



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

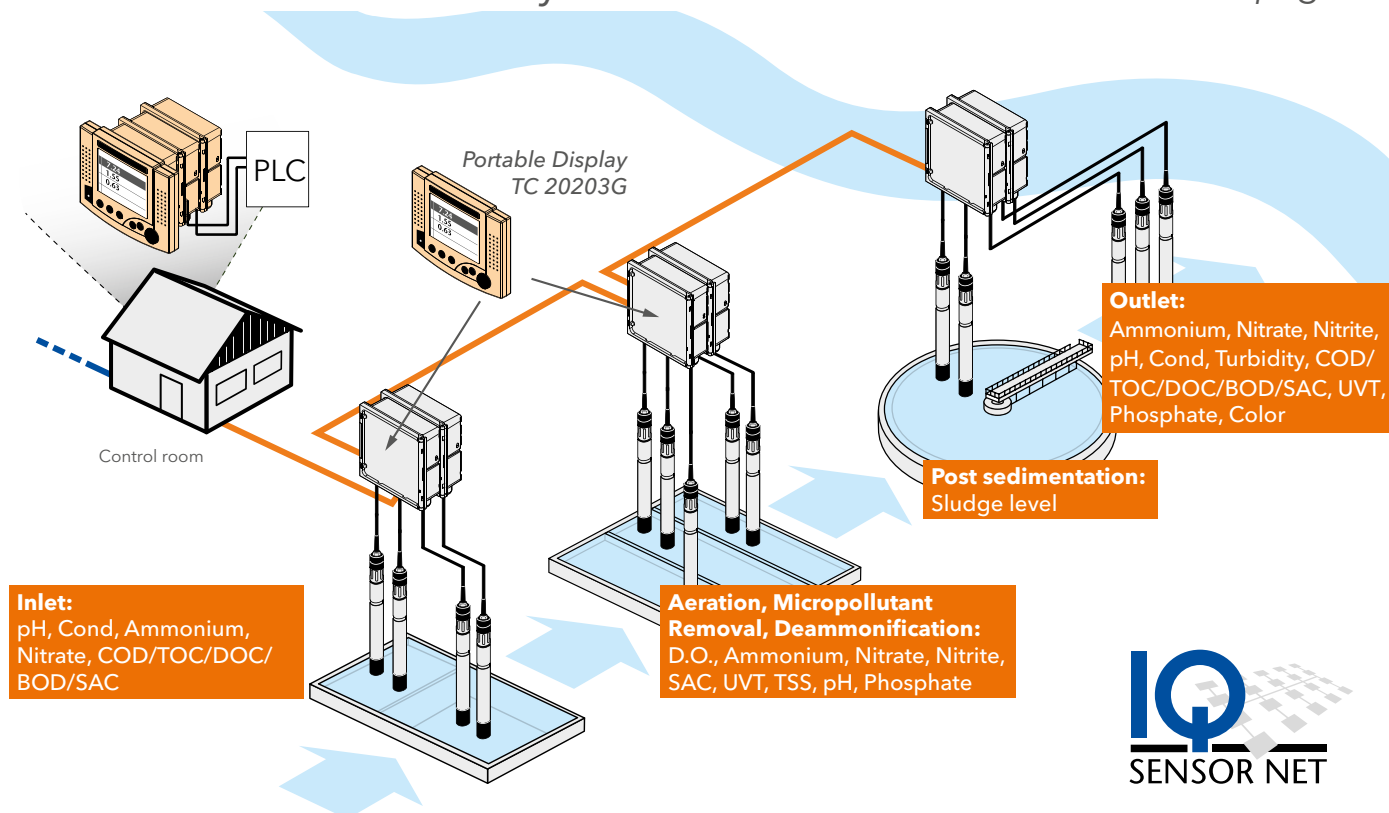


a xylem brand

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

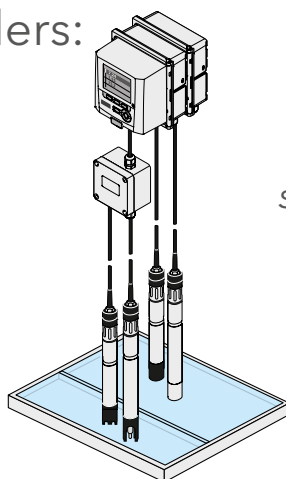
① IQ Sensor Network: System 2020

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

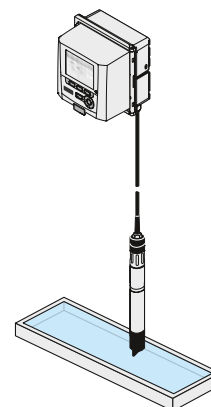
Ammonium & Nitrate measurement with ISE sensors (e.g. VARiON® Plus 700 IQ)

- Easy and fast matrix adjustment
- Up to 2,000 mg/l NH₄
- Extremely robust electrodes
- Compensation with K and Cl

see page 30

③ The Single Parameter Measuring Point: System 281

see from page 58



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	VARION® 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 ₄	Alyza IQ NH ₄
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°	**	**
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)										■	■		■	■		■†			
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/TC203G	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
Module features																			
Power supply																			
100...240 V AC	■																		
24 V AC/DC		■																	
Analog outputs/relays																			
6 x 0/4...20 mA			■																
6 x relays				■															
3 x 0/4...20 mA, 3 x relays					■														
Analog inputs																			
2 x 0/4...20 mA						■													
Interfaces																			
MODBUS							■								■				
PROFIBUS								■								■			
USB							✕	■	✕	■		■		■	■	■			
Ethernet/LAN (Profinet, Ethernet/IP, Modbus TCP)														■	■	■			
Intra-system connectivity																			
4 available IQSN connectors									■										
4 available IQSN connectors including signal amplification for large distances										■									
Radio transmission											■								
Controller																			
Controller/Terminal (with display)												■							
Terminal (with display)													■						
Controller in std IQ module w/o display														■	■	■			
Compensation																			
Air-pressure compensation for D.O. measurement														■	■	■			
Compressed air cleaning																			
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.

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

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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

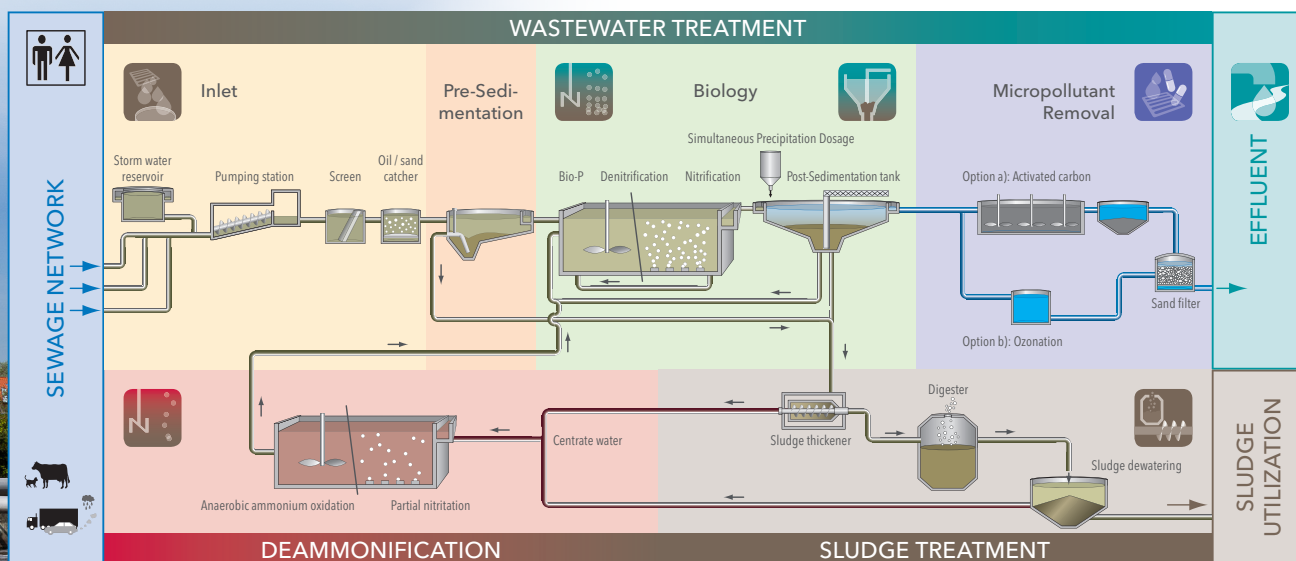
Typical Applications

Process Instrumentation



Wastewater (municipal wwtp)

see also www.xylemanalytics.com/en/applications/wastewater



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

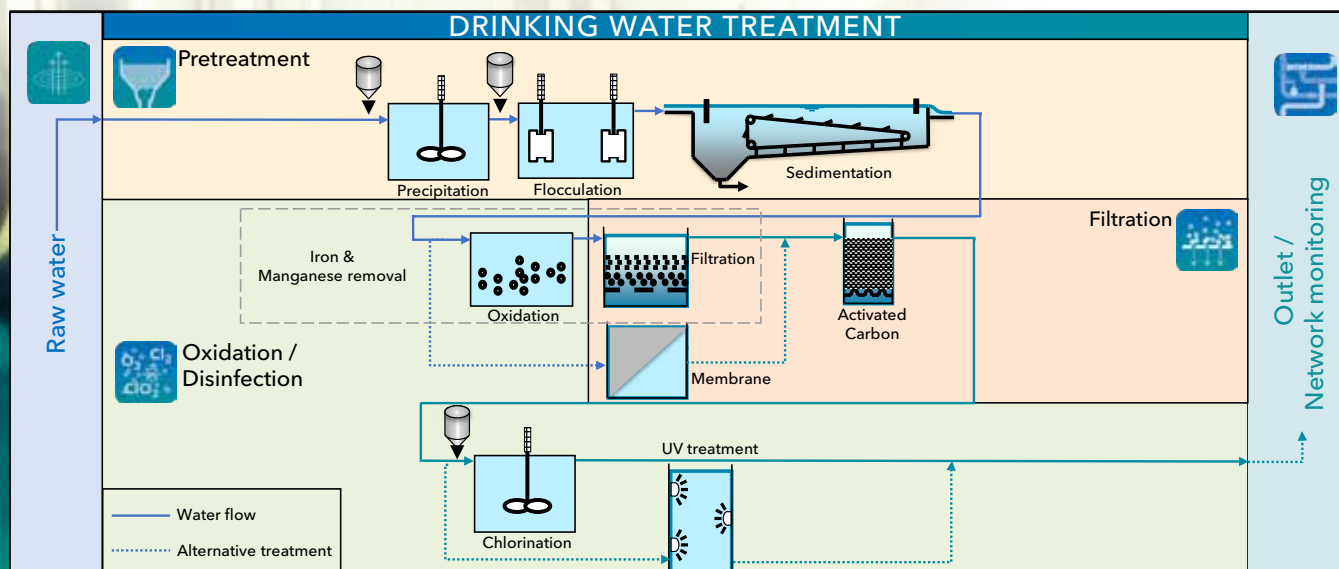
Typical Applications

Process Instrumentation



Drinking Water

see also www.xylenalytics.com/en/applications/drinking-water



Raw water
(Groundwater, Surface waters)

pH: SensoLyt® DW (A) page 16
SenTix® ML 70 page 17

Conductivity: TetraCon® 700 IQ page 20
LR ML page 21
LRD 325 page 20

Oxygen: FDO® 700 IQ page 11

Turbidity: VisoTurb® 700 IQ page 24
Turb PLUS 2000 page 27

Temperatur: available in several other sensors



Pretreatment
(Precipitation, Flocculation, Sedimentation)

Turbidity: VisoTurb® 700 IQ page 24
Turb PLUS 2000 page 27

SAC: UV 705 IQ SAC page 32



Filtration
(Matrix filter, Membrane filter, Activated Carbon)

Turbidity: VisoTurb® 700 IQ page 24
Turb PLUS 2000 page 27



Oxidation/Disinfection
(Chlorination, Ozonation, UV treatment, iron and manganese removal)

Chlorine: Chlorine 3017M page 47
FCML 412 N page 47

UVT: UV 705 IQ SAC page 32

Turbidity: Turb PLUS 2000 page 27

pH: SensoLyt® DW (A) page 16
SenTix® ML 70 page 17

Oxygen: FDO® 700 IQ page 11

Temperatur: available in several other sensors



Outlet & Network monitoring

Turbidity: Turb PLUS 2000 page 27

pH: SensoLyt® DW (A) page 16
SenTix® ML 70 page 17

Conductivity: TetraCon® 700 IQ page 20
LR ML page 21
LRD 01 page 21
LRD 325 page 20

Oxygen: FDO® 700 IQ page 11

Chlorine: Chlorine 3017M page 47
FCML 412 N page 47

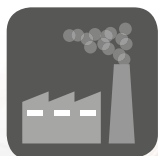
ORP: SensoLyt® Pt (A) page 16
SenTix® ML ORP page 17

Temperature: available in several other sensors

Typical Applications



Process Instrumentation



Industry

see also 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



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 (NH₄):</i>	<i>Alyza 700 IQ NH₄</i>	<i>page 34</i>
<i>Nitrate (NO₃):</i>	<i>NiCaVis® 705 IQ SF</i>	<i>page 32</i>
<i>Nitrite (NO₂):</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 (PO₄):</i>	<i>Alyza 700 IQ PO₄</i>	<i>page 41</i>

Typical Applications

WTW® Process Instrumentation



Fish Farming

see also www.xylenalytics.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
pH (incl. temp.)	<i>SensoLyt® 700 IQ</i> page 15	<i>SensoLyt® 700 IQ SW</i> page 15
Carbon	<i>Spectral sensors</i> page 38	<i>Spectral sensors</i> page 38
D.O. (incl. temp.)	<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
Salinity (incl. temp.)	<i>TetraCon® 700 IQ</i> page 20	<i>TetraCon® 700 IQ SW</i> page 19
TSS/Turbidity	<i>ViSolid® 700 IQ</i> page 25	<i>ViSolid® 700 IQ SW</i> page 25
	<i>VisoTurb® 700 IQ</i> page 24	<i>VisoTurb® 700 IQ SW</i> page 24