FIELD WIRELESS MANAGEMENT STATION

R-Y410

Features

- **Connects Cosasco® Wireless devices and other ISA100 Wireless transmitters to any host system**
- **Easy system integration via Ethernet and serial connections**
- **Easy configuration via web interface**
- **High integrity security and reliability**
- **Supports up to 500 wireless devices**
- **FM, CSA, ATEX, IECEx approved**
- **Duocast function of ISA100.11a standard**
- **Wireless Communication Data Cache**

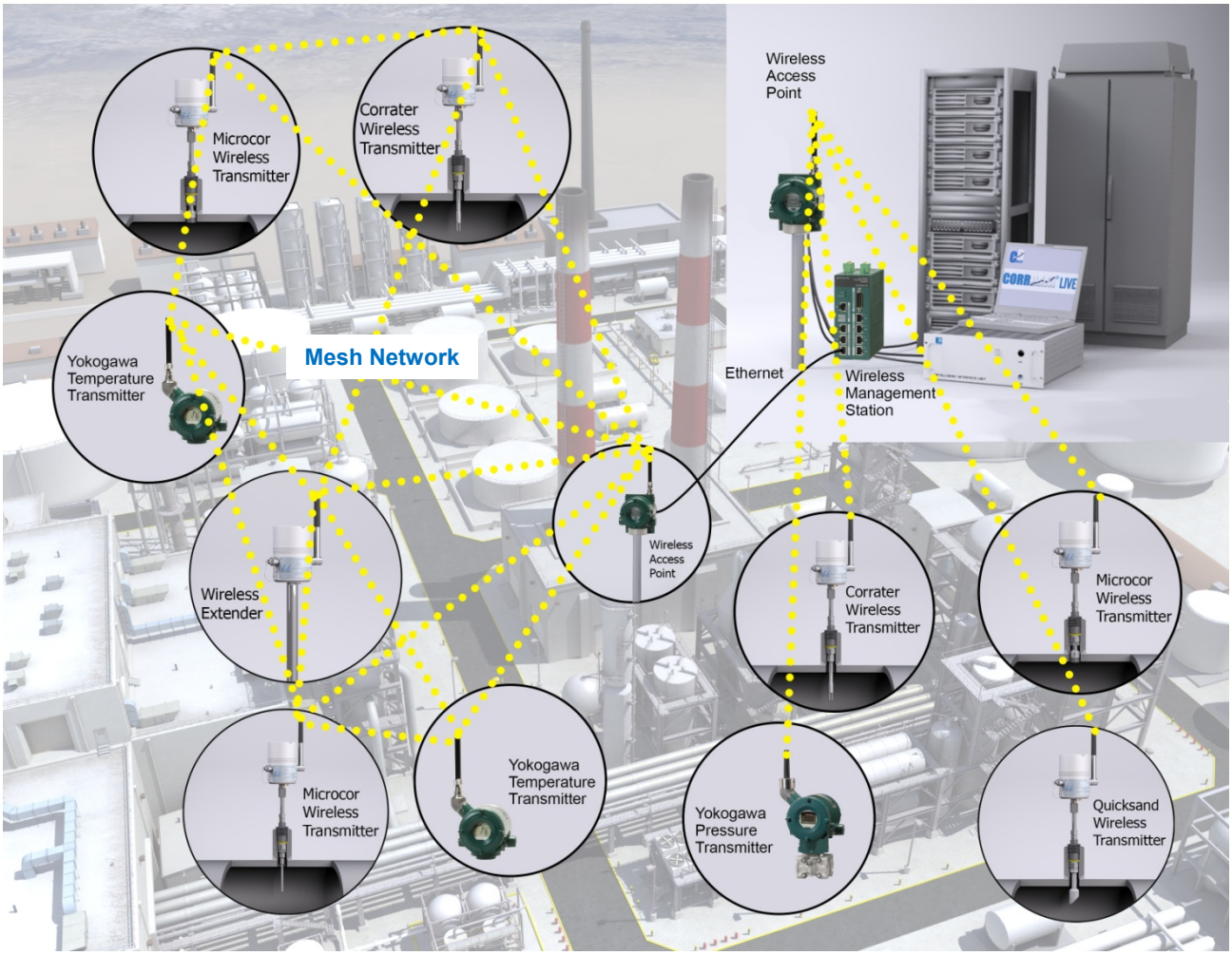
This data sheet describes the hardware specifications for Field Wireless Management Station and specifications of built-in software.

The R-Y410 is based on wireless communications standard ISA100 Wireless for industrial automation of International Society of Automation (ISA). This product has system manager/security manager/gateway function based on ISA100 Wireless and combining this with Field Wireless Access Point (R-Y510) and Cosasco Wireless Devices composes the field wireless system.

For outline of a Cosasco Wireless System, and details of each product, see each Cosasco Wireless System ISA100 and related product data sheets.

COSASCO®

System Integration Overview with Field Wireless Management Station and Field Wireless Access Point



Note: For other ISA100 wireless system options see Cosasco Wireless System ISA100 Wireless data sheet

Cosasco Wireless Devices shown integrated with Yokogawa Wireless Field Devices using ISA100 Wireless Protocol

The R-Y510 Field Wireless Access Point has a function to connect Cosasco wireless devices and a Field Wireless Management Station. R-Y410 Field Wireless Management Station manages and connects M-320 and a host system. The R-Y410 is easily configurable and integrates into a distributed control system through serial or ethernet connections.

Hardware Specifications

Communication Interface

Item		Field Network Specifications		Field Wireless Backbone Specifications	Maintenance/Diagnostic Network Specifications	
Communication Interface	Standard	100BASE-TX *2	RS-485	100BASE-TX *2	100BASE-TX *4	RS-232C *4 *5
	Transmission Speed	100Mbps	38.4Kbps	100Mbps	100Mbps	115.2kbps
	Connector	RJ-45	Proprietary	RJ-45	RJ-45	RJ-11
	Cable Type	Category 5	AWG24~12	Category 5	Category 5	Proprietary
	Maximum Length	100m	1200m	100m	100m	15m
	Number of Ports	3 ports	1 port	4 ports	1 port	1 port
	Port Name	F1, F2, F3	–	B1, B2, B3, B4	M1	–
	Protection	Surge	Isolated, Surge	Surge	–	–
Communication Protocol	Modbus	Modbus/TCP	Modbus/RTU	–	–	–
	OPC *1	Proprietary *3	–	–	–	–
	Management, configuration, etc.	HTTP NTP/SNTP Proprietary *3	–	HTTP IEEE1588PTP v2 Proprietary *3	HTTP Proprietary *3	–

*1: OPC interface connection is available by Field Wireless Device OPC Server (SSS7100). For details of this product, see related products General Specifications.
*2: In outdoor wiring to Field Network or 100BASE-TX of Field Wireless Backbone, use optical fiber cables with a nonmetallic tension member, combining with R-Y610.
*3: TCP based custom protocol used for communication between this product, “Field Wireless OPC Server”, “FieldMate Versatile Device Management Wizard”, “Plant Resource Manager (PRM)”, and R-Y510. For details of each product, see related products General Specifications.
*4: Maintenance/Diagnostic Network (100BASE-TX, RS-232C) are not available for outdoor wiring.
*5: These are the serial ports for a maintenance which only our company use.

Performance

Field Wireless Subnet:

Max 20 subnets are connectable
Max 20 R-Y510 are connectable *1
*1: Max 8 R-Y510 are connectable in one field wireless subnet.

Field Wireless Device:

Update rate	Network size
1 second	Max 200 devices *1
5 seconds	Max 500 devices *2

Upper Communication Interface:

Communication Protocol	Maximum connection
Modbus/TCP *1	8 clients
Modbus/RTU *1	1 client
OPC *2	1 system

*1: The amount of data that can be accessed at one time depends on the modbus client.
*2: OPC interface connection is available by Field Wireless OPC Server (SSS7100).

Access Requests of Upper Communication Interface:
100BASE-TX : Max 240 times per second *1
RS-485 : Max 10 times per second
*1: Sum of access requests of field network interface.

Redundancy Architecture:
Hot standby redundancy system

Switching Time for Redundancy:
1 second (After detection of failure or receiving of switching request)

Update Rate of Field Wireless Device:
User Selectable 0.5 to 3600 seconds.

Diagnosis Functions:
CPU failures, communication interface malfunctions, out of range, abnormal settings.

Software Download Function:
The product’s internal software, and R-Y510’s internal software, and software within the field wireless device (communication firmware and sensor firmware) can be updated.

Installation Environment

Temperature Range:
Operating: -40 to +65°C (altitude : up to 2000m)
-40 to +55°C (altitude : more than 2000m, up to 3000m)
Storage: -40 to +85°C
Humidity Range:
Operating: 5 to 95 %RH (non-condensation)
Storage: 5 to 95 %RH (non-condensation)
Temperature Gradient:
Operating: ±10°C/h or less
Storage: ±20°C/h or less
Power Supply:
Voltage Range : 10.8~26.4 V DC
Rated Power Supply : 24 V DC
Momentary Power Failure : Instant Disconnection
DC Power Supply Ripple Ratio : 1%p-p or less
Power Consumption:
Max. 10 W
Degrees of Protection:
IP20
Vibration Resistance:
0.15 mm P-P (5~58 Hz) , 1 G (58~150 Hz)
Shock Resistance:
15 G 11 ms
Noise Resistance:
Electric Field : 3 V/m or less (80MHz~1GHz)
Electrostatic Discharges: 4 kV or less (contact discharge),
8 kV or less (aerial discharge)
Grounding:
Class-D grounding (no sharing ground with others)
Cooling:
Natural Air Cooling

Regulatory Compliance Statements

EMC Conformity Standards:
EN61326-1 Class A, Table 2 (for use in industrial locations), EN55011 Class A group1, EN61000-6-2
Safety Requirements:
EN61010-1, CSA C22.2 No. 61010-1
Indoor use only
Explosion-Proof Types:
FM, ATEX, CSA, IECEx (approvals under pending)

Physical Specifications
Housing Material:
Aluminum alloy plate with polyester, mint-green paint
(Munsell 5.6BG 3.3/2.9 or its equivalent)
External Dimension:
150 x 60 x 140 mm (not include projection)
Weight:
Approx. 1.0 kg
Mounting:
DIN RAIL Mounting

Software Specifications

■ Field Wireless Management Console
This software is used loading into PC connected to this product. Installing this software into PC is not available.

Configurator:
The software deals with a field wireless network configuration and support.
Monitor:
The software can perform the management and the operation status check in field wireless network and a field wireless device.

■ Specifications and System Requirements

Software License:
Field Wireless Management Console: 1 license
Configurator: 1 client
Monitor: 3 clients
Language:
Software (GUI): English
Manual: Japanese or English

Hardware Operating Environment [*1]:

Item	Recommended System Requirements
Processor	Intel Core 2 Duo 2.66GHz or more
Memory	2GB or more
Hard Disk	40GB or more (Minimum free space 15GB or more)
Display	1280 x 800 High color, 32-bit
Communication Device	Ethernet Network Card

*1: Field Wireless Configurator and Management Tool attached with Field Wireless Integrated gateway(R-Y710) can be used in one PC.
For details of this product, see related products

Software Operating Environment [*1,*2,*3]:

OS	Kind
Windows7 Professional Service Pack 1	32/64bit
Windows Vista Business Edition Service Pack 2	32bit
Windows Server 2008 Enterprise Service Pack 2	32bit
Windows Server 2008 R2 Enterprise	32/64bit

*1: Japanese version and English version are supported.
*2: Microsoft .NET Framework 3.5 Service Pack 1 is required.
*3: For 64bit OS, WOW64 (Windows 32-bit On Windows 64-bit) can be performed.

Configuration Tool for Field Wireless Devices
FieldMate is required to configure the wireless field device parameters. Use R2.05.00 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.

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 name plate.

Model	Description
R-Y410	Field Wireless Management Station

Code	Output Signal
A	Always A

Code	License
B	Single License (10 Field wireless devices connectable) *1
C	Single License (100 Field wireless devices connectable) *2
S	Single License (500 Field wireless devices connectable)
R	Redundant License (500 Field wireless devices connectable)

Code	Manual Language
0	Japanese
1	English

Code	Software Media
0	Provided with DVD-ROM
1	None

Code	Mounting Bracket
D	DIN Rail Mounting

Code	Sync Connector Termination
0	With Terminator *3
1	With Cable for Redundancy *4

Code	- - -
A	Always A

Code	- - -
A	Always A

Code	Option Codes
/□	Optional Specifications

R-YGFW410	A	—	2	—	A	—	D4	WX2	—	N6	—	A	—	A	—	/□	← Example

*1: One R-Y510 and one field wireless subnet are connectable.
*2: Two R-Y510s and one field wireless subnet are connectable.
*3: In case of single behavior, terminate the Sync Connector by the terminator.
*4: In case of redundant behavior, connect the cable for Redundancy between two R-Y410s.

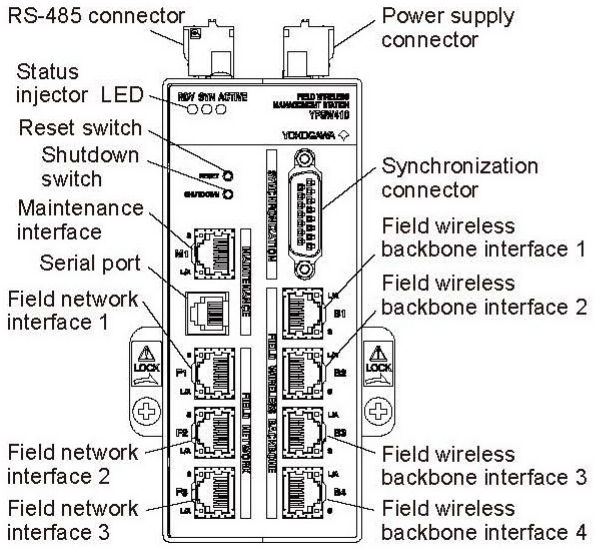
Optional Specifications (For Explosion Protected Types)

Item	Specification	Code
Factory Mutual (FM)	Nonincendive Approval *1	–
ATEX	Type n Declaration *2	–
Canadian Standards Association (CSA)	Nonincendive Approval *1	–
IECEx	Type n Approval *2	–

*1: To be compliant with these standards, the R-Y410 hardware needs to be installed in a lockable metal cabinet.
*2: To be compliant with these standards, the R-Y410 hardware needs to be installed in a lockable metal cabinet of IP54 or higher protection rating.

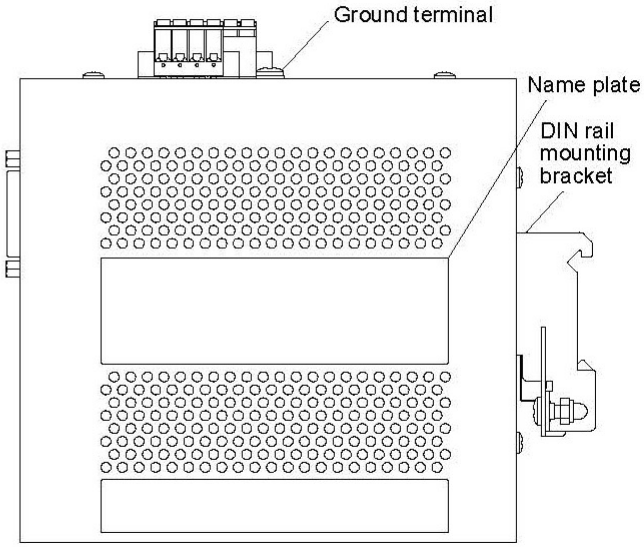
Appearances

■ Front view



F01.ai

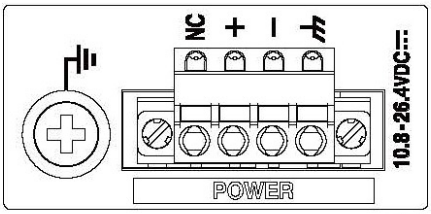
■ Right side



F02.ai

Terminal Configurations

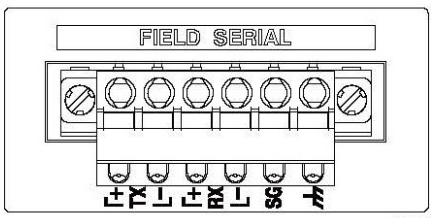
■ Power supply



F03.ai

Terminal	Signal
NC	No Connection
+	24 V DC Hot
–	24 V DC Neutral
⏚	Frame Ground

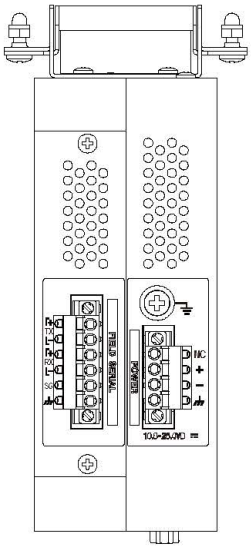
■ RS-485

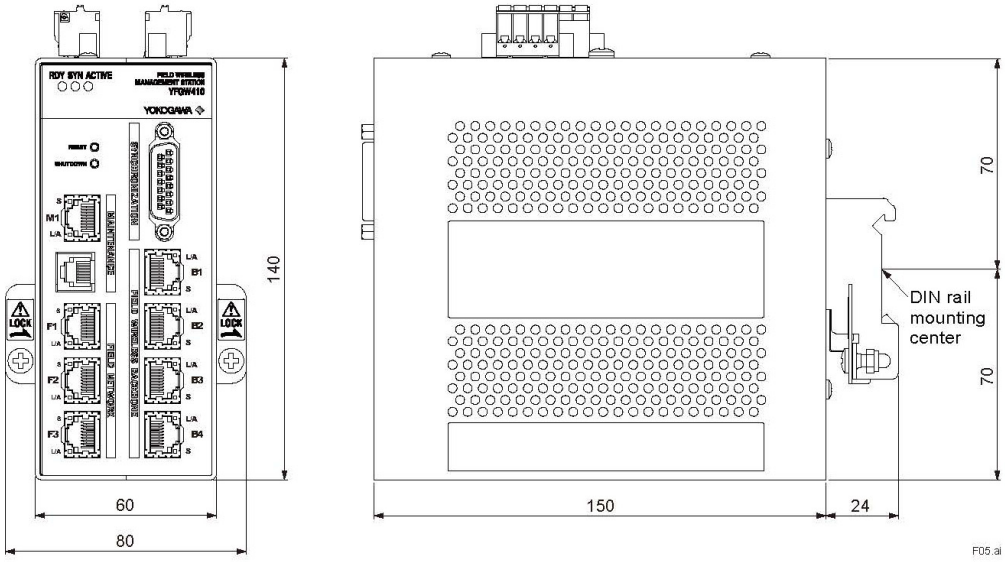


F04.ai

Terminal	Signal (4-wire)	Signal (2-wire)
TX +	Transmit Data positive	Transmit/Receive Data positive
TX -	Transmit Data negative	Transmit/Receive Data negative
RX +	Receive Data positive	Same as TX +
RX -	Receive Data negative	Same as TX -
SG	Signal Ground	Signal Ground
⏚	Frame Ground	Frame Ground

External Dimensions





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.

Cosasco
11841 Smith Avenue
Santa Fe Springs, CA 90670, USA
Tel: 1-562-949-0123
Email: sales@cosasco.com
Web Site: www.cosasco.com

©Rohrback Cosasco Systems, Inc. All rights reserved
The contents of this publication are presented for information purposes only, and while effort has been made to ensure their accuracy, they are not to be construed as warranties or guarantees, express or implied, regarding the products or services described wherein or their use or applicability. We reserve the right to modify or improve the designs or specifications of our products at any time without notice.

COSASCO
bsi. ISO 9001 Quality Management
FM 10694