IQ SensorNet

CONTINUOUS PROCESS MONITORING & CONTROL

YSI

a **xylem** brand

Together, we're the smartest name in wastewater.

Being a trusted water quality partner to the municipal wastewater industry takes unfailing character and competence over a long period of time.

The industry requires a successful, ongoing track record — YSI offered the first practical dissolved oxygen sensor in the early 1960s. It requires an array of capabilities from lab to field — YSI is a leader in laboratory BOD instrumentation and spot sampling instruments for aeration tank and effluent sampling applications. It requires exceptional support and service — YSI is renowned for its pre- through post-sale technical support.

And now more than ever, municipalities demand a partner with the added ability to improve their operational efficiency by providing innovative solutions for continuous process monitoring and control.

The YSI IQ SensorNet product line is the best solution for the wastewater industry...from small to large facilities. The network-based YSI IQ SensorNet system is all about ease, scalability, and performance... whether to monitor influent, reduce energy use during the aeration process, monitor effluent, or control any part of the process such as Biological Nutrient Removal or Returned Activated sludge lines.

YSI is excited to bring you our IQ SensorNet catalog. It's a huge step forward in Continuous Process Monitoring and Control. With **Your Brains and Our IQ**, there's nothing we can't solve together.

Timothy A. Groons

Director, WQS Products

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IQ SensorNet 2020 XT

Improve operational efficiency with continuous data.
With an easily scalable solution, the 2020 XT allows for
the measurement of up to 20 parameters. Add sensors
at any time and at any location or change them out
with ease. This completely modular plug-and-play
system allows you to monitor and control the water
quality in your wastewater facility continuously
and accurately.

Only YSI can offer:

- 3-year warranty
- UltraClean ultrasonic cleaning on some sensors
- System-wide lightning protection
- Modular expansion from 1 to 20
  parameters per network
- Network modules by easily stacking,
  no need for extra cabling
- One cable for power and communications
- Factory-calibrated optical DO cap with
  a 2-year warranty
- USB interface (backs up system settings
  and locks to prevent accidental changes)
- System redundancy for backup control
- 12-month warranty on ISE sensors
  that are individually replaceable
- DC optional backup power

The System 2020 XT

- Display up to 20 parameters plus
  temperature, in any combination
- Easy, intuitive system expansion
- Centralized power supply along
  entire network
- Numerous relays and outputs available
- Communications via modem, Bluetooth,
  radio transmission, Ethernet IP, LAN, USB/
  RS232, MODBUS TCP/IP, PROFIBUS,
  MODBUS RTU
- LED status lights for quick visualization of
  system functionality
- Integrates into existing plant systems,
  such as PLCs and SCADA
- Change or move sensors at any time
  with ease

2020 XT

Effluent:
Ammonium, Nitrate, UVT-254, Phosphate, pH, Conductivity, DO, Turbidity, COD, TOC, DOC, BOD, SAC

PLC SCADA

Control Room

Influent:
pH, Conductivity, Ammonium, Nitrate, Nitrite, COD, TOC, DOC, BOD, SAC

Aeration:
DO, Ammonium, Nitrate, TSS, pH, Phosphate, ORP

Back-up Terminal
Final Settling:
Turbidity, TSS, Sludge Level
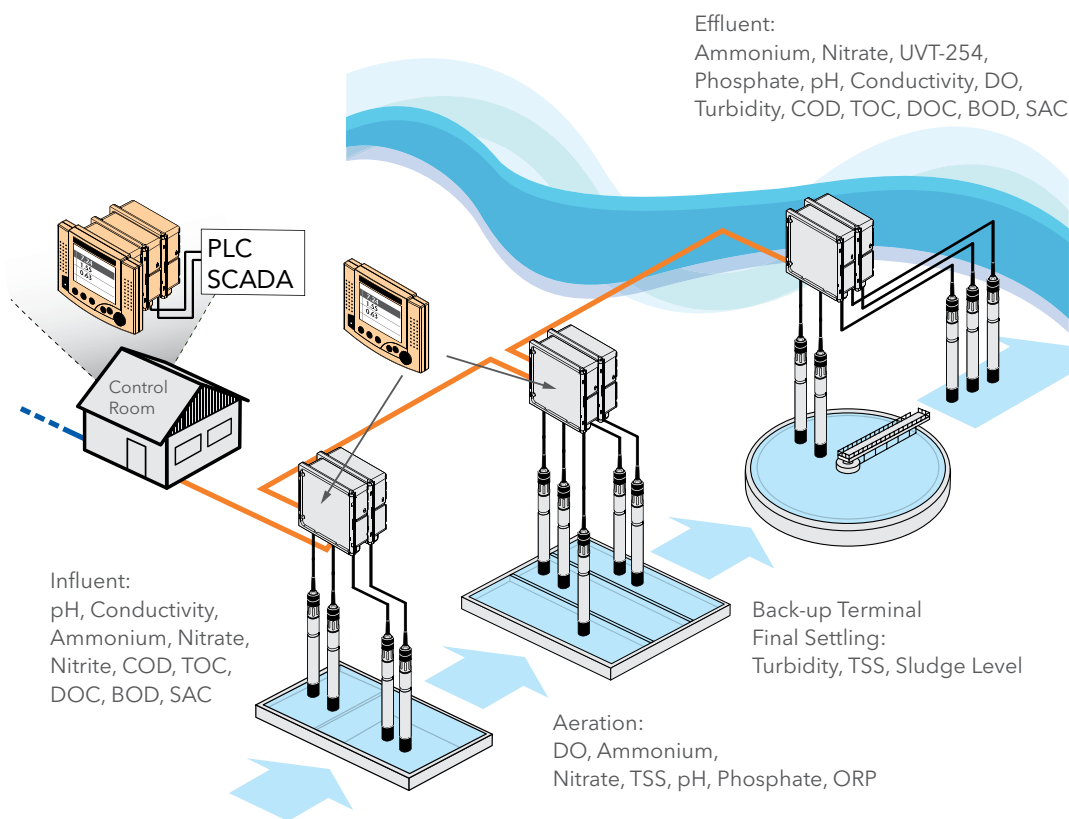
Parameters

Dissolved oxygen
(optical or electrochemical)
TSS
Sludge Level
Turbidity
pH
ORP
Ammonia
Nitrate
Nitrite
Orthophosphate
Potassium
Conductivity/
Specific conductance
Salinity
UVT-254
BOD
COD, total and soluble
SAC, total and soluble
TOC, DOC
Temperature
Chloride
(for compensation)

An example of IQ SensorNet network with 14 sensors and two 2020 XTs.
One 2020 functions as a controller, while the second is used as a backup controller
and movable display.

ysi.com/IQ

2020 XT Terminal Controller

Certifications	ETL, cETL (conforms with relevant UL and Canadian standards), CE
Integrated Lightning Protection	EN 61326 enhanced over voltage protection for entire system
Electrical Connection	Directly via IQ SensorNet when coupled to an MIQ module
Datalogging	525,600 data sets
Display	Graphic; 320 x 240 pixels; backlit, visible area: 4.49 x 3.39 in (114 x 86 mm)
Warranty	3 years
Operating Temperature	-4 to 131° F (-20 to 55°C)

IQ SensorNet 182

The YSI IQ SensorNet 182, 182 XT, or 182 XT-4 is a modular system for a complete sensor network ideal for various installation needs. The modular system can accept additional sensors or output modules easily at any time. This is a powerful system to continuously measure water quality parameters anywhere in a facility for process monitoring and control.

System 182

- Connect 1-4 digital sensors for a variety of parameters
- one cable provides power and communications
- UltraClean ultrasonic cleaning on some sensors
- System-wide lightning protection
- Analog or digital outputs; relays
- 3-year warranty

Model 182 XT-4 shown stacked on two IQ SensorNet Modules.

Model 182	Model 182 XT	Model 182 XT-4
1-2 parameters	1-2 parameters	1-4 parameters
2 mA outputs	4 mA outputs	5 mA outputs
3 relays	5 relays	6 relays

24V, PROFIBUS and MODBUS options are also available

Parameters

Dissolved oxygen
(optical or electrochemical)
TSS
Turbidity
pH
ORP
Ammonia
Nitrate
Nitrite
Potassium
Conductivity/
Specific conductance
Salinity
UVT-254
BOD
COD, total and soluble
SAC, total and soluble
TOC, DOC
Temperature
Chloride
(for compensation)
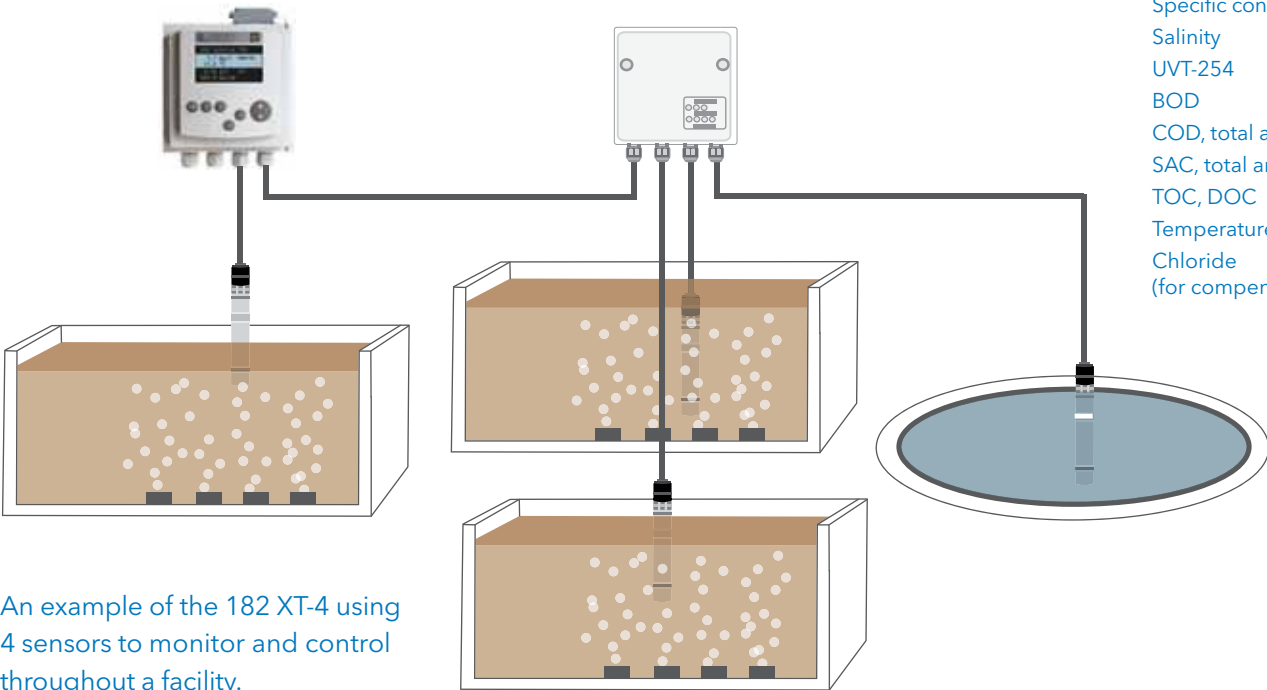
An example of the 182 XT-4 using 4 sensors to monitor and control throughout a facility.

182 Terminal

|	
Certifications	ETL, cETL (conforms with relevant UL and Canadian standards), CE
Integrated Lightning Protection	EN 61326 enhanced over voltage protection for entire system
Display	Graphic; 128 x 64 pixels; backlit, visible area: 2.83 x 1.57 in (72 x 40 mm)
Warranty	3 years
Operating Temperature	-4 to 131° F (-20 to 55°C)

IQ SensorNet Modules

IQ SensorNet modules provide a variety of functions from power, to communications, to outputs, to controller, in order to improve your system's efficiency. All modules can be installed anywhere in the system, either individually or in stacks.

Up to three modules can be mechanically connected to form a stack. Simultaneous mechanical and electrical connections are instantaneous once stacked.
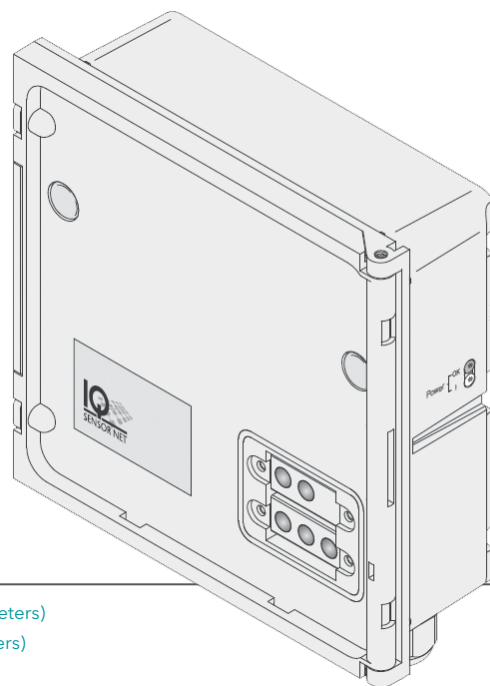
Module Options

	2020 XT (up to 20 parameters plus temperature) **Model Numbers**	**182 XT-4** (up to 4 parameters) **182 XT** (up to 2 parameters) **182** (up to 2 parameters) **Model Numbers**
Power Supply Modules	MIQ/PS, MIQ/24V	DIQ/S 182/24V, DIQ/S 182 XT/24V, DIQ/S 182 XT-4/24V, MIQ/PS
Analog Output Modules	MIQ/CR3, MIQ/C6, MIQ/R6	MIQ/CR3, MIQ/C6, MIQ/R6
Interface Modules	MIQ/2-MOD, MIQ/2-PR	DIQ/S 182 XT-4 PR, DIQ/S 182 XT-4 MOD, DIQ/S 182 XT-4 PR/24V, DIQ/S 182 PR, DIQ/S 182 MOD, DIQ/S 182 PR/24V, DIQ/S 182 MOD/24V, DIQ/S 182 XT-4 MOD/24V
Magnetic Valve Modules	MIQ/CHV Plus	DIQ/CHV, MIQ/CHV Plus
Bluetooth Communication Modules	MIQ/BluePS	MIQ/BluePS
Analog Input Modules	MIQ/IC2	MIQ/IC2
Extension Modules	MIQ/JB, MIQ/JBR,	DIQ/JB, MIQ/JB
Compensation Modules	MIQ/MC2-MOD, MIQ/MC2-PR MIQ/MC2, MIQ/2-PR, MIQ/2-MOD	
Controller Modules	MIQ/MC2, MIQ/MC2-PR, MIQ/MC2-MOD	

MC2 – Controller module with Ethernet IP, MODBUS TCP/IP, RJ-45 port and USB port | **MOD** – MODBUS | **PR** – PROFIBUS

IQ SensorNet Sensors

All IQ SensorNet sensors are rugged, reliable digital sensors designed specifically for wastewater applications. Our sensors are detachable from a common cable. Once a sensor is fixed at a location, it can easily be switched out or moved. Just unscrew and replace with a new one.

VisoTurb
turbidity

- Multi-point factory calibration; no need to recalibrate; matrix adjustment is possible
- Ultrasonic cleaning with UltraClean technology prevents fouling
- Nephelometric measurement technology
- Sample discoloration does not affect measurements
- 2-year warranty

ViSolid
TSS

- Multi-point factory calibration; no need to recalibrate; matrix adjustment is possible
- Ultrasonic cleaning with UltraClean technology prevents fouling
- Uses two measurement methods depending on concentrations - either scattered light or backscatter
- 2-year warranty

VisoTurb and ViSolid Sensors

SensCheck	Continually monitors sensor functionality	
Range VisoTurb	FNU, NTU, TEF: 0.05 to 4000 FNU	g/L TSS: 0.0001 to 400 g/L TSS
Range ViSolid	mg/L TSS 0 to 400 mg/L 0 to 4000 mg/L 0 to 25,000 mg/L 0 to 40,000 mg/L	% TSS: 0.0003 to 100% TSS Practical range: 0.0003 to 4%

UltraClean
TECHNOLOGY

"We were very surprised when we pulled it up for maintenance and it didn't need it. The UltraClean kept it totally clean."

Littleton/Englewood WWTP

UltraClean™ technology keeps sensor clean even after a 30-day deployment.

ysi.com/visoturb   **ysi.com/visolid**

IQ SensorNet Sensors

FDO
DO optical

- No electrolyte, calibration, interferences, or warm-up period
- Zero oxygen consumption technology eliminates the need for stirring
- Resistant to bubbles bursting on the sensor with 45 degree angle cap
- Extremely long sensor cap life; factory calibrated
- 2-year warranty on cap and probe

ysi.com/fdo

TriOxmatic
DO electrochemical

- SensReg function monitors electrolytic solution
- SensLeak function monitors for membrane leakage
- No break-in period or long-term drift
- Digital sensors store calibrations
- 2-year warranty

ysi.com/trioxmatic

FDO   **TriOxmatic**

Sensor cap with memory chip for calibration data

FDO Sensor

Interferences	None
Calibration	Factory calibrated
Operating Temperature	23 to 122°F (-5 to 50°C)
Sensor Type	Optical DO
Range	0 to 20.00 mg/L 0 to 200.0%
Resolution	0.01 mg/L 0.1%
Response Time at 25°C	FDO 700 IQ T90 = <150 seconds T99 = <200 seconds FDO 701 IQ T90 = <80 seconds
Minimum Flow Rate	0 – none required

TriOxmatic Sensor

Operating Temperature	32 to 140°F (0 to 60°C)		
Sensor Type	Electrochemical DO with reference electrode		
Range	700 IQ (700 IQ SW) 0.0 to 60.0 mg/L 0 to 600%	701 IQ 0.00 to 20.00 mg/L 0.0 to 60.0 mg/L 0.0 to 200.0% 0 to 600%	702 IQ 0 to 2000 µg/L 0.00 to 10.00 mg/L 0 to 110%
Resolution	0.1 mg/L 1%	0.01 mg/L 0.1 mg/L 0.1% 1%	0.001 mg/L 0.01 mg/L 0.1%
Response Time at 25°C	T90 = 180 seconds	T90 = 30 seconds T99 = 90 seconds	T90 = 30 seconds T99 = 110 seconds
Minimum Flow Rate	0.05 m/s (1.9 in/sec)	0.23 m/s (9 in/sec)	0.3 m/s (11.8 in/sec)

VARiON
ammonium/nitrate/potassium

- Single- or dual-measurement of ammonium and nitrate; compensation for potassium and chloride
- Factory calibrated
- Compensation electrode; prevents interferences
- In-situ calibration available for improved accuracy
- 2-year warranty, 1-year warranty on electrodes
- Very stable reference system

AmmoLyt | NitraLyt
ammonium/potassium | nitrate

- Ammonium or nitrate measurement with continuous potassium or chloride compensation
- Factory calibrated
- Compensation electrode eliminates interferences
- In-situ calibration possible for improved accuracy
- 2-year warranty, 1-year warranty on electrodes
- Very stable reference system

VARiON probe with individually replaceable electrodes

VARiON, AmmoLyt and NitraLyt Sensors

Operating Temperature and Compensation Temperature Range	32 to 140°F (0 to 40°C)	
Sensor Type	**ISE Ammonium (VARiON or AmmoLyt)**	**ISE Nitrate (VARiON or NitraLyt)**
Range/Resolution VARiON	NH_4-N: 1 to 1000 mg/L / 1 mg/L 0.1 to 100 mg/L / 0.1mg/L	NO_3-N: 1 to 1000 mg/L / 1 mg/L 0.1 to 100 mg/L / 0.1 mg/L
	NH_4: 1 to 1290 mg/L / 1mg/L 0.1 to 129.0 mg/L / 0.1 mg/L	NO_3: 5 to 4500 mg/L / 1 mg/L 0.5 to 450.0 mg/L / 0.1 mg/L
	K+ (compensation): 1 to 1000 mg/L / 1 mg/L	CL- (compensation): 1 to 1000 mg/L / 1 mg/L
pH Range	4 to 8.5 pH units	4 to 11 pH units
Temperature Range	±5% of measured value' ±0.2 mg/L in standard solution	

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ysi.com/ammolyt

ysi.com/nitralyt

IQ SensorNet Sensors

IQ SensorNet UV and UV/VIS sensors are portable, optical-based spectrophotometers built into rugged, corrosion-resistant probes that are designed to measure accurately in harsh applications. Each probe scans 256 wavelengths per measurement for increased accuracy and utilizes UltraClean ultrasonic technology to lower maintenance requirements.

- Built-in air holes for added air cleaning in high fouling applications
- 2-year warranty
- Factory calibrated
- 256 wavelength scan allows for better compensation for interferences, e.g. turbidity
- Display up to 5 parameters depending on the sensor

UltraClean
T E C H N O L O G Y

NitraVis
Nitrate/TSS

CarboVis
COD (total and soluble), TOC, DOC, BOD, SAC (total and soluble), UVT-254, TSS

NiCaVis
Nitrate, COD (total and soluble), TOC, DOC, BOD, SAC (total and soluble), UVT-254

NiCaVis NI (UV Sensor)
Nitrate, Nitrite, COD (total and soluble), TOC, DOC, BOD, SAC (total and soluble), UVT-254

NitraVIS Sensor

Operating Temperature	32 to 113°F (0 to 45°C)	
Electrode Type	Spectral measurement in the UV/VIS range (200 to 720 nm)	
	NitraVis 701 (influent/aeration)	**NitraVis 705 (effluent)**
Range	NO_3-N: 0.1 to 100.0 mg/L	NO_3-N: 0.01 to 25.0 mg/L
	TSS: 0 to 10.00 g/L	TSS: 0 to 900.0 mg/L
Accuracy	±3% of measured value ±0.5 mg/L	
pH Range	4 to 12 pH units	

CarboVis and NiCaVis Sensors

	CarboVis 701 (influent, aeration, effluent)	**CarboVis 705 (effluent)**	**NiCaVis 705 (effluent)**	**NiCaVis 701 IQ NI (influent, aeration, effluent)**	**NiCaVis 705 IQ NI (effluent)**
Operating Temperature	32 to 113°F (0 to 45°C)				
Electrode Type	Spectral measurement in the UV/VIS range (200 to 720 nm) / UV range (200 - 390 nm)				
Range	COD: 0.5 to 4000 mg/L TOC: 5 to 2500 mg/L SAC: 0.5 to 3000.0 1/m TSS: 0 to 15 g/L (influent) 0 to 4.5 g/L (effluent)	COD: 0.1 to 800 mg/L TOC: 1 to 500.0 mg/L SAC: 0.1 to 600.0 1/m TSS: 0 to 3000 mg/L (influent) 0.0 to 900.0 mg/L (effluent)	COD: 0.1 to 800.0 mg/L TOC: 1 to 500.0 mg/L SAC: 0.1 to 600.0 1/m NO_3-N: 0.01 to 25.00 mg/L	NO_3-N: 0.1 to 100 mg/L NO_2-N: 0.1 to 25 mg/L COD: 0.5 to 4000 mg/L (influent, aeration, effluent)	NO_3-N: 0.01 to 25 mg/L NO_2-N: 0.01 to 5 mg/L COD: 0.1 to 800 mg/L (effluent)
pH Range	4 to 12 pH units				

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IFL Sludge Level Sensor

- Smart signal processing in the probe predicts trends, like skimmer passes, for reliable sludge level measurements all the time

- Non-contact, maintenance-free automatic wiper version available

- Factory calibrated

IFL 700 IQ Sensor

Measuring Method	Ultrasonic echo measurement
Measuring Range	0.4 to 15 m (1.3 to 49.2 ft)
Resolution	0.01 m (0.03 ft)
Accuracy	0.1 m (0.3 ft)
Signal Filters	Yes
Flow Speed	Maximum 4 m/s (13.1 ft/s)
Immersion Depth	Minimum 5 cm (1.9 in); maximum 3 m (9.8 ft)
pH Range	4 to 12 pH units
Temperature Range	Medium: > 32 to 122˚F (0 to 50˚C)

IFL with deflector for passing over a skimmer arm

IFL sensor with graph displaying sludge blanket level data

 ysi.com/IFL

IQ SensorNet Sensors

YSI P 700 IQ Orthophosphate Analyzer

The P 700 for orthophosphate measurement can be used as a stand-alone analyzer or networked with other sensors in an IQ SensorNet 2020 XT network. Used throughout the wastewater plant, from pre-sedimentation to the effluent, the P 700 provides continuous data for operational decisions and phosphate elimination verification.

- Compact design – sample pump is integrated in analyzer housing
- Low reagent consumption – solutions exchanged every 4-8 months, reducing reducing operational costs
- Automatic or manual calibration (user selectable)
- Automatic or manual cleaning (user selectable)
- Proven Vanadomolybdate (yellow) method of detection
- Wide measuring range - two measuring ranges allow the P 700 to be used throughout facility
- 0.45 micron filter complies with Standard Methods

P 700 IQ Technical Specifications

Measurement Method	Vanadomolybdate (yellow)
Measurement Range PO$_4$-P	Range A: 0.05 to 15.00 mg/L; Range B: 1 to 50 mg/L
Resolution PO$_4$-P	Range A: 0.01 mg/L; Range B: 1 mg/L
Accuracy PO$_4$-P	Range A: ±2% or ±0.05 mg/L, whichever is greater; Range B: ±2% or ±1 mg/L, whichever is greater
Measurement Range PO$_4$	Range A: 0.15 to 46.00 mg/L; Range B: 3 to 153 mg/L
Resolution PO$_4$	Range A: 0.01 mg/L; Range B: 1 mg/L
Accuracy PO$_4$	Range A: ±2% or ±0.15 mg/L, whichever is greater; Range B: ±2% or ±3 mg/L, whichever is greater
Response Time T-90	< 5 minutes
Detection Limit	Range A: 0.05 mg/L PO$_4$-P; Range B: 1 mg/L PO$_4$-P
Calibration	Automatic or manual (user selectable)
Dimensions	~26.69 x 30.71 x 15.55 in (~678 x 780 x 395 mm)
Weight	~66 lbs (~30 kg); without reagents
Measuring Interval	Range A: 5 minutes (adjustable) or greater; Range B: 10 minutes or greater
Cleaning Solution	1,000 mL for 4 months with cleaning every 24 hours
Climate Control	Heating, Cooling (fan)
pH range	5 to 9 pH units
Operating Temperature	-20 to 40°C (-4 to 104°F)
Storage Temperature -	-20 to 50°C (-4 to 122°F)
Sample Temperature	4 to 45°C (39 to 113°F)
Reagent Consumption	2500 mL for 8 months with measuring range A and 10 minute measuring interval 2500 mL for 4 months with measuring range B and 10 minute measuring interval
Equipment Safety, Standards	EN 61010-1; UL 3111-1; CAN/CSA C22.2 No. 61010.1 cETLus
Electrical	115 VAC
Certifications	CE, IP54, UL
Outputs	Relays, analog outputs, various communication protocols, interfaces directly with IQ SensorNet 2020 XT (not compatible with Model 182)

SensoLyt
pH/ORP

- SensCheck function monitors sensors
- Electrodes are protected
- Easily replace electrodes without tools as needed
- Pre-amplified sensors
- Digital sensors store calibration
- 2-year warranty (6-months electrodes)

ysi.com/sensolyt

SensoLyt Sensor

| Operating Temperature	32 to 140°F (0 to 60°C)			
Electrode Type	ECA pH (gel electrolyte with single pinhole diaphragm)	SEA and SEA-HP pH (gel-polymer solid electrolyte with double pinhole diaphragm; AgCl free and resistant to sulfides)	DWA pH (modified gel electrolyte with single pinhole diaphragm)	PtA ORP mV (gel-polymer solid electrolyte with double pinhole diaphragm
Range	2 to 12 pH units and 4 to 12 pH units	0 to 14 pH units	2 to 12 pH units	±2000 mV (depends on terminal)
Application	standard wastewater	seawater/high pressure	drinking water	

IQ SensorNet Sensors

TetraCon
conductivity/salinity/TDS

- 4-electrode design
- Robust and durable in the field
- Wide measurement range
- Fouling resistant
- 2-year warranty

ysi.com/tetracon

TetraCon Sensor

Operating Temperature	32 to 140°F (0 to 60°C)
Conductivity	Range: 0.00 to 20.00 µS/cm 0.0 to 200.0 µS/cm 0.000 to 2.000 mS/cm 0.00 to 20.00 mS/cm 0.0 to 200.0 mS/cm 0 to 500 mS/cm Accuracy: ±1.5% of reading without calibration ±0.7% of reading with calibration
Salinity	Range: 0 to 70 ppt
TDS	Range: 0 to 2000 mg/L
Cell Constant	K = 0.917 cm (in free solution) K = 0.933 cm (with flow thru adapter)
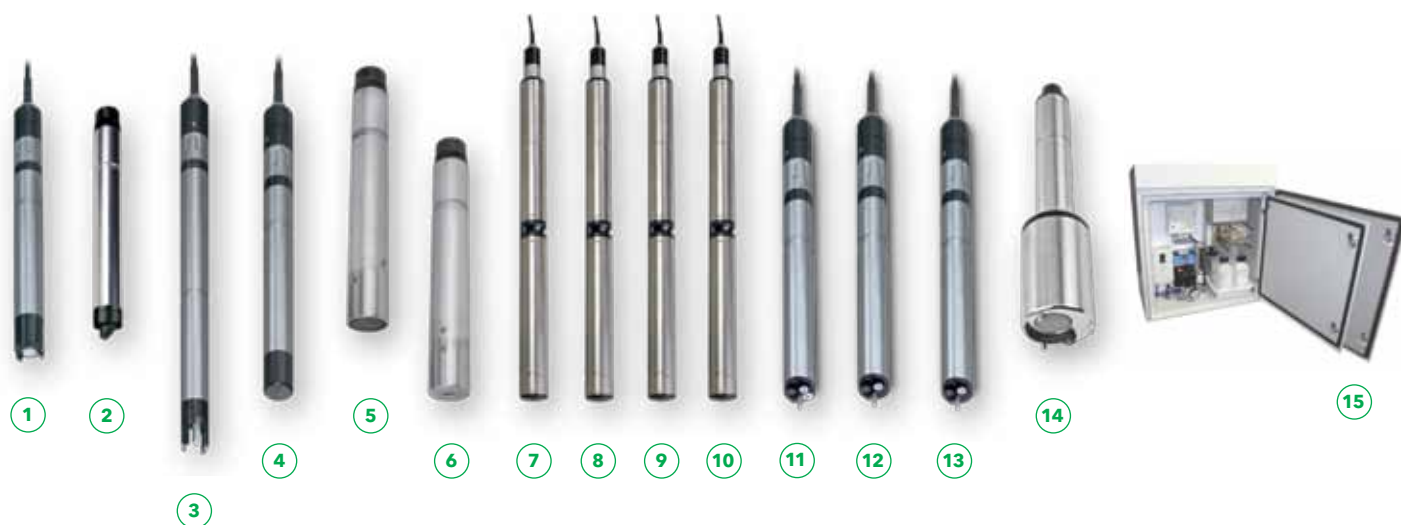
Sensors / Analyzer

Parameters	1 TriOxmatic®	2 FDO®	3 SensoLyt®	4 TetraCon®	5 VisoTurb®	6 ViSolid®	7 NitraVis®	8 CarboVis®	9 NiCaVis®	10 NiCaVis NI®	11 VARiON®	12 AmmoLyt®	13 NitraLyt®	14 IFL®	15 P700 IQ
DO (electrochemical)	●														
DO (optical)		●													
pH			●												
ORP			●												
Conductivity				●											
Salinity + TDS				●											
Turbidity					●										
TSS						●	●	●							
Ammonium											●	●			
Nitrate							●		●	●	●		●		
Nitrite										●					
Orthophosphate[1]															●
Potassium											●	●			
UVT-254								●	●	●					
Chloride[2]											●		●		
COD (chemical oxygen demand), total / soluble								●	●	●					
TOC (total organic carbon)								●	●	●					
BOD (biochemical oxygen demand)								●	●	●					
DOC (dissolved organic carbon)								●	●	●					
SAC (spectral absorption coefficient), total/soluble								●	●	●					
Sludge Level[3]														●	
Temperature	●	●	●	●							●	●	●		

[1] Can be used independently or with a 2020 XT network

[2] Chloride is used as compensation only and is not a visible parameter on the IQSN system.
 Please contact us for more information.

[3] For use with 2020 XT and/or MC2 networks

Mounting Options

Handrail Mount
Monitor shown is rail-mounted with sun shield
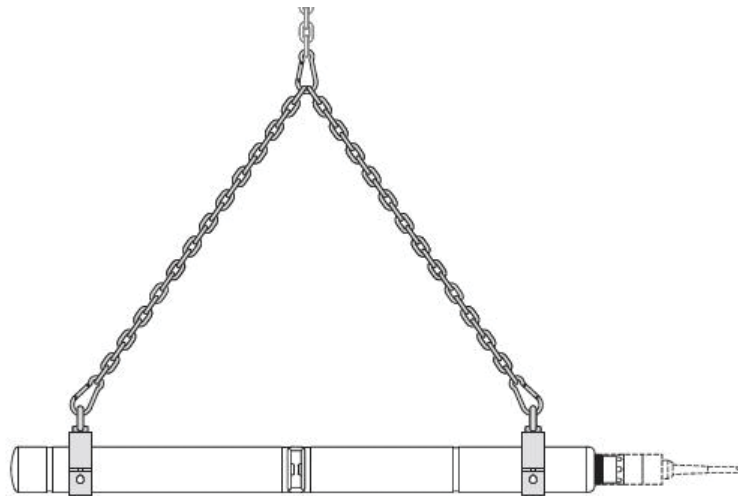

Chain Mount
Provides self cleaning, shown with single sensor holder

With extensions and triple sensor holder

With dual sensor holder

Horizontal Chain Mount for UV and UV/VIS sensors

Flow Thru and Insertion Mounts
(additional options available)

Float Mount
Available as single, dual, or 4-sensor mount

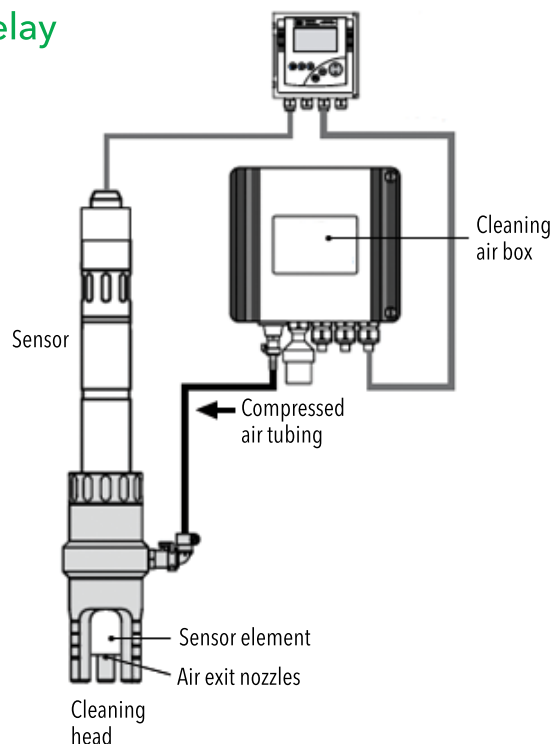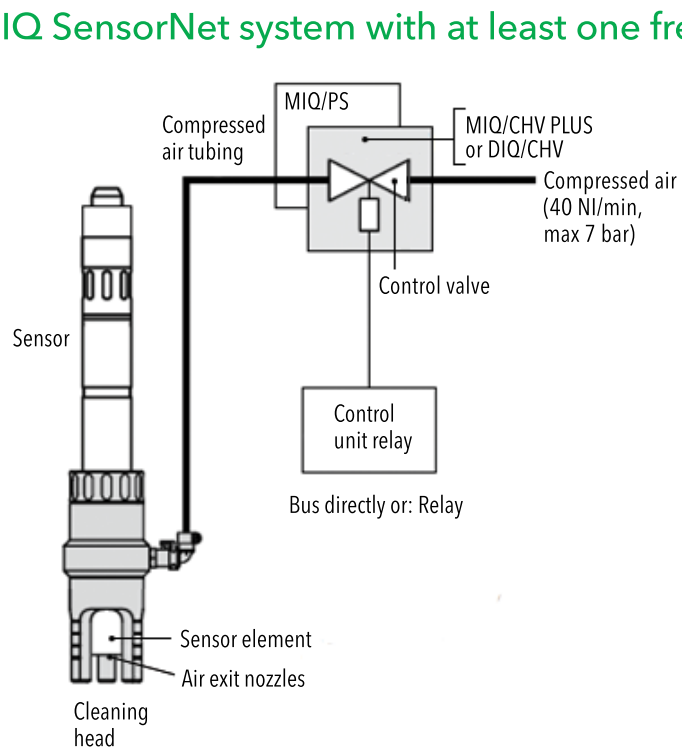**Pressurized, retractable insertion mount**
2 bar or 10 bar overpressure

Flow thru for 2 inch PVC
Available with and without cleaning connections

IQ SensorNet system with at least one free relay

Compressed air tubing

MIQ/PS

MIQ/CHV PLUS
or DIQ/CHV

Compressed air
(40 Nl/min,
max 7 bar)

Control valve

Sensor

Control
unit relay

Bus directly or: Relay

Sensor element

Air exit nozzles

Cleaning
head

Sensor

Cleaning
air box

Compressed
air tubing

Sensor element

Air exit nozzles

Cleaning
head

System-wide Process Monitoring & Control

Aeration:
D.O., Ammonium, Nitrate, Nitrite, TSS, pH, Phosphate

IQ SensorNet 2020 XT
Influent:
pH, Conductivity, Ammonium, Nitrate, COD, TOC, DOC, BOD, SAC

Effluent:
Ammonium, Nitrate, Nitrite,
UVT-254, Phosphate, pH,
Conductivity, D.O., Turbidity,
COD, TOC, DOC, BOD, SAC

Back-up Terminal
Final Settling:
Turbidity, TSS, Sludge Level

Only YSI

The modular YSI IQ SensorNet water quality monitoring and control system (2020 XT, 182, 182 XT, 182 XT-4) is a complete sensor network for a variety of installation needs. This powerful system lets you easily add more modules or sensors at any time while continuously measuring water quality anywhere in your facility for the ultimate process control. In addition, you receive the exclusive benefits below, as provided only by YSI. Sheer genius.

One cable for power and communication

Terminal or display connects to any module on network

2-year lightning-strike warranty

3-year warranty, terminals and displays

2-year warranty, sensors

Terminals, modules, and sensors can be placed anywhere in the network

Measure up to 20 parameters per network

Network scales easily without new hardware or engineering

Want one? Win it.
ysi.com/winIQ

Smart technology recognizes and displays sensors

Network outputs analog and digital signals

Detachable sensors that use a universal sensor cable

USB electronic key function 'locks' and saves system settings from accidental changes

No calibration required on most sensors; automatic drift compensation

Measures DO, conductivity, temperature, pH, ORP (Redox), nitrate, nitrite, soluble and total for COD and SAC, UVT-254, orthophos-phate, sludge level, ammonium, potassium, turbidity, TSS, BOD, DOC, TOC

Optical DO sensor is immune to bubble interference in the medium with unique angled design

UltraClean ultrasonic cleaning integrated into turbidity, TSS and UV sensors

Order Guide

Building a system is easy. Just choose an IQ SensorNet terminal, select which modules you'll need, determine your distances for cabling, and select your parameters. And don't forget your accessories. Let's get started.

Step 1 – the first step is to decide which terminal/controller will be required. Always consider future needs and possible system expansion.

> **Model 182** – maximum 2 sensors with 2 analog (0/4-20 mA) outputs and 3 relays
>
> **Model 182 XT** – maximum 2 sensors with 4 analog (0/4-20 mA) outputs and 5 relays
>
> **Model 182 XT-4** – maximum 4 parameters with 5 analog (0/4-20 mA) outputs and 6 relays capable of digital output
>
> **Model 2020 XT** – maximum of 20 prarameters with multiple analog outputs and relays available; most powerful and configurable system

There are also several kits including terminals and modules together.

Step 2 (modules) – the next step is dependent on the unique application. The modules fall into 9 general categories. Power Supply, Analog Output, Communication, Magnetic Valve, Radio/Bluetooth, Analog Input, Extension, and Controller modules. Some modules are combined functionality modules.

Step 3 (cables) – cable decisions are relatively simple. The application should be understood enough to know distances within the IQ SensorNet system.

> **SACIQ** – sensor adapter cable; connects to each sensor – specific or special order lengths (in meters) available along with seawater option for highly corrosive applications
>
> **SNCIQ** – sensor network cable; connects modules to other modules and terminals in the network - specific or special order lengths (in meters) available

Step 4 (sensors) – it is necessary to know what parameters are required. It may only be a couple parameters at multiple locations or multiple parameters at a couple locations - either way, your requirements will determine which sensors are needed.

Step 5 (accessories) – mounting accessories, additional cleaning accessories, calibrations standards and more...

Questions? Contact environmental@ysi.com

About Xylem

Xylem (NYSE: XYL) is a leading global water technology provider, enabling customers to transport, treat, test and efficiently use water in public utility, residential and commercial building services, industrial and agricultural settings. The company does business in more than 150 countries through a number of market-leading product brands, and its people bring broad applications expertise with a strong focus on finding local solutions to the world's most challenging water and wastewater problems. Xylem is headquartered in White Plains, N.Y., with 2012 annual revenues of $3.8 billion and approximately 12,900 employees worldwide. Xylem has been named to the Dow Jones Sustainability World Index for the last two years for advancing sustainable business practices and solutions worldwide.

The name Xylem is derived from classical Greek and is the tissue that transports water in plants, highlighting the engineering efficiency of our water-centric business by linking it with the best water transportation of all -- that which occurs in nature. For more information, please visit us at www.xyleminc.com.
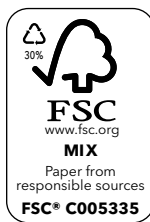
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