

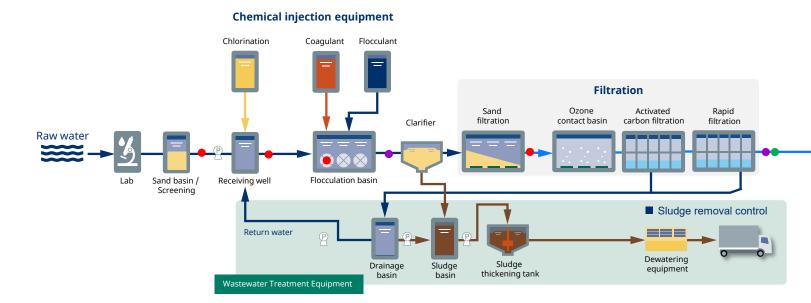
# Yokogawa in the Water Industry in North America

BU-L-20230330-02

# **Drinking Water Treatment Solutions**

### WATER INTAKE

WATER TREATMENT



# WATER INTAKE

#### Lab

- Flow Imaging Microscope FlowCam
- Process Gas Chromatograph GC8000
- **Raw Water Quality Management**
- Turbidity Analyzer TB820D / FLXA402T
- pH/ORP Analyzers & Sensors
- Temperature Transmitters
- Conductivity Analyzers & Sensors ●
- Water Intake Flow Control
- Magnetic Flowmeters

#### **Pump Monitoring & Predictive Maintenance**

- Vibration Sensors Sushi Sensor XS770A
- Data Logging & AI Anomaly Detection GA10

### WATER TREATMENT

#### **Chlorine Injection**

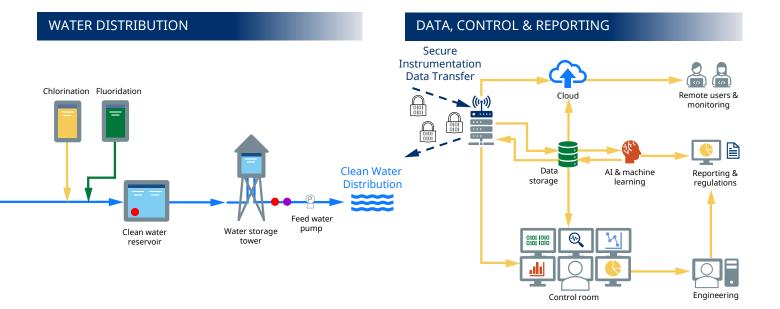
- Free Available Chlorine Analyzer FC800D / FLXA402T
- pH/ORP Analyzers & Sensors

#### Coagulation/Flocculation Control

- Magnetic Flowmeters
- pH/ORP Analyzers & Sensors ●
- Controllers UTAdvanced
- Temperature Transmitters
- Turbidity Analyzer TB820D / FLXA402T

#### Filtration Management

- Turbidity Analyzer TB820D / FLXA402T
- Free Available Chlorine Analyzer FC800D / FLXA402T
- Conductivity Analyzers & Sensors
- Magnetic Flowmeters
- Pressure Transmitters
- pH/ORP Analyzers & Sensors •
- Dissolved Oxygen Analyzers & Sensors ●



# WATER DISTRIBUTION

### Chlorination/Fluoridation Injection

- Magnetic Flowmeters
- Free Available Chlorine Analyzer FC800D / FLXA402T
- Temperature Transmitters
- pH/ORP Analyzers & Sensors

### Finished Water Quality Control

- Turbidity Analyzer TB820D / FLXA402T
- Free Available Chlorine Analyzer FC800D / FLXA402T
- pH/ORP Analyzers & Sensors
- Temperature Transmitters
- Magnetic Flowmeter

### Water Storage Towers

- Level Transmitters
- Pressure Transmitters
- Temperature Transmitters
- Magnetic Flowmeter

### Pump Monitoring & Predictive Maintenance

- Vibration Sensors Sushi Sensor XS770A
- Data Logging & AI Anomaly Detection GA10

#### Clean Water Distribution Network

- Pressure Transmitters
- Magnetic Flowmeters
- Temperature Transmitters
- pH/ORP Analyzers & Sensors
- Free Available Chlorine Analyzer FC800D / FLXA402T
- Conductivity Analyzers & Sensors ●

# DIGITAL TRANSFORMATION WATER SOLUTIONS

### Operation

- Digital twin for predictive suitable operation
- Smart industry readiness index (S.I.R.I.)
- Cost estimator
- Procedural automation & remote monitoring
- Water leakage management for water distribution
- Leak detection system for pipelines
- Energy-saving modeling system for aeration tanks
- Wireless surveys

#### Maintenance

- Plant asset management, repair, & calibration
- Augmented reality (AR) for safe and efficient site work
- Computerized maintenance management system
- Digital control of work software (RAP4)

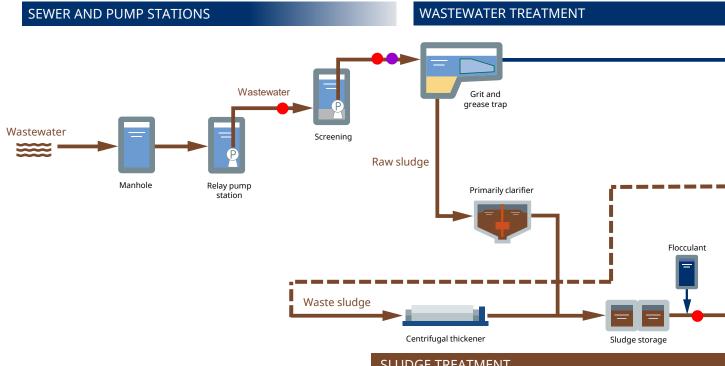
#### **Cybersecurity**

- Security assessment, networking & audits
- Security information service
- Antivirus and OS patch improvements
- Malware inactivation service
- Dashboard & KPI development (AOG)
- Virus check service
- Cloud operations, backup and recovery

#### Disaster Prevention

- Water-gate control
- Sound & odor monitoring
- Dam and flood level monitoring

# Wastewater Treatment Solutions



# SEWER AND PUMP STATIONS

#### Influent Wastewater

- Magnetic Flowmeter
- pH/ORP Analyzers & Sensors
- Temperature Transmitters
- Conductivity Analyzers & Sensors ●

#### Pump Monitoring & Predictive Maintenance

- Vibration Sensors Sushi Sensor XS770A
- Data Logging & AI Anomaly Detection GA10

### WASTEWATER TREATMENT

#### Aeration Tank

- pH/ORP Analyzers & Sensors
- Conductivity Analyzers & Sensors
- Dissolved Oxygen Analyzers & Sensors ●
- Temperature Transmitters

#### Flocculant Monitoring

pH/ORP Analyzers & Sensors ●

# SLUDGE TREATMENT

### SLUDGE TREATMENT

#### Sludge Feed Control

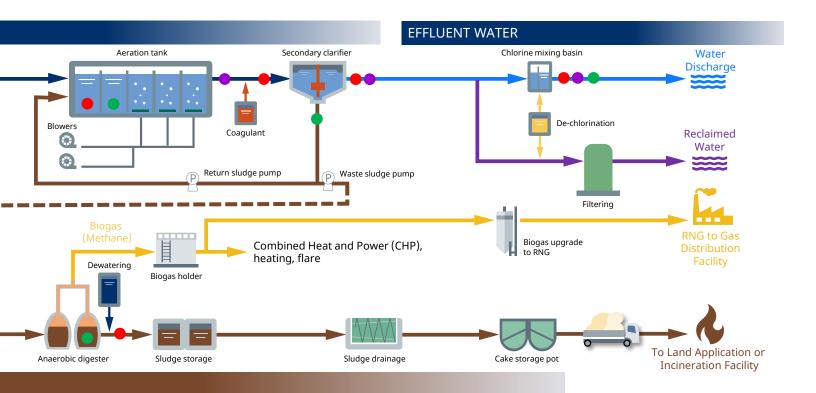
- Pressure Transmitters
- Magnetic Flowmeters

#### Sludge Feed, Storage, & Removal Control

- Level Transmitters
- Pressure Transmitters
- Magnetic Flowmeters

#### Flocculant Monitoring

pH/ORP Analyzers & Sensors



# WASTEWATER TREATMENT (continued...)

#### Aeration Tank

- pH/ORP Analyzers & Sensors •
- Conductivity Analyzers & Sensors ●
- Dissolved Oxygen Analyzers & Sensors •
- Temperature Transmitters

#### 🔁 Blower, Pump Monitoring & Predictive Maint.

- Vibration Sensors Sushi Sensor XS770A
- Data Logging & AI Anomaly Detection GA10

#### Coagulant Monitoring

pH/ORP Analyzers & Sensors ●

#### **Effluent Water Monitoring**

- pH/ORP Analyzers & Sensors
- Conductivity Analyzers & Sensors ●
- Dissolved Oxygen Analyzers & Sensors ●
- Turbidity Analyzer TB820D / FLXA402T
- Magnetic Flowmeters

# GAS/ENERGY RECLAMATION

#### Biogas Measurement & Storage

- Process Gas Chromatograph GC8000
- Pressure Transmitters
- Vortex Flowmeter

# SLUDGE TREATMENT

- Flocculant & Dewatering Monitoring
- pH/ORP Analyzers & Sensors ●

#### Anaerobic Digester Tank Heating Control

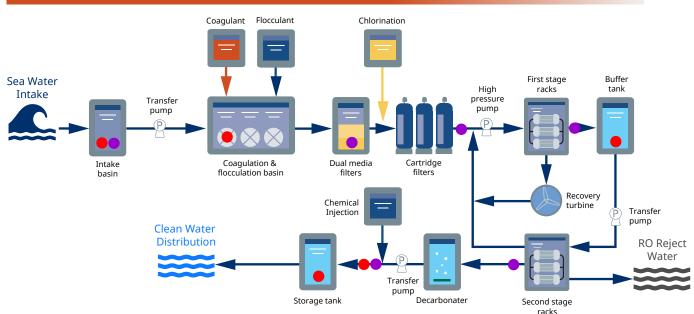
- Pressure Transmitters
- Temperature Transmitters
- Dissolved Oxygen Analyzers & Sensors ●
- pH/ORP Analyzers & Sensors ●
- Sludge Feed, Storage, & Removal Control
- Level Transmitters
- Pressure Transmitters
- Magnetic Flowmeters

#### Dewatered Cake Monitoring

- Magnetic Flowmeters
- Level Transmitters

# Desalination

### SEA WATER REVERSE OSMOSIS (SWRO) DESALINATION



# SEA WATER REVERSE OSMOSIS

#### Intake Basin

- pH/ORP Analyzers & Sensors
- Conductivity Analyzers & Sensors ●
- Temperature Transmitters
- Magnetic Flowmeters
- Pressure Transmitters

#### Coagulation/Flocculation Basin

- pH/ORP Analyzers & Sensors
- Temperature Transmitters
- Magnetic Flowmeters
- Turbidity Analyzer TB820D / FLXA402T

#### Dual Media Filters

- Conductivity Analyzers & Sensors ●
- Turbidity Analyzer TB820D / FLXA402T
- Pressure Transmitters

#### Chlorination Injection

- Turbidity Analyzer TB820D / FLXA402T
- Pressure Transmitters
- Free Available Chlorine Analyzer FC800D / FLXA402T
- Magnetic Flowmeters

#### Cartridge Filters

- Conductivity Analyzers & Sensors ●
- Turbidity Analyzer TB820D / FLXA402T
- Pressure Transmitters
- Magnetic Flowmeters
- Free Available Chlorine Analyzer FC800D / FLXA402T

#### High Pressure Pump

- Pressure Transmitters
- Vibration Sensors Sushi Sensor XS770A
- Magnetic Flowmeters

#### First & Second Stage Racks (Membrane Filter)

- Turbidity Analyzer TB820D / FLXA402T
- Pressure Transmitters
- Magnetic Flowmeters
- Conductivity Analyzers & Sensors
- Free Available Chlorine Analyzer FC800D / FLXA402T

#### Recovery Turbine

- Vibration Sensors Sushi Sensor XS770A
- Magnetic Flowmeters

#### Buffer and Storage Tanks

- Level Transmitters
- pH/ORP Analyzers & Sensors ●
- Conductivity Analyzers & Sensors ●
- Free Available Chlorine Analyzer FC800D / FLXA402T
- Temperature Transmitters

#### Chemical Dosing

- pH/ORP Analyzers & Sensors
- Conductivity Analyzers & Sensors
- Coriolis Flowmeters
- Free Available Chlorine Analyzer FC800D / FLXA402T

#### **Pump Monitoring & Predictive Maintenance**

- Vibration Sensors Sushi Sensor XS770A
- Data Logging & AI Anomaly Detection GA10

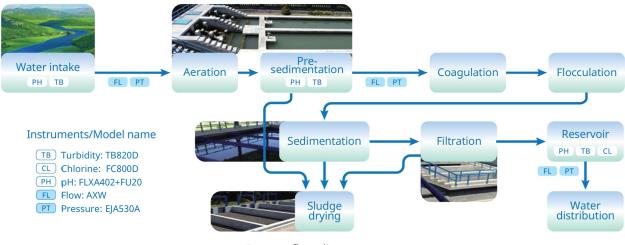
# Success Story

### QUICK SCALING WATER SOLUTIONS WITH YOKOGAWA'S SCADA

A new municipal water treatment plant was designed to produce 300 L/s (25,920 m<sup>3</sup>/day) of clean water. Soon after the plant started operation its production capacity was steadily increased.

The customer selected Yokogawa's process automation system as a one-stop solution which includes the SCADA (Supervisory Control and Data Acquisition) system, STARDOM<sup>™</sup> network-based control system, and various field instruments. To meet urgent water demands, **Yokogawa was asked to deliver a solution within just three months**. This included the entire project from product supply to engineering, installation, and commissioning.

The client was familiar with conventional panel operation in their existing water treatment facilities. However, for the new plant, they decided to employ the latest reliable control systems to increase the availability and quality of operation, facilitate maintenance, and future expansion. Learning the new technologies was a major challenge, but the plant has been supplying safe and clean water to the southwest part of the municipality.



Process flow diagram

### CONTROL HARDWARE & SOFTWARE



#### SCADA SYSTEMS

#### **FAST/TOOLS, CI Server**

Collaborative Information (CI) Server enables digital transformation across multiple facilities by unifying data with disparate formats and protocols into valuable, actionable information.

- High performance, high capacity, and broad scalability
- Open architecture and platform independence – on-premise or in the Cloud
   Simplified deployment and version
- Simplified deployment and version management to minimize TCO
- Advanced HMI and mobile device support



### HYBRID PLC/RTU

### STARDOM

STARDOM is a high-performance, autonomous controller that is compatible with a wide range of SCADA systems.

- For applications that demand high availability, redundant CPUs and networks are options.
- IEC 61131-3 programmable
- Provides integral alarm management,
- thin-client HMI, historian, and special applications such as gas flow computing

# **Field Instruments**



#### MAGNETIC **FLOWMETERS** AXW / AXG

- Exclusive dual frequency excitation method ensures quicker response, reduced noise, and greater stability in high-concentration slurries
- Advanced diagnostics with built-in health check verification, detection of flow noise, electrode coating, and conductivity changes
- Micro SD for duplication, logging, or maintenance
- Flat spec accuracy up to 0.15% and measurement of fluids with conductivity as low as 1uS/cm
- NSF-61 available on select models, 3A approved, Ethernet/IP ready



#### MAGNETIC **FLOWMETERS**

#### **CA Series**

- CA Series can measure fluids that are difficult to measure with other magnetic flowmeters by taking advantage of the unique feature of having capacitive electrodes that do not come into contact with liquid. For example, highconcentration slurry fluids. insulator-adhesive fluids, and ultra-low-conductivity fluids
- If you use the verification function, you can diagnose the equipment and easily check the status of the equipment

**MULTIVARIABLE** TRANSMITTER **EIA910A** 

- Fully compensated mass flow: all flow factors can be automatically and optimal value
- 1.0% mass flow rate accuracy over 1:10 flow range
- Simultaneous dual output of 4 to 20 mA and pulse signals for total flow, flow rate, or alarm status



#### **CORIOLIS MASS AND DENSITY FLOWMETERS**

#### ROTA: . @@HTI

- A versatile, multi-sensing flowmeter that measures most flowing fluids
- Vibration-resistant due to counterbalanced dual measurement system
- Robust sensor design with lowpressure loss
- High accuracy measurement, Mass flow: 0.1%, Density: 0.005 g/cm3
- Wide temperature range (-196 °C to 350 °C)
- In-line concentration measurement, batching and viscosity function NTEP and 3A approvals

**PRESSURE. DIFFERENTIAL &** 

LEVEL TRANSMITTERS

EJA110E / EJA510E / EJA530E

A best-selling pressure transmitter

series featuring a silicon resonant

Combined with an orifice, measures

sensing (Differential pressure and

Multi-functional indicator with local

liquid, gas, and steam flow rates

Unique features include: Multi-

Output signal characterizer.

parameter setting function

Alarm output for measured

pressure and static pressure

Available for direct mounting

Fast response time of 90ms for

various applications

Static pressure)

(optional)

(optional)



#### VORTEX **FLOWMETERS**

#### VY Series

- Up to 16-inch models with Reduces Bore types up to 2 sizes down
- Supports flexible piping design and installations
- Unique noise reduction and Spectral Signal Processing (SSP) to provide an accurate and stable measurement
- Robust shedder bar construction makes measurement at high temperatures (max. 450℃) and high pressure possible
- Vortex waveform monitoring without an oscilloscope



#### VARIABLE AREA FLOWMETERS (ROTAMETER)

#### RAMC / RAKD / RAGN

- Direct measurement and indication
- Easy installation with low maintenance
- Various process connections and wetted materials
- Available in either glass or metal Countless options such as 4-20 mA output, adjustable limit switches, pulse output, etc

### **TEMPERATURE** TRANSMITTERS

#### **YTA**

- Field mount type
- Built to last: Dual-compartment housing realizes high resistance capability to harsh environments.
- Safety first: SIL2 certified right out of the box - At Yokogawa safety is not an option.
- Excellent long-term stability: Industry leading 5-year stability guarantee

#### Head mount type

A head mount type conforms to the standard DIN form B head mounting

#### Panel mount type

 A panel mount type conforms to the standard DIN rail mounting and supports HART communication protocol



LGS

dynamically calculated to an

Note: Symbols indicate process fluid types – Liquid 📘, Gas 👩, Steam 🥵

- without a three-valve manifold Outstanding long-term stability reduces maintenance costs
- 1 to 5 V low power output type available
  - SIL2 certified

sensor



#### **DIAPHRAGM SEAL SYSTEM DIRECT MOUNT**

EJAC80E

- Flange-mounting, compact differential pressure transmitter
- Direct mounting to a tank
- Small flange size model available

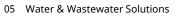


#### **DIAPHRAGM SEAL SYSTEM REMOTE MOUNT**

#### EJAC80E

- Ideal for measuring the levels and densities of corrosive and hightemperature fluids
- Small flange size model available





LGS

# Field Instruments

#### WIRELESS SENSORS

SUSHI SENSOR

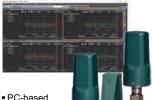


#### XS770A / XS530 / XS550 / XS110A

- Industrial IoT sensors for vibration, pressure, or temperature with long-range capability via LoRaWAN
- Automated plant equipment health monitoring to replace manual operator rounds and digitize data
- Easy plug-and-play installation with intuitive set-up from Smartphone application
- Artificial Intelligence and data monitoring on-premise and/or in the cloud
- FM approval for hazardous locations

#### DATA LOGGING & AI ANOMALY DETECTION

GA10 / SUSHI SENSOR



monitors and

- records data from a variety of instrument networks
- Al anomaly detection and notification
- Build an easy-to-use monitoring screens
  Cost-savings through demand
- Output data to Excel, PDF, FTP,
- printer or other systems
- Access privileges can be assigned to each user
- Support for visualizing power and flow
   Quickly check errors with the alarm monitor
- Maximum of 100 connected devices
  High speed acquisition 100ms or faster
- Maximum number of data tags: 2,000 tags

#### PAPERLESS RECORDERS GX10 / GX20 / GP10 / GP20



- Modular construction, scalable from 30 to 100 input channels on the main unit and expandable to 450 input channels
- Built-in Artificial Intelligence with "Future Pen" predictive waveforms and "Future Alarm" to predict trouble events
- Data integrity complying to FDA 21 CFR Part 11
- Easy integration to PLCs and DCS via EtherNet/IP
- Intuitive touch screen to visualize and search for data, write
- freehand messages, and more • Enable TC, DCV, RTD. DI, and DO
- measurements with modules
  Fast selectable scan intervals from 1 ms to 5 sec
- Secure and reliable data storage to both internal (500MB standard and 1.2GB large) and external (up to 32GB) storage media

# PROCESS LIQUID ANALYZERS & SMARTDAC+ DATA LOGGERS

SENSTATION



Senstation combines the unique capabilities of Yokogawa's leading products such as the SMART data logger, SMARTDAC+, and the SMART digital SENCOM sensors in a new solution that improves factory efficiency and profitability.

- The SMARTDAC+'s customized display with touchscreen and swipe will allow for a detailed real-time overview of all connected sensors
- Remotely access all data from PC, laptop, tablet or a phone
- Simple database management system for tracking up to 100 different serial numbers
- Simplify replacement with "precalibrated" sensors
- Monitor sensor aging in real-time with the sensor wellness feature
- CE compliant; IECEx, ATEX, FM, CSA, TIIS compliant

# **Network Solutions**



#### PROGRAMMABLE LOGIC CONTROLLER (PLC)

#### FA-M3

Yokogawa's FA-M3 next-generation PLC products feature ultra-high speed, stable control and highperformance networking for real time, deterministic automation and monitoring. FA/M3 is scalable up to 8192 I/O points.



#### INDUSTRIAL AI PLATFORM

#### E-RT3

The e-RT3 Plus industrial AI Edge platform is ideal for IoT and AI adoption in manufacturing. With Cloud Service accreditation from Microsoft and Amazon Web Services, the E-RT3 Plus is leading the future of manufacturing from automation to autonomous operations.



### MODULAR DATA ACQUISITION SYSTEM

#### GM10

- Scalability: Up to 420 channels per system / plug and lock modules
- Ease of use: Web-based configuration / live web-based data viewing
- Mobile connectivity: Bluetooth / mobile application
- Open network: Modbus, EtherNet/IP, SLMP, and OPC-UA server
- Reliability: High accuracy measurement, ultimate data security complying to FDA 21 CFR Part 11
- Noise torrance: Electromagnetic relay module
- PID, program control, and highspeed (1ms) measurement options



#### CONTROLLERS & INDICATORS

#### UTAdvanced / TC10 / YS1000

- Advanced PID control, ladder
- sequence control and fuzzy logic • Function block programming
- Bright and easy to read color LCD
- displays with scrolling text
  Multiple communications protocols,
- Multiple communications protocols, Ethernet, Modbus, PROFIBUS, CC-Link, DeviceNet
- 3-year warranty and NEMA 4 face

# Liquid & Gas Analyzers



#### FREE AVAILABLE CHLORINE ANALYZER

#### FC800D / FLXA402T

- EPA Method 334.0 (Jan. 2024)
- Non-reagent type
- Polarographic method using rotating gold electrode
   Ideal for measurement of free
- available chlorine in water supply and distribution systems
- 0-1 mg/L to 0-3 mg/L, 0-5 mg/L and 0-10 mg/L models are available.
- 2 or 3 automatic/remote range switching function



#### RIGHT ANGLE SCATTERED LIGHT TURBIDITY ANALYZER

#### TB820D/ FLXA402T

- EPA Compliant with Yokogawa Method 820 for Drinking Water Applications (Jan. 2024)
- User configurable measuring range from 0-0.2 to 0-5 NTU (Red light LED, 660 nm) and from 0-0.02 to 0-700 FNU/NTU (Infrared light LED, 860 nm).
- Highly reliable measurement with excellent linearity and repeatability
- In-line connection available
   I.D. light course and easy to close
- LED light source and easy-to-clean removable measurement cell
   Optional: PG400 pulse generator
- self-cleaning unit
- Optional: Pressurized head tank for <2 NTU applications</li>



#### PROCESS GAS CHROMATOGRAPH

#### GC8000

- Fast analysis
- Parallel GC by GC Module concept
   Large 12.1-inch color LCD
- touchscreen
- 6 languages
- Built-in wireless LAN port
- (optional, GC8000 Type6)
- AI-based software for easy & predictive maintenance (optional)

# **Advanced Laboratory Instruments**



### FLUID IMAGING TECHNOLOGIES

#### FLOWCAM

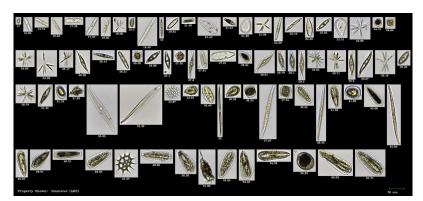
FlowCam is a flow imaging microscope that combines the benefits of digital imaging, flow cytometry, and microscopy into a single solution for life science, materials research, and industrial applications. Beyond traditional particle sizing and counting, image-based analysis allows for the comprehensive characterization of subvisible API aggregates and contaminants in biopharmaceuticals, mammalian cells, microplankton, emulsions, and advanced materials.

#### FlowCam products include:

- FlowCam 8000 Series, our most versatile instrument and enumeration
- FlowCam LO, flow imaging microscopy and light obscuration in a single instrument
- FlowCam Nano, submicron imaging for particles 300 nm to 2 μm
- FlowCam 5000, an affordable instrument optimized for your application
- $\bullet$  FlowCam Macro, analysis of visible particles from 300  $\mu m$  to 5 mm
- ALH for FlowCam, automated liquid handling for unsupervised analysis
- VisualSpreadsheet, powerful analytical software with an optional AI module

Yokogawa Fluid Imaging Technologies' mission is to bring clarity and focus to the study of subvisible particles in the life sciences, including monitoring Earth's water bodies and drinking water supply for hazardous algae, helping to make vaccines and injectable medicines safer, and improving product quality in a variety of applications.

For more information, visit: FlowCam.com



A FlowCam collage of plankton species captured in the Anacosta River, Washington, D.C.

# Liquid Controllers & Sensors





#### FLXA402 (4-Wire) Converter

- Measures pH, ORP, rH, & temperature
- Color touchscreen, 11 languages
   Up to five sensors, connection of digital sensor (SA11) smart
- adapter
- Multi-input and multi-parameter analyzer
- Easy maintenance using SD card, Ethernet, RS485, and Bluetooth
- HART®, Modus, Ethernet, 4-20mA



#### FLXA202 (2-Wire)

- Touchscreen, 12 languages
- Two sensors can be connected
- Hazardous area classification





 Select the appropriate sensor for your application





#### PH71/PH72

- Intelligent, portable pH/ORP meter with waterproof (IP67) construction
- Various convenient functions: 300-point data memory, alarm clock, temperature, etc





#### FLXA402 (4-Wire) Converter

- Measures conductivity, resistivity & temperature
- Color touchscreen, 11 languages
  Up to five sensors, connection of digital sensor (SA11) smart
- adapter • Multi-input and multi-parameter
- analyzer
  Easy maintenance using SD card,
- Ethernet, RS485, and Bluetooth
- HART®, Modus, Ethernet, 4-20mA



#### FLXA202 (2-Wire)

- Touchscreen, 12 languages
- Two sensors can be connected
- Hazardous area classification



#### CONDUCTIVITY SENSORS

 Select the appropriate sensor for your application

#### INDUCTIVE CONDUCTIVITY SENSORS

#### ISC40G/S

- Measuring range: 100 µS/cm 1999 mS/cm with a single sensor
- Material: PEEK or Fluororesin (PFA)

#### PERSONAL CONDUCTIVITY METER SC72

- Intelligent, portable conductivity meter with waterproof (IP67) construction
- Various convenient functions: 300point data memory, alarm clock, temperature, etc

# DISSOLVED OXYGEN ANALYZERS



#### FLXA402 (4-Wire) Converter

- Measures DO concentration, % saturation & temperature
- Color touchscreen, 11 languages
  Up to five sensors, connection of
- digital sensor (SA11) smart adapter
- Multi-input and multi-parameter analyzer
- Easy maintenance using SD card, Ethernet, RS485, and Bluetooth
   HART®, Modus, Ethernet, 4-20mA



#### FLXA202 (2-Wire)

- Touchscreen, 12 languages
- Two sensors can be connected
- Hazardous area classification



#### DISSOLVED OXYGEN SENSORS

#### DO71 / DO72 / DO30G

 Measurement object: Measurement of dissolved oxygen in aeration tanks at sewage treatment plants.

- Measuring range:
  - 0 to 22.5 mg/L (ppm) (DO71)
     0 to 22.5 mg/L (ppm) (DO72-W)
  - 0 to 2 mg/L (ppm) (DO72-T)
- 0 to 20 mg/L (ppm) (DO30G)
  Type of sensor:
- Optical DO sensor (DO71, DO72), Galvanic cell DO sensor (DO30G)

#### INLINE CLEANING MECHANISM

- This cleaning apparatus can be used with the All-in-One style sensors (FU20/FU24/PH20) or with individual 12mm sensors (SC21/SC29)
- Restricts sediment formation on the electrodes and increases the period between calibrations





#### For analog sensors with integrated ID-chip

- Online sensor diagnostics, sensor wellness and predictive maintenance
- Connectable sensor: pH/ORP sensors, Conductivity sensors
- Auto recognition of sensor with plugand-play capability
- On-site calibration using FLXA converter, FieldMate or SENCOM configuration tool
- Standalone operation without connection to converter optimize maintenance
- Integrated logbook



#### PR10

- Can remove a sensor without shutting down the process
- For pH/ORP, Dissolved Oxygen, Conductivity and Inductive Conductivity sensors

### RETRACTABLE ASSEMBLY

#### PH87/PH97

- Suitable for "Hot-Tap" service, allowing for removal from a
- pressurized process line or vessel without interrupting the flow or draining the tank
- Constructed of chemically resistant titanium with blowout protection
- Integral junction box for simple installation
- Adjustable insertion length
- For pH/ORP sensors

#### PNEUMATIC RETRACTABLE FITTING

- EXAtrac RF20 • Suitable for hash applications where
- frequent cleaning is of vital importance for a good pH measurement
- Available in plastic, stainless steel and Alloy C22
- Can remove a sensor without shutting down the process
- For pH/ORP sensors

YOKOGAWA   Co-innovating tomorrow <b>Water Industry Solutions Guide</b> Visit our website at: https://www.yokogawa.com/us //industries/water-wastewater/		WATER												WASTEWATER									SLUDGE								
		vithdrawal	/ coagulation		charcoal filtration	er	iltration	n		nt / effluent					뉟	tion / lift station			e trap	Primary & secondary clarification	Sludge activation / aeration basin	nt dosing	ē	and effluent	Ę		entrator & dewatering	tion	tioning	erator	ade
		Raw water withdrawal	Flocculation	Sand filter	Activated ch	Pressure filter	<b>Membrane filtration</b>	Neutralization	Disinfection	End treatment	Storage	Distribution	Softening	Pump health	Sewer / stor	Pumping station	Influent	Bar screen	sand / grease trap	Primary & se	sludge activa	PO4 coagulant dosing	Return sludge	<b>Disinfection and</b>	Blower system	Pump health	Sludge concentrator	Sludge digestion	Sludge conditioning	Sludge incinerator	Biogas upgrade
NETWORK SOLUTIONS				•							•/		•/								•						•				
YS1000 Series	Single loop controller – dosing control																														
UTAdvanced	Digital indicating controller																														
FA-M3V / e-RT3	PLC / Industrial AI platform														1																
DATA ACQUISITION																															
GX10, GX20, GM10	Paperless data recorder / logging																														
GA10	Data logging software / AI anomaly detection																														
FLOW																															
RAMC, RAKD, RAGN	Rotameter																														
AXW Series	Magnetic flowmeter AXW																														
CA Series	Magnetic flowmeter CA																														
ROTAMASS TI Series	Coriolis mass flow																														
VY Series	Vortex flowmeter																														
LIQUID ANALYSIS																															
FLXA402 / FLXA202	Transmitter / analyzer															1															
FU20	pH potentiometric																														
FU20	ORP potentiometric																														
ISC40	Conductivity																														
D071	Dissolved oxygen - optical																														
TB820D + FLXA402T	Turbidity																														
FC800D + FLXA402T	Free chlorine – EPA 334.0																														
LEVEL																															
EJA110E / EJA530E	Continuous level - hydrostatic																														
PRESSURE																															
EJA510E / EJA530E	Absolute and relative pressure	-				•	•							•															_		
EJA110E	Differential pressure						•							•																	
TEMPERATURE																															
YTA Series	RTD temperature																														
XS770A XS530 + XS110A	Wireless vibration sensor Wireless pressure sensor +													_	_			-		-									-	_	
	communication module Wireless temp. sensor +									_	_	_					+												_	-	
XS550 + XS110A	communication module																														

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