

# **Product Solution Catalog**

(Field Instruments and Analyzers)



Bulletin 00A03B02-01E

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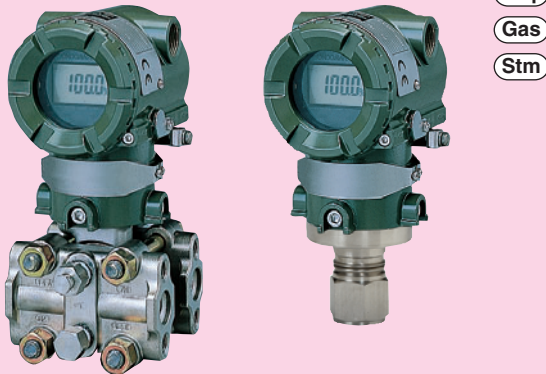
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**YOKOGAWA** ◆

# Field Instruments

## Pressure Transmitters

### DPharp EJA Series Differential Pressure and Pressure Transmitters



- ◆ A field proven, best-selling pressure transmitter series featuring silicon resonant sensor.
  - Proven track record throughout the world.
  - High accuracy.
  - Excellent long term stability slashes maintenance costs.
- ◆ Easy-to-use compact design.
- ◆ Wide variety of product lineup.
- ◆ Explosion-protected type available.

### DPharp EJX Series Differential Pressure and Pressure Transmitters



- ◆ Ultra-high performance, the newest model of DPharp.
  - Fast response.
- ◆ Unique features include;
  - Multi-sensing (Differential pressure and Static pressure).
  - Output signal characterizer.
  - Multi-functional indicator (optional).
  - Alarm output for measured pressure and static pressure (optional).
- ◆ High reliability.
  - SIL2 certified by TÜV.

## Temperature Transmitters and Sensors

### YTA Series Temperature Transmitters



- ◆ Converts a temperature sensor or mV DC signal to a 4 to 20 mA signal and transmits it.
- ◆ Minimizes the error due to the extension wires, thus improving the accuracy.
- ◆ Only a small length of extension wires or three-core cable is required, thus reducing the wiring costs.
- ◆ The sensor type and measurement range can be set according to the purpose.
- ◆ Dual-compartment housing (YTA110, YTA310, and YTA320 )
- ◆ SIL2 certified by TÜV NORD (YTA110, YTA310, and YTA320 with BRAIN and HART protocol)

### Thermocouples and Resistance Temperature Detectors



- ◆ Superb reliability and proven track record.
- ◆ Fully compliant with IEC (and JIS).
- ◆ Variety of mounting hardware for application to all types of process.



# Gas Analyzers

## Gas Chromatograph    Oxygen Analyzers

### GC8000 Process Gas Chromatograph



Touch Panel

- ◆ Fast analysis with Max. 3 ovens.
- ◆ Parallel GC by GC Module concept.
- ◆ The large 12.1 inch color LCD touch screen.

### 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)

### MG8G/MG8E Paramagnetic Oxygen Analyzers



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

### AV550G Averaging Converter

- ◆ Capable of accepting inputs from 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 a 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 Analyzers

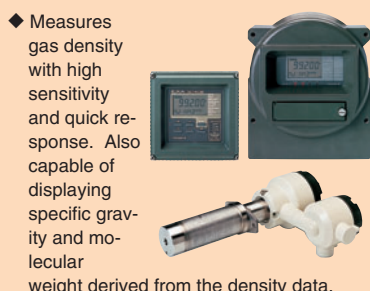
### TDLS200 TruePeak Tunable Laser Analyzers



- ◆ In-line analysis of gases (O<sub>2</sub>, CO, NH<sub>3</sub>, H<sub>2</sub>O etc.) in chemical, combustion, denitration processes
- ◆ Explosion proof type: ATEX Group II for zone 1 (Cat 2G) or 2 (Cat 3G) with purge systems

## 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 values of gases in applications including city gas and iron & steel gas

## Dust Monitor

### DT450G Dust Monitor



- ◆ Automatic range set-up and no manual adjustment required
- ◆ Triboelectric detection method unaffected by dust adhesion
- ◆ For bag filter detection and adjustment of electrostatic precipitator efficiency

## Infrared Gas Analyzers

### IR100/IR200/IR400 NDIR Type Infrared Gas Analyzers



IR100



IR200



IR400

#### Measuring Components

- ◆ IR100: CO<sub>2</sub>, CO, CH<sub>4</sub>
- ◆ IR200: CO<sub>2</sub>, CO, CH<sub>4</sub>, SO<sub>2</sub>, NO, O<sub>2</sub>
- ◆ IR400: NO, SO<sub>2</sub>, CO<sub>2</sub>, CO, CH<sub>4</sub>, O<sub>2</sub>

### SG750 Stack Gas Analyzer



- ◆ Simultaneously measures NO<sub>x</sub>, SO<sub>2</sub>, CO, CO<sub>2</sub> and O<sub>2</sub> with sampling system

# Field Instruments

## Flowmeters

### ADMAG AXF Magnetic Flowmeter



#### Predictive diagnostics - lowers TCO

- ◆ Electrode adhesion detection reduces process downtime.
- ◆ Replaceable electrode construction is available.
- ◆ Error messages and diagnostic instructions simplify and optimize maintenance.

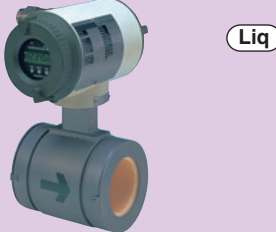
#### User-oriented functionality

- ◆ Multi-line backlit LCD.
- ◆ Easy-to-install rotatable primary (converter).
- ◆ Multiple status alarms.
- ◆ Wide range of liners and electrode materials.

#### High performance - the global leader in stability

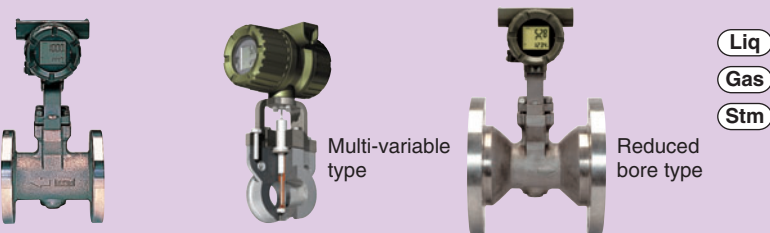
- ◆ Enhanced dual frequency excitation.
- ◆ 0.2% reading accuracy (Optional).
- ◆ 1 micro-S/cm conductivity.
- ◆ Maximum-speed response.

### ADMAG CA Capacitance Magnetic Flowmeter



- ◆ Measures the flows of ultra-low conductivity fluids up to 0.01  $\mu\text{S/cm}$ .
- ◆ Non-wetted electrode structure ensures stable measurement free from the effects of build-up of insulating material or coating, and noise of high-density slurry fluid.
- ◆ Maintenance costs greatly reduced.

### digitalYEWFLO Digital Vortex Flowmeter



- ◆ Spectral signal processing automatically optimizes the settings at all times, from immediately after power-on.
- ◆ Self-diagnostics, one step ahead of other flowmeters, enables predictive maintenance.
- ◆ Simultaneous analog and pulse signal outputs.
- ◆ High-temperature and cryogenic models also available.

- ◆ Built-in temperature sensor within the shedder bar offers the mass flow output or the temperature output.
- ◆ No installation of the temperature device is needed for the process.
- ◆ Durable meter design mostly meets the steam flow such as water hammer, high temperature process, etc.
- ◆ Reduced bore type measures lower flowrate.

### EJA/EJX Series Differential Pressure Transmitters



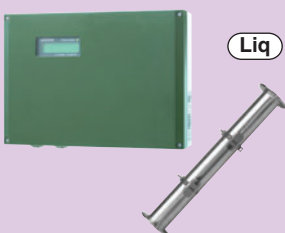
- ◆ Combined with an orifice, measures liquid, gas, and steam flow rates.
- ◆ Available for direct mounting without three-valve manifold.
- ◆ Outstanding long-term stability slashes maintenance costs.

### 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.

### US300FM Ultrasonic Flowmeter

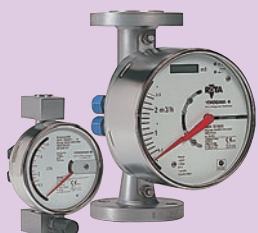


- ◆ Maximum two flow-input channels enable two path measurement or the measurement of two different flows in different pipes. The pipe sizes from 25 mm to 6,500 mm (1 to 255 inches).
- ◆ With the noise suppression technique, the measurement against air bubbles in the fluid has been vastly improved.
- ◆ With the original signal processing, fast and accurate measurement has been realized.
- ◆ The transducers are calibrated one by one when shipped and easy to install at the sites. It is not necessary to adjust zero flow condition, which has been often said to be necessary.
- ◆ US300PM portable type is equipped with wall thickness measurement function.

### US300PM Portable Ultrasonic Flowmeter

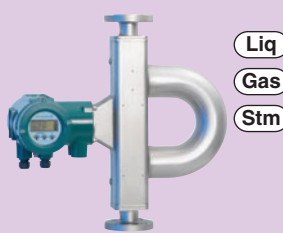


### ROTAMETER Variable Area Flowmeter



- ◆ 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.

### ROTAMASS Coriolis Mass Flowmeter



- ◆ Mass flow for nearly all flowing fluids.
- ◆ Highly independent from external loads or vibrations through special decoupling system.
- ◆ Precise flow and density measurement.
- ◆ Wide temperature range ( $-200^{\circ}\text{C}$  to  $350^{\circ}\text{C}$ ).

## Level Transmitters

### EJA210A/EJX210A Level Transmitter



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

### EJA118W/EJX118A Differential Pressure Transmitters with Diaphragm Seals



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

## Control Elements and Converters

### VP200 Current-to-Pneumatic Positioner



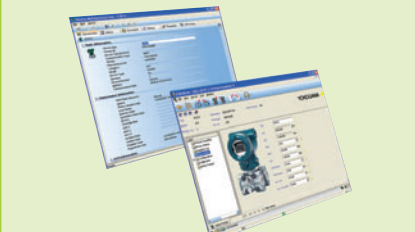
- ◆ Applicable to various actuators from diaphragms to cylindrical actuators, and globe and rotary valves.
- ◆ Positions small and large valves (stroke: 10 to 100 mm).
- ◆ Air consumption reduced to one quarter that of previous models, reducing the cost of generating instrument air.

### YVP110 Valve Positioner



- ◆ Fieldbus-enabled digital valve positioner.
- ◆ A wealth of functions such as auto-tuning to effectively use the combined valve.

### FieldMate Versatile Device Management Wizard



- ◆ As one integrated tool, FieldMate handles parameter setting for intelligent field devices regardless of field communication protocols.
- ◆ FieldMate enables quicker device configuration and problem solving, reducing complex and time-consuming work steps.

### BT200 BRAIN Terminal



Hand-held terminal to communicate with BRAIN communication-enabled instruments and devices for setting up, viewing, modifying, and printing parameters required for the instruments and devices to operate.

### PK200 Current-to-Pneumatic Converter







- ◆ High-performance, high-reliability electro-feedback achieves linearity of  $\pm 0.2\%$ .
- ◆ Energy-efficient, cost-effective design.
- ◆ Air consumption reduced to one quarter that of previous models, reducing the cost of generating instrument air.
- ◆ Special instrumentation work and parts not needed to replace the former electric-pneumatic converter, 5502.

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






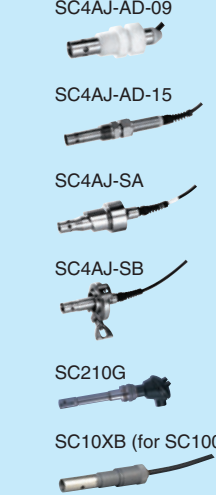




# Liquid Analyzers


## pH/ORP Analyzers

<b>PH450G</b> 4-Wire pH/ORP Converter	<b>FLXA21</b> 2-Wire pH/ORP Transmitter	<b>PH71/PH72</b> Personal pH, pH/ORP Meters	<b>pH/ORP Sensors for Process Use</b>
			
<ul style="list-style-type: none"> <li>Large, high-resolution graphical display and touchscreen operation for ease of use</li> <li>Diagnostic functions for minimum maintenance</li> <li>Temperature compensation and predefined pH buffer tables for best accuracy</li> <li>8 languages</li> </ul>	<ul style="list-style-type: none"> <li>12 languages.</li> <li>Touch screen display.</li> <li>Two sensors can be connected.</li> </ul>	<ul style="list-style-type: none"> <li>Waterproof (IP67) construction allows measurement in wet environment</li> <li>Various convenient functions: 300-point data memory, alarm clock, etc.</li> </ul>	<p>PH8EFP/PH8ERP</p> <p>FU20</p> <p>HA405/HA406</p> <p>DPA405/DPA406</p> <ul style="list-style-type: none"> <li>Appropriate sensor for your application</li> </ul>




## Conductivity Analyzers

<b>SC450G</b> 4-Wire Conductivity/Resistivity Converter	<b>DC402G</b> Dual Cell Conductivity/Resistivity Converter	<b>FLXA21</b> 2-Wire Conductivity Transmitter	<b>ISC450G</b> 4-Wire Inductive Conductivity Converter	<b>FLXA21</b> 2-Wire Inductive Conductivity Transmitter	<b>Conductivity Sensors</b>	<b>ISC40GJ/SJ</b> Inductive Conductivity Sensors	<b>SC72</b> Personal Conductivity Meter
							
<ul style="list-style-type: none"> <li>Large, high-resolution graphical display and touchscreen operation for ease of use</li> <li>Diagnostic functions for minimum maintenance</li> <li>* Temperature compensation, predefined OIML buffer tables, cell fouling monitoring for best accuracy</li> </ul>	<ul style="list-style-type: none"> <li>Differential, ratio or calculated outputs</li> <li>Universal conductivity/resistivity, software switchable</li> <li>Matrix temperature compensation for pure water applications</li> <li>Easy to use EXA control panel</li> <li>USP&lt;645&gt; monitoring</li> </ul>	<ul style="list-style-type: none"> <li>12 languages.</li> <li>Touch screen display.</li> <li>Two sensors can be connected.</li> </ul>	<ul style="list-style-type: none"> <li>Large, high-resolution graphical display and touchscreen operation for ease of use</li> <li>Diagnostic functions for minimum maintenance</li> <li>* Temperature compensation and predefined OIML buffer tables for best accuracy.</li> <li>8 languages</li> </ul>	<ul style="list-style-type: none"> <li>12 languages.</li> <li>Touch screen display.</li> </ul>	<ul style="list-style-type: none"> <li>Appropriate sensor for your application</li> </ul>	<ul style="list-style-type: none"> <li>Measuring range: 100 <math>\mu</math>S/cm 1999 mS/cm with a single sensor</li> <li>Material: PEEK or Teflon (PFA)</li> </ul>	<ul style="list-style-type: none"> <li>Intelligent, portable conductivity meter with waterproof (IP67) construction</li> <li>Various convenient functions: 300-point data memory, alarm clock, etc.</li> </ul>




## Turbidity Analyzers

<b>TB750G</b> Right Angle Scattered Light Turbidity Analyzer	<b>TB400G</b> Scattered-Light Turbidity Analyzer
	
<ul style="list-style-type: none"> <li>User configurable measuring range from 0-0.2 NTU to 0-100 NTU.</li> <li>Highly reliable measurement with excellent linearity and repeatability.</li> <li>In-line connection available</li> <li>Easy-to-clean cell</li> </ul>	<ul style="list-style-type: none"> <li>Surface scattered light method using kaolin, formazin, or PSL (polystyrene latex) for calibration</li> <li>Highly reliable measurement at water supply and sewage systems</li> <li>Measuring range: 0-2 to 0-2000 mg/l (or degrees, unit selectable)</li> </ul>

## Chlorine Analyzers

<b>FC400G</b> Free Available Chlorine Analyzer	<b>FC500G</b> Free Available Chlorine Analyzer	<b>RC400G</b> Residual Chlorine Analyzer
		
<ul style="list-style-type: none"> <li>Non-reagent Type</li> <li>Polarographic method using rotating gold electrode</li> <li>Ideal for measurement of free available chlorine in water supply and distribution systems</li> <li>Field-configurable from 0-1 to 0-3 mg/l for two switchable output ranges</li> <li>Micro processor-based, intelligent converter</li> </ul>	<ul style="list-style-type: none"> <li>Non-reagent Type</li> <li>Polarographic method using rotating gold electrode</li> <li>Ideal for measurement of free available chlorine in water supply and distribution systems</li> <li>Measuring range selectable: 0-1/0-2/0-3 mg/l switchable or 0-5/0-10 mg/l switchable</li> </ul>	<ul style="list-style-type: none"> <li>Reagent Type</li> <li>Polarographic method using rotating platinum electrode</li> <li>Ideal for measurement of residual chlorine in chlorination processes of water supply systems and in cooling water of thermal power stations</li> <li>Measuring range: 0 to 10mg/l</li> </ul>

## Dissolved Oxygen Analyzers


<b>DO402G</b> 4-Wire Dissolved Oxygen Converter	<b>FLXA21</b> 2-Wire Dissolved Oxygen Transmitter	<b>DO70G/DO30G</b> Dissolved Oxygen Sensors
		
<ul style="list-style-type: none"> <li>Long-term stable sensor</li> <li>Display unit in mg/l, ppm, or % saturation</li> <li>Temperature compensation, salt concentration compensation and barometric air pressure compensation for best accuracy</li> <li>Ideal for measurement of dissolved oxygen in aeration tanks at sewage treatment plants, etc.</li> </ul>	<ul style="list-style-type: none"> <li>12 languages.</li> <li>Touch screen display.</li> <li>Two sensors can be connected.</li> </ul>	<ul style="list-style-type: none"> <li>Measurement object: Measurement of dissolved oxygen in aeration tanks at sewage treatment plants.</li> <li>Measuring range: 0 to 25mg/l (ppm) (DO70G), 0 to 20mg/l (ppm) (DO30G)</li> <li>Type of sensor: Optical DO sensor (DO70G), Galvanic cell DO sensor (DO30G)</li> </ul>

## MLSS Analyzer

<b>SS400G</b> MLSS Analyzer

<ul style="list-style-type: none"> <li>Wide measuring range from 0-1000 mg/l to 0-20000 mg/l</li> <li>Ideal for measurement of mixed liquor suspended solids (MLSS) in an aeration tank of activated sludge processes in sewage and industrial wastewater treatment facilities</li> </ul>

## Liquid Density Meter

<b>DM8</b> Vibration Type Liquid Density Meter

<ul style="list-style-type: none"> <li>Measures liquid density with high sensitivity and stability</li> <li>Measuring range of 0.5 to 2.0 g/cm<sup>3</sup> unaffected by flow rate and viscosity</li> <li>Detector is available in general-purpose, sanitary, and flameproof types</li> </ul>

## FT-Near Infrared Analyzers

<b>InfraSpec NR800</b> Fourier Transform Near Infrared Analyzers

<ul style="list-style-type: none"> <li>Continuous, multiple, and simultaneous measurement of component concentration and property values (density, polymerization degree, octane value, etc.) of various processes</li> <li>Measurement of trace water content available</li> </ul>

#### NOTICE

- Before operating the product, read the instruction manual thoroughly for proper and safe operation.
- If this product is for use with a system requiring safeguards that directly involve personnel safety, please contact the Yokogawa sales offices.

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The clear path to operational excellence

SEE  
CLEARLY

KNOW  
IN ADVANCE

ACT  
WITH AGILITY

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