General Specifications

GS 01C27C01-01EN

EJX210B
Flange Mounted
Differential Pressure Transmitter

The high performance flange mounted differential pressure transmitter EJX210B features single crystal silicon resonant sensor and is suitable to measure levels of densities of solidifying or precipitating liquids. EJX210B transmits not only process variables but also the setting parameters using wireless signal. The transmitter runs on internal batteries, and the installation cost can be decreased since hard-wiring is not required. The communication protocol is compliant with ISA100.11a protocol specifications.

■ FEATURES

- **Long Life Battery Design**
  Ultra low current consumption design using two high capacity lithium-thionyl chloride batteries provide wireless operation for years.
- **Security Assured Wireless Network Joining**
  Infrared communication between the devices for wireless network configuration and parameter setting.
- **Quick Update Time**
  Selectable from 0.5 second to 60 minutes for measured process value to publish wirelessly.

■ STANDARD SPECIFICATIONS

■ WIRELESS SPECIFICATIONS

Communication protocol: ISA100.11a protocol
Data rate: 250 kbps
Frequency: 2400 - 2483.5 MHz license free ISM band
Radio security: AES 128 bit codified
RF Transmitter power: Max. 11.6 dBm (fixed)
Antenna: +2 dBi Omni directional monopole type
Separately sold remote antenna and antenna cables can be used.

■ POWER SUPPLY SPECIFICATIONS

Battery:
Use the dedicated battery pack.
Rated voltage: 7.2 V
Rated capacity: 19 Ah

■ SPAN AND RANGE LIMITS

Measurement Span/Range		kPa	inH_2O(/D1)	mbar(/D3)	mmH_2O(/D4)
M	Span	1 to 100	4 to 400	10 to 1000	100 to 10000
	Range	–100 to 100	–400 to 400	–1000 to 1000	–10000 to 10000
H	Span	5 to 500	20 to 2000	50 to 5000	0.05 to 5 kgf/cm^2
	Range	–500 to 500	–2000 to 2000	–5000 to 5000	–5 to 5 kgf/cm^2

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■ PERFORMANCE SPECIFICATIONS

Zero-based calibrated span, linear output, wetted parts material code SW for 3-inch flange flush type, fill fluid code B, and in the continuous measurement mode.

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

Reference Accuracy of Calibrated Span
(includes terminal-based linearity, hysteresis, and repeatability)

Measurement span		H
Reference accuracy	X ≤ span	±0.075% of Span
	X > span	±(0.025+0.01 URL/span)% of Span
X		100 kPa (400 inH_2O)
URL (upper range limit)		500 kPa (2000 inH_2O)

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Measurement span		M
Reference accuracy	X ≤ span	±0.075% of Span
	X > span	±(0.025+0.005 URL/span)% of Span
X		10 kPa (40 inH_2O)
URL (upper range limit)		100 kPa (400 inH_2O)

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

Capsule	Effect
H	±[0.14% Span +0.028% URL]
M	±[0.224% Span +0.056% URL]

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Static Pressure Effects per 0.69 MPa (100 psi) Change

Span Effects
M and H capsules
±0.028% of span

Effect on Zero
M and H capsules
±0.007% of URL

Stability
±0.1 % of URL per 12 months

Battery Characteristic
Battery pack with long life lithium-thionyl chloride batteries. With the intrinsically safe type, the battery pack is replaceable in hazardous area.
Typical battery life is 10 years at 60 seconds update time or 4 years at 10 seconds update time in the following conditions.*
- Ambient temperature: 23±2°C
- Device role: IO mode
- LCD display: off

* Environmental condition such as vibration may affect the battery life.

Response Time (Differential pressure)
M and H capsule: 180 ms (approximate value at normal temperature)
Including dead time of 100 ms (nominal)

Static Pressure Signal Range and Accuracy

(Includes terminal-based linearity, hysteresis, and repeatability)

Range
Upper Range Value and Lower Range Value of the statice pressure can be set in the range between 0 and Maximum Working Pressure (MWP*). The upper range value must be greater than the lower range value. Minimum setting span is 0.5 MPa (73 psi).
*: Maximum Working Pressure (MWP) is within flange rating pressure.

Accuracy
Absolute Pressure
1 MPa or higher: ±0.2% of span
Less than 1 MPa: ±0.2%×(1 MPa/span) of span
Gauge Pressure Reference
Gauge pressure reference is 1013 hPa (1 atm)
Note : Gauge pressure variable is based on the above fixed reference and thus subject to be affected by the change of atomospheric pressure.

■ FUNCTIONAL SPECIFICATIONS

Output
Wireless (ISA100.11a protocol) 2.4 GHz signal.
Output mode, linear or square root, is selectable.

Update Time

Measurement mode	Differential pressure	Pressure
Continuous	100 ms	100 ms
Intermittent	0.5 to 3600 s selectable	0.5 to 3600 s selectable

The transmitter shifts to the countinuous mode when the update time is set to 0.5 second.

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.

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.;
Differential pressure, static pressure, temperature.
See also “Factory Setting.”

Self Diagnostics
Capsule failure, amplifier failure, configuration error, battery alarm, wireless communication alarm and over-range error for process variables.

Software Download Function
Software download function permits to update wireless field device software via ISA100.11a wireless communication.

Battery Pack
2x primary lithium-thionyl chloride batteries
With battery case (batteries sold separately)

■ 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) LCD visible range
(Note: The ambient temperature limits must be within the fill fluid operating temperature range, see table 1.)

Process Temperature Limits
High pressure side: See table 1.
Low pressure side: 40 to 120°C (-40 to 248°F)

Ambient Humidity Limits
0 to 100% RH

Working Pressure Limits
See table 1.
For atmospheric pressure or below, see figure 1.

Table 1. Process temperature, Ambient temperature, and Working pressure

	Code	Process temperature *1*2	Ambient temperature *3	Working pressure
Silicone oil	A	–10 to 250°C *4 (14 to 482°F)	–10 to 85°C (14 to 185°F)	2.7 kPa abs (0.38 psi abs) to flange rating pressure

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*1: See figure 1 'Working Pressure and Process Temperature.'
*2: Indicates high pressure side value. The process temperature limit for low pressure side is –40 to 120°C (–40 to 248°F).
*3: This ambient temperature is the transmitter ambient temperature.
*4: In case of wetted parts material code **TW** (Tantalum), process temperature limit is up to 200°C (392°F).

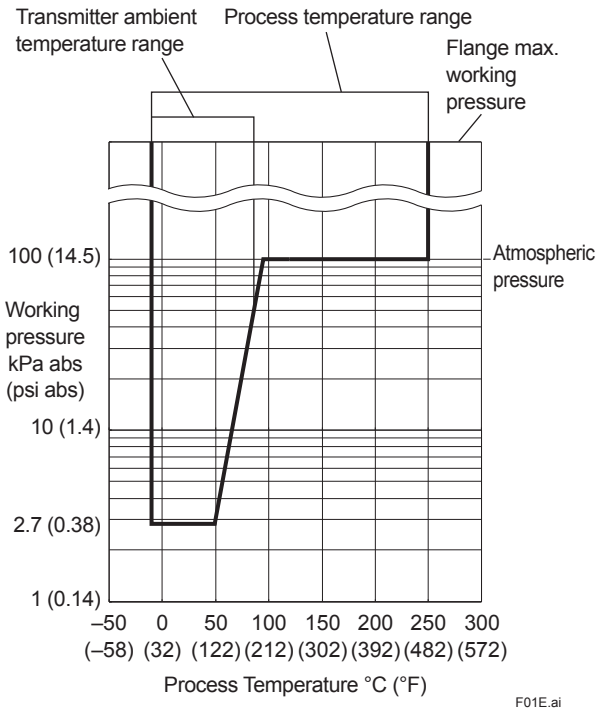

Figure 1. Working Pressure and Process Temperature

■ REGULATORY COMPLIANCE STATEMENTS

This device contains the wireless module which satisfies the following standards.

* Please confirm that an installation region fulfills an applicable standard. If additional regulatory information and approvals are required, contact a Yokogawa representative.

EMC Conformity Standards

EN61326-1 Class A, Table 2 (For use in industrial locations), EN61326-2-3

Radio Equipment Directive (RE)

ETSI EN 300 328, ETSI EN 301 489-1, ETSI EN 301 489-17, EN61010-1, EN61010-2-030, EN62311

• Indoor/Outdoor use

European Pressure Equipment Directive 2014/68/EU

Sound Engineering Practice

EU RoHS Directive

EN50581

Safety Requirement Standards

EN61010-1, EN61010-2-030

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

Regulation Conformity of the Wireless Module

• FCC Approval
• IC Approval

■ PHYSICAL SPECIFICATIONS

Process connections

High pressure side:

Flange connected
See the following table.

Table 2. Flange size and rating

Process connection style	Size	Flange
Flush type	3-inch 2-inch 1 1/2-inch*	JIS 10K, 20K ANSI Class 150, 300 JPI Class 150, 300 DIN PN10/16, 25/40
Extended type	4-inch 3-inch	JIS 10K, 20K ANSI Class 150, 300 JPI Class 150, 300 DIN PN10/16, 25/40

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*: Flushing connection rings are always attached.

Low pressure side:

Threaded
See "MODEL AND SUFFIX CODES."
Process connection of cover flange: IEC61518

Gasket Contact Surface

See the following table.

Table 3. Gasket contact surface

Flange		JIS/JPI/DIN		ANSI	
Wetted parts material code		SW, SE, WW, WE	HW, TW	SW, SE, WW, WE	HW, TW
Gasket contact Surface	Serration*1	—	—	●	—
	Flat (No serration)	●	●	●	●

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●: Applicable, —: Not applicable
*1: ANSI B16.5

Wetted Parts Material

High pressure side:
Refer to “MODEL AND SUFFIX CODES”

Flushing connection ring (optional)

Ring and Vent/Drain plugs
Refer to “MODEL AND SUFFIX CODES”

(Spiral) gasket for transmitter side
316 SST (Hoop), PTFE Teflon (Filler)

Low pressure side:

Diaphragm, Cover Flange, Process Connector, Capsule Gasket, and Vent/Drain plug
Refer to “MODEL AND SUFFIX CODES”

Process connector gasket
PTFE Teflon

Non-wetted Parts Material

Process Flange
Refer to “MODEL AND SUFFIX CODES”

Bolting
B7 carbon steel, 316L SST, or 660 SST

Housing
Low copper cast aluminum alloy

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, NEMA4X

Cover O-rings
Buna-N

Name plate and tag
316 SST tag plate wired onto transmitter.

Fill Fluid
Silicone oil, Fluorinated oil (optional)

Weight

Flush type
3-inch ANSI Class150 flang: 11.1 kg (24.2 lbs)
Without battery pack and process connector.

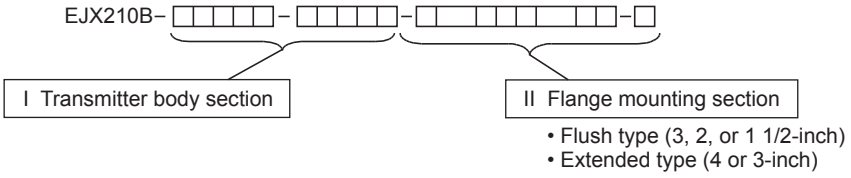
Extended type
4-inch ANSI Class150 flange, extension length (X_2)= 100 mm: 15.6 kg (34.4 lbs)
Without battery pack and process connector.

< Related Instruments>
Field Wireless System: Refer to GS 01W01A01-01EN
Field Wireless Management Station YFGW410:
GS 01W02D01-01EN
Field Wireless Access Point YFGW510:
GS 01W02E01-01EN
Field Wireless Media Converter YFGW610:
GS 01W02D02-01EN

■ MODEL AND SUFFIX CODES

- **Instruction**

The model and suffix codes for EJX210B consist of two parts; a transmitter body section (I) and a flange mounting section (II). This specification sheet introduces these two parts separately. The transmitter body section is shown in one table, and the flange mounting section specifications are listed according to the flange size and the process connection style. First select the model and suffix codes of transmitter body section and then continue on one of the flange mounting section.



I. Transmitter body section

EJX210B – ■■■■■ – ■■■■■ – □□□□□□□□ – □

Model	Suffix codes	Description
EJX210B	· ·	Flange mounted differential pressure transmitter
Output signal	**-L** ·	Wireless communication(ISA100.11a protocol)
Measurement span (Capsule)	**M** ·	1 to 100 kPa (4 to 400 inH_2O)
	H ·	5 to 500 kPa (20 to 2000 inH_2O)
Low pressure side wetted parts material	**S** ·	Refer to "Low Pressure Side Wetted Parts Materials" Table below.
Low pressure side Process connections	**0** ·	without process connector (Rc 1/4 female on the cover flange)
	1 ·	with Rc 1/4 female process connector
	2 ·	with Rc 1/2 female process connector
	3 ·	with 1/4 NPT female process connector
	4 ·	with 1/2 NPT female process connector
	► **5** ·	without process connector (1/4 NPT female on the cover flange)
Coverflange bolts and nuts material	**J** ·	B7 carbon steel
	G ·	316L SST
	C ·	660 SST
Installation	**-9** ·	Horizontal piping type and left side high pressure
Amplifier housing	**8** ·	Cast aluminum alloy with detachable antenna (2 dBi)*2
	9 ·	Cast aluminum alloy without antenna (N connector)*1*2
Electrical connection	**J** ·	No electrical connection, battery-powered type (battery case only; battery cells not included)
Integral Indicator	**D** ·	Digital indicator
—	**N** ·	Always N
Flange mounting section	– □□□□□□□□ – □	Continued on flange mounting section (II)

The '►' marks indicate the most typical selection for each specification.

*1: Order the antenna separately from accessary option.

*2: Remote antenna cables can be attached. Order separately from accessary option.

Table. Low Pressure Side Wetted Parts Materials

Low pressure side wetted parts material code	Cover flange and process connector	Capsule	Capsule gasket	Vent/Drain plug
S #	ASTM CF-8M*1	Hastelloy C-276*2 (Diaphragm) F316L SST, 316L SST (Others)	Teflon-coated 316L SST	316 SST

*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 (2003). For the use of 316 SST material, there may be certain limitations for pressure and temperature. Please refer to NACE standards for details.

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II.Flange mounting section (Flush type)

- **Precess flange size: 3-inch (80 mm)**

EJX210B − □□□□□ − □□□□□ − W□□ 3 □□□□□□ − □

Model	Suffix codes		Description
EJX210B	− □□□□□ − □□□□□ · · · · · · · · · · · · · · · · · ·		Transmitter body section (I)
Process connection style	**-W** · · · · · · · · · · · · · · · · · ·		Flush type
Flange rating	**J1** · · · · · · · · · · · · · · · · · ·		JIS 10K
	J2 · · · · · · · · · · · · · · · · · ·		JIS 20K
	A1 · · · · · · · · · · · · · · · · · ·		ANSI class 150
	A2 · · · · · · · · · · · · · · · · · ·		ANSI class 300
	P1 · · · · · · · · · · · · · · · · · ·		JPI class 150
	P2 · · · · · · · · · · · · · · · · · ·		JPI class 300
	D2 · · · · · · · · · · · · · · · · · ·		DIN PN10/16
	D4 · · · · · · · · · · · · · · · · · ·		DIN PN25/40
Flange size	**3** · · · · · · · · · · · · · · · · · ·		3-inch (80 mm)
Flange material	**A** · · · · · · · · · · · · · · · · · ·		JIS S25C
►	**B** · · · · · · · · · · · · · · · · · ·		304 SST*9
	C · · · · · · · · · · · · · · · · · ·		316 SST*9
Gasket contact surface *1	**1** · · · · · · · · · · · · · · · · · ·		Serration (for ANSI flange with wetted parts material SW only)
	2 · · · · · · · · · · · · · · · · · ·		Flat (no serration)
Wetted parts material (high pressure side) *8			[Diaphragm] / [Others]
	SW · · · · · · · · · · · · · · · · · ·		316L SST # / 316 SST #
	HW · · · · · · · · · · · · · · · · · ·		Hastelloy C-276*6 # / Hastelloy C-276*6 #
	TW · · · · · · · · · · · · · · · · · ·		Tantalum*7 / Tantalum*7
Flushing connection ring *2			[Ring] / [Vent/Drain plugs] / [Material]
►	**0** · · · · · · · · · · · · · · · · · ·		None / — / —
	A · · · · · · · · · · · · · · · · · ·		Straight type / R 1/4 connections*5 / 316 SST #
	B · · · · · · · · · · · · · · · · · ·		Straight type / 1/4 NPT connections / 316 SST #
Extension	**0** · · · · · · · · · · · · · · · · · ·		None
Fill fluid			[Process temperature] *3 / [Ambient temperature]
	-A · · · · · · · · · · · · · · · · · ·		Silicone oil / –10 to 250°C*4 / –10 to 85°C
Option codes			/□ Optional specification

The '►' marks indicate the most typical selection for each specification. Example: EJX210B-LMS5G-98JDN-WA13B1SW00-A/□

*1: See Table 3 'Gasket contact surface.'
*2: When specified flushing connection ring code **A** or **B**, exclusive gasket is provided for transmitter side.
*3: Indicates the process temperature limit of high pressure side.
The process temperature limit for low pressure side is –40 to 120°C.
*4: In case of wetted parts material code **TW** (Tantalum), the process temperature limit is –10 to 200°C.
*5: Not applicable for gasket contact surface code **1**.
*6: Hastelloy C-276 or ASTM N10276
*7: Not applicable for flushing connection ring code **A** and **B**.
*8: ⚠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.
*9: Forged version of the material may be used.

The '#' marks indicate the construction materials conform to NACE material recommendations per MR01-75 (2003). Please refer to NACE standards for details.

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II. Flange mounting section (Flush type)

- **Precess flange size: 2-inch (50 mm)**

EJX210B – □□□□□ – □□□□□ – W□□ 2 □□□□□□ – □

Model	Suffix codes			Description		
EJX210B	– □□□□□ – □□□□□ · · · · · · · · · · · · · · · · · ·			Transmitter body section (I)		
Process connection style	**-W** · · · · · · · · · · · · · · · · · ·			Flush type		
Flange rating	**J1** · · · · · · · · · · · · · · · · · ·			JIS 10K		
	J2 · · · · · · · · · · · · · · · · · ·			JIS 20K		
	A1 · · · · · · · · · · · · · · · · · ·			ANSI class 150		
	A2 · · · · · · · · · · · · · · · · · ·			ANSI class 300		
	P1 · · · · · · · · · · · · · · · · · ·			JPI class 150		
	P2 · · · · · · · · · · · · · · · · · ·			JPI class 300		
	D2 · · · · · · · · · · · · · · · · · ·			DIN PN10/16		
	D4 · · · · · · · · · · · · · · · · · ·			DIN PN25/40		
Flange size	**2** · · · · · · · · · · · · · · · · · ·			2-inch (50 mm)		
Flange material	**A** · · · · · · · · · · · · · · · · · ·			JIS S25C		
	► **B** · · · · · · · · · · · · · · · · · ·			304 SST[*9]		
	C · · · · · · · · · · · · · · · · · ·			316 SST[*9]		
Gasket contact surface [*1]	**1** · · · · · · · · · · · · · · · · · ·			Serration (for ANSI flange with wetted parts material WW only)		
	2 · · · · · · · · · · · · · · · · · ·			Flat (no serration)		
Wetted parts material (high pressure side) [*8]		**WW** · · · · · · · · · · · · · · · · · ·		[Diaphragm] Hastelloy C-276[*6] #	[Others] 316 SST #	
		HW · · · · · · · · · · · · · · · · · ·		Hastelloy C-276[*6] #	Hastelloy C-276[*6] #	
		TW · · · · · · · · · · · · · · · · · ·		Tantalum[*7]	Tantalum[*7]	
Flushing connection ring [*2]		► **0** · · · · · · · · · · · · · · · · · ·		[Ring] None	[Vent/Drain plugs] —	[Material] —
		A · · · · · · · · · · · · · · · · · ·		Straight type	R 1/4 connections[*5]	316 SST #
		B · · · · · · · · · · · · · · · · · ·		Straight type	1/4 NPT connections	316 SST #
Extension			**0** · · · · · · · · · · · · · · · · · ·	None		
Fill fluid			**-A** · · · · · · · · · · · · · · · · · ·	Silicone oil	[Process temperature] [*3] –10 to 250°C[*4]	[Ambient temperature] –10 to 85°C
Option codes	/□ Optional specification					

The '►' marks indicate the most typical selection for each specification. Example: EJX210B-LMS5G-98JDN-WA12B1WW00-A/□

*1: See Table 3 'Gasket contact surface.'
*2: When specified flushing connection ring code **A** or **B**, exclusive gasket is provided for transmitter side.
*3: Indicates the process temperature limit of high pressure side.
The process temperature limit for low pressure side is –40 to 120°C.
*4: In case of wetted parts material code **TW** (Tantalum), the process temperature limit is –10 to 200°C.
*5: Not applicable for gasket contact surface code **1**.
*6: Hastelloy C-276 or ASTM N10276
*7: Not Applicable for flushing connection ring code **A** and **B**.
*8: ⚠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.
*9: Forged version of the material may be used.
The '#' marks indicate the construction materials conform to NACE material recommendations per MR01-75 (2003).
Please refer to NACE standards for details.

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II. Flange mounting section (flush type)

- **Precess flange size: 1 1/ 2-inch (40 mm)**

EJX210B – □□□□□ – □□□□□ – W□ 8 □□□□□□ – □

Model	Suffix codes		Description
EJX210B	– □□□□□ – □□□□□ · · · · · · · · · · · · · · · · ·		Transmitter body section (I)
Process connection style	**-W** · · · · · · · · · · · · · · · · ·		Flush type
Flange rating	**J1** · · · · · · · · · · · · · · · · ·		JIS 10K
	J2 · · · · · · · · · · · · · · · · ·		JIS 20K
	A1 · · · · · · · · · · · · · · · · ·		ANSI class 150
	A2 · · · · · · · · · · · · · · · · ·		ANSI class 300
	P1 · · · · · · · · · · · · · · · · ·		JPI class 150
	P2 · · · · · · · · · · · · · · · · ·		JPI class 300
Flange size	**8** · · · · · · · · · · · · · · · · ·		1 1/2-inch (40 mm)
Flange material	**A** · · · · · · · · · · · · · · · · ·		JIS S25C
	► **B** · · · · · · · · · · · · · · · · ·		304 SST*7
	C · · · · · · · · · · · · · · · · ·		316 SST*7
Gasket contact surface *1	**1** · · · · · · · · · · · · · · · · ·		Serration (for ANSI flange only)
	2 · · · · · · · · · · · · · · · · ·		Flat (no serration)
Wetted parts material (high pressure side) *6	**WW** · · · · · · · · · · · · · · · · ·		[Diaphragm] Hastelloy C-276*5 # / [Others] 316 SST #
Flushing connection ring *2	► **C** · · · · · · · · · · · · · · · · ·		[Ring] Reducer type / [Vent/Drain plugs] R 1/4 connections*4 / [Material] 316 SST #
	D · · · · · · · · · · · · · · · · ·		[Ring] Reducer type / [Vent/Drain plugs] 1/4 NPT connections / [Material] 316 SST #
Extension	**0** · · · · · · · · · · · · · · · · ·		None
Fill fluid	**-A** · · · · · · · · · · · · · · · · ·		Silicone oil / [Process temperature] *3 –10 to 250°C / [Ambient temperature] –10 to 85°C
Option codes			/□ Optional specification

The '►' marks indicate the most typical selection for each specification. Example: EJX210B-LMS5G-98JDN-WA18B1WWC0-A/□

*1: See Table 3 'Gasket contact surface.'
*2: When specified flushing connection ring code **C** or **D**, exclusive gasket is provided for transmitter side.
*3: Indicates the process temperature limit of high pressure side.
The process temperature limit for low pressure side is –40 to 120°C.
*4: Not applicable for gasket contact surface code **1**.
*5: Hastelloy C-276 or ASTM N10276
*6: ⚠ 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.
*7: Forged version of the material may be used.
The '#' marks indicate the construction materials conform to NACE material recommendations per MR01-75 (2003). Please refer to NACE standards for details.

T09E.ai

II. Flange mounting section (Extended type)

- **Precess flange size: 4-inch (100 mm)**

EJX210B – □□□□□ – □□□□□ – E □ 4 □□□□□□ – □

Model	Suffix codes	Description
EJX210B	– □□□□ – □□□□ · · · · · · · · · · · · · · · · · ·	Transmitter body section (I)
Process connection style	**-E** · · · · · · · · · · · · · · · · · ·	Extended type
Flange rating	**J1** · · · · · · · · · · · · · · · · · ·	JIS 10K
	J2 · · · · · · · · · · · · · · · · · ·	JIS 20K
	A1 · · · · · · · · · · · · · · · · · ·	ANSI class 150
	A2 · · · · · · · · · · · · · · · · · ·	ANSI class 300
	P1 · · · · · · · · · · · · · · · · · ·	JPI class 150
	P2 · · · · · · · · · · · · · · · · · ·	JPI class 300
	D2 · · · · · · · · · · · · · · · · · ·	DIN PN10/16
	D4 · · · · · · · · · · · · · · · · · ·	DIN PN25/40
Flange size	**4** · · · · · · · · · · · · · · · · · ·	4-inch (100 mm)
Flange material	**A** · · · · · · · · · · · · · · · · · ·	JIS S25C
	► **B** · · · · · · · · · · · · · · · · · ·	304 SST*4
	C · · · · · · · · · · · · · · · · · ·	316 SST*4
Gasket contact surface *1	**1** · · · · · · · · · · · · · · · · · ·	Serration (for ANSI flange only)
	2 · · · · · · · · · · · · · · · · · ·	Flat (no serration)
Wetted parts material (high pressure side) *3	**SE** · · · · · · · · · · · · · · · · · ·	[Diaphragm] 316L SST # / [Others] 316 SST # / [Pipe] 316 SST #
Flushing connection ring	**0** · · · · · · · · · · · · · · · · · ·	None
Extension	**1** · · · · · · · · · · · · · · · · · ·	Length (X_2) = 50 mm
	3 · · · · · · · · · · · · · · · · · ·	Length (X_2) = 100 mm
	5 · · · · · · · · · · · · · · · · · ·	Length (X_2) = 150 mm
Fill fluid	**-A** · · · · · · · · · · · · · · · · · ·	Silicone oil / [Process temperature] *2 –10 to 250°C / [Ambient temperature] –10 to 85°C
Option codes		/□ Optional specification

The '►' marks indicate the most typical selection for each specification. Example: EJX210B-LMS5G-98JDN-EA14B1SE01-A/□

*1: See Table 3 'Gasket contact surface.'

*2: Indicates the process temperature limit of high pressure side.
The process temperature limit for low pressure side is –40 to 120°C.

*3: ⚠Users must consider the characteristics of selected wetted parts material and the influence of process fluids. The use of inappropriate materials can result in the leakage of corrosive process fluids and cause injury to personnel and/or damage to plant facilities. It is also possible that the diaphragm itself can be damaged and that material from the broken diaphragm and the fill fluid can contaminate the user's process fluids.
Be very careful with highly corrosive process fluids such as hydrochloric acid, sulfuric acid, hydrogen sulfide, sodium hypochlorite, and high-temperature steam (150°C [302°F] or above). Contact Yokogawa for detailed information of the wetted parts material.

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

The '#' marks indicate the construction materials conform to NACE material recommendations per MR01-75 (2003).
Please refer to NACE standards for details.

T10E.ai

II. Flange mounting section (Extended type)

- **Precess flange size: 3-inch (80 mm)**

EJX210B − □□□□□ − □□□□□ − E □□ 3 □□□□□□ − □

Model	Suffix codes		Description		
EJX210B	− □□□□ − □□□□ · · · · · · · · · · · · · · · · · ·		Transmitter body section (I)		
Process connection style	**-E** · · · · · · · · · · · · · · · · ·		Extended type		
Flange rating	**J1** · · · · · · · · · · · · · · · · ·		JIS 10K		
	J2 · · · · · · · · · · · · · · · · ·		JIS 20K		
	A1 · · · · · · · · · · · · · · · · ·		ANSI class 150		
	A2 · · · · · · · · · · · · · · · · ·		ANSI class 300		
	P1 · · · · · · · · · · · · · · · · ·		JPI class 150		
	P2 · · · · · · · · · · · · · · · · ·		JPI class 300		
	D2 · · · · · · · · · · · · · · · · ·		DIN PN10/16		
	D4 · · · · · · · · · · · · · · · · ·		DIN PN25/40		
Flange size	**3** · · · · · · · · · · · · · · · · ·		3-inch (80 mm)		
Flange material	**A** · · · · · · · · · · · · · · · · ·		JIS S25C		
	► **B** · · · · · · · · · · · · · · · · ·		304 SST*5		
	C · · · · · · · · · · · · · · · · ·		316 SST*5		
Gasket contact surface *1	**1** · · · · · · · · · · · · · · · · ·		Serration (for ANSI flange only)		
	2 · · · · · · · · · · · · · · · · ·		Flat (no serration)		
Wetted parts material (high pressure side) *4		**WE** · · · · · · · ·	[Diaphragm] Hastelloy C-276*3 #	[Others] 316 SST #	[Pipe] 316 SST #
Flushing connection ring	**0** · · · · · · · · · · · · · · · · ·		None		
Extension	**1** · · · · · · · · · · · · · · · · ·		Length (X_2) = 50 mm		
	3 · · · · · · · · · · · · · · · · ·		Length (X_2) = 100 mm		
	5 · · · · · · · · · · · · · · · · ·		Length (X_2) = 150 mm		
Fill fluid		**-A** · · · · · · · · · · · · · · · · ·	Silicone oil	[Process temperature] *2 –10 to 250°C	[Ambient temperature] –10 to 85°C
Option codes			/□ Optional specification		

The '►' marks indicate the most typical selection for each specification. Example: EJX210B-LMS5G-98JDN-EA13B1WE01-A/□

*1: See Table 3 'Gasket contact surface.'

*2: Indicates the process temperature limit of high pressure side.
The process temperature limit for low pressure side is –40 to 120°C.

*3: Hastelloy C-276 or N10276

*4: ⚠Users must consider the characteristics of selected wetted parts material and the influence of process fluids. The use of inappropriate materials can result in the leakage of corrosive process fluids and cause injury to personnel and/or damage to plant facilities. It is also possible that the diaphragm itself can be damaged and that material from the broken diaphragm and the fill fluid can contaminate the user's process fluids.
Be very careful with highly corrosive process fluids such as hydrochloric acid, sulfuric acid, hydrogen sulfide, sodium hypochlorite, and high-temperature steam (150°C [302°F] or above). Contact Yokogawa for detailed information of the wetted parts material.

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

The '#' marks indicate the construction materials conform to NACE material recommendations per MR01-75 (2003).
Please refer to NACE standards for details.

T11E.ai

■ OPTIONAL SPECIFICATIONS (For Explosion Protected type)

Item	Description	Code
Factory Mutual (FM)	FM Intrinsically safe Approval Applicable Standard: Class 3600, Class 3610, Class 3611, Class 3810, NEMA 250, ANSI/ISA-60079-0, ANSI/ISA-60079-11 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.: –50 to 70°C (–58 to 158°F)	**FS17**
ATEX	ATEX Intrinsically safe Approval Applicable Standard: EN60079-0, EN60079-11, EN60079-26 Certificate: KEMA 10ATEX0164 X II 1 G Ex ia IIC T4 Ga Degree of protection: IP66/IP67 Maximum Process Temp.(Tp):120°C(248°F) Amb. Temp.(Tamb): –50 to 70°C (–58 to 158°F)	**KS27**
Canadian Standards Association (CSA)	CSA Intrinsically safe Approval Certificate: 2325443 Applicable standard: CAN/CSA-C22.2 No.0, CAN/CSA-C22.2 No.0.4, C22.2 No.25, CAN/CSA-C22.2 No.94,CAN/CSA-C22.2 No.157, C22.2 No.213, CAN/CSA-C22.2 No.61010-1, CAN/CSA-C22.2 No.60079-0, CAN/CSA-E60079-11, IEC60529 Ex ia IIC T4 Intrinsically Safe for Class I, Division 1, Groups A, B, C & D, Class II, Division 1, Groups E, F & G, Class III, Division 1. Nonincendive for Class I, Division 2, Groups A, B, C & D, Class II, Division 2, Groups F & G, Class III, Division 1 Enclosure: IP66/IP67 and Type 4X Temperature Code: T4 Maximum Process Temp.(Tp):120°C (248°F) Amb. Temp.(Tamb): –50 to 70°C (–58 to 158°F)	**CS17**
IECEx	IECEx Intrinsically safe Approval Applicable Standard: IEC60079-0:2011, IEC60079-11:2011, IEC60079-26:2006 Certificate: IECEx KEM 10.0074 X Ex ia IIC T4 Ga Enclosure: IP66/IP67 Maximum Process Temp.(Tp) :120°C(248°F) Amb. Temp.(Tamb): –50 to 70°C (–58 to 158°F)	**SS27**

■ OPTIONAL SPECIFICATIONS

Item		Description		Code
Painting	Color change	Amplifier cover only		P□
	Coating change	Anti-corrosion coating *1		X2
Oil-prohibited use		Degrease cleansing treatment		K1
Oil-prohibited use with dehydrating treatment		Degrease cleansing and dehydrating treatment		K5
Calibration units*2		P calibration (psi unit)	(See Table for Span and Range Limits.)	D1
		bar calibration (bar unit)		D3
		M calibration (kgf/cm^2 unit)		D4
Teflon film*3 *4		Diaphragm protection from sticky process fluid by FEP Teflon film attached with fluorinated oil. Operation range: 20 to 150°C, 0 to 2 MPa (Not applicable for vacuum service).		TF1
Gold-plated diaphragm*5		Inside of isolating diaphragms (fill fluid side) are gold plated, effective for hydrogen permeation.		A1
Material certificate	For Flush type	High Pressure side: Process flange, Block *6 Low Pressure side: Cover flange		M0W
		High Pressure side: Process flange, Block *7 Low Pressure side: Cover flange, Process connector		M1W
		High Pressure side: Process flange, Block, Ring *6 *8 Low Pressure side: Cover flange		M3W
		High Pressure side: Process flange, Block, Ring *7 *8 Low Pressure side: Cover flange, Process connector		M4W
	For Extended type	High Pressure side: Process flange, Block, Pipe, Base *6 Low Pressure side: Cover flange		M0E
		High Pressure side: Process flange, Block, Pipe, Base *7 Low Pressure side: Cover flange, Process connector		M1E
Pressure test/ Leak test certificate*9 *10		(Flange rating)	(Test pressure)	
		JIS 10K	2 MPa (290 psi)	T51
		JIS 20K	5 MPa (720 psi)	T54
		ANSI/JPI Class 150	3 MPa (430 psi)	T52
		ANSI/JPI Class 300	8 MPa (1160 psi)*11	T56
		ANSI/JPI Class 300	7 MPa (1000 psi)*12	T55

Nitrogen(N_2) Gas*13
Retention time: one minute

*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 code **D1**, **D3**, and **D4**.
*3: Applicable for flush type (process connection style code **W**.)
*4: Applicable for flushing connection ring code **0**.
*5: Applicable for wetted parts material code **SW**, **SE**, **WW**, **WE**, and **HW**.Consult Yokogawa in case gold-plated diaphragm is required for low pressure side.
*6: Applicable for Low Pressure Side Process connection code **0** and **5**.
*7: Applicable for Low Pressure Side Process connection code **1**, **2**, **3**, and **4**.
*8: Applicable for flushing connection ring code **A**, **B**, **C**, and **D**.
*9: The unit on the certificate is always MPa regardless of selection of option code **D1**, **D3**, or **D4**.
*10: A flushing connection ring will not be applied when conducting the pressure test or leak test.
*11: Applicable for flush type (process connection style code **W**.)
*12: Applicable for extended type (process connection style code **E**.)
*13: Pure nitrogen gas is used for oil-prohibited use (option code **K1** and **K5**.)

■ OPTIONAL ACCESSORIES

Product	Part number	Specification
Battery pack assembly	F9915NQ*1	Battery case, Lithium-thionyl chloride batteries 2 pieces
Batteries*2	F9915NR	Lithium-thionyl chloride batteries, 2 pieces
Battery case	F9915NK*3	Battery case only
Remote antenna cable	F9915KU	3 m with mounting bracket
	F9915KV	13 m (3 m+10 m), with arrester and mounting bracket
Antenna	F9915KW	2 dBi standard antenna
	F9915KY	6 dBi high gain antenna*4

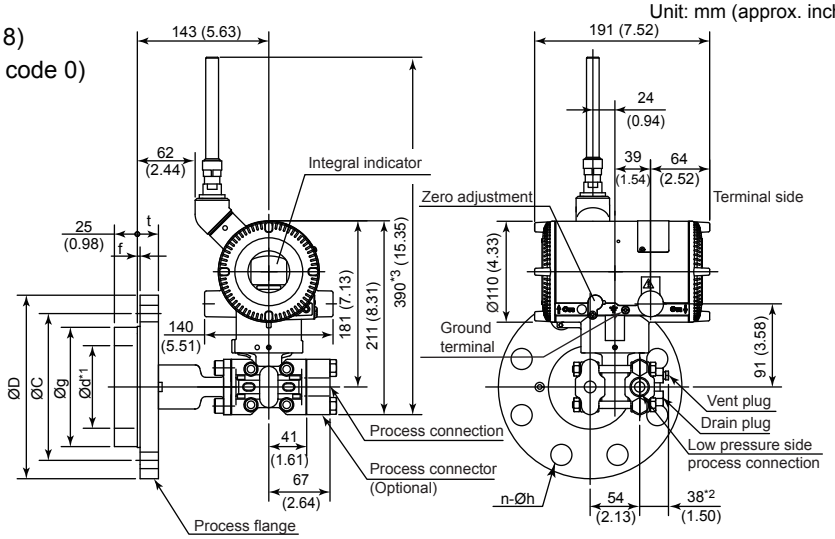
*1: If you need F9915MA, please purchase F9915NQ. F9915NQ is a set of F9915MA and instruction manual.
*2: Alternatively, Tadiran SL-2780/S or TL-5930/S batteries can be purchased from your local distributor.
*3: If you need F9915NS, please purchase F9915NK. F9915NK is a set of F9915NS and instruction manual.
*4: Use of high gain antenna is limited by local regulation of radio and telecommunication law. Consult Yokogawa for details.

■ DIMENSIONS

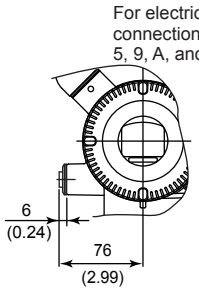
Unit: mm (approx. inch)

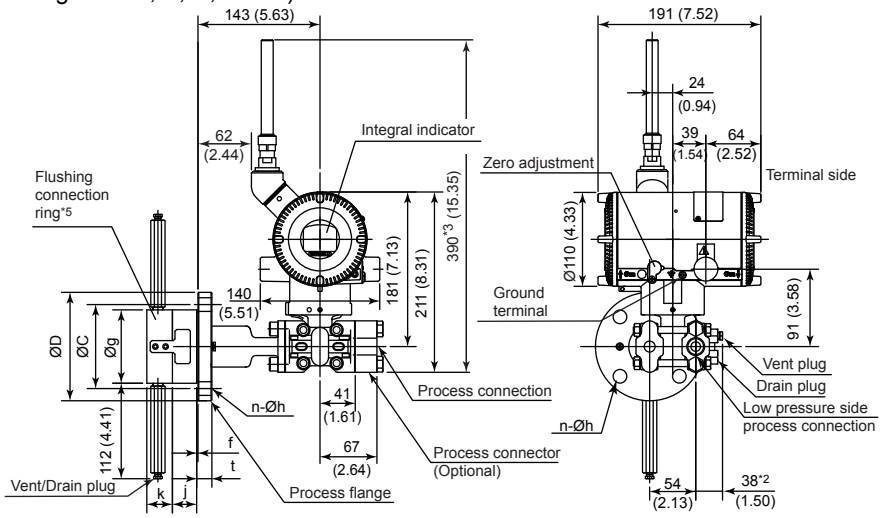
● Flush type (Amplifier housing code 8)

◆ No ring (Flushing connection ring code 0)

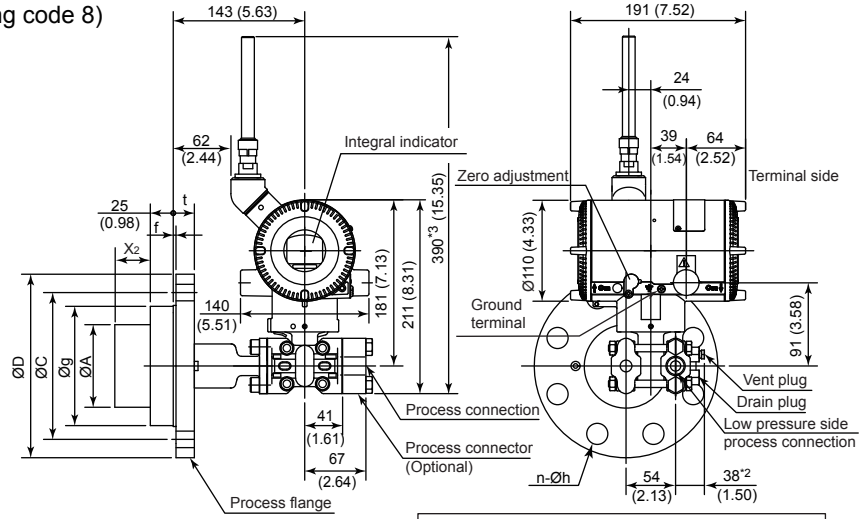


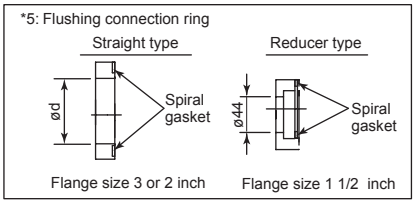
◆ With ring (Flushing connection ring code A, B, C, and D)





● Extended type (Amplifier housing code 8)





*1: Indicates inside diameter of gasket contact surface.
*2: When option code K1 or K5 is selected, add 15 mm (0.59 inch) to the value in the flange. Add 11 mm (0.36 inch) for drain/vent plugs of flushing connection ring.
*3: When amplifier housing code 9 is selected, the value is 270 mm (10.63 inch). In this case, the figure is shown as A.

Unit: mm (Approx.: inch)

Process flange size: 4 inch (100 mm)

Code	Flange rating	øD	øC	øg	ød	t	Bolt holes		j	k	øA
							No.(n)	Dia.(øh)			
J1	JIS 10K	210 (8.27)	175 (6.89)	155 (6.10)	—	18 (0.71)	8	19 (0.75)	—	—	96±0.5 (3.78±0.02)
J2	JIS 20K	225 (8.86)	185 (7.28)	155 (6.10)	—	24 (0.94)	8	23 (0.91)	—	—	96±0.5 (3.78±0.02)
A1	ANSI class 150	228.6 (9.00)	190.5 (7.50)	155 (6.10)	—	23.9 (0.94)	8	19.1 (0.75)	—	—	96±0.5 (3.78±0.02)
A2	ANSI class 300	254 (10.00)	200.2 (7.88)	155 (6.10)	—	31.8 (1.25)	8	22.4 (0.88)	—	—	96±0.5 (3.78±0.02)
P1	JPI class 150	229 (9.02)	190.5 (7.50)	155 (6.10)	—	24 (0.94)	8	19 (0.75)	—	—	96±0.5 (3.78±0.02)
P2	JPI class 300	254 (10.0)	200.2 (7.88)	155 (6.10)	—	32 (1.26)	8	22 (0.87)	—	—	96±0.5 (3.78±0.02)
D2	DIN PN10/16	220 (8.66)	180 (7.09)	155 (6.10)	—	20 (0.79)	8	18 (0.71)	—	—	96±0.5 (3.78±0.02)
D4	DIN PN25/40	235 (9.25)	190 (7.48)	155 (6.10)	—	24 (0.94)	8	22 (0.87)	—	—	96±0.5 (3.78±0.02)

Process flange size: 3 inch (80 mm)

Code	Flange rating	øD	øC	øg	ød*1	t	Bolt holes		j	k	øA
							No.(n)	Dia.(øh)			
J1	JIS 10K	185 (7.28)	150 (5.91)	130 (5.12)	90 (3.54)	18 (0.71)	8	19 (0.75)	25 (0.98)	27 (1.06)	71±0.5 (2.8±0.02)
J2	JIS 20K	200 (7.87)	160 (6.30)	130 (5.12)	90 (3.54)	22 (0.87)	8	23 (0.91)	25 (0.98)	27 (1.06)	71±0.5 (2.8±0.02)
A1	ANSI class 150	190.5 (7.50)	152.4 (6.00)	130 (5.12)	90 (3.54)	23.9 (0.94)	4	19.1 (0.75)	25 (0.98)	27 (1.06)	71±0.5 (2.8±0.02)
A2	ANSI class 300	209.6 (8.25)	168.1 (6.62)	130 (5.12)	90 (3.54)	28.5 (1.12)	8	22.4 (0.88)	25 (0.98)	27 (1.06)	71±0.5 (2.8±0.02)
P1	JPI class 150	190 (7.48)	152.4 (6.00)	130 (5.12)	90 (3.54)	24 (0.94)	4	19 (0.75)	25 (0.98)	27 (1.06)	71±0.5 (2.8±0.02)
P2	JPI class 300	210 (8.27)	168.1 (6.62)	130 (5.12)	90 (3.54)	28.5 (1.12)	8	22 (0.87)	25 (0.98)	27 (1.06)	71±0.5 (2.8±0.02)
D2	DIN PN10/16	200 (7.87)	160 (6.30)	130 (5.12)	90 (3.54)	20 (0.79)	8	18 (0.71)	25 (0.98)	27 (1.06)	71±0.5 (2.8±0.02)
D4	DIN PN25/40	200 (7.87)	160 (6.30)	130 (5.12)	90 (3.54)	24 (0.94)	8	18 (0.71)	25 (0.98)	27 (1.06)	71±0.5 (2.8±0.02)

Process flange size: 2 inch (50 mm)

Code	Flange rating	øD	øC	øg	ød*1	t	Bolt holes		j	k
							No.(n)	Dia.(øh)		
J1	JIS 10K	155 (6.10)	120 (4.72)	100 (3.94)	61 (2.40)	16 (0.63)	4	19 (0.75)	25 (0.98)	27 (1.06)
J2	JIS 20K	155 (6.10)	120 (4.72)	100 (3.94)	61 (2.40)	18 (0.71)	8	19 (0.75)	25 (0.98)	27 (1.06)
A1	ANSI class 150	152.4 (6.00)	120.7 (4.75)	100 (3.94)	61 (2.40)	19.1 (0.75)	4	19.1 (0.75)	25 (0.98)	27 (1.06)
A2	ANSI class 300	165.1 (6.50)	127.0 (5.00)	100 (3.94)	61 (2.40)	22.4 (0.88)	8	19.1 (0.75)	25 (0.98)	27 (1.06)
P1	JPI class 150	152 (5.98)	120.6 (4.75)	100 (3.94)	61 (2.40)	19.5 (0.77)	4	19 (0.75)	25 (0.98)	27 (1.06)
P2	JPI class 300	165 (6.50)	127.0 (5.00)	100 (3.94)	61 (2.40)	22.5 (0.89)	8	19 (0.75)	25 (0.98)	27 (1.06)
D2	DIN PN10/16	165 (6.50)	125 (4.92)	100 (3.94)	61 (2.40)	18 (0.71)	4	18 (0.71)	25 (0.98)	27 (1.06)
D4	DIN PN25/40	165 (6.50)	125 (4.92)	100 (3.94)	61 (2.40)	20 (0.79)	4	18 (0.71)	25 (0.98)	27 (1.06)

Process flange size: 1 1/2 inch (40 mm)

Code	Flange rating	øD	øC	øg	ød*1	t	Bolt holes		j	k
							No.(n)	Dia.(øh)		
J1	JIS 10K	140 (5.51)	105 (4.13)	86 (3.39)	44 (1.73)	16 (0.63)	4	19 (0.75)	27 (1.06)	30 (1.18)
J2	JIS 20K	140 (5.51)	105 (4.13)	86 (3.39)	44 (1.73)	18 (0.71)	4	19 (0.75)	27 (1.06)	30 (1.18)
A1	ANSI class 150	127 (5.00)	98.4 (3.87)	86 (3.39)	44 (1.73)	17.5 (0.69)	4	15.9 (0.63)	27 (1.06)	30 (1.18)
A2	ANSI class 300	155.4 (6.12)	114.3 (4.50)	86 (3.39)	44 (1.73)	20.6 (0.81)	4	22.4 (0.88)	27 (1.06)	30 (1.18)
P1	JPI class 150	127 (5.00)	98.6 (3.88)	86 (3.39)	44 (1.73)	17.6 (0.69)	4	16 (0.63)	27 (1.06)	30 (1.18)
P2	JPI class 300	155 (6.10)	114.3 (4.50)	86 (3.39)	44 (1.73)	20.6 (0.81)	4	22 (0.87)	27 (1.06)	30 (1.18)

*1: Indicates inside diameter of gasket contact surface.

Extension length (X_2)

Extension code	X_2
1	50 (1.97)
3	100 (3.94)
5	150 (5.91)

T12E.ai

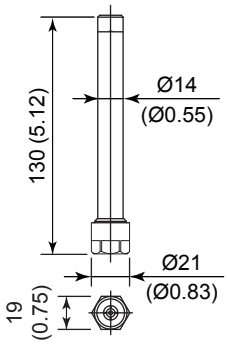
● Antenna/Cable

Unit: mm (approx. inch)

☐ Non-directional antenna

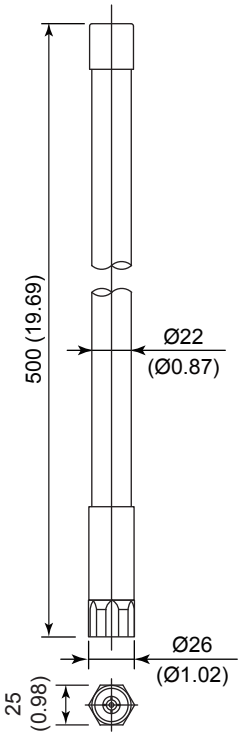
• Gain: 2 dBi

Part number: F9915KW



• Gain: 6 dBi

Part number: F9915KY

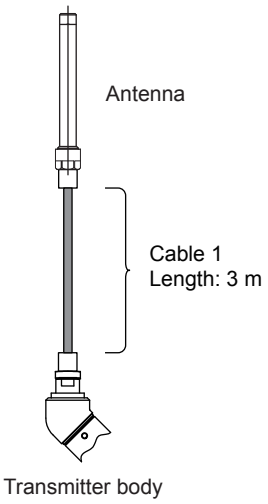


☐ Antenna cable

• Sheath diameter: 11.2 mm

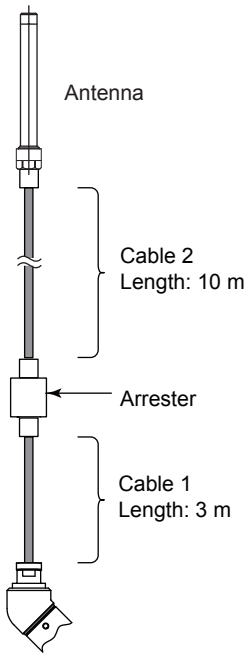
< Without arrester >

Part number: F9915KU

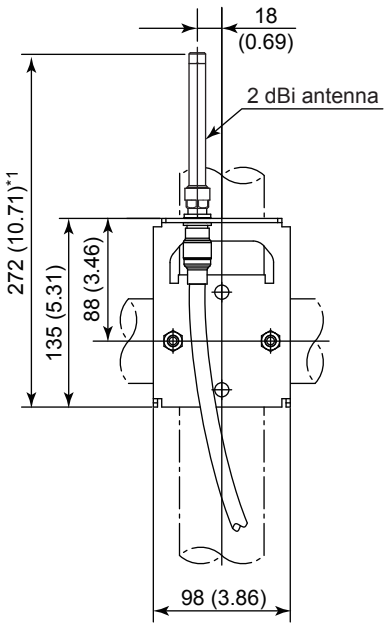


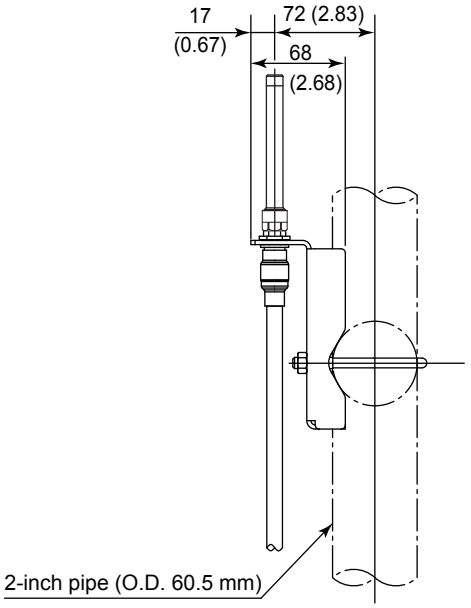
< With arrester >

Part number: F9915KV



● Antenna mounting bracket

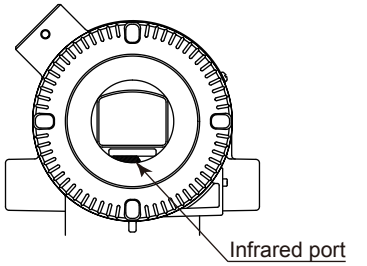




*1: When 6 dBi antenna is selected, the value is 642 mm (25.28 inch).

F04E.ai

● **Infrared Configuration**



<Ordering Information>

Specify the following when ordering

1. Model, suffix codes, and option codes
2. Calibration range and unit
   1) Range
      Calibration range can be specified with range value specifications up to 5 digits 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) Unit
      Specify only one unit from Table A.

Table A. Available Range Unit

EJX210B	mmH_2O, mmH_2O (68°F), mmHg, Pa, kPa, MPa, mbar, bar, gf/cm^2, kgf/cm^2, inH_2O, inH_2O (68°F), inHg, ftH_2O, ftH_2O (68°F) or psi

3. Output mode
   Select Liner.
4. Display setting (SCALE)
   1) Display scale and unit
      Specify either “0 to 100 %” or “Desired Range and Unit” for engineering unit scale:
      - When “Desired Range and Unit” is specified, scale range can be specified with range limit specifications up to 5 digits 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.
   2) Display mode
      Select Liner.
5. Tag Number (if required)
   Specify Tag number (up to 16 letters) to be engraved on the tag plate. The specified letters are written on TAG_Name (16 letters) in the amplifier memory.
6. Software tag (if required)
   Specify this software tag when tag number which is different from the tag number specified in the “TAG NUMBER” is required. The tag number specified in “SOFTWARE TAG” will be entered on “TAG” (up to 16 letters) in the amplifier memory.
7. Network ID (if required)
   Specify the number from 2 to 65535.When not specified, it will use 1 as the default.

< Factory Setting >

Tag No.	Blank unless otherwise specified in order
Software tag	Blank unless otherwise specified in order
Network ID	‘1‘ unless otherwise specified in order.
Static pressure display range	‘0 to 25 MPa’ for M and H capsule, absolute value. Measuring low pressure side.

< Reference >

1. DPharp EJX® is a registered trademark of Yokogawa Electric Corporation.
2. Teflon; Trademark of E.I. DuPont de Nemours & Co.
3. Hastelloy; Trademark of Haynes International Inc.

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