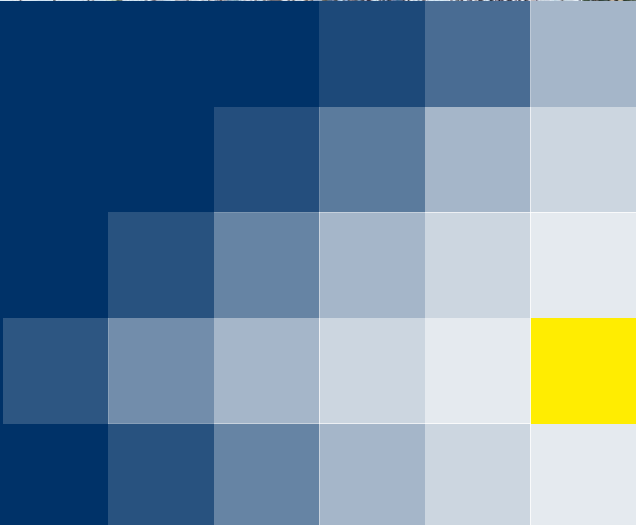




OpreX™ Field Instruments

# Product Solution Catalog

## Field Instruments and Analyzers



# Field Instruments

## Pressure Transmitters



Liq Gas Stm

### DPharp EJX Series Differential Pressure and Pressure Transmitters

- Ultra-high performance, the flag-ship model of DPharp.
- High accuracy and fast response.
- Unique features include;
  - Multi-sensing (Differential pressure and Static pressure).
  - Output signal characterizer.
  - Multi-functional indicator with local parameter setting function (optional).
  - Alarm output for measured pressure and static pressure (optional).
- High reliability.
- SIL2 certified by TÜV.



Liq Gas Stm

### DPharp EJA-E Series Differential Pressure and Pressure Transmitters

- A best-selling pressure transmitter series featuring silicon resonant sensor.
- Fast response, corresponding to various applications.
- Excellent long term stability slashes maintenance cost.
- Unique features include;
  - Multi-sensing (Differential pressure and Static pressure).
  - Output signal characterizer.
  - Multi-functional indicator with local parameter setting function (optional).
  - SIL2 capable.
  - 1 to 5 V low power output type available.

## Temperature Transmitters



### YTA Series Temperature Transmitters

#### 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 guaranty



#### Head mount type

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

#### Panel mount type

- A panel mount type conformsto the standard DIN rail mounting and supports HART communication protocol.



Liq Gas Stm

### EJX-B Series Wireless Differential Pressure/Pressure Transmitters

### YTA510 Wireless Temperature Transmitter

- Provide optimized wireless performance and identical sensor capability to wired one

## Field Wireless Infrastructure



YFGW410



YFGW510

### YFGW410/510 Field Wireless Management Station/Access Point

### FN110-R1/LN90 Field Wireless Gateway Module



FN110-R1/LN90

- Single or redundant configuration with YFGW410 and redundant switch over in less than 1 second
- Highly reliable redundant communication: DUOCAST (YFGW410/510 only)
- Management of 500 wireless devices (max.) by YFGW410
- Management of 20 YFGW510s (max.) by YFGW410 and 100 wireless devices by YFGW510
- Management of 20 wireless devices (max.) by FN110-R1/LN90



### FN310 Field Wireless Multi-Protocol Module

Wired HART transmitter

MODBUS device (SENCOM)



### FN510 Field Wireless Multi-Function Module

DI / DO, AI

Pulse count

Vibration sensor (LN01)

- Convert a wired transmitter, sensor or device into wireless



### YTMX580 Multi-Input Temperature Transmitter

- 8 analog inputs

## Common Features

- ISA100 Wireless™ certified
- Network Topology — Star, Mesh, Designed mesh (mesh route is designed manually)
- Power supply — Battery

- Function as network device — IO auto, IO, IO and repeater, repeater
- Update period — from 0.5 to 3600 seconds (depend on function)
- Ex Certification — ATEX, FM, CSA, IECEx

Note: **Liq**, **Gas**, and **Stm** symbols indicate applicable process fluid types (liquid, gas, steam).

# Gas Analyzers

## Oxygen Analyzers



### ZR402/ZR202 Zirconia Oxygen Analyzers

- Measurement with probe directly inserted into furnace or boiler
- Integrated and separate types available
- Also can be used as a high temperature humidity analyzer
- Fully field-repairable probe
- HART communication
- Explosionproof (FM, CSA, ATEX) (ZR22S, ZR202S)



### AV550G Averaging Converter

- Capable of accepting inputs up to 8 oxygen detectors and 8 individual outputs are available
- Averaging of multiple point oxygen measurements is ideally suited for combustion control



### OX400 Low Concentration Zirconia Oxygen Analyzer

- Capable of measuring wide range of concentrations, from 0-10 ppm up to 0-100 vol% O<sub>2</sub>.
- Oxygen concentration control in semiconductor-related diffusion and drying furnaces and in LCD manufacturing processes



### OX100/OX102 Limiting Current Type Oxygen Analyzers

- Ideally suited for measuring oxygen concentrations of N<sub>2</sub> purged flow-soldering machine, etc.

## Laser Analyzer



### TDLS8000 Tunable Diode Laser Spectrometer

- In-line analysis of gases of O<sub>2</sub>, CO, CH<sub>4</sub>, NH<sub>3</sub>, H<sub>2</sub>O, and many more NIR absorbing gases in refinery and petrochemical plants
- Large HMI provides easy operation and control of up to 4 analyzers at the same time
- IEC61508 SIL designed & approved, SIL 2
- IECEx, ATEX, cFMus hazardous area approvals based on Nonincendive/Type n and flameproof
- HART and Modbus TCP communications are standard.
- 10 languages



### TDLS8100 Probe type Tunable Diode Laser Spectrometer

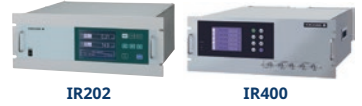
- Access on one side only
- Optical, hydrodynamics, thermal and vibration designed Probe to stabilize laser optics axis and optical path length for a long time



### MG8G/MG8E Paramagnetic Oxygen Analyzers

- Ideally suited for measuring oxygen concentrations of flammable gases
- MG8E has flameproof construction

## Infrared Gas Analyzers



### IR202/IR400 NDIR Type Infrared Gas Analyzers

#### Measuring Components

- IR202: NO, SO<sub>2</sub>, CO<sub>2</sub>, CO, CH<sub>4</sub>, O<sub>2</sub>
- IR400: NO, SO<sub>2</sub>, CO<sub>2</sub>, CO, CH<sub>4</sub>, O<sub>2</sub>

## Gas Density Meter



### GD402/GD40 Gas Density Meter

- Measures gas density with high sensitivity and quick response. Also capable of displaying specific gravity and molecular weight derived from the density data.
- Can be used in hazardous areas with explosive atmospheres (FM, CSA, TIIS)
- Hydrogen purity and replacement meter for power generators

## Gas Calorimeter



### CM6G Gas Calorimeter

- Ideally suited for measuring calorific value and Wobbe Index of gases in applications including city gas and iron & steel gas

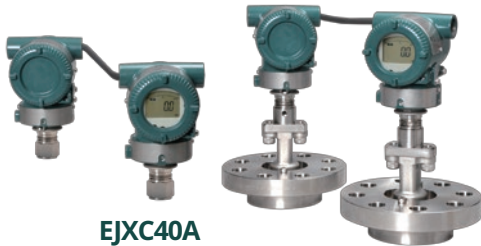
## Level Transmitters



### EJXC80A/EJAC80E Diaphragm Seal System (Direct Mount Seal)

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

Liq



### EJXC40A Digital Remote Sensor

- Connecting two pressure sensors, master (high pressure side) and slave (low pressure side) in a remote location, with DRS dedicated communication cable to measure differential pressure.
- Suitable for level measurement of a tall tank. DRS cable length (maximum): 45 m
- Signal characterization for various tank types.

Liq



### EJXC80A/EJAC80E Diaphragm Seal System (Remote Mount Seal)

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

Liq



### EJAC60E Hygienic Adapter System Fluidless Type Pressure Transmitter

- The hygienic pressure transmitter is designed specifically for the needs of the food and pharmaceutical industry.
- The transmitter design eliminates the use of filling fluid and incorporates a hygienically sealed adapter structure to ensure process integrity.
- Hygienically sealed adapters offer 16 different type of process connections.

## Configuration Tool

### FieldMate Versatile Device Management Wizard

- FieldMate is a field work-oriented software program for configuring, daily patrol, troubleshooting, and managing a wide variety of field devices used in plants and laboratories.
- Multi-protocol access support  
HART, FOUNDATION™ fieldbus H1, PROFIBUS, BRAIN, ISA100.11a, Modbus
- Support frequently used functions (Zero adjustment, Input loop check support, and Acquisition of device parameters)



### CA700/PM100 Pressure Calibrator/ External Pressure Sensor

- A pressure calibrator specifically designed for the differential pressure and pressure transmitters
- Pressure measurement range 200 kPa ~ 70 MPa.
- Basic accuracy: Pressure 0.01% drg, Current/voltage 0.015% rdg
- "As Found", "As Left" data and error rate (%) can be recorded.



Note: **Liq**, **Gas**, and **Stm** symbols indicate applicable process fluid types (liquid, gas, steam).



Liq

### ADMAG AXR 2-wire Magnetic Flowmeter

- 2-wire loop powered performance allows direct connection to DCS I/O card possible, thus drastically reducing the initial cost and power consumption.
- Certified with SIL2 Safety Integrity Level (IEC 61508). AXR is capable of SIL2 single use and SIL3 redundant use, as standard.



Liq

### ADMAG AXF Magnetic Flowmeter

- "Dual Frequency Excitation Method" realizes the stable measurement of high concentration slurry fluid and low conductivity fluid.
- User-friendly functions, such as an electrode adhesion level diagnosis function, infra-red switches which can be used for setting parameters without opening the case cover.



Liq Gas

### ROTAMETER Variable Area Flowmeter

- Complete stainless steel design.
- Local indication and analog output.
- Various process connections and wetted materials.
- Options such as Exi-version, inductive alarms, pulse output, etc.



Liq Gas Stm

### EJX/EJA Series Differential Pressure Transmitters

- Combined with an orifice, measures liquid, gas, and steam flow rates.
- Available for direct mounting without three-valve manifold.
- Outstanding long-term stability slashes maintenance costs.



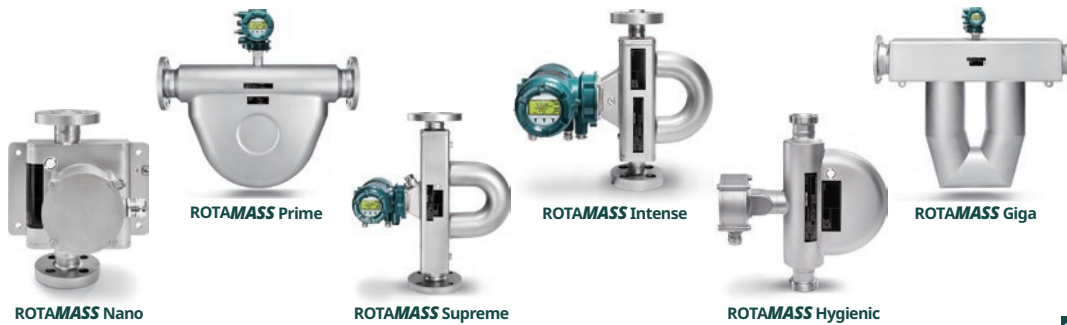
Liq Gas Stm

### EJX910A Multivariable Transmitter

- Fully compensated mass flow: all flow factors can be automatically and dynamically calculated to an 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.

# Field Instruments

## Flowmeters



### ROTAMASS Total Insight Coriolis Mass Flow and Density Meter

- A versatile, multi-sensing flowmeter that measures most flowing fluids
- Vibration-resistant due to counterbalanced dual measurement system
- Robust sensor design with low pressure loss
- High accuracy measurement, Mass flow: 0.1%, Density: 0.005 g/cm<sup>3</sup>
- Wide temperature range (-196 °C to 350 °C)
- In-line Concentration Measurement, Batching and Viscosity function

#### The Total Insight concept provides:

- Six dedicated product lines offering best-suited solutions
- Wizard for easy setup and configuration
- "Event-Management" for pro-active operation
- In-line meter verification with Total Health Check and Tube Health Check
- MicroSD card for easy data transfer
- Worldwide approvals and universal power supply

Liq Gas



### ADMAG Total Insight AXG and AXW Magnetic Flowmeter

- The ADMAG Total Insight AXG and AXW adopt the "Total Insight" concept and totally support the product life cycle. The functions will increase customer's benefits with reducing total cost of ownership.
- High-quality and highly reliable product based on years of experience and achievement by our proprietary dual frequency excitation method.
- The AXG is ideal for industrial process lines like oil&gas/chemical/pulp&paper/food& beverage/metal&mining applications, and the AXW is for general industrial process lines and water supply/sewage applications.
- The AXG and/or AXW provide four I/O signals, calorie calculation, data logging, NAMUR NE 107, built-in verification, application diagnostics, and data transfer by microSD card.

Liq

### digitalYEWFLO Vortex Flowmeter



- Spectral signal processing automatically optimizes the output immediately after power-on.
- The maximum size is 400 mm. Various body from cost-effective wafer types to high-pressure flange types (ANSI class 1500 lb) is available.
- Available in high-temperature (up to +450 °C) and cryogenic models (down to -196 °C).
- Built-in temperature sensor in the shedder bar offers the mass flow output or the temperature output.
- Corrosion-resistant type compatible with corrosive fluids is available.
- Robust meter design to withstand steam flow challenges such as water hammer, high temperature process, etc.
- Reduced bore type enable low flow measurement. Available for up to 2 sizes down.

Liq Gas Steam

## Converter



### PK200 Current-to-Pneumatic Converter

- Electronic feedback system achieving high reliability and high performance.
- Energy-saving design achieve economy.
- Designed to be replacement-compatible with the former model 5502.
- Easy to operate.....one side access.

Field Instruments



## Gas Chromatograph



### GC8000 Process Gas Chromatograph

- Fast analysis with Max. 3 ovens
- Parallel GC by GC Module concept
- Large 12.1 inch color LCD touch screen
- 6 languages

## FT-Near Infrared Analyzers



### InfraSpec NR800 Fourier Transform Near Infrared Analyzers

- Continuous, multiple, and simultaneous measurement of component concentration and property values (density, polymerization degree, octane value, etc.) of various processes
- Measurement of trace water content available



- Barcode reader provides easy operation for at-line and routine analyses
- Reduces operating and maintenance costs by consolidation of lab and process calibration models and onsite hands-on training

## pH/ORP Analyzers



### FLXA402 4-Wire pH/ORP Converter

- Color Touch screen
- Up to five sensor measurements
- Aluminum alloy cast
- Connection of new digital sensor (SA11) smart adapter
- Easy maintenance using SD card, Ethernet, RS485 and Bluetooth
- 11 languages

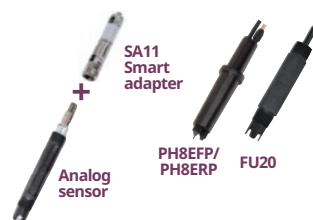


### FLXA202/FLXA21 2-Wire pH/ORP Analyzer

- Touch screen display.
- Two sensors can be connected.
- 12 languages.



FU24F FU20F SC25F  
SENCOM® digital sensor



### pH/ORP Sensors for Process Use

- Appropriate sensor for your application



### PH71/PH72 Personal pH, pH/ORP Meters

- Waterproof (IP67) construction allows measurement in wet environment
- Various convenient functions: 300-point data memory, alarm clock, etc.

## Conductivity Analyzers



### FLXA402 4-Wire Conductivity/Inductive Conductivity Converter

- Color Touch screen
- Up to five sensor measurements
- Aluminum alloy cast
- Connection of new digital sensor (SA11) smart adapter
- Easy maintenance using SD card, Ethernet, RS485 and Bluetooth
- 11 languages



### FLXA202/FLXA21 2-Wire Conductivity/Inductive Conductivity Analyzer

- Touch screen display.
- For conductivity, two sensors can be connected.
- 12 languages.



### Conductivity Sensors

- Appropriate sensor for your application

## Smart Adapter



- Adapter for analog sensors with integrated solution: transmit, convert, calibrate, diagnose measurement data
- Connection to the analogue sensor to enable digital output
- Connectable sensor: pH/ORP Sensors, Conductivity Sensors
- On-site calibration and the operation alone without connection to converter optimize maintenance
- Digital communication with full Modbus support in slave mode

# id Analyzers

## ISC40G/S Inductive Conductivity Sensors

- Measuring range: 100  $\mu\text{S}/\text{cm}$  1999 mS/cm with a single sensor
- Material: PEEK or Teflon (PFA)



## SC72 Personal Conductivity Meter

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



## Dissolved Oxygen Analyzers

### FLXA402 4-Wire Dissolved Oxygen Converter

- Color Touch screen
- Up to two sensor measurements
- Aluminum alloy cast
- Connection of new digital sensor (SA11) smart adapter
- Easy maintenance using SD card, Ethernet, RS485 and Bluetooth
- 11 languages



### FLXA202/FLXA21 2-Wire Dissolved Oxygen Analyzer

- Touch screen display.
- Two sensors can be connected.
- 12 languages.



### DO70G/DO30G Dissolved Oxygen Sensors

- Measurement object: Measurement of dissolved oxygen in aeration tanks at sewage treatment plants.
- Measuring range: 0 to 25 mg/l (ppm) (DO70G), 0 to 20 mg/l (ppm) (DO30G)
- Type of sensor: Optical DO sensor (DO70G), Galvanic cell DO sensor (DO30G)

## Turbidity Analyzers

### TB750G Right Angle Scattered Light Turbidimeter

- User configurable measuring range from 0-0.2 NTU to 0-100 NTU.
- Highly reliable measurement with excellent linearity and repeatability.
- In-line connection available
- Easy-to-clean cell



### TB400G Surface Scattering Light Turbidity Meter

- Surface scattered light method using kaolin, formazin, or PSL (polystyrene latex) for calibration
- Highly reliable measurement at water supply and sewage systems
- Measuring range: 0-2 to 0-2000 mg/l (or degrees, unit selectable)



## MLSS Analyzer

### SS400G MLSS Analyzer

- Wide measuring range from 0-1000 mg/l to 0-20000 mg/l
- Ideal for measurement of mixed liquor suspended solids (MLSS) in an aeration tank of activated sludge processes in sewage and industrial wastewater treatment facilities



## Liquid Density Meter

### DM8 Vibration Type Liquid Density Meter

- Measures liquid density with high sensitivity and stability
- Measuring range of 0.5 to 2.0 g/cm<sup>3</sup> unaffected by flow rate and viscosity
- Detector is available in general-purpose, sanitary, and flameproof types



## Chlorine Analyzers

### FC400G Free Available Chlorine Analyzer

- Non-reagent Type
- Polarographic method using rotating gold electrode
- Ideal for measurement of free available chlorine in water supply and distribution systems
- Field-configurable from 0-1 to 0-3 mg/l for two switchable output ranges
- Micro processor-based, intelligent converter



### FC500G Free Available Chlorine Analyzer

- Non-reagent Type
- Polarographic method using rotating gold electrode
- Ideal for measurement of free available chlorine in water supply and distribution systems
- Measuring range selectable: 0-1/0-2/0-3 mg/l switchable or 0-5/0-10 mg/l switchable



### RC400G Residual Chlorine Analyzer

- Reagent Type
- Polarographic method using rotating platinum electrode
- Ideal for measurement of residual chlorine in chlorination processes of water supply systems and in cooling water of thermal power stations
- Measuring range: 0 to 10 mg/l



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