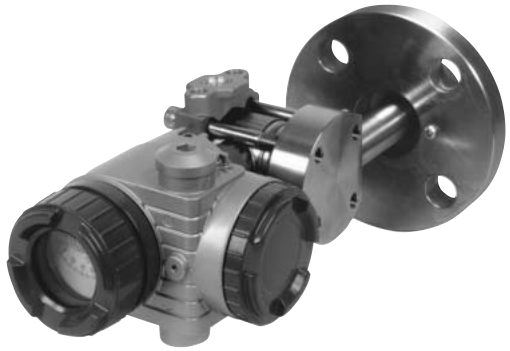
SMALL FLANGE LEVEL TRANSMITTER

DATA SHEET FKY···4

The FCX–AII small flange 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. Directly connectable to 1-1/2 in. and 2 in. flanges
   The transmitter is connectable to 1-1/2 in. and 2 in. pipes without a reducer.
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 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 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 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.
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 vapour

Static pressure, span, and range limit:

Type	Static pressure	Span limit [kPa] {m bar}		Range limit [kPa] {m bar}
		Min.	Max.	
FKY□□3	Up to flange rating	3 {30}	32 {320}	+/– 32 { +/– 320}
FKY□□5		13 {130}	130 {1300}	+/– 130 { +/– 1300}
FKY□□6		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.

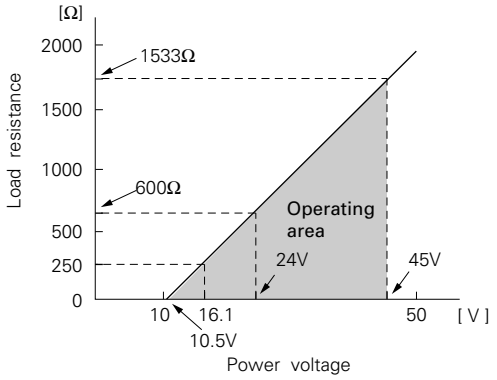
– Lower limit of static pressure (vacuum limit) ;
  Silicone fill sensor: See Fig.1
  Fluorinated fill sensor: 66kPa abs (500mmHg abs) at temperature below 60 °C.
– The maximum span of each sensor can be converted to different units using factors as below.
  $1MPa=10^3kPa=10bar=10.19716kgf/cm^2=145.0377psi$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

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:

Authorities	Flameproof
ATEX	Ex II 2 GD EEx d IIC T6 IP66/67 T85°C Tamb = -40°C to +65°C EEx 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	-
TIIS	Ex do IIB+H_2 T4 Tamb max = +55°C Maximum process temp.=+120°C
IECEx Scheme /SAA	Ex d IIC T5 IP66/67 **pending** Tamb = -40°C to +85°C Ex d IIC T6 IP66/67 **pending** Tamb = -40°C to +65°C

Authorities	Intrinsic safety
ATEX	Ex II 1 GD EEx ia IIC T5 Tamb = -40°C to +40°C EEx ia IIC T4 Tamb = -40°C to +80°C Entity Parameters: Ui=28V, Ii=93.3mA, Pi=0.66W, Ci=27nF (Without Arrester), Ci=34.2nF (With Arrester), Li=1.134mH
Factory Mutual	Class I II III Div.1 Groups A, B, C, D, E, F, G T4 Entity Type 4X Entity Parameters: Vmax=42.4V, Imax=113mA, Pi=1W, Ci=34.2nF, Li=1.134mH
CSA	Class I Div.1 Groups A, B, C, D Class II Div.1 Groups E, F, G Class III Div.1 Temp Code T4 Tamb max = +40°C Temp Code T3C Tamb max = +85°C Entity Parameters: Vmax=28V, Imax=93mA, Ci=27nF (Without Arrester), Ci=34.2nF (With Arrester), Li=1.4mH
TIIS	Ex ia IIC T4 Tamb max = +60°C Entity Parameter: Ui=28V, Ii=94.3mA, Pi=0.66W, Ci=32.6nF, Li=1.134mH
IECEx Scheme /SAA	Ex ia IIC T4 IP66/67 Tamb = -40°C to +70°C Ex ia IIC T5 IP66/67 Tamb = -40°C to +50°C Entity Parameter: Ui=28V, Ii=93.3mA, Pi=0.66W, Ci=0.033µF, Li=1.034mH

Model code		Tamb
9th digit	13th digit	
A,B,D	Y,G,H,S	-40°C to +85°C
L,P,1,2	Y,G,H,S	-20°C to +80°C
Q,S,4,5	Y,G,H,S	-20°C to +60°C
E,F,H	Y,G,H,S	-40°C to +60°C
-	W,A,D	-10°C to +60°C

(Note) (1) HHC: Hand Held Communicator

Authorities	Type n Nonincendive
ATEX	Ex II 3 GD EEx nL IIC T5 Tamb = -40°C to +40°C EEx nL IIC T4 Tamb = -40°C to +80°C Specific Parameters: Model without arrester: Ui=42.4V, Ii=113mA, Pi=1W, Ci=27nF, Li=1.134mH Model with arrester: Ui=32V, Ii=113mA, Pi=1W, Ci=34.2nF, Li=1.134mH EEx nAL IIC T5 Tamb = -40°C to +40°C EEx nAL IIC T4 Tamb = -40°C to +80°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		Tamb
9th digit	13th digit	
A,B,D	Y,G,H,S	-40°C to +85°C
L,P,1,2	Y,G,H,S	-20°C to +80°C
Q,S,4,5	Y,G,H,S	-20°C to +60°C
E,F,H	Y,G,H,S	-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 T4 Tamb max = +40°C Temp Code T3C Tamb max = +85°C Entity Parameters: Vmax=28V, Ci=27nF (Without Arrester), Ci=34.2nF (With Arrester), Li=1.4mH
TIIS	-
IECEx Scheme /SAA	-

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:
– 100% to + 100% of URL

Normal/reverse action:
Selectable from HHC[1]

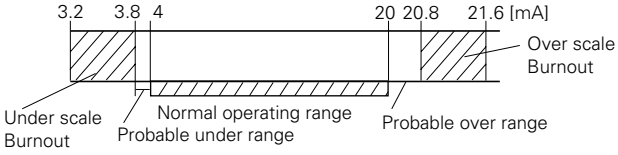
Indication: Analog indicator or 5-digit LCD meter, as specified.

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 20.8mA 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: – 15 to + 65°C
(– 15 to + 65°C for LCD indicator)
(– 15 to + 60°C for arrester option)
(– 10 to + 60°C for fluorinated oil fill transmitter)
(– 10 to + 60°C for silicon oil "H", "S")
For explosionproof units (flameproof or intrinsic safety), ambient temperature must be within the limits specified in each standard.

Process:

Fill fluid	13th digit of "Code symbols"	Process temperature	Lower limit of static press
Fluorinated oil	W, A and D	–20 to 80°C	Atmospheric pressure
Silicone oil	H	0 to 250°C	
	Y and G	–40 to 120°C	2.7kPa abs {20.3mmHg abs}
	S	0 to 250°C	

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

Storage: – 40 to + 70°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

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

EMC Conformity: EN61326 CE

Performance specifications

Reference conditions, silicone oil fill, 316SS 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: ±0.25% of span
For spans below 1/10 of URL:

$$\pm \left(0.17 + 0.08\frac{0.1 \times URL}{Span}\right) \% \text{ of span}$$

(Option) (Code: 21th digit H, K)
For spans greater than 1/10 of URL: ±0.1% of span
For span below 1/10 of URL:

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

Stability: ±0.2% of upper range limit (URL) for 3 years.

Temperature effect:
Effects per 28°C change between the limits of – 15°C and + 65°C
Zero shift; ±0.5%/28°C
(x equal to 1/2 URL or more)

$$\text{Zero shift; } \left(\pm 0.5\ \frac{URL}{2x}\right) \%/28°C$$

(x less than 1/2 URL)
Total shift; ±0.75%/28°C
(x equal to 1/2 URL or more)

$$\text{Total shift; } \pm\left(0.25 + 0.5 \times \frac{URL}{2x}\right) \%/28°C$$

(x less than 1/2 URL)

(Option) (Code: 21th digit J, K)
Zero shift; ±0.5%/28°C
(x equal to 1/6.5 URL or more)

$$\text{Zero shift; } \pm\left(0.5\ \frac{URL}{6.5\,x}\right) \%/28°C$$

(x less than 1/6.5 URL)
Total shift; ±0.75%/28°C
(x equal to 1/6.5 URL or more)

$$\text{Total shift; } \pm\left(0.25 + 0.5\,\frac{URL}{6.5\,x}\right) \%/28°C$$

(x less than 1/6.5 URL)

Where, x: Calibrated span
URL: Maximum span (Upper Range Limit)

Static pressure effect:
Zero shift: ±0.2% of URL/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

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)

Update period: 120 msec *)

Step response: (without electrical damping)

Time constant *)	Dead time *)
0.3 s	0.2 s

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

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.

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 x 1.5 conduit, as specified.
And 1-conduit or 2-conduit, as specified.

Process connections:
LP side: 1/4-18 NPT or Rc1/4.
HP side: ANSI, or JIS raised face flange.
See OUTLINE DIAGRAM for detailed dimensions.
Refer to "Code symbols"

Process-wetted parts material:

Material code (7th digit in "Code symbols")	LP side			HP side
	Process cover	Diaphragm	Wetted sensor body	Diaphragm & flange face
V	316 stainless (*1)	316L stainless	316 stainless	316L stainless
J	316 stainless (*1)	316L stainless	316 stainless	316L stainless steel + AU coating
C	316 stainless (*1)	316L stainless	316 stainless	Hastelloy-C
D	316 stainless (*1)	316L stainless	316 stainless	Monel
E	316 stainless (*1)	316L stainless	316 stainless	Tantalum
H	316 stainless (*1)	Hastelloy-C	Hastelloy-C lining	Hastelloy-C
M	316 stainless (*1)	Monel	Monel lining	Monel
T	316 stainless (*1)	Tantalum	Tantalum lining	Tantalum
B	Hastelloy-C	Hastelloy-C	Hastelloy-C lining	Hastelloy-C
L	Monel lining	Monel	Monel lining	Monel
U	Tantalum	Tantalum	Tantalum lining	Hastelloy-C

Note: (*1) SCS14A per JIS G 5121 (equivalent CF8M per ASTM A351/A351M)
Remark: Sensor O-rings: Viton O-ring or teflon gasket selectable

Non-wetted parts material:
Electronics housing: Low copper die-cast aluminum alloy finished with epoxy/polyurethane double coating(standard), or 316 stainless steel (SCS14A per JIS G5121), as specified.
Bolts and nuts: Cr-Mo alloy (standard) or 304 stainless steel
Fill fluid: Silicone oil (standard) or fluorinated oil
Mounting flange: 304 stainless steel or carbon steel, as specified.

Environmental protection:
IEC IP67 and NEMA 6 / 6P

Flange mounting: See drawings

Mass{weight}: Transmitter approximately 13kg without options.
Add; 0.8kg for indicator option
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) 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 x 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

Optional tag plate:
An extra stainless steel tag with 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.

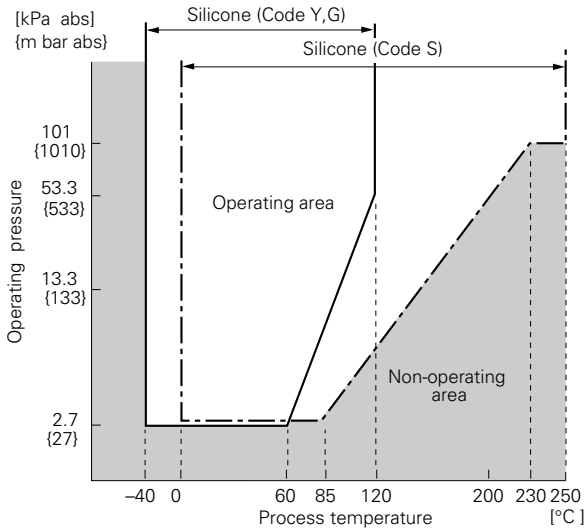


Fig. 1 Relation between process temperature and operating pressure

ACCESSORIES

Oval flanges: (Model FFP, refer to Data Sheet No. EDS6-10)
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)

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.

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)	EN61000-4-2	B
Electromagnetic field	80 to 1000MHz 10V/m 80%AM (1kHz)	EN61000-4-3	A
Rated power frequency magnetic field	30A/m 50Hz	EN61000-4-8	A
Burst	2kV 5kHz	EN61000-4-4	B
Surge	1.2μs/50μs 1kV (Line to line) 2kV (Line to ground)	EN61000-4-5	B
Conducted RF	0.15 to 80MHz 3V 80%AM (1kHz)	EN61000-4-6	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.

CODE SYMBOLS

Digit	Description						
4	<Connections>						
	Process connection	Oval flange screw	Conduit connection				
	Rc1/4	7/16-20UNF	G 1/2	(×1)	Combination with 12th digit code "C, E, P, Q" are not available.		A
	1/4-18NPT	7/16-20UNF	1/2-14NPT	(×1)			B
	1/4-18NPT	M10 (or M12)	Pg13.5	(×1)			C
	1/4-18NPT	M10 (or M12)	M20×1.5	(×1)			D
	1/4-18NPT	7/16-20UNF	Pg13.5	(×1)			E
	Rc1/4	7/16-20UNF	G 1/2	(×2)			S
	1/4-18NPT	7/16-20UNF	1/2-14NPT	(×2)			T
	1/4-18NPT	M10 (or M12)	Pg13.5	(×2)			V
	1/4-18NPT	M10 (or M12)	M20×1.5	(×2)			W
	1/4-18NPT	7/16-20UNF	Pg13.5	(×2)			X
5	<Mounting flange>						
	Material	Size and rating					
	304 stainless steel	JIS 10K 40A					0
		JIS 10K 50A					1
		JIS 20K 40A					2
		JIS 20K 50A					3
		JIS 30K 40A					4
		JIS 30K 50A					5
		ANSI/JPI 150LB 1 1/2"					A
		ANSI/JPI 150LB 2"					B
		ANSI/JPI 300LB 1 1/2"					C
		ANSI/JPI 300LB 2"					D
	Carbon steel	JIS 10K 40A					G
		JIS 10K 50A					H
		JIS 20K 40A					J
		JIS 20K 50A					K
		JIS 30K 40A					L
		JIS 30K 50A					M
		ANSI/JPI 150LB 1 1/2"					Q
		ANSI/JPI 150LB 2"					R
		ANSI/JPI 300LB 1 1/2"					S
		ANSI/JPI 300LB 2"					T
6	<Span limit [kPa] {m bar}>					3	
	3 ----- 32 {30 ----- 320}						
	13 ----- 130 {130 ---- 1300}					5	
	50 ----- 500 {500 ---- 5000}					6	
7	<Material>						
	LP side			HP side			
	Process cover	Diaphragm	Wetted sensor body	Diaphragm & flange face			
	316 stainless steel	316 stainless steel	316 stainless steel	316 stainless steel			V
	316 stainless steel	316 stainless steel	316 stainless steel	Diaphragm: 316L stainless steel +Au coating Flange face: 316 stainless steel			J
	316 stainless steel	316 stainless steel	316 stainless steel	Hastelloy-C			C
	316 stainless steel	316 stainless steel	316 stainless steel	Monel			D
	316 stainless steel	316 stainless steel	316 stainless steel	Tantalum			E
	316 stainless steel	Hastelloy-C	Hastelloy-C lining	Hastelloy-C			H
	316 stainless steel	Monel	Monel lining	Monel			M
	316 stainless steel	Tantalum	Tantalum lining	Tantalum			T
	Hastelloy-C lining	Hastelloy-C	Hastelloy-C lining	Hastelloy-C			B
	Monel lining	Monel	Monel lining	Monel			L
	Tantalum lining	Tantalum	Tantalum lining	Tantalum			U

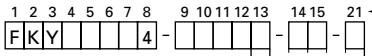
1 2 3 4 5 6 7 8 — 9 10 11 12 13 — 14 15 — 21 ← Digit No. of code

F K Y [ ][ ][ ][ ] 4 - [ ][ ][ ][ ][ ] - [ ][ ] - [ ]

Note 1: (*1) 100% turn down is possible for model FKY, but should be used within indicated 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
					F K Y 4 -
9	<Indicator and arrester>				
	Indicator	Arrester			
	None	None	Z/S board attached.		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			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 code "A","S")				B
	TIIS, Flameproof (Cable gland seal) (Available for 4th code "A","S")				C
	FM, Flameproof (or explosionproof) (Available for 4th code "B","T")				D
	ATEX, Flameproof				X
	IECEx Scheme/SAA, Flameproof **(Approval pending)**				R
	TIIS, Intrinsic safety				G
	FM, Intrinsic safety and nonincendive				H
	ATEX, Intrinsic safety				K
	ATEX, Type n				P
	IECEx Scheme/SAA, Intrinsic safety				T
	FM, Combined of Flameproof and Intrinsic safety				V
11	<Diaphragm extension [mm]>				
	Extension [mm]	Applicable material code			
	0	Any			Y
	50	(7th digit code "V" only, 1½ in. flange is not applicable)			A
	100				B
	150				C
	200				D
12	<Options>				
	Extra SS tag plate	Stainless steel elec. housing	Coating of cell		
	None	None	None		Y
	Yes	None	None		B
	None	Yes	None		C
	Yes (*2)	Yes	None	Note 2	E
	None	None	Yes		M
	Yes	None	Yes		N
	None	Yes	Yes		P
	Yes Yes	Yes			Q

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



Digit	Description		Note	Code
13	<Special applications and fill fluid>			
	Treatment	Fill fluid		
	Standard	Silicone oil		Y
	Standard	Fluorinated oil		W
	Degreasing	Silicone oil		G
	Oxygen service	Fluorinated oil (7th digit code "V" only)		A
	Chlorine service	Fluorinated oil (7th digit code "H", "T", "B", "U", "C" and "E")		D
	High temp. 250°C	Silicone oil (7th digit code "V", "H")		H
	High temp. and vacuum (250°C)	Silicone oil (7th digit code "V" only)		S
14	<O-ring / Gasket and Teflon membrane>			
	O-ring / Gasket	Teflon membrane		
	Viton (O-ring)	None		A
	Teflon (gasket)	None		B
	Viton (O-ring)	Yes (11th digit code "Y" only)		C
	Teflon (gasket)	Yes (13th digit code "H", "S" are not available.)		D
15	<Bolt/nut> (*3)		Note 3	
	Cr-Mo alloy hexagon socket head cap screw/carbon steel nut			A
	Cr-Mo alloy hexagon bolt/nut			B
	304 stainless steel bolt / 304 stainless steel nut			E
21	<Other options> (*4)		Note 4	
	High accuracy type	Instruction manual attached		H
	Low temperature effect type	Instruction manual attached		J
	H+J	Instruction manual attached		K
	Instruction manual unattached			L
	High accuracy type	Instruction manual unattached		T
	Low temperature effect type	Instruction manual unattached		U
	T+U	Instruction manual unattached		V

Note 3: (*3) In case of tropical use, select stainless bolts and nuts.
Note 4: (*4) If other option is not necessary, 21st digit code is blank.
In case of 21st digit code is blank, instruction manual attached.

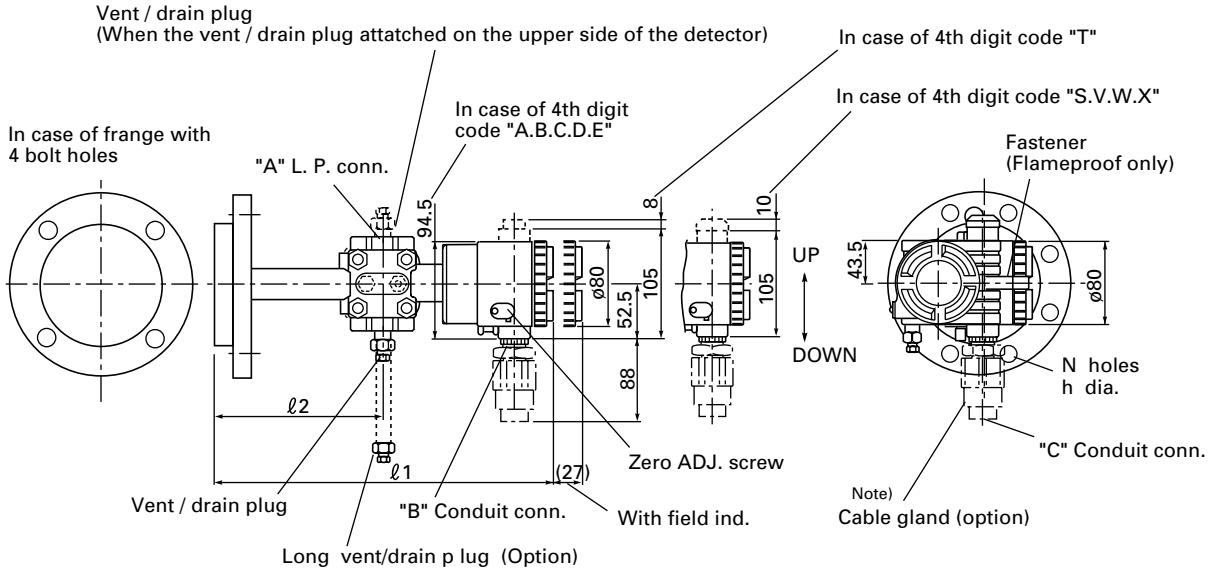
ORDERING INFORMATION

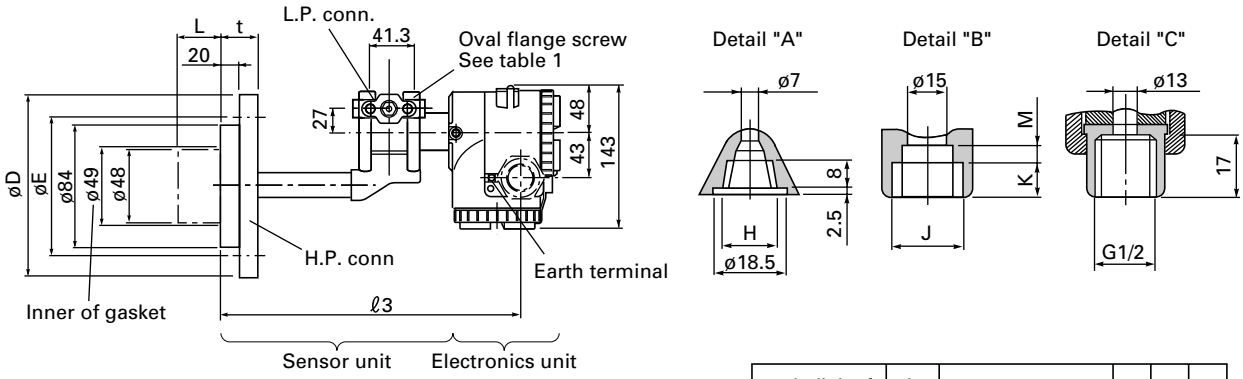
When ordering this instrument, specify:

1. CODE SYMBOLS
2. Measuring range
3. Output orientation (burnout direction) when abnormality is occurred in the transmitter.
   Hold / Overscale (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.

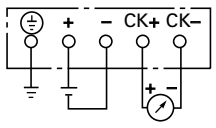
OUTLINE DIAGRAM (Unit:mm)

< 7th digit code : "V", "J", "C" , "D", "E", "H", "M"or "T" >





CONNECTION DIAGRAM



11th digit of Code symbols	L [mm]	Mass approx, [kg]	ℓ1	ℓ2	ℓ3
Y	0	9.5 to 12	333	160	296
A	50	10 to 17	327	154	290
B	100	10.5 to 17.5			
C	150	11 to 18			
D	200	11.5 to 18.5			

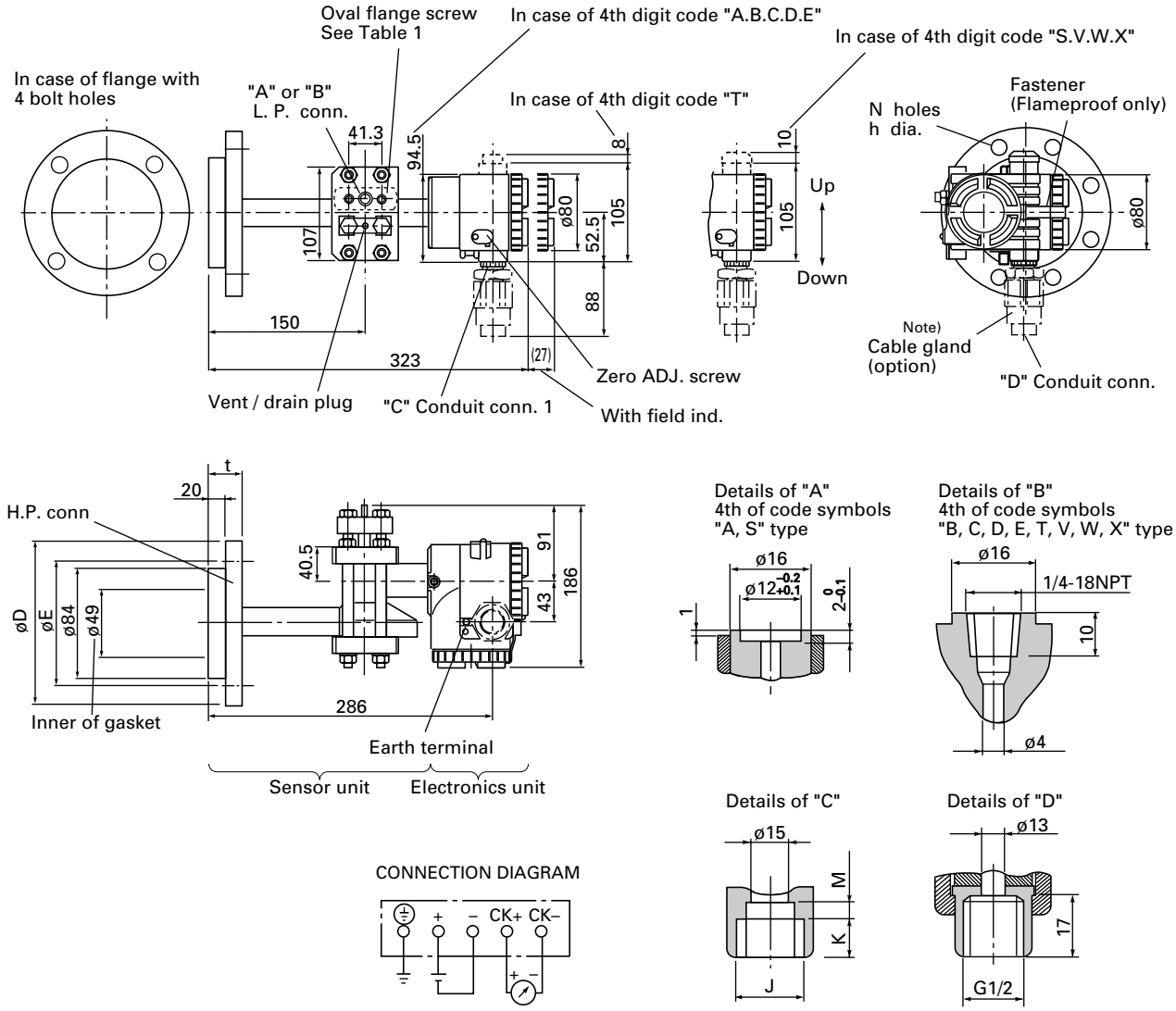
5th digit of Code symbols	øD	øE	t	N-øh	Flange
0, G	140	105	36	4-19	JIS-10K-40A
1, H	155	120	36	4-19	JIS-10K-50A
2, J	140	105	39	4-19	JIS-20K-40A
3, K	155	120	38	8-19	JIS-20K-50A
4, L	160	120	42	4-23	JIS-30K-40A
5, M	165	130	42	8-19	JIS-30K-50A
A, Q	127	98.4	37.5	4-16	ANSI/JPI-150LB-1 1/2B
B, R	152	120.6	39.5	4-20	ANSI/JPI-150-2B
C, S	156	114.3	41	4-23	ANSI/JPI-300LB-1 1/2B
D, T	165	127	42.5	8-20	ANSI/JPI-300LB-2B

4th digit of the code symbols	Conduit conn.			Press. conn.	Oval flange screw
	J	K	M	H	
A, S	G1/2	17	8	Rc1/4	7/16-20UNF SCREW DEPTH15
B, T	1/2-14NPT	18	5	1/4-18NPT	7/16-20UNF SCREW DEPTH15
C, V	Pg13.5	8	4.5	1/4-18NPT	M10 SCREW DEPTH15
D, W	M20 × 15	16	5	1/4-18NPT	M10 SCREW DEPTH15
E, X	Pg13.5	8	4.5	1/4-18NPT	7/16-20UNF SCREW DEPTH15

Table 1

Note) Cable gland is supplied in case offlamproof packing type.
ø11 cable is suitable.

< 7th digit code : "B", "L" or "U" >



See table 1

5th digit of Code symbols	øD	øE	t	N-øh	Flange
0, G	140	105	36	4-19	JIS-10K-40A
1, H	155	120	36	4-19	JIS-10K-50A
2, J	140	105	39	4-19	JIS-20K-40A
3, K	155	120	38	8-19	JIS-20K-50A
4, L	160	120	42	4-23	JIS-30K-40A
5, M	165	130	42	8-19	JIS-30K-50A
A, Q	127	98.4	37.5	4-16	ANSI/JPI-150LB-1 1/2B
B, R	152	120.6	39.5	4-20	ANSI/JPI-150-2B
C, S	158	114.3	41	4-23	ANSI/JPI-300LB-1 1/2B
D, T	165	127	42.5	8-20	ANSI/JPI-300LB-2B

4th digit of the code symbols	Conduit conn.			Oval flange screw
	J	K	M	
A, S	G1/2	17	8	7/16-20UNF SCREW DEPTH10
B, T	1/2-14NPT	16	5	7/16-20UNF SCREW DEPTH10
C, V	Pg13.5	8	4.5	M10 SCREW DEPTH10
D, W	M20 × 15	16	5	M10 SCREW DEPTH10
E, X	Pg13.5	8	4.5	7/16-20UNF SCREW DEPTH10

Table 1

Note) Cable gland is supplied in case of flamproof packing type.
ø11 cable is suitable.

⚠ Caution on Safety

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

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