

General Specifications

GS 01C25H01-11EN

EJX118A/Z
Diaphragm Sealed
Differential Pressure Transmitter
(Inner Diaphragm type)



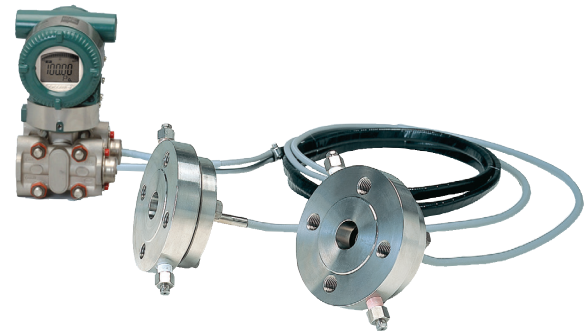
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Diaphragm seals are used to prevent process medium from entering directly into the pressure-sensing assembly of the differential pressure transmitter, they are connected to the transmitter using capillaries filled with fill fluid.

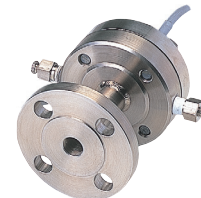
Inner diaphragm type can be installed to small size frange which is 1 inch, 3/4 inch or 1/2 inch.

And the performance is the same as 2 inch, because it is used the daiaphragm size same as 2 inch.

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 as complying with SIL 2 for safety requirement.



Adapter connection type



Flange connection type

STANDARD SPECIFICATIONS

Refer to GS 01C25T02-01E 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 ₂ O/(D1) | mbar/(D3) | mmH ₂ O/(D4) |
|------------------------|-------------|-------------------------|---------------|------------------------------|
| M Span | 2 to 100 | 8 to 400 | 20 to 1000 | 200 to 10000 |
| M 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 ² |
| H Range | -500 to 500 | -2000 to 2000 | -5000 to 5000 | -5 to 5 kgf/cm ² |

PERFORMANCE SPECIFICATIONS

Zero-based calibrated span, linear output, wetted parts material code S□, fill fluid code B, and capillary length of 5 m.

For Fieldbus and PROFIBUS PA communication types, use caribrated range instead of span in the following specifications.

Specification Conformance

EJX series ensures specification conformance to at least ±3σ.

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 ₂ O) |
| URL (upper range limit) | 500 kPa (2000 inH ₂ 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 ₂ O) |
| URL (upper range limit) | 100 kPa (400 inH ₂ 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 |
| | Square root output (%) |

Ambient Temperature Effects per 50°C (122°F) Change

| Capsule | M | H |
|-------------|--------------------------------------|-------------------------------------|
| Zero shift | $\pm(0.2+0.7 \times \frac{2X}{A})\%$ | $\pm(0.2+0.7 \times \frac{X}{A})\%$ |
| Total shift | $\pm(0.7+0.7 \times \frac{2X}{A})\%$ | $\pm(0.7+0.7 \times \frac{X}{A})\%$ |

T01.ai

'A' is the highest value among the absolute values of lower range value (LRV) and upper range value (URV), and the span value in calibration range.

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, 350 Ω)

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 pre-set 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 %, 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%, 3.6mA or less | | |
| | /C2 | -1.25%, 3.8mA or less | | |
| | /C3 | 103.1%, 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 range-setting 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 Loop test, Tag number, Unit, LRV, URV, Damping, Output mode (linear/square root), Display out 1, and Re-range by applying actual pressure (LRV/URV) and Device Information.

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 PA communication types are certified in compliance with the following standards;

IEC 61508: 2010;

Functional Safety of Electrical/electronic/programmable electronic related systems; SIL 2 capability for single transmitter use, SIL 3 capability for dual transmitter use.

Reliability Data different depending on hardware and software revision.

For details, refer to Functional Safety Data Sheet.

(Document number: TI 01C25A05-01EN or TI 01C25A05-21EN for option code SLT)

The document can be downloaded from the website of Yokogawa.

(Website address: <https://www.yokogawa.com/solutions/products-platforms/field-instruments/>)

□ 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, and 1-4.

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 (14 to 482°F) | -10 to 60°C (14 to 140°F) | 2.7 kPa abs (0.38 psi abs) to flange rating pressure | 1.07 |
| Silicone oil (general use) | B | -30 to 180°C (-22 to 356°F) | -15 to 60°C (5 to 140°F) | | 0.94 |
| Fluorinated oil (oil-prohibited use) | D | -20 to 120°C (-4 to 248°F) | -10 to 60°C (14 to 140°F) | 51 kPa abs (7.4 psi abs) to flange rating pressure | 1.90 to 1.92 |
| Ethylene glycol (low temperature use) | E | -50 to 100°C (-58 to 212°F) | -40 to 60°C (-40 to 140°F) | 100 kPa abs (atmospheric pressure) to flange pressure rating | 1.09 |
| Silicone oil (high temp. and high vacuum use) | 1 | -10 to 250°C (14 to 482°F) | -10 to 50°C (14 to 122°F) | 0.013 kPa abs (0.0019 psi abs) to flange rating pressure | 1.07 |
| Silicone oil (high vacuum use) | 4 | -10 to 100°C (14 to 212°F) | -10 to 50°C (14 to 122°F) | | 1.07 |

*1: See figure 1-1, 1-2, 1-3, and 1-4 '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)

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.

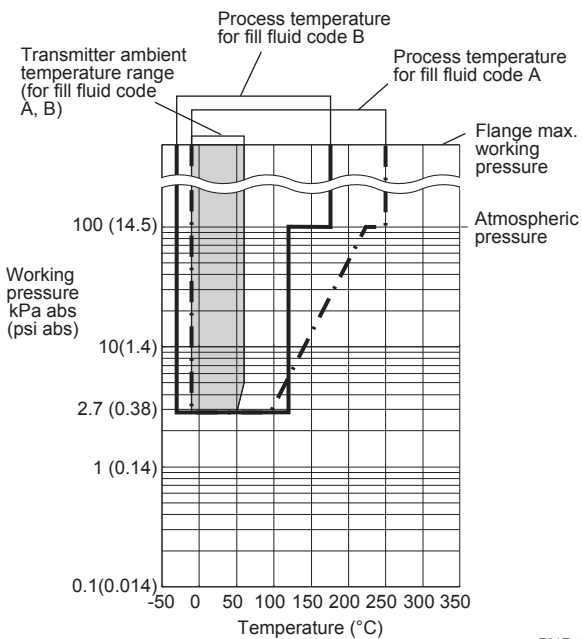


Figure 1-1. Working Pressure and Process Temperature (Fill fluid: silicone oil for general use)

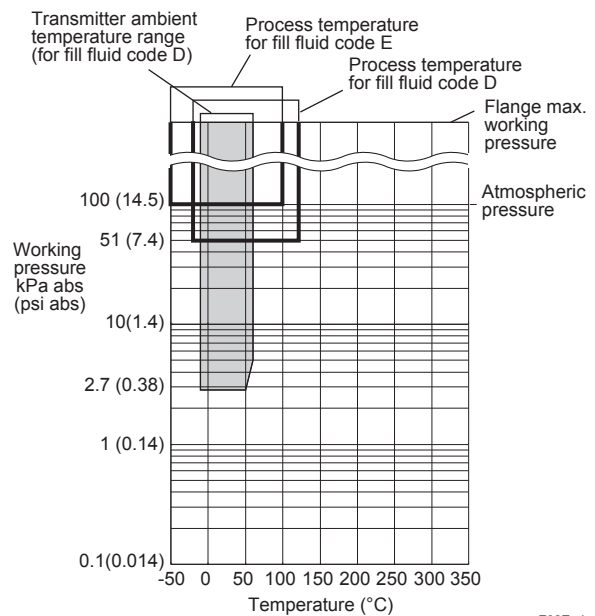


Figure 1-2. Working Pressure and Process Temperature (Fill fluid: fluorinated oil for oil-prohibited use and ethylene glycol for low temperature use)

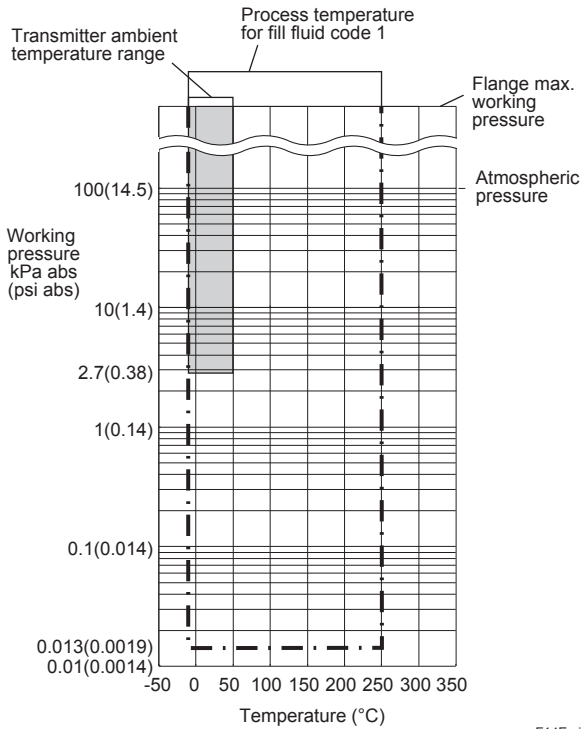


Figure 1-3. Working Pressure and Process Temperature (Fill fluid: silicone oil for high temp. and high vacuum use)

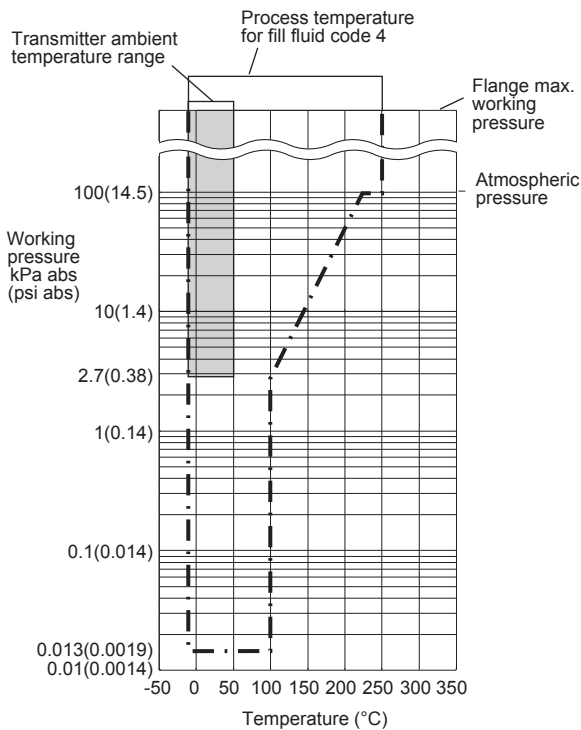


Figure 1-4. Working Pressure and Process Temperature (Fill fluid: silicone oil for high vacuum use)

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 550 Ω load can be used. See graph below.

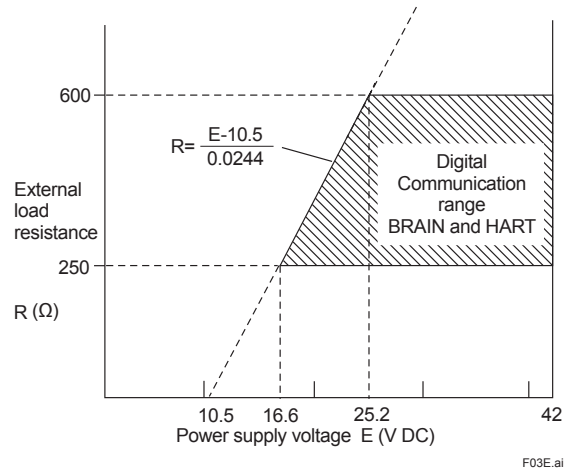


Figure 2. Relationship Between Power Supply Voltage and External Load Resistance

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 1290 Ω for operation
- 250 to 600 Ω 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, Table 2
- EN 61326-2-3
- EN 61326-2-5 (for fieldbus)

European Pressure Equipment Directive 2014/68/EU

Sound Engineering Practice

EU RoHS Directive

EN IEC 63000

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

PHYSICAL SPECIFICATIONS

Process connections

See the following table.

Table 2. Flange size and rating

| Process connection style | Size | Flange |
|--------------------------|----------|--------------------------|
| Adapter connection type | 1/2-inch | JIS 10K, 20K, 40K |
| | 3/4-inch | ANSI Class 150, 300, 600 |
| | 1-inch | JPI Class 150, 300, 600 |
| Flange connection type | 1/2-inch | JIS 10K, 20K, 40K |
| | 3/4-inch | ANSI Class 150, 300, 600 |
| | 1-inch | JPI Class 150, 300, 600 |

Gasket Contact Surface

See the following table.

Table 3. Gasket contact surface

| Flange | | JIS/JPI | | ANSI | |
|----------------------------|---------------------|---------|--------|--------|--------|
| Wetted parts material code | | SA, SD | WA, WD | SA, SD | WA, WD |
| 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 Material

Diaphragm seal

Diaphragm and other wetted parts;
Refer to "MODEL AND SUFFIX CODES."

Vent / drain plugs

316 SST

Flange material

Refer to "MODEL AND SUFFIX CODES."
(It means the material of adapter or pipe with flange.)

Gasket for transmitter side

316L SST with PTFE Teflon coating

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
- 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]

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:

Capillary tube

316 SST

Protection tube

304 SST PVC-sheathed

(Max. operating temperature of PVC, 100°C (212°F))

Fill fluid

See table 1.

In case of Adapter connection type

Stud bolt... B7

Nut 304 SST

Weight

Inner diaphragm, adapter connection type: 8.8 kg

(19.4 lbs)

(1/2-inch ANSI Class150 flange, 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 >

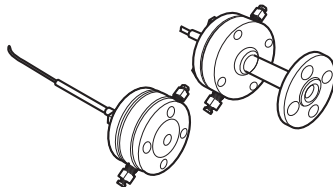
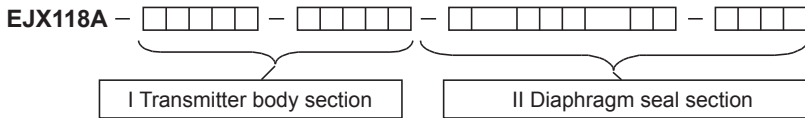
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2. FieldMate; Trademark of Yokogawa Electric Corporation.
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MODEL AND SUFFIX CODES

Instruction

The model and suffix codes for EJX118A consist of two parts; a transmitter body section (I) and a diaphragm seal section (II). This specification sheet introduces these two parts separately. The transmitter body section is shown in one table, and the diaphragm seal section specifications are listed according to the process connection style. First select the model and suffix codes of transmitter body section and then continue on one of the diaphragm seal section.



Inner diaphragm,
Adapter connection type ... See Page 8
Inner diaphragm,
Flange connection type ... See Page 9

F04E.ai

I. Transmitter body section



F05E.ai

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

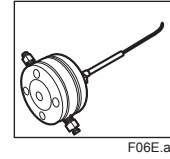
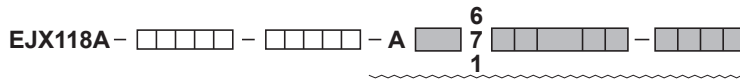
*2: Not applicable for electrical connection code **0, 5, 7** and **9**.

*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 (Inner Diaphragm, Adapter connection type)



| Model | Suffix codes | Description | |
|--|--------------|---|----------------------------|
| EJX118A | -□□□□-□□□□ | Transmitter body section (I) | |
| Process connection style | -A | Inner Diaphragm, Adapter connection type | |
| Flange rating | J1 | JIS 10K | |
| | J2 | JIS 20K | |
| | J4 | JIS 40K | |
| | A1 | ANSI class 150 | P1 JPI class 150 |
| | A2 | ANSI class 300 | P2 JPI class 300 |
| | A4 | ANSI class 600*8 | P3 JPI class 600*8 |
| Process connection size (Process flange size) | 6 | 1/2 inch (15 mm) | |
| | 7 | 3/4 inch (20 mm) | |
| | 1 | 1 inch (25 mm) | |
| Flange material*3 | E | 316 SST (Adapter material)*4 | |
| Gasket contact surface*1 | 1 | Serration (for ANSI flange only) | |
| | 2 | Flat (no serration) | |
| Wetted parts material*3 | SA | [Diaphragm] 316L SST [Others] 316 SST (include Adapter)*4 | |
| | WA | Hastelloy C-276 *5# 316 SST (include Adapter)*4# | |
| Flushing connection ring*2 | 0 | None | |
| Extension | 0 | None | |
| Fill fluid*5 | -A | For general use (silicone oil) [Process temperature] -10 to 250°C [Ambient temperature] -10 to 60°C | |
| | -B | For general use (silicone oil) -30 to 180°C -15 to 60°C | |
| | -D | For oil-prohibited use (fluorinated oil)*2 -20 to 120°C -10 to 60°C | |
| | -E | For low temperature use (ethylene glycol) -50 to 100°C -40 to 60°C | |
| | -1 | High temp. and high vacuum use (Silicone oil) -10 to 250°C -10 to 50°C | |
| | -4 | High vacuum use (Silicone oil) -10 to 100°C -10 to 50°C | |
| Capillary connection | B | Back of diaphragm seal unit | |
| Capillary treatment*6 | 1 | Bundled capillary (1 m separated) | |
| | 2 | Standard | |
| Capillary length*7 | 1 | 1 m*6 | |
| | 2 | 2 m | |
| | 3 | 3 m | |
| | 4 | 4 m | |
| | 5 | 5 m | |
| Option codes and Tokuchu code | | /□ Optional specification and /Z | |

The “▶” marks indicate the most typical selection for each specification. Example: EJX118A-DMSCG-912EN-AA16E2SA00-BB15/□/Z

*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: ⚠ 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.

*4: Forged version of the material may be used.

*5: Hastelloy C-276 or N10276.

*6: In case where capillary length code **1** (1 m) is selected, capillary treatment must be selected code **2** (None).

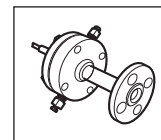
*7: In case of wetted parts material code **WA** (Hastelloy C), specify capillary length from 1 to 5m.

*8: In case where flange rating code **A4** (ANSI class 600) or **P4** (JPI class 600) is selected, It must be selected optional code / **HP** (High pressure-proof structure).

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 (Inner Diaphragm, Flange connection type)

EJX118A - □□□□ - □□□□ - D □□⁶ □□□□□□ - □□□□₁



F07E.ai

| Model | Suffix codes | | Description | |
|--|--------------|---|---|-----------------------|
| EJX118A | -□□□□-□□□□ | | Transmitter body section (I) | |
| Process connection style | -D..... | | Inner Diaphragm, Flange connection type | |
| Flange rating | J1..... | JIS 10K | | |
| | J2..... | JIS 20K | | |
| | J4..... | JIS 40K | | |
| | A1..... | ANSI class 150 | | |
| | A2..... | ANSI class 300 | | |
| | A4..... | ANSI class 600*8 | | |
| | P1..... | JPI class 150 | | |
| | P2..... | JPI class 300 | | |
| Process connection size (Process flange size) | 6..... | 1/2 inch (15 mm) | | |
| | 7..... | 3/4 inch (20 mm) | | |
| | 1..... | 1 inch (25 mm) | | |
| Flange material*3 | D..... | | 316 SST (Flange and Pipe material)*4 | |
| Gasket contact surface*1 | 1..... | Serration (for ANSI flange only) | | |
| | 2..... | Flat (no serration) | | |
| Wetted parts material*3 | SD..... | [Diaphragm] | [Others] | |
| | WD..... | 316L SST | 316 SST *4 | |
| | | Hastelloy C-276 *5# | 316 SST *4# | |
| Flushing connection ring | 0..... | | None | |
| Extension | 0..... | | None | |
| Fill fluid | -A..... | For general use (silicone oil) | [Process temperature] | [Ambient temperature] |
| | -B..... | For general use (silicone oil) | -10 to 250°C | -10 to 60°C |
| | -D..... | For oil-prohibited use (fluorinated oil)*2 | -30 to 180°C | -15 to 60°C |
| | -E..... | For low temperature use (ethylene glycol) | -20 to 120°C | -10 to 60°C |
| | -1..... | High temp. and high vacuum use (Silicone oil) | -50 to 100°C | -40 to 60°C |
| | -4..... | High vacuum use (Silicone oil) | -10 to 250°C | -10 to 50°C |
| Capillary connection | B..... | | Back of diaphragm seal unit | |
| Capillary treatment*6 | 1..... | Bundled capillary (1 m separated) | | |
| | 2..... | Standard | | |
| Capillary length*7 | 1..... | 1 m*6 | 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 and Tokuchu code | | | / □ Optional specification and /Z | |

The “▶” marks indicate the most typical selection for each specification. Example: EJX118A-DMSCG-912EN-DA16D2SD00-BB15/□/Z

- *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: ⚠ 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.
- *4: Forged version of the material may be used.
- *5: Hastelloy C-276 or N10276.
- *6: In case where capillary length code **1** (1 m) is selected, capillary treatment must be selected code **2** (None).
- *7: In case of wetted parts material code **WD** (Hastelloy C), specify capillary length from 1 to 5m.
- *8: In case where flange rating code **A4** (ANSI class 600) or **P4** (JPI class 600) is selected, It must be selected optional code / **HP** (High pressure-proof structure).

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.

■ OPTIONAL SPECIFICATIONS (For Explosion Protected type) “◇”

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

Please select appropriate equipment in accordance with the laws and regulations of the relevant country/region, when it is used in a location where explosive atmospheres may be present.

| Item | Description | Code |
|---------------------|---|------|
| Factory Mutual (FM) | FM Explosionproof Approval *1 Applicable Standard: FM3600, FM3615, FM3810, NEMA 250, ANSI/UL 61010-1, ANSI/UL 61010-2-30 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) “FACTORY SEALED, CONDUIT SEAL NOT REQUIRED.” Temperature class: T6, Amb. Temp.: -40 to 60°C (-40 to 140°F) | FF1 |
| | FM Intrinsically safe Approval *1*2 Applicable Standard: FM 3600, FM 3610, FM 3611, FM 3810, ANSI/ISA-60079-0, ANSI/ISA-60079-11, ANSI/ISA-61010-1, NEMA 250 Intrinsically Safe for Class I, Division 1, Groups A, B, C & D, Class II, Division 1, Groups E, F & G and Class III, Division 1, Class I, Zone 0, in Hazardous Locations, AEx ia IIC Nonincendive for Class I, Division 2, Groups A, B, C & D, Class II, Division. 2, Groups F & G, Class I, Zone 2, Group IIC, in Hazardous Locations Enclosure: Type 4X, Temp. Class: T4, Amb. Temp.: -60 to 60°C (-75 to 140°F) Intrinsically Safe Apparatus Parameters [Groups A, B, C, D, E, F and G] Vmax=30 V, Imax=200 mA, Pmax=1 W, Ci=6 nF, Li=0 μH [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 Applicable Standard: EN IEC 60079-0, EN 60079-1, EN 60079-31 Certificate: KEMA 07ATEX0109 X II 2 G Ex db IIC T6...T4 Gb, II 2 D Ex tb IIIC T85°C Db Degree of protection: IP66/IP67 Amb. Temp. (Tamb) for gas-proof : 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) Process Temp. for gas-proof (Tp): 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) 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 Applicable Standard: EN IEC 60079-0, EN 60079-11 Certificate: DEKRA 11ATEX0228 X II 1 G Ex ia IIC T4 Ga, II 2 D Ex ia IIIC T85°C T100°C T120°C Db Degree of protection: IP66/IP67 Amb. Temp. (Tamb) for EPL Ga: -50 to 60°C (-58 to 140°F) Maximum Process Temp. (Tp) for EPL Ga: 120°C Electrical data: Ui=30 V, Ii=200 mA, Pi=0.9 W, Ci=27.6 nF, Li=0 μH Amb. Temp. for EPL Db: -30 to 60°C *3 Max. surface Temp. for EPL Db: T85°C (Tp: 80°C), T100°C (Tp: 100°C), T120°C (Tp: 120°C) | KS21 |
| | Multiple types of protection (KF22, KS21 or Intrinsically safe Ex ic) *1*2 Applicable Standard: EN IEC 60079-0, EN 60079-11 II 3 G Ex ic IIC T4 Gc, Amb. Temp.: -30 to 60°C (-22 to 140°F) *3 Ui=30 V, Ci=27.6 nF, Li=0 μH | KU22 |

*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.

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

| Item | Description | Code |
|-------------------------|--|------|
| IECEx Scheme | IECEx Flameproof Approval *1 Applicable Standard: IEC 60079-0, IEC 60079-1, IEC 60079-31 Certificate: IECEx DEK 14.0046X Enclosure: IP66/IP67 Ex db IIC T6...T4 Gb, Ex tb IIIC T85°C Db Amb. Temp. (Tamb) for gas-proof : 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) Process Temp. for gas-proof (Tp): 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) Max. surface Temp. for dust-proof: T85°C (Tamb: -30 to 75°C, Tp: -30 to 85°C) *3 IECEx Intrinsically safe and SF22 *1*2 Intrinsically safe Ex ia Certificate: IECEx DEK 11.0081X Applicable Standard: IEC 60079-0, IEC 60079-11 Ex ia IIC T4 Ga Enclosure: IP66/IP67 Amb. Temp.: -50 to 60°C(-58 to 140°F), Max. Process Temp.: 120°C(248°F) Electrical Parameters: Ui=30V, Ii=200mA, Pi=0.9W, Ci=27.6nF, Li=0 μH Intrinsically safe Ex ic Certificate: IECEx DEK 13.0061X Applicable Standard: IEC 60079-0, IEC 60079-11 Ex ic IIC T4 Gc IP code: IP66 Amb. Temp.: -30 to 60°C(-22 to 140°F) *3, Max. Process Temp.: 120°C(248°F) Electrical Parameters: Ui=30V,Ci=27.6 nF, Li=0 μH Flameproof Refer to SF22 | SF22 |
| Combination of Approval | Combination of KU22, FU1 and CU1 *1*2*4 | V1U1 |

*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*6 | 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*8 | 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.) Allowable current: Max. 6000 A (1 × 40 μs), Repeating 1000 A (1 × 40 μs) 100 times Applicable Standards: IEC 61000-4-4, IEC 61000-4-5 | A | |
| Status output *7 | | Transistor output (sink type) 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 treatment and dehydrating treatment | K5 | |
| Calibration units *2 | P calibration (psi unit) | | (See table for Span and Range Limits.) | D1 |
| | bar calibration (bar unit) | | | D3 |
| | M calibration (kgf/cm ² unit) | | | D4 |
| Operating temperature correction *3 | | 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%, 3.2 mA DC or less. | | C1 | |
| | NAMUR NE43 Compliant Output signal limits: 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 | | 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 (Tag No.: Maximum. 16 characters.) | N4 | |
| Data configuration at factory *5 | Data configuration for HART communication type | Software damping, Descriptor, Message | CA | |
| | Data configuration for BRAIN communication type | Software damping | CB | |
| Advanced diagnostics *9 | | Multi-sensing process monitoring • Impulse line blockage detection *10 | DG6 | |
| Material certificate | Adapter (Flange), Block | | Adapter connection type | M2A |
| | Adapter (Flange), Block, Bolt for Block, Stud bolt and nut, Bolt and nut for cover flange | | | M8A |
| | Flange, Base, Block, Pipe | | Flange connection type | M2D |
| | Flange, Base, Block, Pipe, Bolt for block, Bolt and nut for cover flange | | | M8D |
| Pressure test/Leak test Certificate *11 | (Flange rating) | (Test pressure) | Nitrogen Gas *12 Retention time: one minute | T51 |
| | JIS 10K | 2 MPa (290 psi) | | T54 |
| | JIS 20K | 5 MPa (720 psi) | | T57 |
| | JIS 40K | 10 MPa (1450 psi) | | T52 |
| | ANSI/JPI Class 150 | 3 MPa (430 psi) | | T56 |
| | ANSI/JPI Class 300 | 8 MPa (1160 psi) | | T58 |
| | ANSI/JPI Class 600 | 16 MPa (2300 psi) | | |
| Long Vent | | For inner diaphragm use only. Total length: 119 mm (standard: 34 mm); Total length when combining with option code K1, K2, K5, and K6: 130 mm. Material: 316 SST | U2 | |
| High pressure-proof structure *13 | | High pressure-proof structure for ANSI/JPI class 600 flange. | HP | |
| Parameter list *14 | | List of setting and adjustment parameters | YP | |

*1: Not applicable with color change option. Not applicable for amplifier housing code 2.

*2: 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**.

*3: Specify the process operating temperature for zero correction. Example: Zero correction by process temperature 90°C.

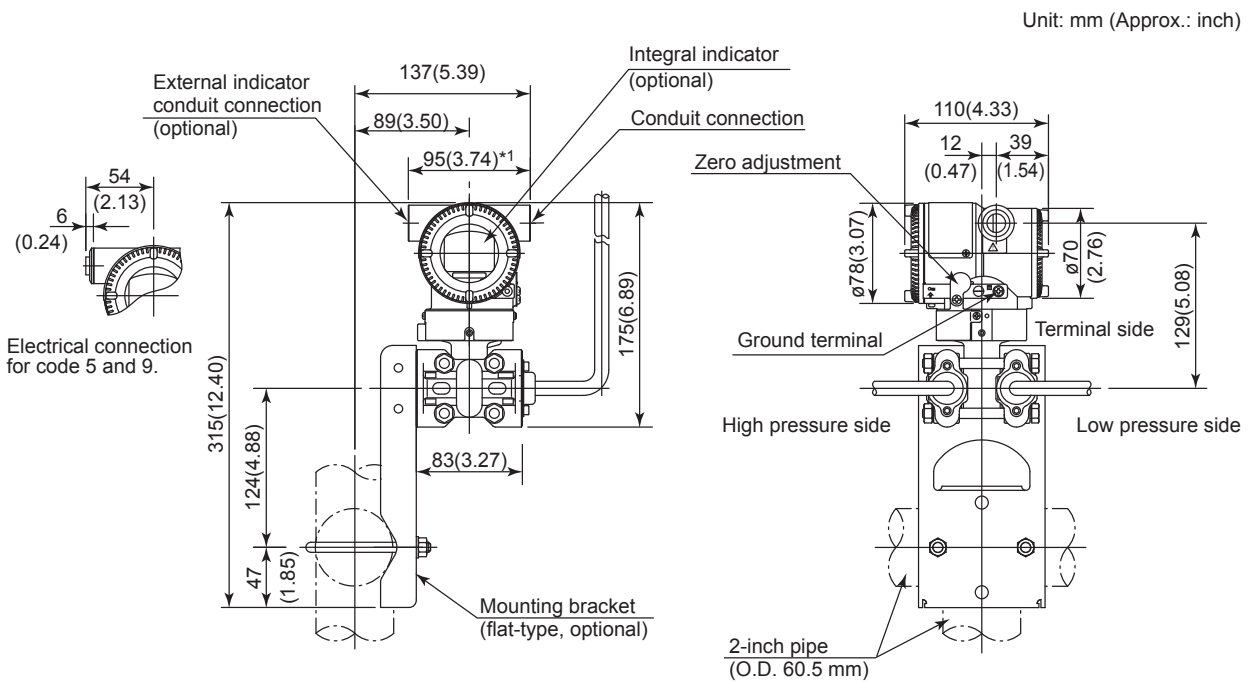
*4: Applicable for output signal code **D**, **E** and **J**. The hardware error indicates faulty amplifier or capsule.

*5: Also see 'Ordering Information.'

- *6: Not applicable for amplifier housing code **2** and **3**.
- *7: Check terminals cannot be used when this option is specified. Not applicable for output signal code **F** and **G**.
- *8: 316 or 316L SST. The specification is included in amplifier code **2**.
- *9: Applicable only for output signal code **E** and **J**.
- *10: 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.
- *11: The unit on the certificate is always MPa regardless of selection of option code **D1**, **D3**, or **D4**.
- *12: Dry nitrogen gas is used for oil-prohibited use (option code **K1** and **K5**.)
- *13: In case where flange rating code **A4** (ANSI class 600) or **P4** (JPI class 600) is selected, it must be selected optional code / **HP** (High pressure-proof structure).
- *14: Applicable only for output signal code D, E and J.

■ DIMENSIONS

● Transmitter body section



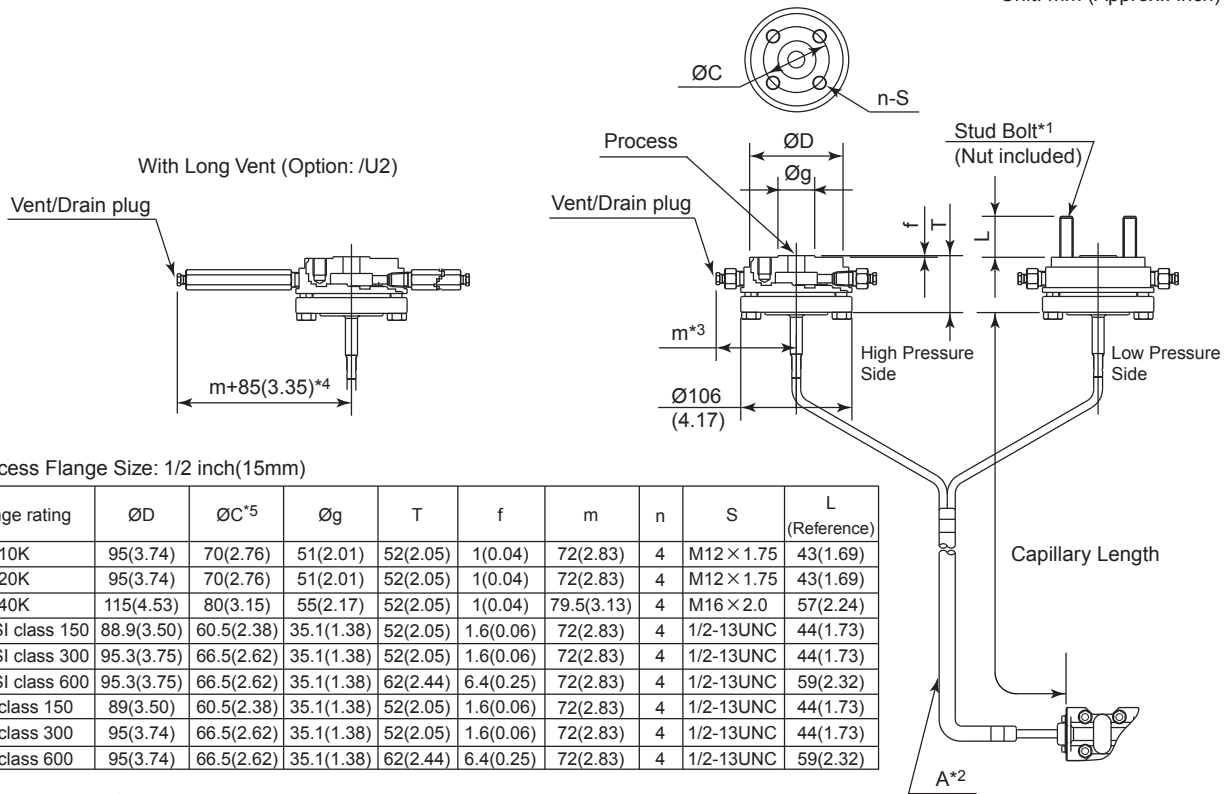
*1: When electrical connection code 7 or C is selected, a blind plug is protruded upto 8 mm (0.31 inch) from the conduit connection.

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<Diaphragm seal section>

• Adapter connection type

Unit: mm (Approx.: inch)



Process Flange Size: 1/2 inch(15mm)

| Flange rating | ØD | ØC*5 | Øg | T | f | m | n | S | L (Reference) |
|----------------|------------|------------|------------|----------|-----------|------------|---|-----------|---------------|
| JIS 10K | 95(3.74) | 70(2.76) | 51(2.01) | 52(2.05) | 1(0.04) | 72(2.83) | 4 | M12×1.75 | 43(1.69) |
| JIS 20K | 95(3.74) | 70(2.76) | 51(2.01) | 52(2.05) | 1(0.04) | 72(2.83) | 4 | M12×1.75 | 43(1.69) |
| JIS 40K | 115(4.53) | 80(3.15) | 55(2.17) | 52(2.05) | 1(0.04) | 79.5(3.13) | 4 | M16×2.0 | 57(2.24) |
| ANSI class 150 | 88.9(3.50) | 60.5(2.38) | 35.1(1.38) | 52(2.05) | 1.6(0.06) | 72(2.83) | 4 | 1/2-13UNC | 44(1.73) |
| ANSI class 300 | 95.3(3.75) | 66.5(2.62) | 35.1(1.38) | 52(2.05) | 1.6(0.06) | 72(2.83) | 4 | 1/2-13UNC | 44(1.73) |
| ANSI class 600 | 95.3(3.75) | 66.5(2.62) | 35.1(1.38) | 62(2.44) | 6.4(0.25) | 72(2.83) | 4 | 1/2-13UNC | 59(2.32) |
| JPI class 150 | 89(3.50) | 60.5(2.38) | 35.1(1.38) | 52(2.05) | 1.6(0.06) | 72(2.83) | 4 | 1/2-13UNC | 44(1.73) |
| JPI class 300 | 95(3.74) | 66.5(2.62) | 35.1(1.38) | 52(2.05) | 1.6(0.06) | 72(2.83) | 4 | 1/2-13UNC | 44(1.73) |
| JPI class 600 | 95(3.74) | 66.5(2.62) | 35.1(1.38) | 62(2.44) | 6.4(0.25) | 72(2.83) | 4 | 1/2-13UNC | 59(2.32) |

Process Flange Size: 3/4 inch(20mm)

| Flange rating | ØD | ØC*5 | g | T | f | m | n | S | L (Reference) |
|----------------|-------------|------------|------------|----------|-----------|------------|---|-----------|---------------|
| JIS 10K | 100(3.94) | 75(2.95) | 56(2.20) | 52(2.05) | 1(0.04) | 72(2.83) | 4 | M12×1.75 | 43(1.69) |
| JIS 20K | 100(3.94) | 75(2.95) | 56(2.20) | 52(2.05) | 1(0.04) | 72(2.83) | 4 | M12×1.75 | 43(1.69) |
| JIS 40K | 120(4.72) | 85(3.35) | 60(2.36) | 52(2.05) | 1(0.04) | 82(3.23) | 4 | M16×2.0 | 57(2.24) |
| ANSI class 150 | 98.6(3.88) | 69.9(2.75) | 42.9(1.69) | 52(2.05) | 1.6(0.06) | 72(2.83) | 4 | 1/2-13UNC | 44(1.73) |
| ANSI class 300 | 117.3(4.62) | 82.6(3.25) | 42.9(1.69) | 52(2.05) | 1.6(0.06) | 80.7(3.18) | 4 | 5/8-11UNC | 51(2.01) |
| ANSI class 600 | 117.3(4.62) | 82.6(3.25) | 42.9(1.69) | 62(2.44) | 6.4(0.25) | 80.7(3.18) | 4 | 5/8-11UNC | 67(2.64) |
| JPI class 150 | 99(3.90) | 69.8(2.75) | 42.9(1.69) | 52(2.05) | 1.6(0.06) | 72(2.83) | 4 | 1/2-13UNC | 44(1.73) |
| JPI class 300 | 117(4.61) | 82.6(3.25) | 42.9(1.69) | 52(2.05) | 1.6(0.06) | 80.7(3.18) | 4 | 5/8-11UNC | 51(2.01) |
| JPI class 600 | 117(4.61) | 82.6(3.25) | 42.9(1.69) | 62(2.44) | 6.4(0.25) | 80.7(3.18) | 4 | 5/8-11UNC | 67(2.64) |

Process Flange Size: 1 inch(25mm)

| Flange rating | ØD | ØC*5 | Øg | T | f | m | n | S | L (Reference) |
|----------------|-----------|------------|------------|----------|-----------|------------|---|-----------|---------------|
| JIS 10K | 125(4.92) | 90(3.54) | 67(2.64) | 52(2.05) | 1(0.04) | 84.5(3.33) | 4 | M16×2.0 | 57(2.24) |
| JIS 20K | 125(4.92) | 90(3.54) | 67(2.64) | 52(2.05) | 1(0.04) | 84.5(3.33) | 4 | M16×2.0 | 57(2.24) |
| JIS 40K | 130(5.12) | 95(3.74) | 70(2.76) | 52(2.05) | 1(0.04) | 87(3.43) | 4 | M16×2.0 | 57(2.24) |
| ANSI class 150 | 108(4.25) | 79.2(3.12) | 50.8(2.00) | 52(2.05) | 1.6(0.06) | 76(2.99) | 4 | 1/2-13UNC | 44(1.73) |
| ANSI class 300 | 124(4.88) | 88.9(3.50) | 50.8(2.00) | 52(2.05) | 1.6(0.06) | 84(3.31) | 4 | 5/8-11UNC | 51(2.01) |
| ANSI class 600 | 124(4.88) | 88.9(3.50) | 50.8(2.00) | 62(2.44) | 6.4(0.25) | 84(3.31) | 4 | 5/8-11UNC | 67(2.64) |
| JPI class 150 | 108(4.25) | 79.2(3.12) | 50.8(2.00) | 52(2.05) | 1.6(0.06) | 76(2.99) | 4 | 1/2-13UNC | 44(1.73) |
| JPI class 300 | 124(4.88) | 88.9(3.50) | 50.8(2.00) | 52(2.05) | 1.6(0.06) | 84(3.31) | 4 | 5/8-11UNC | 51(2.01) |
| JPI class 600 | 124(4.88) | 88.9(3.50) | 50.8(2.00) | 62(2.44) | 6.4(0.25) | 84(3.31) | 4 | 5/8-11UNC | 67(2.64) |

*1: Stud bolts and nuts are attached for 2×n pcs.

*2: When selecting "Capillary treatment code 1," the capillaries are bundled at "A" while having 1m separated capillaries for remote seals.

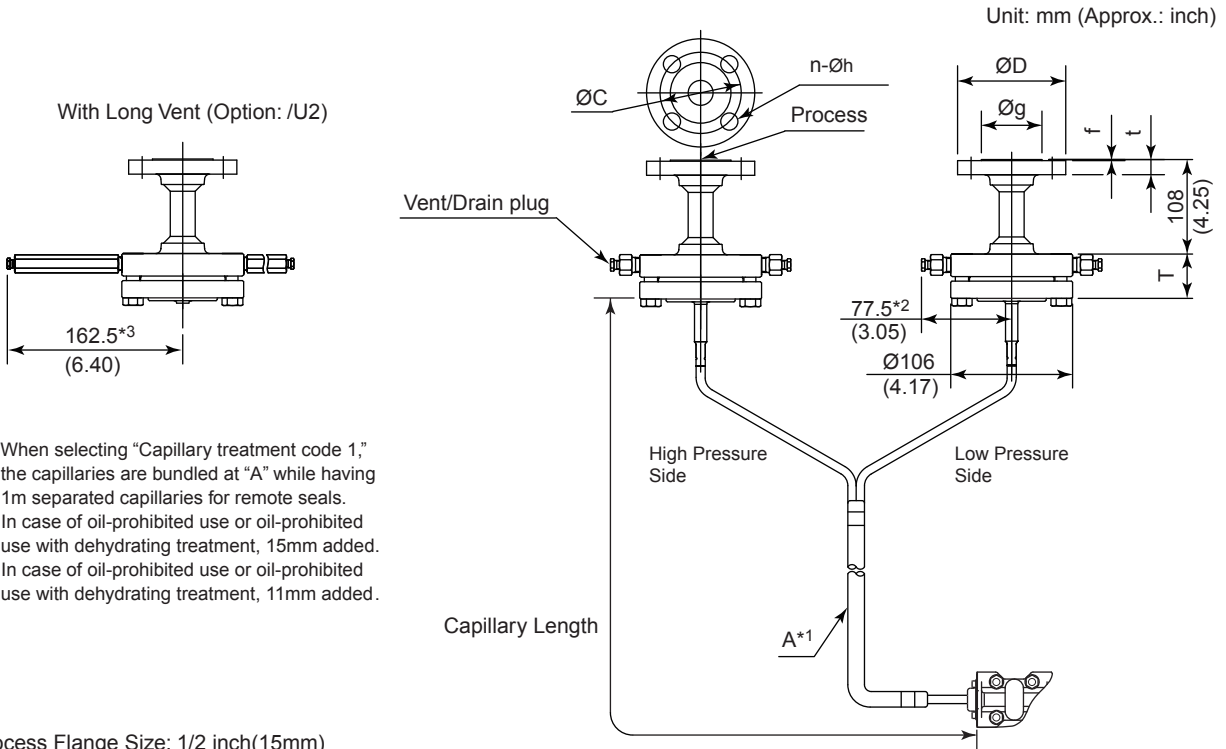
*3: In case of oil-prohibited use or oil-prohibited use with dehydrating treatment, 15mm added.

*4: In case of oil-prohibited use or oil-prohibited use with dehydrating treatment, 11mm added.

*5: This value is the same as flange standards. Actual value might be added 1mm(0.04inch) because the commercial gaskets can be used.

F09E.ai

● Flange connection type



- *1: When selecting "Capillary treatment code 1," the capillaries are bundled at "A" while having 1m separated capillaries for remote seals.
- *2: In case of oil-prohibited use or oil-prohibited use with dehydrating treatment, 15mm added.
- *3: In case of oil-prohibited use or oil-prohibited use with dehydrating treatment, 11mm added.

Process Flange Size: 1/2 inch(15mm)

| Flange rating | ØD | ØC | Øg | T | t | f | n | Øh |
|----------------|------------|------------|------------|----------|------------|-----------|---|------------|
| JIS 10K | 95(3.74) | 70(2.76) | 51(2.01) | 42(1.65) | 12(0.47) | 1(0.04) | 4 | 15(0.59) |
| JIS 20K | 95(3.74) | 70(2.76) | 51(2.01) | 42(1.65) | 14(0.55) | 1(0.04) | 4 | 15(0.59) |
| JIS 40K | 115(4.53) | 80(3.15) | 55(2.17) | 42(1.65) | 20(0.79) | 1(0.04) | 4 | 19(0.75) |
| ANSI class 150 | 88.9(3.50) | 60.5(2.38) | 35.1(1.38) | 42(1.65) | 11.2(0.44) | 1.6(0.06) | 4 | 15.7(0.62) |
| ANSI class 300 | 95.3(3.75) | 66.5(2.62) | 35.1(1.38) | 42(1.65) | 14.3(0.56) | 1.6(0.06) | 4 | 15.7(0.62) |
| ANSI class 600 | 95.3(3.75) | 66.5(2.62) | 35.1(1.38) | 57(2.24) | 14.3(0.56) | 6.4(0.25) | 4 | 15.7(0.62) |
| JPI class 150 | 89(3.50) | 60.5(2.38) | 35.1(1.38) | 42(1.65) | 11.2(0.44) | 1.6(0.06) | 4 | 16(0.63) |
| JPI class 300 | 95(3.74) | 66.5(2.62) | 35.1(1.38) | 42(1.65) | 14.3(0.56) | 1.6(0.06) | 4 | 16(0.63) |
| JPI class 600 | 95(3.74) | 66.5(2.62) | 35.1(1.38) | 57(2.24) | 14.3(0.56) | 6.4(0.25) | 4 | 16(0.63) |

Process Flange Size: 3/4 inch(20mm)

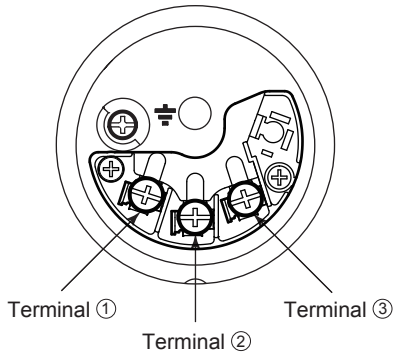
| Flange rating | ØD | ØC | Øg | T | t | f | n | Øh |
|----------------|-------------|------------|------------|----------|------------|-----------|---|------------|
| JIS 10K | 100(3.94) | 75(2.95) | 56(2.20) | 42(1.65) | 14(0.55) | 1(0.04) | 4 | 15(0.59) |
| JIS 20K | 100(3.94) | 75(2.95) | 56(2.20) | 42(1.65) | 16(0.63) | 1(0.04) | 4 | 15(0.59) |
| JIS 40K | 120(4.72) | 85(3.35) | 60(2.36) | 42(1.65) | 20(0.79) | 1(0.04) | 4 | 19(0.75) |
| ANSI class 150 | 98.6(3.88) | 69.9(2.75) | 42.9(1.69) | 42(1.65) | 12.7(0.50) | 1.6(0.06) | 4 | 15.7(0.62) |
| ANSI class 300 | 117.3(4.62) | 82.6(3.25) | 42.9(1.69) | 42(1.65) | 15.8(0.62) | 1.6(0.06) | 4 | 19.1(0.75) |
| ANSI class 600 | 117.3(4.62) | 82.6(3.25) | 42.9(1.69) | 57(2.24) | 15.8(0.62) | 6.4(0.25) | 4 | 19.1(0.75) |
| JPI class 150 | 99(3.90) | 69.8(2.75) | 42.9(1.69) | 42(1.65) | 12.7(0.50) | 1.6(0.06) | 4 | 16(0.63) |
| JPI class 300 | 117(4.61) | 82.6(3.25) | 42.9(1.69) | 42(1.65) | 15.8(0.62) | 1.6(0.06) | 4 | 19(0.75) |
| JPI class 600 | 117(4.61) | 82.6(3.25) | 42.9(1.69) | 57(2.24) | 15.8(0.62) | 6.4(0.25) | 4 | 19(0.75) |

Process Flange Size: 1 inch(25mm)

| Flange rating | ØD | ØC | Øg | T | t | f | n | Øh |
|----------------|-----------|------------|------------|----------|------------|-----------|---|------------|
| JIS 10K | 125(4.92) | 90(3.54) | 67(2.64) | 42(1.65) | 14(0.55) | 1(0.04) | 4 | 19(0.75) |
| JIS 20K | 125(4.92) | 90(3.54) | 67(2.64) | 42(1.65) | 16(0.63) | 1(0.04) | 4 | 19(0.75) |
| JIS 40K | 130(5.12) | 95(3.74) | 70(2.76) | 42(1.65) | 22(0.87) | 1(0.04) | 4 | 19(0.75) |
| ANSI class 150 | 108(4.25) | 79.2(3.12) | 50.8(2.00) | 42(1.65) | 14.3(0.56) | 1.6(0.06) | 4 | 15.7(0.62) |
| ANSI class 300 | 124(4.88) | 88.9(3.50) | 50.8(2.00) | 42(1.65) | 17.6(0.69) | 1.6(0.06) | 4 | 19.1(0.75) |
| ANSI class 600 | 124(4.88) | 88.9(3.50) | 50.8(2.00) | 57(2.24) | 17.6(0.69) | 6.4(0.25) | 4 | 19.1(0.75) |
| JPI class 150 | 108(4.25) | 79.2(3.12) | 50.8(2.00) | 42(1.65) | 14.3(0.56) | 1.6(0.06) | 4 | 16(0.63) |
| JPI class 300 | 124(4.88) | 88.9(3.50) | 50.8(2.00) | 42(1.65) | 17.6(0.69) | 1.6(0.06) | 4 | 19(0.75) |
| JPI class 600 | 124(4.88) | 88.9(3.50) | 50.8(2.00) | 57(2.24) | 17.6(0.69) | 6.4(0.25) | 4 | 19(0.75) |

F10E.ai

● 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 (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.

F11E.ai

● Wiring Example for Analog Output and Status Output

| Connection | Description |
|--|---|
| Analog output | <p>EJX Electrical Terminal</p> <p>F12E.ai</p> |
| Analog and Status output (when /AL is specified) If shield cable is not used, communication is not possible. | <p>EJX Electrical terminal</p> <p>Use two-wire separately shielded cables.</p> <p>F13E.ai</p> |

< 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"^{*1} (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"^{*1} (22 characters) in the amplifier memory.
^{*1}: 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 (upto 16 characters)
 2) Message (upto 30 characters)
 3) Software damping (0.00 to 100.00 s)
 [/CB : For BRAIN communication type]
 1) Software damping (0.00 to 100.00 s)
8. Process fluid temperature for zero compensation (if required)

< Factory Setting >

| | |
|-------------------------------------|---|
| Tag Number | As specified in order |
| Software damping ^{*1} | '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 ₂ O, mmH ₂ O(68°F), mmAq ^{*2} , mmWG ^{*2} , mmHg, Pa, hPa ^{*2} , kPa, MPa, mbar, bar, gf/cm ² , kgf/cm ² , inH ₂ O, inH ₂ O(68°F), inHg, ftH ₂ O, ftH ₂ 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 |

< Information on EU WEEE Directive >

EU WEEE (Waste Electrical and Electronic Equipment) Directive is only valid in the EU.

This instrument is intended to be sold and used only as a part of equipment which is excluded from WEEE Directive, such as large-scale stationary industrial tools, a large-scale fixed installation and so on, and, therefore, subjected to the exclusion from the scope of the WEEE Directive. The instrument should be disposed of in accordance with local and national legislation/regulations.