FUJI ELECTRIC

FCX-AII Series

REMOTE SEAL TYPE
PRESSURE TRANSMITTER

DATA SHEET

FKB···4

The FCX–AⅡ pressure transmitter accurately measures gauge pressure and transmits a proportional 4 to 20mA signal. The transmitter utilizes a unique micromachined capacitance silicon sensor with state-of-the-art microprocessor technology to provide exceptional performance and functionality.
Totally welded construction of the seals assures excellent reliability in high temperature and highly corrosive process conditions.

FEATURES

1. High accuracy
   0.2% accuracy for all calibrated spans is a standard feature for all GP models covering 1.3kPa{0.013bar} range to 50000kPa{500bar} high pressure range. 0.1% accuracy is available as option. Fuji's micro-capacitance silicon sensor assures this accuracy for all elevated or suppressed calibration ranges without additional adjustment.
2. Minimum environmental influence
   The "Advanced Floating Cell" design which protects the pressure sensor against changes in temperature, and overpressure substantially reduces total measurement error in actual field applications.
3. Fuji/HART® bilingual communications protocol and FOUNDATION™ fieldbus and Profibus™ compatibility
   FCX–AⅡ series transmitter offers bilingual communications to speak both Fuji proprietary protocol and HART®. Any HART® compatible devices can communicate with FCX–AⅡ. Further, by upgrading electronics FOUNDATION™ fieldbus and Profibus™ are also available.
4. Application flexibility
   Various options that render the FCX–AⅡ suitable for almost any process applications include:
   – Analog indicator at either the electronics side or terminal side
   – Full range of hazardous area approvals
   – Built-in RFI filter and lightning arrester
   – 5-digit LCD meter with engineering unit
   – Stainless steel electronics housing
   – Wide selection of materials
   – High temperature, high vacuum seals
5. Burnout current flexibility (Under Scale: 3.2 to 3.8mA, Over Scale: 20.8 to 21.6mA)
   Burnout signal level is adjustable using Model FXW Hand Held Communicator (HHC) to comply with NAMUR NE43.
6. Dry calibration without reference pressure
   Thanks to the best combination of unique construction of mechanical parts (Sensor unit) and high performance electronics circuit (Electronics unit), reliability of dry calibration without reference pressure is at equal level as wet calibration.

SPECIFICATIONS

Functional specifications

Service: Liquid, gas, or vapour

Span, range, and overrange limit:

Type	Span limit [kPa]{bar}		Range limit [kPa]{bar}	Overrange limit [MPa] {bar}
	Min.	Max.		
FKB□□1	1.3 {0.013}	130 {1.3}	–100 to +130 {–1 to +1.3}	1 {10}
FKB□□2	5 {0.05}	500 {5}	–100 to +500 {–1 to +5}	1.5 {15}
FKB□□3	30 {0.3}	3000 {30}	–100 to +3000 {–1 to +30}	9 {90}
FKB□□4	100 {1}	10000 {100}	–100 to +10000 {–1 to +100}	15 {150}
FKB□□5	500 {5}	50000 {500}	–100 to +50000 {–1 to +500}	75 {750}

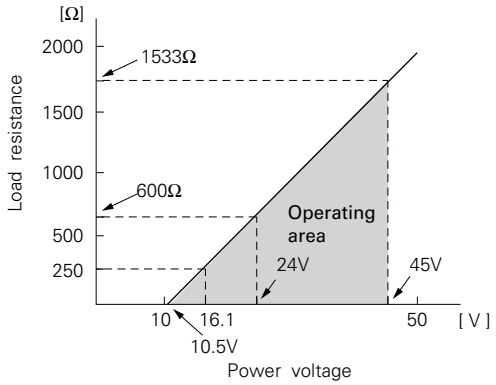
Remark: To minimize environmental influence, span should be greater than 1/40 of the max. span in most applications.

– Lower range limit (vacuum limit) ;
  Silicone fill sensor: See Fig. 1, Fig. 2
  Fluorinated fill sensor: Atmospheric pressure
– Conversion factors to different units;
  $1MPa=10^3kPa=10bar=10.19716kgf/cm^2=145.0377psi$
  $1kPa=10mbar=101.9716mmH_2O=4.01463inH_2O$

Output signal: 4 to 20mA DC with digital signal superimposed on the 4 to 20mA signal.

Power supply: Transmitter operates on 10.5V to 45V DC at transmitter terminals.
10.5V to 32V DC for the units with optional arrester.

Load limitations: see figure below



Note: For communication with HHC[1] (Model: FXW), min. of 250Ω is required.

Hazardous locations:

Authorities	Flameproof	Intrinsic safety	Type n Nonincendive
ATEX	Ex II 2 GD - EExd IIC T5/T6	Ex II 1 GD - EExia IIC T4/T5	Ex II 3 GD - EExn IIC T4/T5
Factory Mutual	Class I II III Div. 1 Groups B thru. G	Class I II III Div. 1 Groups A thru. F	Class I II III Div. 2 Groups A thru. G
CSA	Class I II III Div. 1 Groups C thru. G	Class I II III Div. 1 Groups A thru. G	Class I II III Div. 2 Groups A thru. G
TIIS	Ex do IIB+H_2 T4	Ex ia II C T4 (*)	—

(*) Approval pending

Zero/span adjustment:
Zero and span are adjustable from the HHC[1]. Zero and span are also adjustable externally from the adjustment screw (Span adjustment is not available with 9th digit code "L, P, Q, S").

Damping: Adjustable from HHC or local adjustment unit with LCD display.
The time constant is adjustable between 0.12 to 32 seconds.

Zero elevation/suppression:
Zero can be elevated or suppressed within the specified range limit of each sensor model.

Normal/reverse action:
Selectable from HHC[1].

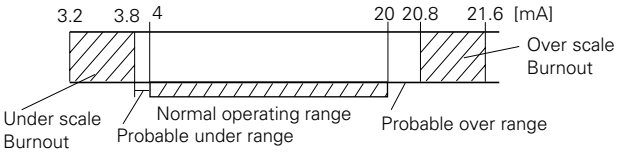
Indication: Analog indicator or 5-digit LCD meter, as specified.

Burnout direction: Selectable from HHC[1]
If self-diagnostic detect transmitter failure, the analog signal will be driven to either "Output Hold", "Output Overscale" or "Output Underscale" modes.

"Output Hold":
Output signal is hold as the value just before failure happens.

"Output Overscale":
Adjustable within the range 20.8mA to 21.6mA from HHC[1]

"Output Underscale":
Adjustable within the range 3.2mA to 3.8mA from HHC[1]



Loop-check output:
Transmitter can be configured to provide constant signal 3.8mA through 21.6mA by HHC[1].

Temperature limit:
Ambient: –40 to +85°C
(–20 to +80°C for LCD indicator)
(–40 to +60°C for arrester option)
(–10 to +60°C for fluorinated oil fill transmitter)
(–10 to +85°C for silicone oil "H", "S", "K")
(+20 to +85°C for silicone oil "J", "T")
For explosionproof units (flameproof or intrinsic safety), ambient temperature must be within the limits specified by each standard.

Process:

Fill fluid	Code in the 13th digit of "Code symbols"	Process temperature	Lower limit of static press.
Fluorinated oil	W, A and D	–20 to 120°C	Atmospheric pressure
Silicone oil	H	–15 to 250°C	
	J	85 to 300°C	
	Y and G	–40 to 120°C	2.7kPa abs {20mmHg abs}
	S	–15 to 250°C	
	T	85 to 300°C	
	K	–15 to 200°C	0.13kPa abs {1mmHg abs} or more

Storage: –40 to +90°C

Humidity limit: 0 to 100% RH

Communication: With HHC[1] (Model FXW, consult Data Sheet No. EDS8-47), following information can be remotely displayed or reconfigured.
Note: HHC's version must be more than 6.0 (or FXW □□□□1–□3), for FCX-A Ⅱ.

Items	Display	Set
Tag No.	*v*	*v*
Model No.	*v*	*v*
Serial No.	*v*	—
Engineering unit	*v*	*v*
Range limit	*v*	—
Measuring range	*v*	*v*
Damping	*v*	*v*
Output mode	*v*	—
Burnout direction	*v*	*v*
Calibration	*v*	*v*
Output adjust	—	*v*
Data	*v*	—
Self diagnoses	*v*	—
Printer	—	—
External switch lock	*v*	*v*
Transmitter display	*v*	*v*
Linearize	*v*	*v*
Rerange	*v*	*v*

(Note) (1) HHC: Hand Held Communicator

Performance specifications

Reference conditions, silicone oil fill, 316SS isolating diaphragms, 4 to 20mA analog output in linear mode.

Accuracy rating: (including linearity, hysteresis, and repeatability)

(Standard)

For spans greater than 1/10 of URL: ±0.2% of span

For spans below 1/10 of URL:

$$\pm \left(0.1+0.1 \frac{0.1 \times \text{URL}}{\text{Span}} \right) \text{ \% of span}$$

(Option) (Code; 21th digit H,K)

Not available for Max span 50000kPa model.

For spans greater than 1/10 of URL: ±0.1% of span

For spans below 1/10 of URL:

$$\pm \left(0.05+0.05 \frac{0.1 \times \text{URL}}{\text{Span}} \right) \text{\% of span}$$

Stability: ±0.1% of upper range limit (URL) for 6 month.

Temperature effect:

Effect per 28°C change between the limits of −40°C and +85°C

(Standard) Zero shift: ±0.35% of URL
Total effect: ±0.5% of URL

(Option) (Code; 21th digit J,K)
Zero shift: ±0.3% of URL
Total effect: ±0.4% of URL

Overrange effect: Zero shift; 0.2% of URL for any overrange to maximum limit

Supply voltage effect:

Less than 0.005% of calibrated span per 1V

RFI effect: Less than 0.2% of URL for the frequencies of 20 to 1000MHz and field strength 30 V/m when electronics covers on.
(Classification: 2-abc: 0.2% span per SAMA PMC 33.1)

Step response: Time constant: 0.2s*)
Dead time: 0.2s*)
(without electrical damping)

*) Faster response is available as option (maximum update rate: 25 times per second).

Dielectric strength:

500V AC, 50/60Hz 1 min., between circuit and earth.

Insulation resistance:

More than 100MΩ/500V DC.

Turn-on time: 4 sec.

Internal resistance for external field indicator:

12Ω or less

Physical specifications

Electrical connections:

G1/2, 1/2-14 NPT, Pg13.5, or M20 × 1.5 conduit, as specified.
1-port (standard) or 2-port with each conduit, as specified.

Process connections:

JIS, ANSI, or DIN raised face flanges or screw connection JIS/ISO G1 external thread.
Refer to "Code symbols."

Process-wetted parts material:

Diaphragm: 316L stainless steel, Hastelloy-C Monel, Tantalum, Titanium or Zirconium
Flange face: 316 stainless steel, Hastelloy-C Monel, Tantalum, Titanium or Zirconium
Extension: 316 stainless steel, Hastelloy-C (Refer to "Code symbols")

Non-wetted parts material:

Electronics housing: Low copper die-cast aluminum alloy finished with epoxy/polyurethane double coating (standard), or 316 stainless steel (SCS14 per JIS G5121), as specified.
Capillary: In case of 11th code "D, E, L, F, M, N, P", PVC armored stainless steel. In case of 11th code "Q, R, S, T, V, W, X", stainless steel armored stainless steel.
Mounting flange: 304 stainless steel or carbon steel, as specified
Fill fluid: Silicone oil (standard) or fluorinated oil
Mounting bracket: 304 stainless steel

Environmental protection:

IEC IP67 and NEMA 6/6P

Mounting: On 60.5mm (JIS 50A) pipe using mounting bracket, direct wall mounting

Mass {weight}: Transmitter approximately 10kg without options.
Add; 0.5kg for mounting bracket
0.8kg for indicator option
4.5kg for stainless steel housing option
1.5kg per 50mm extension of diaphragm

Optional features

Indicator: A plug-in analog indicator (1.5% accuracy) can be housed in the electronics compartment or in the terminal box of the housing.
An optional 5-digit LCD meter with engineering unit is also available.

Local adjustment unit with LCD display:
An optional 5-digit LCD meter with Zero/Span adjustment function, loop-check function and damping adjustment function, is available.

Arrester: A built-in arrester protects the electronics from lightning surges.
Lightning surge immunity:
4kV (1.2 × 50μs)

Oxygen service: Special cleaning procedures are followed throughout the process to maintain all process wetted parts oil-free.
The fill fluid is fluorinated oil.

Chlorine service: Oil-free procedures as above. Includes fluorinated oil for fill.

Degreasing: Process-wetted parts are cleaned, but the fill fluid is standard silicone oil. Not for use on oxygen or chlorine measurement.

Vacuum and high temperature service:
Special silicone oil and filling procedure are applied.
See Fig.1 and Fig.2.

Optional tag plate:
An extra stainless steel tag for customer tag data is wired to the transmitter.

Coating of cell: Cell's surface is finished with epoxy/polyurethane double coating. Specify if environment is extremely corrosive.

ACCESSORIES

Hand-held communicator:
(Model FXW, refer to Data Sheet No. EDS8-47)

Z/S board: Parts No.=ZZPFCX4-A070
When Z/S board is mounted on the FCX–AII amplifier unit, external adjustment screw will be available for zero and span adjustment.

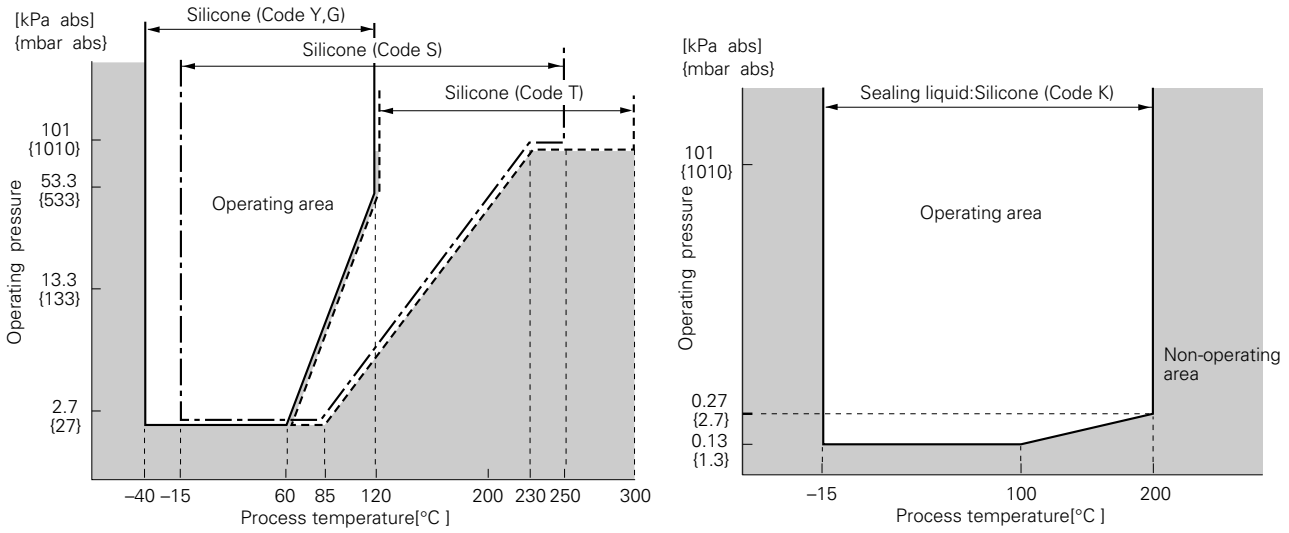


Fig. 1 Relation between process temperature and operating pressure

CODE SYMBOLS

Digit	Description			Note	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 21 ← Digit No. of code
					F K B 4 - -
4	<Conduit connection>				
	G1/2 (×1)	Combination with 12th digit code "C, E, P, Q" are not available.			A
	1/2-14NPT (×1)				B
	Pg13.5 (×1)				C
	M20 × 1.5 (×1)				D
	G1/2 (×2)				S
	1/2-14NPT (×2)				T
	Pg13.5 (×2)				V
	M20 × 1.5 (×2)				W
5	<Flanges>				
	Mounting flange	Flange size and rating	Ranges 1 2 3 4 5		
	304 stainless steel	JIS 10K 80A	* * *		0
		JIS 10K 100A	* * *		1
		ANSI/JPI 150LB "3"	* * *		3
		ANSI/JPI 150LB "4"	* * *		4
		DIN PN16/40 DN80	* * *		6
		DIN PN16 DN100	* * *		7
		JIS 20K 80A	* * *		9
		JIS 30K 80A	* * *		M
		ANSI/JPI 300LB 3B	* * *		S
		ANSI/JPI 600LB 3B	* * *		T
	Carbon steel	JIS 10K 80A	* * *		A
		JIS 10K 100A	* * *		B
		ANSI/JPI 150LB "3"	* * *		D
		ANSI/JPI 150LB "4"	* * *		E
		DIN PN16/40 DN80	* * *		G
		DIN PN16 DN100	* * *		H
		Screw type, JIS/ISO G1	* *		K
	316 stainless steel	ANSI/JPI 150LB 3B	* * *		V
		ANSI/JPI 150LB 4B	* * *		W
		ANSI/JPI 300LB 3B	* * *		X
		ANSI/JPI 300LB 4B	* * *		Y
		ANSI/JPI 600LB 3B	* * *		U
	None (wafer type)	3 inch wafer	* * *		P
		4 inch wafer	* * *		Q
6	<Span limit (*2) [kPa]{bar}>			Note 2	
	1.3...130 {0.013...1.3}				1
	5...500 {0.05...5}				2
	30...3000 {0.3...30}				3
	100...10000 {1...100}	Available only with material code "V"			4
	500...50000 {5...500}				5
7	<Material/diaphragm extension>				
	Diaphragm	Flange face	Diaph. extension [mm]		
	316L stainless steel	316 stainless steel	0	Note 1	V (*1)
			50 (*3)	Note 3	A
			100 (*3)		B
			150 (*3)		C
			200 (*3)		D
	Hastelloy-C	Hastelloy-C	0		H
			50		F
			100		G
			150		K
			200		L
	316L stainless +Au coating	316 stainless steel	0		J
	Monel	Monel	0		M
	Tantalum	Tantalum	0		T
	Titanium	Titanium	0 (*4)	Note 4	P
	Zirconium	Zirconium	0 (*4)		R

Note1: (*1) If range 4 or 5 is selected, specify material "V" in any cases.
Note2: (*2) 100: 1 turn down is possible, but should be used at a span greater than 1/40 of the maximum span for better performance.
Note3: (*3) Available for 13th digit code "S", "T", "K" and 5th digit code “1”,“4”,“7”,“B”,“E”,“H”,“Q“, “T”, “W”, “Y”.
Note4: (*4) Available for 6th digit code “2”, “3“ and 5th digit “0“, “3“, “6“, “9“, “A“, “D“, “G“, “P“, “M“, “S“, “T“, “U“, “V“, “X“.

Digit	Description				Note	1 2 3 4 5 6 7 8	9	10	11	12	13	14	15	21
						F K B					-			-
9	<Indicator and arrester>													
	Indicator		Arrester											
	None		None	Z/S board attached. Approval pending for 10th digit code "G, H, J, K, P"			A							
	Analog, 0 to 100% linear scale		None				B							
	Analog, custom scale		None				D							
	None		Yes				E							
	Analog, 0 to 100% linear scale		Yes				F							
	Analog, custom scale		Yes				H							
	Digital, 0 to 100%		None				L							
	Digital, custom scale		None				P							
	Digital, 0 to 100%		Yes				Q							
	Digital, custom scale		Yes				S							
	Digital, 0 to 100% (Local adjustment unit with LCD display)		None	Approval pending for 10th digit code "D, E, G, H, J, K, P"			1							
	Digital, custom scale (Local adjustment unit with LCD display)		None				2							
	Digital, 0 to 100% (Local adjustment unit with LCD display)		Yes				4							
	Digital, custom scale (Local adjustment unit with LCD display)		Yes				5							
10	Approvals for hazardous locations													
	None (for ordinary locations)							A						
	TIIS, Flameproof (Conduit seal)	(Available for 4th digit code "A", "S")						B						
	TIIS, Flameproof (Cable gland seal)	(Available for 4th digit code "A", "S")						C						
	FM, Flameproof (or explosionproof)	(Available for 4th digit code "B", "T")						D						
	CSA, Flameproof (or explosionproof)	(Available for 4th digit code "B", "T")						E						
	ATEX, Flameproof							X						
	TIIS, Intrinsic safety (Approval pending)							G						
	FM, Intrinsic safety and nonincendive							H						
	CSA, Intrinsic safety and nonincendive							J						
	ATEX, Intrinsic safety							K						
	ATEX, Type n							P						
11	<Capillary and mounting bracket>													
	Capillary	Mounting bracket	Armor of capillary						D					
	1.5 m	304 Stainless steel	PVC	(*5)	Note 5				E					
	3	304 Stainless steel	PVC	(*5)	Note 5				L					
	5	304 Stainless steel	PVC	(*5)	Note 5				F					
	6	304 Stainless steel	PVC	(*5)	Note 5				M					
	7	304 Stainless steel	PVC	(*5)	Note 5				N					
	8	304 Stainless steel	PVC	(*5)	Note 5				P					
	10	304 Stainless steel	PVC	(*5)	Note 5				Q					
	1.5	304 Stainless steel	Stainless steel	(*6)	Note 6				R					
	3	304 Stainless steel	Stainless steel	(*6)	Note 6				S					
	5	304 Stainless steel	Stainless steel	(*6)	Note 6				T					
	6	304 Stainless steel	Stainless steel	(*6)	Note 6				V					
	7	304 Stainless steel	Stainless steel	(*5)	Note 5				W					
	8	304 Stainless steel	Stainless steel	(*5)	Note 5				X					
	10	304 Stainless steel	Stainless steel	(*5)	Note 5									
12	<Options>													
	Extra SS tag plate		Stainless steel elec. housing	Coating of cell										
	None		None	None						Y				
	Yes		None	None						B				
	None		Yes	None	Note 7					C				
	Yes	(*7)	Yes	None						E				
	None		None	Yes						M				
	Yes		None	Yes						N				
	None		Yes	Yes						P				
	Yes		Yes	Yes						Q				

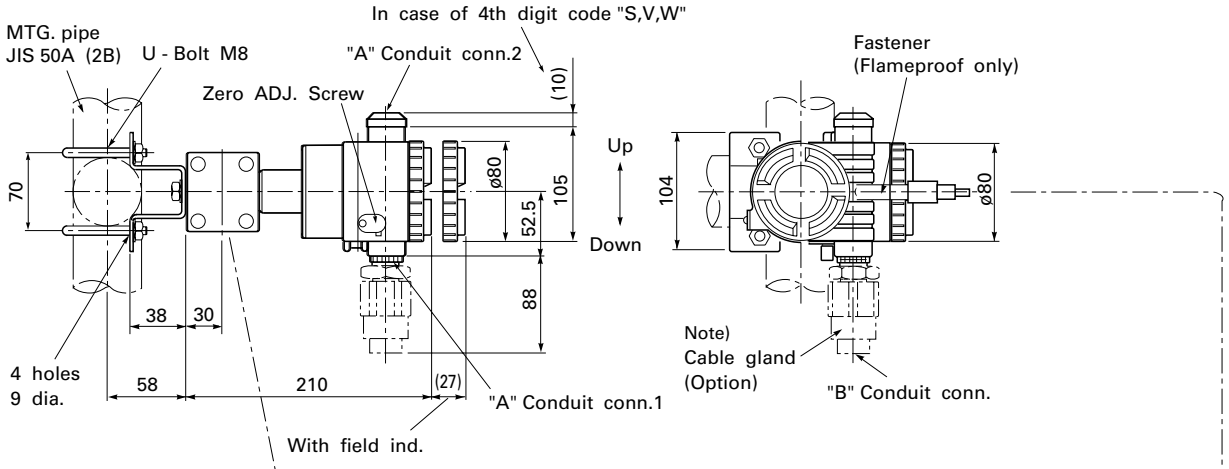
Digit No. of code

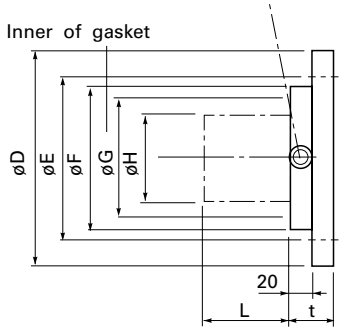
Note5: (*5) Available for 13th digit code "Y, W, G, A, D". Inquire about in case of 13th other code.
Note6: (*6) Available for all 13th digit code.
Note7: (*7) Customer tag number can be engraved on standard stainless steel name plate. If extra tag plate is required, select "Yes".

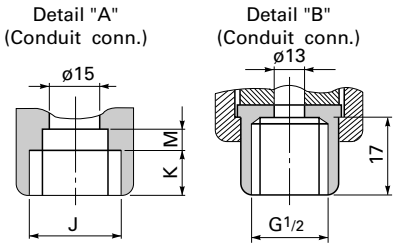
Digit	Description	Note	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 21 ← Digit No. of code
13	<Special applications and fill fluid> Treatment — Fill fluid Standard — Silicone oil Standard — Fluorinated oil Degreasing — Silicone oil Oxygen service — Fluorinated oil (7th digit code "V", "A", "B", "C" and "D") Chlorine service — Fluorinated oil (7th digit code "H", "F", "G", "K", "L" and "T") High temp. 250°C — Silicone oil High temp. 300°C — Silicone oil High temp. and vacuum (250°C) — Silicone oil High temp. and vacuum (300°C) — Silicone oil High temp. and high vacuum — Silicone oil •Available for 6th digit code "1", "2"or "3". In case of 13th code "S", "T", "K", available for 6th digit code "2", "3" only. (* 8) •Available for 7th digit code "V", "A", "B", "C", "D", "H", "F", "G", "K" or "L".	Note 8	Y W G A D H J S T K
14	<Teflon membrane> None Yes (Available for the 5th digit code "0", "3", "6", "A", "D", "G", "P" and 7th digit code "V", "H", "M", "T", "P", "R". Not available for the 13th digit code "H", "J", "S", "T", "K".)		Y C
15	<Bolt/nut> (*9) None (6th digit code "1", "2", "3") Cr-Mo alloy hexagon socket head cap screw/carbon steel nut (6th digit code "4", "5") Cr-Mo alloy hexagon bolt/carbon steel unit (6th digit code "4", "5") 304 stainless steel/304 stainless steel (6th digit code "4") 630 stainless steel/304 stainless steel (6th digit code "5")	Note 9	Y A B E F
21	<Other options> High accuracy type Low temperature effect type H+J		H J K

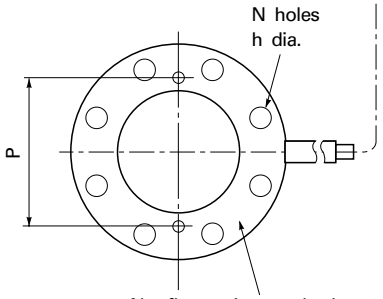
Note8: (*8) Treatment; Standard
Note9: (*9) In case of tropical use, select stainless bolts and nuts.

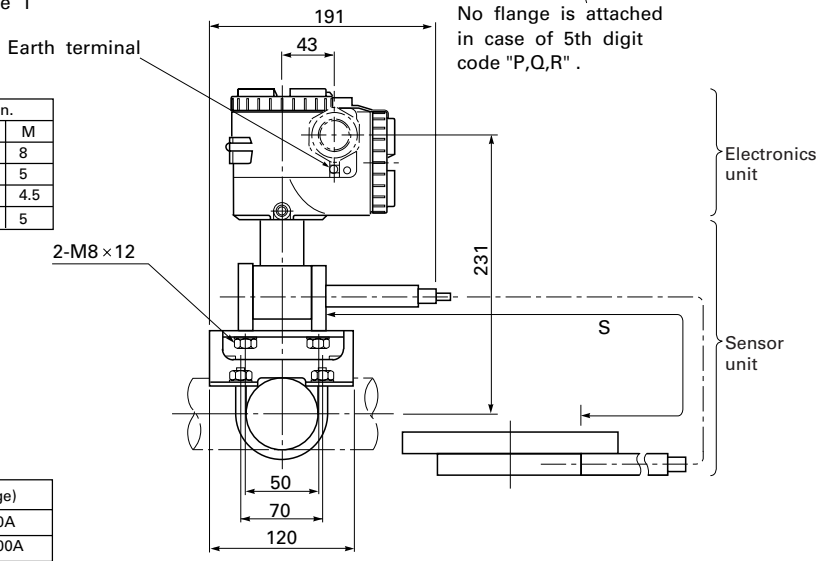
OUTLINE DIAGRAM (Unit:mm)











7th digit code	L	Mass approx.(kg)
V H M T P R	0	9.5
A F	50	10.5
B J	100	11.5
C K	150	12
D L	200	12.5

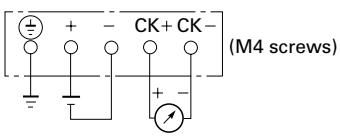
4th digit of the code symbols	Conduit conn.		
	J	K	M
A, S	G1/2	17	8
B, T	1/2-14NPT	16	5
C, V	Pg13.5	8	4.5
D, W	M20×1.5	16	5

Table 1

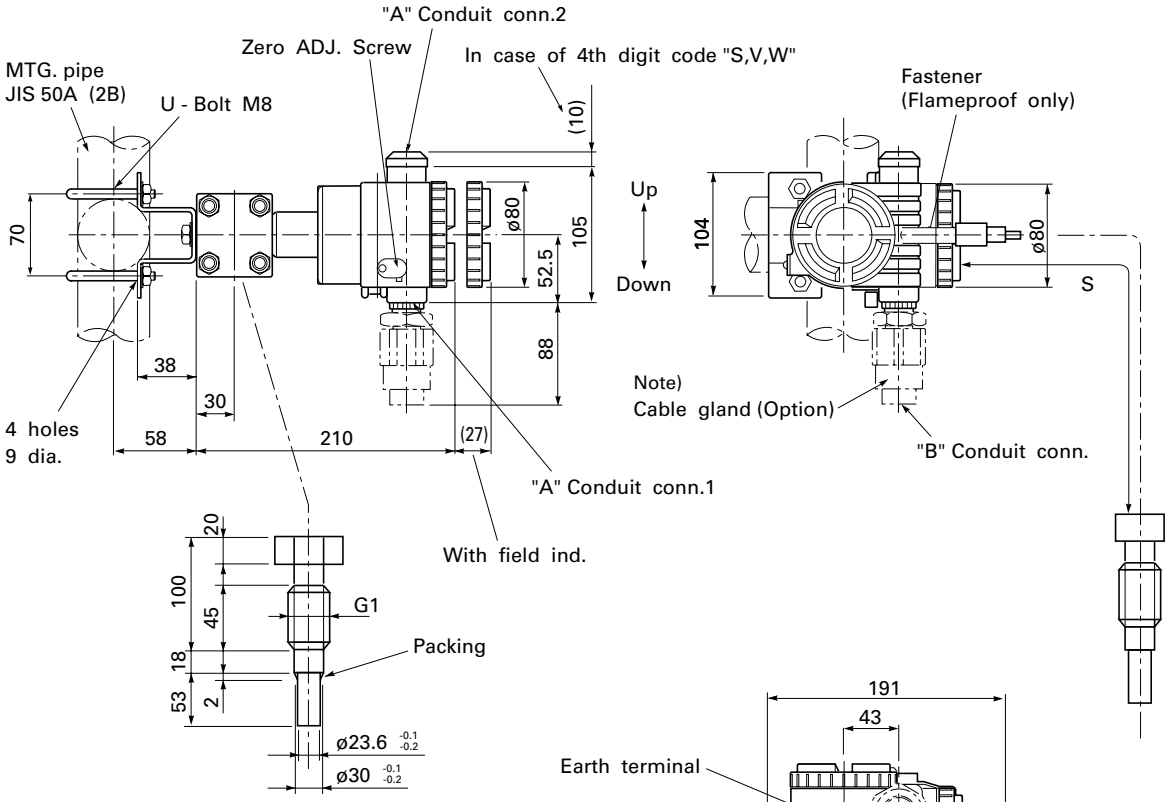
øD	øE	øF	øG	øH	t	P	N-øh	(Flange)
185	150	126	100	73	38	116	8-19	JIS-10K-80A
210	175	151	103	96	38	141	8-19	JIS-10K-100A
191	152.5	126	100	73	44	116	4-20	ANSI/JPI -150LB-3B
229	190.5	151	103	96	44	141	8-20	ANSI/JPI -150LB-4B
200	160	126	100	73	44	116	8-18	DIN PN40 DN80
220	180	151	103	96	40	141	8-18	DIN PN16 DN100

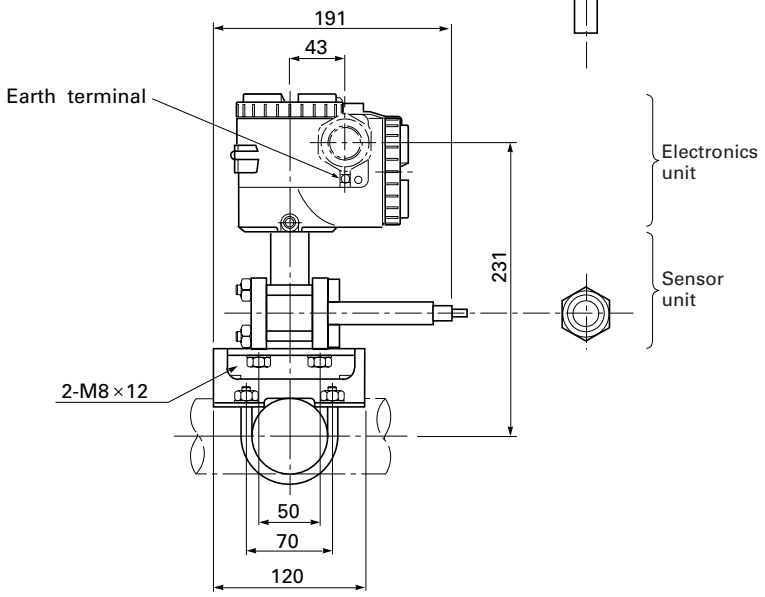
Note) Cable gland is supplied in case of 10th digit code "C".
ø11 cable is suitable.

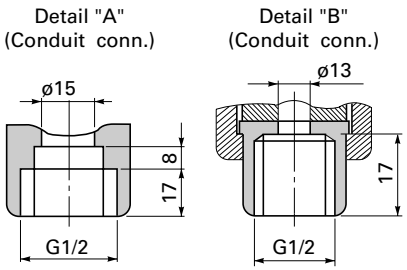
CONNECTION DIAGRAM



11th digit code	S (m)
D Q	1.5
E R	3
L S	5
F T	6
M V	7
N W	8
P X	10

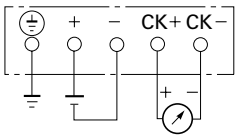






11th digit code	S (m)
D Q	1.5
E R	3
L S	5
F T	6
M V	7
N W	8
P X	10

CONNECTION DIAGRAM



ORDERING INFOMATION

When ordering this instrument, specify.

1. CODE SYMBOLS
2. Measuring range.
3. Output orientation (burnout direction) when abnormality is occurred in the transmitter.
   Hold / Overscale (21.6mA) / Underscale (3.2mA)
   Unless otherwise specified, output hold function is supplied.
4. Indication method (indicated value and unit) in case of the actual scale (code D, H, P, S on 9th digit).
5. Tag No. (up to 26 alphanumerical characters), if required.

The product conforms to the requirements of the Electromagnetic compatibility Directive 94/9/EC as detailed within the technical construction file number TN513035. The applicable standards used to demonstrate compliance are :

EMI (Emission) EN61326 : 1997
Class A (standard for Industrial Location)

Frequency range MHz	Limits	Reference standard
30 to 230	40dB (μV/m) quasi peak, measured at 10m distance	CISPR16-1 and CISPR16-2
230 to 1000	47dB (μV/m) quasi peak, measured at 10m distance	

EMI (Immunity) EN61326: 1997
Annex A (standard for Industrial Location)

Phenomenon	Test value	Basic standard	Performance criteria
Electrostatic discharge	4kV (Contact) 8kV (Air)	IEC61000-4-2	B
Electromagnetic field	80 to 1000MHz 10V/m 80%AM (1kHz)	IEC61000-4-3	A
Rated power frequency magnetic field	30A/m 50Hz	IEC61000-4-8	A
Burst	2kV 5kHz	IEC61000-4-4	B
Surge	1.2μs/50μs 1kV (Line to line) 2kV (Line to ground)	IEC61000-4-5	B
Conducted RF	0.15 to 80MHz 3V 80%AM (1kHz)	IEC61000-4-6	A

Note) Definition of performance criteria

A: During testing, normal performance within the specification limits.

B: During testing, temporary degradation, or loss of function or performance which is self-recovering.

Fuji Electric Co.,Ltd.

Head office
11-2 Osaki 1-chome, Shinagawa-ku, Tokyo, 141-0032 Japan
http://www.fujielectric.co.jp

Fuji Electric Instruments Co.,Ltd.

Sales Div.
International Sales Dept.
No.1, Fuji-machi, Hino-city, Tokyo, 191-8502 Japan
Phone: 81-42-585-6201, 6202
Fax: 81-42-585-6187
http://www.fic-net.co.jp

Printed in Japan