



OpreX™ Field Instruments

# Product Solution Catalog

Field Instruments and Analyzers

# Field Instruments

## Pressure Transmitters



Liq Gas Stm

### DPharp EJX-A 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.

## Field Wireless



YFGW410



YFGW520

### YFGW410/520 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 (YFGW410/520 only)
- Management of 500 wireless devices (max.) by YFGW410
- Management of 20 YFGW520 (max.) by YFGW410 and 100 wireless devices by YFGW520
- Management of 20 wireless devices (max.) by FN110-R1/LN90



### FN310 Field Wireless Multi-Protocol Module

Wired HART transmitter



### FN510 Field Wireless Multi-Function Module

DI / DO, AI Pulse count Vibration sensor (LN01)

- Convert a wired transmitter, sensor or device into wireless



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

## 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



### ZR22/ZR802/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, IECEx) (ZR22S, ZR202S, ZR802S)



### 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



### MG8G/MG8E Paramagnetic Oxygen Analyzers

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

## 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/TDLS8200 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
- IEC61508 SIL designed & approved.
- FM (US, Canada), IECEx, ATEX/UKEX, hazardous area approvals based on Explosionproof/flame proof.



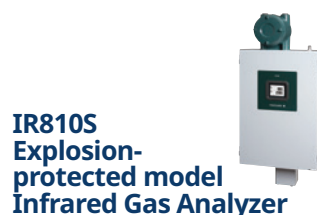
### TDLS5500 High Sensitivity Laser Spectrometer

- Analysis of gases for trace C<sub>2</sub>H<sub>2</sub> in ethylene and trace H<sub>2</sub>S, H<sub>2</sub>O in natural gas.
- The optical resonator structure makes the realizes ultra-high sensitivity.
- No Interference by extremely high spectral resolution through low-pressure sampling

## Infrared Gas Analyzers (NDIR)



### IR800G/IR810G Infrared Gas Analyzers



### IR810S Explosion-protected model Infrared Gas Analyzer



### IR202/IR400 Infrared Gas Analyzers

- Measuring Components**
- 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

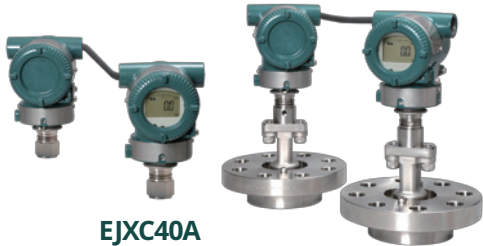
## Level Transmitters



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

Liq

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



### EJXC40A Digital Remote Sensor

Liq

- 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.



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

Liq

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



### 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 PC-based tool for device configuration and management that performs initial setup, daily maintenance, troubleshooting, and configuration backup of a wide variety of field devices used in plants and laboratories.
- Support frequently used functions (Zero adjustment, Input loop check support, and Acquisition of device parameters)
- Calibration Support  
FieldMate helps your calibration works by collaborating with CA700 Pressure Calibrator.

### 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).

### Magnetic Flowmeter CA Series



Liq

- 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, high-concentration 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.

### ROTAMETER Variable Area Flowmeter



Liq Gas

- 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.

### EJX/EJA Series Differential Pressure Transmitters



Liq Gas Stm

- 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.

### EJX910A Multivariable Transmitter



Liq Gas Stm

- 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.

## 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

## 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

### Vortex Flowmeter VY Series

- Support for efficient and planned plant operations: With a health diagnosis function, the user can accurately assess the current measurement status of the instrument on the PC monitor in the control room. In addition, the status information is recorded in the instrument, making it easier to identify when maintenance is required. These features contribute to maintenance activities based on the condition of the instrument.
- Stable measurement by Yokogawa's unique detection structure with a proven track record: Yokogawa's original integral detection structure provides excellent reliability and durability through: (1) a signal sensing element inside the shedder bar and (2) a simple structure without moving parts. In addition, by optimizing our proven SSP (\*) filtering function, measurements are more stable and stronger against vibration.  
\*: SSP is YOKOGAWA's original technology for digital signal processing.
- Wide range of supported applications: The VY Series has succeeded the YEWFLO Series' lineup and expanded lineup with a greater variety of specifications.
  - Standardize the Dual-Sensor (Welded) General Type
  - Additional standards such as SIL 2, NAMUR, etc.
  - Fluid temperature range of -196 to 450°C (Including integral flowmeter)
  - Flange pressure rating up to ASME Class 1500
  - Additional size for the built-in temperature sensor
  - Additional process connections, etc.
- Enhanced input/output functions: Analog input (4 to 20 mA) is supported, resulting in enhanced flow rate calculation functions such as for mass flow rate and heat flow rate.  
Analog output (4 to 20 mA) which is isolated, and pulse/alarm/status contact output are supported.



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## 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
- Built-in Wireless LAN port (Optional, GC8000 Type6)
- AI-based software for easy & predictive maintenance (Optional)

## 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



### WE410, WE420, WE430, WE440 Wet Chemistry Analyzer

- Used for water analysis of sodium, silica, hydrazine and phosphate
- Monitors the quality of power plants steam and water cycle

## 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



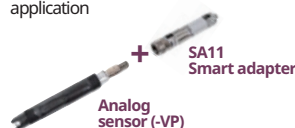
### FLXA202/FLXA21 2-Wire pH/ORP Analyzer

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



### pH/ORP Sensors for Process Use

- Appropriate sensor for your application



## Smart Adapter

### SA11 SENCOM Smart Adapter

- SENCOM Smart Adapter SA11 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 plug and play capability
- On-site calibration using FLXA converter, FieldMate or SENCOM ct configuration tool
- Standalone operation without connection to converter optimize maintenance
- Integrated logbook

## 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



### ISC40G/S Inductive Conductivity Sensors

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

## PR10 Retractable Assembly

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



# id Analyzers

## Personal Meters

### 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.

### 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.



### DO71/DO72/DO30G Dissolved Oxygen Sensors

- 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)

## Turbidity Analyzers



### TB820D, FLXA402T Right Angle Scattered Light Turbidity Analyzer

- 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
- LED light source and Easy to Clean removable measurement cell.



### TB830D, FLXA402T Surface Scattering Light Turbidity Analyzer

- Surface scattering measurement method minimizes contamination
- LED light source for 3-years long life and reduced maintenance costs
- High sensitivity and high accuracy with long-standing reliability
- Measuring range from 0-2 to 0-2000 NTU (White light LED) and 0-2 to 0-2000 FNU/NTU (Infrared light LED, 860 nm)
- Easy-to-clean cell structure

## 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



### FC800D, FLXA402T Non-reagent Type 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
- 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



### RC800D, FLXA402T Reagent Type Residual Chlorine Analyzer

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

Customer  
Portal site :



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Yokogawa enables operational excellence across the enterprise.

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