

# General Specifications

## EJX118A Diaphragm Sealed Differential Pressure Transmitter



GS 01C25H01-01EN

[Style: S2]

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

EJX118A Diaphragm Sealed Differential Pressure Transmitters can be used to measure liquid, gas, or steam flow, as well as liquid level, density, and pressure. EJX118A outputs a 4 to 20 mA DC signal corresponding to the measured differential pressure.

Its highly accurate and stable sensor can also measure the static pressure which can be shown on the integral indicator or remotely monitored via BRAIN or HART communications. Other key features include quick response, remote set-up using communications, and diagnostics and optional status output for pressure high/low alarm. The multi-sensing technology provides the advanced diagnostic function to detect such abnormality as an impulse line blockage.

FOUNDATION Fieldbus and PROFIBUS PA protocol types are also available. All EJX series models in their standard configuration, with the exception of the Fieldbus and PROFIBUS types, are certified by TÜV as complying with SIL 2 for safety requirement.



### ■ STANDARD SPECIFICATIONS

Refer to GS 01C25T02-01EN for Fieldbus communication type and GS 01C25T04-01EN for PROFIBUS PA communication type for the items marked with “∇.”

#### □ SPAN AND RANGE LIMITS

| 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>  |

#### □ PERFORMANCE SPECIFICATIONS

Zero-based calibrated span, linear output, wetted parts material code SW for 3-inch flange flush type, fill fluid code B, and capillary length of 5 m. For Fieldbus and PROFIBUS PA communication types, use calibrated range instead of span in the following specifications.

#### 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)

| 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) |                                  |

| 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) |                                 |

#### Square Root Output Accuracy

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

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

#### Static Pressure Effects per 0.69 MPa (100 psi) Change

**Span Effects**  
M and H capsules  
±0.02% of span

**Effect on Zero**  
M and H capsules  
±0.014% of URL

**Power Supply Effects(Output signal code D, E and J)**

±0.005 % per Volt (from 21.6 to 32 V DC, 350Ω)

**Response Time (Differential pressure) “◇”**

M and H capsule: 200 ms (approximate value at normal temperature)

When software damping is set to zero and including dead time of 45 ms (nominal)

**Static Pressure Signal Range and Accuracy (For monitoring via communication or on indicator. 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 “◇”**

Two wire 4 to 20 mA DC output with digital communications, linear or square root programmable. BRAIN or HART FSK protocol are superimposed on the 4 to 20 mA signal.

Output range: 3.6 mA to 21.6 mA

Output limits conform to NAMUR NE43 can be preset by option code C2 or C3.

**Failure Alarm (Output signal code D, E and J)**

Output status at CPU failure and hardware error;

Up-scale: 110%, 21.6 mA DC or more (standard)

Down-scale: -5%, 3.2 mA DC or less

Analog output status at process abnormality (Option code /DG6);

The result of process abnormality detected by the advanced diagnostic function can be reflected to an analog alert status. The following three setting modes are available.

|             |     | Mode                      |   |               |
|-------------|-----|---------------------------|---|---------------|
|             |     | Burnout                   | Fall back   | Off           |
| Standard    |     | 110%,<br>21.6mA or more   | Holds to a specified value within the output range from 3.6mA to 21.6mA | Normal output |
| Option Code | /C1 | -2.5%,<br>3.6mA or less   |   |               |
|             | /C2 | -1.25%,<br>3.8mA or less  |   |               |
|             | /C3 | 103.1%,<br>20.5mA or more |   |               |

**Damping Time Constant (1st order)**

Amplifier damping time constant is adjustable from 0.00 to 100.00 s by software and added to response time.

Note: For BRAIN protocol type, when amplifier software damping is set to less than 0.5 s, communication may occasionally be unavailable during the operation, especially while output changes dynamically. The default setting of damping ensures stable communication.

**Update Period “◇”**

Differential pressure: 45 ms

Static pressure: 360 ms

**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. Re-range can be done locally using the digital indicator with rangesetting switch.

**Integral Indicator (LCD display, optional) “◇”**

5-digit numerical display, 6-digit unit display and bar graph.

The indicator is configurable to display one or up to four of the following variables periodically.; Measured differential pressure, differential pressure in %, scaled differential pressure, measured static pressure. See also “Factory Setting.”

**Local Parameter Setting (Output signal code D, E, and J)**

Parameter configuration by the external zero adjustment screw and push button (Integral indicator code E) offers easy and quick setup for parameters of Tag number, Unit, LRV, URV, Damping, Output mode (linear/square root), Display out 1, and Re-range by applying actual pressure (LRV/URV).

**Self Diagnostics**

CPU failure, hardware failure, configuration error, process alarm for differential pressure, static pressure or capsule temperature.

User-configurable process high/low alarm for differential pressure and static pressure is also available, and its status can be output when optional status output is specified.

**Advanced Diagnostics (optional) “◇”**

Applicable for Output signal code E, J and F.

- Impulse line blockage detection  
The impulse line condition can be calculated and detected by extracting the fluctuation component from the differential pressure and static pressure signals. The EJX118A detects the impulse line abnormality particularly which side of impulse line is plugged.

**Signal Characterizer (Output signal code D, E and J)**

User-configurable 10-segment signal characterizer for 4 to 20 mA output.

**Capillary Fill Fluid Density Compensation (Output signal code D, E and J)**

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

**Status Output (optional, output signal code D, E and J)**

One transistor contact output (sink type) to output the status of user configurable high/low alarm for differential pressure/static pressure.  
 Contact rating: 30 V DC, 120 mA DC max.  
 Refer to 'Terminal Configuration' and 'Wiring Example for Analog Output and Status Output.'

**SIL Certification**

EJX series transmitters except Fieldbus and PROFIBUS communication types are certified by TÜV in compliance with the following standards;  
 IEC 61508: 2010; Part1 to Part 7  
 Functional Safety of Electrical/electronic/programmable electronic related systems; SIL 2 capability for single transmitter use, SIL 3 capability for dual transmitter use.

□ **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) with LCD display  
 (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, 1-2, 1-3, 1-4, and 1-5.

**Supply & Load Requirements**

(Output signal code D, E and J. Optional features or approval codes may affect electrical requirements.)

With 24 V DC supply, up to a 550Ω load can be used. See figure 2.

**Supply Voltage “◇”**

10.5 to 42 V DC for general use and flameproof type.  
 10.5 to 32 V DC for lightning protector  
 (option code /A.)  
 10.5 to 30 V DC for intrinsically safe, type n, or non-incendive.  
 Minimum voltage limited at 16.6 V DC for digital communications, BRAIN and HART

**Load (Output signal code D, E and J)**

0 to 1290Ω for operation  
 250 to 600Ω for digital communication

**Communication Requirements “◇”**

(Approval codes may affect electrical requirements.)

**BRAIN****Communication distance**

Up to 2 km (1.25 miles) when using CEV polyethylene-insulated PVC-sheathed cables.  
 Communication distance varies depending on type of cable used.

**Load capacitance**

0.22 μF or less

**Load inductance**

3.3 mH or less

**Input impedance of communicating device**

10 kΩ or more at 2.4 kHz.

**EMC Conformity Standards**

EN 61326-1 Class A, Table2  
 EN 61326-2-3  
 EN 61326-2-5 (for fieldbus)

**European Pressure Equipment Directive 2014/68/EU**

Sound Engineering Practice

**EU RoHS Directive**

EN 50581

**Safety Requirement Standards**

EN 61010-1, C22.2 No.61010-1

- Installation category: I  
 (Anticipated transient overvoltage 330 V)
- Pollution degree: 2
- Indoor/Outdoor use

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

|   | Code | Process temperature <sup>*1</sup>           | Ambient temperature <sup>*2</sup>          | Working pressure   | Specific gravity <sup>*3</sup> |
|---|------|---|--|--|--------------------------------|
| Silicone oil (general use)                    | A    | -10 to 250°C <sup>*4</sup><br>(14 to 482°F) | -10 to 60°C<br>(14 to 140°F)               | 2.7 kPa abs<br>(0.38 psi abs)<br>to 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 (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 (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)<br>to flange rating pressure           | 1.90 to 1.92                   |
| Ethylene glycol (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 | 1.09                           |
| Silicone oil (high temp. and high vacuum use) | 1    | -10 to 250°C <sup>*4</sup><br>(14 to 482°F) | -10 to 60°C <sup>*5</sup><br>(14 to 140°F) | 0.013 kPa abs<br>(0.0019 psi abs)<br>to flange rating pressure     | 1.07                           |
| Silicone oil (high temp. and high vacuum use) | 2    | 10 to 310°C<br>(50 to 590°F)                | 10 to 60°C <sup>*5</sup><br>(50 to 140°F)  |  | 1.09                           |
| Silicone oil (high vacuum use)                | 4    | -10 to 100°C<br>(14 to 212°F)               | -10 to 60°C <sup>*5</sup><br>(14 to 140°F) |  | 1.07                           |

- \*1: See figure 1-1, 1-2, 1-3, 1-4, and 1-5 '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).
- \*5: The upper ambient temperature limit is 50°C (122°F) in the following combinations.

| Process connection style code | Process connection size code |
|-------------------------------|------------------------------|
| W (Flush type)                | 2 (2-inch) or 8 (1 1/2-inch) |
| E (Extension type)            | 3 (3-inch)                   |

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.

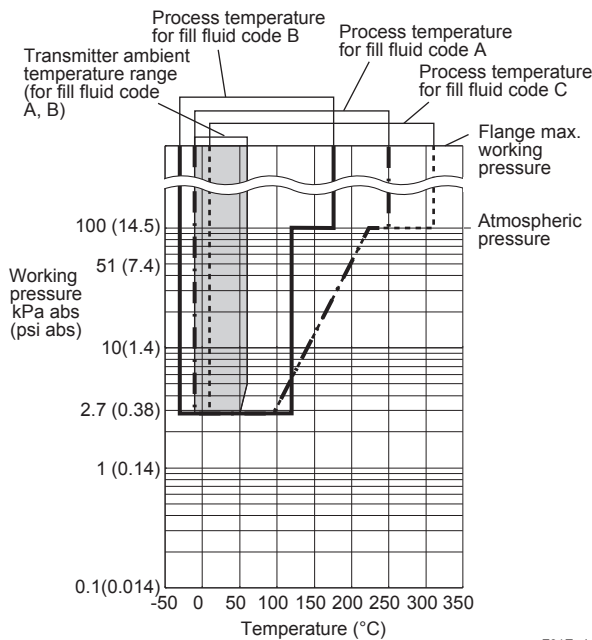


Figure 1-1. Working Pressure and Process Temperature (Fill fluid: silicone oil for general and high temperature use)

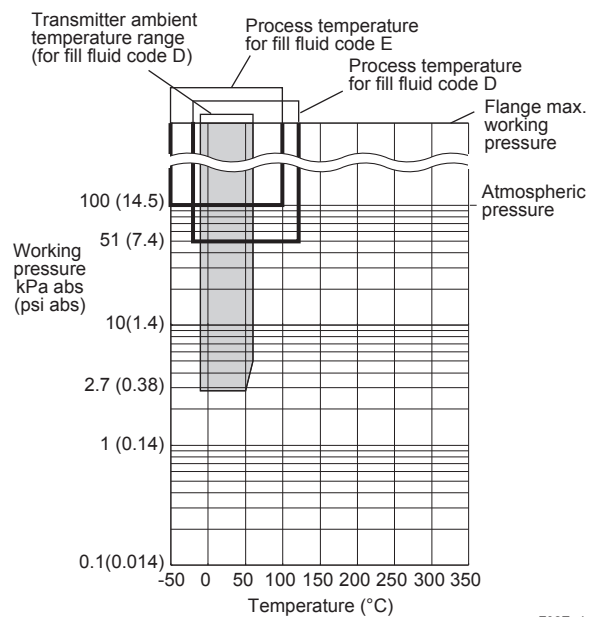
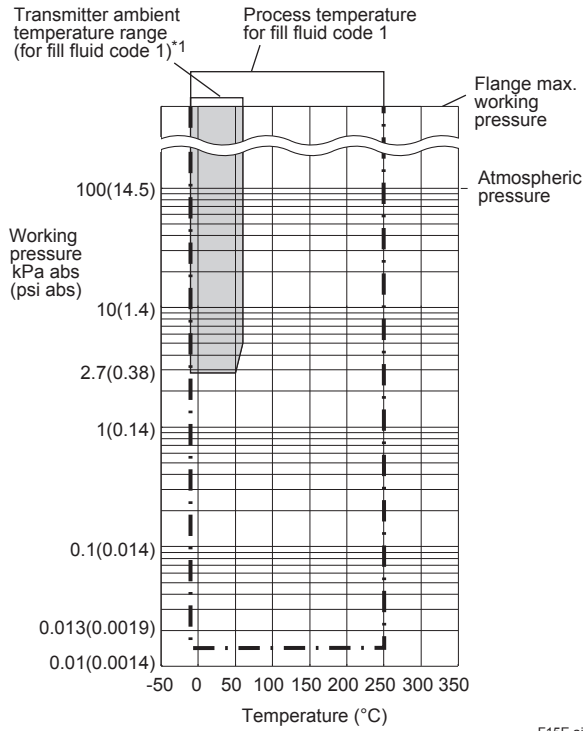
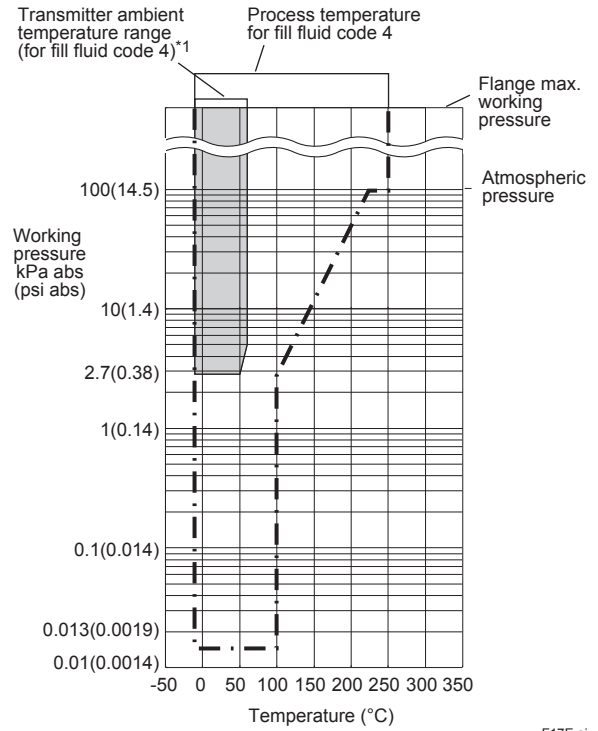


Figure 1-2. Working Pressure and Process Temperature (Fill fluid: fluorinated oil for oil-prohibited use and ethylene glycol for low temperature use)



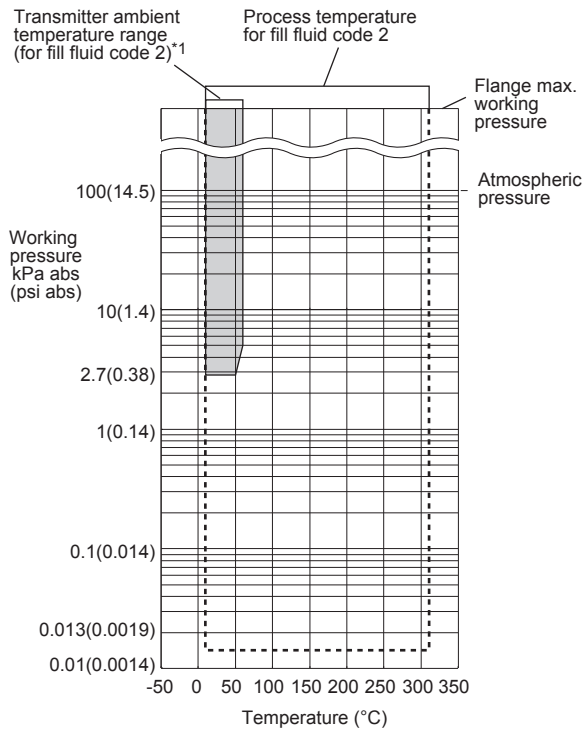
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**Figure 1-3. Working Pressure and Process Temperature (Fill fluid: silicone oil for high temp. and high vacuum use)**

**Figure 1-5. Working Pressure and Process Temperature (Fill fluid: silicone oil for high vacuum use)**

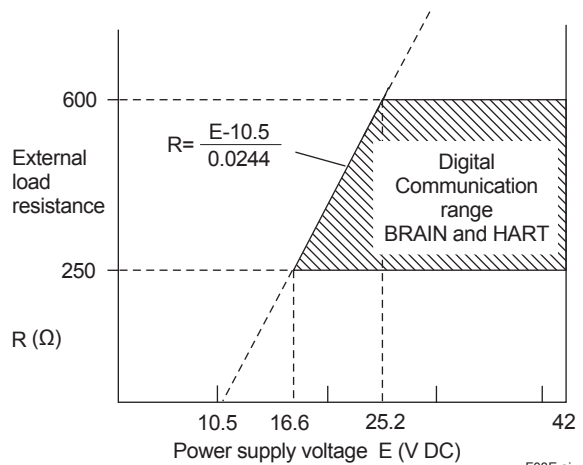


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**Figure 1-4. Working Pressure and Process Temperature (Fill fluid: silicone oil for high temp. and high vacuum use)**

\*1: The upper ambient temperature limit is 50°(122°F) in the following combinations.

| Process connection style code | Process connection size code |
|-------------------------------|------------------------------|
| W (Flush type)                | 2 (2-inch) or 8 (1 1/2-inch) |
| E (Extension type)            | 3 (3-inch)                   |



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**Figure 2. Relationship Between Power Supply Voltage and External Load Resistance**



□ **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*                         | JIS 10K, 20K, 40K<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<br>ANSI Class 150, 300<br>JPI Class 150, 300<br>DIN PN10/16, 25/40                    |
| Combination type (Extended and Flush) | 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                    |

\*: Flushing connection rings are always attached.

**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) | ●           | ●          | ●          | ●          |

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

**Electrical Connections**

See "MODEL AND SUFFIX CODES."

**Transmitter Mounting**

2-inch pipe mounting

**Wetted Parts Materials**

**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  
316SST (Hoop), PTFE Teflon (Filler)

**Non-wetted Parts Materials**

**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
- Low copper cast aluminum alloy with corrosion resistance properties (copper content ≤ 0.03%, iron content ≤ 0.15%) (optional)
- ASTM CF-8M Stainless steel (optional)

**Coating of housing**

[for aluminum housing]  
Urethane curing type polyester resin powder coating  
Mint-green paint (Munsell 5.6BG 3.3/2.9 or its equivalent)  
[for option code /P□ or /X2]  
Epoxy and polyurethane resin solvent coating

**Degrees of protection**

IP66/IP67, Type 4X

**Cover O-rings**

Buna-N, fluoro-rubber (optional)

**Name plate and tag**

316 SST

**Diaphragm seal section:**

**Process flange**

JIS S25C, JIS SUS304, or JIS SUS316

**Capillary tube**

JIS SUS316

**Protection tube**

JIS SUS304 PVC-sheathed  
(Max. operating temperature of PVC, 100°C (212°F))

**Fill fluid**

See table 1.

**Weight**

Flush type: 16.1 kg (35.5 lbs)  
(3-inch ANSI Class150 flange, capillary length 5 m; without integral indicator and mounting bracket.)  
Extended type: 21.7 kg (47.9 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: 18.9 kg (41.7 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.)

Add 1.5kg (3.3lb) for Amplifier housing code 2.

< **Related Instruments** > "◇"

Power Distributor: Refer to GS 01B04T01-02E or GS 01B04T02-02E  
BRAIN TERMINAL: Refer to GS 01C00A11-00E

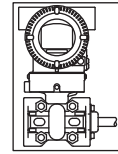
< **Reference** >

1. *DPsharp EX*™ is a registered trademark of Yokogawa Electric Corporation.
  2. FieldMate; Trademark of Yokogawa Electric Corporation.
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I. Transmitter body section

EJX118A-



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| Model                               | Suffix Codes   | Description  |
|-------------------------------------|--|--|
| <b>EJX118A</b>                      | .....  | Diaphragm sealed differential pressure transmitter   |
| Output signal                       | <b>-D</b> .....<br><b>-E</b> .....<br><b>-J</b> .....<br><br><b>-F</b> .....<br><br><b>-G</b> .....  | 4 to 20 mA DC with digital communication (BRAIN protocol)<br>4 to 20 mA DC with digital communication (HART 5 protocol)<br>4 to 20 mA DC with digital communication (HART 5 / HART 7 protocol)<br>(Refer to GS 01C25T01-01EN)<br>Digital communication (FOUNDATION Fieldbus protocol, refer to GS 01C25T02-01EN)<br>Digital communication (PROFIBUS PA protocol, refer to GS 01C25T04-01EN)  |
| Measurement span (capsule)          | <b>M</b> .....<br><b>H</b> .....   | 2 to 100 kPa (8 to 400 inH <sub>2</sub> O)<br>10 to 500 kPa (40 to 2000 inH <sub>2</sub> O)  |
| —                                   | <b>S</b> .....   | Always S   |
| —                                   | <b>C</b> .....   | Always C   |
| Coverflange bolts and nuts material | <b>J</b> .....<br><b>G</b> .....<br><b>C</b> .....   | B7 carbon steel<br>316L SST<br>660 SST   |
| Installation                        | <b>-9</b> .....  | Horizontal piping type and left side high pressure   |
| Amplifier housing                   | <b>1</b> .....<br><b>3</b> .....<br><b>2</b> .....   | Cast aluminum alloy<br>Cast aluminum alloy with corrosion resistance properties*1<br>ASTM CF-8M stainless steel*2  |
| Electrical connection               | ▶ <b>0</b> .....<br><b>2</b> .....<br><b>4</b> .....<br><b>5</b> .....<br><b>7</b> .....<br><b>9</b> .....<br><b>A</b> .....<br><b>C</b> .....<br><b>D</b> ..... | G 1/2 female, one electrical connection without blind plugs<br>1/2 NPT female, two electrical connections without blind plugs<br>M20 female, two electrical connections without blind plugs<br>G 1/2 female, two electrical connections with a blind plug *3<br>1/2 NPT female, two electrical connections with a blind plug *3<br>M20 female, two electrical connections with a blind plug *3<br>G1/2 female, two electrical connections and a 316 SST blind plug<br>1/2 NPT female, two electrical connections and a 316 SST blind plug<br>M20 female, two electrical connections and a 316 SST blind plug |
| Integral indicator                  | ▶ <b>D</b> .....<br><b>E</b> .....<br><b>N</b> .....   | Digital indicator *4<br>Digital indicator with the range setting switch (push button) *5<br>None   |
| Mounting bracket                    | ▶ <b>B</b> .....<br><b>J</b> .....<br><b>N</b> .....   | 304 SST 2-inch pipe mounting, flat type (for horizontal piping)<br>316 SST 2-inch pipe mounting, flat type (for horizontal piping)<br>None   |
| Diaphragm seal section              |  | -  -  Continued on diaphragm seal section (II)  |

The “▶” marks indicate the most typical selection for each specification.

\*1: Not applicable for electrical connection code 0, 5, 7, 9 and A.

\*2: Not applicable for electrical connection code 0, 5, 7 and 9.

\*3: Material of a blind plug; aluminum alloy for code 5 and 9, and SUS304 for code 7.

\*4: Not applicable for output signal code G.

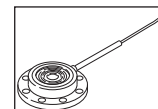
\*5: Not applicable for output signal code F.



II. Diaphragm seal section (Flush type)

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

EJX118A-□□□□-□□□□-W□□<sup>3</sup>/<sub>2</sub>□□□□□□□□



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| Model   | Suffix codes   | Description   |
|---|--|---|
| EJX118A                                       | -□□□□□□-□□□□□□   | Transmitter body section (I)  |
| Process connection style                      | -W.....  | Flush type  |
| Flange rating                                 | J1.....<br>J2.....<br>J4.....<br>A1.....<br>A2.....<br>A4.....<br>D2.....<br>D4.....<br>D5.....<br>P1.....<br>P2.....<br>P4..... | JIS 10K<br>JIS 20K<br>JIS 40K<br>ANSI class 150<br>ANSI class 300<br>ANSI class 600<br>DIN PN10/16<br>DIN PN25/40<br>DIN PN64<br>JPI class 150<br>JPI class 300<br>JPI class 600  |
| Process connection size (Process flange size) | 3.....<br>2.....   | 3-inch (80 mm)<br>2-inch (50 mm)  |
| Flange material                               | ▶ A.....<br>B.....<br>C.....   | JIS S25C<br>304 SST *11<br>316 SST *11  |
| Gasket contact surface*1                      | 1.....<br>2.....   | Serration (for ANSI flange with wetted parts material SW only)<br>Flat (no serration)   |
| Wetted parts material*10                      | SW.....<br>HW.....<br>TW.....<br>UW.....   | [Diaphragm] [Others]<br>316L SST 316L SST<br>Hastelloy C-276*9# Hastelloy C-276*9#<br>Tantalum*7 Tantalum*7<br>Titanium Titanium (for 3-inch process flange only)   |
| Flushing connection ring*2                    | ▶ 0.....<br>1.....<br>2.....   | [Ring] [Vent/Drain plugs] [Material]<br>None — —<br>Straight type R 1/4 connections 316 SST #<br>Straight type 1/4 NPT connections 316 SST #  |
| Extension                                     | 0.....   | None  |
| Fill fluid*5                                  | ▶ -A.....<br>-B.....<br>-C.....<br>-D.....<br>-E.....<br>-1.....<br>-2.....<br>-4.....   | [Process temperature] [Ambient temperature]<br>For general use (silicone oil)*3<br>-10 to 250°C -10 to 60°C<br>For general use (silicone oil)<br>-30 to 180°C -15 to 60°C<br>For high temperature use (silicone oil)*4*7<br>10 to 310°C 10 to 60°C<br>For oil-prohibited use (fluorinated oil)*5<br>-20 to 120°C -10 to 60°C<br>For low temperature use (ethylene glycol)<br>-50 to 100°C -40 to 60°C<br>High temp. and high vacuum use (Silicone oil)*3*12<br>-10 to 250°C -10 to 60°C(50°C)*13<br>High temp. and high vacuum use (Silicone oil)*4*7*12<br>10 to 310°C 10 to 60°C(50°C)*13<br>High vacuum use (Silicone oil)*12<br>-10 to 100°C -10 to 60°C(50°C)*13 |
| Capillary connection                          | A.....   | Side of diaphragm seal unit   |
| —   | 2.....   | Always 2  |
| Capillary length*6                            | 1...<br>2...<br>3...<br>4...<br>5...   | 6..... 6 m<br>7..... 7 m<br>8..... 8 m<br>9..... 9 m<br>A..... 10 m   |
| Option codes                                  |  | /□ Optional specification   |

The “▶” marks indicate the most typical selection for each specification.

Example: EJX118A-DMSCG-912EN-WA13B1SW00-BA25/□

- \*1: See table 3 ‘Gasket contact surface’ on page 6.
- \*2: When specified flushing connection ring code 1 or 2, exclusive gaskets are 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) and TW (Tantalum) for 2-inch process flange, specify capillary length from 1 to 5m.
- \*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.
- \*12: Not applicable for wetted parts material code UW.
- \*13: The upper ambient temperature limit is 50°(122°F) when specifying process connection size code 2 (2-inch).

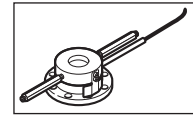
The # marks indicate the construction materials conform to NACE material recommendations per MR0175/ISO 15156.

Please refer to the latest standards for details. Selected materials also conform to NACE MR0103.

II. Diaphragm seal section (Flush type)

● Process connection size: 1 1/2-inch (40 mm)

EJX118A-□□□□□-□□□□□-W 8 □□□□□□□□□□



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| Model   | Suffix codes  | Description   |
|---|---|---|
| EJX118A                                       | -□□□□□-□□□□□  | Transmitter body section (I)  |
| Process connection style                      | -W.....   | Flush type  |
| Flange rating                                 | J1.....<br>J2.....<br>J4.....<br>A1.....<br>A2.....<br>A4.....<br>P1.....<br>P2.....<br>P4..... | JIS 10K<br>JIS 20K<br>JIS 40K<br>ANSI class 150<br>ANSI class 300<br>ANSI class 600<br>JPI class 150<br>JPI class 300<br>JPI class 600  |
| Process connection size (Process flange size) | 8.....  | 1 1/2-inch (40 mm)  |
| Flange material                               | ▶ A.....<br>B.....<br>C.....  | JIS S25C<br>304 SST *6<br>316 SST *6  |
| Gasket contact surface*1                      | 1.....<br>2.....  | Serration (for ANSI flange only)<br>Flat (no serration)   |
| Wetted parts material*5                       | SW.....   | [Diaphragm] 316L SST<br>[Others] 316L SST   |
| Flushing connection ring*2                    | 3.....<br>4.....  | [Ring] Reducer type<br>[Vent/Drain plugs] R 1/4 connections*4<br>[Material] 316 SST #<br>Reducer type 1/4 NPT connections 316 SST #   |
| Extension                                     | 0.....  | None  |
| Fill fluid                                    | ▶ -A.....<br>-B.....<br>-D.....<br>-E.....<br>1.....<br>4.....                                  | [Process temperature] [Ambient temperature]<br>For general use (silicone oil) -10 to 250°C -10 to 60°C<br>For general use (silicone oil) -30 to 180°C -15 to 60°C<br>For oil-prohibited use (fluorinated oil)*3 -20 to 120°C -10 to 60°C<br>For low temperature use (ethylene glycol) -50 to 100°C -40 to 60°C<br>High temp. and high vacuum use (Silicone oil) -10 to 250°C -10 to 50°C<br>High vacuum use (Silicone oil) -10 to 100°C -10 to 50°C |
| Capillary connection                          | A.....  | Side of diaphragm seal unit   |
| —   | 2.....  | Always 2  |
| Capillary length                              | 1...<br>2...<br>3...<br>4...<br>5...<br>6...<br>7...<br>8...<br>9...<br>A...                    | 1 m<br>2 m<br>3 m<br>4 m<br>5 m<br>6 m<br>7 m<br>8 m<br>9 m<br>10 m   |
| Option codes                                  |   | /□ Optional specification   |

The “▶” marks indicate the most typical selection for each specification.

Example: EJX118A-DMSCG-912EN-WA18B1SW40-BA25/□

\*1: See table 3 'Gasket contact surface' on page 6.

\*2: When specified flushing connection ring code 3 or 4, exclusive gaskets are 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: ⚠ 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.

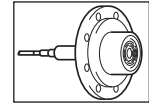
Be very careful with highly corrosive process fluids such as hydrochloric acid, sulfuric acid, hydrogen sulfide, sodium hypochlorite, and hightemperature steam (150°C [302°F] or above). Contact Yokogawa for detailed information of the wetted parts material.

\*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)

EJX118A-□□□□-□□□□-E 4 3 □□□□-□□□□



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| Model   | Suffix codes   | Description  |  |                       |                       |    |  |             |    |  |             |    |  |            |    |  |             |    |   |             |    |   |                     |    |  |                    |    |  |                     |
|---|--|--|--|-----------------------|-----------------------|----|--|-------------|----|--|-------------|----|--|------------|----|--|-------------|----|---|-------------|----|---|---------------------|----|--|--------------------|----|--|---------------------|
| EJX118A                                       | -□□□□-□□□□   | Transmitter body section (I)   |  |                       |                       |    |  |             |    |  |             |    |  |            |    |  |             |    |   |             |    |   |                     |    |  |                    |    |  |                     |
| Process connection style                      | -E   | Extended type  |  |                       |                       |    |  |             |    |  |             |    |  |            |    |  |             |    |   |             |    |   |                     |    |  |                    |    |  |                     |
| Flange rating                                 | J1 .....<br>J2 .....<br>A1 .....<br>A2 .....<br>P1 .....<br>P2 .....<br>D2 .....<br>D4 .....   | JIS 10K<br>JIS 20K<br>ANSI class 150<br>ANSI class 300<br>JPI class 150<br>JPI class 300<br>DIN PN10/16<br>DIN PN25/40   |  |                       |                       |    |  |             |    |  |             |    |  |            |    |  |             |    |   |             |    |   |                     |    |  |                    |    |  |                     |
| Process connection size (Process flange size) | 4 .....<br>3 .....   | 4-inch (100 mm)<br>3-inch (80 mm)  |  |                       |                       |    |  |             |    |  |             |    |  |            |    |  |             |    |   |             |    |   |                     |    |  |                    |    |  |                     |
| Flange material                               | ▶ A .....<br>B .....<br>C .....  | JIS S25C<br>304 SST *5<br>316 SST *5   |  |                       |                       |    |  |             |    |  |             |    |  |            |    |  |             |    |   |             |    |   |                     |    |  |                    |    |  |                     |
| Gasket contact surface*1                      | 1 .....<br>2 .....   | Serration (for ANSI flange only)<br>Flat (no serration)  |  |                       |                       |    |  |             |    |  |             |    |  |            |    |  |             |    |   |             |    |   |                     |    |  |                    |    |  |                     |
| Wetted parts material*4                       | SE   | [Diaphragm]      [Pipe]      [Others]<br>316L SST      316 SST      316 SST  |  |                       |                       |    |  |             |    |  |             |    |  |            |    |  |             |    |   |             |    |   |                     |    |  |                    |    |  |                     |
| Flushing connection ring                      | 0  | None   |  |                       |                       |    |  |             |    |  |             |    |  |            |    |  |             |    |   |             |    |   |                     |    |  |                    |    |  |                     |
| Extension                                     | 2 .....<br>4 .....<br>6 .....  | Length (X2) = 50 mm<br>Length (X2) = 100 mm<br>Length (X2) = 150 mm  |  |                       |                       |    |  |             |    |  |             |    |  |            |    |  |             |    |   |             |    |   |                     |    |  |                    |    |  |                     |
| Fill fluid                                    | ▶ -A .....<br>-B .....<br>-C .....<br>-D .....<br>-E .....<br>-1 .....<br>-2 .....<br>-4 ..... | <table border="0"> <tr> <td></td> <td>[Process temperature]</td> <td>[Ambient temperature]</td> </tr> <tr> <td>-A</td> <td>For general use (silicone oil)<br/>-10 to 250°C</td> <td>-10 to 60°C</td> </tr> <tr> <td>-B</td> <td>For general use (silicone oil)<br/>-30 to 180°C</td> <td>-15 to 60°C</td> </tr> <tr> <td>-C</td> <td>For high temperature use (silicone oil)<br/>10 to 310°C</td> <td>10 to 60°C</td> </tr> <tr> <td>-D</td> <td>For oil-prohibited use (fluorinated oil)*2<br/>-20 to 120°C</td> <td>-10 to 60°C</td> </tr> <tr> <td>-E</td> <td>For low temperature use (ethylene glycol)<br/>-50 to 100°C</td> <td>-40 to 60°C</td> </tr> <tr> <td>-1</td> <td>High temp. and high vacuum use (Silicone oil)<br/>-10 to 250°C</td> <td>-10 to 60°C(50°C)*6</td> </tr> <tr> <td>-2</td> <td>High temp. and high vacuum use (Silicone oil)<br/>10 to 310°C</td> <td>10 to 60°C(50°C)*6</td> </tr> <tr> <td>-4</td> <td>High vacuum use (Silicone oil)<br/>-10 to 100°C</td> <td>-10 to 60°C(50°C)*6</td> </tr> </table> |  | [Process temperature] | [Ambient temperature] | -A | For general use (silicone oil)<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)<br>10 to 310°C | 10 to 60°C | -D | For oil-prohibited use (fluorinated oil)*2<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 | -1 | High temp. and high vacuum use (Silicone oil)<br>-10 to 250°C | -10 to 60°C(50°C)*6 | -2 | High temp. and high vacuum use (Silicone oil)<br>10 to 310°C | 10 to 60°C(50°C)*6 | -4 | High vacuum use (Silicone oil)<br>-10 to 100°C | -10 to 60°C(50°C)*6 |
|   | [Process temperature]  | [Ambient temperature]  |  |                       |                       |    |  |             |    |  |             |    |  |            |    |  |             |    |   |             |    |   |                     |    |  |                    |    |  |                     |
| -A  | For general use (silicone oil)<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)<br>10 to 310°C   | 10 to 60°C   |  |                       |                       |    |  |             |    |  |             |    |  |            |    |  |             |    |   |             |    |   |                     |    |  |                    |    |  |                     |
| -D  | For oil-prohibited use (fluorinated oil)*2<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  |  |                       |                       |    |  |             |    |  |             |    |  |            |    |  |             |    |   |             |    |   |                     |    |  |                    |    |  |                     |
| -1  | High temp. and high vacuum use (Silicone oil)<br>-10 to 250°C                                  | -10 to 60°C(50°C)*6  |  |                       |                       |    |  |             |    |  |             |    |  |            |    |  |             |    |   |             |    |   |                     |    |  |                    |    |  |                     |
| -2  | High temp. and high vacuum use (Silicone oil)<br>10 to 310°C                                   | 10 to 60°C(50°C)*6   |  |                       |                       |    |  |             |    |  |             |    |  |            |    |  |             |    |   |             |    |   |                     |    |  |                    |    |  |                     |
| -4  | High vacuum use (Silicone oil)<br>-10 to 100°C   | -10 to 60°C(50°C)*6  |  |                       |                       |    |  |             |    |  |             |    |  |            |    |  |             |    |   |             |    |   |                     |    |  |                    |    |  |                     |
| Capillary connection                          | B  | Back of diaphragm seal unit  |  |                       |                       |    |  |             |    |  |             |    |  |            |    |  |             |    |   |             |    |   |                     |    |  |                    |    |  |                     |
| —   | 2  | Always 2   |  |                       |                       |    |  |             |    |  |             |    |  |            |    |  |             |    |   |             |    |   |                     |    |  |                    |    |  |                     |
| Capillary length*3                            | 1 ...<br>2 ...<br>3 ...<br>4 ...<br>5 ...  | 6 ..... 6 m<br>7 ..... 7 m<br>8 ..... 8 m<br>9 ..... 9 m<br>A ..... 10 m   |  |                       |                       |    |  |             |    |  |             |    |  |            |    |  |             |    |   |             |    |   |                     |    |  |                    |    |  |                     |
| Option codes                                  |  | /□ Optional specification  |  |                       |                       |    |  |             |    |  |             |    |  |            |    |  |             |    |   |             |    |   |                     |    |  |                    |    |  |                     |

The “▶” marks indicate the most typical selection for each specification.  
 Example: EJX118A-DMSCG-912EN-EA14B1SE02-BB25/□

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- \*1: See table 3 'Gasket contact surface' on page 6.
  - \*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 (X2) 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 hightemperature 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.
  - \*6: The upper ambient temperature limit is 50°(122°F) when specifying process connection size code 3 (3-inch).





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- \*1: See table 3 'Gasket contact surface' on page 6.
  - \*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 (X2) 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 hightemperature 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) “◇”

For other agency approvals and marine approvals, please refer to GS 01C25A20-01EN.

| Item                | Description  | Code |
|---------------------|--|------|
| Factory Mutual (FM) | FM Explosionproof Approval *1<br>Applicable Standard: FM3600, FM3615, FM3810, ANSI/NEMA 250<br>Explosionproof for Class I, Division 1, Groups B, C and D, Dust-ignitionproof for Class II/III, Division 1, Groups E, F and G, in Hazardous locations, indoors and outdoors (Enclosure: Type 4X)<br>“FACTORY SEALED, CONDUIT SEAL NOT REQUIRED.”<br>Temperature class: T6, Amb. Temp.: -40 to 60°C (-40 to 140°F)   | FF1  |
|                     | FM Intrinsically safe Approval *1*2<br>Applicable Standard: FM3600, FM3610, FM3611, FM3810<br>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<br>Nonincendive for Class I, Division 2, Groups A, B, C & D, Class II, Division 2, Groups F & G, Class I, Zone 2, Group IIC, in Hazardous Locations<br>Enclosure: Type 4X, Temp. Class: T4, Amb. Temp.: -60 to 60°C (-75 to 140°F)<br>Intrinsically Safe Apparatus Parameters<br>[Groups A, B, C, D, E, F and G] Vmax=30 V, Imax=200 mA, Pmax=1 W, Ci=6 nF, Li=0 μH<br>[Groups C, D, E, F and G] Vmax=30 V, Imax=225 mA, Pmax=1 W, Ci=6 nF, Li=0 μH | FS1  |
|                     | Combined FF1 and FS1 *1*2  | FU1  |
| ATEX                | ATEX Flameproof Approval *1<br>Applicable Standard: EN 60079-0:2012+A11:2013, EN 60079-1:2007 (“2014” from August 1, 2017), EN 60079-31:2014<br>Certificate: KEMA 07ATEX0109 X<br>II 2G, 2D Ex d IIC T6...T4 Gb (“Ex db IIC T6...T4 Gb” from August 1, 2017), Ex tb IIIC T85°C Db<br>Degree of protection: IP66/IP67<br>Amb. Temp. (Tamb) for gas-proof:<br>T4; -50 to 75°C (-58 to 167°F), T5; -50 to 80°C (-58 to 176°F), T6; -50 to 75°C (-58 to 167°F)<br>Process Temp. for gas-proof (Tp):<br>T4; -50 to 120°C (-58 to 248°F), T5; -50 to 100°C (-58 to 212°F), T6; -50 to 85°C (-58 to 185°F)<br>Max. surface Temp. for dust-proof: T85°C (Tamb: -30 to 75°C, Tp: -30 to 85°C) *3  | KF22 |
|                     | ATEX Intrinsically safe Approval *1*2<br>Applicable Standard: EN 60079-0:2012+A11:2013, EN 60079-11:2012<br>Certificate: DEKRA 11ATEX0228 X<br>II 1G, 2D Ex ia IIC T4 Ga, Ex ia IIIC T85°C T100°C T120°C Db<br>Degree of protection: IP66/IP67<br>Amb. Temp. (Tamb) for EPL Ga: -50 to 60°C (-58 to 140°F)<br>Maximum Process Temp. (Tp) for EPL Ga: 120°C<br>Electrical data: Ui=30 V, Ii=200 mA, Pi=0.9 W, Ci=27.6 nF, Li=0 μH<br>Amb. Temp. for EPL Db: -30 to 60°C *3<br>Max. surface Temp. for EPL Db: T85°C (Tp: 80°C), T100°C (Tp: 100°C), T120°C (Tp: 120°C)   | KS21 |
|                     | Combined KF22, KS21 and ATEX Intrinsically safe Ex ic *1*2<br>[ATEX Intrinsically safe Ex ic]<br>Applicable Standard: EN 60079-0:2012+A11:2013, EN 60079-11:2012<br>II 3G Ex ic IIC T4 Gc, Amb. Temp.: -30 to 60°C (-22 to 140°F) *3<br>Ui=30 V, Ci=27.6 nF, Li=0 μH   | KU22 |

| Item                                 | Description   | Code                                    |
|--------------------------------------|---|---|
| Canadian Standards Association (CSA) | <p>CSA Explosionproof Approval *1<br/>                     Certificate: 2014354<br/>                     Applicable Standard: C22.2 No.0, C22.2 No.0.4, C22.2 No.0.5, C22.2 No.25, C22.2 No.30, C22.2 No.94, C22.2 No.60079-0, C22.2 No.60079-1, C22.2 No.61010-1, C22.2 No.61010-2-030<br/>                     Explosion-proof for Class I, Groups B, C and D.<br/>                     Dustignition-proof for Class II/III, Groups E, F and G.<br/>                     When installed in Division 2, "SEAL NOT REQUIRED" Enclosure: Type 4X,<br/>                     Temp. Code: T6...T4<br/>                     Ex d IIC T6...T4 Enclosure: IP66/IP67<br/>                     Max.Process Temp.: T4;120°C(248°F), T5;100°C(212°F), T6; 85°C(185°F)<br/>                     Amb.Temp.: -50 to 75°C(-58 to 167°F) for T4, -50 to 80°C(-58 to 176°F) for T5,<br/>                     -50 to 75°C(-58 to 167°F) for T6 *3<br/>                     Process Sealing Certification<br/>                     Dual Seal Certified by CSA to the requirement of ANSI/ISA 12.27.01<br/>                     No additional sealing required<br/>                     Primary seal failure annunciation: at the zero adjustment screw</p>   | CF1                                     |
|                                      | <p>CSA Intrinsically safe Approval *1*2<br/>                     Certificate: 1606623<br/>                     [For CSA C22.2]<br/>                     Applicable Standard: C22.2 No.0, C22.2 No.0.4, C22.2 No.25, C22.2 No.94, C22.2 No.157, C22.2 No.213, C22.2 No.61010-1, C22.2 No.60079-0, C22.2 No.61010-2-030<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, 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: Type 4X, Temp. Code: T4 Amb. Temp.: -50 to 60°C(-58 to 140°F) *3<br/>                     Electrical Parameters: [Intrinsically Safe] Vmax=30V, Imax=200mA, Pmax=0.9W, Ci=10nF, Li=0 μH<br/>                     [Nonincendive] Vmax=30V, Ci=10nF, Li=0 μH<br/>                     [For CSA E60079]<br/>                     Applicable Standard: CAN/CSA E60079-11, CAN/CSA E60079-15, IEC 60529:2001<br/>                     Ex ia IIC T4, Ex nL IIC T4 Enclosure: IP66/IP67<br/>                     Amb. Temp.: -50 to 60°C(-58 to 140°F) *3, Max. Process Temp.: 120°C(248°F)<br/>                     Electrical Parameters: [Ex ia] Ui=30V, Ii=200mA, Pi=0.9W, Ci=10nF, Li=0 μH<br/>                     [Ex nL] Ui=30V, Ci=10nF, Li=0 μH<br/>                     Process Sealing Certification<br/>                     Dual Seal Certified by CSA to the requirement of ANSI/ISA 12.27.01<br/>                     No additional sealing required<br/>                     Primary seal failure annunciation: at the zero adjustment screw</p> | CS1                                     |
|                                      | Combined CF1 and CS1 *1*2   | CU1                                     |
| IECEx Scheme                         | <p>IECEx Flameproof Approval *1<br/>                     Applicable Standard: IEC 60079-0:2011, IEC60079-1:2007-4<br/>                     Certificate: IECEx CSA 07.0008<br/>                     Flameproof for Zone 1, Ex d IIC T6...T4 Gb Enclosure: IP66/IP67<br/>                     Max.Process Temp.: T4;120°C(248°F), T5;100°C(212°F), T6; 85°C(185°F)<br/>                     Amb.Temp.: -50 to 75°C(-58 to 167°F) for T4, -50 to 80°C(-58 to 176°F) for T5,<br/>                     -50 to 75°C(-58 to 167°F) for T6</p>  | SF2                                     |
|                                      | <p>IECEx Intrinsically safe and Flameproof Approval *1*2<br/>                     Intrinsically safe Ex ia<br/>                     Certificate: IECEx DEK 11.0081X<br/>                     Applicable Standard: IEC 60079-0:2011, IEC 60079-11:2011<br/>                     Ex ia IIC T4 Ga Enclosure: IP66/IP67<br/>                     Amb. Temp.: -50 to 60°C(-58 to 140°F), Max. Process Temp.: 120°C(248°F)<br/>                     Electrical Parameters: Ui=30V, Ii=200mA, Pi=0.9W, Ci=27.6nF, Li=0 μH<br/>                     Intrinsically safe Ex ic<br/>                     Certificate: IECEx DEK 13.0061X<br/>                     Applicable Standard: IEC 60079-0:2011, IEC 60079-11:2011<br/>                     Ex ic IIC T4 Gc IP code: IP66<br/>                     Amb. Temp.: -30 to 60°C(-22 to 140°F) *3, Max. Process Temp.: 120°C(248°F)<br/>                     Electrical Parameters: Ui=30V,Ci=27.6 nF, Li=0 μH<br/>                     Flameproof<br/>                     Certificate: IECEx CSA 07.0008<br/>                     Applicable Standard: IEC 60079-0:2011, IEC60079-1:2007-4<br/>                     Flameproof for Zone 1, Ex d IIC T6...T4 Gb Enclosure: IP66/IP67<br/>                     Max.Process Temp.: T4;120°C(248°F), T5;100°C(212°F), T6; 85°C(185°F)<br/>                     Amb.Temp.: -50 to 75°C(-58 to 167°F) for T4, -50 to 80°C(-58 to 176°F) for T5,<br/>                     -50 to 75°C(-58 to 167°F) for T6</p>  | SU21                                    |
|                                      | Combination of Approval   | Combination of KU22, FU1 and CU1 *1*2*4 |

\*1: Applicable for Electrical connection code 2, 4, 7, 9, C and D.  
 \*2: Not applicable for option code /AL.  
 \*3: Lower limit of ambient temperature is -15°C (5°F) when /HE is specified.  
 \*4: When this option code is specified, a wired tag plate (as of N4 option) shall be used for tag number.

**OPTIONAL SPECIFICATIONS**

| Item  |   | Description  | Code   |
|---|---|--|--|
| Painting  | Color change  | Amplifier cover only *9  | P□   |
|   |   | Amplifier cover and terminal cover, Munsell 7.5 R4/14  | PR   |
|   | Coating change  | Anti-corrosion coating *1  | X2   |
| 316 SST exterior parts                          |   | 316 SST zero-adjustment screw and setscrews *12  | HC   |
| Fluoro-rubber O-ring                            |   | All O-rings of amplifier housing. Lower limit of ambient temperature: -15°C (5°F)  | HE   |
| Lightning protector                             |   | Transmitter power supply voltage: 10.5 to 32 V DC (10.5 to 30 V DC for intrinsically safe type.)<br>Allowable current: Max. 6000 A (1×40 μs), Repeating 1000 A (1×40 μs) 100 times<br>Applicable Standards: IEC 61000-4-4, IEC 61000-4-5 | A  |
| Status output *10                               |   | Transistor output (sink type)<br>Contact rating: 30 V DC, 120 mA DC(max) Low level: 0 to 2 V DC  | AL   |
| Oil-prohibited use                              |   | Degrease cleansing treatment   | K1   |
| Oil-prohibited use with dehydrating treatment   |   | Degrease cleansing and dehydrating treatment   | K5   |
| Calibration units *3                            | P calibration (psi unit)  | (See Table for Span and Range Limits.)   | D1   |
|   | bar calibration (bar unit)  |  | D3   |
|   | M calibration (kgf/cm <sup>2</sup> unit)  |  | D4   |
| Teflon film *2 *11 *19                          |   | 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 *5             |   | 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  |
| Output limits and failure operation *4          | Failure alarm down-scale: Output status at CPU failure and hardware error is -5%, 3.2mA DC or less. |  | C1   |
|   | NAMUR NE43 Compliant<br>Output signal limits:<br>3.8 mA to 20.5 mA                                  | Failure alarm down-scale: Output status at CPU failure and hardware error is -5%, 3.2 mA DC or less.   | C2   |
|   |   | Failure alarm up-scale: Output status at CPU failure and hardware error is 110%, 21.6 mA or more.  | C3   |
| Gold-plated diaphragm *6                        |   | Inside of isolating diaphragms (fill fluid side) are gold plated, effective for hydrogen permeation.   | A1   |
| Wired tag plate                                 |   | 316 SST tag plate wired onto transmitter   | N4   |
| Data configuration at factory *7                | Data configuration for HART communication type  | Software damping, Descriptor, Message  | CA   |
|   | Data configuration for BRAIN communication type   | Software damping   | CB   |
| Advanced diagnostics *13                        |   | Multi-sensing process monitoring<br>• Impulse line blockage detection *14  | DG6  |
| Material certificate                            | Process flange, Block   | For Flush type   | M2W  |
|   | Process flange, Block, Ring *8  |  | M5W  |
|   | Process flange, Block, Pipe, Base   | For Extended type  | M2E  |
|   | High Pressure side: Process flange, Block, Pipe, base<br>Low Pressure side: Process flange, Block   | For Combination type   | M2Y  |
| Pressure test/<br>Leak test certificate *17 *18 | [Flange rating]   | [Test pressure]  |  |
|   | JIS 10K   | 2 MPa (290 psi)  | Nitrogen (N <sub>2</sub> ) Gas *16<br>Retention time: one minute |
|   | JIS 20K   | 5 MPa (720 psi)  |  |
|   | JIS 40K *2  | 10 MPa (1450 psi)  |  |
|   | ANSI/JPI Class 150  | 3 MPa (430 psi)  |  |
|   | ANSI/JPI Class 300 *2   | 8 MPa (1160 psi)   |  |
|   | ANSI/JPI Class 300 *15  | 7 MPa (1000 psi)   |  |
|   | ANSI/JPI Class 600 *2   | 16 MPa (2300 psi)  |  |
|   |   | T51  |  |
|   |   | T54  |  |
|   |   | T57  |  |
|   |   | T52  |  |
|   |   | T56  |  |
|   |   | T55  |  |
|   |   | T58  |  |

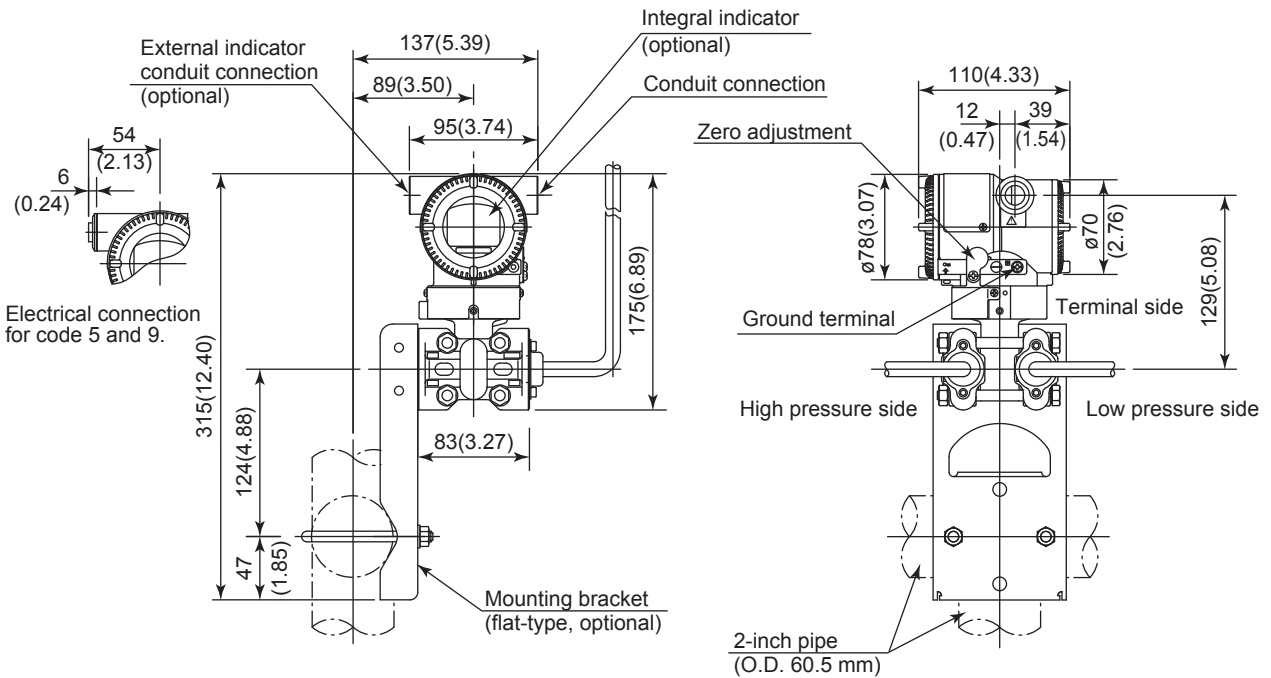
- \*1: Not applicable with color change option. Not applicable for amplifier housing code 2.
- \*2: Applicable for flush type (process connection style code W.)
- \*3: The unit of MWP (Max. working pressure) on the name plate of a housing is the same unit as specified by option code D1, D3, and D4.
- \*4: Applicable for output signal code D, E and J. The hardware error indicates faulty amplifier or capsule.
- \*5: Specify the process operating temperature for zero correction. Example: Zero correction by process temperature 90°C.
- \*6: Applicable for wetted parts material code SW, SE, SY, and HW.
- \*7: Also see 'Ordering Information.'
- \*8: Applicable for flushing connection ring code 1, 2, 3, and 4.
- \*9: Not applicable for amplifier housing code 2 and 3.

- \*10: Check terminals cannot be used when this option is specified. Not applicable for output signal code F and G.
- \*11: Applicable for flushing connection ring code 0.
- \*12: 316 or 316L SST. The specification is included in amplifier code 2.
- \*13: Applicable only for output signal code E and J.
- \*14: The change of pressure fluctuation is monitored and then detects the impulse line blockage.  
See TI 01C25A31-01E for detailed technical information required for using this function.
- \*15: Applicable for extended type and Combination type (process connection style code E and Y.)
- \*16: Pure nitrogen gas is used for oil-prohibited use (option code K1 and K5.)
- \*17: The unit on the certificate is always MPa regardless of selection of option code D1, D3, or D4.
- \*18: A flushing connection ring will not be applied when conducting the pressure test or leak test.
- \*19: Not applicable for Fill fluid code 1, 2, or 4.

**■ DIMENSIONS**

Unit: mm (approx.inch)

**< Transmitter body section >**



\*1: When electrical connection code 7 or C is selected, a blind plug is protruded upto 8 mm from the conduit connection.

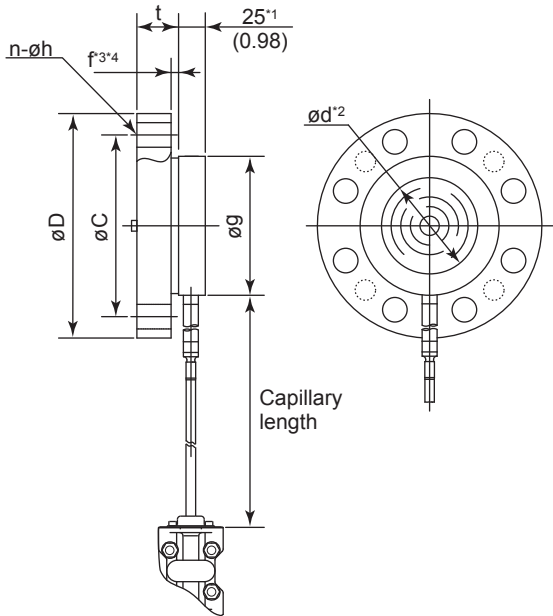
F10E.ai

< Diaphragm seal section >

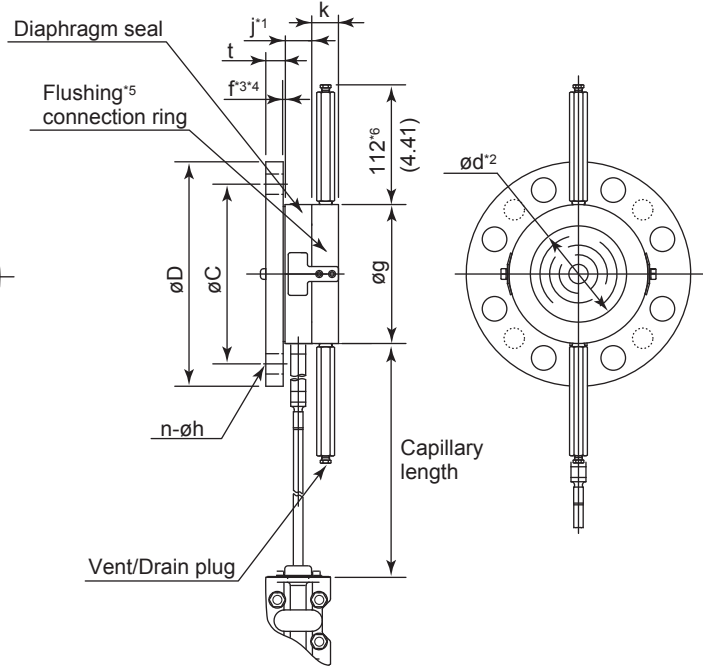
Unit: mm (approx.inch)

• Flush type

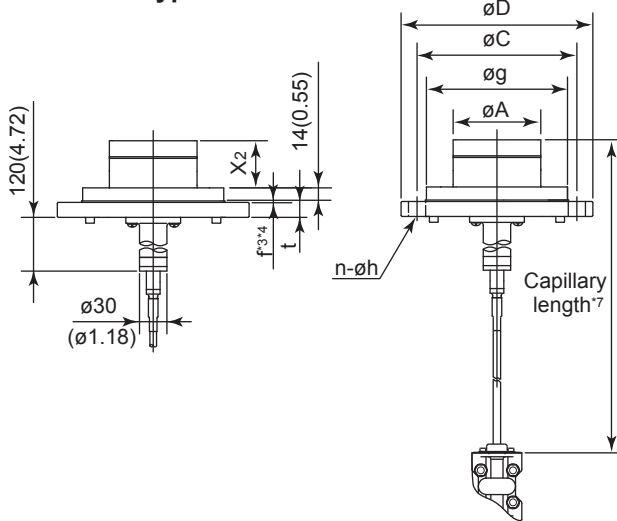
• No ring (Flushing connection ring code 0)



• With ring (Flushing connection ring code 1, 2, 3, and 4)



• Extended type

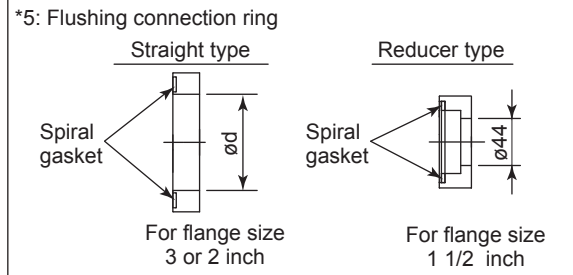


\*1: When wetted parts material code UW (titanium), value is 34 (1.34)

\*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.



\*6: When option code K1 or K5 is selected, add 11 mm (0.28 inch.)

\*7: The specified capillary length includes the extension length (X₂) and the flange thickness (t).

• Extension length (X2)

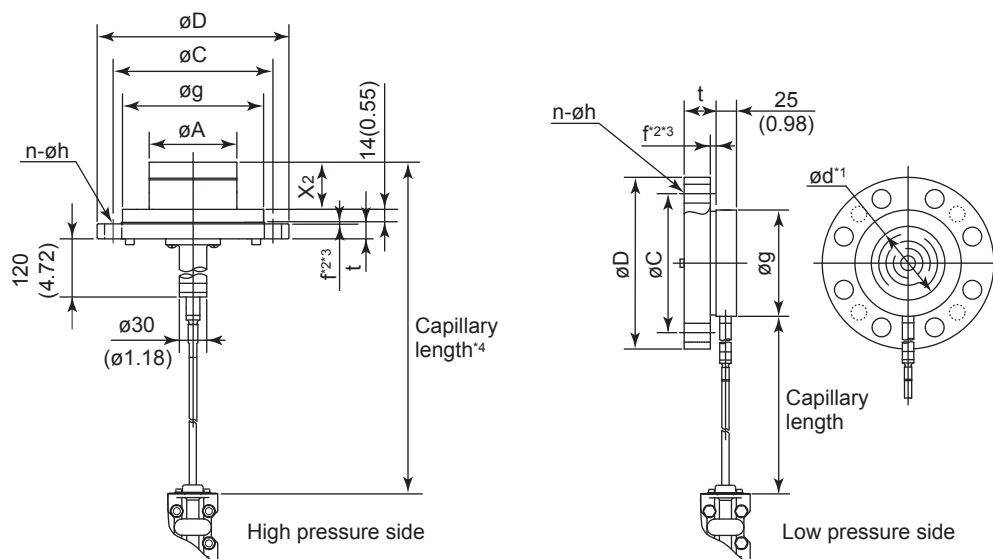
| Extension code | X2         |
|----------------|------------|
| 2              | 50 (1.97)  |
| 4              | 100 (3.94) |
| 6              | 150 (5.91) |

F11E.ai



Unit: mm (approx.inch)

● Combination type



- \*1: Indicates inside diameter of gasket contact surface.
- \*2: In case where process flange material is JIS S25C, value of f is 0.
- \*3: In case where process flange material is JIS SUS304 in ANSI/JPI flange, value of f is included in t.
- \*4: The specified capillary length includes the extension length ( $X_2$ ) and the flange thickness (t).

● Extension length ( $X_2$ )

| Extension code | $X_2$     |
|----------------|-----------|
| 1              | 50(1.97)  |
| 3              | 100(3.94) |
| 5              | 150(5.91) |

F12E.ai

Process flange size: 4 inch (100 mm)

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

Unit: mm (approx.inch)

**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<br>(7.28)   | 150<br>(5.91)   | 130<br>(5.12) | 90 (3.54)        | 18 (0.71)      | 0                 | 8          | 19 (0.75)      | 25 (0.98)       | 27 (1.06) | 71±0.5<br>(2.8±0.02) |
| J2   | JIS 20K        | 200<br>(7.87)   | 160<br>(6.30)   | 130<br>(5.12) | 90 (3.54)        | 22 (0.87)      | 0                 | 8          | 23 (0.91)      | 25 (0.98)       | 27 (1.06) | 71±0.5<br>(2.8±0.02) |
| J4   | JIS 40K        | 210<br>(8.27)   | 170<br>(6.69)   | 130<br>(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<br>(7.50) | 152.4<br>(6.00) | 130<br>(5.12) | 90 (3.54)        | 23.9<br>(0.94) | 1.6<br>(0.06)     | 4          | 19.1<br>(0.75) | 25 (0.98)       | 27 (1.06) | 71±0.5<br>(2.8±0.02) |
| A2   | ANSI class 300 | 209.6<br>(8.25) | 168.1<br>(6.62) | 130<br>(5.12) | 90 (3.54)        | 28.5<br>(1.12) | 1.6<br>(0.06)     | 8          | 22.4<br>(0.88) | 25 (0.98)       | 27 (1.06) | 71±0.5<br>(2.8±0.02) |
| A4   | ANSI class 600 | 209.6<br>(8.25) | 168.1<br>(6.62) | 130<br>(5.12) | 90 (3.54)        | 38.2<br>(1.50) | 6.4<br>(0.25)     | 8          | 22.4<br>(0.88) | 25 (0.98)       | 27 (1.06) | —                    |
| P1   | JPI class 150  | 190<br>(7.48)   | 152.4<br>(6.00) | 130<br>(5.12) | 90 (3.54)        | 24 (0.94)      | 1.6<br>(0.06)     | 4          | 19 (0.75)      | 25 (0.98)       | 27 (1.06) | 71±0.5<br>(2.8±0.02) |
| P2   | JPI class 300  | 210<br>(8.27)   | 168.1<br>(6.61) | 130<br>(5.12) | 90 (3.54)        | 28.5<br>(1.12) | 1.6<br>(0.06)     | 8          | 22 (0.87)      | 25 (0.98)       | 27 (1.06) | 71±0.5<br>(2.8±0.02) |
| P4   | JPI class 600  | 210<br>(8.27)   | 168.1<br>(6.61) | 130<br>(5.12) | 90 (3.54)        | 38.4<br>(1.51) | 6.4<br>(0.25)     | 8          | 22 (0.87)      | 25 (0.98)       | 27 (1.06) | —                    |
| D2   | DIN PN10/16    | 200<br>(7.87)   | 160<br>(6.30)   | 130<br>(5.12) | 90 (3.54)        | 20 (0.79)      | 0                 | 8          | 18 (0.71)      | 25 (0.98)       | 27 (1.06) | 71±0.5<br>(2.8±0.02) |
| D4   | DIN PN25/40    | 200<br>(7.87)   | 160<br>(6.30)   | 130<br>(5.12) | 90 (3.54)        | 24 (0.94)      | 0                 | 8          | 18 (0.71)      | 25 (0.98)       | 27 (1.06) | 71±0.5<br>(2.8±0.02) |
| D5   | DIN PN64       | 215<br>(8.46)   | 170<br>(6.69)   | 130<br>(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) |

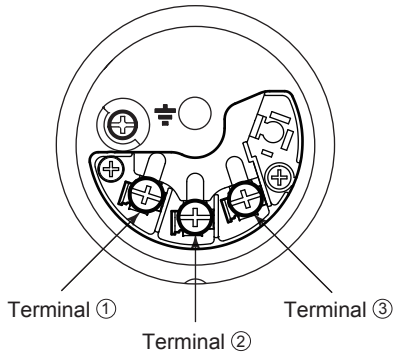
\*1: When wetted parts material code UW (titanium) is selected, value is 34 (1.34).

\*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 JIS SUS304 in ANSI/JPI flange, value of f is included in t.

• Terminal Configuration



• Terminal Wiring

|        |   |   |  |
|--------|---|---|--|
| SUPPLY | + | ① | Power supply and output terminals                            |
|        | - | ② |  |
| CHECK  | + | ③ | External indicator (ammeter) terminals*1*2                   |
| or     | - | ② |  |
| ALARM  | + | ③ | Status contact output terminals*2<br>(when /AL is specified) |
|        | - | ② |  |
|        |   |   | ⏏ Ground terminal  |

\*1: When using an external indicator or check meter, the internal resistance must be 10 Ω or less. A check meter or indicator cannot be connected when /AL option is specified.

\*2: Not available for FOUNDATION Fieldbus and PROFIBUS PA communication types.

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• Wiring Example for Analog Output and Status Output

| Connection                                       | Description   |
|--|---|
| Analog output                                    | <p>EJX electrical terminal</p> <p>*1: Either A or +</p>   |
| Analog and status output (when /AL is specified) | <p>EJX electrical terminal</p> <p>*1: Either A or +</p> <p>Use two-wire separately shielded cables.</p> |

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< Ordering Information >

Specify the following when ordering

For output signal code **-J**, refer to GS 01C25T01-01EN.

1. Model, suffix codes, and option codes
2. Calibration range and units:
  - 1) Calibration range can be specified with range value specifications up to 5 digits (excluding any decimal point) for low or high range limits within the range of -32000 to 32000. When reverse range is designated, specify LRV as greater than URV. When square root output mode is specified, LRV must be "0(zero)".
  - 2) Specify only one unit from the table, 'Factory setting.'
3. Select linear or square root for output mode and display mode.  
 Note: If not specified, the instrument is shipped set for linear mode.
4. Display scale and units (for transmitters equipped with the integral indicator only)  
 Specify either 0 to 100 % or 'Range and Unit' for engineering units scale:  
 Scale range can be specified with range limit specifications up to 5 digits (excluding any decimal point) 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.
5. Tag Number (if required)  
 Specified characters (up to 16 characters for BRAIN, 22 characters for HART, or 16 characters for /N4 tag) are engraved on the stainless steel tag plate fixed on the housing.
6. SOFTWARE TAG (for HART only. If required)  
 Specified characters (up to 32 characters) are set as "Tag" (the first 8 characters) and "Long tag"<sup>\*1</sup> (32 characters) in the amplifier memory. Use alphanumeric capital letters.  
 When the "SOFTWARE TAG" is not specified, specified "TAG NO" is set as "Tag" (the first 8 characters) and "Long tag"<sup>\*1</sup> (22 characters) in the amplifier memory.  
<sup>\*1</sup>: applicable only when HART 7 is selected.
7. Other factory configurations (if required)  
 Specifying option code **CA** or **CB** will allow further configuration at factory. Following are configurable items and setting range.  
 [/CA : For HART communication type]
  - 1) Descriptor (up to 16 characters)
  - 2) Message (up to 30 characters)
  - 3) Software damping (0.00 to 100.00 sec)
 [/CB : For BRAIN communication type]
  - 1) Software damping (0.00 to 100.00 sec)
8. Process fluid temperature for zero compensation (if required)

< Factory Setting >

|                                     |  |
|-------------------------------------|--|
| Tag number                          | As specified in order  |
| Software damping <sup>*1</sup>      | '2.00 s' or as specified in order  |
| Output mode                         | 'Linear' unless otherwise specified in order   |
| Calibration range lower range value | As specified in order  |
| Calibration range upper range value | As specified in order  |
| Calibration range units             | Selected from mmH <sub>2</sub> O, mmH <sub>2</sub> O(68°F), mmAq <sup>*2</sup> , mmWG <sup>*2</sup> , mmHg, Pa, hPa <sup>*2</sup> , 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. (Only one unit can be specified.) |
| Display setting                     | Designated differential pressure value specified in order. (% or user scaled value.) Display mode 'Linear' or 'Square root' is also as specified in order.   |
| Static pressure display range       | '0 to 25 MPa' for M and H capsule, absolute value. Measuring low pressure side.  |

- \*1: To specify these items at factory, /CA or /CB option is required.
- \*2: Not available for HART protocol type.

< Material Cross Reference >

| ASTM  | JIS      |
|-------|----------|
| 316   | SUS316   |
| F316  | SUSF316  |
| 316L  | SUS316L  |
| F316L | SUSF316L |
| 304   | SUS304   |
| F304  | SUSF304  |
| 660   | SUH660   |
| B7    | SNB7     |
| CF-8M | SCS14A   |