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 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. Also, 24 VDC External power supply (Power supply suffix code: -B) can be specified. The communication is compliant with ISA100.11a* protocol specifications.

* ISA100.11a is an industrial automation wireless communication standard developed by the International Society of Automation (ISA) and is an international standard (IEC 62734) approved by the International Electrotechnical Commission (IEC).

### 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 Wireless (IEEE802.15.4)
  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
  $\pm 0.5^\circ C$ ($\pm 0.9^\circ F$) (added to accuracy when using thermocouple input)
- **Ambient Temperature Effect (per 1.0°C change)**
  See Table 2.
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 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)

Infrared Communication
Data rate: 9600 bps
Distance: Infrared surface of the near infrared adapter should be within 30 cm

Power Supply
  • Battery Model
  2x primary lithium-thionyl chloride batteries (size D)
  With battery case (batteries sold separately)
  • External Power Supply Model
  Rated supply voltage: 24 VDC
  Allowable power supply voltage range: 10.5 to 26.4 VDC
  Power consumption: Max 1.2W

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
  • Battery Model
  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
  • External Power Supply Model
  Power terminal to ground terminal:
  100 VAC (50/60 Hz), 1 min, leakage current of 5 mA or less
  Note: The power supply terminal has a built-in surge protection device. The terminal without the surge protection device has the dielectric strength shown below.
  500 VAC (50/60 Hz), 1 min, leakage current of 5 mA or less
  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 standards, require additional regulatory information and approvals, contact to Yokogawa Electric Corporation.

Safety Standards
EN 61010-1, EN 61010-2-030
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
EN 61326-1 Class A Table 2 (For use in industrial locations), EN 61326-2-3
* During the test, the transmitter continues to operate under the electromagnetic effects of within ±1% of the span.
EN 301 489-1, EN 301 489-17

RE Conformity Standards
ETSI EN 300 328, ETSI EN 301 489-1, ETSI EN 301 489-17, EN 62311
The CE declaration of conformity for RE for this product can be found at <http://www.field-wireless.com/> 

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
EN 61326-1 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
Input Parameter: Uᵢ = 28 V, Iᵢ = 135 mA,
Pᵢ = 850 mW, Cᵢ = 0.013 μF, Lᵢ = 0.24 mH
Sensor Circuit Parameter: Uₒ = 5.88 V,
Is, Io = 130.1 mA, Po = 191.2 mW, Ca = 1 μF, La = 1 mH
Ambient temperature: −50 to 70 °C ( − 58 to 158°F )
Enclosure: NEMA Type 4X

CSA Intrinsically safe Approval, non-incendive Approval
Certificate No.: 2495456
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
Ex ia IIC T4
Input Parameter: Uᵢ = 28 V, Iᵢ = 135 mA,
Pᵢ = 850 mW, Cᵢ = 0.013 μF, Lᵢ = 0.24 mH
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
Enclosure: IP66/IP67

ATEX Intrinsically safe Approval
Certificate No.: DEKRA 12ATEX0068 X
II 1 G Ex ia IIC T4 Ga
Input Parameter: Uᵢ = 28 V, Iᵢ = 135 mA,
Pᵢ = 850 mW, Cᵢ = 0.013 μF, Lᵢ = 0.24 mH
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
Enclosure: IP66/IP67

IECEX Intrinsically safe Approval
Certificate No.: IECEx DEK 12.0013X
Ex ia IIC T4 Ga
Input Parameter: Uᵢ = 28 V, Iᵢ = 135 mA,
Pᵢ = 850 mW, Cᵢ = 0.013 μF, Lᵢ = 0.24 mH
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
Enclosure: IP66/IP67
TIIS intrinsically safe Approval
Battery Model (Integral antenna)  
Approval number: TC20543  
Ex ia IIC T4 X  
Power Supply: Battery pack (F9915MA) or battery case (F9915NS) DC 7.2 V  
Sensor Circuit Parameter: Uo = 5.88 V, Io = 130.1 mA, Po = 191.3 mW, Co = 1 μF, Lo = 1 mH  
Ambient temperature: −20 to 60°C  
Enclosure: IP66/IP67  
Battery model (Remote antenna)  
Approval number: TC20816  
Ex ia IIC T4 X  
Power Supply: Battery pack (F9915MA) or battery case (F9915NS) DC 7.2 V  
Sensor Circuit Parameter: Uo = 5.88 V, Io = 130.1 mA, Po = 191.3 mW, Co = 1 μF, Lo = 1 mH  
Antenna Circuit: Uo = 5.88 V, Io = 177.4 mA, Po = 349.5 mW  
Ambient Temperature: −20 to 60°C  
Enclosure: IP20  
External Power Supply Model (Integral antenna)  
Approval number: TC21262  
Ex ia IIC T4 X  
Input Parameter: Ui = 28 V, Ii = 135 mA, Pi = 850 mW, Ci = 0.013 μF, Li = 0.24 mH  
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  
Enclosure: IP20  
External Power Supply Model (Remote antenna)  
Approval number: TC21344  
Ex ia IIC T4 X  
Input Parameter: Ui= 28 V, Ii= 135 mA, Pi = 850 mW, Ci = 0.013 μF, Li = 0.24 mH  
Sensor Circuit Parameter: Uo = 5.88 V, Io = 130.1 mA, Po = 191.2 mW, Co = 1 μF, Lo = 1 mH  
Antenna Circuit: Uo = 5.88 V, Io = 177.4 mA, Po = 349.5 mW  
Ambient Temperature: −50 to 70°C  
Enclosure: IP20  

■ PHYSICAL SPECIFICATIONS

Enclosure  
Housing  
Low copper cast aluminum alloy  
Coating  
- Standard coating  
- 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  
Note: For Intrinsically safe Approval, refer to REGULATORY COMPLIANCE STATEMENTS  

Connections  
Refer to “MODEL AND SUFFIX CODES.”  
Connection Terminal  
4 mm Screw terminal  
Name Plate and Tag  
316 SST  
Mounting Blacket  
316 SST  
Select pipe mounting or wall mounting  

Weight  
3.2 kg (7.05 lb)  
Without mounting bracket.  

■ 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.

In the examination, IP20 enclosure, which is the lowest intrinsically safe explosion-proof requirement, has been verified, but both the integrated antenna model and remote antenna model can be used in an environment that requires IP66/IP67.
# Table 1. Sensor type, measurement range, and accuracy

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

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

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

**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

<table>
<thead>
<tr>
<th>Model</th>
<th>Suffix Code</th>
<th>Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>YTMX580</td>
<td>-L</td>
<td>Multi-Input Temperature Transmitter</td>
</tr>
<tr>
<td>Output Signal</td>
<td>7</td>
<td>Wireless communication (ISA100 Wireless)</td>
</tr>
<tr>
<td>Housing</td>
<td>0</td>
<td>G 1/2 female, nine electrical connections</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>1/2 NPT female, nine electrical connections</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>M20 female, nine electrical connections</td>
</tr>
<tr>
<td>Electrical Connection</td>
<td>N</td>
<td>Always 7</td>
</tr>
<tr>
<td>Integral Indicator</td>
<td>L</td>
<td>316 SST 2-inch pipe mounting</td>
</tr>
<tr>
<td>Mounting Bracket</td>
<td>W</td>
<td>316 SST wall mounting*1</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>None</td>
</tr>
<tr>
<td>Power Supply</td>
<td>-A</td>
<td>Battery (case only, battery not included), with a blind plug</td>
</tr>
<tr>
<td></td>
<td>-B</td>
<td>24 VDC, without a blind plug</td>
</tr>
<tr>
<td>Antenna*5</td>
<td>A</td>
<td>Integral antenna</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>Remote antenna*4</td>
</tr>
<tr>
<td>Temperature Unit</td>
<td>-A</td>
<td>Cel, K *2</td>
</tr>
<tr>
<td></td>
<td>-B</td>
<td>Cel, K, degF, degR *3</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>None</td>
</tr>
<tr>
<td>Option Codes</td>
<td></td>
<td>Optional specifications (See Option Code)</td>
</tr>
</tbody>
</table>

*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.

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

### OPTIONAL SPECIFICATION

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Option Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coating</td>
<td>High anti-corrosion coating</td>
<td>/X2</td>
</tr>
<tr>
<td>Factory configured settings</td>
<td>Factory configured settings with multiple input types/ ranges</td>
<td>/FC1*1</td>
</tr>
</tbody>
</table>

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

### OPTIONAL SPECIFICATION (For Explosion Protected type)

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

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

### Standard Accessories

<table>
<thead>
<tr>
<th>Product</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>User's manual (Booklet)</td>
<td>1</td>
</tr>
<tr>
<td>Mounting bracket*1</td>
<td>1 set</td>
</tr>
<tr>
<td>Battery case (installed in the main body)*3</td>
<td>1</td>
</tr>
<tr>
<td>Remote antenna*2</td>
<td>1</td>
</tr>
</tbody>
</table>

*1: Not included if specifying no mounting brackets (Mounting bracket suffix code is N).
*2: With the remote antenna option (Antenna type suffix code is B).
*3: When battery is specified for the power supply (Power supply suffix code is -A).
## Optional Accessories

<table>
<thead>
<tr>
<th>Product</th>
<th>Model code (part number)</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remote antenna cable(^1)</td>
<td>F9193UA</td>
<td>Antenna cable: 1 m, Operational temperature range: -40 to +85°C, With remote antenna mounting bracket.</td>
</tr>
<tr>
<td></td>
<td>F9193UB</td>
<td>Antenna cable: 3 m, Operational temperature range: -40 to +85°C, With remote antenna mounting bracket.</td>
</tr>
<tr>
<td></td>
<td>F9193UC</td>
<td>Antenna cable: 4 m (1 m+3 m) with arrestor, Operational temperature range: -40 to +85°C, With remote antenna mounting bracket.</td>
</tr>
<tr>
<td></td>
<td>F9193UD</td>
<td>Antenna cable: 6 m (3 m+3 m) with arrestor, Operational temperature range: -40 to +85°C, With remote antenna mounting bracket.</td>
</tr>
<tr>
<td></td>
<td>F9193UE</td>
<td>Antenna cable: 13 m (3 m+10 m) with arrestor, Operational temperature range: -40 to +85°C, With remote antenna mounting bracket.</td>
</tr>
<tr>
<td>Antenna(^1)</td>
<td>F9193DH</td>
<td>+2 dBi Remote Antenna (White)</td>
</tr>
</tbody>
</table>

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

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

\(^1\): 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.

<table>
<thead>
<tr>
<th>Model</th>
<th>Suffix Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>YTMXBP</td>
<td>-A1</td>
<td>G 1/2, 1 piece</td>
</tr>
<tr>
<td></td>
<td>-A4</td>
<td>G 1/2, 4 pieces</td>
</tr>
<tr>
<td></td>
<td>-A7</td>
<td>G 1/2, 7 pieces</td>
</tr>
<tr>
<td></td>
<td>-C1</td>
<td>1/2 NPT, 1 piece</td>
</tr>
<tr>
<td></td>
<td>-C4</td>
<td>1/2 NPT, 4 pieces</td>
</tr>
<tr>
<td></td>
<td>-C7</td>
<td>1/2 NPT, 7 pieces</td>
</tr>
<tr>
<td></td>
<td>-D1</td>
<td>M20, 1 piece</td>
</tr>
<tr>
<td></td>
<td>-D4</td>
<td>M20, 4 pieces</td>
</tr>
<tr>
<td></td>
<td>-D7</td>
<td>M20, 7 pieces</td>
</tr>
</tbody>
</table>
**DIMENSIONS**

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

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)

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

- Remote antenna

- Antenna

- Antenna cable

* Non-direction antenna

* Gain : +2 dBi

* Sheath dia : 11.11mm

* Part number: F9193DH

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

[Diagram of Infrared Configuration]

**Terminal Configuration**

[Diagram of Terminal Configuration]

**Input Wiring**

- TC or DC millivolts
  - 1 3 2 4
  - (+) (-)

- Two-wire RTD or ohm
  - 1 3 2 4
  - (A) (B)

- Three-wire RTD or ohm
  - 1 3 2 4
  - (A) (B) (B)

- Four-wire RTD or ohm
  - 1 3 2 4
  - (A) (a) (b) (B)

**External Power Supply Wiring**

[Diagram of External Power Supply Wiring]

External Power Supply
(24V DC)
<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.

5. Network ID (if required)

Specify the number from 2 to 65535. When not specified, it will be 1.

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

<table>
<thead>
<tr>
<th>Tag No.</th>
<th>“Blank” or as specified in order</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calibration range and unit</td>
<td>See Table 1. Measurement Range or as specified in order</td>
</tr>
</tbody>
</table>

<Related Instruments>

Paperless Recorder Wireless Model GX20W
Refer to GS 04L51B11-01EN, GS 04L53B01-01EN (I/O Modules)
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 Model GX10/GX20/GP10/GP20:
Refer to GS 04L51B01-01EN (GX10/GX20), GS 04L52B01-01EN (GP10/GP20), GS 04L53B01-01EN (I/O Modules)
Paperless Recorder DAQSTATION DX1000,DX2000:
Refer to GS 04L41B01-01E, GS 04L42B01-01E
Data Acquisition System GM :
Refer to GS 04L55B01-01EN, GS 04L53B01-01EN (I/O Modules)
Data Acquisition Unit MW100:
Refer to GS 04M10A01-01E

<Related Documents>

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

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The company and product names used in this manual are not accompanied by the trademark or registered trademark symbols ("™" and "®").

<Information on EU WEEE Directive>

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.