
◀	O Normal	**Normal:**	The intensity of the display is set to a medium value.
▼	O Max	**Max:**	The intensity of the display is set to a maximum value.
	O Power save	**Power save:**	The display switches off after one minute without a button being pressed and automatically switches back on when a button is pressed.
	O Screensaver	**Screensaver:**	The colors of the display are inverted every minute.

Note: If none of the keys are activated for a given period of time, the display is switched to the energy saving mode and the intensity is reduced. The display is returned to the selected intensity as soon as any key is activated.

7.11. Language

The desired menu language can be selected in the **Language** menu.

	Language	Set menu language
▼	O Deutsch	The menu appears in the selected language immediately after selection.
▶	O English	
◀	O Français	

The desired language is selected by pressing the ▼ or ▶ key. The desired language appears in the menus as soon as it has been selected.

7.12. Info

The following information regarding the Sensor is displayed in the **Info** menu:

- Sensor type
- Software version
- Serial number

7.13. Reset

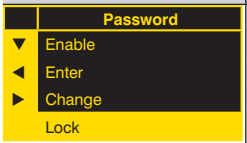
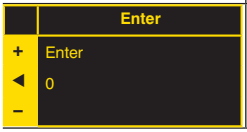
Sensor settings can be returned to their default settings with the help of the **Reset** menu. Default settings are listed in section “6.2. Default Settings”.

	Reset	Return to default settings
R ◀	Press <R> for Reset	All of the selected sensor settings are returned to their default values by pressing the **R** key.

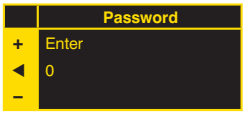
7.14. Password

Password settings can be entered in the password menu with the following four submenus.

Designation	Function
Enable	**Switch Password Function On or Off**
Password ▼ Enable ◀ Enter ▶ Change Lock	The **Enable** menu is accessed by pressing the ▶ key, where you can activate or deactivate the password function by selecting **Off** or **On**. After interruption of the power supply, the operation of the sensor is locked. Immediate blockage of the operation can be done in the sub-menu “Lock“.
Enter	**Password Entry for Enabling the Sensor**
Password ▼ Enable ◀ Enter ▶ Change Lock	The **Enter** submenu is accessed by pressing the ▶ key, where you can enter the password in order to enable the sensor.
Enter + Enter ◀ 0 –	The desired password is entered by means of the + or – key. Press and hold the + or – key in order to scroll quickly through the numbers. Entry is acknowledged by pressing the ◀ key. The password is set to 0 upon shipment from the factory.
Change	**Change the Password**
Password ▼ Enable ◀ Enter ▶ Change Lock	The **Change** submenu is accessed by pressing the ▶ key, where you can change the password.
Change + Change ◀ 0 –	The desired password is selected with the + or – key, and is acknowledged with the ◀ key. Press and hold the + or – key in order to scroll quickly through the numbers.

Designation	Function
Lock	**Lock after Sensor**
	The sensor can be disabled with the help of this function, without interrupting supply power. The sensor is disabled and switched automatically to the password entry mode after pressing the ▶ key.
	A password must be entered in order to continue using the sensor.

Notes regarding password functions:
If the password function has been activated, the password must be entered each time supply power to the Sensor is interrupted.
After pressing a key, the menu is automatically switched to the password entry mode.
The following user interface then appears:



After entering the correct password with the + or – key, the entire menu is enabled and the Sensor is ready for use.

- The password function is deactivated upon shipment from the factory.
- Passwords can be selected within a range of 0000 to 9999.

Be sure to make a note of the new password before exiting the “change password” function! If the password is forgotten, it must be overwritten with a master password. The master password can be requested by e-mail from **techbox@automationdirect.com.**

8. Maintenance Instructions

- This wenglor Sensor is maintenance-free.
- It is advisable to clean the lens and the display, and to check the plug connections at regular intervals.
- Do not clean with solvents or cleansers which could damage the device.

9. Proper Disposal

wenglor sensoric gmbh does not accept the return of unusable or irreparable products. Respectively valid national waste disposal regulations apply to product disposal.