EXspect 271

OPERATING INSTRUCTIONS

NIR Backscatter Sensor

EXNER
Process Equipment

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EXNER PROCESS EQUIPMENT GmbH

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1 General information

The operating instructions enable the safe and efficient handling of the backscatter sensor EXspect 271.

The operating instructions belong to the product and must be stored in its direct vicinity and easily accessible to the staff at all times. Before starting any work, the staff must read these operating instructions carefully and understand them.

If these operating instructions incorporate documentation from suppliers (as an attachment), Exner Process Equipment assumes no guarantee for its contents, individual statements, technical data, etc.

1.1 Manufacturer

Exner Process Equipment GmbH
Carl-Metz-Str. 26
D-76275 Ettlingen

1.2 Depiction of information

For simplified and safe work with these operating instructions, uniform safety instructions and symbols are used.

Safety instructions

Safety instructions protect against injury to persons and damage to property. The measures described for averting danger must be adhered to.

The safety instructions are structured as follows:

SIGNAL WORD

Type and source of the danger
Consequences in case of non-observation
Prevention measures / Prohibitive rules

The components have the following meaning:

- Signal word: marks the seriousness of the danger
- Warning sign: draws attention to the danger
- Type and source of the danger: names the causes of the danger
- Consequences: describes the consequences in case of non-observation
- Measures: provides measures to avert the danger

DANGER

This warning message marks a danger with a high risk which results in death or severe injury if not avoided.

WARNING

This warning message marks a danger with a moderate risk which can result in death or severe injury if not avoided.

ATTENTION

This warning message marks a danger with a low risk which can result in minor or moderate injury if not avoided.

NOTE

This note contains information regarding possible material or environmental damages which do not result in injury to persons.

Symbols

Marks	Meaning
»	Instruction with no specified sequence
1.	Instruction with a specified sequence
•	List
→	Reference to Chapter
" "	Operating element, Push button, Button
✓	Result

2 Safety and protection measures

2.1 General safety instructions

The EXspect sensor is designed in such a way that no risks can arise from using the product if the operating instructions are observed.

- Read the operating instructions first.
- Only install or operate the sensor after having read and understood all notes on its safe and proper use.
- Keep the operating instructions in a safe place in order to be able consult them at all times if required.
- Only use the sensor and its accessories if they are in good order and condition.
- Ensure proper use of the sensor. Do not use it for applications for which it is not intended (e.g. as a step).
- Observe the laws, ordinances, regulations and standards applicable in the country of use and at the place of use.

2.2 Intended use

The EXspect sensor is secured to tanks or pipes. The optical part of the sensor is immersed in the process fluid to measure physical properties via the backscattering of emitted light.

The sensor must be serviced regularly.

- Prepare a maintenance schedule for the respective process.
- Only perform maintenance work described in these operating instructions.
- Changes to the sensor may only be carried out after consulting with the manufacturer.

NOTE

The manufacturer is not liable for damages arising from improper or unintended use.

2.3 Danger zones and residual danger

Sensors are connected to tanks and pipes which can be pressurised. Process liquid can only escape in case of negligent action or improper operation. The system or part thereof should therefore be depressurised and emptied completely before the sensor is removed.

- Before commissioning and after each maintenance, ensure that all seals and connections are complete and functional.
- Take appropriate safety precautions before touching the sensor as parts of it can adopt the process temperature.

2.4 Equipment and accessories

Only use tested and approved equipment and accessories.

Seals

The EXspect 271 sensor does not require any elastomer seals. If you connect the sensor to your process using an adapter, then

» select the material properties of the process seal and the O-rings depending on the process medium and the cleaning fluid used.

» consider the seal material's swelling capacity and resistance to acids and alkalis.

2.5 Requirements of the staff

Qualification

Only trained professionals may install and service the sensor!

Protective clothing

When commissioning or servicing, the operating staff must wear goggles and appropriate protective clothing.

Accident prevention regulations (UVV)

Please observe the work safety rules and regulations in the country and place of use!

2.6 Pictograms

For better orientation, pictograms and symbols are used in the operating instructions.

Pictogram	Meaning
	General warning signs

3 Technical data

3.1 Standards

The following standards were applied when manufacturing the sensor:

- EN 61326-1: 2013-7
- EN 61326-2-3: 2013-7
- DIN/EN 27027 (ISO7027)

3.2 Specification

Sensor specifications	
Measurement range	0...100 %
Resolution	0.1 %
Accuracy	± 1.5 %
Reproducibility	≤ 1 % from final value
Wave length	850 nm
Light source	LED
Material	Stainless steel 1.4435 (316L)
Surface finish	Ra <0.37 µm
Lens	Sapphire ball
Supply voltage	24 V DC
Output current	4...20 mA
Switch output	Can be set to NO or NC
Input contact	+24 V DC for adjustment (zeroing)
Cable connection	5 or 8-pin M12 plug
Cable length	2 m or 5 m
Process connection	G 1/2" for welding sockets with 35° cone

3.3 Dimensions

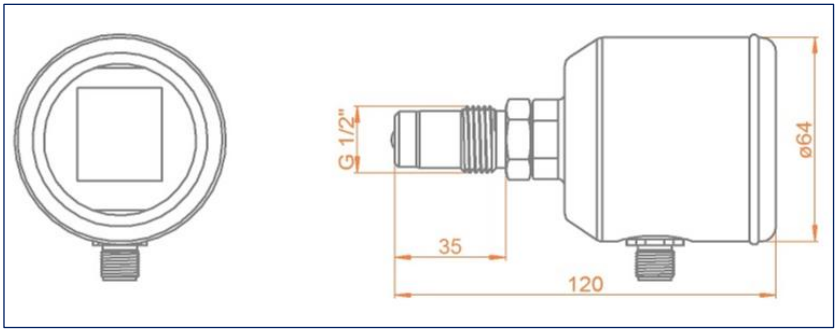


Fig. 1: Sensor dimensions

3.4 Environmental conditions

Ambient temperature	-10...70°C
Transport and storage temperature	-20...80°C

3.5 EXspect process conditions

Max. permissible pressure PS	20 bar	
Max. permissible temperature TS:	100°C	
Max permissible sterilisation temperature	141°C	max. 2 hours

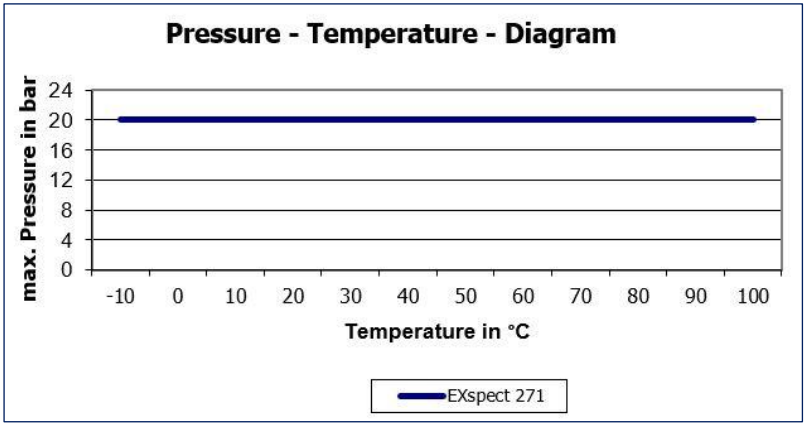


Fig. 2: EXspect pressure-temperature diagram

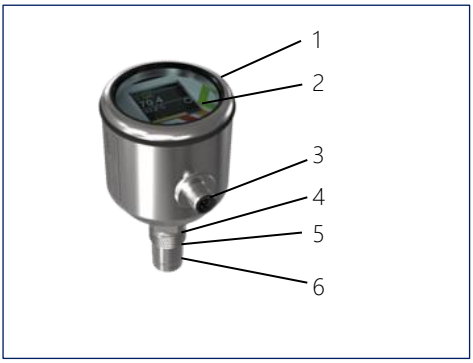
3.6 Identification plate

Fig. 3: Identification plate

In case of queries, please contact your dealer directly.

4 Product description

4.1 EXspect 271 NIR backscatter sensor



1	Housing cover
2	Touch display
3	M12 port
4	Pressure screw
5	Process connection
6	Sapphire lens (ball)

Fig. 4: NIR backscatter sensor

EXspect 271

The EXspect 271 NIR backscatter sensor enables monitoring of the turbidity of liquids for continuous monitoring of process results or safe indication of variations. It is particularly suitable for phase separation, separation control, filter monitoring and concentration measurement.

- Safe phase separation
- Quicker product changeovers
- Reduced waste water costs
- Filter monitoring
- Colour-independent concentration measurement
- Compact design with integrated booster and display
- Durable sapphire lens
- Hygienic design, CIP/SIP-compliant
- LED light source, guaranteed stable and long-lasting signal
- Integrated contact and analogue outlet
- Simple parameterisation
- Turbidity in % or a customer-specific unit

Display

The current measurement value is shown on the display. The sensor can be configured using the touch display.

Calibration input

The current measurement value can be set to 0 by briefly connecting a 24 V DC signal to the calibration input. With this, the transmitter can be adjusted to familiar measurement media (zeroed). The same is possible using the "Offset Val" menu function.

4.2 Functions

Zeroing

Set the current measurement value to 0 using offset.
This is the same function as the calibration input via the external contact.

Display switching

Defines which measurement value should be displayed:

- Turbidity
- Customer-defined unit (CDU)

The factory pre-set CDU value can only be changed or adjusted for sensors with the 8-pin M12 connector and the ECI-01 communication interface, as well as the EXpert 2.x software.

Independent of display toggling, the analogue output always provides a turbidity-dependent signal.

Lower measuring range

Defines the 4 mA point for the output current. The range can be freely selected between 0 and 100 %.

Upper measuring range

Defines the 20 mA point for the output current. The range can be freely selected between 0 and 100 %.

Damping

Attenuates the turbidity measurement value by continuous averaging.

Switch-off point

Defines the point at which the contact switch switched off. The range can be freely selected between 0...100 %.

Switch-on point

Defines the point at which the contact switch switched on. The range can be freely selected between 0...100 %.

Switch function

Defines the digital output function for the contact switch. You can choose between making contact and breaking contact.

Switching delay

Defines the switching delay for the contact switch. You can choose freely from a range of 0...200 seconds.

Language

Defines the display language.

4.3 Process integration

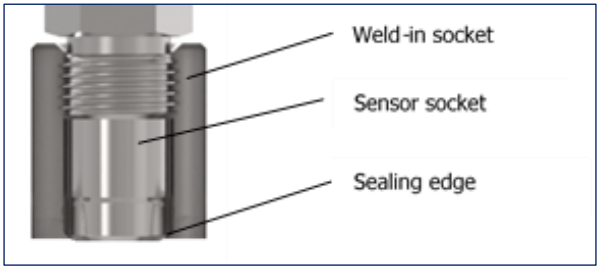
Sensor

The EXspect 271 sensor is integrated directly into pipes or tanks with its G ½" connector, or by using corresponding adapters with the existing process connectors.

Fig. 5: Process integration

Welding sockets

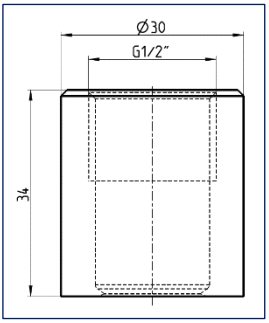
Installation using welding sockets guarantees hygienic process adaptation, which can be used with minimal dead space and free of elastomers. As this is a purely metal-sealed system, no other sealing materials, e.g. elastomers, may be used.

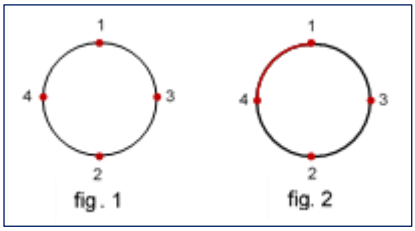


Please always use the weld-in plugs supplied as accessories so that the heat resulting from the welding process can be dissipated safely, and distortion of the drill hole is hindered effectively.

Welding in tanks / pipes

1. Drill a hole with the same external diameter as the weld-in plug (maximum tolerance is +0.2 mm)
2. Attach plugs at 4 evenly-spaced points (Fig. 1 below)
3. Screw the weld-in plugs in
4. Weld the parts between the 4 points (Fig. 2 below)





Transmitter

The transmitter is powered by a 24 V DC supply, has a freely programmable contact switch, and a 4...20 mA output for outputting measurement values. The measuring value can be set to 0 % via 24 V input.

Pressure / Temperature

The EXspect sensor can be used at a pressure of up to 20 bar and at a maximum process temperature of 141 °C.

To protect the LED which is used, it is switched off as of a temperature of 100 °C. Measurement is then no longer possible. The display shows the error message “Electricity LED".

After lowering the media temperature below 100 °C, the LED is reactivated and the error message disappears.

NOTE

Please note the pressure and temperature diagrams in → Chapter 3

Installation position

In principle, the sensors can be used in any location. However, you must ensure that the pipe is completely filled, and that the sensor is not set up in a place where bubbles are formed due to high turbulence of the medium. You should also observe how easily the display can be read ensure good access and operability.

The following diagram shows the favoured locations for installing the sensor. As you can see, the sensor is better mounted on the side of the pipe.

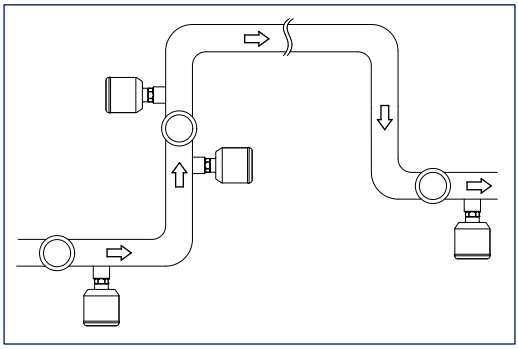


Fig. 6: Installation locations

4.4 Checking and Adjustment

Reference normals (EXcap 120) with varying backscattering values are available for checking and adjustment of the EXspect 271 sensor. If necessary, they can be attached to the sensor. To guarantee the inspection/adjustment is carried out without any errors, ensure that:

- The optical sensor unit is dry and clean

- The reference normal is placed precisely on the sensor
- The marking (arrow) for the standard is aligned with the sensor connector

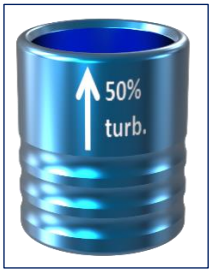


Fig. 7: Reference normal with marking

5 Delivery

5.1 Scope of delivery

The sensor is checked in the factory and is shipped ready for installation in packaging which protects the sensor ideally.

The delivery includes:

- EXspect sensor
- Protective case for the optical unit
- Operating instructions
- Certificate for surfaces (optional)

NOTE

Keep the sensor in its packaging. It is best protected there until it is installed.

5.2 Checking the delivery

Requirements:

- The packaging and device are in perfect condition.
- The sensor's identification plate corresponds with the information in the purchase order (→ Chapter 3.6 "Identification plate).

In case of queries, please contact your dealer directly.

6 Assembly

6.1 Preparing the system

Requirements:

- Sufficient working space is available to operate the sensor.
- The process is deactivated.
- The tanks and/or pipes are depressurised, empty and clean.
- The connecting piece and process connector must fit together.
- The pipe is earthed.

6.2 Mechanical connection

ATTENTION

Risk of injury due to escaping process liquid!

Depending on the process liquid's properties, you may incur scalding or chemical skin burns.

» Check that the tanks or pipes to which the sensor is connected is/are depressurised, empty and clean!

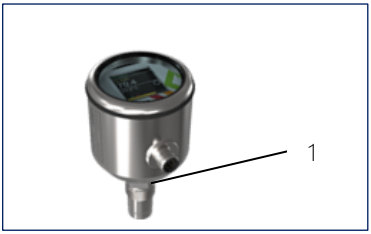
Sensors with process connection Thread G1/2" (Code: G12):

» Use the appropriate process connector with a 35° sealing cone (see also → Chapter 10: Spare parts and accessories)

» Tighten the pressure screw (see Fig. 8) to 10-20 Nm .

Sensors with process connection compliant to EHEDG/3A (Code: T15 / T20 / VRN):

» Please note the additional information for hygienic installation which is described in the "EHEDG & 3A supplementary sheet".



1	Pressure screw

Fig. 8: Pressure screw on the sensor

6.3 Electrical connection

Requirements:

- Use an original cable with the correct connector.

NOTE

In addition, ensure that the connection cable runs only within one building, that it does not leave it and does not exceed a maximum cable length of 29,90 meters.

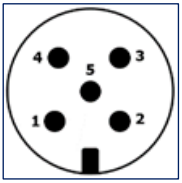
Sensor connection:

The colour coding indicated corresponds to that used by Exner accessories. The corresponding pin configuration can be found in the following diagrams.

Fig. 9: Plug connection on the sensor (5-pin / 8-pin)

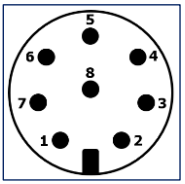
M12 5 connector, -pin (view as per Fig. 9):

Pin	Colour	Description
1	Brown	DC + (24 V DC)
2	White	Switch output (DOut level)
3	Blue	DC – (GND)
4	Black	Analogue output (4 - 20 mA)
5	Grey	Calibration (Cal. offset)



M12 8-pin connector (view as per Fig. 9):

Pin	Colour	Description
1	Brown	Switch output (DOut level)
2	White	DC + (24 V DC)
3	Blue	Only for service
4	Black	Only for service
5	Grey	Calibration (Cal. offset)
6	Pink	Analogue output (4 - 20 mA)
7	Purple	DC – (GND)
8	Orange	Fault (DOut Fault)



» Plug the M12-plug into the sensor connector and tighten the union nut hand-tight.

NOTE

If the analogue output is not required or not connected, the corresponding cable must be set to „GND".

7 Parameterisation

7.1 User menu

WARNING

Setting parameters incorrectly can result in incorrect measurement values and digital output switching points being displayed. This can have an unwanted impact on your processes.

NOTE

Ensure that only authorised and trained staff make changes to the parameterisation.

Sensor parameters can either be parameterised via the touch display or by using an M12 (8-pin) plug connector in combination with the communication interface ECI-01 and the EXpert 2.x software.

1. Touch the display to access the menu.

2. You can access the individual parameters and the sensor and display data by pressing the arrow symbol. If you want to configure a parameter, touch the tool symbol.

3. Then, select the appropriate setting using the arrow keys and confirm by pressing the enter symbol.

4. You can also select the desired value using the arrow keys. If a numerical value is set, it can be increased/decreased by one digit by briefly touching the respective arrow key. Keeping the arrow key pressed longer changes the numerical value by increments of 10.

   Pressing the enter symbol confirms the value entered and exits this setting level. If no value has been changed and you wish to leave the setting menu level, press the ESC symbol.

5. You can return to the readout display by touching the speedo symbol or automatically if no entries have been made or if the display is not touched within a period of 30 seconds.

User menu

The values **in bold** are the **standard user parameters**.

Parameter	Name	Value range	Description
Offset	Offset activation	**OFF**, ON	Activates / deactivates the setting "Offset"
Offset Val	Offset	-100.0 ... **0.0** (for unit %)	Defines the offset value A reliable offset value can only be set if the current measured value does not change or only changes marginally over a period of approx. 5 seconds.

Unit	Display toggling	**%**, CDU	Determines which measurement value should be displayed: **%**: Turbidity **CDU**: CDU: Customer-defined unit Adjust the CDU value settings using the EXpert software. Regardless of the display options selected, the analogue outlet always returns a signal depending on the turbidity.
AO min	Lower output limit (analogue output min)	**0.0** ... 100.0 (for unit %)	Defines the turbidity value at which minimum output current is output
AO max	Upper output limit (analogue output max)	0.0 ...**100.0** (for unit %)	Sets the turbidity value at which maximum output current is output
Damping	Attenuation	**0** ...100	Attenuates the turbidity measuring value by returning a moving average for the set number of measuring values.
DO on	Switch-on point (Digital output on)	**0.0** ...100.0 (for unit %)	Defines the switch-on value.
DO off	Switch-off point (digital output off)	**0.0** ...100.0 (for unit %)	Defines the switch-off value.
DO funct	Switch function (digital output on)	**NO**, NC	NO = Closer (Normally open) NC = Opener (Normally closed)

DO delay	Switching delay (digital output delay)	**0** ...200 s.	Delays the switching point by up to 200 seconds.
Language	Language settings	**German,** English, French, Dutch	Defines the display language.

7.2 Adjust the sensor to the medium (zeroing)

To recognise recurring product conditions, the sensor can be adjusted to these product conditions.

1. Select the parameter "Offset ON".
2. Immerse the sensor tip into the reference liquid and, as soon as the measurement value is stabilised, select the "SET" menu function under the parameter "Offset Val" to set the offset. This sets the measurement value to 0.

Alternatively, a 24 V DC switching signal can be applied at the calibration input. In order to activate the offset and to set the value of the reference liquid as "zero value" at the same time, the calibration input must be supplied with a voltage of 24 V DC for approx. 5 seconds.

The described applying 24 V DC to the calibration input has the same function as the two following settings in the display:

- Offset activation (Offset ON)
- Setting the offset value (SET OffsValue)

Offset can be activated or deactivated if the voltage (24 V DC) is only applied to the calibration input for approx. 1 sec. "Zeroing" does not take place.

NOTE

Constant electrical voltage may neither exist at the calibration input (Pin 5, see → Chapter 6.3) nor when connecting the cable. The calibration input must be kept deenergised. Voltage (24V DC) may only be applied short-term for the switching operations described.

7.3 Outlet current

The EXspect sensor is equipped with a 4...20 mA output to return the turbidity values. The outlet current is configured using the following parameters:

"AO min" defines the lower measuring range and the 4 mA point.

"AO max" defines the upper measuring range and the 20 mA point.

"Damping" defines the damping affecting the display and the output current.

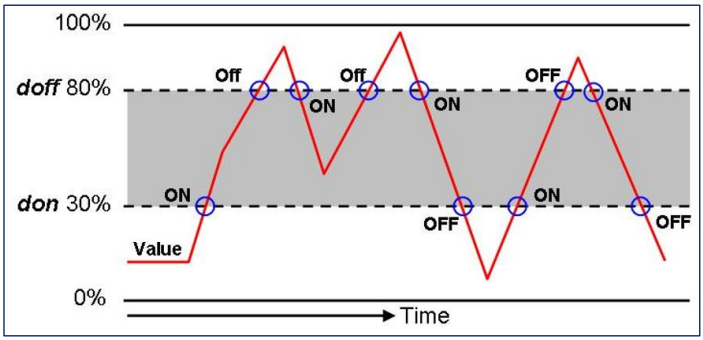
7.4 Switching points

The EXspect sensor has a PNP switch output which is configured using four parameters.

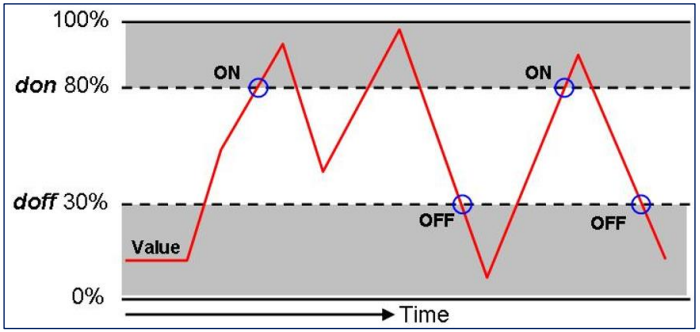
"DO ON" defines the point at which the digital output is switched on, and "DO OFF" defines the point at which it is switched off.

The two parameters in combination determine the function of the switch output:

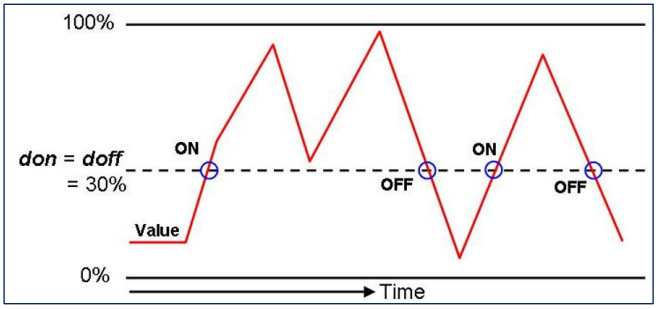
If the "DO ON" value is smaller than the "DO OFF" value, the digital output turns on if the measurement value is between the two points (window function).



If the "DO ON" is higher than the "DO OFF" value, the output switches on if the measurement value exceeds the "DO ON" value. It only switches off again if the measurement value falls below the "DO OFF" value (hysteresis function).



If the "DO ON" and "DO OFF" values are identical, the output switches on when the measurement value "DO ON + DO OFF" exceeds the switch value, and switches off when the switch value "DO ON + DO OFF" drops below it again.



Both parameters can be set independently between 0 and 100%.

"DO funct" inverts the switch output functions.

If the value = NO, the switch output works as a closer, if the value = NC, it works as an opener.

"DO delay" delays the reaction of the switch output by up to 200 s. This value applies equally to switching the output on and off.

7.5 Display

The EXspect sensor is equipped with a removable display. It is not possible to operate the sensor without it.

Parameters can be set via the display or communication interface ECI-01 (for EXspect).

NOTE

If sensor parameters are set using the display, it should be noted that when removing the cover plate, the pressure screw must be fixed using an appropriate tool so that it cannot move. After parameterisation, the sensor cover must be put back properly and be correctly positioned.

Parameterisation using the
ECI-01 communication interface and the EXpert 2.x PC software is only possible for sensors with an 8-pin connector.

NOTE

Before connecting the sensor to a PC via the ECI-01 communication interface for the first time, you must first install the EXpert 2.x software on it.

8 Maintenance

8.1 Important maintenance notes

- Prepare a maintenance plan appropriate for the respective process!
- Only trained personnel is allowed to perform maintenance work.
- Always wear appropriate protective clothing when performing maintenance works.
- Only perform maintenance work or repairs described in the operating manual!
- Changes to the design may only be carried out after consulting with the manufacturer.
- Pipes or tanks must be depressurised, empty and clean before you remove the sensor from the process.

8.2 Checking the process connector

The sensor is held and sealed in the process connector by the pressure screw (see Fig. 10).

NOTE

Check regularly whether the connecting piece is sealed. If necessary, tighten the pressure screw (1) with 10-20 Nm.

Fig. 10: Pressure screw on the sensor

1	Pressure screw

WARNING

Process fluid is escaping from the process connector!

Danger depending on the properties of the process medium!

» Tighten the pressure screw with 10 -20 Nm.

8.3 Cleaning the lens

The backscatter is measured in the process by means of a sapphire lens (ball). The measurement value can be distorted by contaminants or deposits.

Clean deposits from the lens regularly.

1. Remove the sensor from the process connector.
2. Remove deposits from the lens.
3. Check the lens for possible damage.

ATTENTION

Risk of injury due to escaping process liquid!

» Wear safety goggles and protective clothing!

» Check that the tanks or pipe the sensor is being connected to is/are depressurised, empty and clean!

Fig. 11: Sapphire lens at sensor

8.4 Maintenance plan

Perform the servicing work at recommended intervals!

Interval	Work
Every three months	» Make a visual check of the sealing of the process connector. » Tighten the pressure screw to 10 -20 Nm.
Once per year	» Remove the sensor and clean the lens.

9 Troubleshooting in case of problems

9.1 No or incorrect measurement

Possible cause	Remedy
No voltage to the sensor.	» Check / establish electrical connection as per → Chapter 6.3
Lens is soiled	» Clean the lens → Chapter 8.3
Calibration faulty	» Zero the sensor to zero with clear, distilled water or calibrate to the medium → Chapter 7.2 » Offset / Check zeroing

9.2 Widely fluctuating measurement value

Possible cause	Remedy
Bubbles in the system	» Attenuate the display and output current → Chapter 7.3
Sensor is not fully immersed in the process fluid	» Change the installation site

9.3 Output current does not match the measurement value

Possible cause	Remedy
Parameters for output current set incorrectly	» Check output current parameterisation and change if necessary → Chapter 7.3
Electrical connection missing	» Check / establish electrical connection as per → Chapter 6.3

9.4 Switch output switches incorrectly

Possible cause	Remedy
Parameters for switch output set incorrectly	» Check parameterisation of switch output and change if necessary → Chapter 7.3
Faulty electrical connection	» Check / establish electrical connection as per → Chapter 6.3

9.5 Display cannot be operated

Possible cause	Remedy
Plug connection from display to sensor contaminated or defective	» Check and clean the plug connection. If necessary, replace the display.
Display defective	» Replace the display

9.6 Error message on the display

Error message	Remedy
Data Error	» Action depends on other errors shown on the display
COMM Error	» Action depends on other errors shown on the display.
Error!	» Action depends on other errors shown on the display.
Warning!	» Action depends on other errors shown on the display
EEPROM Error	» Return the sensor to the manufacturer for testing
CDU Cal Error	» Check / correct the calibration values and restart the sensor as fewer than two calibration values or selected calibration points are outside the

	possible range
Sensor Overtemp	» Media temperature
LED Current	» Reduce media temperature (to protect the LEDs, they are switched off at temperatures exceeding 90°C). If the error message is also displayed at a temperature lower than 90°C, return the sensor to the manufacturer for testing.
LED Voltage	» Return the sensor to the manufacturer for testing
HW Error (Hardware error)	» Check the power supply
Gen Error (General error)	» Reset the sensor to factory settings or return it to the manufacturer for testing
AO Alarm (Analogue output)	» Check connector cables and plugs
Low Signal!	» Use sensor with a larger measurement range as the selected zero point exceeds the sensor's maximum measurement range.

10 Order structure for EXspect 271

EXspect 271 sensor							
	Code	Measurement range					
	A	0...100 % turbidity					
		Code	Material				
		4435	Stainless steel, 1.4435 (316L)				
		XXXX	Special version				
			Code	Seal material (touching medium)			
			MET	Metal sealing (without elastomer)			
			XXX	Special version			
				Code	Process connection		
				G12	Thread G ½" (metal sealing)		
				T15	Tri-Clamp 1,5" (EHEDG/3A)		
				T20	Tri-Clamp 2" (EHEDG/3A)		
				VRN	Varivent N (EHEDG/3A) DN40-125		
				XXX	Special version		
					Code	Interface	
					AS	Analogue 4...20 mA / 5-pin M12	
					AD	Analogue 4...20 mA / can be parameterised digitally / 8-pin M12	
					XX	Special version	
						Code	Display
						1	with integrated display
						X	Special version
EXspect 271							Order code

11 Spare parts and accessories

The sensor serial number must always be quoted for spare parts and accessories orders.

11.1 EXspect 271 accessories

Description	Order number
2 m EXspect connector cable (M12 5-pin)	2-125-00-001
5 m EXspect connector cable (M12 5-pin)	2-125-00-002
2 m EXspect connector cable (M12 8-pin)	2-120-68-001
5 m EXspect connector cable (M12 8-pin)	2-120-68-002
PC software EXpert 2.x on a USB stick (for Windows)	2-120-69-003
Communication interface ECI-01 EXspect 271/231 for connecting to a PC via USB (connector cable M12 8-pin)	2-120-66-001

11.2 EXspect 271 certificates

Description	Order number
Certificate EN10204-2.2 for surface roughness (Ra <0.37 µm)	2-121-01-001
Certificate EN10204-3.1 for material	2-121-01-002

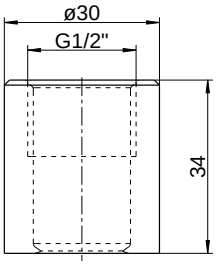
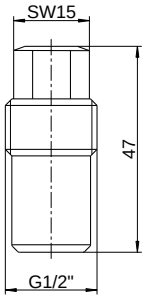
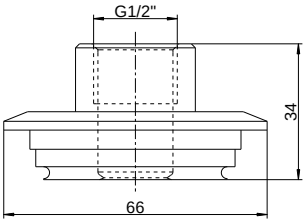
11.3 EXspect 271 factory inspection

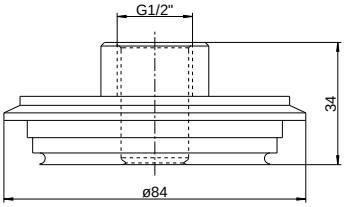
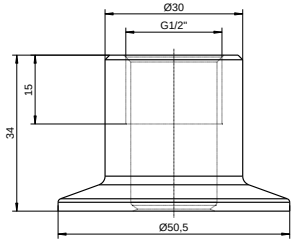
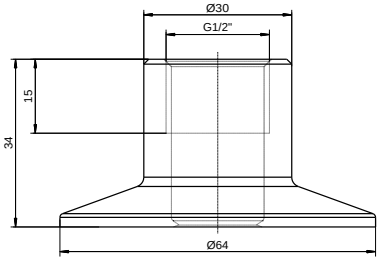
Description	Order number
Factory recalibration for NIR sensors incl. certificate (proof of return)	2-999-00-013

11.4 EXspect 271 spare parts

Description	Order number
Operating and display unit	2-118-00-001
Housing cover with inspection glass	2-151-32-001

11.5 EXspect 271 installation adapter

Description	Drawing	Order number
Welding socket G ½" cylindrical		2-087-33-003
Brass welding aid G ½"		2-086-11-001
Varivent F process adapter DN 25-40		2-083-33-001

Description	Drawing	Order number
Varivent N DN 40-125 process adapter		2-083-33-002
Process adapter Tri-clamp 1 ½"		2-083-33-005
Process adapter Tri-clamp 2"		2-083-33-006

12 Disposal

Sensor

Make sure that the sensor is free of hazardous and toxic substances. Components must be disposed of separately in accordance with their respective materials.

Please observe the valid rules and regulations concerning disposal in the country and place of application.

Packaging

The packaging material is cardboard and can be disposed of as waste paper.

13 Certificates and compliances

All freely available certificates and conformities can be found in their most current form in the "Downloads" section of our website.

To access the following address, enter it into your browser or scan the QR code below. Then select the relevant product and document from the list.

https://e-p-e.com/en/downloads

Depending on the product, additional certificates (e.g. material, surface, etc.) are available. If necessary, please send a corresponding request to Exner Process Equipment GmbH.

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