Field Wireless Product Profile

Reliable and scalable field wireless network infrastructure with a variety of sensors offers the perfect solutions ranging from operation to maintenance, monitoring to control.
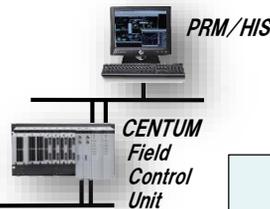
Plant Operation
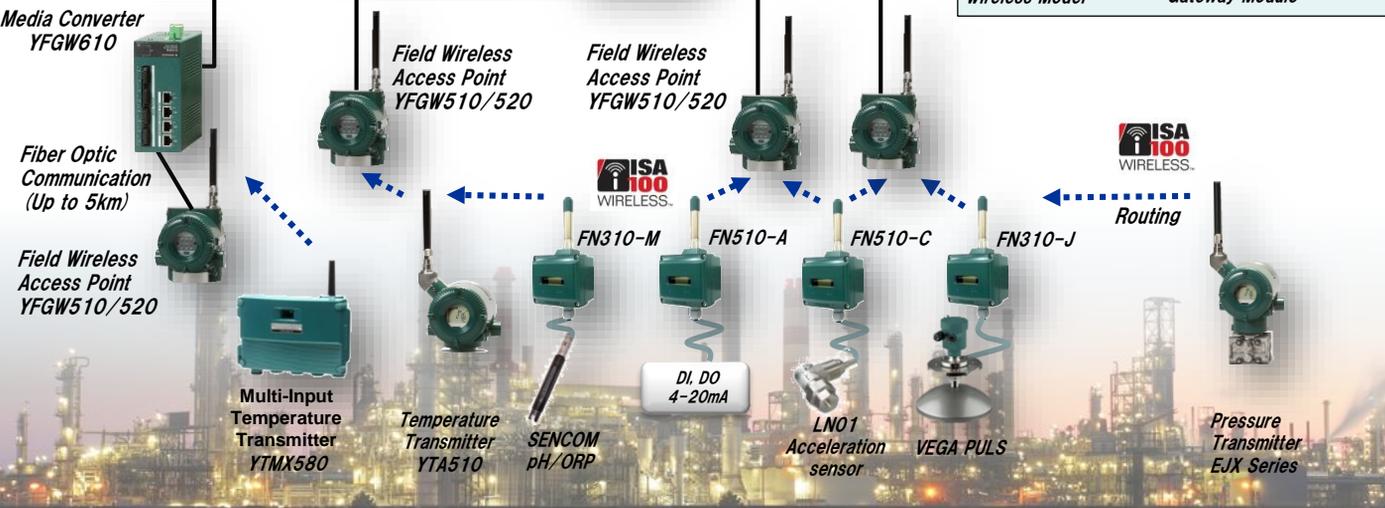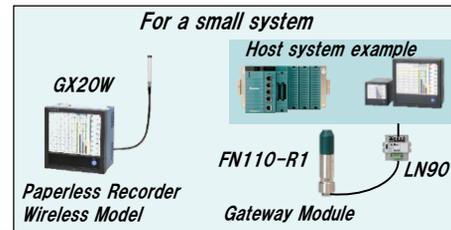(Monitoring/Control)

Facility Maintenance
(Monitoring)

Material Surveillance
(Monitoring)

PRM/HIS

CENTUM Field Control Unit

Plant-wide Field Wireless

Field Wireless Management Station YFGW410 (redundant option shown)

For a small system

Host system example

GX20W

Paperless Recorder Wireless Model

FN110-R1
Gateway Module

LN90

Backbone Network

Media Converter YFGW610

Field Wireless Access Point YFGW510/520

Field Wireless Access Point YFGW510/520

Routing

Fiber Optic Communication (Up to 5km)

Field Wireless Access Point YFGW510/520

FN310-M

FN510-A

FN510-C

FN310-J

DI, DO 4-20mA

Multi-Input Temperature Transmitter YTMX580

Temperature Transmitter YTA510

SENCOM pH/ORP

LN01 Acceleration sensor

VEGA PULS

Pressure Transmitter EJX Series

Main features of Yokogawa Plant-wide Field Wireless infrastructure:

・Typical communication range of 500 meters with line of sight
・Up to 500 sensors can be accommodated
・Fastest data update period up to 0.5 second
・Extended communication range of more than three kilometers with repeaters

・Battery-powered transmitters and adapters
・Battery life up to 10 years
・Path redundancy and mesh network, improving communication reliability

http://www.field-wireless.com/

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Image	Product name / Model name / Feature	Performance / Specification

Field wireless infrastructure devices

Field Wireless Management Station / YFGW410

This product manages wireless network and security based on ISA100 Wireless [1] and works as a gateway to host applications. A pair of this product forms a redundant gateway. Combining this product with YFGW510 / YFGW520 composes the field wireless communication infrastructure. Host system interface is Modbus, OPC or PROFINET.

Maximum number of field wireless devices in accordance with update period
・1 second update: 200 devices
・5 second update: 500 devices
・Max number of YFGW510/520 : 20
・Rated Power: 24 VDC (Max. 10W)

Field Wireless Access Point / YFGW510 YFGW520

This product provides a backbone router function specified in ISA100 Wireless [1] and functions as an access point for field wireless devices. A pair of YFGW510 / YFGW520 offers route redundancy without degrading network latency. Use YFGW520 for single mode fiber connection.

・Maximum number of field wireless devices to be connected: 100 devices
・Network interface: Ethernet
・Redundancy mechanism: Duocast
・Rated Power: 24 VDC (Max. 3.5W)

Field Wireless Media Converter / YFGW610

This product extends the transmission distance between YFGW410 and YFGW510 / YFGW520 using optical fiber. YFGW510 / YFGW520 with fiber interface is required.
Multi mode fiber and single mode fiber can be used.

・Maximum transmission distance:
2 km (multi mode) / 5 km (single mode)
・Convert between
  twisted-pair cable (100BASE-TX)
  and optical fiber (100BASE-FX)
・Rated Power: 24 VDC (Max. 10W)

Gateway Module / FN110-R1

Palm-sized ISA100 Wireless gateway optimized for a small system. Minimize wireless system configuration time. Host system interface is Modbus.

Maximum number of field wireless devices in accordance with update period
・1 second update: 10 devices
・2 second update: 20 devices
・Network topology: Star
・Host interface: RS-485

Interface adapter / LN90

LN90 interface adapter is required between Gateway module and a host system.
The power of Gateway module is supplied via LN90.

・Rated Power: 12VDC, 24VDC
・Rated output voltage: 3.5VDC 60mA
・Communication interface: RS-485
・Communication speed: 38400bps(Max.)

Field wireless utility modules

Field Wireless Multi-Protocol Module / FN310

FN110

FN310

This module and FN110 convert a wired device to a wireless device. The built-in batteries power a FN110. The connected wired device can be powered by this module or external power source. This module supports HART and Modbus protocol. Extension cable allows flexible FN110 installation.

・Powered by 2 x D Size batteries [2]
・Update Period: 5 or 8~3600 seconds
・Battery Life: 4 years with 10 minute update time

Field Wireless Multi-Function Module / FN510

FN110

FN510

This module and FN110 convert a variety of I/Os to a wireless device. Batteries are included and power a FN110. External power may be required for some I/O. Piezoelectric sensor can be connected to work as an accelerometer. Extension cable allows flexible FN110 installation.

・Powered by 2 x D Size batteries [2]
・Update Period: 1~3600 seconds
・2 DI, 1 DO, 1 Pulse input, 1 AI
・Battery Life: 10 years with 10 second update time
・1 ACAI (Piezoelectric sensor)
・Battery Life: 2 years with 10 second update time

Piezoelectric Accelerometer (for FN series)

This product is used in combination with Field Wireless Multi-Function Module FN510.
Measured value is transmitted to field wireless network via FN510 module.

・Frequency Range: 10 Hz to 10000 Hz
  (in combination with FN510)
・Operation Acceleration Range:
  ±300 m/s^2 (Peak)

Field wireless devices

Wireless Differential Pressure/Pressure Transmitters / EJX B Series

This product can measure absolute pressure or gauge pressure of liquid, gas, steam flow, as well as flow and liquid level. The accuracy of this product is the same as wired transmitters. The low power consumption design achieves long battery life. Extension coaxial cable allows flexible antenna installation.

・Powered by 2 x D Size batteries [2]
・Update Period: 0.5~3600 seconds
・Battery Life: 6 years with 10 second update time

Wireless Temperature Transmitter / YTA510

This product can accept measurement from thermocouples (8 types) or RTD signals (3 types). The two input model can measure and process each input independently. Extension coaxial cable allows flexible antenna installation.

・Powered by 2 x D Size batteries [2]
・Update Period: 1~3600 seconds
・Battery Life: 10 years with 10 second update time

Multi-Input Temperature Transmitter / YTMX580

YTMX580 can accept up to 8 points of measurement from thermocouples (8 types) or RTD signals (3 types). It can also accept DC voltage, resistance, and 4 to 20 mA DC signal input.

・Powered by 2 x D Size batteries [2]
・Update Period: 1 to 3600 seconds
・Battery Life: 6 years with 60 second update time

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(1) An international, industrial wireless standard (IEC 62734) engineered to serve the needs of process industries
(2) D size Lithium Thionyl Chloride battery. The battery pack is replaceable in hazardous area.

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