

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.

- * The specific radio equipment (Approval Number: 007WWCUL0480) which received the technical standard satisfied certification based on the Radio Law is used for this product.
- * Please confirm that an installation region fulfills an applicable standard. If additional regulatory information and approvals are required, contact a Yokogawa representative.

EMC Conformity Standards

EN61326-1 Class A, Table 2 (For use in industrial locations), EN61000-6-2

R&TTE Conformity Standards: CE

ETSI EN 300 328, ETSI EN 301 489-17, EN61010-1, EN62311
• Indoor/Outdoor use

Regulation Conformity of the Wireless Module

- FCC Approval
- IC Approval

AT	BE	BG	CY	CZ	DK
EE	FI	FR	DE	GR	HU
IE	IT	LV	LT	LU	MT
NL	PL	PT	RO	SK	SI
ES	SE	GB	IS	LI	NO
CH					

■ 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	/□ Optional specifications	

■ OPTIONAL SPECIFICATIONS

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

■ 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

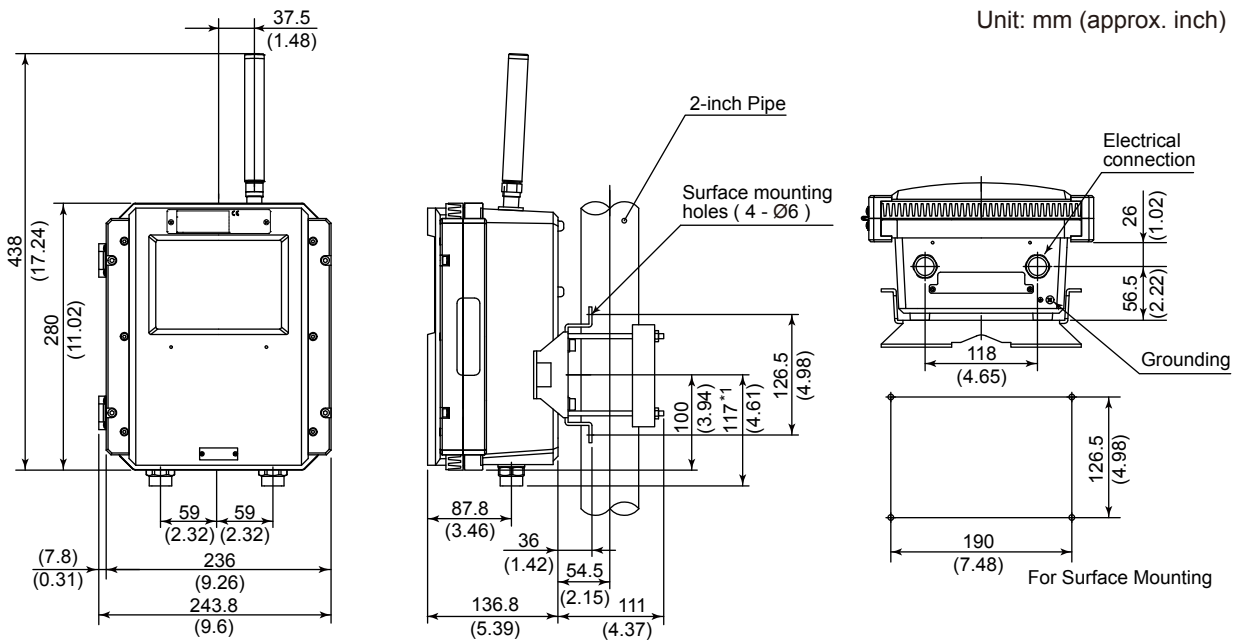
■ OPTIONAL SPECIFICATIONS (For Explosion Protected Types)

Item	Description	Code
Factory Mutual (FM)	FM nonincendive approval Applicable standard: FM3600, FM3611, FM3810, ANSI/NEMA250 Nonincendive for Class I, Division 2, Groups A, B, C & D, Class II, Division 2, Groups F & G, Class III, Division 1 hazardous (classified) locations. Enclosure: "NEMA 4X" Temp. Class: T4, Amb. Temp.: -40 to 60°C (-40 to 140°F)	FN17
ATEX	ATEX Type n declaration Applicable standard: EN60079-0: 2009, 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)	KN27
Canadian Standards Association (CSA)	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 & D, Class II, Division 2, Groups F & 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)	CN17
IECEX	IECEX Type n Approval Certificate: IECEX KEM 10.0092X Applicable standard: IEC60079-0: 2007, IEC60079-15: 2005, IEC60529: 2001 Ex nA nL IIC T4 Gc Enclosure: IP66 Amb. Temp.: -40 to 60°C (-40 to 140°F)	SN27

EXTERNAL DIMENSIONS

YFGW710

Unit: mm (approx. inch)



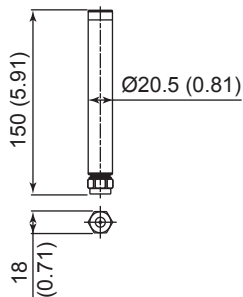
*1: Applicable for Electrical connection code 2.

F01E.ai

Antenna

Antenna

- Omni directional monopole type
- Gain: 2 dBi



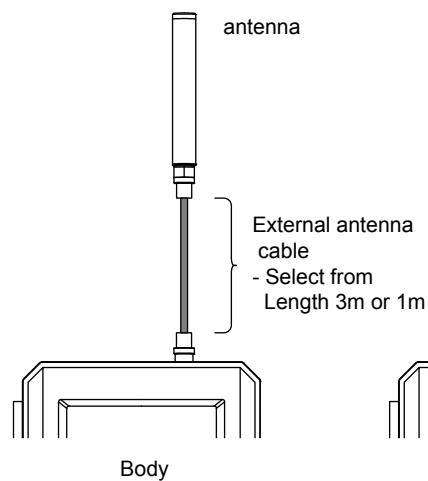
F02E.ai

Remote Antenna

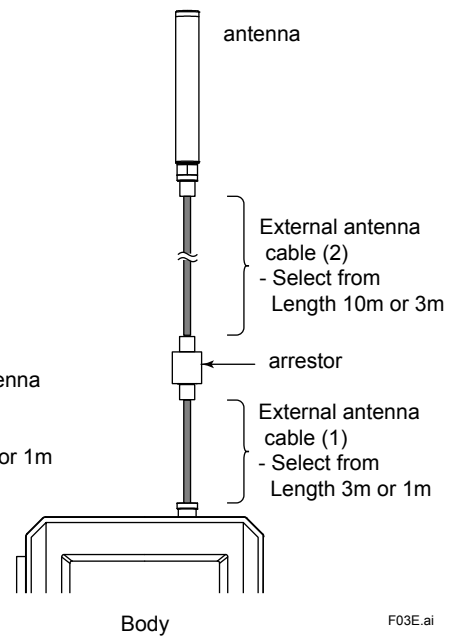
High-frequency Coaxial Cable

- Sheath diameter: 11.1 mm

< Non Arrestor >

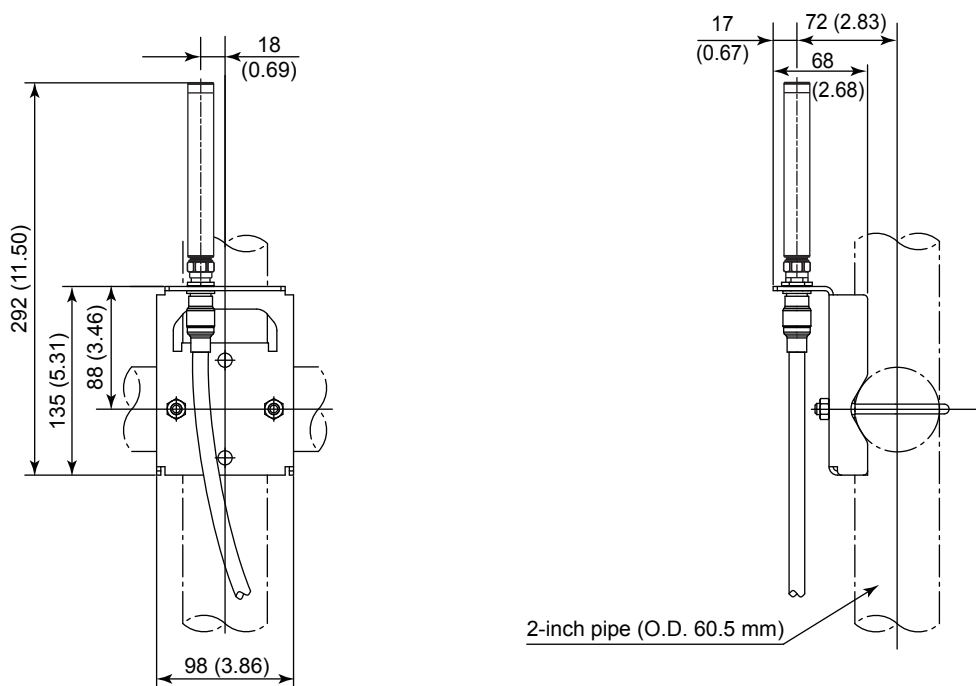


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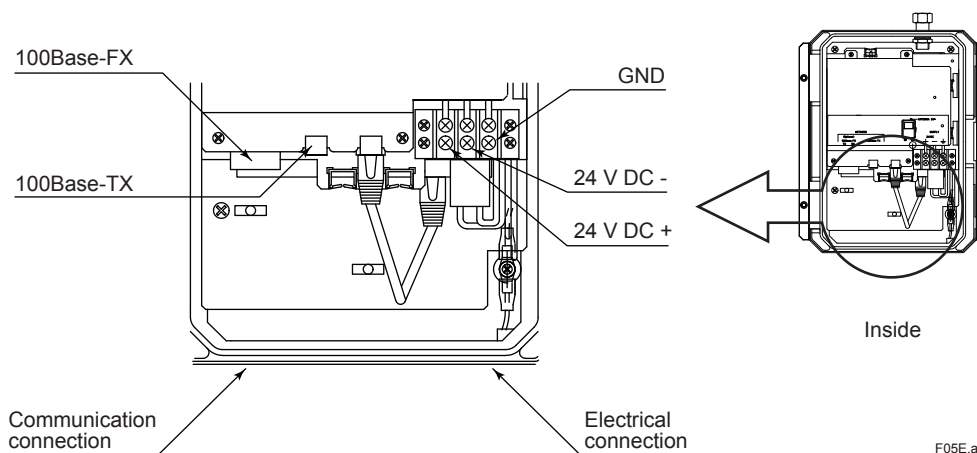
F03E.ai

■ Antenna mounting bracket



F04E.ai

■ Terminal Configuration



F05E.ai

■ 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.

■ 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.

■ TRADEMARK

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