

# General Specifications

YFGW710  
Field Wireless Integrated Gateway



GS 01W01F01-01EN

## ■ GENERAL

This General Specification (GS) describes the hardware specifications for Field Wireless Integrated Gateway and specifications of attached software.

This product is based on wireless communications standard ISA100.11a for industrial automation of International Society of Automation (ISA).

For related instruments for the field wireless system, see the Field Wireless System Guidance (GS 01W01A01-01EN).



## ■ HARDWARE SPECIFICATIONS

### ■ Upper Communication Interface

Item		Specifications	
Communication Interface	Standard *1	100BASE-TX	100BASE-FX
	Transmission speed	100 Mbps	100 Mbps
	Connector	RJ-45	SC connector [ single pole × 2 ] *2
	Cable Type	Category 5 cable	Multimode fiber *3 50 / 125 μm or 62.5 / 125 μm
	Center wavelength	—	1300 nm
	Maximum length	100 m	2 km
Communication Protocol		Modbus/TCP	
	Field Wireless Device OPC Server *4	Proprietary (TCP/IP)	
	Management, Configuration, etc	Proprietary (TCP/IP)	
Number of maximum connection *5	Modbus	4 clients	
	Field Wireless Device OPC Serve *4	10 systems	

\*1: Either 100BASE-TX or 100BASE-FX is used at a time. Use 100BASE-FX for outdoor wiring.

\*2: 2-pole SC connector cannot be used due to the conduit hole size limitation.

\*3: In outdoor wiring, use optical fiber cables with a nonmetallic tension member.

\*4: OPC interface connection is available by Field Wireless Device OPC Server (GS 33M20S20-40) (Option).

\*5: A concurrent connection is possible.

### ■ Wireless Network Specifications

#### Communication Protocol:

ISA100.11a protocol

#### Frequency:

2400 - 2483.5 MHz license free ISM band

#### Number of channels:

15

#### RF Transmitter Power:

Max 11.6 dBm fixed

#### Raw data rate:

250 kbps

#### Radio Security:

AES 128 bit codified

#### Antenna:

+2 dBi Omni directional monopole type

#### Network Size:

Max 50 devices are connectable

■ Installation Environment

Operating Temperature Range:  
-40 to 60°C

Operating Humidity Range:  
0 to 100%RH (no condensation.)

Power Supply:  
Voltage range: 10.0 to 26.4 V DC  
Rated power supply: 24 V DC  
Momentary power failure: Instant disconnection  
DC power supply ripple rate: 1 % p-p or less

Power Dissipation:  
Max.10 W

Degrees of Protection:  
IP66, NEMA4X

Grounding:  
Class-D grounding (No sharing ground with others)

Housing Material:  
Cast aluminum alloy with polyurethane, mint-green paint  
(Munsell 5.6BG 3.3/2.9 or its equivalent)

Name plate and tag:  
316 SST tag plate

Altitude:  
2,000 m or less

■ Weight

5.1 kg (11.2 lb)  
Without cable glands and mounting bracket.

■ Regulatory Compliance Statements

This device contains the wireless module which satisfies the following standards.

- \* Please confirm that an installation region fulfills an applicable standard. If additional regulatory information and approvals are required, contact a Yokogawa representative.

Japanese Radio Law:  
Construction Type Certification Number:  
007WWCUL0480

R&TTE Conformity Standards: CE  
• Radio Spectrum: EN 300 328  
• EMC: EN 301 489-1, EN 301 489-17, EN 61326-1 Class A, Table 2 (For use in industrial locations), EN 55011 Class A, group 1, EN 61000-6-2  
• Health and Safety: EN 62311, EN 61010-1

Regulation Conformity of the Wireless Module  
• FCC Approval  
• IC Approval

Safety Requirements:  
• CSA C22.2 No. 61010-1 (Indoor use only)

■ SOFTWARE SPECIFICATIONS

■ Field Wireless Configurator

The software deals with a wireless network configuration and support.

■ Field Wireless Management Tool

The software can perform the management and the operation status check in a field wireless network and a field wireless device.

■ Specifications and System Requirements

Software License:  
Field Wireless Configurator 1 license  
Field Wireless Management Tool 1 license

Hardware Operating Environment \*1:

Windows Vista

(Recommended system requirements)

CPU: Intel Core2Duo 2.66 GHz or more high performance CPU  
Main memory: 2 GB or more  
Hard disk drive: 40 GB or more, minimum free space 15 GB or more  
Display: 1024 x 768 High color, 32-bit  
Communication device: Ethernet network card

Windows XP/Server 2003

(Recommended system requirements)

CPU: Intel Pentium 4 2.8 GHz or more high performance CPU  
Main memory: 1 GB or more  
Hard disk drive: 20 GB or more, minimum free space 15 GB or more  
Display: 1024 x 768 High color, 32-bit  
Communication device: Ethernet network card

Software Operating Environment:

OS:  
Windows 7 Professional (32bit/64bit)  
Windows Vista Business Edition Service Pack 2 or later (32bit)  
Windows XP Professional Service Pack 3 or later (32bit)  
Windows Server 2008 Enterprise Service Pack 2 or later (32bit/64bit)  
Windows Server 2008 R2 Enterprise (64bit)

\*1: Field Wireless Configurator and Field Wireless Management Tool can be installed in one PC.

■ Configuration Tool for Field Wireless Devices

FieldMate is required to configure the wireless field device parameters. Use R2.02.01 or later version for configuration via ISA100.11a wireless communication, or R2.03.00 or later version for configuration via infrared communication. For details, see FieldMate Versatile Device Management Wizard (GS 01R01A01-01E).

## ■ MODEL AND SUFFIX CODES

Model	Suffix Codes	Descriptions
YFGW710	.....	Field Wireless Integrated Gateway
---	-A.....	Always A
Communication interface	0 ..... 1 .....	100BASE-TX 100BASE-TX/100BASE-FX
Electrical connection	0 ..... 2 ..... 4 .....	G 1/2 female, two electrical connections, without blind plugs 1/2 NPT female, two electrical connections, without blind plugs M20 female, two electrical connections, without blind plugs
License	-S.....	Single gateway license
Manual language	0 ..... 1 .....	Japanese English
Software media	0 ..... 1 .....	Provided with CD-ROM None
Mounting bracket	D ..... N .....	2-inch pipe mounting (for vertical piping) None
---	A .....	Always A
Option codes	<input type="checkbox"/> Optional specifications	

## ■ OPTIONAL SPECIFICATIONS

Item	Description	Code
Coating	Anti-corrosion coating	<b>X2</b>
External antenna cable	1 m	<b>AC1</b>
	3 m	<b>AC3</b>
	4 m (1 m + 3 m) with arrestor	<b>AC13</b>
	6 m (3 m + 3 m) with arrestor	<b>AC33</b>
	13 m (3 m + 10 m) with arrestor	<b>AC3A</b>

## ■ OPTIONAL ACCESSORIES

Product	Part number	Specification
Remote antenna cable with mounting bracket	F9193UA	Antenna cable: 1m, Operational temperature range: -40 to + 75°C
	F9193UB	Antenna cable: 3m, Operational temperature range: -40 to + 75°C
	F9193UC	Antenna cable: 4m (1m+3m) with arrestor, Operational temperature range: -40 to + 75°C
	F9193UD	Antenna cable: 6m (3m+3m) with arrestor, Operational temperature range: -40 to + 75°C
	F9193UE	Antenna cable: 13m (3m+10m) with arrestor, Operational temperature range: -40 to + 75°C

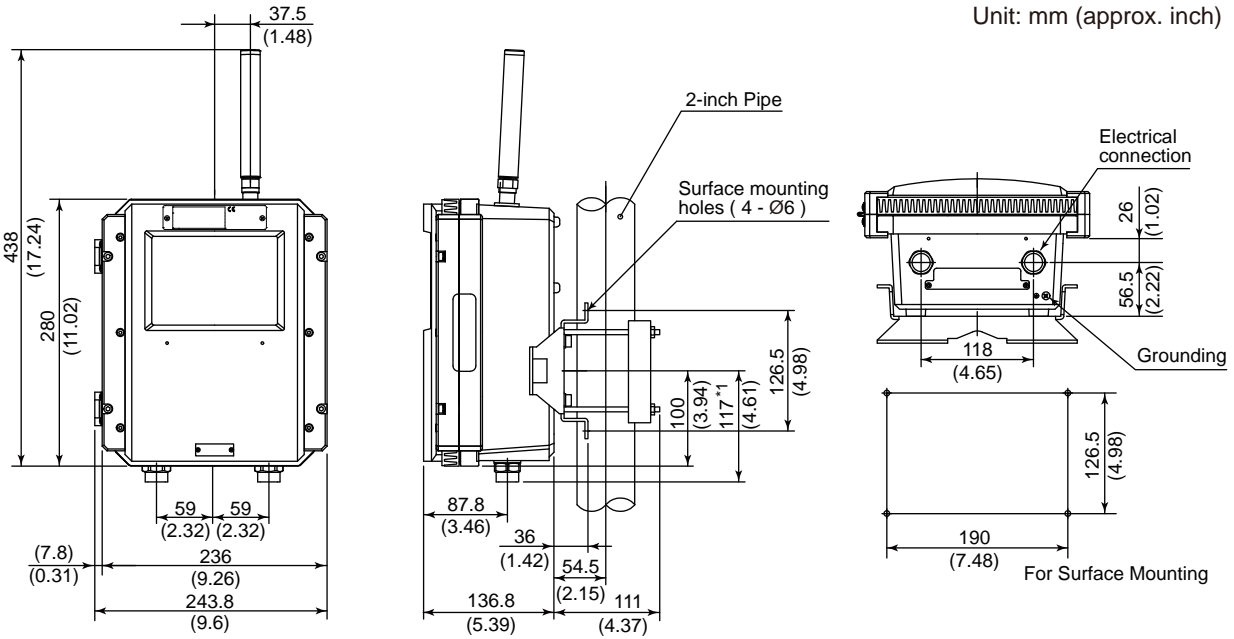
## ■ OPTIONAL SPECIFICATIONS (For Explosion Protected Types)

Item	Description	Code
Factory Mutual (FM)	<p>FM nonincendive approval            Applicable standard: FM3600, FM3611, FM3810, ANSI/NEMA250            Nonincendive for Class I, Division 2, Groups A, B, C &amp; D,            Class II, Division 2, Groups F &amp; G,            Class III, Division 1            hazardous (classified) locations.            Enclosure: "NEMA 4X"            Temp. Class: T4, Amb. Temp.: -40 to 60°C (-40 to 140°F)</p>	<b>FN17</b>
ATEX	<p>ATEX Type n declaration            Applicable standard: EN60079-0: 2012, EN60079-11: 2012, EN60079-15: 2010, EN60079-28: 2007            II 3 G Ex nA [ic] [op is] IIC T4 Gc (with 100BASE-FX)            II 3 G Ex nA [ic] IIC T4 Gc (without 100BASE-FX)            Enclosure: IP66            Amb. Temp.: -40 to 60°C (-40 to 140°F)</p>	<b>KN27</b>
Canadian Standards Association (CSA)	<p>CSA nonincendive approval            Certificate: 2342292            [For CSA C22.2]            Applicable standard: C22.2 No.0, C22.2 No.0.4, C22.2 No.25,            C22.2 No.94, C22.2 No.213, C22.2 No.61010-1            Nonincendive for Class I, Division 2, Groups A, B, C &amp; D,            Class II, Division 2, Groups F &amp; G,            Class III, Division 1            Enclosure: Type 4X,            Temp. Class: T4, Amb. Temp.: -40 to 60°C(-40 to 140°F)            [For CSA E60079]            Applicable standard: CAN/CSA-E60079-0, CAN/CSA-E60079-15, IEC60529            Ex nA nL IIC T4            Enclosure: IP66            Amb. Temp.: -40 to 60°C (-40 to 140°F)</p>	<b>CN17</b>
IECEX	<p>IECEX Type n Approval            Certificate: IECEX DEK 13.0047            Applicable standard: IEC60079-0: 2011, IEC60079-15: 2010, IEC60079-11:2011            Ex nA [ic] IIC T4 Gc            Enclosure: IP66            Amb. Temp.: -40 to 60°C (-40 to 140°F)</p>	<b>SN27</b>

**EXTERNAL DIMENSIONS**

**YFGW710**

Unit: mm (approx. inch)

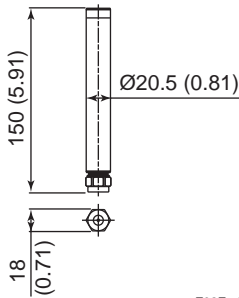


\*1: Applicable for Electrical connection code 2.

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**Antenna**

- Antenna
- Omni directional monopole type
- Gain: 2 dBi



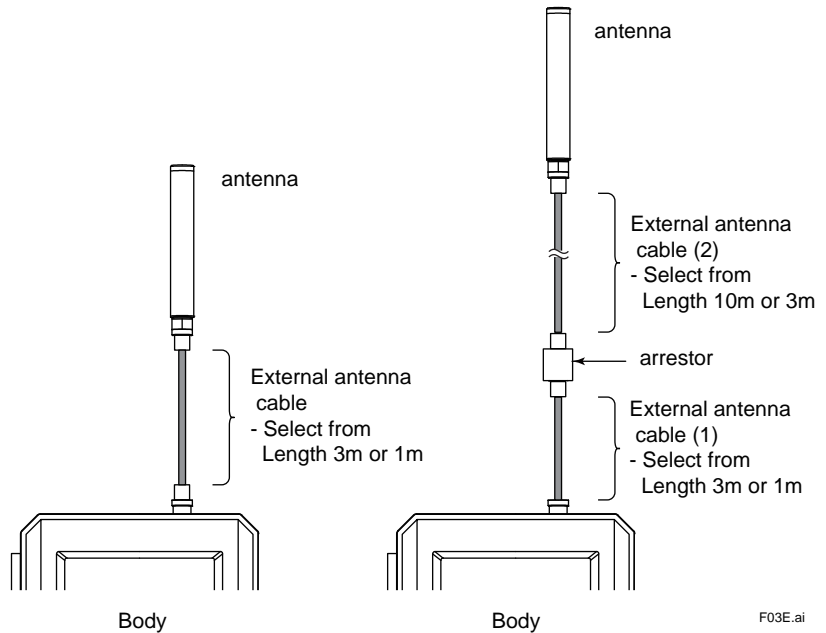
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**Remote Antenna**

- High-frequency Coaxial Cable
- Sheath diameter: 11.1 mm

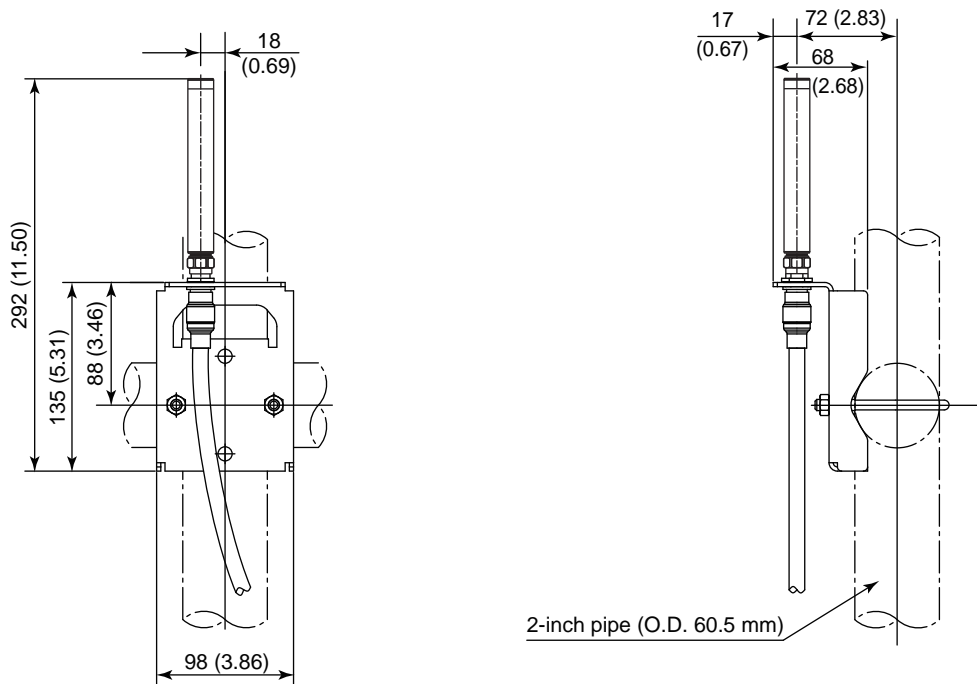
< Non Arrestor >

< Arrestor Mounting >



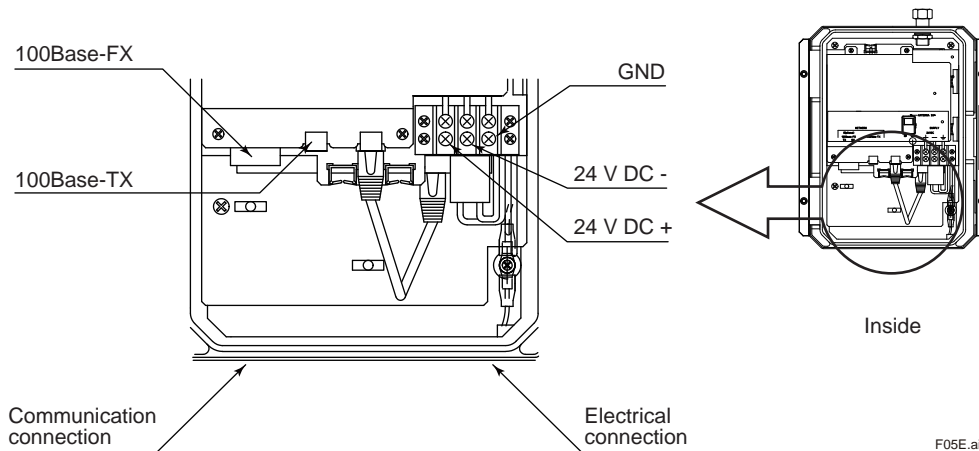
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■ Antenna mounting bracket



F04E.ai

■ Terminal Configuration



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■ NOTES FOR OPERATION

The check process of wireless communication, the operating environment of the system, deterioration of wireless quality, and communication path error and restoration may cause data loss, retransmission of the same data, or variations in the data update time.

■ TRADEMARK

YFGW is a registered trademark of Yokogawa Electric Corporation  
Other product and company names appearing in this document are trademarks or registered trademarks of their respective holders.

■ ORDERING INFORMATION

- Specify the following when ordering
1. Model, suffix codes, and option codes
  2. Tag Number (if required)  
Specify Tag number (up to 16 letters) to be engraved on the tag plate.