

# General Specifications

GS 01C27H01-01EN

EJX118B and EJX438B  
Diaphragm Sealed  
Differential Pressure and  
Gauge Pressure Transmitter



Diaphragm seals are used to prevent process medium from entering directly into the pressure-sensing assembly of the differential pressure and pressure transmitters, they are connected to the transmitter using capillaries filled with fill fluid.

EJX118B Diaphragm Sealed Differential Pressure and EJX438B Diaphragm Sealed Gauge Pressure Transmitters can be used to measure liquid, gas, or steam flow, as well as liquid level, density and pressure.

EJX118B and EJX438B transmit not only process variables but also the setting parameters using wireless signal. The transmitters run on internal batteries, and the installation cost can be decreased since hard-wiring is not required. The communication protocol 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.
- Security Assured Wireless Network Joining**  
 Infrared communication between the devices for wireless network configuration and parameter setting.
- Quick Update Time**  
 Selectable from 0.5 second to 60 minutes for measured process value to publish wirelessly.

## STANDARD SPECIFICATIONS

### WIRELESS SPECIFICATIONS

#### Wireless Communication

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 monopole type  
 For amplifier housing code 8 and 9, separately sold remote antenna and antenna cables can be used.

### POWER SUPPLY SPECIFICATIONS

Battery:  
 Use the dedicated battery pack.  
 Rated voltage: 7.2 V  
 Rated capacity: 19 Ah

## SPAN AND RANGE LIMITS

### EJX118B

| Measurement Span/Range | kPa   | inH <sub>2</sub> O/(D1) | mbar/(D3)     | mmH <sub>2</sub> O/(D4) |                              |
|------------------------|-------|-------------------------|---------------|-------------------------|------------------------------|
| M                      | Span  | 2 to 100                | 8 to 400      | 20 to 1000              | 200 to 10000                 |
|                        | Range | -100 to 100             | -400 to 400   | -1000 to 1000           | -10000 to 10000              |
| H                      | Span  | 10 to 500               | 40 to 2000    | 100 to 5000             | 0.1 to 5 kgf/cm <sup>2</sup> |
|                        | Range | -500 to 500             | -2000 to 2000 | -5000 to 5000           | -5 to 5 kgf/cm <sup>2</sup>  |

T01E.ai

### EJX438B

| Measurement Span and Range | MPa             | psi (D1)     | bar (D2)     | kgf/cm <sup>2</sup> (D3) |            |            |
|----------------------------|-----------------|--------------|--------------|--------------------------|------------|------------|
| A*1                        | Span            | 0.035 to 3.5 | 5 to 500     | 0.35 to 35               | 0.35 to 35 |            |
|                            | Range           | -0.1 to 3.5  | -14.5 to 500 | -1 to 35                 | -1 to 35   |            |
| B                          | Flush type*1    | Span         | 0.16 to 16   | 23 to 2300               | 1.6 to 160 | 1.6 to 160 |
|                            |                 | Range        | -0.1 to 16   | -14.5 to 2300            | -1 to 160  | -1 to 160  |
|                            | Extended type*1 | Span         | 0.16 to 7    | 23 to 1000               | 1.6 to 70  | 1.6 to 70  |
|                            |                 | Range        | -0.1 to 7    | -14.5 to 1000            | -1 to 70   | -1 to 70   |

T02E.ai

\*1: Measurement range is within the flange rating.

## PERFORMANCE SPECIFICATIONS

Zero-based calibrated span, linear output, wetted parts material code SW for 3-inch flange flush type, fill fluid code B, capillary length of 5 m, and in the continuous measurement mode.

### Specification Conformance

EJX series ensures specification conformance to at least  $\pm 3\sigma$ .

### Reference Accuracy of Calibrated Span

(includes terminal-based linearity, hysteresis, and repeatability)

**EJX118B**

| Measurement span        |          | H                                 |
|-------------------------|----------|-----------------------------------|
| Reference accuracy      | X ≤ span | ±0.15% of Span                    |
|                         | X > span | ±(0.085+0.013 URL/span)% of Span  |
| X                       |          | 100 kPa (400 inH <sub>2</sub> O)  |
| URL (upper range limit) |          | 500 kPa (2000 inH <sub>2</sub> O) |

T03E.ai

| Measurement span        |          | M                                |
|-------------------------|----------|----------------------------------|
| Reference accuracy      | X ≤ span | ±0.15% of Span                   |
|                         | X > span | ±(0.02+0.013 URL/span)% of Span  |
| X                       |          | 10 kPa (40 inH <sub>2</sub> O)   |
| URL (upper range limit) |          | 100 kPa (400 inH <sub>2</sub> O) |

T04E.ai

**EJX438B**

| Measurement span        |          | A                              | B                 |
|-------------------------|----------|--------------------------------|-------------------|
| Reference accuracy      | X ≤ span | ±0.15% of Span                 |                   |
|                         | X > span | ±(0.1+0.005 URL/Span)% of Span |                   |
| X                       |          | 0.35 MPa (50 psi)              | 1.6 MPa (230 psi) |
| URL (upper range limit) |          | 3.5 MPa (500 psi)              | 16 MPa (2300 psi) |

T05E.ai

**Square Root Output Accuracy (EJX118B)**

The square root accuracy is a percent of flow span.

| Output               | Accuracy  |
|----------------------|---|
| 50% or Greater       | Same as reference accuracy                      |
| 50% to Dropout point | Reference accuracy×50<br>Square root output (%) |

**Ambient Temperature Effects per 28°C (50°F) Change**

**EJX118B**

| Capsule | Effect                   |
|---------|--------------------------|
| M and H | ±(0.25% Span +0.06% URL) |

**EJX438B**

| Capsule | Effect                   |
|---------|--------------------------|
| A and B | ±(0.5% Span +0.025% URL) |

**Static Pressure Effects per 0.69 MPa (100 psi) Change (EJX118B)**

**Span Effects : ±0.02% of span**

**Effect on Zero : ±0.014% of URL**

**Battery Characteristic**

Battery pack with long life lithium-thionyl chloride batteries. With the intrinsically safe type, the battery pack is replaceable in hazardous area.

Typical battery life is 10 years at 60 seconds update time or 4 years at 10 seconds update time in the following conditions.\*

- Ambient temperature: 23±2°C
- Device role: IO mode
- LCD display: off

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

**Response Time**

**EJX118B (Differential pressure)**

M and H capsule: 260 ms (approximate value at normal temperature)

**EJX438B**

200 ms (approximate value at normal temperature)

When software damping is set to zero and including dead time of 100 msec (nominal)

**Static Pressure Signal Range and Accuracy (EJX118B)**

**(Includes terminal-based linearity, hysteresis, and repeatability)**

**Range**

Upper Range Value and Lower Range Value of the static pressure can be set in the range between 0 and Maximum Working Pressure (MWP\*). The upper range value must be greater than the lower range value. Minimum setting span is 0.5 MPa (73 psi).

\*: Maximum Working Pressure (MWP) is within flange rating pressure.

**Accuracy**

Absolute Pressure

1 MPa or higher : ±0.2% of span

Less than 1 MPa: ±0.2%×(1 MPa/span) of span

Gauge Pressure Reference

Gauge pressure reference is 1013 hPa (1 atm)

Note : Gauge pressure variable is based on the above fixed reference and thus subject to be affected by the change of atmospheric pressure.

■ **FUNCTIONAL SPECIFICATIONS**

**Output**

Wireless (ISA100.11a protocol) 2.4 GHz signal.  
Output mode for EJX118B, linear or square root, is selectable.

**Update Time**

| Measurement mode | Differential pressure    | Pressure                 |
|------------------|--------------------------|--------------------------|
| Continuous       | 100 ms                   | 100 ms                   |
| Intermittent     | 0.5 to 3600 s selectable | 0.5 to 3600 s selectable |

For amplifier housing code 7:  
The transmitter shifts to the continuous mode when the update time is set to 1 second.  
Minimum update time is 1 second.  
For amplifier housing code 8 and 9:  
The transmitter shifts to the continuous mode when the update time is set to 0.5 second.

**Zero Adjustment Limits**

Zero can be fully elevated or suppressed, within the lower and upper range limits of the capsule.

**External Zero Adjustment**

External zero is continuously adjustable with 0.01% incremental resolution of span.

**Integral Indicator (LCD display)**

5-digit numerical display, 6-digit unit display and bar graph.  
The indicator is configurable to display one or up to three of the following variables periodically;  
Differential pressure, static pressure, temperature.  
See also "Factory Setting."

**Self Diagnostics**

Capsule failure, amplifier 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.

**Battery Pack**

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

**Capillary Fill Fluid Density Compensation**

Compensation of the zero shift by the ambient temperature effect on the capillary tube.

■ **NORMAL OPERATING CONDITION**

**(Optional features or approval codes may affect limits.)**

**Ambient Temperature Limits**

-40 to 60°C (-40 to 140°F)  
-30 to 60°C (-22 to 140°F) LCD visible range  
(Note: The ambient temperature limits must be within the fill fluid operating temperature range, see table 1.)

**Process Temperature Limits**

See table 1.

**Ambient Humidity Limits**

0 to 100% RH

**Working Pressure Limits**

See table 1.  
For atmospheric pressure or below, see figure 1-1 and 1-2.

**Table 1. Process temperature, Ambient temperature, and Working pressure**

|  | Code | Process temperature*1            | Ambient temperature*2         | Working pressure   | Specific gravity*3 |
|--|------|----------------------------------|-------------------------------|--|--------------------|
| Silicone oil (general use)               | A    | -10 to 250°C *4<br>(14 to 482°F) | -10 to 60°C<br>(14 to 140°F)  | 2.7 kPa abs<br>(0.38 psi abs) to<br>flange rating pressure         | 1.07               |
| Silicone oil (general use)               | B    | -30 to 180°C<br>(-22 to 356°F)   | -15 to 60°C<br>(5 to 140°F)   |  | 0.94               |
| Silicone oil<br>(high temperature use)   | C    | 10 to 310°C<br>(50 to 590°F)     | 10 to 60°C<br>(50 to 140°F)   |  | 1.09               |
| Fluorinated oil<br>(oil-prohibited use)  | D    | -20 to 120°C<br>(-4 to 248°F)    | -10 to 60°C<br>(14 to 140°F)  | 51 kPa abs<br>(7.4 psi abs) to<br>flange rating pressure           | 1.90 to 1.92       |
| Ethylene glycol<br>(low temperature use) | E    | -50 to 100°C<br>(-58 to 212°F)   | -40 to 60°C<br>(-40 to 140°F) | 100 kPa abs<br>(atmospheric pressure)<br>to flange pressure rating | 1.90               |

T06E.ai

\*1: See figure 1-1 and 1-2 'Working Pressure and Process Temperature.'

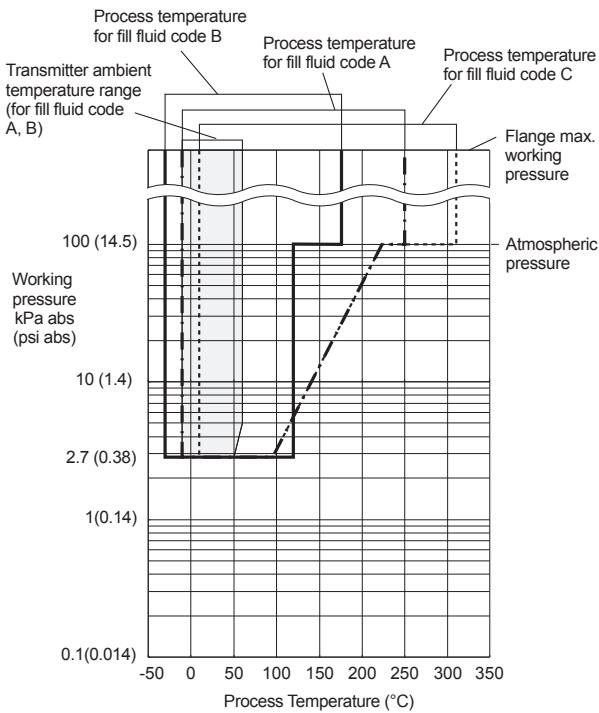
\*2: This ambient temperature is the transmitter ambient temperature.

\*3: Approximate values at a temperature of 25°C (77°F)

\*4: In case of wetted parts material code TW (Tantalum), process temperature limit is up to 200°C (392°F).

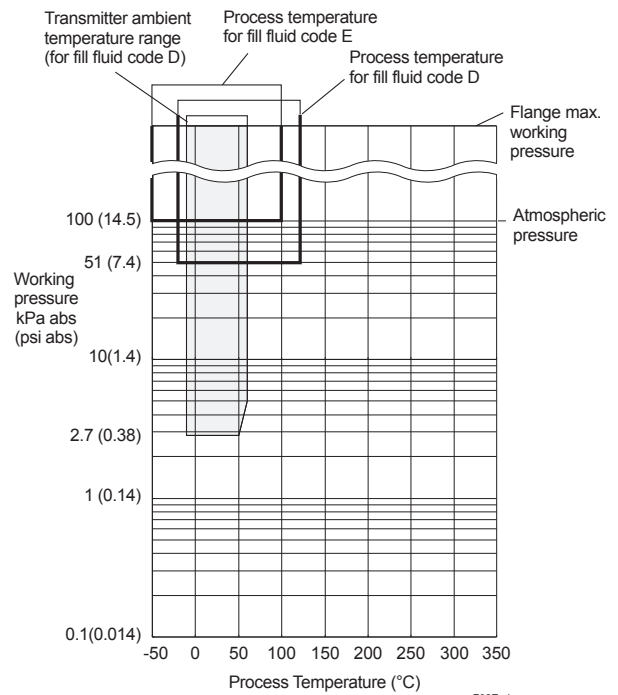
Note: The differential pressure transmitter should be installed at least 600 mm below the high pressure (HP) process connection. However, this value (600 mm) may be affected by ambient temperature, operating pressure, fill fluid or material of the wetted diaphragm.

Contact YOKOGAWA when the transmitter can not be installed at least 600 mm below the HP process connection.



F01E.ai

**Figure 1-1. Working Pressure and Process Temperature (Fill fluid : silicone oil for general and high temperature use)**



F02E.ai

**Figure 1-2. Working Pressure and Process Temperature (Fill fluid : fluorinated oil for oil-prohibited use and ethylene glycol for low temperature use)**

**REGULATORY COMPLIANCE STATEMENTS**

This device contains the wireless module which 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.

**EMC Conformity Standards**

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

**R&TTE Conformity Standards**

ETSI EN 300 328, ETSI EN 301 489-1, ETSI EN 301 489-17, EN61010-1, EN61010-2-030, EN62311

- Indoor/Outdoor use

**European Pressure Equipment Directive 97/23/EC (until 18th July, 2016)**

2014/68/EU (from 19th July, 2016)  
Sound Engineering Practice

**Safety Requirement Standards**

- EN61010-1, EN61010-2-030
- Altitude of installation site:  
Max. 2,000 m above sea level
- Installation category: I  
(Anticipated transient overvoltage 330 V)
- Pollution degree: 2
- Indoor/Outdoor use

**Regulation Conformity of the Wireless Module**

- FCC Approval
- IC Approval

**PHYSICAL SPECIFICATIONS**

**Process connections**

See the following table.

**Table 2. Flange size and rating**

| Process connection style                | Size  | Flange  |
|---|---|---|
| Flush type                              | 3-inch<br>2-inch<br>1 1/2-inch*1                        | JIS 10K, 20K, 40K, 63K*2<br>ANSI Class 150, 300, 600<br>JPI Class 150, 300, 600<br>DIN PN10/16, 25/40, 64 |
| Extended type                           | 4-inch<br>3-inch  | JIS 10K, 20K, 40K*2<br>ANSI Class 150, 300<br>JPI Class 150, 300<br>DIN PN10/16, 25/40                    |
| Combination type (Extended and Flush)*3 | High pressure side: 4-inch<br>Low pressure side: 3-inch | JIS 10K, 20K<br>ANSI Class 150, 300<br>JPI Class 150, 300<br>DIN PN10/16, 25/40                           |

T07E.ai

- \*1: Flushing connection rings are always attached.
- \*2: Applicable for EJX438B only.
- \*3: Applicable for EJX118B only.

**Gasket Contact Surface**

See the following table.

**Table 3. Gasket contact surface**

| Flange                     |                     | JIS/JPI/DIN |            | ANSI       |            |
|----------------------------|---------------------|-------------|------------|------------|------------|
| Wetted parts material code |                     | SW, SE, SY  | HW, TW, UW | SW, SE, SY | HW, TW, UW |
| Gasket contact Surface     | Serration*1         | —           | —          | ●          | —          |
|                            | Flat (No serration) | ●           | ●          | ●          | ●          |

T08E.ai

- : Applicable, —: Not applicable
- \*1: ANSI B16.5

**Electrical Connections**

See “MODEL AND SPECIFICATIONS.”

**Transmitter Mounting**

2-inch pipe mounting

**Wetted Parts Material**

**Diaphragm seal**

**Diaphragm and other wetted parts;**  
Refer to “MODEL AND SUFFIX CODES.”

**Flushing connection ring (optional)**

**Ring and Vent / Drain plugs;**  
Refer to “MODEL AND SUFFIX CODES.”

(Spiral) gasket for transmitter side  
316 SST (Hoop), PTFE Teflon (Filler)

**Non-wetted Parts Material**

**Transmitter body section:**

**Cover flange**  
ASTM CF-8M

**Cover flange bolting**  
B7 carbon steel, 316L SST, or 660 SST

**Housing**  
Low copper cast aluminum alloy with polyurethane, mint-green paint (Munsell 5.6BG 3.3/2.9 or its equivalent)

**Degrees of Protection**  
IP66/IP67, NEMA4X

**Name plate and tag**  
316 SST tag plate wired onto transmitter

**Diaphragm seal section:**

**Process Flange**  
JIS S25C, 304 SST, or 316 SST

**Capillary tube**  
316 SST

**Protection tube**  
304 SST PVC-sheathed  
(Max. operating temperature of PVC, 100°C (212°F))

**Fill fluid**  
See table 1.

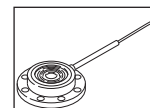
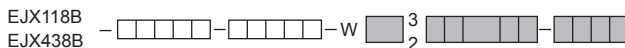
**Weight**

- EJX118B**  
Flush type: 18.2 kg (40.1 lbs)  
(3-inch ANSI Class150 flange, capillary length 5 m; without integral indicator and mounting bracket.)  
Extended type: 23.8 kg (52.5 lbs)  
(4-inch ANSI Class150 flange, extension length (X<sub>2</sub>)=100 mm, capillary length 5 m; without integral indicator and mounting bracket.)  
Combination type: 21.0 kg (46.3 lbs)  
(4-inch and 3-inch ANSI Class150 flange, extension length (X<sub>2</sub>)=100 mm, capillary length 5 m; without integral indicator and mounting bracket.)



### II. Diaphragm seal section (Flush type)

- Precess connection size: 3-inch (80 mm) / 2-inch (50 mm)



| Model   | Suffix codes              |   | Description                  |               |  | EJX118B | EJX438B |
|---|---------------------------|---|------------------------------|---------------|--|---------|---------|
| EJX118B<br>EJX438B                            | -                         |   | Transmitter body section (I) |               |  |         |         |
| Process connection style                      | -W                        |   | Flush type                   |               |  |         |         |
| Flange rating                                 | J1                        | JIS 10K   |                              |               |  |         |         |
|   | J2                        | JIS 20K   |                              |               |  |         |         |
|   | J4                        | JIS 40K   |                              |               |  |         |         |
|   | J6                        | JIS 63K   |                              |               |  |         |         |
|   | A1                        | ANSI class 150  | P1                           | JPI class 150 |  |         |         |
|   | A2                        | ANSI class 300  | P2                           | JPI class 300 |  |         |         |
|   | A4                        | ANSI class 600  | P4                           | JPI class 600 |  |         |         |
|   | D2                        | DIN PN10/16   |                              |               |  |         |         |
|   | D4                        | DIN PN25/40   |                              |               |  |         |         |
|   | D5                        | DIN PN64  |                              |               |  |         |         |
| Process connection size (Process flange size) | 3                         | 3-inch (80 mm)  |                              |               |  |         |         |
|   | 2                         | 2-inch (50 mm)  |                              |               |  |         |         |
| Flange material                               | A                         | JIS S25C  |                              |               |  |         |         |
|   | B                         | 304 SST <sup>*11</sup>  |                              |               |  |         |         |
|   | C                         | 316 SST <sup>*11</sup>  |                              |               |  |         |         |
| Gasket contact surface <sup>*1</sup>          | 1                         | Serration (for ANSI flange with wetted parts material SW only)                        |                              |               |  |         |         |
|   | 2                         | Flat (no serration)   |                              |               |  |         |         |
| Wetted parts material <sup>*10</sup>          | SW                        | [Diaphragm] 316L SST<br>[Others] 316L SST   |                              |               |  |         |         |
|   | HW                        | Hastelloy C-276 <sup>*9#</sup><br>Hastelloy C-276 <sup>*9#</sup>                      |                              |               |  |         |         |
|   | TW                        | Tantalum <sup>*7</sup><br>Tantalum <sup>*7</sup>                                      |                              |               |  |         |         |
|   | UW                        | Titanium<br>Titanium  |                              |               |  |         |         |
| Flushing connection ring <sup>*2</sup>        | 0                         | [Ring] None<br>[Vent/Drain plugs] —<br>[Material] —                                   |                              |               |  |         |         |
|   | 1                         | Straight type<br>R 1/4 connections <sup>*8</sup><br>316 SST #                         |                              |               |  |         |         |
|   | 2                         | Straight type<br>1/4 NPT connections<br>316 SST #                                     |                              |               |  |         |         |
|   | A                         | Straight type<br>R 1/4 connections <sup>*8</sup><br>316 SST #                         |                              |               |  |         |         |
|   | B                         | Straight type<br>1/4 NPT connections<br>316 SST #                                     |                              |               |  |         |         |
| Extension                                     | 0                         | None  |                              |               |  |         |         |
| Fill fluid                                    | A                         | For general use (silicone oil) <sup>*3</sup><br>-10 to 250°C    -10 to 60°C           |                              |               |  |         |         |
|   | B                         | For general use (silicone oil)<br>-30 to 180°C    -15 to 60°C                         |                              |               |  |         |         |
|   | C                         | For high temperature use (silicone oil) <sup>*4 *7</sup><br>10 to 310°C    10 to 60°C |                              |               |  |         |         |
|   | D                         | For oil-prohibited use (fluorinated oil) <sup>*5</sup><br>-20 to 120°C    -10 to 60°C |                              |               |  |         |         |
|   | E                         | For low temperature use (ethylene glycol)<br>-50 to 100°C    -40 to 60°C              |                              |               |  |         |         |
| Capillary connection                          | A                         | Side of diaphragm seal unit   |                              |               |  |         |         |
| —   | 2                         | Always 2  |                              |               |  |         |         |
| Capillary length <sup>*6</sup>                | 1                         | 1 m   | 6                            | 6 m           |  |         |         |
|   | 2                         | 2 m   | 7                            | 7 m           |  |         |         |
|   | 3                         | 3 m   | 8                            | 8 m           |  |         |         |
|   | 4                         | 4 m   | 9                            | 9 m           |  |         |         |
|   | 5                         | 5 m   | A                            | 10 m          |  |         |         |
| Option codes                                  | /□ Optional specification |   |                              |               |  |         |         |

T10E.ai

The "▶" marks indicate the most typical selection for each specification. Example: EJX118B-LMSCG-97JDN-WA13B1SW00-BA25/□ EJX438B-LASCG-97JDN-WA13B1SW00-BA25/□

\*1: See table 3 'Gasket contact surface.'

\*2: When specified flushing connection ring code 1, 2, A, or B, exclusive gasket is provided for transmitter side.

\*3: In case of wetted parts material code TW (Tantalum), the process temperature limit is -10 to 200°C.

\*4: Wetted parts material code TW (Tantalum) cannot be applied.

\*5: Even in case where fill fluid code D (fluorinated oil) is selected, if degrease cleansing treatment or both degrease cleansing and dehydrating treatment for the wetted parts is required, specify option code K1 or K5.

\*6: In case of wetted parts material code HW (Hastelloy C), TW (Tantalum), and UW (Titanium) for 2-inch pressure flange, specify capillary length from 1 to 5 m.

\*7: Not applicable for flashing connection ring code 1 and 2.

\*8: Not applicable for gasket contact surface code 1.

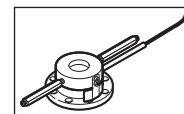
\*9: Hastelloy C-276 or N10276.

\*10: △ Users must consider the characteristics of selected wetted parts material and the influence of process fluids. The use of inappropriate materials can result in the leakage of corrosive process fluids and cause injury to personnel and/or damage to plant facilities. It is also possible that the diaphragm itself can be damaged and that material from the broken diaphragm and the fill fluid can contaminate the user's process fluids. Be very careful with highly corrosive process fluids such as hydrochloric acid, sulfuric acid, hydrogen sulfide, sodium hypochlorite, and high-temperature steam (150°C [302°F] or above). Contact Yokogawa for detailed information of the wetted parts material.

\*11: Forged version of the material may be used. The # marks indicate the construction materials conform to NACE material recommendations per MR0175/ISO15156. Please refer to the latest standards for details. Selected materials also conform to NACE MR0103.

## II. Diaphragm seal section (Flush type)

• Precess connection size: 1 1/2-inch (40 mm)



| Model  | Suffix codes   | Description   |                     |            | EJX118B | EJX438B |
|--|--|---|---------------------|------------|---------|---------|
| EJX118B<br>EJX438B                               | –□□□□□–□□□□□□□□  | Transmitter body section (I)  |                     |            | ○       | ○       |
| Process connection style                         | -W . . . . .   | Flush type  |                     |            | ○       | ○       |
| Flange rating                                    | J1 . . . . .   | JIS 10K   |                     |            | ○       | ○       |
|  | J2 . . . . .   | JIS 20K   |                     |            | ○       | ○       |
|  | J4 . . . . .   | JIS 40K   |                     |            | ○       | ○       |
|  | A1 . . . . .   | ANSI class 150  |                     |            | ○       | ○       |
|  | A2 . . . . .   | ANSI class 300  |                     |            | ○       | ○       |
|  | A4 . . . . .   | ANSI class 600  |                     |            | ○       | ○       |
|  | P1 . . . . .   | JPI class 150   |                     |            | ○       | ○       |
|  | P2 . . . . .<br>P4 . . . . .                                   | JPI class 300<br>JPI class 600                                      |                     |            | ○       | ○       |
| Process connection size<br>(Process flange size) | 8 . . . . .  | 1 1/2-inch (40 mm)  |                     |            | ○       | ○       |
| Flange material                                  | A . . . . .  | JIS S25C  |                     |            | ○       | ○       |
|  | ▶ B . . . . .  | 304 SST*6   |                     |            | ○       | ○       |
|  | C . . . . .  | 316 SST*6   |                     |            | ○       | ○       |
| Gasket contact surface*1                         | 1 . . . . .  | Serration (for ANSI flange only)                                    |                     |            | ○       | ○       |
|  | 2 . . . . .  | Flat (no serration)   |                     |            | ○       | ○       |
| Wetted parts material*5                          | SW . . . . .   | [Diaphragm]   | [Others]            |            | ○       | ○       |
|  |  | 316L SST  | 316L SST            |            |         |         |
| Flushing connection ring*2                       | 3 . . . . .<br>4 . . . . .<br>C . . . . .<br>D . . . . .       | [Ring]  | [Vent/Drain plugs]  | [Material] | ○       | –       |
|  |  | Reducer type  | R 1/4 connections*4 | 316 SST #  | ○       | –       |
|  |  | Reducer type  | 1/4 NPT connections | 316 SST #  | –       | ○       |
|  |  | Reducer type  | R 1/4 connections*4 | 316 SST #  | –       | ○       |
|  |  | Reducer type  | 1/4 NPT connections | 316 SST #  | –       | ○       |
| Extension  | 0 . . . . .  | None  |                     |            | ○       | ○       |
| Fill fluid                                       | ▶ -A . . . . .<br>-B . . . . .<br>-D . . . . .<br>-E . . . . . | [Process temp.] [Ambient temp.]                                     |                     |            | ○       | ○       |
|  |  | For general use (silicone oil) –10 to 250°C –10 to 60°C             |                     |            | ○       | ○       |
|  |  | For general use (silicone oil) –30 to 180°C –15 to 60°C             |                     |            | ○       | ○       |
|  |  | For oil-prohibited use (fluorinated oil)*3 –20 to 120°C –10 to 60°C |                     |            | ○       | ○       |
|  |  | For low temperature use (ethylene glycol) –50 to 100°C –40 to 60°C  |                     |            | ○       | ○       |
| Capillary connection                             | A . . . . .  | Side of diaphragm seal unit   |                     |            | ○       | ○       |
|  | 2 . . . . .  | Always 2  |                     |            | ○       | ○       |
| Capillary length                                 | 1 . . . . .  | 1 m   | 6 . . . . .         | 6 m        | ○       | ○       |
|  | 2 . . . . .  | 2 m   | 7 . . . . .         | 7 m        | ○       | ○       |
|  | 3 . . . . .  | 3 m   | 8 . . . . .         | 8 m        | ○       | ○       |
|  | 4 . . . . .  | 4 m   | 9 . . . . .         | 9 m        | ○       | ○       |
|  | 5 . . . . .  | 5 m   | A . . . . .         | 10 m       | ○       | ○       |
|  | Option codes   | /□ Optional specification   |                     |            |         |         |

T11E.ai

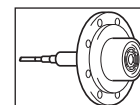
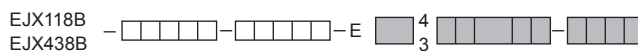
The “▶” marks indicate the most typical selection for each specification. Example: EJX118B-LMSCG-97JDN-WA18B1SW40-BA25/□  
EJX438B-LASCG-97JDN-WA18B1SWD0-BA25/□

- \*1: See table 3 ‘Gasket contact surface.’
- \*2: When specified flushing connection ring code 3, 4, C, or D, exclusive gasket is provided for transmitter side.
- \*3: Even in case where fill fluid code D (fluorinated oil) is selected, if degrease cleansing treatment or both degrease cleansing and dehydrating treatment for the wetted parts is required, specify option code K1 or K5.
- \*4: Not applicable for gasket contact surface code 1.
- \*5: Δ Users must consider the characteristics of selected wetted parts material and the influence of process fluids. The use of inappropriate materials can result in the leakage of corrosive process fluids and cause injury to personnel and/or damage to plant facilities. It is also possible that the diaphragm itself can be damaged and that material from the broken diaphragm and the fill fluid can contaminate the user’s process fluids.  
Be very careful with highly corrosive process fluids such as hydrochloric acid, sulfuric acid, hydrogen sulfide, sodium hypochlorite, and high-temperature steam (150°C [302°F] or above). Contact Yokogawa for detailed information of the wetted parts material.
- \*6: Forged version of the material may be used.



## II. Diaphragm seal section (Extended type)

- Process connection size: 4-inch (100 mm) / 3-inch (80 mm)



| Model  | Suffix codes                                       | Description  | EJX118B  | EJX438B   |
|--|--|--|--|---|
| EJX118B<br>EJX438B                               | -□□□□□-□□□□□                                       | Transmitter body section (I)   | ○  | ○   |
| Process connection style                         | -E   | Extended type  | ○  | ○   |
| Flange rating                                    | J1<br>J2<br>J4<br>A1<br>A2<br>P1<br>P2<br>D2<br>D4 | JIS 10K<br>JIS 20K<br>JIS 40K<br>ANSI class 150<br>ANSI class 300<br>JPI class 150<br>JPI class 300<br>DIN PN10/16<br>DIN PN25/40  | ○<br>○<br>-<br>○<br>○<br>○<br>○<br>○<br>○  | ○<br>○<br>○<br>○<br>○<br>○<br>○<br>○<br>○   |
| Process connection size<br>(Process flange size) | 4<br>3   | 4-inch (100 mm)<br>3-inch (80 mm)  | ○<br>○   | ○<br>○  |
| Flange material                                  | ▶ A<br>B<br>C                                      | JIS S25C<br>304 SST*5<br>316 SST*5   | ○<br>○<br>○  | ○<br>○<br>○   |
| Gasket contact surface*1                         | 1<br>2   | Serration (for ANSI flange only)<br>Flat (no serration)  | ○<br>○   | ○<br>○  |
| Wetted parts material*4                          | SE   | [Diaphragm] 316L SST<br>[Pipe] 316 SST<br>[Others] 316 SST   | ○  | ○   |
| Flushing connection ring                         | 0  | None   | ○  | ○   |
| Extension  | 1<br>2<br>3<br>4<br>5<br>6                         | Length (X <sub>2</sub> ) = 50 mm<br>Length (X <sub>2</sub> ) = 50 mm<br>Length (X <sub>2</sub> ) = 100 mm<br>Length (X <sub>2</sub> ) = 100 mm<br>Length (X <sub>2</sub> ) = 150 mm<br>Length (X <sub>2</sub> ) = 150 mm | -<br>○<br>-<br>○<br>-<br>○   | -<br>○<br>-<br>○<br>-<br>○  |
| Fill fluid                                       | ▶ -A<br>-B<br>-C<br>-D<br>-E                       | For general use (silicone oil)<br>For general use (silicone oil)<br>For high temperature use (silicone oil)<br>For oil-prohibited use (fluorinated oil)*2<br>For low temperature use (ethylene glycol)                   | [Process temp.]<br>-10 to 250°C<br>-30 to 180°C<br>10 to 310°C<br>-20 to 120°C<br>-50 to 100°C | [Ambient temp.]<br>-10 to 60°C<br>-15 to 60°C<br>10 to 60°C<br>-10 to 60°C<br>-40 to 60°C |
| Capillary connection                             | B<br>2   | Back of diaphragm seal unit<br>Always 2  | ○<br>○   | ○<br>○  |
| Capillary length*3                               | 1<br>2<br>3<br>4<br>5                              | 1 m<br>2 m<br>3 m<br>4 m<br>5 m  | 6<br>7<br>8<br>9<br>A  | 6 m<br>7 m<br>8 m<br>9 m<br>10 m  |
| Option codes                                     |  | /□ Optional specification  |  |   |

T12E.ai

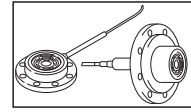
The “▶” marks indicate the most typical selection for each specification. Example: EJX118B-LMSCG-97JDN-EA14B1SE02-BB25/□  
EJX438B-LASCG-97JDN-EA14B1SE01-BB25/□

- \*1: See table 3 ‘Gasket contact surface.’
- \*2: Even in case where fill fluid code **D** (fluorinated oil) is selected, if degrease cleansing treatment or both degrease cleansing and dehydrating treatment for the wetted parts is required, specify option code **K1** or **K5**.
- \*3: The specified capillary length includes the extension length (X<sub>2</sub>) and the flange thickness (t).
- \*4: △ Users must consider the characteristics of selected wetted parts material and the influence of process fluids. The use of inappropriate materials can result in the leakage of corrosive process fluids and cause injury to personnel and/or damage to plant facilities. It is also possible that the diaphragm itself can be damaged and that material from the broken diaphragm and the fill fluid can contaminate the user’s process fluids.  
Be very careful with highly corrosive process fluids such as hydrochloric acid, sulfuric acid, hydrogen sulfide, sodium hypochlorite, and high-temperature steam (150°C [302°F] or above). Contact Yokogawa for detailed information of the wetted parts material.
- \*5: Forged version of the material may be used.

## II. Diaphragm seal section (Combination type)

- **Process connection size: High pressure side; 4-inch (100 mm) ••• Extended type**  
**Low pressure side; 3-inch (80 mm) ••• Flush type**

EJX118B - [ ] [ ] [ ] [ ] - [ ] [ ] [ ] [ ] - Y [ ] W [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]



| Model   | Suffix codes   | Description   |
|---|--|---|
| EJX118B                                       | [ ] [ ] [ ] [ ] - [ ] [ ] [ ] [ ]  | Transmitter body section (I)  |
| Process connection style                      | -Y   | Combination type (Extended and Flush)   |
| Flange rating                                 | J1 ..... JIS 10K<br>J2 ..... JIS 20K<br>A1 ..... ANSI class 150<br>A2 ..... ANSI class 300<br>P1 ..... JPI class 150<br>P2 ..... JPI class 300<br>D2 ..... DIN PN10/16<br>D4 ..... DIN PN25/40   |   |
| Process connection size (Process flange size) | W  | High pressure side 4-inch (100 mm)<br>Low pressure side 3-inch (80 mm)  |
| Flange material                               | A ..... JIS S25C<br>▶ B ..... 304 SST*5<br>C ..... 316 SST*5   |   |
| Gasket contact surface *1                     | 1 ..... Serration (for ANSI flange only)<br>2 ..... Flat (no serration)  |   |
| Wetted parts material *4                      | SY   | [Diaphragm] [Pipe] [Others]<br>High pressure side: 316L SST 316 SST 316 SST<br>Low pressure side: 316L SST — 316L SST   |
| Flushing connection ring                      | 0  | None  |
| Extension                                     | 1 ..... Length (X <sub>2</sub> ) = 50 mm<br>3 ..... Length (X <sub>2</sub> ) = 100 mm<br>5 ..... Length (X <sub>2</sub> ) = 150 mm   |   |
| Fill fluid                                    | ▶ -A ..... For general use (silicone oil)<br>-B ..... For general use (silicone oil)<br>-C ..... For high temperature use (silicone oil)<br>-D ..... For oil-prohibited use (fluorinated oil) <sup>2</sup><br>-E ..... For low temperature use (ethylene glycol) | [Process temperature] [Ambient temperature]<br>-10 to 250°C -10 to 60°C<br>-30 to 180°C -15 to 60°C<br>10 to 310°C 10 to 60°C<br>-20 to 120°C -10 to 60°C<br>-50 to 100°C -40 to 60°C |
| Capillary connection                          | C  | High pressure side: Back of diaphragm seal unit<br>Low pressure side: Side of diaphragm seal unit   |
| —   | 2  | Always 2  |
| Capillary length <sup>3</sup>                 | 1 ..... 1 m<br>2 ..... 2 m<br>3 ..... 3 m<br>4 ..... 4 m<br>5 ..... 5 m<br>6 ..... 6 m<br>7 ..... 7 m<br>8 ..... 8 m<br>9 ..... 9 m<br>A ..... 10 m  |   |
| Option codes                                  |  | /□ Optional specification   |

T13E.ai

The “▶” marks indicate the most typical selection for each specification. Example: EJX118B-LMSCG-97JDN-YA1WB1SY01-BC25/□

\*1: See table 3 'Gasket contact surface.'

\*2: Even in case where fill fluid code **D** (fluorinated oil) is selected, if degrease cleansing treatment or both degrease cleansing and dehydrating treatment for the wetted parts is required, specify option code **K1** or **K5**.

\*3: The specified capillary length of high pressure side (extended side) includes the extension length (X<sub>2</sub>) and the flange thickness (t).

\*4: ⚠ Users must consider the characteristics of selected wetted parts material and the influence of process fluids. The use of inappropriate materials can result in the leakage of corrosive process fluids and cause injury to personnel and/or damage to plant facilities. It is also possible that the diaphragm itself can be damaged and that material from the broken diaphragm and the fill fluid can contaminate the user's process fluids.  
 Be very careful with highly corrosive process fluids such as hydrochloric acid, sulfuric acid, hydrogen sulfide, sodium hypochlorite, and high-temperature steam (150°C [302°F] or above). Contact Yokogawa for detailed information of the wetted parts material.

\*5: Forged version of the material may be used.

## ■ OPTIONAL SPECIFICATIONS (For Explosion Protected type)

| Item                                 | Description  | Code        |
|--------------------------------------|--|-------------|
| Factory Mutual (FM)                  | <p>FM Intrinsically safe Approval<br/>           Applicable Standard: Class 3600, Class 3610, Class 3611, Class 3810, NEMA 250, ANSI/ISA-60079-0, ANSI/ISA-60079-11<br/>           Intrinsically Safe for Class I, Division 1, Groups A, B, C &amp; D, Class II, Division 1, Groups E, F &amp; 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 &amp; D, Class II, Division 2, Groups F &amp; G and Class III, Division 1, Class I, Zone 2, Group IIC, in Hazardous Locations<br/>           Enclosure: "NEMA 4X", Temp. Class: T4, Amb. Temp.: -50 to 70°C (-58 to 158°F)</p>  | <b>FS17</b> |
| ATEX                                 | <p>ATEX Intrinsically safe Approval<br/>           Applicable Standard: EN60079-0, EN60079-11, EN60079-26<br/>           Certificate: KEMA 10ATEX0164 X<br/>           II 1 G Ex ia IIC T4 Ga Degree of protection: IP66/IP67<br/>           Maximum Process Temp.(Tp):120°C(248°F)<br/>           Amb. Temp.(Tamb): -50 to 70°C (-58 to 158°F)</p>  | <b>KS27</b> |
| Canadian Standards Association (CSA) | <p>CSA Intrinsically safe Approval<br/>           Certificate: 2325443<br/>           Applicable standard: CAN/CSA-C22.2 No.0, CAN/CSA-C22.2 No.0.4, C22.2 No.25, CAN/CSA-C22.2 No.94, CAN/CSA-C22.2 No.157, C22.2 No.213, CAN/CSA-C22.2 No.61010-1, CAN/CSA-C22.2 No.60079-0, CAN/CSA-E60079-11, IEC60529<br/>           Ex ia IIC T4<br/>           Intrinsically Safe for Class I, Division 1, Groups A, B, C &amp; D, Class II, Division 1, Groups E, F &amp; G, Class III, Division 1.<br/>           Nonincendive for Class I, Division 2, Groups A, B, C &amp; D, Class II, Division 2, Groups F &amp; G, Class III, Division 1<br/>           Enclosure: IP66/IP67 and Type 4X Temperature Code: T4<br/>           Maximum Process Temp.(Tp):120°C (248°F)<br/>           Amb. Temp.(Tamb): -50 to 70°C (-58 to 158°F)</p> | <b>CS17</b> |
| IECEX                                | <p>IECEX Intrinsically safe Approval<br/>           Applicable Standard: IEC60079-0:2011, IEC60079-11:2011, IEC60079-26:2006<br/>           Certificate: IECEX KEM 10.0074 X<br/>           Ex ia IIC T4 Ga Enclosure: IP66/IP67<br/>           Maximum Process Temp.(Tp) :120°C(248°F)<br/>           Amb. Temp.(Tamb): -50 to 70°C (-58 to 158°F)</p>  | <b>SS27</b> |

■ OPTIONAL SPECIFICATIONS

| Item   |  | Description  | Code   |   |     |
|--|--|--|--|---|-----|
| Painting                                       | Color change                             | Amplifier cover only   | P□   |   |     |
|  | Coating change                           | Anti-corrosion coating *1  | X2   |   |     |
| Oil-prohibited use                             |  | Degrease cleansing treatment   | K1   |   |     |
| Oil-prohibited use with dehydrating treatment  |  | Degrease cleansing treatment and dehydrating treatment   | K5   |   |     |
| Calibration units *3                           | P calibration (psi unit)                 |  | (See table for Span and Range Limits.)<br>D1 |   |     |
|  | bar calibration (bar unit)               |  |  | D3  |     |
|  | M calibration (kgf/cm <sup>2</sup> unit) |  |  | D4  |     |
| Teflon film *2 *7                              |  | Diaphragm protection from sticky process fluid by FEP Teflon film attached with fluorinated oil. Operation range: 20 to 150°C, 0 to 2 MPa (Not applicable for vacuum service). | TF1  |   |     |
| Operating temperature correction *4            |  | Adjusting range: 80°C to Maximum temperature of specified fill fluid   | R  |   |     |
| Capillary without PVC sheaths                  |  | When ambient temperature exceeds 100°C, or use of PVC is prohibited  | V  |   |     |
| Gold-plated diaphragm *5                       |  | Inside of isolating diaphragms (fill fluid side) are gold plated, effective for hydrogen permeation.   | A1   |   |     |
| Material certificate                           |  | Process flange, Block  | For Flush type                               |   |     |
|  |  | Process flange, Block, Ring *6   |  | M2W   |     |
|  |  | Process flange, Block, Pipe, Base  | For Extended type                            |   |     |
|  |  | High Pressure side: Process flange, Block, Pipe, Base *12<br>Low Pressure side: Process flange, Block  |  | M5W   |     |
| Pressure test/<br>Leak test<br>Certificate *11 | EJX118B                                  | (Flange rating)  | (Test pressure)                              | Nitrogen (N <sub>2</sub> ) Gas *10<br>Retention time:<br>10 minutes |     |
|  |  | JIS 10K  | 2 MPa (290 psi)                              |   | T51 |
|  |  | JIS 20K  | 5 MPa (720 psi)                              |   | T54 |
|  |  | JIS 40K *8   | 10 MPa (1450 psi)                            |   | T57 |
|  |  | ANSI/JPI Class 150   | 3 MPa (430 psi)                              |   | T52 |
|  |  | ANSI/JPI Class 300 *8  | 8 MPa (1160 psi)                             |   | T56 |
|  |  | ANSI/JPI Class 300 *9  | 7 MPa (1000 psi)                             |   | T55 |
|  | ANSI/JPI Class 600 *8                    | 16 MPa (2300 psi)  | T58  |   |     |
|  | EJX438B                                  | For A-Capsule  | JIS 10K                                      | 2 MPa (290 psi)   | T51 |
|  |  |  | JIS 20K, 40K, 63K                            | 3.5 MPa (500 psi)   | T53 |
|  |  |  | ANSI/JPI Class 150                           | 3 MPa (430 psi)   | T52 |
|  |  |  | ANSI/JPI Class 300, 600                      | 3.5 MPa (500 psi)   | T53 |
|  |  | For B-Capsule  | JIS 10K                                      | 2 MPa (290 psi)   | T51 |
|  |  |  | JIS 20K                                      | 5 MPa (720 psi)   | T54 |
|  |  |  | JIS 40K *8                                   | 10 MPa (1450 psi)   | T57 |
|  |  |  | JIS 40K *9                                   | 7 MPa (1000 psi)  | T55 |
|  |  |  | JIS 63K *8                                   | 16 MPa (2300 psi)   | T58 |
|  |  |  | ANSI/JPI Class 150                           | 3 MPa (435 psi)   | T52 |
|  |  |  | ANSI/JPI Class 300 *8                        | 8 MPa (1160 psi)  | T56 |
|  |  |  | ANSI/JPI Class 300 *9                        | 7 MPa (1000 psi)  | T55 |
| ANSI/JPI Class 600 *8                          |  |  | 16 MPa (2300 psi)                            | T58   |     |

- \*1: Not applicable with color change option.
- \*2: Applicable for flush type (process connection style code **W**.)
- \*3: The unit of MWP (Max. working pressure) on the name plate of a housing is the same unit as specified by option code **D1**, **D3**, and **D4**.
- \*4: Specify the process operating temperature for zero correction. Example: Zero correction by process temperature 90°C.
- \*5: Applicable for wetted parts material code **SW**, **SE**, **SY**, and **HW**.
- \*6: Applicable for flushing connection ring code **1**, **2**, **3**, **4**, **A**, **B**, **C**, and **D**.
- \*7: Applicable for flushing connection ring code **0**.
- \*8: Applicable for flush type (process connection style code **W**.)
- \*9: Applicable for extended type and Combination type (process connection style code **E** and **Y**.)
- \*10: Pure nitrogen gas is used for oil-prohibited use (option code **K1** and **K5**.)
- \*11: The unit on the certificate is always MPa regardless of selection of option code **D1**, **D3**, or **D4**. A flushing connection ring will not be applied when conducting the pressure test or leak test.
- \*12: Applicable for model EJX118B.

## ■ OPTIONAL ACCESSORIES

| Product               | Part number | Specification   |
|-----------------------|-------------|---|
| Battery pack assembly | F9915NQ*1   | Battery case, Lithium-thionyl chloride batteries 2 pieces |
| Batteries*2           | F9915NR     | Lithium-thionyl chloride batteries, 2 pieces              |
| Battery case          | F9915NK*3   | Battery case only   |
| Remote antenna cable  | F9915KU     | 3 m with mounting bracket                                 |
|                       | F9915KV     | 13 m (3 m+10 m), with arrester and mounting bracket       |
| Antenna               | F9915KW     | 2 dBi standard antenna                                    |
|                       | F9915KX     | 0 dBi antenna   |
|                       | F9915KY     | 6 dBi high gain antenna*4                                 |

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

\*2: Alternatively, Tadiran SL-2780/S or TL-5930/S batteries can be purchased from your local distributor.

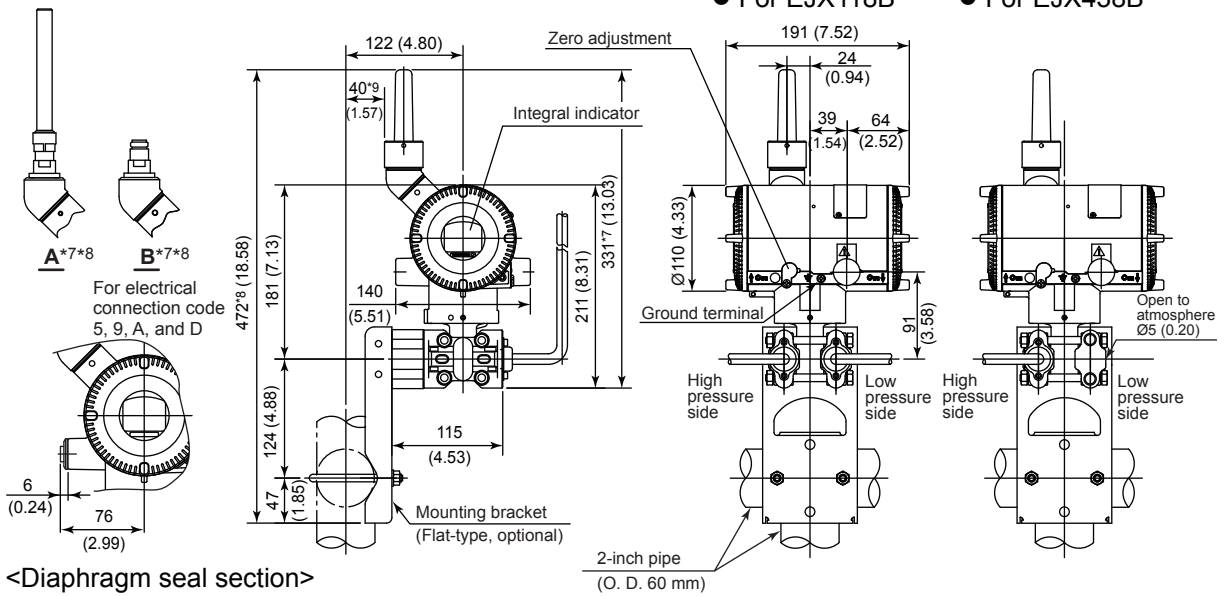
\*3: If you need F9915NS, please purchase F9915NK. F9915NK is a set of F9915NS and instruction manual.

\*4: Use of high gain antenna is limited by local regulation of radio and telecommunication law. Consult Yokogawa for details.

**DIMENSIONS**

<Transmitter body section> (Amplifier housing code 7)

Unit: mm (approx. inch)



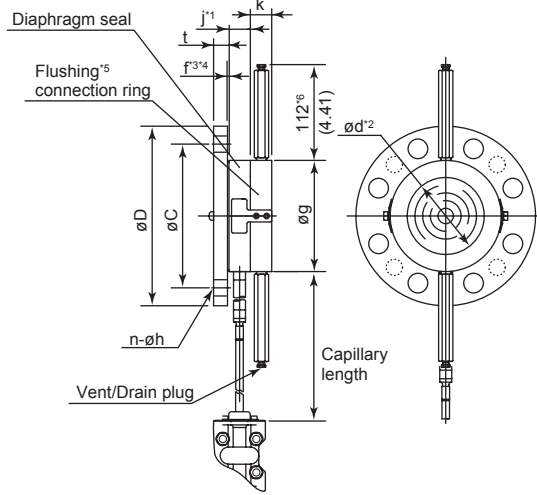
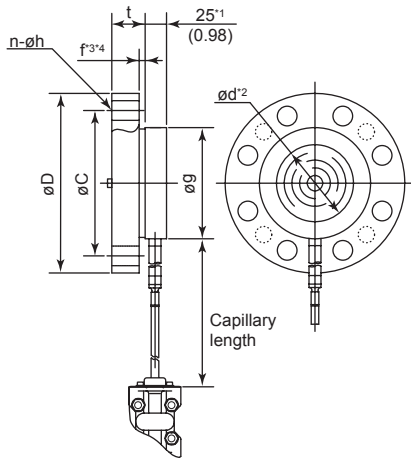
<Diaphragm seal section>

● Flush type

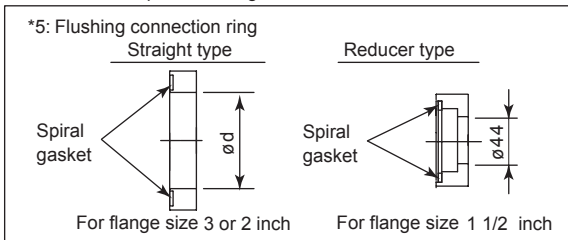
- ◆ No ring (Flushing connection ring code 0)

◆ With ring

- (EJX118B: Flushing connection ring code 1, 2, 3, and 4)
- (EJX438B: Flushing connection ring code A, B, C, and D)



- \*1: When wetted parts material code **UW** (titanium), value is 34 (1.34).
- \*2: Indicates inside diameter of gasket contact surface
- \*3: In case where process flange material is JIS S25C, value of f is 0.
- \*4: In case where process flange material is JIS SUS304 in ANSI/JPI flange, value of f is included in t.

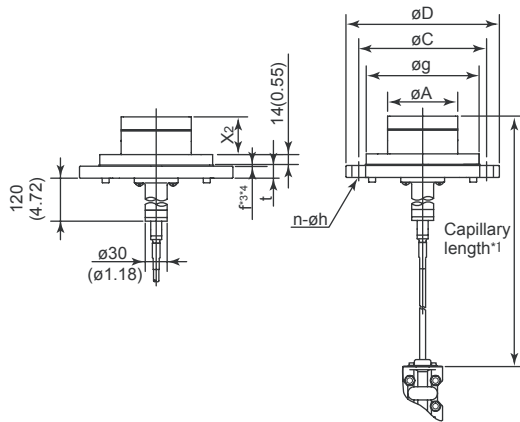


- \*5: Flushing connection ring
- \*6: When option code **K1** or **K5** is selected, add 11 mm (0.28 inch).
- \*7: When amplifier housing code 8 is selected, the value is 390 mm (15.35 inch). When amplifier housing code 9 is selected, the value is 270 mm (10.63 inch). In both cases, the figures are shown as A or B accordingly.
- \*8: When amplifier housing code 8 is selected, the value is 530 mm (20.87 inch). When amplifier housing code 9 is selected, the value is 410 mm (16.14 inch). In both cases, the figures are shown as A or B accordingly.
- \*9: When amplifier housing code 8 or 9 is selected, add 1 mm (0.04 inch) to the value.

F04E.ai

Unit: mm (approx. inch)

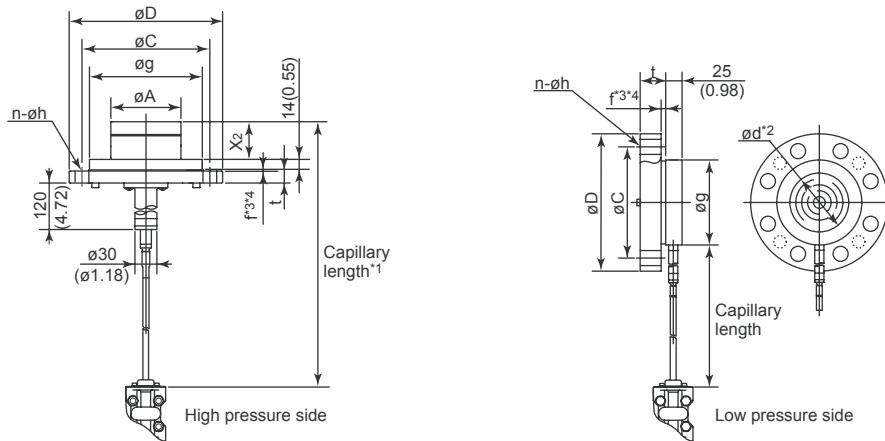
● Extended type



● Extension length (X<sub>2</sub>)

| Extension code | X <sub>2</sub> |
|----------------|----------------|
| 2              | 50(1.97)       |
| 4              | 100(3.94)      |
| 6              | 150(5.91)      |

● Combination type for EJX118B



F05E.ai

- \*1: The specified capillary length includes the extension length (X<sub>2</sub>) and the flange thickness (t).
- \*2: Indicates inside diameter of gasket contact surface.
- \*3: In case where process flange material is JIS S25C, value of f is 0.
- \*4: In case where process flange material is 304 SST in ANSI/JPI flange, value of f is included in t.

Unit: mm (Approx.: inch)

**Process flange size: 4 inch (100 mm)**

| Code | Flange rating  | øD           | øC           | øg         | ød | t           | f <sup>3-4</sup> | Bolt holes |             | j | k | øA                 |
|------|----------------|--------------|--------------|------------|----|-------------|------------------|------------|-------------|---|---|--------------------|
|      |                |              |              |            |    |             |                  | No.(n)     | Dia.(øh)    |   |   |                    |
| J1   | JIS 10K        | 210 (8.27)   | 175 (6.89)   | 155 (6.10) | —  | 18 (0.71)   | 0                | 8          | 19 (0.75)   | — | — | 96±0.5 (3.78±0.02) |
| J2   | JIS 20K        | 225 (8.86)   | 185 (7.28)   | 155 (6.10) | —  | 24 (0.94)   | 0                | 8          | 23 (0.91)   | — | — | 96±0.5 (3.78±0.02) |
| A1   | ANSI class 150 | 228.6 (9.00) | 190.5 (7.50) | 155 (6.10) | —  | 23.9 (0.94) | 1.6 (0.06)       | 8          | 19.1 (0.75) | — | — | 96±0.5 (3.78±0.02) |
| A2   | ANSI class 300 | 254 (10.00)  | 200.2 (7.88) | 155 (6.10) | —  | 31.8 (1.25) | 1.6 (0.06)       | 8          | 22.4 (0.88) | — | — | 96±0.5 (3.78±0.02) |
| P1   | JPI class 150  | 229 (9.02)   | 190.5 (7.50) | 155 (6.10) | —  | 24 (0.94)   | 1.6 (0.06)       | 8          | 19 (0.75)   | — | — | 96±0.5 (3.78±0.02) |
| P2   | JPI class 300  | 254 (10.0)   | 200.2 (7.88) | 155 (6.10) | —  | 32 (1.26)   | 1.6 (0.06)       | 8          | 22 (0.87)   | — | — | 96±0.5 (3.78±0.02) |
| D2   | DIN PN10/16    | 220 (8.66)   | 180 (7.09)   | 155 (6.10) | —  | 20 (0.79)   | 0                | 8          | 18 (0.71)   | — | — | 96±0.5 (3.78±0.02) |
| D4   | DIN PN25/40    | 235 (9.25)   | 190 (7.48)   | 155 (6.10) | —  | 24 (0.94)   | 0                | 8          | 22 (0.87)   | — | — | 96±0.5 (3.78±0.02) |

**Process flange size: 3 inch (80 mm)**

| Code | Flange rating  | øD           | øC           | øg         | ød <sup>2</sup> | t           | f <sup>3-4</sup> | Bolt holes |             | j <sup>1</sup> | k         | øA                |
|------|----------------|--------------|--------------|------------|-----------------|-------------|------------------|------------|-------------|----------------|-----------|-------------------|
|      |                |              |              |            |                 |             |                  | No.(n)     | Dia.(øh)    |                |           |                   |
| J1   | JIS 10K        | 185 (7.28)   | 150 (5.91)   | 130 (5.12) | 90 (3.54)       | 18 (0.71)   | 0                | 8          | 19 (0.75)   | 25 (0.98)      | 27 (1.06) | 71±0.5 (2.8±0.02) |
| J2   | JIS 20K        | 200 (7.87)   | 160 (6.30)   | 130 (5.12) | 90 (3.54)       | 22 (0.87)   | 0                | 8          | 23 (0.91)   | 25 (0.98)      | 27 (1.06) | 71±0.5 (2.8±0.02) |
| J4   | JIS 40K        | 210 (8.27)   | 170 (6.69)   | 130 (5.12) | 90 (3.54)       | 32 (1.26)   | 0                | 8          | 23 (0.91)   | 25 (0.98)      | 27 (1.06) | —                 |
| A1   | ANSI class 150 | 190.5 (7.50) | 152.4 (6.00) | 130 (5.12) | 90 (3.54)       | 23.9 (0.94) | 1.6 (0.06)       | 4          | 19.1 (0.75) | 25 (0.98)      | 27 (1.06) | 71±0.5 (2.8±0.02) |
| A2   | ANSI class 300 | 209.6 (8.25) | 168.1 (6.62) | 130 (5.12) | 90 (3.54)       | 28.5 (1.12) | 1.6 (0.06)       | 8          | 22.4 (0.88) | 25 (0.98)      | 27 (1.06) | 71±0.5 (2.8±0.02) |
| A4   | ANSI class 600 | 209.6 (8.25) | 168.1 (6.62) | 130 (5.12) | 90 (3.54)       | 38.2 (1.50) | 6.4 (0.25)       | 8          | 22.4 (0.88) | 25 (0.98)      | 27 (1.06) | —                 |
| P1   | JPI class 150  | 190 (7.48)   | 152.4 (6.00) | 130 (5.12) | 90 (3.54)       | 24 (0.94)   | 1.6 (0.06)       | 4          | 19 (0.75)   | 25 (0.98)      | 27 (1.06) | 71±0.5 (2.8±0.02) |
| P2   | JPI class 300  | 210 (8.27)   | 168.1 (6.61) | 130 (5.12) | 90 (3.54)       | 28.5 (1.12) | 1.6 (0.06)       | 8          | 22 (0.87)   | 25 (0.98)      | 27 (1.06) | 71±0.5 (2.8±0.02) |
| P4   | JPI class 600  | 210 (8.27)   | 168.1 (6.61) | 130 (5.12) | 90 (3.54)       | 38.4 (1.51) | 6.4 (0.25)       | 8          | 22 (0.87)   | 25 (0.98)      | 27 (1.06) | —                 |
| D2   | DIN PN10/16    | 200 (7.87)   | 160 (6.30)   | 130 (5.12) | 90 (3.54)       | 20 (0.79)   | 0                | 8          | 18 (0.71)   | 25 (0.98)      | 27 (1.06) | 71±0.5 (2.8±0.02) |
| D4   | DIN PN25/40    | 200 (7.87)   | 160 (6.30)   | 130 (5.12) | 90 (3.54)       | 24 (0.94)   | 0                | 8          | 18 (0.71)   | 25 (0.98)      | 27 (1.06) | 71±0.5 (2.8±0.02) |
| D5   | DIN PN64       | 215 (8.46)   | 170 (6.69)   | 130 (5.12) | 90 (3.54)       | 28 (1.10)   | 0                | 8          | 22 (0.87)   | 25 (0.98)      | 27 (1.06) | —                 |

**Process flange size: 2 inch (50 mm)**

| Code | Flange rating  | øD           | øC           | øg         | ød <sup>2</sup> | t           | f <sup>3-4</sup> | Bolt holes |             | j         | k         |
|------|----------------|--------------|--------------|------------|-----------------|-------------|------------------|------------|-------------|-----------|-----------|
|      |                |              |              |            |                 |             |                  | No.(n)     | Dia.(øh)    |           |           |
| J1   | JIS 10K        | 155 (6.10)   | 120 (4.72)   | 100 (3.94) | 61 (2.40)       | 16 (0.63)   | 0                | 4          | 19 (0.75)   | 25 (0.98) | 27 (1.06) |
| J2   | JIS 20K        | 155 (6.10)   | 120 (4.72)   | 100 (3.94) | 61 (2.40)       | 18 (0.71)   | 0                | 8          | 19 (0.75)   | 25 (0.98) | 27 (1.06) |
| J4   | JIS 40K        | 165 (6.50)   | 130 (5.12)   | 100 (3.94) | 61 (2.40)       | 26 (1.02)   | 0                | 8          | 19 (0.75)   | 25 (0.98) | 27 (1.06) |
| A1   | ANSI class 150 | 152.4 (6.00) | 120.7 (4.75) | 100 (3.94) | 61 (2.40)       | 19.1 (0.75) | 1.6 (0.06)       | 4          | 19.1 (0.75) | 25 (0.98) | 27 (1.06) |
| A2   | ANSI class 300 | 165.1 (6.50) | 127.0 (5.00) | 100 (3.94) | 61 (2.40)       | 22.4 (0.88) | 1.6 (0.06)       | 8          | 19.1 (0.75) | 25 (0.98) | 27 (1.06) |
| A4   | ANSI class 600 | 165.1 (6.50) | 127.0 (5.00) | 100 (3.94) | 61 (2.40)       | 31.8 (1.25) | 6.4 (0.25)       | 8          | 19.1 (0.75) | 25 (0.98) | 27 (1.06) |
| P1   | JPI class 150  | 152 (5.98)   | 120.6 (4.75) | 100 (3.94) | 61 (2.40)       | 19.5 (0.77) | 1.6 (0.06)       | 4          | 19 (0.75)   | 25 (0.98) | 27 (1.06) |
| P2   | JPI class 300  | 165 (6.50)   | 127.0 (5.00) | 100 (3.94) | 61 (2.40)       | 22.4 (0.88) | 1.6 (0.06)       | 8          | 19 (0.75)   | 25 (0.98) | 27 (1.06) |
| P4   | JPI class 600  | 165 (6.50)   | 127.0 (5.00) | 100 (3.94) | 61 (2.40)       | 31.9 (1.26) | 6.4 (0.25)       | 8          | 19 (0.75)   | 25 (0.98) | 27 (1.06) |
| D2   | DIN PN10/16    | 165 (6.50)   | 125 (4.92)   | 100 (3.94) | 61 (2.40)       | 18 (0.71)   | 0                | 4          | 18 (0.71)   | 25 (0.98) | 27 (1.06) |
| D4   | DIN PN25/40    | 165 (6.50)   | 125 (4.92)   | 100 (3.94) | 61 (2.40)       | 20 (0.79)   | 0                | 4          | 18 (0.71)   | 25 (0.98) | 27 (1.06) |
| D5   | DIN PN64       | 180 (7.09)   | 135 (5.31)   | 100 (3.94) | 61 (2.40)       | 26 (1.02)   | 0                | 4          | 22 (0.87)   | 25 (0.98) | 27 (1.06) |

**Process flange size: 1 1/2 inch (40 mm)**

| Code | Flange rating  | øD           | øC           | øg        | ød <sup>2</sup> | t           | f <sup>3-4</sup> | Bolt holes |             | j         | k         |
|------|----------------|--------------|--------------|-----------|-----------------|-------------|------------------|------------|-------------|-----------|-----------|
|      |                |              |              |           |                 |             |                  | No.(n)     | Dia.(øh)    |           |           |
| J1   | JIS 10K        | 140 (5.51)   | 105 (4.13)   | 86 (3.39) | 44 (1.73)       | 16 (0.63)   | 0                | 4          | 19 (0.75)   | 27 (1.06) | 30 (1.18) |
| J2   | JIS 20K        | 140 (5.51)   | 105 (4.13)   | 86 (3.39) | 44 (1.73)       | 18 (0.71)   | 0                | 4          | 19 (0.75)   | 27 (1.06) | 30 (1.18) |
| J4   | JIS 40K        | 160 (6.30)   | 120 (4.72)   | 86 (3.39) | 44 (1.73)       | 24 (0.94)   | 0                | 4          | 23 (0.91)   | 27 (1.06) | 30 (1.18) |
| A1   | ANSI class 150 | 127 (5.00)   | 98.6 (3.88)  | 86 (3.39) | 44 (1.73)       | 17.5 (0.69) | 1.6 (0.06)       | 4          | 15.9 (0.63) | 27 (1.06) | 30 (1.18) |
| A2   | ANSI class 300 | 155.4 (6.12) | 114.3 (4.50) | 86 (3.39) | 44 (1.73)       | 20.6 (0.81) | 1.6 (0.06)       | 4          | 22.4 (0.88) | 27 (1.06) | 30 (1.18) |
| A4   | ANSI class 600 | 155.4 (6.12) | 114.3 (4.50) | 86 (3.39) | 44 (1.73)       | 28.8 (1.13) | 6.4 (0.25)       | 4          | 22.4 (0.88) | 27 (1.06) | 30 (1.18) |
| P1   | JPI class 150  | 127 (5.00)   | 98.6 (3.88)  | 86 (3.39) | 44 (1.73)       | 17.6 (0.69) | 1.6 (0.06)       | 4          | 16 (0.63)   | 27 (1.06) | 30 (1.18) |
| P2   | JPI class 300  | 155 (6.10)   | 114.3 (4.50) | 86 (3.39) | 44 (1.73)       | 20.6 (0.81) | 1.6 (0.06)       | 4          | 22 (0.87)   | 27 (1.06) | 30 (1.18) |
| P4   | JPI class 600  | 155 (6.10)   | 114.3 (4.50) | 86 (3.39) | 44 (1.73)       | 28.9 (1.14) | 6.4 (0.25)       | 4          | 22 (0.87)   | 27 (1.06) | 30 (1.18) |

- \*1: When wetted parts material code **UW** (titanium) is selected, value is 34 (1.34).
- \*2: Indicates inside diameter of gasket contact surface.
- \*3: In case where process flange material is JIS S25C, value of f is 0.
- \*4: In case where process flange material is 304 SST in ANSI/JPI flange, value of f is included in t.

T14E.ai



● Antenna/Cable

Unit: mm (approx. inch)

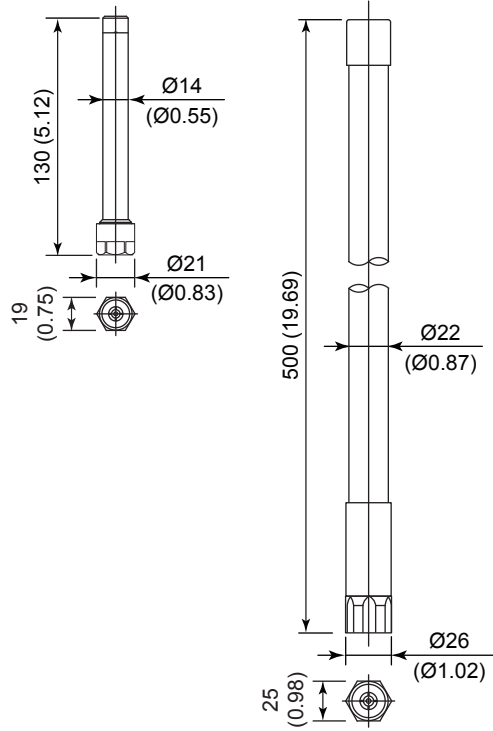
□ Non-directional antenna

• Gain: 2 dBi

Part number: F9915KW

• Gain: 6 dBi

Part number: F9915KY



□ Antenna cable

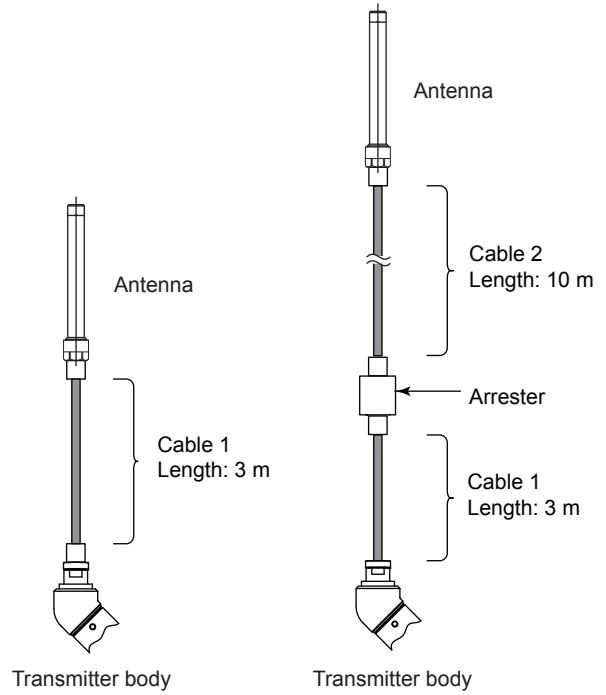
• Sheath diameter: 11.2 mm

< Without arrester >

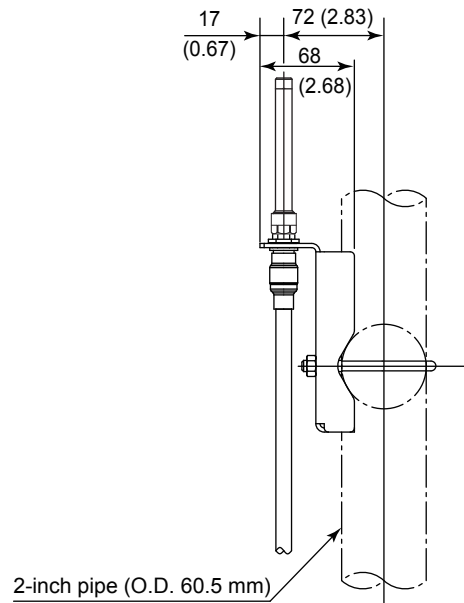
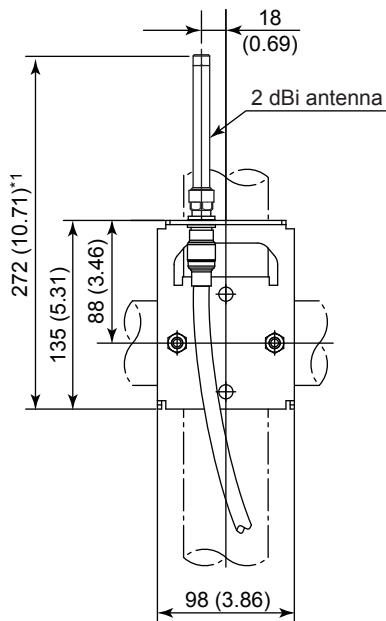
Part number: F9915KU

< With arrester >

Part number: F9915KV



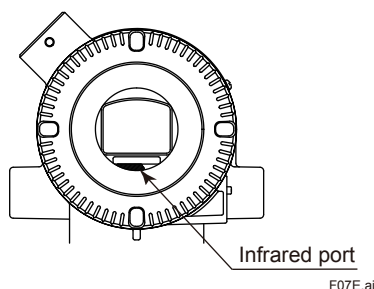
● Antenna mounting bracket



\*1: When 6 dBi antenna is selected, the value is 642 mm (25.28 inch).

F06E.ai

● Infrared Configuration



<Ordering Information>

Specify the following when ordering

1. Model, suffix codes, and option codes
2. Calibration range and unit

1) Range

Calibration range can be specified with range value specifications up to 5 digits for low or high range limits within the range of -32000 to 32000. When reverse range is designated, specify Lower Range Value (LRV) as greater than Upper Range Value (URV). When Square root Output mode in EJX118B is specified, LRV must be "0 (zero)".

2) Unit

Specify only one unit from Table A.

Table A. Available Range Unit

|                             |   |
|-----------------------------|---|
| <b>EJX118B,<br/>EJX438B</b> | mmH <sub>2</sub> O, mmH <sub>2</sub> O (68°F), mmHg, Pa, kPa, MPa, mbar, bar, gf/cm <sup>2</sup> , kgf/cm <sup>2</sup> , inH <sub>2</sub> O, inH <sub>2</sub> O (68°F), inHg, ftH <sub>2</sub> O, ftH <sub>2</sub> O (68°F) or psi. |
|-----------------------------|---|

3. Output mode

For choices, refer to Table B.

- For EJX118B, select Linear or Square root. Specify the same mode as that of "Display mode".
- For EJX438B, select Linear.

4. Display setting (SCALE)

1) Display scale and unit

Specify either "0 to 100 %" or "Desired Range and Unit" for engineering unit scale:  
 - When "Desired Range and Unit" is specified, scale range can be specified with range limit specifications up to 5 digits for low or high range limits within the range of -32000 to 32000. Unit display consists of 6-digit, therefore, if the specified scaling unit excluding "/" is longer than 6-characters, the first 6 characters will be displayed on the unit display. When Square root Output mode in EJX118B is specified, LRV must be "0 (zero)".

2) Display mode

For choices, refer to Table B.

- For EJX118B, select either Linear or Square root. Specify the same mode as that of Display mode.
- For EJX438B, select Linear.

Table B. Output mode and display mode

| Output mode<br>Display mode | LINEAR | SQUARE ROOT              |
|-----------------------------|--------|--------------------------|
| LINEAR                      | ●      | —                        |
| SQUARE ROOT                 | —      | ●: EJX118B<br>—: EJX438B |

●: Applicable, —: Not applicable

5. Tag Number (if required)

Specify Tag number (up to 16 letters) to be engraved on the tag plate. The specified letters are written on TAG\_Name (16 letters) in the amplifier memory.

6. Software tag (if required)

Specify this software tag when tag number which is different from the tag number specified in the "TAG NUMBER" is required. The tag number specified in "SOFTWARE TAG" will be entered on "TAG" (up to 16 letters) in the amplifier memory.

7. Network ID (if required)

Specify the number from 2 to 65535. When not specified, it will use 1 as the default.

8. Other Items related with options

- 1) When option code /R is selected; [COMPENSATION TEMPERATURE]  
Specify the process operating temperature for the compensation of zero shift by fill fluid density change. The specified value must be within the range from 80 degC to a maximum temperature applicable for the fill fluid. When combined with option code TF1, the value is limited to 150 degC. Note that the unit for this value is degC. Specifying of unit is unnecessary.

< Factory Setting >

|  |   |
|--|---|
| Tag No.  | Blank unless otherwise specified in order                                       |
| Software tag                                     | Blank unless otherwise specified in order                                       |
| Network ID                                       | '1' unless otherwise specified in order.  |
| Static pressure display range (For EJX118B only) | '0 to 25 MPa' for M and H capsule, absolute value. Measuring low pressure side. |

< Reference >

1. **DPHarp EJX** is registered trademark of Yokogawa Electric Corporation.
  2. Teflon; Trademark of E.I. DuPont de Nemours & Co.
  3. Hastelloy; Trademark of Haynes International Inc.
- Other company names and product names used in this material are registered trademarks or trademarks of their respective owners.