EXpure 191

TECHNICAL INFORMATION

Turbidity sensor – 90° scattered light

EXNER
Process Equipment

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1 Technical data

1.1 Standards

The following standards were applied when manufacturing the sensor:

- EN 61326-1: 2013-7
- EN 61326-2-3: 2013-7
- DIN/EN 27027 (ISO 7027)

1.2 Specification

Sensor specifications	
Measurement process	90° scattered light
Measurement range	0...10 NTU / 0...10 FNU
Resolution	0,001 NTU / 0,001 FNU
Units	NTU, FNU, CDU (Customer Defined Unit)
Precision	± 1 % of measurement range end value
Reproducibility	≤ 1 % of measurement range end value
Wavelength	850 nm (NIR)
Light source	LED
Material finish	Stainless steel, 1.4435 (316L)
Material sealing	EPDM
Material Casing / Measuring cell	Polyoxymethylene (POM), black / Polyethylene (PE-HD), black
Measuring window	Sapphire
Process connector	Female thread G ¼"
Installation position	Vertical
Electrical connection	Pin-and-socket connector M12 (8-pin)
Connector cable length	2 m / 5 m
Interfaces	Modbus RTU (RS485), analogue 4...20 mA (optional)

Electrical connection	9...24 V DC

1.3 Dimensions

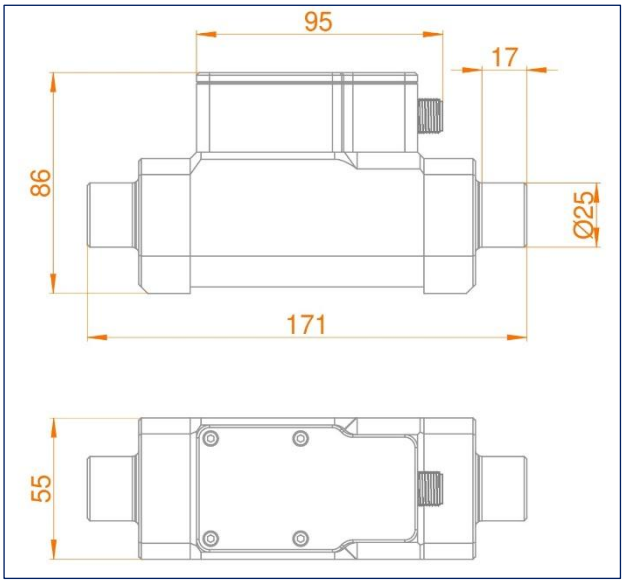


Fig. 1: EXpure 191 dimensions

1.4 Environmental conditions

Ambient temperature	0...60 °C
Transport and storage temperature	-10...80 °C

1.5 Process conditions

Pressure range:	0...6 bar
Temperature range:	1...50 °C
Measuring cell media flow:	30...80 l/h

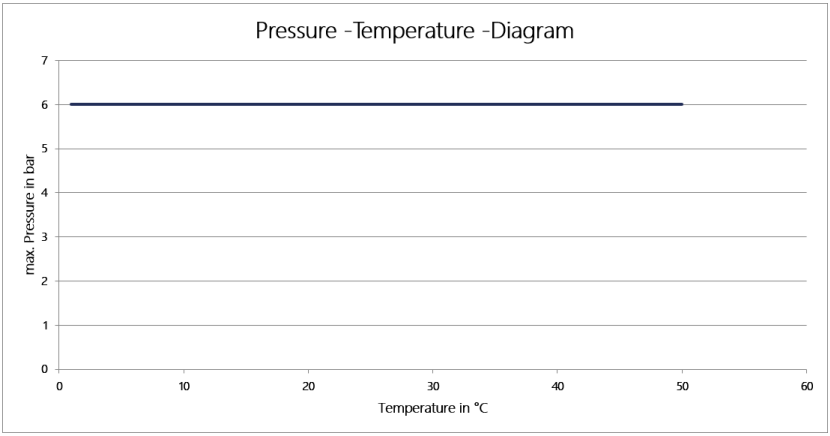


Figure 2: EXpure 191 pressure temperature diagram

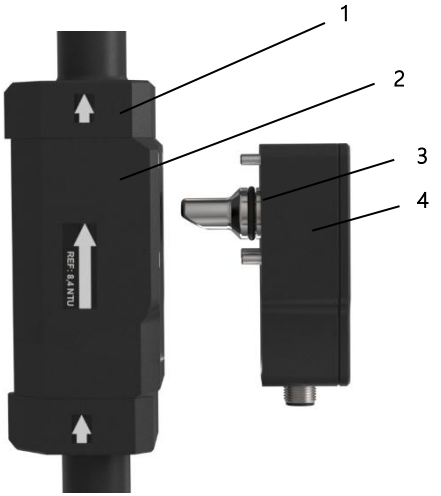
1.6 Identification plate

Fig. 3: Identification plate

2 Product description

2.1 EXpure 191

2.1.1 Components



1	Reducer
2	Measuring cell
3	O-ring
4	Sensor

Fig. 4: EXpure 191

2.1.2 Description and structure

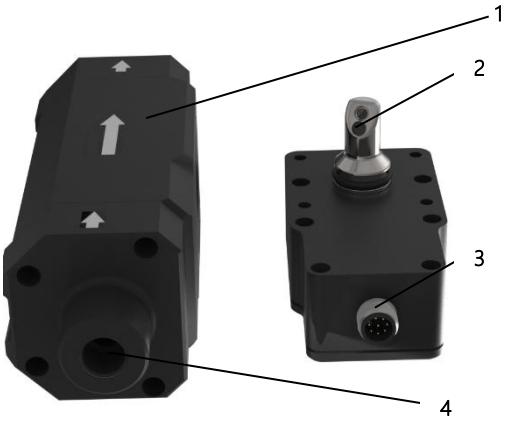
The sensor EXpure 191 is a high-precision turbidity sensor in compact casing for use including the areas of swimming pool technology and drinking water purification.

The sensor is easy to mount and connect. Servicing work is little effort when in operation. Moreover, there is no need for complex calibration.

The sensor is supplied pre-assembled with a measuring cell, which is installed upright in a pipe, preferably a rising pipe, using size G1/4" female thread. Observe the direction of flow when installing. A marking arrow is attached to the EXpure 191 measuring cell for orientation purposes.

Air bubbles in the system can affect the measurement. A bubble trap is available as an accessory to minimise these influences.

When measuring in swimming pool water, for example, various accompanying substances (e.g. chlorine) can influence the measured value. The EXpure 191 sensor with the "SP" parameterisation was fine-tuned for this purpose. This allows reliable measurement of turbidity for use in swimming pools without further calibration steps.



1	Marking arrow (direction of flow)
2	Optical unit with measurement window
3	M12 (8-pin) connector
4	Process connection G1/4"

Fig. 5: Measuring cell and sensor

2.1.3 Reducers

Reducers are located on both ends of the measuring cell. If they are removed, e.g. for cleaning purposes, observe when re-assembling that the printed arrows point in the medium flow direction or a direction identical to the measuring cell directional arrow.

3 EXpure 191 order structure

	Code	Measurement range					
	A	0…10 NTU / 0…10 FNU					
		Code	Material (fluid-wetted)				
		1	PE-HD / Stainless steel 1.4435 (316L)				
			Code	Structure type / Nominal size			
			F32	Flow-through vessel DN32 (1 ¼")			
				Code	Process connector		
				G14	Female thread G1/4"		
					Code	Parameterisation	
					00	Standard	
					SP	Swimming pool	
						Code	Interface
						D0	Modbus RTU (RS485)
						DA	Modbus RTU (RS485) / analogue 0/4…20 mA
EXpure 191							Order number

4 Spare parts and accessories

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

Accessories & Spare parts	Order number
Connector cable 2 m	2-120-68-001
Connector cable 5 m	2-120-68-002
PC software EXpert 2.x on USB stick (for Windows)	2-120-69-003
Communication interface ECI-01 EXspect / EXpure for PC connection via USB	2-120-66-001
Set Bubble trap	2-120-84-001
Needle valve set (black plastic, PE/FPM)	2-120-84-004
Set O-rings (EPDM – FDA/USP IV/KTW-BWGL)	2-120-84-005

4.1 Certificates

Certificates	Order number
Certificate for factory calibration of NIR sensors according to DIN EN 10204-3.1	2-121-01-022

4.2 Factory examination

Factory examination	Order number
Works recalibration for NIR sensors including a certificate (recirculation proof)	2-999-00-013

5 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.

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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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