wenglor
the innovative family

InoxSens **Catalog**

InoxSens

InoxSens is wenglor's hygienic design for demanding cleaning requirements in the food & beverage and pharmaceuticals industries.
The housing is made of noncorrosive stainless steel and offers IP 69K protection as a standard feature. The InoxSens system is EHEDG and FDA compliant.
Inox (French): stainless steel

Content

Technical Glossary

3

3-A SSI:
3-A SSI is an organization which sets standards in the field of food and beverages in close cooperation with the FDA. It's comparable with the EHEDG in Europe. Components in closed processes (e. g. piping) can be certified by 3A. Certified components bear the 3A logo. Components in open processes (e. g. conveyor belts) cannot be certified.

C

CE Mark:
Represents the manufacturer's declaration that any product bearing such a mark is in compliance with applicable European standards and directives. The CE mark is neither a seal of quality nor a mark of conformity, but rather serves to facilitate free commercial trade within the EU.

D

Degree of Protection:
The specified degree of protection indicates whether or not the device is protected against contact, penetration by solid particles of a specified size and moisture (in accordance with DIN EN 60529).

IP20: Protection against penetration by solid particles with diameters larger than 12 mm. No special protection against penetration by water.

IP40: Protection against penetration by solid particles with diameters larger than 1 mm. No special protection against penetration by water.

IP42: Protection against penetration by solid particles with diameters larger than 1 mm. Protection against dripping water falling at an inclined angle.

IP54: Protection against dust deposits, full contact protection, protection against splash-water from all directions.

IP65: Full contact protection for voltage conducting components, protection against penetration by dust, protection against water jet streams.

IP67: Full contact protection for voltage conducting components, protection against penetration by dust, protection against submersion in water under specified conditions: at a depth of 1 metre for a duration of 30 minutes.

IP68 (wenglor specification): Full contact protection for voltage conducting components, protection against penetration by dust, protection against submersion in water under specified conditions: 1 metre for a duration of 7 days.

IP69K: Full contact protection for voltage conducting components, protection against penetration by dust, protection against water high pressure/steam jet cleaning (80-100 bar, 80 °C).

The degree of protection depends upon the utilised plug for devices with plug connectors.

In rare cases, extreme temperature fluctuations/temperature shock, even within the admissible range, may result in a reduced degree of protection due to different thermal expansion coefficients of the housing materials used. Direct exposure to sunlight may also result in damage to the housing.

E

Ecolab:
Ecolab is the company name of a cleaning agent manufacturer. Ecolab tests materials for compatibility with their own cleaning agents.

EHEDG:
European Hygienic Engineering & Design Group. The EHEDG provides design guidelines in accordance with which systems used in the food zone should be designed and laid out. The EHEDG was founded in 1989, and is a non-governmental organization. By means of its guidelines, the EHEDG provides a basis for the CEN (European Committee for Standardization). These guidelines are incorporated into various standards, for example the DIN EN 1672-2 standard. The EHEDG has a legitimate claim to compliance within the international market as well. It works together with the -> NSF and -> 3A in the USA. The goal is international harmonization of standards and guidelines. The EHEDG evaluates the design and cleanability of systems and equipment used in closed processes, for example piping. Installation, care and maintenance are taken into consideration. Testing and certification of sensors in an open process (e. g. conveyor belt) is not conducted (http://www.ehedg.org).

F

FDA:
Food and Drug Administration. American public authority for the safety of food and drugs. US public authority which enforces law with the objective of protecting public health in the USA. The FDA controls the safety and the effectiveness of human and veterinary drugs, biological products, medical products, foodstuffs and devices which emit radiation. This applies to products manufactured in the USA, as well as imported products. The improvement of public health is also one of the FDA's tasks. There are FDA approved materials and chemicals, which are listed by the -> CFR.

G

GMP:
Good Manufacturing Practice. GMP is a collection of guidelines for assuring the quality of production sequences and the production environment for manufacturing drugs, food and fodder. Quality assurance plays a central role in pharmaceuticals manufacturing, because deviations from specified quality characteristics may have direct effects on the health of the consumer. A GMP compliant quality management system assures product quality and fulfills requirements stipulated by the health authorities which are binding for product marketing.

I

IFS:
International Food Standard. The IFS is a private organization. IFS auditors approve food production facilities. The product quality of the food, as well as the production process, is examined on the basis of the -> HACCP concept.

InoxSens:
InoxSens is wenglor's hygienic design for demanding cleaning requirements in the food & beverage and pharmaceuticals industries.
The housing is made of noncorrosive stainless steel and offers IP 69K protection as a standard feature. The InoxSens system is -> EHEDG and -> FDA compliant.

Inox (French): stainless steel

ISO 14159:
Standard regarding: "Safety of machinery – Hygiene requirements for the design of machinery". Comparable with -> DIN EN 1672-2.

J

Johnson Diversey:
Johnson Diversey is the company name of a cleaning agent manufacturer. Johnson Diversey tests materials for compatibility with their own cleaning agents.

L

LMHV:
Food hygiene ordinance (German federal ordinance entitled Lebensmittelhygiene-Verordnung). German federal ordinance specifying hygiene requirements for the production, handling and marketing of food. The LMHV adopts EU directives into German law and must be adhered to by food producers in Germany.

N

NSF:
NSF International is The Public Health and Safety Company. The NSF is not a government health authority. It establishes standards for the food and beverage industry. Founded in 1944 in Michigan, USA (http://www.nsf.org).

InoxSens

System Solution for Photoelectronic Sensors

Through Beam Sensor

OSII403Z0103 (PMMA)
OSII403Z0203 (Glas)
OEII403C0103 (PMMA)
OEII403C0203 (Glass)

Reflex Sensor

OTII802C0103 (PMMA)
OTII802C0203 (Glass)
OTII802C0303 (PMMA)

Reflex Sensor with Background Suppression

OHI122C0103 (PMMA)
OHI122C0203 (Glass)

OHII102C0103 (PMMA)
OHII102C0203 (Glass)
OHII102C0303 (PMMA)

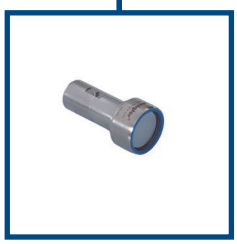
Retro-Reflex Sensor for Clear Glass Recognition

OKI403C0103 (PMMA)
OKI403C0203 (Glass)

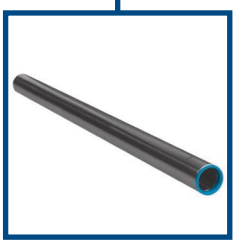
OKII403C0103 (PMMA)
OKII403C0203 (Glass)
OKII403C0303 (PMMA)

Reflectors in Stainless Steel Protection Housing ZRDS01R01
(with InoxLock)

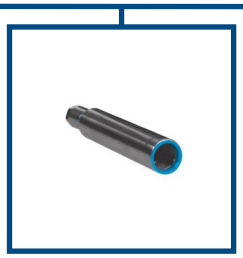
Hygienic Design Reflectors in stainless steel Protection Housing ZRMS02S01 (Glass)
Z90R001 (PMMA)



Hygienic Design Reflectors in stainless steel Protection Housing ZRM-S02I01 (with InoxLock)



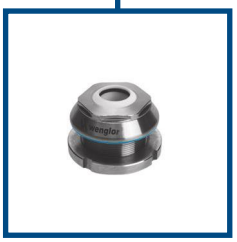
Mounting Tube with InoxLock ZMRII0401 and ZMRII0102 (straight)



Mounting Tube with InoxLock ZMRII0101
(with cable gland)

Mounting Tube with InoxLock ZMRII0402
(angled)

InoxLock Set Z0011
Easy to install with Mounting Tool Z0012



Mounting Console for Ø 20 mm ZMKII0002
(with angle compensation)

Mounting Console for Ø 20 mm ZMKII0001

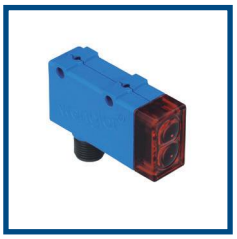
Mounting Clamp for Ø 20 mm ZMSII0002

InoxSens
System Solution with Protection Housing

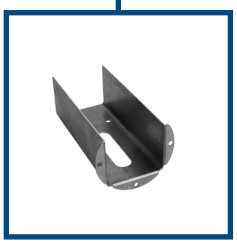
OCR Reader and Illuminations

Scanner (< 46 × 54 mm)

Sensor in P-housing



Sensor in M-housing

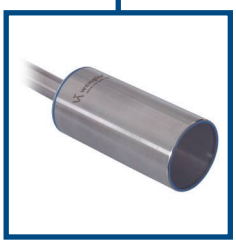


Mounting Bracket ZMWBV0001

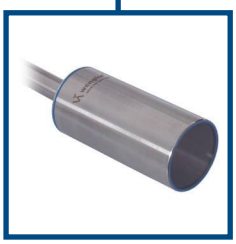
Mounting Bracket ZMWFI0001

Mounting Bracket ZMW0P0001

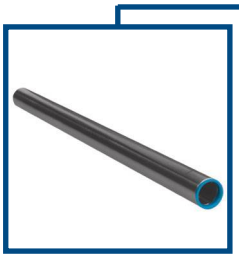
Mounting Bracket ZMW0M0001



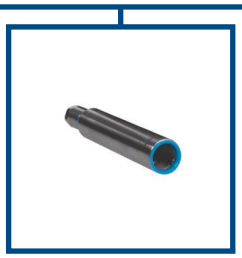
Protection Housing ZSV-02-01 (PMMA)



Protection Housing ZSV-03-01 (Glass)

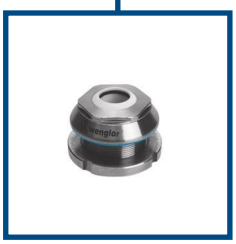


Mounting Tube with InoxLock ZMRII0401 and ZMRII0102 (straight)



Mounting Tube with InoxLock ZMRII0101 (with cable gland)

Mounting Tube with InoxLock ZMRII0402 (angled)



Mounting Console Ø 20 mm ZMKII0002 (with angle compensation)

Mounting Console Ø 20 mm ZMKII0001

Mounting Clamp Ø 20 mm ZMSII0002

Reflex Sensor

800 mm

Range

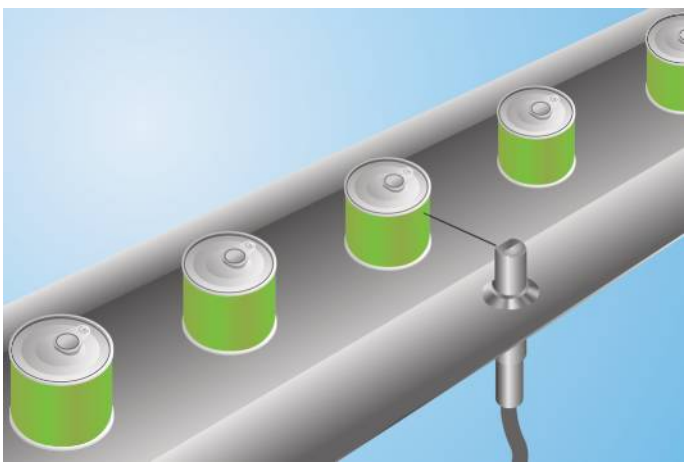
InoxSens

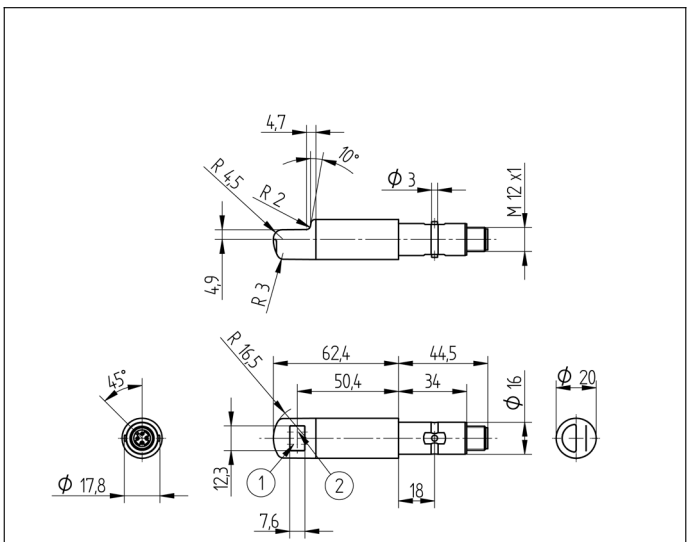
- **Hygienic design makes it easy to clean**
- **Made with food safe materials that are FDA approved**
- **Touch teach-in, external teach-in**
- **Waterproof (IP68/IP69K)**

Technical Data

Optical Data	
Range	800 mm
Switching Hysteresis	< 15 %
Light Source	Infrared Light
Wave Length	880 nm
Service Life (T = +25 °C)	100000 h
Max. Ambient Light	10000 Lux
Light Spot Diameter	see Table 1
Electrical Data	
Supply Voltage	10...30 V
Current Consumption (Ub = 24 V)	< 40 mA
Switching Frequency	1600 Hz
Response Time	313 µs
On-/Off-Delay (RS-232)	0...5 s
Temperature Drift	< 5 %
Temperature Range	-25...60 °C
Switching Output Voltage Drop	< 2,5 V
PNP Switching Output/Switching Current	200 mA
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Overload Protection	yes
Lockable	yes
Teach Mode	NT, MT
Protection Class	III
Mechanical Data	
Adjustment	Teach-In
Housing Material	Stainless Steel 316L
Degree of Protection	IP68/IP69K
Connection	M12 × 1; 4-pin
Material Control Panel	PC (FDA)

InoxSens is the hygiene series from wenglor. The innovative design of InoxSens sensors allows contamination and cleaning agents to flow off by themselves. A variety of components form a complete system which integrates seamlessly into the machine. The laser welded stainless steel housing made of V4A (1.4404/316L) is corrosion-free and resistant to cleaning agents. Gap-free mounting with InoxLock and the captive optics further contribute to these sensors' optimal suitability for cleaning-heavy environments. The InoxSens sensors are set up with the help of touch teach-in and is made possible by the hermetically sealed housing.

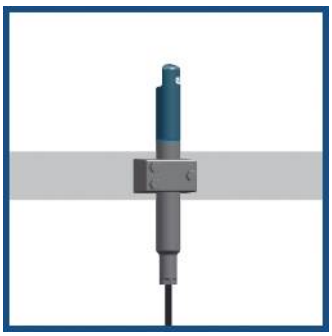
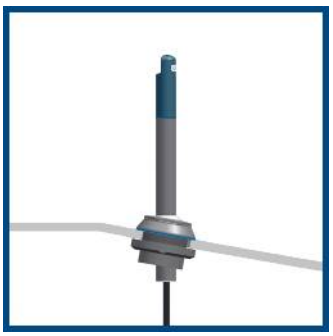




1 = Emitter
2 = Receiver
All dimensions in mm (1 mm = 0.03937 Inch)

	Plug Version	
Part Number	OTII802C0103	OTII802C0203
PNP NO/NC switchable	●	●
RS-232 with Adapterbox	●	●
Optic Cover	PMMA (FDA)	Glass
Connection Diagram No.	152	152
Control Panel No.	II1	II1
Suitable Connection Technology No.	2	2
Suitable Mounting Technology No.	140 490	140 490

Connection Diagrams page 60

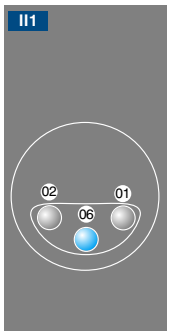





Complementary Products

Adapterbox A232

PNP-NPN Converter BG2V1P-N-2M

Ctrl. Panel



01 = Switching Status Indicator
02 = Contamination Warning
06 = Teach Button

Table 1

Detection Range	100 mm	500 mm	800 mm
Light Spot Diameter	19 mm	40 mm	55 mm

Reflex Sensor

800 mm

Range

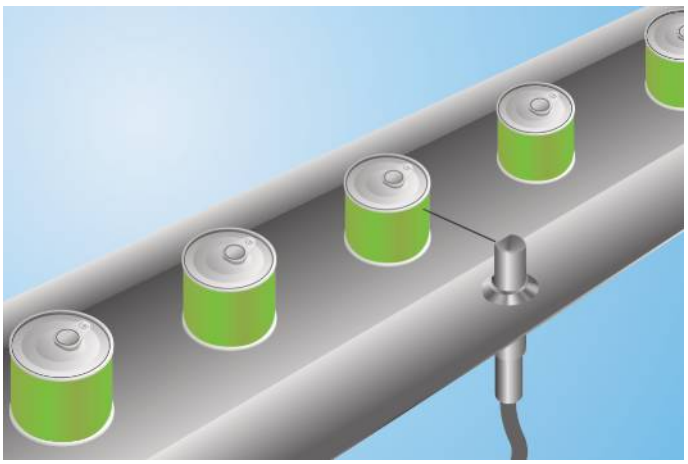
InoxSens

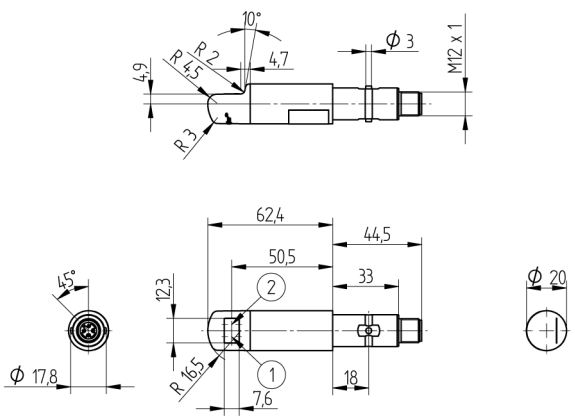
- **External teach-in, RS-232 interface**
- **Hygienic design makes it easy to clean**
- **Made with food safe materials that are FDA approved**
- **Waterproof (IP68/IP69K)**

Technical Data

Optical Data	
Range	800 mm
Switching Hysteresis	< 15 %
Light Source	Infrared Light
Wave Length	880 nm
Service Life (T = +25 °C)	100000 h
Max. Ambient Light	10000 Lux
Light Spot Diameter	see Table 1
Electrical Data	
Supply Voltage	10...30 V
Current Consumption (Ub = 24 V)	< 40 mA
Switching Frequency	1600 Hz
Response Time	313 µs
On-/Off-Delay (RS-232)	0...5 s
Temperature Drift	< 5 %
Temperature Range	-25...60 °C
Switching Output Voltage Drop	< 2,5 V
PNP Switching Output/Switching Current	200 mA
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Overload Protection	yes
Lockable	yes
Teach Mode	NT, MT
Protection Class	III
Mechanical Data	
Adjustment	Teach-In
Housing Material	Stainless Steel 316L
Degree of Protection	IP68/IP69K
Connection	M12 × 1; 4-pin
Optic Cover	PMMA (FDA)

InoxSens is the hygiene series from wenglor. The innovative design of InoxSens sensors allows contamination and cleaning agents to flow off by themselves. A variety of components form a complete system which integrates seamlessly into the machine. The laser welded stainless steel housing made of V4A (1.4404/316L) is corrosion-free and resistant to cleaning agents. Gap-free mounting with InoxLock and the captive optics further contribute to these sensors' optimal suitability for cleaning-heavy environments.





1 = Emitter
2 = Receiver
All dimensions in mm (1 mm = 0.03937 Inch)

	Plug Version
Part Number	OTII802C0303
PNP NO/NC switchable	●
RS-232 with Adapterbox	●
Connection Diagram No.	152
Control Panel No.	IIo1
Suitable Connection Technology No.	2
Suitable Mounting Technology No.	140 490

Connection Diagrams page 60

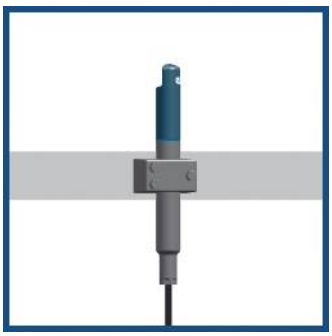
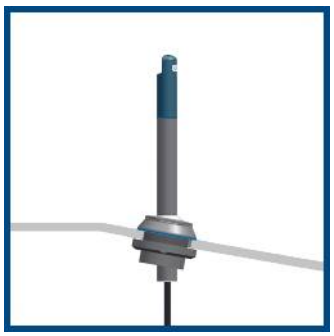





Table 1

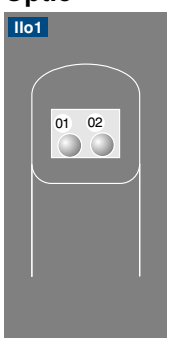
Detection Range	100 mm	500 mm	800 mm
Light Spot Diameter	19 mm	40 mm	55 mm

Complementary Products

Adapterbox A232

PNP-NPN Converter BG2V1P-N-2M

Optic



01 = Switching Status Indicator
02 = Contamination Warning

Reflex Sensor
with Background Suppression

100 mm
Range

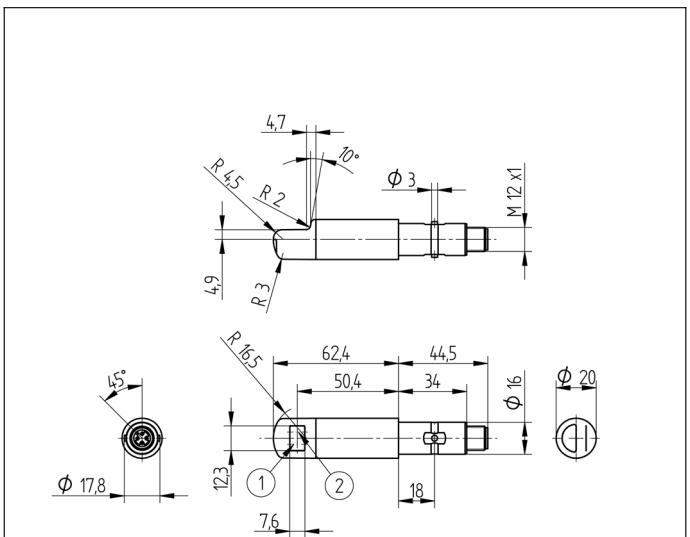
InoxSens

- **Hygienic design makes it easy to clean**
- **Made with food safe materials that are FDA approved**
- **Touch teach-in, external teach-in**
- **Waterproof (IP68/IP69K)**

Technical Data

Optical Data	
Range	100 mm
Adjustable Range	10...100 mm
Switching Hysteresis	< 5 %
Light Source	Red Light
Service Life (T = +25 °C)	100000 h
Max. Ambient Light	10000 Lux
Light Spot Diameter	see Table 1
Electrical Data	
Supply Voltage	10...30 V
Current Consumption (Ub = 24 V)	< 30 mA
Switching Frequency	600 Hz
Response Time	800 µs
Temperature Drift	< 10 %
Temperature Range	-25...60 °C
Switching Output Voltage Drop	< 2,5 V
PNP Switching Output/Switching Current	200 mA
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Overload Protection	yes
Lockable	yes
Teach Mode	HT, VT
Protection Class	III
Mechanical Data	
Adjustment	Teach-In
Housing Material	Stainless Steel 316L
Degree of Protection	IP68/IP69K
Connection	M12 × 1; 4-pin
Material Control Panel	PC (FDA)

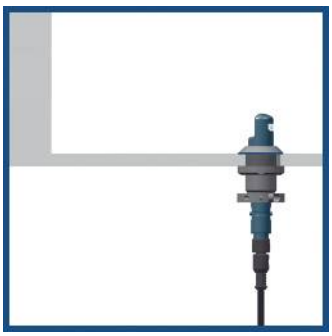
InoxSens is the hygiene series from wenglor. The innovative design of InoxSens sensors allows contamination and cleaning agents to flow off by themselves. A variety of components form a complete system which integrates seamlessly into the machine. The laser welded stainless steel housing made of V4A (1.4404/316L) is corrosion-free and resistant to cleaning agents. Gap-free mounting with InoxLock and the captive optics further contribute to these sensors' optimal suitability for cleaning-heavy environments. The InoxSens sensors are set up with the help of touch teach-in and is made possible by the hermetically sealed housing.



1 = Emitter
2 = Receiver
All dimensions in mm (1 mm = 0.03937 Inch)

	Plug Version	
Part Number	OHII102C0103	OHII102C0203
PNP NO/NC switchable	●	●
RS-232 with Adapterbox	●	●
Optic Cover	PMMA (FDA)	Glass
Connection Diagram No.	152	152
Control Panel No.	II1	II1
Suitable Connection Technology No.	2	2
Suitable Mounting Technology No.	140 490	140 490

Connection Diagrams page 60



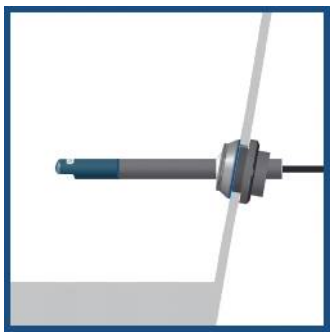
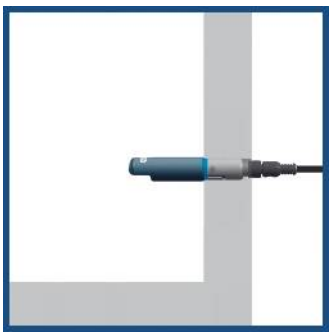



Table 1

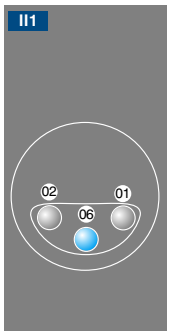
Detection Range	10 mm	40 mm	100 mm
Light Spot Diameter	2,5 × 7 mm	2,5 × 5 mm	2,5 × 2,5 mm

Complementary Products

Adapterbox A232

PNP-NPN Converter BG2V1P-N-2M

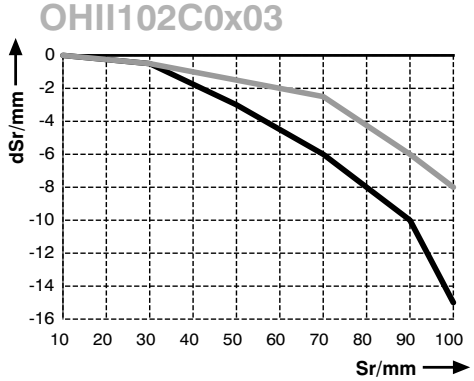
Ctrl. Panel



01 = Switching Status Indicator
02 = Contamination Warning
06 = Teach Button

Switching Distance Deviation

Typical characteristic curve based on Kodak white (90 % remission)



Sr = Switching Distance
dSr = Switching Distance Change
black 6 % remission
grey 18 % remission

Reflex Sensor
with Background Suppression

100 mm
Range

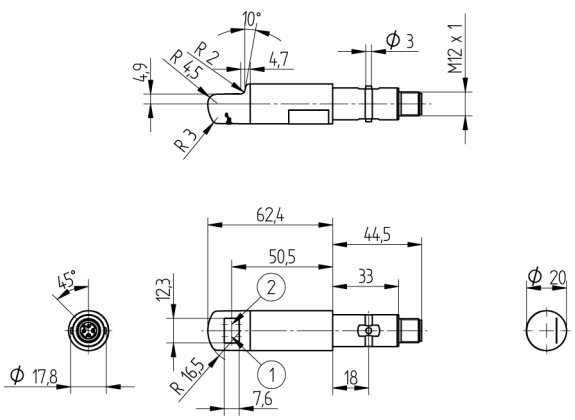
InoxSens

- **External teach-in, RS-232 interface**
- **Hygienic design makes it easy to clean**
- **Made with food safe materials that are FDA approved**
- **Waterproof (IP68/IP69K)**

Technical Data

Optical Data	
Range	100 mm
Adjustable Range	10...100 mm
Switching Hysteresis	< 5 %
Light Source	Red Light
Service Life (T = +25 °C)	100000 h
Max. Ambient Light	10000 Lux
Light Spot Diameter	see Table 1
Electrical Data	
Supply Voltage	10...30 V
Current Consumption (Ub = 24 V)	< 30 mA
Switching Frequency	600 Hz
Response Time	800 µs
Temperature Drift	< 10 %
Temperature Range	-25...60 °C
Switching Output Voltage Drop	< 2,5 V
PNP Switching Output/Switching Current	200 mA
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Overload Protection	yes
Lockable	yes
Teach Mode	HT, VT
Protection Class	III
Mechanical Data	
Adjustment	Teach-In
Housing Material	Stainless Steel 316L
Degree of Protection	IP68/IP69K
Connection	M12 × 1; 4-pin
Optic Cover	PMMA (FDA)

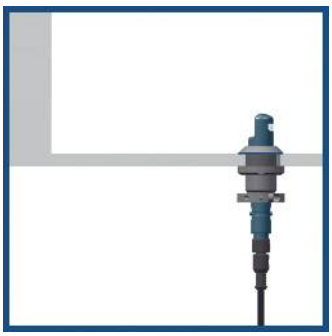
InoxSens is the hygiene series from wenglor. The innovative design of InoxSens sensors allows contamination and cleaning agents to flow off by themselves. A variety of components form a complete system which integrates seamlessly into the machine. The laser welded stainless steel housing made of V4A (1.4404/316L) is corrosion-free and resistant to cleaning agents. Gap-free mounting with InoxLock and the captive optics further contribute to these sensors' optimal suitability for cleaning-heavy environments.



1 = Emitter
2 = Receiver
All dimensions in mm (1 mm = 0.03937 Inch)

	Plug Version
Part Number	OHII102C0303
PNP NO/NC switchable	●
RS-232 with Adapterbox	●
Connection Diagram No.	152
Control Panel No.	IIo1
Suitable Connection Technology No.	2
Suitable Mounting Technology No.	140 490

Connection Diagrams page 60



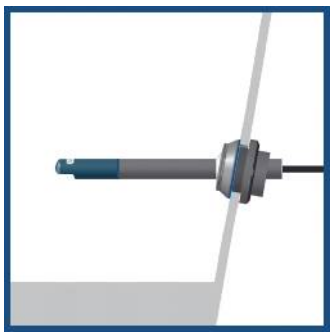
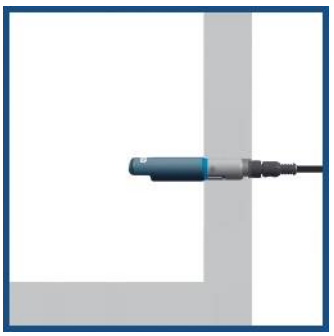



Table 1

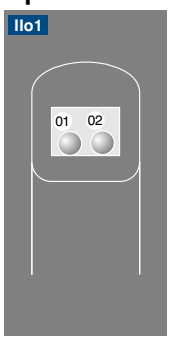
Detection Range	10 mm	40 mm	100 mm
Light Spot Diameter	2,5 × 7 mm	2,5 × 5 mm	2,5 × 2,5 mm

Complementary Products

Adapterbox A232

PNP-NPN Converter BG2V1P-N-2M

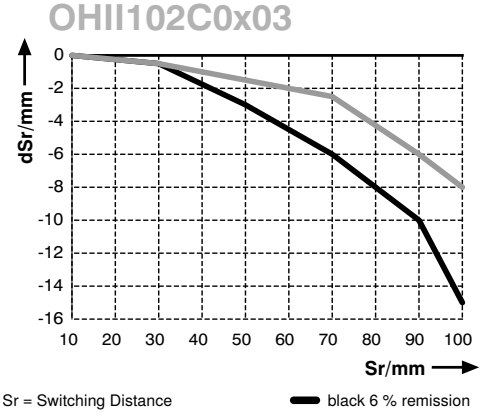
Optic



01 = Switching Status Indicator
02 = Contamination Warning

Switching Distance Deviation

Typical characteristic curve based on Kodak white (90 % remission)



Sr = Switching Distance
dSr = Switching Distance Change
black 6 % remission
grey 18 % remission

Reflex Sensor
with Background Suppression

120 mm
Range

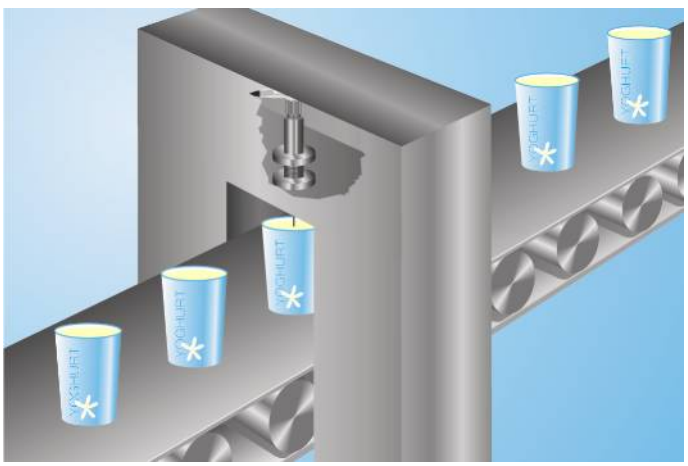
InoxSens

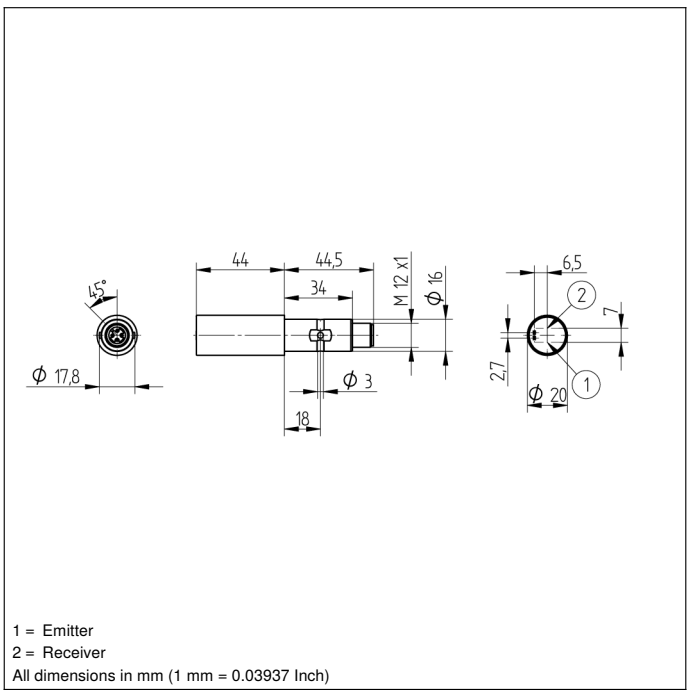
- **External teach-in**
- **Hygienic design makes it easy to clean**
- **Made with food safe materials that are FDA approved**
- **Waterproof (IP68/IP69K)**

Technical Data

Optical Data	
Range	120 mm
Adjustable Range	30...120 mm
Switching Hysteresis	< 5 %
Light Source	Red Light
Service Life (T = +25 °C)	100000 h
Max. Ambient Light	10000 Lux
Light Spot Diameter	see Table 1
Electrical Data	
Supply Voltage	10...30 V
Current Consumption (Ub = 24 V)	< 30 mA
Switching Frequency	600 Hz
Response Time	800 µs
Temperature Drift	< 10 %
Temperature Range	-25...60 °C
Switching Output Voltage Drop	< 2,5 V
PNP Switching Output/Switching Current	200 mA
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Overload Protection	yes
Lockable	yes
Teach Mode	HT, VT
Protection Class	III
Mechanical Data	
Adjustment	Teach-In
Housing Material	Stainless Steel 316L
Degree of Protection	IP68/IP69K
Connection	M12 × 1; 4-pin

InoxSens is the hygiene series from wenglor. The innovative design of InoxSens sensors allows contamination and cleaning agents to flow off by themselves. A variety of components form a complete system which integrates seamlessly into the machine. The laser welded stainless steel housing made of V4A (1.4404/316L) is corrosion-free and resistant to cleaning agents. Gap-free mounting with InoxLock and the captive optics further contribute to these sensors' optimal suitability for cleaning-heavy environments.The configuration of the InoxSens sensors are made through external teach-in.

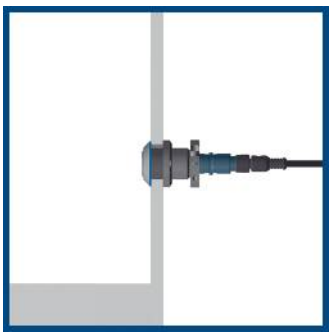




1 = Emitter
2 = Receiver
All dimensions in mm (1 mm = 0.03937 Inch)

	Plug Version	
Part Number	OHI122C0103	OHI122C0203
PNP NO/NC switchable	●	●
RS-232 with Adapterbox	●	●
Optic Cover	PMMA (FDA)	Glass
Connection Diagram No.	152	152
Control Panel No.	II4	II4
Suitable Connection Technology No.	2	2
Suitable Mounting Technology No.	140 490	140 490

Connection Diagrams page 60



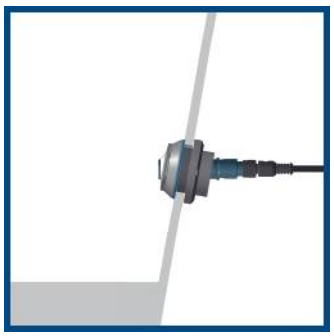


Table 1

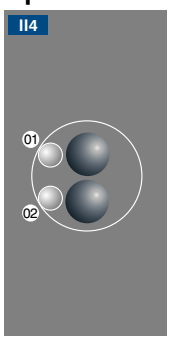
Detection Range	30 mm	100 mm	120 mm
Light Spot Diameter	2,5 × 7 mm	2,5 × 2,5 mm	3 × 3 mm

Complementary Products

Adapterbox A232

PNP-NPN Converter BG2V1P-N-2M

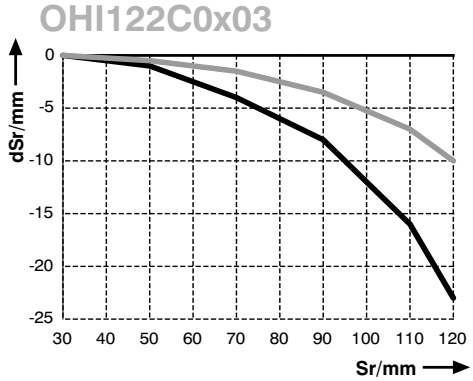
Optic



01 = Switching Status Indicator
02 = Contamination Warning

Switching Distance Deviation

Typical characteristic curve based on Kodak white (90 % remission)



Sr = Switching Distance
dSr = Switching Distance Change
black 6 % remission
grey 18 % remission

Retro-Reflex Sensor
for Clear Glass Recognition

4000 mm
Range

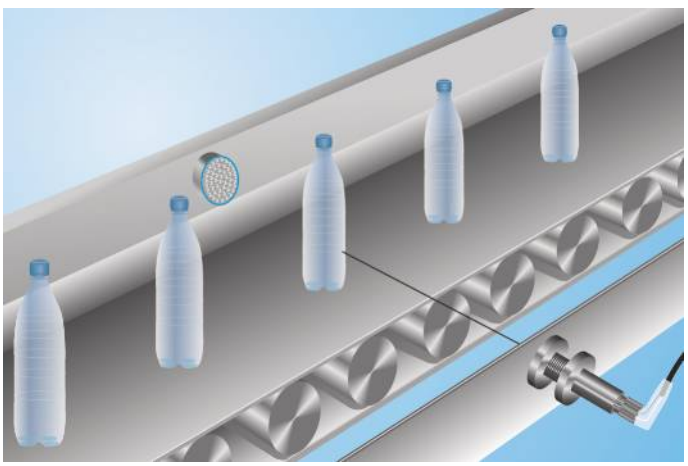
InoxSens

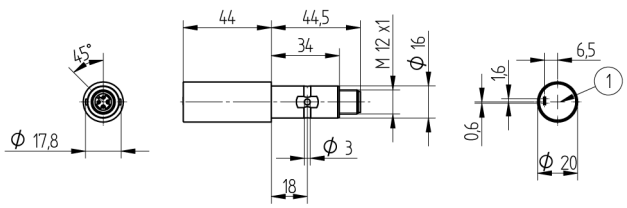
- **External teach-in**
- **Hygienic design makes it easy to clean**
- **Made with food safe materials that are FDA approved**
- **Waterproof (IP68/IP69K)**

Technical Data

Optical Data	
Range	4000 mm
Reference Reflector/Reflex Foil	RQ100BA
Clear Glass Recognition	yes
Switching Hysteresis	< 5 %
Light Source	Red Light
Polarization Filter	yes
Service Life (T = +25 °C)	100000 h
Max. Ambient Light	10000 Lux
Opening Angle	3 °
Single-Lens Optic	yes
Electrical Data	
Supply Voltage	10...30 V DC
Current Consumption (Ub = 24 V)	< 40 mA
Switching Frequency	1600 Hz
Response Time	313 µs
On-/Off-Delay (RS-232)	0...5 s
Temperature Drift	< 5 %
Temperature Range	-10...60 °C
Switching Output Voltage Drop	< 2,5 V
PNP Switching Output/Switching Current	200 mA
Residual Current Switching Output	< 50 µA
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Overload Protection	yes
Lockable	yes
Teach Mode	NT, MT, XT
Protection Class	III
Mechanical Data	
Adjustment	Teach-In
Housing Material	Stainless Steel 316L
Degree of Protection	IP68/IP69K
Connection	M12 × 1; 4-pin

InoxSens is the hygiene series from wenglor. The innovative design of InoxSens sensors allows contamination and cleaning agents to flow off by themselves. A variety of components form a complete system which integrates seamlessly into the machine. The laser welded stainless steel housing made of V4A (1.4404/316L) is corrosion-free and resistant to cleaning agents. Gap-free mounting with InoxLock and the captive optics further contribute to these sensors' optimal suitability for cleaning-heavy environments.The configuration of the InoxSens sensors are made through external teach-in.

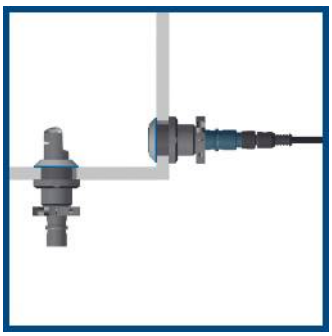




1 = optical axle
All dimensions in mm (1 mm = 0.03937 Inch)

	Plug Version	
Part Number	OKI403C0103	OKI403C0203
PNP NO/NC switchable	●	●
RS-232 with Adapterbox	●	●
Optic Cover	PMMA (FDA)	Glass
Connection Diagram No.	152	152
Control Panel No.	II3	II3
Suitable Connection Technology No.	2	2
Suitable Mounting Technology No.	140 490	140 490

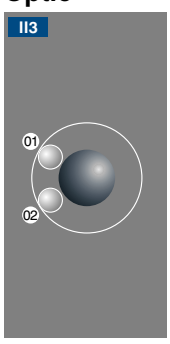
Connection Diagrams page 60



Complementary Products

- Adapterbox A232
- PNP-NPN Converter BG2V1P-N-2M
- Reflector in Stainless Steel Protection Housing
- Reflector, Reflex Foil

Optic



01 = Switching Status Indicator
02 = Contamination Warning

Feasible reflector distance

Reflector type, mounting distance

RQ100BA	0...4 m	**RE6210BM**	0...0,7 m
RE18040BA	0...2,5 m	**RR25_M**	0...1 m
RQ84BA	0...3,5 m	**RR25KP**	0...0,55 m
RR84BA	0...4 m	**RR21_M**	0...0,9 m
RE9538BA	0...1,5 m	**ZRAE02B01**	0...1,6 m
RE6151BM	0...3,4 m	**ZRDS01R01**	0...0,7 m
RR50_A	0...2,6 m	**ZRME01B01**	0...0,4 m
RE6040BA	0...3,2 m	**ZRME03B01**	0...1,6 m
RE8222BA	0...1,9 m	**ZRMR02K01**	0...0,5 m
RR34_M	0...1,6 m	**ZRMS02_01**	0...0,7 m
RE3220BM	0...0,8 m		

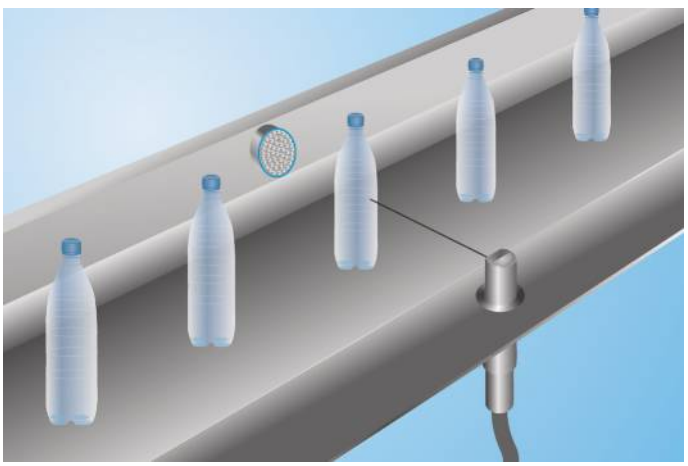
Retro-Reflex Sensor
for Clear Glass Recognition

4000 mm
Range

InoxSens

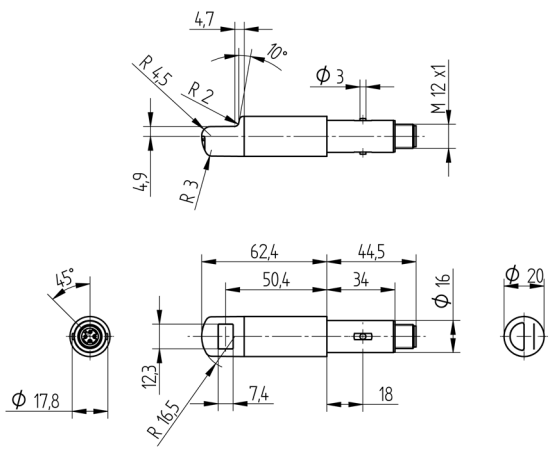
- **Hygienic design makes it easy to clean**
- **Made with food safe materials that are FDA approved**
- **Touch teach-in, external teach-in**
- **Waterproof (IP68/IP69K)**

InoxSens is the hygiene series from wenglor. The innovative design of InoxSens sensors allows contamination and cleaning agents to flow off by themselves. A variety of components form a complete system which integrates seamlessly into the machine. The laser welded stainless steel housing made of V4A (1.4404/316L) is corrosion-free and resistant to cleaning agents. Gap-free mounting with InoxLock and the captive optics further contribute to these sensors' optimal suitability for cleaning-heavy environments. The InoxSens sensors are set up with the help of touch teach-in and is made possible by the hermetically sealed housing.



Technical Data

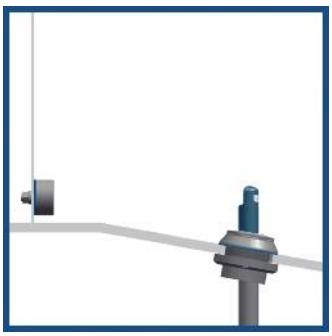
Optical Data	
Range	4000 mm
Reference Reflector/Reflex Foil	RQ100BA
Clear Glass Recognition	yes
Switching Hysteresis	< 5 %
Light Source	Red Light
Polarization Filter	yes
Service Life (T = +25 °C)	100000 h
Max. Ambient Light	10000 Lux
Opening Angle	3 °
Single-Lens Optic	yes
Electrical Data	
Supply Voltage	10...30 V DC
Current Consumption (Ub = 24 V)	< 40 mA
Switching Frequency	1600 Hz
Response Time	313 µs
On-/Off-Delay (RS-232)	0...5 s
Temperature Drift	< 5 %
Temperature Range	-10...60 °C
Switching Output Voltage Drop	< 2,5 V
PNP Switching Output/Switching Current	200 mA
Residual Current Switching Output	< 50 µA
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Overload Protection	yes
Lockable	yes
Teach Mode	NT, MT, XT
Protection Class	III
Mechanical Data	
Adjustment	Teach-In
Housing Material	Stainless Steel 316L
Degree of Protection	IP68/IP69K
Connection	M12 × 1; 4-pin
Material Control Panel	PC (FDA)



All dimensions in mm (1 mm = 0.03937 Inch)

	Plug Version	
Part Number	OKII403C0103	OKII403C0203
PNP NO/NC switchable	●	●
RS-232 with Adapterbox	●	●
Optic Cover	PMMA (FDA)	Glass
Connection Diagram No.	152	152
Control Panel No.	II1	II1
Suitable Connection Technology No.	2	2
Suitable Mounting Technology No.	140 490	140 490

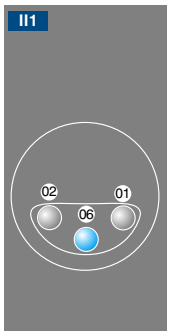
Connection Diagrams page 60

Complementary Products

- Adapterbox A232
- PNP-NPN Converter BG2V1P-N-2M
- Reflector in Stainless Steel Protection Housing
- Reflector, Reflex Foil

Ctrl. Panel



01 = Switching Status Indicator
02 = Contamination Warning
06 = Teach Button

Feasible reflector distance

Reflector type, mounting distance

RQ100BA	0...4 m	RE6210BM	0...0,7 m
RE18040BA	0...2,5 m	RR25_M	0...1 m
RQ84BA	0...3,5 m	RR25KP	0...0,55 m
RR84BA	0...4 m	RR21_M	0...0,9 m
RE9538BA	0...1,5 m	ZRAE02B01	0...1,6 m
RE6151BM	0...3,4 m	ZRDS01R01	0...0,7 m
RR50_A	0...2,6 m	ZRME01B01	0...0,4 m
RE6040BA	0...3,2 m	ZRME03B01	0...1,6 m
RE8222BA	0...1,9 m	ZRMR02K01	0...0,5 m
RR34_M	0...1,6 m	ZRMS02_01	0...0,7 m
RE3220BM	0...0,8 m		

Retro-Reflex Sensor
for Clear Glass Recognition

4000 mm
Range

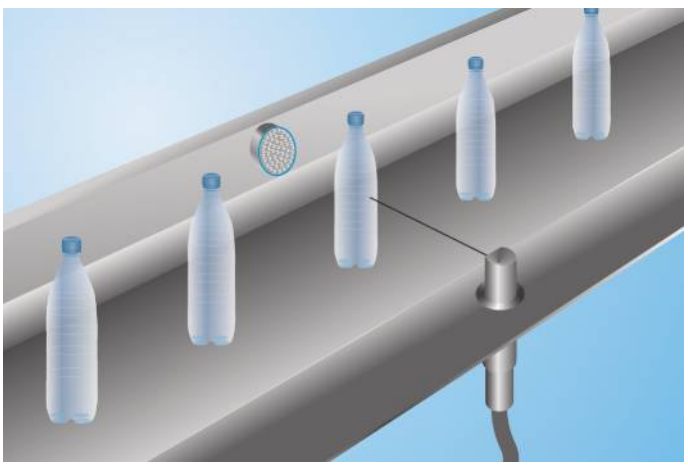
InoxSens

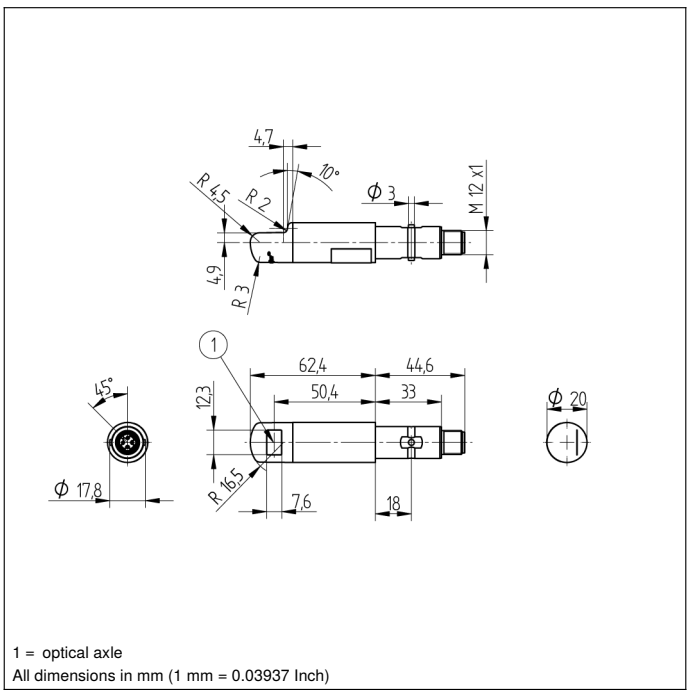
- **External teach-in, RS-232 interface**
- **Hygienic design makes it easy to clean**
- **Made with food safe materials that are FDA approved**
- **Waterproof (IP68/IP69K)**

Technical Data

Optical Data	
Range	4000 mm
Reference Reflector/Reflex Foil	RQ100BA
Clear Glass Recognition	yes
Switching Hysteresis	< 5 %
Light Source	Red Light
Polarization Filter	yes
Service Life (T = +25 °C)	100000 h
Max. Ambient Light	10000 Lux
Opening Angle	3 °
Single-Lens Optic	yes
Electrical Data	
Supply Voltage	10...30 V DC
Current Consumption (Ub = 24 V)	< 40 mA
Switching Frequency	1600 Hz
Response Time	313 µs
On-/Off-Delay (RS-232)	0...5 s
Temperature Drift	< 5 %
Temperature Range	-10...60 °C
Switching Output Voltage Drop	< 2,5 V
PNP Switching Output/Switching Current	200 mA
Residual Current Switching Output	< 50 µA
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Overload Protection	yes
Lockable	yes
Teach Mode	NT, MT, XT
Protection Class	III
Mechanical Data	
Adjustment	Teach-In
Housing Material	Stainless Steel 316L
Degree of Protection	IP68/IP69K
Connection	M12 × 1; 4-pin
Optic Cover	PMMA (FDA)

InoxSens is the hygiene series from wenglor. The innovative design of InoxSens sensors allows contamination and cleaning agents to flow off by themselves. A variety of components form a complete system which integrates seamlessly into the machine. The laser welded stainless steel housing made of V4A (1.4404/316L) is corrosion-free and resistant to cleaning agents. Gap-free mounting with InoxLock and the captive optics further contribute to these sensors' optimal suitability for cleaning-heavy environments.

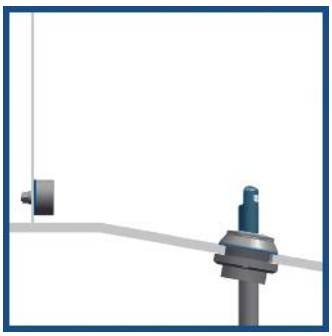




1 = optical axle
All dimensions in mm (1 mm = 0.03937 Inch)

	Plug Version
Part Number	OKII403C0303
PNP NO/NC switchable	●
RS-232 with Adapterbox	●
Connection Diagram No.	152
Control Panel No.	IIo1
Suitable Connection Technology No.	2
Suitable Mounting Technology No.	140 490

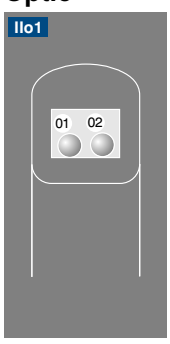
Connection Diagrams page 60

Complementary Products

- Adapterbox A232
- PNP-NPN Converter BG2V1P-N-2M
- Reflector in Stainless Steel Protection Housing
- Reflector, Reflex Foil

Optic



01 = Switching Status Indicator
02 = Contamination Warning

Feasible reflector distance

Reflector type, mounting distance

RQ100BA	0...4 m	**RE6210BM**	0...0,7 m
RE18040BA	0...2,5 m	**RR25_M**	0...1 m
RQ84BA	0...3,5 m	**RR25KP**	0...0,55 m
RR84BA	0...4 m	**RR21_M**	0...0,9 m
RE9538BA	0...1,5 m	**ZRAE02B01**	0...1,6 m
RE6151BM	0...3,4 m	**ZRDS01R01**	0...0,7 m
RR50_A	0...2,6 m	**ZRME01B01**	0...0,4 m
RE6040BA	0...3,2 m	**ZRME03B01**	0...1,6 m
RE8222BA	0...1,9 m	**ZRMR02K01**	0...0,5 m
RR34_M	0...1,6 m	**ZRMS02_01**	0...0,7 m
RE3220BM	0...0,8 m		

Through-Beam Sensor

4000 mm

Range

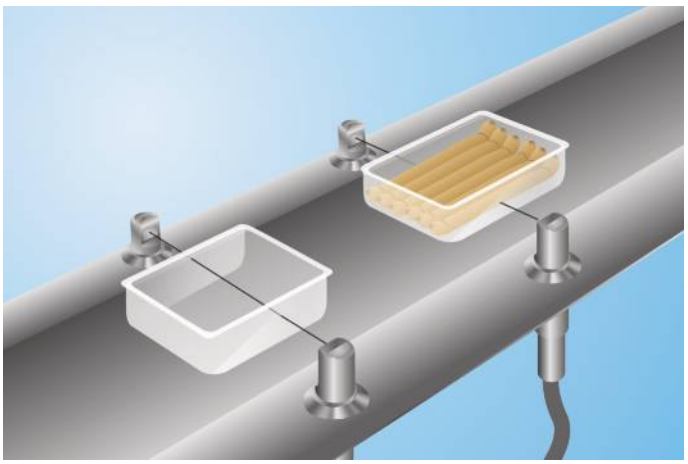
InoxSens

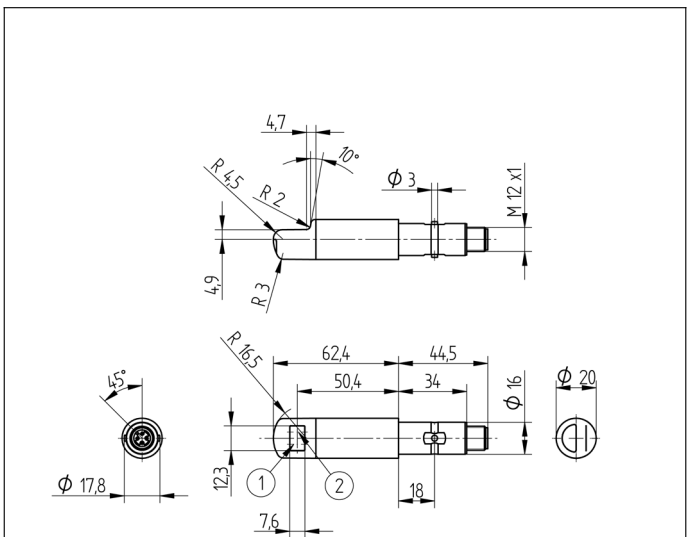
- **Hygienic design makes it easy to clean**
- **Made with food safe materials that are FDA approved**
- **Touch teach-in, external teach-in**
- **Waterproof (IP68/IP69K)**

Technical Data

Optical Data	
Range	4000 mm
Light Source	Red Light
Service Life (T = +25 °C)	100000 h
Opening Angle	3 °
Electrical Data	
Supply Voltage	10...30 V DC
Current Consumption (Ub = 24 V)	< 40 mA
Temperature Drift	< 10 %
Temperature Range	-25...60 °C
Reverse Polarity Protection	yes
Teach Mode	NT, MT, XT
Protection Class	III
Mechanical Data	
Adjustment	Teach-In
Housing Material	Stainless Steel 316L
Degree of Protection	IP68/IP69K
Connection	M12 × 1; 4-pin
Optic Cover	PMMA (FDA)
Material Control Panel	PC (FDA)

InoxSens is the hygiene series from wenglor. The innovative design of InoxSens sensors allows contamination and cleaning agents to flow off by themselves. A variety of components form a complete system which integrates seamlessly into the machine. The laser welded stainless steel housing made of V4A (1.4404/316L) is corrosion-free and resistant to cleaning agents. Gap-free mounting with InoxLock and the captive optics further contribute to these sensors' optimal suitability for cleaning-heavy environments. The InoxSens sensors are set up with the help of touch teach-in and is made possible by the hermetically sealed housing.

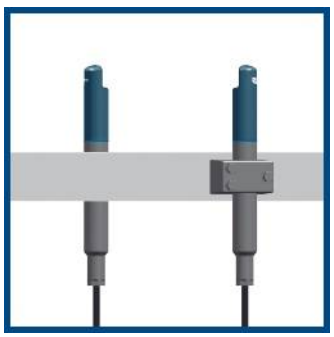




1 = Emitter
2 = no function
All dimensions in mm (1 mm = 0.03937 Inch)

	Plug Version	
Part Number	OSII403Z0103	OEII403C0103
PNP NO/NC switchable		●
RS-232 with Adapterbox		●
Switching Hysteresis		< 15 %
Max. Ambient Light		10000 Lux
Sensor Type	Emitter	Receiver
Switching Frequency		500 Hz
Response Time		1 ms
Switching Output Voltage Drop		< 2,5 V
PNP Switching Output/Switching Current		200 mA
Residual Current Switching Output		< 50 µA
Short Circuit and Overload Protection		yes
Overload Protection	yes	
Test input	yes	
Connection Diagram No.	1018	152
Control Panel No.	II2	II1
Suitable Connection Technology No.	2	2
Suitable Mounting Technology No.	140 490	140 490

Connection Diagrams page 60

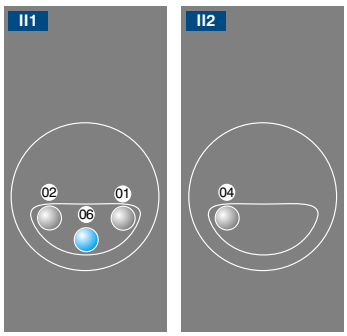


Complementary Products

Adapterbox A232

PNP-NPN Converter BG2V1P-N-2M

Ctrl. Panel



01 = Switching Status Indicator
02 = Contamination Warning
04 = Function Indicator
06 = Teach Button

Through-Beam Sensor

4000 mm

Range

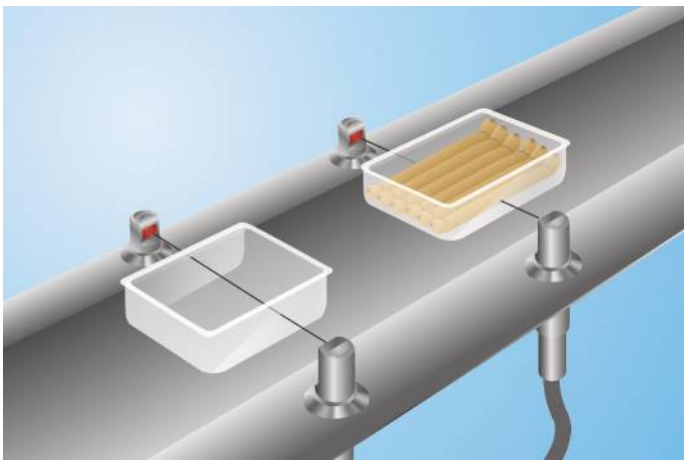
InoxSens

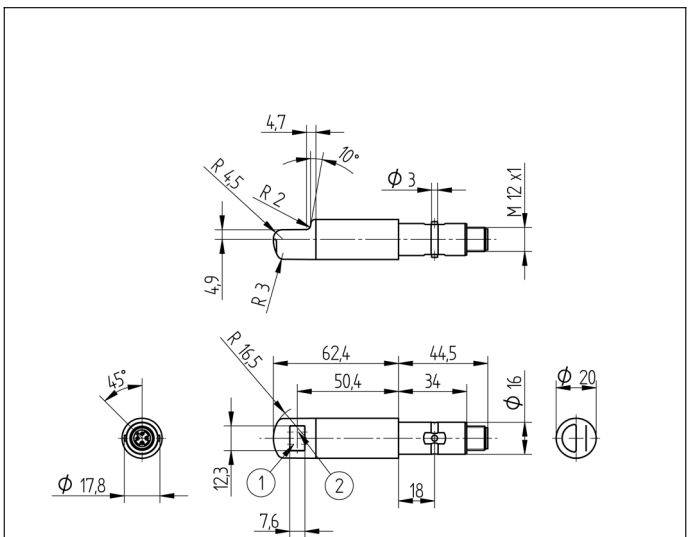
- **Hygienic design makes it easy to clean**
- **Made with food safe materials that are FDA approved**
- **Touch teach-in, external teach-in**
- **Waterproof (IP68/IP69K)**

Technical Data

Optical Data	
Range	4000 mm
Light Source	Red Light
Service Life (T = +25 °C)	100000 h
Opening Angle	3 °
Electrical Data	
Supply Voltage	10...30 V DC
Current Consumption (Ub = 24 V)	< 40 mA
Temperature Drift	< 10 %
Temperature Range	-25...60 °C
Reverse Polarity Protection	yes
Teach Mode	NT, MT, XT
Protection Class	III
Mechanical Data	
Adjustment	Teach-In
Housing Material	Stainless Steel 316L
Degree of Protection	IP68/IP69K
Connection	M12 × 1; 4-pin
Optic Cover	Glass
Material Control Panel	PC (FDA)

InoxSens is the hygiene series from wenglor. The innovative design of InoxSens sensors allows contamination and cleaning agents to flow off by themselves. A variety of components form a complete system which integrates seamlessly into the machine. The laser welded stainless steel housing made of V4A (1.4404/316L) is corrosion-free and resistant to cleaning agents. Gap-free mounting with InoxLock and the captive optics further contribute to these sensors' optimal suitability for cleaning-heavy environments. The InoxSens sensors are set up with the help of touch teach-in and is made possible by the hermetically sealed housing.

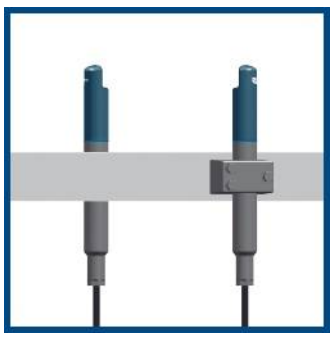




1 = Emitter
2 = no function
All dimensions in mm (1 mm = 0.03937 Inch)

	Plug Version	
Part Number	OSII403Z0203	OEII403C0203
PNP NO/NC switchable		●
RS-232 with Adapterbox		●
Switching Hysteresis		< 15 %
Max. Ambient Light		10000 Lux
Sensor Type	Emitter	Receiver
Switching Frequency		500 Hz
Response Time		1 ms
Switching Output Voltage Drop		< 2,5 V
PNP Switching Output/Switching Current		200 mA
Residual Current Switching Output		< 50 µA
Short Circuit and Overload Protection		yes
Overload Protection	yes	
Test input	yes	
Connection Diagram No.	1018	152
Control Panel No.	II2	II1
Suitable Connection Technology No.	2	2
Suitable Mounting Technology No.	140 490	140 490

Connection Diagrams page 60

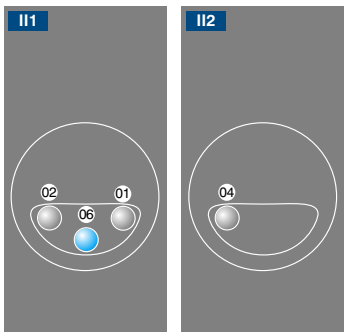


Complementary Products

Adapterbox A232

PNP-NPN Converter BG2V1P-N-2M

Ctrl. Panel



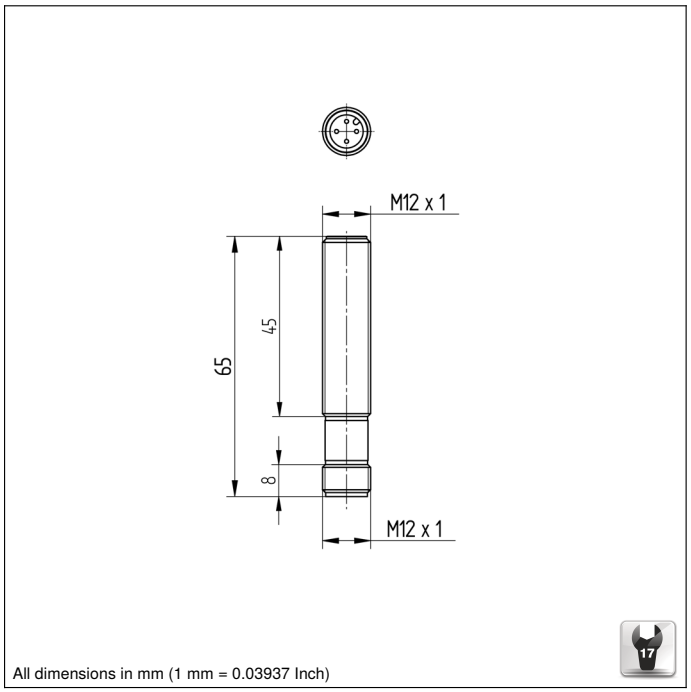
01 = Switching Status Indicator
02 = Contamination Warning
04 = Function Indicator
06 = Teach Button

Inductive Sensor
with Full-Metal Housing

4 mm
M12 × 1; 40 - 80 mm

Range
flush

InoxSens



All dimensions in mm (1 mm = 0.03937 Inch)

Housing: Stainless Steel V4A 1.4404, 316L

Technical Data

Inductive Data	
Switching Distance	4 mm
Correction Factors V2A/CuZn/Al	0,82/0,35/0,32
Mounting	flush
Mounting A/B/C/D in mm	0/20/12/0
Mounting A/B/C/D (V2A) in mm	0/20/12/0
Switching Hysteresis	< 15 %
Electrical Data	
Supply Voltage	10...30 V DC
Current Consumption (Ub = 24 V)	< 15 mA
Switching Frequency	500 Hz
Temperature Drift	< 10 %
Temperature Range	-25...80 °C
Switching Output Voltage Drop	< 2,5 V
Switching Output/Switching Current	400 mA
Residual Current Switching Output	< 100 µA
Short Circuit Protection	yes
Reverse Polarity and Overload Protection	yes
Protection Class	III
Mechanical Data	
Housing Material	Stainless Steel 316L
Full Encapsulation	yes
Degree of Protection	IP68/IP69K
Connection	M12 × 1; 4-pin
Mechanical Strength Sensor Area	60 bar
Ex II 3G Ex nA IIC T5 Gc X	yes
Ex II 3D Ex tc IIIC T90°C Dc IP6X X	yes

	Plug Version	
Part Number	IB040DE65UB3	IB040DE65UD3
Stock Type	●	
PNP NO	●	
PNP NC		●
Connection Diagram No.	1021	106
Suitable Connection Technology No.	2	2
Suitable Mounting Technology No.	170	170

Connection Diagrams page 60

Complementary Products

PNP-NPN Converter BG2V1P-N-2M

Protection Clip Z0007

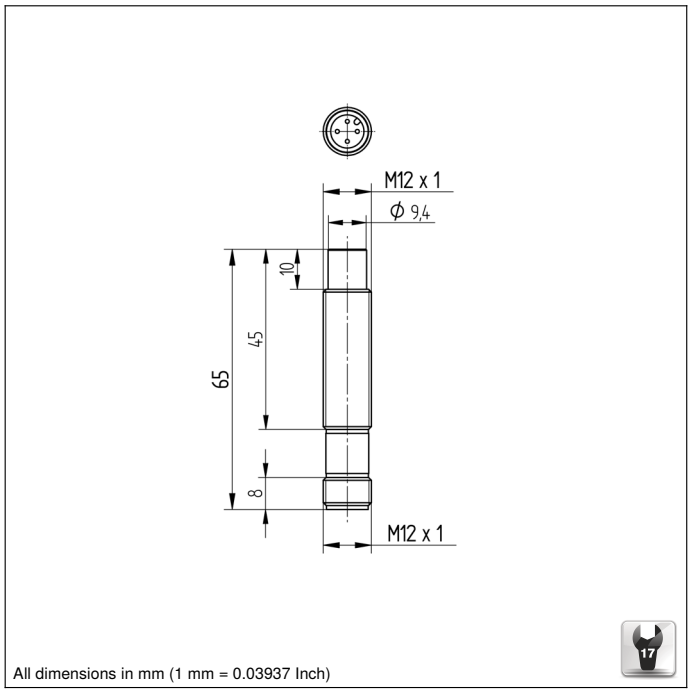
Inductive Sensor
with Full-Metal Housing

6 mm M12 × 1; 40 - 80 mm

Range
non-flush

wenglor
the innovative family

InoxSens



All dimensions in mm (1 mm = 0.03937 Inch)

Housing: Stainless Steel V4A 1.4404, 316L

Technical Data

Inductive Data	
Switching Distance	6 mm
Correction Factors V2A/CuZn/Al	0,97/0,30/0,27
Mounting	non-flush
Mounting A/B/C/D in mm	18/30/18/10
Mounting A/B/C/D (V2A) in mm	18/30/18/10
Switching Hysteresis	< 15 %
Electrical Data	
Supply Voltage	10...30 V DC
Current Consumption (Ub = 24 V)	< 15 mA
Switching Frequency	500 Hz
Temperature Drift	< 10 %
Temperature Range	-25...80 °C
Switching Output Voltage Drop	< 2,5 V
Switching Output/Switching Current	400 mA
Residual Current Switching Output	< 100 µA
Short Circuit Protection	yes
Reverse Polarity and Overload Protection	yes
Protection Class	III
Mechanical Data	
Housing Material	Stainless Steel 316L
Full Encapsulation	yes
Degree of Protection	IP68/IP69K
Connection	M12 × 1; 4-pin
Mechanical Strength Sensor Area	60 bar
Ex II 3G Ex nA IIC T5 Gc X	yes
Ex II 3D Ex tc IIIC T90°C Dc IP6X X	yes

	Plug Version	
Part Number	IB060SE65UB3	IB060SE65UD3
Stock Type	●	
PNP NO	●	
PNP NC		●
Connection Diagram No.	1021	106
Suitable Connection Technology No.	2	2
Suitable Mounting Technology No.	170	170

Connection Diagrams page 60

Complementary Products

PNP-NPN Converter BG2V1P-N-2M

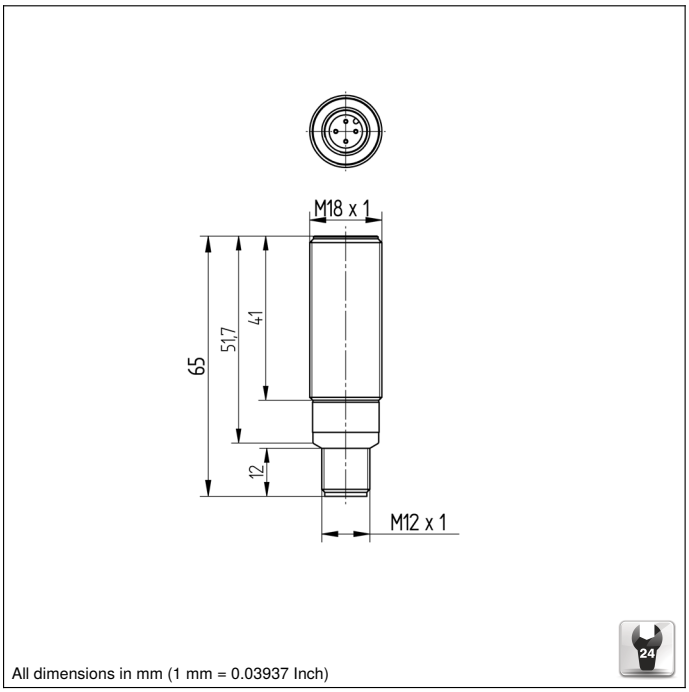
Protection Clip Z0007

Inductive Sensor
with Full-Metal Housing

8 mm
M18 × 1; 60 - 80 mm

Range
flush

InoxSens



All dimensions in mm (1 mm = 0.03937 Inch)

Housing: Stainless Steel V4A 1.4404, 316L

Technical Data

Inductive Data	
Switching Distance	8 mm
Correction Factors V2A/CuZn/Al	0,89/0,38/0,33
Mounting	flush
Mounting A/B/C/D in mm	0/40/24/0
Mounting A/B/C/D (V2A) in mm	0/40/24/0
Switching Hysteresis	< 15 %
Electrical Data	
Supply Voltage	10...30 V DC
Current Consumption (Ub = 24 V)	< 15 mA
Switching Frequency	400 Hz
Temperature Drift	< 10 %
Temperature Range	-25...80 °C
Switching Output Voltage Drop	< 2,5 V
Switching Output/Switching Current	400 mA
Residual Current Switching Output	< 100 µA
Short Circuit Protection	yes
Reverse Polarity and Overload Protection	yes
Protection Class	III
Mechanical Data	
Housing Material	Stainless Steel 316L
Full Encapsulation	yes
Degree of Protection	IP68/IP69K
Connection	M12 × 1; 4-pin
Mechanical Strength Sensor Area	10 bar
Ex II 3G Ex nA IIC T5 Gc X	yes
Ex II 3D Ex tc IIIC T90°C Dc IP6X X	yes

	Plug Version
Part Number	IW080DE65UA3
Stock Type	●
PNP NO/NC antivalent	●
Connection Diagram No.	101
Suitable Connection Technology No.	2
Suitable Mounting Technology No.	150

Connection Diagrams page 60

Complementary Products

PNP-NPN Converter BG2V1P-N-2M

Protection Clip Z0007

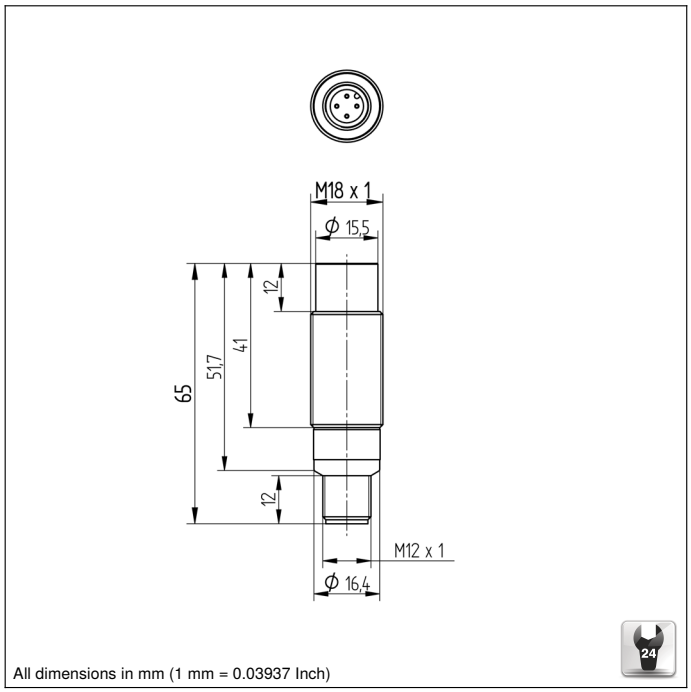
Inductive Sensor
with Full-Metal Housing

wenglor
the innovative family

InoxSens

12 mm
M18 × 1; 60 - 80 mm

Range
non-flush



All dimensions in mm (1 mm = 0.03937 Inch)

Housing: Stainless Steel V4A 1.4404, 316L

Technical Data

Inductive Data	
Switching Distance	12 mm
Correction Factors V2A/CuZn/Al	1,13/0,65/0,55
Mounting	non-flush
Mounting A/B/C/D in mm	27/70/36/16
Mounting A/B/C/D (V2A) in mm	27/70/36/12
Switching Hysteresis	< 15 %
Electrical Data	
Supply Voltage	10...30 V DC
Current Consumption (Ub = 24 V)	< 15 mA
Switching Frequency	400 Hz
Temperature Drift	< 10 %
Temperature Range	-25...80 °C
Switching Output Voltage Drop	< 2,5 V
Switching Output/Switching Current	400 mA
Residual Current Switching Output	< 100 µA
Short Circuit Protection	yes
Overload Protection	yes
Reverse Polarity and Overload Protection	yes
Protection Class	III
Mechanical Data	
Housing Material	Stainless Steel 316L
Full Encapsulation	yes
Degree of Protection	IP68/IP69K
Connection	M12 × 1; 4-pin
Mechanical Strength Sensor Area	45 bar
Ex II 3G Ex nA IIC T5 Gc X	yes
Ex II 3D Ex tc IIIC T90°C Dc IP6X X	yes

	Plug Version
Part Number	IW120SE65UA3
Stock Type	●
PNP NO/NC antivalent	●
Connection Diagram No.	101
Suitable Connection Technology No.	2
Suitable Mounting Technology No.	150

Connection Diagrams page 60

Complementary Products

PNP-NPN Converter BG2V1P-N-2M

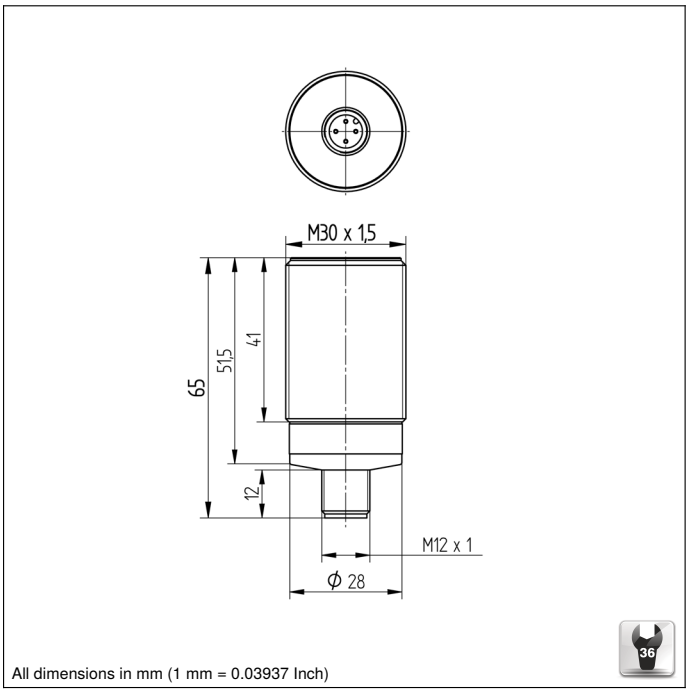
Protection Clip Z0007

Inductive Sensor
with Full-Metal Housing

15 mm
M30 × 1,5; 60 - 80 mm

Range
flush

InoxSens



All dimensions in mm (1 mm = 0.03937 Inch)

Housing: Stainless Steel V4A 1.4404, 316L

Technical Data

Inductive Data	
Switching Distance	15 mm
Correction Factors V2A/CuZn/Al	0,74/0,59/0,52
Mounting	flush
Mounting A/B/C/D in mm	0/60/45/0
Mounting A/B/C/D (V2A) in mm	0/60/45/0
Switching Hysteresis	< 15 %
Electrical Data	
Supply Voltage	10...30 V DC
Current Consumption (Ub = 24 V)	< 15 mA
Switching Frequency	200 Hz
Temperature Drift	< 10 %
Temperature Range	-25...80 °C
Switching Output Voltage Drop	< 2,5 V
Switching Output/Switching Current	400 mA
Residual Current Switching Output	< 100 µA
Short Circuit Protection	yes
Reverse Polarity and Overload Protection	yes
Protection Class	III
Mechanical Data	
Housing Material	Stainless Steel 316L
Full Encapsulation	yes
Degree of Protection	IP68/IP69K
Connection	M12 × 1; 4-pin
Mechanical Strength Sensor Area	25 bar
Ex II 3G Ex nA IIC T5 Gc X	yes
Ex II 3D Ex tc IIIC T90°C Dc IP6X X	yes

	Plug Version
Part Number	IX150DE65UA3
Stock Type	●
PNP NO/NC antivalent	●
Connection Diagram No.	101
Suitable Connection Technology No.	2
Suitable Mounting Technology No.	130

Connection Diagrams page 60

Complementary Products

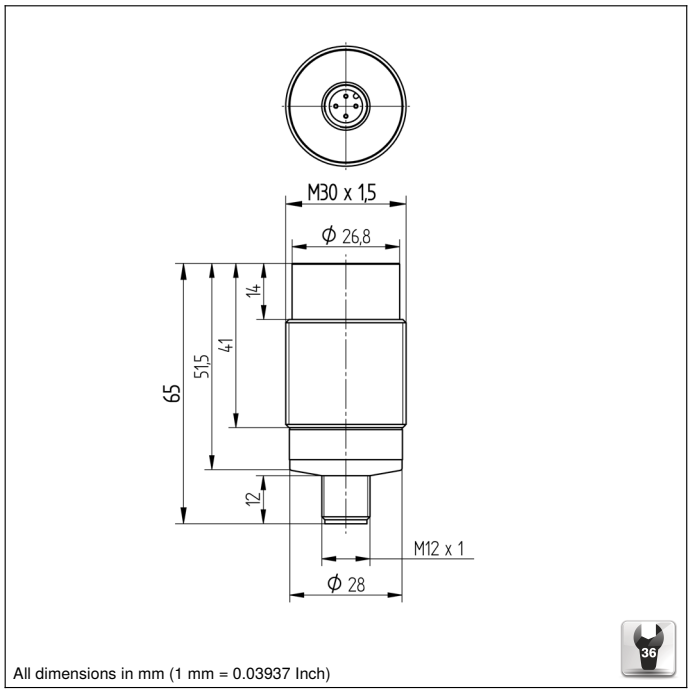
PNP-NPN Converter BG2V1P-N-2M

Protection Clip Z0007

Inductive Sensor
with Full-Metal Housing

25 mm M30 × 1,5; 60 - 80 mm

Range
non-flush



All dimensions in mm (1 mm = 0.03937 Inch)

Housing: Stainless Steel V4A 1.4404, 316L

Technical Data

Inductive Data	
Switching Distance	25 mm
Correction Factors V2A/CuZn/Al	1,09/0,65/0,58
Mounting	non-flush
Mounting A/B/C/D in mm	60/110/75/35
Mounting A/B/C/D (V2A) in mm	45/110/75/25
Switching Hysteresis	< 15 %
Electrical Data	
Supply Voltage	10...30 V DC
Current Consumption (Ub = 24 V)	< 15 mA
Switching Frequency	200 Hz
Temperature Drift	< 10 %
Temperature Range	-25...80 °C
Switching Output Voltage Drop	< 2,5 V
Switching Output/Switching Current	400 mA
Residual Current Switching Output	< 100 µA
Short Circuit Protection	yes
Reverse Polarity and Overload Protection	yes
Protection Class	III
Mechanical Data	
Housing Material	Stainless Steel 316L
Full Encapsulation	yes
Degree of Protection	IP68/IP69K
Connection	M12 × 1; 4-pin
Mechanical Strength Sensor Area	25 bar
Ex II 3G Ex nA IIC T5 Gc X	yes
Ex II 3D Ex tc IIIC T90°C Dc IP6X X	yes

	Plug Version
Part Number	IX250SE65UA3
Stock Type	●
PNP NO/NC antivalent	●
Connection Diagram No.	101
Suitable Connection Technology No.	2
Suitable Mounting Technology No.	130

Connection Diagrams page 60

Complementary Products

PNP-NPN Converter BG2V1P-N-2M

Protection Clip Z0007

Pressure Sensor

0...40 bar

Range

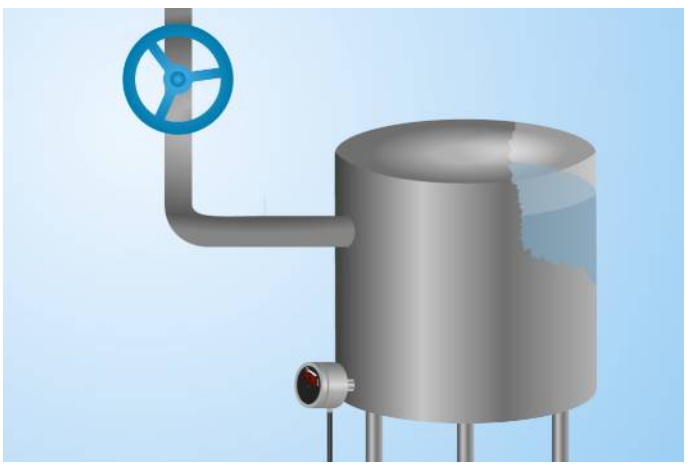
InoxSens UniBar

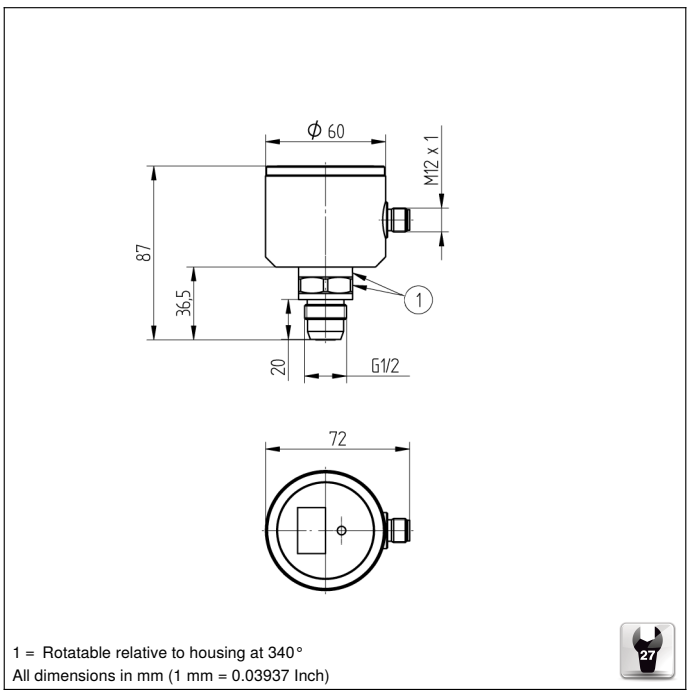
- **Hygienic design makes it easy to clean**
- **Piggable with flush mounting**
- **Robust stainless steel housing with IP69K**
- **Space-saving process connection thanks to small pressure membrane**

Technical Data

Sensor-specific data	
Adjustable Range	4...100 %
Medium	Liquids, gases
Switching Hysteresis	2 %
Temperature Drift	0,025 %/K
Environmental conditions	
Temperature of medium	-25...80 °C
Ambient temperature	-25...80 °C
Electrical Data	
Supply Voltage	16...32 V DC
Current Consumption (Ub = 24 V)	< 60 mA
Switching Outputs	1
Response Time	1,2 s
Switching Output/Switching Current	< 250 mA
Switching Output Voltage Drop	< 2 V
Analog Output	4...20 mA
Current Output Load Resistance	< 500 Ohm
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Protection Class	III
Mechanical Data	
Adjustment	Menu
Housing Material	1.4404; PC; EPDM
Material Control Panel	Polyester
Material in contact with media	1.4435; 1.4404
Degree of Protection	IP67/IP69K
Connection	M12 × 1; 4-pin
Process Connection	G 1/2" CIP-capable

UniBar pressure sensors measure the relative pressure in closed systems of any medium in the range -1...600 bar.
UniBar pressure sensors are very easy to use thanks to the removable cover on the integrated display. The highly visible switching status display enables the rapid localization of affected sensors for maintenance processes.
Thanks to the metallic sealing edge on the process connection, no further seals are required.



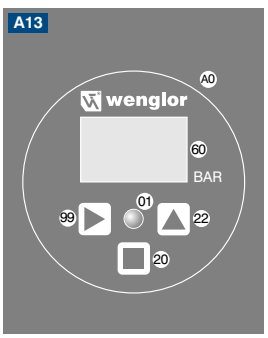


1 = Rotatable relative to housing at 340°
All dimensions in mm (1 mm = 0.03937 Inch)

	Part Number	Plug Version		
		FFXP001	FFXP002	FFXP003
Analog Output		●	●	●
Scalable analog output		●	●	●
PNP NO/NC switchable		●	●	●
Measuring Range		0...10 bar	0...25 bar	0...40 bar
Maximum overload pressure		20 bar	50 bar	80 bar
Bursting pressure		40 bar	100 bar	160 bar
Connection Diagram No.		533	533	533
Control Panel No.		A13	A13	A13
Suitable Connection Technology No.		21	21	21
Suitable Mounting Technology No.		905 906	905 906	905 906

Connection Diagrams page 60

Ctrl. Panel



01 = Switching Status Indicator
20 = Enter Button
22 = UP Button
60 = Display
99 = Right button
A0 = Detachable lid

Flow Sensor

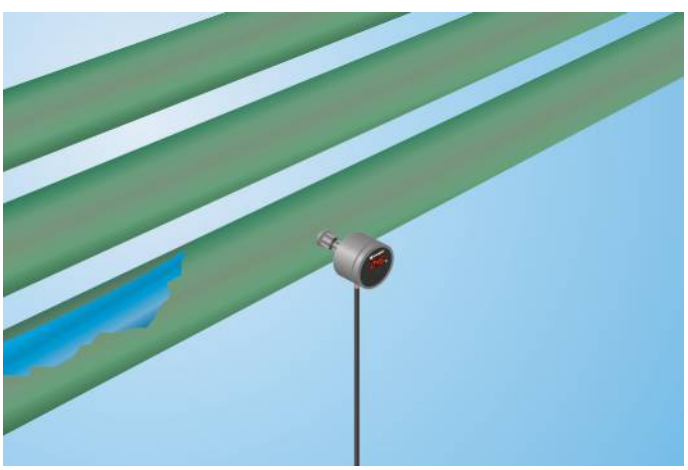
10...300 cm/s

Range

InoxSens UniFlow

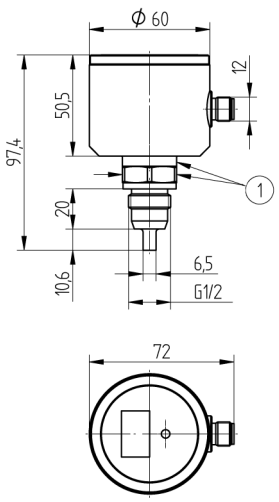
- **Highest precision of its class**
- **Hygienic design makes it easy to clean**
- **Installation in any position**
- **Measurement independent of flow direction**
- **Robust stainless steel housing with IP69K**

wenglor UniFlow flow sensors measure the flow rate of aqueous and oily media in closed piping systems.
UniFlow flow sensors are very easy to operate thanks to the removable cover on the integrated display. The highly visible switching status display enables the rapid localization of affected sensors for maintenance processes.
Thanks to the metallic sealing edge on the process connection, no further seals are required.



Technical Data

Sensor-specific data	
Selectable measuring range	10...300 cm/s
Measuring range 1	10...150 cm/s
Adjustable range 1	15...150 cm/s
Measuring range 2	20...300 cm/s
Adjustable range 2	30...300 cm/s
Medium	Water
Switching Hysteresis	5 %
Temperature gradient	30 K
Response time in case of temperature jump	10 s
Environmental conditions	
Temperature of medium	0...100 °C
Temperature of the medium, short-term	140 °C
Ambient temperature	-20...70 °C
Mechanical Strength	60 bar
Electrical Data	
Supply Voltage	16...32 V DC
Current Consumption (Ub = 24 V)	60 mA
Switching Outputs	1
Response Time	1...5 s
Switching Output/Switching Current	< 250 mA
Switching Output Voltage Drop	< 2 V
Analog Output	4...20 mA
Current Output Load Resistance	< 500 Ohm
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Protection Class	III
Mechanical Data	
Adjustment	Menu
Housing Material	1.4404; PC; EPDM
Material Control Panel	Polyester
Material in contact with media	1.4435; 1.4404
Degree of Protection	IP67/IP69K
Connection	M12 × 1; 4-pin
Process Connection	G 1/2" CIP-capable
Process Connection Length	48 mm
Bar length	10 mm

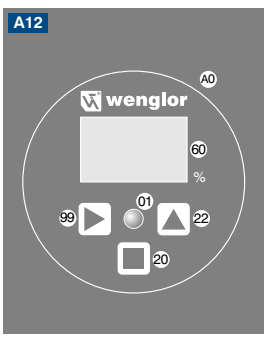


1 = Rotatable relative to housing at 340°
All dimensions in mm (1 mm = 0.03937 Inch)

	Part Number	Plug Version	
		FFXF001	FFXF002
Analog output flow		●	
Analog output temperature			●
Temperature monitoring		●	●
PNP NO/NC switchable		●	●
Connection Diagram No.		533	533
Control Panel No.		A12	A12
Suitable Connection Technology No.		21	21
Suitable Mounting Technology No.		903 905 906	903 905 906

Connection Diagrams page 60

Ctrl. Panel



01 = Switching Status Indicator
20 = Enter Button
22 = UP Button
60 = Display
99 = Right button
A0 = Detachable lid

Temperature Sensor

0...140 °C

Range

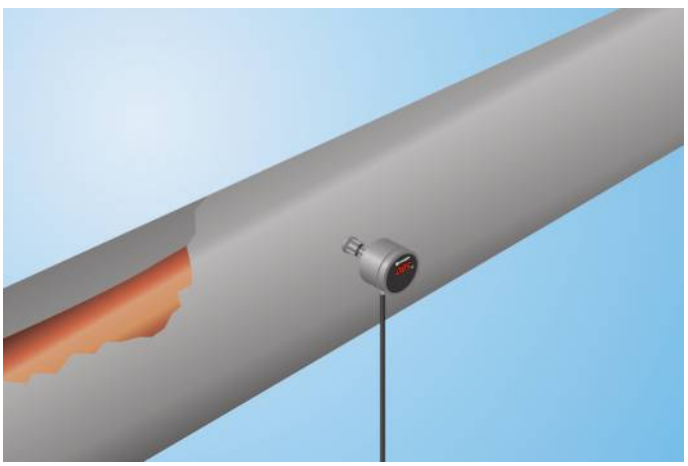
InoxSens UniTemp

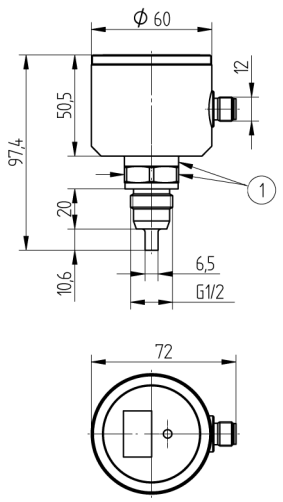
- **Hygienic design makes it easy to clean**
- **Robust stainless steel housing with IP69K**
- **Simple operation via the display**
- **Temperature range: 0...200 °C available**

Technical Data

Sensor-specific data	
Temperature Measurement Range	0...140 °C
Adjustable Range	2...139 °C
Medium	Liquids, gases
Resolution	1 °C
Switching Hysteresis	2 °C
Response Time	2...4 s
Environmental conditions	
Temperature of medium	0...140 °C
Ambient temperature	-20...80 °C
Mechanical Strength	60 bar
Electrical Data	
Supply Voltage	16...32 V DC
Current Consumption (Ub = 24 V)	60 mA
Switching Outputs	1
Switching Output/Switching Current	< 250 mA
Switching Output Voltage Drop	< 2 V
Analog Output	4...20 mA
Current Output Load Resistance	< 500 Ohm
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Protection Class	III
Mechanical Data	
Adjustment	Menu
Housing Material	1.4404; PC; EPDM
Material Control Panel	Polyester
Material in contact with media	1.4435; 1.4404
Degree of Protection	IP67/IP69K
Connection	M12 × 1; 4-pin
Process Connection	G 1/2" CIP-capable
Process Connection Length	48 mm
Bar length	10 mm

UniTemp temperature sensors measure the temperature of liquid or gaseous media and facilitate the temperature monitoring of processes.
UniTemp temperature sensors are very easy to operate thanks to the removable cover on the integrated display. The highly visible switching status display enables the rapid localization of affected sensors for maintenance processes.
Thanks to the metallic sealing edge on the process connection, no further seals are required.



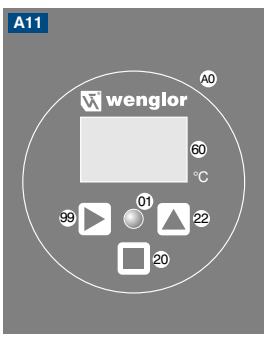


1 = Rotatable relative to housing at 340°
All dimensions in mm (1 mm = 0.03937 Inch)

	Part Number	Plug Version
		FFXT001
Analog Output		●
PNP NO/NC switchable		●
Connection Diagram No.		533
Control Panel No.		A11
Suitable Connection Technology No.		21
Suitable Mounting Technology No.		903 905 906

Connection Diagrams page 60

Ctrl. Panel



01 = Switching Status Indicator
20 = Enter Button
22 = UP Button
60 = Display
99 = Right button
A0 = Detachable lid

Mounting Tube
with InoxLock

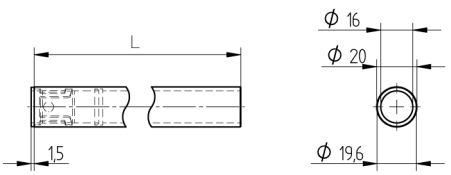
InoxSens

Technical Data

Mechanical Data	
Material	Stainless Steel 316L
Material Sealing	Silicone (FDA)
Degree of Protection	IP68/IP69K
with threaded cable gland IP68/IP69K	no

- **Hygienic design makes it easy to clean**
- **Made with food safe materials that are FDA approved**
- **Resistant to cleaning agents**
- **Waterproof (IP68/IP69K)**

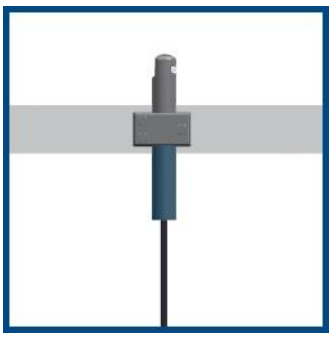
InoxSens is the hygiene series from wenglor. The InoxSens mounting tubes are also part of this complete system, which is seamlessly integrated into the machine. The stainless steel tubes made of V4A (1.4404/316L) are corrosion-free and resistant to cleaning agents, and they provide IP68/IP69K protection for all standard connector cables. The mounting tubes are available in straight and angled versions, as well as with threaded cable gland IP69K. The InoxLock set is also available separately for assembly by the customer.

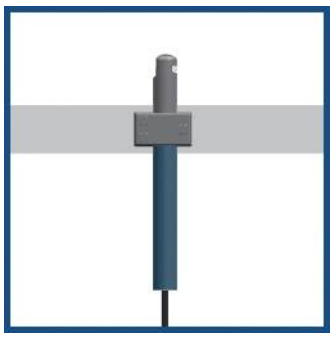
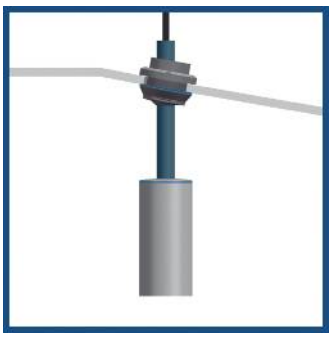


All dimensions in mm (1 mm = 0.03937 Inch)

RoHS	Part Number	ZMRII0401	ZMRII0102
Packaging unit		1 Piece	1 Piece
Hygienic Design		●	●
Detergent resistant		●	●
Tube Length (L)		350 mm	70 mm
Mounting Number		490 500	490 500
Suitable Mounting Technology No.		140	140

Connection Diagrams page 60



Mounting Tube
with InoxLock

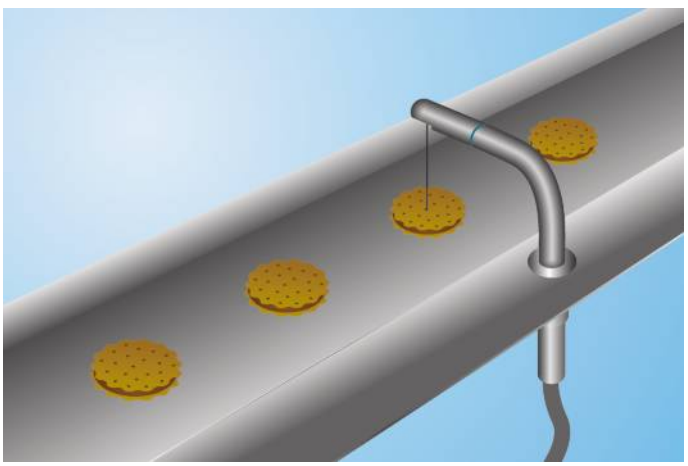
InoxSens

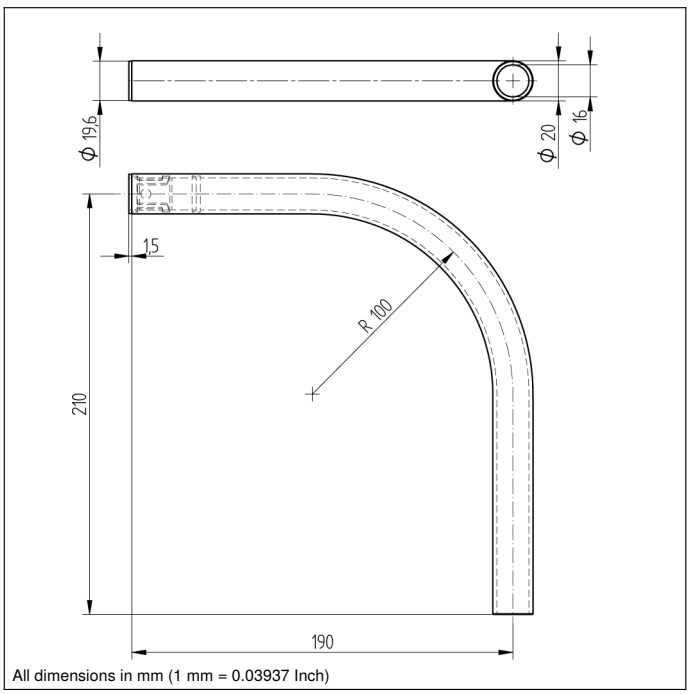
Technical Data

Mechanical Data	
Material	Stainless Steel 316L
Material Sealing	Silicone (FDA)
Tube Length (L)	350 mm
Degree of Protection	IP68/IP69K
with threaded cable gland IP68/IP69K	no

- **Hygienic design makes it easy to clean**
- **Made with food safe materials that are FDA approved**
- **Resistant to cleaning agents**
- **Waterproof (IP68/IP69K)**

InoxSens is the hygiene series from wenglor. The InoxSens mounting tubes are also part of this complete system, which is seamlessly integrated into the machine. The stainless steel tubes made of V4A (1.4404/316L) are corrosion-free and resistant to cleaning agents, and they provide IP68/IP69K protection for all standard connector cables. The mounting tubes are available in straight and angled versions, as well as with threaded cable gland IP69K. The InoxLock set is also available separately for assembly by the customer.





All dimensions in mm (1 mm = 0.03937 Inch)

RoHS	Part Number	ZMRII0402
Packaging unit		1 Piece
Hygienic Design		●
Detergent resistant		●
Mounting Number		490 500
Suitable Mounting Technology No.		140

Connection Diagrams page 60




Mounting Tube
with InoxLock

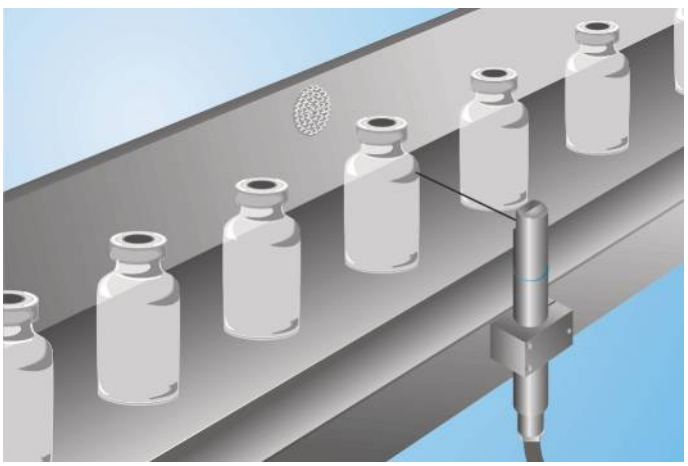
InoxSens

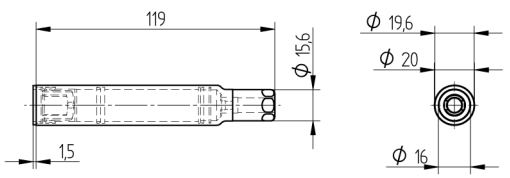
Technical Data

Mechanical Data	
Material	Stainless Steel 316L
Material Sealing	Silicone (FDA)
Tube Length (L)	119 mm
Degree of Protection	IP68/IP69K
with threaded cable gland IP68/IP69K	yes

- **Hygienic design makes it easy to clean**
- **Made with food safe materials that are FDA approved**
- **Resistant to cleaning agents**
- **Waterproof (IP68/IP69K)**

InoxSens is the hygiene series from wenglor. The InoxSens mounting tubes are also part of this complete system, which is seamlessly integrated into the machine. The stainless steel tubes made of V4A (1.4404/316L) are corrosion-free and resistant to cleaning agents, and they provide IP68/IP69K protection for all standard connector cables. The mounting tubes are available in straight and angled versions, as well as with threaded cable gland IP69K. The InoxLock set is also available separately for assembly by the customer.

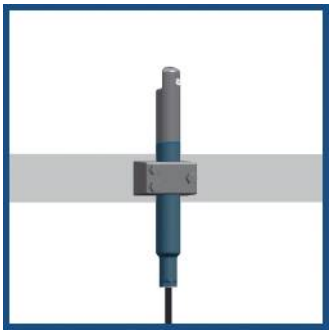




All dimensions in mm (1 mm = 0.03937 Inch)

RoHS	Part Number	ZMRII0101
Packaging unit		1 Piece
Hygienic Design		●
Detergent resistant		●
Mounting Number		490 500
Suitable Mounting Technology No.		140

Connection Diagrams page 60



Mounting Console
for Ø 20 mm

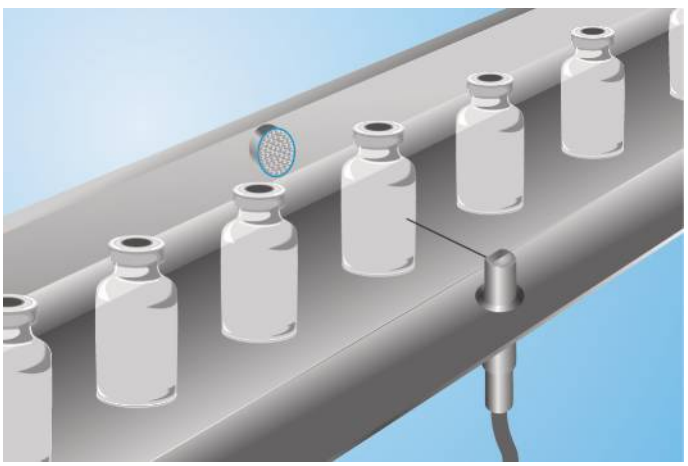
InoxSens

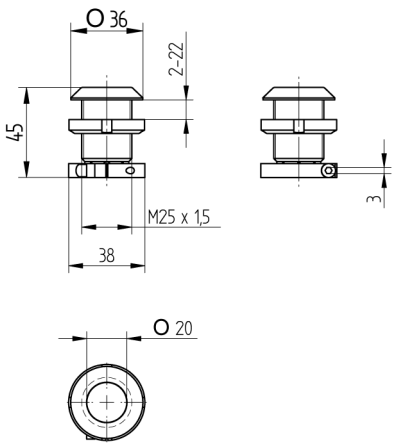
Technical Data

Mechanical Data	
Material	Stainless Steel 316L
Material Sealing	Silicone (FDA)
Material O-Ring	FPM (FDA)

- **Hygienic design makes it easy to clean**
- **Made with food safe materials that are FDA approved**
- **Resistant to cleaning agents**

InoxSens is the hygiene series from wenglor. In addition to numerous other components, the InoxSens mounting console is also part of this complete system, which is seamlessly integrated into the machine. InoxSens sensors and mounting tubes can be fed through the system's side panel and mounted in a gap-free fashion with the help of the mounting console.



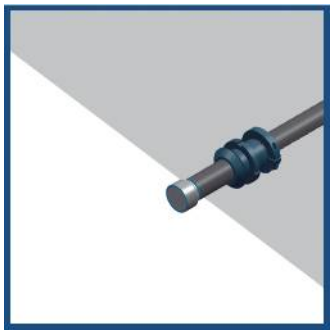


All dimensions in mm (1 mm = 0.03937 Inch)

RoHS	Part Number	ZMKII0001
Packaging unit		1 Piece
Hygienic Design		●
Detergent resistant		●
Mounting Number		140

Connection Diagrams page 60






Mounting Console
for Ø 20 mm

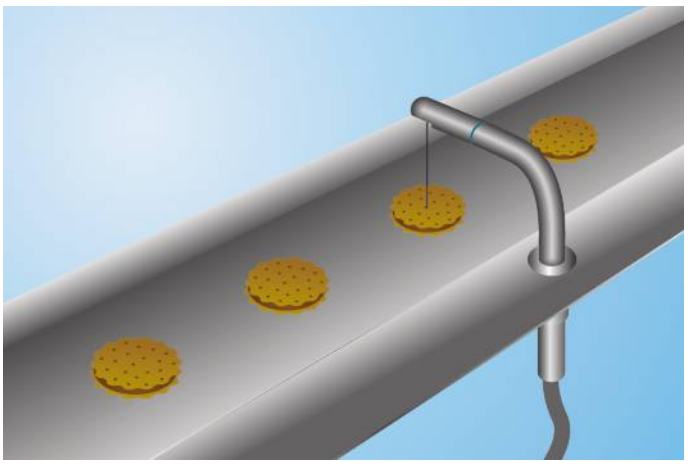
InoxSens

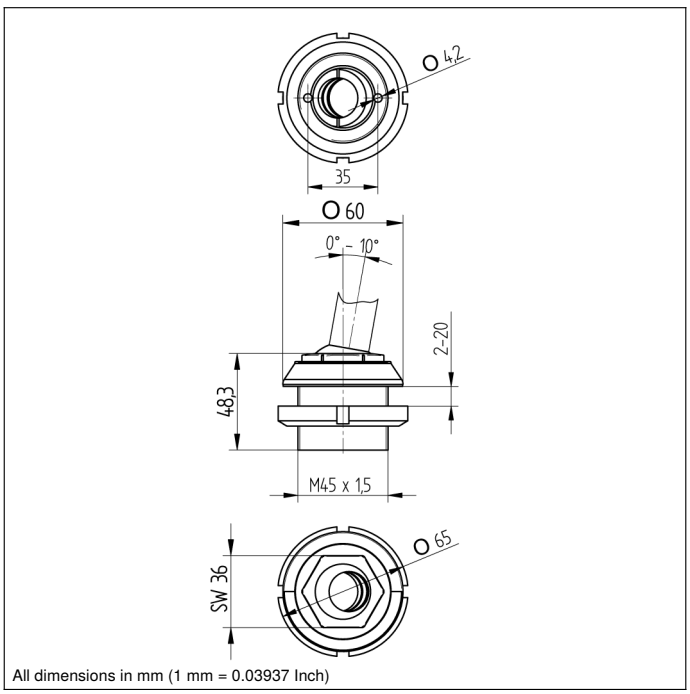
Technical Data

Mechanical Data	
Material	Stainless Steel 316L
Material Sealing	Silicone (FDA)
Material Ball	PTFE (FDA)
Angle compensation	10 °
Material O-Ring	FPM (FDA)

- **For angle compensation**
- **Hygienic design makes it easy to clean**
- **Made with food safe materials that are FDA approved**
- **Resistant to cleaning agents**

InoxSens is the hygiene series from wenglor. In addition to numerous other components, the InoxSens mounting console is also part of this complete system, which is seamlessly integrated into the machine. InoxSens sensors and mounting tubes can be fed through the system's side panel and mounted in a gap-free fashion with the help of the mounting console. Sensors can even be mounted to inclined surfaces, and can be quickly and easily adjusted thanks to angle compensation of up to 10°.

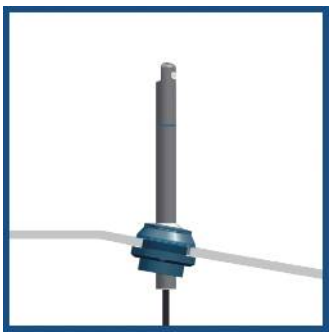




All dimensions in mm (1 mm = 0.03937 Inch)

RoHS	Part Number	ZMKII0002
Packaging unit		1 Piece
Hygienic Design		●
Detergent resistant		●
Mounting Number		140

Connection Diagrams page 60



Mounting Clamp
for Ø 20 mm

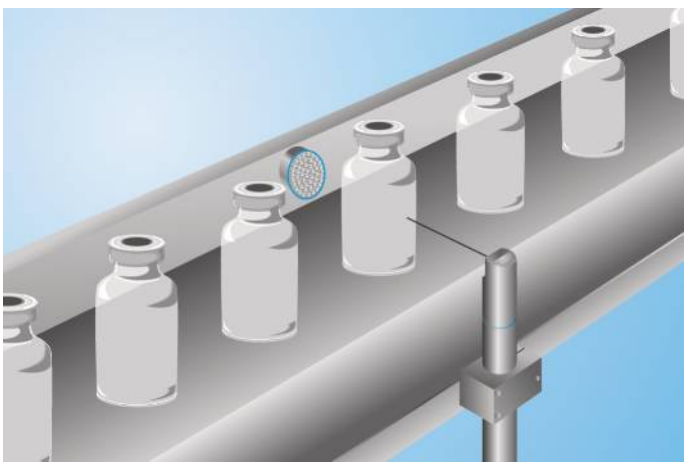
InoxSens

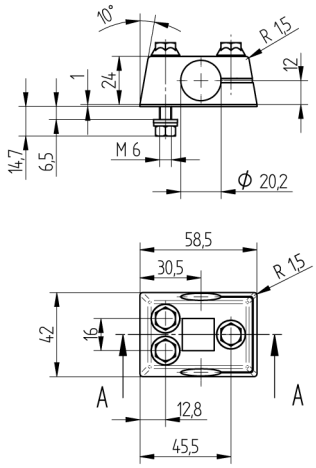
Technical Data

Mechanical Data	
Material	Stainless Steel 316L
Material Sealing	EPDM (FDA)

- **Hygiene-compatible screws included in delivery**
- **Hygienic design makes it easy to clean**
- **Made with food safe materials that are FDA approved**
- **Resistant to cleaning agents**

InoxSens is the hygiene series from wenglor. The InoxSens mounting clamp is also part of this complete system, which is seamlessly integrated into the machine. The clamp allows you to install the InoxSens sensors and mounting tubes in your installation using hygiene-compatible materials.

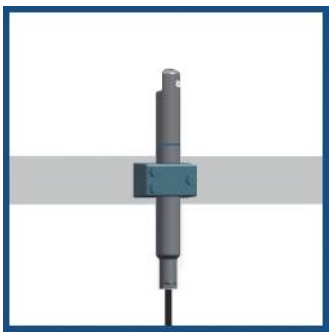


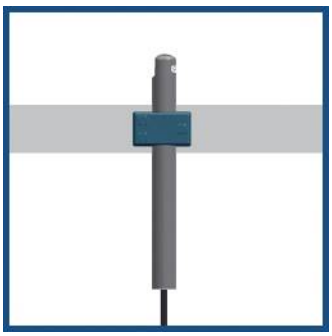


All dimensions in mm (1 mm = 0.03937 Inch)

RoHS	Part Number	ZMSII0002
Scope of delivery		3 screws
Packaging unit		1 Piece
Hygienic Design		●
Detergent resistant		●
Mounting Number		140

Connection Diagrams page 60





Reflector
in Stainless Steel Protection Housing

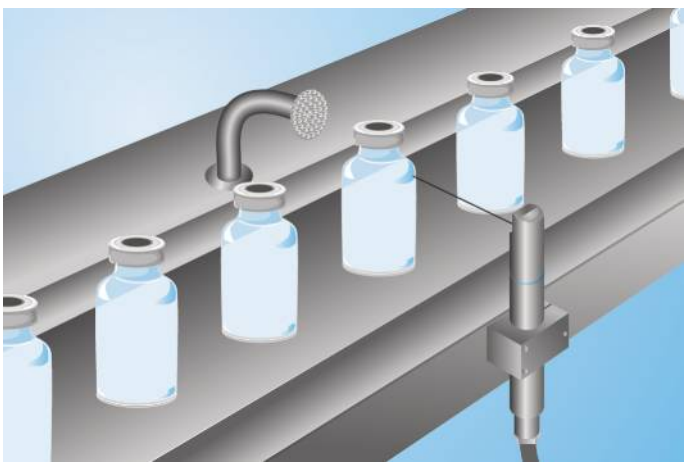
InoxSens

Technical Data

Mechanical Data	
Structure	Microstructure
Material	Stainless Steel 316L
Material Sealing	Silicone (FDA)
Degree of Protection	IP68/IP69K
Temperature Range	-20...60 °C

- **Cost-saving mounting**
- **Hygienic design makes it easy to clean**
- **Made with food safe materials that are FDA approved**
- **Resistant to cleaning agents**

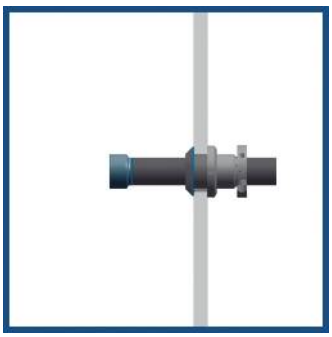
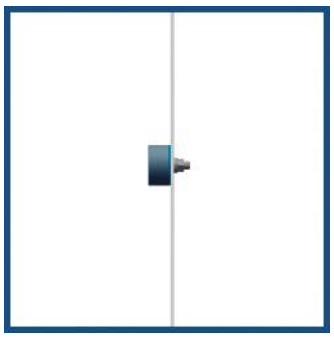
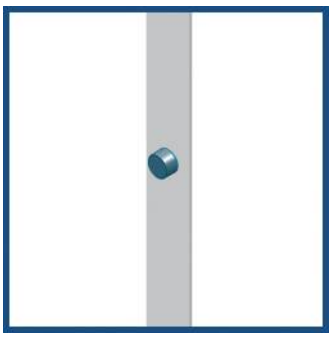
InoxSens is the hygiene series from wenglor. Together with other components, wenglor's InoxSens reflectors in stainless steel protection housing are part of this complete system which is seamlessly integrated into the machine. The reflectors are furnished with IP68 and IP69K protection and are attached using either InoxLock or fixing screws.



All dimensions in mm (1 mm = 0.03937 Inch)

Part Number	Z90R001	ZRMS02S01	ZRMS02I01
Packaging unit	1 Piece	1 Piece	1 Piece
Hygienic Design	●	●	●
Detergent resistant	●	●	●
Mounting Type	Fixing Screw	Fixing Screw	InoxLock
Disk	PMMA (FDA)	Glass	Glass
Suitable Mounting Technology No.			490

Connection Diagrams page 60

Reflector
in Stainless Steel Protection Housing

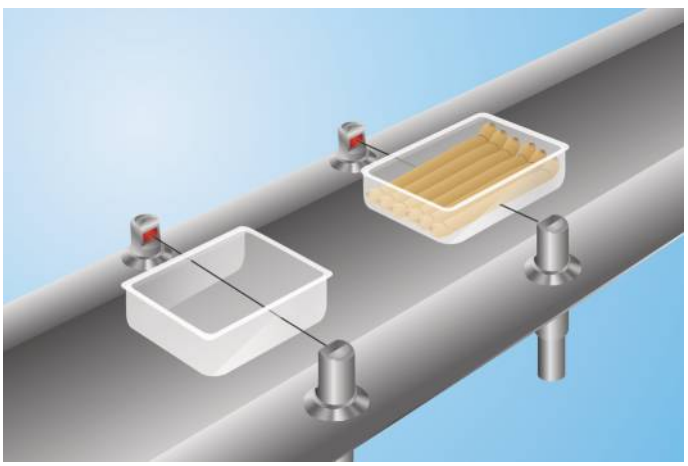
InoxSens

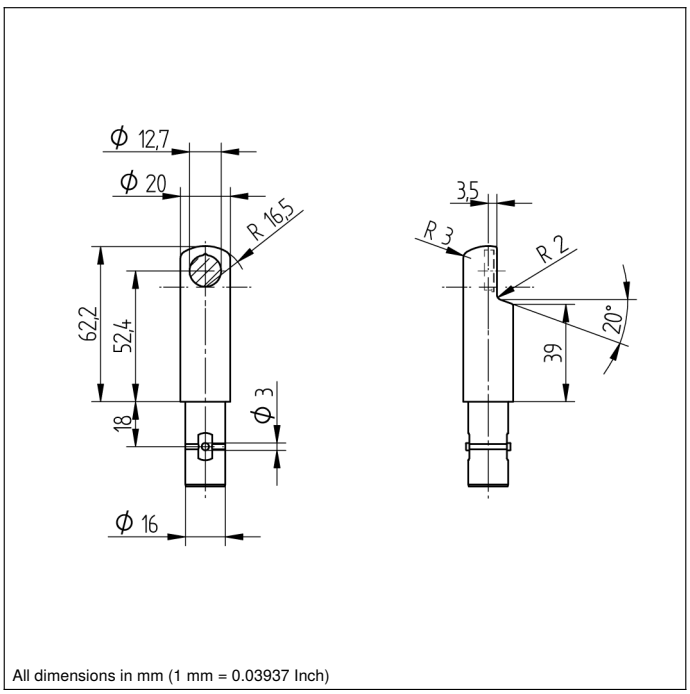
Technical Data

Mechanical Data	
Structure	Continuous Structure
Mounting Type	InoxLock
Material	Stainless Steel 316L
Degree of Protection	IP68/IP69K
Temperature Range	-25...70 °C
Disk	PMMA (FDA)

- **Cost-saving mounting**
- **Hygienic design makes it easy to clean**
- **Made with food safe materials that are FDA approved**
- **Resistant to cleaning agents**

InoxSens is the hygiene series from wenglor. Together with other components, wenglor's InoxSens reflectors in stainless steel protection housing are part of this complete system which is seamlessly integrated into the machine. The reflectors are furnished with IP68 and IP69K protection and are attached using either InoxLock or a mounting console for 20 mm.

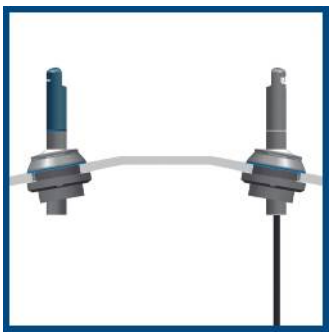




All dimensions in mm (1 mm = 0.03937 Inch)

Part Number	ZRDS01R01
Packaging unit	1 Piece
Hygienic Design	●
Detergent resistant	●
Suitable Mounting Technology No.	140 490

Connection Diagrams page 60



Protection Housing

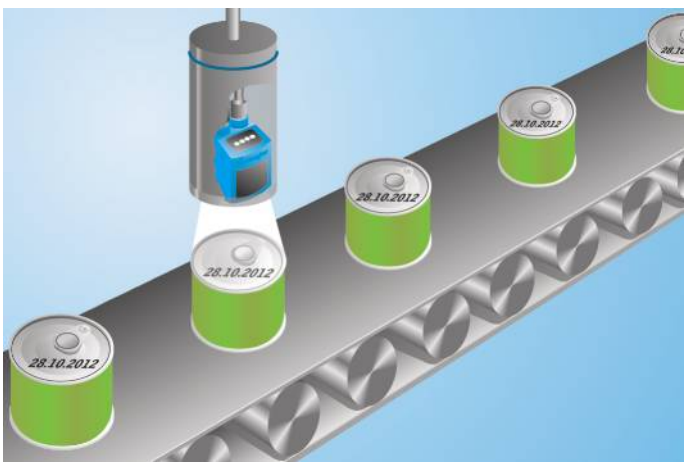
InoxSens

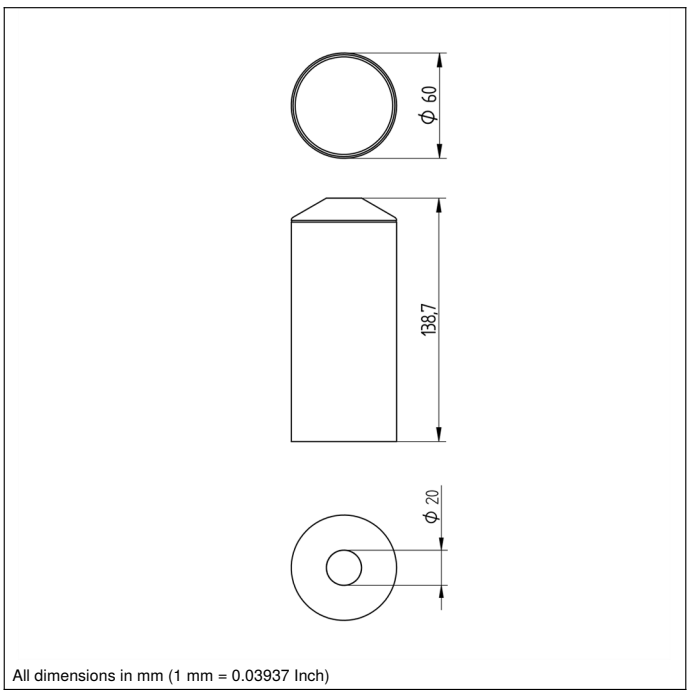
Technical Data

Mechanical Data	
Material	Stainless Steel 316L
Degree of Protection	IP68/IP69K
Material Sealing	Silicone (FDA)
Mounting Type	Mounting Tube

- **Hygienic design makes it easy to clean**
- **Integrates time tested wenglor products**
- **Made with food safe materials that are FDA approved**
- **Resistant to cleaning agents**

InoxSens is the hygiene series from wenglor. In conjunction with InoxSens protection housing, numerous wenglor products are also suitable for heavy-cleaning areas, such as: OCR readers, illumination, scanners, color sensors, luminescence sensors, print mark sensors, reflex sensors for measuring tasks and reflex sensors for contrast recognition. In addition to a high level of protection, the InoxSens protection housing also provides optimized heat dissipation.





All dimensions in mm (1 mm = 0.03937 Inch)

RoHS	Part Number	ZSV-02-01	ZSV-03-01
Packaging unit		1 Piece	1 Piece
Optic Cover		PMMA (FDA)	Glass
Mounting Number		510	510
Suitable Mounting Technology No.		500	500

Connection Diagrams page 60

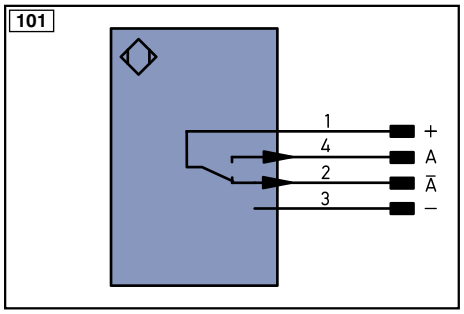
Complementary Products

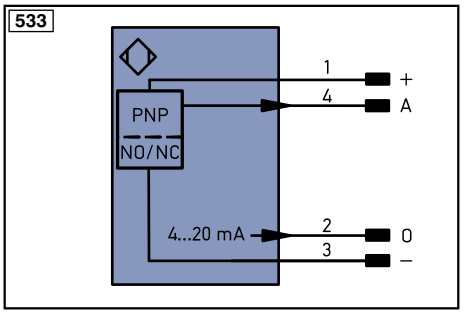
Mounting Bracket ZMW0M0001
Mounting Bracket ZMW0P0001
Mounting Bracket ZMWBV0001
Mounting Bracket ZMWFI0001

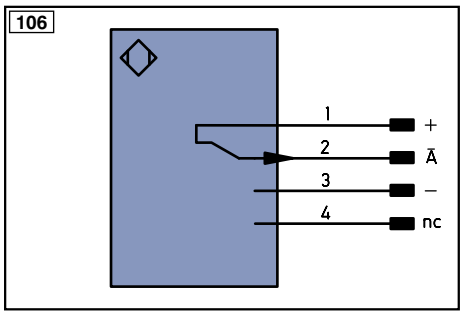
Connection Diagrams

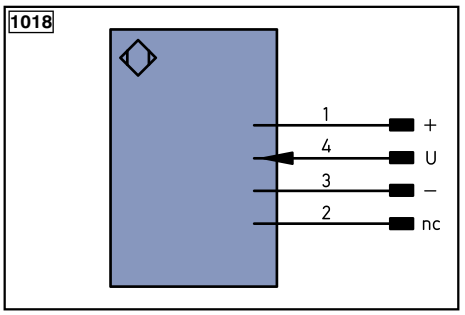
Legend

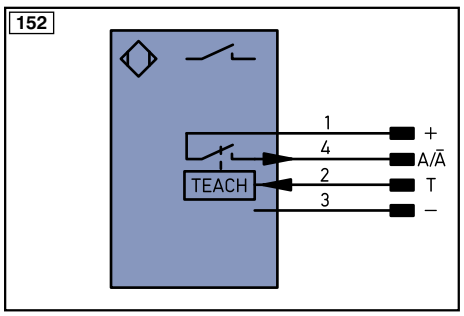
+	Supply Voltage +		nc	not connected			
–	Supply Voltage 0 V		U	Test Input			
~	Supply Voltage (AC Voltage)		Ū	Test Input inverted			
A	Switching Output	(NO)	W	Trigger Input			
Ā	Switching Output	(NC)	O	Analog Output			
V	Contamination/Error Output	(NO)	O–	Ground for the Analog Output			
V̄	Contamination/Error Output	(NC)	BZ	Block Discharge			
E	Input (analog or digital)		AMV	Valve Output			
T	Teach Input		a	Valve Control Output +	Wire Colors according to DIN IEC 757		
Z	Time Delay (activation)		b	Valve Control Output 0 V			
S	Shielding		SY	Synchronization	BK	Black	
RxD	Interface Receive Path		E+	Receiver-Line	BN	Brown	
TxD	Interface Send Path		S+	Emitter-Line	RD	Red	
RDY	Ready		⏚	Grounding	OG	Orange	
GND	Ground		SnR	Switching Distance Reduction	YE	Yellow	
CL	Clock		Rx+/–	Ethernet Receive Path	GN	Green	
E/A	Output/Input programmable		Tx+/–	Ethernet Send Path	BU	Blue	
	IO-Link		Bus	Interfaces-Bus A(+)/B(–)	VT	Violet	
PoE	Power over Ethernet		La	Emitted Light disengageable	GY	Grey	
IN	Safety Input		Mag	Magnet activation	WH	White	
OSSD	Safety Output		RES	Input confirmation	PK	Pink	
Signal	Signal Output		EDM	Contactor Monitoring	GNYE	Green Yellow	

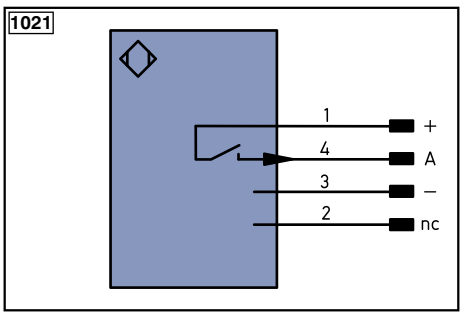












Index
alphabetical