

# General Specifications

## OpreX™ Pressure Transmitter EJX310S Absolute Pressure Transmitter

GS 01C33D10-01EN

### OVERVIEW

The high performance absolute pressure transmitter EJX310S features single crystal silicon resonant sensor and is suitable to measure liquid, gas, or steam flow as well as liquid level, density and pressure. EJX310S outputs a 4 to 20 mA DC signal corresponding to the measured pressure. Its highly accurate and stable sensor can be shown on the integral indicator or remotely monitored via HART or PROFINET communications.

Other key features include quick response, backlit Graphic display,

EJX S series are certified as complying with SIL 2 for safety requirement.



### STANDARD SPECIFICATIONS

#### Span and Range Limits

Capsule range code	kPa abs		psi abs (/D1)		mbar abs (/D3)		mmHg abs (/D4)	
	Range	Span	Range	Span	Range	Span	Range	Span
L	0 to 10	0.5 to 10	0 to 2.95 inHg	0.15 to 2.95 inHg	0 to 100	5 to 100	0 to 75	3.8 to 75
M	0 to 130	1.3 to 130	0 to 38 inHg	0.39 to 38 inHg	0 to 1300	13 to 1300	0 to 975	9.8 to 975
A	0 to 3.5 MPa	0.018 to 3.5 MPa	0 to 507	2.5 to 507	0 to 35 bar	0.175 to 35 bar	0 to 35 kgf/cm <sup>2</sup>	0.175 to 35 kgf/cm <sup>2</sup>
B	0 to 16 MPa	0.08 to 16 MPa	0 to 2320	12 to 2320	0 to 160 bar	0.8 to 160 bar	0 to 163 kgf/cm <sup>2</sup>	0.8 to 163 kgf/cm <sup>2</sup>

#### Pressure limits

Capsule range code	Maximum Over Pressure	Burst Pressure Limits
L, M	500 kPa abs (72 psia)	69 MPa (10000psi)
A	16 MPa abs (2300 psia)	
B	25 MPa abs (3600 psia)	

□ **Performance Specifications**

Zero-based calibrated span, linear output, wetted parts material code “S” and silicone oil, unless otherwise mentioned.

**Specification Conformance:**

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

**Reference Accuracy of Calibrated Span:**

These specifications include terminal-based linearity, hysteresis, and repeatability.

Capsule Range code	Wetted Parts Material code	Reference Accuracy		X	URL (Upper Range Limit)
		Span $\geq$ X	Span $<$ X		
L	S, L	$\pm 0.075\%$	$\pm(0.02+0.03 \text{ URL}/\text{span})\%$	5.4 kPa abs (1.59 inHg abs)	10 kPa abs (2.95 inHg abs)
M	S, L	$\pm 0.035\%$	$\pm(0.005+0.005 \text{ URL}/\text{span})\%$	21.4 kPa abs (6.3 inHg abs)	130 kPa abs (38 inHg abs)
A			$\pm(0.0035 \text{ URL}/\text{span})\%$	0.35 MPa abs (50 psia)	3.5 MPa abs (507 psia)
B				1.6 MPa abs (232 psia)	16 MPa abs (2300 psia)

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

Capsule range code	Effect
L	$\pm (0.1\% \text{ Span} + 0.35\% \text{ URL})$
M	$\pm (0.04\% \text{ Span} + 0.035\% \text{ URL})$
A, B	$\pm (0.04\% \text{ Span} + 0.012\% \text{ URL})$

**Stability (All normal operating condition):**

$\pm 0.2\%$  of URL per 20 years:

**Power Supply Effects: For HART Communication:**

$\pm 0.005\%$  per Volt (from 21.6 to 32 V DC, 350  $\Omega$ )

**Vibration Effects:**

Less than 0.1% of URL (10-60 Hz, 0.21 mm displacement/60-2000 Hz 3G)

**Mounting Position Effects:**

Tilting up to 90 degrees will cause zero shift up to 0.5 kPa (2.0 inH<sub>2</sub>O) which can be corrected by the zero adjustment.

**Minimum Pressure at Calibration\*:**

L capsule: 130 Pa abs (1 mmHg abs)

M, A and B capsules: 2.7 kPa abs (20 mmHg abs)

\* If one or two of the calibration points are smaller than the above value, the above pressure is used for testing. In case all the calibration points are greater than the limit, only the pressure of upper range value (URL) is applied for testing.

Specifying option code /S1 with M or A capsule will lower the limit to 130 Pa abs.

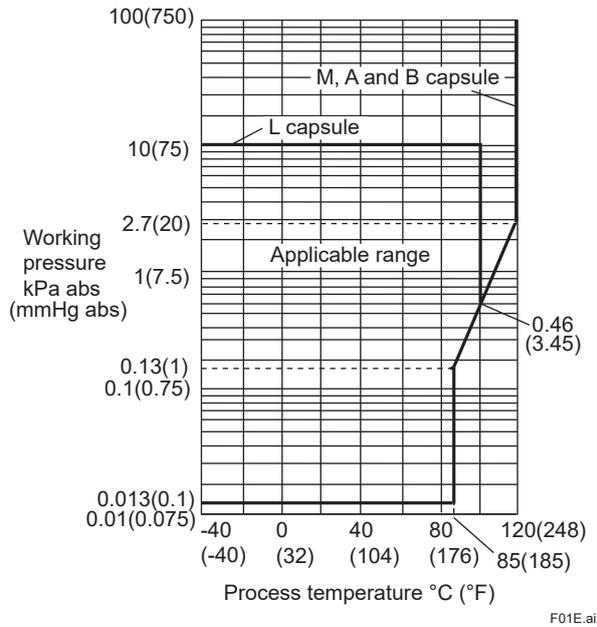
/S1 is recommended for M capsule when the specified upper range value (URL) is not exceeding 3.4 kPa abs.

**Working Pressure Limits (Silicone oil):**

- Maximum Pressure Limits:

Capsule range code	Pressure
L	130 kPa abs (38 inHg abs)
M	130 kPa abs (38 inHg abs)
A	3.5 MPa abs (507 psia)
B	16 MPa abs (2300 psia)

- Minimum Pressure Limit: See graph below figure 1



**Figure 1. Working Pressure and Process temperature**

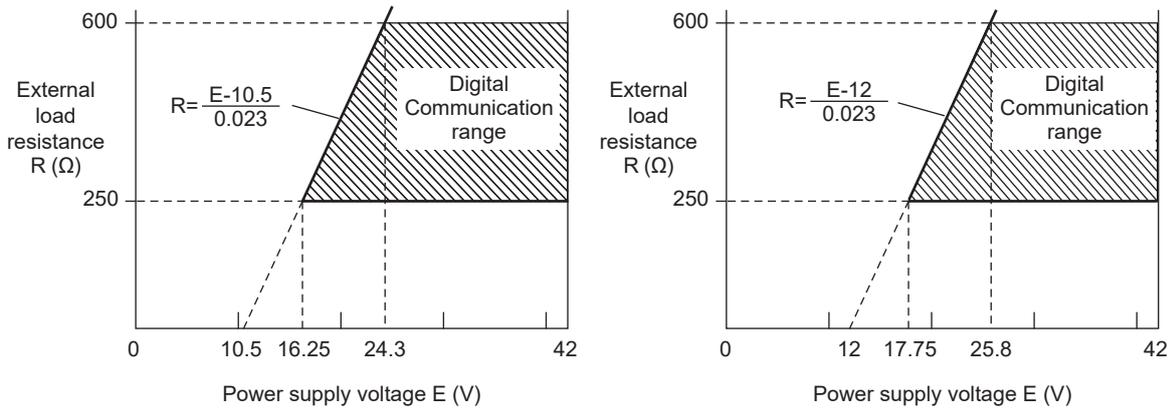
□ **Communication Specifications**

**HART Communication:**

Item		Description
Communication protocol		Two wire 4 to 20 mA DC output with digital communications HART
Output signal		Digital communication signal based on HART. 3.6 to 21.6 mA (-2.5 to 110%) Normal output range (default setting): 3.6 to 21.6 mA Burnout High side (default setting): 115% (22.4 mA DC) Burnout Low side (default setting): -5% (3.2 mA DC)  For optional code /C2 Normal output range (default setting): 3.8 to 20.5 mA Burnout High side (default setting): 115% (22.4 mA DC) Burnout Low side (default setting): -5% (3.2 mA DC)
Output mode		Linear/Signal Characterizer (Max 30-segment)
Communication Requirements	Supply Voltage	For LCD Display and without display (Display and interface code : E,N) 10.5 to 42 V DC for general use and flameproof type. 10.5 to 30 V DC for intrinsically safe type. Minimum voltage limited at 16.4 V DC for digital communications For Graphic display (Display and interface code : F) 12 to 42 V DC for general use and flameproof type. Minimum voltage limited at 17.75 V DC for digital communications.
	Load	250 to 600Ω (including cable resistor) Working Pressure and Process Temperature for Figure 2
Response time (Typical)		90 ms
Measurement period	Absolute Pressure	35 ms
	Capsule Temperature	2 s
	Main module Temperature	1 s
Output signal at Failure Alarm		Output current value (Burnout), Communication, Indicator (Support for NAMUR NE107)
External Zero Adjustment		External zero is continuously adjustable with 0.01% incremental resolution of span.
Zero Adjustment Limits		Zero can be fully elevated or suppressed, within the lower and upper range limits of the capsule.
Display	LCD Display	Process value (5-digit, up to 4 different process values) Unit display (6-digit), Bar graph, Alarm message, NE107 status is displayed
	Graphic Display	Graphical LCD display(128×80 pixels display) with a color backlight, Process value (5-digit, up to 4 different process values), Unit display (6-digit), Bar graph, Alarm message, NE107 status is displayed, Display rotation selection Display language: English, French, German, Italian, Spanish, Portuguese, Russian, Chinese, Japanese
Local Parameter Setting	LCD Display	Loop test (test output), Tag number setting, Measurement range unit setting, Lower limit (LRV) and Upper limit (URV) of measurement range, Damping time constant setting, Output mode (proportional/square root) setting, Display content selection, Range resetting using actual pressure (LRV/URV), Burnout direction setting, setting of write-protect, Display of device information.
	Graphic Display	Loop test (test output), Tag number setting, Measurement range unit setting, Lower limit (LRV) and Upper limit (URV) of measurement range, Damping time constant setting, Output mode (proportional/square root) setting, Display content selection, Range resetting using actual pressure (LRV/URV), Burnout direction setting, setting of write-protect, Display of device information, Multiple display selection, Backlight color selection, Display rotation selection, language selection, LCD contrast selection
Diagnostics function		The following items are detected and output current value, communication, and indicator. Sensor error, Module error, Process error (out of equipment specification range, out of measurement range), Parameter setting value error, High/Low alarm for measured pressure.
Advanced functions		Heat trace monitoring: The change of the process connection temperature calculated by using the two temperature sensors built enables to detect the heat trace breakage or the abnormal temperature due to the failure.
		Impulse line blockage detection The impulse line condition can be calculated and detected by extracting the fluctuation component from the static pressure signals.

• Display and interface code: E or N

• Display and interface code: F



F02E.ai

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

**PROFINET Communication:**

Item		Description
Communication protocol		Ethernet-APL Port Profile Specification Ver 1.1 (IEEE 802.3cg-2019) PROFINET Ver 2.45 (IEC 61158 Type 10, IEC 61784-2 CPF3) PA Profile 4.0
Output signal		Digital communication signal based on PROFINET
Output mode		Linear/Signal Characterizer (Max 30-segment)
Communication Requirements	Supply Voltage	9 to 15 V DC for intrinsically safe type.
	Load	N/A
Response time (Typical)		150 ms
Measurement period	Absolute Pressure	35 ms
	Capsule Temperature	2 s
	Main module Temperature	1 s
Function Block		AI × 3, Totalizer × 1
Output signal at Failure Alarm		Communication, Indicator (Support for NAMUR NE107)
External Zero Adjustment		External zero is continuously adjustable with 0.01% incremental resolution of span.
Zero Adjustment Limits		Zero can be fully elevated or suppressed, within the lower and upper range limits of the capsule.
Display	LCD Display	Process value (5-digit, up to 4 different process values) Unit display (6-digit), Bar graph, Alarm message, NE107 status is displayed
	Graphic Display	Graphical LCD display(128×80 pixels display) with a color backlight, Process value (5-digit, up to 4 different process values), Unit display (6-digit), Bar graph, Alarm message, NE107 status is displayed, Display rotation selection Display language: English, French, German, Italian, Spanish, Portuguese, Russian, Chinese, Japanese
Local Parameter Setting	LCD Display	Display of device information (VendorID, DeviceID, Station name, IP address)
	Graphic Display	Display of device information (VendorID, DeviceID, Station name, IP address) Setting can be changed. Multiple display selection, Backlight color selection, Display rotation selection, language selection, LCD contrast selection
Diagnostics function		The following items are detected and communication, and indicator: Sensor error, Module error, Process error (out of equipment specification range, out of measurement range), Parameter setting value error.
Advanced functions		Heat trace monitoring: The change of the process connection temperature calculated by using the two temperature sensors built enables to detect the heat trace breakage or the abnormal temperature due to the failure.
		Impulse line blockage detection The impulse line condition can be calculated and detected by extracting the fluctuation component from the static pressure signals.

□ **Conformity Standards**

**Degrees of protection:**

IP66/IP67/IP68 (maximum depth of 20 meters up to 168 hours),  
Type 4X

**Explosion Protected type:**

Canada, US, ATEX, IECEx  
See MODEL AND SUFFIX CODES.

**EMC Conformity Standards:**

EN 61326-1: Class A, Table 2\*1  
EN 61326-2-3

\*1: Tested in accordance with IEC 61000-4 series, as specified in EN 61326-1

**Environmental regulations:**

- EU RoHS Directive: EN IEC 63000
- REACH Statement: Regulation EC 1907/2006
- China RoHS: GB 26572
- Toxic Substances Control Act: TSCA: US Toxic Substances Control Act (TSCA) Section 6(h)

**Safety Requirement Standards:**

EN61010-1

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

**SIL Certification:**

Compliant with conformity standard IEC 61508 (Functional Safety of Electrical/Electronic/Programmable Electronic Safety-related Systems).

Compliant with SIL 2. Compliant with SIL 3 if two instruments are used in a redundant configuration.

The safety data varies depending on the hardware/software revision.

Read the Safety Manual for details. (Document No.: TI 01C33A01-01ZN)

The Functional Safety Manual can be downloaded from our website.

URL: <https://www.yokogawa.com/solutions/products-platforms/field-instruments/>

**Marking:**

- CE marking
- RCM marking
- Morocco conformity marking
- cFMUS marking

Approval code	CE	RCM	Morocco conformity	cFMUS
-C□□, -F□□		✓	✓	✓
-KF1, -KS1, -KU1, -KNN	✓	✓	✓	
-SF1, -SS1, -SU1		✓	✓	
-VU1	✓	✓	✓	✓
-NNN		✓	✓	

---

## □ Normal Operating Condition

**Supply Voltage:**

Refer to "Communication Specifications".

**Ambient Temperature Limits:**

-40 to 85°C (-40 to 185°F)

-30 to 80°C (-22 to 176°F) with Display

In case of explosion protected types, limits may be different.

**Process Temperature Limits:**

-40 to 120°C (-40 to 248°F) M, A and B capsules

-40 to 100°C (-40 to 212°F) L capsules

In case of explosion protected types, limits may be different.

**Ambient Humidity Limits:**

0 to 100% RH

**Vibration Resistance:**

0.21 mm (10-60 Hz), 3 G (60-2000 Hz)

**Shock Resistance:**

50 G 11 ms (de-energized, with half-sine wave pulse in three directions)

**Noise Resistance:**

EN61326, NAMUR NE21

**Grounding:**

Class-C grounding (Ground resistance 10Ω or less)

## □ Physical Specifications

**Electrical connection:**

Refer to "MODEL AND SUFFIX CODES."

**Process connections:**

Refer to "MODEL AND SUFFIX CODES."

**Material:**

- Wetted Parts Materials: Refer to "MODEL AND SUFFIX CODES."
- Bolting: B7 carbon steel, 316L SST or 660 SST
- Housing: Low copper cast aluminum alloy
- Name plate and tag: 316 SST
- Cover O-rings: Buna-N,
- Fill fluid: Silicone, Fluorinated oil
- Capsule gasket: Teflon-coated 316L SST
- Process connector gasket: PTFE Teflon / For optional codes /N2, /N3 Fluorinated rubber O-ring

**Coating of housing:**

[for aluminum housing]

Polyester resin powder coating Mint-green paint (RAL190 30 15)

[for option code /P□ or /X2]

Epoxy and polyurethane resin solvent coating

**Mounting:**

2 inch pipe mounting

**Weight:**

3.0 kg (6.6 lb) Without Display, mounting bracket, and process connector.

**MODEL AND SUFFIX CODES**

Model	SuffixCode	Description
<b>EJX310S</b>		Absolute Pressure Transmitter
Approval	<b>-CF1</b>	Canada explosion-proof*1*2
	<b>-CS1</b>	Canada intrinsically safe*2
	<b>-CU1</b>	Canada explosion-proof and intrinsically safe*1*2
	<b>-CNN</b>	Canada safety requirement*1*2
	<b>-FF1</b>	USA explosion-proof*1*2
	<b>-FS1</b>	USA intrinsically safe*2
	<b>-FU1</b>	USA explosion-proof and intrinsically safe*1*2
	<b>-FNN</b>	USA safety requirement*1*2
	<b>-KF1</b>	ATEX flameproof*1*2
	<b>-KS1</b>	ATEX intrinsically safe*2
	<b>-KU1</b>	ATEX flameproof and intrinsically safe*1*2
	<b>-KNN</b>	CE marking*1
	<b>-SF1</b>	IECEX flameproof approval*1*2
	<b>-SS1</b>	IECEX intrinsically safe*2
	<b>-SU1</b>	IECEX flameproof and intrinsically safe*1*2
	<b>-VU1</b>	IECEX, ATEX, USA and Canada explosion-proof, intrinsically safe combination*1*2
<b>-NNN</b>	None*1	
Output signal	<b>-J</b>	4 to 20 mA DC with digital communication (HART protocol)
	<b>-T</b>	PROFINET over Ethernet-APL*3
Housing	<b>1</b>	Material: Cast-aluminum alloy
Electrical Connection	<b>0</b>	G1/2 female, one electrical connection without blind plugs
	<b>2</b>	1/2NPT female, two electrical connections without blind plugs
	<b>4</b>	M20 female, two electrical connections without blind plugs
	<b>5</b>	G1/2 female, two electrical connections with a blind plug
	<b>7</b>	1/2NPT female, two electrical connections with a blind plug
	<b>9</b>	M20 female, two electrical connections with a blind plug
	<b>A</b>	G1/2 female, two electrical connections with a 316 SST blind plug
	<b>C</b>	1/2NPT female, two electrical connections with a 316 SST blind plug
	<b>D</b>	M20 female, two electrical connections with a 316 SST blind plug
	<b>F</b>	G1/2 female, two electrical connections without blind plugs
<b>P</b>	M20 female and 1/2NPT female dual connection without blind plugs	
Display and interface	<b>E</b>	LCD display
	<b>F</b>	Graphic display*8
	<b>N</b>	Without display
Capsule range	<b>-L</b>	10 kPa abs / 2.95 inHg abs*9
	<b>-M</b>	130 kPa abs / 38 inHg abs*9
	<b>-A</b>	3.5 MPa abs / 500 psia
	<b>-B</b>	16 MPa abs / 2300 psia
Wetted Parts Material*4	<input type="checkbox"/>	Refer to "Wetted Parts Material" table below
Fill fluid	<b>H</b>	Silicone oil
	<b>F</b>	Fluorinated oil*5 Operating temperature -20 to 80°C (-4 to 176°F)
Process Connection	<b>0</b>	Without process connector (Rc1/4 female on cover flange)
	<b>1</b>	With Rc1/4 female process connector
	<b>2</b>	With Rc1/2 female process connector
	<b>3</b>	With 1/4NPT female process connector
	<b>4</b>	With 1/2NPT female process connector
	<b>5</b>	Without process connector (1/4NPT female on cover flange)
Mounting Bracket	<b>C</b>	660 SST
	<b>G</b>	316L SST
	<b>J</b>	ASTM-B7 carbon steel

Model	SuffixCode	Description
Installation	2	Vertical impulse piping type, right side high pressure, process connectors upside
	3	Vertical impulse piping type, right side high pressure, process connectors downside
	6	Vertical impulse piping type, left side high pressure, process connectors upside
	7	Vertical impulse piping type, left side high pressure, process connectors downside
	8	Horizontal impulse piping type, right side high pressure
	9	Horizontal impulse piping type, left side high pressure
	B	Bottom process connection type, left side high pressure*6
	U	Universal flange*6
Mounting Bracket	-B	304 SST 2-inch pipe mounting (flat type)
	-D	304 SST 2-inch pipe mounting (L type)
	-J	316 SST 2-inch pipe mounting (flat type)
	-K	316 SST 2-inch pipe mounting (L type)
	-M	316 SST 2-inch pipe mounting (for bottom process connection)*6
	-P	316 SST 2-inch pipe mounting, position adjustable L type (for vertical piping)*7
	-N	None
—	N	Always N
Optional codes		/□ Optional specifications

- \*1: Not applicable for output signal code T.
- \*2: Not applicable for electrical connection code 0, 5, 9, A and F.
- \*3: Not applicable for display and interface code F and N.  
The approval code -FS1,-KS1 or -SS1 must be selected.
- \*4: △ Users must consider the characteristics of selected wetted parts material and the influence of process fluids. The use of inappropriate materials can result in the leakage of corrosive process fluids and cause injury to personnel and/or damage to plant facilities. It is also possible that the diaphragm itself can be damaged and that material from the broken diaphragm and the fill fluid can contaminate the user's process fluids.  
Be very careful with highly corrosive process fluids such as hydrochloric acid, sulfuric acid, hydrogen sulfide, sodium hypochlorite, and high-temperature steam (150°C [302°F] or above). Contact Yokogawa for detailed information of the wetted parts material.
- \*5: Oil-prohibited use (degreasing cleaning) or dehydrating treatment, select the additional specification code for oil-prohibited use (/K01, /K41) or oil-prohibited use with dehydrating treatment (/K05, /K45).
- \*6: Not applicable for wetted parts material code L, J and K.
- \*7: For position adjustable bracket, refer to SD 01C33B10-01EN.
- \*8: Not applicable for approval code -CS1,-CU1,-FS1,-FU1,-KS1,-KU1,-SS1,-SU1 and -VU1
- \*9: Not applicable for approval code -CF1,-CU1 and VU1

**Table. Wetted Parts Materials**

Wetted parts material code	Cover flange and process connector	Capsule	Capsule gasket	Vent/Drain plug
<b>S #</b>	ASTM CF-8M(*1)(*4)	Hastelloy C-276(*3) (Diaphragm) F316L SST, 316L SST (Others)	Teflon-coated 316L SST	316 SST
<b>L #</b>	ASTM CF-3M(*2)(*4)	Hastelloy C-276(*3) (Diaphragm) F316L SST, 316L SST (Others)	Teflon-coated 316L SST	316L SST
<b>F #</b>	ASTM CF-8M(*1)(*4)	Hastelloy C-276(*3) / Gold-plated (3 μm) (Diaphragm), F316L SST, 316L SST (Others)	Teflon-coated 316L SST	316 SST
<b>G #</b>	ASTM CF-8M(*1)(*4)	Hastelloy C-276(*3) / Gold-plated (10 μm) (Diaphragm), F316L SST, 316L SST (Others)	Teflon-coated 316L SST	316 SST
<b>J #</b>	ASTM CF-3M(*2)(*4)	Hastelloy C-276(*3) / Gold-plated (3 μm) (Diaphragm), F316L SST, 316L SST (Others)	Teflon-coated 316L SST	316L SST
<b>K #</b>	ASTM CF-3M(*2)(*4)	Hastelloy C-276(*3) / Gold-plated (10 μm) (Diaphragm), F316L SST, 316L SST (Others)	Teflon-coated 316L SST	316L SST

- \*1: ASTM CF-8M or SCS14A. Cast version of 316 SST.
- \*2: ASTM CF-3M or SCS16A. Cast version of 316L SST.
- \*3: Hastelloy C-276 or Hastelloy C276 equivalent.
- \*4: Intergranular corrosion test passed according to ASTM A262 Practice E.  
The # marks indicate the construction materials conform to NACE material recommendations per MR0175/ISO15156. Please refer to the latest standards for details. Selected materials also conform to NACE MR0103.

**OPTIONAL SPECIFICATIONS / Approval for Explosion-proof**

Item	Description	Code	
Flameproof packing adapter*1*2	Electrical connection: G1/2 female,	1 pcs	/V11
	Applicable cable outline: Ø8 to Ø12	2 pcs	/V12

**OPTIONAL SPECIFICATIONS / Hardware**

Item	Description	Code	
Plug option	Long vent*3*4: Total length: 119 mm (standard: 34 mm); Total length when combining with option code K□□: 130 mm. Material: 316 SST	/U1	
	Without vent and drain plugs*5	/UN	
Additional blind plug	Additional blind plug is attached to the conduit connection on both sides for storing transmitter*6	/PP	
Painting	Color change	Color change, amplifier cover; Black	/P1
		Color change, amplifier cover; Jade green	/P2
		Color change, amplifier cover; Metric silver	/P7
		Color change, amplifier and terminal covers Munsell code; 7.5 R4/14, Red	/PR
	Coating Change	High anti-corrosion coating: Housing, amplifier and terminal covers*7	/X2
Surge protective device	UL1449, UL497B compliant device (SPD). • 3 kA crest (8 x 20 microseconds) • 6 kV crest (1.2 x 50 microseconds) Exchangeable	/A	
Oil-prohibited use*3	Degrease cleansing treatment	/K01	
	Degrease cleansing treatment with certificates	/K41	
Oil-prohibited use with dehydrating treatment*3	Degrease cleansing and dehydrating treatment	/K05	
	Degrease cleansing and dehydrating treatment with certificates	/K45	
Wired tag plate	316 SST tag plate wired onto transmitter: up to 22 characters	/N4	
Nameplate Indication	Range field	Blank the calibration range on the nameplate	/N5
	Maximum Pressure Limits (MWP) unit*27	P calibration (psi unit)	/D1
		bar calibration (bar unit)	/D3
	M calibration (kgf/cm <sup>2</sup> unit)	/D4	
High-humidity option*8	For high-humidity environments	/HE	
Gold-plated capsule gasket*3*9	Gold-plated 316L SST capsule gasket. Without drain and vent plugs.	/GS	
Body option*3*10	Right side high pressure, without drain and vent plugs*11	/N1	
	N1 and Process connection, based on IEC61518 with female thread on both sides of cover flange, with blind kidney flanges on back.*12*13	/N2	
	N2, and Material certificate for cover flange, diaphragm, capsule body, and blind kidney flange*12*13	/N3	
Calibration option*14	Minimum input pressure: 130 Pa abs (1 mmHg abs) at range calibrating testing	/S1	
Functional safety*26	Without functional safety SIL 2	/SLN	

### ■ OPTIONAL SPECIFICATIONS / Software

Item		Description	Code	Output signal code	
				J	T
Failure operation		Analog output levels compliant with NAMUR NE43 (Output signal limits: 3.8 mA to 20.5 mA Output status)	/C2	○	
Date configuration at factory	Parameter Setting	For HART communication type: Software damping, Descriptor and Message	/CA	○	
		For HART communication type: Disabling external zero adjustment, Software damping, Descriptor and Message	/CJ	○	
		For PROFINET communication type: Software damping, Descriptor and Memo	/CB		○
	For PROFINET communication type: Disabling external zero adjustment, Software damping, Descriptor and Memo	/CK		○	
	Display Setting	Two engineering values are alternately displayed on the LCD. *25	/CF	○	○

### ■ OPTIONAL SPECIFICATIONS / Documents

Item		Description	Code
Material certificate		Cover flange*15	/M01
		Cover flange, Process connector*16	/M11
		Cover flange, Bolt and nut for cover flange*15	/M61
		Cover flange, Process connector, Bolt and nut for cover flange, Bolt for process connector*16	/M71
		Cover flange, Diaphragm, Capsule body*15*17	/MA1
		Cover flange, Process connector, Diaphragm, Capsule body*16*18	/MC1
		Cover flange, Bolt and Nut for cover flange, Diaphragm, Capsule body, Vent and Drain plug, Vent screw, Capsule gasket*15*19	/MG1
		Cover flange, Process connector, Bolt and Nut for cover flange Bolt for process connector, Diaphragm, Capsule body, Vent and Drain plug, Vent screw, Capsule gasket*16*19	/MH1
Material certificate list*20		Material certificate list	/YC
Parameter list*21		List of setting and adjustment parameters	/YP
Pressure test/Leak test certificate	L, M Capsule	Test Pressure: 50 kPa (200 inH <sub>2</sub> O)	Nitrogen Gas*22 Retention time: one minute
	A Capsule	Test Pressure: 3.5 MPa (500 psi)	
	B Capsule	Test Pressure: 16 MPa (2300 psi)	
Pressure test/Leak test certificate*23		Submit pressure test certificate and leak test certificate separately. Test pressure: According to the test pressure on the Pressure and Leak Test certificate.	Pressure test: Test Fluid: Water*24 Test time: ten minutes  Leakage test: Test Fluid: Nitrogen Gas*22 Test time: ten minutes
Calibration certificate	Yokogawa measuring instruments control system		/L4
	Yokogawa measuring instruments control system, and primary standards list		/L5
	Yokogawa measuring instruments control system, primary standards list, and calibration equipments list		/L6
	Yokogawa measuring instruments control system, primary standards list, calibration equipments list and their test cert.		/L9

### ■ OPTIONAL SPECIFICATIONS / Warranty

Item	Description	Code
Warranty	3-years warranty	/WP3
	5-years warranty	/WP5

- \*1: Applicable for approval code -KNN and -NNN.
- \*2: Applicable for electrical connection code 0, 5, A and F.
- \*3: Applicable for wetted parts material code S, F, G, H, M and T.
- \*4: Applicable for installation code 2, 3, 6 and 7.
- \*5: Not applicable for process connection code U.
- \*6: Applicable for electrical connection code 5, 7, 9, A, C and D. Not applicable for approval code -CF1,-CU1,-FF1,-FU1,-KF1,-KU1,-SF1,-SU1 and -VU1.
- \*7: Not applicable with color change option.
- \*8: Not applicable with flameproof packing adapter option code /V11 and /V12.
- \*9: Applicable for wetted parts material code S, F and G; and process connection code 0 and 5; and installation code 8 and 9 ; and option code /M01, /M61, /M71, and /MA1. Not applicable for option code U1, UN, N2 and N3.

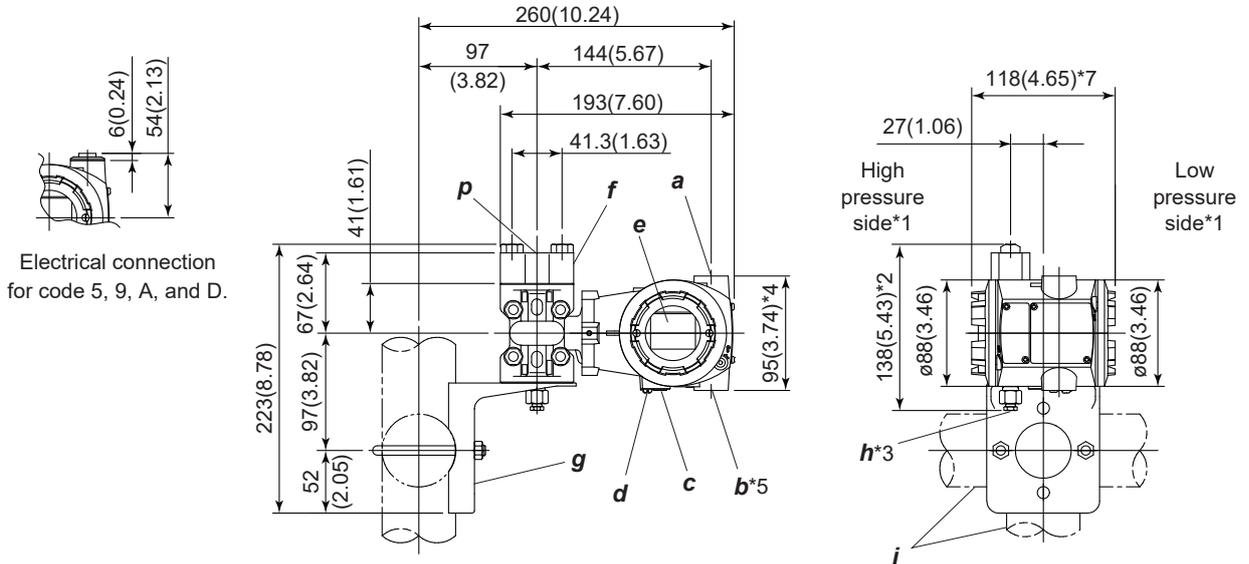
- \*10: Applicable for installation code 9.
- \*11: Applicable for mounting bracket code B, J and N.
- \*12: Applicable for mounting bracket code N.
- \*13: Applicable for material certificate option /M□□.
- \*14: Applicable for Capsule code M and A with upper range value smaller than 53.3 kPa (400 mmHg abs) .  
If not specified, minimum input pressure for calibration testing will be 2.7 kPa abs (20 mmHg abs) even if the smaller range value is specified for customer's range.
- \*15: Applicable for process connection code 0 and 5.
- \*16: Applicable for process connection code 1, 2, 3 and 4.
- \*17: Applicable for option code /UN, /N1, and /GS.
- \*18: Applicable for option code UN and N1.
- \*19: Not applicable for option code /UN, /N1, and /GS.
- \*20: Applicable for material certificate option /M□□.
- \*21: Applicable for output signal code J.
- \*22: Dry nitrogen gas is used for oil-prohibited use (option codes /K01, /K05, /K41 and /K45).
- \*23: Applicable for pressure test/leak test certificate code /T□□.
- \*24: Pure water is used for oil-prohibited use (option codes /K01, /K05, /K41 and /K45).
- \*25: Not applicable for display and interface code N.
- \*26: Required if output signal code T is selected.
- \*27: The MWP (maximum working pressure) unit indicated on the housing nameplate is displayed in the unit specified by option codes D1, D3, and D4.

**■ DIMENSIONS**

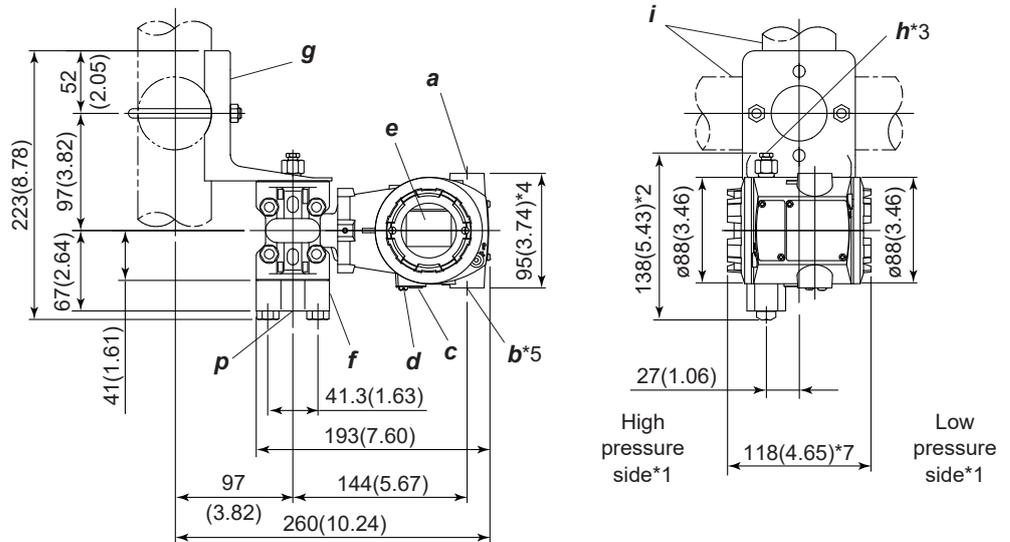
Unit: mm (approx.inch)

• Vertical Impulse Piping Type

- Process connector upside (The drawing below is for Installation code 6.)



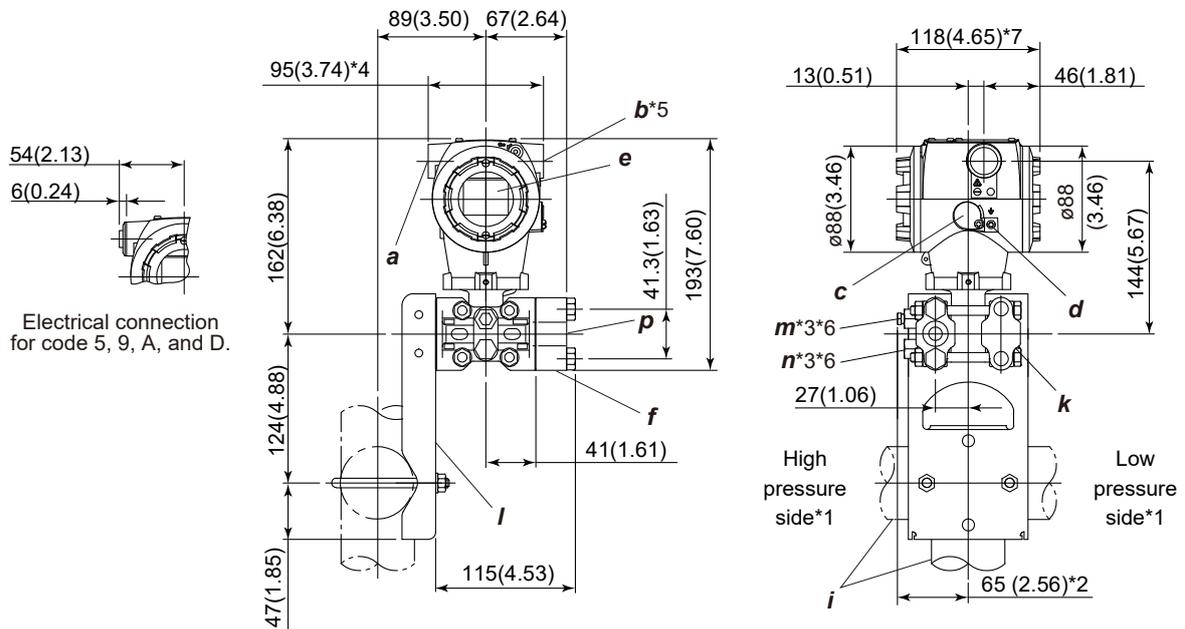
- Process connector downside (The drawing below is for Installation code 7.)



<b>a</b> External indicator Conduit connection (optional)	<b>e</b> Display (optional)	<b>i</b> 2-inch pipe (O.D. 60.5 mm)
<b>b</b> Conduit connection	<b>f</b> Process connector (optional)	<b>p</b> Process connection
<b>c</b> Zero adjustment	<b>g</b> Mounting bracket (L-type, optional)	
<b>d</b> Ground terminal	<b>h</b> Vent/Drain plugs	

Unit: mm (approx.inch)

- Horizontal Impulse Piping Type (The drawing below is for Installation code 9.)

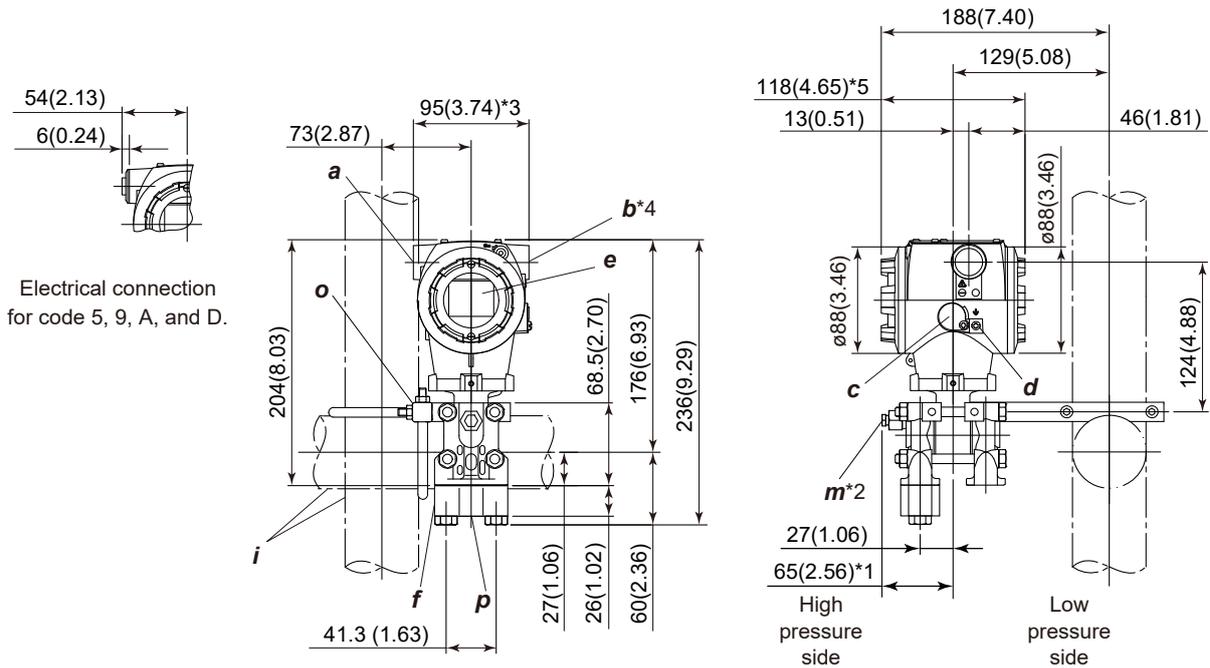


<b>a</b>	External indicator Conduit connection (optional)	<b>e</b>	Display (optional)	<b>m</b>	Vent plug
<b>b</b>	Conduit connection	<b>f</b>	Process connector (optional)	<b>n</b>	Drain plug
<b>c</b>	Zero adjustment	<b>i</b>	2-inch pipe (O.D. 60.5 mm)	<b>p</b>	Process connection
<b>d</b>	Ground terminal	<b>l</b>	Mounting bracket (Flat-type, optional)		

- \*1: In case of Installation code 2, 3, or 8 is specified, high and low pressure side on the above figure are reversed. (i.e. High pressure side is on the right side)
- \*2: In case of optional codes /K01, /K05, /K41 and /K45 specified, add 15 mm (0.59 inch).
- \*3: In case of optional code /UN specified, plugs are not attached.
- \*4: In case of electrical connection code 7 or C is specified, a blind plug is protruded by up to 8 mm (0.31 inch) from conduit connection.
- \*5: In case of optional code /PP specified, a blind plug is attached to conduit connection on both sides.
- \*6: In case of optional code /GS specified, plugs are not attached.
- \*7: In case of Display and interface code N specified, it is 113 mm (4.45 inch).

● Bottom Process Connection (The drawing below is for Installation code B.)

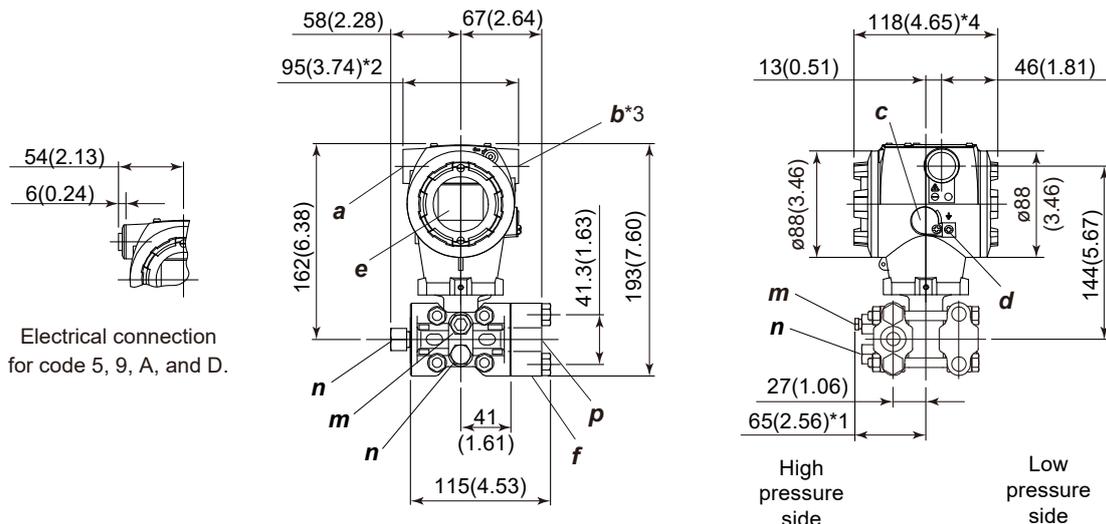
Unit: mm (approx.inch)



<b>a</b>	External indicator Conduit connection (optional)	<b>e</b>	Display (optional)	<b>o</b>	Mounting bracket (optional)
<b>b</b>	Conduit connection	<b>f</b>	Process connector (optional)	<b>p</b>	Process connection
<b>c</b>	Zero adjustment	<b>i</b>	2-inch pipe (O.D. 60.5 mm)		
<b>d</b>	Ground terminal	<b>m</b>	Vent plug		

- \*1: In case of optional codes /K01, /K05, /K41 and /K45 specified, add 15 mm (0.59 inch).
- \*2: In case of optional code /UN specified, plugs are not attached.
- \*3: In case of electrical connection code 7 or C is specified, a blind plug is protruded by up to 8 mm (0.31 inch) from conduit connection.
- \*4: In case of optional code /PP specified, a blind plug is attached to conduit connection on both sides.
- \*5: In case of Display and interface code N specified, it is 113 mm (4.45 inch).

● Universal Flange (The drawing below is for Installation code U.)

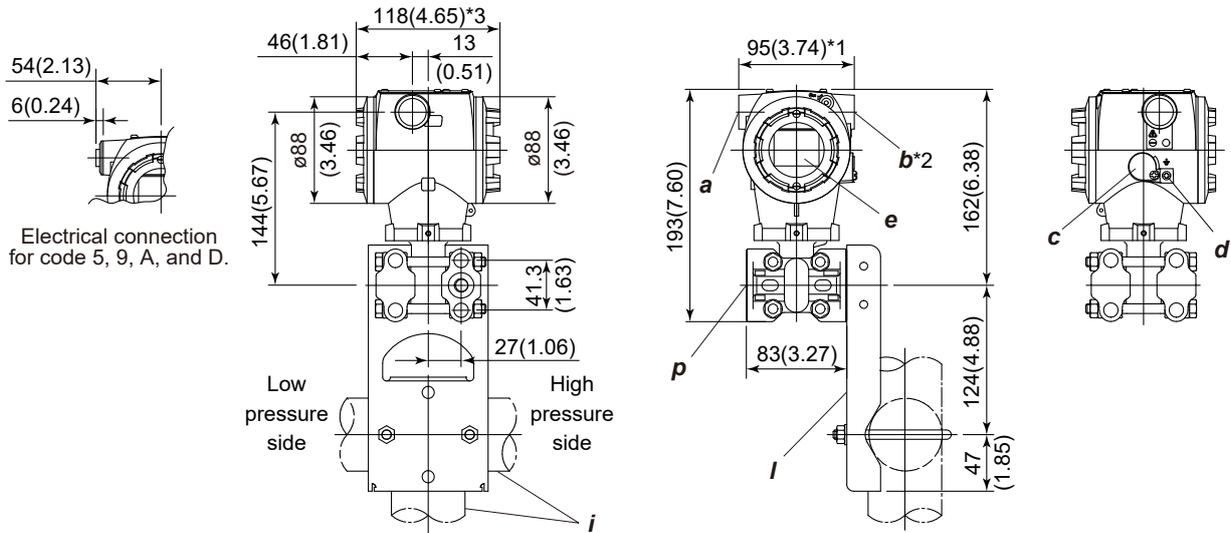


<b>a</b>	External indicator Conduit connection (optional)	<b>d</b>	Ground terminal	<b>m</b>	Vent plug
<b>b</b>	Conduit connection	<b>e</b>	Display (optional)	<b>n</b>	Drain plug
<b>c</b>	Zero adjustment	<b>f</b>	Process connector (optional)	<b>p</b>	Process connection

- \*1: In case of optional codes /K01, /K05, /K41 and /K45 specified, add 15 mm (0.59 inch).
- \*2: In case of electrical connection code 7 or C is specified, a blind plug is protruded by up to 8 mm (0.31 inch) from conduit connection.
- \*3: In case of optional code /PP specified, a blind plug is attached to conduit connection on both sides.
- \*4: In case of Display and interface code N specified, it is 113 mm (4.45 inch).

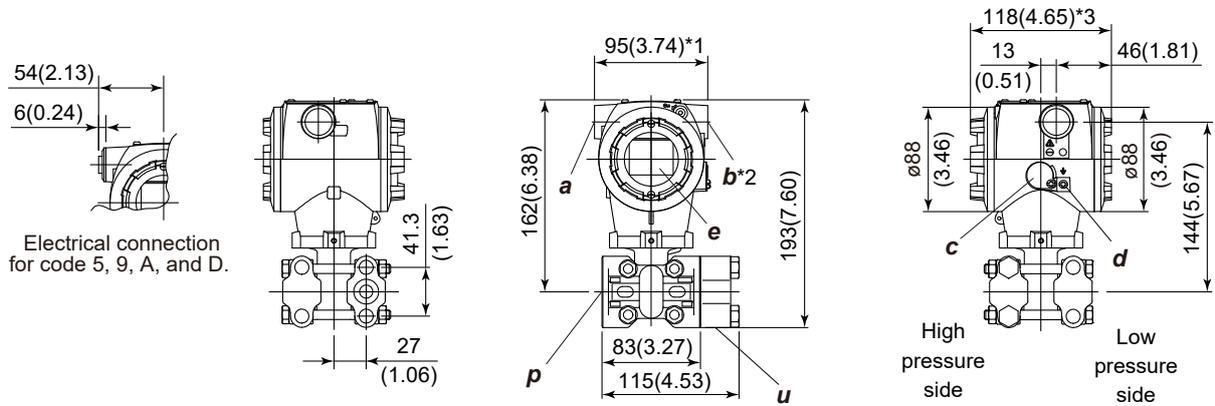
●Option Code /N1

Unit: mm (approx.inch)



<b>a</b> External indicator Conduit connection (optional)	<b>d</b> Ground terminal	<b>l</b> Mounting bracket (Flat-type, optional)
<b>b</b> Conduit connection	<b>e</b> Display (optional)	<b>p</b> Process connection
<b>c</b> Zero adjustment	<b>i</b> 2-inch pipe (O.D. 60.5 mm)	

●Option Code /N2 and /N3



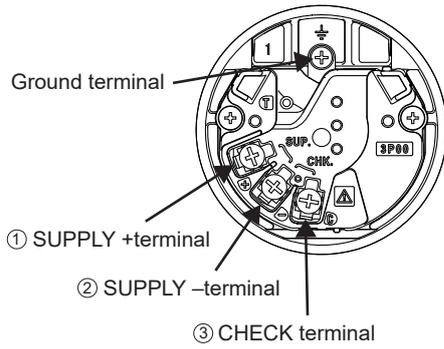
<b>a</b> External indicator Conduit connection (optional)	<b>e</b> Display (optional)
<b>b</b> Conduit connection	<b>p</b> Process connection
<b>c</b> Zero adjustment	<b>u</b> Blind kidney flange
<b>d</b> Ground terminal	

\*1: In case of electrical connection code 7 or C is specified, a blind plug is protruded by up to 8 mm (0.31 inch) from conduit connection.

\*2: In case of optional code /PP specified, a blind plug is attached to conduit connection on both sides.

\*3: In case of Display and interface code N specified, it is 113 mm (4.45 inch).

• Terminal Configuration



• Terminal Wiring

SUPPLY	+	①	Power supply and output terminals
	-	②	
CHECK	+	③	External indicator (ammeter) terminals *1
	-	②	
			⏏ Ground terminal

\*1: When using an external indicator or check meter, the internal resistance must be 10Ω or less. Not available for PROFINET communication type.

**< Ordering Information >**

1. Model, suffix codes, and option codes
2. Calibration range, unit and output mode  
 This product requires sizing to determine the differential pressure range and orifice diameter at the time of ordering. Please contact our sales office.
  - 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 -99999 to 99999. When reverse range is designated, specify Lower Range Value (LRV) as greater than Upper Range Value (URV)
  - 2) Specify only one unit from the table, 'Factory Settings' when shipped.
  - 3) Specify output mode from LINEAR or SQUARE ROOT. When SQUARE ROOT is selected, the smaller value of the range limit must be zero.
3. Display scale, unit and display mode (for transmitters equipped with Display only)  
 Specify either 0 to 100 % or unit scale and 'Range and Unit' for 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 -99999 to 99999. The unit display consists of 6-digit, therefore, if the specified unit is longer than 7 characters excluding '/', the first 6 characters will be displayed on the unit display.  
 Select either LINEAR or SQRT for the display mode.  
 For PROFINET communication, select from the display unit options and select LINEAR when the output mode is LINEAR, and select SQRT when the output mode is SQUARE ROOT.  
 When SQUARE ROOT is selected for display mode, the smaller value of the scale limit must be zero.
4. TAG NO (if required)
5. Parameter Setting (Optional code /CB, /CA, /CK, /CJ)
  - Software damping in second (0.00 to 100.00)
  - Descriptor (up to 16 characters)
  - Message (Optional code: /CA and /CJ): up to 32 characters
  - Memo (Optional code /CB and /CK) up to 32 character
6. Burnout direction setting (for HART protocol) High or Low
7. Network setting (for PROFINET protocol)  
 Specify the IP ADDRESS, SUBNET MASK, DEFAULT GATEWAY, and STATION NAME.  
 If you specify it, please specify a combination of settings that can be communicated.

**< Factory Setting >**

Tag number. (*1)	As specified in order: up to 22 characters (SOFTWARE TAG: up to 32 characters)
Software damping	2.00 s or as 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 torr, Pa abs, hPa abs, kPa abs, MPa abs, mbar abs, bar abs, mmH <sub>2</sub> O abs, mmH <sub>2</sub> O(68°F)abs, mmHg abs, gf/cm <sup>2</sup> abs, kgf/cm <sup>2</sup> abs, inH <sub>2</sub> O abs, inH <sub>2</sub> O(68°F)abs, inHg abs, ftH <sub>2</sub> O abs, ftH <sub>2</sub> O(68°F)abs, atm, or psia. (Only one unit can be specified)
Display setting	Designated value specified in order. (% , or user scaled value.)
Burnout (for HART protocol)	'High' unless otherwise specified in order
Network setting (for PROFINET protocol)	Unless otherwise specified, - IP ADDRESS: 192.168.1.210 - SUBNET MASK: 255.255.255.0 - DEFAULT GATEWAY: 0.0.0.0 - STATION NAME: pressure-transmitter-ejx-s (*2)

\*1: The specified characters will be engraved on the tag plate and written into the main unit (communication parameters) before shipping.  
 If you want to specify characters different from the tag plate, please specify it separately in the software tag.  
 Available characters include uppercase and lowercase letters, numbers, spaces, and the following symbols.

!	#	(	)	+	-	.	/	:	=	_
---	---	---	---	---	---	---	---	---	---	---

For HART communication type, the tag parameter will be written using the first 8 characters. If lowercase letters are included, they will be converted to uppercase.

\*2: The STATION NAME can be a combination of lowercase letters, numbers, and hyphens, up to 40 characters long.

---

**< Related Instruments >**

FieldMate Versatile Device Management Wizard: Refer to GS 01R01A01-01E.

**< Reference >**

1. FieldMate; Trademark of Yokogawa Electric Corporation.
2. Hastelloy; Trademark of Haynes International Inc.
3. HART®: Registered trademark of the FieldComm Group.

Other company names and product names used in this material are registered trademarks or trademarks of their respective owners.

**< 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.