

# General Specifications

## YTMX580 Multi-Input Temperature Transmitter



GS 04R01B01-01EN

The model YTMX580 Multi-Input Temperature Transmitter can accept inputs from up to 8 points of measurement such as thermocouples (8 types: K, E, J, etc.) or RTD signals (3 types: Pt100, etc.), converting the corresponding measurement input values to a wireless signal. It can also accept DC voltage, resistance, and 4–20 mA DC signal input. In addition to temperature signals, it can also wirelessly send and receive setting parameters. Internal battery power means eliminating not only signal wires, but also power cables—this offers great installation cost reductions. The communication is compliant with ISA100.11a protocol specifications.



### ■ FEATURES

#### ● Long Life Battery Design

Ultra low current consumption design using two high capacity lithium-thionyl chloride batteries provide wireless operation for years.

#### ● High Security Wireless Network Configuration

Infrared communication between the devices for wireless network configuration and parameter setting.

#### ● Quick Update Time

Selectable from 1 second to 60 minutes for measured process value to publish wirelessly.

### ■ STANDARD SPECIFICATIONS

#### ■ WIRELESS SPECIFICATIONS

Communication protocol: ISA100.11a protocol  
Data rate: 250 kbps  
Frequency: 2400 - 2483.5 MHz license free ISM band  
Radio security: AES 128 bit codified  
RF Transmitter power: Max. 11.6 dBm (fixed)  
Antenna: +2 dBi Omni directional type

#### ■ PERFORMANCE SPECIFICATIONS

##### Accuracy

See Table 1.

##### Cold Junction Compensation Accuracy

For T/C only  
 $\pm 0.5\text{ }^{\circ}\text{C}$  ( $\pm 0.9\text{ }^{\circ}\text{F}$ ) (added to accuracy when using thermocouple input)

##### Ambient Temperature Effect (per 1.0 °C change)

See Table 2.

#### Battery Pack

Battery pack with long life lithium-thionyl chloride batteries. With the intrinsically safe type, the battery pack is replaceable in a hazardous area. Typical battery life is 6 years at 60 seconds publication period (update time) in the following conditions.\*

- Network connection: JOIN status
- Ambient temperature:  $23\pm 2\text{ }^{\circ}\text{C}$
- Device role: IO function only
- LED indicator: off

\* Environmental condition such as ambient temperature and vibration may affect the battery life.

### ■ FUNCTIONAL SPECIFICATIONS

#### Input

channels: 8 points

Input type is selectable: Thermocouples, 2-, 3-, and 4-wire RTDs, ohms, DC millivolts and DC milliamperes (4 to 20 mA, with external shunt resistors). See Table 1.

Note: Explosion proofing not applicable during DC volts and DC milliamperes input.

#### Maximum Allowable Input voltage

$\pm 2.5\text{ VDC}$

Category O (Transient overvoltage 330V)

#### Input Resistance

10 M $\Omega$  or more

#### Input Signal Source Resistance (for T/C, mV)

1 k $\Omega$  or lower

#### Input Lead Wire Resistance (for RTD, Ohm)

10  $\Omega$  per wire or lower

#### Output

Wireless (ISA100.11a protocol) 2.4 GHz signal.

**Measurement Range**

See Table 1.

**Publication Period (Update Time)**

1 to 3600 sec selectable.

Minimum of 2 seconds with 4 or more measuring points.

**Zero-gain Adjustment**

Set the amount of zero-gain point adjustment.

**Status Display**

The RDY (green) and ALM (red) LEDs indicate the following statuses: Starting, Running, Waiting to "JOIN" (network), Squawk, Alarm, Deep Sleep

**Sensor Burnout**

Select HIGH, LOW or OFF as the configuration. (use setting software)

**Self Diagnostics**

Amplifier failure, sensor failure, configuration error, battery alarm, wireless communication alarm and over-range error for process variables.

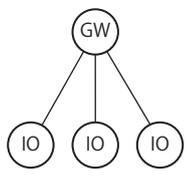
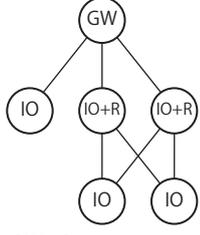
**Software Download Function**

Software download function permits to update wireless field device software via ISA100.11a wireless communication.

**Device Role**

The following 2 device roles are supported depending on the network topology.

- IO Function only (IO)
- IO Function and Routing Function (IO + Router)

| Device Role                             | IO   | IO+Router   |
|---|--|---|
| Network form                            | Star   | Mesh  |
| Example network connections and devices |  <p>GW : Gateway<br/>IO : YTMX580</p> |  <p>GW : Gateway<br/>IO + R : YTMX580<br/>IO : YTMX580</p> |

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**Infrared Communication**

Data rate:9600 bps

Distance:Infrared surface of the near infrared adapter should be within 30 cm

**Power Supply**

2x primary lithium-thionyl chloride batteries (size D)  
With battery case (batteries sold separately)

**Insulation Resistance**

Measuring input terminal to ground terminal:  
100 MΩ or greater (at 500 VDC)

**Dielectric Strength**

Dielectric strength that can withstand the following conditions

Measuring input terminal to ground terminal:  
500 VAC (50/60 Hz), 1 min, leakage current of 5 mA or less

Between measuring input terminal:  
200 VAC (50/60 Hz), 1 min, leakage current of 5 mA or less

■ **NORMAL OPERATING CONDITION**

(Optional features or approval codes may affect limits.)

**Ambient Temperature Limits**

-40 to 85 °C (-40 to 185 °F)

As for explosion protect type, see REGULATORY COMPLIANCE STATEMENTS

**Ambient Humidity Limits**

0 to 100 % RH

**Storage Temperature**

-40 to 85 °C (-40 to 185 °F)

**Vibration**

3G or less, at resonant frequencies from 10 to 2000 Hz (IEC 60770-1)

■ **REGULATORY COMPLIANCE STATEMENTS**

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

- \* Please confirm that a installation region fulfills a standards, require additional regulatory information and approvals, contact to Yokogawa Electric Corporation.

**Safety Standards**

EN61010-1, EN61010-2-030,  
CSA C22.2 No.61010-1-12  
CSA C22.2 No.61010-2-030-12  
UL 61010-1, UL 61010-2-030 (CSA NRTL/C)  
Overvoltage Category I, Pollution Degree 2  
Indoor/Outdoor use

**EMC Conformity Standards**

EN61326-1 Class A Table 2 (For use in industrial locations), EN61326-2-3, EN 301 489-1, EN 301 489-17

**R&TTE Conformity Standards**

ETSI EN 300 328, ETSI EN 301 489-1,  
ETSI EN 301 489-17, EN60950-1, EN62311

**Regulation Conformity of the Wireless Module**

- FCC Approval
- IC Approval
- Japanese Radio Law ( Construction Design Attestation Number: 007WWCUL0480)

**Korea Certification ( Radio Wave Act )**

KCC-REM-YHQ-WEN007

**EMC and Radiocommunications regulatory arrangement in Australia and New Zealand (RCM)**

AS/NZS 4268  
AS/NZS 2772.2  
EN61326-1 Class A, Table2 (For use in industrial location)

**Explosion Protection**

FM Intrinsically safe, nonincendive Approval  
 Intrinsically Safe for Class I, Division 1,  
 Groups A, B, C & D, Class II, Division 1,  
 Groups E, F & G and Class III, Division 1,  
 Class I, Zone 0, in Hazardous Locations, AEx ia IIC  
 Nonincendive for Class I, Division 2,  
 Groups A, B, C & D, Class II, Division 2,  
 Groups F & G and Class III, Division 1,  
 Class I, Zone 2,  
 Group IIC, in Hazardous Locations  
 Sensor Circuit Parameter: Voc, Uo= 5.88 V,  
 Isc, Io= 130.1 mA, Po= 191.2 mW, Ca, Co= 1 µF,  
 La, Lo= 1 mH  
 Ambient temperature: -50 to 70 °C ( - 58 to 158°F )

CSA Intrinsically safe Approval, non-incendive  
 Approval

Intrinsically Safe for Class I, Division 1, Groups A,  
 B, C & D, Class II, Division 1, Groups E, F & G,  
 Class III, Division 1  
 Non-incendive for Class I, Division 2,  
 Groups A, B, C & D, Class II, Division 2,  
 Groups F & G, Class III, Division 1  
 Enclosure: Type 4X, IP66/IP67  
 Temperature Code: T4  
 Ambient temperature: -50 to 70 °C  
 Ex ia IIC T4  
 Sensor Circuit Parameter: Uo= 5.88 V,  
 Io= 130.1 mA, Po= 191.2 mW, Co= 1 µF,  
 Lo= 1 mH

ATEX Intrinsically safe Approval

II 1 G Ex ia IIC T4 Ga  
 Sensor Circuit Parameter: Uo= 5.88 V,  
 Io= 130.1 mA, Po=191.2 mW, Co= 1µF,  
 Lo= 1 mH  
 Ambient temperature: -50 to 70 °C

IECEx Intrinsically safe Approval

Ex ia IIC T4 Ga  
 Sensor Circuit Parameter: Uo= 5.88 V,  
 Io= 130.1 mA, Po= 191.2 mW, Co= 1 µF,  
 Lo= 1 mH  
 Ambient temperature: -50 to 70 °C

TIIS intrinsically safe Approval

Ex ia IIC T4 X  
 Power Supply: Battery pack (F9915MA) or battery  
 case (F9915NS) DC7.2V  
 Sensor Input Circuit: Uo= 5.88 V, Io= 130.1 mA,  
 Po= 191.3 mW, Co= 1 µ F, Lo= 1 mH  
 Ambient temperature: -20 to 60 °C

\* The remote antenna model (antenna suffix code  
 B) is not applicable.

**■ PHYSICAL SPECIFICATIONS****Enclosure****Housing**

Low copper cast aluminum alloy

**Coating**

- Standard coating  
 polyurethane, mint-green paint. (Munsell 5.6 BG  
 3.3/2.9 or its equivalent)
- High anti-corrosion coating (Option Code /X2)  
 Base coating: epoxy resin coating  
 Finish coating: polyurethane coating  
 The color is same as standard type.

**Degrees of Protection**

IP66/IP67, NEMA Type 4X

**Connection Terminal**

4 mm Screw terminal

**Name Plate and Tag**

316 SST

**Mounting Bracket**

316 SST

Select pipe mounting or wall mounting

**Weight**

3.2 kg (7.05 lb)

Without mounting bracket.

**Connections**

Refer to "MODEL AND SUFFIX CODES."

**■ ACCESSORIES****Remote Antenna Cable (optional accessories)**

(Only by order of option)

Specification of Cable: 8D-SFA(HDPE)  
 Outside Diameter of Cable: 11.1 mm  
 Minimum Bend Radius: 67 mm (when fixing)  
 167 mm (when wiring)

Cable End Treatment: N type connector, one end is  
 male and the other is female.

Operational temperature range: -40 to +85 °C  
 ( - 40 to 185°F )

\* "When fixing" shows the bending radius for fixing (the  
 state is maintained for a long time).

"When wiring" shows the bending radius while  
 checking the wiring position. This bending radius  
 is set larger than that for fixing in order to prevent  
 damage to the cable because the cable is likely to be  
 repeatedly bent when checking the final wiring  
 position.

**Table 1. Sensor type, measurement range, and accuracy**

| Sensor Type |       | Standard        | Measurement Range                       | Accuracy   |
|-------------|-------|-----------------|---|--|
| T/C         | B     | IEC584          | 100 to 1820 °C ( 212.0 to 3308.0 °F )   | Accuracy not guaranteed for less than 400 °C ( 752.0 °F )<br>± 2.54 °C ( ± 4.57 °F ) in the range from 400 °C ( 752.0 °F ) or more to less than 800 °C ( 1472.0 °F )<br>± 1.54 °C ( ± 2.78 °F ) for 800 °C ( 1472.0 °F ) or more |
|             | E     |                 | -200 to 1000 °C ( -328.0 to 1832.0 °F ) | ± 0.80 °C ( ± 1.44 °F ) for less than 0 °C ( 32.0 °F )<br>± 0.40 °C ( ± 0.72 °F ) for 0 °C ( 32.0 °F ) or more   |
|             | J     |                 | -180 to 760 °C ( -292.0 to 1400.0 °F )  | ± 0.80 °C ( ± 1.44 °F ) for less than 0 °C ( 32.0 °F )<br>± 0.70 °C ( ± 1.26 °F ) for 0 °C ( 32.0 °F ) or more   |
|             | K     |                 | -180 to 1372 °C ( -292.0 to 2501.6 °F ) | ± 1.10 °C ( ± 1.98 °F ) for less than 0 °C ( 32.0 °F )<br>± 1.0 °C ( ± 1.80 °F ) for 0 °C ( 32.0 °F ) or more  |
|             | N     |                 | -200 to 1300 °C ( -328.0 to 2372.0 °F ) | ± 2.0 °C ( ± 3.60 °F ) for less than 0 °C ( 32.0 °F )<br>± 1.0 °C ( ± 1.80 °F ) for 0 °C ( 32.0 °F ) or more   |
|             | R     |                 | 0 to 1768 °C ( 32.0 to 3214.4 °F )      | ± 2.00 °C ( ± 3.60 °F ) for less than 200 °C ( 392.0 °F )<br>± 1.50 °C ( ± 2.70 °F ) for 200 °C ( 392.0 °F ) or more   |
|             | S     |                 | 0 to 1768 °C ( 32.0 to 3214.4 °F )      | ± 2.00 °C ( ± 3.60 °F ) for less than 200 °C ( 392.0 °F )<br>± 1.40 °C ( ± 2.52 °F ) for 200 °C ( 392.0 °F ) or more   |
|             | T     |                 | -200 to 400 °C ( -328.0 to 752.0 °F )   | ± 0.70 °C ( ± 1.26 °F )  |
| RTD         | Pt100 | IEC751          | -200 to 850 °C ( -328.0 to 1562.0 °F )  | ± 0.30 °C ( ± 0.54 °F ) for less than 400 °C ( 752.0 °F )<br>± 0.40 °C ( ± 0.72 °F ) in the range from 400 °C ( 752.0 °F ) or more to less than 500 °C ( 932.0 °F )<br>± 0.50 °C ( ± 0.90 °F ) for 500 °C ( 932.0 °F ) or more   |
|             | Pt200 |                 | -200 to 850 °C ( -328.0 to 1562.0 °F )  | ± 0.54 °C ( ± 0.98 °F ) for less than 400 °C ( 752.0 °F )<br>± 0.64 °C ( ± 1.15 °F ) in the range from 400 °C ( 752.0 °F ) or more to less than 500 °C ( 932.0 °F )<br>± 0.74 °C ( ± 1.33 °F ) for 500 °C ( 932.0 °F ) or more   |
|             | Pt500 |                 | -200 to 850 °C ( -328.0 to 1562.0 °F )  | ± 0.38 °C ( ± 0.68 °F ) for less than 400 °C ( 752.0 °F )<br>± 0.48 °C ( ± 0.86 °F ) in the range from 400 °C ( 752.0 °F ) or more to less than 500 °C ( 932.0 °F )<br>± 0.58 °C ( ± 1.04 °F ) for 500 °C ( 932.0 °F ) or more   |
| mV          | -     | -10 to 100 [mV] | ± 0.035 [mV]                            |  |
| V           | -     | -0.01 to 1 [V]  | ± 0.001 [V]                             |  |
| Ohm         | -     | 0 to 2000 [Ω]   | ± 1.0 [Ω]                               |  |

Note1: For T/C input, add Cold Junction Compensation Accuracy (± 0.5 °C) to the total accuracy.

Note2: For RTD input of the 2-wire connection, add a corrected value (± 0.1 °C) to the total accuracy.

Note3: For DC milliamperes (4 to 20 mA), connect external shunt resistors.

Note4: Explosion proofing not applicable to [DC volts, DC milliamperes].

Table 2. Effects of ambient temperature

| Sensor Type                  |                                 | Temperature Effects per 1.0°C Change in Ambient Temperature | Measurement Range         |
|------------------------------|---------------------------------|---|---------------------------|
| T/C                          | B                               | 0.2 °C - ( 0.066 % of ( t - 100 ) )                         | t < 300 °C                |
|                              |                                 | 0.07 °C - ( 0.0057 % of ( t - 300 ) )                       | 300 °C ≤ t < 1000 °C      |
|                              |                                 | 0.037 °C  | t ≥ 1000 °C               |
|                              | E                               | 0.035 °C - ( 0.00492 % of t )                               | t < 0 °C                  |
|                              |                                 | 0.035 °C - ( 0.00146 % of t )                               | t ≥ 0 °C                  |
|                              | J                               | 0.0039 °C - ( 0.00529 % of t )                              | t < 0 °C                  |
|                              |                                 | 0.0039 °C + ( 0.00149 % of t )                              | t ≥ 0 °C                  |
|                              | K                               | 0.00521 °C - ( 0.00707 % of t )                             | t < 0 °C                  |
|                              |                                 | 0.00521 °C + ( 0.00182 % of t )                             | t ≥ 0 °C                  |
|                              | N                               | 0.0077 °C - ( 0.00918 % of t )                              | t < 0 °C                  |
|                              |                                 | 0.0077 °C + ( 0.00136 % of t )                              | t ≥ 0 °C                  |
|                              | R, S                            | 0.04 °C 0 + ( 0.0102 % of t )                               | t < 100 °C                |
|                              |                                 | 0.0316 °C - ( 0.001 % of t )                                | 100 °C ≤ t < 600 °C       |
|                              |                                 | 0.0175 °C + ( 0.00173 % of t )                              | t ≥ 600 °C                |
| T                            | 0.00513 °C - ( 0.00631 % of t ) | t < 0 °C  |                           |
|                              | 0.00513 °C + ( 0.0008 % of t )  | t ≥ 0 °C  |                           |
| RTD                          | Pt100                           | 0.0048 °C + ( 0.0016 % of absolute value t )                | Entire Sensor Input Range |
|                              | Pt200                           | 0.0038 °C + ( 0.0015 % of absolute value t )                | t < 650 °C                |
|                              |                                 | 0.0028 °C + ( 0.0016 % of t )                               | t ≥ 650 °C                |
|                              | Pt500                           | 0.003 °C + ( 0.0014 % of absolute value t )                 | t < 650 °C                |
| 0.002 °C + ( 0.0016 % of t ) |                                 | t ≥ 650 °C  |                           |
| mV                           |                                 | 0.0002 mV + ( 0.0015 % of reading )                         | Entire Sensor Input Range |
| V                            |                                 | 0.005 mV + ( 0.0015 % of reading )                          | Entire Sensor Input Range |
| Ohm                          |                                 | 0.001 Ω + ( 0.0009 % of reading )                           | Entire Sensor Input Range |

Note1: The " t " on Table 2 means the value of the reading in °C.

Note2: The " absolute value t " on Table 2 means the absolute value of the reading in °C.

[ Example of absolute value t ]

When the temperature value is 250 Kelvin, abs reading is 23.15, absolute (250 - 273.15).

## ■ MODEL AND SUFFIX CODES

| Model                 | Suffix Code | Descriptions   |
|-----------------------|-------------|--|
| <b>YTMX580</b>        |             | Multi-Input Temperature Transmitter                          |
| Output Signal         | <b>-L</b>   | Wireless communication (ISA100.11a)                          |
| Housing               | <b>7</b>    | Always 7   |
| Electrical Connection | <b>0</b>    | G 1/2 female, nine electrical connections                    |
|                       | <b>2</b>    | 1/2 NPT female, nine electrical connections                  |
|                       | <b>4</b>    | M20 female, nine electrical connections                      |
| Integral Indicator    | <b>N</b>    | None   |
| Mounting Bracket      | <b>L</b>    | 316 SST 2-inch pipe mounting                                 |
|                       | <b>W</b>    | 316 SST wall mounting*1                                      |
|                       | <b>N</b>    | None   |
| Power Supply          | <b>-A</b>   | Battery (case only, battery not included), with a blind plug |
| Antenna*5             | <b>A</b>    | Integral antenna   |
|                       | <b>B</b>    | Remote antenna*4*6   |
| Temperature Unit      | <b>-A</b>   | Cel, K *2  |
|                       | <b>-B</b>   | Cel, K, degF, degR *3  |
| ---                   | <b>A</b>    | Always A   |
| Option Codes          |             | Optional specifications (See Option Code)                    |

\*1: For wall mounting, please prepare bolts and nuts.

\*2: This is a Japan-only specification (only available to end users inside Japan).

\*3: In Japan, degF (°F) and degR (°R) are non-statutory measurement units. Suffix code -B can only be specified by end users outside of Japan.

\*4: Order the remote antenna cables separately from accessory option.

\*5: Use of antenna is limited by local regulation of radio and telecommunication law. Consult Yokogawa for details.

\*6: Not selectable for TIIS explosion proof specifications (suffix code: /JS37)

Note: " Cel " means " °C ", " degF " means " °F " and " degR " means " °R ".

## ■ OPTIONAL SPECIFICATION

| Item                        | Description   | Option Code |
|-----------------------------|---|-------------|
| Coating                     | High anti-corrosion coating                                   | <b>/X2</b>  |
| Factory configured settings | Factory configured settings with multiple input types/ ranges | <b>/FC1</b> |

## ■ OPTIONAL SPECIFICATION (For Explosion Protected type)

| Item                                 | Description                                       | Option Code      |
|--------------------------------------|---|------------------|
| Canadian Standards Association (CSA) | CSA Intrinsically safe and non-incendive approval | <b>/CS17*1</b>   |
| Factory Mutual (FM)                  | FM intrinsically safe and nonincendive approval   | <b>/FS17*1</b>   |
| TIIS                                 | TIIS intrinsically safe approval                  | <b>/JS37*1*2</b> |
| ATEX                                 | ATEX intrinsically safe approval                  | <b>/KS27*1</b>   |
| IECEx Scheme                         | IECEx intrinsically safe approval                 | <b>/SS27*1</b>   |

\*1: /CS17, /FS17, /JS37, /KS27, /SS27 cannot be specified together.

\*2: /JS37 can be specified on Integral antenna models (Suffix Code for Antenna is "A").

## ■ Standard Accessories

| Product  | Qty   |
|--|-------|
| User's manual (Booklet)                                    | 1     |
| Mounting bracket*1 (2-inch pipe mounting or wall mounting) | 1 set |
| Battery case ( installed in the main body. )               | 1     |
| Remote antenna*2   | 1     |

\*1: Not included if specifying no mounting brackets ( mounting bracket suffix code is N ).

\*2: With the remote antenna option ( Antenna Type suffix code B ).

## ■ Optional Accessories

| Product                | Model code (part number) | Specification   |
|------------------------|--------------------------|---|
| Remote antenna cable*1 | F9193UA                  | Antenna cable: 1 m, Operational temperature range: -40 to +85 °C, With remote antenna mounting bracket.                           |
|                        | F9193UB                  | Antenna cable: 3 m, Operational temperature range: -40 to +85 °C, With remote antenna mounting bracket.                           |
|                        | F9193UC                  | Antenna cable: 4 m (1 m+3 m) with arrestor, Operational temperature range: -40 to +85 °C, With remote antenna mounting bracket.   |
|                        | F9193UD                  | Antenna cable: 6 m (3 m+3 m) with arrestor, Operational temperature range: -40 to +85 °C, With remote antenna mounting bracket.   |
|                        | F9193UE                  | Antenna cable: 13 m (3 m+10 m) with arrestor, Operational temperature range: -40 to +85 °C, With remote antenna mounting bracket. |
| Antenna*1              | F9193DH                  | +2dBi Remote Antenna (White)  |

\*1: Use of remote antenna cable is limited by local regulation of radio and telecommunication law. Consult Yokogawa for details.

| Product               | Model code (part number) | Specification  |
|-----------------------|--------------------------|--|
| Battery pack assembly | F9915NQ*1                | Battery case, Lithium-thionyl chloride batteries 2 pieces                          |
| Battery case          | F9915NK*2                | Battery case only  |
| Batteries             | F9915NR                  | Lithium-thionyl chloride batteries, 2 pieces                                       |
| Front door part       | B8808DE                  | Front door Gasket, 1 piece   |
|                       | B8808DM                  | Front door Bolt Cap (Long) , 1 piece   |
|                       | B8808DN                  | Front door Bolt Cap (Short) , 1 piece  |
|                       | B8808EM                  | Front door Bolt SUS316, 1 piece  |
| Bracket               | B8808DW                  | 2B Pipe Mounting Bracket SUS316  |
|                       | B8808DV                  | Wall Mounting Bracket SUS316   |
| Shunt resistor        | X010-050-1               | 50 Ω± 0.1 %, for 4mm screw terminals, Operational temperature range: -25 to +80 °C |

\*1: If you need F9915MA, please purchase F9915NQ. F9915NQ is a set of F9915MA and instruction manual.

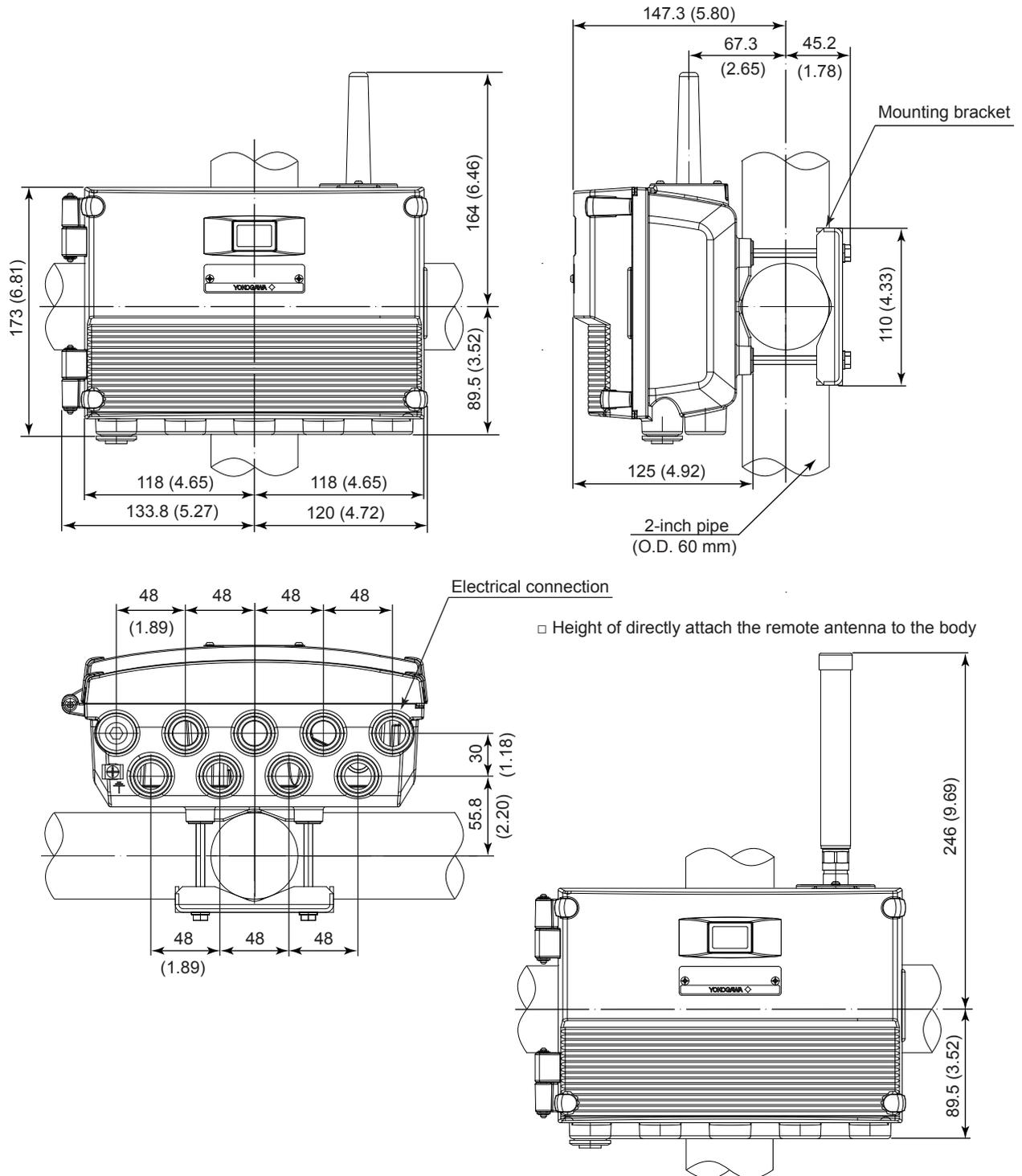
\*2: If you need F9915NS, please purchase F9915NK. F9915NK is a set of F9915NS and instruction manual.

| Model             | Surffix Code  | Description                          |
|-------------------|---------------|--------------------------------------|
| YTMXBP            |               | Blind plug for electrical connection |
| Type and Quantity | -A1           | G 1/2, 1 piece                       |
|                   | -A4           | G 1/2, 4 pieces                      |
|                   | -A7           | G 1/2, 7 pieces                      |
|                   | -C1           | 1/2 NPT, 1 piece                     |
|                   | -C4           | 1/2 NPT, 4 pieces                    |
|                   | -C7           | 1/2 NPT, 7 pieces                    |
|                   | -D1           | M20, 1 piece                         |
|                   | -D4           | M20, 4 pieces                        |
| -D7               | M20, 7 pieces |                                      |

## ■ DIMENSIONS

### ● 2-inch pipe mounting (vertical or horizontal pipe)

Unit: mm (approx. inch)

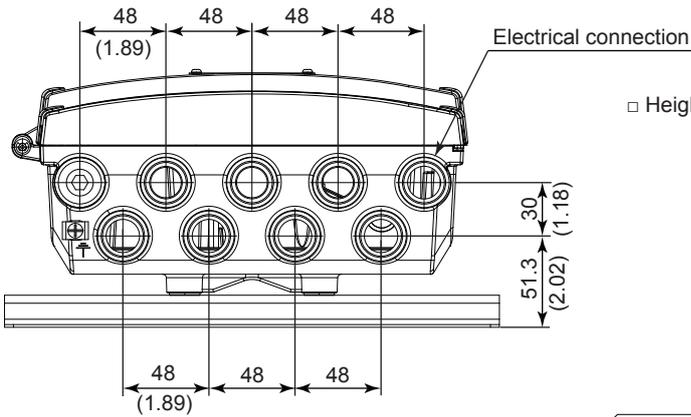
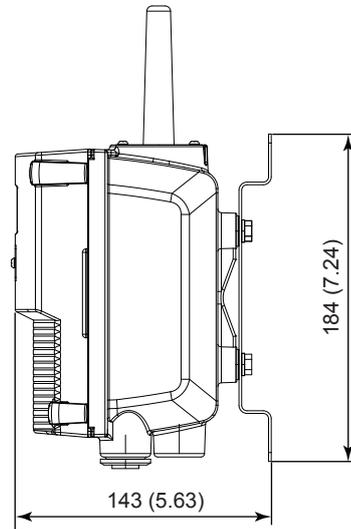
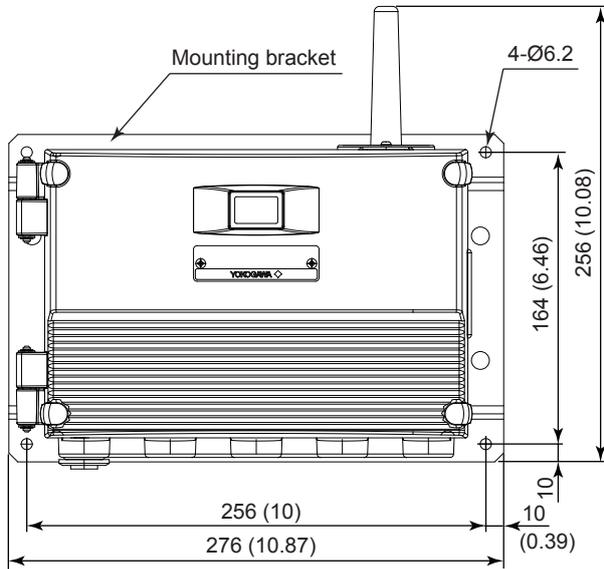


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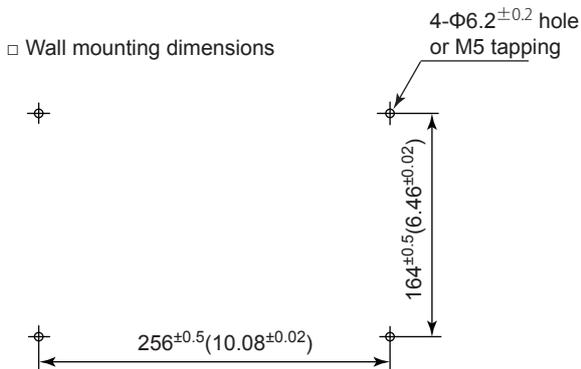
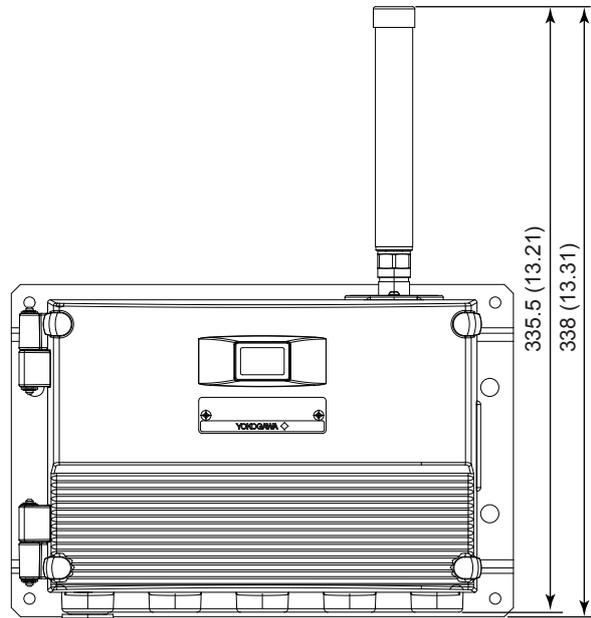
Note: If not specified, the tolerance is 3 %. However, for dimensions less than 10 mm, the tolerance is 0.3 mm.

• Wall mounting

Unit: mm (approx. inch)



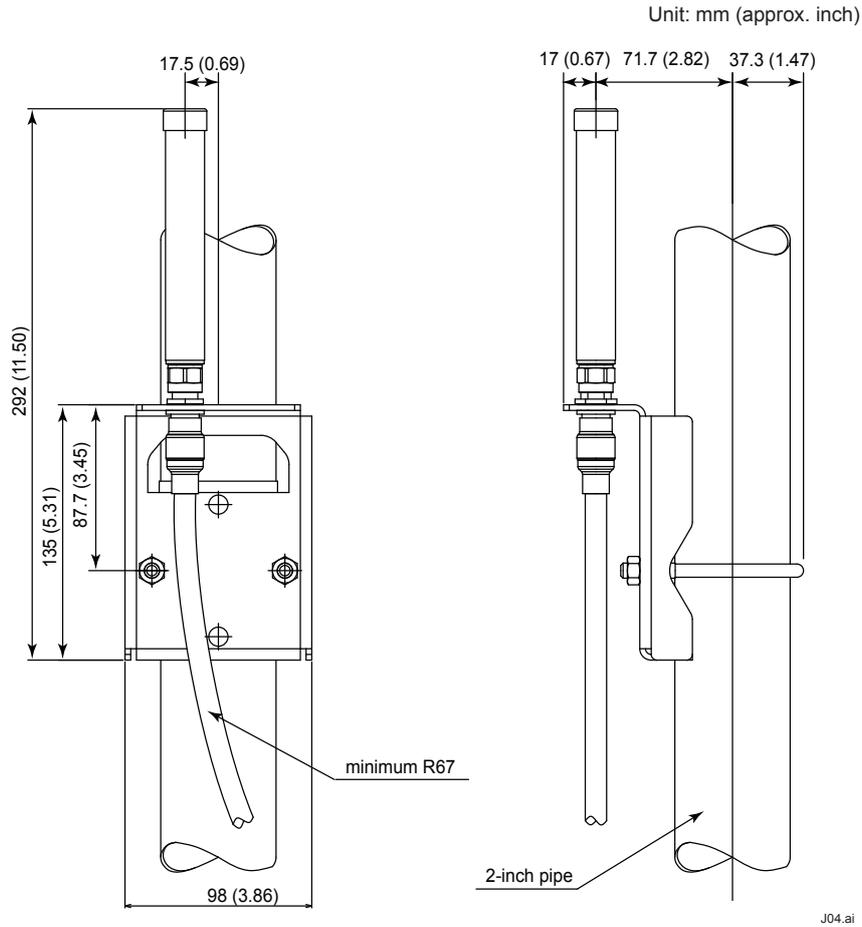
□ Height of directly attach the remote antenna to the body



E03.ai

Note: If not specified, the tolerance is 3 %. However, for dimtensions less than 10 mm, the tolerance is 0.3 mm.

● Remote antenna bracket

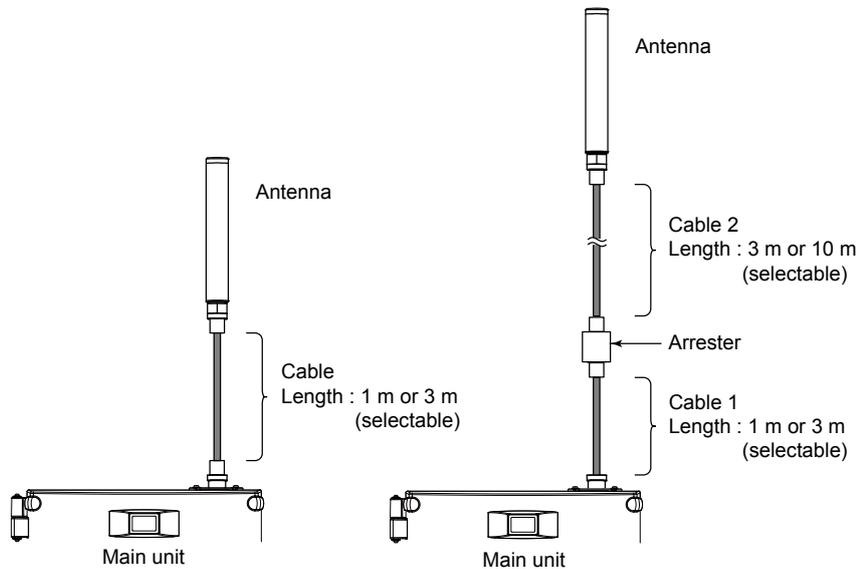
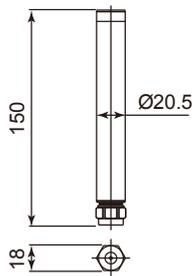


● Remote antenna

- Antenna
- Antenna
  - \* Non-direction antenna
  - \* Gain : +2 dBi
  - \* Part number: F9193DH
- Antenna cable
- High-frequency coaxial cable
  - \* Sheath dia : 11.11mm

<Without arrester>

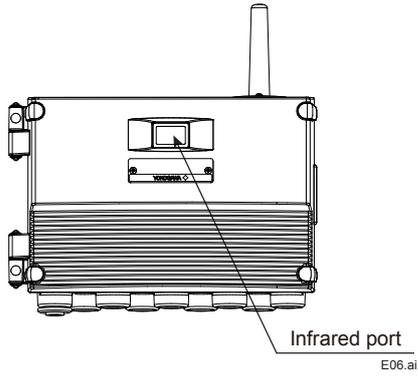
<With arrester>



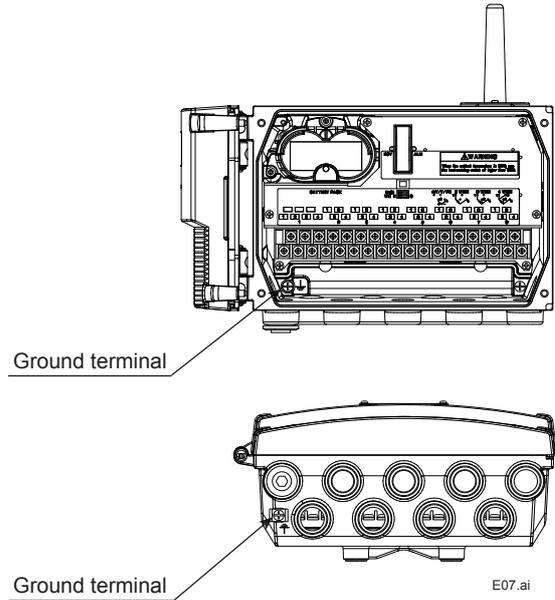
E05.ai

Note: If not specified, the tolerance is 3 %. However, for dimentions less than 10 mm, the tolerance is 0.3 mm.

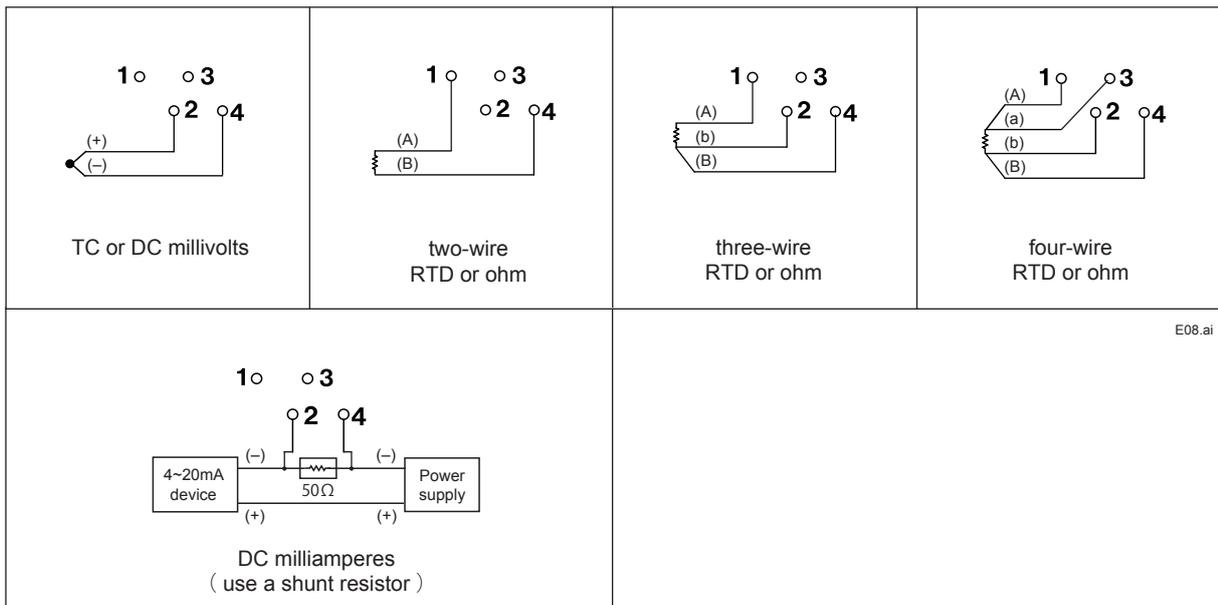
● Infrared Configuration



● Terminal Configuration



● Input Wiring



**< Ordering Information >**

Specify the following when ordering Model, suffix codes, and optional codes. The instrument is shipped with the settings shown in Table A.

1. Sensor type.
  - 1) Select an input sensor type from table 1. Each input is of the same type.
  - 2) For RTD and resistance input, specify the number of wire as well. (Example; Pt100 3-wire system)
  - 3) With the /FC1 option (Factory configured settings with multiple input types/ ranges), please indicate the type of sensor for each input. You can also select "NOT\_USED" for inputs 2 through 8.

Note1: If the option code related to explosion protection is specified, Either DCV (mV) or DCV (V) as sensor type is should NOT be applied.

Note2: If the period of measurement is 1 second, the maximum number of measuring points is 3. At a 1-second period, the sensor type for at least 5 points must be set to "NOT\_USED."

2. Calibration range and unit (if required)
  - 1) Calibration range can be specified within the measurement range shown in Table 1. With the /FC1 option, please indicate the upper and lower limit values for each input. If /FC1 is not specified, the upper and lower limit values for all inputs will be the same.
  - 2) Please specify the units of temperature for each input (°C, °K, °F, or °R). °F and °R are available when Temperature Unit suffix code -B is specified. (In Japan, °F and °R are non-statutory measurement units. Suffix code -B can only be specified by end users outside of Japan.) With the /FC1 option, please indicate the unit for each input. If /FC1 is not specified, the unit for all inputs will be the same. It is not necessary to specify the unit of mV, V and ohm inputs, for these units automatically will be mV, V or Ohm.

3. Tag Number (if required)
 

Specify Tag number (up to 16 letters) to be engraved on the tag plate. Also, the specified letters are written to the "Tag\_Name" (16 letters) of the amplifier memory. The characters can be specified using alphanumeric and the symbols, [ - ] and [ . ]. Do not write anything to Tag number when nothing is engraved on the tag plate.

4. Software tag (if required)
 

Specify this software tag when the tag number required is different from the tag number specified for the Tag plate. The tag number specified in "Software tag" will be entered on "Tag\_Name" (up to 16 letters) in the amplifier memory.

Note Lower-case alphabet characters and periods [ . ] cannot be used in Yokogawa's configuration software. Specify the tag name (Tag\_Name) using a combination of upper-case alphabet characters, numbers, and hyphens [ - ].

**< Factory Setting >**

**Table A. Settings upon shipment**

|                            |   |
|----------------------------|---|
| Tag No.                    | "Blank" or as specified in order                        |
| Calibration range and unit | See Table 1. Measurement Range or as specified in order |

**< Related Instruments >**

- Field Wireless Integrated Gateway YFGW710:  
Refer to GS 01W01F01-01EN
- Field Wireless Management Station YFGW410:  
Refer to GS 01W02D01-01EN
- Field Wireless Access Point YFGW510:  
Refer to GS 01W02E01-01EN
- Field Wireless Media Converter YFGW610:  
Refer to GS 01W02D02-01EN
- Versatile Device Management Wizard FieldMate:  
Refer to GS 01R01A01-01E
- Thermocouple : Refer to GS 06B01B01-00E, GS 06B01E01-00E
- Mineral Insulated Thermocouple :  
Refer to GS 06B02D01-00E
- Resistance Temperature Sensor :  
Refer to GS 06B03B01-00E, GS 06B04D01-00E
- Protection Tube, Thermowell :  
Refer to GS 06B02T02-00E
- Paperless Recorder DAQSTATION DX1000,DX2000:  
Refer to GS 04L41B01-01E, GS 04L42B01-01E
- Data Acquisition Unit MW100:  
Refer to GS 04M10A01-01E

**< Related Documents >**

- Field Wireless System Overview:  
Refer to GS 01W01A01-01EN

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