

ABSOLUTE PRESSURE TRANSMITTER

DATA SHEET

FKA...5

The FCX-AIII absolute pressure transmitter accurately measures absolute 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.

FEATURES

1. High accuracy

0.2% accuracy for all calibrated spans is a standard feature for all AP models covering 1.6kPa {0.016bar} range to 3000kPa {30bar} high pressure range. 0.1% accuracy is available as option. Fuji's micro-capacitance silicon sensor assures this accuracy for all 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-AIII series transmitter offers bilingual communications to speak both Fuji proprietary protocol and HART®. Any HART® compatible devices can communicate with FCX-AIII. Further, by upgrading electronics FOUNDATION™ fieldbus and Profibus™ are also available.

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

5. Burnout current flexibility (Under Scale: 3.2 to 4.0mA, Over Scale: 20.0 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 abs] [bar abs]		Range limit [kPa abs] [bar abs]	Overrange limit [MPa] [bar]
	Min.	Max.		
FKA□01	1.6 {0.016}	16 {0.16}	0 to +16 {0 to +0.16}	0.5 {5}
FKA□02	1.6 {0.016}	130 {1.3}	0 to +130 {0 to +1.3}	0.5 {5}
FKA□03	5 {0.05}	500 {5}	0 to +500 {0 to +5}	1.5 {15}
FKA□04	30 {0.3}	3000 {30}	0 to +3000 {0 to +30}	9 {90}

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

- The maximum span of each sensor can be converted to different units using factors as below.

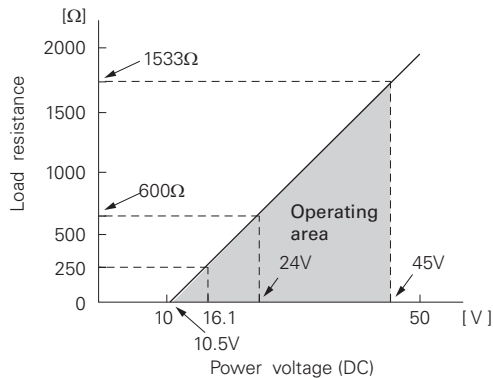
1MPa abs=10³kPa abs=10bar abs=10.19716kgf/cm² abs
=145.0377psi abs

1kPa abs =10mbar abs=101.9716mmH₂O abs
=4.01463inH₂O abs=7.50062mmHg abs

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 TABLE2

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 configurator unit with LCD display. The time constant is adjustable between 0.06 to 32 seconds.

Zero elevation/suppression:

Zero can be elevated 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":

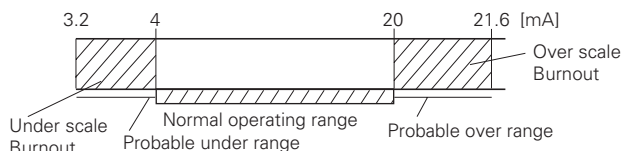
Output signal is hold as the value just before failure happens.

"Output Overscale":

Adjustable within the range 20.0mA to 21.6mA 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 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)

For explosionproof units (flameproof or intrinsic safety), ambient temperature must be within the limits specified by each standard.

Process: -40 to +85°C for silicone fill sensor

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

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)

(Not available for Max span 16kPa abs, 130kPa abs)

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

$$\text{Zero shift: } \pm \left(0.125 + 0.1 \frac{\text{URL}}{\text{Span}} \right) \%$$

$$\text{Total effect: } \pm \left(0.15 + 0.1 \frac{\text{URL}}{\text{Span}} \right) \%$$

Overrange effect: Zero shift; $\pm 0.2\%$ 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: 0.08 s (at 23°C)

Dead time: 0.12 s

(without electrical damping)

Mounting position effect:

Zero shift, less than 0.1kPa{1mbar} for a 10° tilt in any plane.

No effect on span. This error can be corrected by adjusting zero.

Dielectric strength:

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

Insulation resistance:

More than 100MΩ at 500V DC.

Internal resistance for external field indicator:

12Ω or less

Physical specifications

Electrical connections:

G1/2, 1/2-14NPT, Pg13.5, or M20 x 1.5 conduit, as specified.

Process connections:

1/4-18 NPT or Rc1/4 on 54mm centers, as specified.

Process-wetted parts material:

Material code (7th digit in "Code symbols")	Process cover	Diaphragm	Wetted sensor body	Vent/drain
V	316 stainless steel (*)	316L stainless steel	316 stainless steel	316/316L stainless steel
H	316 stainless steel (*)	Hastelloy-C	Hastelloy-C lining	316/316L stainless steel
M	316 stainless steel (*)	Monel	Monel lining	316/316L stainless steel
T	316 stainless steel (*)	Tantalum	Tantalum lining	316/316L stainless steel

Note: (*) SCS14A per JIS G 5121 (equivalent CF8M per ASTM A351/A351M)

Remarks: Availability of above material design depends on ranges. 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.

Bolts and nut: Cr-Mo alloy (standard), 304 or 316 stainless steel

Fill fluid: Silicone oil

Mounting bracket: 304 or 316 stainless steel.

Environmental protection:

IEC IP67 and NEMA 6/6P

Mounting:

On 60.5mm (JIS 50A) pipe using mounting bracket, direct wall mounting, or direct process mounting.

Mass{weight}:

Transmitter approximately 2.9 to 3.4kg without options.

Add; 0.5kg for mounting bracket

4.5kg for stainless steel housing option

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)

Degreasing:

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

NACE specification:

Metallic materials for all pressure boundary parts comply with NACE MR-01-75. 304 stainless steel bolts and nuts, ASTM B7M or L7M bolts and 2HM nuts (Class II) are available.

Optional tagplate:

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.

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	<Connections>					F	K	A	0	5												
	Process connection	Oval flange screw	Conduit connection	Case type																		
	Rc1/4	7/16-20UNF	G1/2	T type						5												
	1/4-18NPT	7/16-20UNF	1/2-14NPT	T type						6												
	1/4-18NPT	M10	Pg13.5	T type						7												
	1/4-18NPT	M10	M20×1.5	T type						8												
	1/4-18NPT	7/16-20UNF	Pg13.5	T type						9												
	Rc1/4	7/16-20UNF	G1/2	L type						S												
	1/4-18NPT	7/16-20UNF	1/2-14NPT	L type						T												
	1/4-18NPT	M10	Pg13.5	L type						V												
1/4-18NPT	M10	M20×1.5	L type						W													
1/4-18NPT	7/16-20UNF	Pg13.5	L type						X													
6, 7																						
	Span limit [kPa abs](bar abs)(*1)	Process cover	Diaphragm	Wetted cell body	Note1																	
	1.6...16 {0.016...0.16}	316 stainless steel	316L stainless steel	316 stainless steel							1V											
		316 stainless steel	Hast. C	Hast. C lining							1H											
		316 stainless steel	Monel	Monel lining							1M											
	1.6...130 {0.016...1.3}	316 stainless steel	316L stainless steel	316 stainless steel							2V											
		316 stainless steel	Hast. C	Hast. C lining							2H											
		316 stainless steel	Monel	Monel lining							2M											
		316 stainless steel	Tantalum	Tantalum lining							2T											
	5...500 {0.05...5}	316 stainless steel	316L stainless steel	316 stainless steel							3V											
		316 stainless steel	Hast. C	Hast. C lining							3H											
		316 stainless steel	Monel	Monel lining							3M											
		316 stainless steel	Tantalum	Tantalum lining							3T											
	30...3000 {0.3...30}	316 stainless steel	316L stainless steel	316 stainless steel							4V											
		316 stainless steel	Hast. C	Hast. C lining							4H											
		316 stainless steel	Monel	Monel lining							4M											
	316 stainless steel	Tantalum	Tantalum lining							4T												
9	<Indicator and arrester>																					
	Indicator		Arrester																			
	None		None															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% linear scale		None															L				
	Digital, custom scale		None															P				
	Digital, 0 to 100% linear scale		Yes															Q				
	Digital, custom scale		Yes															S				
	Digital, 0 to 100% linear scale																	1				
	(Local configurator unit with LCD display)		None																			
	Digital, custom scale																	2				
	(Local configurator unit with LCD display)		None																			
Digital, 0 to 100% linear scale																	4					
(Local configurator unit with LCD display)		Yes																				
Digital, custom scale																	5					
(Local configurator unit with LCD display)		Yes																				
10	<Approvals for hazardous locations>																					
	None (for ordinary locations)																					
	TIIS, Flameproof (Conduit seal) (*6)				Note6														A			
	TIIS, Flameproof (Cable gland seal) (*6)				Note6														B			
	TIIS, Intrinsic safety																		C			
	FM, Flameproof (or explosionproof) (*7)																		G			
	FM, Intrinsic safety and nonincentive				Note7														D			
	FM Combined of flameproof and intrinsic safety (*7)																		H			
	ATEX Flameproof (*8)				Note7														V			
	ATEX Intrinsic safety				Note8														X			
	ATEX Type n																		K			
	ATEX Combined of flameproof and intrinsic safety (*8)																		P			
	IECEX Scheme, Flameproof (*8)				Note8														M			
	IECEX Scheme, Intrinsic safety																		R			
	CSA, Flameproof (or explosionproof) (*9)																		T			
	CSA, Intrinsic safety and nonincentive				Note9														E			
NEPSI, Flameproof (or explosionproof) (*7)																		J				
NEPSI, Intrinsic safety (Entity)				Note7														F				
NEPSI, Combined of flameproof and intrinsic safety (*7)																		S				
NEPSI, Combined of flameproof and intrinsic safety (*7)				Note7														U				
11	<Vent/ drain and mounting bracket>																					
	Vent/drain		Mounting bracket																			
	Standard		None																			
	Standard		Yes, stainless steel (SUS304)																	A		
	Standard		Yes, stainless steel (SUS316)																	C		
	Side		None																	K		
	Side		Yes, stainless steel (SUS304)																	D		
	Side		Yes, stainless steel (SUS316)																	F		

Note1: (*1) 100: 1 turn down is possible, but should be used at a span greater than 1/40 of the maximum span for better performance.

Digit	Description		Note	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	21	Digit No. of code
12	<Options> Extra SS tag plate None Yes None Yes None Yes	Stainless steel elec. housing Coating of cell None None None None Yes Yes Yes } (*5)	Note2 Note5 Note5	F	K	A	0	5	-											
13	<Special applications and fill fluid> Treatment Standard Degreasing NACE specification	Fill fluid Silicone oil Silicone oil Silicone oil (7th digit code "T" and 15th digit code "A", "B" are not available)																		
14	<O-ring/Gasket and Teflon membrane> Teflon (gasket)																			
15	<Bolt/nut> (*3) Cr-Mo alloy hexagon socket head cap screw/carbon steel nut Cr-Mo alloy hexagon bolt/nut NACE bolt/nut (ASTM A193 B7M/A194 2HM) NECE bolt/nut (ASTM A320 L7M/A194 2HM) 304 stainless steel bolt/304 stainless steel nut 316 stainless steel bolt/316 stainless steel nut		Note 3																	
21	<Other options> (*4) High accuracy type Opposite Vent/Drain Plug Position Instruction manual unattached High accuracy type Opposite Vent/Drain Plug Position	Instruction manual attached Instruction manual attached Instruction manual unattached Instruction manual unattached Instruction manual unattached	Note 4																	

Note2: (*2) Customer tag number can be engraved on standard stainless steel name plate. If extra tag plate is required, select "Yes".

Note3: (*3) In case of tropical use, select stainless bolts and nuts.

Note4: (*4) If other option is not necessary, 21st digit code is blank.
In case of 21st digit code is blank, instruction manual attached.

Note5: (*5) Not available for 10th digit code "B", "C".

Note6: (*6) Available for 4th digit code "5", "S".

Note7: (*7) Not available for 4th digit code "8", "W".

Note8: (*8) Available for 4th digit code "6", "8", "T", "W".

Note9: (*9) Available for 4th digit code "6", "T".

ACCESSORIES

Oval flanges: (Model FFP, refer to Data Sheet No. EDS6-128)
Converts process connection to 1/2-14 NPT or to Rc1/2; in carbon steel or in 316 stainless steel.

Hand held communicator: (Model FXW, refer to Data Sheet No. EDS 8-47)

ORDERING INFORMATION

When ordering this instrument, specify.

- CODE SYMBOLS
- Measuring range.
- Output orientation (burnout direction) when abnormality is occurred in the transmitter.
Hold / Overscale / Underscale
Unless otherwise specified, output hold function is supplied.
- Indication method (indicated value and unit) in case of the actual scale (code D, H, P, S on 9th digit).
- Tag No. (up to 14 alphanumeric characters), if required.

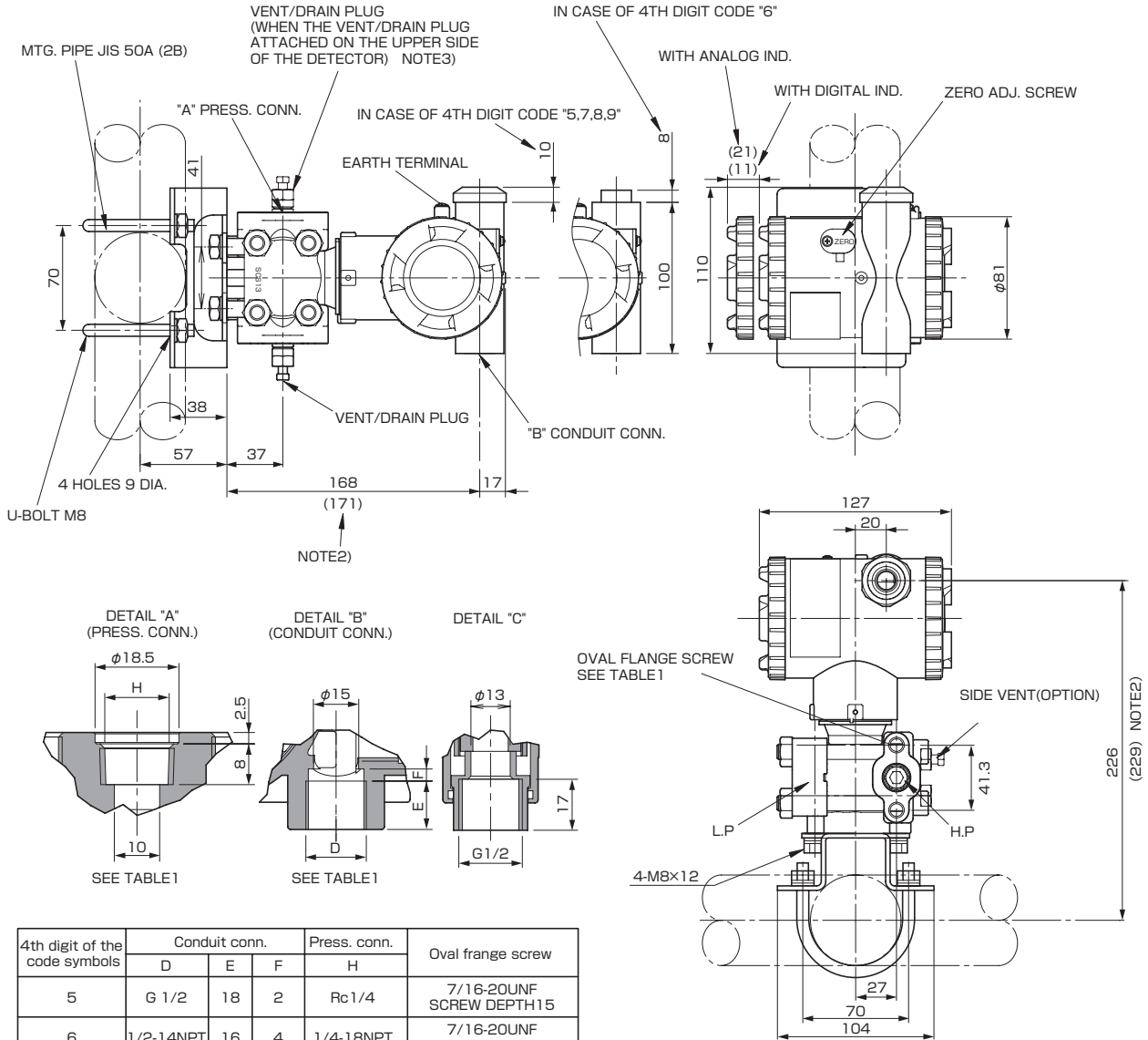
OUTLINE DIAGRAM (Unit:mm)

< CODE SYMBOLS : FKA

5	8
6	9
7	

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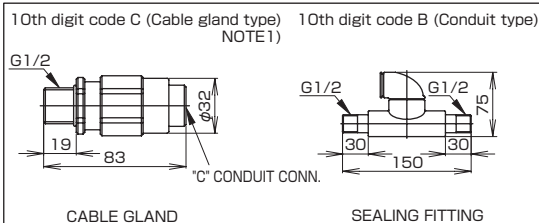
 5 >



4th digit of the code symbols	Conduit conn.			Press. conn.	Oval frange screw
	D	E	F	H	
5	G 1/2	18	2	Rc 1/4	7/16-20UNF SCREW DEPTH15
6	1/2-14NPT	16	4	1/4-18NPT	7/16-20UNF SCREW DEPTH15
7	Pg13.5	10.5	4.5	1/4-18NPT	M10 SCREW DEPTH15
8	M20×1.5	16	4	1/4-18NPT	M10 SCREW DEPTH15
9	Pg13.5	10.5	4.5	1/4-18NPT	7/16-20UNF SCREW DEPTH15

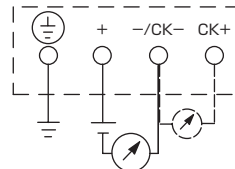
TABLE 1

OPTION PARTS FOR FLAMEPROOF OF TIIS (JAPAN)



NOTE1) IN CASE OF 10TH CODE "C", φ11 CABLE IS SUITBLE.
 NOTE2) WHEN THE 7TH DIGIT OF THE CODE SYMBOLS "H,M,T"
 NOTE3) THE PRESSURE CONNECTOR IS LOCATED ON THE DOWN SIDE SURFACE OF THE DETECTOR, WHEN THE VENT/DRAIN PLUG IS ATTACHED ON THE UPPER SIDE OF THE DETECTOR (WHEN THE 21ST DIGIT OF THE CODE SYMBOLS : C, P).

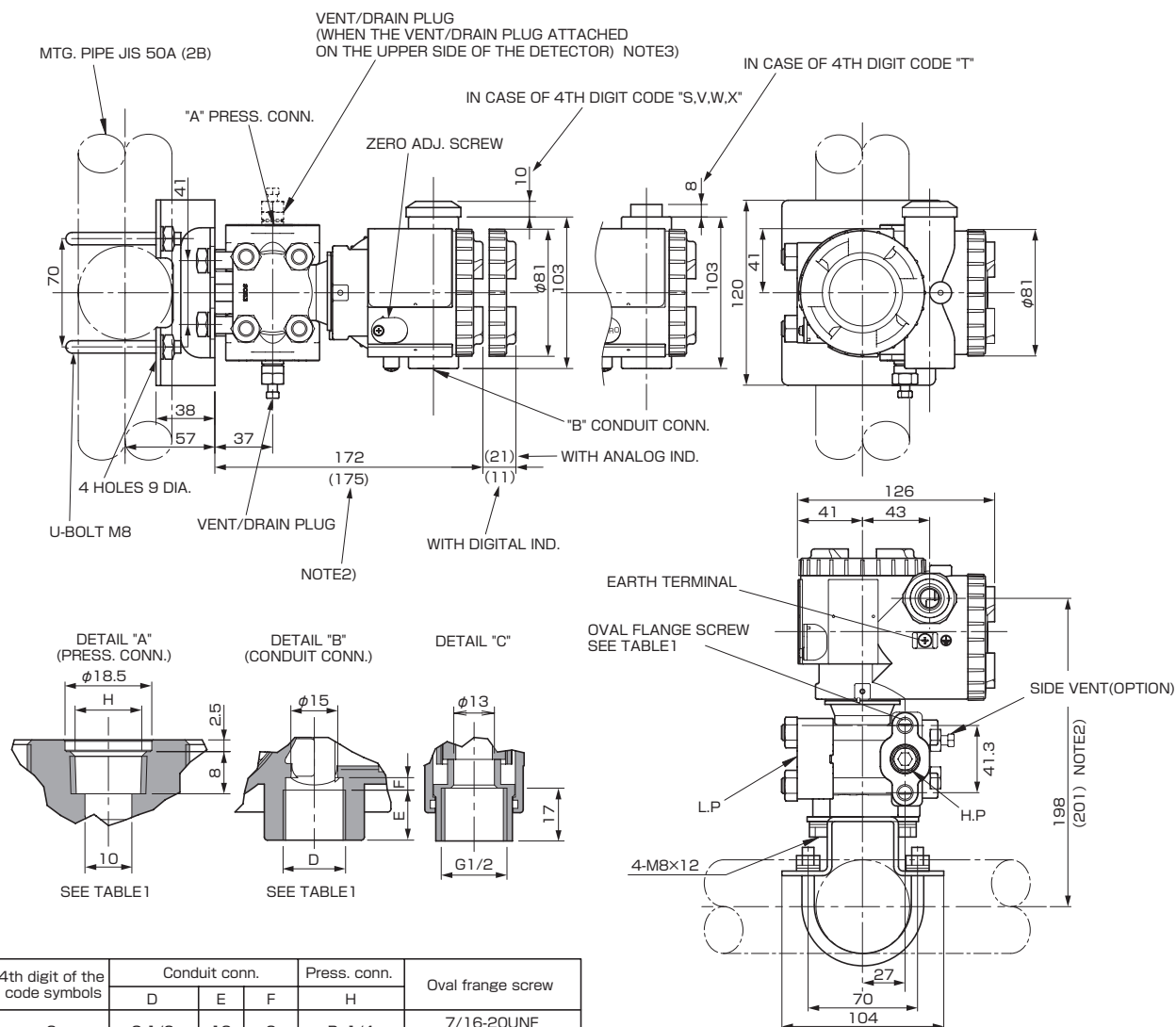
CONNECTION DIAGRAM



< CODE SYMBOLS : FKA

SW				
T	X			
V				5

 >

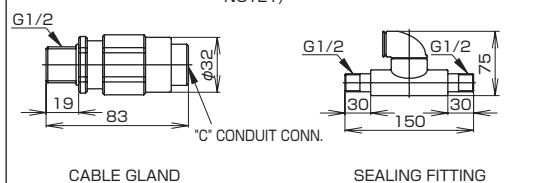


4th digit of the code symbols	Conduit conn.			Press. conn.	Oval flange screw
	D	E	F	H	
S	G 1/2	18	2	Rc 1/4	7/16-20UNF SCREW DEPTH15
T	1/2-14NPT	16	4	1/4-18NPT	7/16-20UNF SCREW DEPTH15
V	Pg13.5	10.5	4.5	1/4-18NPT	M10 SCREW DEPTH15
W	M20x1.5	16	4	1/4-18NPT	M10 SCREW DEPTH15
X	Pg13.5	10.5	4.5	1/4-18NPT	7/16-20UNF SCREW DEPTH15

TABLE 1

OPTION PARTS FOR FLAMEPROOF OF TIIS (JAPAN)

10th digit code C (Cable gland type) 10th digit code B (Conduit type) NOTE1)



NOTE1) IN CASE OF 10TH CODE "C", $\phi 11$ CABLE IS SUITBLE.
 NOTE2) WHEN THE 7TH DIGIT OF THE CODE SYMBOLS "H.M.T"
 NOTE3) THE PRESSURE CONNECTOR IS LOCATED ON THE DOWN SIDE SURFACE OF THE DETECTOR, WHEN THE VENT/RAIN PLUG IS ATTACHED ON THE UPPER SIDE OF THE DETECTOR (WHEN THE 21ST DIGIT OF THE CODE SYMBOLS : C, P).

CONNECTION DIAGRAM

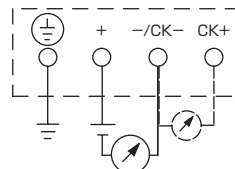


TABLE 2

Authorities	Intrinsic safety																		
ATEX	<p>Ex II 1 G Ex ia IIC T5 Tamb = -40°C to +50°C Ex ia IIC T4 Tamb = -40°C to +70°C</p> <p>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)</p>																		
Factory Mutual (pending)	<p>Class I II III Div.1 Groups A, B, C, D, E, F, G T4 Entity Type 4X</p> <table><tr><th>Model code</th><th>Tamb</th></tr><tr><th>9th digit</th><td></td></tr><tr><td>A,B,D</td><td>-40°C to +85°C</td></tr><tr><td>L,P1,2</td><td>-20°C to +80°C</td></tr><tr><td>Q,S,4,5</td><td>-20°C to +60°C</td></tr><tr><td>E,F,H</td><td>-40°C to +60°C</td></tr></table> <p>Entity Parameters: Vmax=42.4V, Imax=113mA, Pi=1W, Ci=35.98nF, Li=0.694mH</p>	Model code	Tamb	9th digit		A,B,D	-40°C to +85°C	L,P1,2	-20°C to +80°C	Q,S,4,5	-20°C to +60°C	E,F,H	-40°C to +60°C						
Model code	Tamb																		
9th digit																			
A,B,D	-40°C to +85°C																		
L,P1,2	-20°C to +80°C																		
Q,S,4,5	-20°C to +60°C																		
E,F,H	-40°C to +60°C																		
CSA	<p>Class I Div.1 Groups A, B, C, D Class II Div.1 Groups E, F, G Class III Div.1</p> <p>Temp Code T5 Tamb max = +50°C Temp Code T4 Tamb max = +70°C</p> <p>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)</p>																		
TIIS	<p>Ex ia IIC T4 Tamb max = +60°C</p> <p>Entity Parameters: Ui=28V, Ii=94.3mA, Pi=0.66W, Ci=38.4nF, Li=0.694mH</p>																		
IECEX Scheme	<p>Ex ia IIC T4 Tamb = -40°C to +70°C Ex ia IIC T5 Tamb = -40°C to +50°C</p> <p>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)</p>																		
NEPSI	<p>Ex ia IIC T4 Ex d IIB+H2 T6 / Ex ia IIC T4</p> <table><tr><th>Model code</th><th></th><th>Tamb</th></tr><tr><th>9th digit</th><th>13th digit</th><td></td></tr><tr><td>A,B,D</td><td>Y,G,N</td><td>-40°C to +85°C</td></tr><tr><td>L,P1,2</td><td>Y,G,N</td><td>-20°C to +80°C</td></tr><tr><td>Q,S,4,5</td><td>Y,G,N</td><td>-20°C to +60°C</td></tr><tr><td>E,F,H</td><td>Y,G,N</td><td>-40°C to +60°C</td></tr></table> <p>Entity Parameters: Ui=42.4V, Ii=113mA, Pi=1W, Ci=35.98nF, Li=0.694mH</p>	Model code		Tamb	9th digit	13th digit		A,B,D	Y,G,N	-40°C to +85°C	L,P1,2	Y,G,N	-20°C to +80°C	Q,S,4,5	Y,G,N	-20°C to +60°C	E,F,H	Y,G,N	-40°C to +60°C
Model code		Tamb																	
9th digit	13th digit																		
A,B,D	Y,G,N	-40°C to +85°C																	
L,P1,2	Y,G,N	-20°C to +80°C																	
Q,S,4,5	Y,G,N	-20°C to +60°C																	
E,F,H	Y,G,N	-40°C to +60°C																	

Authorities	Flameproof												
ATEX	<p>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</p>												
Factory Mutual	<p>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</p>												
CSA	<p>Class I Div.1 Groups C, D Class II Div.1 Groups E, F, G Class III Div.1</p> <p>Note) "Seal Not Required" enclosure is allowed.</p>												
TIIS	<p>Ex do IIB+H₂ T4 Tamb max = +60°C Maximum process temp. = +120°C</p>												
IECEX Scheme	<p>Ex d IIC T5 IP66/67 Tamb = -40°C to +85°C Ex d IIC T6 IP66/67 Tamb = -40°C to +65°C</p>												
NEPSI	<p>Ex d IIB+H₂ T6 Tamb = -40°C to +60°C</p>												
Authorities	Type n Nonincendive												
ATEX	<p>Ex II 3 GD EEx nL IIC T5 Tamb = -40°C to +50°C EEx nL IIC T4 Tamb = -40°C to +70°C</p> <p>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</p> <p>EEx nAL IIC T5 Tamb = -40°C to +50°C EEx nAL IIC T4 Tamb = -40°C to +70°C</p> <p>Specific Parameters: Model without arrester: Umax=42.4V, Imax=113mA, Pmax=1W Model with arrester: Umax=32V, Imax=113mA, Pmax=1W</p>												
Factory Mutual (pending)	<p>Class I II III Div.2 Groups A, B, C, D, F, G T4 Entity Type 4X</p> <table> <tr> <th>Model code</th><th>Tamb</th></tr> <tr> <td>9th digit</td><td></td></tr> <tr> <td>A,B,D</td><td>-40°C to +85°C</td></tr> <tr> <td>L,P1,2</td><td>-20°C to +80°C</td></tr> <tr> <td>Q,S,4,5</td><td>-20°C to +60°C</td></tr> <tr> <td>E,F,H</td><td>-40°C to +60°C</td></tr> </table>	Model code	Tamb	9th digit		A,B,D	-40°C to +85°C	L,P1,2	-20°C to +80°C	Q,S,4,5	-20°C to +60°C	E,F,H	-40°C to +60°C
Model code	Tamb												
9th digit													
A,B,D	-40°C to +85°C												
L,P1,2	-20°C to +80°C												
Q,S,4,5	-20°C to +60°C												
E,F,H	-40°C to +60°C												
CSA	<p>Class I Div.2 Groups A, B, C, D Class II Div.2 Groups E, F, G Class III Div.2</p> <p>Temp Code T5 Tamb max = +50°C Temp Code T4 Tamb max = +70°C</p> <p>Entity Parameters: Vmax=28V, Ci=25.18nF (Without Arrester), Ci=35.98nF (With Arrester), Li=0.694mH</p>												

⚠ Caution on Safety

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

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