PNG smart by wenglor

Making Industries Smarter

The Next Generation
of Photoelectronic Sensors

“Sensors are the most important components of smart machines.”

Dr. Alexander Ohl
Development Director, wenglor sensoric

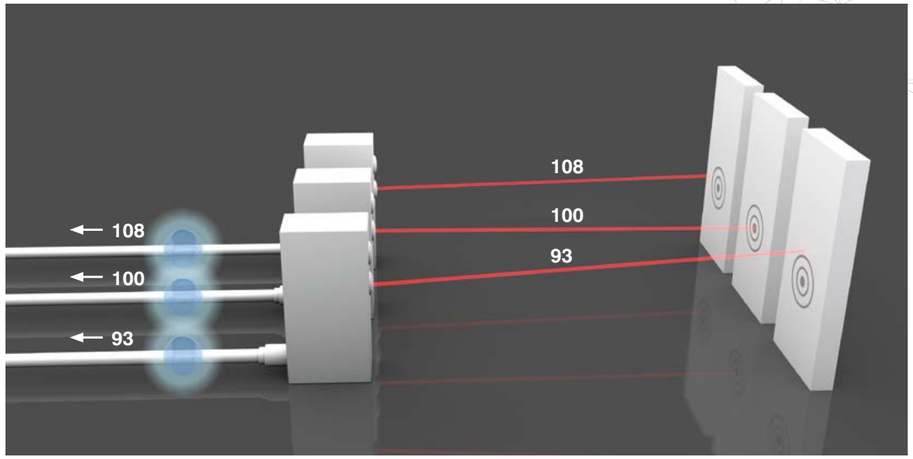
Photoelectronic **N**ext **G**eneration stands for a new age of smart photoelectronic sensors. wenglor’s portfolio provides a unique combination of the communication and performance capabilities which are required to make machines smart in the first place. As thinking, networked, learning sense organs, PNG//smart sensors are an integral constituent of automated production and logistics processes.

PNG//smart

Unique Communication and Performance

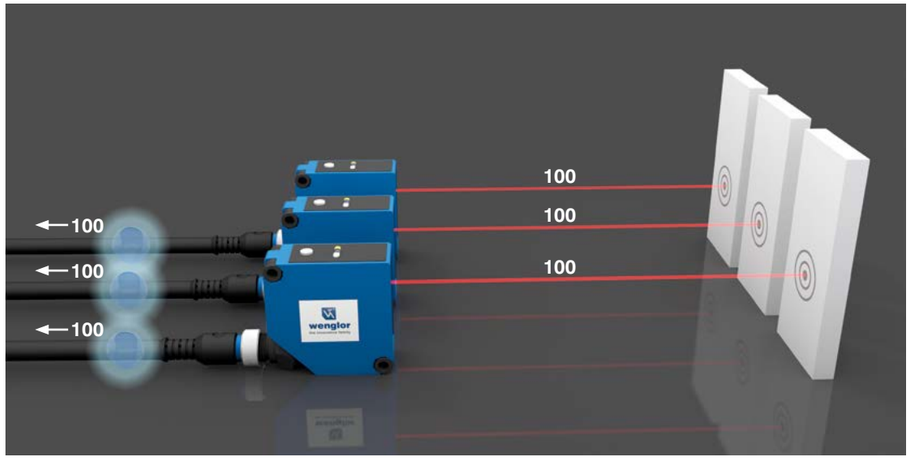
PNG//smart sensors are the result of a unique combination consisting of an intelligent interface and precision wenglor technology. They flexibly exchange process and parameters data and, thanks to accurately targeted optics and a balanced switching point, they transmit highly precise results in real-time.

Non-Targeted Optics and Non-Balanced Switching Point



The position of the spot varies in the case of sensors without targeted optics. Acquired data vary as well in the case of non-balanced switching points. Consequently, data communicated from different sensors are not comparable.

With Targeted Optics and Balanced Switching Point



In the case of targeted optics and balanced switching points, data obtained from the different sensors are comparable.

Communication

Speaking and Understanding the Language of Industry

Digital production of the future is already possible today with PNG//smart sensors. Equipped with the latest IO-Link version, the intelligent sensors permit highly flexible production and, at the same time, increase efficiency – by means of quick initial start-up, reduced idle time and consistent quality assurance.

Manufacturing Lot Size 1

Ongoing production processes can be flexibly switched over to another product with the help of PNG//smart sensors. Costly setup time is eliminated for batch changes. This results from the sensors' capability to exchange information with each other, as well as with actuators. The respective data are conditioned and processed by the sensors. This permits networked communication from machine to machine, by means of which the entire value chain can be optimized.

Predictive Maintenance

The sensors generate and transmit additional diagnostics and status data (condition monitoring). Analysis of this data makes it possible to plan maintenance work in advance and avoid downtime in production.

Simple Configuration

wenglor wTeach2 software is available free of charge and assures easy handling when configuring sensors – including evaluation and visualization of measurement and diagnostics data.

wTeach2

Integration into Existing Systems

PNG//smart sensors communicate with all common control systems via the IO-Link interface and can thus be easily integrated into existing networks.

IO-Link PROFINET EtherNet/IP

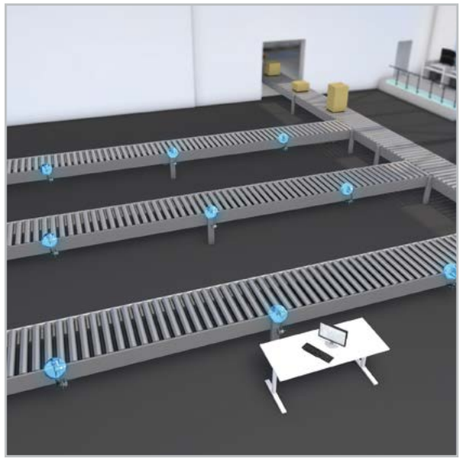
Wireless Presettings via NFC

PNG//smart sensors can even be configured in the de-energized state before installation – simply, while on-the-go using a smart phone or a tablet with the wenglor app.

NFC

Quick Initial Start-Up

Set up once – duplicate as often as you'd like. The PNG//smart sensor configuration can be stored to the controller and transferred to other applications by simply clicking a button, regardless of your current location.



Plug & Play with Data Storage

If a sensor is replaced, stored parameters are transferred automatically to the new sensor making replacement possible without programming.

wenglor offers intelligent communication via IO-Link in other product categories as well:

Ultrasonic Sensors | Inductive Sensors | Fluid Sensors | Photoelectronic Sensors

Performance

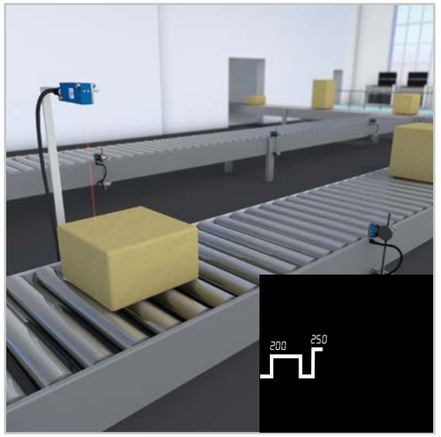
Innovative wenglor Technologies for Maximum Precision

wenglor's latest ASIC[1] development and precisely targeted optics provide for maximum precision and reliability of each individual PNG//smart sensor. Sensors with this technology perform better than ever before.

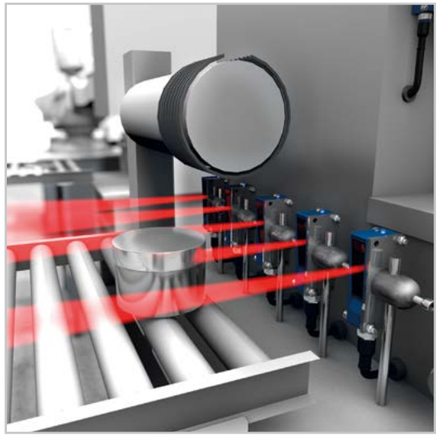
Installation Without Mounting System

Optics targeted at the factory and the balanced switching point assure that PNG//smart sensors with identical settings always deliver exactly the same results. This means that they can be secured in matching fixtures without a complex mounting system. This not only saves time and money during initial start-up, it also results in additional flexibility for the integration of sensors into the existing design of the respective equipment or an automated vehicle system. In combination with data storage, PNG//smart sensors also offer the world's first plug & play solution which doesn't require any reprogramming or readjustment.

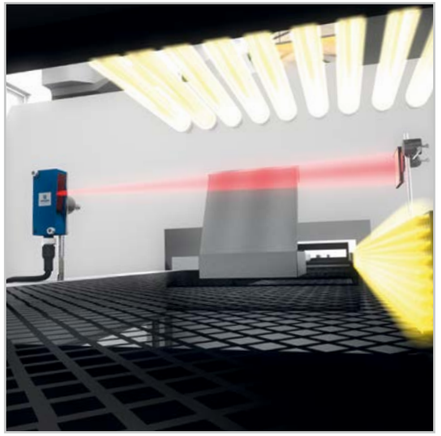
[1] ASIC = Application-Specific Integrated Circuit



Flexible Switching or Measurement
Switching statuses or distance values can be read out via the IO-Link interface. Flexible setting options reduce type diversity within the respective systems and minimize inventory costs.



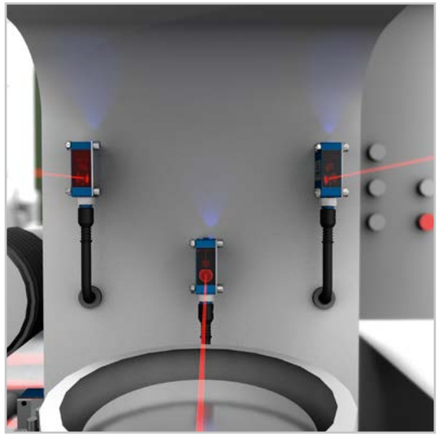
Reliable Object Detection
Whether black, glossy or transparent: PNG//smart sensors detect objects regardless of their color, shape or surface structure.



Insensitive to Interference
The sensors are insensitive to interference such as ambient light or electromagnetic influences thanks to specially developed processes.

No Reciprocal Influence Thanks to WinTec
PNG//smart sensors don't influence each other when they're mounted directly next to or opposite each other. This makes a great number of queries possible in very tight spaces.

WinTec



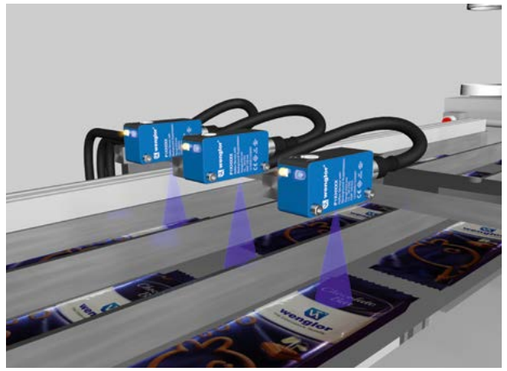
Safety Thanks to Laser Class 1
PNG//smart generation laser sensors are entirely safe for the human eye. As a result, they can be used on moving fixtures such as robot arms and shuttles. Warnings and complex protective measures are unnecessary.

Inspiring Contactless Object Detection

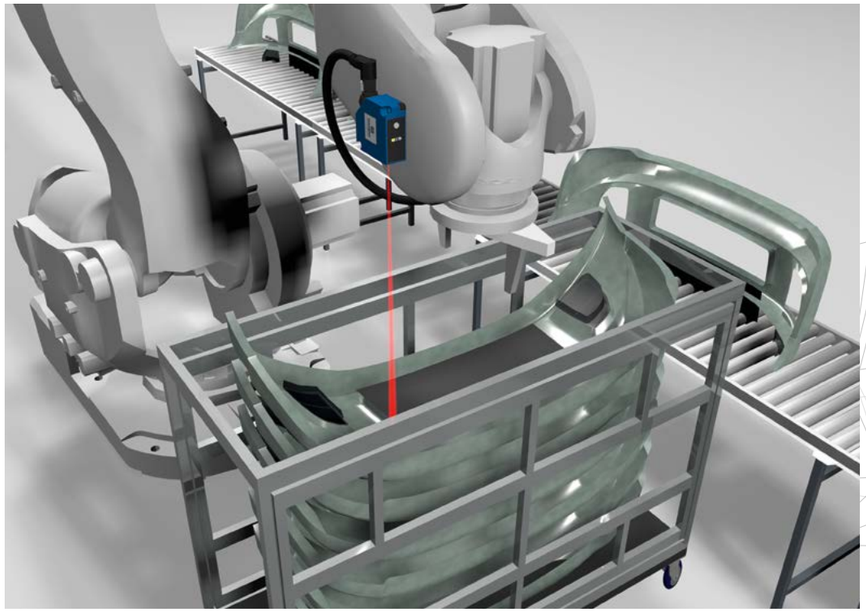
Industry is inspired by the great variety of functions provided by the PNG//smart series – with an ideal solution for every application. Seven optical functional principles based on various light sources result in the largest possible selection of sensors for Industry 4.0.

- High-performance distance sensors
- Reflex sensors
- Reflex sensors with background suppression
- Retro-reflex sensors
- Retro-reflex sensors for clear glass recognition
- Through-beam sensors
- Reflex light barriers

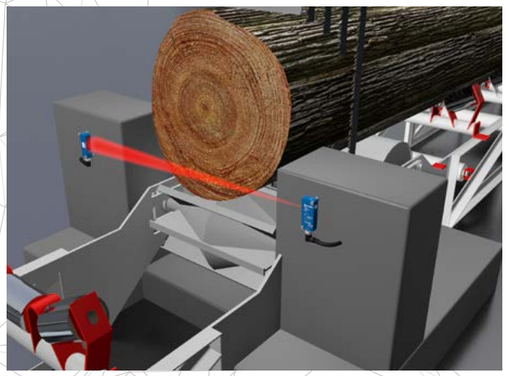
Packaging Industry
Reflex sensors with background suppression and blue light are especially well-suited for the detection of dark or glossy packages.



Automotive Industry
A smooth flow of materials is of decisive significance for trouble-free production. Reflex sensors with background suppression monitor material supplies for this reason, for example in automobile manufacturing.



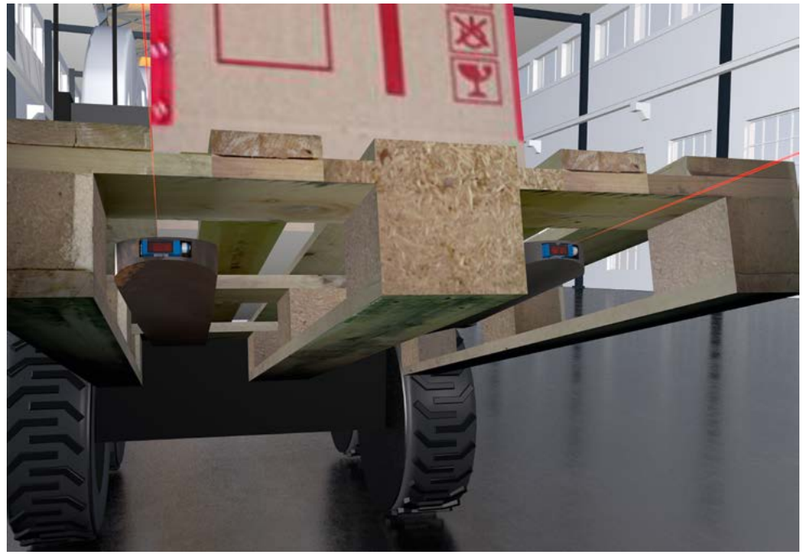
Beverages Industry
Retro-reflex sensors for clear glass recognition reliably detect transparent objects such as trays or PET and glass bottles with the help of a reflector. The sensors are equipped with an intelligent function for dynamic readjustment of the switching threshold in order to ensure precise object detection in the long-term. They automatically adjust the switching threshold in the event of contamination, aging or temperature fluctuation. Thanks to their single-lens optics without blind spot, retro-reflex sensors for clear glass recognition are capable of detecting objects through small openings such as drill holes or gaps.



Woodworking Industry
Highly strict demands are placed on photoelectronic sensors in the woodworking industry due to the dusty working environment. Thanks to heightened light intensity, wenglor's through-beam sensors are perfectly reliable even in adverse environments. Additional diagnostics and status data from the condition monitoring function, as well as a contamination warning, make the sensors ideal for use under the conditions which prevail in the woodworking industry.

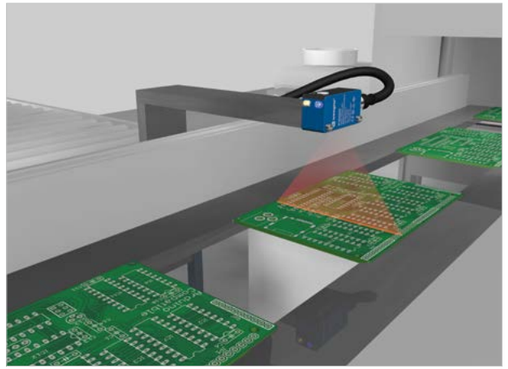
Logistics

In Logistics 4.0, unmanned transport systems such as forklifts and shuttles are used to transport goods through logistics centers. Thanks to their compact housings, high-performance distance sensors can be easily integrated into the vehicles in order to guide them through their environment without colliding and safely load or unload materials. With switching distances of up to 3000 mm and unparalleled performance where the detection of black and glossy objects is concerned, PNG//smart sensors are first choice for intralogistics experts.



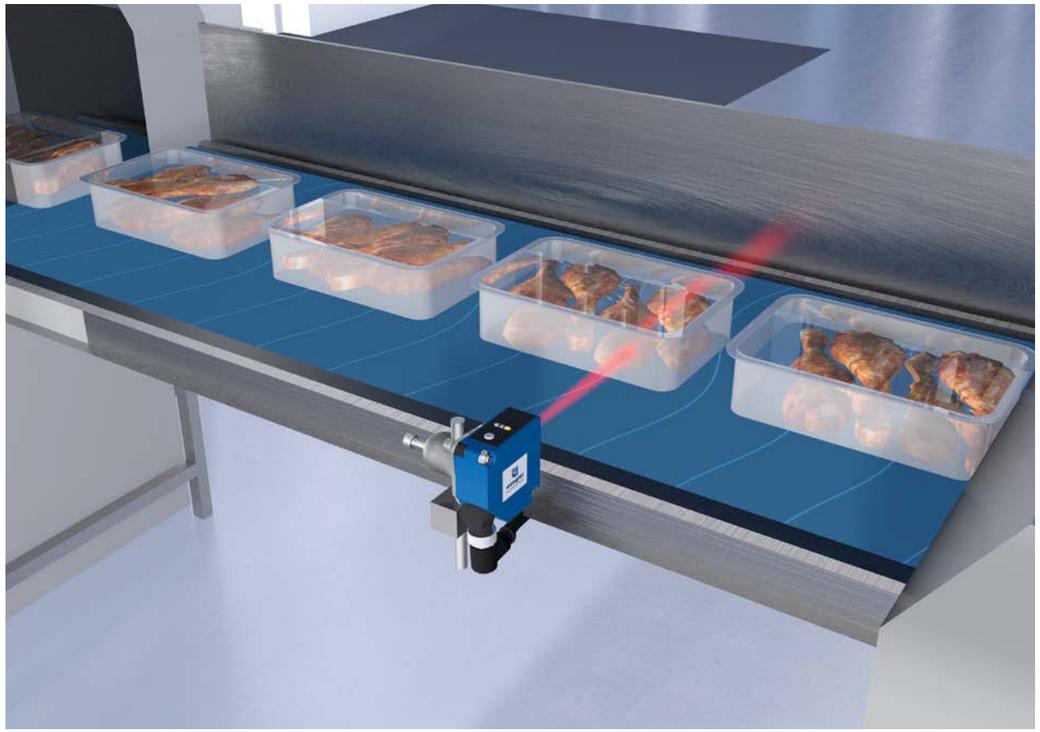
Electronics Industry

Due to their stamped or perforated surfaces, PCBs are difficult to detect. wenglor has developed a reflex sensor especially for this application which features a spot in the form of a line which accurately detects PCBs. Notches, holes or components on the PCBs don't disturb the sensor. The reflex sensor can also be used to reliably detect objects whose position on the conveyor belt varies.



Packaging Industry

Reflex light barriers detect even transparent packages which are located between the barrier and a specified background without the help of reflectors. This eliminates costs associated with mounting systems and reflectors, and offers additional installation flexibility. Reflex light barriers can be used throughout the entire packaging process – from monitoring the flow of materials in filling systems right on up to checking for the presence of packages.



A wenglor-Sensor of the PNG//smart generation is distinguished by that of which it has less. Fewer parts, less weight and fewer different housing materials – a product design which makes use and initial start-up of the entire product range smart.

PNG//smart Housing Formats

IP67/68

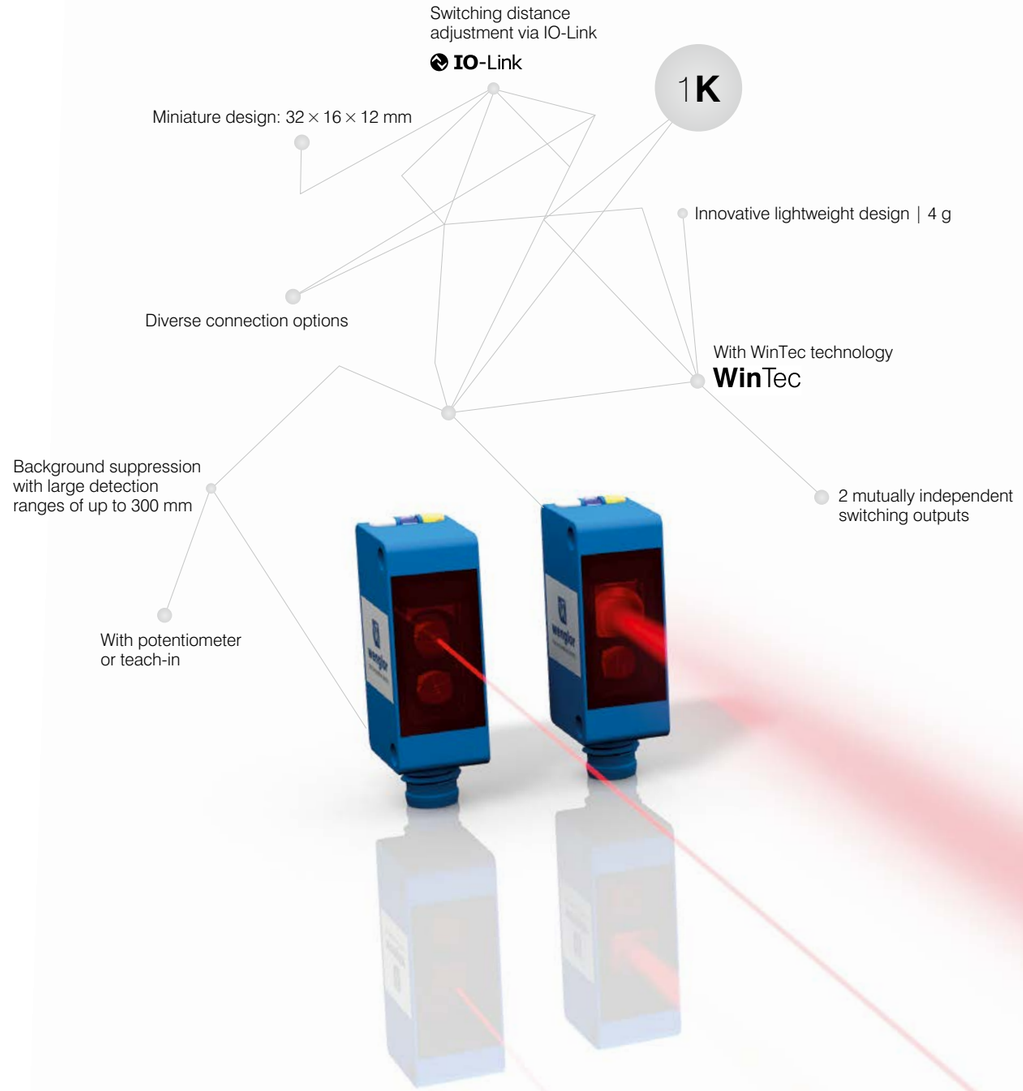
Rugged plastic housing with IP67 / IP68

Expanded temperature range of −40 to +60° C

Innovative lightweight design for applications on robot arms and unmanned transport systems

weGreen

Efficient power consumption conserves resources



Innovative display unit for simple alignment and accurate diagnosis

1N

Printed QR code for quick access to product information

NFC
Reliable configuration via NFC – even in the de-energized state

Compact housing
75 × 32.5 × 18 mm

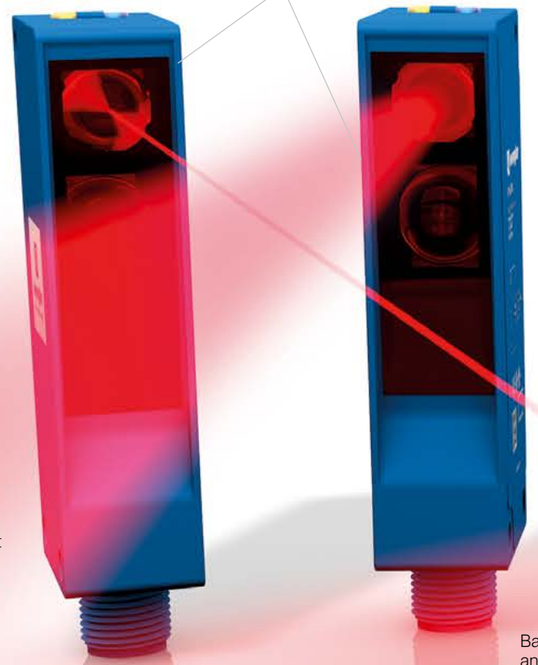
With potentiometer or teach-in

2 mutually independent switching outputs

Protective housing for adverse environments

Large ranges of up to 60 m

Switching distance adjustment via IO-Link
IO-Link



Background suppression with visible red light and large detection ranges of up to 1.2 m

NFC
Reliable configuration via NFC – even in the de-energized state

1P

Printed QR code for quick access to product information

With WinTec technology
WinTec

Background suppression with visible red light and large detection ranges of up to 1 m

With potentiometer or teach-in

2 mutually independent switching outputs

Compact housing
50 × 50 × 20 mm

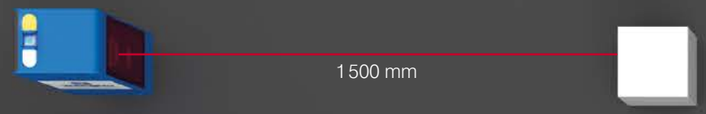
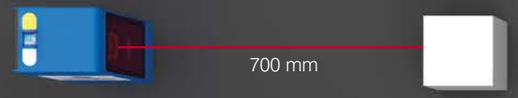
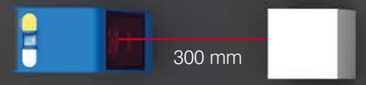
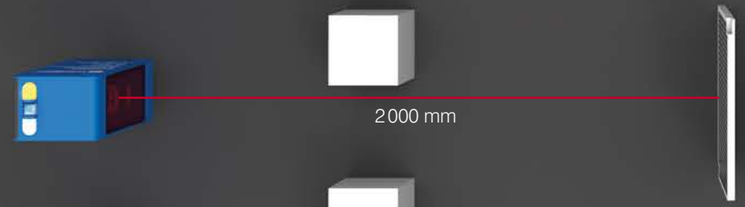
Unparalleled performance for the detection of black objects

Large ranges of up to 20 m

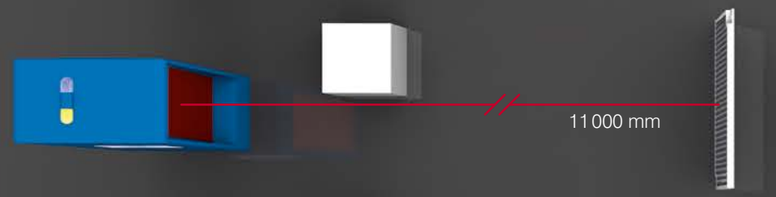
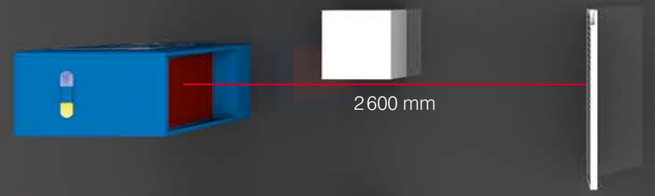
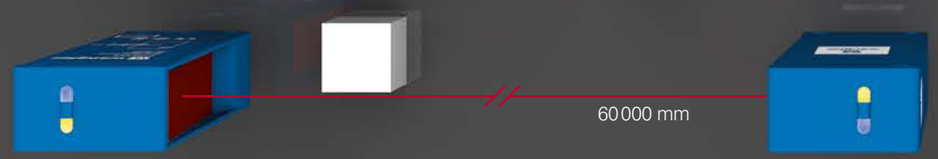
Protective housing for adverse environments

Switching distance adjustment via IO-Link
IO-Link

Innovative display unit for simple alignment and accurate diagnosis

Functional Principle	Upper range limit	Connection	Light source	Spot
High-performance distance sensors		Cable end: M12 × 1 Cable Plug: M8 × 1	Laser (red) class 1 Laser (infrared) class 1	Triple dot Dot
Reflex sensors		Plug: M8 × 1	LED (red)	Dot Line
Reflex sensors with background suppression		Cable end: M12 × 1 Cable Plug: M8 × 1	LED (red) LED (blue) Laser (red) class 1 Laser (red) class 2	Dot Dot
Retro-reflex sensors		Cable end: M12 × 1 Cable Plug: M8 × 1	LED (red) Laser (red) class 1	Dot
Retro-reflex sensors for clear glass recognition		Plug: M8 × 1	LED (red)	Dot
Through-beam sensors		Cable end: M12 × 1 Cable Plug: M8 × 1	LED (red) Laser (red) class 1	Dot

Detailed information concerning products can be found in the technical data sheets at: **www.wenglor.com/pngsmart**

Functional Principle	Upper range limit	Connection	Light source	Spot
Reflex sensors with background suppression		Cable Plug: M12 × 1	LED (red) LED (blue) Laser (red) class 1	Dot Dot
Retro-reflex sensors		Cable Plug: M12 × 1	LED (red) Laser (red) class 1	Dot
Retro-reflex sensors for clear glass recognition		Plug: M12 × 1	LED (red)	Dot
Through-beam sensors		Plug: M12 × 1	LED (red)	Dot

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Functional Principle	Upper range limit	Connection	Light source	Spot
High-performance distance sensors	3000 mm	Plug: M12 × 1 Cable end: M12 × 1	Laser (red) class 1	Dot
Reflex sensors with background suppression	1000 mm	Plug: M12 × 1	LED (red) LED (blue) Laser (red) class 1	Dot Dot
Retro-reflex sensors	11000 mm	Plug: M12 × 1	LED (red) Laser (red) class 1	Dot
Retro-reflex sensors for clear glass recognition	2600 mm	Plug: M12 × 1	LED (red)	Dot
Through-beam sensors	20000 mm	Plug: M12 × 1	LED (red)	Dot
Reflex light barriers	1000 mm	Plug: M12 × 1	LED (red)	Dot

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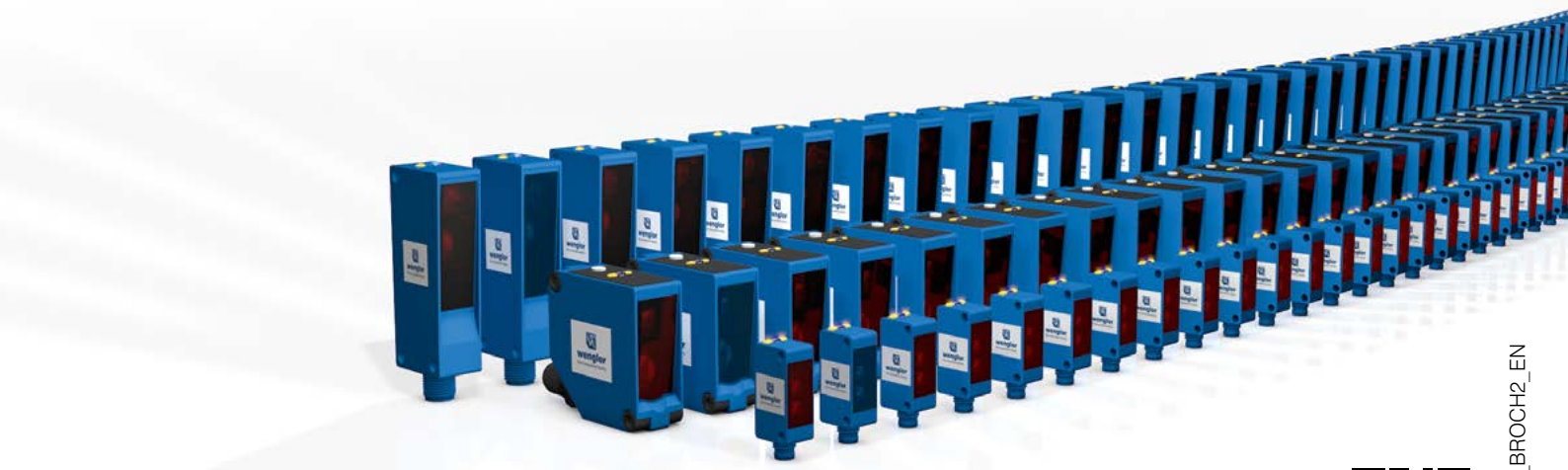
wenglor

the innovative family



www.wenglor.com

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