

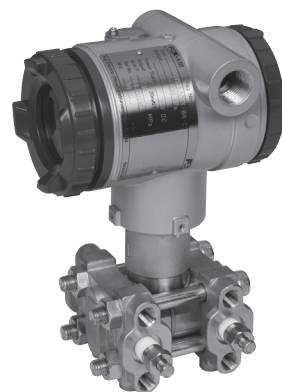
DIFFERENTIAL PRESSURE (FLOW) TRANSMITTER

DATA SHEET

FKC...5/FDC...5

The FCX -AIII differential pressure (flow) transmitter accurately measures differential pressure and converts it into an output signal of 4~20mA DC.

The transmitter utilizes a unique micromachined capacitance silicon sensor with state-of-the-art microprocessor technology to provide exceptional performance and functionality. It's small volume, light weight, good environment adaptability, and applicable to all fields. If using the hand held communicator (sold separately), it can be set and display via remote operation, without affecting the DC 4~20mA output signal of transmitter. FCX-AIII series transmitters with safety function have obtained the certificate of SIL certification by TÜV.



Features

- High accuracy**
 Differential pressure (flow) transmitter can be carried out with high accuracy measurement in the range of 0.1 ~ 20000kPa.
 Standard accuracy: $\pm 0.065\%$
 High accuracy (optional): $\pm 0.05\%$
 There's no need to linear calibration when carrying out zero elevation or suppression.
- Excellent environmental adaptability**
 The advanced floating cell protects sensor from temperature, static pressure and overpressure effect, and controls the total measurement error of the field to the minimum.
- Excellent operability and easy to use**
 It has an excellent operability and easy to use in any application.
 - All range meet the requirements of explosion-proof.
 - 5-digit digital indicator
 - Stainless steel AMP case
 - Built-in RFI filter and lightning arrester
 - Various anti-corrosive materials
 - Built-in local configurator with 3 push buttons
- The transmitter can communicate using FUJI, HART, communication protocol, and also can use FOUNDATION FIELDBUS or PROFIBUS protocol after changing the electronic circuit.

Specifications

Functional specifications

- Measured fluid: Liquid, gas, or vapor
- Range, operating pressure:

Type	Operating pressure [MPa]	Span limit [kPa]		Range limit [kPa]	
		Min.	Max.	Lower	Upper
FKC□11 FDC□11	-0.1 ~ +5	0.1	1	-1	1
FKC□22 FDC□22	-0.1 ~ +10	0.1	6	-6	6
FKC□23 FDC□23	-0.1 ~ +10	0.32	32	-32	32
FKC□25 FDC□25	-0.1 ~ +10	1.3	130	-130	130
FKC□26 FDC□26	-0.1 ~ +10	5	500	-500	500
FKC□33 FDC□33	-0.1 ~ +16	0.32	32	-32	32
FKC□35 FDC□35	-0.1 ~ +16	1.3	130	-130	130
FKC□36 FDC□36	-0.1 ~ +16	5	500	-500	500
FKC□38 FDC□38	-0.1 ~ +16	30	3000	-3000	3000
FKC□43 FDC□43	-0.1 ~ +42	0.32	32	-32	32
FKC□45 FDC□45	-0.1 ~ +42	1.3	130	-130	130
FKC□46 FDC□46	-0.1 ~ +42	5	500	-500	500
FKC□48 FDC□48	-0.1 ~ +30	30	3000	-3000	3000
FKC□49 FDC□49	-0.1 ~ +30	500	20000	-10000	20000

Note: Recommended span should be greater than 1/40 of max. span.

- Process temperature, Lower range limit: Refer to Figure 1

Fill fluid	13th digit Code	Process ^(Note) Temperature	Lower range limit
Silicone oil	Y, G, N	-40 ~ +120°C	2.7kPa abs
Fluorinated oil	W, A, D	-20 ~ +80°C	Atmospheric pressure
Silicone oil	R	-15 ~ +120°C	2.7kPa abs

- Remote function: Refer to table 1
Note: HHC's version must be higher than 7.0 (or FXW□□□□1-□4).
- Output signal: (1)FKC: DC4~20mA+HART protocol
(2)FDC: FOUNDATION Fieldbus protocol or PROFIBUS-PA
- Allowable load resistance: 0 ~ 600Ω (at DC 24V)
(Refer to figure 2) For communication with HHC, min. of 250Ω resistor is required.
- Power supply:

General	DC10.5 ~ 45V
Intrinsic safety	DC10.5 ~ 26V
With arrestor	DC10.5 ~ 32V
- Condition of communication line: Length: up to 2km
(0.75 ~ 1.25mm² Using twisted pair cable when instrument control cable is more than 1km.)
Load resistance: 250 ~ 600Ω (DC24V, including resistance of cable)
Load capacitance: 0.22μF or less
Load inductance: 3.3mH or less
sapping with power line: 15cm or more (Please avoid parallel wiring.)
Note: Line condition of intrinsic safety and explosion-proof is different, please refer to the instruction manual.
- Saturation current: Upper limit 20.0 ~ 22.5mA(variable)
Lower limit 3.2 ~ 4.0mA(variable)
(Settable in increments of 0.1mA with HHC or local configurator unit with LCD display.)
- Damping: The time constant is adjustable from 0.06 to 32 seconds.
- Adjustment function: Zero and span are adjustable by the external adjustment screw, or by local configurator with 3 push buttons, or by HHC.
- Zero elevation/suppression: Zero can be elevated or suppressed within the range of -100% to +100% URL.
- Normal/reverse action: Selectable from HHC or LCD unit with local adjustment function.
- Burnout direction: Output hold
Output 20.0 ~ 22.5mA (variable)
Output 3.2 ~ 4.0mA (variable)
(Settable in increments of 0.1mA with HHC or local configurator unit with LCD display.)
- Explosion proof: Refer to table 8
- Ambient temperature: -40 ~ +85°C
(With arrestor: -40 ~ +60°C
Fluorinated oil fill: -10 ~ +60°C
Note: The optimum operating temperature of digital indicator is -30 ~ +80°C, response is slow below -30°C.)
- Storage temperature: -40 ~ +90°C
- Weather resistance: DIN 40040 GPC
- EMC applicable standard: EN61326-1: 2006 (CE)

Performance specifications

- Differential pressure linear output
silicone oil fill, SUS316L diaphragms, 4 to 20mA analog output in linear mode.
 - Accuracy rating: (including linearity, hysteresis, repeatability)
Max span 32kPa to 3000kPa model:
For spans greater than 1/10 of URL:
 $\pm 0.065\%$ or
 $\pm 0.04\%$ (21th code: H)
For spans below 1/10 of URL:
 $\pm (0.015+0.05 \frac{0.1 \times URL}{x})\%$
Max span 20MPa model:
For spans greater than 5Mpa:
 $\pm 0.1\%$
For spans below 5Mpa:
 $\pm (0.05+0.05 \frac{5MPa}{x})\%$
Max span 1kPa,6kPa model:
For spans greater than 1/10 of URL:
 $\pm 0.1\%$
For spans below 1/10 of URL:
 $\pm (0.05+0.05 \frac{0.1 \times URL}{x})\%$
 - Stability: Zero shift $\pm 0.1\%$ of upper range limit (URL) for 10 years for 6th digit code 3, 5, 6, 8 and 9.
 - Ambient temperature effect: Changed per 28°C in the range of -40°C ~ +85°C.

Range	Zero shift	Total shift
• 1kPa {10mbar} URL	$\pm(0.125+0.1 \frac{URL}{x})\%$	$\pm(0.15+0.1 \frac{URL}{x})\%$
• 6kPa {60mbar} URL		
• 32kPa{320mbar} URL 130kPa {1300mbar} URL	$\pm(0.075+0.0125 \frac{URL}{x})\%$	$\pm(0.095+0.0125 \frac{URL}{x})\%$
• 500kPa {5000mbar} URL		
• 3000kPa {30000mbar} URL		
• 20000kPa {200000mbar} URL		

In the formal : x : SPAN
URL : Upper range limit

- Static pressure effect:

Range	Zero shift (% of URL)
1kPa {10m bar} Sensor	$\pm 0.2\%$ / 0.2MPa {2bar}
6kPa {60m bar} Sensor	$\pm 0.2\%$ / 3.2MPa {32bar}
32kPa {320m bar} ~ 3000kPa {30 bar}	$\pm 0.05\%$ / 10MPa {100bar}
20000kPa{200bar}	$\pm 0.2\%$ / 6.9MPa {69bar}

- Overrange effect:

5th digit model code	Zero shift (% of URL)
"1"/1kPa {10m bar} Sensor	$\pm 0.3\%$ /0.2MPa {2bar}
"2"/6kPa {60m bar} Sensor	$\pm 0.1\%$ /3.2MPa {32bar}
"2"	$\pm 0.1\%$ /10MPa {100bar}
"3" 32kPa (320m bar)	$\pm 0.1\%$ /16MPa {160bar} FKC□3{5,6,8}
"3" ~ 3000kPa (30 bar)	$\pm 0.15\%$ /16MPa {160bar} FKC33
"4"	$\pm 0.25\%$ /42MPa {420bar} FKC□4{3,5,6,8}
"4"	$\pm 0.2\%$ /10MPa {100bar} FKC□49

2. Square root output

- Accuracy rating:

Output	SPAN	
	0.1× URL以上	0.1× URL以下
50 ~ 100%	± 0.065 %	± (0.015 + 0.05× 0.1× URL/X)%
20 ~ 50%	± 0.163 %	± 2.5× (0.015 + 0.05× 0.1× URL/X)%
10 ~ 20%	± 0.325 %	± 5× (0.015 + 0.05× 0.1× URL/X)%

- MAX SPAN 1kPa, 6kPa:

Output	Accuracy
50 ~ 100%	± 0.1 %
20 ~ 50%	± 0.25%
10 ~ 20%	± 0.5 %

- Temperature effect: Changed per 28°C in the range of -40°C ~ +85°C.

6th digit model code	Shift at 20% output point
"1", "2"	$\pm(0.375+0.25 \frac{URL}{X})\%/28^{\circ}C$
"3" ~ "9"	$\pm(0.24+0.03125 \frac{URL}{X})\%/28^{\circ}C$

- Mounting position effect: 0.12kPa/10°
In case of 13th digit code "W", "D", "A" (Wetted parts treatment, Fill fluid), the influence value is 2 times of above.
- Supply voltage effect: ± 0.005% /1V(DC 16.1 ~ 45V)
- Insulation strength: 500VAC, 50/60Hz, 1 min, between circuit and earth.
- Insulation resistance: More than 100MΩ at 500V DC, between circuit and earth.
- Update rate: 60ms
- Response time:

Model	*Time constant [s]	Dead time [s]
FKC□11 FDC□11	0.33	0.12
FKC□22 FDC□22	0.3	
FKC□□3 FDC□□3	0.12	
FKC□□5 FDC□□9	0.08	

Note: * Value at 23°C

Structure and material

- Material of detecting unit: refer to mode discription for details

Material code	Process cover	Detecting unit body		Pressure [MPa]			
		Diaphragm	Other wetted	0.2	10	16	42
V	SCS14A	SUS316L	SUS316	○	○	○	○
W	SCS14A	Hastelloy-C	SUS316	○	○	○	○
J	SCS14A	SUS316L Gold-plated	SUS316	○	○	○	○
H	SCS14A	Hastelloy-C	Hastelloy-C	○	○	○	○
M	SCS14A	Monel	Monel	—	—	○	○
T	SCS14A	Tantalum	Tantalum	—	—	○	—
L	Monel	Monel	Monel	—	○	—	—

Note: ○ available, — not available

SCS14A(JIS G 5121).....CF8M(ASM A351/A351M) Equivalent

- Amp case materials: Aluminium die casting + Polyester coating (color: silvery) or Stainless steel(SCS14A)
- Amp case cover materials: Aluminium die casting + Polyester coating (color: blue) or Stainless steel(SCS14A)
- Structure of case: Immersion protected type JIS C 0920 (Equivalent to IEC IP67, NEMA 6/6P)
- Outline dimension: According to the outline drawing.
- Weight: approx. 3.1~3.6kg (body)
- Conduit connection: G1/2, 1/2-14NPT, M20× 1.5, Pg13.5 (Refer to the model code table for details.)
- External terminal: M3.5 Screw
- Preprocess connection: Rc1/4 or 1/4-18NPT (Refer to the model code table for details.)
- Mounting method: Mounting on 50A(2B) pipe with U-bolt, or mounting on the wall (according to model and specification)
- Direction of AMP unit: Amp unit can be turned clockwise or counterclockwise by 90° or 180°, relative to the direction of detecting unit.

Optional specifications

- Analog indicator: Built in amplifier unit
Class 2.5, moving-coil, movement 90°, 0 ~ 100% evenly divided scale or actual scale
- Digital indicator: Built in amplifier unit, 5 digit LCD and unit display, 0 ~ 100% scale display or actual scale display. Optimum operating temperature range: -30 ~ +80°C,
- Digital indicator: Displaying or setting the items of table 1 (with 3 push buttons) via 3 push buttons of digital indicator.
- Arrester: Built in amplifier unit
Lightning performance: 4kV(1.2× 50μs)
- Degreasing treatment for oxygen: Filling fluorinated oil, degreasing and cleaning for wetted parts, available only for 7th digit code(material)"V", "W".
- Chlorine measurement: Filling fluorinated oil, available only for 7th digit code(material)"H", "T".
- NACE specifications: H₂S treatment countermeasure based on NACE specification.
- Anti-corrosive coating of detecting unit: Epoxy and polyurethane double coating
- Stainless steel tag plate: The plate can be engraved up to 14 characters (letters and numbers)

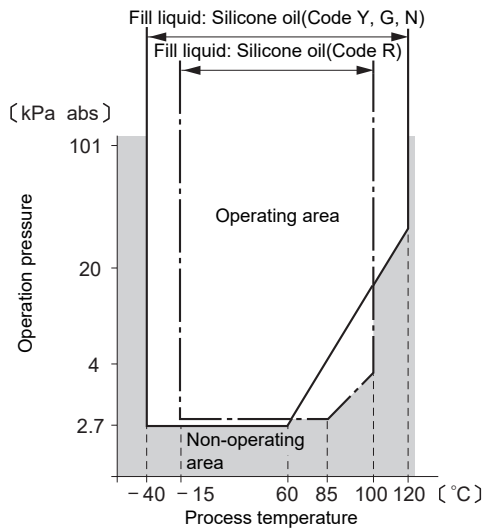
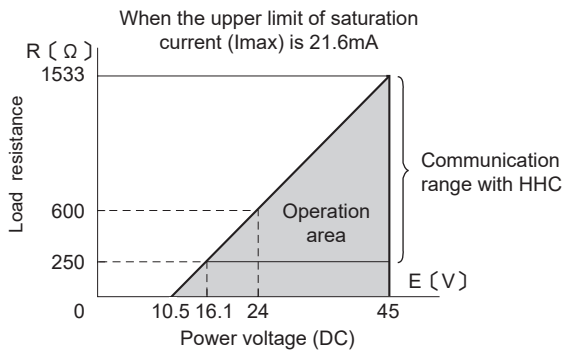


Figure 1 Relation between process temperature and operating pressure



(Note) The load resistance varies according to the upper limit of saturation current.

$$R [\Omega] = \frac{E [V] - 10.5}{(I_{max} [mA] + 0.9) \times 10^{-3}}$$

Figure 2 Operation area of power voltage and load resistance

The product conforms to the requirements of European EMC directive "Electromagnetic Compatibility Directive 2004/108/EC". The detail content is recorded in the technical construction file number TN5A0704. The applicable standards are as follows:

Emission list:

EN 61326-1 : 2006 Class A (Industrial location)



Frequency range	Limits	Reference standard
30 ~ 230MHz	40dB(μV/m) quasi peak, measured at 10m distance	EN55011:1998 +A1:1999 +A2:2002 (Group1 Class A)
230 ~ 1000MHz	47dB(μV/m) quasi peak, measured at 10m distance	

Immunity requirements:

EN 61326-1 : 2006 Table2 (Industrial location)

Phenomenon	Test value	Basic standard	P.C.
Electrostatic discharge	2/4kV (Contact) 2/4/8kV (Air)	IEC 61000-4-2:1995 +A1:1998+A2:2001	B
Electromagnetic field	10V/m(80 ~ 1000MHz) 3V/m(1.4 ~ 2.0GHz) 1V/m(2.0 ~ 2.7GHz) 80%AM(1kHz)	IEC 61000-4-3:2002 +A1:2002	A
Rated power frequency magnetic field	30 A/m 50/60 Hz	IEC 61000-4-8:1993 +A1:2001	A
Burst	2kV	IEC 61000-4-4:2004	B
Surge	1.2/50μs(Voltage) 8.0/20μs(Current) 0.5/1kV line to line 0.5/1/2kV line to ground	IEC 61000-4-5:1995 +A1:2001	B
Conducted RF	0.15 ~ 80MHz 3V 80%AM(1kHz)	IEC 61000-4-6:1996 +A1:2001	A

Definition of performance criteria:

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

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

Table1 Adjustment function

No.	Items	HHC (Model:FXW)Note1)		Local configurator (With 3 push buttons)	
		Display	Set	Dispaly	Set
1	Tag No.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	Type	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	Serial No. & Software Version	<input type="radio"/>	—	<input type="radio"/>	—
4	Engineering unit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	Range Limit	<input type="radio"/>	—	<input type="radio"/>	—
6	Measuring range	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7	Damping	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8	Output mode	<input type="radio"/>	—	<input type="radio"/>	—
9	Burnout direction	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A	Zero/span calibration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B	Calibration of output circuit	—	<input type="radio"/>	—	<input type="radio"/>
C	Measured data	<input type="radio"/>	—	<input type="radio"/>	—
D	Self-diagnosis	<input type="radio"/>	—	<input type="radio"/>	—
E	Printer function	<input type="radio"/>	—	—	—
F	Lock of adj. function	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G	Indication of digital indicator	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
H	Linzearize	<input type="radio"/>	<input type="radio"/>	—	—
I	Rerange	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
J	Saturation current Write	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
K	protect	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
L	History				
	-Calibration history	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	-Temperature history	<input type="radio"/>	—	<input type="radio"/>	—

Note1) The version of HHC must be higher than 7.0 when it supports FCX-AIII series transmitter(or FXW□□□□1-□4).

It can upgrade the version by changing ROM, please consult our company's windows or agency shop nearby for details.

Scope of delivery

Instrument body, pipe mounting bracket (according to type selection)

Related products

- Hand held communicator (Model: FXW):
Hand held, built-in battery, setting, display
For the details, please refer to data sheet (CSDS8-47).
- Three valves manifold, oval flange(Model: LFN, LFP):
For the drtails, please refer to data sheet.

Ordering information

1. Model code
2. Span
3. Please select the direction of output (Notuse/OVER/UNDER) when the transmitter is fault (Burnout). If unspecified, it is Notuse.
4. Please select the output mode (linear or square root). If unspecified, it is linear mode.
5. If the scale of indicator is selected to actual scale (9th code: D、H、P、S), please select the items of display (digit, scale, unit , etc).
6. Please select the tag plate according to need.(up to 14 digit, consist of lettters and numbers).

Model code

Digit	Description				Note	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	21	← Digit No.
	Differential pressure (flow) transmitter DC4~20mA+HART FOUNDATION Fieldbus and PROFIBUS					F	C																
						FKC							5										
						FDC							5										
4	<Process cover>	<AMP case>																					
	<Preprocess conn.>	<Oval flange screw>	<Conduit conn.>	<Case type>	Note1																		
	Rc 1/4	7/16-20UNF	G 1/2	T type																			
	1/4-18NPT	7/16-20UNF	1/2-14NPT	T type																			
	1/4-18NPT	M10(or M12)	Pg 13.5	T type	Note3																		
	1/4-18NPT	M10(or M12)	M20 x 1.5	T type	Note3																		
	1/4-18NPT	7/16-20UNF	Pg 13.5	T type																			
	Rc 1/4	7/16-20UNF	G 1/2	L type																			
	1/4-18NPT	7/16-20UNF	1/2-14NPT	L type	Note3																		
	1/4-18NPT	M10(or M12)	Pg 13.5	L type	Note3																		
	1/4-18NPT	M10(or M12)	M20 x 1.5	L type	Note3																		
	1/4-18NPT	7/16-20UNF	Pg 13.5	L type	Note3																		
5	<Range>		<Materials>																				
6	(MPa)	(kPa)	(Process cover)	(Diaphragm)	(Other)																		
7	-0.1 ~ 5	0.1 ~ 1	SCS14A	SUS316L	SUS316																		
	-0.1 ~ 5	0.1 ~ 1	SCS14A	Hastelloy C	SUS316																		
	-0.1 ~ 5	0.1 ~ 1	SCS14A	SUS316L Gold-plated	SUS316																		
	-0.1 ~ 5	0.1 ~ 1	SCS14A	Hastelloy C	Hastelloy C																		
	-0.1 ~ 5	0.1 ~ 1	SCS14A	Tantalum	Tantalum																		
	-0.1 ~ 10	0.1 ~ 6	SCS14A	SUS316L	SUS316																		
	-0.1 ~ 10	0.1 ~ 6	SCS14A	Hastelloy C	SUS316																		
	-0.1 ~ 10	0.1 ~ 6	SCS14A	SUS316L Gold-plated	SUS316																		
	-0.1 ~ 10	0.1 ~ 6	SCS14A	Hastelloy C	Hastelloy C																		
	-0.1 ~ 10	0.1 ~ 6	SCS14A	Tantalum	Tantalum																		
	-0.1 ~ 16	0.32 ~ 32	SCS14A	SUS316L	SUS316																		
	-0.1 ~ 16	0.32 ~ 32	SCS14A	Hastelloy C	SUS316																		
	-0.1 ~ 16	0.32 ~ 32	SCS14A	SUS316L Gold-plated	SUS316																		
	-0.1 ~ 16	0.32 ~ 32	SCS14A	Hastelloy C	Hastelloy C																		
	-0.1 ~ 16	0.32 ~ 32	SCS14A	Monel	Monel																		
	-0.1 ~ 16	0.32 ~ 32	SCS14A	Tantalum	Tantalum																		
	-0.1 ~ 16	1.3 ~ 130	SCS14A	SUS316L	SUS316																		
	-0.1 ~ 16	1.3 ~ 130	SCS14A	Hastelloy C	SUS316																		
	-0.1 ~ 16	1.3 ~ 130	SCS14A	SUS316L Gold-plated	SUS316																		
	-0.1 ~ 16	1.3 ~ 130	SCS14A	Hastelloy C	Hastelloy C																		
	-0.1 ~ 16	1.3 ~ 130	SCS14A	Monel	Monel																		
	-0.1 ~ 16	1.3 ~ 130	SCS14A	Tantalum	Tantalum																		
	-0.1 ~ 16	5 ~ 500	SCS14A	SUS316L	SUS316																		
	-0.1 ~ 16	5 ~ 500	SCS14A	Hastelloy C	SUS316																		
	-0.1 ~ 16	5 ~ 500	SCS14A	SUS316L Gold-plated	SUS316																		
	-0.1 ~ 16	5 ~ 500	SCS14A	Hastelloy C	Hastelloy C																		
	-0.1 ~ 16	5 ~ 500	SCS14A	Monel	Monel																		
	-0.1 ~ 16	5 ~ 500	SCS14A	Tantalum	Tantalum																		
	-0.1 ~ 16	30 ~ 3000	SCS14A	SUS316L	SUS316																		
	-0.1 ~ 16	30 ~ 3000	SCS14A	SUS316L Gold-plated	SUS316																		
	-0.1 ~ 16	30 ~ 3000	SCS14A	Hastelloy C	SUS316																		
	-0.1 ~ 16	30 ~ 3000	SCS14A	Monel	SUS316																		
	-0.1 ~ 16	30 ~ 3000	SCS14A	Tantalum	SUS316																		
	-0.1 ~ 42	0.32 ~ 32	SCS14A	SUS316L	SUS316																		
	-0.1 ~ 42	0.32 ~ 32	SCS14A	Hastelloy C	SUS316																		
	-0.1 ~ 42	0.32 ~ 32	SCS14A	SUS316L Gold-plated	SUS316																		
	-0.1 ~ 42	0.32 ~ 32	SCS14A	Hastelloy C	Hastelloy C																		
	-0.1 ~ 42	0.32 ~ 32	SCS14A	Monel	Monel																		
	-0.1 ~ 30	0.32 ~ 32	SCS14A	Tantalum	Tantalum																		
	-0.1 ~ 42	1.3 ~ 130	SCS14A	SUS316L	SUS316																		
	-0.1 ~ 42	1.3 ~ 130	SCS14A	Hastelloy C	SUS316																		
	-0.1 ~ 42	1.3 ~ 130	SCS14A	SUS316L Gold-plated	SUS316																		
	-0.1 ~ 42	1.3 ~ 130	SCS14A	Hastelloy C	Hastelloy C																		
	-0.1 ~ 42	1.3 ~ 130	SCS14A	Monel	Monel																		
	-0.1 ~ 30	1.3 ~ 130	SCS14A	Tantalum	Tantalum																		
	-0.1 ~ 42	5 ~ 500	SCS14A	SUS316L	SUS316																		
	-0.1 ~ 42	5 ~ 500	SCS14A	Hastelloy C	SUS316																		
	-0.1 ~ 42	5 ~ 500	SCS14A	SUS316L Gold-plated	SUS316																		
	-0.1 ~ 42	5 ~ 500	SCS14A	Hastelloy C	Hastelloy C																		
	-0.1 ~ 42	5 ~ 500	SCS14A	Monel	Monel																		
	-0.1 ~ 30	5 ~ 500	SCS14A	Tantalum	Tantalum																		
	-0.1 ~ 30	30 ~ 3000	SCS14A	SUS316L	SUS316																		
	-0.1 ~ 30	30 ~ 3000	SCS14A	SUS316L Gold-plated	SUS316																		
	-0.1 ~ 30	500 ~ 20000	SCS14A	SUS316L	SUS316																		
	-0.1 ~ 10	0.32 ~ 32	Monel	Monel	Monel																		
	-0.1 ~ 10	1.3 ~ 130	Monel	Monel	Monel																		
	-0.1 ~ 10	5 ~ 500	Monel	Monel	Monel																		
8	<Version>				Note22																		

FKC

Digit	Description	Note	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	21	← Digit No.
	Differential pressure (flow) transmitter DC4~20mA+HART FOUNDATION Fieldbus and PROFIBUS		F	C																
			FKC							5										
			FDC							5										
9	<Field indicator> <Indicator scale> <Arrester>										A									
	None	None									B									
	Analog 0 ~ 100% evenly divided scale	None									C									
	Analog 0 ~ 100% square scale	None									D									
	Analog Actual scale	None									E									
											F									
	None	Yes									G									
	Analog 0 ~ 100% evenly divided scale	Yes									H									
	Analog 0 ~ 100% square scale	Yes									I									
	Analog Actual scale	Yes									J									
	Digital 0 ~ 100% scale display	None									K									
	Digital Actual scale display	None									L									
	Digital 0 ~ 100% square root display	None									M									
	Digital 0 ~ 100% scale display	Yes									N									
	Digital Actual scale display	Yes									O									
	Digital 0 ~ 100% square root display	Yes									P									
	Digital(with local adj. function)	0 ~ 100% scale display									1									
	Digital(with local adj. function)	Actual scale display									2									
	Digital(with local adj. function)	0 ~ 100% square root display									3									
	Digital(with local adj. function)	0 ~ 100% scale display									4									
	Digital(with local adj. function)	Actual scale display									5									
	Digital(with local adj. function)	0 ~ 100% square root display									6									
	None	Foundation Fieldbus									A									
	None	Foundation Fieldbus									E									
	Digital	Foundation Fieldbus									P									
	Digital	Foundation Fieldbus									S									
	None	Profibus									R									
	None	Profibus									V									
	Digital	Profibus									T									
	Digital	Profibus									W									
10	<Explosion proof specifications>																			
	General Non explosion proof										A									
	TIIS (Cable gland seal) explosion proof	Note18									C									
	TIIS intrinsic safety										G									
	FM Flameproof	Note20									D									
	FM Intrinsic safety	Note20									H									
	FM Combined of flameproof and intrinsic safety	Note20									V									
	ATEX Flameproof	Note19									X									
	ATEX Intrinsic safety										K									
	ATEX Type n										P									
	ATEX Combined of flameproof and intrinsic safety	Note19									M									
	IECEX Flameproof	Note19									R									
	IECEX Intrinsic safety										T									
	CSA Flameproof	Note20									E									
	CSA Intrinsic safety										J									
	NEPSI Flameproof										F									
	NEPSI Intrinsic safety										S									
	NEPSI Combined of flameproof, intrinsic safety and dust ignition proof										U									
11	<Side Vent/Drain plug> <Mounting bracket>	Note21																		
	None (Standard)	None									A									
	None (Standard)	Flat type (SUS304)									C									
	None (Standard)	Flat type (SUS316)									K									
	None (Standard)	L type (SUS304)									M									
	None (Standard)	L type (SUS316)									N									
	Yes	None									D									
	Yes	Flat type (SUS304)									F									
	Yes	Flat type (SUS316)									L									
	Yes	L type (SUS304)									P									
	Yes	L type (SUS316)									Q									
12	<Special specification>																			
	Standard specification										Y									
	Stainless steel tag plate										B									
	Anti-corrosive coating of detecting unit										M									
	Anti-corrosive coating of detecting unit, SS tag plate										N									
	Anti-corrosive coating of detecting unit,SS AMP case	Note15									P									
	Anti-corrosive coating of detecting unit,SS AMP case,SS tag plate	Note15									Q									
13	<Treatment of wetted parts > <Fill fluid>																			
	Standard	Silicone oil (General)									Y									
	Standard	Fluorinated oil									W									
	Degreasing	Silicone oil									G									
	Oxygen service	Fluorinated oil									A									
	Chlorine service	Fluorinated oil									D									
	NACE Specification	Silicone oil									N									
	Standard	Silicone oil for vacuum use									R									
14	<Gasket material>																			
	Teflon																			B

Digit	Description	Note	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	21	Digit No.
	Differential pressure (flow) transmitter DC4~20mA+HART FOUNDATION Fieldbus and PROFIBUS		F	C																
15	<Vent/Drain plug type> Standard Standard Standard Standard Standard Standard	<Bolt/Nut material> Standard(Cr-Mo hexagon socket bolt/carbon steel nut) Cr-Mo hexagon head bolt/carbon steel nut NACE Bolt/Nut (*A) NACE Bolt/Nut (*B) SUS304 Bolt/Nut SUS630 Bolt/SUS304 Nut SUS316 Bolt/Nut	F	K	C				5											
16	<Options> None Three valves manifold Three valves manifold Five valves manifold Five valves manifold Oval flange Oval flange Adapter Adapter Oval flange + Adapter Oval flange + Adapter	<Material> None SUS304 SUS316 SUS304 SUS316 SUS304 SUS316 SUS304 SUS316 SUS304 SUS316																		
21	<Other> Vent/drain plug mounted on the upper side High accuracy type Inspection report	Note12 Note16																		

(*A) NACE Bolt/Nut material: ASTM A193 B7M/A194 2HM

(*B) NACE Bolt/Nut material: ASTM A320 L7M/A194 2HM

Note1) In case of 7th digit code "L", the process connection can see the detail "A" at page 11,13.

Note2) Not available for square root mode.

Note3) In case of 5th digit code "4", the screw size is M12.

Note4) Not available for 7th digit code "L".

Note5) Available for 7th digit code "V", "W", "J".

Note6) Available only for 7th digit code "H", "T".

Note7) Not available for 7th digit code "T" and 15th digit code "A", "B".

Note8) Please select SUS bolts and nuts for tropical area.

Note9) Not available for 5th digit code "4". In case of 5th digit code "3", the max. operating pressure is 10MPa.

Note11) Available for 5th digit code "3", "4".

Note12) The digit is blank when not needed.

Note15) Not available for 10th digit code "C".

Note16) Available only for 5th digit code "3", "4" and 6th digit code "3-8".

Note17) Please note when select Fieldbus or Profibus transmitter.(Under development)

Note18) Available only for 4th digit code "5", "S".

Note19) Available only for 4th digit code "6", "8", "T", "W".

Note20) Available only for 4th digit code "6", "T".

Note21) When selecting L type AMP case, recommending Flat type bracket.

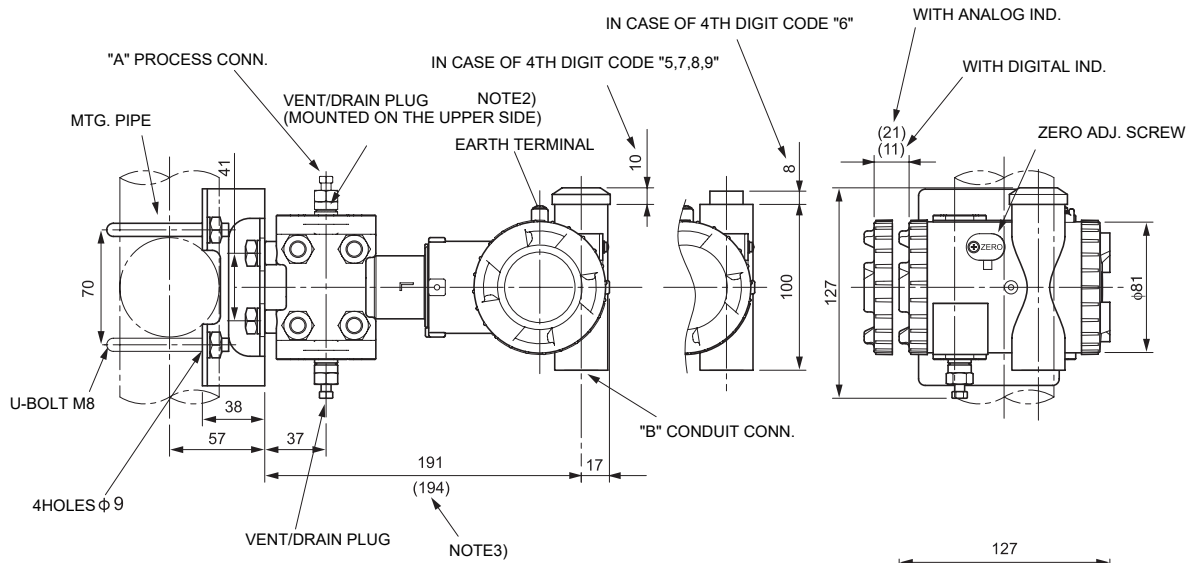
When selecting T type AMP case, recommending L type bracket.

Note22) The 8th digit code can be selected as "S", this means that it's the transmitter with safety function. SIL2 capability for single transmitter use, SIL3 capability for dual transmitter use.

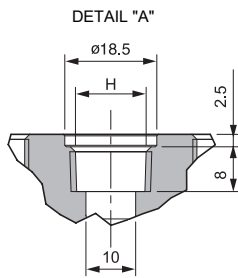
FKC

OUTLINE DIAGRAM (Unit: mm)

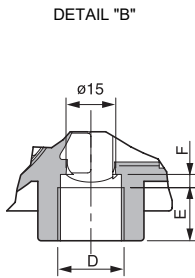
<AMP. CASE: T TYPE > IN CASE OF 7TH DIGIT CODE "V,J,H,M,T,W" AND 11TH DIGIT CODE "C,K,F,L"



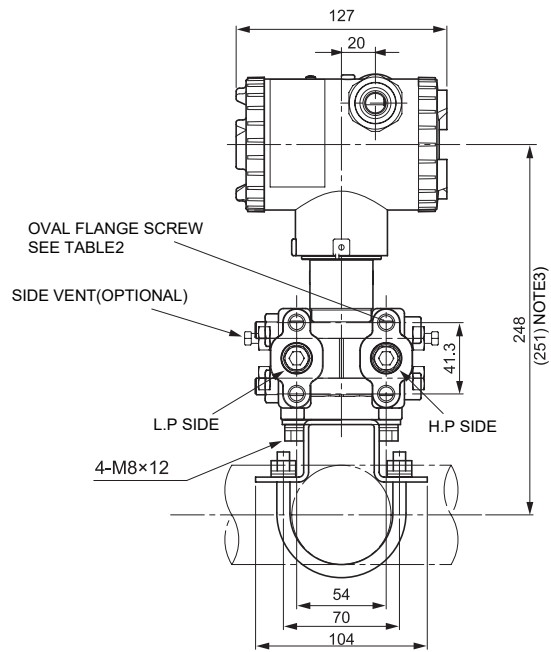
NOTE2) IN CASE OF 21TH DIGIT CODE "C" AND VENT/DRAIN PLUG MOUNTED ON THE UPPER SIDE, PREPROCESS CONN. IS ON THE LOWER SIDE.
 NOTE3) IN CASE OF 5TH DIGIT CODE "1,2,4" OR 7TH DIGIT CODE "H,M,T"



SEE TABLE2



SEE TABLE2

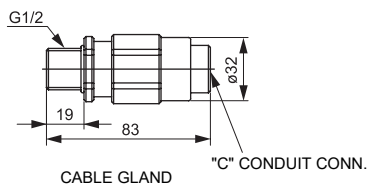


4th digit code	Conduit conn.			Process conn.	Oval flange screw
	D	E	F	H	
5	G 1/2	18	2	Rc1/4	7/16-20UNF SCREW DEPTH 15
6	1/2-14NPT	16	4	1/4-18NPT	7/16-20UNF SCREW DEPTH 15
7	Pg13.5	10.5	4.5	1/4-18NPT	M10 SCREW DEPTH 15
8	M20x1.5	16	4	1/4-18NPT	M10 SCREW DEPTH 15
9	Pg13.5	10.5	4.5	1/4-18NPT	7/16-20UNF SCREW DEPTH 15

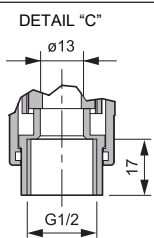
TABLE 2

<OPTIONAL PARTS FOR FLAMEPROOF OF TIIS>

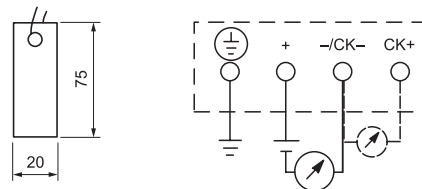
10th digit code C (Cable gland type) NOTE 1)



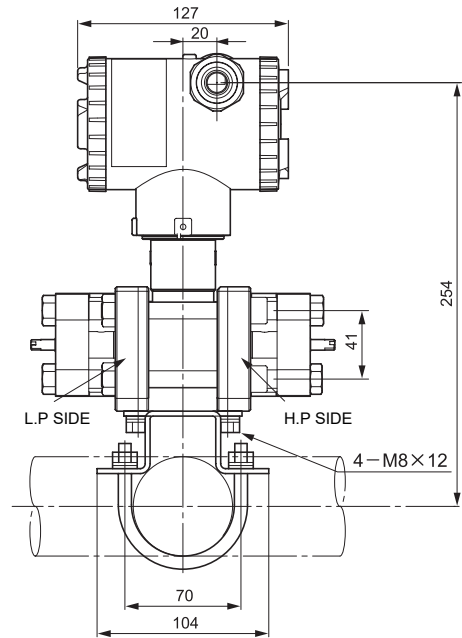
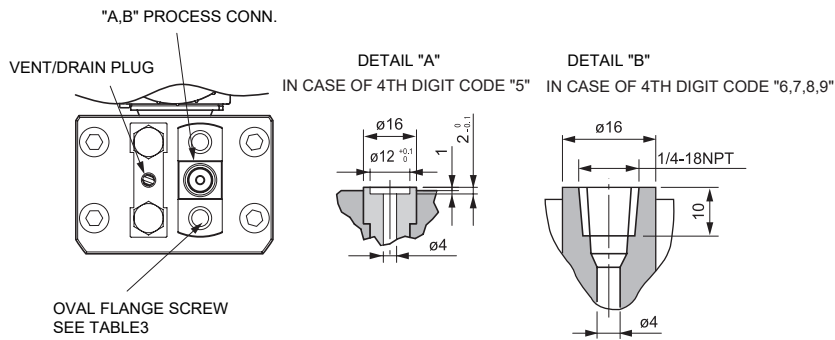
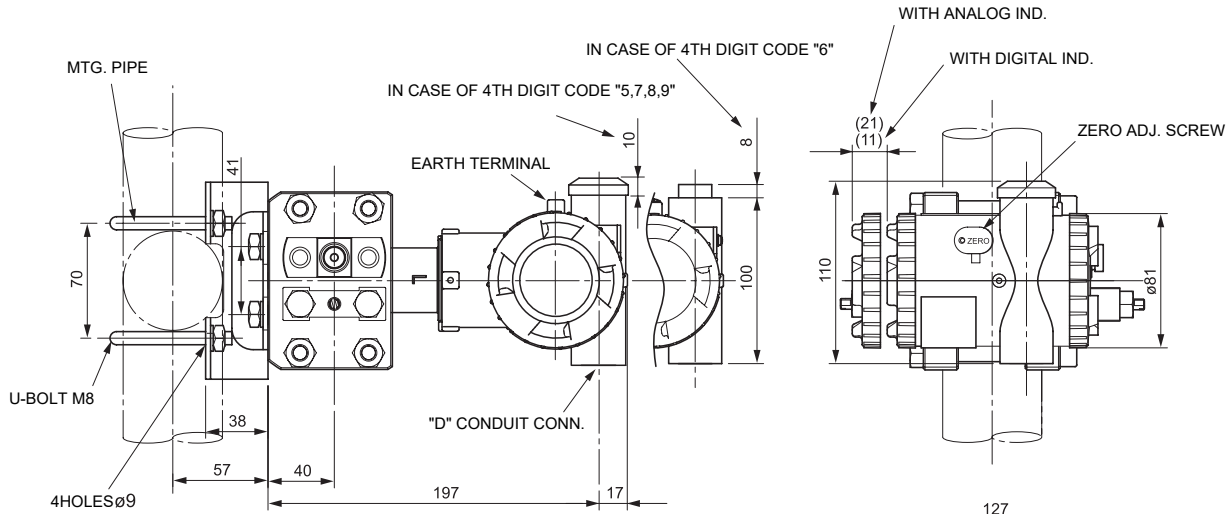
NOTE1) IN CASE OF 10TH DIGIT CODE "C", φ11 CABLE IS SUITBLE.



<SS TAG PLATE(OPTIONAL)> <CONNECTION DIAGRAM>



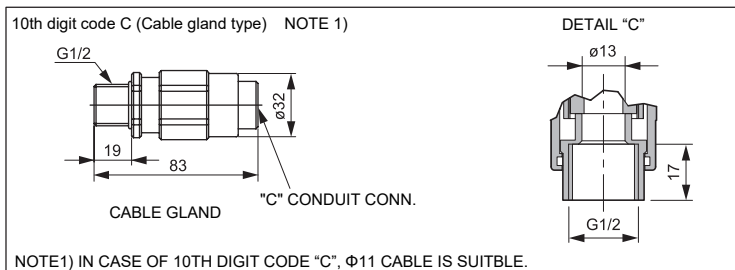
<AMP. CASE: T TYPE > IN CASE OF 7TH DIGIT CODE "L" AND 11TH DIGIT CODE "C,K,F,L"



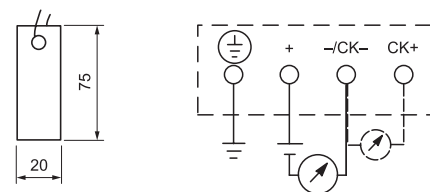
4th digit code	Conduit conn.			Process conn.	Oval flange screw
	D	E	F	H	
5	G 1/2	18	2	Rc1/4	7/16-20UNF SCREW DEPTH 15
6	1/2-14NPT	16	4	1/4-18NPT	7/16-20UNF SCREW DEPTH 15
7	Pg13.5	10.5	4.5	1/4-18NPT	M10 SCREW DEPTH 15
8	M20 \times 1.5	16	4	1/4-18NPT	M10 SCREW DEPTH 15
9	Pg13.5	10.5	4.5	1/4-18NPT	7/16-20UNF SCREW DEPTH 15

TABLE 3

<OPTIONAL PARTS FOR FLAMEPROOF OF TIIS>

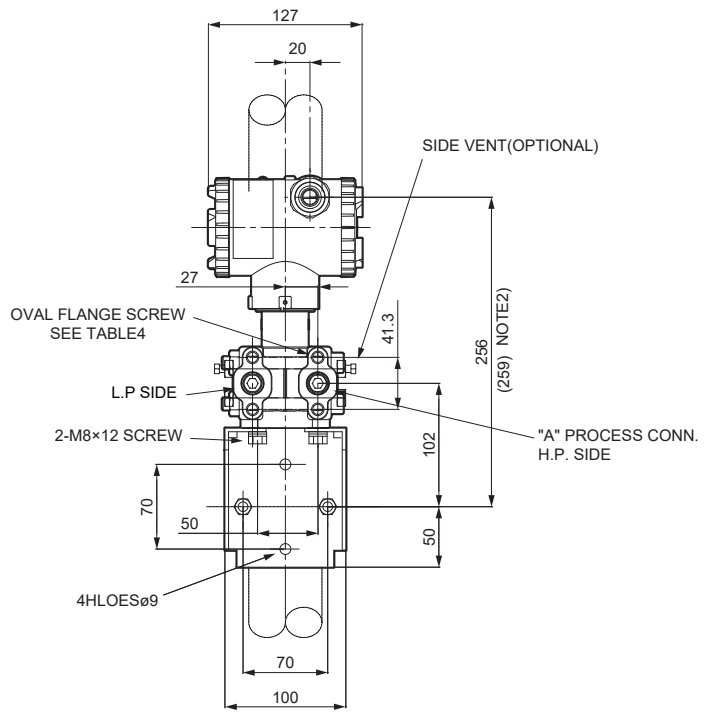
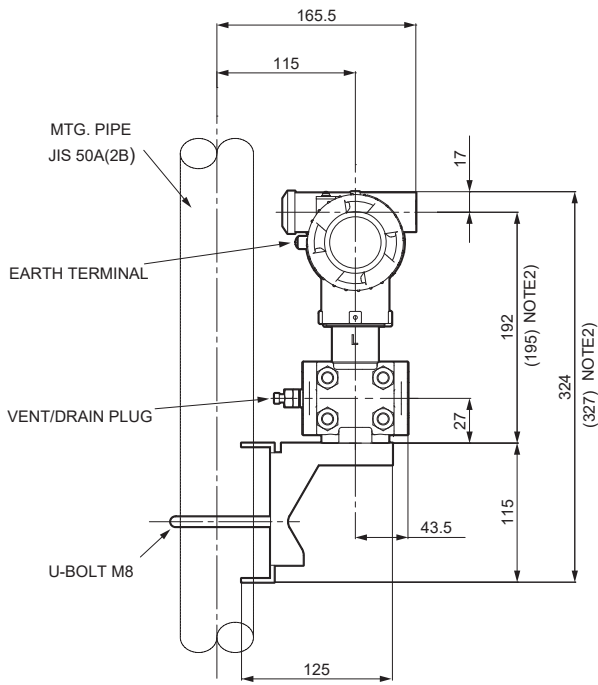


<SS TAG PLATE(OPTIONAL)> <CONNECTION DIAGRAM>

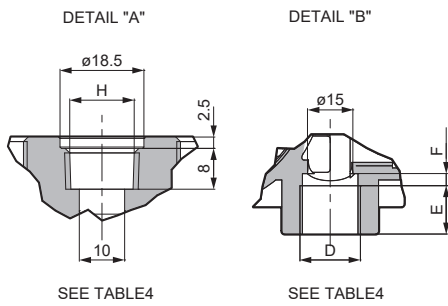


FKC

<AMP. CASE: T TYPE > IN CASE OF 11TH DIGIT CODE "M,N,P,Q"



NOTE2) IN CASE OF 7TH DIGIT CODE "W,J,H,M,T"

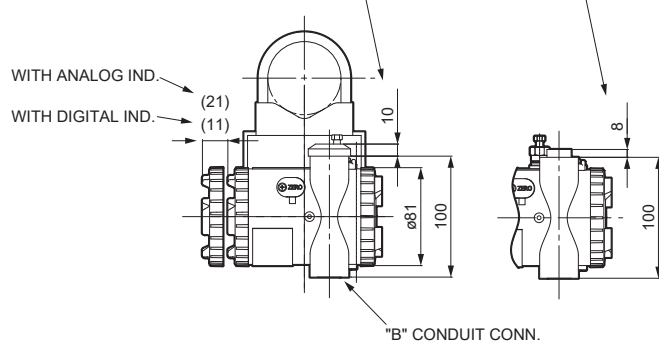


SEE TABLE4

SEE TABLE4

IN CASE OF 4TH DIGIT CODE "5,7,8,9"

IN CASE OF 4TH DIGIT CODE "6"

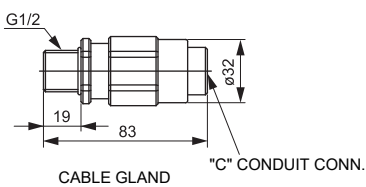


4th digit code	Conduit conn.			Process conn.	Oval flange screw
	D	E	F	H	
5	G 1/2	18	2	Rc1/4	7/16-20UNF SCREW DEPTH 15
6	1/2-14NPT	16	4	1/4-18NPT	7/16-20UNF SCREW DEPTH 15
7	Pg13.5	10.5	4.5	1/4-18NPT	M10 SCREW DEPTH 15
8	M20x1.5	16	4	1/4-18NPT	M10 SCREW DEPTH 15
9	Pg13.5	10.5	4.5	1/4-18NPT	7/16-20UNF SCREW DEPTH 15

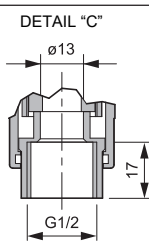
TABLE 4

<OPTIONAL PARTS FOR FLAMEPROOF OF TIIS>

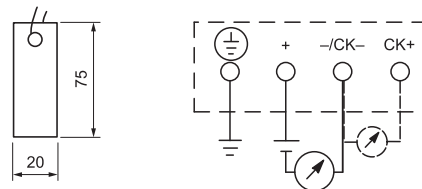
10th digit code C (Cable gland type) NOTE 1)



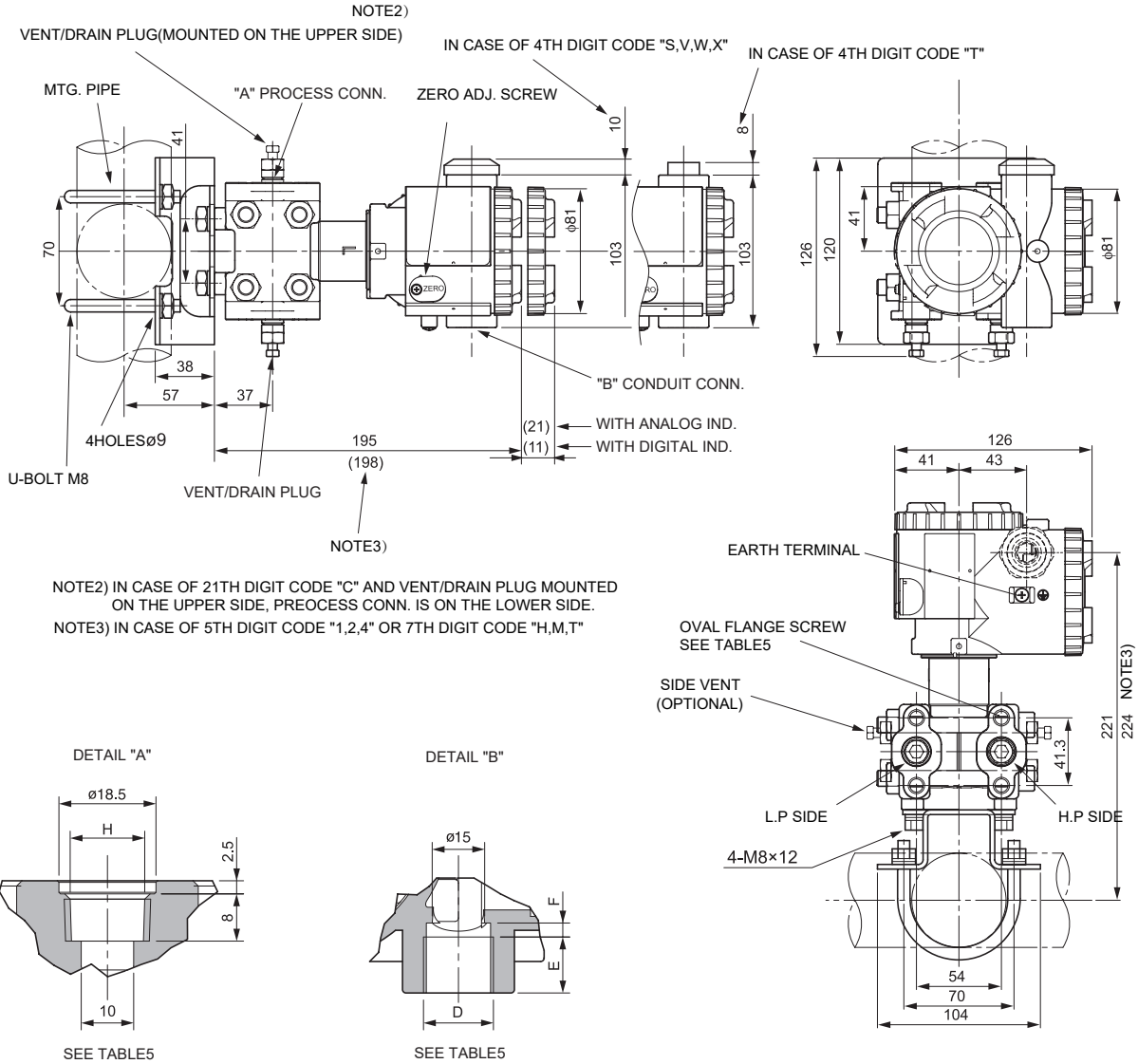
NOTE1) IN CASE OF 10TH DIGIT CODE "C", ø11 CABLE IS SUITBLE.



<SS TAG PLATE(OPTIONAL)> <CONNECTION DIAGRAM>



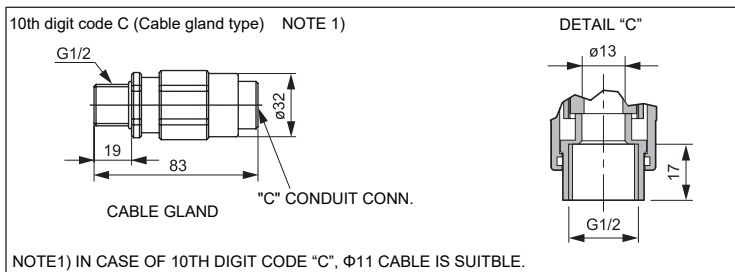
<AMP. CASE: L TYPE > IN CASE OF 7TH DIGIT CODE "V,J,H,M,T" AND 11TH DIGIT CODE "C,K,F,L"



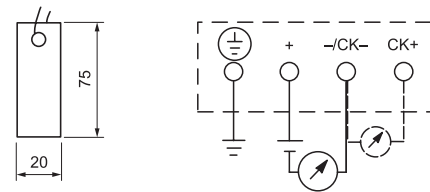
4th digit code	Conduit conn.			Process conn.	Oval flange screw
	D	E	F	H	
S	G 1/2	18	2	Rc1/4	7/16-20UNF SCREW DEPTH 15
T	1/2-14NPT	16	4	1/4-18NPT	7/16-20UNF SCREW DEPTH 15
V	Pg13.5	10.5	4.5	1/4-18NPT	M10 SCREW DEPTH 15
W	M20×1.5	16	4	1/4-18NPT	M10 SCREW DEPTH 15
X	Pg13.5	10.5	4.5	1/4-18NPT	7/16-20UNF SCREW DEPTH 15

TABLE 5

<OPTIONAL PARTS FOR FLAMEPROOF OF TIIS>

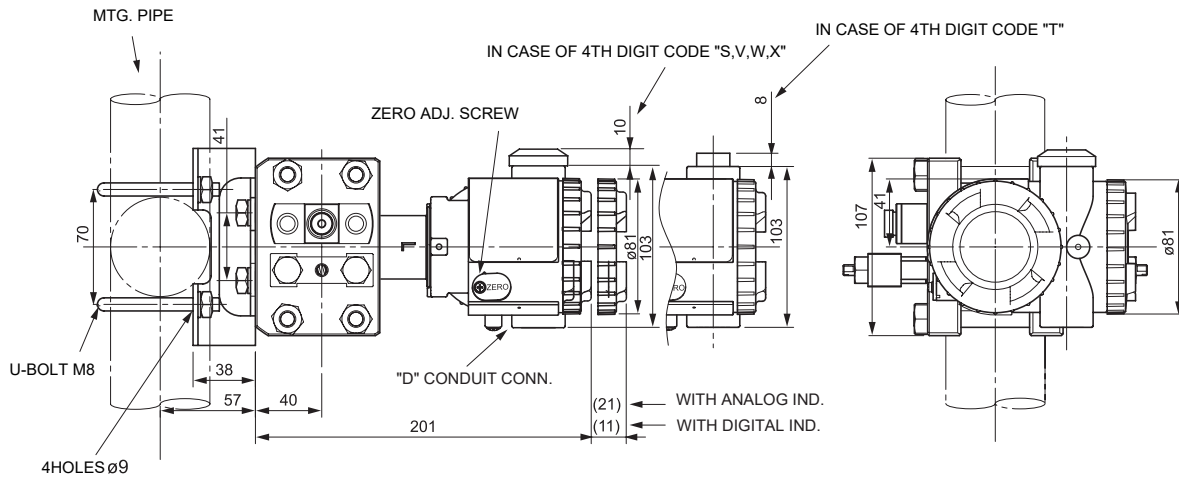


<SS TAG PLATE(OPTIONAL)> <CONNECTION DIAGRAM>

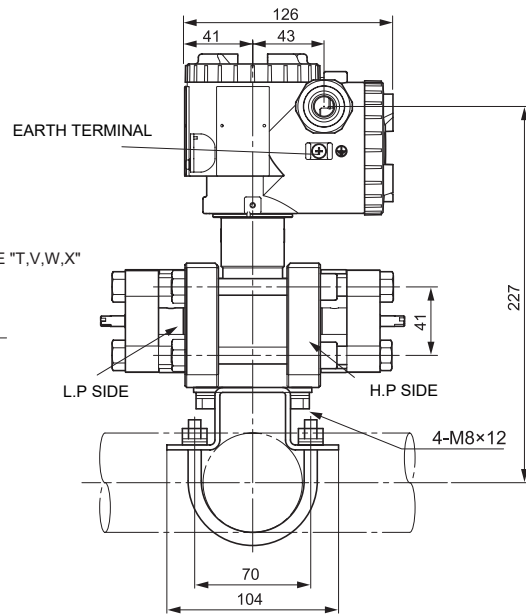
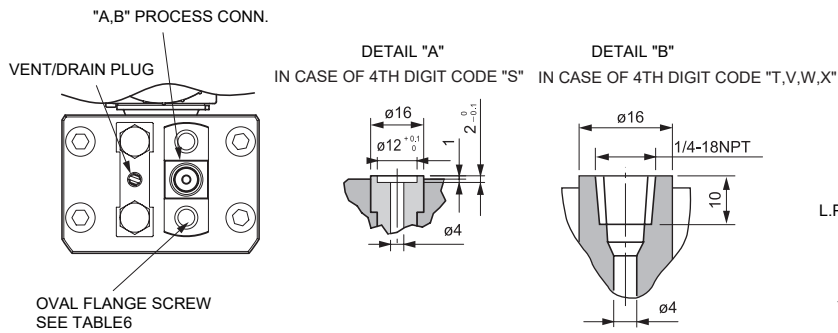


FKC

<AMP. CASE: L TYPE > IN CASE OF 7TH DIGIT CODE "L" AND 11TH DIGIT CODE "C,K,F,L"



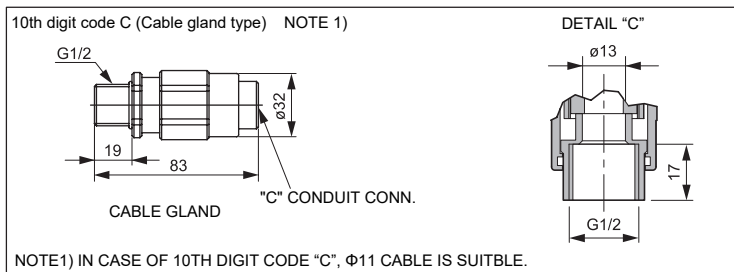
FKC



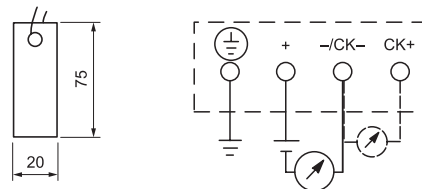
4th digit code	Conduit conn.			Process conn.	Oval flange screw
	D	E	F	H	
S	G 1/2	18	2	Rc1/4	7/16-20UNF SCREW DEPTH 15
T	1/2-14NPT	16	4	1/4-18NPT	7/16-20UNF SCREW DEPTH 15
V	Pg13.5	10.5	4.5	1/4-18NPT	M10 SCREW DEPTH 15
W	M20x1.5	16	4	1/4-18NPT	M10 SCREW DEPTH 15
X	Pg13.5	10.5	4.5	1/4-18NPT	7/16-20UNF SCREW DEPTH 15

TABLE 6

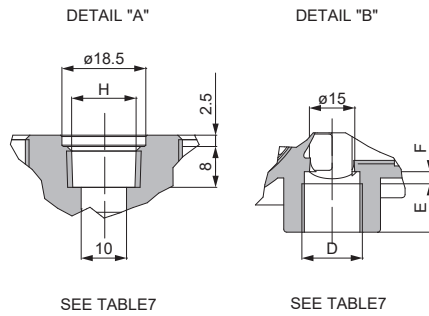
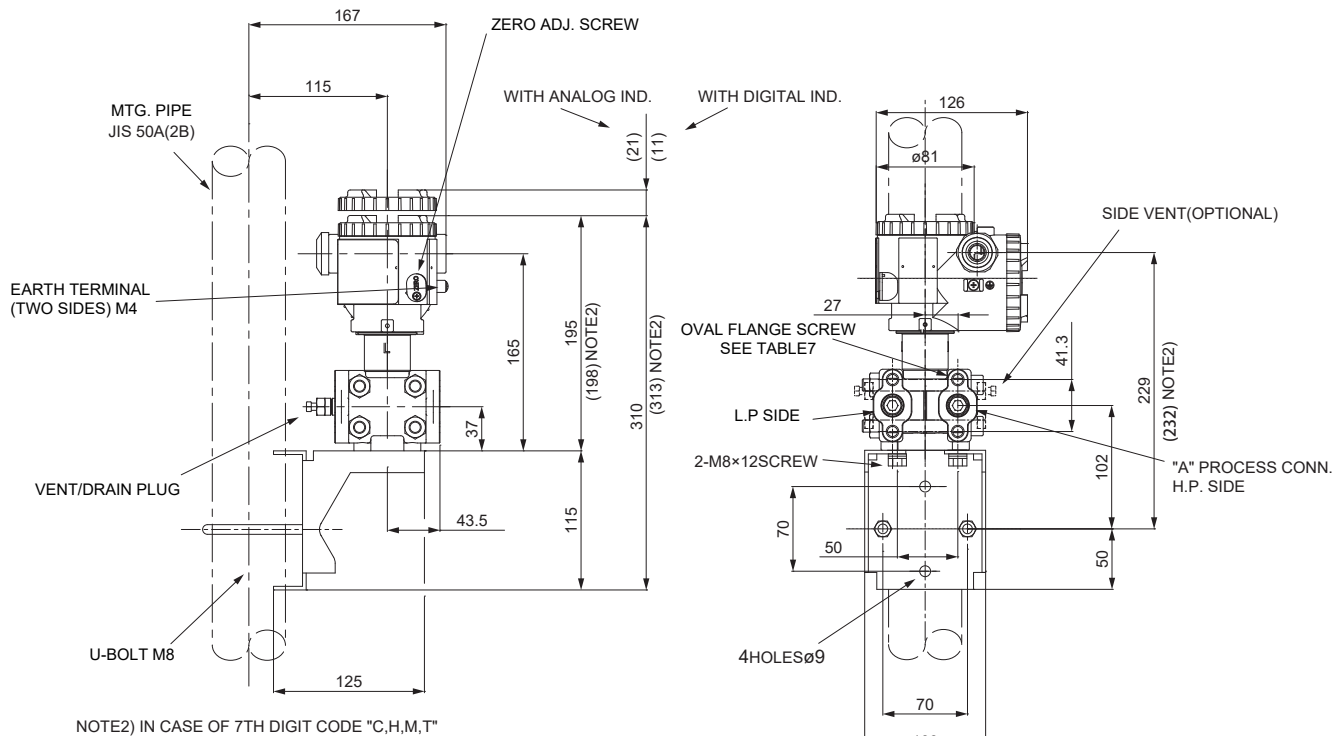
<OPTIONAL PARTS FOR FLAMEPROOF OF TIIS>



<SS TAG PLATE(OPTIONAL)> <CONNECTION DIAGRAM>

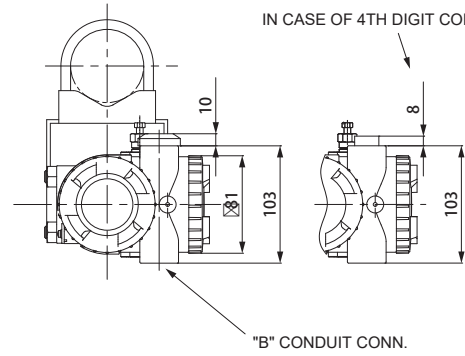


<AMP. CASE: L TYPE > IN CASE OF 11TH DIGIT CODE "M,N,P,Q"



IN CASE OF 4TH DIGIT CODE "S,V,W,X"

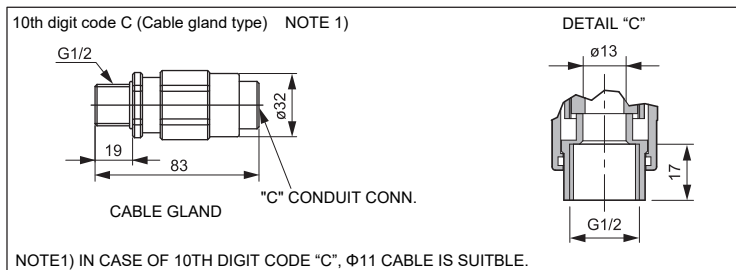
IN CASE OF 4TH DIGIT CODE "T"



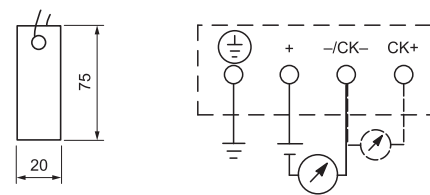
4th digit code	Conduit conn.			Process conn.	Oval flange screw
	D	E	F	H	
S	G 1/2	18	2	Rc1/4	7/16-20UNF SCREW DEPTH 15
T	1/2-14NPT	16	4	1/4-18NPT	7/16-20UNF SCREW DEPTH 15
V	Pg13.5	10.5	4.5	1/4-18NPT	M10 SCREW DEPTH 15
W	M20x1.5	16	4	1/4-18NPT	M10 SCREW DEPTH 15
X	Pg13.5	10.5	4.5	1/4-18NPT	7/16-20UNF SCREW DEPTH 15

TABLE 7

<OPTIONAL PARTS FOR FLAMEPROOF OF TIIS>



<SS TAG PLATE(OPTIONAL)> <CONNECTION DIAGRAM>



FKC

Table 8 Explosion proof

Authorities	Intrinsic safety	Authorities	Flameproof																																			
ATEX	Ex II 1 G Ex ia II C T5 Ex ia II C T4 Tamb = -40°C ~ +50°C Tamb = -40°C ~ +70°C	ATEX	Ex II 2 GD EEx d II C T6 IP66/67 T85°C Tamb = -40°C ~ +65°C EEx d II C T5 IP66/67 T100°C Tamb = -40°C ~ +85°C																																			
	Entity Parameters: Ui = 28V, li = 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)		FM	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																																		
FM	Class I II III DIV.1 Groups A, B, C, D, E, F, G T4 Entity Type 4X Model	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.																																			
	<table border="1"> <thead> <tr> <th>9th digit</th> <th>13th digit</th> <th>Tamb</th> </tr> </thead> <tbody> <tr> <td>A, B, D</td> <td>Y, G, N</td> <td>-40°C ~ +85°C</td> </tr> <tr> <td>L, P, 1, 2</td> <td>Y, G, N</td> <td>-20°C ~ +80°C</td> </tr> <tr> <td>Q, S, 4, 5</td> <td>Y, G, N</td> <td>-20°C ~ +60°C</td> </tr> <tr> <td>E, F, H</td> <td>Y, G, N</td> <td>-40°C ~ +60°C</td> </tr> <tr> <td>-</td> <td>W, A, D</td> <td>-10°C ~ +60°C</td> </tr> </tbody> </table>			9th digit	13th digit	Tamb	A, B, D	Y, G, N	-40°C ~ +85°C	L, P, 1, 2	Y, G, N	-20°C ~ +80°C	Q, S, 4, 5	Y, G, N	-20°C ~ +60°C	E, F, H	Y, G, N	-40°C ~ +60°C	-	W, A, D	-10°C ~ +60°C	Entity Parameters: Vmax = 28V, Imax = 94.3mA, Pi = 0.66W, Ci = 35.98nF, Li = 0.694mH																
9th digit	13th digit	Tamb																																				
A, B, D	Y, G, N	-40°C ~ +85°C																																				
L, P, 1, 2	Y, G, N	-20°C ~ +80°C																																				
Q, S, 4, 5	Y, G, N	-20°C ~ +60°C																																				
E, F, H	Y, G, N	-40°C ~ +60°C																																				
-	W, A, D	-10°C ~ +60°C																																				
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⚠ Caution on Safety

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

