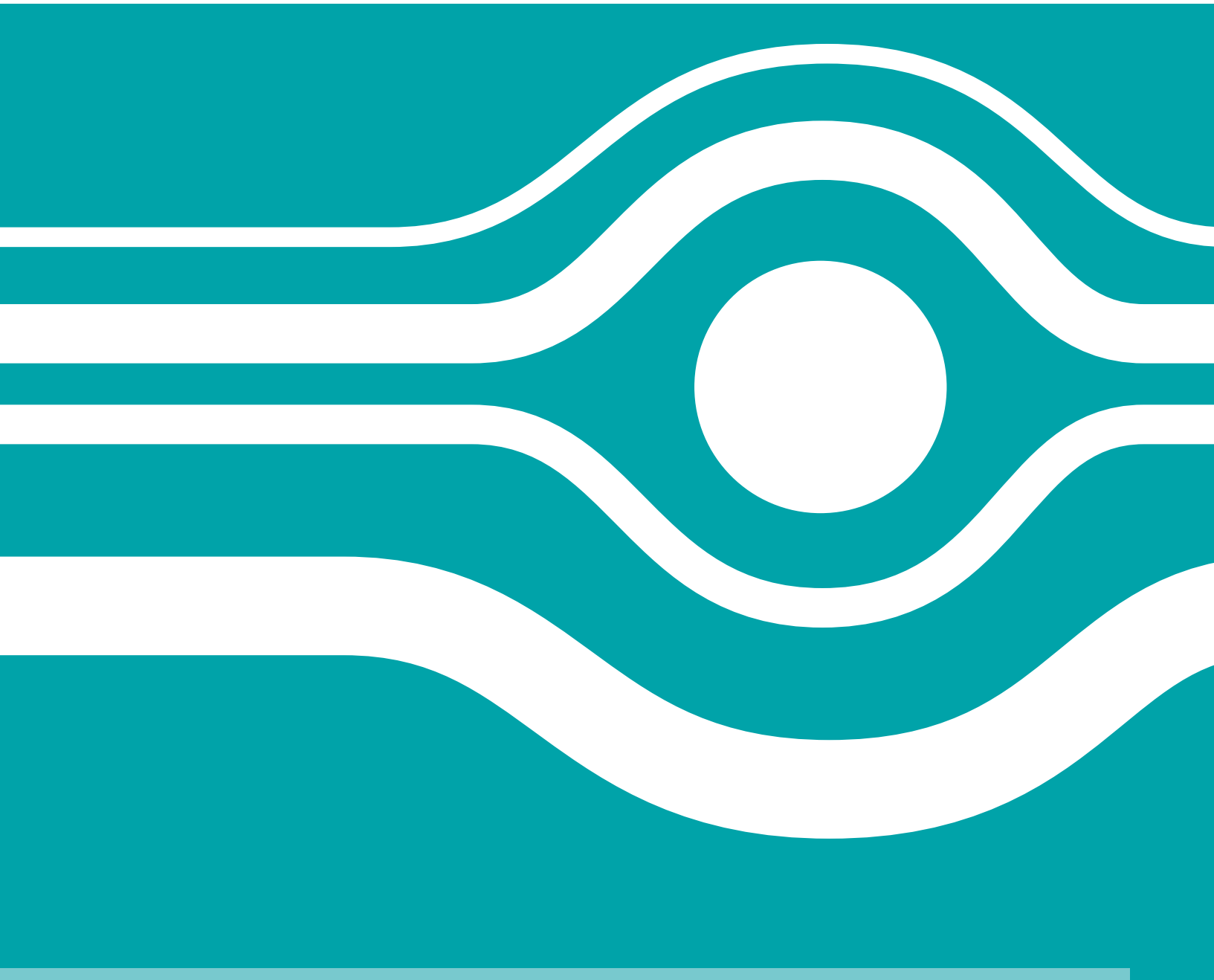
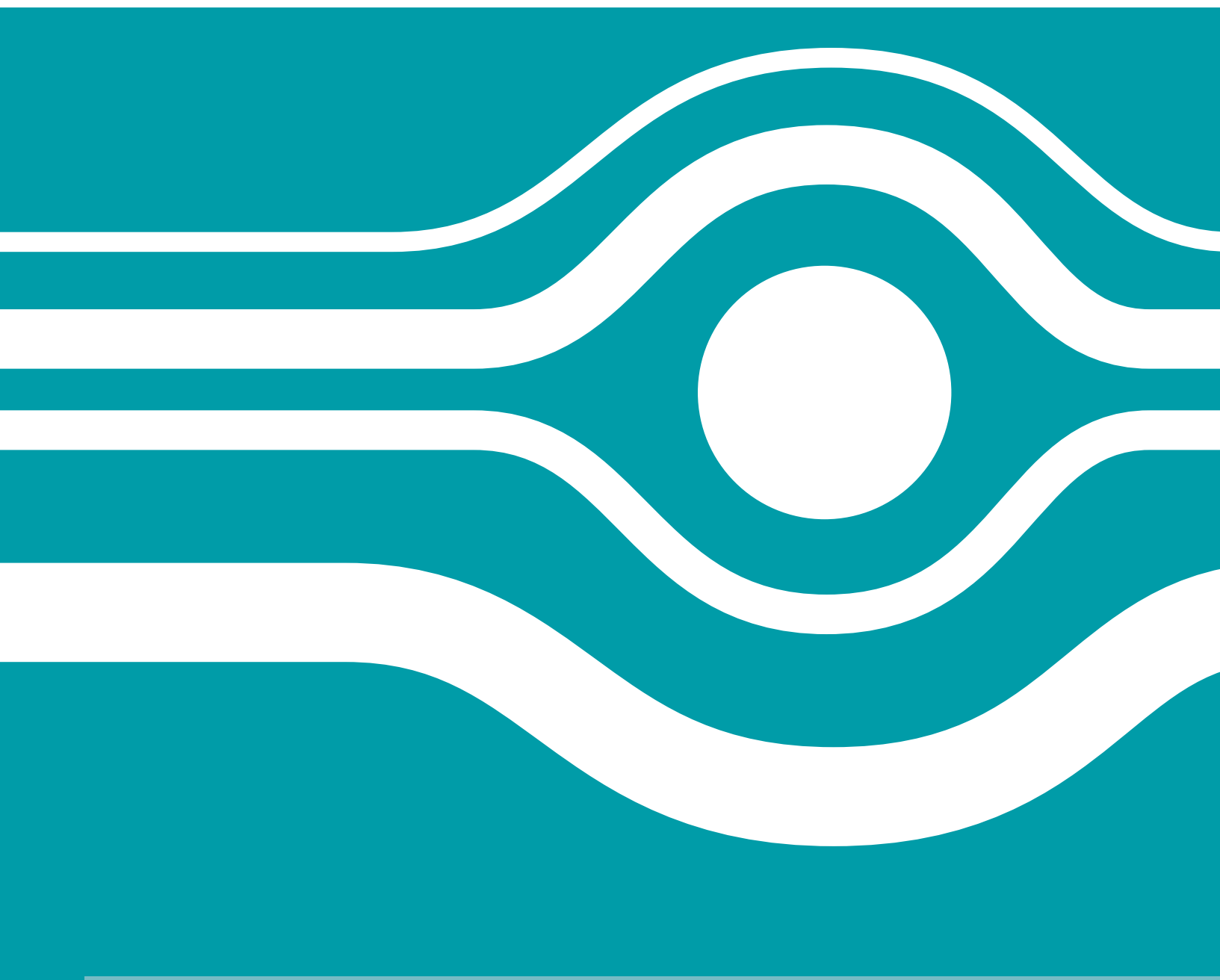
wenglor
the innovative family

Fluid Sensors





Fluid Sensors

wenglor fluid sensors include flow, pressure and temperature sensors. UniFlow flow sensors measure the speed with which media in closed systems flows. UniBar pressure sensors measure the relative pressure of any media in closed systems. UniTemp temperature sensors measure the temperature of liquid or gaseous media and facilitate the temperature monitoring of processes.

wenglor fluid sensors have a patented measuring method which is absolutely unique in the area of flow sensor technology. As a result, the products are mounted independent of position or flow direction and deliver most accurate measurement results despite being easy to mount.

The uniform design, operating and connection concept makes wenglor fluid sensors extremely easy to use. In particular, the 7-segment display ensures easy and intuitive operation. Another new feature is the separate LED for switching status indication allowing rapid detection of the switching state.

All sensors have a switch output, which can be defined via the menu as normally closed (NC) or normally open (NO).
Alternatively, the sensors also have an analog output as current output or voltage output.

Only a small selection of wenglor fluid sensors is listed in the catalog. The full product range of fluid sensors can be found at www.wenglor.com.

On the following pages you will find:

Pressure Sensors

UniBar pressure sensors measure the relative pressure in closed systems of any medium in the range of −1…600 bar.
The pressure applied to a pressure sensor is converted into an electronic signal and transmitted to a microprocessor for evaluation by an electronic amplifier. This takes on the evaluation of programmable switching points and finally displays the current pressure on the 7-segment display. The switch output reads out the corresponding switching signal, the analog output and the measurement value (optionally in 0…10 V or 4…20 mA).

Thanks to their front flush design, **pressure sensors with metal membrane** are piggable and therefore particularly suitable for areas with increased hygiene requirements, such as the food and pharmaceutical industries.

Only a small selection of wenglor pressure sensors is listed in the catalog. The full product range of pressure sensors can be found at www.wenglor.com. Various plastic and stainless steel housing types, pressure ranges, process connections and outputs can be combined.

Application examples:

- Process monitoring
- Monitoring and regulating pressure in filling systems
- Monitoring of compressed air systems
- Fill level determination in tank/silo systems
- Pressure regulation of aggregates
- Filter monitoring

wenglor Pressure Sensors at a Glance

This table provides information on additional sensors not included in the catalog.
The data sheets are available for download at www.wenglor.com.

All sensors have M12×1 connector. The PNP switch output can be defined via the menu as normally closed or normally open.

Additional options:
- Pressure unit on display foil in mbar, bar or MPa
- Analog output as current or voltage output

Housing: FA (Plastic) FM (Plastic) FX (Stainless Steel)



Pressure range	Process connection, female				Process connection, male	
	G1/8"	G1/4"	G3/8"	G1/2"	G1/2"	G1/2" CIP-capable
−1…0 bar	FA	—	—	FA	—	—
−0,5…0 bar	FA	—	—	FA	—	—
−0,25…0 bar	FA	—	—	FA	—	—
−0,1…0 bar	FA	—	—	FA	—	—
0…0,1 bar	FA	—	—	FA	—	—
0…0,5 bar	FA	—	—	FA	—	—
0…1 bar	FA	—	—	FA	—	—
0…6 bar	FA	—	—	FA	—	—
0…10 bar	FA	FA, FM	FA, FM	FA, FM	FA, FM	FA, FM, FX
0…25 bar	—	FA, FM	FA, FM	FA, FM	FA, FM	FA, FM, FX
0…40 bar	—	FA, FM	FA, FM	FA, FM	FA, FM	FA, FM, FX
0…100 bar	—	FA, FM	FA, FM	FA, FM	FA, FM	FA, FM, FX
0…160 bar	—	FA, FM	FA, FM	FA, FM	FA, FM	FA, FM, FX
0…250 bar	—	FA, FM	FA, FM	FA, FM	FA, FM	FA, FM, FX
0…400 bar	—	FA, FM	FA, FM	FA, FM	FA, FM	FA, FM, FX
0…600 bar	—	FA, FM	FA, FM	FA, FM	FA, FM	FA, FM, FX

Pressure Sensor

0...40 bar

Range

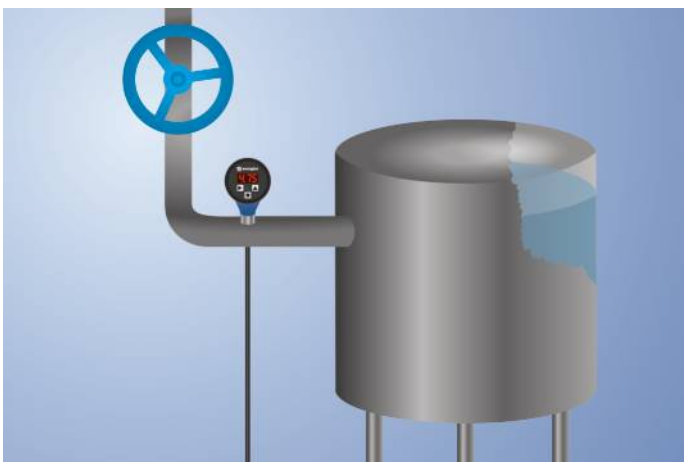
UniBar

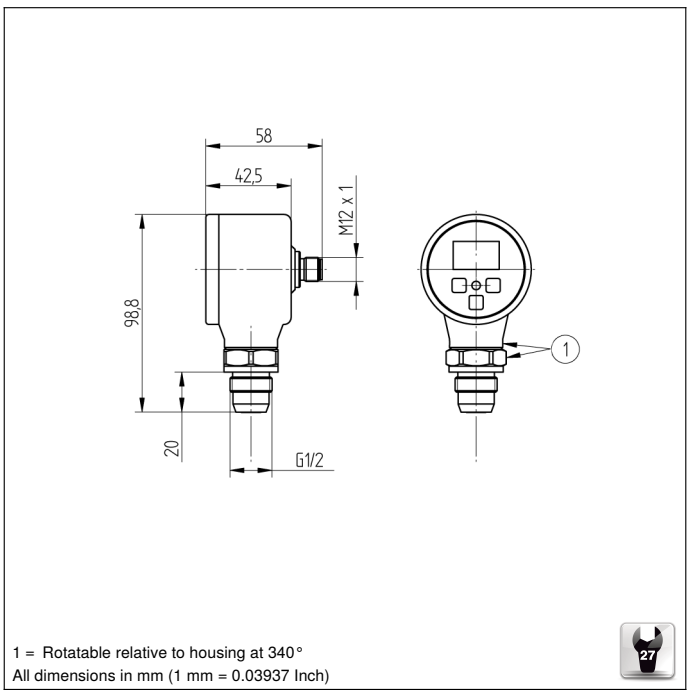
- **Highly visible output indicator**
- **Piggable with flush mounting**
- **Simple operation via the display**
- **Space-saving process connection thanks to small pressure membrane**

Technical Data

Sensor-specific data	
Adjustable Range	4...100 %
Medium	Liquids, gases
Switching Hysteresis	2 %
Measuring error	< ± 0,5 %
Temperature Drift	0,025 %/K
Environmental conditions	
Temperature of medium	-25...80 °C
Ambient temperature	-25...80 °C
EMC	DIN EN 61326-2-3
Shock resistance per DIN IEC 68-2-27	50 g / 11 ms
Vibration resistance per DIN IEC 60068-2-6	20 g (10...2000 Hz)
Electrical Data	
Supply Voltage	16...32 V DC
Current Consumption (Ub = 24 V)	< 60 mA
Response Time	30 ms
Switching Output/Switching Current	< 250 mA
Switching Output Voltage Drop	< 2 V
Resolution	10 bit
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Protection Class	III
Mechanical Data	
Adjustment	Menu
Housing Material	PBT; PC; FKM
Material Control Panel	Polyester
Material in contact with media	1.4435; 1.4404
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 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)

* approved by wenglor

	Part Number	Plug Version					
		FFMP001	FFMP002	FFMP003	FFMP189	FFMP190	FFMP191
Analog Output		●	●	●			
Final value, analog output: scalable 2:1		●	●	●			
PNP NO/NC switchable		●	●	●	●	●	●
Measuring Range		0...10 bar	0...25 bar	0...40 bar	0...10 bar	0...25 bar	0...40 bar
Maximum overload pressure		20 bar	50 bar	80 bar	20 bar	50 bar	80 bar
Bursting pressure		40 bar	100 bar	160 bar	40 bar	100 bar	160 bar
Switching Outputs		1	1	1	2	2	2
Analog Output		4...20 mA	4...20 mA	4...20 mA			
Current Output Load Resistance		< 500 Ohm	< 500 Ohm	< 500 Ohm			
Degree of Protection		IP65 *	IP67 *	IP67 *	IP65 *	IP67 *	IP67 *
Connection Diagram No.		533	533	533	536	536	536
Control Panel No.		A05	A05	A05	A05	A05	A05
Suitable Connection Technology No.		21	21	21	21	21	21
Suitable Mounting Technology No.		905 906	905 906	905 906	905 906	905 906	905 906

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The complete product range of pressure sensors can be found at www.wenglor.com.
An overview of this can be found in the table of contents.

Ctrl. Panel

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

Pressure Sensor

0...40 bar

Range

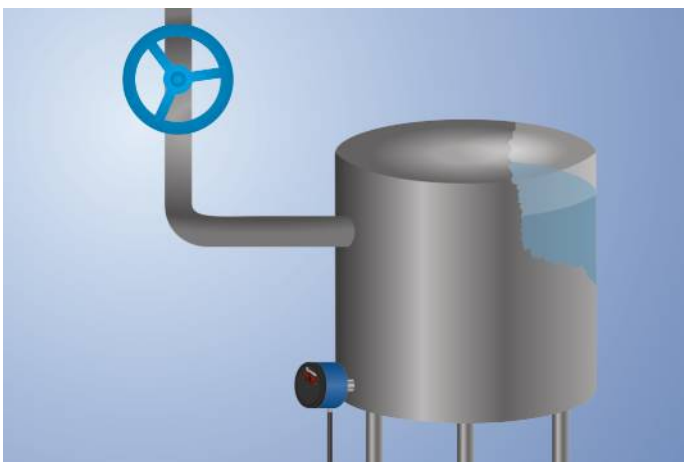
UniBar

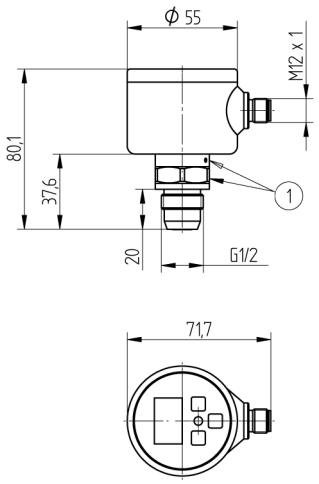
- **Highly visible output indicator**
- **Piggable with flush mounting**
- **Simple operation via the display**
- **Space-saving process connection thanks to small pressure membrane**

Technical Data

Sensor-specific data	
Adjustable Range	4...100 %
Medium	Liquids, gases
Switching Hysteresis	2 %
Measuring error	< ± 0,5 %
Temperature Drift	0,025 %/K
Environmental conditions	
Temperature of medium	-25...80 °C
Ambient temperature	-25...80 °C
EMC	DIN EN 61326-2-3
Shock resistance per DIN IEC 68-2-27	50 g / 11 ms
Vibration resistance per DIN IEC 60068-2-6	20 g (10...2000 Hz)
Electrical Data	
Supply Voltage	16...32 V DC
Current Consumption (Ub = 24 V)	< 60 mA
Response Time	30 ms
Switching Output/Switching Current	< 250 mA
Switching Output Voltage Drop	< 2 V
Resolution	10 bit
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Protection Class	III
Mechanical Data	
Adjustment	Menu
Housing Material	PBT; PC; FKM
Material Control Panel	Polyester
Material in contact with media	1.4435; 1.4404
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 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)

* approved by wenglor

	Part Number	Plug Version					
		FFAP001	FFAP002	FFAP003	FFAP231	FFAP232	FFAP233
Analog Output		●	●	●			
Final value, analog output: scalable 2:1		●	●	●			
PNP NO/NC switchable		●	●	●	●	●	●
Measuring Range		0...10 bar	0...25 bar	0...40 bar	0...10 bar	0...25 bar	0...40 bar
Maximum overload pressure		20 bar	50 bar	80 bar	20 bar	50 bar	80 bar
Bursting pressure		40 bar	100 bar	160 bar	40 bar	100 bar	160 bar
Switching Outputs		1	1	1	2	2	2
Analog Output		4...20 mA	4...20 mA	4...20 mA			
Current Output Load Resistance		< 500 Ohm	< 500 Ohm	< 500 Ohm			
Degree of Protection		IP65 *	IP67 *	IP67 *	IP65 *	IP67 *	IP67 *
Connection Diagram No.		533	533	533	536	536	536
Control Panel No.		A05	A05	A05	A05	A05	A05
Suitable Connection Technology No.		21	21	21	21	21	21
Suitable Mounting Technology No.		905 906	905 906	905 906	905 906	905 906	905 906

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Ctrl. Panel

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

Pressure Sensor

0...40 bar

Range

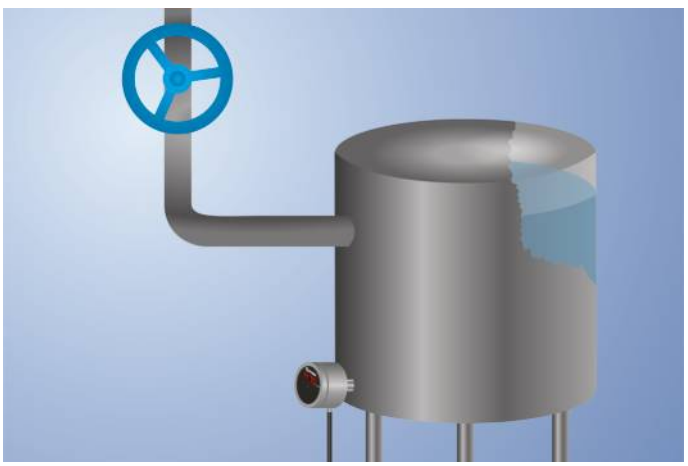
InoxSens UniBar

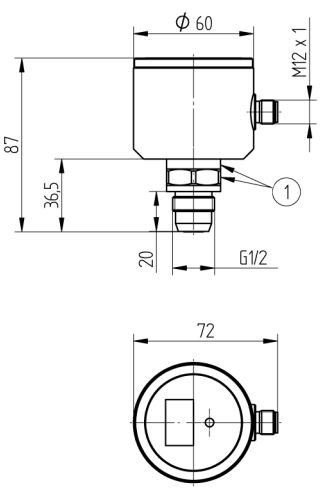
- **EHEDG approval**
- **Hygienic design makes it easy to clean**
- **Piggable with flush mounting**
- **Robust stainless steel housing with IP69K**
- **Space-saving process connection thanks to small pressure membrane**

Technical Data

Sensor-specific data	
Adjustable Range	4...100 %
Medium	Liquids, gases
Switching Hysteresis	2 %
Measuring error	< ± 0,5 %
Temperature Drift	0,025 %/K
Environmental conditions	
Temperature of medium	-25...80 °C
Ambient temperature	-25...80 °C
EMC	DIN EN 61326-2-3
Shock resistance per DIN IEC 68-2-27	50 g / 11 ms
Vibration resistance per DIN IEC 60068-2-6	20 g (10...2000 Hz)
Electrical Data	
Supply Voltage	16...32 V DC
Current Consumption (Ub = 24 V)	< 60 mA
Response Time	1,2 s
Switching Output/Switching Current	< 250 mA
Switching Output Voltage Drop	< 2 V
Resolution	10 bit
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
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)

* approved by wenglor

	Part Number	Plug Version					
		FFXP001	FFXP002	FFXP003	FFXP050	FFXP051	FFXP052
Analog Output		●	●	●			
Final value, analog output: scalable 2:1		●	●	●			
PNP NO/NC switchable		●	●	●	●	●	●
Measuring Range		0...10 bar	0...25 bar	0...40 bar	0...10 bar	0...25 bar	0...40 bar
Maximum overload pressure		20 bar	50 bar	80 bar	20 bar	50 bar	80 bar
Bursting pressure		40 bar	100 bar	160 bar	40 bar	100 bar	160 bar
Switching Outputs		1	1	1	2	2	2
Analog Output		4...20 mA	4...20 mA	4...20 mA			
Current Output Load Resistance		< 500 Ohm	< 500 Ohm	< 500 Ohm			
Degree of Protection		IP65/IP69K *	IP67/IP69K *	IP67/IP69K *	IP65/IP69K *	IP67/IP69K *	IP67/IP69K *
Connection Diagram No.		533	533	533	536	536	536
Control Panel No.		A13	A13	A13	A13	A13	A13
Suitable Connection Technology No.		21	21	21	21	21	21
Suitable Mounting Technology No.		905 906	905 906	905 906	905 906	905 906	905 906

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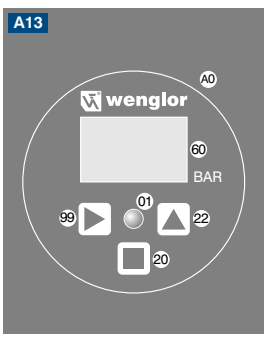
The complete product range of pressure sensors can be found at www.wenglor.com.
An overview of this can be found in the table of contents.

Ctrl. Panel



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

Flow Sensors

The UniFlow flow sensors impress with their unique, patented measurement method, which is independent from the flow direction. Alignment of the sensor with the flow direction is not necessary during installation as both the heating and temperature sensors are located in the measurement tip of the flow sensor. Even if the sensor was rotated, it is not necessary to reset the switching point. Flow sensors by wenglor can be mounted in horizontal or vertical positions in the pipe. This position-independent installation provides maximum flexibility.

UniFlow flow sensors from wenglor determine the speed of oily and aqueous media in closed piping systems.
They operate according to the calorimetric principle, which states that a flowing medium absorbs and transports heat energy away. The tip of the sensor is heated, and the medium flowing past it cools it down again. The integrated temperature sensor detects the temperature at the measuring point, which is influenced by the flow speed. The flow speed of the medium can be determined by comparing actual temperature and the heating temperature.

Only a small selection of wenglor flow sensors is listed in the catalog. The full product range of flow sensors can be found at www.wenglor.com. Various plastic and stainless steel housing types, measuring ranges for water and oil, process connections and outputs can be combined.

Application examples:

- Flow rate monitoring in filling machines
- Monitoring of cooling water in power generators
- Cooling water control
- Cooling of ship electronics

wenglor Flow Sensors at a Glance

This table provides information on additional sensors not included in the catalog.
The data sheets are available for download at www.wenglor.com.

All sensors have M12×1 connector. The PNP switch output can be defined via the menu as normally closed or normally open.

Additional options:
- Various immersion depths
- Operating pressure 60 bar or 300 bar
- Analog output as current or voltage output

Housing:

FA (Plastic)

FX (Stainless Steel)

Flow speed oil	**Process connection**			
	G1/4"	G1/2"	G1/2" CIP-capable	Sealing cone M18×1,5
1 m/s	FA	FA	FX	FA

Flow speed water	**Process connection**			
	G1/4"	G1/2"	G1/2“ CIP-capable	Sealing cone M18×1,5
2 m/s	FA	FA	FX	FA
3 m/s	FA	FA	FX	FA

Flow Sensor

15...200 cm/s

Range

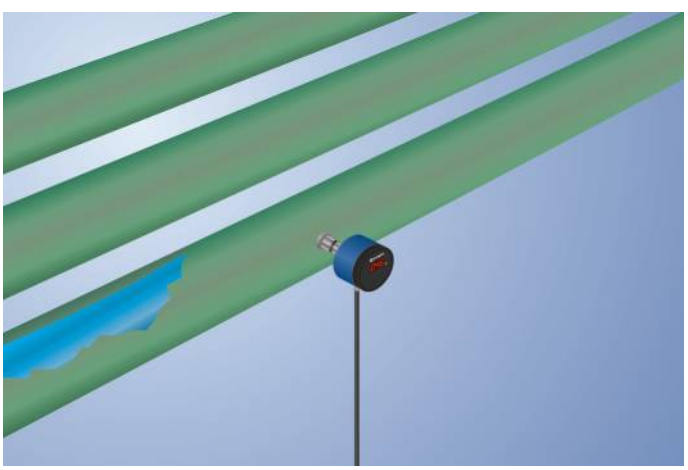
UniFlow

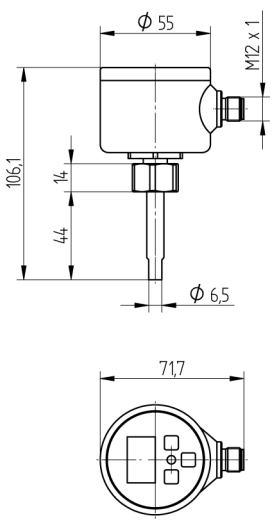
- **Highest precision of its class**
- **Installation in any position**
- **Measurement independent of flow direction**
- **Simple operation via the display**
- **Temperature of the medium: 0 ... 100° C (140° C for 24 hours without current measurement)**

Technical Data

Sensor-specific data	
Measuring Range	15...200 cm/s
Adjustable Range	15...200 cm/s
Medium	Water
Measuring error	2 %
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
EMC	DIN EN 61326-2-3
Shock resistance per DIN IEC 68-2-27	50 g / 11 ms
Vibration resistance per DIN IEC 60068-2-6	20 g (10...2000 Hz)
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
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Protection Class	III
Mechanical Data	
Adjustment	Menu
Housing Material	PBT; PC; FKM
Material Control Panel	Polyester
Material in contact with media	1.4435; 1.4404; FKM
Degree of Protection	IP67 *
Connection	M12 × 1; 4-pin
Process Connection	Sealing cone M18 × 1,5
Process Connection Length	64 mm
Bar length	44 mm

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 integrated display. The highly visible switching status display enables the rapid localization of affected sensors for maintenance processes.





All dimensions in mm (1 mm = 0.03937 Inch)

* approved by wenglor

	Plug Version
Part Number	FFAF001
PNP NO/NC switchable	●
Connection Diagram No.	532
Control Panel No.	A03
Suitable Connection Technology No.	2 21
Suitable Mounting Technology No.	900 901

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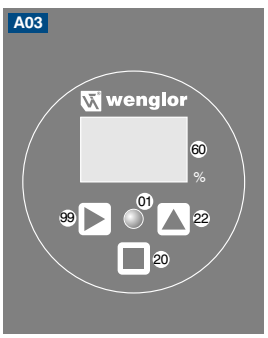
**The complete product range of flow sensors can be found at www.wenglor.com.
An overview of this can be found in the table of contents.**

Ctrl. Panel



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

Flow Sensor

10...300 cm/s

Range

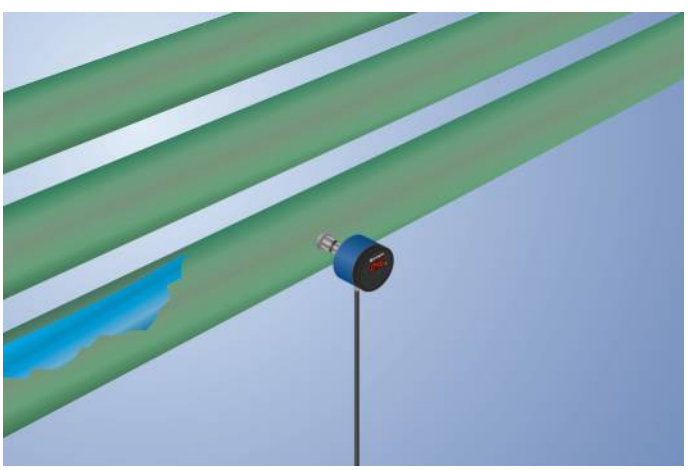
UniFlow

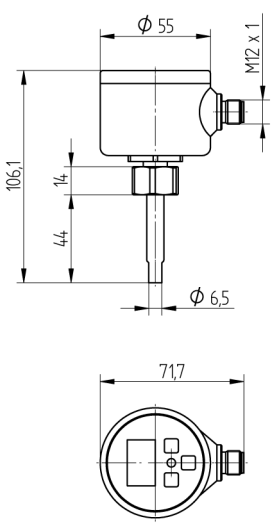
- **Display can be switched between flow and medium temperature**
- **Highest precision of its class**
- **Measurement independent of flow direction**
- **Selectable measuring range**
- **Simple operation via the display**
- **Temperature of the medium: 0 ... 100° C (140° C for 24 hours without current measurement)**

Technical Data

Sensor-specific data	
Selectable measuring range	10...300 cm/s
Medium	Water
Measuring error	2 %
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
EMC	DIN EN 61326-2-3
Shock resistance per DIN IEC 68-2-27	50 g / 11 ms
Vibration resistance per DIN IEC 60068-2-6	20 g (10...2000 Hz)
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	PBT; PC; FKM
Material Control Panel	Polyester
Material in contact with media	1.4435; 1.4404; FKM
Degree of Protection	IP67 *
Connection	M12 × 1; 4-pin
Process Connection	Sealing cone M18 × 1,5
Process Connection Length	64 mm
Bar length	44 mm

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 integrated display. The highly visible switching status display enables the rapid localization of affected sensors for maintenance processes.





All dimensions in mm (1 mm = 0.03937 Inch)

* approved by wenglor

	Part Number	Plug Version		
		FFAF002	FFAF003	FFAF186
Analog output flow		●		
Analog output temperature			●	
Analog output switchable to flow or temperature				●
Temperature monitoring		●	●	●
PNP NO/NC switchable		●	●	●
Connection Diagram No.		533	533	533
Control Panel No.		A03	A03	A03
Suitable Connection Technology No.		21	21	21
Suitable Mounting Technology No.		900 901	900 901	900 901

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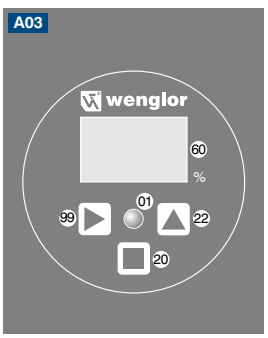
An overview of this can be found in the table of contents.**

Ctrl. Panel



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

Measuring Range

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

Flow Sensor

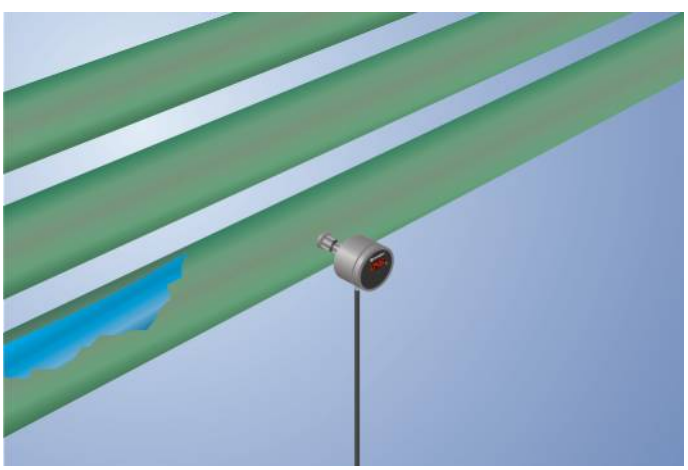
10...300 cm/s

Range

InoxSens UniFlow

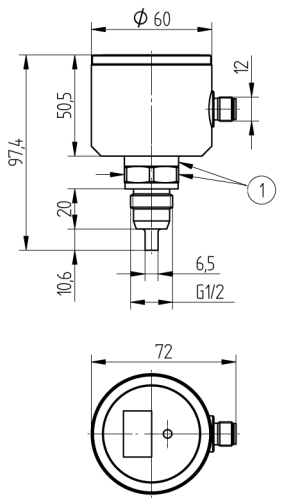
- **CIP-capable**
- **EHEDG approval**
- **Highest precision of its class**
- **Hygienic design makes it easy to clean**
- **Measurement independent of flow direction**
- **Temperature of the medium: 0 ... 100° C (140° C for 24 hours without current measurement)**

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
Medium	Water
Measuring error	2 %
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
EMC	DIN EN 61326-2-3
Shock resistance per DIN IEC 68-2-27	50 g / 11 ms
Vibration resistance per DIN IEC 60068-2-6	20 g (10...2000 Hz)
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)

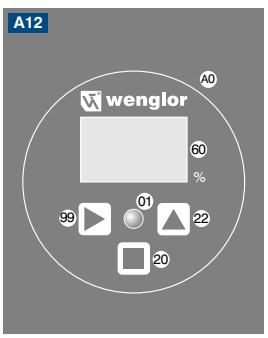
* approved by wenglor

	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 32

**The complete product range of flow sensors can be found at www.wenglor.com.
An overview of this can be found in the table of contents.**

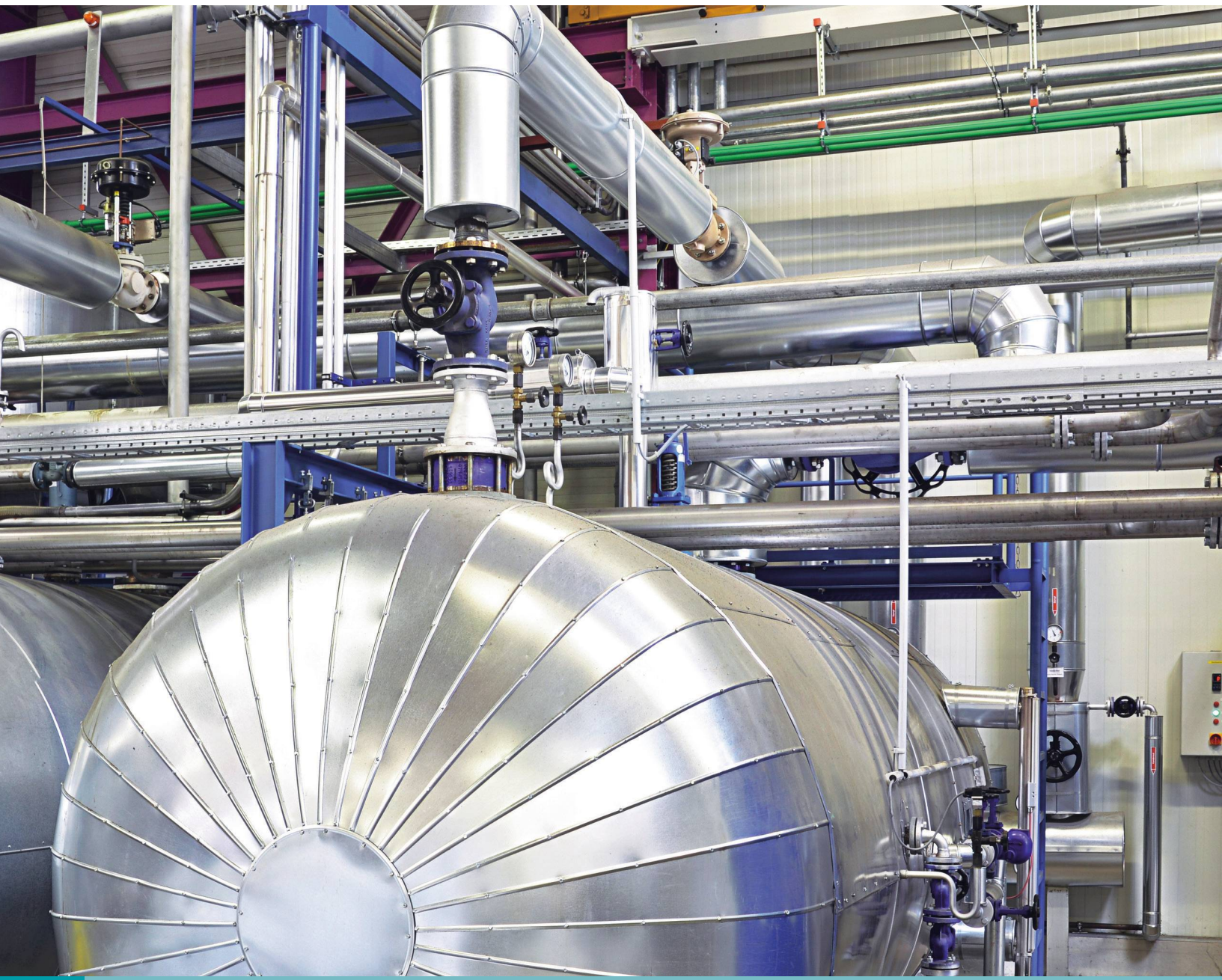
Ctrl. Panel



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

Measuring Range

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



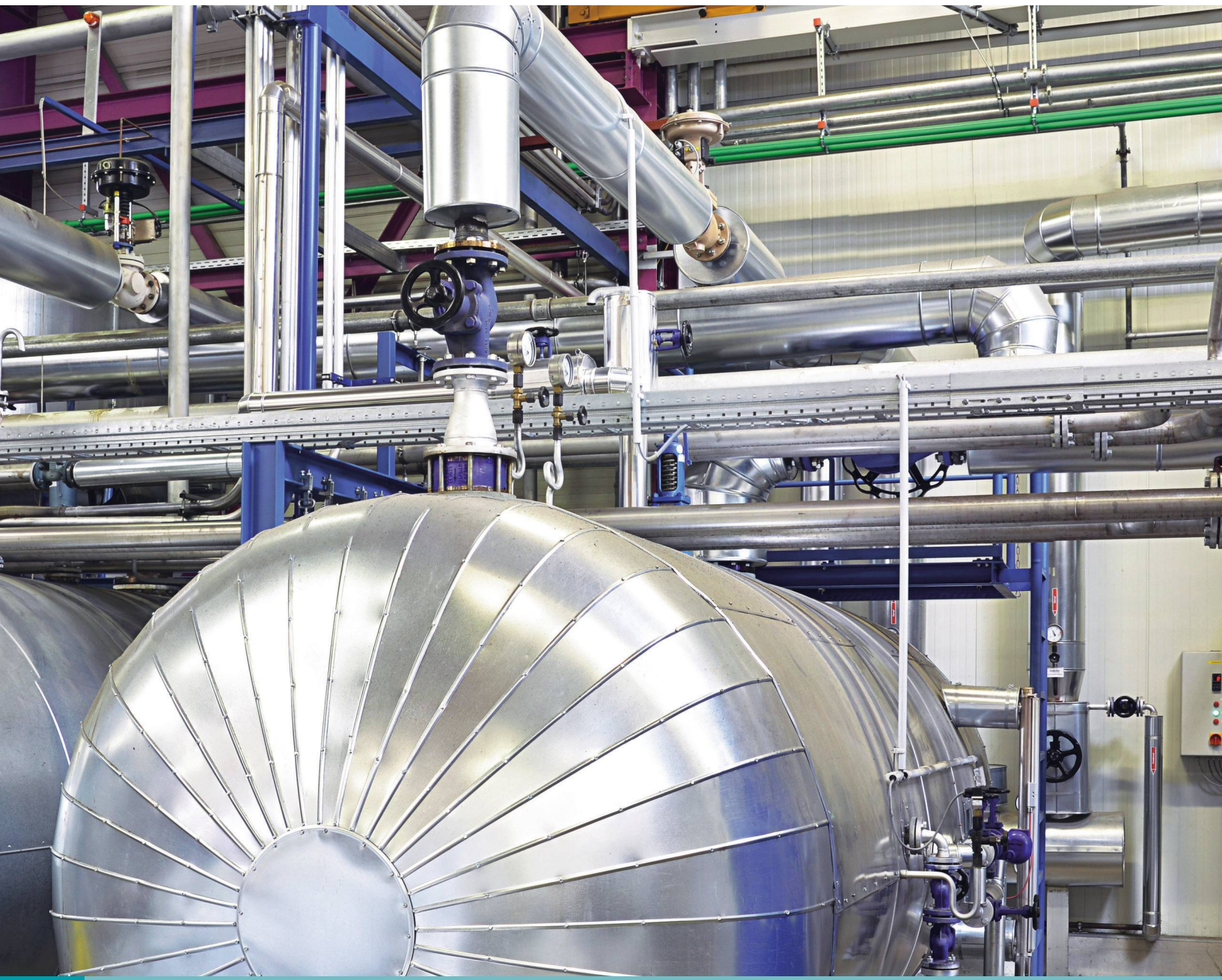
Temperature Sensors

UniTemp temperature sensors measure the temperature of liquid or gaseous media and facilitate the temperature monitoring of processes.
The measurement tip of the wenglor temperature sensors contains a sensor which detects temperature changes and converts them into an electric signal. An electronic amplifier detects the change and converts it into an electrical signal. This signal is then processed by a microprocessor and converted into a temperature value (in degrees Celsius). Individually adjustable switching points allow for temperature monitoring across a wide range of different ambient conditions.
wenglor temperature sensors impress with their compact design, particularly as a result of their large measuring range of 0 to 200 °C.

Only a small selection of wenglor temperature sensors is listed in the catalog. The full product range of temperature sensors can be found at www.wenglor.com. Various plastic and stainless steel housing types, process connections and outputs can be combined.

Application examples:

- Temperature monitoring in brewing processes
- Monitoring flow and return temperatures in solar thermal energy
- Temperature regulation in cheese production
- Temperature measuring for tempering furnaces



wenglor Temperature Sensors at a Glance

This table provides information on additional sensors not included in the catalog.
The data sheets are available for download at www.wenglor.com.

All sensors have M12×1 connector. The PNP switch output can be defined via the menu as normally closed or normally open.

Additional options:
- Various immersion depths
- Analog output as current or voltage output

Housing: FA (Plastic) FX (Stainless Steel)

Temperature Range	Process connection				
	G1/4"	G1/2"	G1/2" CIP-capable	Sealing cone M18×1,5	Insulation displacement connector 6 mm
0…140 °C	FA	FA	FA, FX	FA	FA, FX
0…200 °C	—	—	—	—	FA, FX

Temperature Sensor

0...140 °C

Range

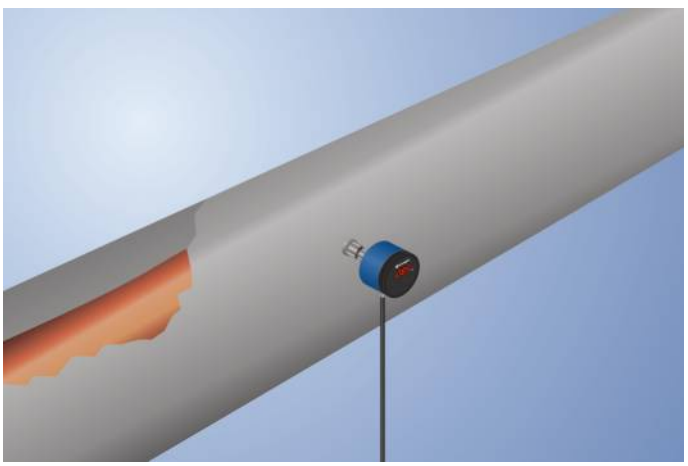
UniTemp

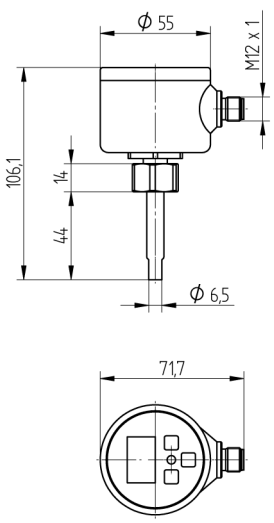
- **Highly visible output indicator**
- **Simple operation via the display**
- **Temperature range: 0...200 °C available**

Technical Data

Sensor-specific data	
Temperature Measurement Range	0...140 °C
Adjustable Range	2...139 °C
Medium	Liquids, gases
Measuring error	± 1 °C
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
EMC	DIN EN 61326-2-3
Shock resistance per DIN IEC 68-2-27	50 g / 11 ms
Vibration resistance per DIN IEC 60068-2-6	20 g (10...2000 Hz)
Electrical Data	
Supply Voltage	16...32 V DC
Current Consumption (Ub = 24 V)	60 mA
Switching Output/Switching Current	< 250 mA
Switching Output Voltage Drop	< 2 V
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Protection Class	III
Mechanical Data	
Adjustment	Menu
Housing Material	PBT; PC; FKM
Material Control Panel	Polyester
Material in contact with media	1.4435; 1.4404; FKM
Degree of Protection	IP67 *
Connection	M12 × 1; 4-pin
Process Connection	Sealing cone M18 × 1,5
Process Connection Length	64 mm
Bar length	44 mm

UniTemp temperature sensors measure the temperature of liquid or gaseous media and facilitate the temperature monitoring of processes.





All dimensions in mm (1 mm = 0.03937 Inch)

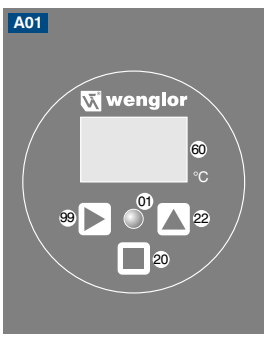
* approved by wenglor

	Part Number	Plug Version	
		FFAT001	FFAT041
Analog Output		●	
PNP NO/NC switchable		●	●
Switching Outputs		1	2
Analog Output		4...20 mA	
Current Output Load Resistance		< 500 Ohm	
Connection Diagram No.		533	536
Control Panel No.		A01	A01
Suitable Connection Technology No.		21	21
Suitable Mounting Technology No.		900 901	900 901

Connection Diagrams page 32

**The complete product range of temperature sensors can be found at www.wenglor.com.
An overview of this can be found in the table of contents.**

Ctrl. Panel



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

Temperature Sensor

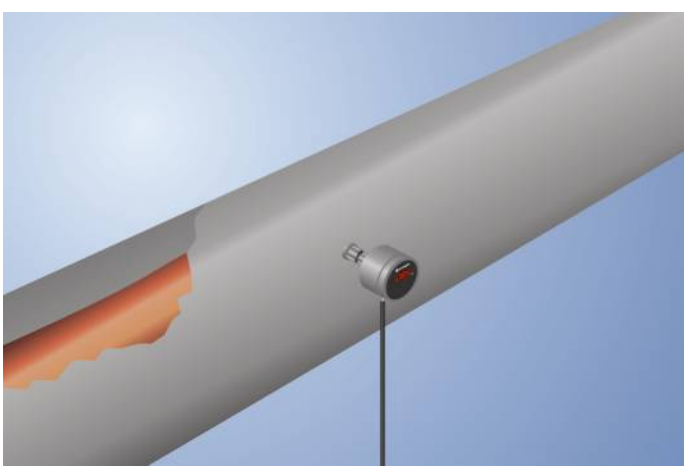
0...140 °C

Range

InoxSens UniTemp

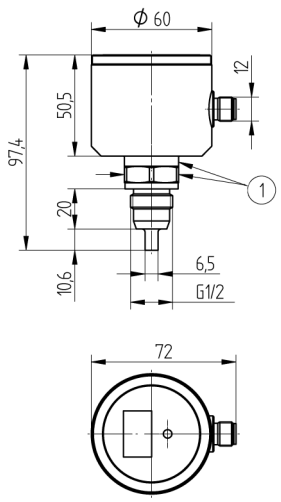
- **EHEDG approval**
- **Hygienic design makes it easy to clean**
- **Robust stainless steel housing with IP69K**
- **Simple operation via the display**
- **Temperature range: 0...200 °C available**

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.



Technical Data

Sensor-specific data	
Temperature Measurement Range	0...140 °C
Adjustable Range	2...139 °C
Medium	Liquids, gases
Measuring error	± 1 °C
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
EMC	DIN EN 61326-2-3
Shock resistance per DIN IEC 68-2-27	50 g / 11 ms
Vibration resistance per DIN IEC 60068-2-6	20 g (10...2000 Hz)
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



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

* approved by wenglor

	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

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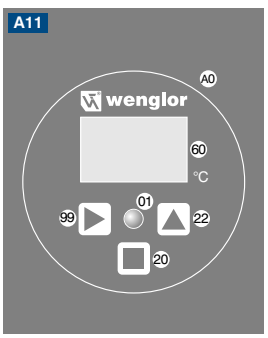
**The complete product range of temperature sensors can be found at www.wenglor.com.
An overview of this can be found in the table of contents.**

Ctrl. Panel



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

Connection Diagrams

Legend

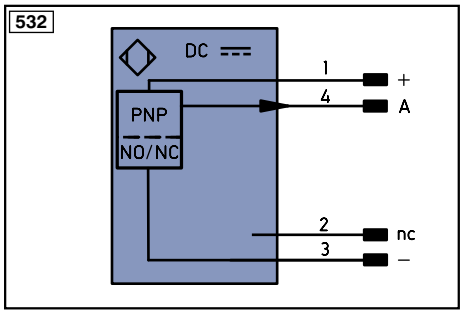
+	Supply Voltage +	
–	Supply Voltage 0 V	
~	Supply Voltage (AC Voltage)	
A	Switching Output	(NO)
Ā	Switching Output	(NC)
V	Contamination/Error Output	(NO)
V̄	Contamination/Error Output	(NC)
E	Input (analog or digital)	
T	Teach Input	
Z	Time Delay (activation)	
S	Shielding	
RxD	Interface Receive Path	
TxD	Interface Send Path	
RDY	Ready	
GND	Ground	
CL	Clock	
E/A	Output/Input programmable	
	IO-Link	
PoE	Power over Ethernet	
IN	Safety Input	
OSSD	Safety Output	
Signal	Signal Output	

nc	not connected
U	Test Input
Ū	Test Input inverted
W	Trigger Input
O	Analog Output
O–	Ground for the Analog Output
BZ	Block Discharge
AMV	Valve Output
a	Valve Control Output +
b	Valve Control Output 0 V
SY	Synchronization
E+	Receiver-Line
S+	Emitter-Line
⏚	Grounding
SnR	Switching Distance Reduction
Rx+/–	Ethernet Receive Path
Tx+/–	Ethernet Send Path
Bus	Interfaces-Bus A(+)/B(–)
La	Emitted Light disengageable
Mag	Magnet activation
RES	Input confirmation
EDM	Contactor Monitoring

Wire Colors according to DIN IEC 757

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

532



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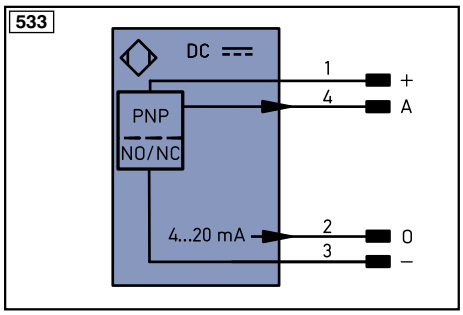

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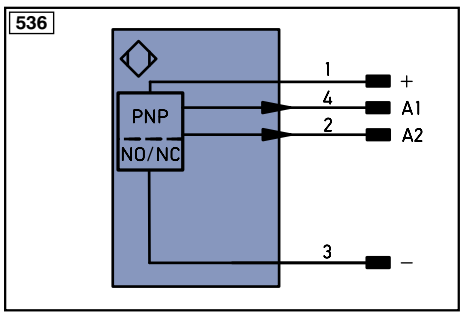

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alphabetical