

ELECTRONIC TRANSMITTER with FIELDBUS

DATA SHEET

Fieldbus is a standard digital communication protocol between field instruments and upper control system. This fieldbus standard enables interactive communication among the number of I&C manufactures simultaneously and also the usage by exchanging fieldbus instruments.

FCX-AII Series Electronic Transmitters with FOUNDATION FIELDBUS and PROFIBUS is a fieldbus transmitters utilizing a unique micromachined capacitance silicon sensor with state-of -the-art microporcessor technology and converting the signal of silicon sensor to fieldbus protocol.

This fieldbus transmitter can provide many merits of fieldbus as shown in the following "FEATURES".

FEATURES

1. Fuji Original IC "Frontier-1+ Fieldbus IC"

"Frontier-1+" the original Fieldbus interface controller IC, developed by Fuji Electric based on IEC Fieldbus Physical Layer Specification, is installed in FCX-AII (Fieldbus version.).

2. Interoperability

FCX-AII transmitter comply with the latest Foundation Fieldbus specification and PROFIBUS-PA specification and provide full interactive interoperability to other transmitters.

In addition, FOUNDATION FIELDBUS FCX-AII transmitters are certified and registered by ITK4.0, the latest standard for Interoperability Testing.

3. Reduction of wiring cost

The reduction of wiring cost of instrumentation is realizing due to multi-drop wiring of fieldbus instruments comparing to the current instruments.

4. High accuracy, high stability and high reliability

High resolution data transmission with digital communication lead high accuracy, high stability and high reliability.

5. Abundant alarm functions and self-diagnosis

Abundant alarm and maintenance function defined in Fieldbus specification in addition to process data can be well supported.

The self-diagnosis including failure of pressure sensor, abnormal of temperature etc. are also provided.

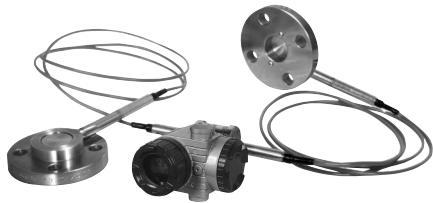
Model Configuration

Differential pressure/flow transmitter [model : FDC] (Standard version and Hydroseal diaphragm version)		Pressure transmitter [type : FDG] (Standard version and Hydroseal diaphragm version)	
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Common specifications	4	Common specifications	4
Individual specifications	5	Individual specifications	6
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Absolute pressure transmitter [model : FDA]		Level transmitter [model : FDE]	
	Reference page		Reference page
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Individual specifications	7	Individual specifications	7
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Remote seal type differential pressure/flow transmitter [model : FDD]		Remote seal type pressure transmitter [model : FDB]	
	Reference page		Reference page
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Small frange type level transmitter [model : FDY]	
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Small frange remote seal type differential pressure/flow transmitter [model : FDX]	
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Small frange remote seal type pressure transmitter [model : FDW]	
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SPECIFICATIONS

(1) Common specifications

Function and Performance

Service: Liquid, gas, and vapour
Output signal: Digital signal based on fieldbus FOUNDATION protocol or PROFIBUS-PA.
Power supply: Transmitter operates on 9V to 32V DC at transmitter terminals.
Quiescent draw current: 16±2mA

Standard:

Foundation fieldbus	Fieldbus Foundation specification(H1). (basic device, device type 113, AI function block)
PROFIBUS-PA	PROFIBUS PROFILE. Order No.3042 PROFIBUS-PA Version 3.0

Transmission cycle (Macro cycle):

Foundation fieldbus	250ms min.
PROFIBUS-PA	250ms fix.

Hazardous locations:

Authorities	Flameproof	Note
ATEX Factory Mutual	Ex II2 GD -EEExd IIC T5/T6 Class I II III Div. 1 Groups B thru. G	Ex iaIIC T4 FISCO (Approval pending)
CSA	Class I II III Div. 1 Groups C thru. G	
JIS	Ex do IIB+H ₂ T4	

Zero/span adjustment:

Zero and span are adjustable from the host system. Zero is also adjustable externally from the adjustment screw.

Indication: None or 5-digit LCD meter, as specified.

Burnout direction: Selectable from the host system. If self-diagnostic detect transmitter failure, the output will be driven to either "Output Hold", "Output Overscale" or "Output Underscale" modes.

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 filled transmitters)
 (-10 to +85°C for silicone oil "H, S, K")
 (+20 to +85°C for silicone oil "J, T")
 Ambient: -15 to +65°C
 (-15 to +60°C for arrester option)
 (-10 to +60°C for fluorinated oil filled transmitter)
 (-10 to +60°C for silicone oil "H, S")

FDB,
FDD

FDW,
FDX,
FDY

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

Process: See individual specifications
 Storage: -40 to +90°C
 (FDW, FDX, FDY ... -40 to +70°C)

Humidity limit: 0 to 100% RH

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

Insulation resistance: More than 100MΩ at 500V DC.

Structure and Material

Electrical connections:

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

Process connections:

Model	Process connections
FDC, FDG, FDA FDE, FDY (LP side)	1/4-18NPT or Rc1/4 on 54mm centers, as specified. Meets DIN 19243.
FDE, FDY (HP side) FDB, FDD, FDW, FDX	ANSI, DIN or JIS raised face flange. See CODE SYMBOLS of each model (5th digit).

Process-wetted parts material:

See CODE SYMBOLS of each model (7th digit)

Non-wetted parts material:

Electronics housing: Low copper die-cast aluminum alloy finished with polyester coating (standard), or 316 stainless steel (SCS14 per JIS G5121), as specified.

Bolts and nuts: Cr-Mo alloy (standard), 304 stainless steel or 630 stainless steel, as specified.

See CODE SYMBOLS of each model.

Fill fluid: Silicone oil (standard) or fluorinated oil (Daifloil)

Mounting bracket: 304 stainless steel

Environmental protection:

IEC IP67 and NEMA 6/6P

Mounting:

Model	Process connections
FDC, FDG, FDA	On 60.5mm (JIS 50A) pope using mounting or direct wall mounting.
FDE, FDY FDB, FDD, FDW, FDX	Direct process mounting.

Optional Specifications

Varies with model or material. So refer to CODE SYMBOLS.

Indicator: An optional 5-digit LCD meter with engineering unit is also available.

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: The fill fluid is fluorinated oil.

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

NACE specification:

Metallic materials for all pressure boundary parts comply with NACE MR-01-75. ASTM B7M or L7M bolts and 2HM nuts (Class II) are available. Static pressure rating for code "3" (16 MPa) is degraded to 10MPa.

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.

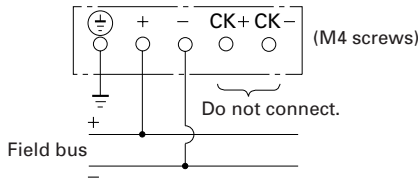
Coating of cell: Cell's surface is finished with epoxy/polyurethane double coating. Specify if environment is extremely corrosive.

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.

Equalizing valves: (Model FFN, refer to Data Sheet No. EDS6-10) Available in Carbon steel or in 316 stainless steel and in pressure rating 16MPa or 42MPa.

Connection diagram



(2) Individual specifications

Zero-based spans, reference conditions, silicone oil fill, SS316 isolating diaphragms, output in linear mode, digital trim values equal to the span setpoints and capillary length of 1.5m.

Differential Pressure / Flow Transmitter : FDC

Static pressure, range limit:

Type	Static pressure [MPa]	Range limit [kPa]
FDC□11	-0.1 to + 3.2	+/- 1
FDC□22	-0.1 to + 10	+/- 6
FDC□23		+/- 32
FDC□25		+/- 130
FDC□26		+/- 500
FDC□33	-0.1 to + 16	+/- 32
FDC□35		+/- 130
FDC□36		+/- 500
FDC□38		+/- 3000
FDC□43		+/- 32
FDC□45	-0.1 to + 42	+/- 130
FDC□46		+/- 500
FDC□48		+/- 3000

Over range limit: To maximum static pressure limit
Process temperature and negative pressure tolerance limit:
 (For details, see Fig. 1)

Filled oil	13th code	Process temperature	Negative pressure tolerance limit
Silicone oil (*1)	Y, G, N	-40 to +120°C	2.7 kPa abs
Fluorinated oil	W, A, D	-20 to +80°C	Atmospheric pressure
Silicone oil	R	-15 to +120°C	2.7 kPa abs

Lower limit of static pressure (vacuum limit):

Silicone oil filled sensor: See Fig. 1
Fluorinated oil filled sensor: 66kPa abs (500mmHg abs) at temperature below 60°C

Accuracy rating: (including linearity, hysteresis, and repeatability) Reference conditions, silicone oil fill, 316SS isolating diaphragms.

Max span above 32kPa model:

For spans greater than 1/10 of URL: ±0.07% of span
 For spans below 1/10 of URL:

$$\pm \left(0.02 + 0.05 \frac{0.1 \times \text{URL}}{\text{Span}} \right) \% \text{ of span}$$

Max span 1kPa, 6kPa model:

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

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

Stability: ±0.1% of upper range limit (URL) for 3 years

Temperature effect:

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

Range code (6th digit in Code symbols)	Zero shift	Total effect
"1" / 1kPa max. span "2" / 6kPa max. span	±0.225%	±0.25%
"3" / 32kPa max. span "5" / 130kPa max. span "6" / 500kPa max. span "8" / 3000kPa max. span	±0.0875%	±0.1075%

Static pressure effect:

Static pressure code (5th digit in Code symbols)	Zero shift (% of URL)	Span shift
"1" / 1kPa sensor "2" / 6kPa sensor	±0.2% / 1MPa ±0.2% / 3.2MPa	-0.2% / 3.2MPa -0.2% / 3.2MPa
"2" "3" "4"	±0.05% / 10MPa	-0.2% / 10MPa

Overrange effect:

Static pressure code (5th digit in Code symbols)	Zero shift (% of URL)
"1" / 1kPa sensor "2" / 6kPa sensor	±0.3% / 1MPa ±0.1% / 3.2MPa
"2" "3" "4"	±0.1% / 10MPa ±0.1% / 16MPa ±0.25% / 42MPa

Mounting position effect:

Zero shift, less than 0.12kPa for a 10° tilt in any plane.
 No effect on span.
 This error can be corrected by adjusting Zero.

Mass(weight):

Transmitter approximately 4.4kg without options.

Differential Pressure / Flow Transmitter Hydroseal Diaphragm version: FDC

Static pressure, range limit:

Type	Static pressure [MPa]	Range limit [kPa]
FDC□ 33	-0.1 to 16	+/- 32
FDC□ 35	-0.1 to 16	+/- 130

Over range limit: To maximum static pressure limit

Process temperature and negative pressure tolerance limit:
(For details, see Fig. 1)

Filled oil	13th code	Process temperature	Negative pressure tolerance limit
Silicone oil	Y, G, N	-20 to +120°C	2.7 kPa abs
Fluorinated oil	W, A, D	-20 to +80°C	Atmospheric pressure
Silicone oil	R	-15 to +120°C	2.7 kPa abs

Lower limit of static pressure (vacuum limit):

Silicone oil filled sensor: See Fig. 1

Fluorinated oil filled sensor: 66kPa abs (500mmHg abs)
at temperature below 60°C

Accuracy rating: (including linearity, hysteresis, and repeatability)
Reference conditions, silicone oil fill, 316SS isolating diaphragms.

For spans greater than 1/10 of URL: ±0.15% of span

For spans below 1/10 of URL:

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

Stability: ±0.15% of upper range limit (URL) for 3 years

Temperature effect:

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

Zero shift	Total effect
±0.175%	±0.2%

Static pressure effect:

Zero shift (% of URL)	Span shift
±0.15% /10MPa(100bar)	-0.2% /10MPa(100bar)

Overrange effect:

Range code (6th digit in Code symbols)	Zero shift (% of URL)
"3"	1 % URL / 16MPa
"5"	0.6 % URL / 16MPa

Mounting position effect:

Zero shift, less than 0.12kPa for a 10° tilt in any plane.

No effect on span.

This error can be corrected by adjusting Zero.

Mass(weight): Transmitter approximately 4.4kg without options.

Pressure Transmitter : FDG

Range and overrange limit:

Type	Range limit [kPa]		Overrange limit [MPa]
	Lower limit	Upper limit	
FDG□01	Permissible negative pressure limit	130	1
FDG□02		500	1.5
FDG□03		3000	9
FDG□04		10000	15
FDG□05		50000	75

Process temperature and negative pressure tolerance limit:
(For details, see Fig. 1)

Filled oil	13th code	Process temperature	Negative pressure tolerance limit
Silicone oil	Y, G, N	-40 to +100°C	2.7 kPa abs
Fluorinated oil	W, A, D	-20 to +80°C	Atmospheric pressure
Silicone oil	R	-15 to +100°C	2.7 kPa abs

Lower limit of static pressure (vacuum limit):

Silicone oil filled sensor: See Fig. 1

Fluorinated oil filled sensor: 66kPa abs (500mmHg abs)
at temperature below 60°C

Accuracy rating: (including linearity, hysteresis, and repeatability)
Reference conditions, silicone oil fill, 316SS isolating diaphragms.

Max span below 10000kPa model:

For spans greater than 1/10 of URL: ±0.07% of span

For spans below 1/10 of URL:

$$\pm \left(0.02 + 0.05 \frac{0.1 \times \text{URL}}{\text{Span}} \right) \% \text{ of span}$$

Max span 50000kPa model:

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

For spans below 1/10 of URL:

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

Stability: ±0.1% of upper range limit (URL) for 3 years

Temperature effect:

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

Zero shift: ±0.0875%

Total effect: ±0.1075%

Overrange effect: Zero shift; 0.2% of URL for any overrange to maximum limit

Mounting position effect:

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

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

Mass(weight): Transmitter approximately 3.4kg without options.

Pressure Transmitter Hydroseal Diaphragm version: FDG

Static pressure, range limit:

Type	Static pressure [MPa]	Range limit [kPa]		Over range limit [MPa]
		Lower limit	Upper limit	
FDG□07	-0.1 to 0.5	Permissible negative pressure limit	500	1.5
FDG□08	-0.1 to 3		3000	9
FDG□09	-0.1 to 10		10000	15

Process temperature and negative pressure tolerance limit:
(For details, see Fig. 1)

Filled oil	13th code	Process temperature	Negative pressure tolerance limit
Silicone oil	Y, G, N	-20 to +100°C	2.7 kPa abs
Fluorinated oil	W, A, D	-20 to +80°C	Atmospheric pressure

Lower limit of static pressure (vacuum limit):

Silicone oil filled sensor: See Fig. 1

Fluorinated oil filled sensor: 66kPa abs (500mmHg abs)
at temperature below 60°C

Accuracy rating: (including linearity, hysteresis, and repeatability)
Reference conditions, silicone oil fill, 316SS isolating diaphragms.

For spans greater than 1/10 of URL: ±0.15% of span

For spans below 1/10 of URL:

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

Stability: ±0.15% of upper range limit (URL) for 3 years

Temperature effect:
Effects per 28°C change between the limits of -40°C and +85°C
Zero shift: ±0.2%
Total effect: ±0.225%

Overrange effect: Zero shift; 0.4% of URL for any overrange to maximum limit

Mounting position effect:
Zero shift, less than 0.1kPa for a 10° tilt in any plane.

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

Mass (weight): Transmitter approximately 3.4kg without options.

Absolute Pressure Transmitter : FDA

Range and overrange limit:

Type	Range limit [kPa abs]	Overrange limit [MPa]
FDA□□01	0 to +16	0.5
FDA□□02	0 to +130	0.5
FDA□□03	0 to +500	1.5
FDA□□04	0 to +3000	9

Process temperature and negative pressure tolerance limit:

Process temperature; -40 to +85°C
Negative pressure; Depends on measuring range.

Accuracy rating: (including linearity, hysteresis, and repeatability).

Reference conditions, silicone oil fill, 316SS isolating diaphragms.

(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)

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

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

For spans below 1/10 of URL:

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

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

Temperature effect:
Effect per 28°C change between the limits of -40°C and +85°C
Zero shift: ±0.225%
Total effect: ±0.25%

Overrange effect: Zero shift; ±0.2% of URL for any overrange to maximum limit

Mounting position effect:
Zero shift, less than 0.1kPa for a 10° tilt in any plane.

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

Mass (weight): Transmitter approximately 3.4kg without options.

Level Transmitter : FDE

Static pressure, range limit:

Type	Static pressure	Range limit [kPa]
FDE□□□3	Up to flange rating	+/- 32
FDE□□□5		+/- 130
FDE□□□6		+/- 500

Over range limit: To maximum static pressure limit
Process temperature and negative pressure tolerance limit:
(For details, see Fig. 2, Fig. 3)

Filled oil	13th code	Process temperature	Negative pressure tolerance limit
Fluorinated oil	W, A, D	-20 to +120°C	Atmospheric pressure
Silicone oil	H	-15 to +250°C	2.7 kPa abs
	J	85 to +300°C	
	Y, G	-40 to +120°C	
	S	-15 to +250°C	
	T	85 to +300°C	
	K	-15 to +150°C	0.13 kPa abs

Low pressure side contact liquid temperature on transmitter of Code "H, J, S, T" is 120°C or lower. Low pressure side contact liquid temperature of Code "K" is 85°C or lower.

Lower limit of static pressure (vacuum limit):

Silicone oil filled sensor: See Fig. 1

Fluorinated oil filled sensor: 66kPa abs (500mmHg abs) at temperature below 60°C

Accuracy rating: (including linearity, hysteresis, and repeatability)

Reference conditions, silicone oil fill, 316SS isolating diaphragms.

(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 3 years

Temperature effect:

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

(Standard)

Zero shift: ±0.35% of URL

Total effect: ±0.5% of URL

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

Zero shift: ±0.3% of URL

Total effect: ±0.4% of 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

Mounting position effect:

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

No effect on span.

This error can be corrected by adjusting zero.

Mass (weight): Transmitter approximately 13kg without options.

Remote Seal Type Differential Pressure / Flow Transmitter: FDD

Static pressure, range limit:

Type	Static pressure	Range limit [kPa]
FDD□□□3	Up to flange rating	+/- 32
FDD□□□5		+/- 130
FDD□□□6		+/- 500

Over range limit: To maximum static pressure limit
Process temperature and negative pressure tolerance limit:
 (For details, see Fig. 2, Fig. 4)

Filled oil	13th code	Process temperature	Negative pressure tolerance limit
Fluorinated oil	W, A, D	-20 to +120°C	Atmospheric pressure
Silicone oil	H	-15 to +250°C	2.7 kPa abs
	J	+85 to +300°C	
	Y, G	-40 to +120°C	
	S	-15 to +250°C	
	T	+85 to +300°C	
	K	-15 to +200°C	0.13 kPa abs

Accuracy rating: (including linearity, hysteresis, and repeatability)
 Reference conditions, silicone oil fill, 316SS isolating diaphragms.

(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 spans greater than 1/10 of URL: 0.1% of span

For spans below 1/10 of URL:

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

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

Temperature effect (*):

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

(Standard)

Zero shift: ±0.35% of URL

Total effect: ±0.5% of URL

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

Zero shift: ±0.3% of URL

Total effect: ±0.4% of URL

Note: * Excluding effect by temperature difference between the seals.

Static pressure effect:

Zero shift; 0.2% of URL for flange rating pressure

Span shift: -0.2% of calibrated span for flange rating pressure

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

Mass {weight}: Transmitter approximately 15kg without options.

Remote Seal Type Pressure Transmitter: FDB

Range, and overrange limit:

Type	Range limit [kPa]	Overrange limit [MPa]
FDB□□1	-100 to +130	1
FDB□□2	-100 to +500	1.5
FDB□□3	-100 to +3000	9
FDB□□4	-100 to +10000	15
FDB□□5	-100 to +50000	75

Process temperature and negative pressure tolerance limit:
 (For details, see Fig. 2, Fig. 4)

Filled oil	13th code	Process temperature	Negative pressure tolerance limit
Fluorinated oil	W, A, D	-20 to +120°C	Atmospheric pressure
Silicone oil	H	-15 to +250°C	2.7 kPa abs
	J	85 to +300°C	
	Y, G	-40 to +120°C	
	S	-15 to +250°C	
	T	85 to +300°C	
	K	-15 to +200°C	0.13 kPa abs

Accuracy rating: (including linearity, hysteresis, and repeatability)
 Reference conditions, silicone oil fill, 316SS isolating diaphragms.

(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)

Not available for Max span 50000kPa model.

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

For spans below 1/10 of URL:

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

Stability: ±0.1% of upper range limit (URL) for 3 years

Temperature effect:

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

(Standard) Zero shift: ±0.35% of URL

Total effect: ±0.5% of URL

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

Zero shift: ±0.3% of URL

Total effect: ±0.4% of URL

Overrange effect: Zero shift; 0.2% of URL for any overrange to maximum limit

Mass {weight}: Transmitter approximately 10kg without options.

Small Frange Level Transmitter : FDY

Static pressure, range limit:

Type	Static pressure	Range limit [kPa]
FDY□□5	Up to flange rating	+/- 130
FDY□□6		+/- 500

Over range limit: To maximum static pressure limit

Process temperature and negative pressure tolerance limit:
 (For details, see Fig. 2)

Filled oil	13th code	Process temperature	Negative pressure tolerance limit
Fluorinated oil	W, A, D	-20 to +80°C	Atmospheric pressure
Silicone oil	H	0 to +250°C	2.7 kPa abs
	Y, G	-40 to +120°C	
	S	0 to +250°C	

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

Lower limit of static pressure (vacuum limit):

Silicone oil filled sensor: See Fig. 1

Fluorinated oil filled sensor: 66kPa abs (500mmHg abs) at temperature below 60°C

Accuracy rating: (including linearity, hysteresis, and repeatability)

Reference conditions, silicone oil fill, 316SS isolating diaphragms.

(Standard)

For spans greater than 1/10 of URL: ±0.25% of span

For spans below 1/10 of URL:

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

(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:

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

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%
Total shift; ±0.75%
(Option) (Code: 21th digit J, K)
Zero shift; ±0.5%
Total shift; ±0.75%
Where, URL: Maximum span (Upper Range Limit)

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

Mass{weight): Transmitter approximately 13kg without options.

**Small Frange Remote Seal Type
Differential Pressure Transmitter: FDX**

Static pressure, range limit:

Type	Static pressure	Range limit [kPa]
FDX□□5	Up to flange rating	+/- 130
FDX□□6		+/- 500

Over range limit: To maximum static pressure limit
Process temperature and negative pressure tolerance limit:
(For details, see Fig. 2, Fig. 4)

Filled oil	13th code	Process temperature	Negative pressure tolerance limit
Fluorinated oil	W, A, D	-20 to +120°C	Atmospheric pressure
Silicone oil	H	0 to +250°C	2.7 kPa abs
	Y, G	-40 to +120°C	
	S	0 to +250°C	

Accuracy rating: (including linearity, hysteresis, and repeatability)
Reference conditions, silicone oil fill, 316SS isolating diaphragms.

(Standard)
For spans greater than 1/10 of URL: 0.25% of span
For spans below 1/10 of URL:
$$\pm \left(0.17 + 0.08 \frac{0.1 \times \text{URL}}{\text{Span}} \right) \% \text{ of span}$$

(Option) (Code; 21th digit H,K)
For spans greater than 1/10 of URL: 0.1% of span
For spans below 1/10 of URL:
$$\pm \left(0.05 + 0.05 \frac{0.1 \times \text{URL}}{\text{Span}} \right) \% \text{ of span}$$

Stability: ±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%
Total shift; ±0.75%
(option) (Code; 21th digit J,K)
Zero shift: ±0.5%
Total shift; ±0.75%
Where, URL: Maximum span (Upper Range Limit)

Note : Above specifications are based on the conditions that flanges and sensor unit are at the same temperature and in the same level. If temperature is different at flanges, capillary or sensor unit, output variation may increase.

Static pressure effect:
Zero shift; 0.2% of URL/1MPa (10 bar)
Span shift: -0.2% of calibrated span / 1MPa
Overrange effect: Zero shift; 0.1% of URL for flange nominal pressure
Mass {weight): Transmitter approximately 15kg without options.

**Small Frange Remote Seal Type
Pressure Transmitter: FDW**

Range, and overrange limit:

Type	Range limit [kPa]	Overrange limit [MPa]
FDW□□3	-100 to +3000	4.5
FDW□□4	-100 to 10000	15

Process temperature and negative pressure tolerance limit:
(For details, see Fig. 2)

Filled oil	13th code	Process temperature	Negative pressure tolerance limit
Fluorinated oil	W, A, D	-20 to +120°C	Atmospheric pressure
Silicone oil	H	0 to +250°C	2.7 kPa abs
	Y, G	-40 to +120°C	
	S	0 to +250°C	

Accuracy rating: (including linearity, hysteresis, and repeatability)
Reference conditions, silicone oil fill, SS316 isolating diaphragms.

(Standard)
For spans greater than 1/10 of URL: ±0.25% of span
For spans below 1/10 of URL:
$$\pm \left(0.17 + 0.08 \frac{0.1 \times \text{URL}}{\text{Span}} \right) \% \text{ of span}$$

(Option) (Code; 21th digit H)
For spans greater than 1/10 of URL: ±0.1% of span
For spans below 1/10 of URL:
$$\pm \left(0.05 + 0.05 \frac{0.1 \times \text{URL}}{\text{Span}} \right) \% \text{ of span}$$

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

Temperature effect:
Effect per 28°C change between the limits of -15°C and +65°C
Zero shift: ±0.5%
Total shift; ±0.75%
Where, URL: Maximum span (Upper Range Limit)

Note : Above specifications are based on the conditions that flange and sensor unit are at the same temperature and in the same level. If temperature is different at flange, capillary or sensor unit, output variation may increase.

Overrange effect: Zero shift; 0.2% of URL/(1.5 x URL)
Mass {weight): Transmitter approximately 10kg without options.

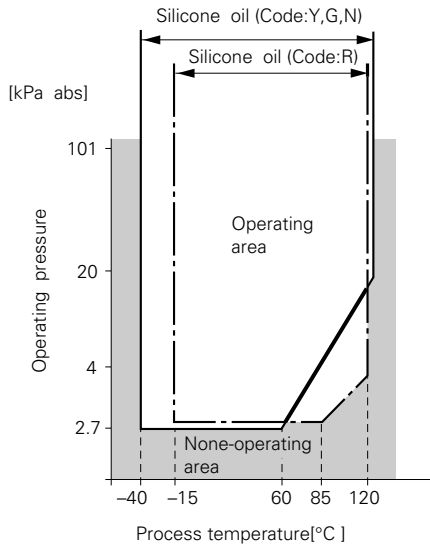


Fig. 1 Relation between process temperature and operating pressure (pressure and differential pressure/flow transmitters)

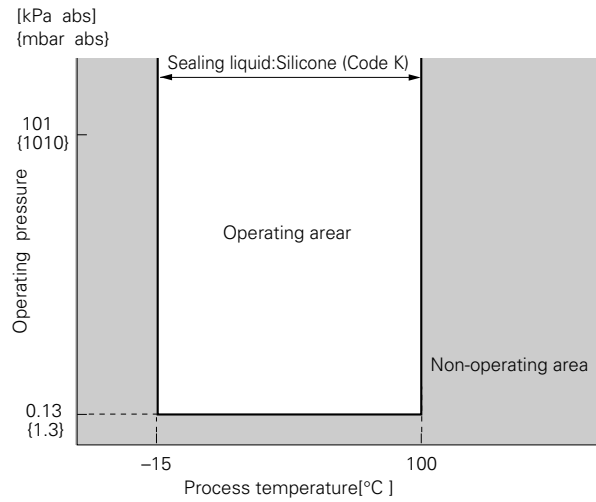


Fig. 3 Relation between process temperature and operating pressure (level transmitters)

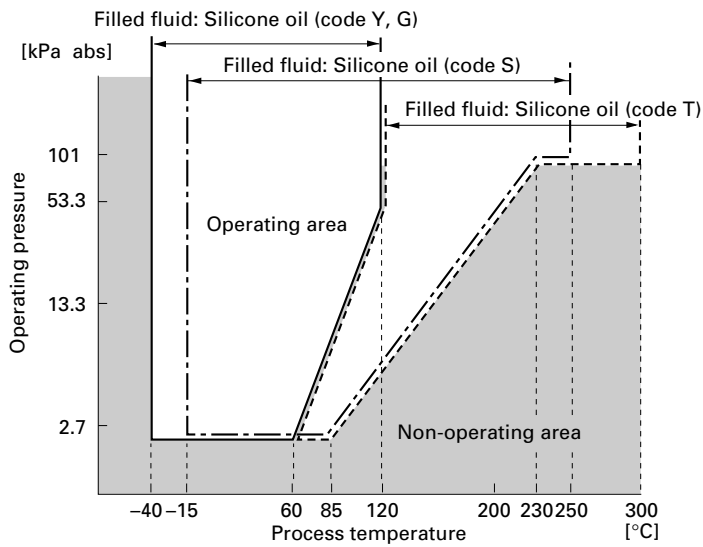


Fig. 2 Relation between process temperature and operating pressure (remote seal type pressure, remote seal type differential pressure and level transmitters)

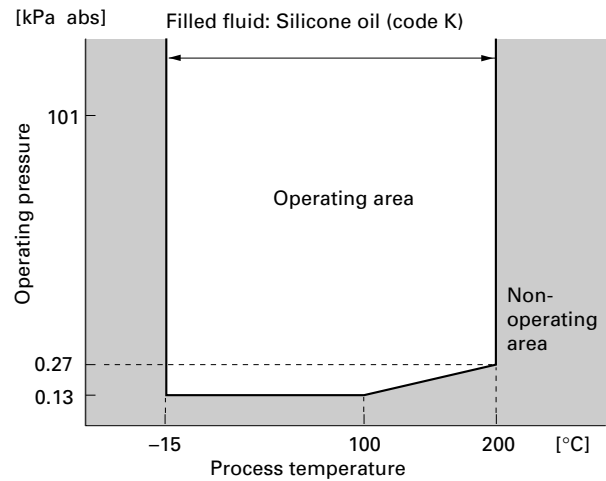


Fig. 4 Relation between process temperature and operating pressure (remote seal type pressure, remote seal type differential pressure and level transmitters)

Digit	Description	Note	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	← Digit No. of code					
9	<Digital indicator, arrester and communication> <u>Digital indicator</u> <u>Arrester</u> <u>Communication type</u> None None Foundation Fieldbus None Yes Foundation Fieldbus Yes None Foundation Fieldbus Yes Yes Foundation Fieldbus None None Profibus None Yes Profibus Yes None Profibus Yes Yes Profibus		F	D	C					4		A	E	P	S								
10	<Approvals for hazardous, for fieldbus> None (for ordinary locations) TIIS, Flameproof (Conduit seal) TIIS, Flameproof (Cable gland seal) FM, Flameproof (or explosionproof) CSA, Flameproof (or explosionproof) ATEX, Flameproof ATEX, Intrinsic safty (Entity) SAA, Flameproof (or explosionproof) ATEX, FISCO	Approval pending Approval pending Approval pending Approval pending Note 9										A	B	C	D	E	X						
11	<Vent/ drain and mounting bracket> <u>Vent/drain</u> <u>Mounting bracket</u> Standard None } Specify "A" or "C" for the 7th Standard Yes, stainless steel } digit code "B", "L", or "U" Side None Side Yes, stainless steel												A	C	D	F							
12	<Options> <u>Extra SS tag plate</u> <u>Stainless steel elec, housing</u> <u>Coating of cell</u> None None None Yes None None None Yes None Yes Yes None ----- None None Yes Yes None Yes None Yes Yes Yes Yes Yes	Note 4												Y	B	C	E	M	N	P	Q		
13	<Special applications and fill fluid> <u>Treatment</u> <u>Fill fluid</u> Standard Silicone oil Standard Fluorinated oil ----- <u>Degreasing</u> Silicone oil Oxygen service Fluorinated oil (7th digit code "V" only) Chlorine service Fluorinated oil (7th digit code "H", "T", "B", "U") NACE specification Silicone oil (Not available for 7th digit code "T", "U" and 15th digit code "A", "B") Vacuum service Silicone oil for vacuum use (Not available for 7th digit code "C")													Y	W	G	A	D	N	R			
14	<Sensor O-ring / Gasket> Viton (O-ring) Teflon (gasket)																	A	B				
15	<Bolt/nut> (*8) Cr-Mo alloy hexagon socket head cap screw/carbon steel nut Cr-Mo alloy hexagon bolt/nut NACE bolt/nut (ASTM A193 B7M/A194 2HM) } (*5) NACE bolt/nut (ASTM A320 L7M/A194 2HM) } (*5) 304 stainless steel bolt/304 stainless steel nut (*6) 630 stainless steel bolt/304 stainless steel nut (*7)	Note 8 Note 5 Note 6 Note 7																A	B	C	D	E	F

- Note 1: (*1) The thread is M12, if 42MPa {420bar} static pressure is specified.
Note 2: (*2) 100: 1 turn down is possible, but should be used at the span greater than 1/40 of the maximum span for better performance.
Note 3: (*3) The diaphragm face is coated with gold and ceramic.
Note 4: (*4) Customer tag number can be engraved on standard stainless steel name plate. If extra tag plate is required, select "Yes".
Note 5: (*5) Static pressure should be -0.1 to +10MPa{-1 to +100bar}.
Note 6: (*6) Available for 5th digit code "1", "2", "3". In case of stainless steel bolt with 5th digit code "3", static pressure should be -0.1 to +10MPa {-1 to + 100bar}.
Note 7: (*7) Available for 5th digit code "3", "4".
Note 8: (*8) In case of tropical use, select stainless bolts and nuts.
Note 9: (*9) In case of 10th code is "4"(ATEX, FISCO), then the 9th code, E, S, V and W (with arrester option) are not available.

Pressure transmitter : FDG

Digit	Description			Note	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
					F	D	G	0	4												
4	<Connections>																				
	Process connection	Oval flange screw	Conduit connection																		
	Rc1/4	7/16-20UNF	G1/2 (×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)(*1)	Pg13.5 (×1)							C											
	1/4-18NPT	M10 (or M12)(*1)	M20×1.5 (×1)							D											
	1/4-18NPT	7/16-20UNF	Pg13.5 (×1)							E											
	Rc1/4	7/16-20UNF	G1/2 (×2)							S											
	1/4-18NPT	7/16-20UNF	1/2-14NPT (×2)							T											
	1/4-18NPT	M10 (or M12)(*1)	Pg13.5 (×2)							V											
1/4-18NPT	M10 (or M12)(*1)	M20×1.5 (×2)							W												
1/4-18NPT	7/16-20UNF	Pg13.5 (×2)							X												
6, 7																					
	Span limit [kPa>(*2)	Process cover	Diaphragm	Wetted cell body	Note 2																
	1.3...130	316 stainless steel	316L stainless steel	316 stainless steel	316 stainless steel															1V	
		316 stainless steel	316L stainless steel	316 stainless steel	316 stainless steel															1J	
		316 stainless steel	Hast. C	Hast. C	Hast. C lining															1H	
		316 stainless steel	Monel	Monel	Monel lining															1M	
		316 stainless steel	Tantalum	Tantalum	Tantalum lining															1T	
		Hast. C lining	Hast. C	Hast. C	Hast. C lining															1B	
		Monel lining	Monel	Monel	Monel lining															1L	
		Tantalum lining	Tantalum	Tantalum	Tantalum lining															1U	
		5...500	316 stainless steel	316L stainless steel	316 stainless steel	316 stainless steel															2V
			316 stainless steel	316L stainless steel	316 stainless steel	316 stainless steel															2J
	316 stainless steel		Hast. C	Hast. C	Hast. C lining															2H	
	316 stainless steel		Monel	Monel	Monel lining															2M	
	316 stainless steel		Tantalum	Tantalum	Tantalum lining															2T	
	Hast. C lining		Hast. C	Hast. C	Hast. C lining															2B	
	Monel lining		Monel	Monel	Monel lining															2L	
	Tantalum lining		Tantalum	Tantalum	Tantalum lining															2U	
	30...3000		316 stainless steel	316L stainless steel	316 stainless steel	316 stainless steel															3V
			316 stainless steel	316L stainless steel	316 stainless steel	316 stainless steel															3J
		316 stainless steel	Hast. C	Hast. C	Hast. C lining															3H	
		316 stainless steel	Monel	Monel	Monel lining															3M	
316 stainless steel		Tantalum	Tantalum	Tantalum lining															3T		
Hast. C lining		Hast. C	Hast. C	Hast. C lining															3B		
Monel lining		Monel	Monel	Monel lining															3L		
Tantalum lining		Tantalum	Tantalum	Tantalum lining															3U		
100...10000		316 stainless steel	316L stainless steel	316 stainless steel	316 stainless steel															4V	
		316 stainless steel	316L stainless steel	316 stainless steel	316 stainless steel															4J	
	316 stainless steel	Hast. C	Hast. C	Hast. C lining															4H		
	316 stainless steel	Monel	Monel	Monel lining															4M		
	316 stainless steel	Tantalum	Tantalum	Tantalum lining															4T		
	Hast. C lining	Hast. C	Hast. C	Hast. C lining															4B		
	Monel lining	Monel	Monel	Monel lining															4L		
	Tantalum lining	Tantalum	Tantalum	Tantalum lining															4U		
	500...50000	316 stainless steel	316L stainless steel	316 stainless steel																5V	
	50...500	316 stainless steel	316L stainless steel	316 stainless steel																7C	
300...3000	316 stainless steel	316L stainless steel	316 stainless steel																8C		
1000...10000	316 stainless steel	316L stainless steel	316 stainless steel																9C		
9	<Digital indicator, arrester and communication>																				
	Digital indicator	Arrester	Communication type																		
	None	None	Foundation Fieldbus																A		
	None	Yes	Foundation Fieldbus																E		
	Yes	None	Foundation Fieldbus																P		
	Yes	Yes	Foundation Fieldbus																S		
	None	None	Profibus																R		
	None	Yes	Profibus																V		
	Yes	None	Profibus																T		
	Yes	Yes	Profibus																W		

Digit	Description	Note	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	← Digit No. of code					
10	<Approvals for hazardous, for fieldbus> None (for ordinary locations) TIIS, Flameproof (Conduit seal) TIIS, Flameproof (Cable gland seal) FM, Flameproof (or explosionproof) CSA, Flameproof (or explosionproof) ATEX, Flameproof ATEX, Intrinsic safety (Entity) SAA, Flameproof (or explosionproof) ATEX, FISCO	Approval pending Approval pending Approval pending Approval pending Note5	F	D	G	0			4														
11	<Vent/ drain and mounting bracket> <u>Vent/drain</u> <u>Mounting bracket</u> Standard None } Specify "A", or "C" for the 7th Standard Yes, stainless steel } digit code "B", "L", or "U" Side None Side Yes, stainless steel												A	C	D	F							
12	<Options> <u>Extra SS tag plate</u> <u>Stainless steel elec. housing</u> <u>Coating of cell</u> None None None Yes None None None Yes None Yes } (*3) Yes None ----- None None Yes Yes None Yes None Yes Yes Yes Yes Yes	Note3											Y	B	C	E	M	N	P	Q			
13	<Special applications and fill fluid> <u>Treatment</u> <u>Fill fluid</u> Standard Silicone oil Standard Fluorinated oil Degreasing Silicone oil ----- Oxygen service Fluorinated oil (7th digit code "V" only) Chlorine service Fluorinated oil (7th digit code "H", "T", "B", "U") NACE specification Silicone oil (Not available for 6th digit code "5", 7th digit code "T", "U", 15th digit code "A", "B") Vacuum service Silicone oil for vacuum use(Not available for 7th digit code "C")													Y	W	G	A	D	N	R			
14	<Sensor O-ring / Gasket> Viton (O-ring) Teflon (gasket)																	A	B				
15	<Bolt/nut> (*4) Cr-Mo alloy hexagon socket head cap screw/carbon steel nut Cr-Mo alloy hexagon bolt/nut ----- NACE bolt/nut (ASTM A193 B7M/A194 2HM) NACE bolt/nut (ASTM A320 L7M/A194 2HM) } Not available for 6th digit 304 stainless steel bolt/304 stainless steel nut } code "5" 630 stainless steel bolt/304 stainless steel nut } Available for 6th digit code "5"	Note4																A	B	C	D	E	F

- Note 1 : (*1) For 50MPa {500bar} units, M12 is provided rather than M10.
Note 2 : (*2) 100: 1 turn down is possible, but should be used at the span greater than 1/40 of the maximum span for better performance.
Note 3 : (*3) Costomer tag number can be engraved on standard stainless steel name plate. If extra tag plate is required, select "Yes".
Note 4 : (*4) In case of tropical use, select stainless bolts and nuts.
Note 5 : (*5) In case of 10th code is "4" (ATEX, FISCO), then the 9th code, E, S, V and W (with arrester option) are not available.

Absolute pressure transmitter : FDA

Digit	Description	Note	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	21	← Digit No. of code																																																											
			F	D	A	0		4																																																																						
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Digit	Description	Note	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	21			
13	<Special applications and fill fluid> Treatment Fill fluid Standard Silicone oil Degreasing Silicone oil NACE specification Silicone oil (7th digit code "T" and 15th digit code "A", "B" are not available)		F	D	A	0				4						Y	G	N			
14	<Sensor O-ring> Viton																A				
15	<Bolt/nut> (*3) Cr-Mo alloy hexagon socket head cap screw/carbon steel nut Cr-Mo alloy hexagon bolt/nut NACE bolt/nut (ASTM A193 B7M/A194 2HM) NACE bolt/nut (ASTM A320 L7M/A194 2HM) 304 stainless steel bolt/304 stainless steel nut	Note 3															A	B	C	D	E
21	<Other options> High accuracy type																				H

← Digit No. of code

- 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) Customer tag number can be engraved on standard stainless steel name plate. If extra tag plate is required, select "Yes".
 Note 3: (*3) In case of tropical use, select stainless bolts and nuts.
 Note 4: (*4) In case of 10th code is "4" (ATEX, FISCO), then the 9th code, E, S, V and W (with arrester option) are not available.

Level transmitter : FDE

Digit	Description	Note	Digit No. of code																	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	21		
4	<Connections>		F	D	E				4											
	Process connection	Oval flange screw	Conduit connection																	
	Rc1/4	7/16-20UNF	G 1/2 (x1)																	
	1/4-18NPT	7/16-20UNF	1/2-14NPT (x1)																	
	1/4-18NPT	M10	Pg13.5 (x1)																	
	1/4-18NPT	M10	M20x1.5 (x1)																	
	1/4-18NPT	7/16-20UNF	Pg13.5 (x1)																	
	Rc1/4	7/16-20UNF	G 1/2 (x2)																	
	1/4-18NPT	7/16-20UNF	1/2-14NPT (x2)																	
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	1/4-18NPT	M10	M20x1.5 (x2)																	
	1/4-18NPT	7/16-20UNF	Pg13.5 (x2)																	
5	<Mounting flange>																			
	Material	Size and rating																		
	304 stainless steel	JIS 10K 80A																		
		JIS 10K 100A																		
		JIS 30K 80A																		
		JIS 30K 100A																		
		ANSI/JPI 150LB 3"																		
		ANSI/JPI 150LB 4"																		
		ANSI/JPI 300LB 3"																		
		ANSI/JPI 300LB 4"																		
		DIN PN40 DN80																		
		DIN PN16 DN100																		
	JIS 20K 80A																			
	ANSI/JPI 600LB 3"																			
	Carbon steel	JIS 10K 80A																		
		JIS 10K 100A																		
		JIS 30K 80A																		
		JIS 30K 100A																		
		ANSI/JPI 150LB 3"																		
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DIN PN40 DN80																				
DIN PN16 DN100																				
316 stainless steel	JIS 10K 80A																			
	ANSI/JPI 150LB 3B																			
	ANSI/JPI 150LB 4B																			
	ANSI/JPI 300LB 3B																			
	ANSI/JPI 300LB 4B																			
	ANSI/JPI 600LB 3B																			
6																				
	0.32 ---- 32																			
	1.3 ---- 130																			
5 ---- 500																				
7	<Material>																			
		LP side		HP side																
	Process cover	Diaphragm	Wetted sensor	Diaphragm and flange face																
	316 stainless steel	316 stainless steel	316 stainless steel	316 stainless steel																
	316 stainless steel	316 stainless steel	316 stainless steel	Hastelloy-C																
	316 stainless steel	316 stainless steel	316 stainless steel	Monel																
	316 stainless steel	316 stainless steel	316 stainless steel	Tantalum																
	316 stainless steel	316 stainless steel	316 stainless steel	Diaphragm:																
				316L stainless steel																
				+Au coating																
				Flange face:																
				316 stainless steel																
	316 stainless steel	Hastelloy-C	Hastelloy-C lining	Hastelloy-C																
	316 stainless steel	Monel	Monel lining	Monel																
	316 stainless steel	Tantalum	Tantalum lining	Tantalum																
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Monel lining	Monel	Monel lining	Monel																	
Tantalum lining	Tantalum	Tantalum lining	Tantalum																	
316 stainless steel	316 stainless steel	316 stainless steel	Titanium																	
316 stainless steel	316 stainless steel	316 stainless steel	Zirconium																	
9	<Digital indicator, arrester and communication>																			
	Digital indicator	Arrester	Communication type																	
	None	None	Foundation Fieldbus																	
	None	Yes	Foundation Fieldbus																	
	Yes	None	Foundation Fieldbus																	
	Yes	Yes	Foundation Fieldbus																	
	None	None	Profibus																	
	None	Yes	Profibus																	
	Yes	None	Profibus																	
	Yes	Yes	Profibus																	

Remote seal type differential pressure transmitter : FDD

Digit	Description	Note	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	21	← Digit No. of code																																					
4	<p><Conduit connection></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">G 1/2 (×1)</td> <td rowspan="4" style="font-size: 2em; vertical-align: middle;">}</td> <td rowspan="4" style="vertical-align: middle;">Combination with 12th digit code "C, E, P, Q" are not available.</td> </tr> <tr> <td>1/2-14NPT (×1)</td> </tr> <tr> <td>Pg13.5 (×1)</td> </tr> <tr> <td>M20 × 1.5 (×1)</td> </tr> <tr> <td colspan="3">-----</td> </tr> <tr> <td>G 1/2 (×2)</td> <td></td> <td></td> </tr> <tr> <td>1/2-14NPT (×2)</td> <td></td> <td></td> </tr> <tr> <td>Pg13.5 (×2)</td> <td></td> <td></td> </tr> <tr> <td>M20 × 1.5 (×2)</td> <td></td> <td></td> </tr> </table>	G 1/2 (×1)	}	Combination with 12th digit code "C, E, P, Q" are not available.	1/2-14NPT (×1)	Pg13.5 (×1)	M20 × 1.5 (×1)	-----			G 1/2 (×2)			1/2-14NPT (×2)			Pg13.5 (×2)			M20 × 1.5 (×2)				F	D					4								0																		
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10	<Approvals for hazardous, for fieldbus> None (for ordinary locations) TIIS, Flameproof (Conduit seal) TIIS, Flameproof (Cable gland seal) FM, Flameproof (or explosionproof) CSA, Flameproof (or explosionproof) ATEX, Flameproof ATEX, Intrinsic safty (Entity) SAA, Flameproof (or explosionproof) ATEX, FISCO	Approval pending Approval pending Approval pending Approval pending Note 8	F	D	D				4										0		
11	<Capillary and mounting bracket>																				
	Capillary	Mounting bracket	armor of capillary																		
	1.5 m	304 Stainless steel	PVC	(*4)																	
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13	<Special applications and fill fluid>																				
	Treatment	Fill fluid																			
	Standard	Silicone oil																			
	Standard	Fluorinated oil																			
	Degreasing	Silicone oil																			
	Oxygen service	Fluorinated oil (7th digit code "V", "A", "B", "C" and "D")																			
	Chlorine service	Fluorinated oil (7th digit code "H", "F", "G", "K", "L" and "T")																			
	High temp. 250°C	Silicone oil																			
	High temp. 300°C	Silicone oil																			
	High temp. and vacuum (250°C)	Silicone oil	7th digit code "V", "A", "B", "C", and "D"	(*7)																	
14	<Teflon membrane>																				
	None	Yes (Available for 5th digit code "0", "2", "4", "6", "8", "A", "C", "E", "G", "J", "P", "M", "R", "S", "T", "V", "X" and 7th digit code "V", "H", "M", "T", "P", "R". Not available for the 13th digit code "H", "J", "S", "T", "K".)																			
21	<Other options>																				
	High accuracy type	Low temperature effect type																			
	H+J																				

- 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) In case of 13th digit code "S", "T", "K" and 5th digit code "1", "3", "5", "7", "B", "D", "F", "H", "Q", "K", "U", "W" are available.
- Note 3: (*3) Available for 6th digit code "2, 3" and 5th digit code "0, 2, 4, 6, 8, A, C, E, G, J, P, M, R, S, T, W".
- Note 4: (*4) Available for 13th digit code "Y, W, G, A, D".
Inquire about in case of 13th other code.
- Note 5: (*5) Available for 13th digit code "Y", "W", "G", "A", "D", "H", "J", "S", "T", "K".
- Note 6: (*6) Customer tag number can be engraved on standard stainless steel name plate. If extra tag plate is required, select "Yes".
- Note 7: (*7) Treatment; Standard
- Note 8: (*8) In case of 10th code is "4" (ATEX, FISCO), then the 9th code, E, S, V and W (with arrester option) are not available.

Small frange type level transmitter : FDY

Digit	Description	Note	Digit No. of code																																																																							
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10	<Approvals for hazardous, for fieldbus> None (for ordinary locations) TIIS, Flameproof (Conduit seal) TIIS, Flameproof (Cable gland seal) FM, Flameproof (or explosionproof) CSA, Flameproof (or explosionproof) ATEX, Flameproof ATEX, Intrinsic safty (Entity) SAA, Flameproof (or explosionproof) ATEX, FISCO	Approval pending Approval pending Approval pending Approval pending Note 4	F	D	Y					4													
11	<Diaphragm extension [mm]> <u>Extension [mm]</u> <u>Applicable material code</u> 0 Any 50 100 } (7th digit code "V" only, 1½ in. flange is not applicable) 150 200												Y	A	B	C	D						
12	<Options> <u>Extra SS tag plate</u> <u>Stainless steel elec. housing</u> <u>Coating of cell</u> None None None Yes None None None Yes None Yes (*2) Yes None ----- None None Yes Yes None Yes None Yes Yes Yes Yes Yes	Note 2												Y	B	C	E	M	N	P	Q		
13	<Special applications and fill fluid> <u>Treatment</u> <u>Fill fluid</u> Standard Silicone oil Standard Fluorinated oil Degreasing Silicone oil ----- Oxygen service Fluorinated oil (7th digit code "V" only) Chlorine service Fluorinated oil (7th digit code "C", "E", "H", "T", "B", "U") High temp. 250°C Silicone oil (7th digit code "V" only) High temp. and vacuum (250°C) Silicone oil (7th digit code "V" only)													Y	W	G	A	D	H	S			
14	<O-ring / Gasket and Teflon membrane> <u>O-ring / Gasket</u> <u>Teflon membrane</u> Viton (O-ring) None Teflon (gasket) None ----- Viton (O-ring) Yes } (11th digit code "Y" only) Teflon (gasket) Yes } (13th digit code "H", "S" are not available.)																	A	B	C	D		
15	<Bolt/nut> (*3) Cr-Mo alloy hexagon socket head cap screw/carbon steel nut Cr-Mo alloy hexagon bolt/nut 304 stainless steel bolt / 304 stainless steel nut	Note 3																	A	B	E		
21	<Other options> High accuracy type Low temperature effect type H+J																				H	J	K

- Note 1: (*1) 100: 1 turn down is possible for model FDY, but should be used at a span greater than 1/40 of the maximum span for better performance.
- Note 2: (*2) Customer tag number can be engraved on standard stainless steel name plate. If extra tag plate is required, select "Yes".
- Note 3: (*3) In case of tropical use, select stainless bolts and nuts.
- Note 4: (*4) In case of 10th code is "4" (ATEX, FISCO), then the 9th code, E, S, V and W (with arrester option) are not available.

Small frange remote seal type differential pressure transmitter : FDX

Digit	Description	Note	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	Digit No. of code																												
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4	<p><Conduit connections></p> <p>G 1/2 (x1) 1/2 - 14NPT (x1) Pg13.5 (x1) M20 x 1.5 (x1)</p> <p>G 1/2 (x2) 1/2 - 14NPT (x2) Pg13.5 (x2) M20 x 1.5 (x2)</p> <p>Combination with 12th digit code "C, E, P, Q" are not available.</p>						A B C D S T V W																																													
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Tantalum	Tantalum	0																																																		
9	<p><Digital indicator, arrester and communication></p> <table border="1"> <thead> <tr> <th>Digital indicator</th> <th>Arrester</th> <th>Communication type</th> </tr> </thead> <tbody> <tr> <td>None</td> <td>None</td> <td>Foundation Fieldbus</td> </tr> <tr> <td>None</td> <td>Yes</td> <td>Foundation Fieldbus</td> </tr> <tr> <td>Yes</td> <td>None</td> <td>Foundation Fieldbus</td> </tr> <tr> <td>Yes</td> <td>Yes</td> <td>Foundation Fieldbus</td> </tr> <tr> <td>None</td> <td>None</td> <td>Profibus</td> </tr> <tr> <td>None</td> <td>Yes</td> <td>Profibus</td> </tr> <tr> <td>Yes</td> <td>None</td> <td>Profibus</td> </tr> <tr> <td>Yes</td> <td>Yes</td> <td>Profibus</td> </tr> </tbody> </table>	Digital indicator	Arrester	Communication type	None	None	Foundation Fieldbus	None	Yes	Foundation Fieldbus	Yes	None	Foundation Fieldbus	Yes	Yes	Foundation Fieldbus	None	None	Profibus	None	Yes	Profibus	Yes	None	Profibus	Yes	Yes	Profibus																								
Digital indicator	Arrester	Communication type																																																		
None	None	Foundation Fieldbus																																																		
None	Yes	Foundation Fieldbus																																																		
Yes	None	Foundation Fieldbus																																																		
Yes	Yes	Foundation Fieldbus																																																		
None	None	Profibus																																																		
None	Yes	Profibus																																																		
Yes	None	Profibus																																																		
Yes	Yes	Profibus																																																		
10	<p><Approvals for hazardous, for fieldbus></p> <p>None (for ordinary locations)</p> <p>TIIS, Flameproof (Conduit seal) TIIS, Flameproof (Cable gland seal) FM, Flameproof (or explosionproof) CSA, Flameproof (or explosionproof) ATEX, Flameproof</p> <p>ATEX, Intrinsic safety (Entity) SAA, Flameproof (or explosionproof)</p> <p>ATEX, FISCO</p>	<p>Approval pending</p> <p>Approval pending</p> <p>Approval pending</p>																																																		

Digit	Description	Note	Digit No. of code																					
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
11	<Capillary and mounting bracket>		F	D	X				4	-														
	mounting bracket	Capillary																						
	Stainless steel	1.5m	PVC																					
		3m	} (*4)																					
5m																								
	1.5m	Stainless steel																						
	3m																							
	5m																							
12	<Options>																							
	Extra tag tag plate	Stainless steel elec. housing	Coating of cell																					
	None	} (*3)	None	None																				
			Yes	None	None																			
			None	Yes	None																			
	Yes	Yes	None																					
	None	None	Yes																					
	Yes	None	Yes																					
None	Yes	Yes																						
Yes	Yes	Yes																						
13	<Treatment/Fill fluid>																							
	Treatment	Fill fluid																						
	Standard	Silicone oil (for general use)																						
	Standard	Fluorinated oil																						
	Degreasing	Silicone oil																						
	Oxygen service	Fluorinated oil (7th digit code "V", "A", "B", "C" and "D")																						
	Chlorine service	Fluorinated oil (7th digit code "H" and "T")																						
	High temp. 250°C	Silicone oil } (7th digit code "V", "A", "B", "C" and "D")																						
High temp. and vacuum (250°C)	Silicone oil }																							
14	<Teflon membrane>																							
	None																							
Yes	(Available for 7th digit code "V", "H", "M", "T". Not available for 5th digit code "Y" and 13th digit code "H", "S".)																							

- Note 1: (*1) Direct mounting adapter type is specified at 16th to 20th digit.
Direct mounting adapter is available only for 7th digit code "V".
- Note 2: (*2) Diaphragm extension is available only for 2" (50A) flanges.
- Note 3: (*3) Customer tag number can be engraved on standard stainless steel name plate. If extra tag plate is required, select "Yes".
- Note 4: (*4) Available for 13th digit code "Y, W, G, A, D".
Inquire about in case of 13th other code.
- Note 5: (*5) In case of 10th code is "4" (ATEX, FISCO), then the 9th code, E, S, V and W (with arrester option) are not available.

Specifications of Direct Mounting Adapter {for 15, 20A (1/2, 3/4") connection} and others

- Note 1. When ordering the instrument with direct mounting adapter, specify "Y" in the 5th digit of Code Symbol, and specify 16th digit to 20th digit.
When ordering the instrument without direct mounting adapter, nothing should be filled in the 16th to 20th digit.
2. Unless otherwise described in the specifications, leave the 21st digit blank.

Digit	Description	Note	Digit No. of code																			
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
16, 17	<Process connection (direct mounting adapter)>		F	D	X				4	-												
	JIS 10K 15A																					
	JIS 10K 20A																					
	JIS 20K 15A																					
	JIS 20K 20A																					
	JIS 30K 15A																					
	JIS 30K 20A																					
	ANSI/JPI 150LB 1/2"																					
	ANSI/JPI 150LB 3/4"																					
	ANSI/JPI 300LB 1/2"																					
	ANSI/JPI 300LB 3/4"																					
	Screw connection Rc1/2																					
	Screw connection Rc3/4																					
	Screw connection Rc1/2 - 14NPT																					
	Screw connection Rc3/4 - 14NPT																					
	18	<Material (direct mounting adapter)>																				
Adapter		Bolts/nuts (*1)																				
	316 Stainless Steel	Cr-Mo steel/carbon steel																				
19	<Vent/drain (for direct mounting adapter)>																					
	Standard																					
	Long type																					
20	<Gasket (for direct mounting adapter)>																					
	Standard (Teflon) (Only Y, W, G, A and D can be specified on 13th digit). For high temperature (spiral gasket) (Only H and S can be specified on 13th digit).																					
21	<Other options>																					
	High accuracy type																					
	Low temperature effect type																					
	H+J																					

Note (*1) For connection of transmitter receiving pressure unit and direct mounting adapter

Specifications of Direct Mounting Adapter {for 15, 20A (1/2, 3/4") connection} and others

- Note 1. When ordering the instrument with direct mounting adapter, specify "Y" in the 5th digit of Code Symbol, and specify 16th digit to 20th digit.
 When ordering the instrument without direct mounting adapter, nothing should be filled in the 16th to 20th digit.
2. Unless otherwise described in the specifications, leave the 21st digit blank.

Digit	Description	Note	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	← Digit No. of code	
16, 17	<Process connection (direct mounting adapter)> JIS 10K 15A JIS 10K 20A JIS 20K 15A JIS 20K 20A JIS 30K 15A JIS 30K 20A JIS 63K 15A JIS 63K 20A ANSI/JPI 150LB 1/2" ANSI/JPI 150LB 3/4" ANSI/JPI 300LB 1/2" ANSI/JPI 300LB 3/4" ANSI/JPI 600LB 1/2" ANSI/JPI 600LB 3/4" Screw connection Rc1/2 Screw connection Rc3/4 Screw connection Rc1/2 - 14NPT Screw connection Rc3/4 - 14NPT		F	D	M					4	-														
18	<Material (direct mounting adapter)> Adapter Bolts/nuts (* 1) 316 Stainless Steel Cr-Mo steel/carbon steel	Note 1																							
19	<Vent/drain (for direct mounting adapter)> Standard Long type																								
20	<Gasket (for direct mounting adapter)> Standard (Teflon)(Only Y, W, G, A and D can be specified on 13th digit). For high temperature (spiral gasket) (Only H and S can be specified on 13th digit).																								
21	<Other options> High accuracy type																								

Note1: (* 1) For connection of transmitter receiving pressure unit and direct mounting adapter

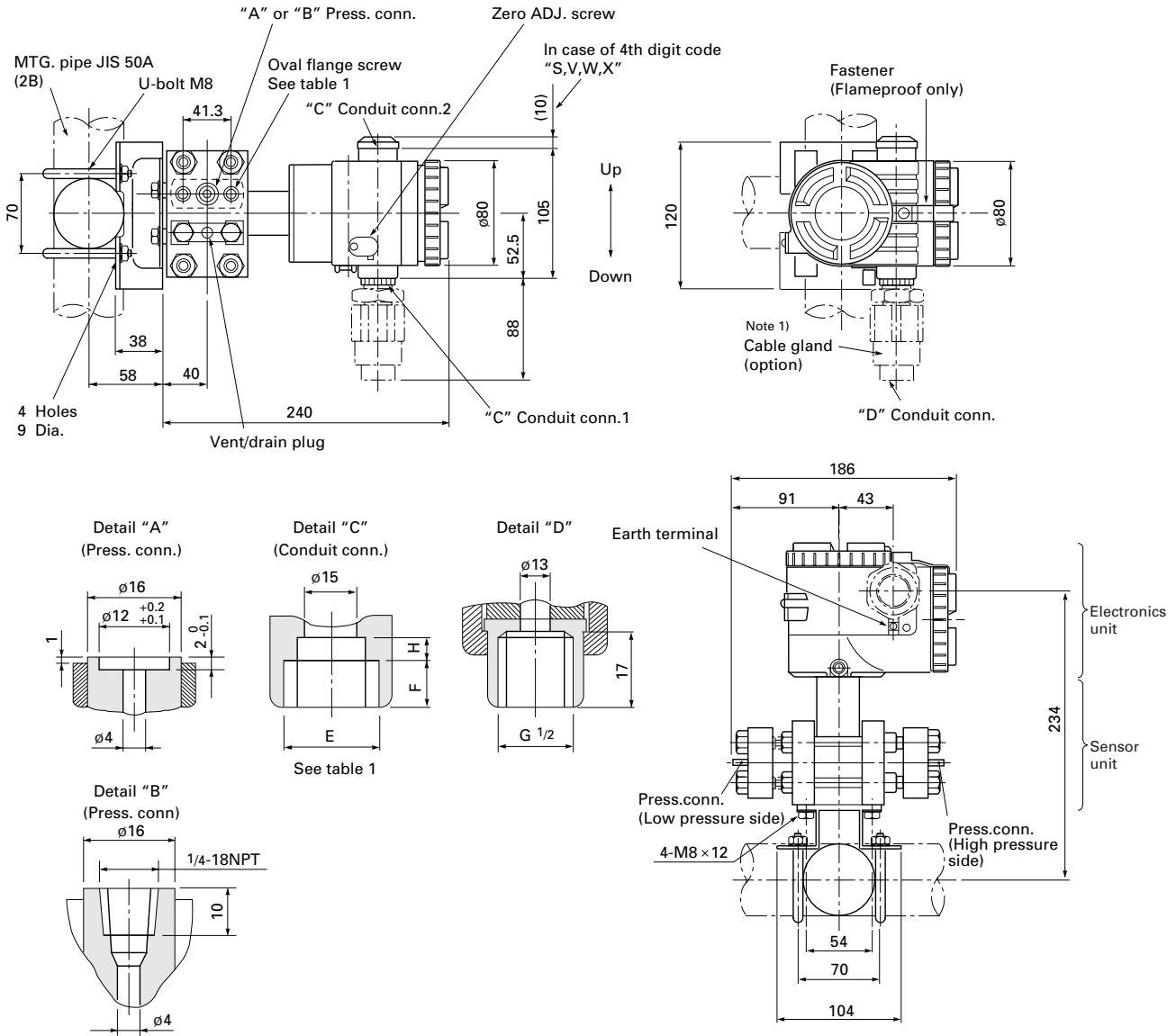
ORDERING INFORMATION

When ordering this instrument, specify:

1. CODE SYMBOLS
2. Calibration range (XD_SCALE) and unit (CAL_UNIT)
 - Unless specified, the range is maximum span.
3. Output scale and unit (OUT_SCALE)
 - Unless specified, the scale is the same as the calibration range.
4. Output mode (L_TYPE)
 - Select any of Direct/Indirect Linear/Indirect SORT.
 - Unless otherwise specified,
 - ① In case of output scale in flow rates
Indirect SORT (extraction output)
 - ② In case of other units
Indirect linear (proportional output)
5. Low flow rate cut point (specify only when needed for flow measurement)
 - Specify in percentages of output scale
6. Output orientation (burnout direction) when abnormality is occurred in the transmitter.
Select Hold / Overscale / Underscale.
Unless specified, output hold function is supplied.
7. Setting of external zero adjustment SW
 - Select either of "valid" and "invalid"
 - Unless otherwise specified, "valid" is selected.
8. Tag No.
 - Up to 26 alphanumerical characters.
 - Unless otherwise specified, the tag No. is EFB-002 (but, not stamped).
9. Node address (if required)
 - Unless specified, "0 × F0" (Foundation Fieldbus), "0 × 03" (Profibus)
10. Display scale and unit (specify only for the transmitter with a digital indicator)
 - For the settable range, contact Fuji Electric Co. Ltd.
 - No low flow cut is performed
 - Unless otherwise specified, it conforms to the output scale.

Differential pressure / flow transmitter : FDC

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

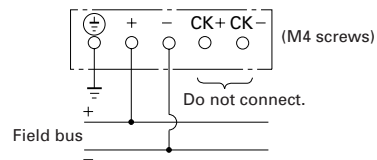


4th digit of the code symbols	Conduit conn.			Oval flange screw
	E	F	H	
A, S	G1/2	17	8	7/16-20UNF Screw depth 10
B, T	1/2-14NPT	16	5	7/16-20UNF Screw depth 10
C, V	Pg13.5	8	4.5	M10 Screw depth 10
D, W	M20 x 1.5	16	5	M10 Screw depth 10
E, X	Pg13.5	8	4.5	7/16-20UNF Screw depth 10

Table 1

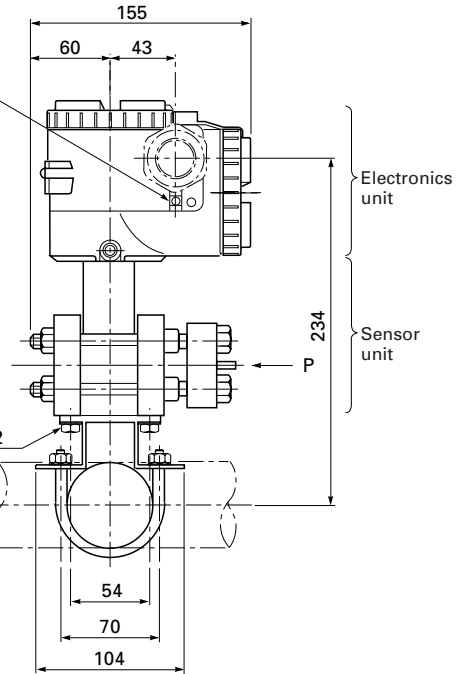
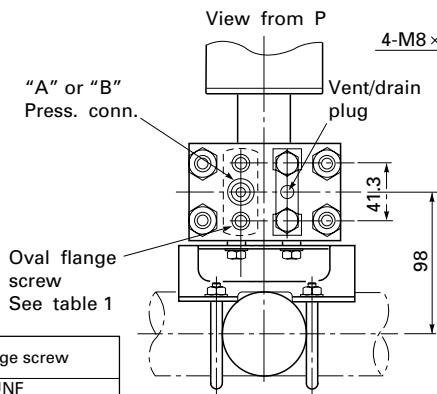
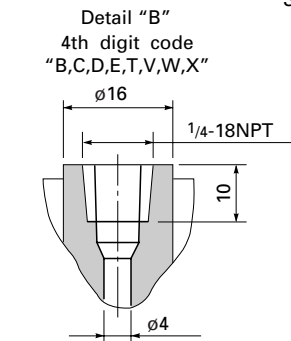
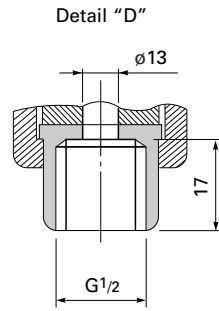
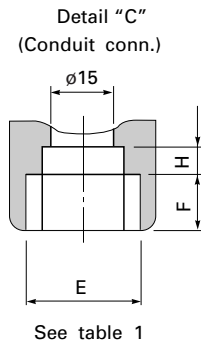
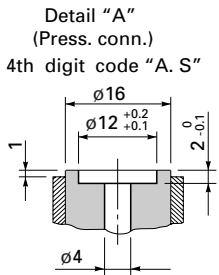
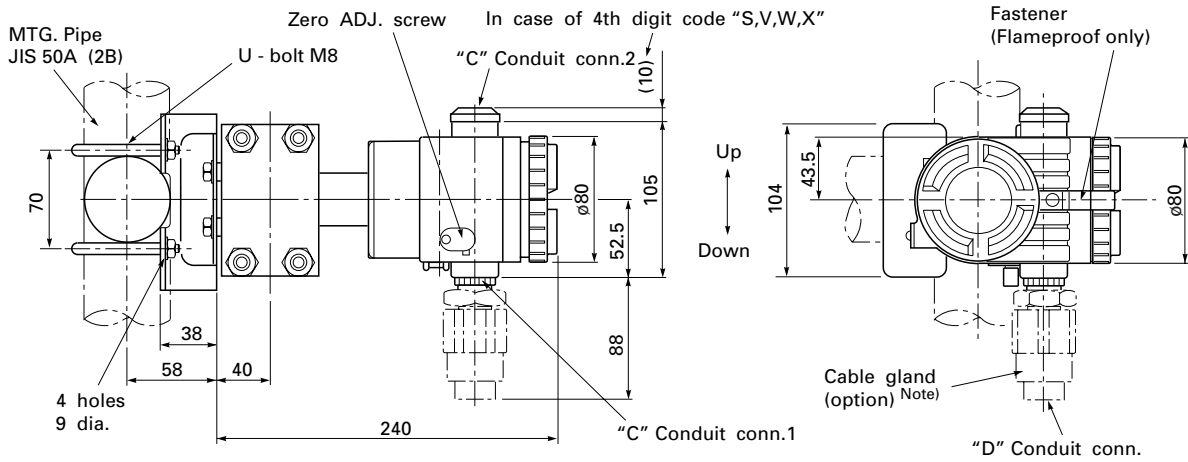
Note 1) Cable gland is supplied in case of 10th digit code "C".
ø11 cable is suitable.

CONNECTION DIAGRAM



Pressure transmitter : FDG

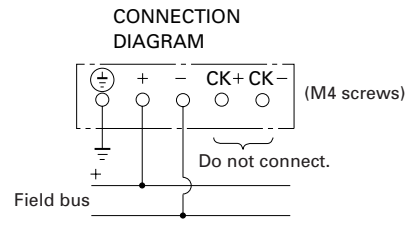
< 7th digit code : B, L, U >



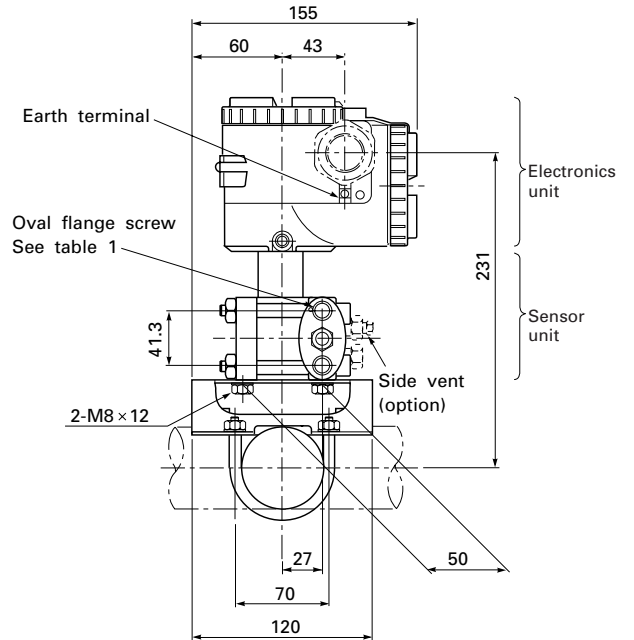
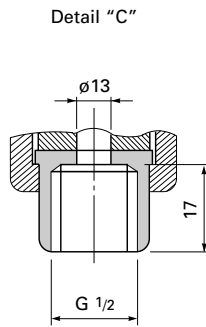
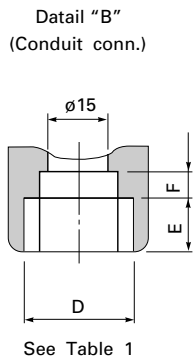
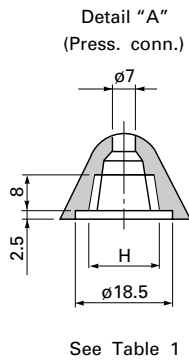
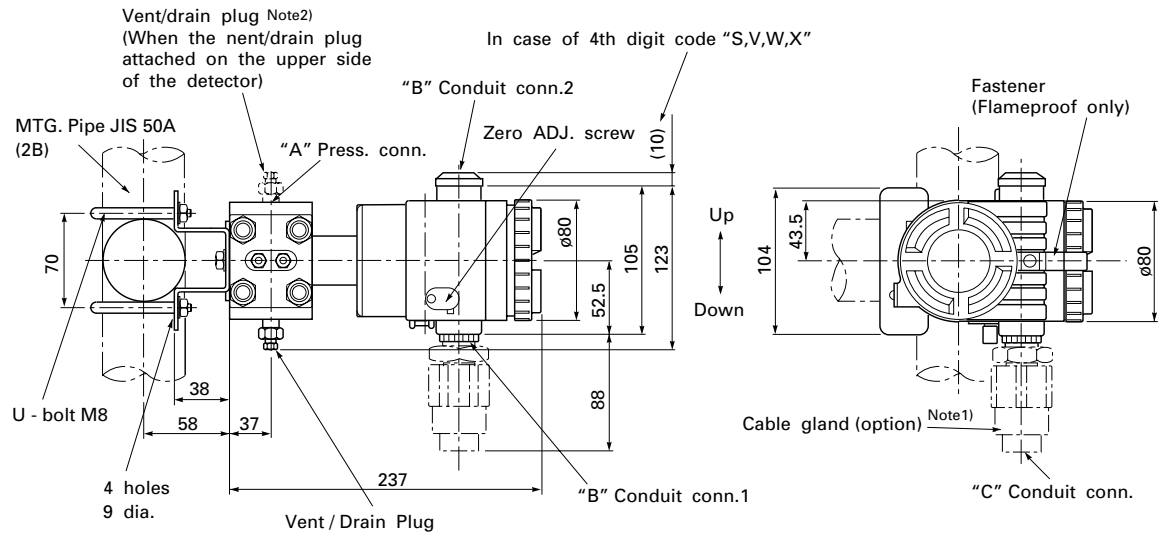
4th digit of the code symbols	Conduit conn.			Oval flange screw
	D	E	F	
A, S	G ¹ / ₂	17	8	⁷ / ₁₆ -20UNF Screw depth10
B, T	1/2-14NPT	16	5	⁷ / ₁₆ -20UNF Screw depth10
C, V	Pg13.5	8	4.5	M10 Screw depth10
D, W	M20×1.5	16	5	M10 Screw depth10
E, X	Pg13.5	8	4.5	⁷ / ₁₆ -20UNF Screw depth10

Table 1

Note) Cable gland is supplied in case of 10th digit code "C".
ø11 cable is suitable.



Absolute pressure transmitter : FDA



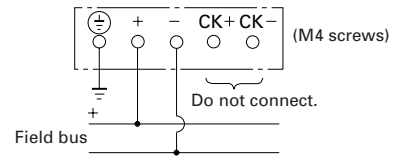
4th digit of the code symbols	Conduit conn.			Press.conn. H	Oval flange screw
	D	E	F		
A, S	G ¹ / ₂	17	8	Rc ¹ / ₄	7/16-20UNF screw depth15
B, T	1/2-14NPT	16	5	1/4-18NPT	7/16-20UNF screw depth15
C, V	Pg13.5	8	4.5	1/4-18NPT	M10 screw depth15
D, W	M20×1.5	16	5	1/4-18NPT	M10 screw depth15
E, X	Pg13.5	8	4.5	1/4-18NPT	7/16-20UNF screw depth15

Table 1

Note1) Cable gland is supplied in case of flamproof packing type.
ø11 cable is suitable.

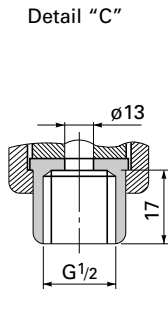
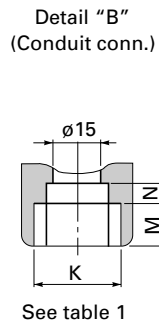
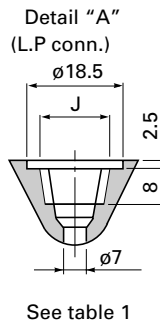
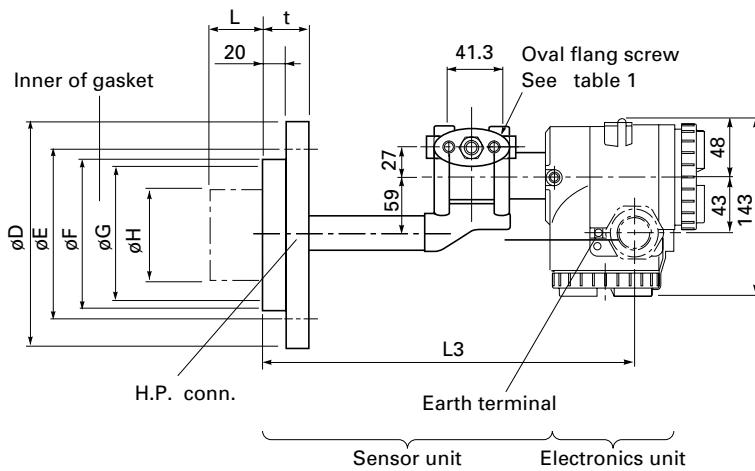
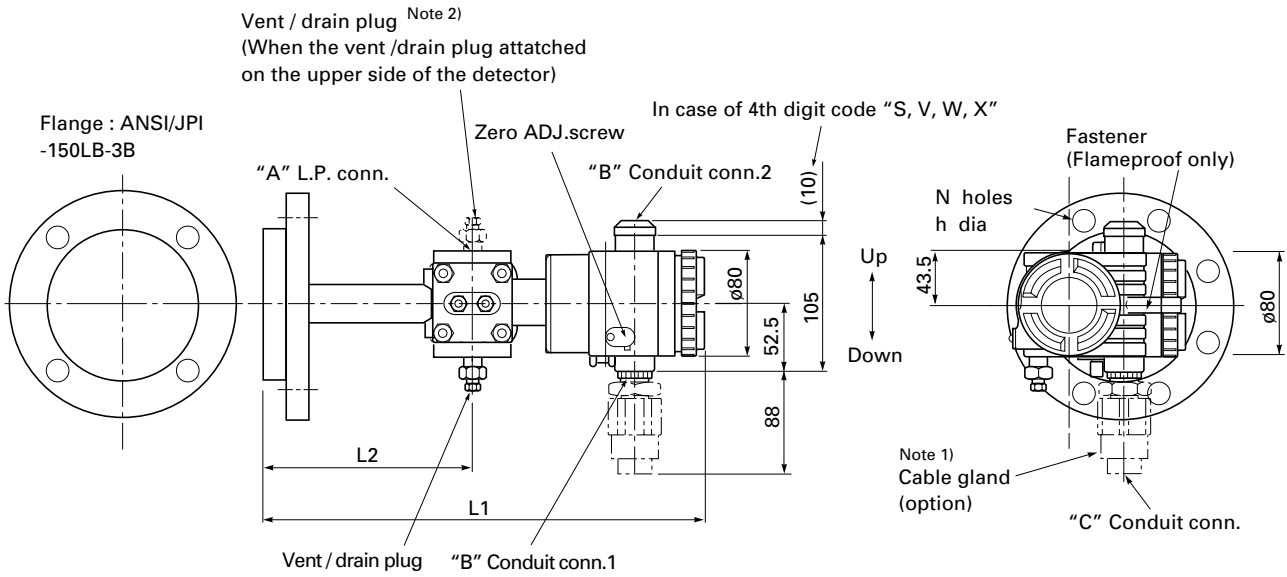
Note2) The pressure connector is located on the down side surface of the detector, when the vent / drainplug is attached on the upper side of the detector.

CONNECTION DIAGRAM



Level transmitter : FDE

< 7th digit code without : B, L, U >



11th digit code	L (mm)	Mass approx. (kg)	L1	L2	L3
Y	0	9.5 ~ 13	360	160	296
A E	50	10 ~ 17	354	154	290
B F	100	10.5 ~ 17.5			
C G	150	11 ~ 18			
D H	200	11.5 ~ 18.5			

φD	φE	φF	φG	φH	t	N-φh	(Flange)
185	150	126	100	73	38	8-19	JIS-10K-80A
200	160	126	100	73	42	8-23	JIS-20K-80A
210	170	126	100	73	48	8-23	JIS-30K-80A
210	175	151	103	96	38	8-19	JIS-10K-100A
240	195	151	103	96	52	8-25	JIS-30K-100A
191	152.5	126	100	73	44	4-20	ANSI-150LB-3B
210	168	126	100	73	49	8-23	ANSI-300LB-3B
210	168	126	100	73	52	8-23	ANSI-600LB-3B
229	190.5	151	103	96	44	8-20	ANSI-150LB-4B
254	200	151	103	96	52	8-23	ANSI-300LB-4B
200	160	126	100	73	44	8-18	DIN PN40 DN80
220	180	151	103	96	40	8-18	DIN PN16 DN100

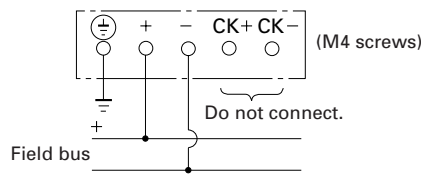
4th digit of the code symbols	Conduit conn.			Press.conn.	Oval flange screw
	K	M	N	J	
A, S	G ¹ / ₂	17	8	Rc ¹ / ₄	⁷ / ₁₆ -20UNF Screw depth 15
B, T	¹ / ₂ -14NPT	16	5	¹ / ₄ -18NPT	⁷ / ₁₆ -20UNF Screw depth 15
C, V	Pg13.5	8	4.5	¹ / ₄ -18NPT	M10 Screw depth 15
D, W	M20×1.5	16	5	¹ / ₄ -18NPT	M10 Screw depth 15
E, X	Pg13.5	8	4.5	¹ / ₄ -18NPT	⁷ / ₁₆ -20UNF Screw depth 15

Table 1

Note 1) Cable gland is supplied in case of flameproof packing type. φ11 cable is suitable.

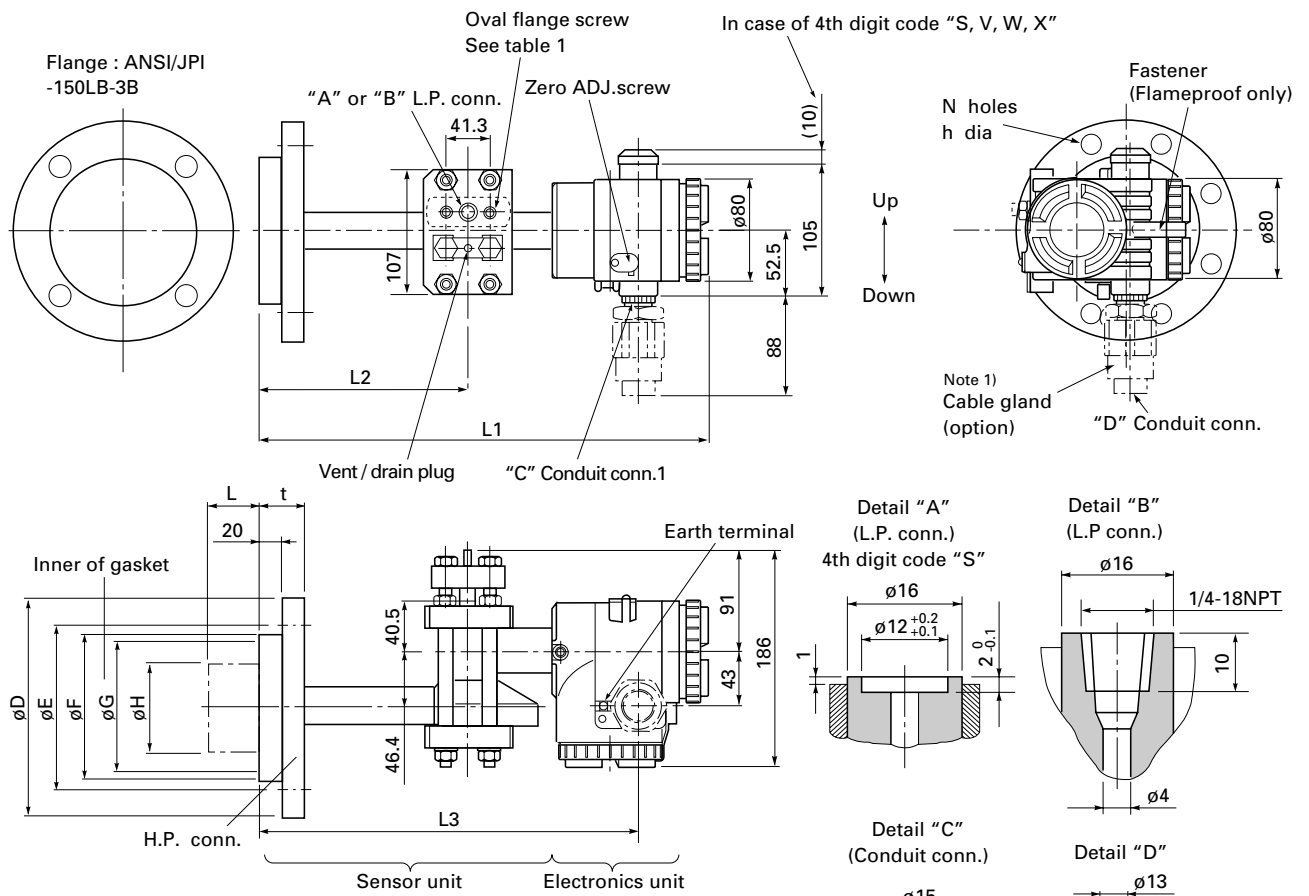
Note 2) The pressure connector is located on the down side surface of the detector, when the vent / detector.

CONNECTION DIAGRAM



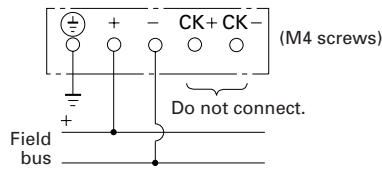
Level transmitter : FDE

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



11th digit code	L (mm)	Mass apprx. (kg)	L1	L2	L3
Y	0	11.5 ~ 15	350	150	286
A E	50	12 ~ 19	344	144	290
B F	100	12.5 ~ 19.5			
C G	150	13 ~ 20			
D H	200	13.5 ~ 20.5			

CONNECTION DIAGRAM



φD	φE	φF	φG	φH	t	N-φh	(Flange)
185	150	126	100	73	38	8-19	JIS-10K-80A
200	160	126	100	73	42	8-23	JIS-20K-80A
210	170	126	100	73	48	8-23	JIS-30K-80A
210	175	151	103	96	38	8-19	JIS-10K-100A
240	195	151	103	96	52	8-25	JIS-30K-100A
191	152.5	126	100	73	44	4-20	ANSI-150LB-3B
210	168	126	100	73	49	8-23	ANSI-300LB-3B
210	168	126	100	73	52	8-23	ANSI-600LB-3B
229	190.5	151	103	96	44	8-20	ANSI-150LB-4B
254	200	151	103	96	52	8-23	ANSI-300LB-4B
200	160	126	100	73	44	8-18	DIN PN40 DN80
220	180	151	103	96	40	8-18	DIN PN16 DN100

4th digit of the code symbols	Conduit conn.			Oval flange screw
	K	M	N	
A, S	G ¹ / 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	M20×1.5	16	5	M10 Screw depth10
E, X	Pg13.5	8	4.5	⁷ / ₁₆ -20UNF Screw depth10

Table 1

Note 1) Cable gland is supplied in case of 10th digit code "C".
φ11 cable is suitable.

Remote seal type differential pressure transmitter : FDD

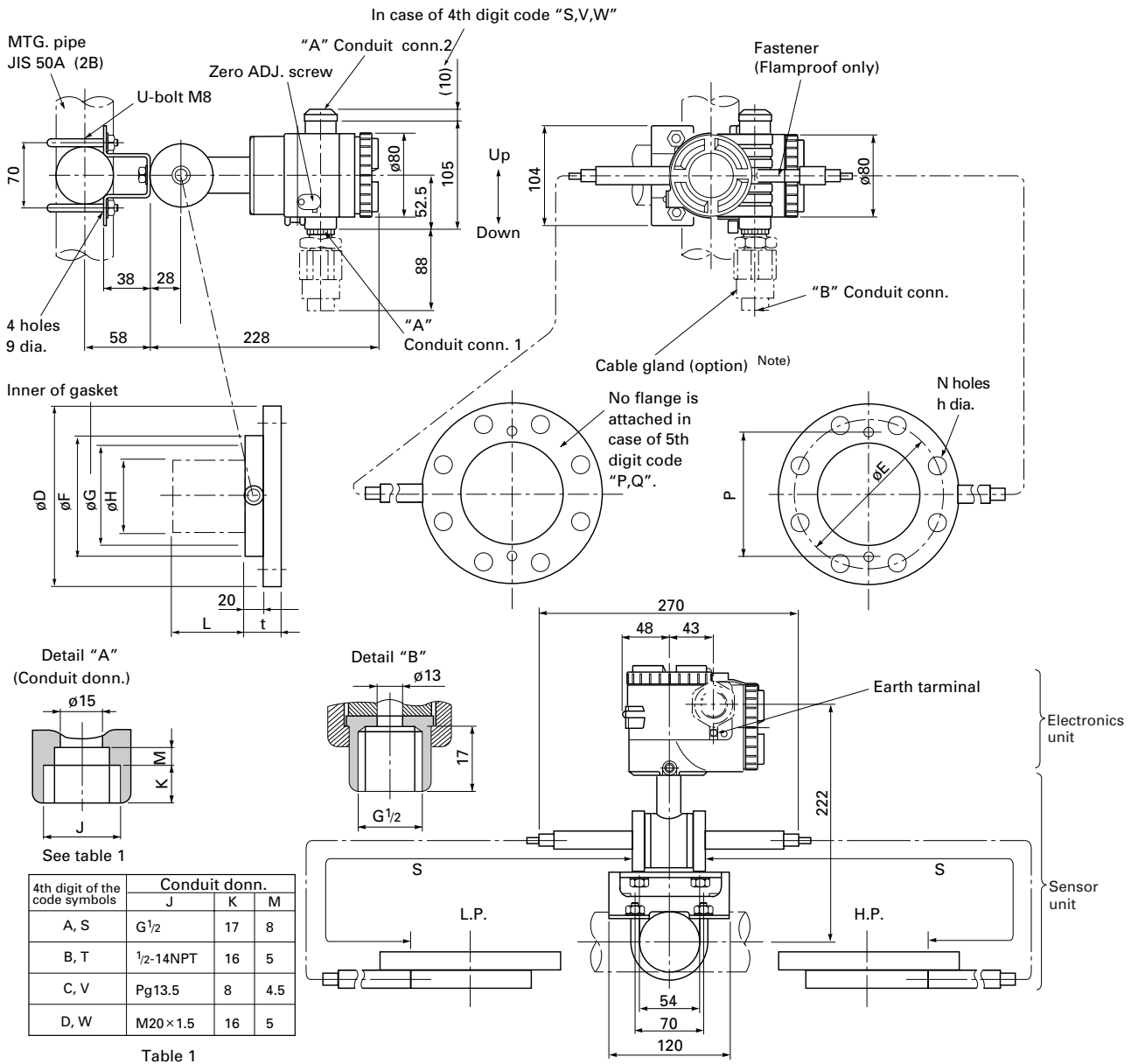


Table 1

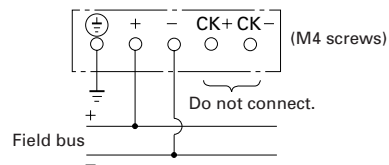
ϕ D	ϕ E	ϕ F	ϕ G	ϕ H	t	P	N- ϕ h	(Flange)
185	150	126	100	73	38	116	8-19	JIS-10K-80A
200	160	126	100	73	42	116	8-23	JIS-20K-80A
210	170	126	100	73	48	116	8-23	JIS-30K-80A
210	175	151	103	96	38	141	8-19	JIS-10K-100A
240	195	151	103	96	52	141	8-25	JIS-30K-100A
191	152.5	126	100	73	44	116	4-20	ANSI-150LB-3B
210	168	126	100	73	49	116	8-23	ANSI-300LB-3B
210	168	126	100	73	52	116	8-23	ANSI-600LB-3B
229	190.5	151	103	96	44	141	8-20	ANSI-150LB-4B
254	200	151	103	96	52	141	8-23	ANSI-300LB-4B
200	160	126	100	73	44	116	8-18	DIN PN40 DN80
220	180	151	103	96	40	141	8-18	DIN PN16 DN100

NOTE) Cable gland is supplied in case of flamproof packing type.
 ϕ 11 cable is suitable.

7th digit code	L	Mass. approx. (kg)
V,H,M,T,P,R	0	14-19.5
A,F	50	15-30.5
B,J	100	15.5-31
C,K	150	16-31.5
D,L	200	16.5-32

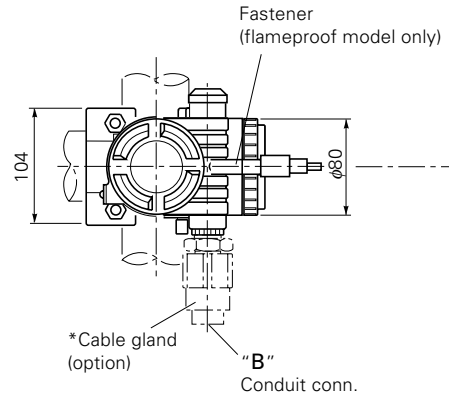
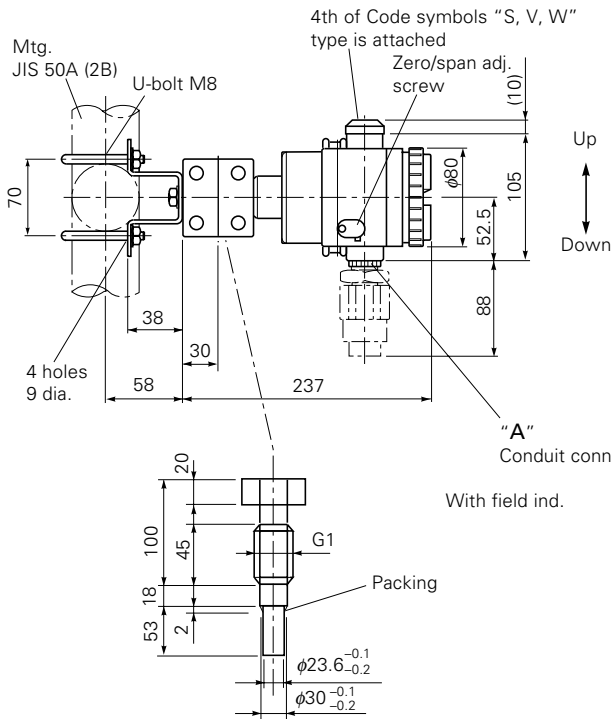
11th digit code	S (m)	11th digit code	S (m)
D,Q	1.5	M,V	7
E,R	3	N,W	8
L,S	5	P,X	10
F,T	6		

CONNECTION DIAGRAM

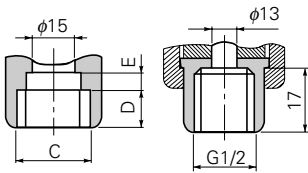


Remote seal type pressure transmitter : FDB

F D B □ K $\begin{matrix} 4 \\ 5 \end{matrix}$ V 4



Details of "A" Details of "B"

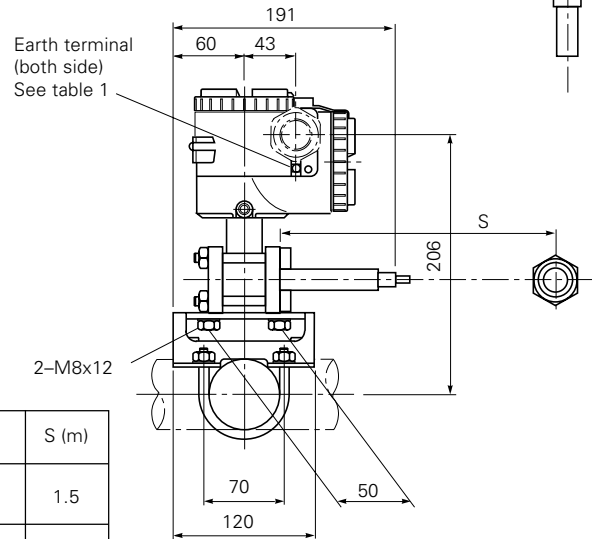


See table 1

4th of Code symbols	Conduit conn.			Earth terminal
	C	D	E	
S	G1/2	17	8	M4
T	1/2-14NPT	16	5	No. 8-32UNC
V	Pg13.5	8	4.5	M4
W	M20x1.5	16	5	M4

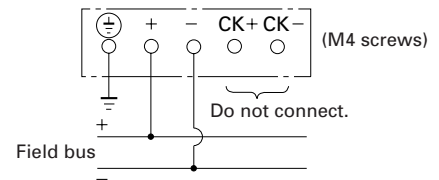
Table 1

Note *: Cable gland is supplied in case of flameproof packing type. $\phi 11$ cable is suitable.



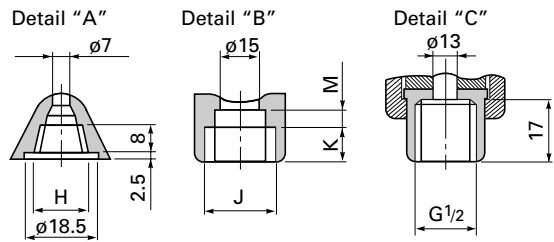
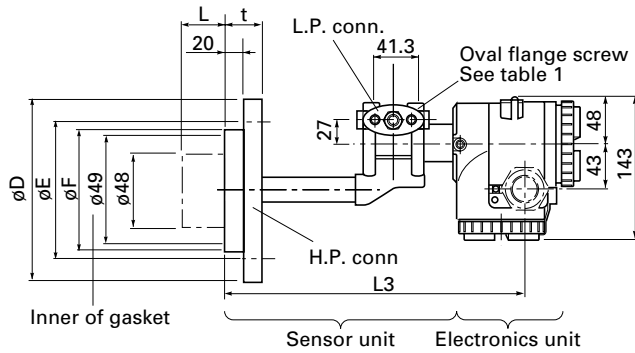
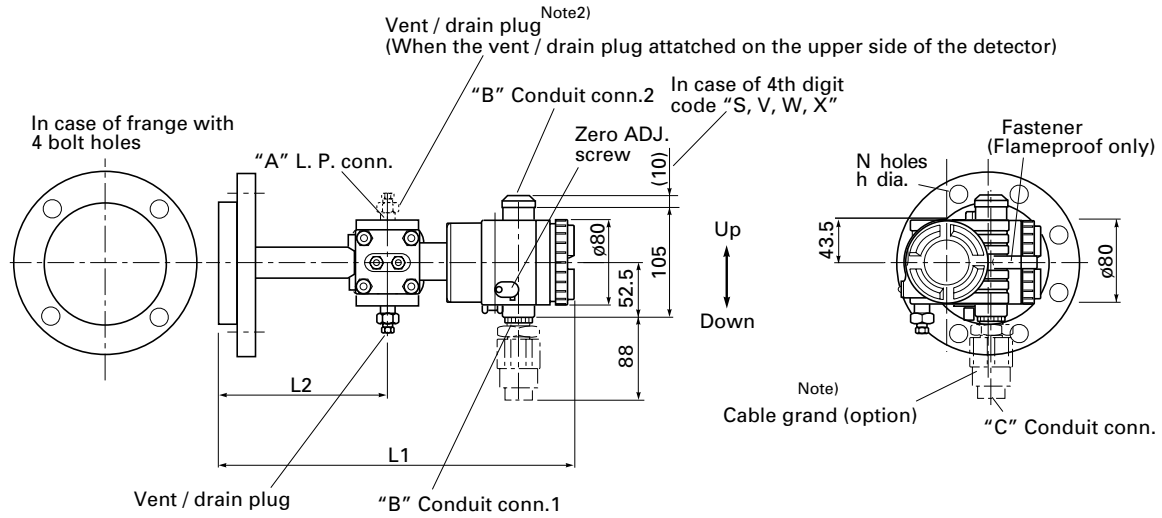
11th of Code symbols	S (m)
$\begin{matrix} D \\ Q \end{matrix}$	1.5
$\begin{matrix} E \\ R \end{matrix}$	3
$\begin{matrix} L \\ S \end{matrix}$	5
$\begin{matrix} F \\ T \end{matrix}$	6
$\begin{matrix} M \\ V \end{matrix}$	7
$\begin{matrix} N \\ W \end{matrix}$	8
$\begin{matrix} P \\ X \end{matrix}$	10

CONNECTION DIAGRAM



Small frange type level transmitter : FDY

< 7th digit code without : B, L, U >



See table 1

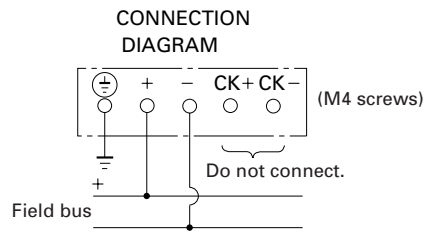
11th digit of Code symbols	L [mm]	Mass approx. [kg]	L1	L2	L3
Y	0	9.5 to 12	360	160	296
A	50	10 to 17	354	154	290
B	100	10.5 to 17.5			
C	150	11 to 18			
D	200	11.5 to 18.5			

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

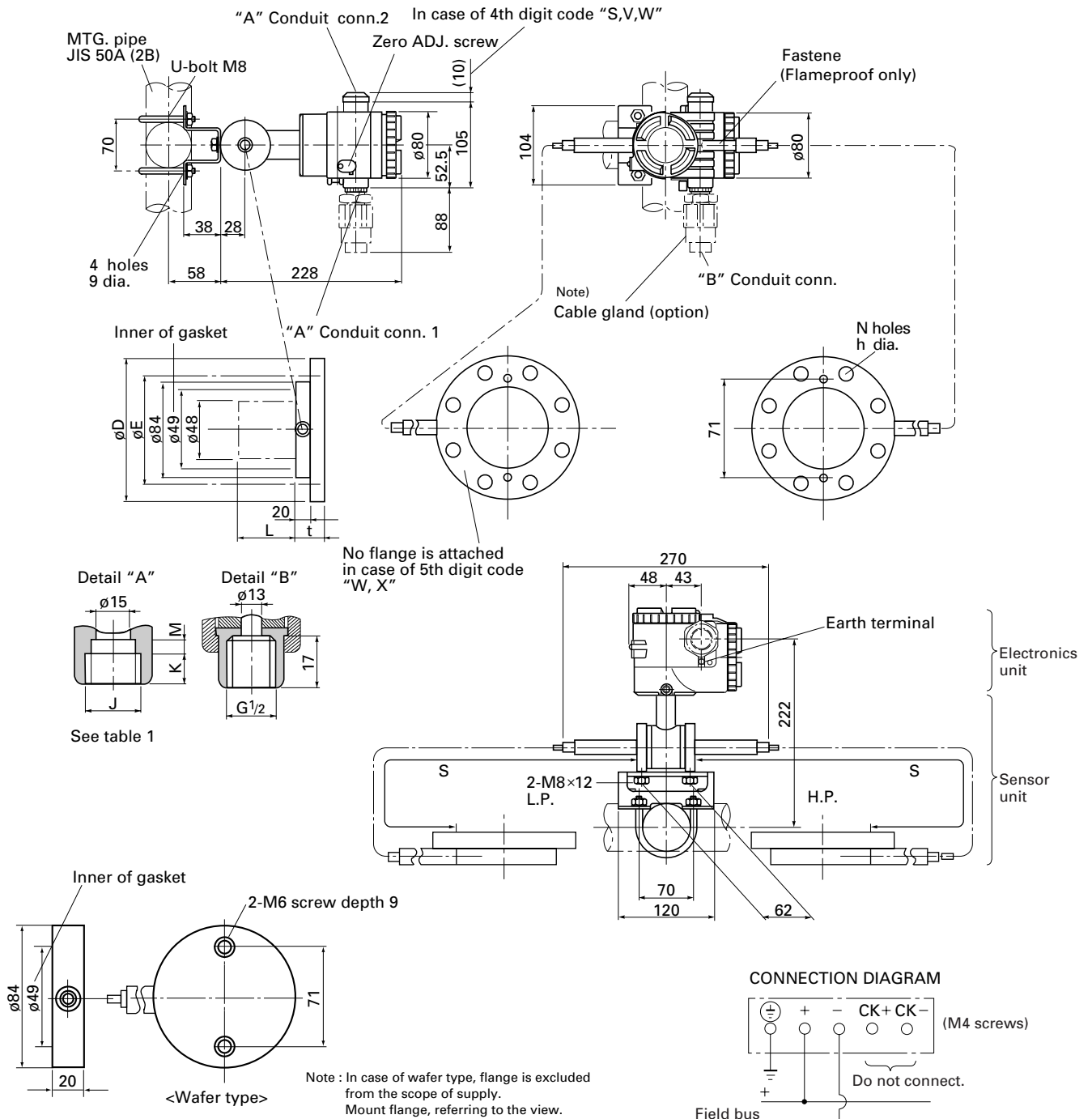
4TH DIGIT OF THE CODE SYMBOLS	CONDUIT CONN.			PRESS.CONN.	Oval flange screw
	J	K	M	H	
A, S	G1/2	17	8	Rc1/4	7/16-20UNF Screw depth15
B, T	1/2-14NPT	18	5	1/4-18NPT	7/16-20UNF Screw depth15
C, V	Pg13.5	8	4.5	1/4-18NPT	M10 Screw depth15
D, W	M20 x 1.5	16	5	1/4-18NPT	M10 Screw depth15
E, X	Pg13.5	8	4.5	1/4-18NPT	7/16-20UNF Screw depth15

Table 1

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



Small frange remote seal type differential pressure transmitter : FDX



5th digit of code symbols	ϕD	ϕE	t	N- ϕ	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	38	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
6,N	175	130	52	4-25	JIS-63K-40A
7,P	185	145	54	8-23	JIS-63K-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-150LB-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
E,U	156	114.3	42.5	4-23	ANSI/JPI-600LB-1 1/2B
F,V	165	127	45.5	8-20	ANSI/JPI-600LB-2B

4th digit of Code symbols	Conduit conn.		
	J	K	M
A, S	$G^{1/2}$	17	8
B, T	1/2-14NPT	16	5
C, V	Pg13.5	8	4.5
D, W	M20 x 1.5	16	5

11th digit of Code symbols	Capillary length : S [mm]
D,Q	1500
E,R	3000
L,S	5000

Table 1

7th digit of Code symbols	L	Mass approx. [kg]
V, H, M, T	0	14 to 19.5
A	50	15 to 30.5
B	100	15.5 to 31
C	150	16 to 31.5
D	200	16.5 to 32

NOTE) Cable gland is supplied in case of flameproof packing type. $\phi 11$ cable is suitable.

Small frange remote seal type differential pressure transmitter : FDX

<With direct mount adaptor (screw connection type)>

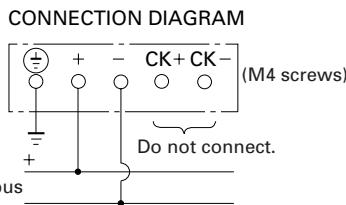
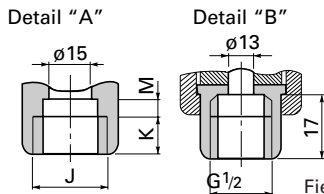
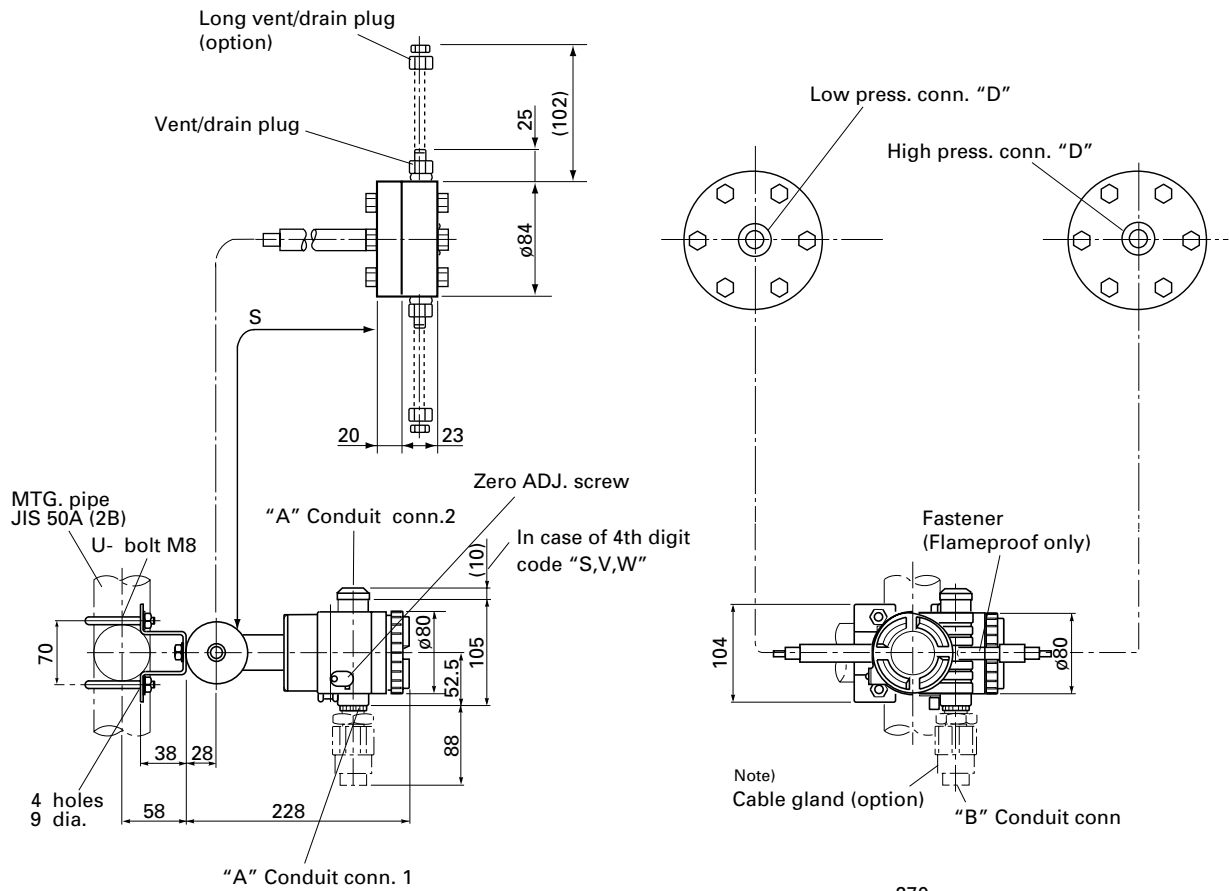
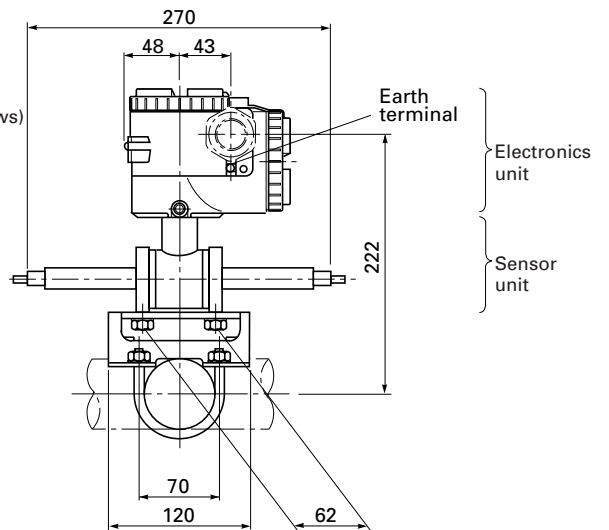


Table 1

4th digit of Code symbols	Conduit conn.		
	J	K	M
A, S	G 1/2	17	8
B, T	1/2-14NPT	16	5
C, V	Pg13.5	8	4.5
D, W	M20 x 1.5	16	5

11th digit of Code symbols	Capillary length : S [mm]
D,Q	1500
E,R	3000
L,S	5000

16th digit of Code symbols	17th digit of Code symbols	Press. conn. "D"
S	R	Rc 1/2
S	N	1/2-14NPT
S	2	Rc 3/4
S	T	3/4-14NPT



NOTE) Cable gland is supplied in case of 10th digit code "C".
ø11 cable is suitable.

Small frange remote seal type pressure transmitter : FDW

<With direct mount adaptor>

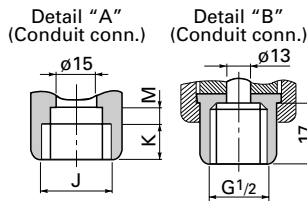
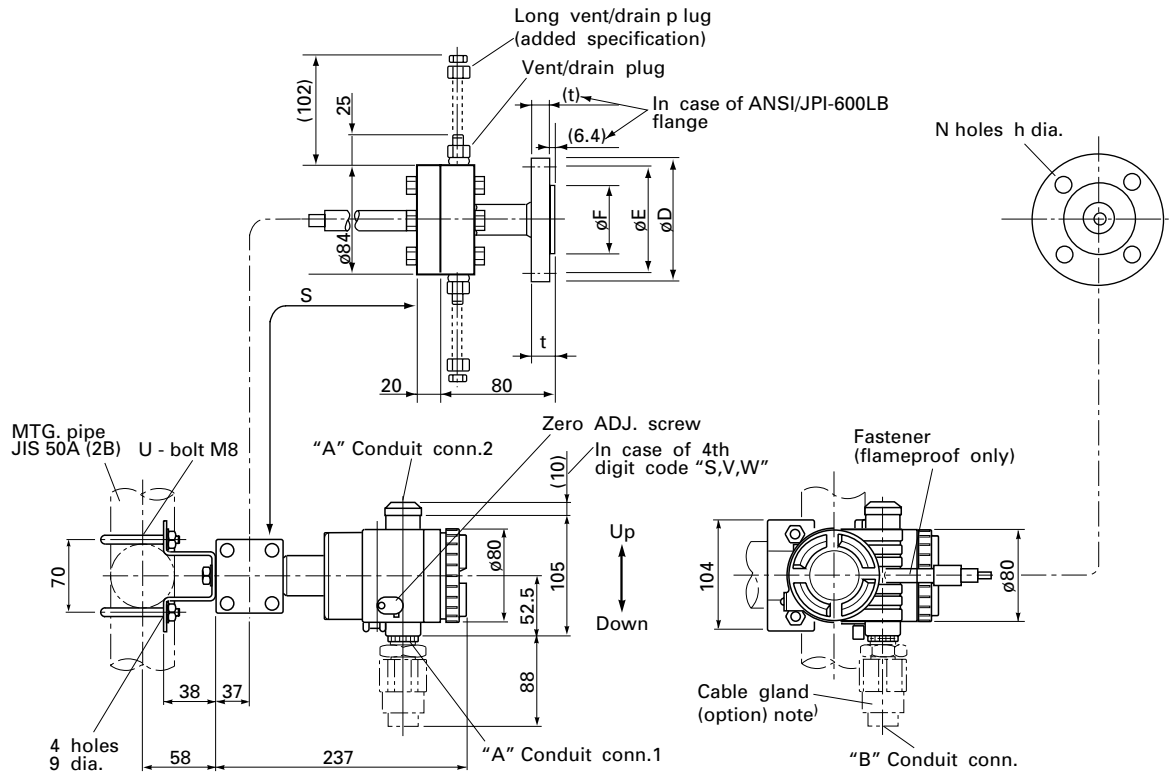
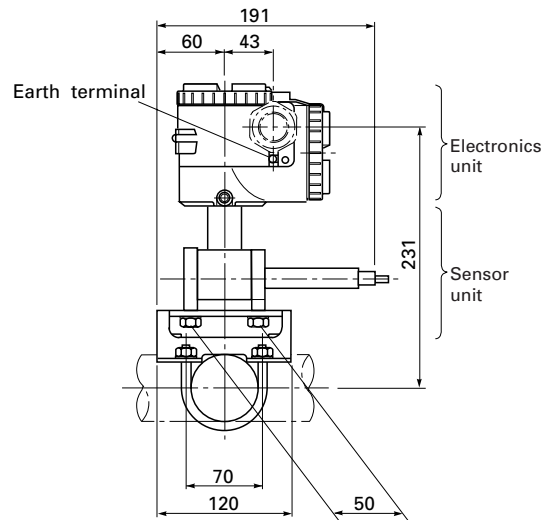


Table 1

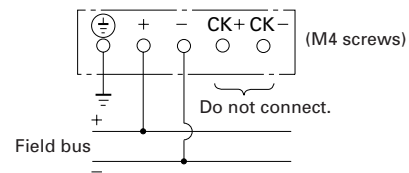
4TH DIGIT OF THE CODE SYMBOLS	CONDUIT CONN.		
	J	K	M
A, S	G1/2	17	8
B, T	1/2-14NPT	16	5
C, V	Pg13.5	8	4.5
D, W	M20×1.5	16	5

11th digit of Code symbols	Capillary length : S [mm]
D, Q	1500
E, R	3000
L, S	5000

16th of code symbols	17th of code symbols	ϕD	ϕE	ϕF	t	N- ϕ	Flange
1	1	95	70	51	12	4-15	JIS-10K-15A
1	2	100	75	56	14	4-15	JIS-10K-20A
2	1	95	70	51	14	4-15	JIS-20K-15A
2	2	100	75	56	16	4-15	JIS-20K-20A
3	1	115	80	55	18	4-19	JIS-30K-15A
3	2	120	85	60	18	4-19	JIS-30K-20A
6	1	120	85	55	23	4-19	JIS-63K-15A
6	2	135	95	60	25	4-23	JIS-63K-20A
1	H	89	60.3	34.9	11.5	4-16	ANSI/JPI-150LB 1/2B
1	T	98	69.9	42.9	13	4-16	ANSI/JPI-150LB 3/4B
2	H	95	66.7	34.9	14.5	4-16	ANSI/JPI-300LB 1/2B
2	T	117	82.5	42.9	16	4-20	ANSI/JPI-300LB 3/4B
4	H	95	66.7	34.9	14.5	4-16	ANSI/JPI-600LB 1/2B
4	T	117	82.5	42.9	16	4-20	ANSI/JPI-600LB 3/4B



CONNECTION DIAGRAM



NOTE) Cable gland is supplied in case of flamproof packing type.
 $\phi 11$ cable is suitable.

