

REMOTE SEAL TYPE PRESSURE TRANSMITTER

DATA SHEET

FKB...5

The FCX-AIII 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

FCX-AIII series transmitter offers bilingual communications to speak both Fuji proprietary protocol and HART®. Any HART® compatible devices can communicate with FCX-AIII.

4. Application flexibility

Various options that render the FCX-AIII suitable for almost any process applications include:

- 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 4.0mA, Over Scale: 20.0 to 22.5mA)

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}

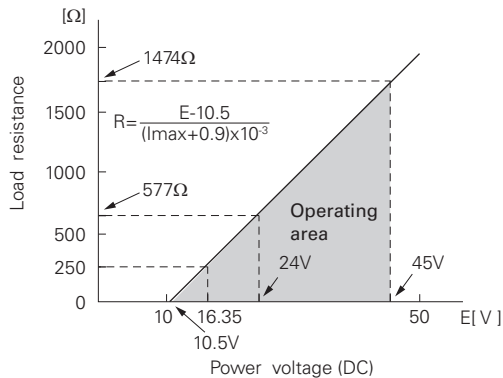
Remark: To minimize environmental influence, span should be greater than 1/40 of the max. span in most applications.

- Lower range limit (vacuum limit) ;
Silicone fill sensor: See Fig. 1, Fig. 2
Fluorinated fill sensor: Atmospheric pressure
- Conversion factors to different units;
1MPa=10³kPa=10bar=10.19716kgf/cm²=145.0377psi
1kPa=10mbar=101.9716mmH₂O=4.01463inH₂O

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: SEE TABLE 2

Zero/span adjustment:

Zero and span are adjustable from the HHC⁽¹⁾. Zero and span are also adjustable externally from the adjustment screw.

Damping:

Adjustable from HHC or local adjustment unit with LCD display. The time constant is configurator between 0.06 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":

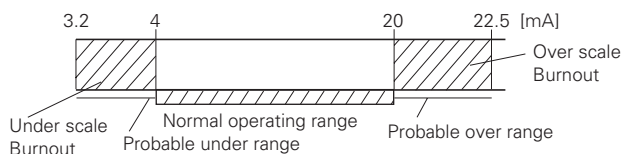
Output signal is hold as the value just before failure happens.

"Output Overscale":

Adjustable within the range 20.0mA to 22.5mA from HHC⁽¹⁾

"Output Underscale":

Adjustable within the range 3.2mA to 4.0mA from HHC⁽¹⁾



Output Limits conforming the NAMUR NE43 by order.

Loop-check output:

Transmitter can be configured to provide constant signal 3.2mA through 22.5mA 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") *

*) In case of capillary length is more than 7m, max. temperature is +55°C.

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	20 to 300°C	
	Y and G	-40 to 180°C	2.7kPa abs (20mmHg abs)
	S	-15 to 250°C	
	T	20 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 items can be remotely displayed or configured.

Note: HHC's version must be higher than 7.0 (or FXW □□□□1-□4), for FCX-AIII.

Local configurator with LCD display (option):

Local configurator with 3 push button and LCD display can support following items.

Items	By communication with FXW		By local configurator (with 3 push button)	
	Display	Set	Display	Set
Tag No.	✓	✓	✓	✓
Model No.	✓	✓	✓	✓
Serial No. & Software Version	✓	—	✓	—
Engineering unit	✓	✓	✓	✓
Range limit	✓	—	✓	—
Measuring range	✓	✓	✓	✓
Damping	✓	✓	✓	✓
Output mode	✓	—	✓	—
Burnout direction	✓	✓	✓	✓
Calibration	✓	✓	✓	✓
Output adjust	—	✓	—	✓
Data	✓	—	✓	—
Self diagnoses	✓	—	✓	—
Printer (In case of FXW with printer option)	✓	—	—	—
External switch lock	✓	✓	✓	✓
Transmitter display	✓	✓	✓	✓
Linearize	✓	✓	—	—
Rerange	✓	✓	✓	✓
Saturate current	✓	✓	✓	✓
Write protect	✓	✓	✓	✓
History				
- Calibration history	✓	✓	✓	✓
- Ambient temperature history	✓	—	✓	—

EMC Conformity: EN61326-1: 2006 CE

(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: $\pm 0.2\%$ 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: $\pm 0.1\%$ 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: $\pm 0.2\%$ of upper range limit (URL) for 10 years.

Temperature effect:

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

(Standard) Zero shift: $\pm \left(0.35 \frac{\text{URL}}{x} \right) \%$

Total effect: $\pm \left(0.5 \frac{\text{URL}}{x} \right) \%$

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

Zero shift:

$$\pm 0.3\% \quad (x \geq 1/4 \text{ URL})$$

$$\pm \left(0.1 + 0.2 \frac{0.25 \times \text{URL}}{x} \right) \% \quad (x < 1/4 \text{ URL})$$

Total effect:

$$\pm 0.4\% \quad (x \geq 1/4 \text{ URL})$$

$$\pm \left(0.2 + 0.2 \frac{0.25 \times \text{URL}}{x} \right) \% \quad (x < 1/4 \text{ URL})$$

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

Update rate: 60 msec

Step response: Time constant: 0.3s (at 23°C)

Dead time: 0.12s

(without electrical damping)

Dielectric strength:

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

Insulation resistance:

More than 100M Ω /500V DC.

Internal resistance for external field indicator:

12 Ω or less

Physical specifications

Electrical connections:

G1/2, 1/2-14 NPT, Pg13.5, or M20 \times 1.5 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 polyester coating (standard), or 316 stainless steel (ASTM CF8M), 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 8.2 to 11.2kg without options.

Add; 0.5kg for mounting bracket

4.5kg for stainless steel housing option

1.5kg per 50mm extension of diaphragm

Optional features

- Indicator:** A plug-in analog indicator (2.5% accuracy).
An optional 5-digit LCD meter with engineering unit is also available.
- Local configurator with LCD display:** An optional 5 digits LCD meter with 3 push buttons can support items as using communication with FXW.
- 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)

ORDERING INFORMATION

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 / Underscale
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 14 alphanumerical characters), if required.

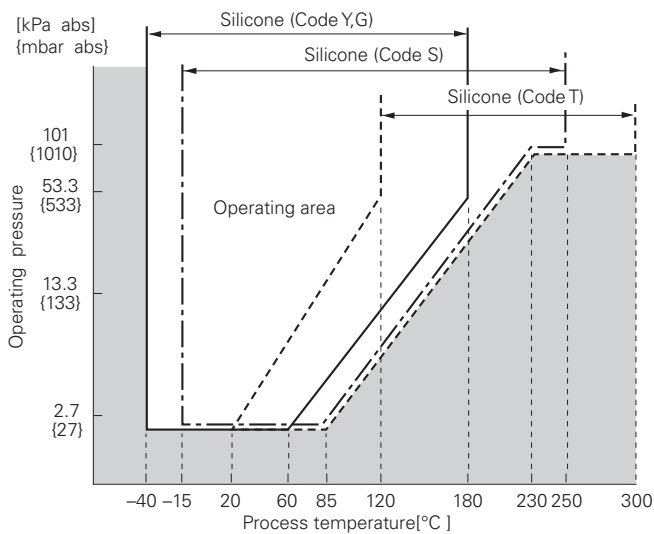


Fig. 1 Relation between process temperature and operating pressure

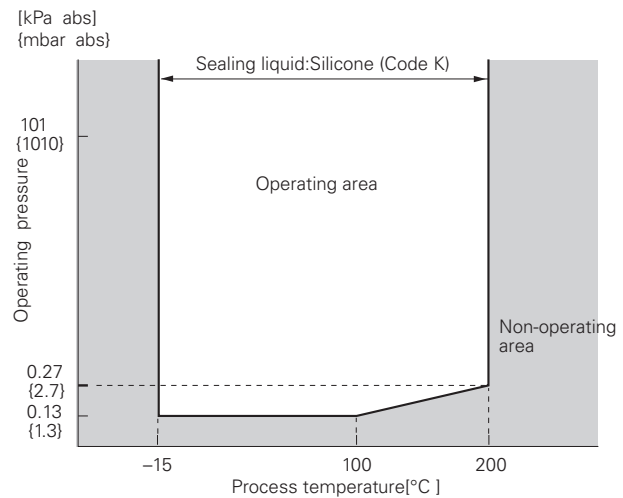


Fig. 2 Relation between process temperature and operating pressure

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		
4	<Conduit connection>		F	K	B					5											
	Conduit connection	Case type																			
	G1/2	T type							5												
	1/2-14NPT	T type							6												
	Pg13.5	T type							7												
	M20×1.5	T type							8												
5	<Flanges>																				
	Mounting flange	Flange size and rating	Ranges																		
			1	2	3	4	5														
	304 stainless steel	JIS 10K 80A	* *																		
		JIS 10K 100A	* *																		
		ANSI/JPI 150LB "3"	* *																		
		ANSI/JPI 150LB "4"	* *																		
		DIN PN16/40 DN80	* *																		
		DIN PN16 DN100	* *																		
		JIS 20K 80A	* * *																		
		JIS 30K 80A	* * *																		
		ANSI/JPI 300LB 3B	* * *																		
		ANSI/JPI 600LB 3B	* * *																		
	Carbon steel	JIS 10K 80A	* *																		
		JIS 10K 100A	* *																		
		ANSI/JPI 150LB "3"	* *																		
		ANSI/JPI 150LB "4"	* *																		
		DIN PN16/40 DN80	* *																		
		DIN PN16 DN100	* *																		
		Screw type, JIS/ISO G1						* *													
	316 stainless steel	ANSI/JPI 150LB 3B	* * *																		
		ANSI/JPI 150LB 4B	* * *																		
		ANSI/JPI 300LB 3B	* * *																		
		ANSI/JPI 300LB 4B	* * *																		
ANSI/JPI 600LB 3B		* * *																			
None (wafer type)	3 inch wafer	* *																			
	4 inch wafer	* *																			
6																					
	1.3...130	{0.013...1.3}																			
	5...500	{0.05...5}																			
	30...3000	{0.3...30}																			
	100...10000	{1...100}	} Available only with material code "V" (*1)																		
500...50000	{5...500}																				
7	<Material/diaphragm extension>																				
	Diaphragm	Flange face	Diaph. extension [mm]																		
	316L stainless steel	316 stainless steel	0																		
			50	} (*3)																	
			100																		
			150																		
			200																		
	Hastelloy-C	Hastelloy-C	0																		
			50	} (*4)																	
			100																		
			150																		
			200																		
316L stainless +Au coating	316 stainless steel	0																			
		0																			
		0																			
		0																			
		0																			
		0																			
Hastelloy C	316 stainless steel	0																			
		0																			
		0																			
		0																			
Monel	Monel	0																			
		0																			
Titanium	Titanium	0																			
		0																			
Zirconium	Zirconium	0																			
		0																			

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 5th digit code "1", "4", "7", "B", "E", "H", "Q", "W", "Y", when 13th digit code "S", "T", "K".

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	← Digit No. of code	
9	<Indicator and arrester>		F	K	B					5										
	<u>Indicator</u>	<u>Arrester</u>									A									
	None	None									B									
	Analog, 0 to 100% linear scale	None									D									
	Analog, custom scale	None									E									
	None	Yes									F									
	Analog, 0 to 100% linear scale	Yes									H									
	Analog, custom scale	Yes									L									
	Digital, 0 to 100% linear scale	None									P									
	Digital, custom scale	None									Q									
	Digital, 0 to 100% linear scale	Yes									S									
	Digital, custom scale	Yes									1									
	Digital, 0 to 100% linear scale (Local configurator unit with LCD display)	None									2									
	Digital, custom scale (Local configurator unit with LCD display)	None									4									
Digital, 0 to 100% linear scale (Local configurator unit with LCD display)	Yes									5										
Digital, custom scale (Local configurator unit with LCD display)	Yes																			
10	<Approvals for hazardous locations>										A									
	None (for ordinary locations)										B									
	TIIS, Flameproof (Conduit seal) (*11)		Note 11								C									
	TIIS, Flameproof (Cable gland seal) (*11)		Note 11								G									
	TIIS, Intrinsic safety										D									
	FM, Flameproof (or explosionproof) (*14)		Note 14								H									
	FM, Intrinsic safety and nonincentive										V									
	FM Combined of flameproof and intrinsic safety (*14)		Note 14								X									
	ATEX Flameproof (*13)		Note 13								K									
	ATEX Intrinsic safety										P									
	ATEX Type n										M									
	ATEX Combined of flameproof and intrinsic safety (*13)		Note 13								R									
	IECEX Scheme, Flameproof (*13)		Note 13								T									
	IECEX Scheme, Intrinsic safety										E									
CSA, Flameproof (or explosionproof) (*14)		Note 14								J										
CSA, Intrinsic safety and nonincentive										F										
NEPSI, Flameproof (or explosionproof)										S										
NEPSI, Intrinsic safety										U										
NEPSI, Combined of flameproof and intrinsic safety																				
11	<Capillary and mounting bracket>																			
	<u>Capillary</u>	<u>Mounting bracket</u>	<u>Armor of capillary</u>																	
	1.5 m	304 Stainless steel	PVC	(*5)	Note 5						D									
	3	304 Stainless steel	PVC	(*5)	Note 5						E									
	5	304 Stainless steel	PVC	(*5)	Note 5						L									
	6	304 Stainless steel	PVC	(*5)	Note 5						F									
	7	304 Stainless steel	PVC	(*5)	Note 5						M									
	8	304 Stainless steel	PVC	(*5)	Note 5						N									
	10	304 Stainless steel	PVC	(*5)	Note 5						P									
	1.5	304 Stainless steel	Stainless steel	(*6)	Note 6						Q									
	3	304 Stainless steel	Stainless steel	(*6)	Note 6						R									
	5	304 Stainless steel	Stainless steel	(*6)	Note 6						S									
	6	304 Stainless steel	Stainless steel	(*6)	Note 6						T									
	7	304 Stainless steel	Stainless steel	(*6)	Note 6						V									
	8	304 Stainless steel	Stainless steel	(*6)	Note 6						W									
	10	304 Stainless steel	Stainless steel	(*6)	Note 6						X									
	12	<Options>																		
		<u>Extra SS tag plate</u>	<u>Stainless steel elec. housing</u>	<u>Coating of cell</u>																
		None	None	None		Note 7						Y								
		Yes	None	None								B								
None } (*7)		None	Yes								M									
Yes } (*7)		None	Yes								N									
None } (*8)		Yes	Yes		Note 8						P									
Yes } (*8)		Yes	Yes		Note 8						Q									

- 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"
- Note8: (*8) Not available for 10th digit code "B", "C".
- Note11: (*11) Available for 4th digit code "5", "S".
- Note13: (*13) Available for 4th digit code "6", "8", "T", "W".
- Note14: (*14) Available for 4th digit code "6", "T".

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>		F	K	B					5										
	Treatment	Fill fluid																		
	Standard	Silicone oil																		
	Standard	Fluorinated oil																		
	Degreasing	Silicone oil																		
	Oxygen service	Fluorinated oil (7th digit code "V", "W", "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 } Available for 6th digit code "1", "2" or "3",	Note 15																	
	High temp. 300°C	Silicone oil } and available for 7th digit code "V", "W", "A", "B", "C", "D", "H", "F", "G", "K" and "L".																		
	High temp. and vacuum (250°C)	Silicone oil } Available for 6th digit code "2", "3" only, and																		
High temp. and vacuum (300°C)	Silicone oil } available for 7th digit code "V", "W", "A", "B", "C" and "D"																			
High temp. and high vacuum	Silicone oil																			
14	<Teflon membrane>																			
	None																			
	Yes (Available for the 5th digit code "0", "3", "6", "9", "M", "S", "T", "A", "D", "G", "P", "V", "X", "U", and 7th digit code "V", "W", "H", "M", "T", "P", "R". Not available for the 13th digit code "H", "J", "S", "T", "K".)																			
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																			
	304 stainless steel/304 stainless steel	(6th digit code "4")																		
	630 stainless steel/304 stainless steel	(6th digit code "5")																		
316 stainless steel/316 stainless steel	(6th digit code "4")																			
21	<Other options> (*10)																			
	High accuracy type	Instruction manual attached																		
	Low temperature effect type	Instruction manual attached																		
	H+J	Instruction manual attached																		
	Instruction manual unattached																			
	High accuracy type	Instruction manual unattached																		
Low temperature effect type	Instruction manual unattached																			
T+U	Instruction manual unattached																			

Note9: (*9) In case of tropical use, select stainless bolts and nuts.
Note10: (*10) If other option is not necessary, 21st digit code is blank.
In case of 21st digit code is blank, instruction manual attached.
Note15: (*15) Treatment; Standard

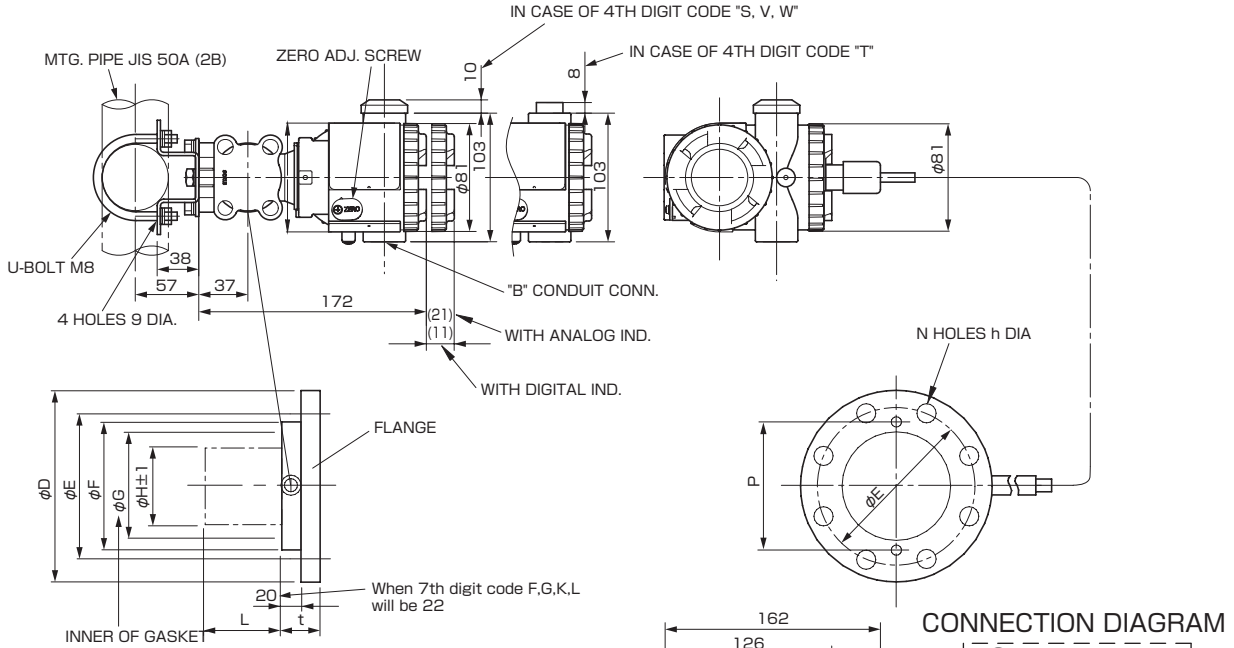
OUTLINE DIAGRAM (Unit:mm)

< CODE SYMBOLS : FKB

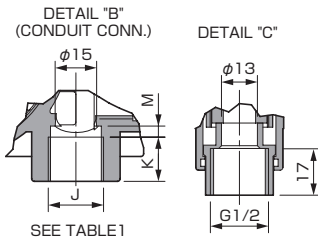
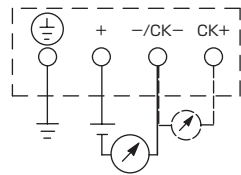
S	V	0	4	D	P	1
T	W	1	A	E	Q	2
		3	B	K		3

 5- - - - - >

< Flange type >



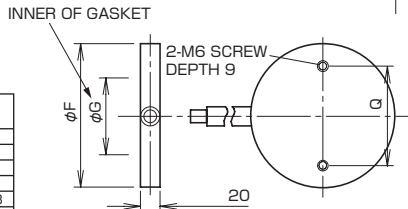
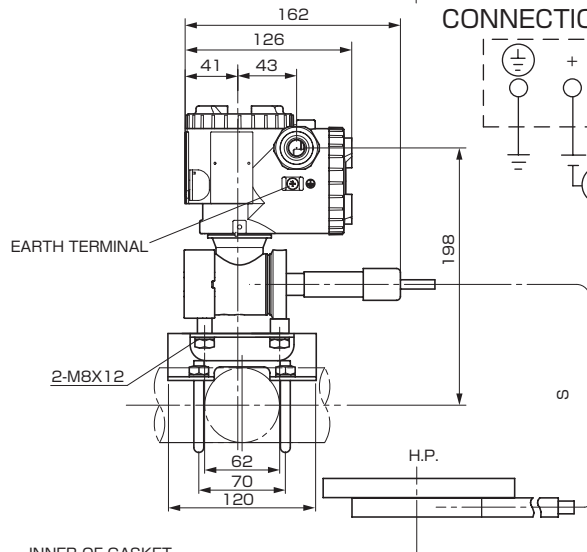
CONNECTION DIAGRAM



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

4th digit of the code symbols	Conduit conn.			7th digit of the code symbols	L	MASS.APPROX(kg)
	J	K	M			
S	G 1/2	18	2	V, W, J, H, M, T, P, R	0	8.2
T	1/2-14NPT	16	4	A, F	50	9.2
V	Fig 13.5	10.5	4.5	B, G	100	10.2
W	M20x1.5	16	4	C, K	150	10.7
				D, L	200	11.2

TABLE 1



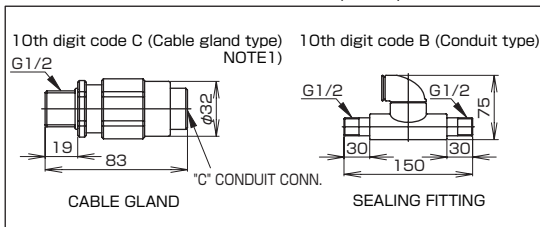
< WAFER TYPE >

	q
80A, 3B	116
100A, 4B	141

NOTE) The measurements "t" will be added 2mm to each measurements in case of 7th digit of F,G,L,K.

5th digit of the code symbols	φD	φE	φF	φG	φH±1	(NOTE) t	P	N-φh	FLANGE
0, A	185	150	126	100	73	38	116	8-19	JIS-10K-80A
9	200	160	126	100	73	42	116	8-23	JIS-20K-80A
M	210	170	126	100	73	48	116	8-23	JIS-30K-80A
1, B	210	175	151	103	96	38	141	8-19	JIS-10K-100A
3, D, V	191	152.5	126	100	73	44	116	4-20	ANSI 150LB 3B
S, X	210	168	126	100	73	49	116	8-23	ANSI 300LB 3B
T, U	210	168	126	100	73	52	116	8-23	ANSI 600LB 3B
4, E, W	229	190.5	151	103	96	44	141	8-20	ANSI 150LB 4B
Y	254	200	151	103	96	52	141	8-23	ANSI 300LB 4B
6, G	200	160	126	100	73	44	116	8-18	DIN PN40 DN80
7, H	220	180	151	103	96	40	141	8-18	DIN PN16 DN100

OPTION PARTS FOR FLAMEPROOF OF TIIS (JAPAN)



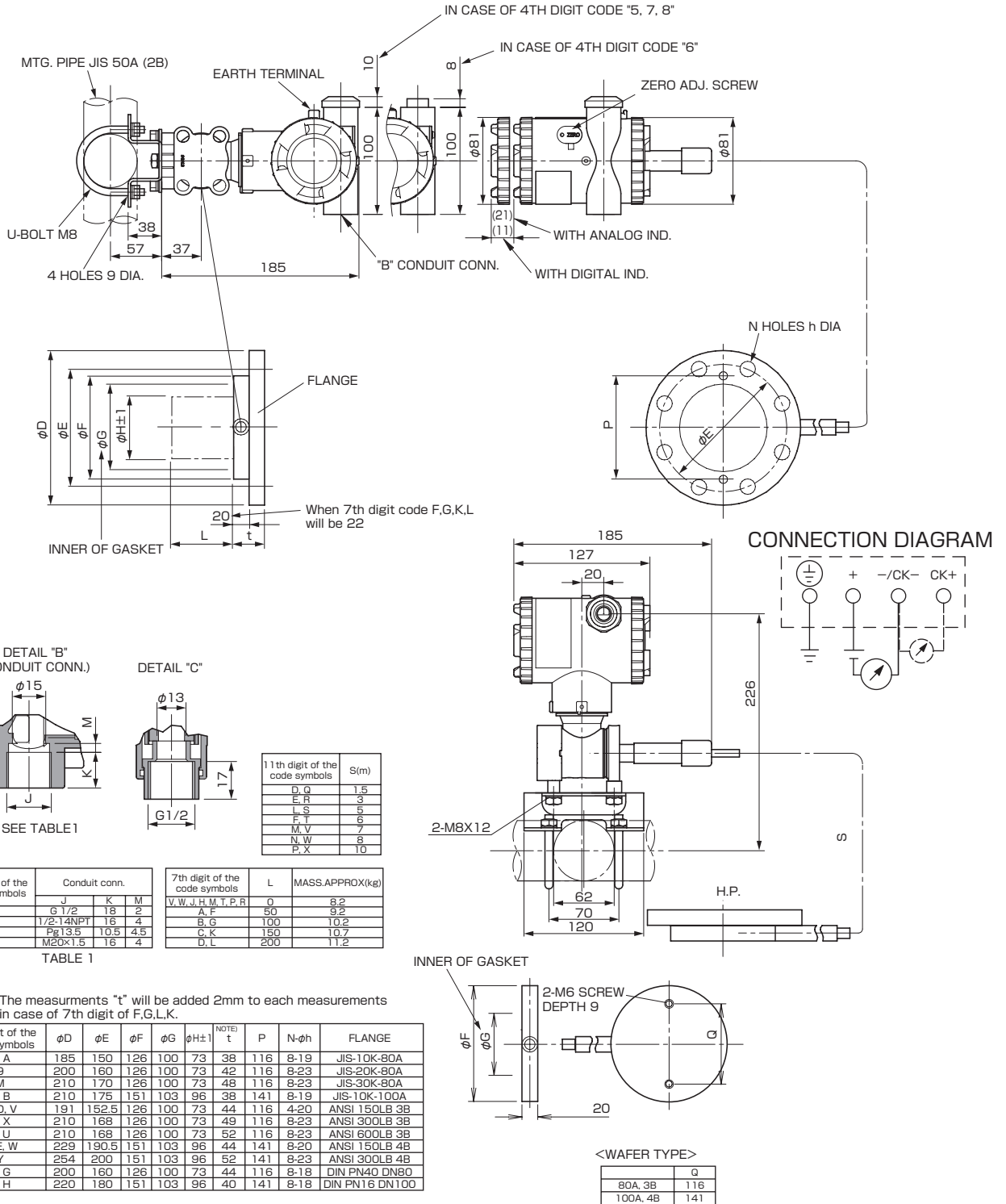
NOTE1) IN CASE OF 10TH CODE "C", φ11 CABLE IS SUITBLE.

< CODE SYMBOLS : FKB

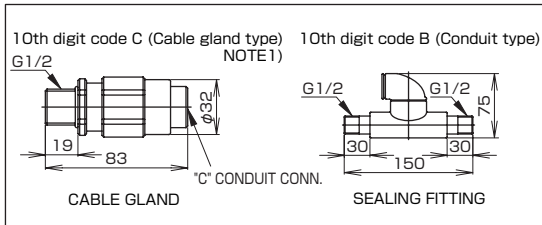
5	7	0	4	D	P	1
6	8	1	A	E	Q	2
		3	B	K		3

 5- - - - - >

< Flange type >



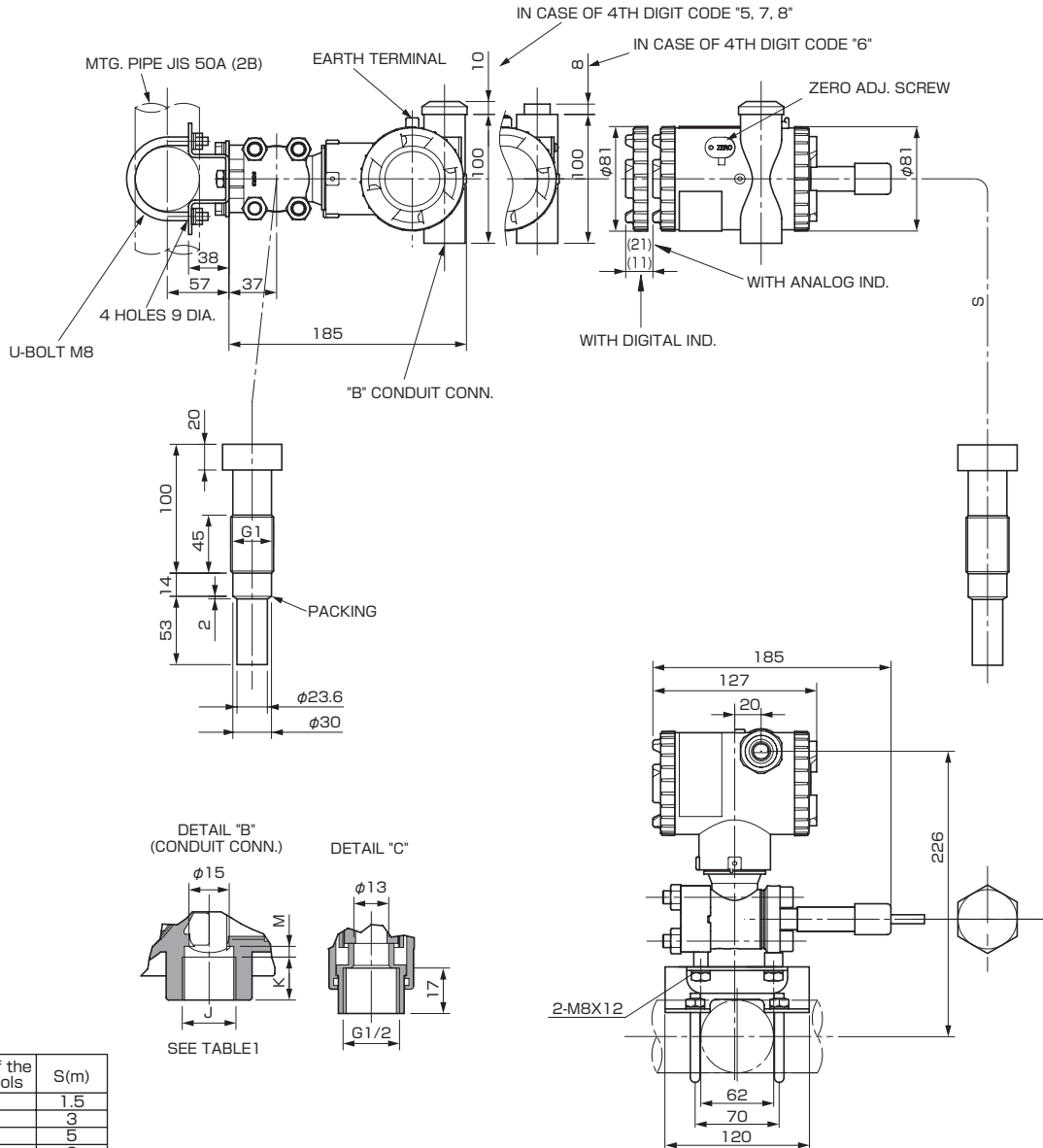
OPTION PARTS FOR FLAMEPROOF OF TIIS (JAPAN)



NOTE1) IN CASE OF 10TH CODE "C", $\phi 11$ CABLE IS SUITBLE.

< CODE SYMBOLS : FKB $\begin{matrix} 5 & 7 \\ 6 & 8 \end{matrix}$ K $\begin{matrix} 4 \\ 5 \end{matrix}$ V5-□□□□□□-□□□□ >

< Screw type >

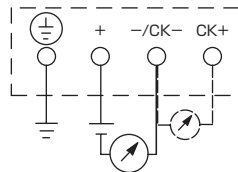


11th digit of the code symbols	S(m)
D, Q	1.5
E, R	3
L, S	5
F, T	6
M, V	7
N, W	8
P, X	10

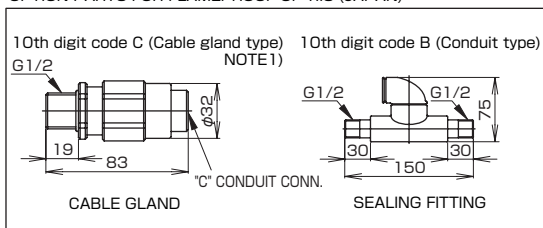
4th digit of the code symbols	Conduit conn.		
	J	K	M
5	G 1/2	18	2
6	1/2-14NPT	16	4
7	Pg13.5	10.5	4.5
8	M20X1.5	16	4

TABLE 1

CONNECTION DIAGRAM



OPTION PARTS FOR FLAMEPROOF OF TIIS (JAPAN)



NOTE 1) IN CASE OF 10TH CODE "C", φ11 CABLE IS SUITABLE.

TABLE 2

Authorities	Intrinsic safety																					
ATEX	Ex II 1 G Ex ia IIC T5 Tamb = -40°C to +50°C Ex ia IIC T4 Tamb = -40°C to +70°C Entity Parameters: Ui=28V, Ii=94.3mA, Pi=0.66W, Ci=26nF (Without Arrester), Li=0.6mH (Without analog indicator), Ci=36nF (With Arrester), Li=0.7mH (With analog indicator)																					
Factory Mutual	Class I II III Div.1 Groups A, B, C, D, E, F, G T4 Entity Type 4X <table border="1"> <thead> <tr> <th colspan="2">Model code</th> <th>Tamb</th> </tr> <tr> <th>9th digit</th> <th>13th digit</th> <th></th> </tr> </thead> <tbody> <tr> <td>A,B,D</td> <td>Y,G,H,J,S,T,K</td> <td>-40°C to +85°C</td> </tr> <tr> <td>L,P,1,2</td> <td>Y,G,H,J,S,T,K</td> <td>-20°C to +80°C</td> </tr> <tr> <td>Q,S,4,5</td> <td>Y,G,H,J,S,T,K</td> <td>-20°C to +60°C</td> </tr> <tr> <td>E,F,H</td> <td>Y,G,H,J,S,T,K</td> <td>-40°C to +60°C</td> </tr> <tr> <td>-</td> <td>W,A,D</td> <td>-10°C to +60°C</td> </tr> </tbody> </table> Entity Parameters: Vmax=28V, Imax=94.3mA, Pi=0.66W, Ci=35.98nF, Li=0.694mH	Model code		Tamb	9th digit	13th digit		A,B,D	Y,G,H,J,S,T,K	-40°C to +85°C	L,P,1,2	Y,G,H,J,S,T,K	-20°C to +80°C	Q,S,4,5	Y,G,H,J,S,T,K	-20°C to +60°C	E,F,H	Y,G,H,J,S,T,K	-40°C to +60°C	-	W,A,D	-10°C to +60°C
Model code		Tamb																				
9th digit	13th digit																					
A,B,D	Y,G,H,J,S,T,K	-40°C to +85°C																				
L,P,1,2	Y,G,H,J,S,T,K	-20°C to +80°C																				
Q,S,4,5	Y,G,H,J,S,T,K	-20°C to +60°C																				
E,F,H	Y,G,H,J,S,T,K	-40°C to +60°C																				
-	W,A,D	-10°C to +60°C																				
CSA	Class I Div.1 Groups A, B, C, D Class II Div.1 Groups E, F, G Class III Div.1 Temp Code T5 Tamb max = +50°C Temp Code T4 Tamb max = +70°C Entity Parameters: Vmax=28V, Imax=94.3mA, Ci=25nF (Without Arrester), Ci=36nF (With Arrester), Li=0.6mH (Without analog meter), Li=0.7mH (With analog meter)																					
TIIS	Ex ia IIC T4 Tamb max = +60°C Entity Parameters: Ui=28V, Ii=94.3mA, Pi=0.66W, Ci=38.4nF, Li=0.694mH																					
IECEX Scheme	Ex ia IIC T4 Tamb = -40°C to +70°C Ex ia IIC T5 Tamb = -40°C to +50°C Entity Parameters: Ui=28V, Ii=94.3mA, Pi=0.66W, Ci=26nF (Without Arrester), Li=0.6mH (Without analog indicator), Ci=36nF (With Arrester), Li=0.7mH (With analog indicator)																					
NEPSI	Ex ia IIC T4 Ex d IIB+H ₂ T6 / Ex ia IIC T4 <table border="1"> <thead> <tr> <th colspan="2">Model code</th> <th>Tamb</th> </tr> <tr> <th>9th digit</th> <th>13th digit</th> <th></th> </tr> </thead> <tbody> <tr> <td>A,B,D</td> <td>Y,G,H,J,S,T,K</td> <td>-40°C to +85°C</td> </tr> <tr> <td>L,P,1,2</td> <td>Y,G,H,J,S,T,K</td> <td>-20°C to +80°C</td> </tr> <tr> <td>Q,S,4,5</td> <td>Y,G,H,J,S,T,K</td> <td>-20°C to +60°C</td> </tr> <tr> <td>E,F,H</td> <td>Y,G,H,J,S,T,K</td> <td>-40°C to +60°C</td> </tr> <tr> <td>-</td> <td>A,W,D</td> <td>-10°C to +60°C</td> </tr> </tbody> </table> Entity Parameters: Ui=42.4V, Ii=113mA, Pi=1W, Ci=35.98nF, Li=0.694mH	Model code		Tamb	9th digit	13th digit		A,B,D	Y,G,H,J,S,T,K	-40°C to +85°C	L,P,1,2	Y,G,H,J,S,T,K	-20°C to +80°C	Q,S,4,5	Y,G,H,J,S,T,K	-20°C to +60°C	E,F,H	Y,G,H,J,S,T,K	-40°C to +60°C	-	A,W,D	-10°C to +60°C
Model code		Tamb																				
9th digit	13th digit																					
A,B,D	Y,G,H,J,S,T,K	-40°C to +85°C																				
L,P,1,2	Y,G,H,J,S,T,K	-20°C to +80°C																				
Q,S,4,5	Y,G,H,J,S,T,K	-20°C to +60°C																				
E,F,H	Y,G,H,J,S,T,K	-40°C to +60°C																				
-	A,W,D	-10°C to +60°C																				

Authorities	Flameproof																					
ATEX	Ex II 2 GD Ex d IIC T6 IP66/67 T85°C Tamb = -40°C to +65°C Ex d IIC T5 IP66/67 T100°C Tamb = -40°C to +85°C																					
Factory Mutual	Class I Div.1 Groups B, C, D T6 Type 4X Class II III Div.1 Groups E, F, G T6 Type 4X Tamb max = +60°C																					
CSA	Class I Div.1 Groups C, D Class II Div.1 Groups E, F, G Class III Div.1 (Note) "Seal Not Required" enclosure is allowed.																					
TIIS	Ex do IIB+H ₂ T4 Tamb max = +60°C Maximum process temp. = +120°C																					
IECEX Scheme	Ex d IIC T5 IP66/67 Tamb = -40°C to +85°C Ex d IIC T6 IP66/67 Tamb = -40°C to +65°C																					
NEPSI	Ex d IIB+H ₂ T6 Tamb = -40°C to +60°C																					
Authorities	Type n Nonincendive																					
ATEX	Ex II 3 GD EEx nL IIC T5 Tamb = -40°C to +50°C EEx nL IIC T4 Tamb = -40°C to +70°C Specific Parameters: Model without arrester: Ui=42.4V, Ii=113mA, Pi=1W, Ci=25.18nF, Li=0.694mH Model with arrester: Ui=32V, Ii=113mA, Pi=1W, Ci=35.98nF, Li=0.694mH EEx nAL IIC T5 Tamb = -40°C to +50°C EEx nAL IIC T4 Tamb = -40°C to +70°C Specific Parameters: Model without arrester: Umax=42.4V, Imax=113mA, Pmax=1W Model with arrester: Umax=32V, Imax=113mA, Pmax=1W																					
Factory Mutual (pending)	Class I II III Div.2 Groups A, B, C, D, F, G T4 Entity Type 4X <table border="1"> <thead> <tr> <th colspan="2">Model code</th> <th>Tamb</th> </tr> <tr> <th>9th digit</th> <th>13th digit</th> <th></th> </tr> </thead> <tbody> <tr> <td>A,B,D</td> <td>Y,G,H,J,S,T,K</td> <td>-40°C to +85°C</td> </tr> <tr> <td>L,P,1,2</td> <td>Y,G,H,J,S,T,K</td> <td>-20°C to +80°C</td> </tr> <tr> <td>Q,S,4,5</td> <td>Y,G,H,J,S,T,K</td> <td>-20°C to +60°C</td> </tr> <tr> <td>E,F,H</td> <td>Y,G,H,J,S,T,K</td> <td>-40°C to +60°C</td> </tr> <tr> <td>-</td> <td>W,A,D</td> <td>-10°C to +60°C</td> </tr> </tbody> </table>	Model code		Tamb	9th digit	13th digit		A,B,D	Y,G,H,J,S,T,K	-40°C to +85°C	L,P,1,2	Y,G,H,J,S,T,K	-20°C to +80°C	Q,S,4,5	Y,G,H,J,S,T,K	-20°C to +60°C	E,F,H	Y,G,H,J,S,T,K	-40°C to +60°C	-	W,A,D	-10°C to +60°C
Model code		Tamb																				
9th digit	13th digit																					
A,B,D	Y,G,H,J,S,T,K	-40°C to +85°C																				
L,P,1,2	Y,G,H,J,S,T,K	-20°C to +80°C																				
Q,S,4,5	Y,G,H,J,S,T,K	-20°C to +60°C																				
E,F,H	Y,G,H,J,S,T,K	-40°C to +60°C																				
-	W,A,D	-10°C to +60°C																				
CSA	Class I Div.2 Groups A, B, C, D Class II Div.2 Groups E, F, G Class III Div.2 Temp Code T5 Tamb max = +50°C Temp Code T4 Tamb max = +70°C Entity Parameters: Vmax=28V, Ci=25.18nF (Without Arrester), Ci=35.98nF (With Arrester), Li=0.694mH																					

 Caution on Safety

*Before using this product, be sure to read its instruction manual in advance.

Fuji Electric Systems Co., Ltd.

International Sales Div.1

Sales Group

Gate City Ohsaki, East Tower, 11-2, Osaki 1-chome,
Shinagawa-ku, Tokyo 141-0032, Japan

<http://www.fesys.co.jp/eng>

Phone: 81-3-5435-7280, 7281 Fax: 81-3-5435-7425

<http://www.fic-net.jp/eng>