General Specifications

FN110
Field Wireless
Communication Module

GS 01W03B01-01EN

■ GENERAL

This General Specification (GS) describes the specifications for Field Wireless Communication Module. This product is based on the industrial automation wireless communication standard ISA100.11a of the International Society of Automation (ISA). ISA100.11a is approved as an International Standards (IEC 62734) by International Electrotechnical Commission (IEC). Wireless functions defined by ISA100.11a are equipped with this product. This product supports a field wireless gateway. When utilzing with "Interface Adapter LN90", this product acts as a field wireless gateway. For more details, refer to the General Specifications of "Interface Adapter LN90".



■ FEATURES

• Built-in high-performance wireless communication function

The high-performance built-in wireless communication module has excellent radio sensitivity and low power consumption, provides a stable wireless communication platform with excellent power saving capabilities.

• Compact and light weight

This product has been made compact and extremely lightweight as an explosion proof antenna with a built-in wireless communication module. As a result, flexible installation in the industrial environment is possible.

• Built-in wireless gateway

Inter module communication code -R1 is specified, this product acts as system manager, security manager, gateway, and backbone router based on ISA100.11a. Easy to construct small scale field wireless network with combining Remote Terminal Unit (RTU) or other controller.

■ STANDARD SPECIFICATIONS

□ WIRELESS SPECIFICATIONS

Communication protocol:
ISA100 Wireless (IEEE802.15.4)

Data rate:
250 kbps

Frequency:
2400 – 2483.5 MHz license free ISM band

Radio security:
AES 128 bit

RF Transmitter power:
12 dBm (eirp)

Antenna:
2 dBi (Omni directional)

□ POWER SUPPLY SPECIFICATIONS

Power Supply Voltage:
2.9 - 4.8 V
See also "OPTIONAL SPECIFICATIONS (For Explosion Protected Types)"

Consumption current:
Max. 60 mA

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□ PERFORMANCE SPECIFICATIONS

[Inter module communication code: -R1]

Field Wireless Subnet:
1 subnet

Field Wireless Device:
Max. 20 devices (update rate: 2 to 3600 s)
Max. 10 devices (update rate: 1 s)

Modbus communication for PLC/RTU:
Communication Mode: Half-duplex communication (RS485 compliant)
Communication Speed: Max. 38400 bps
Communication Distance: Max. 20 m (dedicated cable)

Diagnostic Functions:
Power failures, wired communication failures, firmware internal errors, memory errors, abnormal temperature

□ INSTALLATION ENVIRONMENT

Ambient Temperature Limits:
Operating: –40 to 85°C (altitude up to 3000 m)
Storage: –40 to 85°C

Ambient Humidity Limits:
Operating: 0 to 100%RH (non-condensation)
Storage: 0 to 100%RH (non-condensation)

Ambient Temperature Gradient:
Operating: ±10°C/h or less
Storage: ±20°C/h or less

Vibration Resistance:
0.21 mm P-P (10 – 60 Hz), 3 G (60 - 2 kHz)

Shock Resistance:
50 G 11 ms

Grounding:
Ground through the mating of the metal shell. Please ensure that the ground terminal is connected to an appropriate ground.

□ REGULATORY COMPLIANCE STATEMENTS

This device 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.

Telecommunication Compliance:
MIC Identification (Japan),
FCC Approval (United States), IC Approval (Canada),
RE Directive (EU Countries)

CE Conformity:
RoHS Directive:
EN IEC 63000
ATEX Directive:
See “OPTIONAL SPECIFICATIONS (For Explosion Protected Types)”
RE Directive:
Safety: EN61010-1 (Indoor/Outdoor use), EN62479
EMC: EN 301 489-1, EN 301 489-17, EN61326-1 Class A Table 2, EN55011 Class A
Radio Spectrum: EN 300 328

Canadian Safety Standards:
CAN/CSA-C22.2 No.61010-1
CAN/CSA-C22.2 No.94.1, CAN/CSA-C22.2 No.94.2
IEC 60529

Degrees of Protection:
IP66, IP67 and Type 4X apply when the connector is properly tightened.

□ PHYSICAL SPECIFICATIONS

Connector:
5-pin round connector dedicated

Housing Material:
Brass

Weight:
100 g

■ MODEL AND SUFFIX CODES

Model	Suffix Codes	Description
FN110	.....	Field Wireless Communication Module
General Specifications	Inter module communication **-R1**	Modbus communication for PLC/RTU
	Output signal **-L**	ISA100 Wireless
	Housing Material **0**	Brass
	Antenna **0**	Integral antenna 2 dBi (2.4 GHz)
	--- **A**	Always A
	--- **-A**	Always A
	--- **A**	Always A
Option codes		/□ Optional specifications

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■ OPTIONAL SPECIFICATIONS (For Explosion Protected Types)

Please select appropriate equipment in accordance with the laws and regulations of the relevant country/region, when it is used in a location where explosive atmospheres may be present.

Item	Description	Code
IECEx	IECEx Type n Approval*1 Applicable Standards: IEC 60079-0, IEC 60079-15 Certificate: IECEx PRE 16.0052X Ex nA IIC T4 Gc, Degree of protection: IP66/IP67 according to IEC 60079-15 Amb. Temp. (Tamb): –40 to 70°C (–40 to 158°F) Power supply: 2.9 to 4.3 V	**SN27**

*1: Only available when inter module communication code -R1 is specified. When optional code SN27 is selected, specify the protection cap CP.

■ OPTIONAL SPECIFICATIONS

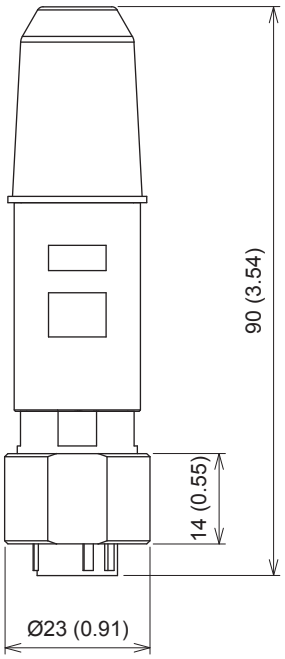
Item	Description	Code
Protection cap*	Metal waterproof cap	**CP**

*: When protection cap is not specified, dust-cap is attached.

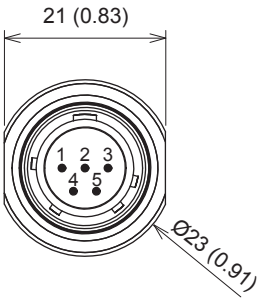
■ EXTERNAL DIMENSIONS

□ Body

Unit: mm (approx. inch)



Pin	Signal
1	Not Connected
2	Signal Ground
3	Power Supply
4	Transmit/Receive Data positive
5	Transmit/Receive Data negative



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< Ordering Information >

Model, suffix codes, and option codes.

< Related Products General Specifications >

Field Wireless System Overview:
Refer to GS 01W01A01-01EN
Interface Adapter LN90:
Refer to GS 01W03L01-01EN

< Trademark >

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EU WEEE (Waste Electrical and Electronic Equipment) Directive is only valid in the EU.
This instrument is intended to be sold and used only as a part of equipment which is excluded from WEEE Directive, such as large-scale stationary industrial tools, a large-scale fixed installation and so on, and, therefore, subjected to the exclusion from the scope of the WEEE Directive. The instrument should be disposed of in accordance with local and national legislation/regulations.

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