

General Specifications

EJX430A Gauge Pressure Transmitter



GS 01C25E01-01E

The high performance gauge pressure transmitter EJX430A features single crystal silicon resonant sensor and is suitable to measure liquid, gas, or steam pressure. The EJX430A outputs a 4 to 20 mA DC signal corresponding to the measured pressure. It also features quick response, remote setup and monitoring via BRAIN or HART communications, and self-diagnostics. FOUNDATION Fieldbus protocol type is also available.

All EJX series models in their standard configuration, with the exception of the Fieldbus type, are certified by TÜV as complying with SIL 2 for safety requirement.

STANDARD SPECIFICATIONS

Refer to GS 01C25T02-01E for Fieldbus communication type marked with “◇.”

SPAN AND RANGE LIMITS

Measurement Span/Range	MPa	psi (/D1)	bar(/D3)	kgf/cm ² (/D4)
H	Span 2.5 to 500 kPa	10 to 2000 inH ₂ O	0.025 to 5	0.025 to 5
	Range -100 to 500 kPa	-400 to 2000 inH ₂ O	-1 to 5	-1 to 5
A	Span 0.0175 to 3.5	2.5 to 500	0.175 to 35	0.175 to 35
	Range -0.1 to 3.5	-14.5 to 500	-1 to 35	-1 to 35
B	Span 0.08 to 16	12 to 2300	0.8 to 160	0.8 to 160
	Range -0.1 to 16	-14.5 to 2300	-1 to 160	-1 to 160

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PERFORMANCE SPECIFICATIONS

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

For Fieldbus communication type, use calibrated range instead of span in the following specifications.

Specification Conformance

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

Reference Accuracy of Calibrated Span

(includes the effects of terminal-based linearity, hysteresis, and repeatability)

Measurement span		H
Reference accuracy	X ≤ span	±0.04% of Span
	X > span	±(0.005+0.0049 URL/Span)% of Span
X		70 kPa (280inH ₂ O)
URL (upper range limit)		500 kPa (2000inH ₂ O)

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Measurement span		A	B
Reference accuracy	X ≤ span	±0.04% of Span	
	X > span	±(0.005+0.0035 URL/Span)% of Span	
X		0.35 MPa (50 psi)	1.6 MPa (230 psi)
URL (upper range limit)		3.5 MPa (500 psi)	16 MPa (2300 psi)

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

Capsule	Effect
H	±(0.04% Span+0.0125% URL)
A, B	±(0.04% Span+0.009% URL)

Stability (All normal operating condition)

±0.1% of URL per 10 years

Power Supply Effects (Output signal code D and E)

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

Vibration Effects

Less than 0.1% of URL when tested per the requirements of IEC60770-1 field or pipeline with high vibration level (10-60 Hz, 0.21 mm peak to peak displacement/60-2000 Hz 3g)

Mounting Position Effects

Rotation in diaphragm plane has no effect. Tilting up to 90 degree will cause zero shift up to 0.4 kPa (1.6 inH₂O) which can be corrected by the zero adjustment.

Response Time (All capsules) “◇”

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

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 conforming to NAMUR NE43 can be pre-set by option code C2 or C3.

Failure Alarm (Output signal code D and E)

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

Damping Time Constant (1st order)

Amplifier's damping time constant is adjustable from 0.00 to 100.00 sec by software and added to re-sponse time.

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

Update Period "◇"

Pressure: 45 msec

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) "◇"

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

The indicator is configurable to display one or up to three of the following variables periodically.; pressure in %, scaled pressure, measured pressure. See also "Factory Settings" .

Burst Pressure Limits

69 MPa (10,000 psi)

Self Diagnostics

CPU failure, hardware failure, configuration error, and over-range error for pressure and capsule temperature.

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

Signal Characterizer (Output signal code D and E)

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

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

One transistor contact output (sink type) to output the status of user configurable high/low alarm for pressure.

Contact rating : 10.5 to 30 V DC, 120 mA DC max. Refer to 'Terminal Configuration' and 'Wiring Example for Analog Output and Status Output.'

SIL Certification

All the EJX series transmitters except Fieldbus communication type are certified by RWTÜV Systems GmbH in compliance with the following standards;
IEC 61508: 2000; Part1 to Part 7
Functional Safety of Electrical/electronic/programmable electronic related systems; SIL 2 capability for single transmitter use, SIL 3 capability for dual transmitter use.

NORMAL OPERATING CONDITION

(Optional features or approval codes may affect limits.)

Ambient Temperature Limits

-40 to 85°C (-40 to 185°F)
-30 to 80°C (-22 to 176°F) with LCD display

Process Temperature Limits

-40 to 120°C (-40 to 248°F)

Ambient Humidity Limits

0 to 100% RH

Maximum Over Pressure

Capsule	Pressure
H, A	16 MPa (2300 psi)
B	25 MPa (3600 psi)

Working Pressure Limits (Silicone oil)

Maximum Pressure Limits

Capsule	Pressure
H	500 kPa (2000 inH ₂ O)
A	3.5 MPa (500 psi)
B	16 MPa (2300 psi)

Minimum Pressure Limit

See graph below

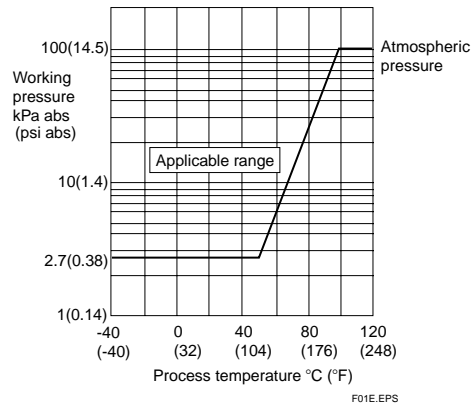


Figure 1. Working Pressure and Process Temperature

Supply & Load Requirements

(Output signal code D and E. 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.

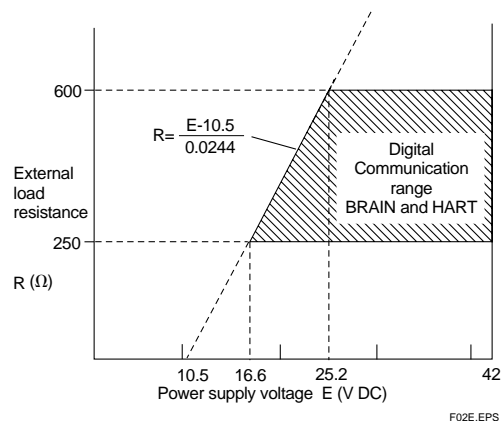


Figure 2. Relationship Between Power Supply Voltage and External Load Resistance

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 type.
- Minimum voltage limited at 16.6 V DC for digital communications, BRAIN and HART

Load (Output signal code D and E)

- 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.

HART**Communication Distance**

Up to 1.5 km (1 mile) when using multiple twisted pair cables. Communication distance varies depending on type of cable used.

Use the following formula to determine cable length for specific applications:

$$L = \frac{65 \times 10^6}{(R \times C)} - \frac{(C_f + 10,000)}{C}$$

Where:

- L = length in meters or feet
- R = resistance in Ω (including barrier resistance)
- C = cable capacitance in pF/m or pF/ft
- C_f = maximum shunt capacitance of receiving devices in pF/m or pF/ft

EMC Conformity Standards  ,  N200

EN 61326, AS/NZS 2064

□ PHYSICAL SPECIFICATIONS**Wetted Parts Materials**

Diaphragm, Cover Flange, Process Connector, Capsule Gasket, and Vent/Drain Plug
Refer to “MODEL AND SUFFIX CODE.”

Process Connector Gasket

PTFE Teflon
fluorinated rubber for option code N2 and N3

Non-wetted Parts Materials**Bolting**

ASTM-B7M carbon steel, 316 SST(ISO A4-70)
stainless steel, or ASTM grade 660 stainless steel

Housing

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

Degrees of Protection

IP67, NEMA4X, JIS C0920

Cover O-rings

Buna-N

Name plate and tag

304 SST

Fill Fluid

Silicone, fluorinated oil (option)

Weight

[Installation code 7, 8 and 9]
2.6 kg(5.7 lb) without integral indicator, mounting bracket, and process connector.

Connections

Refer to “MODEL AND SUFFIX CODE.”

< Related Instruments >

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

< Reference >

1. Teflon; Trademark of E.I. DuPont de Nemours & Co.
 2. Hastelloy; Trademark of Haynes International Inc.
 3. HART; Trademark of the HART Communication Foundation.
 4. FOUNDATION Fieldbus; Trademark of Fieldbus Foundation.
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MODEL AND SUFFIX CODES

Model	Suffix Codes	Description
EJX430A	Gauge pressure transmitter
Output Signal	-D -E -F	4 to 20 mA DC with digital communication (BRAIN protocol) 4 to 20 mA DC with digital communication (HART protocol) Digital communication (FOUNDATION Fieldbus protocol, refer to GS 01C25T02-01E)
Measurement span (capsule)	H A B	2.5 to 500 kPa (10 to 2000 inH ₂ O) 0.0175 to 3.5 MPa (2.5 to 500 psi) 0.08 to 16 MPa (12 to 2300 psi)
Wetted parts material*2	S	Refer to "Wetted Parts Material" Table below.
Process connections	0 1 2 3 4 ☆ 5	without process connector (Rc1/4 female on the cover flanges) with Rc1/4 female process connector with Rc1/2 female process connector with 1/4 NPT female process connector with 1/2 NPT female process connector without process connector (1/4 NPT female on the cover flanges)
Bolts and nuts material	J G C	ASTM-B7M carbon steel 316SST(ISO A4-70) stainless steel ASTM grade 660 stainless steel
Installation	-3 -7 -8 ☆ -9	Vertical piping, right side high pressure, and process connection down side Vertical piping, left side high pressure, and process connection down side Horizontal piping and right side high pressure Horizontal piping and left side high pressure
Amplifier housing	1	Cast alluminum alloy
Electrical connection	☆ 0 2 4 5 7 9	G1/2 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 G1/2 female, two electrical connections and a blind plug 1/2 NPT female, two electrical connections and a blind plug M20 female, two electrical connections and a blind plug
Integral indicator	D E ☆ N	Digital indicator Digital indicator with the range setting switch*1 None
Mounting bracket	☆ B D N	304 SST 2-inch pipe mounting, flat type (for horizontal piping) 304 SST 2-inch pipe mounting, L type (for vertical piping) None

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The "☆" marks indicate the most typical selection for each specification.

*1: Not applicable for output signal code F.

*2: ⚠ Users must consider the characteristics of selected wetted parts material and influence of process fluids. Specifying inappropriate materials has the potential to cause serious damage to human body and plant facilities resulted from an unexpected leak of the corrosive process fluids.

Table. Wetted Parts Materials

Wetted parts material code	Cover flange and process connector	Capsule	Capsule gasket	Drain/Vent plug
S #	ASTM CF-8M*1	Hastelloy C-276 *2 (Diaphragm) 316L SST (Others)	Teflon-coated 316L SST	316 SST

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*1: Cast version of 316 SST. Equivalent to SCS14A.

*2: Hastelloy C-276 or ASTM N10276.

The '# marks indicate the construction materials conform to NACE material recommendations per MR01-75. For the use of 316 SST material, there may be certain limitations for pressure and temperature. Please refer to NACE standards for details.

OPTIONAL SPECIFICATIONS (For Explosion Protected type) “◇”

Item	Description	Code
Factory Mutual (FM)	FM Explosionproof Approval *1 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 (NEMA 4X) Temperature class: T6, Amb. Temp.: -40 to 60°C (-40 to 140°F)	FF1
	FM Intrinsically safe Approval *1*3 Intrinsically Safe for Class I, Division 1, Groups A, B, C & D, Class II, Division 1, Groups E, F & G and Class III, Division 1, Class I, Zone 0, in Hazardous Locations, AEx ia IIC Nonincendive for Class I, Division 2, Groups A, B, C & D, Class II, Division 2, Groups F & G, and Class III, Division 1, Class I, Zone 2, Group IIC, in Hazardous Locations Enclosure: "NEMA 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*3	FU1
CENELEC ATEX	CENELEC ATEX (KEMA) Flameproof Approval *1 II 2G, 1D EExd IIC T4, T5, T6 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 70°C (-58 to 158°F) Max. process Temp.(Tp): T4: 120°C (248°F), T5: 100°C (212°F), T6: 85°C (185°F) Max. surface Temp. for dust-proof: T80°C (Tamb: -40 to 40°C, Tp:80°C), T100°C (Tamb: -40 to 60°C, Tp:100°C), T120°C (Tamb: -40 to 80°C, Tp:120°C) Type of protection: IP66 and IP67	KF2
	CENELEC ATEX (KEMA) Intrinsically safe Approval *1*3 II 1G, 1D EEx ia IIC T4 Amb. Temp.(Tamb) for gas-proof: -50 to 60°C (-58 to 140°F) Maximum Process Temp.(Tp) for gas-proof: 120°C Electrical data: Ui=30 V, li=200 mA, Pi=0.9 W, Ci=10 nF, Li=0 mH Max. surface Temp. for dust-proof: T85°C (Tamb: -40 to 60°C, Tp:80°C), T100°C (Tamb: -40 to 60°C, Tp:100°C), T120°C (Tamb: -40 to 60°C, Tp:120°C) Type of protection: IP66 and IP67	KS2
	Combined KF2, KS2 and Type n *1*3 Type n: II 3G EEx nL IIC T4, Amb. Temp.: -50 to 60°C (-50 to 140°F) Ui=30 V DC, Ci=10 nF, Li=0 mH	KU2
Canadian Standards Association (CSA)	CSA Explosionproof Approval *2 [For CSA C22.2] 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 [For CSA E60079] Flameproof for Zone 1, Ex d IIC T6...T4 Enclosure: IP66 and 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 70°C(-58 to 158°F) for T6	CF1
	CSA Intrinsically safe Approval *2*3 [For CSA C22.2] 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 E, F & G, Class III, Division 1 Enclosure: Type 4X, Temp. Code: T4 Amb. Temp.: -50 to 60°C(-58 to 140°F) Electrical Parameters: [Intrinsically Safe] Vmax=30V, Imax=200mA, Pmax=0.9W, Ci=10nF, Li=0 [Nonincendive] Vmax=30V, Ci=10nF, Li=0 [For CSA E60079] Ex ia IIC T4, Ex nL IIC T4 Amb. Temp.: -50 to 60°C(-58 to 140°F), Max. Process Temp.: 120°C(248°F) Enclosure: IP66 and IP67 Electrical Parameters: [Ex ia] Ui=30V, li=200mA, Pi=0.9W, Ci=10nF, Li=0 [Ex nL] Ui=30V, Ci=10nF, Li=0	CS1
	Combined CF1 and CS1 *2*3	CU1

T05E.EPS

- *1: Applicable for electrical connection code **2, 4, 7, and 9.**
- *2: Applicable for electrical connection code **2 and 7.**
- *3: Not applicable for option code **/AL.**

OPTIONAL SPECIFICATIONS

Item		Description	Code	
Painting	Color change	Amplifier cover only	P□	
		Amplifier cover and terminal cover, Munsell 7.5 R4/14	PR	
	Coating change	Anti-corrosion coating*1	X2	
Lightning protector	Transmitter power supply voltage: 10.5 to 32 V DC (10.5 to 30 V DC for intrinsically safe type, 9 to 32 V DC for Fieldbus communication 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*2	Transistor output (sink type) Contact rating : 10.5 to 30 V DC, 120 mA DC(max) Low level : 0 to 2 V DC		AL	
Oil-prohibited use*3	Degrease cleansing treatment		K1	
	Degrease cleansing treatment and with fluorinated oilfilled capsule. Operating temperature -20 to 80°C (-4 to 176°F)		K2	
Oil-prohibited use with dehydrating treatment*3	Degrease cleansing treatment and dehydrating treatment		K5	
	Degrease cleansing treatment and dehydrating treatment with fluorinated oilfilled capsule. Operating temperature -20 to 80°C (-4 to 176°F)		K6	
Capsule fill fluid	Fluorinated oil filled in capsule		K3	
Calibration units*4	P calibration (psi unit)		(See Table for Span and Range Limits.) D1	
	bar calibration (bar unit)			D3
	M calibration (kgf/cm ² unit)			D4
Long vent*5	Total length: 119 mm (standard: 34 mm); Total length when combining with option code K1, K2, K5, and K6: 130 mm. Material: 316 SST.		U1	
Output limits and failure operation*6	Failure alarm down-scale : Output status at CPU failure and hardware error is -5%, 3.2mA DC or less.		C1	
	NAMUR NE43 Compliant Output signal limits : 3.8mA to 20.5 mA	Failure alarm down-scale : Output status at CPU failure and hardware error is -5%, 3.2mA DC or less.	C2	
		Failure alarm up-scale : Output status at CPU failure and hardware error is 110%, 21.6 mA or more.	C3	
Body option*7	Right side high pressure, without drain and vent plugs		N1	
	N1 and Process connection, based on IEC61518 with female thread on both sides of cover flange, with blind kidney flanges on back		N2	
	N2, and Material certificate for cover flange, diaphragm, capsule body, and blind kidney flange		N3	
Stainless steel tag plate	304 SST stainless steel tag plate wired onto transmitter		N4	
Data Configuration at factory*8	Data configuration for HART communication type	Software damping, Descriptor, Message	CA	
	Data configuration for BRAIN communication type	Software damping	CB	
Material Certificate*9	Cover flange *10		M01	
	Cover flange, Process connector *11		M11	
Pressure test/ Leak test Certificate*16	Test Pressure: 500kPa(2000 inH ₂ O)*12		Nitrogen(N ₂) Gas*15 Retention time: one minute	
	Test Pressure: 3.5 MPa(500 psi)*13			T01
	Test Pressure: 16 MPa(2300 psi)*14			T12

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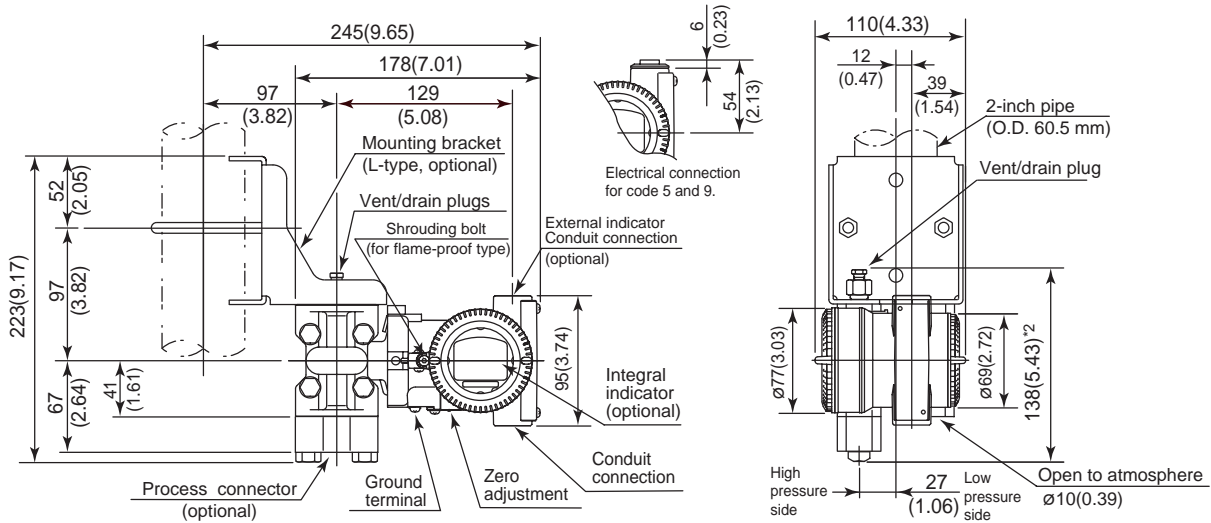
- *1: Not applicable with color change option.
- *2: When this option code is specified, check terminals are not available. Not applicable for output signal code F.
- *3: Applicable for wetted parts material code S.
- *4: The unit of MWP (Max. working pressure) on the name plate of a housing is the same unit as specified by option codes D1, D3, and D4.
- *5: Applicable for vertical impulse piping type (installation code 3 or 7) and wetted parts material code S.
- *6: Applicable for output signal codes D and E. The hardware error indicates faulty amplifier or capsule.
- *7: Applicable for wetted parts material code S; process connection codes 3, 4, and 5; installation code 9; and mounting bracket code N. Process connection faces on the other side of zero adjustment screw.
Also see 'Ordering Information'.
- *8: Material traceability certification, per EN 10204 3.1B.
- *9: Applicable for process connections code 0 and 5.
- *10: Applicable for process connections code 1, 2, 3, and 4.
- *11: Applicable for process connections code 1, 2, 3, and 4.
- *12: Applicable for capsule code H.
- *13: Applicable for capsule code A.
- *14: Applicable for capsule code B.
- *15: Pure nitrogen gas is used for oil-prohibited use (option codes K1, K2, K5, and K6).
- *16: The unit on the certificate is always Pa unit regardless of selection of option code D1, D3 or D4.

DIMENSIONS

● Model EJX430A

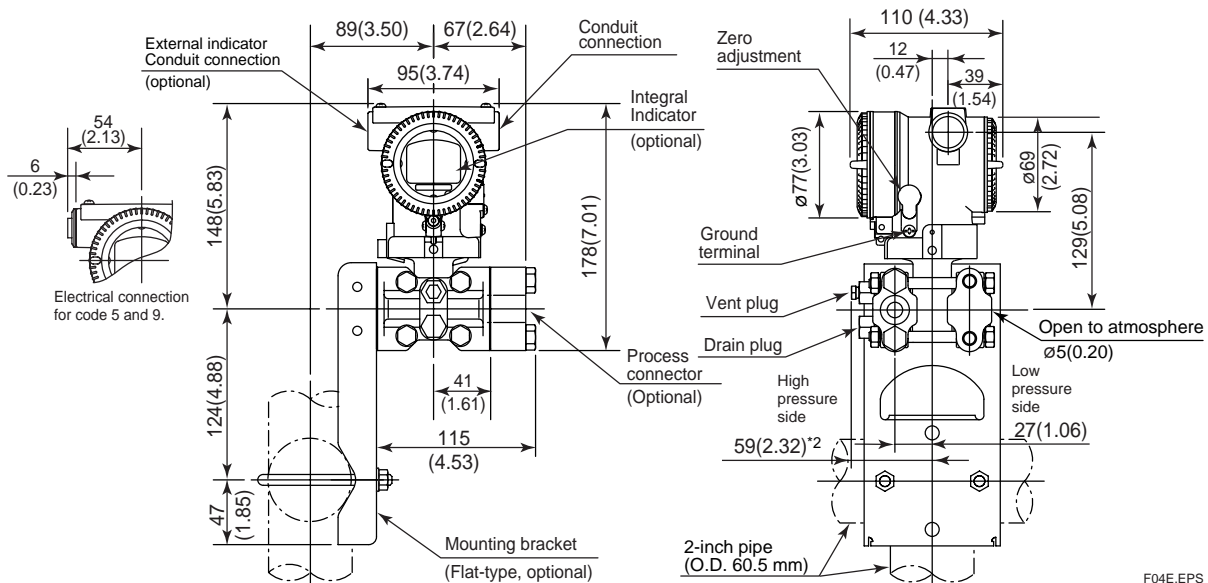
Vertical Impulse Piping Type (INSTALLATION CODE '7') (For CODE '3', refer to the notes below.)

Unit : mm (approx.inch)



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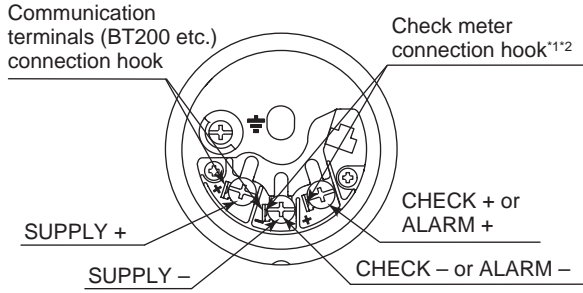
Horizontal Impulse Piping Type (INSTALLATION CODE '9') (For CODE '8', refer to the notes below.)



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- * 1: When Installation code '3' or '8' is selected, high and low pressure side on above figure are reversed. (i.e. High pressure side is on the right side.)
- * 2: When option code K1, K2, K5 or K6 is specified, add 15mm(0.59inch) to the value in the figure.

● Terminal Configuration



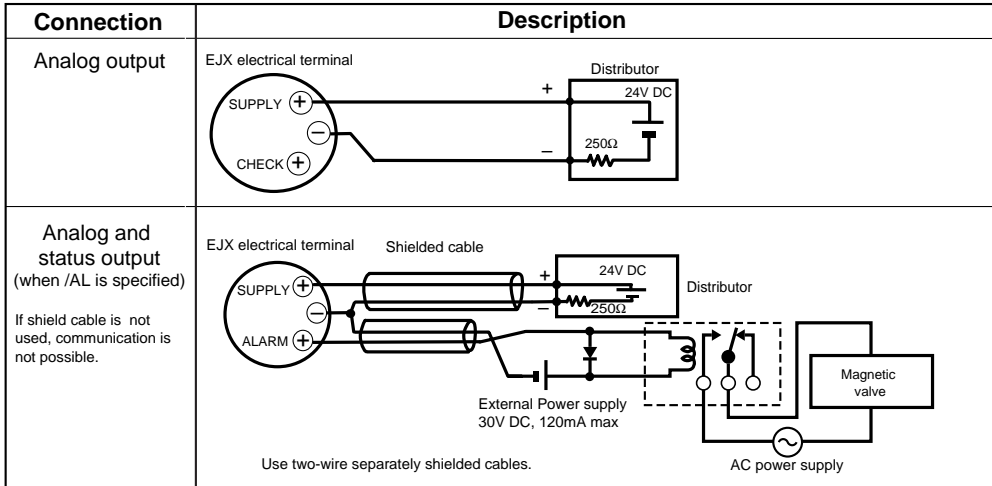
● Terminal Wiring

SUPPLY	+ -	Power supply and output terminal
CHECK or ALARM	+ -	External indicator (ammeter) terminal ¹ *2 or Status contact output terminal ² (when /AL is specified)
		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 fieldbus communication type.

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● Wiring Example for Analog Output and Status Output



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< Ordering Information > “◇”

Specify the following when ordering

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 Lower Range Value(LRV) as greater than Upper Range Value(URV.)
 - 2) Specify only one unit from the table, 'Factory Settings' when shipped.'
3. Display scale and units (for transmitters equipped with integral indicator only)

Specify either 0 to 100 % or engineering unit scale and '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. 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.
4. Tag Number (if required)

For BRAIN communication type, specify up to 16 letters. The specified letters will be written in the amplifier memory and engraved on the tag plate. For HART communication type, specify software tag (up to 8 letters) to be written on the amplifier memory and Tag number (up to 16 letters) to be engraved on the tag plate separately.

5. Other factory configurations (if required)

Specifying option code **CA** or **CB** will allow further configuration at factory. Following are configurable items and setting range.

- [/CA: For HART communication type]
- 1) Descriptor (up to 16 characters)
 - 2) Message (up to 30 characters)
 - 3) Software damping in second (0.00 to 100.00)
- [/CB: For BRAIN communication type]
- 1) Software damping in second (0.00 to 100.00)

< Factory Setting > “◇”

Tag number	As specified in order
Software damping ^{*1}	'2.00 sec' 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 mmH ₂ O, mmHg, Pa, hPa ^{*2} , kPa, MPa, mbar, bar, gf/cm ² , kgf/cm ² , inH ₂ O, inHg, ftH ₂ O, ftHg or psi. (Only one unit can be specified)
Display setting	Designated value specified in order. (% or user scaled value.)

T07E.EPS

*1: To specify these items at factory, option code **CA** or **CB** is required.

*2: Not available for HART protocol type.