YOKOGAWA ◆

Co-innovating tomorrow ™

OpreX™ Measurement

Product Solution Catalog

Field Instruments and Analyzers

Field Instruments

Pressure Transmitters

DPharp EJX-A Series Differential Pressure and Pressure Transmitters

`Liq` `Gas` `Stm`

- 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.

DPharp EJA-E Series Differential Pressure and Pressure Transmitters

`Liq` `Gas` `Stm`

- 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 conforms to 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

EJX-B Series Wireless Differential Pressure/Pressure Transmitters

`Liq` `Gas` `Stm`

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

ZR802G
ZR802S
ZR22G/S
ZR202G/S

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_2.
- 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_2, CO, CH_4, NH_3, H_2O, 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
- Conforms to Marine certification and QAL1.

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.
- The reflective type can be installed in small pipes, and the flowcell type is easy to replace with existing equipment.

TDLS5500 High Sensitivity Laser Spectrometer

- Analysis of gases for trace C_2H_2 in ethylene and trace H_2S ,H_2O 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)

IR810G
IR800G

IR800G/IR810G Infrared Gas Analyzers

Up to 5 gas components measurement
- Simultaneous measurement of gas concentrations of up to five components: four of NO, SO_2, CO_2, CO, CH_4, and O_2.

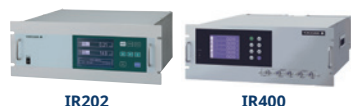**Excellent long-term stability**
- A unique optics system minimizes drift particularly due to contamination of measurement cell, ensuring excellent long-term stability.

IR810S Explosion-protected model Infrared Gas Analyzer

IECEx/ATEX ZONE1 compliant
- Pressurized enclosure explosion protected construction.
  Determinable purge-gas flow rate according to the gas composition to be measured.

IR202
IR400

IR202/IR400 Infrared Gas Analyzers

Measuring Components
- NO, SO_2, CO_2, CO, CH_4, O_2

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)
- Use for H_2 purity and replacement ($H_2 \leftrightarrow CO_2 \leftrightarrow$ AIR) meter for power generators, electrolyzer and annealing furnace.

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
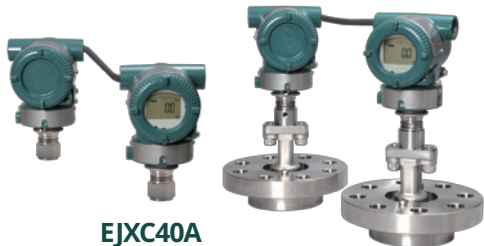
Level Transmitters

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.

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.

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).

Field Instruments

Flowmeters

ROTA*MASS* 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^3
- 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.

Liq Gas Stm

Gas Chromatograph

GC8000 Process Gas Chromatograph

Touch Panel

Wireless

- 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

On-line Model

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

At-line Model

- 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.

FU20 **PH21**

FU24 **SC25V**

PH8EFP/ PH8ERP

pH/ORP Sensors for Process Use

- Appropriate sensor for your application

+ **SA11 Smart adapter**

Analog sensor (-VP)

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.

SC42-SV **SC42-EV**

SX42-SX24-NV

SC4A-S-AD-15-VS **SC4A-E-SC**

SC4AJ-AD-09 **SC4AJ-SB**

SC4AJ-AD-15

SC210G

SC4AJ-SA

Conductivity Sensors

- Appropriate sensor for your application

ISC40G/S Inductive Conductivity Sensors

- Measuring range: 100 µS/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

Gas Analyzers

Liquid Analyzers

id Analyzers

Portable Meters

PH91/PH92 Portable pH, pH/ORP Meters

- Accurate pH measurement
- Durable design and Build-in Sensor Holders with waterproof (IP67) construction
- Various useful functions; Diagnostics, Stability check, Backlit, 500 Data memory etc.

SC92 Portable Conductivity Meter

- Wide range conductivity measurement
- Durable design and Build-in Sensor Holders with waterproof (IP67) construction
- Various useful functions; Diagnostics, Stability check, Backlit, 500 Data memory 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

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/cm³ 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

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OpreX™ Through the comprehensive OpreX portfolio of products, services, and solutions, Yokogawa enables operational excellence across the enterprise.

YOKOGAWA ◆ Co-innovating tomorrow™