

# General Specifications

## EJXC40A Digital Remote Sensor



GS 01C25W05-01EN

*EJXC40A Digital Remote Sensor (DRS) Transmitter connects two pressure sensors, master (high pressure side) and slave (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.*

[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.

### ■ STANDARD SPECIFICATIONS

#### □ SPAN AND RANGE LIMITS

##### Differential Pressure (DP)

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

[When using EJX530A Gauge Pressure Transmitter]

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



Digital Remote Sensor	Applicable 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.

[When using EJX630A Gauge Pressure Transmitter]

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

## □ 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  $\pm 3\sigma$ .

### Reference Accuracy of Calibrated Span

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

#### ○ EJX530A

Measurement span	Reference Accuracy	
	Span $\geq$ X	Span<X
A	$\pm 0.04\%$ of Span	$\pm(0.004 \text{ URL/ span}) \%$ of Span
B		$\pm(0.005+0.0035 \text{ URL/ span}) \%$ of Span
C		
D		$\pm(0.004 \text{ URL/ span}) \%$ 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 $\geq$ X	Span<X
A	$\pm 0.04\%$ of Span	$\pm(0.02+0.007 \text{ URL/ span}) \%$ of Span
B		$\pm(0.005+0.0035 \text{ URL/ span}) \%$ 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 $\geq$ X	Span<X
A	$\pm 0.025\%$ of Span	$\pm(0.008+0.006 \text{ URL/ span}) \%$ of Span
B		$\pm(0.005+0.002 \text{ URL/ span}) \%$ of Span
C		
D		

## Differential Pressure Accuracy (for DRS system)

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

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

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

### ○ EJX530A

$\pm(0.15\%$  of Span + 0.15% of URL)

### ○ EJX630A

A capsule:  $\pm(0.04\%$  of Span + 0.075% of URL)

B capsule:  $\pm(0.04\%$  of Span + 0.018% of URL)

C and D capsule:  $\pm(0.04\%$  of Span + 0.009% of URL)

## Stability (All normal operating condition)

$\pm 0.1\%$  of URL for 10 years

## Power Supply Effects

$\pm 0.005\%$  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  $\pm 0.1\%$  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<sub>2</sub>O) 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 master and slave 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.

## □ 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 protector on master 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 Master (High pressure side) and Slave (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 Master)

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.

## □ 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

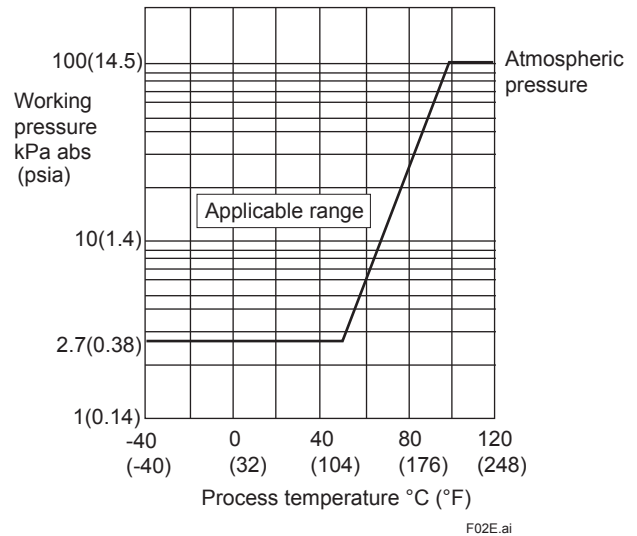


Figure 1. Working Pressure and Process Temperature

### Supply & Load Requirements

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

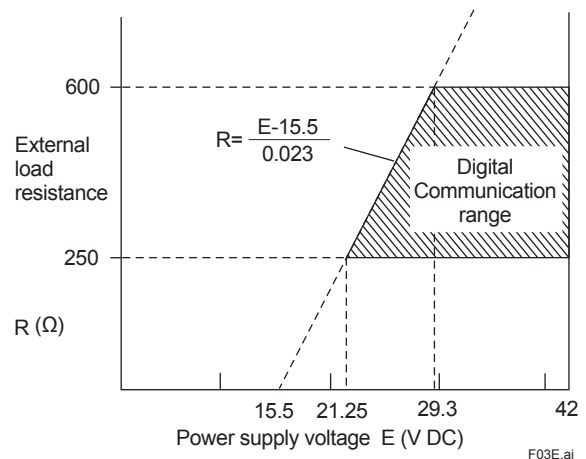


Figure 2. Relationship Between Power Supply Voltage and External Load Resistance

### 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

**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, Table 2

EN 61326-2-3

**European Pressure Equipment Directive**

2014/68/EU

Sound Engineering Practice (for all capsules)

With option code /PE3 (for D capsule)

CE<sub>0038</sub>

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 50581

**Safety Requirement Standards**

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

- Installation category: I
- Pollution degree: 2
- Indoor/Outdoor 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]

Urethane curing type polyester resin powder coating  
Mint-green paint (Munsell 5.6BG 3.3/2.9 or its equivalent)

[for option code /P□ or /X2]

Epoxy and polyurethane resin solvent coating

**Degrees of protection**

IP66/IP67, Type 4X

**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** >

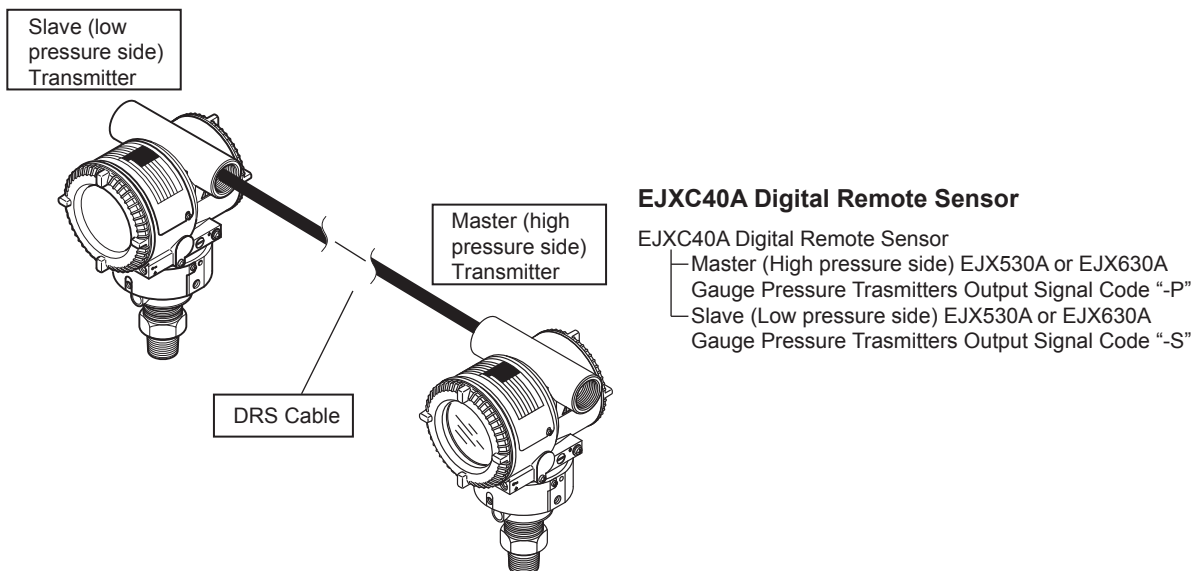
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## ■ MODEL AND SUFFIX CODES

EJXC40A digital remote sensor requires specifying two transmitters independently as master and slave 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 master (high pressure side) and slave (low pressure side) sensors. When using a diaphragm seal system for master and slave sensors, please also refer to the GS for Diaphragm Seal System (GS 01C25W01-01EN).



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### Digital Remote Sensor

Model	Suffix Code	Description
<b>EJXC40A</b>	.....	Digital Remote Sensor
Measurement Type	<b>-D</b> .....	Differential Pressure
Master Style (High pressure side)	<b>S</b> .....	Screw mount
Slave Style (Low pressure side)	<b>S</b> .....	Screw mount
Digital Remote Sensor	<b>R</b> .....	Digital Remote Sensor
Process Connection for Master	<b>T</b> .....	With Screw mounted
Wetted parts for Master	<b>L</b> ..... <b>A</b> .....	Diaphragm Hastelloy C-276 *1# Hastelloy C-276 *1#
Process Connection for Slave	<b>T</b> .....	With Screw mounted
Wetted parts for Slave	<b>L</b> ..... <b>A</b> .....	Diaphragm Hastelloy C-276 *1# Hastelloy C-276 *1#
Fill Fluid	<b>G</b> .....	For Screw Mounted
Accessory for Master	<b>-N</b> .....	Always N
Accessory for Slave	<b>N</b> ....	Always N

\*1: Hastelloy C-276 or ASTM N10276.

\*2: -30 to 80 °C when an integral Indicator is specified.

\*3: -20 to 80 °C when a fluorinated oil filled capsule is specified.

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.



**[When using EJX530A as a pressure sensor]****EJX530A Gauge Pressure Transmitter**

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

Example: Master (High pressure side) EJX530A-PAS4N-012DN/ ☐

Slave (Low pressure side) EJX530A-SAS4N-017NN/ ☐

Please also refer to "The Notes for Selecting Master/Slave 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 master. The slave transmitter always comes with "None" (without an indicator.)

\*9: Not applicable for amplifier housing code 2, capsule code D and wetted parts material code H.

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.

**[When using EJX630A as a pressure sensor]****EJX630A Gauge Pressure Transmitter**

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

Example: Master (High pressure side) EJX630A-PAS4N-012DN/ □

Slave (Low pressure side) EJX630A-SAS4N-017NN/ □

Please also refer to "The Notes for Selecting Master/Slave 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 master. The slave transmitter always comes with "None" (without an indicator.)

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

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



## ■ OPTIONAL SPECIFICATIONS (For Explosion Protected type)

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

Item	Description	Code
Factory Mutual (FM)	FM Explosionproof Approval*1 Applicable Standard: FM3600, FM3615, FM3810, ANSI/NEMA 250 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: Class 3600, Class 3610, Class 3611, Class 3810, ANSI/UL-60079-0, ANSI/UL-60079-11, NEMA 250, ANSI/IEC 60529 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	FS14
	Combined FF1 and FS14*1	FU14
ATEX	ATEX Flameproof Approval*1 Applicable Standard: EN 60079-0, EN 60079-1, EN 60079-31 Certificate: KEMA 07ATEX0109 X II 2G, 2D Ex d IIC T6...T4 Gb ("Ex db IIC T6...T4 Gb" from August 1, 2017), Ex tb IIIC T85°C Db 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 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	KS24
	Combined KF22 and KS24*1	KU24
IECEx Scheme	IECEx Flameproof Approval*1 Applicable Standard: IEC 60079-0, IEC60079-1 Certificate: IECEx CSA 07.0008 Flameproof for Zone 1, Ex d IIC T6...T4 Gb Enclosure: IP66/IP67 Max. Process Temp.: T4; 120°C (248°F), T5; 100°C (212°F), T6; 85°C (185°F) Amb. Temp.: -50 to 75°C (-58 to 167°F) for T4, -50 to 80°C (-58 to 176°F) for T5, -50 to 75°C (-58 to 167°F) for T6	SF2
	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	SS24
	Combined SF2 and SS24*1	SU24

\*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.

## ■ OPTIONAL SPECIFICATIONS

### ● EJXC40A Digital Remote Sensor

Item	Description	Code
DRS Cable	Cable length 15m	EC1
	Cable length 30m	EC3
	Cable length 45m	EC5
Oil-prohibited use	Degrease cleansing treatment	K21
Oil-prohibited use with dehydrating treatment	Degrease cleansing and dehydrating treatment	K25
Pressure test/ Leak test certificate*12	Test Pressure: 200 kPa (29psi)*6	T05
	Test Pressure: 2 MPa (290psi)*7	T06
	Test Pressure: 10 MPa (1450psi)*8	T07
	Test Pressure: 50 MPa (7200psi)*9	T08
	Test Pressure: 70 MPa (10150psi)*10	T15

Nitrogen (N2) Gas or Water\*11  
Retention time: one minute

### ● Master Transmitter EJX530A, EJX630A

Item	Description	Code
High Accuracy type*18	Reference accuracy: $\pm 0.025\%$ of Span	HAC
Painting	Color change	P□
	Amplifier cover only*14	PR
	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: $-15^{\circ}\text{C}$ ( $5^{\circ}\text{F}$ )	HE
Oil-prohibited use	Degrease cleansing treatment	K11
	Degrease cleansing treatment with fluorinated oilfilled capsule. Operating temperature $-20$ to $80^{\circ}\text{C}$ ( $-4$ to $176^{\circ}\text{F}$ )	K12
Oil-prohibited use with dehydrating treatment	Degrease cleansing and dehydrating treatment	K15
	Degrease cleansing and dehydrating treatment with fluorinated oilfilled capsule. Operating temperature $-20$ to $80^{\circ}\text{C}$ ( $-4$ to $176^{\circ}\text{F}$ )	K16
Capsule fill fluid	Fluorinated oil filled in capsule Operating temperature $-20$ to $80^{\circ}\text{C}$ ( $-4$ to $176^{\circ}\text{F}$ )	K13
Calibration units*2	P calibration (psi unit)	D1
	bar calibration (bar unit)	D3
	M calibration ( $\text{kgf}/\text{cm}^2$ unit)	D4
Gold-plated diaphragm*13	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	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	CA
Advanced diagnostics	Software damping, Descriptor, Message	CA
	Multi-sensing process monitoring • Impulse line blockage detection*17 • Heat trace monitoring (For only Master)	DG6
Material certificate*5	Process Connector	M15
European Pressure Equipment Directive*15	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

## • Slave Transmitter EJX530A, EJX630A

Item		Description	Code
High Accuracy type*18		Reference accuracy: $\pm 0.025\%$ of Span	<b>HAC</b>
Painting	Color change	Amplifier cover only*14	<b>P□</b>
		Amplifier cover and terminal cover, Munsell 7.5 R4/14	<b>PR</b>
	Coating change	Anti-corrosion coating*1	<b>X2</b>
316 SST exterior parts		316 SST zero-adjustment screw and setscrews*16	<b>HC</b>
Fluoro-rubber O-ring		All O-rings of amplifier housing. Lower limit of ambient temperature: $-15^{\circ}\text{C}$ ( $5^{\circ}\text{F}$ )	<b>HE</b>
Oil-prohibited use		Degrease cleansing treatment	<b>K11</b>
		Degrease cleansing treatment with fluorinated oilfilled capsule. Operating temperature $-20$ to $80^{\circ}\text{C}$ ( $-4$ to $176^{\circ}\text{F}$ )	<b>K12</b>
Oil-prohibited use with dehydrating treatment		Degrease cleansing and dehydrating treatment	<b>K15</b>
		Degrease cleansing and dehydrating treatment with fluorinated oilfilled capsule. Operating temperature $-20$ to $80^{\circ}\text{C}$ ( $-4$ to $176^{\circ}\text{F}$ )	<b>K16</b>
Capsule fill fluid		Fluorinated oil filled in capsule Operating temperature $-20$ to $80^{\circ}\text{C}$ ( $-4$ to $176^{\circ}\text{F}$ )	<b>K13</b>
Calibration units*2	P calibration (psi unit)	(See Table for Span and Range Limits.)	<b>D1</b>
	bar calibration (bar unit)		<b>D3</b>
	M calibration (kgf/cm <sup>2</sup> unit)		<b>D4</b>
Gold-plated diaphragm*13		Surface of isolating diaphragms are gold plated, effective for hydrogen permeation.	<b>A1</b>
Material certificate*5		Process Connector	<b>M15</b>
European Pressure Equipment Directive*15		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	<b>PE3</b>

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

\*2: The unit of MWP (Max. working pressure) on the name plate of a housing is the same unit as specified by option 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: Pure 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.

**The Notes for Selecting Master/Slave Transmitters**

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

Items which should be identical between master and slave transmitters	Model	Model Code (EJX530A or EJX630A)		
	Suffix Code	Pressure Range (capsule)		
		Wetted parts material		
		Process connections		
		Electrical connection (Thread type)		
	Optional Code	High Accuracy type		HAC
		Painting	Color change	P□
				PR
				Coating change
		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
		European Pressure Equipment Directive		PE3

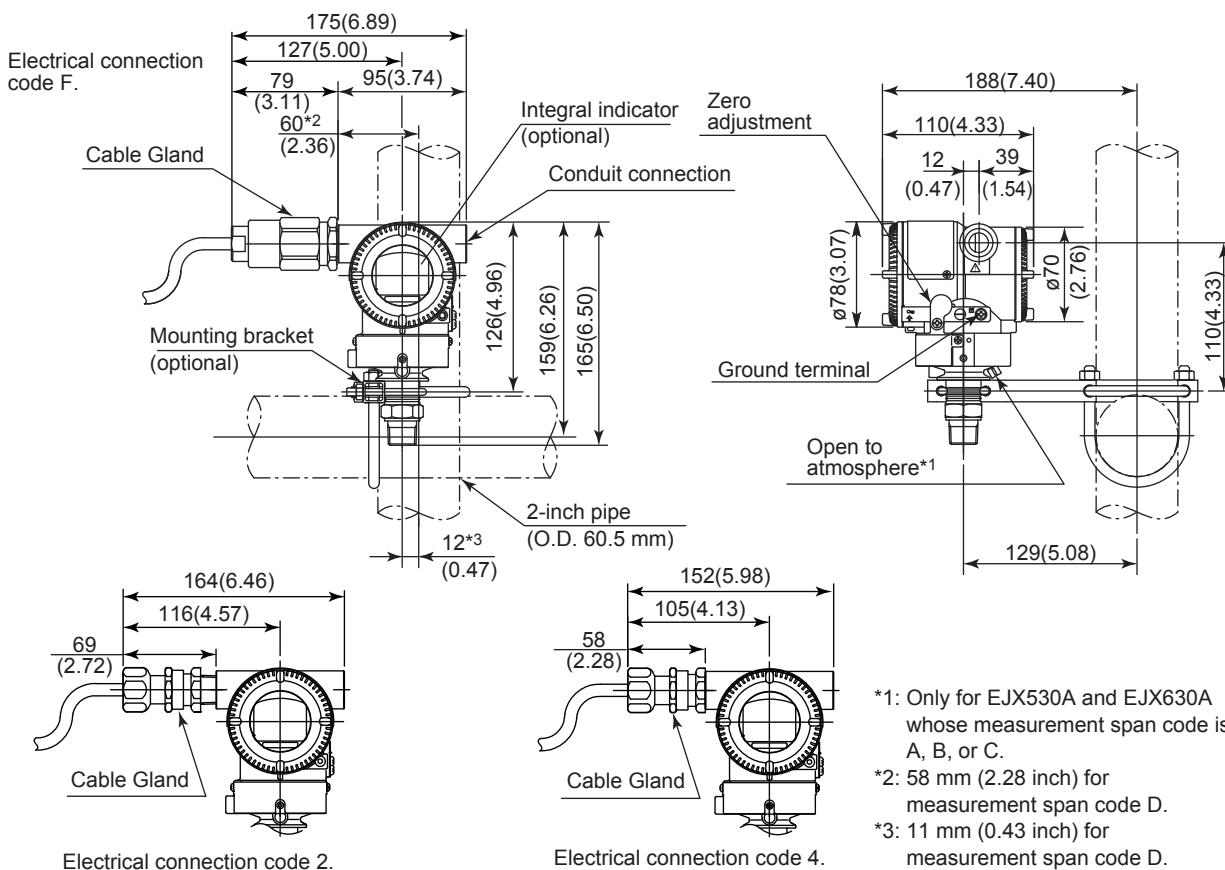
## DIMENSIONS

### Master (high pressure side) transmitter

[EJX530A/EJX630A Output signal code -P]

- With Process connections code 7

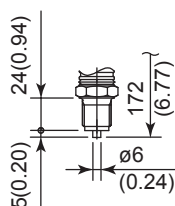
Unit: mm (approx. inch)



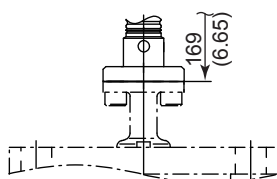
- With Process connections code 4



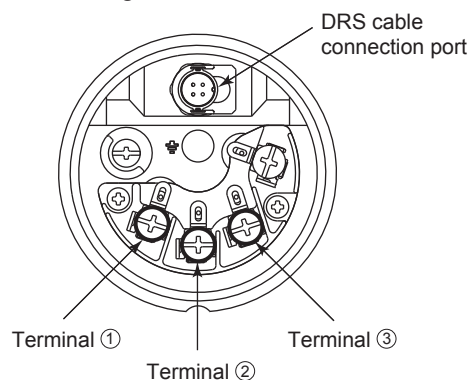
- With Process connections code 8 and 9



- With process connections code P



- Terminal Configuration



- Terminal Wiring

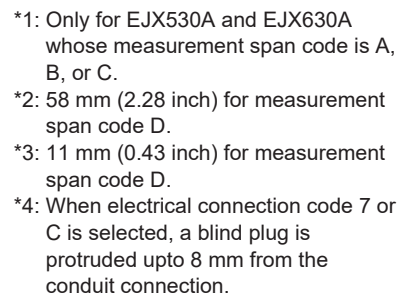
SUPPLY	+	①	Power supply and output terminals
	-	②	
CHECK	+	③	External indicator (ammeter) terminals*1
	-	②	
			⏏ Ground terminal

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

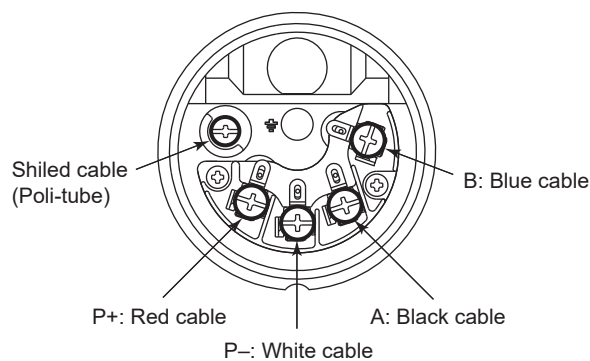
F05.ai

[EJX530A/EJX630A Output signal code -S]

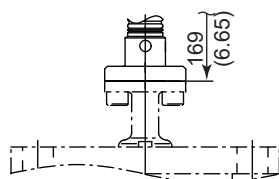
- Unit: mm (approx. inch)



- Terminal Configuration for Connecting DRS cable

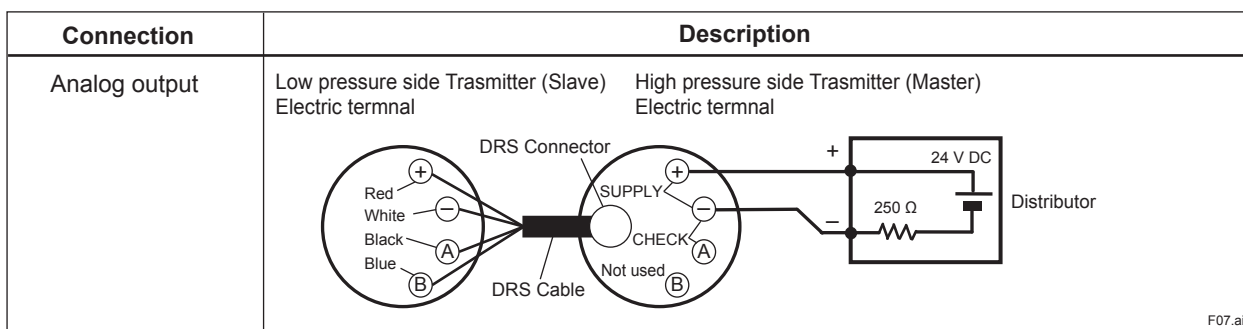


- With process connections code P





## • Wiring Example for Analog Output



### < Ordering Information >

- Model, suffix codes, and option codes
- Calibration range and units:
  - Calibration range can be specified with range value specifications up to 5 digits (excluding any decimal point) for low or high range limits within the range of -32000 to 32000. When reverse range is designated, specify LRV as greater than URV. When square root output mode is specified, LRV must be "0 (zero)".
  - Specify only one unit from the table, 'Factory setting.'
- Select linear or square root for output mode.  
Note: If not specified, the instrument is shipped set for linear mode.
- 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.
- 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.
- 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.
- Other factory configurations (if required)  
Specifying option code CA will allow further configuration at factory. Following are configurable items and setting range.  
[/CA]
  - Descriptor (up to 16 characters)
  - Message (up to 32 characters)
  - 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 <sub>2</sub> O, mmH <sub>2</sub> O (68°F), Pa, kPa, MPa, mbar, bar, gf/cm <sup>2</sup> , kgf/cm <sup>2</sup> , mmHg, inH <sub>2</sub> O, inH <sub>2</sub> O (68°F), inHg, ftH <sub>2</sub> O, ftH <sub>2</sub> O (68°F) or psi. (Only one unit can be specified.)
Display setting	Designated differential pressure value specified in order. (% or user scaled value.)

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

### < Material Cross Reference >

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