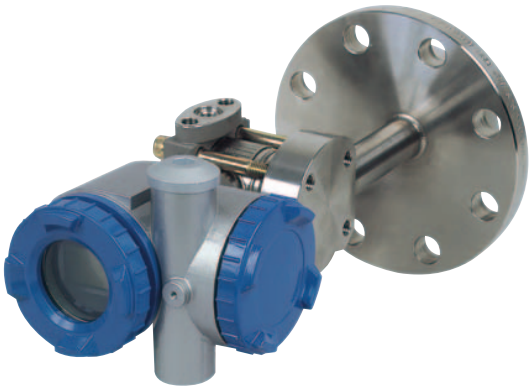
LEVEL TRANSMITTER

DATA SHEET FKE···5

The FCX-AIII level transmitter accurately measures liquid level 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 models covering 0.32kPa {3.2mbar} range to 500kPa {5bar} high differential 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, static pressure, 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 service.
5. Programmable output Linearization Function
   Output signal can be freely programmable.
   (Up to 14 compensated points at approximation.)
6. 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.
7. 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 vapor

Static pressure, span, and range limit:

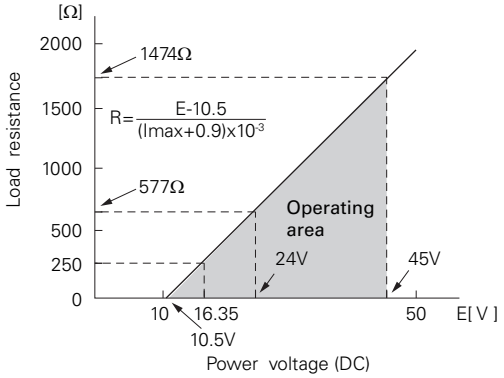
Type	Static pressure	Span limit [kPa] {m bar}		Range limit [kPa] {m bar}
		Min.	Max.	
FKE□□3	Up to flange rating	0.32 (3.2) {3.2(3.2)}	32 {320}	+/– 32 { +/– 320}
FKE□□5		1.3 (13) {13(130)}	130 {1300}	+/– 130 { +/– 1300}
FKE□□6		5 (50) {50(500)}	500 {5000}	+/– 500 { +/– 5000}

Remark: To minimize environmental influence, span should be greater than 1/40 of the max. span in most applications.
Note: Minimum span for flange whose diameter is 50A/2B/2 inch or smaller are shown in parentheses.

– Lower limit of static pressure (vacuum limit) ;
  Silicone fill sensor: See Fig.1
  Fluorinated fill sensor: 66kPa abs (500mmHg abs) at temperature below 60 °C.
– The maximum span of each sensor can be converted to different units using factors as below.
  $1MPa=10^3kPa=10bar=10.19716kgf/cm^2=145.0377psi$
  $1kPa=10mbar=101.9716mmH_2O=4.01463inH_2O$

Overrange limit: To maximum static pressure limit
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 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 configurator unit with LCD display.
The time constant is adjustable between 0.06 to 32 seconds.

Zero elevation/suppression:
–100% to + 100% of URL

Normal/reverse action:
Selectable from HHC[1]

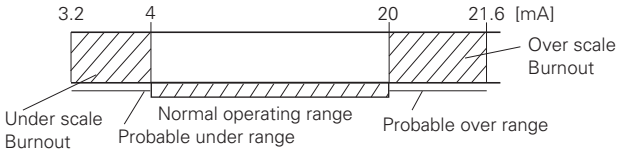
Indication: Analog indicator or 5-digit LCD meter, as specified.

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]
Note: When the ambient temperature is -30°C or lower: 20.0mA to 20.8mA.

"Output Underscale": Adjustable within the range 3.2mA to 4.0mA from HHC[1]



Output Limits comforming 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)
(–10 to + 60°C for fluorinated oil fill transmitter)
For explosionproof units (flameproof or intrinsic safety), ambient temperature must be within the limits specified in each standard.

Process:

	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	U	–15 to 250°C	
	X	20 to 300°C	
	Y and G	–40 to 120°C	2.7kPa abs {20.3mmHg abs}

Low pressure side contact liquid temperature on transmitter of Code H, J is 120°C or lower.

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.	*v*	*v*	*v*	*v*
Model No.	*v*	*v*	*v*	*v*
Serial No. & Software Version	*v*	—	*v*	—
Engineering unit	*v*	*v*	*v*	*v*
Range limit	*v*	—	*v*	—
Measuring range	*v*	*v*	*v*	*v*
Damping	*v*	*v*	*v*	*v*
Output mode	*v*	—	*v*	—
Burnout direction	*v*	*v*	*v*	*v*
Calibration	*v*	*v*	*v*	*v*
Output adjust	—	*v*	—	*v*
Data	*v*	—	*v*	—
Self diagnoses	*v*	—	*v*	—
Printer (In case of FXW with printer option)	*v*	—	—	—
External switch lock	*v*	*v*	*v*	*v*
Transmitter display	*v*	*v*	*v*	*v*
Linearize	*v*	*v*	—	—
Rerange	*v*	*v*	*v*	*v*
Saturate current	*v*	*v*	*v*	*v*
Write protect	*v*	*v*	*v*	*v*
History – Calibration history – Ambient temperature history	 *v* *v*	 *v* —	 *v* *v*	 *v* —

Programmable output linearization function:
Output signal can be characterized with "14 points linear approximation function" from HHC[1].

(Note) (1) HHC: Hand Held Communicator

Performance specifications

Reference conditions, silicone oil fill, 316L SS isolating diaphragms, 4-20 mA 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)

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

For span below 1/10 of URL:

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

Stability: ±0.2% of upper range limit (URL) for 10 years.

Temperature effect:

Effects 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: ±0.3% (X>1/4URL)

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

Total effect: ±0.4% (X>1/4URL)

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

Static pressure effect:

Zero shift: ±0.2% of URL / 1MPa

Span shift: –0.2% of calibrated span / 1MPa

Overrange effect: Zero shift; ±0.1% of URL for flange rating pressure

Supply voltage effect:

Less than 0.005% of calibrated span per 1V

Update rate: 60 msec

Step response: (without electrical damping)

Range code	Time constant (at 23°C)	Dead time
"3"	0.55 s	0.12 s
"5" and "6"	0.3 s	

Mounting position effect:

Zero shift, less than 0.3kPa {3m bar} for a 10° tilt in any plane. (No extension)

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

Process connections:

LP side: 1/4-18 NPT or Rc1/4.

HP side: ANSI, DIN, or JIS raised face flange. See OUTLINE DIAGRAM for detailed dimensions.

Refer to "Code symbols"

Process-wetted parts material:

Material (7th code)	HP side (mounting flange side)		LP side	
	Diaphragm	Flange face	Diaphragm	Wetted sensor body
V	316L stainless steel	316L stainless steel	316L stainless steel	316 stainless steel
B	316L stainless steel + Au coating	316L stainless steel	316L stainless steel	316 stainless steel
W	Hastelloy-C	316L stainless steel	316L stainless steel	316 stainless steel
C	Hastelloy-C	Hastelloy-C	316L stainless steel	316 stainless steel
D	Monel	Monel	316L stainless steel	316 stainless steel
E	Tantalum	Tantalum	316L stainless steel	316 stainless steel
H	Hastelloy-C	Hastelloy-C	Hastelloy-C	Hastelloy-C
M	Monel	Monel	Monel	Monel
T	Tantalum	Tantalum	Tantalum	Tantalum
P	Titanium	Titanium	316L stainless steel	316 stainless steel
R	Zirconium	Zirconium	316L stainless steel	316 stainless steel

Process cover: 316 stainless steel

Remark: Sensor O-rings: Viton O-ring and teflon gasket selectable.

Non-wetted parts material:

Electronics housing:

Low copper die-cast aluminum alloy finished with polyester coating (standard), or 316 stainless steel, as specified.

Bolts and nuts:

Cr-Mo alloy (standard) or 304 stainless steel

Fill fluid:

Silicone oil (standard) or fluorinated oil

Mounting flange:

316L stainless steel

Environmental protection:

IEC IP67 and NEMA 6 / 6P

Flange mounting: See drawings

Mass {weight}: Transmitter approximately 10.2 to 19.2kg without options.

Add; 0.5kg for mounting bracket

4.5kg for stainless steel housing option

1.0kg 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 service: Special silicone oil and filling procedure are applied. See Fig.1 and Fig.2

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

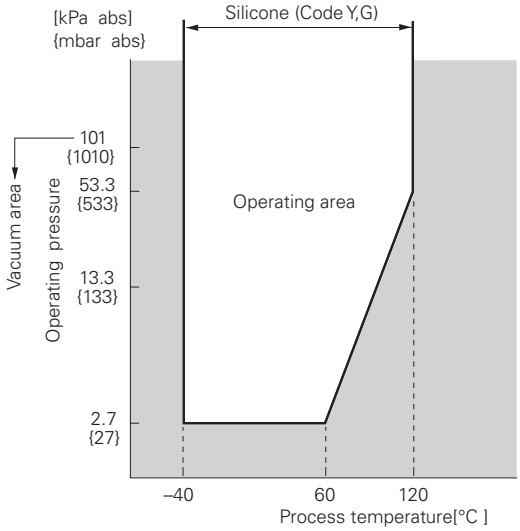


Fig. 1 Relation between process temperature and operating pressure

EU Directive Compliance CE

EMC (2014/30/EU)
EN 61326-1 (Table 2)
EN 55011 (Group 1 Class A)
EN 61326-2-3

ATEX (2014/34/EU)
EN 60079-0
EN 60079-1
EN 60079-11
EN 60079-15
EN 60079-26
EN 60079-31

PED (2014/68/EU)
Article 4.3

RoHS (2011/65/EU)
EN 50581

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:

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, 2, 5 on 9th digit).
5. TAG No. (up to 14 alphanumerical characters), if required.

CODE SYMBOLS

Digit	Description				Note	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 ← Digit No. of code F K E [4] [5] [6] [7] 5 - [9 10 11 12 13] - [14 15]
4	<Low pressure Connections>					
	<Process cover>		<AMP case>			
	<Process connection>	<Oval flange screw>	<Conduit connection>	<Case shape>		
	Rc1/4	7/16-20UNF	G1/2	L shape		S
	1/4-18NPT	7/16-20UNF	1/2-14NPT	L shape		T
	1/4-18NPT	M10	Pg 13.5	L shape		V
	1/4-18NPT	M10	M20	L shape		W
	1/4-18NPT	7/16-20UNF	Pg 13.5	L shape		X
	Rc1/4	7/16-20UNF	G1/2	T shape		5
	1/4-18NPT	7/16-20UNF	1/2-14NPT	T shape		6
	1/4-18NPT	M10	Pg 13.5	T shape		7
	1/4-18NPT	M10	M20	T shape		8
	1/4-18NPT	7/16-20UNF	Pg 13.5	T shape		9
5	<Flange size and rating>		<Flange material>			
	JIS 10K 40A		316L SS			A
	JIS 20K 40A		316L SS			B
	JIS 30K 40A		316L SS			C
	JIS 10K 50A		316L SS			D
	JIS 20K 50A		316L SS			E
	JIS 30K 50A		316L SS			F
	JIS 10K 80A		316L SS			0
	JIS 20K 80A		316L SS			T
	JIS 30K 80A		316L SS			2
	JIS 10K 100A		316L SS			1
	JIS 20K 100A		316L SS			U
	JIS 30K 100A		316L SS			3
	ANSI/JPI 150LB 1.5"		316L SS			G
	ANSI/JPI 300LB 1.5"		316L SS			H
	ANSI/JPI 150LB 2"		316L SS			J
	ANSI/JPI 300LB 2"		316L SS			K
	ANSI/JP1 150LB 3B		316L SS			4
	ANSI/JP1 300LB 3B		316L SS			6
	ANSI/JP1 150LB 4B		316L SS			5
	ANSI/JP1 300LB 4B		316L SS			7
	DIN PN40 DN80		316L SS			8
	DIN PN16 DN100		316L SS			9
6	<Span limit (*1) [kPa] {m bar}>				Note 1	
	[0.32 ..... 32] (For flange size 50A/2B or smaller: [3.2 ..... 32])					3
	{3.2 ..... 320} (For flange size 50A/2B or smaller: {32 ..... 320})					
	[1.3 .....130] (For flange size 50A/2B or smaller: [13 ..... 130])					5
	{13 ..... 1300} (For flange size 50A/2B or smaller: {130 ..... 1300})					
	[5 ..... 500] (For flange size 50A/2B or smaller: [50 ..... 500]) (*2)				Note 2	6
	{50 ..... 5000} (For flange size 50A/2B or smaller: {500 ..... 5000}) (*2)					
7	<Material>					
	HP side		LP side			
	Diaphragm	Flange face	Diaphragm	Wetted cell body		
	316L SS	316L SS	316L SS	316 SS		V
	316L SS + Au coating	316L SS	316L SS	316 SS		B
	Hastelloy-C	316L SS	316L SS	316 SS		W
	Hastelloy-C	Hastelloy-C	316L SS	316 SS		C
	Monel	Monel	316L SS	316 SS		D
	Tatalum	Tatalum	316L SS	316 SS		E
	Hastelloy-C	Hastelloy-C	Hastelloy-C	Hastelloy-C		H
	Monel	Monel	Monel	Monel		M
	Tatalum	Tatalum	Tatalum	Tatalum		T
	Titanium	Titanium	316L SS	316 SS	Note 3	P
	Zirconium	Zirconium	316L SS	316 SS	Note 3	R
9	<Indicator>		<Scale>	<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 (Local configurator unit with LCD)		0 to 100% linear scale	None		1
	Digital (Local configurator unit with LCD)		Custom scale	None		2
	Digital (Local configurator unit with LCD)		0 to 100% linear scale	Yes		4
	Digital (Local configurator unit with LCD)		Custom scale	Yes		5

Note 1: (*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.
Note 2: (*2) Not available for 7th digit code "R".
Note 3: (*3) 5th digit code "0, 2, 4, 6, 8, T" are available.

Digit	Description	Note	1 2 3 4 5 6 7 8	9 10 11 12 13	14 15 ← Digit No. of code
			F K E	-	-
10	<Approvals for hazardous location>				
	None (for ordinary location)			A	
	TIIS Flameproof (Cabel grand seal) (*5)	Note 4		C	
	TIIS Intrinsic safety			G	
	FM Flameproof (or explosionproof) (*6)	Note 5		D	
	FM Intrinsic safety			H	
	FM Combined of flameproof and intrinsic safety (*6)	Note 5		V	
	ATEX Flameproof (*7)	Note 6		X	
	ATEX Intrinsic safety			K	
	ATEX Type n			P	
	ATEX Combined of flameproof and intrinsic safety (*7)	Note 6		M	
	IECEx scheme, Flameproof (*7)	Note 6		R	
	IECEx scheme, Intrinsic safety			T	
	CSA Flameproof (or explosionproof) (*6)	Note 5		E	
	CSA Intrinsic safety and nonincentive			J	
11	<Diaphragm extension [mm]>				
	<Extension [mm]> <Applicable material code (7th code)>				
	0 mm Any			Y	
	50 mm "V" only			A	
	100 mm "V" only			B	
	150 mm "V" only			C	
	200 mm "V" only			D	
12	<Option>				
	<Extra SS tag plate> <SS electric housing>				
	None None	Note 7		Y	
	Yes None (*8)			B	
	None Yes (*9)	Note 8		C	
	Yes Yes	Note 8		E	
13	<Treatment> <Fill fluid>				
	Standard Silicone oil			Y	
	Standard Fluorinated oil			W	
	Degreasing Silicone oil			G	
	Oxygen service Fluorinated oil (7th code "V" only)			A	
	Chlorine service Fluorinated oil (7th code "H", "T", "C", and "E")			D	
	High temp. Silicone oil High temp. 250°C (7th code "V", "W", "C", and "H")			U	
	High temp. Silicone oil High temp. 300°C (7th code "V", "W", "C", and "H")			X	
14	<O-ring/Gasket> <Vent/drain plug type> <Bolt for LP side> (*10)	Note 9			
	Standard Teflon (FEF design) Carbone steel (Cr-Mo alloy hexagon socket head cap bolt / nut)				L
	Standard Teflon (FEF design) 316 SS bolt / 316 SS nut				E
	A-type long vent Teflon (FEF design) Carbone steel (Cr-Mo alloy hexagon socket head cap bolt / nut)				K
	A-type long vent Teflon (FEF design) 316 SS bolt / 316 SS nut				D
15	<Other options> <Instruction manual>				
	None Yes				Y
	Opposite Vent/drain plug position Yes				C
	None None				L
	Opposite Vent/drain plug position None				P
	High accuracy Yes				H
	Low temperature effect Yes				J
	High accuracy + Low temperature effect Yes				K
	High accuracy None				T
	Low temperature effect None				F
	High accuracy + Low temperature effect None				G

Note 4 : (*4) Available for 4th digit code "S".
Note 5 : (*5) Available for 4th digit code "6", "T".
Note 6 : (*6) Available for 4th digit code "6", "8", "T", "W".
Note 7 : (*7) Customer tag number can be engraved on standard stainless steel name plate. If extra tag plate is required, select "Yes".
Note 8 : (*8) Not available for 4th digit code "5" to "9", and 10th digit code "C".
Note 9 : (*9) For use in tropics, select stainless bolts and nuts.

OUTLINE DIAGRAM (Unit:mm)

<AMP. case: L type>

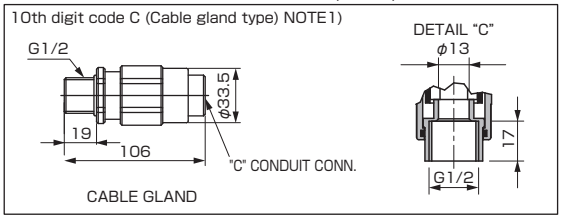
4th digit of the code symbols	conduit conn.			Press. Conn.	Oval flange screw
	J	K	M	S	
S	G1/2	18	2	Rc 1/4	7/16-20UNF
T	1/2-14NPT	16	4	1/4-18NPT	7/16-20UNF
V	Pg13.5	10.5	4.5	1/4-18NPT	M10
W	M20×1.5	16	4	1/4-18NPT	M10
X	Pg13.5	10.5	4.5	1/4-18NPT	7/16-20UNF

TABLE 1

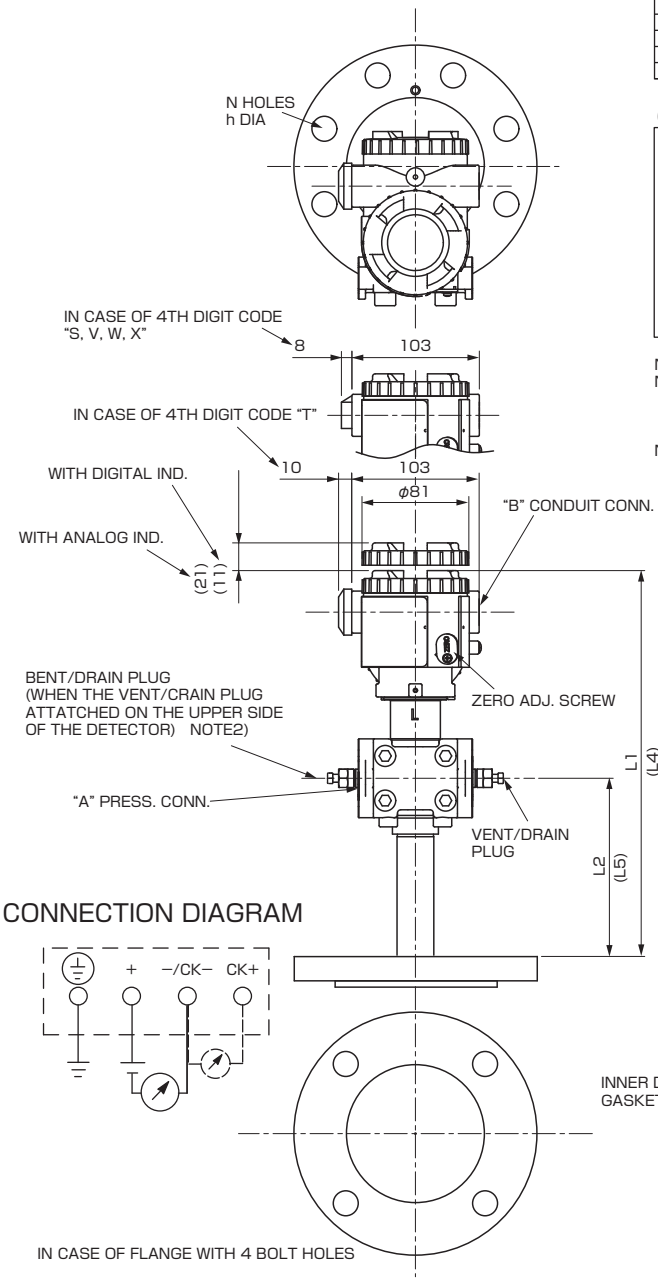
11th digit of the code symbols	L±1.5	MASS APPROX. (kg)	L1	L2	L3	NOTE3)		
						L4	L5	L6
Y	0	10.2 ～ 13.7	285	128	255	290	130	257
A	50	10.7 ～ 17.7						
B	100	11.2 ～ 18.2						
C	150	11.7 ～ 18.7						
D	200	12.2 ～ 19.2						

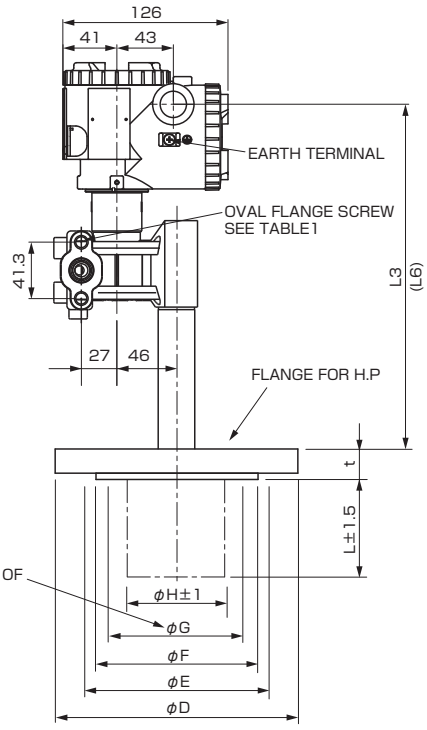
5th digit of the code symbols	φD	φE	φF	φG	φH±1	t	N-φh	FLANGE
A	140	105	81	49	--	16	4-19	JIS 10K 40A
B	140	105	81	49	--	18	4-19	JIS 20K 40A
C	160	120	90	49	--	22	4-23	JIS 30K 40A
D	155	120	96	49	48	16	4-19	JIS 10K 50A
E	155	120	96	49	48	18	8-19	JIS 20K 50A
F	165	130	105	49	48	22	8-19	JIS 30K 50A
0	185	150	126	100	73	18	8-19	JIS 10K 80A
T	200	160	132	100	73	22	8-23	JIS 20K 80A
2	210	170	140	100	73	28	8-23	JIS 30K 80A
1	210	175	151	103	96	18	8-19	JIS 10K 100A
U	225	185	160	103	96	24	8-23	JIS 20K 100A
3	240	195	160	103	96	32	8-25	JIS 30K 100A
G	127	98.4	73	49	48	17.5	4-16	ANSI/JPI 150LB 1.5B
H	156	114.3	73	49	48	20.6	4-23	ANSI/JPI 300LB 1.5B
J	150	120.6	92	49	48	20	4-20	ANSI/JPI 150LB 2B
K	165	127	92	49	48	22.5	8-20	ANSI/JPI 300LB 2B
4	190	152.5	127	100	73	24	4-20	ANSI/JPI 150LB 3B
6	210	168	127	100	73	29	8-23	ANSI/JPI 300LB 3B
5	230	190.5	158	103	96	24	8-20	ANSI/JPI 150LB 4B
7	255	200	158	103	96	32	8-23	ANSI/JPI 300LB 4B

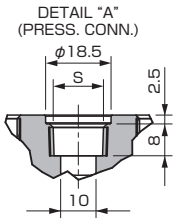
OPTION PARTS FOR FLAMEPROOF OF TIIS (JAPAN)

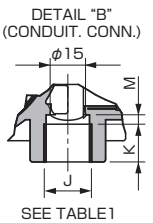


NOTE1) IN CASE OF 10TH DIGIT CODE "C", φ11 CABLE IS SUITBLE.
NOTE2) THE PRESSURE CONNECTOR IS LOCATED ON THE DOWN SIDE SURFACE OF THE DETECTOR, WHEN THE VENT/DRAINPLUG IS ATTATCHED ON THE UPPER SIDE OF THE DETECTOR
(WHEN THE 15TH DIGIT OF THE CODE SYMBOLS : C,E,D,P,Q,R).
NOTE3) WHEN THE 7TH DIGIT OF THE CODE SYMBOLS "H,M,T"





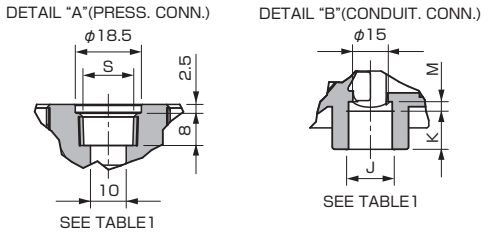




CONNECTION DIAGRAM

IN CASE OF FLANGE WITH 4 BOLT HOLES

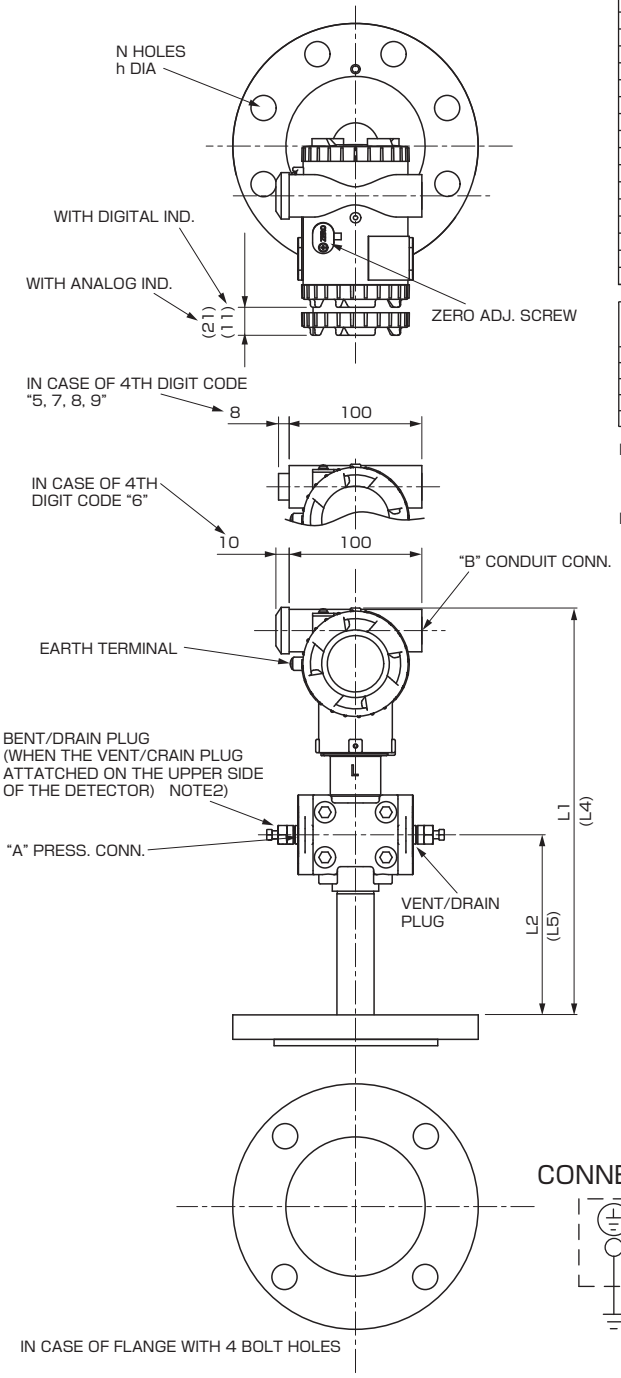
<AMP. case: T type>



4th digit of the code symbols	conduit conn.			Press. Conn.	Oval flange screw
	J	K	M	S	
5	G1/2	18	2	Rc 1/4	7/16-20UNF
6	1/2-14NPT	16	4	1/4-18NPT	7/16-20UNF
7	Pg13.5	10.5	4.5	1/4-18NPT	M10
8	M20×1.5	16	4	1/4-18NPT	M10
9	Pg13.5	10.5	4.5	1/4-18NPT	7/16-20UNF

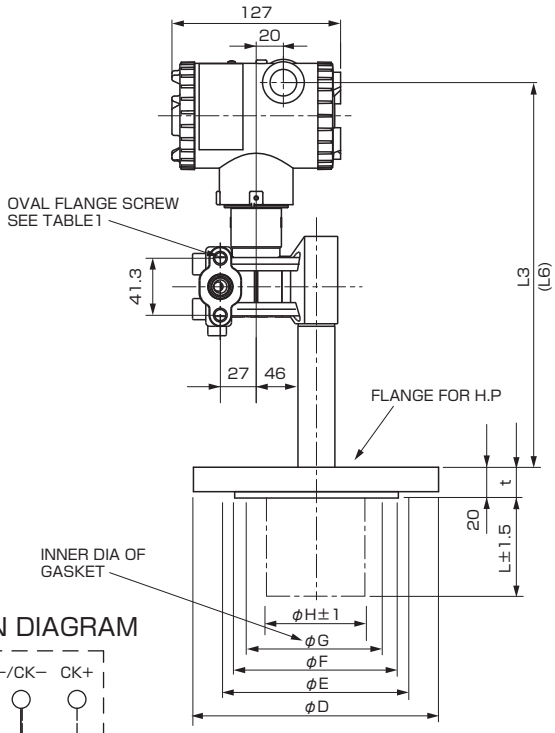
TABLE 1

5th digit of the code symbols	ϕD	ϕE	ϕF	ϕG	ϕH±1	t	N-ϕh	FLANGE
A	140	105	81	49	48	16	4-19	JIS 10K 40A
B	140	105	81	49	48	18	4-19	JIS 20K 40A
C	160	120	90	49	48	22	4-23	JIS 30K 40A
D	155	120	96	49	48	16	4-19	JIS 10K 50A
E	155	120	96	49	48	18	8-19	JIS 20K 50A
F	165	130	105	49	48	22	8-19	JIS 30K 50A
0	185	150	126	100	73	18	8-19	JIS 10K 80A
T	200	160	132	100	73	22	8-23	JIS 20K 80A
2	210	170	140	100	73	28	8-23	JIS 30K 80A
1	210	175	151	103	96	18	8-19	JIS 10K 100A
U	225	185	160	103	96	24	8-23	JIS 20K 100A
3	240	195	160	103	96	32	8-25	JIS 30K 100A
G	127	98.4	73	49	48	17.5	4-16	ANSI/JPI 150LB 1.5B
H	156	114.3	73	49	48	20.6	4-23	ANSI/JPI 300LB 1.5B
J	150	120.6	92	49	48	20	4-20	ANSI/JPI 150LB 2B
K	165	127	92	49	48	22.5	8-20	ANSI/JPI 300LB 2B
4	190	152.5	127	100	48	24	4-20	ANSI/JPI 150LB 3B
6	210	168	127	100	96	29	8-23	ANSI/JPI 300LB 3B
5	230	190.5	158	103	96	24	8-20	ANSI/JPI 150LB 4B
7	255	200	158	103	96	32	8-23	ANSI/JPI 300LB 4B



11th digit of the code symbols	L±1.5	MASS APPROX. (kg)	L1	L2	L3	NOTE3)		
						L4	L5	L6
Y	0	10.2 ~ 13.7	298	128	282	303	130	284
A	50	10.7 ~ 17.7						
B	100	11.2 ~ 18.2						
C	150	11.7 ~ 18.7						
D	200	12.2 ~ 19.2						

NOTE2) THE PRESSURE CONNECTOR IS LOCATED ON THE DOWN SIDE SURFACE OF THE DETECTOR, WHEN THE VENT/DRAINPLUG IS ATTATCHED ON THE UPPER SIDE OF THE DETECTOR
(WHEN THE 15TH DIGIT OF THE CODE SYMBOLS : C,E,D,P,Q,R).
NOTE3) WHEN THE 7TH DIGIT OF THE CODE SYMBOLS "H,M,T"



CONNECTION DIAGRAM

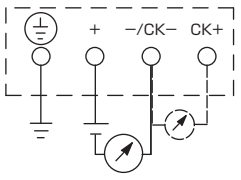


TABLE 2

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 Model code / 9th digit / 13th digit / Tamb A,B,D / Y,G,H,J / –40°C to +85°C L,P,1,2 / Y,G,H,J / –20°C to +80°C Q,S,4,5 / Y,G,H,J / –20°C to +60°C E,F,H / Y,G,H,J / –40°C to +60°C – / W,A,D / –10°C to +60°C Entity Parameters: Vmax=28V, Imax=94.3mA, Pi=0.66W, Ci=35.98nF, Li=0.694mH
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=40.92nF, 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)

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

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	Class I II III Div.2 Groups A, B, C, D, F, G T4 Entity Type 4X Model code / 9th digit / 13th digit / Tamb A,B,D / Y,G,H,J / –40°C to +85°C L,P,1,2 / Y,G,H,J / –20°C to +80°C Q,S,4,5 / Y,G,H,J / –20°C to +60°C E,F,H / Y,G,H,J / –40°C to +60°C – / W,A,D / –10°C to +60°C

⚠ Caution on Safety

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

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