General Specifications

EJXC40A
Digital Remote Sensor

DPharp EJX™

GS 01C25W05-01EN

EJXC40A Digital Remote Sensor (DRS) Transmitter connects two pressure sensors, primary (high pressure side) and secondary (low pressure side) in a remote location, with DRS dedicated communication cable to measure differential pressure. EJXC40A is suitable to measure liquid, gas, or steam flow as well as liquid level, density and pressure and outputs a 4 to 20 mA DC signal corresponding to the measured differential pressure. Monitoring or parameter setting can be remotely done via HART communication.

EJXC40A is certified by certification body as complying with SIL 2 for safety requirement. (Combination with INMETRO or NEPSI intrinsically safe approval is pending.)

[Diaphragm Seal System]

For the specifications of the diaphragm seal system with a direct mount flanged diaphragm seal, please also refer to GS 01C26W01-01EN.



Digital Remote Sensor	Appricable Transmitter
EJXC40A	EJX530A, EJX630A

EJXC40A represent a seal system type.

CE and other certification are acquired for model codes of EJX530A or EJX630A transmitter. See section 'Model and Suffix Codes' of this document.

■ STANDARD SPECIFICATIONS

□ SPAN AND RANGE LIMITS

Differential Pressure (DP)

The transmitter outputs differential pressure, using the two transmitters of same model and capsule for primary (high pressure side) and secondary (low pressure side) pressure sensors.

[When using EJX530A Gauge Pressure Transmitter]

Measurement Span/Range		MPa	psi (/D1)	bar (/D3)	kgf/cm² (/D4)
A	Span	2 to 200 kPa	0.3 to 29	0.02 to 2	0.02 to 2
	Range	−200 to 200 kPa	−29 to 29	−2 to 2	−2 to 2
B	Span	0.01 to 2	1.5 to 290	0.1 to 20	0.1 to 20
	Range	−2 to 2	−290 to 290	−20 to 20	−20 to 20
C	Span	0.05 to 10	7.3 to 1450	0.5 to 100	0.5 to 100
	Range	−10 to 10	−1450 to 1450	−100 to 100	−100 to 100
D	Span	0.35 to 50	50.8 to 7200	3.5 to 500	3.5 to 500
	Range*1	−50 to 50	−7200 to 7200	−500 to 500	−500 to 500

[When using EJX630A Gauge Pressure Transmitter]

Measurement Span/Range		MPa	psi (/D1)	bar (/D3)	kgf/cm² (/D4)
A	Span	2 to 200 kPa	0.3 to 29	0.02 to 2	0.02 to 2
	Range	−200 to 200 kPa	−29 to 29	−2 to 2	−2 to 2
B	Span	0.01 to 2	1.5 to 290	0.1 to 20	0.1 to 20
	Range	−2 to 2	−290 to 290	−20 to 20	−20 to 20
C	Span	0.05 to 10	7.3 to 1450	0.5 to 100	0.5 to 100
	Range	−10 to 10	−1450 to 1450	−100 to 100	−100 to 100
D	Span	0.35 to 70	50.8 to 10150	3.5 to 700	3.5 to 700
	Range*1	−70 to 70	−10150 to 10150	−700 to 700	−700 to 700

*1: When measurement span exceeds 16 MPa, measurement range can be set within the following range; 0 to 50 MPa or -50 to 0 MPa.

YOKOGAWA

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□ PERFORMANCE SPECIFICATIONS

Unless otherwise mentioned, data in the tables show the specifications of a stand-alone pressure transmitter.
Zero-based calibrated span, linear output, wetted parts material code 'S' and silicone oil, unless otherwise mentioned.

Specification Conformance

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

Reference Accuracy of Calibrated Span

The DRS transmitter has the pressure measurement accuracy of primary (high pressure side) and secondary (low pressure side) pressure sensors. The differential pressure accuracy shall be defined as a computed value based on the accuracy of those two pressure sensors.
The tables below show the accuracy of each pressure sensor and computation of differential pressure accuracy.

Note) Both primary and secondary pressure transmitters are shipped with the zero-based calibration range with URL value as its upper range value(URV). The pressure range can not be specified when ordering.

○ **EJX530A**

Measurement span	Reference Accuracy	
	Span≥X	Span<X
A	±0.04% of Span	±(0.004 URL/ span) % of Span
B		±(0.005+0.0035 URL/ span) % of Span
C		
D		±(0.004 URL/ span) % of Span

Measurement span	A	B	C	D
X	20 kPa (2.9 psi)	0.2 MPa (29 psi)	1 MPa (145 psi)	5 MPa (720 psi)
URL (Upper range limit)	200 kPa (29 psi)	2 MPa (290 psi)	10 MPa (1450 psi)	50 MPa (7200 psi)

○ **EJX630A**

Measurement span	Reference Accuracy	
	Span≥X	Span<X
A	±0.04% of Span	±(0.02+0.007 URL/ span) % of Span
B		±(0.005+0.0035 URL/ span) % of Span
C		
D		

Measurement span	A	B	C	D
X	70 kPa (10.2 psi)	0.2 MPa (29 psi)	1 MPa (145 psi)	7 MPa (1015 psi)
URL (Upper range limit)	200 kPa (29 psi)	2 MPa (290 psi)	10 MPa (1450 psi)	70 MPa (10150 psi)

○ **EJX630A with /HAC**

Measurement span	Reference Accuracy	
	Span≥X	Span<X
A	±0.025% of Span	±(0.008+0.006 URL/ span) % of Span
B		±(0.005+0.002 URL/ span) % of Span
C		
D		

Differential Pressure Accuracy (for DRS system)

Measurement span	Reference Accuracy
A	$\pm\sqrt{(\text{accuracy of primary})^2 + (\text{accuracy of secondary})^2}$ of span
B	
C	
D	

example) $\pm\sqrt{0.04^2+0.04^2}$ = ±0.056% (when X≦span)

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

○ **EJX530A**
±(0.15% of Span + 0.15% of URL)

○ **EJX630A**
A capsule: ±(0.04% of Span + 0.075% of URL)
B capsule: ±(0.04% of Span + 0.018% of URL)
C and D capsule: ±(0.04% of Span + 0.009% of URL)

Stability (All normal operating condition)

±0.1% of URL for 10 years

Power Supply Effects

±0.005% per Volt (from 21.6 to 42 V DC)

Vibration Effects

Amplifier housing code 1 and 3:
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 displacement/60-2000 Hz 3 g)
Amplifier housing code 2:
Less than ±0.1% of URL when tested per the requirements of IEC60770-1 field with general application or pipeline with low vibration level (10-60 Hz 0.15 mm displacement /60-500 Hz 2 g)

Mounting Position Effects

Rotation in diaphragm plane has no effect. Tilting up to 90 degree will cause zero shift up to 0.21 kPa (0.84 inH_2O) which can be corrected by the zero adjustment.

Response Time (All capsules)

250 ms
Provided that the amplifier software damping and the pressure damping of both primary and secondary sensors are set to 0.00 s. Dead time is included. The amplifier software damping can be set within 0.00 to 100.00 s, and added to the response time.
Update Period: 90 ms.

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□ FUNCTIONAL SPECIFICATIONS

Output
Two wire 4 to 20 mA DC output with digital communications, linear or square root programmable. HART FSK protocol are superimposed on the 4 to 20 mA signal.
Output range: 3.8 mA to 21.6 mA
Output limits conforming to NAMUR NE43 can be pre-set by option code C2 or C3.

Failure Alarm
Output status at CPU failure and hardware error;
Up-scale: 110%, 21.6 mA DC or more (standard)
Down-scale: −2.5%, 3.6 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%, 21.6 mA or more	Holds to a specified value within the output range from 3.8 mA to 21.6 mA	Normal output
Option Code	/C1	-1.25%, 3.8 mA or less		
	/C2	-1.25%, 3.8 mA or less		
	/C3	103.1%, 20.5 mA or more		

Damping Time Constant (1st order)
Amplifier's damping time constant is adjustable from 0.00 to 100.00 s by software and added to response time.

Update Period
Differential pressure: 90 ms

Zero Adjustment Limits

○ **Differential pressure**
Zero can be fully elevated or suppressed, within the lower and upper range limits of differential pressure.

○ **Pressure**
Zero can be fully elevated or suppressed so that setting range can be within the capsule range limits.

External Zero Adjustment
External zero is continuously adjustable with 0.01% incremental resolution of span. Applicable only for differential pressure.

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 three of the following variables periodically;
PV in %, PV in engineering unit, differential pressure, pressure (high/low pressure side), capsule temperature (high /low pressure side)

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

Burst Pressure Limits

○ **EJX530A**
A, B and C capsule: 30 MPa
D capsule: 132 MPa

○ **EJX630A**
A, B and C capsule: 50 MPa
D capsule: 182 MPa

Lightning protector
DRS adopts a lightning prptector on primary side of EJXC40A DRS system as standard.
Allowable current: Max. 5000A(8/20us) 5 times, repeating 200A(10/1000us), 300times.

Self Diagnostics
CPU failure, hardware failure, configuration error, process alarm for pressure or capsule temperature. User-configurable process high/low alarm for pressure or capsule temperature is also available, and communication error between Primary (High pressure side) and Secondary (Low pressure side).

NE107 Field Diagnostic Function
In NAMUR recommendation NE107, alarms are standardized into four status signals (Failure, Function Check, Out of Specification, Maintenance Required).
This alarm management function can deliver recommended actions and appropriate diagnosis information for alarms to suitable persons.

Advanced Diagnostics (optional)
- Impulse line blockage detection
  The impulse line condition can be calculated and detected by extracting the fluctuation component from the pressure signal.
- Heat trace monitoring (For only primary)
  The change of the process connection temperature calculated by using the two temperature sensors built in the EJX enables to detect the heat trace breakage or the abnormal temperature due to the failure.

Signal Characterizer
User-configurable 31-segment signal characterizer for 4 to 20 mA output.

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□ 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

○ **EJX530A**

Capsule	Pressure
A and B	4 MPa (580 psig)
C	20 MPa (2900 psig)
D	75 MPa (10800 psig)

○ **EJX630A**

Capsule	Pressure
A	4 MPa (580 psig)
B	16 MPa (2300 psig)
C	25 MPa (3600 psig)
D	105 MPa (15200 psig)

Working Pressure Limits (Silicone oil)

Maximum Pressure Limits

○ **EJX530A**

Capsule	Pressure
A	200 kPa (29 psig)
B	2 MPa (290 psig)
C	10 MPa (1450 psig)
D	50 MPa (7200 psig)

○ **EJX630A**

Capsule	Pressure
A	200 kPa (29 psig)
B	2 MPa (290 psig)
C	10 MPa (1450 psig)
D	70 MPa (10150 psig)

Minimum Pressure Limit

See graph below

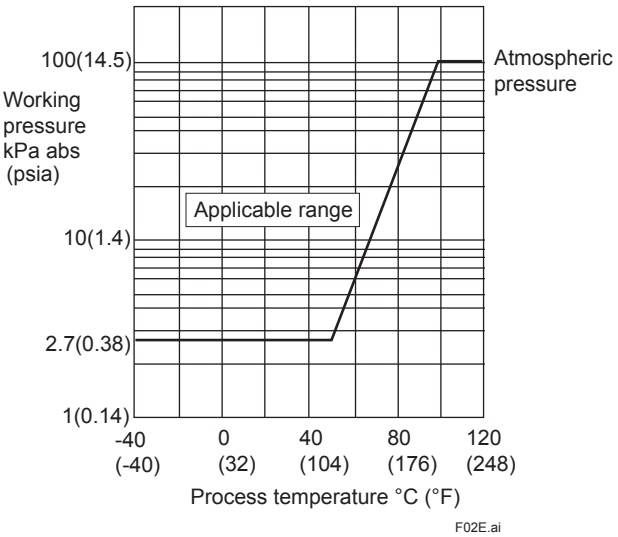

Figure 1. Working Pressure and Process Temperature

Supply & Load Requirements

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

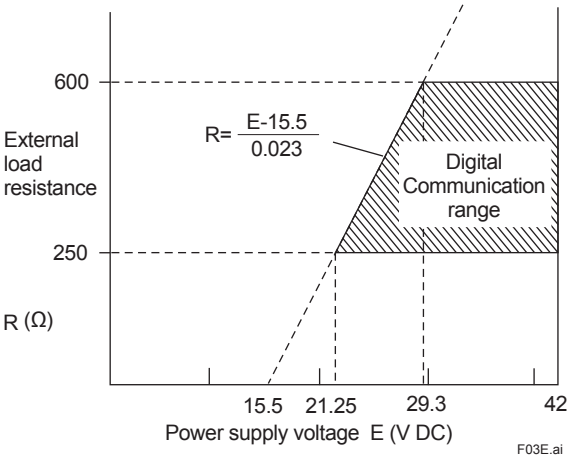

Figure 2. Relationship Between Power Supply Voltage and External Load Resistance

Supply Voltage

15.5 to 42 V DC for general use and flameproof type.
15.5 to 30 V DC for intrinsically safe or non-incendive.

Minimum voltage limited at 21.25 V DC for digital communications.

Load

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

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Communication Requirements
(Approval codes may affect electrical requirements.)

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

Load capacitance
0.22 µF or less

Load inductance
3.3 mH or less

Input impedance of communicating device
10 kΩ or more at 2.4 kHz.

EMC Conformity Standards
EN 61326-1 Class A, Table2
EN 61326-2-3

European Pressure Equipment Directive 2014/68/EU
Sound Engineering Practice (for all capsules)

With option code /PE3 (for D capsule)
Category III, Module H, Type of Equipment: Pressure Accessory-Vessel, Type of Fluid: Liquid and Gas, Group of Fluid: 1 and 2

EU RoHS Directive
EN IEC 63000

Safety Requirement Standards
EN 61010-1, C22.2 No.61010-1
- Installation category: I
- Pollution degree: 2
- Indoor/Outdoor use

SIL Certification
EJXC40A is certified by certification body in compliance with the following standards;
IEC 61508: 2010; Part1 to Part 7
Functional Safety of Electrical/electronic/programmable electronic related systems; SIL 2 capability for single transmitter use, SIL 3 capability for dual transmitter use.

□ PHYSICAL SPECIFICATIONS

Wetted Parts Materials
Diaphragm, Process Connector
Refer to “MODEL AND SUFFIX CODES.”

Non-wetted Parts Materials

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

Pipe
Polypropylene

Cover O-rings
Buna-N, fluoro-rubber (optional)

Name plate and tag
316 SST

Fill fluid
Silicone, Fluorinated oil (optional)

DRS cable
Cable Outer Diameter: 8.7±0.2 mm
Cable Length : 45 m (maximum)
Rated Voltage : 30 V (AC)
Ambient Temperature Limit : -40 to 85 degC
Outer Sheath Material : PVC
Flame Resistance : UL VW-1
Applicable Standard : UL20276

Cable grand
Nickel-plated brass

Weight
Capsule A, B and C: 1.2 kg (2.6 lb)*
Capsule D: 1.4 kg (3.1 lb)*
*: Without integral indicator and mounting bracket.
Add 1.5 kg (3.3 lb) for Amplifier housing code 2.
Communication cable: 0.1 kg/m

Connections
Refer to “MODEL AND SUFFIX CODES.”

< Related Instruments>
Power Distributor: Refer to GS 01B04T01-02E or GS 01B04T02-02E

< Reference >
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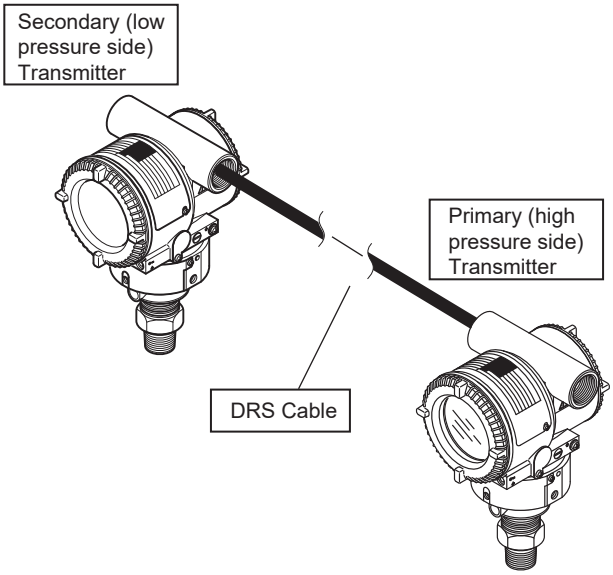
■ MODEL AND SUFFIX CODES

EJXC40A digital remote sensor requires specifying two transmitters independently as primary and secondary in addition to specifying its own model, suffix and option codes.

This GS shows the model, suffix and option codes when using a EJX530A/EJX630A gauge pressure transmitters as primary (high pressure side) and secondary (low pressure side) sensors. When using a diaphragm seal system for primary and secondary sensors, please also refer to the GS for Diaphragm Seal System (GS 01C25W01-01EN).



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EJXC40A Digital Remote Sensor

EJXC40A Digital Remote Sensor
- Primary (High pressure side) EJX530A or EJX630A Gauge Pressure Trasmitters Output Signal Code “-P”
- Secondary (Low pressure side) EJX530A or EJX630A Gauge Pressure Trasmitters Output Signal Code “-S”

Digital Remote Sensor

Model	Suffix Code	Description		
EJXC40A	. . . . .	Digital Remote Sensor		
Measurement Type	**-D**	Differential Pressure		
Primary Style (High pressure side)	**S**	Screw mount		
Secondary Style (Low pressure side)	**S**	Screw mount		
Digital Remote Sensor	**R**	Digital Remote Sensor		
Process Connection for Primary	**T**	With Screw mounted		
Wetted parts for primary	**L**	Diaphragm Hastelloy C-276 *1#	Process connector 316L SST *4#	Others 316L SST# or F316L SST#
	A	Hastelloy C-276 *1#	Hastelloy C-276 *1#	Hastelloy C-276 *1#
Process Connection for Secondary	**T**	With Screw mounted		
Wetted parts for Secondary	**L**	Diaphragm Hastelloy C-276 *1#	Process connector 316L SST *4#	Others 316L SST# or F316L SST#
	A	Hastelloy C-276 *1#	Hastelloy C-276 *1#	Hastelloy C-276 *1#
Fill Fluid	**G**	For Screw Mounted	Process temperature -40 to +120°C*3 (−40 to 248°F)	Ambient Temperature −40 to 85°C*2*3 (−40 to 185°F)
Accessory for primary	**-N**	Always N		
Accessory for Secondary	**N**	Always N		

*1: Hastelloy C-276 or ASTM N10276.
*2: -30 to 80 °C when an integral Indictor is specified.
*3: -20 to 80 °C when a fluorinated oil filled capsule is specified.
*4: Intergranular corrosion test passed according to ASTM A262 Practice E.

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.

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[When using EJX530A as a pressure sensor]

EJX530A Gauge Pressure Transmitter

Model	Suffix Codes	Description
EJX530A	. . . . .	Gauge pressure transmitter
Output signal	**-P**	Primary for Digital Remote Sensor, 4 to 20 mA DC with digital communication (HART 7 protocol)
	-S	Secondary for Digital Remote Sensor
Measurement Span (capsule) of pressure	**A**.	8 to 200 kPa (1.16 to 29 psi)
	B.	0.04 to 2 MPa (5.8 to 290 psi)
	C.	0.2 to 10 MPa (29 to 1450 psi)
	D.	1 to 50 MPa (145 to 7200 psi)
Wetted parts material[*2]		Diaphragm / Process connector / Others
	S.	Hastelloy C-276[*1#] / 316L SST [*10#] / 316L SST[#] or F316L SST[#]
	H.	Hastelloy C-276[*1#] / Hastelloy C-276[*1#] / Hastelloy C-276[*1#]
Process connections	**4**	1/2 NPT female
	7	1/2 NPT male
	8	G1/2 DIN 16 288 male[*3]
	9	M20×1.5 DIN 16 288 male[*3]
	P.	For Diaphragm Seal System[*7*9]
--------	**N**.	Always N
--------	**-0**	Always 0
Amplifier housing	**1**	Cast aluminum alloy
	3	Cast aluminum alloy with corrosion resistance properties[*4]
	2	ASTM CF-8M stainless steel[*5]
Electrical connection		
For Primary	**F**	G 1/2 female, two electrical connections
	2	1/2 NPT female, two electrical connections
	4	M20 female, two electrical connections
For Secondary	**5**	G1/2 female, two electrical connections with a blind plug[*6]
	7	1/2 NPT female, two electrical connections with a blind plug[*6]
	9	M20 female, two electrical connections with a blind plug[*6]
	A.	G1/2 female, two electrical connections and a 316 SST blind plug
	C.	1/2 NPT female, two electrical connections and a 316 SST blind plug
	D.	M20 female, two electrical connections and a 316 SST blind plug
Integral indicator[*8]	**D**.	Digital indicator
	E.	Digital indicator with the range setting switch (push button)
	N.	(None)
Mounting bracket	**L**.	316 SST 2-inch pipe mounting
	N.	None
Optional Codes		☐/ Optional specification

Example: Primary (High pressure side) EJX530A-PAS4N-012DN/ ☐
Secondary (Low pressure side) EJX530A-SAS4N-017NN/ ☐
Please also refer to “The Notes for Selecting Primary/Secondary Transmitters”

*1: Hastelloy C-276 or ASTM N10276.
*2: 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.
*3: Not applicable for combination of capsule code D and wetted parts material code H. Threads are based on the withdrawn DIN 16 288.
*4: Not applicable for electrical connection code 5, A and F.
*5: Not applicable for electrical connection code 5, 7 or 9.
*6: Material of a blind plug; aluminum alloy for code 5 and 9, and SUS304 for code 7.
*7: The code is only applicable for combination with the diaphragm sealed system (C20FW or C20FE direct mount flanged diaphragm seal.).
*8 : An indicator can be specified only for primary. The secondary transmitter always comes with “None” (without an indicator.)
*9: Not applicable for amplifer housing code 2, capsule code D and wetted parts material code H.
*10: Intergranular corrosion test passed according to ASTM A262 Practice E.

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.

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[When using EJX630A as a pressure sensor]

EJX630A Gauge Pressure Transmitter

Model	Suffix Codes	Description
EJX630A	. . . . .	Gauge pressure transmitter
Output signal	**-P**	Primary for Digital Remote Sensor, 4 to 20 mA DC with digital communication (HART 7 protocol)
	-S	Secondary for Digital Remote Sensor
Measurement Span (capsule) of pressure	**A**.	2 to 200 kPa (0.3 to 29 psi)
	B.	0.01 to 2 MPa (1.5 to 290 psi)
	C.	0.05 to 10 MPa (7.3 to 1450 psi)
	D.	0.35 to 70 MPa (50.8 to 10150 psi)
Wetted parts material[*2]		Diaphragm / Process connector / Others
	S.	Hastelloy C-276[*1#] / 316L SST [*8#] / 316L SST# or F316L SST#
	H.	Hastelloy C-276[*1#] / Hastelloy C-276[*1#] / Hastelloy C-276[*1#]
Process connections	**4**	1/2 NPT female
	7	1/2 NPT male
	8	G1/2 DIN 16 288 male[*3]
	9	M20×1.5 DIN 16 288 male[*3]
--------	**N**.	Always N
--------	**-0**	Always 0
Amplifier housing	**1**	Cast aluminum alloy
	3	Cast aluminum alloy with corrosion resistance properties[*4]
	2	ASTM CF-8M stainless steel[*5]
Electrical connection		
For Primary	**F**	G 1/2 female, two electrical connections
	2	1/2 NPT female, two electrical connections
	4	M20 female, two electrical connections
For Secondary	**5**	G1/2 female, two electrical connections with a blind plug[*6]
	7	1/2 NPT female, two electrical connections with a blind plug[*6]
	9	M20 female, two electrical connections with a blind plug[*6]
	A.	G1/2 female, two electrical connections and a 316 SST blind plug
	C.	1/2 NPT female, two electrical connections and a 316 SST blind plug
	D.	M20 female, two electrical connections and a 316 SST blind plug
Integral indicator[*7]	**D**.	Digital indicator
	E.	Digital indicator with the range setting switch (push button)
	N.	(None)
Mounting bracket	**L**.	316 SST 2-inch pipe mounting
	N.	None
Optional Codes		☐/ Optional specification

Example: Primary (High pressure side) EJX630A-PAS4N-012DN/ ☐
Secondary (Low pressure side) EJX630A-SAS4N-017NN/ ☐
Please also refer to “The Notes for Selecting Primary/Secondary Transmitters”.

*1: Hastelloy C-276 or ASTM N10276.
*2: 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.
*3: Not applicable for combination of capsule code D and wetted parts material code H. Threads are based on the withdrawn DIN 16 288.
*4: Not applicable for electrical connection code 5, A and F.
*5: Not applicable for electrical connection code 5, 7 or 9.
*6: Material of a blind plug; aluminum alloy for code 5 and 9, and SUS304 for code 7.
*7: An indicator can be specified only for primary. The secondary transmitter always comes with “None” (without an indicator.)
*8: Intergranular corrosion test passed according to ASTM A262 Practice E.

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.

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■ OPTIONAL SPECIFICATIONS (For Explosion Protected type)

For other agency 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: FM3600:2018, FM3615:2018, FM3810:2018, NEMA 250:2003, ANSI/UL 61010-1:2012, ANSI/UL 61010-2-30:2012 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 Applicable Standard: FM 3600, FM 3610, FM 3611, FM 3810, ANSI/UL-60079-0, ANSI/UL-60079-11, ANSI/UL 61010-1, ANSI/UL 121201, NEMA 250, ANSI/IEC 60529 Certificate: FM16US0152X Intrinsically Safe for Class I, Division 1, Groups A, B, C, D; Class II, Division 1, Groups E, F, G; Class III, Division 1; Class I, Zone 0, Group IIC, AEx ia Nonincendive for Class I, Division 2, Groups A, B, C, D; Class II, Division 2, Groups F, G; Class III, Division 1; Class I, Zone 2, Group IIC Enclosure: Type 4X, IP66/IP67 Temperature Class: T4 Ambient Temperature: –50 °C to +60 °C Electrical Parameters [EJX****-P] Supply/Output Circuit (Terminal: + and –) Ui: 30 V, Ii: 200 mA, Pi: 0.9 W, Ci: 27.6 nF, Li: 0 mH Communication Circuit (Connector) Uo: 8.2 V, Io: 160 mA, Po: 0.3 W, Co: 7.6 µF, Lo: 1 mH [EJX****-S] Ui: 8.2 V, Ii: 200 mA, Pi: 0.4 W, Ci: 6 µF, Li: 0 mH	**FS14**
	Combined FF1 and FS14*1	**FU14**
ATEX	ATEX Flameproof Approval*1 Applicable Standard: EN IEC 60079-0, EN 60079-1, EN 60079-31 Certificate: KEMA 07ATEX0109 X II 2G Ex db IIC T6...T4 Gb, II 2D 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)*2	**KF22**
	ATEX Intrinsically safe Approval*1 Applicable Standard: EN IEC 60079-0, EN 60079-11 Certificate: FM 16ATEX0014 X II 1 G Ex ia IIC T4 Ga Enclosure: IP66/IP67 Ambient Temperature: –50 °C to +60 °C Maximum Process Temperature: 120 °C Electrical Parameters [EJX****-P] Supply/Output Circuit (Terminal: + and –) Ui: 30 V, Ii: 200 mA, Pi: 0.9 W, Ci: 27.6 nF, Li: 0 mH Communication Circuit (Connector) Uo: 8.2 V, Io: 160 mA, Po: 0.3 W, Co: 7.6 µF, Lo: 1 mH [EJX****-S] Ui: 8.2 V, Ii: 200 mA, Pi: 0.4 W, Ci: 6 µF, Li: 0 mH	**KS24**
	Multiple types of protection (KF22 or KS24)*1	**KU24**

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Item	Description	Code
Canadian Standards Association(CSA)	CSA Explosionproof Approval*1 Certificate: 2014354 Applicable Standard: C22.2 No. 25, C22.2 No. 30, C22.2 No. 94.2, C22.2 No.213 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, ANSI/UL 122701 [For Explosion-proof] Class I, Groups B, C and D. Temperature Code: T6...T4 Process Temp.: 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) Amb.Temp.: 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) Enclosure: Type 4X [For Flameproof] Ex d IIC T6...T4 Process Temp.: 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) Amb.Temp.: 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) Enclosure: IP66/IP67 [For Dustignition-proof] Class II/III, Groups E, F and G. Temp. Code: T85°C T85°C (Tamb: –30* to 75°C, Tp: –30* to 85°C) *−15 °C (When fluorinated rubber O-ring is specified) Enclosure: Type 4X Process seal: Single Seal	**CF1**
IECEx Scheme	IECEx Intrinsic safety Approval*1 Applicable Standard: IEC 60079-0, IEC60079-11 Certificate: IECEx FMG 16.0013 X Ex ia IIC T4 Ga Enclosure: IP66/IP67 Ambient Temperature: –50 °C to +60 °C Maximum Process Temperature: 120 °C Electrical Parameters [EJX****-P] Supply/Output Circuit (Terminal: + and –) Ui: 30 V, Ii: 200 mA, Pi: 0.9 W, Ci: 27.6 nF, Li: 0 mH Communication Circuit (Connector) Uo: 8.2 V, Io: 160 mA, Po: 0.3 W, Co: 7.6 µF, Lo: 1 mH [EJX****-S] Ui: 8.2 V, Ii: 200 mA, Pi: 0.4 W, Ci: 6 µF, Li: 0 mH	**SS24**
	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) *2	**SF22**
	Multiple types of protection (SF22 and SS24)*1	**SU34**

*1: Applicable for Electrical connection code 2, 4, 7, 9, C and D.
*2: Lower limit of ambient temperature is –15°C (5°F) when /HE is specified.

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■ OPTIONAL SPECIFICATIONS

● EJXC40A Digital Remote Sensor

Item	Description		Code
DRS Cable	Cable length 15m	Two cable glands, one each for high pressure side and low pressure side, are attached for holding cable. The cable glands are not supplied with the product with option code FF1, FU14, CF1, PF22, PF23, NF2, NF21 or UF1[*20].	EC1
	Cable length 30m		EC3
	Cable length 45m		EC5
Oil-prohibited use[*21]	Degrease cleansing treatment		K21
	Degrease cleansing treatment	With certificates	K81
Oil-prohibited use with dehydrating treatment[*22]	Degrease cleansing and dehydrating treatment		K25
	Degrease cleansing and dehydrating treatment	With certificates	K85
Pressure test/ Leak test certificate[*12]	Test Pressure: 200 kPa (29psi)[*6]	Nitrogen Gas[*11] Retention time: one minute	T05
	Test Pressure: 2 MPa (290psi)[*7]		T06
	Test Pressure: 10 MPa (1450psi)[*8]		T07
	Test Pressure: 50 MPa (7200psi)[*9]	Water[*11] Retention time: one minute	T08
	Test Pressure: 70 MPa (10150psi)[*10]		T15
Calibration certificate	Text, Traceability		L4
	Text, Traceability, Primary standards list		L5
	Text, Traceability, Primary standards list, Calibration equipment list		L6
	Text, Traceability, Primary standards list, Calibration equipment list, Calibration equipment certificate		L9

● Primary Transmitter EJX530A, EJX630A

Item		Description		Code
High Accuracy type[*18]		Reference accuracy: ±0.025% of Span		HAC
Painting	Color change	Amplifier cover only[*14]		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[*16]		HC
Fluoro-rubber O-ring		All O-rings of amplifier housing. Lower limit of ambient temperature: –15°C (5°F)		HE
Oil-prohibited use[*19]		Degrease cleansing treatment		K11
		Degrease cleansing treatment with fluorinated oilfilled capsule. Operating temperature −20 to 80°C (−4 to 176°F)		K12
Oil-prohibited use with dehydrating treatment[*19]		Degrease cleansing and dehydrating treatment		K15
		Degrease cleansing and dehydrating treatment with fluorinated oilfilled capsule. Operating temperature −20 to 80°C (−4 to 176°F)		K16
Capsule fill fluid		Flourinated oil filled in capsule Operating temperature −20 to 80°C (−4 to 176°F)		K13
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
Gold-plated diaphragm[*13*19]		Surface of isolating diaphragms are gold plated, effective for hydrogen permeation.		A1
Wired tag plate		316 SST tag plate wired onto transmitter		N4
Output limits and failure operation[*3]		Failure alarm down-scale : Output status at CPU failure and hardware error is −2.5%, 3.6 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 −2.5%, 3.6 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
Data configuration at factory[*4]		Data configuration for HART communication type	Software damping, Descriptor, Message	CA
		Data configuration for HART communication type	Software damping, Descriptor, Message, External zero adjustment prohibition setting	CJ
Advanced diagnostics		Multi-sensing process monitoring • Impulse line blockage detection[*17] • Heat trace monitoring (For only Primary)		DG6

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Item	Description	Code
Material certificate*5*19	Process Connector	M15
	Process connector, Diaphragm, Capsule body	MA2
European Pressure Equipment Directive*15*19	PED 2014/68/EU Category: III, Module: H, Type of Equipment: Pressure Accessory-Vessel, Type of Fluid: Liquid and Gas, Group of Fluid: 1 and 2	PE3

● Secondary Transmitter EJX530A, EJX630A

Item		Description		Code
High Accuracy type*18*19		Reference accuracy: ±0.025% of Span		HAC
Painting	Color change	Amplifier cover only*14		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*16		HC
Fluoro-rubber O-ring		All O-rings of amplifier housing. Lower limit of ambient temperature: –15°C (5°F)		HE
Oil-prohibited use*19		Degrease cleansing treatment		K11
		Degrease cleansing treatment with fluorinated oilfilled capsule. Operating temperature −20 to 80°C (−4 to 176°F)		K12
Oil-prohibited use with dehydrating treatment*19		Degrease cleansing and dehydrating treatment		K15
		Degrease cleansing and dehydrating treatment with fluorinated oilfilled capsule. Operating temperature −20 to 80°C (−4 to 176°F)		K16
Capsule fill fluid		Flourinated oil filled in capsule Operating temperature −20 to 80°C (−4 to 176°F)		K13
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
Gold-plated diaphragm*13*19		Surface of isolating diaphragms are gold plated, effective for hydrogen permeation.		A1
Material certificate*5*19		Process Connector		M15
		Process connector, Diaphragm, Capsule body		MA2
European Pressure Equipment Directive*15*19		PED 97/23/EC Category: III, Module: H, Type of Equipment: Pressure Accessory-Vessel, Type of Fluid: Liquid and Gas, Group of Fluid: 1 and 2		PE3

*1: Not applicable with color change option.
*2: 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.
*3: The hardware error indicates faulty amplifier or capsule.
*4: Also see 'Ordering Information'.
*5: Material traceability certification, per EN 10204 3.1 B.
*6: Applicable for capsule code A.
*7: Applicable for capsule code B.
*8: Applicable for capsule code C.
*9: Applicable for capsule code D of EJX530A.
*10: Applicable for capsule code D of EJX630A.
*11: Dry nitrogen gas or pure water is used for oil-prohibited use (option codes K11, K12, K15 and K16).
*12: The unit on the certificate is always kPa/MPa regardless of selection of option code D1, D3 and D4.
*13: Applicable for wetted parts material code S.
*14: Not applicable for amplifier housing code 2 and 3.
*15: Applicable for measurement span code D. If compliance with category III is needed, specify this option code. Not applicable for process connection code P.
*16: 316 or 316L SST. The specification is included in amplifier code 2.
*17: 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.
*18: Refer to "PERFORMANCE SPECIFICATIONS". Applicable only for EJX630A. Not applicable for the combination of measurement span code A and wetted parts material code H. Not applicable for option code K2, K3 or A1. When specified range value includes minus value for A capsule, the accuracy shall be the standard accuracy even if high accuracy option (/HAC) is specified.
*19: Not applicable with process connections code P for diaphragm seal system.
*20: For these options, prepare the cable gland conforming to the cable of φ8.5 mm diameter. To insert the cable into the cable gland from the RTD connector side, inner diameter of the cable gland must be larger than φ 13 mm.
*21: Applicable with /K11 of Transmitter.
*22: Applicable with /K15 of Transmitter.

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The Notes for Selecting Primary/Secondary Transmitters

The model, suffix and option codes which are listed in the table should be identical between primary and secondary transmitters.

Items which should be identical between primary and secondary transmitters	Model	Model Code (EJX530A or EJX630A)		
	Suffix Code	Pressure Range (capsule)		
		Process connections		
		Electrical connection (Thread type)		
	Optional Code	High Accuracy type		**HAC**
		Painting	Color change	**P□**
				PR
			Coating change	**X2**
		316 SST exterior parts		**HC**
		Fluoro-rubber O-ring		**HE**
		Oil-prohibited use		**K11**
				K12
		Oil-prohibited use with dehydrating treatment		**K15**
				K16
		Flourinated oil filled in capsule		**K13**
		Calibration units		**D1**
				D3
				D4
		Gold-plated diaphragm		**A1**
		Material certificate		**M15**
				MA2
		European Pressure Equipment Directive		**PE3**

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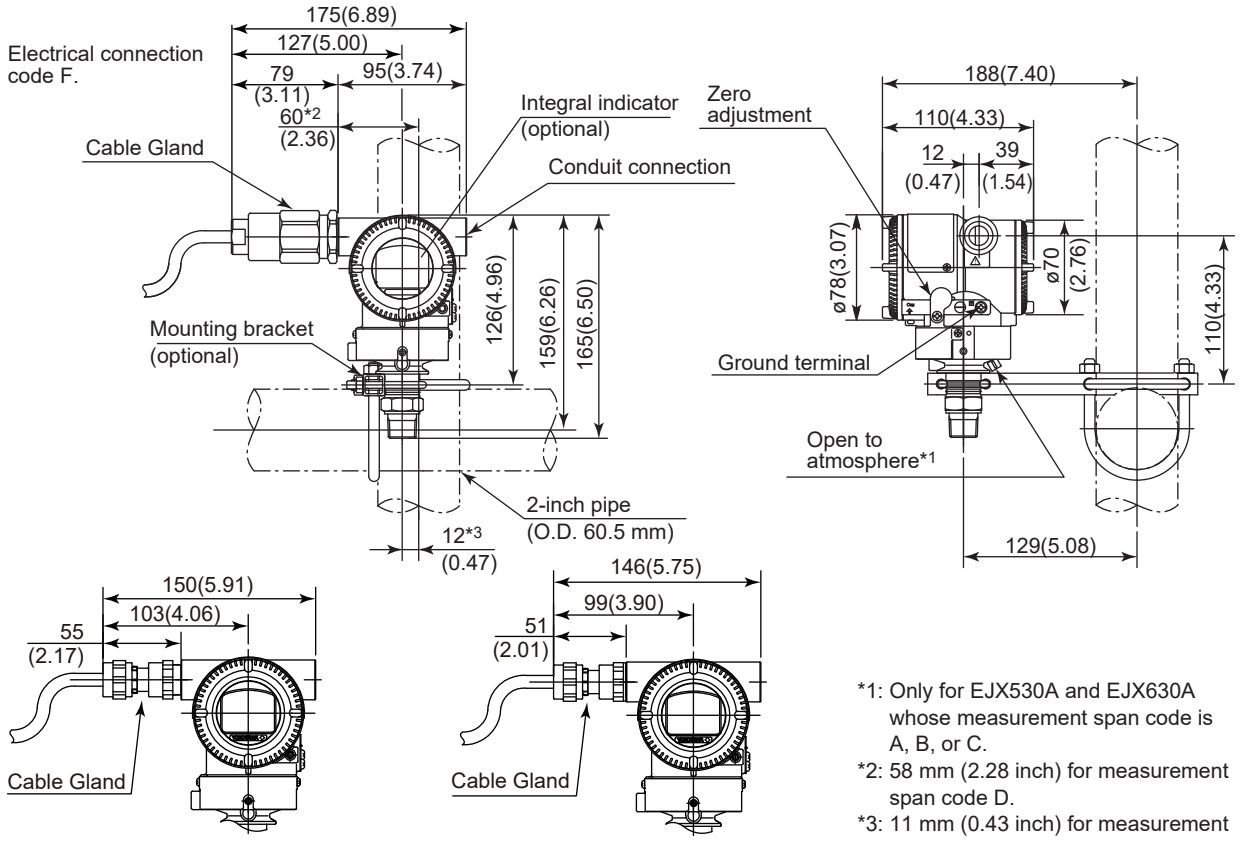
■ DIMENSIONS

Primary (high pressure side) transmitter

[EJX530A/EJX630A Output signal code -P]

- With Process connections code 7

Unit: mm (approx. inch)

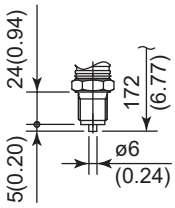


*1: Only for EJX530A and EJX630A whose measurement span code is A, B, or C.
*2: 58 mm (2.28 inch) for measurement span code D.
*3: 11 mm (0.43 inch) for measurement span code D.

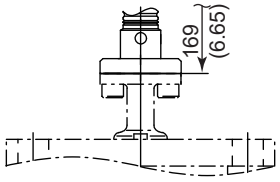
- With Process connections code 4



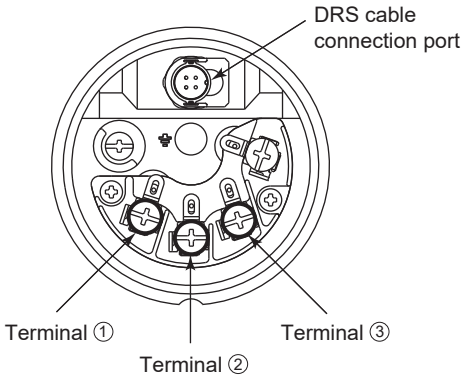
- With Process connections code 8 and 9



- With process connections code P



- Terminal Configuration



- Terminal Wiring

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

*1: When using an external indicator or check meter, the internal resistance must be 10 Ω or less.

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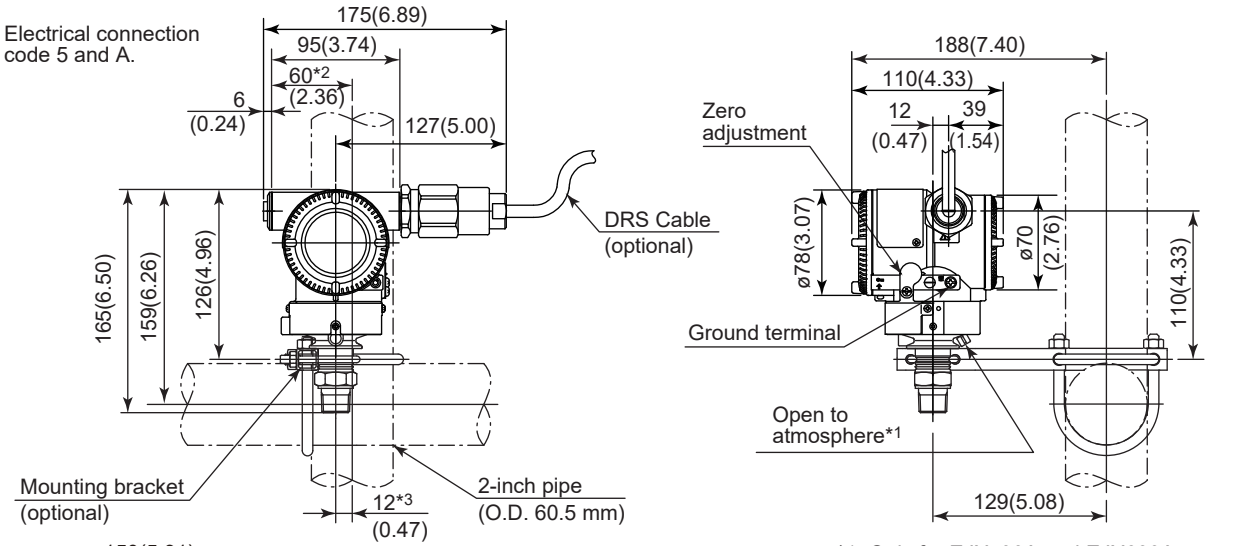
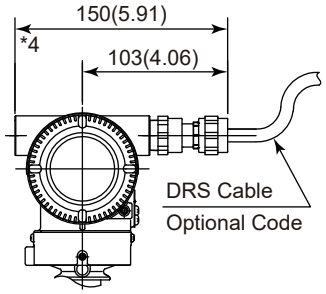
Secondary (low pressure side) transmitter

[EJX530A/EJX630A Output signal code -S]

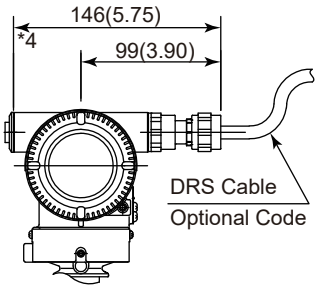
- With Process connections code 7

Unit: mm (approx. inch)





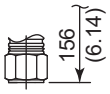
Electrical connection code 7 and C.



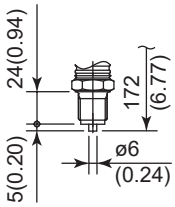
Electrical connection code 9 and D.

*1: Only for EJX530A and EJX630A whose measurement span code is A, B, or C.
*2: 58 mm (2.28 inch) for measurement span code D.
*3: 11 mm (0.43 inch) for measurement span code D.
*4: A blind plug is protruded by up to 8mm from conduit connection.

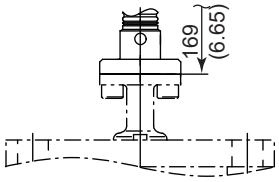
- With Process connections code 4



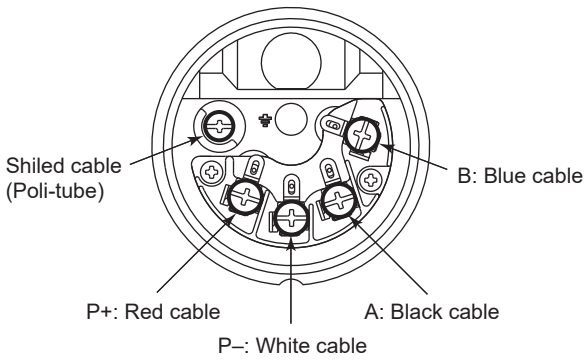
- With Process connections code 8 and 9



- With process connections code P



- Terminal Configuration for Connecting DRS cable



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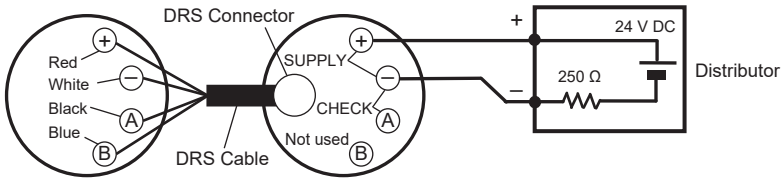
● Wiring Example for Analog Output

Connection	Description
Analog output	Low pressure side Trasmitter (Secondary) Electric termnal High pressure side Trasmitter (Primary) Electric termnal 

< Ordering Information >

1. Model, suffix codes, and option codes
2. Calibration range and units:
   1) Calibration range of differential pressure 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.
   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 22 characters, or 16 characters for /N4 tag) are engraved on the stainless steel tag plate fixed on the housing.
6. SOFTWARE TAG
   Specified characters (up to 32 characters) are set as “Tag” (the first 8 characters) and “Long tag” (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” (22 characters) in the amplifier memory.
7. Other factory configurations (if required)
   Specifying option code /CA or /CJ will allow further configuration at factory. Following are configurable items and setting range.
   [/CA, /CJ]
   1) Descriptor (up to 16 characters)
   2) Message (up to 32 characters)
   3) Software damping (0.00 to 100.00 sec)

< Factory Setting >

Tag number	As specified in order
Software damping*1	‘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 mmH_2O, mmH_2O (68°F), Pa, kPa, MPa, mbar, bar, gf/cm^2, kgf/cm^2, mmHg, inH_2O, inH_2O (68°F), inHg, ftH_2O, ftH_2O (68°F) or psi. (Only one unit can be specified.)
Display setting	Designated differential pressure value specified in order. (% or user scaled value.)

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

< Material Cross Reference >

ASTM	JIS
grade 316	SUS316
grade 316L	SUS316L
grade 304	SUS304

< 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.

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