



# Process Instrumentation

D.O. · pH/ORP · CONDUCTIVITY · TURBIDITY/TSS ·  $\text{NH}_4/\text{NO}_3/\text{NO}_2$  ·  
COD/BOD/TOC/DOC/SAC/UVT · PHOSPHATE · SLUDGE LEVEL · CHLORINE · COLOR

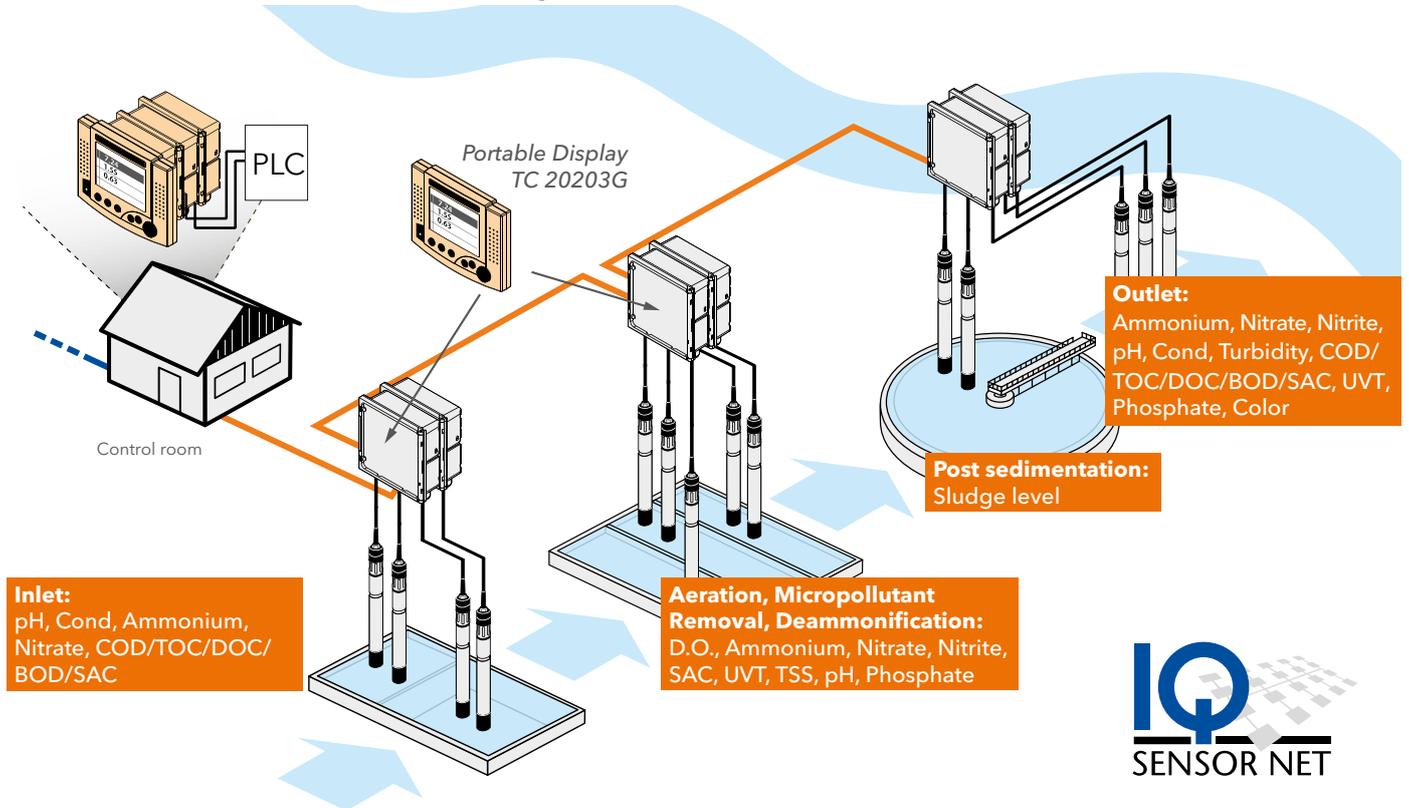


a xylem brand

# IQ SENSOR NET – the System for Wastewater Treatment Plants, Industrial Applications and much more

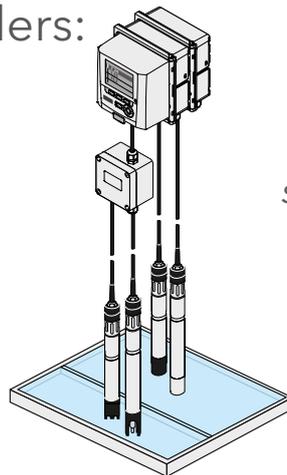
## ① IQ Sensor Network: System 2020

see from page 52



## ② Outstanding among the compact Controllers: System 282/284

see from page 56



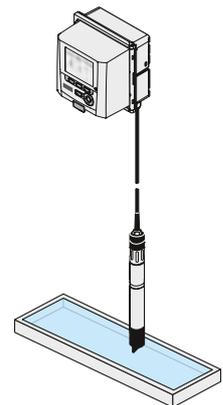
Oxygen measurement with FDO® 700 IQ

- Calibration free sensor
- Reduces energy and operational costs
- Long lifetime of membrane cap
- Precise results without drift

see page 11

## ③ The Single Parameter Measuring Point: System 281

see from page 58



Ammonium & Nitrate measurement with ISE sensors (e.g. VARiON® Plus 700 IQ)

- Easy and fast matrix adjustment
- Up to 2,000 mg/l NH<sub>4</sub>
- Extremely robust electrodes
- Compensation with K and Cl

see page 30

Reagent-free COD measurement with NiCaVis® 701/705 IQ NI

- No reagent consumption
- Integrated ultrasonic cleaning
- Extremely low in maintenance
- No wear parts
- Additionally BOD, TOC, DOC, SAC, UVT, Nitrate and Nitrite

see page 38

# All measurement parameters at a glance

see catalog page 12 11 15 20 24 25 30 30 30 34 34 38 38 32 38 32 43 41 34 45

Parameters	Sensors																			
	TriOxmatic® 700 IQ	FDO® 700/701 IQ	Sensolyt® 700 IQ	TetraCon® 700 IQ	VisoTurb® 700 IQ	ViSolid® 700 IQ	AmmoLyt® 700 IQ	NitraLyt® 700 IQ	VARIION® 700 IQ	NitraVis® 701/705 IQ (TS)	NitraVis® 701/705 IQ (NI)	CarboVis® 701/705 IQ (TS/Co)	NiCaVis® 705 IQ (TS/SF/Co)	NiCaVis® 701/705 IQ (NI) SF	UV 701/705 IQ SAC	UV 701/705 IQ NOx	IFL 700 IQ	Alyza IQ PO <sub>4</sub>	Alyza IQ NH <sub>4</sub>	ColorVis 705 IQ
Usable with System 2020	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Usable with System 282/284	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Usable with System 281	■	■	■	■	■	■											■			
Power consumption [W]	0,2	0,7	0,2	0,2	1,5	1,5	0,2	0,2	0,2	8,0°	8,0°	8,0°	8,0°	8,0°	8,0°	8,0°	5,5°	**	**	8,0°
Parameter																				
Temperature	■	■	■	■			■	■	■											
Dissolved Oxygen (electrochem.)	■																			
Dissolved Oxygen (optical)		■																		
pH			■																	
ORP			■																	
Conductivity				■																
Salinity				■																
TDS				■																
Turbidity (optical)					■															
TSS (optical)					■	■				■		■								
Ammonium (ion-selective)							■		■											
Nitrate (ion-selective)								■	■											
Nitrate (optical/spectral)										■	■		■	■		■ <sup>†</sup>				
Nitrite (optical/spectral)										■			■		■					
Potassium (ion-selective)							■		■											
Chloride (ion-selective)								■	■											
COD (optical/spectral)											■	■	■							
BOD (optical/spectral)											■	■	■							
TOC (optical/spectral)											■	■	■							
DOC (optical/spectral)											■	■	■							
SAC (optical/spectral)											■	■	■	■						
UVT (optical/spectral)											■	■	■	■						
Sludge Level																	■			
Orthophosphate (optical/wet chem.)																		■		
Ammonium (optical/wet chem.)																			■	
Color												■	■							■

\*\* Power delivery: Alyza IQ provides 10W

° When operating with System 282/284, the average power consumption can be used. Details see operating manual System 282/284.

† Nitrite and Nitrate are included in the measured value.

# Systems in Detail

see catalog page 53 53 54 54 54 54 55 55 54 54 54 52 55 55 55 55 66 66 55

Module	MIQ/PS	MIQ/24V	MIQ/C6	MIQ/R6	MIQ/CR3	MIQ/IC2	MIQ/3-MOD	MIQ/3-PR	MIQ/JB	MIQ/JBR	MIQ/WL PS (SET)	MIQ/TC20203G	Terminal IQ	MIQ/MC3	MIQ/MC3-MOD	MIQ/MC3-PR	Cleaning Air Box - 230 VAC	Cleaning Air Box - 115 VAC	MIQ/CHV PLUS
Usable with System 2020	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Usable with System 282/284	■	■	■	■	■	■			■		■						■	■	■
Available IQSN connectors	3	3	2	2	2	2	2	2	4	4	3	✗	✗	2	2	2	✗	✗	2
Electrical current [W]	**	**	3.0	1.5	3.0	0.2	3.0	3.0	0.0	0.2	0.6	3.0	3.0	2.5	3.0	3.0	***	***	2.5
<b>Module features</b>																			
<b>Power supply</b>																			
100...240 V AC	■																		
24 V AC/DC		■																	
<b>Analog outputs/relays</b>																			
6 x 0/4...20 mA			■																
6 x relays				■															
3 x 0/4...20 mA, 3 x relays					■														
<b>Analog inputs</b>																			
2 x 0/4...20 mA						■													
<b>Interfaces</b>																			
MODBUS							■								■				
PROFIBUS								■								■			
USB						✗	■	✗	■			■		■	■	■			
Ethernet/LAN (Profinet, Ethernet/IP, Modbus TCP)														■	■	■			
<b>Intra-system connectivity</b>																			
4 available IQSN connectors									■										
4 available IQSN connectors including signal amplification for large distances										■									
Radio transmission											■								
<b>Controller</b>																			
Controller/Terminal (with display)												■							
Terminal (with display)													■						
Controller in std IQ module w/o display														■	■	■			
<b>Compensation</b>																			
Air-pressure compensation for D.O. measurement														■	■	■			
<b>Compressed air cleaning</b>																			
Air compressor 230 VAC																	■		
Air compressor 115 VAC																		■	
Valve for automatic cleaning																			■

\*\* Power delivery: MIQ/PS and MIQ/24V provide 18W each

\*\*\* Integrated power supply

✗ USB interface only for software updates



Dr. Robert Reining,  
Xylem Analytics Germany Managing Director  
and Site Leader Mainz and Weilheim

## WTW a Brand, rich in Tradition

Since 2011, WTW is part of the Xylem Group, which operates worldwide in its core business of water. As a brand of Xylem Analytics Germany GmbH and being rich in tradition, we see our task in using our expertise and innovative technologies to find solutions for our customer's measurement tasks.

For many years the IQ SENSOR NET has been a technology leader in wastewater quality measurement. It can be used both as single on-site measurement and in a network. The innovative digital sensors represent the heart of the system. As a result the IQ SENSOR NET is the most flexible digital multi-parameter system for up to 20 sensors. With the new MIQ/MC3 controller family with integrated USB and LAN interfaces, the IQ SENSOR NET System can be connected to internet communication via TCP/IP technology. The Alyza IQ Analyzer family augments the System with wet chemical analyzers for the measurement of orthophosphate or ammonium. They provide extremely low reagent consumption and produce very small amounts of waste.

This as well as our entire product portfolio of process instrumentation can be found on the following pages. If you need any information or solution on laboratory equipment of the brand WTW or other Xylem brands, don't hesitate to contact us or take a look on our new website [www.xylemanalytics.com](http://www.xylemanalytics.com).

With more than 75 years of experience, the WTW brand has established a first-class reputation through its exemplary customer-support. Our Customer Care Center is ready to find an individual solution for any customer's measurement tasks. WTW's comprehensive application collection, in combination with expert application specialists, ensures fast solutions for technical challenges. The dealer and service network extends around the world.

As it always has been the largest percentage of our products are produced at our facility in Weilheim in Upper Bavaria, south of Munich, by nearly 400 employees - quality-measurement technology with expert support, "Made in Germany".

You can find out more about Xylem on our website:  
[www.xylem.com](http://www.xylem.com)

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## IP-Code (International Protection Code)

Protection types acc. to DIN EN 60529

### 1st number:

instrument  
protected against  
entry of solid bodies

- 0 not protected
- 1 with  $\varnothing \geq 50$  mm
- 2 with  $\varnothing \geq 12$  mm
- 3 with  $\varnothing \geq 2.5$  mm
- 4 with  $\varnothing \geq 1.0$  mm
- 5 dust protected\*
- 6 dustproof

\* limited amounts of dust  
may enter under certain  
conditions

### 2nd number:

protection against water

- 0 not protected
- 1 vertically falling drops
- 2 drops of water at angles of up to 15° to vertical
- 3 drops of water at angles of up to 60° to vertical
- 4 splashes from any direction
- 5 jets of water from any direction
- 6 strong jets of water from any direction
- 7 intermittent submersion (max. 1 m deep, 30 min)
- 8 permanent submersion  
(conditions must be specified)

If numbers 7 and 8 are fulfilled this does not necessarily  
mean that numbers 5 or 6 are also fulfilled.



These test marks indicate that **he national safety standards applicable in the USA and Canada have been complied with.**

Our certification partners, UL (Underwriter Laboratories) and ITS (Intertek Testing Services), are officially authorized testing centers in both countries.



**Warranty** for perfect operation of instruments supplied by us. Faults resulting from natural wear and tear, improper use/handling or from alterations/repairs carried out by the customer or third parties to the items supplied are excluded from this warranty.



This test mark indicates that **the product complies with the applicable EU and UK directives.**

For WTW products these are essentially:

CE: **Directive 2014/35/EU**

UK: **Electrical Equipment (Safety) Regulations 2016**

Electrical equipment for use within particular voltage limits (low-voltage directive/product safety)

CE: **Directive 2014/30/EU**

UK: **Electromagnetic Compatibility Regulations 2016**

Electromagnetic compatibility (EMC directive)

CE: **Directive 2011/65/EU**

UK: **The restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012**

Restriction Of Hazardous Substances (ROHS)

CE: **Directive 2014/53/EU**

UK: **Radio Equipment Regulations 2017**

Radio Equipment Directive (RED)



Reference to **Data sheets**

at the end of the catalog or separately available

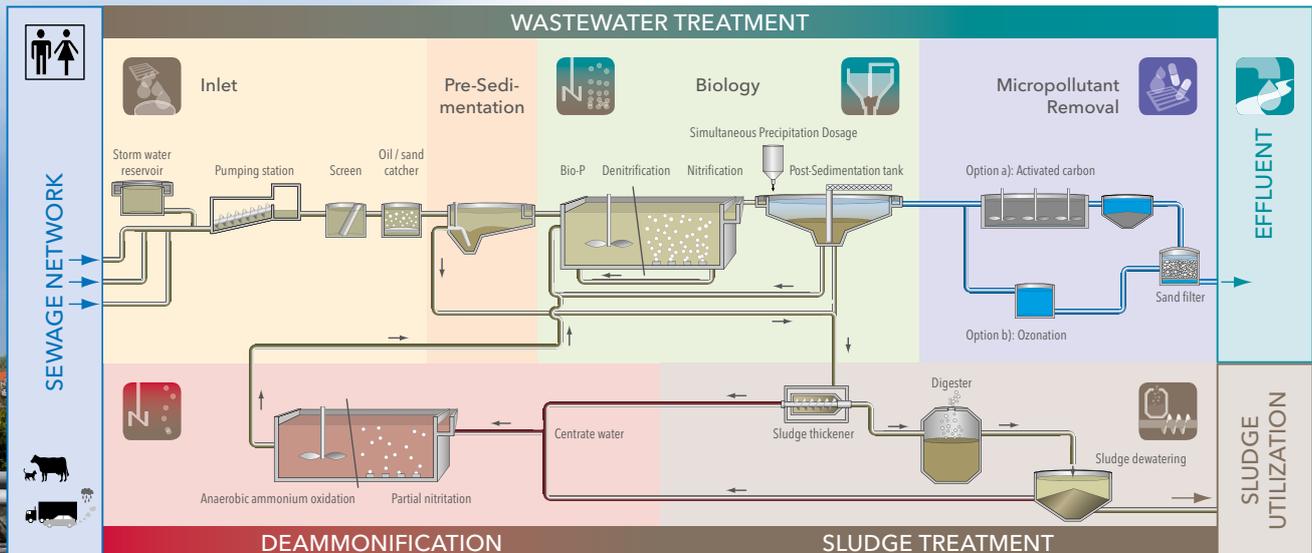
# Typical Applications

## Process Instrumentation



### Wastewater (municipal wwtp)

see also [www.xylemanalytics.com/en/applications/wastewater](http://www.xylemanalytics.com/en/applications/wastewater)



	Inlet	<b>pH:</b> <b>Conductivity:</b>	SensoLyt® 700 IQ EX measuring point TetraCon® 700 IQ EX measuring point	page 15 page 16 page 20 page 20	<b>NH<sub>4</sub>, NO<sub>3</sub>:</b> <b>TSS, NO<sub>3</sub>, NO<sub>2</sub>, NO<sub>x</sub>, COD, BOD, TOC, DOC, SAC, UVT:</b>	ISE sensors Spectral sensors	page 32 page 32
	Biological Treatment	<b>D.O.:</b> <b>NH<sub>4</sub>, NO<sub>3</sub>:</b>	FDO® 700 IQ TriOxmatic® 700 IQ ISE sensors Alyza IQ NH4	page 11 page 12 page 32 page 34	<b>TSS, NO<sub>3</sub>, NO<sub>2</sub>, NO<sub>x</sub>, COD, BOD, TOC, DOC, SAC, UVT:</b> <b>TSS:</b> <b>Orthophosphate:</b>	Spectral sensors ViSolid® 700 IQ Alyza IQ PO <sub>4</sub>	page 32 page 25 page 41
	Sedimentation	<b>Sludge level:</b>	IFL 700 IQ	page 43			
	Effluent	<b>pH:</b> <b>Conductivity:</b> <b>NH<sub>4</sub>, NO<sub>3</sub>:</b>	SensoLyt® 700 IQ TetraCon® 700 IQ ISE sensors Alyza IQ NH4	page 15 page 20 page 32 page 34	<b>TSS, NO<sub>3</sub>, NO<sub>2</sub>, NO<sub>x</sub>, COD, BOD, TOC, DOC, SAC, UVT, Color:</b> <b>Turbidity:</b> <b>Orthophosphate:</b>	Spectral sensors VisoTurb® 700 IQ Alyza IQ PO <sub>4</sub>	page 32 page 24 page 41
	Micropollutant Removal	<b>SAC, UVT:</b>	UV 705 IQ SAC	page 38	<b>NO<sub>3</sub>, NO<sub>2</sub>, COD, BOD, TOC, DOC, SAC, UVT:</b>	NiCaVis® 705 IQ NI	page 32
	Sludge Treatment	<b>TSS:</b>	ViSolid® 700 IQ	page 25	<b>pH:</b>	SensoLyt® 700 IQ EX measuring point	page 15 page 16
	Deammonification (Anammox)	<b>pH:</b> <b>D.O.:</b>	SensoLyt® 700 IQ FDO® 700 IQ	page 15 page 11	<b>NH<sub>4</sub>, NO<sub>3</sub>:</b> <b>NO<sub>3</sub>, NO<sub>2</sub>:</b>	ISE sensors NitraVis® 701 IQ NI	page 30 page 32

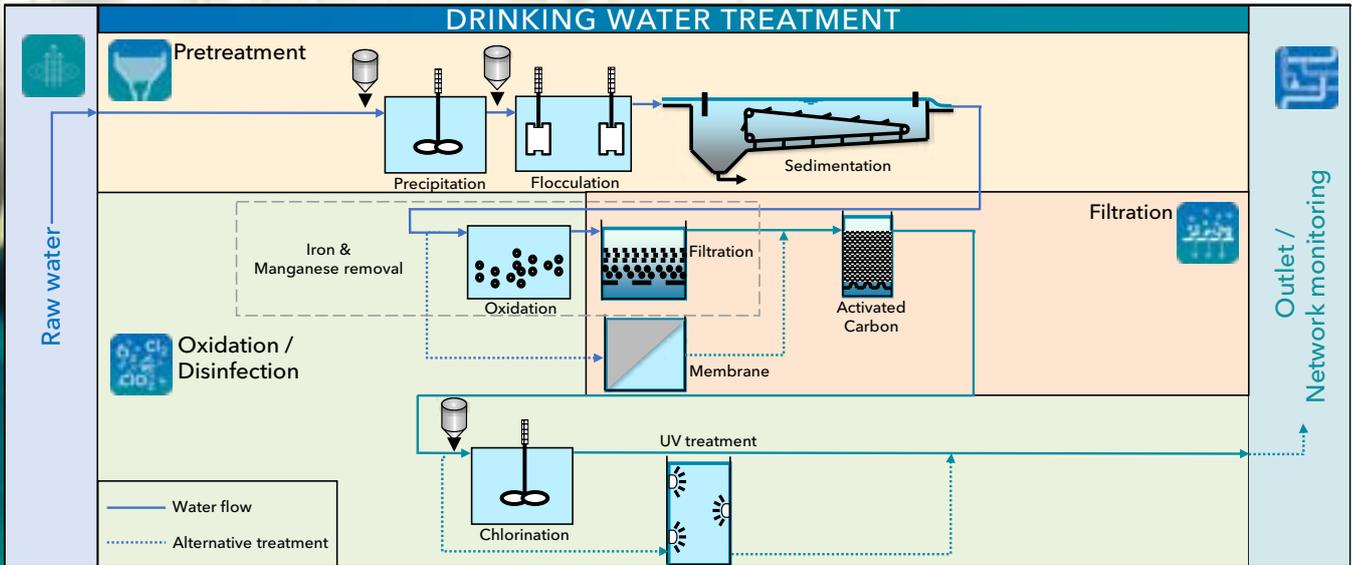
# Typical Applications

## Process Instrumentation



### Drinking Water

see also [www.xylymanalytics.com/en/applications/drinking-water](http://www.xylymanalytics.com/en/applications/drinking-water)



	<b>Raw water</b> (Groundwater, Surface waters)	<b>pH:</b> SensoLyt® DW (A) page 16 SenTix® ML 70 page 17 <b>Conductivity:</b> TetraCon® 700 IQ page 20 LR ML page 21 LRD 325 page 20	<b>Oxygen:</b> FDO® 700 IQ page 11 <b>Turbidity:</b> VisoTurb® 700 IQ page 24 Turb PLUS 2000 page 27 <b>Temperatur:</b> available in several other sensors
	<b>Pretreatment</b> (Precipitation, Flocculation, Sedimentation)	<b>Turbidity:</b> VisoTurb® 700 IQ page 24 Turb PLUS 2000 page 27	<b>SAC:</b> UV 705 IQ SAC page 32
	<b>Filtration</b> (Matrix filter, Membrane filter, Activated Carbon)	<b>Turbidity:</b> VisoTurb® 700 IQ page 24 Turb PLUS 2000 page 27	
	<b>Oxidation/Disinfection</b> (Chlorination, Ozonation, UV treatment, iron and manganese removal)	<b>Chlorine:</b> Chlorine 3017M page 47 FCML 412 N page 47 <b>UVT:</b> UV 705 IQ SAC page 32 <b>Turbidity:</b> Turb PLUS 2000 page 27	<b>pH:</b> SensoLyt® DW (A) page 16 SenTix® ML 70 page 17 <b>Oxygen:</b> FDO® 700 IQ page 11 <b>Temperatur:</b> available in several other sensors
	<b>Outlet &amp; Network monitoring</b>	<b>Turbidity:</b> Turb PLUS 2000 page 27 <b>pH:</b> SensoLyt® DW (A) page 16 SenTix® ML 70 page 17 <b>Conductivity:</b> TetraCon® 700 IQ page 20 LR ML page 21 LRD 01 page 21 LRD 325 page 20	<b>Oxygen:</b> FDO® 700 IQ page 11 <b>Chlorine:</b> Chlorine 3017M page 47 FCML 412 N page 47 <b>ORP:</b> SensoLyt® Pt (A) page 16 SenTix® ML ORP page 17 <b>Temperature:</b> available in several other sensors

# Typical Applications



## Process Instrumentation



### Industry

see also [www.xylymanalytics.com/en/applications/industry](http://www.xylymanalytics.com/en/applications/industry)



The IQ SENSOR NET can further be used for different industrial applications. Please consider the application range of our sensors, e.g. pH, temperature, corrosion or resistance. Given lifetimes and accuracies might differ due to the specific composition of the measured media.

*IQ SENSOR NET*  
*IQ Sensors*  
*IQ Sensors (corrosion resistant SW versions)*

*from page 48*  
*from page 10*  
*from page 11*



### Water

see also [www.xylymanalytics.com/en/applications/environmental-monitoring-surface-water](http://www.xylymanalytics.com/en/applications/environmental-monitoring-surface-water)



For the continuous monitoring of surface water Xylem Analytics Germany offers the IQ SENSOR NET with its standard IQ sensors and especially developed reagent free spectral probes (SF versions).

<i>pH:</i>	<i>SensoLyt® 700 IQ</i>	<i>page 15</i>
<i>Conductivity:</i>	<i>TetraCon® 700 IQ</i>	<i>page 20</i>
<i>D.O.:</i>	<i>FDO® 700 IQ</i>	<i>page 11</i>
	<i>TriOxmatic® 700 IQ</i>	<i>page 12</i>
<i>Turbidity:</i>	<i>VisoTurb® 700 IQ</i>	<i>page 24</i>
<i>Ammonium (NH<sub>4</sub>):</i>	<i>Alyza 700 IQ NH4</i>	<i>page 34</i>
<i>Nitrate (NO<sub>3</sub>):</i>	<i>NiCaVis® 705 IQ SF</i>	<i>page 32</i>
<i>Nitrite (NO<sub>2</sub>):</i>	<i>NiCaVis® 705 IQ NI SF</i>	<i>page 32</i>
<i>Color</i>	<i>ColorVis 705 IQ</i>	<i>page 32</i>
	<i>NiCaVis® 705 IQ SF Co</i>	<i>page 32</i>
<i>COD/BOD</i>	<i>NiCaVis® 705 IQ SF</i>	<i>page 32</i>
<i>Phosphate (PO<sub>4</sub>):</i>	<i>Alyza 700 IQ PO4</i>	<i>page 41</i>

# Typical Applications

## Process Instrumentation



### Fish Farming

see also [www.xylymanalytics.com/en/applications/aquaculture](http://www.xylymanalytics.com/en/applications/aquaculture)



From extensive to intensive management, from fresh to salt water fish farming - to monitor relevant parameters like pH, oxygen concentration, salinity, total suspended solids or turbidity, we offer respective sensors; including temperature.

	Freshwater	Saltwater
<b>pH (incl. temp.)</b>	<i>SensoLyt® 700 IQ</i> page 15	<i>SensoLyt® 700 IQ SW</i> page 15
<b>Carbon</b>	<i>Spectral sensors</i> page 38	<i>Spectral sensors</i> page 38
<b>D.O. (incl. temp.)</b>	<i>FDO® 700 IQ</i> (protective cap MSK FDO® against fish bites must be ordered separately) page 11  <i>TriOxmatic® 700 IQ</i> page 12	<i>FDO® 700 IQ SW</i> (protective cap MSK FDO® against fish bites included) page 11  <i>TriOxmatic® 700 IQ SW</i> page 12
<b>Salinity (incl. temp.)</b>	<i>TetraCon® 700 IQ</i> page 20	<i>TetraCon® 700 IQ SW</i> page 19
<b>TSS/Turbidity</b>	<i>ViSolid® 700 IQ</i> page 25  <i>VisoTurb® 700 IQ</i> page 24	<i>ViSolid® 700 IQ SW</i> page 25  <i>VisoTurb® 700 IQ SW</i> page 24

# D.O. Measurement

Measuring . Monitoring . Controlling



Reliable and continuous measurements of dissolved oxygen have become vitally important in many areas of the water/ wastewater treatment facilities. The availability of accurate and real-time measured concentrations is an absolute requirement for process monitoring and dynamic process control to ensure an efficient plant operation.

#### Fields of application:

- Nitrification/Denitrification
- Deammonification
- Inlet and Effluent Monitoring
- Water Pollution Control
- Fishfarming/Aquaculture



see also <https://www.xylymanalytics.com/en/parameters/dissolved-oxygen-do>

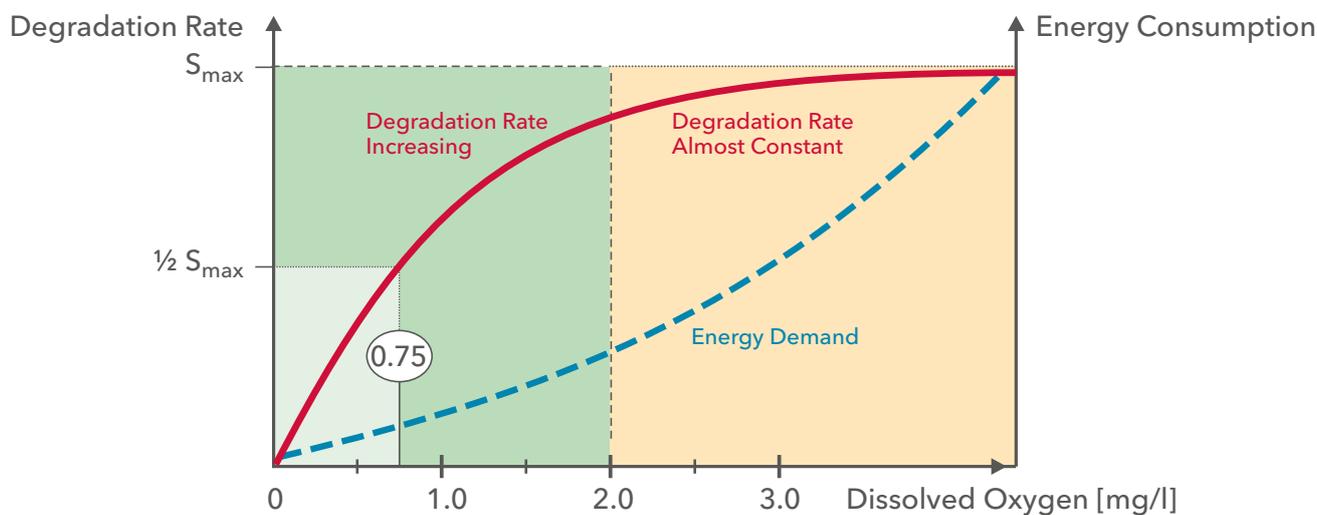
# Monitoring and Control

In the **biological nutrient removal process** of wastewater treatment plants, continuous and precise measurement of dissolved oxygen concentration is of vital importance to an optimal and trouble free operation of the water/wastewater treatment facility. The efficiency and energy demand of the purification process, in the nitrification and denitrification phase, is mainly determined by the performance of the aeration control system; i.e. by a load-dependent regulation of the oxygen supply.

In the presence of dissolved oxygen, the nitrifying bacteria convert ammonium to nitrate. The activity of the microorganisms depends on the oxygen concentration, with an economic break point at about 2 mg/l. Higher oxygen concentrations do not increase the rate of degradation, but require significantly more energy for the oxygen blowers (see illustration).

The aerator equipment is responsible for the majority of energy consumption in a biological wastewater plant. To reduce the energy and maintenance costs, it is therefore important to reduce the aerator operation time to a minimum depending on the required dissolved oxygen concentration.

The residual dissolved oxygen in the sludge, however, has a negative effect on the conditions in the denitrification stage. On the other hand in nitrification, a certain amount of dissolved oxygen is needed for optimal growth and ammonium oxidation. **Only the use of precise and reliable on-line measuring instruments will ensure an efficient and energy saving control of the process.**



NH<sub>4</sub>-N degradation rate vs. D.O. concentration

## Measurement Systems

For more than 70 years, the brand WTW has been recognized as a leader in the field of Dissolved Oxygen measurements. Innovative technologies, creative and continuous product development, and

extensive application expertise have resulted in superior instruments and systems of outstanding performance, reliability and design for the most precise online measurements available.

# FDO®: Optical D.O. Measuring

The innovative geometry of the membrane cap with a 45° angle enables the precise oxygen measurement and avoids false readings through air bubble adhesion. Due to the automatic recognition of the calibration free cap, a manual input of the serial number is not needed (potential source of error). The fast and easy cap change saves a lot of work and time.

The long lifetime of the cap (3-5 years) ensures sustainable operation and minimized maintenance costs. Further, the moveable sensor mounting enables a self cleaning effect at the measuring window.

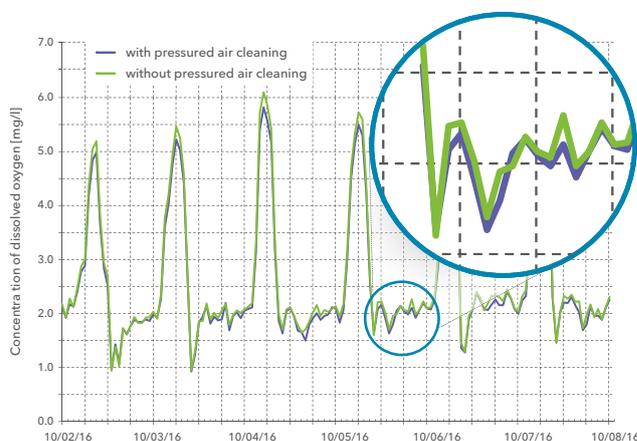
Additional cleaning with pressured air is possible for special applications but not required for typical municipal wastewater treatment plants (see figure).



FDO® 700 IQ



- Calibration and flow free
- Insensitive to air bubbles
- Low usage costs



Comparison of two FDO® sensors with and without pressured air cleaning

## Sensor Caps

The caps for the digital FDO® sensors are calibration free and provide reliable DIN compliant results.

### SC-FDO 700

for wastewater treatment plants, with a response time ideal for treatment processes

### SC-FDO 701

with faster response time



## Ordering Information

Model	Description	Order No.
SC-FDO 700	Universal sensor cap for FDO® 700 IQ/700 IQ SW	201654
SC-FDO 701	Fast response time sensor cap for FDO® IQ 701/IQ 701 SW	201655



For technical data please see datasheet D2.02

Optical FDO® D.O. sensors see from page 11

Information about IQ SENSOR NET system see from page 48

# Digital

Calibration-free, reliable, DIN compliant - the optical FDO® oxygen sensors for the IQ SENSOR NET to regulate biological cleaning steps.



## FDO® 700 IQ

for the IQ SENSOR NET



## FDO® 700 IQ SW

for use in corrosive media



## FDO® 701 IQ

with a faster response time



## FDO® 701 IQ SW

with a faster response time, for use in corrosive media



## Ordering Information

Model	Description	Order No.
<b>FDO® 700 IQ</b>	Optical O <sub>2</sub> sensor for connection to the IQ SENSOR NET.	201650
<b>FDO® 701 IQ</b>	like the FDO®700 IQ, but with a faster response time	201660
<b>FDO® 700 IQ SW</b>	like the FDO®700 IQ, but as sea water model with plastic arming (POM)	201652
<b>FDO® 701 IQ SW</b>	like the FDO®700 IQ SW, but with a faster response time	201653



For technical data please see datasheet D2.02

Alternatives and accessories see brochure "Product Details" and website

Information about IQ SENSOR NET system see from page 48

Analog dissolved oxygen sensors see from page 13

# TriOxmatic®: Electrochemical D.O. Measuring

Precise and accurate results with mature and proven oxygen sensors with 3 electrodes system.

The amperometric sensors provide an outstanding high accuracy - without startup phase. The robust teflon membrane is resistant towards organic deposits. The self diagnostic systems SensLock and SensReg are continuously monitoring the membrane and the electrolyte consumption.



TriOxmatic® 700 IQ



- Low investment costs
- No startup time, no long-term drift - stable from the beginning to the end
- Self-diagnosis system SensReg/ SensLock by means of 3 electrodes system



## Digital

TriOxmatic® IQ: The digital amperometric oxygen sensors are automatically recognized by the IQ SENSOR NET.



### TriOxmatic® 700 IQ

for the IQ SENSOR NET

### TriOxmatic® 700 IQ SW

for use in corrosive media

### TriOxmatic® 701 IQ

with a shorter response time

### TriOxmatic® 702 IQ

trace sensor (ppb range) - for pure or boiler feed water

## Ordering Information

Model	Description	Order No.
TriOxmatic® 700 IQ	Universal oxygen sensor for the measurement and regulation of oxygen input in wastewater treatment plants	201640
TriOxmatic® 700 IQ SW	Like TriOxmatic®700 IQ, but as a sea water model	201641
TriOxmatic® 701 IQ	Like TriOxmatic®700 IQ, but with faster response times	201644
TriOxmatic® 702 IQ	Like TriOxmatic®700 IQ, but as a trace sensor (ppb area) suitable for pure or boiler feed water	201646



For technical data please see datasheet D2.01

Alternatives and accessories see brochure "Product Details" and website

Information about IQ SENSOR NET system see from page 48

Optical IQ dissolved oxygen sensors see from page 10

# Analog

Analog oxygen sensors to be connected to the analog transmitters Oxi 298.

## TriOxmatic® 690



suitable for pure measuring tasks in wastewater/water

## TriOxmatic® 701

increased resolution for the residual oxygen in the denitrification



analog TriOxmatic® sensor

## Ordering Information

Model	Description	Order No.
TriOxmatic® 690-7	Universal oxygen sensor without self diagnosis, with normal response time, cable length 7 m	201690
TriOxmatic® 701-7	Oxygen sensor with automatic self diagnosis and faster response time, cable length 7 m	201678



For technical data please see datasheet D3.02

Alternatives and accessories see brochure "Product Details" and website

Analog monitors see from page 62

Optical IQ dissolved oxygen sensors see from page 10

## Further analog Sensors

For drinking water monitoring: The sensor can be connected to the Oxi 298 Pt1000 transmitter as well as to the multiparameter system MULTILINE 1000 with the open wires.



- Including cable
- Integrated temperature sensor
- Easy handling



D7.04

## Ordering Information

Model	Description	Order No.
Oxi ML 41	Electrochemical D.O. sensor with 1 m (3.3 ft) fixed cable for transmitter MULTILINE 1000 or Oxi 4000. Range: 0-20 mg/l or 0 - 200%, temperature range: -5-45 °C, with temperature sensor Pt 1000; open cable ends.	201931



For technical data please see datasheet D7.04

Alternatives and accessories see brochure "Product Details" and website

Analog monitors see from page 62

Optical IQ dissolved oxygen sensors see from page 10

# pH / ORP Measurement

Reliable with convenient calibration



pH is one of the most important parameters measured throughout the water, wastewater and many process industries. In the biological treatment of wastewaters, for example, the acidic or alkaline condition of the waste water has an essential influence on the activity of the microorganisms; continuous online pH control is required. Precise and reliable systems for pH monitoring and control are also necessary in drinking water plants and in a variety of industrial process technologies.

#### Fields of application:

- Wastewater Treatment Facilities
- Water Treatment Utilities
- Neutralization Plants
- Surface Waters and Groundwater
- Industrial Processes
- Food Industry
- Pharmaceutical industry

see also <https://www.xylymanalytics.com/en/parameters/ph-and-orp-redox>



# SensoLyt® System Design

Especially in difficult conditions, which are often found in sewage treatment facilities, high demands towards the continuous pH/ORP measurements are made. These concern in particular the reliability and the operational safety of the employed systems. Especially developed for these harsh applications, the SensoLyt® sensors are precision engineered assemblies, which consist of a submersible housing with a built-in preamplifier and the appropriate combination of pH or ORP electrode. In combination with our WTW controllers they form a reliable pH/ORP measuring system, which represents the highest standard with regard to accuracy, EMC noise immunity and economy.



SensoLyt® 700 IQ



- Stable signals by digital signal processing
- Convenient calibration in the lab and glass breakage detection
- Reliable measurements by integrated temperature sensor



## Digital

To be connected to the digital, modular, and expandable IQ SENSOR NET as well as to the single parameter controller 281.



### SensoLyt® 700 IQ

for the IQ SENSOR NET



### SensoLyt® 700 IQ SW

for use in corrosive media



## Ordering Information

Model	Description	Order No.
<b>SensoLyt® 700 IQ</b>	Digital pH/ORP fitting for SensoLyt® electrode, with integrated preamplifier and temperature sensor (please order cable separately)	109170
<b>SensoLyt® 700 IQ SW</b>	Like the SensoLyt® 700 IQ, but as a sea water model	109171



For technical data please see datasheet D2.03

Alternatives and accessories see brochure "Product Details" and website

Information about IQ SENSOR NET system see from page 48

Analog pH/ORP fitting see from page 16

# Analog

To be operated with analog transmitters.

## SensoLyt® 650-7

Passive armature without pre-amplifier to be directly connected to pH monitor pH 29 NTC.

## SensoLyt® 650-7 EX

Version for explosive areas of zone 1, to be connected to the Stratos Pro A 201 X pH controllers.



SensoLyt® 650

## Ordering Information

Model	Description	Order No.
<b>SensoLyt® 650-7</b>	pH/ORP armature with high-impedance signal transmission and integrated temperatur sensor, cale length 7 m	109195
<b>SensoLyt® 650-7 EX</b>	as above, but for explosion-endangered area (Ex ib IIC T6 Gb X), connectable to StratosProA201XpH-0(-1). Electrodes need to be ordered separately	109195EX



For technical data please see datasheets D3.03 and D4.04

Alternatives and accessories see brochure "Product Details" and website

Analog monitors see from page 62



Controllers / isolated amplifier for EX area see from page 67

# Combination Electrodes

SensoLyt® electrodes for all applications - from drinking water to municipal and industrial wastewater.

## Armored Versions

for connection with SensoLyt® armature: **SEA(-EX/-HP), TFA, ECA, DWA, PtA, and PtFA.**

## Electrode without armor

to be installed into flow cells; can be connected directly to pH 298 transmitters.



SEA-HP

SensoLyt®

EC



## Ordering Information

Model	Description	Order No.
<b>SensoLyt® SEA</b>	pH electrode for heavily loaded wastewater, to be connected to SensoLyt® armature, range 2 ... 12 pH	109115
<b>SensoLyt® SEA EX</b>	Like model SEA, but for explosion-endangered area (only when connected to SensoLyt® 650-7 EX Sensor)	109115EX
<b>SensoLyt® TFA</b>	Like model SEA, but for not typically municipal or industrial wastewater	109114
<b>SensoLyt® DWA</b>	Like model SEA, but for drinking water, range 0 ... 14 pH	109119
<b>SensoLyt® PtA</b>	ORP electrode for heavily loaded wastewater, to be connected to SensoLyt® armature, range ±2000 mV	109125
<b>SensoLyt® PtFA</b>	ORP electrode for heavily loaded wastewater, to be connected to SensoLyt® armature, range ±2000 mV	109126
<b>SensoLyt® SE</b>	Like model SEA, but unarmored, to be installed by example in flow cells	109100



For technical data please see datasheets D3.04 and D4.04

Alternatives and accessories see brochure "Product Details" and website

Analog monitors see from page 62

SensoLyt® armature see page 15

# Analog ProcessLine® Combination Electrodes

The special construction of the ProcessLine® electrodes brings them very close to the optimum for liquid electrolyte electrodes with respect to their accuracy, stability, fast response time and durability. To be installed in a flow cell or in a retractable armature. The low maintenance SteamLine electrodes are designed to be used in a SIP treatment (sterilization in place) and a CIP cleaning (clean in place).



PL 81-225pHT VP



- Low maintenance
- Without contamination or blocking of the reference electrode
- Fast and stable readings
- SIP and CIP capable



## Ordering Information

Model	Description	Order No.
<b>PL 80-120pH</b>	pH electrode, S8, 0...14 pH, no Temp., 120 mm	109233
<b>PL 80-225pH</b>	pH electrode, S8, 0...14 pH, no Temp., 225 mm	109234
<b>SL 80-120 PH</b>	pH electrode, S8, 0...14 pH, no Temp., 120 mm, capable for SIP and CIP	285113213
<b>PL 82-225pHT VP</b>	pH electrode, VP, 0...14 pH, Pt100, 225 mm	109239
<b>SL 81-120 PHT-VP</b>	pH electrode, VP, 0...14 pH, Pt1000, 120 mm, capable for SIP and CIP	285113308
<b>PL 81-120 pHT VP</b>	pH electrode, VP, 0...14 pH, Pt1000, 120 mm	285113550



For technical data please see datasheet D3.05

Alternatives and accessories see brochure "Product Details" and website

Combination electrodes for SensoLyt® fittings see from page 16

Analog monitors see from page 62

# Analog SenTix® Electrodes

To measure pH and ORP in drinking water, WTW offers analog sensors to be connected to analog transmitters pH 298 and MULTILINE 1000.

The pH electrode **SenTix® ML 70** ist equipped with a thread PG 13.5 and a S7 plug head. The ORP sensor **SenTix® ML RP** provides a measuring range of -2000 ... +2000 mV and a temperature range of 0 ... 80 °C.



- Economic
- With thread for pipe installation
- Easy handling



## Ordering Information

Model	Description	Order No.
<b>SenTix® ML 70</b>	pH combination electrode with gel electrolyte, S7 plug head, glass-shaft; PG 13.5 screw thread	104100
<b>SenTix® ML ORP</b>	ORP combination electrode with gel electrolyte, S7 plug head, glass-shaft; PG 13.5 screw thread	104150



For technical data please see datasheet D7.04

Alternatives and accessories see brochure "Product Details" and website

Analog monitors see from page 62

Analog pH electrodes see from page 16

# Conductivity Measurement

Reliable in multiple applications



Conductivity is a well recognized and often indispensable parameter of state-of-the-art water, wastewater and industrial process analysis. Continuous measuring systems are employed to monitor the salt load of the influent in wastewater treatment plants, to control quality of drinking water and ultra-pure water or to determine non-specific contaminants in industrial processes.

#### Fields of application:

- Municipal and Industrial Wastewater
- Water Treatment
- Surface Waters
- Sea Water, Brackish Water, Fishfarming
- Boiler Feed Water
- Demineralization
- Industrial Process Fluids

see also <https://www.xylymanalytics.com/en/parameters/conductivity-and-salinity>



# TetraCon® 4-electrode Design

Compared to the 2-electrode conductivity sensors, the 4 electrode version of the TetraCon® series provides a very large measuring range. For several years now, the proven technique guarantees smooth operation, especially in the area of higher conductivities. Further on, the 4 electrode cell is very resistant against contamination and provides a fast temperature compensation by its integrated temperature sensor. A pressure resistance of up to 10 bar enables the installation in pipes.



TetraCon® 700 IQ



- Highest linearity with 4 electrode measuring cell
- Extremely robust and durable
- Large measuring range (1 µS/cm ... 2 S/cm) with only one single cell
- Highly resistant to fouling



## Digital

To be connected to the digital, modular, and expandable IQ SENSOR NET as well as to the single parameter controller 281.



### TetraCon® 700 IQ

for the IQ SENSOR NET



### TetraCon® 700 IQ SW

for use in corrosive media



## Ordering Information

Model	Description	Order No.
TetraCon® 700 IQ	Digital 4 electrode conductivity measuring cell for highly contaminated wastewater	302500
TetraCon® 700 IQ SW	Like TertaCon® 700 IQ, but as a sea water model	302501



For technical data please see datasheet D2.04

Alternatives and accessories see brochure "Product Details" and website

Information about IQ SENSOR NET system see from page 48

Analog conductivity measuring cells see from page 20

# Analog

To be operated with analog transmitters.

## TetraCon® 700-7

especially developed submersible sensor assembly for use in wastewater treatment plants



## TetraCon® 700-7 EX

Version for explosive areas of zone 1, to be connected to the Stratos Pro A 201 X Cond controllers.



## TetraCon® 325

Suitable for universal applications



## TetraCon® DU/T

flow measuring cell for standard industrial applications



## LRD 325

for installation in pipes



## Ordering Information

Model	Description	Order No.
<b>TetraCon® 700-7</b>	Universal 4 electrode conductivity cell especially for wastewater treatment plants, 7 m (23 ft) cable	302316
<b>TetraCon® 700-7 EX</b>	Analog 4 electrodes conductivity measuring cell with integrated temperature sensor and 7 m cable with open wires	302316EX
<b>TetraCon® 325</b>	4 electrodes measuring cell, with integrated temperature sensor, cell constant $K=0.475 \text{ cm}^{-1}$ , cable length 1.5m	301960
<b>TetraCon® DU/T</b>	4 electrodes flow measuring cell, with integrated temperature sensor, cell constant: $K=0.0778 \text{ cm}^{-1}$	301252
<b>LRD 325-7</b>	4 electrodes measuring cell to be screwed into pipe, with integrated temperature sensor, cable length 7 m	302229



For technical data please see datasheets D3.06 and D4.03

Alternatives and accessories see brochure "Product Details" and website

Analog monitors see from page 62



Controllers / isolated amplifier for EX area see from page 67

# 2-electrode Measuring Cells

Pipe installation, drinking water, ultra-pure water and trace measurements – the right cell for any application. The reliable 2 electrode cell provides high resolution and accuracy.



- The right solution for any application
- High operational safety by robust workmanship

## Analog

To be operated with analog transmitters.



LRD 01 

for installation in pipes



LR 325/01

for ultra-pure water applications



LR 325/001

for trace measurement in both aqueous and non-aqueous or partially aqueous media



LR ML 

for drinking water and connection to LF 298 or MULTILINE 1000



## Ordering Information

Model	Description	Order No.
LRD 01-7	2 electrodes measuring cell to be screwed into pipe, with integrated temperature sensor, cable length 7 m	302222
LR 325/01	Conductivity measuring cell for ultrapure water, with integrated temperature sensor, cell constant K=0.1cm <sup>-1</sup> , Glass flow cell	301961
LR 325/001	as above, but for trace measurement, Stainless steel flow cell	301962
LR ML	Conductivity cell, with 1 m fixed cable, 2 graphite electrodes; - 5-80°C; range 100 µS/cm - 20 mS/cm; temperature measurement with Pt 1000, PG 13.5 screw thread	301150



For technical data please see datasheet D3.06

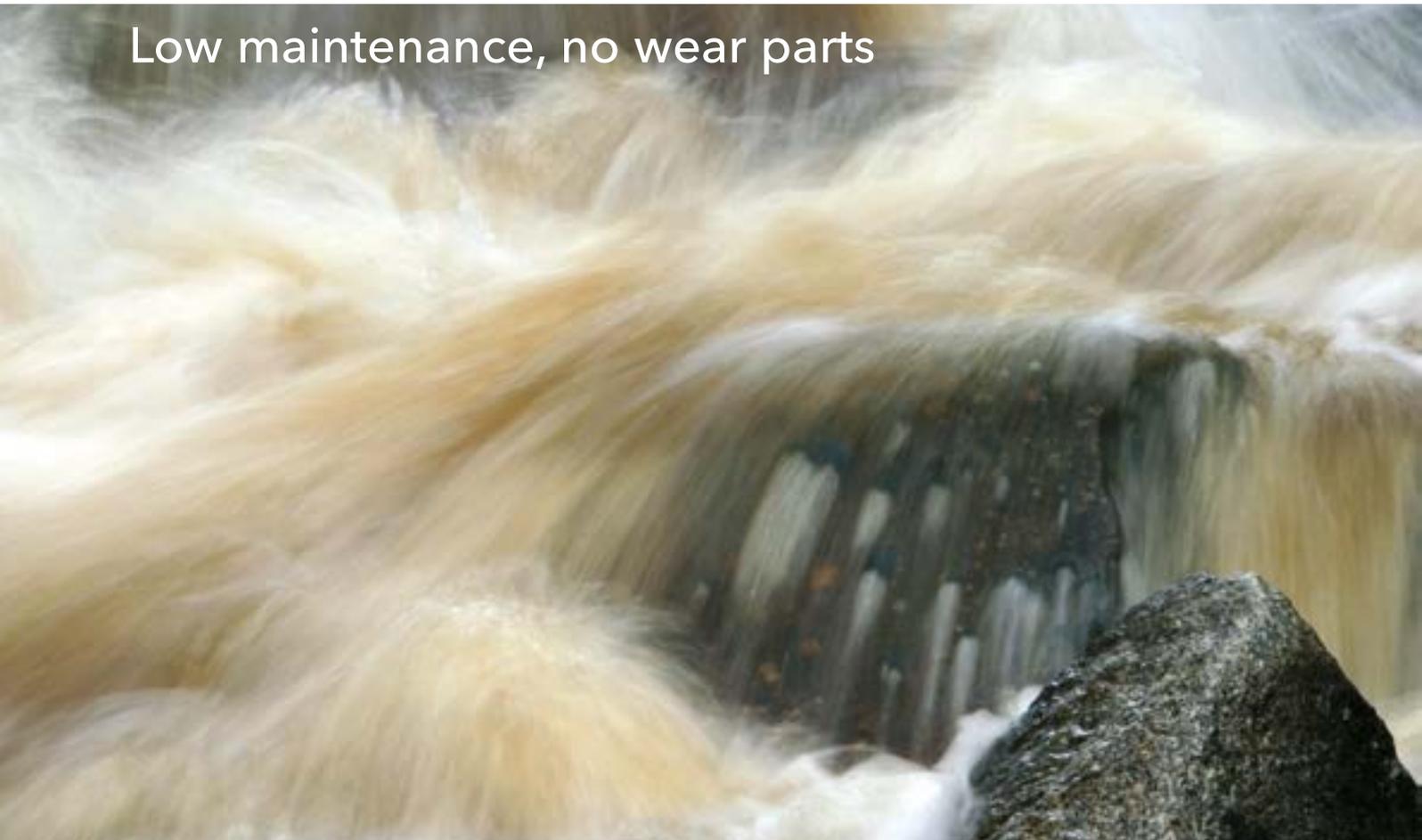
Alternatives and accessories see brochure "Product Details" and website

Analog monitors see from page 62

Digital conductivity measuring cells see from page 19

# Turbidity / Suspended Solids

Low maintenance, no wear parts



## Turbidity

For people, turbidity of water is highly comprehensible. For most persons, turbid water is nasty or even repellent. Smell, taste and turbidity are the most important indicators for the quality of potable water. Turbidity is typically determined using 90 degree scattered light principle in compliance with EN ISO 7027.

### Fields of application:

- Outlet of wastewater treatment plants
- Sludge concentration
- Monitoring/Controlling of sludge cycle
- Drinking water
- Surface water

# Suspended Solids (TS)

The concentration of suspended solids is a very important process parameter for today's sludge treatment. A continuous gravimetric analysis is not possible in wastewater treatment process - therefore on-line methods are used. Total suspended solids can be determined on-line using scattered light or light absorbance.

Under normal conditions there is a good correlation to gravimetric analysis. However, sludges can be totally different - concerning coloration, particle size and structure. Therefore of course a "multi-point" user calibration is possible. This can also be done with the mandatory required gravimetric determination of total suspended solids.

## Cleaning System

The fouling of the optical path requires an effective cleaning system realized by WTW using a unique Ultrasonic System. This ultrasonic module, integrated in the VisoTurb® 700 IQ and in the ViSolid® 700 IQ, causes a permanent oscillation on the optical windows avoiding biological fouling. Pictures (right) show the same sensor with ultrasonic cleaning system switched-off and switched-on in a typical wastewater application.

The sensor with a switched off ultrasonic cleaning (upper picture) is totally covered with organic deposits after 16 days. The sensor with switched on ultrasonic cleaning (below) doesn't show any negative impact.

Likewise, the IQ spectral sensors provide the integrated ultrasonic cleaning.



ViSolid® 700 IQ with switched-off cleaning system is completely covered with a biological layer after 16 days.



ViSolid® 700 IQ with working ultrasonic cleaning system shows no adverse effect.



see also <https://www.xylymanalytics.com/en/parameters/turbidity-and-tss>

# Turbidity Sensor VisoTurb®

The VisoTurb® is ideal to monitor turbidity, for example in the outlet of a wastewater treatment plant. The unique integrated ultrasonic cleaning system ensures low-maintenance and continuously reliable measuring. By this, whether spare nor wear parts are needed.

With the nephelometric measuring principle, the scattered light is measured at a 90° angle. The measuring setup is suitable for low and medium turbidity values up to 4000 FNU. The sensor works according to EN ISO 7027.



VisoTurb® 700 IQ



- Ultrasonic cleaning without wear or spare parts
- Extremely low maintenance
- Highly accurate factory calibration
- High operational safety (SensorCheck function)



## Digital

To be connected to the digital, modular, and expandable IQ SENSOR NET as well as to the single parameter controller 281.



### VisoTurb® 700 IQ

for the IQ SENSOR NET



### VisoTurb® 700 IQ SW

for use in corrosive media



## Ordering Information

Model	Description	Order No.
VisoTurb® 700 IQ	Digital turbidity sensor with integrated ultrasonic cleaning	600010
VisoTurb® 700 IQ SW	Like VisoTurb®700 IQ, but as a sea water model	600011



For technical data please see datasheet D2.05

Alternatives and accessories see brochure "Product Details" and website

Information about IQ SENSOR NET system see from page 48

Sensors for suspended solids measurement see from page 25

# Suspended Solids Sensor ViSolid®

The unique integrated ultrasonic cleaning system ensures low-maintenance and continuously reliable measuring. By this, whether spare nor wear parts are needed.

The sensor uses two methods, which are selected depending on the total suspended solids concentration. At low concentrations, scattered light is measured. At higher concentrations, the direct back scattering provides optimal results.



ViSolid® 700 IQ



- Ultrasonic cleaning without wear or spare parts
- Extremely low maintenance
- Highly accurate factory calibration
- High operational safety (SensorCheck function)



## Digital

To be connected to the digital, modular, and expandable IQ SENSOR NET.



ViSolid® 700 IQ

for the IQ SENSOR NET



ViSolid® 700 IQ SW

for use in corrosive media



## Ordering Information

Model	Description	Order No.
ViSolid®700 IQ	Digital suspended solids sensor with integrated ultrasonic cleaning	600012
ViSolid®700 IQ SW	Like ViSolid®700 IQ, but as a sea water model	600013



For technical data please see datasheet D2.06

Alternatives and accessories see brochure "Product Details" and website

Information about IQ SENSOR NET system see from page 48

UV-VIS spectral sensors for TSS measurement see from page 26

# UV-VIS Spectral Sensors

With spectral sensors (wavelengths 200-720 nm) TSS, Nitrate, Nitrite and Color as well as additional carbon parameters can be measured (COD, BOD, TOC, DOC, SAC).

The following WTW spectral sensors are optimized for municipal wastewater application:

NitraVis® 701 IQ TS	for inlet and aeration	from page 32
NitraVis® 705 IQ TS	for effluent	from page 32
NiCaVis® 705 IQ TS	for effluent	from page 32
CarboVis® 701 IQ TS	for inlet and aeration	from page 38
CarboVis® 705 IQ TS	for effluent	from page 38
CarboVis® 705 IQ TS Co	for effluent	from page 45
NiCaVis® 705 IQ TS Co	for effluent	from page 45
ColorVis 705 IQ	for effluent	from page 45

The following WTW spectral sensors are designed for monitoring of surface water:

NiCaVis® 705 IQ SF	for e.g. rivers and lakes	from page 32
NiCaVis® 705 IQ SF Co	for e.g. rivers and lakes	from page 45
NiCaVis® 705 IQ NI SF	for e.g. rivers and lakes	from page 32
ColorVis 705 IQ	for e.g. rivers and lakes	from page 45



# Analyzer for Turbidity

## Turb PLUS 2000 Series



### For Turbidity Monitoring in Drinking Water

For many drinking water treatment plants, turbidity is the most important parameter. With the Turb PLUS 2000, turbidity can be monitored according to DIN EN ISO 7027 or US EPA 180.1.

The devices with integrated ultrasonic cleaning can be used in sedimentation, filtration, disinfection and in the plant outlet.

- High accuracy of  $\pm 2\%$  of reading or  $\pm 0.02$  NTU below 40 NTU
- Ultrasonic Cleaning System
- ISO and EPA compliant
- Resolution down to 0.0001 NTU
- 20 mA Current and RS 485 (Modbus RTU)
- Can be integrated into existing IQ SENSOR NET via MIQ/IC2

### Turb PLUS 2020

white light,  
without ultrasonic cleaning



### Turb PLUS 2120

infrared light,  
without ultrasonic cleaning

### Turb PLUS 2120 Set

infrared light, with ultrasonic cleaning and additional bubble trap



Turb 2120

## Ordering Information

Model	Description	Order No.
<b>Turb PLUS 2020</b>	Turbidity analyzer with white light (US EPA 180.1)	600026
<b>Turb PLUS 2120</b>	Turbidity analyzer with infrared light (ISO EN DIN 7027)	600036
<b>Turb PLUS 2120 Set</b>	Turb PLUS 2120 including external bubble trap	600037
<b>BC-Turb/DW</b>	External bubble trap	600041
<b>Kal Kit Turb/DW</b>	Calibration standard set (0.02, 10, 1000 NTU, cleaning tissues, designation rings)	600052
<b>Kal Kit Turb PLUS 2000</b>	Calibration standard set (0.02, 10, 100 NTU, cleaning tissues, designation rings)	600054
<b>Kal Kit Turb 2110/DW</b>	Calibration standard set (0.02, 1, 10 NTU, cleaning tissues, designation rings)	600056



For technical data please see datasheet D7.06

Alternatives and accessories see brochure "Product Details" and website

Pre-mounted panels for turbidity measurement see from page 65

Analyzer for chlorine see from page 47

# Nitrogen

Nutrient Parameter: Ammonium, Nitrate, Nitrite



see also <https://www.xylenalytics.com/en/parameters/nitrate-nitrite-and-nox>

and <https://www.xylenalytics.com/en/parameters/ammonium>

## Ammonium

Nitrogen is found in a large variety of compounds and forms, it is considered to be the ultimate “quick-change artist”. In municipal wastewater it is mainly encountered as a waste product in the form of urea, which is already partly converted to ammonium nitrogen by ammonification.

### Fields of application:

- Municipal wastewater (treatment plant)
  - Inlet
  - Biological Cleaning
  - Outlet
- Centrate water
- Deammonification (Anammox)
- Surface waters

In the aeration basin, the initial step of nitrification consists of oxidizing the ammonium present in wastewater via nitrite to nitrate, for which oxygen is required. In the denitrification, nitrate is degraded to nitrogen gas under anaerobic conditions.

For fish, ammonium is already toxic in very small concentrations. Hence, water bodies with an ammonium concentration of 1 mg/l are not suitable for fish. Therefore, the discharge values, which have to be met by treatment plants, have to be very low.

## Nitrate

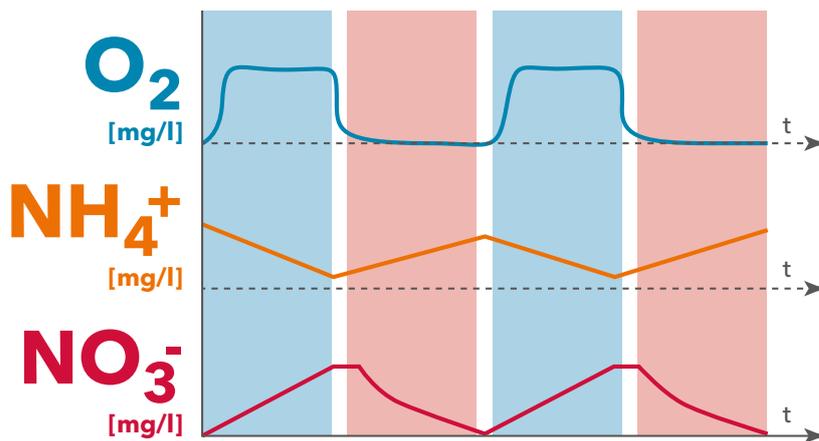
Nitrate is produced from ammonium in the nitrification process. To monitor and control this process and the subsequent denitrification (reduction of nitrate) in a wastewater treatment plant, nitrate is often measured among other parameters. As nitrification also takes place in soils and groundwater, whereby groundwater is the main source for drinking water in many countries, it often contains nitrate. The nitrate threshold value for drinking water in Europe is 50 mg/l.

As nitrate is used directly as a nutrient source for plant organisms, it is used as fertilizer in agriculture. High amounts of nitrates in fertilizers are often transferred into surface water and groundwater leading to eutrophication and therefore higher algae growth, as well as increasing nitrate content in drinking water.

In general, nitrate is harmless to people. In the human body nitrate may however be transformed into nitrite, which can be dangerous to health.

## Nitrite

Nitrite occurs in considerably smaller amounts within wastewater treatment plants and soils. It is an intermediate product and oxidized very quickly into



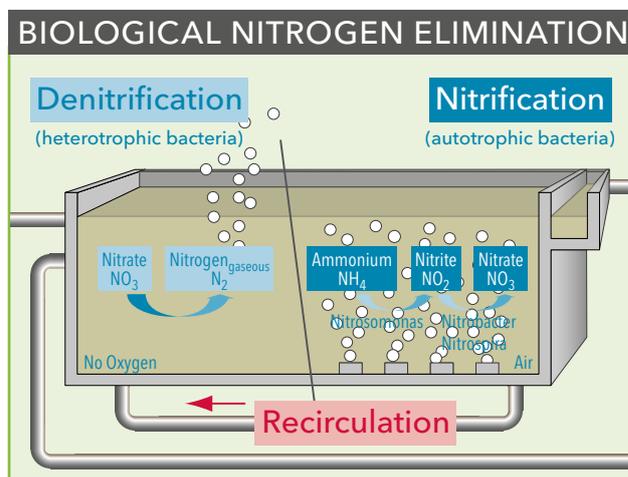
Example: intermittent nitrification/denitrification

nitrate. Nevertheless, in newer cleaning processes of wastewater treatment plants (e.g. Anammox), nitrite is produced intentionally and therefore becomes measurable.

Nitrite is a fish poison and harmful to humans. Besides circulatory disturbances and a lack of oxygen supply, in the human body nitrite is classified as potentially carcinogenic. Due to this, monitoring is crucial for health and ecological reasons.

## NO<sub>x</sub>

NO<sub>x</sub> is a sum parameter of nitrate (NO<sub>3</sub>) and nitrite (NO<sub>2</sub>).



# ISE Sensors

The reliable and robust ISE sensors are measuring  $\text{NH}_4$  and  $\text{NO}_3$  continuously and in real-time without delays. The sensors increase process transparency and allow a dynamic and efficient control of nitrification and denitrification. The accuracy of the measurement is dependent on the measured medium. For compensation of this effect a matrix adjustment is necessary. You can benefit from our intuitive operation, which makes the adjustment as easy as possible! Our cross compensation enables the correction of several measured values with only one compensation electrode.



VARiON®Plus 700 IQ



- As easy as measuring pH
- Up to 18 month lifetime of electrodes
- Calibration-free, long stability
- No chemicals used



# Digital Sensors

To be connected to the digital, modular, and expandable IQ SENSOR NET.



## VARiON®Plus 700 IQ

Ion selective measurement of ammonium and nitrate, free of reagents with automatic compensation of potassium/chloride



## AmmoLyt®Plus 700 IQ

Ammonium can be measured directly in the medium without sample preparation or sample transfer. Measurement of centrate and other process waters up to 2,000 mg/l  $\text{NH}_4\text{-N}$



## NitraLyt®Plus 700 IQ

Nitrogen elimination - transparent, process optimized, economical. Nitrate can be measured directly in the medium - optimized for regulation purposes



## Ordering Information

Model	Description	Order No.
<b>VARiON®Plus 700 IQ</b>	Digital sensor for the ion selective measurement of ammonium and nitrate, without electrodes	107040
<b>AmmoLyt®Plus 700 IQ</b>	Digital sensor for ion selective measurement of ammonium	107070
<b>NitraLyt®Plus 700 IQ</b>	Digital sensor for the ion selective measurement of nitrate	107080



For technical data please see datasheets D2.07, D2.08 and D2.09

Alternatives and accessories see brochure "Product Details" and website

Information about IQ SENSOR NET system see from page 48

Spectral nitrate/nitrite sensors see from page 32

# Electrodes

The electrodes for the digital ISE sensors convince with reliable measurements.

1 Year Warranty



## Reference electrode VARiON® Ref

for mounting into sensors VARiON®Plus 700 IQ, NitraLyt®Plus 700 IQ, AmmoLyt®Plus 700 IQ

## Ammonium electrode VARiON®Plus NH<sub>4</sub>

for mounting into sensors VARiON®Plus 700 IQ and AmmoLyt®Plus 700 IQ, measuring range: 0.1 - 2,000 mg/l NH<sub>4</sub>-N

## Potassium electrode VARiON®Plus K

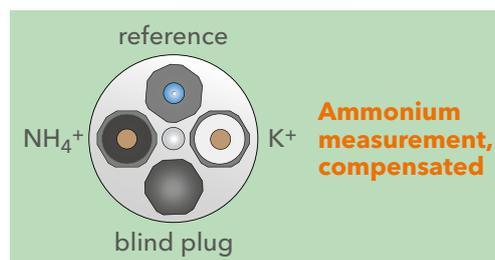
for mounting into sensors VARiON®Plus 700 IQ and AmmoLyt®Plus 700 IQ, measuring range: 1 - 1,000 mg/l K<sup>+</sup>

## Nitrate electrode VARiON®Plus NO<sub>3</sub>

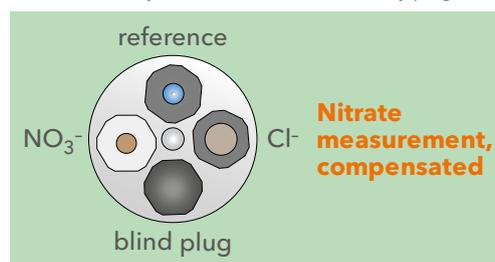
for mounting into sensors VARiON®Plus 700 IQ and NitraLyt®Plus 700 IQ, measuring range: 0.1 - 1,000 mg/l NO<sub>3</sub>-N

## Chloride electrode VARiON®Plus Cl<sup>-</sup>

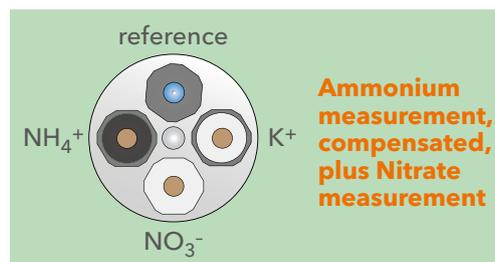
for mounting into sensors VARiON®Plus 700 IQ and NitraLyt®Plus 700 IQ, measuring range: 1 - 1,000 mg/l Cl<sup>-</sup>



(Possible) configuration of VARiON®Plus 700 IQ for ammonium measurement or AmmoLyt®Plus 700 IQ (without dummy plug)



(Possible) configuration of VARiON®Plus 700 IQ for nitrate measurement or NitraLyt®Plus 700 IQ (without dummy plug)



(Possible) configuration of VARiON®Plus 700 IQ for ammonium measurement dynamically compensated plus nitrate measurement (manual compensation possible)

## Ordering Information

Model	Description	Order No.
<b>VARiON® Ref</b>	Reference electrode for mounting into sensors VARiON®Plus 700 IQ/NitraLyt®Plus 700 IQ/ AmmoLyt®Plus 700 IQ	107042
<b>VARiON®Plus NH<sub>4</sub></b>	Ammonium electrode for VARiON®Plus 700 IQ and AmmoLyt®Plus 700 IQ/AmmoLyt®	107044
<b>VARiON®Plus NO<sub>3</sub></b>	Nitrate electrode for VARiON®Plus 700 IQ and NitraLyt®Plus 700 IQ/ NitraLyt®	107045
<b>VARiON®Plus K</b>	Potassium electrode for VARiON®Plus 700 IQ and for AmmoLyt®Plus 700 IQ	107046
<b>VARiON®Plus Cl</b>	Chloride electrode for VARiON®Plus 700 IQ and for NitraLyt®Plus 700 IQ	107047



Sets and accessories see brochure "Product Details" and website

Information about IQ SENSOR NET system see from page 48

Spectral nitrate/nitrite sensors see from page 32

Ammonium analyzer see from page 34

# UV-VIS and UV Spectral Sensors



UV-VIS spectral sensors represent a precise measuring technique with long-term stability and provide continuous recording of the selected parameters  $\text{NO}_3$  and  $\text{NO}_2$  in measuring cycles within minute range. The disturbance variables for optical measuring, such as turbidity/suspended solids, are eliminated by spectral recording. Thanks to integrated ultrasonic cleaning, a very long maintenance-free operation is possible.



Spectral sensor with multifunctional slide and Shock-Absorption-Rings



- Low maintenance due to integrated ultrasonic cleaning
- Measuring  $\text{NO}_2$ ,  $\text{NO}_3$  and more parameters
- No use of chemicals nor consumables



TD D2.10, D2.14, D2.26, D2.27

## Ordering Information

Model	Description	Order No.
<b>NitraVis® 701 IQ</b>	Spectral nitrate probe for the measurement in inlet/aeration with integrated ultrasonic cleaning, multifunctional slide and shock-absorption-rings, without connecting cable (order SACIQ separately)	481044
<b>NitraVis® 705 IQ</b>	Like NitraVis® 701 IQ, but for measuring in the outlet	481046
<b>NitraVis® 701 IQ TS</b>	Spectral nitrate and suspended solids probe for measuring in the inlet/aeration with integrated ultrasonic cleaning, multifunctional slide and shock-absorption-rings, without connecting cable (order SACIQ separately)	481045
<b>NitraVis® 705 IQ TS</b>	Like NitraVis® 701 IQ TS, but for measuring in the outlet	481047
<b>NitraVis® 701 IQ NI</b>	Spectral nitrate and nitrite probe for measuring in the inlet/aeration with integrated ultrasonic cleaning, multifunctional slide and shock-absorption-rings, without connecting cable (order SACIQ separately)	481056
<b>NitraVis® 705 IQ NI</b>	Like NitraVis® 705 IQ NI, but for measuring in the drain/outlet	481057
<b>NiCaVis® 705 IQ</b>	Spectral UV-VIS probe for measuring nitrate, $\text{COD}_{\text{tot}}$ , $\text{COD}_{\text{diss}}$ , TOC, BOD, DOC, $\text{SAC}_{\text{tot}}$ , $\text{SAC}_{\text{diss}}$ , and $\text{UVT}_{254}$ in the drain/outlet with integrated ultrasonic cleaning, multifunctional slide and shock-absorption-rings, without connecting cable (order SACIQ separately)	481052
<b>NiCaVis® 705 IQ TS</b>	Like NiCaVis® 705 IQ, but with TS	481053
<b>NiCaVis® 705 IQ TS Co</b>	like NiCaVis® 705 IQ TS, but with Color	481066
<b>NiCaVis® 701 IQ NI</b>	Spectral UV sensor for the measurement of nitrite, nitrate, $\text{COD}_{\text{tot}}$ , $\text{COD}_{\text{diss}}$ , TOC, BOD, DOC, $\text{SAC}_{\text{tot}}$ , $\text{SAC}_{\text{diss}}$ , $\text{UVT}_{254}$ in the inlet and in the aeration with integrated ultrasonic cleaning, multifunctional slide and shock-absorption-rings, without connecting cable (order SACIQ separately)	481054
<b>NiCaVis® 705 IQ NI</b>	Like NiCaVis® 701 IQ NI, but for the measurement in the drain/outlet	481055
<b>UV 701 IQ NOx</b>	Optical nitrate (NOx) sensor to measure higher concentration with integrated ultrasonic cleaning, multifunctional slide and shock-absorption-rings, without connecting cable (order SACIQ separately)	481034
<b>UV 705 IQ NOx</b>	Like UV 701 IQ NOx, but to measure low concentrations	481035
<b>NiCaVis® 705 IQ SF</b>	Spectral UV-VIS sensor (60 mm) for the measurement of Nitrate, COD, TOC, BOD, DOC, SAC, $\text{UVT}_{254}$ and TS in surface water bodies with integrated ultrasonic cleaning.	481058
<b>NiCaVis® 705 IQ SF Co</b>	like NiCaVis® 705 IQ SF, but with Color	481060
<b>NiCaVis® 705 IQ NI SF</b>	Spectral UV-VIS sensor (60 mm) for the measurement of Nitrate, Nitrite, COD, TOC, BOD, DOC, SAC, $\text{UVT}_{254}$ and TS in surface water bodies with integrated ultrasonic cleaning.	481059



For technical data please see datasheets D2.10 to D2.14 and D2.26

Alternatives and accessories see brochure "Product Details" and website

Information about IQ SENSOR NET system see from page 48

CarboVis® spectral sensors for determination of carbon parameters see page 38

Parameter \ Sensoren	NitraVis® 701 IQ	NitraVis® 705 IQ	NitraVis® 701 IQ TS	NitraVis® 705 IQ TS	NitraVis® 701 IQ NI	NitraVis® 705 IQ NI	NiCaVis® 705 IQ	NiCaVis® 705 IQ TS	NiCaVis® 705 IQ TS Co	NiCaVis® 701 IQ NI	NiCaVis® 705 IQ NI	UV 701 IQ NOx	UV 705 IQ NOx	NiCaVis® 705 IQ SF	NiCaVis® 705 IQ SF Co	NiCaVis® 705 IQ NI SF	CarboVis® 701 IQ	CarboVis® 705 IQ	CarboVis® 701 IQ TS	CarboVis® 705 IQ TS	CarboVis® 705 IQ TS Co	UV 701 IQ SAC	UV 705 IQ SAC	ColorVis 705 IQ	
Usable with System 2020 3G and 282/284	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
<b>Parameter</b>																									
TSS (optical)																									
Color (optical)																									
Nitrate (optical/spectral)																									
Nitrite (optical/spectral)																									
NO <sub>x</sub> (optical/spectral)†																									
COD (optical/spectral)																									
BOD (optical/spectral)																									
TOC (optical/spectral)																									
DOC (optical/spectral)																									
SAC <sub>254</sub> (optical/spectral)																									
UVT <sub>254</sub> (optical/spectral)																									

\* Gap size for inlet and outlet depends on concentrations  
 † Nitrite and Nitrate are included in the measured value

# Analyzers

The wet chemical analyzer **Alyza IQ NH<sub>4</sub>** provides precise results due to its revolutionary MultiPort Valve. Further on, the instrument requires extremely low amounts of liquids..

Ammonium measurement with Alyza IQ NH<sub>4</sub> (Indophenol method acc. to DIN 38 406) for wastewater plant effluent and river monitoring.



- Minimized reagent consumption and waste
- Extremely low maintenance
- No service contract required
- High accuracy at low measuring ranges



Alyza IQ NH<sub>4</sub> one-channel version with open measuring unit and visible photometer

## Ammonium Analyzer Alyza IQ NH<sub>4</sub>

For integration into the digital, modular and expandable IQ SENSOR NET

### Alyza IQ NH<sub>4</sub>-110

1-channel version with 2 measuring ranges; without pump

### Alyza IQ NH<sub>4</sub>-111

1-channel version with 2 measuring ranges; with 1 pump

### Alyza IQ NH<sub>4</sub>-112

2-channel version with 2 measuring ranges; with 2 pumps

## Ordering Information

Model	Description	Orderno.
<b>Alyza IQ NH<sub>4</sub>-110</b>	Ammonium analyzer Alyza IQ NH4 for the IQ Sensor Net, Measurement range 1 and 2, 1-channel w/o pump. Scope of delivery: Ammonium analyzer for indoor and outdoor use, spare parts for the first year, pre-installed 2 m SNCIQ and power cable (please order controller and reagents separately).	825010
<b>Alyza IQ NH<sub>4</sub>-111</b>	Ammonium analyzer Alyza IQ NH4 for the IQ Sensor Net, Measurement range 1 and 2, 1-channel with pump. Scope of delivery: Ammonium analyzer for indoor and outdoor use, spare parts for the first year, pre-installed 2 m SNCIQ and power cable (please order controller and reagents separately).	825011
<b>Alyza IQ NH<sub>4</sub>-112</b>	Ammonium analyzer Alyza IQ NH4 for the IQ Sensor Net, Measurement range 1 and, 2-channel with two pumps. Scope of delivery: Ammonium analyzer for indoor and outdoor use, spare parts for the first year, pre-installed 2 m SNCIQ and power cable (please order controller and reagents separately).	825012



For technical data please see datasheet D2.24

Reagents and accessories see brochure "Product Details" and website

Information about IQ SENSOR NET system see from page 48

Further analyzer see from page 61



Parameters

Dissolved Oxygen

pH/ORP

Conductivity

Turbidity/  
Suspended Solids

Nitrogen

Carbon: COD/  
TOC/DOC/SAC/  
BOD

Phosphate

Sludge Level

Color

Chlorine

# Carbon

Carbon parameters:  
COD, BOD, TOC, DOC, SAC, UVT



see also <https://www.xylymanalytics.com/en/parameters/chemical-oxygen-demand-cod>

and <https://www.xylymanalytics.com/en/parameters/biochemical-oxygen-demand-bod>

To measure the organic load of water, the parameters TOC, DOC, COD or BOD are used. The differences in these parameters show that these measurements are not identical and that the measured values therefore can not be the same.

Very often, SAC is used as a surrogate parameter. With the same sensor also UV transmission (UVT) can be measured and used as control parameter for disinfection plants.

## Fields of application:

- Municipal wastewater (treatment plant)
  - Inlet
  - Biological Cleaning
  - Outlet
- Centrate water
- Micropollutant removal
- Surface waters
- Disinfection plants

## COD

Chemical Oxygen Demand - contains all substances that can be dissolved by chemical oxidation. It is at the same time the conventional parameter for the calculation of wastewater charges.

## BOD

Biochemical Oxygen Demand - contains only the compounds that can be oxidated microbiologically.

## TOC

Total Organic Carbon - a measure for the total organically bound carbon.

## DOC

Dissolved Organic Carbon - dissolved organic share of TOC.

## SAC

The SAC (spectral absorption coefficient) is a parameter that can be determined relatively easily. Many organic compounds have characteristic UV absorption spectrums. The intensity of the light attenuation can, therefore, be correlated with the organic load.

This correlation is significant in measuring media with low variations of composition concerning color, solids and their optical characteristics. Wastewater, however, contains many substances with completely different optical characteristics. For each substance, a different correlation factor concerning the carbon content applies.

## UVT

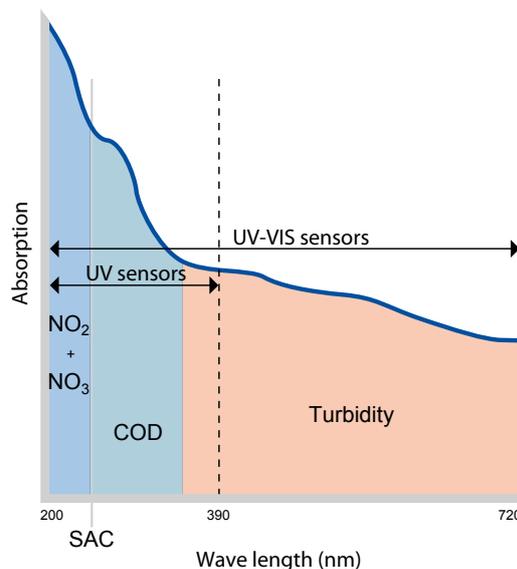
Additionally, UV transmission can be measured with the SAC sensor at 254 nm. UVT is particularly used to control disinfection plants.

Depending on the requirements, the turbidity can be compensated ( $UVT_{dis}$ ) or not ( $UVT_{tot}$ ).

## Spectral Online Sensors

The CarboVis® and NiCaVis® sensors measure the total spectrum range from ultraviolet to long wave visible light (200-720 nm; UV-VIS sensors) or in the ultraviolet range (200-390 nm; UV sensors). The measured values are determined from the high information content of the spectral data. The calculation is based on methods and characteristics that were achieved from a multitude of measurements and longtime analyses. The user can, therefore, select algorithms that are adapted to the measuring site (inlet, biological tank, outlet) having a high correlation with the basic parameter COD.

The spectral procedure has an additional advantage: the turbidity of the test sample, which affects optical measurements, is optimally compensated over a wide wavelength range. Moreover, the spectral measurement provides an optimal compensation of the influence of existing nitrate and nitrite for the COD measurement.



Example spectrum of UV-VIS sensor

# UV-VIS and UV Spectral Sensors



The chemical-free spectral measurement allows a precise determination of the COD, nitrate, nitrite and total suspended solids.

Due to the built-in ultrasonic cleaning system, a very long maintenance-free operation is possible. Accumulation of dirt and biofilm formation is gently but very effectively prevented in this manner.

High-tech materials such as titanium and peek ensure an easy use in almost all and even corrosive media.



Spectral sensor with multifunctional slide and Shock-Absorption-Rings



- Low maintenance due to integrated ultrasonic cleaning
- Measurement of COD, BOD and many more
- No reagents, no consumables



## Ordering Information

Model	Description	Order No.
<b>CarboVis® 701 IQ</b>	Spectral UV-VIS probe to measure COD <sub>tot</sub> , COD <sub>diss</sub> , TOC, BOD, DOC, SAC <sub>tot</sub> , SAC <sub>diss</sub> and UVT <sub>254</sub> in the inlet and the aeration with integrated ultrasonic cleaning, multifunctional slide and shock-absorption-rings, without connecting cable (order SACIQ separately)	481048
<b>CarboVis® 705 IQ</b>	Like CarboVis® 701 IQ, but for the measurement in the drain	481050
<b>CarboVis® 701 IQ TS</b>	Spectral UV-VIS probe to measure COD <sub>tot</sub> , COD <sub>diss</sub> , TOC, BOD, DOC, SAC <sub>tot</sub> , SAC <sub>diss</sub> , UVT <sub>254</sub> and suspended solids in the infeed and the stimulation with integrated ultrasonic cleaning, multifunctional slide and shock-absorption-rings, without connecting cable (order SACIQ separately)	481049
<b>CarboVis® 705 IQ TS</b>	Like CarboVis® 701 IQ TS, but for the measurement in the drain	481051
<b>CarboVis® 705 IQ TS Co</b>	Like CarboVis® 705 IQ TS, but with Color	481065
<b>NiCaVis® 705 IQ</b>	Spectral UV-VIS probe for measuring nitrate, COD <sub>tot</sub> , COD <sub>diss</sub> , TOC, BOD, DOC, SAC <sub>tot</sub> , SAC <sub>diss</sub> and UVT <sub>254</sub> in the drain/outlet with integrated ultrasonic cleaning, multifunctional slide and shock-absorption-rings, without connecting cable (order SACIQ separately)	481052
<b>NiCaVis® 705 IQ TS</b>	Like NiCaVis® 705 IQ, but with TS	481053
<b>NiCaVis® 705 IQ TS Co</b>	Like NiCaVis® 705 IQ TS, but with Color	481066
<b>NiCaVis® 701 IQ NI</b>	Spectral UV sensor for the measurement of nitrite, nitrate, COD <sub>tot</sub> , COD <sub>diss</sub> , TOC, BOD, DOC, SAC <sub>tot</sub> , SAC <sub>diss</sub> , UVT <sub>254</sub> in the inlet and in the aeration with integrated ultrasonic cleaning, multifunctional slide and shock-absorption-rings, without connecting cable (order SACIQ separately)	481054
<b>NiCaVis® 705 IQ NI</b>	Like NiCaVis® 701 IQ NI, but for the measurement in the drain/outlet	481055
<b>UV 701 IQ SAC</b>	Optical SAC and UVT sensor (254 nm) to measure higher concentrations with integrated ultrasonic cleaning, multifunctional slide and shock-absorption-rings, without connecting cable (order SACIQ separately)	481036
<b>UV 705 IQ SAC</b>	Like UV 701 IQ SAC, but to measure lower concentrations	481038
<b>NiCaVis® 705 IQ SF</b>	Spectral UV-VIS sensor (60 mm) for the measurement of Nitrate, COD, TOC, BOD, DOC, SAC, UVT <sub>254</sub> and TS in surface water bodies with integrated ultrasonic cleaning.	481058
<b>NiCaVis® 705 IQ SF Co</b>	Like NiCaVis® 705 IQ SF, but with Color	481060
<b>NiCaVis® 705 IQ NI SF</b>	Spectral UV-VIS sensor (60 mm) for the measurement of Nitrate, Nitrite, COD, TOC, BOD, DOC, SAC, UVT <sub>254</sub> and TS in surface water bodies with integrated ultrasonic cleaning.	481059



For technical data please see datasheets D2.11, D2.13, D2.15, D2.16 and D2.26

Alternatives and accessories see brochure "Product Details" and website

Information about IQ SENSOR NET system see from page 48

Spectral sensors for nitrogen see from page 32

Parameter	Sensoren																									
	NitraVis® 701 IQ	NitraVis® 705 IQ	NitraVis® 701 IQ TS	NitraVis® 705 IQ TS	NitraVis® 701 IQ NI	NitraVis® 705 IQ NI	NiCaVis® 705 IQ	NiCaVis® 705 IQ TS	NiCaVis® 705 IQ TS Co	NiCaVis® 701 IQ NI	NiCaVis® 705 IQ NI	UV 701 IQ NOx	UV 705 IQ NOx	NiCaVis® 705 IQ SF	NiCaVis® 705 IQ SF Co	NiCaVis® 705 IQ NI SF	CarboVis® 701 IQ	CarboVis® 705 IQ	CarboVis® 701 IQ TS	CarboVis® 705 IQ TS	CarboVis® 705 IQ TS Co	UV 701 IQ SAC	UV 705 IQ SAC	ColorVis 705 IQ		
Usable with System 2020 3G and 282/284	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
<b>Parameter</b>																										
TSS (optical)																										
Color (optical)																										
Nitrate (optical/spectral)																										
Nitrite (optical/spectral)																										
NO <sub>x</sub> (optical/spectral)†																										
COD (optical/spectral)																										
BOD (optical/spectral)																										
TOC (optical/spectral)																										
DOC (optical/spectral)																										
SAC <sub>254</sub> (optical/spectral)																										
UVT <sub>254</sub> (optical/spectral)																										

\* Gap size for inlet and outlet depends on concentrations  
 † Nitrite and Nitrate are included in the measured value

# Phosphate

## Precipitation Dosing and Outlet Monitoring



Phosphorus compounds - in particular orthophosphate  $\text{PO}_4^{3-}$  - are considered to be the limiting nutrients in most stagnant and flowing waters. An increase in their concentration caused by higher input (wastewater, soil erosion etc.) results directly in increasing eutrophication of the water with known effects such as increased growth of algae, oxygen depletion and even anoxia in the deeper regions, etc.. Hence, the elimination of phosphorus on wastewater treatment plants is very important.

### Fields of application:

- Municipal wastewater (wwtp)
  - Precipitation control
  - Effluent monitoring
- Surface water

see also <https://www.xylemanalytics.com/en/parameters/phosphate>



# Analyzer

The wet chemical analyzer **Alyza IQ PO<sub>4</sub>** provides precise results due to its revolutionary MultiPort Valve. Further on, the instrument requires extremely low amounts of liquids.

Precipitation control and outlet monitoring with the orthophosphate measurement of the Alyza IQ PO<sub>4</sub> (molybdate vanadate method or yellow method). It is connectable to IQ SENSOR NET Systems 2020 and 282/284 and provides 10 W to the IQ SENSOR NET.



- Minimized reagent consumption and waste
- Extremely low maintenance
- High accuracy at low measuring ranges



## Orthophosphate Analyzer Alyza IQ PO<sub>4</sub>

To be connected to the digital, modular, and expandable IQ SENSOR NET.



Alyza IQ PO<sub>4</sub> one channel version with open measuring unit and visible photometer



Alyza IQ PO<sub>4</sub> two channel version with covered measuring unit

### Alyza IQ PO<sub>4</sub>-111

1-channel version for measuring range 1

### Alyza IQ PO<sub>4</sub>-121

1-channel version for measuring range 2

### Alyza IQ PO<sub>4</sub>-112

2-channel version for measuring range 1

### Alyza IQ PO<sub>4</sub>-122

2-channel version for measuring range 2

## Ordering Information

Model	Description	Order No.
<b>Alyza IQ PO<sub>4</sub>-111</b>	PO <sub>4</sub> analyzer, 1-channel, with MR 1; incl. 2 m SNCIQ cable, reagent sets need to be ordered separately	825511
<b>Alyza IQ PO<sub>4</sub>-112</b>	as above, but 2-channel	825512
<b>Alyza IQ PO<sub>4</sub>-121</b>	PO <sub>4</sub> analyzer, 1-channel, with MR 2; incl. 2 m SNCIQ cable, reagent sets need to be ordered separately	825521
<b>Alyza IQ PO<sub>4</sub>-122</b>	as above, but 2-channel	825522



For technical data please see datasheet D2.25

Reagents and accessories see brochure "Product Details" and website

Information about IQ SENSOR NET system see from page 48

Further analyzer see from page 61

# Sludge Level Measurement

Objective, Reliable, Low Maintenance



The sludge level is the boundary of settled sludge to the projecting turbid or clear water, wherein the location of the sludge level is defined as the distance to the water surface (sludge level depth), or as distance from the tank bottom (sludge level).

The sludge level plays primarily a role in the area of wastewater treatment (pre-sedimentation, thickener and post-sedimentation), water treatment and also in the process analysis. The sensor can be used in clear, turbid and heavily polluted liquids with a high content of solids.

## Fields of application:

- Municipal and industrial wastewater
  - Optimization / control of the (primary) sludge extraction
  - The management of the return sludge
  - Monitoring of the settling behavior



see also <https://www.xylymanalytics.com/en/parameters/sludge-level>

# Digital IQ Sensor to Determine the Sludge Level



Digital ultrasonic sensor IFL 700 IQ



- Applicable for different tank designs
- Very easy commissioning
- Maintenance-free cleaning system
- Detailed presentation of sludge profile



## IFL 700 IQ

The IFL 700 IQ has a cleaning system of high quality materials such as titanium (shaft, sealed several times) and Grivory (scraper). Because of the technical design, this system is maintenance free. An annual replacement of seals or the scraper is not required. The cleaning cycle can be set individually in the system. The necessary cleaning frequency is automatically adjusted by the sensor.

## Ordering Information

Model	Description	Order No.
IFL 700 IQ	Digital ultrasonic sensor with automatic cleaning to measure the sludge level	481200



For technical data please see datasheet D2.17

Alternatives and accessories see brochure "Product Details" and website

Information about IQ SENSOR NET system see from page 48

Radio module see page 54

# Color

Continuous. APHA Hazen 2120.  
DIN EN ISO 7887



<https://www.xylymanalytics.com/en/company/news/iq-spectral-sensors-to-measure-color-continuously>



Color has always been an important parameter for water quality, and in the last years the demand for continuous color measurement has been constantly growing. The new WTW color sensors for the IQ SENSOR NET measure according to the standards DIN EN ISO 7887:2011, procedure C and APHA 2120 2018 (Hazen), procedure C.

Both are laboratory measurement methods. DIN EN ISO 7887:2011, procedure C prescribes a wavelength of 410 nm, while APHA 2120 2018 (Hazen), procedure C allows the wavelength to be freely selected. For this method, the WTW sensors offer the wavelengths of 340, 350, 390, 445, 455 and 465 nm.

#### Fields of application:

- Municipal wastewater (treatment plant)
  - Outlet
- Surface waters

# UV-VIS Spectral Sensors



## All in one

The reagent-free spectral measurement enables the monitoring of color in the effluent of the wastewater treatment plant or in surface waters.

Due to the turbidity compensation, the continuous measurement is reliable and highly accurate. In addition to pure color measurement, optionally also carbon, nitrate and total suspended solids can be determined too.

The built-in ultrasonic cleaning system guarantees a very long maintenance-free operation. Accumulation of dirt and biofilm formation is gently but very effectively prevented.

High-tech materials such as titanium and PEEK allow an employment even in corrosive media.



Spectral sensor with multifunctional slide and shock absorption rings



- Reliable and highly accurate
- Low maintenance due to integrated ultrasonic cleaning
- No reagents, no consumables



D2.26, D2.27

## Ordering Information

Model	Description	Order No.
<b>ColorVis 705 IQ</b>	Spectral UV-VIS sensor to measure Color, incl. integrated ultrasonic cleaning, for wastewater and surface waters	481067
<b>CarboVis® 705 IQ TS Co</b>	Like ColorVis 705, including Carbons and Total Suspended Solids, for wastewater	481065
<b>NiCaVis® 705 IQ TS Co</b>	Like ColorVis 705, including Nitrate, Carbons and Total Suspended Solids, for wastewater	481066
<b>NiCaVis® 705 IQ SF Co</b>	Like NiCaVis® 705 IQ TS Co, without TSS, for surface waters	481060



For technical data please see datasheets D2.26 and D2.27

Alternatives and accessories see brochure "Product Details" and website

Information about IQ SENSOR NET system see from page 48

Laboratory photometers, see „Lab & Field Instrumentation“ catalog

# Chlorine

## Free and Total Chlorine



Due to its chemical properties and its high reactivity, chlorine is very well suited for the disinfection of water and to avoid contamination with bacteria and pathogens. Chlorine in water occurs balanced depending on pH; at neutral pH mainly as hypochlorous acid (HClO). Hypochlorous acid is a strong oxidizing agent: its disinfecting effect is based on the irreversible aggregation of protein of viruses and bacteria - similar to the effect of heat exposure. When the pH value increases, the balance in the water moves to hypochlorite (ClO<sup>-</sup>), which reduces the disinfecting effect.

### Fields of application:

- Drinking Water Monitoring
- Pools & Thermal Baths
- Disinfection



see also <https://www.xylymanalytics.com/en/parameters/chlorine>

# Analog Sensors

## For free and total chlorine

The electrochemical chlorine sensors are developed for measurements in pools and drinking water. Directly connectable to the controller CI 298.



FCML 412 N



- Environmentally friendly - no use of chemicals
- Reliable - protection from contamination through a membrane
- Accurate - pH compensation of the measuring results



### FCML 412 N

for measurement of free chlorine

### TCML N

for measurement of total chlorine

## Ordering Information

Model	Description	Order No.
<b>FCML 412 N</b>	Chlorine electrode according to electrochemical principle, suitable for measurements of free chlorine in drinking water and pools. Measuring range: 0-2 mg/l, pH range 4-9, independent from pH value.	201187
<b>TCML N</b>	Chlorine electrode according to electrochemical principle, suitable for measurements of total chlorine in drinking water and pools. Measuring range: 0-2 mg/l.	201192



For technical data please see datasheet D7.01

Alternatives and accessories see brochure "Product Details" and website

Analog monitors see from page 62

Analog pH Electrodes see from page 16

# Analyzer

## Chlorine 3017M

Continuous and precise measurement of free and total chlorine according to the DPD method (ISO method 7393-2 and US EPA method 334.0).



Chlorine 3017M



- High accuracy of  $\pm 0.03$  mg/l or  $\pm 5\%$
- > 30 days unattended runtime
- Can be integrated into existing IQ SENSOR NET via MIQ/IC2



## Ordering Information

Model	Description	Order No.
<b>Chlorine 3107M</b>	Online analyzer for photometric measurement of free and total chlorine, according to colorimetric DPD Method (ISO & US EPA); outputs (selectable): 4 to 20 mA or RS 485 Modbus; range: 0-5 mg/l; sample inlet device not included;	860151



For technical data please see datasheet D7.05

Alternatives and accessories see brochure "Product Details" and website

Premounted panels for chlorine measurement see from page 64

Analyzer for turbidity measurement see from page 27

# IQ SENSOR NET

Digital. Modular. Flexible. Secure



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see also <https://www.xylenalytics.com/en/landingpages/iq-sensor-net>



# Fields of Application and Product Overview

## IQ SENSOR NET - the system for wastewater treatment plants and more applications

The digital and modular IQ SENSOR NET provides many unique advantages. Since 2001 our customers have enjoyed making the most out of the IQ SENSOR NET modular design. It enables you to easily expand the network with new members. This provides great flexibility and peace of mind that you are completely safe for all wastewater monitoring requirements in the future.

- Integrated overvoltage protection of all components (sensors, modules, cables)
- Reduce cost of installation with universal sensor connection and 2 wired cables rather than multiple power and output cables
- Intuitive design to operate and expand



At the beginning of your planning, make your decision between 3 systems:

	Network System 2020		Measuring Location System 282 / 284		Single Parameter Measuring Point System 281
	MIQ/TC 2020 3G	MIQ/MC3	DIQ/S 284	DIQ/S 282	DIQ/S 281
Connectable sensors	20	20	4	2	1
Displayable parameters	20	20	20	20	1
USB interface	✓	✓	✓	✓	✓
Ethernet interface	✓	✓	✓	✓	
System access via IQ WEB CONNECT	✓	✓	✓	✓	
Field bus connection	✓	✓	✓	✓	
Data memory	✓	✓	✓	✓	✓
IQ sensors with universal sensor connection	✓	✓	✓	✓	✓
MIQ modules	✓	✓	✓	✓	
DIQ modules			✓	✓	✓
Wireless communication	✓	✓	✓	✓	
Redundant controller	✓	✓			
Max. number of displays	3	3	1	1	1
Cable length	3 km	3 km	250 m	250 m	250 m
Oxygen <i>sensors see from page 11</i>	●	●	●	●	●
pH/ORP <i>probes see from page 15</i>	●	●	●	●	●
Conductivity <i>cells see from page 19</i>	●	●	●	●	●
Turbidity <i>sensors see from page 25</i>	●	●	●	●	●
Suspended solids <i>sensors see from page 24</i>	●	●	●	●	●
Nitrogen <i>probes see from page 30</i>	●	●	●	●	
Carbon <i>probes see from page 38</i>	●	●	●	●	
SAC/UVT <i>probes see from page 38</i>	●	●	●	●	
Phosphate <i>analyzer see from page 41</i>	●	●	●	●	
Sludge level <i>probes see from page 43</i>	●	●	●	●	●
	MIQ/TC 2020 3G	MIQ/MC3	DIQ/S 284	DIQ/S 282	DIQ/S 281
see page	52	55	56	56	58



Visual System overview see cover of this catalog.

All parameters (tabular design) see cover of this catalog.

System details (tabular design) see cover of this catalog.

Analog systems from page 62. ATEX from page 66.

# IQ Systems



## 1) IQ Sensor Network:

### System 2020 3G

- For up to 20 digital IQ sensors in any order
- Measuring network for large plants, BackUp controller function for higher operational safety
- Ethernet/LAN interface and integrated webserver for easy network connection
- Fast and easy software update and saving of log-book data, measured values and configurations for additional safety on a USB stick
- Up to 3 portable and clear displays even in direct sun light

## 2) Outstanding among the compact:

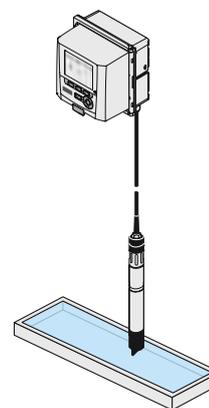
### System 282/284

- Multi-channel controller for up to 4 IQ sensors provides easy and low-cost expansion
- Up to 20 parameters can be visualized at the same time
- Perfectly suited to replace or add a single measuring point
- Simple Data transfer and download with USB stick at every controller
- Optional: Ethernet and RS 485 interface for network connection and fieldbus communication

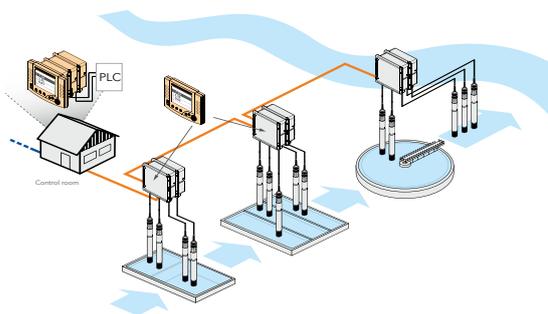
## 3) The single parameter measuring point:

### System 281

- Low-cost entrance into the digital measuring technique
- For the parameters pH/ORP, Cond, D.O., Turb, TSS and sludge level
- Stable, robust and reliable measuring technique

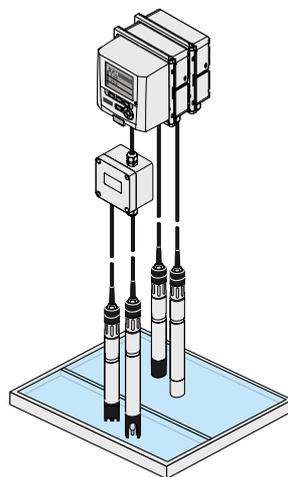


IQ System 281 with FDO® 700 IQ F



System 2020 with distributed mounting for up to 20 sensors

Product descriptions of single components see page 52



IQ System 284 with 4 connected IQ sensors (6 x mA, 6 x Relays, Ethernet interface for remote control as option)

Product descriptions of single components see page 56

Product descriptions of single components see page 58

Visual overview of systems see cover of this catalog.

# IQ Sensors



## One connection for all IQ sensors - via the universal SACIQ sensor cable

The standard version of high grade stainless steel is suitable for process and industry. All media contacting components of the seawater versions are made of titanium and plastic and are therefore extremely resistant to corrosion.

For the following parameters WTW offers IQ sensors:

Oxygen (D.O.)	from page 12
pH/ORP	from page 15
Conductivity	from page 19
Turbidity	from page 24
Suspended Solids	from page 25
Nitrogen: NH <sub>4</sub> , NO <sub>3</sub> , NO <sub>2</sub> , NO <sub>x</sub>	from page 30
Carbon: COD/TOC/DOC/BOD	from page 38
SAC/UVT	from page 38
Sludge Level	from page 42
Color	from page 44



# IQ Analyzer

## Alyza IQ - the wet-chemistry revolution is now

The Alyza IQ convinces with extremely low reagent and waste consumption and an easy handling. It can be connected to Systems 2020 and 282/284.

WTW offers IQ analyzers for the following parameters:

Orthophosphate	from page 41
Ammonium	from page 34



Daily reagent consumption of TresCon®, P 700 IQ and Alyza IQ

# IQ SENSOR NET System 2020



## A flexible system - reliable results

The IQ SENSOR NET is of modular design and grows with your demands.

## Application areas and system concept

The IQ SENSOR NET is a network for analytical measurements. It is in worldwide operation since 2001, constantly evolving to meet customer needs. It is used for inlet and outlet monitoring, as well as for controlling the activated sludge process.

Due to its modular design, the system can be expanded any time by adding further modules and sensors in any order.



## The basic equipment



Terminal/Controller MIQ/TC 2020 3G

- Large display with user-friendly buttons in all weather conditions
- Feature enhancements by addition of specific modules
- Low installation costs by stackmounting without cable



## Terminal/Controller MIQ/TC 2020 3G

Terminal/Controller for the IQ SENSOR NET System 2020, portable operating unit with large display, robust buttons and USB interface; connectible to every MIQ module.



USB interface of Terminal/Controller MIQ/TC 2020 3G



## Modules for Power Supply

**MIQ/PS** or **MIQ/24V** for the power supply via wide range or 24 V (AC and DC). The power supply modules that operate the IQ SENSOR NET are available in two models: The wide range power supply MIQ/PS for 100–240 VAC and the low-voltage power supply MIQ/24V for 24 VAC/24 VDC.

By the ability to stack these in the IQ SENSOR NET, you can quickly and easily dock these modules onto already existing ones - anywhere in the system. Therefore, additional mounting hardware is not required.

- Individually adaptable to the energy requirement
- Up to 6 modules can be installed in one system
- Simple mounting
- Mount anywhere in the system, stacked without additional mounting hardware
- Integrated overvoltage protection ensures high operational safety in any weather



## Ordering Information

Model	Description	Order No.
<b>MIQ/TC 2020 3G</b>	Terminal/Controller for the IQ SENSOR NET System 2020	470020
<b>MIQ/PS</b>	Power supply module for voltage supply with wide range power supply	480004
<b>MIQ/24V</b>	Power supply module for voltage supply with 24 VAC or 24 VDC input voltage	480006



For technical data please see datasheets D1.01 and D1.03

Alternatives and accessories see brochure "Product Details" and website

Analog systems from page 65

ATEX from page 66

## The Sensors and Parameters

All common parameters from inlet to outlet. The sensors can be connected with a universal cable to any module.

For the following parameters WTW offers

IQ sensors:

Oxygen (D.O.)  
pH/ORP  
Conductivity  
Turbidity  
Suspended Solids  
Nitrogen: NH<sub>4</sub>, NO<sub>3</sub>, NO<sub>2</sub>, NO<sub>x</sub>  
Carbon: COD/TOC/DOC/BOD  
SAC/UVT  
Sludge Level  
Color

from page 12  
from page 17  
from page 19  
from page 24  
from page 25  
from page 30  
from page 38  
from page 38  
from page 43  
from page 44

IQ analyzer:

Orthophosphate from page 41  
Ammonium from page 34

# The Modules

Expand the functions of your system by adding specific modules.



- Can be combined in any configuration thanks to the modular system - no matter where, when or how
- Simple installation - the stacking technique of the IQ SENSOR NET saves additional installation materials, work effort and time
- Integrated overvoltage protection ensures high operational safety in any weather

## Modules for System Expansion

The expansion modules are required to connect the IQ sensors as well as for the branching of the system.

**MIQ/JB:** passive module „Junction Box“ (MIQ/JB) with four identical IQ SENSOR NET connections

**MIQ/JBR:** Module with active repeater function to prepare the signal for very long cable distances

**MIQ/WL PS:** Radio module for the wireless connection in your IQ SENSOR NET



Connections of modules for system expansion, analog outputs, analog inputs, and power supply; with at least two IQ SENSOR NET connections

## Modules with Analog Outputs

The analog output modules can be combined as required, up to a max. of 48 output channels (total of current outputs and relays in the system 2020).

**MIQ/R6** with 6 relays

**MIQ/CR3** with 3 current outputs and 3 relays

**MIQ/C6** with 6 current outputs

## Module with Analog Inputs

With the module **MIQ/IC2** you will expand the system by two current inputs and you will also allow the connection of separate sensors and analyzers into the IQ SENSOR NET.



Antenna of radio module MIQ/WL PS

## Modules with Digital Outputs

**MIQ/3-MOD** for MODBUS RTU connection

**MIQ/3-PR** for PROFIBUS DP connection



Connections of digital output modules MIQ/3-MOD and MIQ/3-PR incl. USB interface (left)

## Other MIQ Modules

**MIQ/CHV PLUS:** Magnetic valve module for automatic compressed air cleaning, controlled by relays of the IQ SENSOR NET.

**MIQ/EKB:** To avoid trip hazards, you can also route the connecting cable of the IQ SENSOR NET underground. To extend these, you can use our ground cable terminal box MIQ/EKB.



Connections of magnetic valve module MIQ/CHV PLUS with two pressured air connectors (left)

## Controller MIQ/MC3

The usage of a MIQ/MC3 controller provides reliable and direct data transfer to the PLC via the fieldbuses PROFIBUS DP, Modbus RTU (RS 485), Ethernet/IP, Modbus TCP or PROFINET (RJ 45).

By the **MIQ/MC3**, the MIQ/TC 2020 3G becomes a portable Terminal, which can be connected to any module. You also benefit from Controller BackUp function and full remote access with IQ WEB CONNECT.



Connections of Controller MIQ/MC3 with Ethernet and USB interface (left)

## Terminal IQ

Additional, cost-effective display and operating unit.



Terminal IQ

## Ordering Information

Model	Description	Order No.
<b>MIQ/JB</b>	Modul IQ/Junction Box, for system branching, for system 2020 and 282/284, 4 free IQ SENSOR NET connections	480008
<b>MIQ/WL PS SET</b>	2 MIQ/WL PS radio modules, preconfigured as master and slave, ready to operate	480025
<b>MIQ/R6</b>	Module IQ / relay 6 with 6 relay outputs (output module, analog)	480013
<b>MIQ/CR3</b>	Module IQ / current relay 3, with 3 power and 3 relay outputs output module (analog)	480014
<b>MIQ/C6</b>	Module IQ / Current 6 with 6 power outputs (output module, analog)	480015
<b>MIQ/3-MOD</b>	Module IQ with MODBUS RTU / RS 485 connection (output module, digital)	471026
<b>MIQ/IC2</b>	Module IQ / input Current 2 with 2 inputs for 0/4 - 20 mA signals (input module)	480016
<b>MIQ/CHV PLUS</b>	Module IQ/Cleaning Head Valve for automatic relay or IQ SENSOR NET controlled compressed air cleaning (relay and compressed air supply, external)	480018
<b>MIQ/MC3</b>	System 2020 controller, for up to 20 sensors, w/ automatic air pressure compensation, USB and RJ45 interface (ethernet)	471020
<b>MIQ/MC3-MOD</b>	Like MIQ/MC3, but including MODBUS RTU/RS 485 interface	471022
<b>MIQ/MC3-PR</b>	Like MIQ/MC3, but including PROFIBUS-DP/RS 485 interface	471023
<b>Terminal IQ</b>	Terminal without controller function for the IQ Sensor Net System 2020 (MC3 or MIQ/TC 2020 3G required)	470021



For technical data please see datasheets D1.05, D1.04, D1.06 and D1.02

Alternatives and accessories see brochure "Product Details" and website

DIQ modules for the system 282/284 from page 57

Analog systems from page 62

# IQ SENSOR NET System 282/284



**for small and mid-sized wastewater treatment plants**

Controller for small and mid-sized wastewater treatment plants including USB-interface and internal data logger – up to 4 sensors, all parameters, available anytime.

## The Controllers



DIQ/S 282-CR3



- Up to 4 sensors connectable at once
- USB interface and data logger
- Available anytime via internet



### DIQ/S 282

Controller **for up to two sensors**, available in five different versions: with three current outputs, with PROFIBUS interface, with MODBUS interface, with Ethernet interface for remote control or with Ethernet interface including protocols PROFINET, Modbus TCP and Ethernet/IP. Every version is also available with 24 V AC/DC supply.

### DIQ/S 284

Controller **for up to four sensors**, available in five different versions: with six current outputs, with PROFIBUS interface, with MODBUS interface, with Ethernet interface for remote control or with Ethernet interface including protocols PROFINET, Modbus TCP and Ethernet/IP. Every version is also available with 24 V AC/DC supply.

## Ordering Information

Model	Description	Order No.
DIQ/S 282-CR3	Controller for up to 2 IQ sensors, with 3 Relays, with 3 mA-outputs, 100 ... 240 VAC	472110
DIQ/S 284-CR6	Controller for up to 4 IQ sensors, with 6 Relays, with 6 mA-outputs, 100 ... 240 VAC	472130

Version with field bus protocols and digital interfaces see data sheets D1.07 and D1.08.



For technical data please see datasheets D1.07 and D1.08

Alternatives and accessories see brochure "Product Details" and website

IQ SENSOR NET System 2020 see page 52

Analog systems from page 62

# The Sensors and Parameters

All common parameters from inlet to outlet. The sensors can be connected with a universal cable to any module.

For the following parameters WTW offers

**IQ sensors:**

Oxygen (D.O.) from page 12  
 pH/ORP from page 15  
 Conductivity from page 19  
 Turbidity from page 24  
 Suspended Solids from page 25

Nitrogen: NH<sub>4</sub>, NO<sub>3</sub>, NO<sub>2</sub>, NO<sub>x</sub> from page 30  
 Carbon: COD/TOC/DOC/BOD from page 38  
 SAC/UVT from page 38  
 Sludge Level from page 43

**IQ analyzer:**

Orthophosphate from page 41  
 Ammonium from page 34

# The Modules

Modules for the flexible expansion of the systems 281 and 282/284 by additional measuring points or functions - compact design



DIQ/JB



- Simple installation - electrical connection and mounting can be done with terminal strips and simple screws
- The flexible system expansion allows you to upgrade at a later date
- Its compact design saves space and cost



## DIQ/JB

to connect a second or remote IQ sensor

## DIQ/CHV

for the automatic relay-controlled compressed air cleaning

## MIQ/...

All MIQ modules can be used with the system 282/284 (except: MIQ/MC3(-...)) and MIQ/3-...) (see from page 54):

MIQ/PS	MIQ/WL PS SET	MIQ/IC2
MIQ/24V	MIQ/R6	MIQ/CHV PLUS
MIQ/JB	MIQ/CR3	MIQ/EKB
MIQ/JBR	MIQ/C6	

## Ordering Information

Model	Description	Order No.
DIQ/JB	Dual IQ/Junction Box	472005
DIQ/CHV	Dual IQ/Cleaning Head Valve	472007



For technical data please see datasheet D1.10

Alternatives and accessories see brochure "Product Details" and website

IQ SENSOR NET System 281 page 58

Analog systems from page 62

# IQ SENSOR NET System 281



## Digital and easy

For pH, dissolved oxygen, conductivity, turbidity, TSS and sludge level

## Great technology at low price

Get decades of experience from WTW and use the established technology. With the excellent cost-performance ratio you can save time, work and money!

## 1 Controller. 1 Sensor.

Get started into the digital world and stay sustainable with the state-of-the-art technique. No preamplifier, reliable data transfer, automatic sensor recognition!

## The Controller



DIQ/S 281



- Cost advantage - one controller, one sensor
- Digital – for reliable data transfer
- WTW quality – proven, robust, durable
- HART and Modbus RTU versions available



## DIQ/S 281

The digital controller DIQ/S 281 for pH/ORP, D.O., Turbidity, TSS, conductivity or sludge level enables a sensor change at any time; cable length of up to 250 m.

## Ordering Information

Model	Description	Order No.
<b>DIQ/S 281-CR2</b>	Dual IQ/System 281, Universal monitor for the connection of 1 digital IQ sensor (pH/ORP, D.O., conductivity or turbidity), with 2 analog outputs (0/4-20 mA) and 2 relays, 100 ... 240 VAC	472103
<b>DIQ/S 281-CR2/24V</b>	Like the DIQ/S 281, but for 24 V AC/ DC voltage supply	472104
<b>DIQ/S 281-MOD</b>	Dual IQ/System 281, Universal monitor for the connection of 1 digital IQ sensor with MODBUS connection, 2 x Relays	472105
<b>DIQ/S 281-HART</b>	Universal monitor for the connection of 1 digital IQ sensor with HART connection	472106



For technical data please see datasheet D1.09

Alternatives and accessories see brochure "Product Details" and website

Analog systems from page 62



Controllers and sensors for explosive areas see page 66

## The Sensors and Parameters

### for pH/ORP measurement

*SensoLyt® 700 IQ* see page 15

*SensoLyt® electrodes* see page 15

### for Dissolved Oxygen measurement

*TriOxmatic® 700 IQ* see page 12

*FDO® 700 IQ* see page 11

*FDO® 701 IQ* see page 10

### for Conductivity measurement

*TetraCon® 700 IQ* see page 20

### for Turbidity measurement

*VisoTurb® 700 IQ* see page 24

### for Suspended Solids measurement

*ViSolid® 700 IQ* see page 25

### for Sludge Level measurement

*IFL 700 IQ* see page 43

## The Modules

The modules most frequently used in practical applications are the DIQ/CHV

see page 57

and, in the case of sludge level measurement, the MIQ/WL PS (see page 56).

see page 54



# Analyzer

Highly accurate measuring



In the wastewater treatment industry, there has been an increased need for on-line measuring analyzers justifying their market presence next to less expensive in-situ sensor systems. Especially when it comes to high-precision water analyses, for example in the monitoring of the discharge in sewage treatment plants requiring automatic calibrations and/or adjustments as well as standard DIN methods for analysis, analyzers are necessary.

#### Fields of application:

- Wastewater Treatment Plant
  - Precipitation control
  - Wastewater treatment plant effluent monitoring
- Surface Water

# Alyza IQ Series

The new wet-chemical **Alyza IQ** delivers precise results thanks to the revolutionary MultiPort Valve and requires only extremely small quantities of reagent and sample.



- Minimized reagent consumption and waste
- Extremely low maintenance effort
- Service contract optional - it's your choice
- High accuracy at low measuring ranges



Alyza IQ PO<sub>4</sub> two-channel version with covered measuring unit



## Alyza IQ PO<sub>4</sub>

for the measurement of orthophosphate  
*see from page 41*

## Alyza IQ NH<sub>4</sub>

for the measurement of ammonium  
*see from page 34*

## Further Analyzers



Turb 2120



Chlorine 3017M

## Turb PLUS 2000 Series

for the monitoring of turbidity in drinking water  
*see from page 27*

## Chlorine 3017 M

for the measurement of chlorine in drinking water  
*see from page 47*

# Analog Monitors

pH/ORP, Conductivity, D.O. or Chlorine  
in numerous applications



The analog monitor series 298 for pH, conductivity, oxygen as well as for the chlorine measurement offers an enormously high operational reliability based on their galvanically isolated outputs. The clear menu structure along with the easy to read LCD display ensures a maximum operating and user friendliness.

The specially coated drinking water panels are pre-assembled and ready-to-operate. The sensors for free or total chlorine and the sensor combinations in case of a multi-parameter panel are freely selectable. Additional options such as analog/digital Outputs or flow monitoring are dependent on the selected panel.

## Fields of application:

- Drinking Water Monitoring
- Swimming pools & Thermal Baths
- Textile manufacturing & dyeing processes
- Pure & ultrapure water
- Electroplating
- Landfills & Leachates
- Paper & Pulp Industry
- Fishfarming/Aquaculture
- Wastewater Treatment Facilities

# Series 298 Single-parameter Field Monitor

Analog transmitter to directly connect analog pH/ORP electrodes, chlorine electrodes, conductivity cells and oxygen sensors with an outstanding price/performance ratio for a versatile application.



pH 298



- User-friendly and effective thanks to easy operation
- Safe operation due to the galvanically isolated outputs



## pH 298

for low-impedance pH measurement, automatic temperature compensation with NTC, Pt100 or Pt1000

*analog pH electrodes see from page 16*

## LF 298

suitable for numerous conductivity measuring cells due to different measuring ranges and cell constants

*analog conductivity measuring cells see from page 21*

## Oxi 298

with compressed air compensation and complete sensor monitoring

*analog D.O. sensors see from page 13*

## Cl 298

to measure free or total chlorine

*analog chlorine electrodes see from page 47*

## Ordering Information

Model	Description	Order No.
<b>pH 298 NTC</b>	Analog controller to measure pH/ORP, 230V and NTC	191230
<b>pH 298 Pt100</b>	Analog controller to measure pH/ORP, 230V and Pt100	191232
<b>pH 298 Pt1000</b>	Analog controller to measure pH/ORP, 230V and Pt1000	191234
<b>Oxi 298 NTC</b>	Analog controller to measure oxygen, 230V and NTC	291230
<b>Oxi 298 Pt1000</b>	Analog controller to measure oxygen, 230V and Pt1000	291234
<b>LF 298 NTC</b>	Analog controller to measure conductivity, 230V and NTC	391230
<b>LF 298 Pt1000</b>	Analog controller to measure conductivity, 230V and Pt1000	391234
<b>Cl 298 Pt1000</b>	Analog controller to measure chlorine, 230V and Pt1000	801254

*24V versions available upon request*



For technical data please see datasheet D3.01

Alternatives and accessories see brochure "Product Details" and website

Analog sensor technology see parameter chapters starting from page 13



EX monitors see from page 67

# Panels with Analog Monitors

## Single-parameter System CI 298/P

Pre-mounted on specially coated panel to measure free or total chlorine

### Monitors

CI 298 with integrated data memory, 2 current outputs, 2 relays and Modbus in robust aluminium housing



- Sanitary and well-structured
- Environmentally friendly - no use of chemicals
- Integrated PID control

### Electrode with flow cell

Order FCML 412 N or TCML N electrode (see page 47) separately; electrodes and flow cell match perfectly



### Flow control monitoring (optional)

To continuously monitor the upstream flow of the electrode; the flow rate is visualized on the display as a signal and can be transmitted via Modbus

### Dosing valve

for optimum flow adjustments

### Pressure reducer

0 ... 16 bar with integrated temperature sensor



CI 298/P

## Ordering Information

Model	Description	Order No.
CI 298/P - 230 VAC	Ready to operate measuring panel to measure free or total chlorine, analog monitor 2 current outputs and MODBUS interface, with automatic temperature compensation (Pt1000), 230 VAC	801260
CI 298/P Flow - 230 VAC	Like above, but with FlowControl to monitor the flow volume	801261



For technical data please see datasheets D3.01, D7.01, D7.03

Configuration of alternatives and accessories brochure "Product Details"

Analog sensor technology see parameter chapters starting from page 13



EX monitors see from page 67

# MULTILINE 1000 Multi-parameter System

With up to 16 individually configurable measuring channels, the terminal MULTILINE 1000 is a very flexible measuring system for drinking water analysis. The system is pre-configured on a wall mounting panel and ready to use. Simply connect and start measuring: Drinking water measuring panel comes with a flow system, pressure reducer, dosing ball valve, completely pre-assembled cable and with a water-repellent panel. Connections with DN10 and optionally:

## pH measurement

(SenTix® ML 70 *see page 17*)



## ORP measurement

(SenTix® ML ORP *see page 17*)

## Chlorine measurements

amperometric;  
free chlorine - low pH dependency (pH 4-9) (FCML 412 N *see page 47*) or total chlorine (TCML N *see page 47*)

- Multi-parameter system for measurement of pH/ORP, D.O. conductivity, turbidity, free or total chlorine
- Intuitive menu navigation
- Excellent price-performance ratio
- No chemical consumables needed - environmentally friendly



## Turbidity measurement

with white light, without ultrasonic cleaning (Turb 2000),  
with white light and ultrasonic cleaning (Turb 2020);  
with IR light, without ultrasonic cleaning (Turb 2100),  
with IR light and ultrasonic cleaning (Turb 2120) *see page 27*

## Conductivity measurement

(LR ML *see page 21*)

## Flow detector

(with pre-mounted impeller)



Drinking water panel with basic equipment and all options (orange)

## Ordering Information

Model	Description	Order No.
<b>MULTILINE 1000 230VAC</b>	Multi-parameter monitor to connect up to any 16 sensors, power supply 230 VAC	480200
<b>MULTILINE 1000 115VAC</b>	Like above, but with 115 VAC	480201
<b>Drinking water panel</b>	ready-to-use panel to measure pH, ORP, Cond, Chlorine and Turbidity (Turb 2000); X: with or without flow; yyyy: coding dependent on parameter selection; details see price list or drinking water flyer	8X-yyyyy



For technical data please see datasheets D7.01 to D7.04

Configuration of alternatives and accessories brochure "Product Details"

Analog sensor technology see parameter chapters starting from page 13

Analyzer see from page 60

# ATEX Instrumentation

For explosive areas



For measurements in explosive atmospheres (EX area), WTW offers the complete EX measuring equipment with sensors, EX-compliant accessories, EX-transmitter, isolated amplifier and certificates.

*EX pH/ORP Armatures and Combination Electrodes*

*see page 16*

*EX Conductivity Measuring Cells*

*see page 20*

#### **Fields of application:**

- Zone 1 IIB
- Zone 1 IIC
- Inlet
- Channels
- Pumping station



see also [www.xylymanalytics.com/en/products/process-controllers-and-sensors/atex-controller-and-sensor](http://www.xylymanalytics.com/en/products/process-controllers-and-sensors/atex-controller-and-sensor)

# EX monitors

The EX compliant monitor accepts the EX versions of the proven pH and conductivity sensors SensoLyt® and TetraCon®. Besides a clear display with color backlight, the monitor is equipped with 1 or 2 current outputs. Additionally, the monitor convinces with its operational capability in the temperature range of -20 °C ... 65 °C.



- EX certified
- Color backlighting
- For high ambient temperatures



## EX monitor for pH

for pH measurements

*analog pH electrodes see page 20*

## EX monitor for Cond

for conductivity measurements

*analog conductivity measuring cells see page 20*

### Ordering Information

Model	Description	Order No.
<b>EX monitor pH-0</b>	pH transmitter with 1 analog current output	109444EX
<b>EX monitor pH-1</b>	pH transmitter with 2 analog current outputs	109445EX
<b>EX monitor LF-0</b>	Conductivity transmitter with 1 analog current output	300944EX
<b>EX monitor LF-1</b>	Conductivity transmitter with 2 analog current outputs	300945EX



*For technical data please see datasheet D3.01*

*Alternatives and accessories see brochure "Product Details" and website*

*Isolated amplifier see below*

*Analog monitors see from page 62*

# Isolated amplifier

The isolated amplifier supplies the EX compliant monitor with auxiliary voltage and transfers the measured value. It can be connected directly to the PLC or as 24V version to the MIQ/IC2 of the IQ SENSOR NET.



- Maximum safety
- Secure separation and isolation of input, output and auxiliary power



### Ordering Information

Model	Description	Order No.
<b>Isolated amplifier</b>	Isolated amplifier to power the EX-transmitter in an intrinsically safe way, power supply 90 ... 253V, explosion protection II (1) G [Ex ia Ga] IIC.	109446EX
<b>Isolated amplifier Opt. 336</b>	Same, but with supporting power supply 24 VAC/DC	109447EX



*For technical data please see datasheet D3.01*

*Alternatives and accessories see brochure "Product Details" and website*

*EX monitors see above*

*Analog monitors see from page 62*

# Samplers

Stationary, portable or wall-mounted



Sampling in wastewater treatment plants or process technology is of crucial importance to guarantee comparability and comply with legal and operational requirements. The first work step to determine chemical, physical or biological parameters is the sampling process - no matter if portable or wall mounted.

#### Fields of application:

- Sewage Treatment
- Municipal Sewerage Systems
- Water Protection Control

see also [www.xylymanalytics.com/en/products/process-controllers-and-sensors/samplers](http://www.xylymanalytics.com/en/products/process-controllers-and-sensors/samplers)



# Our unit types



PB-S

## Stationary sampler

Whether time- or event-controlled: The stationary samplers can be installed at any measuring point. Due to the robust stainless steel housing, the **PB-S** is particularly resistant and takes your important samples in all weather conditions. This means that nothing stands in the way of standard-compliant sampling.



- Highly accurate sample volume
- Standardised sampling
- Uniform operation in all units
- Time-, quantity-, event-proportional or manual sampling



PB-W

## Sampler for wall mounting

For wall mounting, the **PB-W** is ideal for simple applications with its large and quickly exchangeable collection containers.

The compact and lightweight housing makes mounting a child's play.

## Portable sampler

As an alternative to stationary samplers, the **PB-M** offers unique carrying comfort due to its lightweight design and handy housing. With its modern operation and vacuum technology, this promises carefree sampling. Ideal for sampling in inlets and outlets of small and medium-sized wastewater treatment plants, outdoor facilities, as well as for spot and official monitoring.



PB-M

## Ordering Information

Model	Description	Order No.
<b>PB-S/1</b>	Sampler 230 V/50 Hz, with stainless steel housing, with 1 x 52.5 pt. (25 l) PE sample container	503225
<b>PB-S/R12</b>	Sampler 230 V/50 Hz, with stainless steel housing, with 12 x 6.1 pt. (2.9 l) PE sample container	503228
<b>PB-S/R24</b>	Sampler 230 V/50 Hz, with stainless steel housing, with 24 x 2.1 pt. (1 l) PE sample container	503230
<b>PB-W/230V</b>	Compact sampler 230 V (50/60 Hz) for wall mounting	503200
<b>PB-W/115V</b>	Compact sampler 115 V (50/60 Hz) for wall mounting	503201
<b>PB-M-S/1</b>	Version with 1 x 13 l collection container (PE)	503250
<b>PB-M-L/R24</b>	Version with 24 x 1 l sample bottles (PE)	503280
<b>LG/65/PB-M</b>	Battery charger IP 65 for PB-M	503371



For technical data please see datasheet D5.01, D5.03, D5.04

Alternatives and accessories see brochure "Product Details" and website

Information about IQ SENSOR NET see from page 48

Monitoring parameters (tabular design) see cover of this catalog.

# Accessories

## IQ SENSOR NET and further Process Instrumentation



For the IQ SENSOR NET, WTW offers a wide range of mounting accessories. From channel over tank to pipe installation - from wall over rail to floor mounting. Besides ready-to-go sets, we also provide accessories as single scopes to enable any kind of individual demand for sensor and controller/module mounting.

Further mounting equipment for drinking water and other analog sensors are also available.

### Fields of application:

- Mounting:
  - Channel
  - Basin
  - Pipe
- Mounting:
  - Wall
  - Handrail
  - Floor

see also [www.xylymanalytics.com/en/products/accessories](http://www.xylymanalytics.com/en/products/accessories)



# Accessories for the IQ SENSOR NET System



## Sensor Mounting

Extensions and holders

## Controller/Module Mounting

Sunshields and mounting kits

## Cable

Sensor and connection cables

## Ready-to-go Sets

To mount up to 3 sensors including controller/module



Sensor holder EH/U 170 with SACIQ-7,0

Sensor holder EH2/U 170 with 2 x SACIQ-7,0

Sun shield SSH/IQ

## Ordering Information

Model	Description	Order No.
<b>Sensor Mounting: Extensions and holders</b>		
UA 55	Universal extension assembly (incl. handle and set of seals) for sensors 650, 690 and 70X (IQ), length: 317 mm (12.48 in)	109260
UA 130	Universal extension assembly (incl. handle and set of seals) for sensors 650, 690 and 70X (IQ), length: 1067 mm (42.01 in)	109261
EH/U 170	Sensor holder for 1 Sensor 650, 690 and 70X (IQ) to a swing mounting assembly	109320
EH2/U 170	Sensor holder for 2 Sensors 650, 690 and 70X (IQ) to a swing mounting assembly	109323
EH/W 170	Sensor holder for 1 Sensor 650, 690 and 70X (IQ) for direct wall mounting of UA armatures	109274
<b>Controller/Module Mounting: Sun shields and mounting kits</b>		
SD/K 170	Sun shield for outdoor installation of junction boxes or an IQ SENSOR NET module and monitors	109284
MR/SD 170	Mounting kit for attaching sun shields to pipes	109286
SSH/IQ	Sun shield for mounting of IQ SENSOR NET modules and monitors	109295
PMS/IQ	Kit for panel mounting of IQ SENSOR NET modules and monitors	480048
THS/IQ	Kit for top hat rail mounting of IQ SENSOR NET modules and monitors	480050
ADA/D-SUB	D-SUB connection for Profibus and Modbus connections of IQ SENSOR NET modules and monitors	902888
<b>Sensor and connection cables</b>		
SACIQ-1,5	Cable to connect an IQ sensor, 1,5 m length	480040
SACIQ-7,0	Cable to connect an IQ sensor, 7 m length	480042
SACIQ-15,0	Cable to connect an IQ sensor, 15 m length	480044
SACIQ-20,0 SW	Cable to connect an IQ sensor, 20 m length, seawater application	480045
SNCIQ-50	Connection cable for the IQ SENSOR NET, per meter	480046V
SNCIQ-100	Connection cable for the IQ SENSOR NET, 100 m	480068
<b>Ready-to-go Sets to mount up to 3 sensors including controller/module</b>		
IN/SET1	Installation set for 1 Sensor 650, 690 and 70X (IQ), incl. mounting stand, sensor holder, sun shield	109304
IN/SET2	Installation set for 2 Sensors 650, 690 and 70X (IQ), incl. mounting stand, sensor holder, sun shield	109305
IN/SET3	Installation set for 3 Sensors 650, 690 and 70X (IQ), incl. mounting stand, sensor holder, sun shield	109306



further accessories and alternatives see brochure "Product Details" and website

Information about IQ SENSOR NET system see from page 48

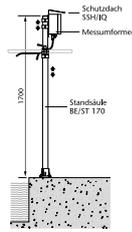
Sensors see from page 11



Accessories for EX area see brochure "Product Details"

## Mounting Stands

From wall over rail to floor mounting



BE/ST 170

## Floaters

For fluctuating water levels



Float S 200

## Fixtures

For pendulum and swing holders, without stands



Swivel fixture BE/R 170-D

## Chain and Shackle

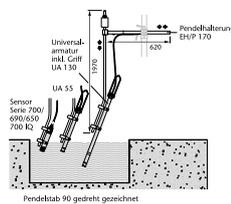
For individual solutions



CH/SO

## Swing, Pendulum and Clamp Holders

To mount sensors and holders



EH/P 170

## Mounting Equipment for 60 mm Sensors

For spectral and sludge level sensors



Holding Device VIS Set/EH

## Cleaning Accessories

Cleaning Air Box (Pressured air cleaning) and spare parts



Cleaning head CH

## Junction Boxes

To connect analog sensors to the IQ SENSOR NET



KI/pH-MIQ/S

## Ordering Information

Model	Description	Order No.
<b>BE/ST 170</b>	Vario floor mounting stand, incl. universal joint fixture and brackets for sun shield	109280
<b>BE/ST 170-R</b>	Vario pipe mounting stand, incl. universal joint fixture and brackets for sun shield	109281
<b>BE/ST 170-M</b>	Vario wall mounting stand, incl. universal joint fixture and brackets for sun shield	109283
<b>S 200</b>	Float for mounting sensor if water level fluctuates	108540
<b>BE/M 170</b>	Masonry fixture installation of swing or pendulum mounting assembly directly on the basin edge or on top of a wall	109276
<b>BE/R 170-D</b>	Swivel/pivot clamp fixture for mounting of a swing or pendulum mounting assembly directly to basin railing	109279
<b>S/CH</b>	Shackle for chain fitting	505123
<b>CH/SO</b>	Chain per meter	505124
<b>EH/F 170-1,5</b>	Swing mounting assembly, incl. chain, boom: 1.5 m/4.9 ft	109272
<b>EH/F 170-2,5</b>	Swing mounting assembly, incl. chain, boom: 2.5 m/8.1 ft	109273
<b>EH/W 172</b>	Wall mounting for 60 mm sensors	109361
<b>EH/WB</b>	Sensor carrier for 60 mm sensors	109362
<b>Cleaning Air Box - 230 VAC</b>	Air compressor for pressured air cleaning of sensors, 230V	480019
<b>CH</b>	Cleaning head to air pressure clean 40 mm sensors, incl. 15 air pressure tubes	900107
<b>KI/pH-MIQ/S</b>	Connection box for high impedance pH/ORP electrodes to IQ SENSOR NET	505544
<b>KI/LF-0,4/MIQ</b>	Connection box for conductivity cells with NTC to IQ SENSOR NET, cell constant: 0.475 cm <sup>-1</sup>	505572



further accessories and alternatives see brochure "Product Details" and website

Information about IQ SENSOR NET system see from page 48

60 mm Sensors: Spectral - page 28 Sludge - page 42



Accessories for EX area see brochure "Product Details"

## Retractable Armatures

For pipe installation, enables sensor removal during operation



Retractable armature

## Flow Cells

For measurements in the bypass



VIS FT-1

## Flow Assemblys

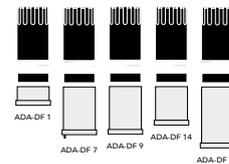
For pipe installation, without sensor removal during operation



EBST 700-DU/ND

## Adapters

Needed for usage of flow cells and vessels



## Ordering Information

Model	Description	Order No.
<b>WA 700/10</b>	Retractable armature for measurements in pipelines, 40 mm sensors, removal during operation, 10 bar	480100
<b>WA 700/2</b>	Retractable armature for measurements in pipelines, 40 mm sensors, removal during operation, 2 bar	480102
<b>ESS-WA 700/VA</b>	Stainless steel (1.4571) weld-in socket for retractable armatures	480106
<b>ADA-WA 1</b>	Adapter for retractable armatures for pH/ORP, conductivity, D.O., turbidity and TSS	480108
<b>ADA-DW 2</b>	Adapter for retractable armatures for TriOxmatic® 690/70X and TetraCon® 700	480110
<b>D 700/N</b>	Flow cell for multi-parameter measurements (D.O., pH/ORP, conductivity, T)	203745
<b>VIS FT-1</b>	Flow cell for spectral UV and UV/VIS sensors	480080
<b>EBST 700-DU/5N</b>	Flow assembly for measurements in PVC pipelines, for sensors 650, 690, 70X (IQ)	203753
<b>ESS 700 VA/N</b>	Weld-in socket, for measurements in Stainless steel (1.4571) pipelines, for use with sensors 650, 690, 70X (IQ)	203755
<b>ADA-DF 1</b>	Adapter for flow cell for measuring of pH/ORP, conductivity and D.O.	203761
<b>ADA-DF 7</b>	Adapter for flow cell for measuring of turbidity	203773
<b>ADA-DF 9</b>	Adapter for flow cell for measuring of pH/ORP, D.O., conductivity, turbidity and suspended solids	203777



further accessories and alternatives see brochure "Product Details" and website

Information about IQ SENSOR NET system see from page 48

Analog Sensors see from page 13



Accessories for EX area see brochure "Product Details"

# Accessories for further Process Instrumentation

## Drinking Water Flow Cells

For pH/ORP, conductivity or chlorine

## Mounting equipment for Analog Sensors

For pH process electrodes and conductivity measuring cells

## Ordering Information

Model	Description	Order No.
<b>D-CL</b>	Flow cell for chlorine sensors for drinking water	201150
<b>D 222/3</b>	Flow cell for pH, conductivity and ORP sensors for drinking water	401995
<b>MZ WIS 40 ST 44</b>	Weld-in socket fitting (straight), stainless steel (1.4404), for installation of CHEMtrac 830 M	108533
<b>CHEMtrac 830 M</b>	Manual retractable housing, stainless steel (1.4404), changing without process interruption; for pH electrodes	109237
<b>ADA-G 1"</b>	V4A-stainless steel (1.4571) muffle for analogue Conductivity measuring cells	303202
<b>EST-LRD</b>	V4A-stainless steel (1.4571) weld-in socket for installation of LRD 01 or LRD 325	303209



further accessories and alternatives see brochure "Product Details" and website

Conductivity measurements see from page 18

pH/ORP measurements see from page 14

Chlorine measurements see from page 46

# WTW – IQ SENSOR NET Highlights



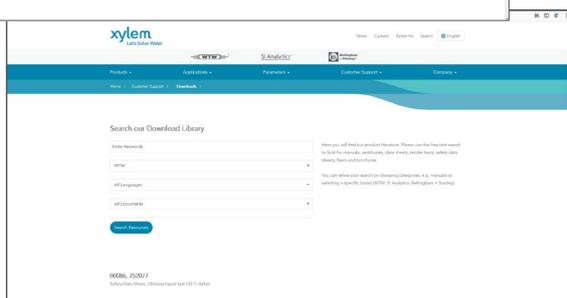
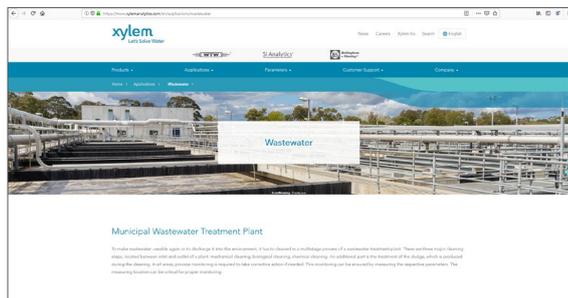
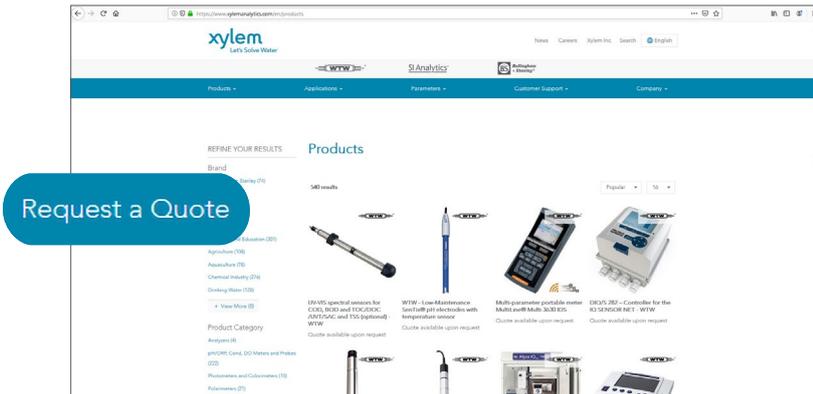
2001	<b>IQ SENSOR NET</b>	the <b>multi-parameter</b> measuring system offers unlimited possibilities for online measurements
	<b>VisoTurb®</b> and <b>ViSolid®</b>	<b>turbidity</b> and <b>TSS</b> sensors with their revolutionary ultrasonic cleaning system give "low-maintenance" a completely new meaning
	<b>SensoLyt® 700 IQ</b>	digital <b>pH</b> Sensor
2002	<b>AmmoLyt® 700 IQ</b>	enables reliable Online measurement of <b>Ammonium</b> directly in the process
	<b>TetraCon® 700 IQ</b>	digital 4 electrodes sensor
2003	<b>NitraLyt® 700 IQ</b>	is a perfect supplementary <b>nutrient parameter</b> (Nitrate) for Online measurement
2004	<b>NitraVis®, CarboVis®</b> and <b>NiCaVis®</b>	spectral "in-situ" Online sensors for <b>Nitrate</b> , <b>Carbon</b> and <b>TSS</b> measurement
2005	<b>System 182</b>	compact 2 channel transmitter
2006	<b>VARiON® 700 IQ</b>	<b>ammonium</b> and <b>nitrate</b> multisensor with automatic compensation of interference ions
	<b>MIQ/Blue PS</b>	module for <b>radio connection</b>
2007	<b>FDO® 700 IQ</b>	<b>optical D.O.</b> sensor
2008	<b>MIQ/TC 2020 XT</b>	terminal/controller with <b>USB</b> and dual-processor function
	<b>System 182 XT-4</b>	perfect for up to 4 sensors
2012	<b>UV-VIS sensors - Next generation</b>	CarboVis®, NitraVis® and NiCaVis® sensors with the <b>optical design</b> , integrated <b>ultrasonic cleaning</b> technology and high-tech materials
	<b>IFL 700 IQ</b>	interface level measurement for <b>sludge</b> management
2013	<b>P 700 IQ</b>	<b>PO4</b> analyzer
2014	<b>DIQ/S 181</b>	controller for 1 sensor
	<b>MIQ/MC3</b>	controller with <b>PROFINET</b>
2015	<b>MIQ/WL PS</b>	module for <b>radio transmission</b>
2016	<b>DIQ/S 282/284</b>	system for up to 4 sensors
	<b>IQ WEB CONNECT</b>	free-of-charge remote access to IQ SENSOR NET
2017	<b>MIQ/TC 2020 3G</b>	Terminal with <b>color display</b>
2019 2020	<b>Alyza IQ</b>	new generation of wet chemical analyzers for <b>NH<sub>4</sub></b> and <b>PO<sub>4</sub></b>
2021	<b>System 281</b>	Modern controller for one single sensor
	<b>Terminal IQ</b>	Cost-effective display and operation unit
	<b>Color Sensors</b>	For continuous <b>color measurement</b>
2022	<b>System 281 MOD</b>	Extension with Modbus protocol
	<b>System 281 HART</b>	Extension with HART protocol



# www.xylymanalytics.com

## News around the clock

Our new website is designed in the Xylem colors and summarized under the web address www.xylymanalytics.com. This website brings together several Xylem Analytics key lab & field brands: WTW, SI Analytics and Bellingham + Stanley. We are presenting you a broader product range with additional brands as well as service and information about the application of our products. Directly request a quote for your required products. We are adding and optimizing its content continuously.



### New products

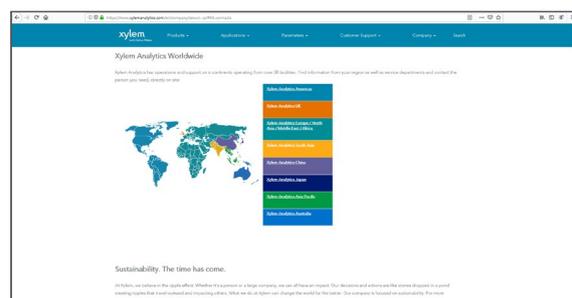
Take a look: Here you can find new products, developments, innovative measurement and analysis instruments, helpful accessories, useful system extensions, special sets, and much more.

### Applications

On our website you will find the solution to your measurement tasks in research, analysis and quality control - and additionally many application.

### Downloads

Are you looking for an operating manual, application report, or do you need a certificate? Everything is provided for you in our download area.



# WTW – Laboratory and Field Instrumentation

The product portfolio includes products for multi-parameter measurement, pH, ORP, ion-selective, oxygen, conductivity, BOD and depletion measurement, as well as meters for photometry, turbidity measurement and colony counts.

Particularly interesting for the analysis and monitoring of wastewater (in municipal wastewater treatment plants) and the perfect complement to WTW's process instrumentation:

## Are you interested?

Please order the new WTW catalog "Lab & Field Instrumentation"!



## photoLab<sup>®</sup> SERIES



- OptRF - the revolutionary optical reagent free measurement of COD, nitrate and nitrite
- Photometric tasks for routine to special applications from water to wine
- PC-driven color measurement for quality control - from CIE to Gardner

### OptRF - faster than the fastest digestion

#### The photoLab<sup>®</sup> 7000 series



## OxiTop<sup>®</sup>



### More than just BOD

#### OxiTop<sup>®</sup>-IDS for all applications of respirometric measurements

Regardless whether aerobic or anaerobic examinations, because of its versatility the OxiTop<sup>®</sup>-IDS is suited for both. All heads can be used independently from any meter for normal BOD measurements between one and seven days.

#### The new measuring head OxiTop<sup>®</sup>-i

Respirometric BOD secure, easy, convenient: direct input of sample volume, display of the curve at the head and call-up of interim values.



## Portable Meters

### The digital MultiLine® IDS series and the proven analog ProfiLine family

There are meters for digital and for conventional sensors. All of them are equipped with a closed, easy to clean silicone keyboard that can easily be operated while wearing gloves.

The **MultiLine® IDS** series are digital multi-parameter meters for pH, ORP, dissolved oxygen, conductivity and turbidity. They have a color graphic display, a large memory, two USB inputs, up to three universal sensor inputs and support GLP compliant measurements through automatic documentation.

Furthermore, the digital portable meters are ready for wireless communication between meter and sensor.

The **ProfiLine** portable meters work with analog sensors. They are available as single or multi-parameter meters for simultaneous measurement of two parameters. Basic models are designed for routine measurement without data logging functions, but there are also meters available with memory and USB interfaces for data transfer to laptop or PC.



- Robust and water-proof
- Single and multi parameter instruments available
- Up to 3 parameters simultaneously
- IDS wireless ready
- Also available as a set with various sensors

## SI Analytics – Process Electrodes

We offer a wide range of electrodes especially for the challenges in industrial processes (e.g. pharma, cosmetics and detergents) as well as food and beverage productions:

Our electrodes are customized to the requirements of your applications and are known for their quality, reliability and long durability. We fulfill this demand by manufacturing our electrodes with the greatest precision and a great measure of care following the most modern manufacturing methods in Germany. Every single electrode must meet the strict quality guidelines of our final inspection.

**Are you interested?** Please order your copy of the SI Analytics catalog „Process Equipment“!



27.00

Are you interested in  
**Level Measurement** or  
further Application?



We're here to help:

+49 881 1830

[Info.WTW@xylem.com](mailto:Info.WTW@xylem.com)

## Our Brands

AANDERAA®

BS Bellingham  
+ Stanley®

-ebro®

mjkl®

O-I Analytical®

SI Analytics®

SonTek®

TIDELAND

WTW®

YSI®

Xylem is a leading global water technology company committed to developing innovative technology solutions to the world's water and critical infrastructure challenges.

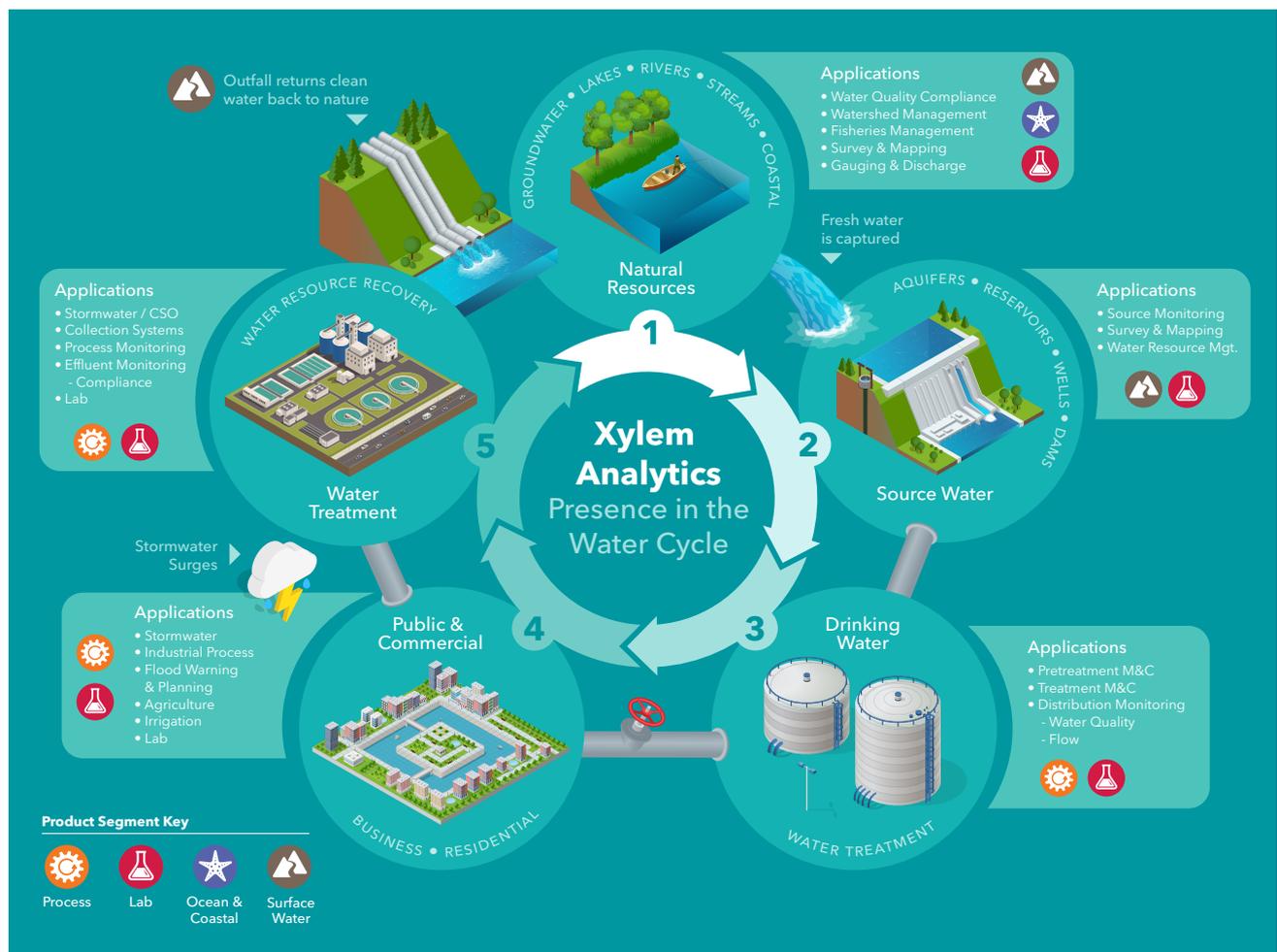
To learn more about all of Xylem's brands, visit [www.xylem.com/en-us/brands/](http://www.xylem.com/en-us/brands/)

# Xylem Analytics

## Capabilities of Proven Brands

Xylem's analytics business is an expanding family of long-established, leading brands for quantitative and qualitative analysis of samples. Our commitment to our customers is to provide them with the best tools available to solve their measurement challenges in processes, in the field, the laboratory or wherever they may be.

While serving a wide range of industries including agriculture, energy, source water, wastewater, drinking water, groundwater, R&D, ocean monitoring, food & beverage, life sciences and more, we have an extended depth of product offerings and applications expertise in four key industries **Wastewater**, **Ocean/Coastal**, **Surface Water** and **Food & Beverage**.



see also [www.xylemanalytics.com/en/company/about-us](http://www.xylemanalytics.com/en/company/about-us)

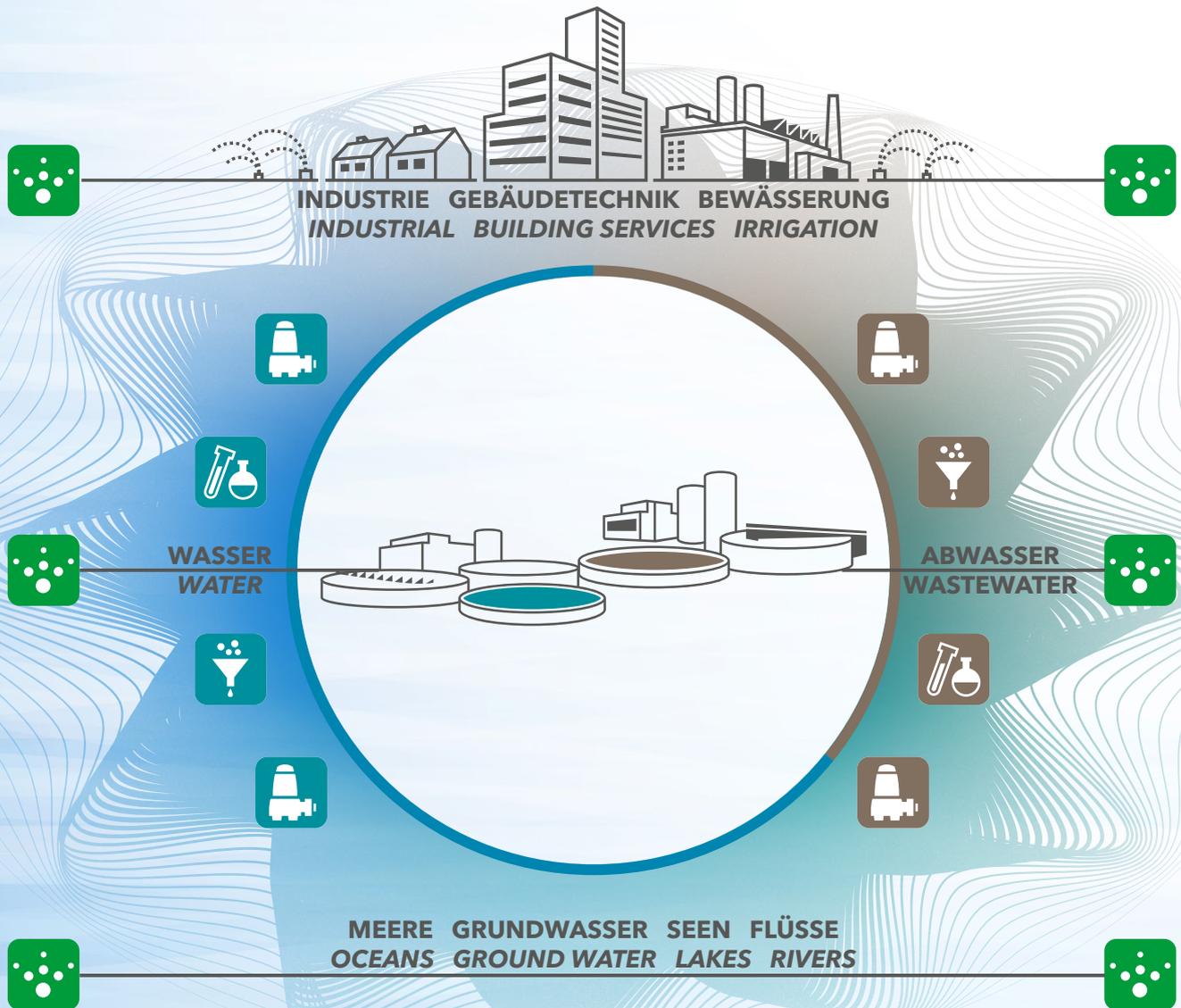


# Water Cycle

## Xylem provides the right solutions

Xylem offers intelligent and innovative system solutions for all water challenges. With our premium brands we are focusing on water and wastewater for **Transport, Treatment, Analyzing and Monitoring**. Let's solve water together. Xylem has the answers for your needs, your requirements and your questions.

Talk to us!



### INDUSTRIAL:

Processing water for heating, cooling, cleaning, circulating and mixing to industrial facilities. Key markets include: oil and gas, mining, food and beverage, pulp and paper; aquaculture; marine; car washes.

### COMMERCIAL:

Water supply and HVAC heating and cooling systems to commercial properties, including apartment buildings, retail stores, hospitals and hotels.



Transport  
Transport



Transport  
Transport

## Water & Wastewater Transport

Xylem pump systems draw water from sources and transport it to treatment plants.

Xylem pumps move water from treatment plants to storage facilities, and on through the distribution system to consumers and end users.

Once clean water has served human needs, Xylem pumps transport wastewater to treatment stations.



Behandlung  
Treat



Behandlung  
Treat

## Water & Wastewater Treatment

Xylem filtration and disinfection technologies clean and purify water before it enters the system.

Xylem biological, filtration and disinfection treatment equipment removes contaminants from wastewater before it is reused (e.g., for irrigation, industrial cooling, recharging groundwater aquifers) or returned to the environment.



Analyse  
Analyze



Analyse  
Analyze

## Analysis & Measurement Instrumentation

Xylem analytical systems test and ensure water quality.

Xylem analytical systems measure water quality and monitor the environment.



Netzwerk  
Network



### RESIDENTIAL:

Water supply and HVAC heating and cooling systems to homes.

### AGRICULTURE:

Irrigation to farms, golf courses and turf applications.



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108540	72	480014	55	Alyza IQ PO <sub>4</sub> -121	41	NiCaVis® 705 IQ SF Co	45
109100	16	480015	55	Alyza IQ PO <sub>4</sub> -122	41	NiCaVis® 705 IQ TS	32
109114	16	480016	55	AmmoLyt®Plus 700 IQ	30	NiCaVis® 705 IQ TS	38
109115	16	480018	55	BC-Turb/DW	27	NiCaVis® 705 IQ TS Co	38
109115EX	16	480019	72	BE/M 170	72	NiCaVis® 705 IQ TS Co	45
109119	16	480025	55	BE/R 170-D	72	NitraLyt®Plus 700 IQ	30
109125	16	480040	71	BE/ST 170	72	NitraLyt® 701 IQ	32
109126	16	480042	71	BE/ST 170-M	72	NitraVis® 701 IQ NI	32
109170	15	480044	71	BE/ST 170-R	72	NitraVis® 701 IQ TS	32
109171	15	480045	71	CarboVis® 701 IQ	38	NitraVis® 705 IQ	32
109195	16	480046V	71	CarboVis® 701 IQ TS	38	NitraVis® 705 IQ NI	32
109195EX	16	480048	71	CarboVis® 705 IQ	38	NitraVis® 705 IQ TS	32
109233	17	480050	71	CarboVis® 705 IQ TS	38	Oxi 298 NTC	63
109234	17	480068	71	CarboVis® 705 IQ TS Co	38	Oxi 298 Pt1000	63
109237	73	480080	73	CarboVis® 705 IQ TS Co	45	Oxi ML 41	13
109239	17	480100	73	CH	72	PB-M-L/R24	69
109260	71	480102	73	CHEMtrac 830 M	73	PB-M-S/1	69
109261	71	480106	73	Chlorine 3107M	47	PB-W/115V	69
109272	72	480108	73	CH/SO	72	PB-W/230V	69
109273	72	480110	73	CI 298/P - 230 VAC	64	pH 298 NTC	63
109274	71	480200	65	CI 298/P Flow - 230 VAC	64	pH 298 Pt100	63
109276	72	480201	65	CI 298 Pt1000	63	pH 298 Pt1000	63
109279	72	481034	32	Cleaning Air Box - 230 VAC	72	PL 80-120pH	17
109280	72	481035	32	ColorVis 705 IQ	45	PL 80-225pH	17
109281	72	481036	38	D 222/3	73	PL 81-120 pH VP	17
109283	72	481038	38	D 700/N	73	PL 82-225pHT VP	17
109284	71	481044	32	D-CL	73	PMS/IQ	71
109286	71	481045	32	DIQ/CHV	57	S 200	72
109295	71	481046	32	DIQ/JB	57	SACIQ-1,5	71
109304	71	481047	32	DIQ/S 281-CR2	58	SACIQ-7,0	71
109305	71	481048	38	DIQ/S 281-CR2/24V	58	SACIQ-15,0	71
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191232	63	481055	38	EH/W 170	71	Sensolyt® PtA	16
191234	63	481056	32	EH/W 172	72	Sensolyt® PtFA	16
201150	73	481057	32	EH/WB	72	Sensolyt® SE	16
201187	47	481058	32	ESS 700 VA/N	73	Sensolyt® SEA	16
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201642	12	481060	38	EX monitor LF-1	67	SenTix®ML ORP	17
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# Xylem Watermark

## Improves Access to Water and Education on Water Issues

Committed to our mission. Xylem Watermark, our corporate citizenship and social investment program, has a twofold mission: provide and protect safe water resources for communities in need, and educate people about water issues. In a world where more than 650 million people lack access to water, and 2.4 billion lack improved sanitation\*, we're using our expertise and technologies to make a difference.

### Focused on urgent needs.

We work to create measurable results in three key areas:

- School and community projects, providing safe water, sanitation, and hygiene (WASH) education to students, teachers and families
- Disaster response, delivering water in the aftermath of emergencies
- Disaster risk reduction, securing water in vulnerable areas

### Involving our employees.

We amplify the impact of Watermark through our employee engagement program. Their volunteer work and financial contributions advance our sustainable solutions.

Make your mark.

To learn more about Watermark, visit [xylemwatermark.com](http://xylemwatermark.com)



\*Source: UNICEF/WHO

## General Information

1. Special versions of instruments on request.
2. Accessories and spare parts for older models - please make separate inquiry.
3. In order to avoid our customers having to pay a surcharge for small-volume purchases, we supply our consumables in practical minimum ordering quantities.

### Technical alterations

The technical description corresponds to the current products. Alterations because of technical improvements are possible.

### Illustrations

We draw your attention to the fact that the illustrations are intended to clarify certain points. There may therefore be discrepancies between the illustrations and the written text.

### Liability

We accept no responsibility for printing errors, writing errors or mistakes in the translation.

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# Xylem |'zīləm|

- 1) The tissue in plants that brings water upward from the roots;
- 2) a leading global water technology company.

We're a global team unified in a common purpose: creating advanced technology solutions to the world's water challenges. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. Our products and services move, treat, analyze, monitor and return water to the environment, in public utility, industrial, residential and commercial building services settings. Xylem also provides a leading portfolio of smart metering, network technologies and advanced analytics solutions for water, electric and gas utilities. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise with a strong focus on developing comprehensive, sustainable solutions.

For more information on how Xylem can help you, go to [www.xylem.com](http://www.xylem.com)



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