

Smart Pressure Transmitter

Model PTG70□

OVERVIEW

The Smart Pressure Transmitter model PTG70□ is a high-performance, highly reliable gauge pressure transmitter. Based on Azbil Corporation's proven Smart Transmitter technologies, the model PTG70□ offers improved performance and reliability with size, weight and cost advantages. An optional, built-in digital indicator allows the pressure transmitter to be used in a wide variety of applications.

FEATURES

Compact and lightweight

- Approx. 0.9 kg (Screw connection type)

Broad range setting

- Range from -100 kPa to +50 MPa.
- Span from 2.0 kPa to 50 MPa.

Note) Screw connection type. Covered with five ranges.

Remote communication (Optional)

Any range can be set using the Smart communicator.

This further increases range flexibility and keeps inventory down.

Built-in digital indicator (Optional)

The built-in digital indicator option effectively checks output on site.

Type of protection

- Water and dust proof for IEC IP67, NEMA3 and 4X
- TIS Flameproof
- KCs Flameproof



External views of the PTG series



**Model PTG70G
(Screw type)**



**Model PTG70B
(Flush diaphragm type)**



**Model PTG70F
(Flange type)**



**Model PTG70S
(Ferrule clamp type)**



**Model PTG70S
(Ferrule cap nut type)**



**Model PTG70K
(Ferrule clamp type
with cooling tower)**



**Model PTG70K
(Ferrule cap nut type
with cooling tower)**



**Model PTG70T
(Remote seal with ferrule type)**



**Model PTG70T
(Remote seal with ferrule cap nut type)**

COMMON SPECIFICATIONS

Type of protection

JIS C0920 watertight, NEMA 3 and 4X, IEC IP67

TIIS Flameproof (Exdo IIC T4X)

KCs Flameproof approval

Ex d II C T4

Supply voltage and load resistance

Refer to Figure 1.

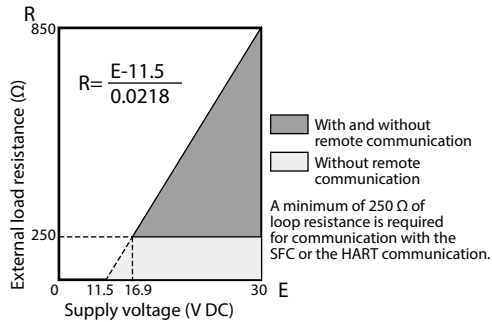


Figure 1. Supply voltage vs. load resistance characteristics

Power supply and voltage effect

0.005 % F.S./V

Lightning protection

Peak value of voltage surge : 6 kV

Peak value of current surge : 700 A

Output / Communication

Analog output (4 to 20 mA DC) two-wire

PED Conformity (2014/68/EU)

The maximum pressures applicable under the Sound Engineering Practice (SEP) section of the Pressure Equipment Directive depend on the type of fluid measured, as shown in the table below.

Measured fluid	Group*	Pressure	Applicable models
Gas	1	200bar (20MPa)	All models except PTG__G-_7
	2	1000bar (100MPa)	All models
Liquid	1	500bar (50MPa)	All models
	2	1000bar (100MPa)	All models

Note) Group1 comprises fluids defines as: explosive, extremely flammable, highly flammable, flammable, very toxic, toxic and oxidizing.

Group2 comprises all other fluids not refer to group1

Any model having a maximum working pressure that is higher than the pressure corresponding to its group does not conform to SEP.

Models PTG__G-_7 conform to PED according to Module A.

Response speed

Approx. 400 ms

Vibration Tolerance

Less than 100 Hz : 2 G

100 to 2000 Hz : 1 G

Zero adjustment

Internal zero adjustment function

CE conformity

- EN61326-1: 2013, Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements
- EN61326-2-3: 2013, Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 2-3: Particular requirements - Test configuration, operational conditions and performance criteria for transducers with integrated or remote signal conditioning
- EN IEC63000: 2018

Finish

Baked acrylic paint, metallic green (Munsell 5G7/8)

Electrical connection

G1/2 internal thread

Mounting

- Direct mounting on a pipe (line mount)
- 2-inch pipe mounting
- Wall mounting

When mounting a PTG transmitter, consider its characteristics against vibration and overall vibration including piping.

Use an optional mounting bracket when mounting it onto 2-inch pipe or wall.

Optional specifications

Built-in indicating meter

The digital LCD indicator (optional) displays engineering units and can be set freely between -19999 and 19999 (4.5 digits).

Corrosion-proof finish

Corrosion-proof paint (Baked epoxy paint), fungus-proof finish

Remote communication function

Remote configuration function by using Smart communicator.

Oil free finish

Oil is removed from the wetted parts before shipment.

Oil and water free finish

Oil and water are removed from the wetted parts before shipment.

Electrolytic grinding (For ferrule type only)

The surface of the wetted parts is smoothed by electrolytic grinding.

Passive state finish (For ferrule type only)

The surface of the wetted parts is treated with a passive state finish to form a protective film to increase resistance to corrosion.

Test report

The test report indicates the results of appearance, I/O characteristics, insulation resistance, and breakdown voltage tests.

Material certificate

The material certificate shows the chemical composition, heat-treatment conditions, and mechanical properties of the materials used for the wetted parts. The transmitter can be easily zero-adjusted in the field with a flat-blade screwdriver.

Withstand pressure test

The withstand pressure test result sheet shows the results of a pressure resistance test (10 minutes) performed on the wetted parts.

Strength calculation sheet

The strength calculation sheet indicates the strength of the meter body cover, flanges, bolts, etc.

Traceability certificate

This certificate consists of three parts: the transmitter's measurement control system configuration diagram, a calibration certificate, and a test report.

Mounting bracket

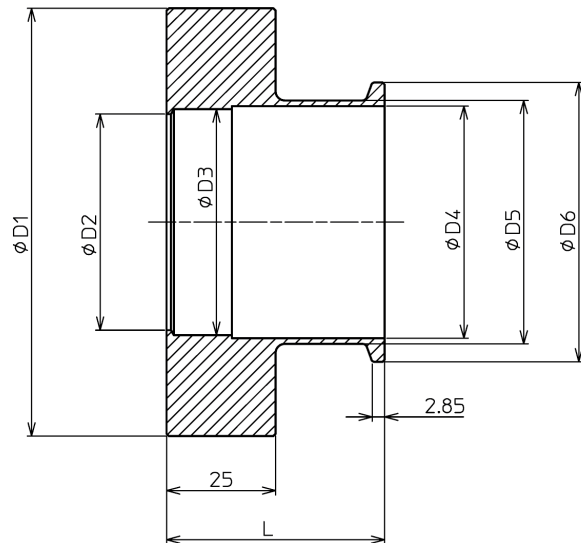
Bracket for 2-inch pipe or wall mounting (For thread connection type and ferrule remote sealed type)

Withstand pressure and air tight test

The withstand pressure and air tight test result sheet shows the results of a pressure resistance test (10 minutes) and a gas-tightness test (10 minutes) performed on the wetted parts.

Tank spud

This part is for attaching the diaphragm of the wetted part. Weld it to the tank before use. (See the figure below).



[Unit: mm]

D1	98
D2	49.5
D3	51.8
D4	53.2
D5	55.8
D6	64
L	50
Material	SUS316L
Size	2S

Working range of negative pressure

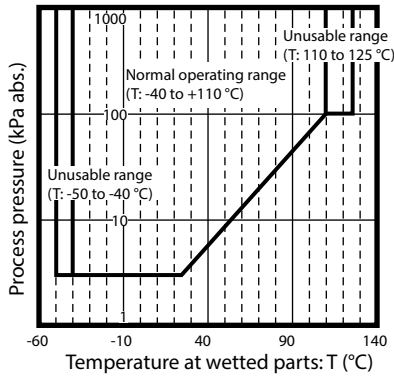


Figure 2. Minimum working pressure for model PTG__G.

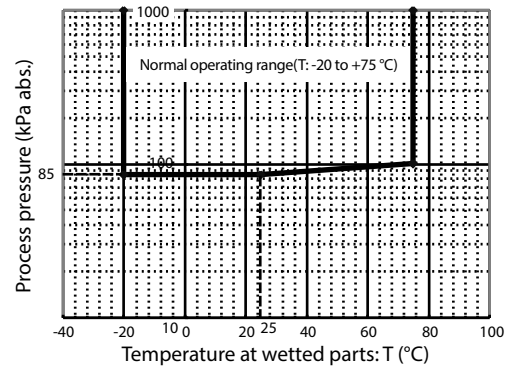


Figure 3. Minimum working pressure for combination of model PTG__G and fluorine oil.

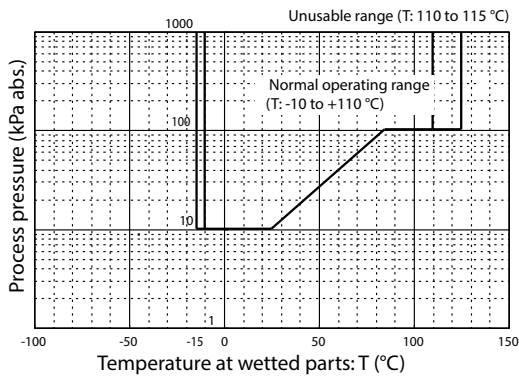


Figure 4. Minimum working pressure for combination of model PTG__B and silicone oil. For the PTG__B 1/2B, the upper limit for normal operation is 85 °C. The extreme upper limit for operation is 90 °C.

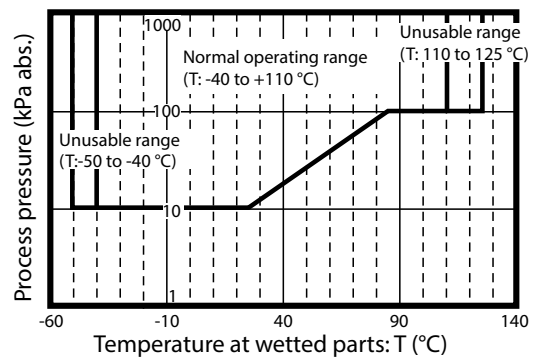


Figure 5. Minimum working pressure for combination of model PTG__F and silicone oil.

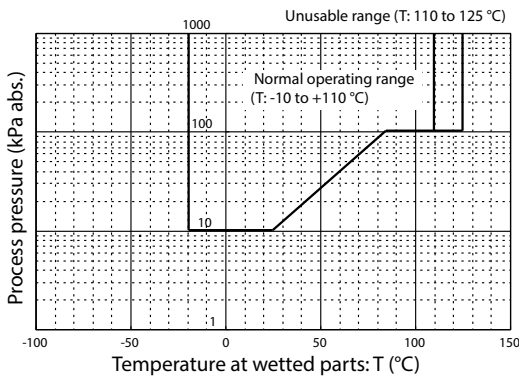


Figure 6. Minimum working pressure for combination of model PTG__F and propylene glycol.

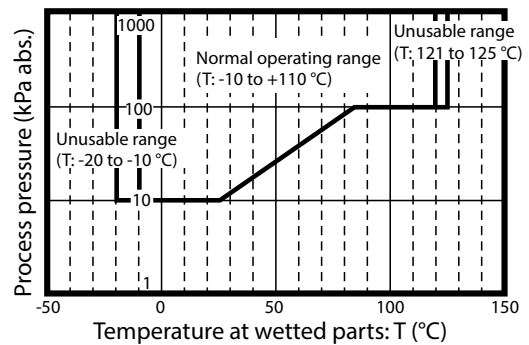


Figure 7. Minimum working pressure for model PTG__S. For the PTG__S pulsation-proof model (-J), the normal operation range is +10 to 45 °C, and the extreme temperature range for operation is +8 to 47 °C.

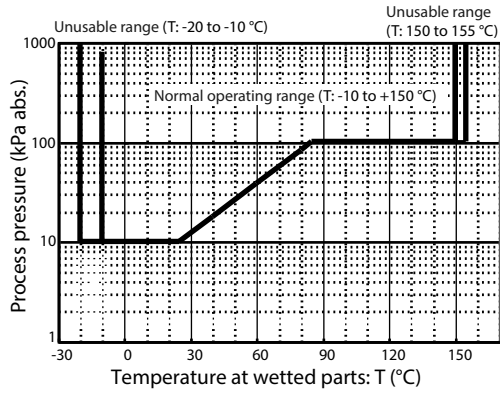


Figure 8. Minimum working pressure for model PTG_K.

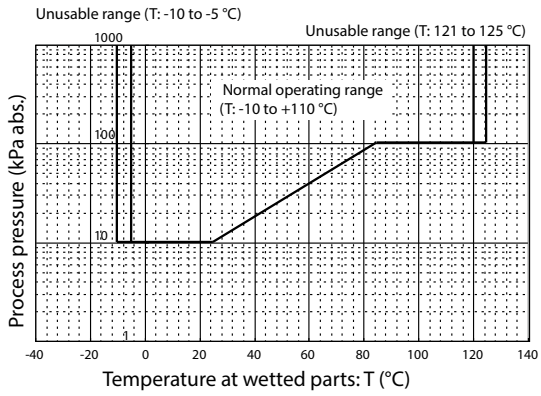


Figure 9. Minimum working pressure for model PTG_T.

Transmitter handling notes

To get the most from the performance this transmitter can offer, please use it properly noting the points mentioned below. Before using it, please read the Instruction Manual.

Transmitter installation notes

⚠ WARNING

- When installing the transmitter, ensure that gaskets do not protrude from connecting points into the process (such as adapter flange connection points and connecting pipes and flanges). Gasket protrusion may result in leaks and output errors.
- Do not use the transmitter outside its defined pressure, temperature, and connection specifications. A serious accident may otherwise occur due to damage and leaks.
- When performing wiring work in explosion-proof areas, follow the work method specified in the explosion-proof guidelines.

⚠ CAUTION

- After installing the transmitter, do not stand on it. Using it as a foothold could cause it to collapse and cause physical injury.
- Be careful not to hit the glass indicator with tools etc. This could break the glass and cause injury.
- The transmitter is heavy. Wear safety shoes and take care when installing it.
- Impact to transmitter can damage sensor module.

Wiring notes

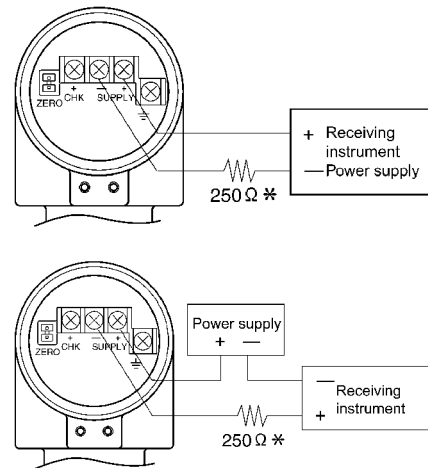
⚠ WARNING

- To avoid shocks, do not perform electrical wiring work with wet hands or with live wires.

⚠ CAUTION

- Do wiring work properly in conformance with the specifications. Wiring mistakes may result in malfunction or irreparable damage to the instrument.
- Use a power supply that conforms to the specifications. Use of an improper power supply may result in malfunction or irreparable damage to the instrument.

Wiring diagram

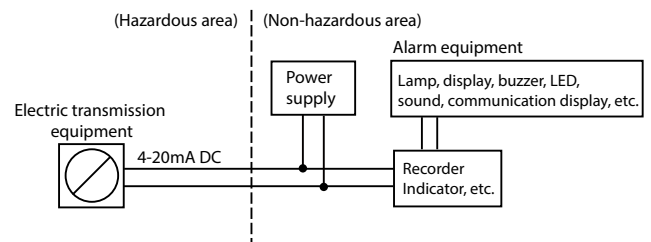


Note) *A minimum of 250 Ω of loop resistance is required for communicator.

Cautions for installation (in case of a TIIS explosion-proof model)

This device has explosion-proof specifications. Configure your system so that an alarm is triggered in case of an output error (output of 3.8 mA or less, or 20.8 mA or more). The type of alarm system can be freely determined by your specifications.

Sample alarm system configuration



Index of detailed specifications for process connection types

Process connection	Process connection style	Measurement span		Reference page
Screw type Model PTG70G	G1/2 external thread G3/8 external thread M20 × 1.5 external thread Rc1/2 internal thread G3/8 internal thread 1/2NPT internal thread Rc1/4 internal thread 1/4NPT internal thread 1/2NPT external thread	2.0 to 100 kPa	{0.021 to 1.019 kgf/cm ² }	9 to 13
	G3/8 external thread G1/2 external thread Rc3/8 internal thread Rc1/2 internal thread 1/2NPT internal thread M20 × 1.5 external 1/2NPT external thread	40 to 400 kPa 0.2 to 2 MPa 1 to 10 MPa	{0.408 to 4.07 kgf/cm ² } {2.04 to 20.3 kgf/cm ² } {10.20 to 101.9 kgf/cm ² }	
	Rc1/4 internal thread G1/2 external thread 1/4NPT internal thread M20 × 1.5 external thread 1/2NPT external thread	5 to 50 MPa	{51.0 to 509 kgf/cm ² }	
Flush diaphragm type Model PTG70B	G2-inch external thread	10 to 100 kPa 40 to 400 kPa 0.2 to 2 MPa 1 to 10 MPa	{0.102 to 1.019 kgf/cm ² } {0.408 to 4.07 kgf/cm ² } {2.04 to 20.3 kgf/cm ² } {10.20 to 101.9 kgf/cm ² }	14 to 16
	G1/2-inch external thread	0.2 to 2 MPa 1 to 10 MPa	{2.04 to 20.3 kgf/cm ² } {10.20 to 101.9 kgf/cm ² }	
Flange type Model PTG70F	JIS10K 50 mm JIS30K 50 mm JIS20K 25 mm JIS10K 15 mm JIS20K 15 mm JIS30K 15 mm	10 to 100 kPa 40 to 400 kPa 0.2 to 2 MPa 1 to 10 MPa	{0.102 to 1.019 kgf/cm ² } {0.408 to 4.07 kgf/cm ² } {2.04 to 20.3 kgf/cm ² } {10.20 to 101.9 kgf/cm ² }	17 to 20
Ferrule type (Direct mount) PTG70S	IDF 2S clamp IDF 1-1/2S clamp IDF 1S clamp	10 to 100 kPa 40 to 400 kPa 0.2 to 2 MPa	{0.102 to 1.019 kgf/cm ² } {0.408 to 4.07 kgf/cm ² } {2.04 to 20.3 kgf/cm ² }	21 to 23
	IDF 2S cap nut IDF 1-1/2S cap nut	10 to 100 kPa 40 to 400 kPa 0.2 to 2 MPa	{0.102 to 1.019 kgf/cm ² } {0.408 to 4.07 kgf/cm ² } {2.04 to 20.3 kgf/cm ² }	24 to 26
Ferrule type with cooling tower Model PTG70K	IDF 2S clamp IDF 1-1/2S clamp	20 to 100 kPa 40 to 400 kPa 0.2 to 2 MPa	{0.21 to 1.019 kgf/cm ² } {0.408 to 4.07 kgf/cm ² } {2.04 to 20.3 kgf/cm ² }	27 to 29
	IDF 1S clamp	40 to 400 kPa 0.2 to 2 MPa	{0.408 to 4.07 kgf/cm ² } {2.04 to 20.3 kgf/cm ² }	
	IDF 2S cap nut IDF 1-1/2 inch cap nut	20 to 100 kPa 40 to 400 kPa 0.2 to 2 MPa	{0.21 to 1.019 kgf/cm ² } {0.408 to 4.07 kgf/cm ² } {2.04 to 20.3 kgf/cm ² }	30 to 32
Remote seal with ferrule type (Capillary 1, 3, 5 m) Model PTG70T	IDF 2S clamp	10 to 100 kPa 40 to 400 kPa 0.2 to 2 MPa	{0.102 to 1.019 kgf/cm ² } {0.408 to 4.07 kgf/cm ² } {2.04 to 20.3 kgf/cm ² }	33 to 35
	IDF 1-1/2S clamp	40 to 400 kPa 0.2 to 2 MPa	{0.408 to 4.07 kgf/cm ² } {2.04 to 20.3 kgf/cm ² }	
	IDF 2S cap nut	2.0 to 100 kPa 40 to 400 kPa 0.2 to 2 MPa	{0.021 to 1.019 kgf/cm ² } {0.408 to 4.07 kgf/cm ² } {2.04 to 20.3 kgf/cm ² }	36 to 39
	IDF 1-1/2S cap nut	40 to 400 kPa 0.2 to 2 MPa	{0.408 to 4.07 kgf/cm ² } {2.04 to 20.3 kgf/cm ² }	

Screw type**Accuracy / Temperature effect****Model PTG70G- _3**

Accuracy *1,*2	$\pm 0.5\%$ F.S. (100 kPa > X > 20 kPa) $\pm (0.5 \times 20 / X)\%$ F.S. (20 kPa > X > 2 kPa)
Zero temperature effect per 30 °C *1	$\pm (0.5 \times 40 / X + 0.35)\%$

Model PTG70G- _4

Accuracy *1,*2	$\pm 0.5\%$ F.S. (400 kPa > X > 80 kPa) $\pm (0.5 \times 80 / X)\%$ F.S. (80 kPa > X > 40 kPa)
Zero temperature effect per 30 °C *1	$\pm (0.4 \times 80 / X + 0.35)\%$

Model PTG70G- _5

Accuracy *1,*2	$\pm 0.5\%$ F.S. (2.0 MPa > X > 0.4 MPa) $\pm (0.5 \times 0.4 / X)\%$ F.S. (0.4 MPa > X > 0.2 MPa)
Zero temperature effect per 30 °C *1	$\pm (0.4 \times 0.4 / X + 0.35)\%$

Model PTG70G- _6

Accuracy *1,*2	$\pm 0.5\%$ F.S. (10 MPa > X > 2.0 MPa) $\pm (0.5 \times 2.0 / X)\%$ F.S. (2.0 MPa > X > 5.0 MPa)
Zero temperature effect per 30 °C *1	$\pm (0.4 \times 2.0 / X + 0.35)\%$

Model PTG70G- _7

Accuracy *1	$\pm 0.5\%$ F.S. (50 MPa > X > 10 MPa) $\pm (0.5 \times 10.0 / X)\%$ F.S. (10 MPa > X > 5.0 MPa)
Zero temperature effect per 30 °C *1	$\pm (0.4 \times 10.0 / X + 0.35)\%$

Note) *1. Within a range of URV ≥ 0 and LRV ≥ 0

*2. Negative pressure accuracy
Accuracy, which is greater value of either $\pm 3\%$ F.S. or upper calculated accuracy.

Ambient temperature limits**Normal operating range**

-25 to +60 °C

Transportation and storage temperature

-30 to +80 °C

Temperature range of wetted parts

Silicone oil : -20 to +110 °C

Fluorine oil : -20 to +75 °C

Ambient humidity limits

5 to 100% RH

Materials**Fill fluid**

Silicone oil for general purpose models

Fluorine oil for oxygen and chlorine models

Wetted parts**Diaphragm**

SUS316L

Others

SUS316

Case

Aluminum alloy

Weight

Approx. 0.9 kg

Process connection

- G1/2 external thread
- G3/8 external thread
- Rc1/4 internal thread
- Rc1/2 internal thread
- Rc3/8 internal thread
- 1/4 NPT internal thread
- 1/2 NPT internal thread
- M20×1.5 external thread
- 1/2NPT external thread

Measuring span / Setting range / Max. working pressure

Model no.	Measuring span	Setting Range	Max. Working Pressure	Process Connection									
				G1/2 external thread	G3/8 external thread	M20 x 1.5 external thread	Rc1/2 internal thread	Rc3/8 internal thread	1/2NPT internal thread	Rc1/4 internal thread	1/4NPT internal thread	1/2NPT external thread	
PTG70G - _3	2.0 to 100 kPa	-100 to +100 kPa	200 kPa	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
PTG70G - _4	40 to 400 kPa	-100 to +400 kPa	800 kPa	✓	✓	✓	✓	✓	✓	✓	-	-	✓
PTG70G - _5	0.2 to 2 MPa	-0.1 to +2 MPa	4 MPa	✓	✓	✓	✓	✓	✓	✓	-	-	✓
PTG70G - _6	1 to 10 MPa	-0.1 to +10 MPa	20 MPa	✓	✓	✓	✓	✓	✓	✓	-	-	✓
PTG70G - _7	5 to 50 MPa	-0.1 to +50 MPa	75 MPa*	✓	-	✓	-	-	-	-	✓	✓	✓

Note) * 62.5 MPa for explosion-proof type

For other specification, please refer to COMMON SPECIFICATIONS.

MODEL SELECTION

Smart Pressure Transmitter model PTG70G

Process connection: Screw type

Measuring span: 2.0 to 100 kPa, 40 to 400 kPa, 0.2 to 2 MPa, 1 to 10 MPa, 5 to 50 MPa

Model number structure: Basic model number - selection - Option1 - Option2

Basic model number		Selection				Option1	Option2
[] - [] [] []		[]	[]	[]	[]	[]	
Product description	Gauge pressure transmitter: Screw connection type	PTG70G					
Type of protection	TIIS Flameproof Electrical connection: G1/2	A					
	KCs Flameproof Electrical connection: G1/2	J					
Measuring span	2.0 to 100 kPa (0.021 to 1.019 kgf/cm ²)	3					
	40 to 400 kPa (0.408 to 4.07 kgf/cm ²)	4					
	0.2 to 2 MPa (2.04 to 20.3 kgf/cm ²)	5					
	1 to 10 MPa (10.20 to 101.9 kgf/cm ²)	6					
	5 to 50 MPa (51.0 to 509 kgf/cm ²)	7					
Material: Diaphragm / wetted parts other than diaphragm / fill fluid	SUS316L / SUS316 / Silicone oil		B1				
	SUS316L / SUS316 / Fluorine oil *1		B2				
Process connection	G1/2 external thread				G4		
	G3/8 external thread (Not applicable for measuring span code "7")				G3		
	M20×1.5 external thread				PH		
	Rc1/2 internal thread (Not applicable for measuring span code "7")				C4		
	Rc3/8 internal thread (Not applicable for measuring span code "7")				C3		
	1/2NPT internal thread (Not applicable for measuring span code "7")				N4		
	Rc1/4 internal thread (Applicable only for measuring span code "3" and "7")				C2		
	1/4NPT internal thread (Applicable only for measuring span code "3" and "7")				N2		
	1/2NPT external thread				M4		
Option 1						-	
No option							X
Built-in digital indicator							M
Corrosion-proof finish							B
Remote communication function							C
Wetted part finish	Oil free finish						G
	Water and oil free finish						H
Option2						-	
No option							X
Test report							1
Material certificate							2
Withstand pressure test							4
Strength calculation sheet (JIS)							5
Traceability certificate							6
Mounting bracket							H
Certificate of oil free finish							J
Withstand pressure and air tight test							K
Certificate of oil free and No water finish							P

Note) *1. Need to select oil free finish "G" and Water and oil free finish "H" in the Option 1.

DIMENSIONS

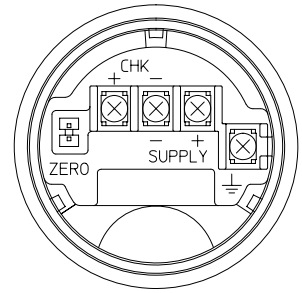
[Unit: mm]

Materials of Construction

KEY No.	Description	Materials
1	Case	Aluminum Alloy
2	Body	SUS 316 (Diaphragm SUS 316L)

Table1 Terminal

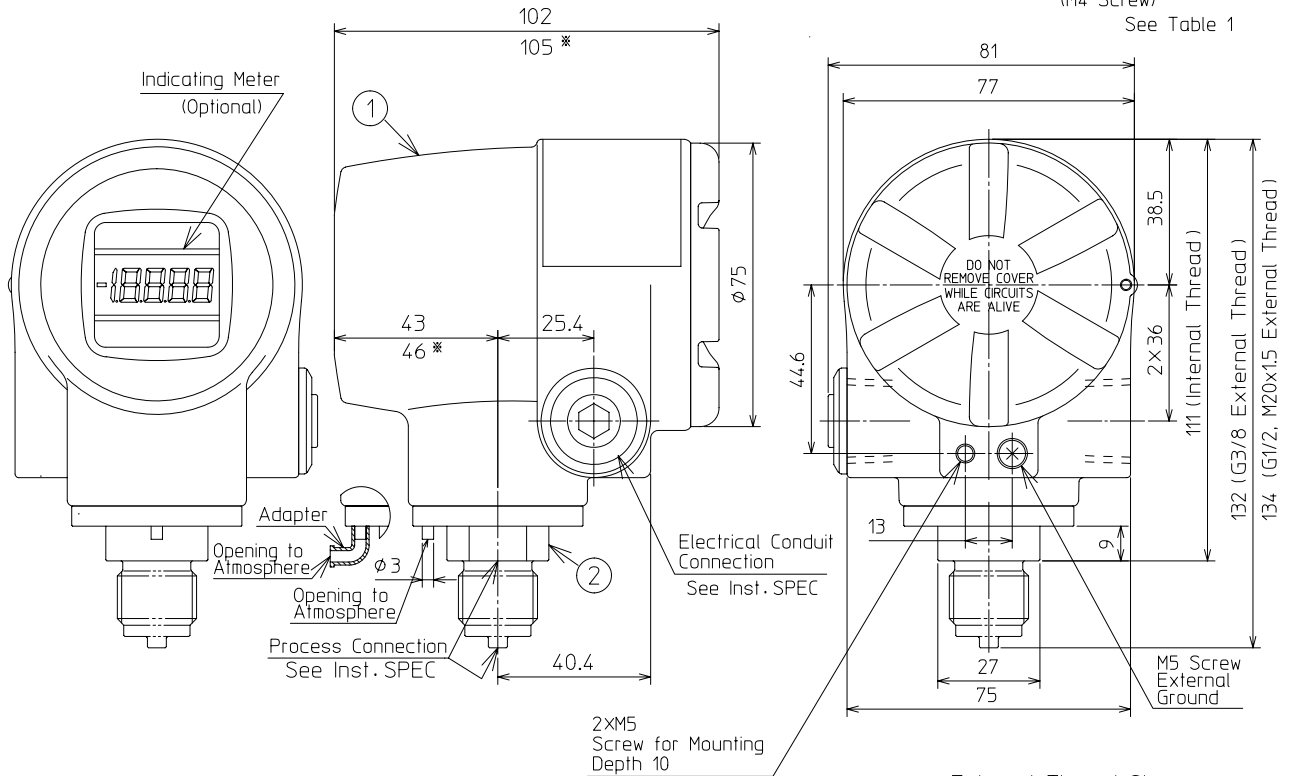
Symbol	Terminal
SUPPLY +, SUPPLY -	Power Supply / Output Signal
CHK+, CHK-	Check Meter
⏏	Ground
ZERO	Zero Adjustment



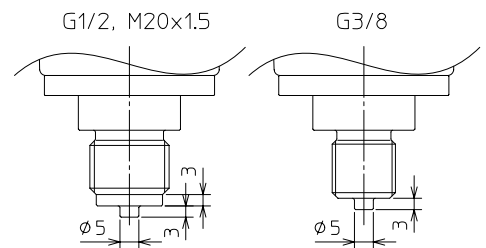
* Dimension when NEPSI or ATEX flameproof with indicating meter is chosen.

Terminal Connection
(M4 Screw)

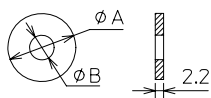
See Table 1



External Thread Shape



Note A ring-shaped gasket as in below drawing is included for external thread connections.
Material: PTFE



Thread	A	B
G1/2, M20x1.5	18	6.5
G3/8	14	5.8

Process Connection:

G1/2, G3/8, M20x1.5 External Thread
Rc1/2, Rc3/8, Rc1/4 Internal Thread
1/2NPT, 1/4NPT Internal Thread

Material of Construction

KEY No.	Description	Material
1	Case	Aluminum Alloy
2	Body	SUS 316 (Diaphragm SUS 316L)

Terminal Connection

(M4 Screw) See Table 1

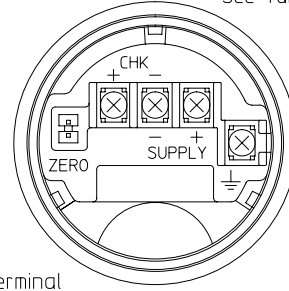
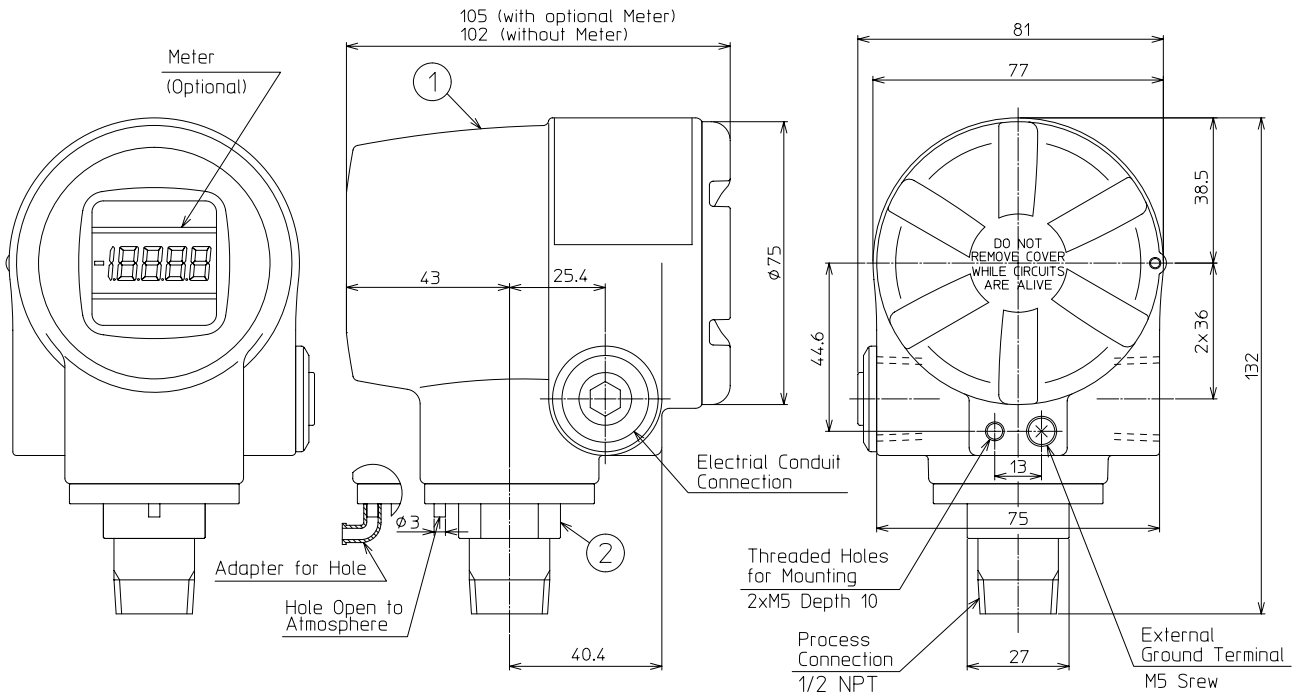


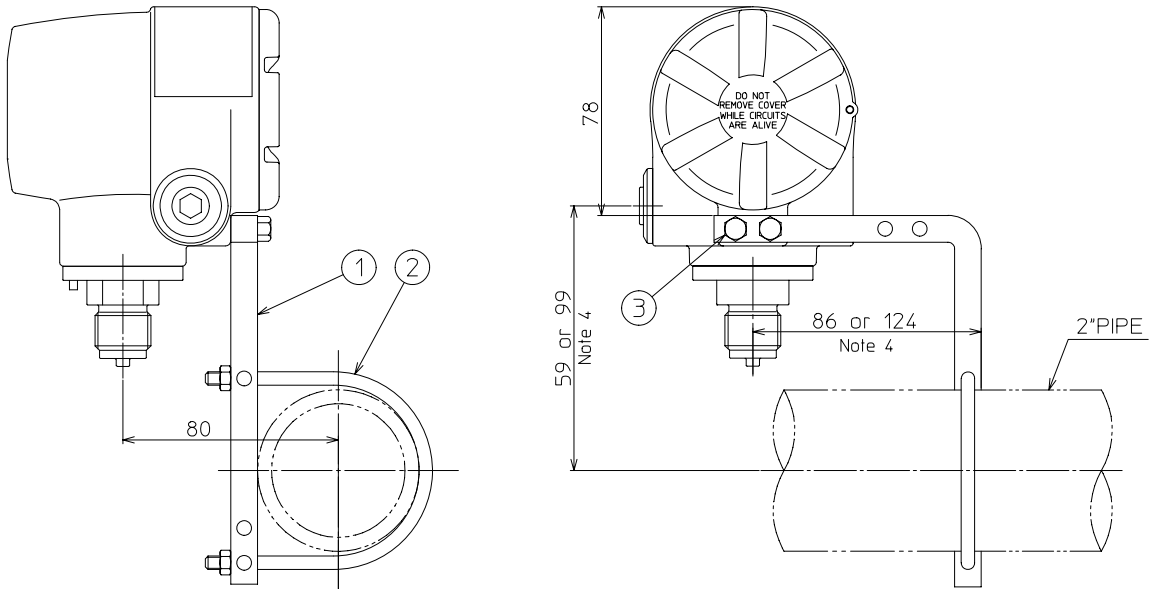
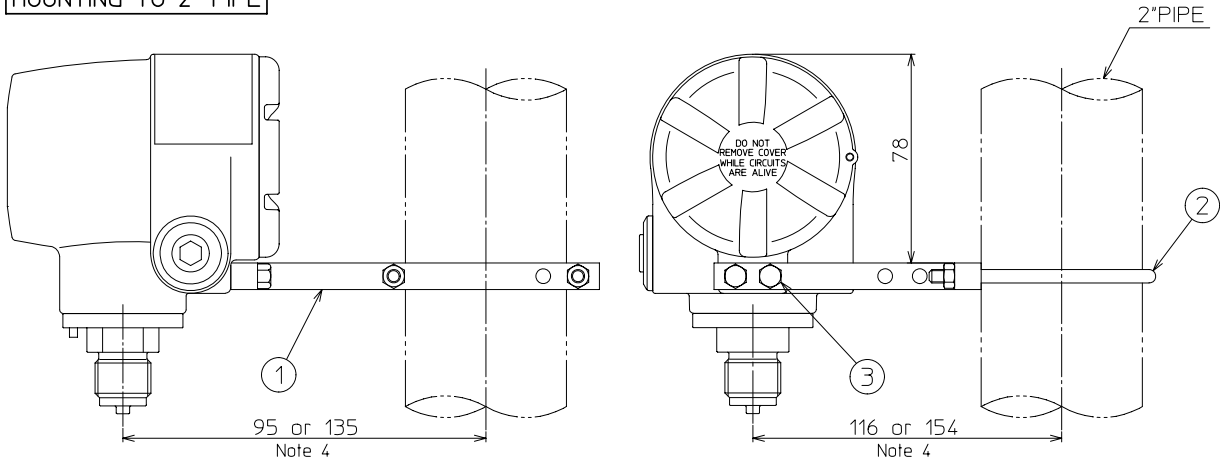
Table1 Terminal

Symbol	Terminal
SUPPLY +, SUPPLY -	Power Supply and Output Signal
CHK+, CHK-	Check Meter
⏏	Ground
ZERO	Zero Adjustment

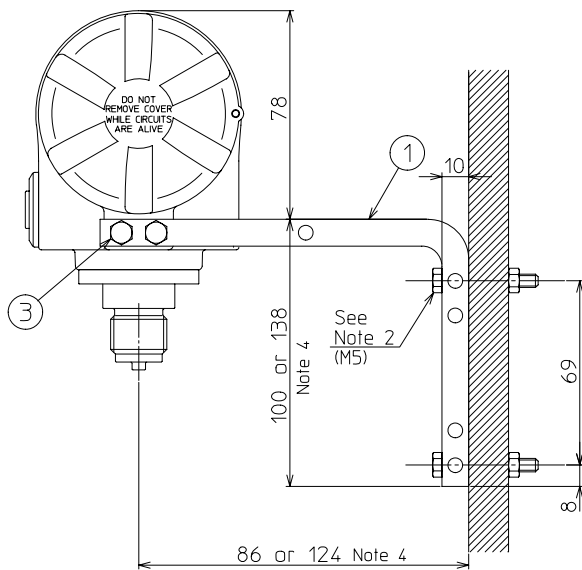


Process connection : 1/2 NPT External

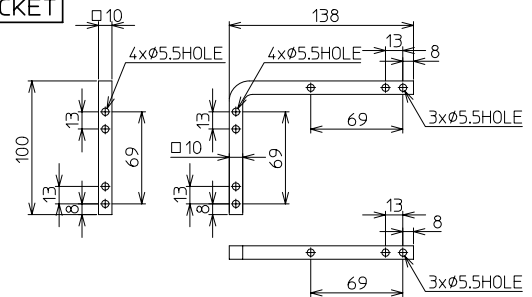
MOUNTING TO 2" PIPE



MOUNTING TO WALL



DIMENSION OF BRACKET



MATERIALS OF CONSTRUCTION

KEY No.	DESCRIPTION	MATERIALS
1	MOUNTING BRACKET	SUS 304
2	U-BOLT/NUT	SUS 304
3	BOLT	SUS 304

NOTES

- 1) Drawing shows dimensions when mounting bracket is used.
- 2) Bolts for wall mounting are not included.
Recommended thread size: M5
- 3) This drawing shows several mounting examples using the bracket.
- 4) This dimension depends on which side of the bracket, short or long, is connected to the pipe or wall.

Flush diaphragm type

(G2 inch external, G1/2 inch external / flush diaphragm)



Measuring span / Setting range / Max. working pressure

Model number	Measuring span	Setting range	Max. working pressure	Process connection
PTG70B - _3	10 to 100 kPa	-100 to +100 kPa	200 kPa	G2 external thread
PTG70B - _4	40 to 400 kPa	-100 to +400 kPa	800 kPa	
PTG70B - _5	0.2 to 2 MPa	-0.1 to +2 MPa	4 MPa	G2 external thread G1/2 external thread
PTG70B - _6	1 to 10 MPa	-0.1 to +10 MPa	20 MPa	

Accuracy / Temperature effect

Model PTG70B- _3

Accuracy *1, *2	± 0.5% F.S. (100 kPa ≥ X ≥ 20 kPa) ± (0.5 × 20 / X)% F.S. (20k Pa ≥ X ≥ 2.0 kPa)	
Zero temperature effect per 30 °C *1	G2 external thread	± (4.7 × 40 / X + 0.35)%

Model PTG70B- _4

Accuracy *1, *2	± 0.5% F.S. (400 kPa ≥ X ≥ 80 kPa) ± (0.5 × 80 / X)% F.S. (80 kPa ≥ X ≥ 40 kPa)	
Zero temperature effect per 30 °C *1	G2 external thread	± (2.5 × 80 / X + 0.35)%

Model PTG70B- _5

Accuracy *1, *2	± 0.5% F.S. (2 MPa ≥ X ≥ 0.4 MPa) ± (0.5 × 0.4 / X)% F.S. (0.4 MPa ≥ X ≥ 0.2 MPa)	
Zero temperature effect per 30 °C *1	G2 external thread	± (0.82 × 0.4 / X + 0.35)%
	G1/2 external thread	± (10.8 × 0.4 / X + 0.35)%

Model PTG70B- _6

Accuracy *1, *2	± 0.5% F.S. (10.0 MPa ≥ X ≥ 2.0 MPa) ± (0.5 × 2.0 / X)% F.S. (2.0 MPa ≥ X ≥ 1.0 MPa)	
Zero temperature effect per 30 °C *1	G2 external thread	± (0.49 × 2.0 / X + 0.35)%
	G1/2 external thread	± (2.48 × 2.0 / X + 0.35)%

Note) *1. Within a range of URV ≥ 0 and LRV ≥ 0

*2. Negative pressure accuracy
Accuracy, which is greater value of either ±3% F.S. or upper calculated accuracy.

Ambient temperature limits

Normal operating ranges

G2 external thread: -10 to +60 °C
G1/2 external thread: -10 to +50 °C

Transportation and storage temperatures

G2 external thread: -20 to +60 °C
G1/2 external thread: -20 to +60 °C

Temperature ranges of wetted parts

G2 external thread: -10 to +110 °C
G1/2 external thread: -10 to +85 °C

Ambient humidity limits

5 to 100% RH

Materials

Fill fluid

- Silicone oil
- Propylene glycol

Wetted parts

Diaphragm

SUS316L

Others

SUS316L

Case

Aluminum alloy

Weight

- G2 inch external thread: Approx. 2.5kg
- G1/2 inch external thread: Approx. 1.5kg

Process connection

- G2 inch external thread
- G1/2 inch external thread

For other specification, please refer to COMMON SPECIFICATIONS.

MODEL SELECTION**Smart pressure transmitter model PTG70B**

Process connection: Flush diaphragm type (G2 inch external, G1/2 inch external / flush diaphragm)

Measuring span: 10 to 100 kPa, 40 to 400 kPa, 0.2 to 2 MPa, 1 to 10 MPa

Model number structure: basic model number - Selection - Option 1 - Option 2

Option2DIMENSIONS		Selection				Option1	
Basic model number							
Product description	Gauge pressure transmitter: Screw connection type (flush)	PTG70B					
Type of protection	TIIS Flameproof Electrical connection: G1/2	A					
	KCs Flameproof Electrical connection: G1/2	J					
Measuring span	10 to 100 kPa (0.102 to 1.019 kgf/cm ²) (Not applicable for process connection G1/2)	3					
	40 to 400 kPa (0.408 to 4.07 kgf/cm ²) (Not applicable for process connection G1/2)	4					
	0.2 to 2 MPa (2.04 to 20.3 kgf/cm ²)	5					
	1 to 10 MPa (10.20 to 101.9 kgf/cm ²)	6					
Material: Diaphragm / wetted parts other than diaphragm / fill fluid	SUS316L / SUS316L / Silicone oil	C1					
	SUS316L / SUS316L / Propylene glycol	CB					
Process connection	G2 external thread	AGF					
	G1/2 external thread	AG4					
Option 1						-	
No option						X	
Built-in digital indicator						M	
Corrosion-proof finish						B	
Remote communication function						C	
Wetted part finish	Oil free finish					G	
	Water and oil free finish					H	
Option2						-	
No option						X	
Test report						1	
Material certificate						2	
Withstand pressure test						4	
Strength calculation sheet (JIS)						5	
Traceability certificate						6	
Mounting bracket						H	
Certificate of oil free finish						J	
Certificate of oil free and No water finish						P	

Flange type

(1/2 inch, 1 inch, 2 inches)



Measuring Span / Setting Range / Max. Working Pressure

Model number	Measuring span	Setting range	Max. working pressure	Process connection
PTG70F - _3	10 to 100 kPa	-100 to +100 kPa	200 kPa	2 inches (50 mm),
PTG70F - _4	40 to 400 kPa	-100 to + 400 kPa	800 kPa	
PTG70F - _5	0.2 to 2 MPa	-0.1 to +2 MPa	4 MPa or flange rating	1 inch (25 mm),
PTG70F - _6	1 to 10 MPa	-0.1 to +10 MPa	20 MPa or flange rating	1/2 inch (15 mm)

Accuracy / Temperature effect

Model PTG70F- _3

Accuracy *1, *2	± 0.5% F.S. (100 kPa ≥ X ≥ 20 kPa) ± (0.5 × 20 / X)% F.S. (20 kPa > X > 2 kPa)	
Zero temperature effect per 30 °C *1	2 inches (50 mm)	± (4.5 × 40 / X + 0.35)%
	1 inch (25 mm)	
	1/2 inch (15 mm)	± (10.0 × 40 / X + 0.35)%

Model PTG70F- _4

Accuracy *1, *2	± 0.5% F.S. (400 kPa ≥ X ≥ 80 kPa) ± (0.5 × 80 / X)% F.S. (80 kPa ≥ X ≥ 40 kPa)	
Zero temperature effect per 30 °C *1	2 inches (50 mm)	± (2.4 × 80 / X + 0.35)%
	1 inch (25 mm)	
	1/2 inch (15 mm)	± (7.1 × 80 / X + 0.35)%

Model PTG70F- _5

Accuracy *1, *2	± 0.5% F.S. (2 MPa ≥ X ≥ 0.4 MPa) ± (0.5 × 0.4 / X)% F.S. (0.4 MPa ≥ X ≥ 0.2 MPa)	
Zero temperature effect per 30 °C *1	2 inches (50 mm)	± (0.8 × 0.4 / X + 0.35)%
	1 inch (25 mm)	
	1/2 inch (15 mm)	± (1.4 × 0.4 / X + 0.35)%

Model PTG70F- _6

Accuracy *1, *2	± 0.5% F.S. (10.0 MPa > X > 2.0 MPa) ± (0.5 × 2.0 / X)% F.S. (2.0 MPa > X > 1.0 MPa)	
Zero temperature effect per 30 °C *1	2 inches (50 mm)	± (0.5 × 2.0 / X + 0.35)%
	1 inch (25 mm)	
	1/2 inch (15 mm)	± (0.5 × 2.0 / X + 0.35)%

Note) *1. Within a range of URV ≥ 0 and LRV ≥ 0

*2. Negative pressure accuracy
Accuracy, which is greater value of either ±3% F.S. or upper calculated accuracy.

Ambient temperature limits

Normal operating range

Silicone oil	-20 to +60 °C
Propylene glycol	-10 to +60 °C

Transportation and storage temperature

Silicone oil	-30 to +80 °C
Propylene glycol	-30 to +80 °C

Temperature ranges of wetted parts

Silicone oil	-20 to +110 °C
Propylene glycol	-10 to +110 °C
150 °C for 30 minutes during steam cleaning.	

Ambient humidity limits

5 to 100% RH

Materials

Fill fluid

- Silicone oil
- Propylene glycol

Wetted parts

Diaphragm

SUS316L

Others

SUS316L

Flange parts

SUS304

Case

Aluminum alloy

Weight

JIS10K 50A : Approx. 4.2 kg

JIS10K 15A : Approx. 2 kg

Process connection

- JIS10K 15 mm, 50 mm
- JIS20K 15 mm, 25 mm
- JIS30K 15 mm, 50 mm

For other specification, please refer to COMMON SPECIFICATIONS.

MODEL SELECTION

Smart pressure transmitter model PTG70F

Process connection: Flange type

Measuring span: 10 to 100 kPa, 40 to 400 kPa, 0.2 to 2 MPa, 1 to 10 MPa

Model number structure: Basic model number - Selection - Option1 - Option2

Basic model number		Selection					Option1	Option2
[]		-	[]	[]	[]	[]	[]	
Product description	Gauge pressure transmitter: Flange mount type	PTG70F						
Type of protection	TIIS Flameproof Electrical connection: G1/2	A						
	KCs Flameproof Electrical connection: G1/2	J						
Measuring span	10 to 100 kPa (0.102 to 1.019 kgf/cm ²)	3						
	40 to 400 kPa (0.408 to 4.07 kgf/cm ²)	4						
	0.2 to 2 MPa (2.04 to 20.3 kgf/cm ²)	5						
	1 to 10 MPa (10.20 to 101.9 kgf/cm ²)	6						
Material Diaphragm / wetted parts other than diaphragm/fill fluid	SUS316L / SUS316L / Silicone oil	C1						
	SUS316L / SUS316L / Propylene glycol	CB						
Flange standard/rating	JIS 10K	A						
	JIS 20K *1	C						
	JIS 30K	D						
Flange diameter	2 inches / 50 mm	3						
	1 inch / 25 mm *3	5						
	1/2 inch / 15 mm	7						
Flange material	SUS304	S						
Flange extension	None	X						
Option 1							-	
No option							X	
Built-in digital indicator							M	
Corrosion-proof finish							B	
Remote communication function							C	
Wetted parts finish	Oil free finish						G	
	Water and oil free finish						H	
Option2							-	
No option								X
Test report								1
Material certificate								2
Withstand pressure test								4
Strength calculation sheet (JIS)								5
Traceability certificate								6
Mounting bracket								H
Certificate of oil free finish								J
Certificate of oil free and No water finish								P

Note) *1. Flange rating JIS20K cannot be selected with flange size 2 inches / 50 mm.

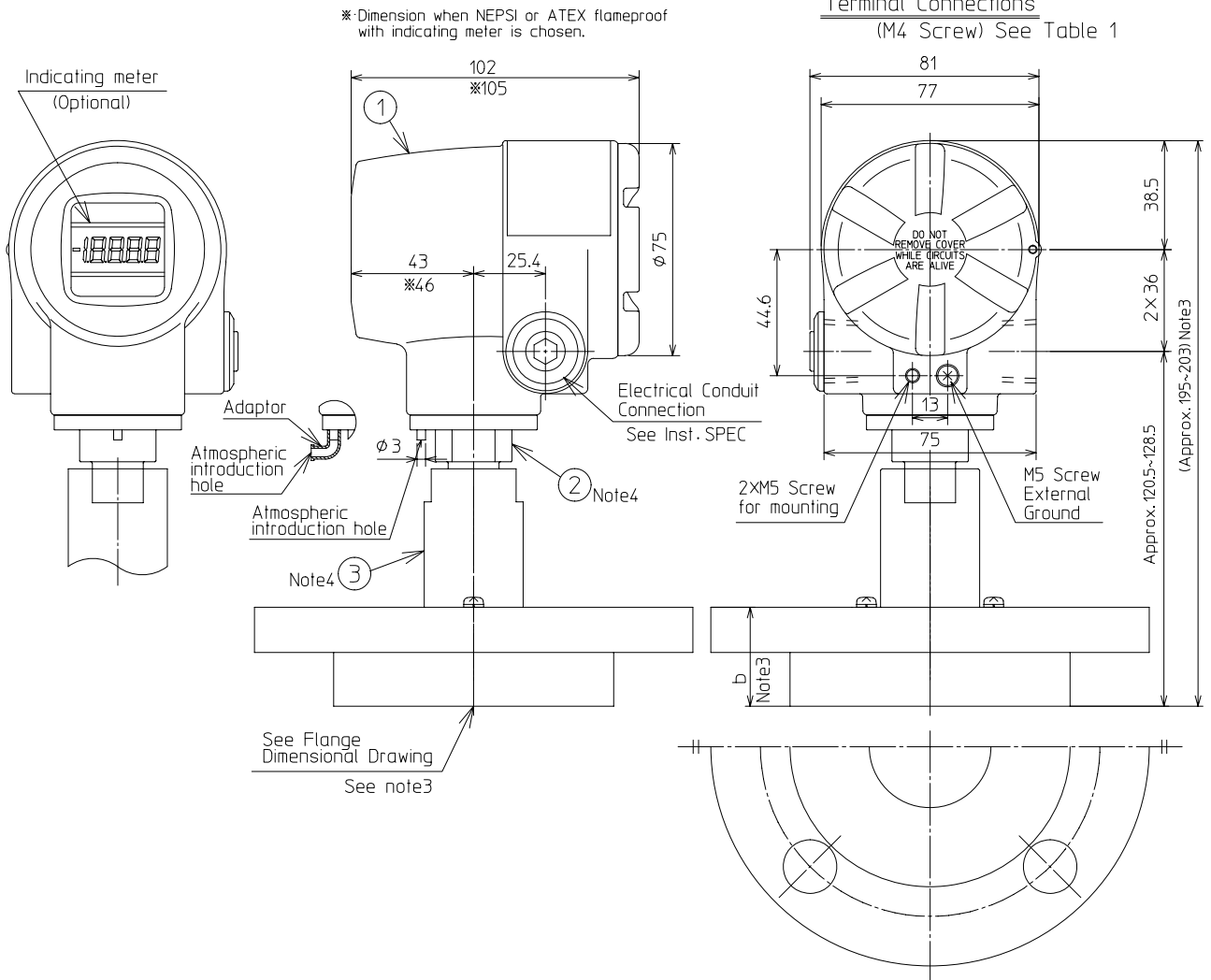
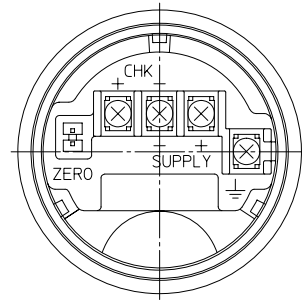
*2. Flange size 1 inch / 25 mm is applicable only with flange rating JIS 20K

DIMENSIONS

[Unit: mm]

Materials of construction

KEY No.	Description	Materials
1	Case	Aluminum alloy
2	Body	SUS 316
3	Wetted Part	See Spec. Code.



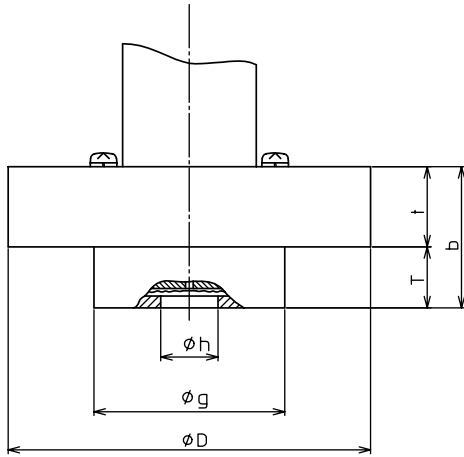
*Dimension when NEPSI or ATEX flameproof with indicating meter is chosen.

- Note1. Total length will vary from 195 to 203 according to flange thickness b. See **page 17** for b value.
- 2. Do not loosen. Loosening will lead to fill-fluid leakage.

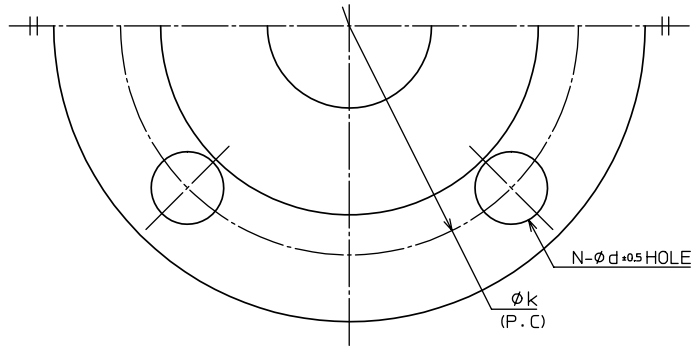
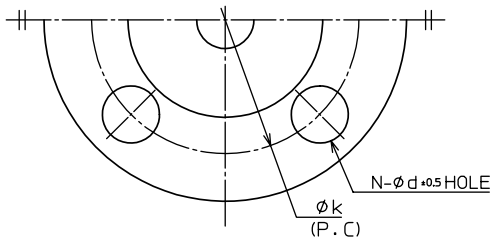
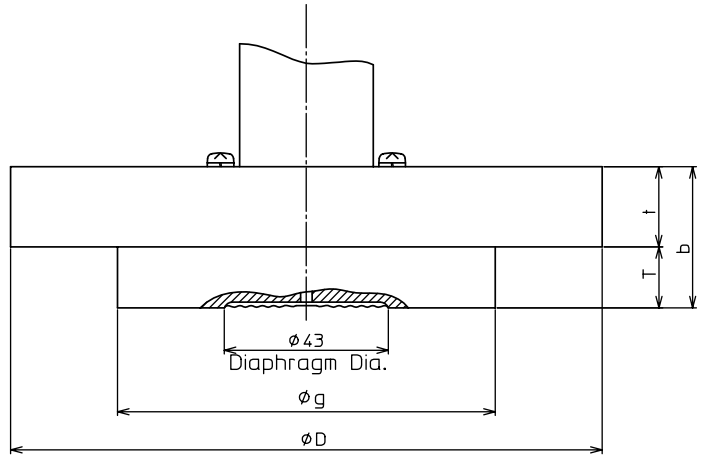
Table1 Terminal

Symbol	Terminal
SUPPLY +, SUPPLY -	Power supply and output signal
CHK+, CHK-	Check meter
\perp	Ground
ZERO	ZERO Adjuster

15A/25A



50A



FLANGE DIMENSIONS

Flange Rating	ϕD	ϕg	ϕk	N	ϕd	ϕh	t	T	b
JIS10K-15A	95	54	70	4	15	15	12	15	27
JIS20K-15A	95	54	70	4	15	15	14	15	29
JIS30K-15A	115	54	80	4	19	15	18	15	33
JIS20K-25A	125	70	90	4	19	27	16	15.5	31.5
JIS10K-50A	155	99	120	4	19	—	16	19	35
JIS30K-50A	165	99	130	8	19	—	22	19	41

FLANGE STANDARD : JIS B2220(2004)

Ferrule type

(1S, 1-1/2S, 2S clamp type)



Measuring span / Setting range / Max. working pressure

Model number	Measuring span	Setting range	Max. working pressure	Process connection
PTG70S - _3	10 to 100 kPa	-100 to +100 kPa	200 kPa	2S, 1-1/2S
PTG70S - _4	40 to 400 kPa	-100 to +400 kPa	800 kPa or clamp rating	2S, 1-1/2S, 1S
PTG70S - _5	0.2 to 2 MPa	-0.1 to +2 MPa	4 MPa or clamp rating	

Accuracy / Max. working pressure

Model PTG70S- _3

Accuracy *1, *2	± 0.5% F.S. (100 kPa ≥ X ≥ 20 kPa) ± (0.5 × 20 / X)% F.S. (20 kPa ≥ X ≥ 2 kPa)	
Zero temperature effect per 30 °C *1	2S (Clamp type)	± (2.4 × 40 / X + 0.35)%
	1-1/2S (Clamp type)	± (5.7 × 40 / X + 0.35)%

Model PTG70S- _4

Accuracy *1, *2	± 0.5% F.S. (400 kPa ≥ X ≥ 80 kPa) ± (0.5 × 80 / X)% F.S. (80 kPa ≥ X ≥ 40 kPa)	
Zero temperature effect per 30 °C *1	2S (Clamp type)	± (1.3 × 80 / X + 0.35)%
	1-1/2S (Clamp type)	± (3.0 × 80 / X + 0.35)%
	1S (Clamp type)	± (30.4 × 80 / X + 0.35)%

Model PTG70S- _5

Accuracy *1, *2	± 0.5% F.S. (2 MPa ≥ X ≥ 0.4 MPa) ± (0.5 × 0.4 / X)% F.S. (0.4 MPa ≥ X ≥ 0.2 MPa)	
Zero temperature effect per 30 °C *1	2S (Clamp type)	± (0.58 × 0.4 / X + 0.35)%
	1-1/2S (Clamp type)	± (0.92 × 0.4 / X + 0.35)%
	1S (Clamp type)	± (6.4 × 0.4 / X + 0.35)%

Note) *1. Within a range of URV ≥ 0 and LRV ≥ 0

*2. Negative pressure accuracy
Accuracy, which is greater value of either ±3% F.S. or upper calculated accuracy.

Ambient temperature limits

Normal operating range

-10 to +60 °C

Transportation and storage temperature

-30 to +80 °C

Temperature ranges of wetted parts

-10 to +110 °C

Ambient humidity limits

5 to 100% RH

Materials

Fill fluid

Propylene glycol

Wetted parts

Diaphragm

SUS316L

Others

SUS316L

Case

Aluminum alloy

Weight

Approx 1.2 kg

Process connection

- IDF 1S clamp type
- IDF 1-1/2S clamp type
- IDF 2S clamp type

For other specification, please refer to COMMON SPECIFICATIONS.

MODEL SELECTION

Smart pressure transmitter model PTG70S

Process connection: Ferrule clamp type

Measuring span: 10 to 100 kPa, 40 to 400 kPa, 0.2 to 2 MPa

Model number structure: Basic model number - Selection - Option1 - Option2

Basic model number		Selection				Option1	Option2
PTG70S		-				-	
Product description	Gauge pressure transmitter: Ferrule type	PTG70S					
Type of protection	TIIS Flameproof Electrical connection: G1/2	A					
	KCs Flameproof Electrical connection: G1/2	J					
Measuring span	10 to 100 kPa (0.102 to 1.1019 kgf/cm ²) (Not applicable for process connection 1S.)	3					
	40 to 400 kPa (0.408 to 4.07 kgf/cm ²)	4					
	0.2 to 2 MPa (2.04 to 20.3 kgf/cm ²)	5					
Material: Diaphragm / wetted parts other than diaphragm/fill fluid	SUS316L / SUS316L / Propylene glycol		CB				
Process connection	IDF 1S ferrule clamp type				AH2X		
	IDF 1-1/2S ferrule clamp type				AH3X		
	IDF 2S ferrule clamp type				AH4X		
	IDF 2S ferrule (Extension length:50mm) clamp type (with silicon gasket)				AH42		
	IDF 2D ferrule (Extension length: 50mm) clamp type (with EPDM gasket)				AH4A		
Option 1						-	
No option							X
Built-in digital indicator							M
Corrosion-proof finish							B
Remote communication function							C
Wetted parts finish	Anti-dynamic pressure specification *1						F
	Anti-pulsation specification *2						J
	Oil free finish						G
	Water and oil free finish						H
	Electrolytic grinding						K
	Passive state finish						W
Option2							-
No option							X
Test report							1
Material certificate							2
Withstand pressure test							4
Traceability certificate							6
Mounting bracket							H
Certificate of oil free finish							J
Certificate of oil free and No water finish							P
Tank Spud							S

Note) *1. Not applicable for ferrule size 1S. The temperature effect will be 3.5 times of the standard. Wetted parts temperature range is +10 to +90 °C.

*2. Not applicable for ferrule size 1S. The accuracy will be 1.5 times and the temperature effect will be 3.5 times of the standard. Wetted parts temperature range is +10 to +45 °C.

Ferrule type

(1-1/2 inch, 2 inches cap nut type)



Measuring Span / Setting Range / Max. Working Pressure

Model number	Measuring span	Setting range	Max. working pressure	Process connection
PTG70S - _3	10 to 100 kPa	-100 to +100 kPa	200 kPa	2S, 1-1/2S
PTG70S - _4	40 to 400 kPa	-100 to +400 kPa	800 kPa or cap nut rating	
PTG70S - _5	0.2 to 2 MPa	-0.1 to +2 MPa	4 MPa or cap nut rating	

Accuracy / Max. working pressure

Model PTG70S- _3

Accuracy *1, *2	± 0.5% F.S. (100 kPa ≥ X ≥ 20 kPa) ± (0.5 × 20 / X)% F.S. (20 kPa ≥ X ≥ 2 kPa)	
Zero temperature effect per 30 °C *1	2S (Cap nut type)	± (2.4 × 40 / X + 0.35)%
	1-1/2S (Cap nut type)	± (5.7 × 40 / X + 0.35)%

Model PTG70S- _4

Accuracy *1, *2	± 0.5% F.S. (400 kPa ≥ X ≥ 80 kPa) ± (0.5 × 80 / X)% F.S. (80 kPa ≥ X ≥ 40 kPa)	
Zero temperature effect per 30 °C *1	2S (Cap nut type)	± (1.3 × 80 / X + 0.35)%
	1-1/2S (Cap nut type)	± (3.0 × 80 / X + 0.35)%

Model PTG70S- _5

Accuracy *1, *2	± 0.5% F.S. (2 MPa ≥ X ≥ 0.4 MPa) ± (0.5 × 0.4 / X)% F.S. (0.4 MPa ≥ X ≥ 0.2 MPa)	
Zero temperature effect per 30 °C *1	2S (Cap nut type)	± (0.58 × 0.4 / X + 0.35)%
	1-1/2S (Cap nut type)	± (0.92 × 0.4 / X + 0.35)%

Note) *1. Within a range of URV ≥ 0 and LRV ≥ 0

*2. Negative pressure accuracy
Accuracy, which is greater value of either ±3% F.S. or upper calculated accuracy.

Ambient temperature limits

Normal operating range

-10 to +60 °C
+10 to +45°C for Anti-pulsation specification “J” of wetted part finish in the Option 1.

Transportation and storage temperature

-30 to +80 °C

Temperature range of wetted parts

-10 to +110 °C
+10 to +45 °C for Anti-pulsation specification “J” of wetted part finish in the Option 1.

Ambient humidity limits

5 to 100% RH

Materials

Fill fluid

Propylene glycol

Wetted parts

Diaphragm

SUS316L

Others

SUS316L

Case

Aluminum alloy

Weight

- 1-1/2 inch : Approx. 1.4 kg
- 2 inches : Approx. 1.7 kg

Process connection

- IDF 1-1/2S cap nut type
- IDF 2S cap nut type

For other specification, please refer to COMMON SPECIFICATIONS.

MODEL SELECTION**Smart pressure transmitter model PTG70S**

Process connection: Ferrule cap nut type

Measuring span: 10 to 100 kPa, 40 to 400 kPa, 0.2 to 2 MPa

Model number structure: Basic model number - Selection - Option1 - Option2

			Selection			Option1	Option2
Product Description	Gauge pressure transmitter: Ferrule type	PTG70S					
Type of protection	TIIS Flameproof Electrical connection: G1/2	A					
	KCs Flameproof Electrical connection: G1/2	J					
Measuring span	10 to 100 kPa (0.102 to 1.1019 kgf/cm ²)	3					
	40 to 400 kPa (0.408 to 4.07 kgf/cm ²)	4					
	0.2 to 2 MPa (2.04 to 20.3 kgf/cm ²)	5					
Material: Diaphragm / wetted parts other than diaphragm/fill fluid	SUS316L / SUS316L / Propylene glycol	CB					
Process connection	IDF 1-1/2S ferrule cap nut type	AC3X					
	IDF 2S ferrule cap nut type	AC4X					
Option 1						-	
No option						X	
Built-in digital indicator						M	
Corrosion-proof finish						B	
Remote communication function						C	
Wetted part finish	Anti-dynamic pressure specification *1					F	
	Anti-pulsation specification *2					J	
	Oil free finish					G	
	Water and oil free finish					H	
	Electrolytic grinding					K	
	Passive state finish					W	
Option2						-	
No option							X
Test report							1
Material certificate							2
Withstand pressure test							4
Traceability certificate							6
Mounting bracket							H
Certificate of oil free finish							J
Certificate of oil free and No water finish							P

Note) *1. The temperature effect will be 3.5 times of the standard.

*2. Applicable only for ferrule size 2S. The accuracy will be 1.5 times and the temperature effect will be 6 times of the standard. Normal operation temperature and wetted parts temperature range are +10 to +45 °C.

Ferrule with cooling tower

(1 inch, 1-1/2 inch, 2 inches clamp type)



Measuring span / Setting range / Max. working pressure

Model number	Measuring span	Setting range	Max. working pressure	Process connection
PTG70K - _3	10 to 100 kPa	-100 to +100 kPa	200 kPa	2, 1-1/2S
PTG70K - _4	40 to 400 kPa	-100 to +400 kPa	800 kPa or clamp rating	2S, 1-1/2S, 1S
PTG70K - _5	0.2 to 2 MPa	-0.1 to +2 MPa	4 MPa or clamp rating	

Accuracy / Temperature effect

Model PTG70K- _3

Accuracy *1, *2	$\pm 0.5\%$ F.S. (100 kPa $\geq X \geq 20$ kPa) $\pm (0.5 \times 20 / X)\%$ F.S. (20 kPa $\geq X \geq 2$ kPa)	
Zero temperature effect per 30 °C *1	2S (Clamp type)	$\pm (2.5 \times 40 / X + 0.35)\%$
	1-1/2S (Clamp type)	$\pm (8.5 \times 40 / X + 0.35)\%$

Model PTG70K- _4

Accuracy *1, *2	$\pm 0.5\%$ F.S. (400 kPa $> X > 80$ kPa) $\pm (0.5 \times 80 / X)\%$ F.S. (80 kPa $> X > 40$ kPa)	
Zero temperature effect per 30 °C *1	2S (Clamp type)	$\pm (1.4 \times 80 / X + 0.35)\%$
	1-1/2S (Clamp type)	$\pm (4.4 \times 80 / X + 0.35)\%$
	1S (Clamp type)	$\pm (37.5 \times 80 / X + 0.35)\%$

Model PTG70K- _5

Accuracy *1, *2	$\pm 0.5\%$ F.S. (2 MPa $> X > 0.4$ MPa) $\pm (0.5 \times 0.4 / X)\%$ F.S. (0.4 MPa $> X > 0.2$ MPa)	
Zero temperature effect per 30 °C *1	2S (Clamp type)	$\pm (0.6 \times 0.4 / X + 0.35)\%$
	1-1/2S (Clamp type)	$\pm (1.2 \times 0.4 / X + 0.35)\%$
	1S (Clamp type)	$\pm (7.8 \times 0.4 / X + 0.35)\%$

Note) *1. Within a range of URV ≥ 0 and LRV ≥ 0

*2. Negative pressure accuracy
Accuracy, which is greater value of either $\pm 3\%$ F.S. or upper calculated accuracy.

Ambient temperature limits

Normal operating range

-10 to +60 °C

Transportation and storage temperature

-30 to +80 °C

Temperature range of wetted parts

-10 to +110 °C

Ambient humidity limit

5 to 100% RH

Materials

Fill fluid

Propylene glycol

Wetted parts

Diaphragm

SUS316L

Others

SUS316L

Case

Aluminum alloy

Weight

Approx. 1.4 kg

Process connection

- IDF 1S clamp
- IDF 1-1/2S clamp
- IDF 2S clamp

For other specification, please refer to COMMON SPECIFICATIONS.

MODEL SELECTION

Smart pressure transmitter model PTG70K

Process connection: Ferrule clamp type with cooling tower

Measuring span: 20 to 100 kPa, 40 to 400 kPa, 0.2 to 2 MPa

Model number structure: Basic model number - Selection - Option1 - Option2

Basic model number		Selection			Option1	Option2
[] - [] [] []		[]	[]	[]	[]	[]
Product description	Gauge pressure transmitter: Ferrule type with cooling tower	PTG70K				
Type of protection	TIIS Flameproof Electrical connection: G1/2	A				
Measuring span	20 to 100 kPa (0.21 to 1.019 kgf/cm ²) (Applicable only for process connection 2S)	3				
	40 to 400 kPa (0.408 to 4.07 kgf/cm ²)	4				
	0.2 to 2 MPa (2.04 to 20.3 kgf/cm ²)	5				
Material: Diaphragm / wetted parts other than diaphragm / fill fluid	SUS316L / SUS316L / Propylene glycol		CB			
Process connection	IDF 1S ferrule clamp type (Not applicable for span code "3")			AH2X		
	IDF 1-1/2S ferrule clamp type			AH3X		
	IDF 2S ferrule clamp type			AH4X		
Option 1					-	
No option						X
Built-in digital indicator						M
Corrosion-proof finish						B
Remote communication function						C
Wetted part finish	Oil free finish					G
	Water and oil free finish					H
	Electrolytic grinding					K
	Passive state finish					W
Option2						-
No option						X
Test report						1
Material certificate						2
Withstand pressure test						4
Traceability certificate						6
Mounting bracket						H
Certificate of oil free finish						J
Certificate of oil free and No water finish						P

Caution for device selection

In the following installation locations, device error may occur. Do not use this device, even if the pressure or temperature, etc., is within the device specifications.

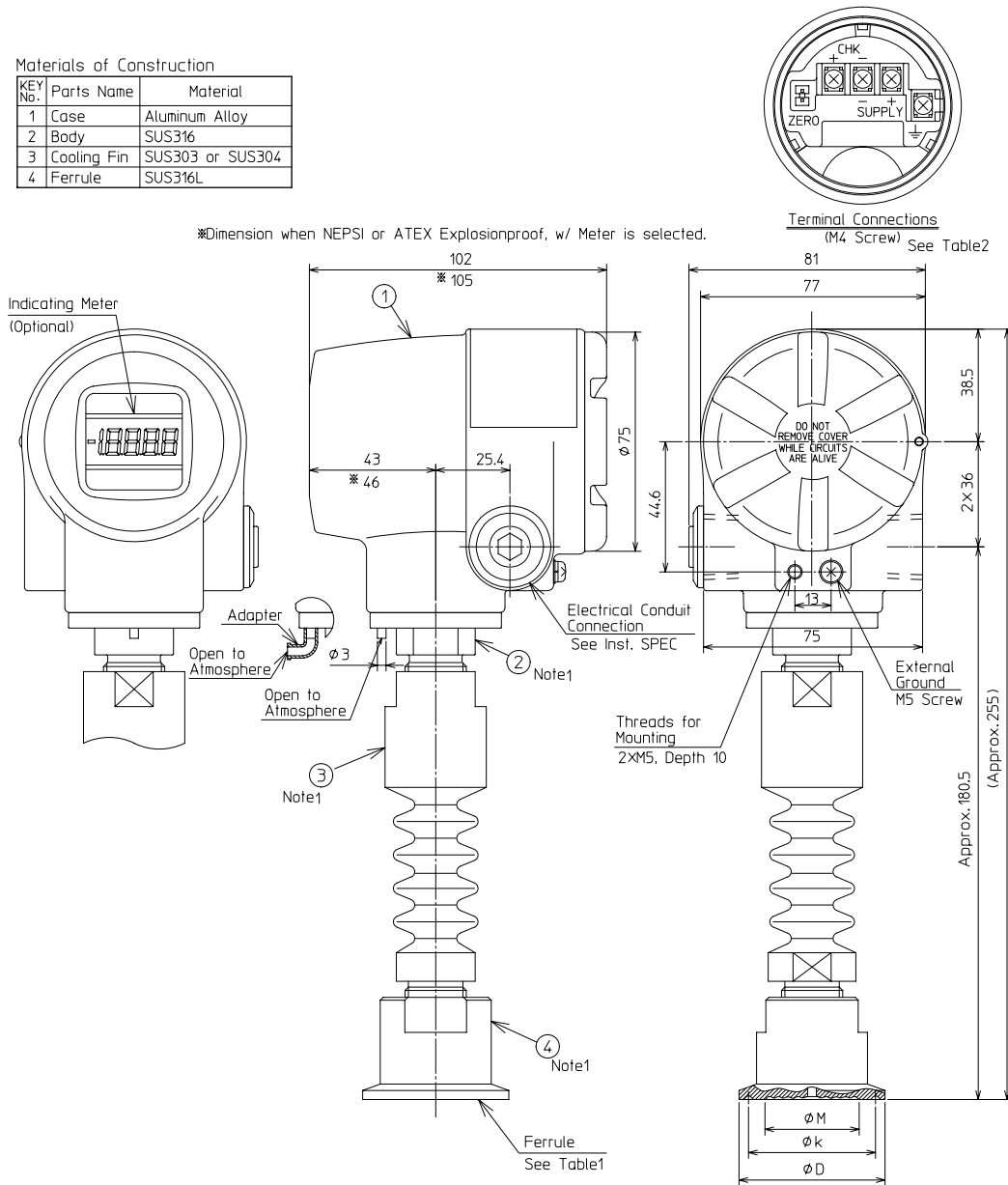
- Locations where dynamic pressure from the process is repeatedly applied to this device by a batch process (Ex. Filler and washer of beer barreling equipment)
- Locations where the pressure-receiving section of this device would be subject to direct spray when the tank is cleaned (Ex.: at the top of a conical tank)
- Locations where dynamic pressure is applied to this device by the process (Ex.: near a bent pipe)
- Locations where this device would be subject to direct pulsation from the process (Ex.: rotary pump outlet)

DIMENSIONS

[Unit: mm]

Materials of Construction

KEY No.	Parts Name	Material
1	Case	Aluminum Alloy
2	Body	SUS316
3	Cooling Fin	SUS303 or SUS304
4	Ferrule	SUS316L



※Dimension when NEPSI or ATEX Explosionproof, w/ Meter is selected.

Terminal Connections (M4 Screw) See Table2

Threads for Mounting 2×M5, Depth 10

Table1 (See Inst. SPEC)

Rating	Code No.		Ferrule Size	øD	øk	øM
	Fitting	Size				
A	H	2	IDF 1S	50.5	43.5	22
		3	IDF 1.5S			
		4	IDF 2S			

Note1. Do not loosen. Loosening will lead to fill-fluid leakage.

Table2 Terminal Connections

Symbol	Description
SUPPLY +, SUPPLY -	Power Supply and Output Signal
CHK +, CHK -	Check Meter
⊥	Ground
ZERO	ZERO Adjuster

Ferrule with cooling tower

(1-1/2 inch, 2 inches cap nut type)



Measuring span/ Setting range/ Max. working pressure

Model number	Measuring span	Setting range	Max. working pressure	Process connection
PTG70K - _3	20 to 100 kPa	-100 to +100 kPa	200 kPa	2S, 1-1/2S
PTG70K - _4	40 to 400 kPa	-100 to +400 kPa	800 kPa or cap nut rating	
PTG70K - _5	0.2 to 2 MPa	-0.1 to +2 MPa	4 MPa or cap nut rating	

Accuracy / Temperature effect

Model PTG70K- _3

Accuracy *1, *2	± 0.5% F.S. (100 kPa ≥ X ≥ 20 kPa) ± (0.5 × 20 / X)% F.S. (20 kPa ≥ X ≥ 2 kPa)	
Zero temperature effect per 30 °C *1	2S (Cap nut type)	± (2.5 × 40 / X + 0.35)%
	1-1/2S (Cap nut type)	± (8.5 × 40 / X + 0.35)%

Model PTG70K- _4

Accuracy *1, *2	± 0.5% F.S. (400 kPa ≥ X ≥ 80 kPa) ± (0.5 × 80 / X)% F.S. (80 kPa ≥ X ≥ 40 kPa)	
Zero temperature effect per 30 °C *1	2S (Cap nut type)	± (1.4 × 80 / X + 0.35)%
	1-1/2S (Cap nut type)	± (4.4 × 80 / X + 0.35)%

Model PTG70K- _5

Accuracy *1, *2	± 0.5% F.S. (2 MPa ≥ X ≥ 0.4 MPa) ± (0.5 × 0.4 / X)% F.S. (0.4 MPa ≥ X ≥ 0.2 MPa)	
Zero temperature effect per 30 °C *1	2S (Cap nut type)	± (0.6 × 0.4 / X + 0.35)%
	1-1/2S (Cap nut type)	± (1.2 × 0.4 / X + 0.35)%

Note) *1. Within a range of URV ≥ 0 and LRV ≥ 0

*2. Negative pressure accuracy
Accuracy, which is greater value of either ±3% F.S. or upper calculated accuracy.

Ambient temperature limits

Normal operating range

-10 to +60 °C

Transportation and storage temperature

-30 to +80 °C

Temperature ranges of wetted parts

-10 to +110 °C

Ambient humidity limits

5 to 100% RH

Materials

Fill fluid

Propylene glycol

Wetted parts

Diaphragm

SUS316L

Others

SUS316L

Case

Aluminum alloy

Weight

- 1-1/2 inch: Approx. 1.6 kg
- 2 inches: Approx. 1.9 kg

Process connection

- IDF 1-1/2S cap nut type
- IDF 2S cap nut type

For other specification, please refer to COMMON SPECIFICATIONS.

MODEL SELECTION**Smart pressure transmitter model PTG70K**

Process connection: Ferrule cap nut type with cooling tower

Measuring span 20 to 100 kPa, 40 to 400 kPa, 0.2 to 2 MPa

Model number structure: Basic model number - Selection - Option1 - Option2

Basic model number		Selection			Option1	Option2
PTG70K		-			-	-
Product description	Gauge pressure transmitter: Ferrule type with cooling tower	PTG70K				
Type of protection	TIIS Flameproof Electrical connection: G1/2	A				
Measuring span	20 to 100 kPa (0.21 to 1.019 kgf/cm ²)	3				
	40 to 400 kPa (0.408 to 4.07 kgf/cm ²)	4				
	0.2 to 2 MPa (2.04 to 20.3 kgf/cm ²)	5				
Material: Diaphragm / wetted parts other than diaphragm / fill fluid	SUS316L / SUS316L / Propylene glycol	CB				
Process connection	IDF 1-1/2S ferrule cap nut type			AC3X		
	IDF 2S ferrule cap nut type			AC4X		
Option 1					-	
No option					X	
Built-in digital indicator					M	
Corrosion-proof finish					B	
Remote communication function					C	
Wetted part finish	Oil free finish				G	
	Water and oil free finish				H	
	Electrolytic grinding				K	
	Passive state finish				W	
Option2					-	
No option						X
Test report						1
Material certificate						2
Withstand pressure test						4
Traceability certificate						6
Mounting bracket						H
Certificate of oil free finish						J
Certificate of oil free and No water finish						P

Caution for device selection

In the following installation locations, device error may occur. Do not use this device, even if the pressure or temperature, etc., is within the device specifications.

- Locations where dynamic pressure from the process is repeatedly applied to this device by a batch process (Ex. Filler and washer of beer barreling equipment)
- Locations where the pressure-receiving section of this device would be subject to direct spray when the tank is cleaned (Ex.: at the top of a conical tank)
- Locations where dynamic pressure is applied to this device by the process (Ex.: near a bent pipe)
- Locations where this device would be subject to direct pulsation from the process (Ex.: rotary pump outlet)

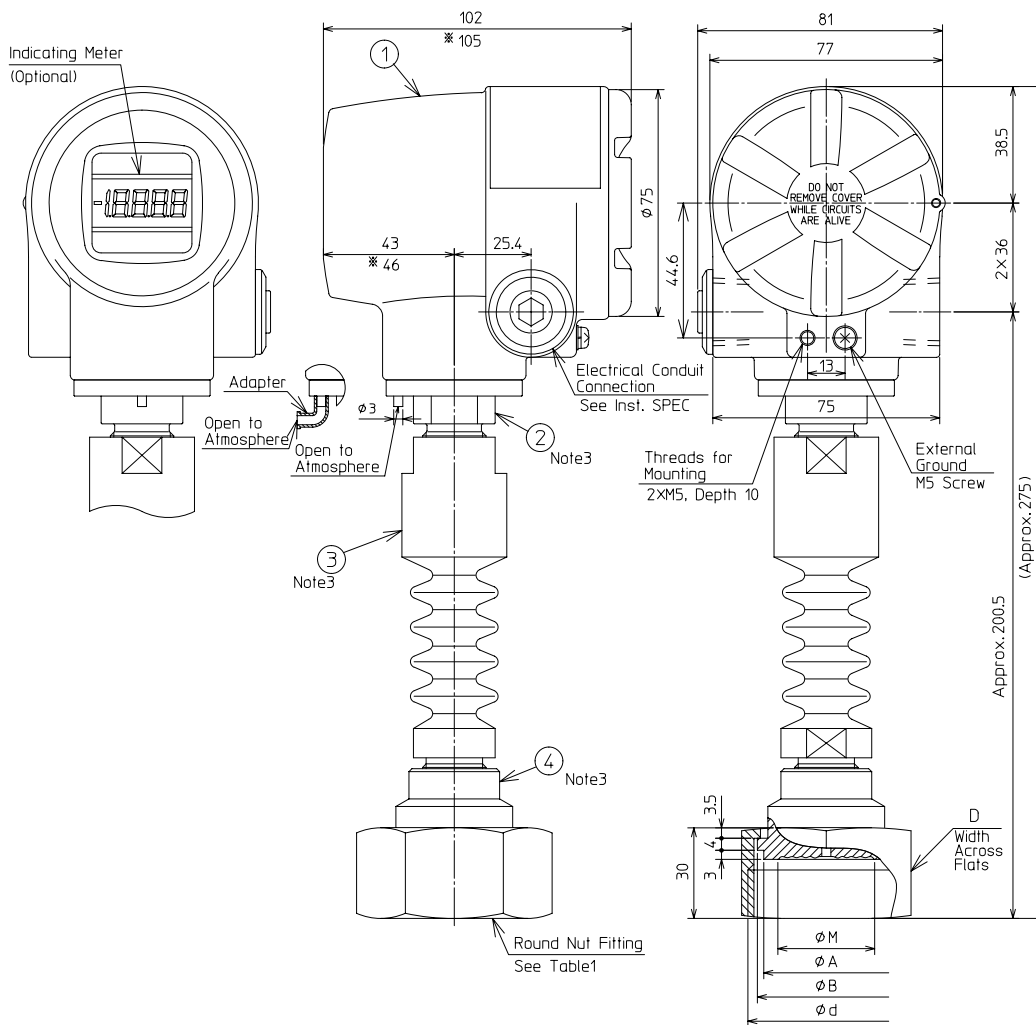
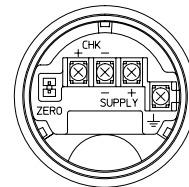
DIMENSIONS

[Unit: mm]

Materials of Construction

KEY No.	Parts Name	Material
1	Case	Aluminum Alloy
2	Body	SUS316
3	Cooling Fin	SUS303 or SUS304
4	Wetted Part	SUS316L

*Dimension when NEPSI or ATEX Explosionproof, w/ Meter is selected.



Note1. When TIS Explosion-Proof is selected, the attached cable adapter must be connected to the electrical conduits, or when elbow option is selected, to the elbow. See Drawing No.ED-551054-00 for dimensions.

- See Drawing No.ED-551052-00 for dimensions including mounting bracket.
- Do not loosen. Loosening will lead to fill-fluid leakage.

Table1 (See Inst. SPEC)

Code No.	Fitting Size (ød)	D	øM	øA	øB
A	3	IDF 1.5S	60	28	42.7
	4	IDF 2S	75	43	56.2

Table2 Terminal Connections

Symbol	Description
SUPPLY +, SUPPLY -	Power Supply and Output Signal
CHK+, CHK-	Check Meter
⊥	Ground
ZERO	ZERO Adjuster

Remote seal with ferrule type (1-1/2 inch, 2 inches clamp type)



Measuring span/ Setting range/ Max. working pressure

Model number	Measuring span	Setting range	Max. working pressure	Process connection
PTG70T - _3	10 to 100 kPa	-100 to +100 kPa	200 kPa	2S
PTG70T - _4	40 to 400 kPa	-100 to +400 kPa	800 kPa or clamp rating	2S, 1-1/2S
PTG70T - _5	0.2 to 2 MPa	-0.1 to +2 MPa	4 MPa or clamp rating	

Accuracy / Temperature effect

Model PTG70T- _3

Accuracy *1, *2	$\pm 0.5\%$ F.S. (100 kPa $\geq X \geq 20$ kPa) $\pm (0.5 \times 20 / X)\%$ F.S. (20 kPa $\geq X \geq 2$ kPa)	
Zero temperature effect per 30 °C *1	2S (Clamp type)	$\pm (11.5 \times 40 / X + 0.35)\%$

Model PTG70T- _4

Accuracy *1, *2	$\pm 0.5\%$ F.S. (400 kPa $\geq X \geq 80$ kPa) $\pm (0.5 \times 80 / X)\%$ F.S. (80 kPa $\geq X \geq 40$ kPa)	
Zero temperature effect per 30 °C *1	2S (Clamp type)	$\pm (5.9 \times 80 / X + 0.35)\%$
	1-1/2S (Clamp type)	$\pm (21.7 \times 80 / X + 0.35)\%$

Model PTG70T- _5

Accuracy *1, *2	$\pm 0.5\%$ F.S. (2 MPa $\geq X \geq 0.4$ MPa) $\pm (0.5 \times 0.4 / X)\%$ F.S. (0.4 MPa $\geq X \geq 0.2$ MPa)	
Zero temperature effect per 30 °C *1	2S (Clamp type)	$\pm (1.5 \times 0.4 / X + 0.35)\%$
	1-1/2S (Clamp type)	$\pm (4.65 \times 0.4 / X + 0.35)\%$

Note) *1. Within a range of URV ≥ 0 and LRV ≥ 0

*2. Negative pressure accuracy
Accuracy, which is greater value of either $\pm 3\%$ F.S. or upper calculated accuracy.

Ambient temperature limits

Normal operating ranges

1-1/2 inch	-5 to +55 °C
2 inches	-5 to +60 °C

Transportation and storage temperature

-30 to +80 °C

Temperature range of wetted parts

-5 to +110 °C

Ambient humidity limits

5 to 100% RH

Materials

Fill fluid

Propylene glycol

Wetted parts

Diaphragm

SUS316L

Others

SUS316L

Case

Aluminum alloy

Capillary cover

Olefin

Weight

Approx. 1.8 kg (Capillary length 3 m)

Process connection

- IDF 1-1/2S clamp type
- IDF 2S clamp type

For other specification, please refer to COMMON SPECIFICATIONS.

MODEL SELECTION

Smart pressure transmitter model PTG70T

Process connection: Remote seal with ferrule clamp type

Measuring span: 10 to 100 kPa, 40 to 400 kPa, 0.2 to 2 MPa

Model number structure: Basic model number - Selection - Option1 - Option2

			Selection				Option1	Option2
Product description	Gauge pressure transmitter: Ferrule type with remote seal	PTG70T						
Type of protection	TIIS Flameproof Electrical connection: G1/2		A					
Measuring span	10 to 100 kPa (0.102 to 1.019 kgf/cm ²) (Not applicable for process connection 1S)			3				
	40 to 400 kPa (0.408 to 4.07 kgf/cm ²)			4				
	0.2 to 2 MPa (2.04 to 20.3 kgf/cm ²)			5				
Material: Diaphragm / wetted parts other than diaphragm / fill fluid	SUS316L / SUS316 L / Propylene glycol				CB			
Process connection	IDF 1-1/2S ferrule clamp type					AH3X		
	IDF 2S ferrule clamp type					AH4X		
Capillary length	1 m (with Olefin tube)					E		
	3 m (with Olefin tube)					G		
	5 m (with Olefin tube)					J		
Option 1							-	
No option								X
Built-in digital indicator								M
Corrosion-proof finish								B
Remote communication function								C
Wetted parts finish	Oil free finish						G	
	Water and oil free finish						H	
	Electrolytic grinding						K	
	Passive state finish						W	
Option2								-
No option								X
Test report								1
Material certificate								2
Withstand pressure test								4
Traceability certificate								6
Mounting bracket								H
Certificate of oil free finish								J
Certificate of oil free and No water finish								P

DIMENSIONS

[Unit: mm]

Materials of construction

KEY No.	Description	Materials
1	Case	Aluminum alloy
2	Body	SUS 316
3	Capillary A'ssy	SUS 304(Olefin cover)
4	Wetted Part	SUS 316L

※ Dimension when NEPSI or ATEX flameproof with indicating meter is chosen.

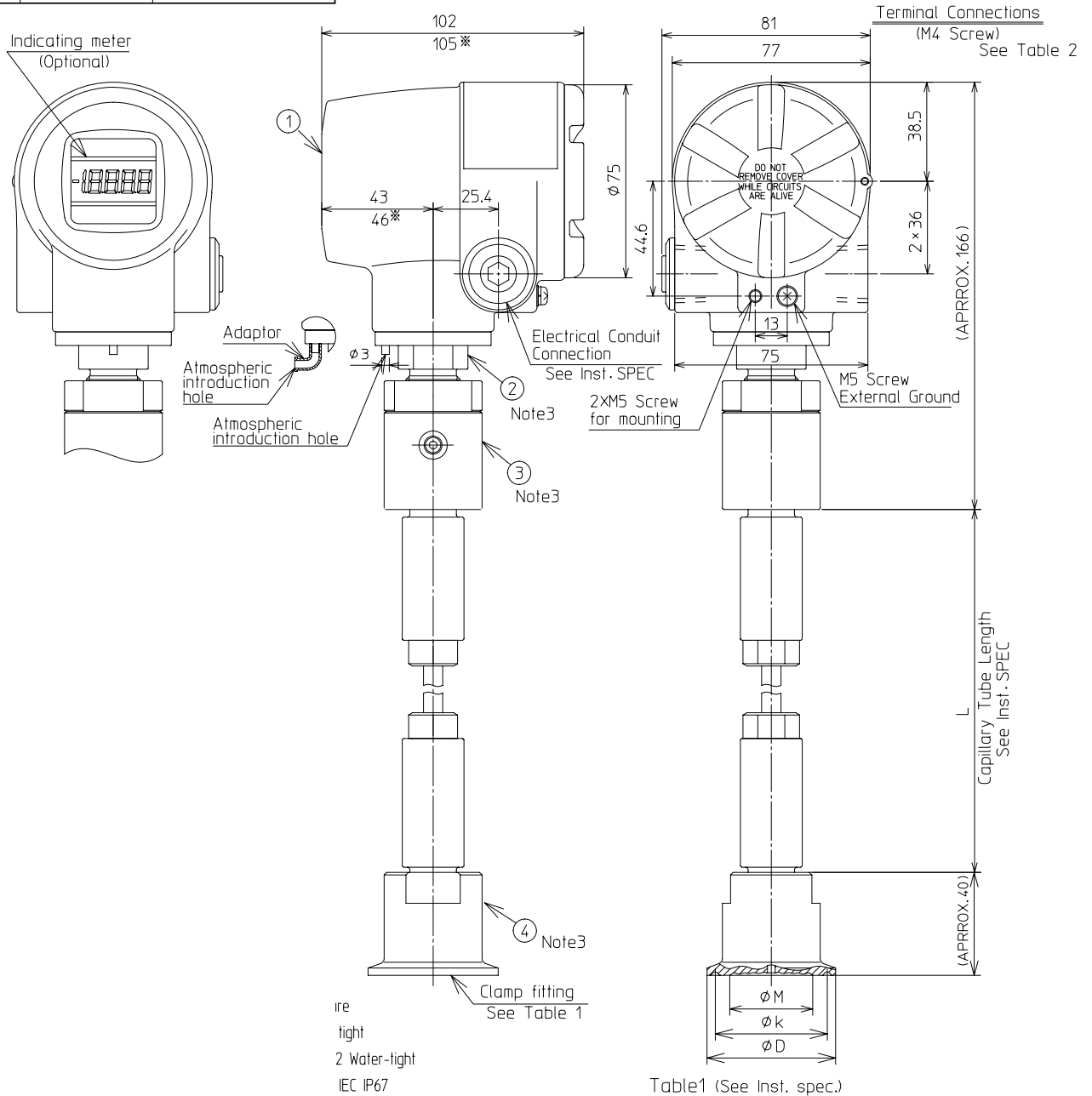
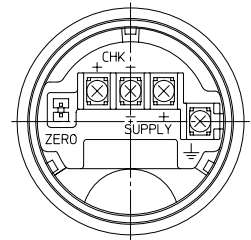


Table1 (See Inst. spec.)

Rating	Code No.		Ferrule Size	φD	φk	φM
	Fitting	Size				
A	H	2	IDF 1S	50.5	43.5	22
		3	IDF 1.5S			
		4	IDF 2S			

Table2 Terminal

Symbol	Terminal
SUPPLY +, SUPPLY -	Power supply and output signal
CHK+, CHK-	Check meter
⏏	Ground
ZERO	ZERO Adjuster

- Note 1. An elbow and cable adaptor is connected for JIS explosion-proof approved instruments. See drawing no. ED-551054-00 for dimensions.
- Note 2. See drawing no. ED-551052-00 for dimensions including mounting bracket.
- Note 3. Do not loosen. Loosening will lead to fill-fluid leakage.

Remote seal with ferrule type
(1-1/2 inch, 2 inches cap nut type)



Measuring span/ Setting range/ Max. working pressure

Model number	Measuring span	Setting range	Max. working pressure	Process connection
PTG70T - _3	10 to 100 kPa	-100 to +100 kPa	200 kPa	2S
PTG70T - _4	40 to 400 kPa	-100 to +400 kPa	800 kPa or cap nut rating	2S, 1-1/2S
PTG70T - _5	0.2 to 2 MPa	-0.1 to +2 MPa	4 MPa or cap nut rating	

Accuracy / Temperature effect

Model PTG70T- _3

Accuracy *1,*2	± 0.5% F.S. (100 kPa ≥ X ≥ 20 kPa) ± (0.5 × 20 / X)% F.S. (20 kPa ≥ X ≥ 2 kPa)	
Zero temperature effect per 30 °C *1	2S (Cap nut type)	± (11.5×40 / X + 0.35)%

Model PTG70T- _4

Accuracy *1,*2	± 0.5% F.S. (400 kPa ≥ X ≥ 80 kPa) ± (0.5 × 80 / X)% F.S. (80 kPa ≥ X ≥ 40 kPa)	
Zero temperature effect per 30 °C *1	2S (Cap nut type)	± (5.9 × 80 / X + 0.35)%
	1-1/2S (Cap nut type)	± (21.7 × 80 / X + 0.35)%

Model PTG70T- _5

Accuracy *1,*2	± 0.5% F.S. (2 MPa > X > 0.4 MPa) ± (0.5 × 0.4 / X)% F.S. (0.4 MPa > X > 0.2 MPa)	
Zero temperature effect per 30 °C *1	2S (Cap nut type)	± (1.5 × 0.4 / X + 0.35)%
	1-1/2S (Cap nut type)	± (4.65 × 0.4 / X + 0.35)%

Note) *1. Within a range of URV ≥ 0 and LRV ≥ 0

*2. Negative pressure accuracy
Accuracy, which is greater value of either ±3% F.S. or upper calculated accuracy.

Ambient temperature limits

Normal operating range

1-1/2 inch -5 to +55 °C
2 inches -5 to +60 °C

Transportation and storage temperature

-30 to +80 °C

Temperature range of wetted parts

-5 to +110 °C

Ambient humidity limits

5 to 100% RH

Materials

Fill fluid

Propylene glycol

Wetted parts

Diaphragm

SUS316L

Others

SUS316L

Case

Aluminum alloy

Capillary cover

Olefin

Weight

Approx. 2.3 kg (Capillary length 3 m)

Process connection

- IDF 1-1/2S cap nut type
- IDF 2S cap nut type

For other specification, please refer to COMMON SPECIFICATIONS.

MODEL SELECTION**Smart pressure transmitter model PTG70T**

Process connection: Remote seal with ferrule cap nut type

Measuring span 10 to 100 kPa, 40 to 400 kPa, 0.2 to 2 MPa

Model number structure: Basic model number - Selection - Option1 - Option 2

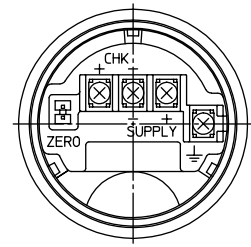
			Selection					Option1	Option2
Product description	Gauge pressure transmitter: Ferrule type with remote seal	PTG70T							
Type of protection	TIIS Flameproof Electrical connection: G1/2		A						
Measuring span	10 to 100 kPa (0.102 to 1.019 kgf/cm ²)		3						
	40 to 400 kPa (0.408 to 4.07 kgf/cm ²)		4						
	0.2 to 2 MPa (2.04 to 20.3 kgf/cm ²)		5						
Material: Diaphragm / wetted parts other than diaphragm / fill fluid	SUS316L / SUS316L / Propylene glycol			CB					
Process connection	IDF 1-1/2S ferrule cap nut type					AC3X			
	IDF 2S ferrule cap nut type					AC4X			
Capillary length	1m (with Olefin tube)					E			
	3m (with Olefin tube)					G			
	5m (with Olefin tube)					J			
Option 1							-		
No option								X	
Corrosion-proof finish								B	
Remote communication function								C	
Built-in digital indicator								M	
Wetted parts finish	Oil free finish							G	
	Water and oil free finish							H	
	Electrolytic grinding							K	
	Passive state finish							W	
Option2								-	
No option								X	
Test report								1	
Material certificate								2	
Withstand pressure test								4	
Traceability certificate								6	
Mounting bracket								H	
Certificate of oil free finish								J	
Certificate of oil free and No water finish								P	

DIMENSIONS

[Unit: mm]

Materials of construction

KEY No.	Description	Materials
1	Case	Aluminum alloy
2	Body	SUS 316
3	Capillary A'ssy	SUS 304(Olefin cover)
4	Wetted Part	SUS 316L



Terminal Connections
(M4 Screw)

See Table 2

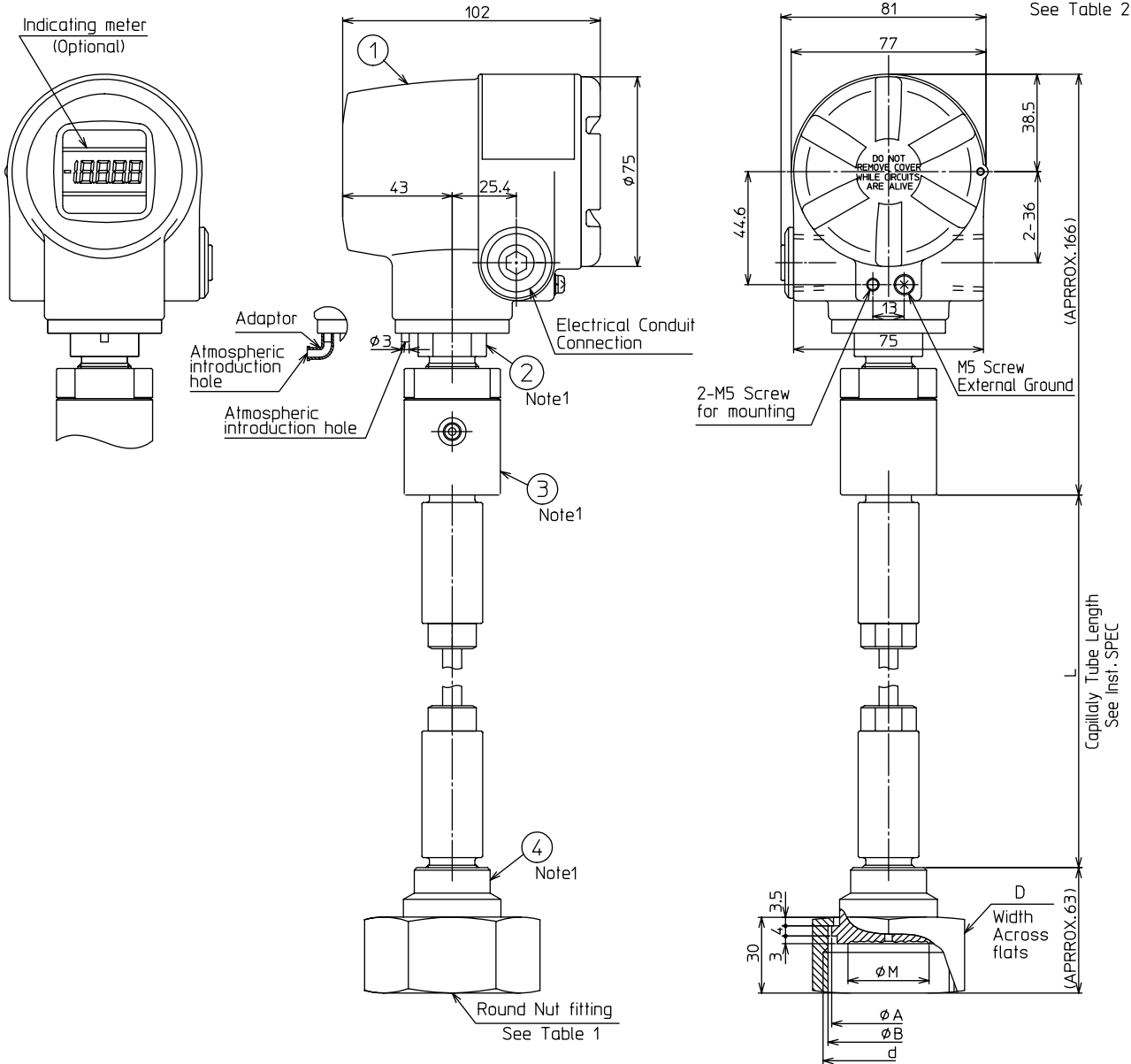


Table1

Rating	Code No.		Fitting Size(d)	D	φM	A	B
	Fitting	Size					
A	C	3	IDF 1.5S	60	32	42.7	28
		4	IDF 2S	75	52	56.2	43

Table2 Terminal

Symbol	Terminal
SUPPLY +, SUPPLY -	Power supply and output signal
CHK+, CHK-	Check meter
⏏	Ground
ZERO	ZERO Adjuster

Note 1. Do not loosen. Loosening will lead to fill-fluid leakage.

DIMENSIONS

[Unit: mm]

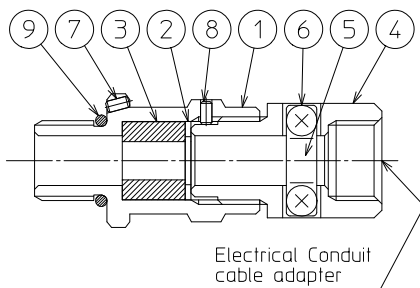
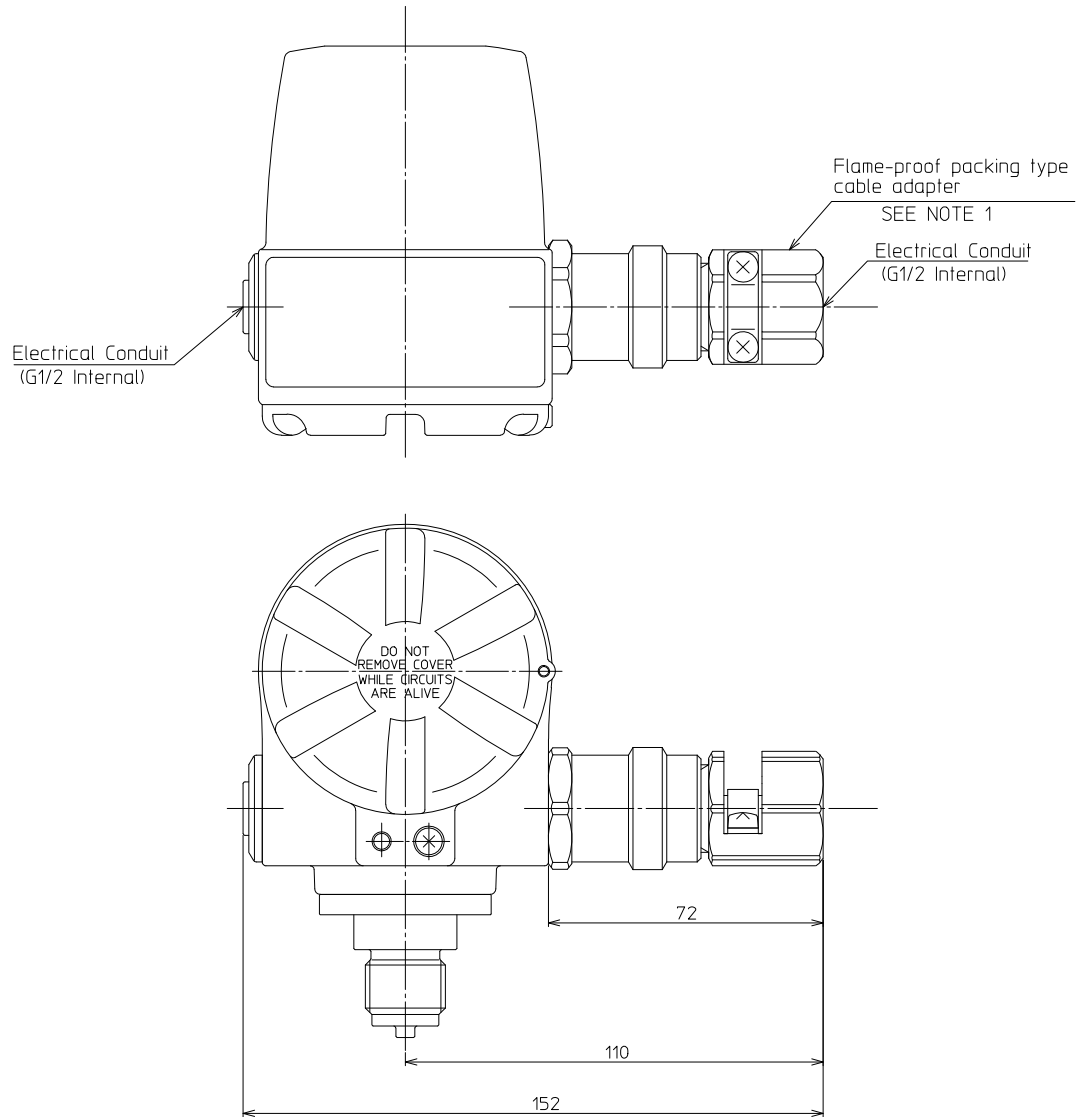


Table 1 (See Inst. SPEC.)

Code No. Selections /Case Structure	Number of Cable Adapters
A	1

Table 2 Materials Table

KEY No.	Description	Materials
1	M. screw	C3604
2	Washer	SUS 304
3	Packing	CR
4	Packing gland	C3604
5	Clamp	SUS 304
6	Cross recessed head screw	SUS 304
7	Set screw	SUS 304
8	Set screw	SUS 304
9	O* Ring	NBR

Note 1) The cable adapter may be connected to opposite conduit.
 2) Select packing and washer according to cable diameter.
 See Table 3. for applicable cable diameters.

Table 3

Packing inside diameter	Washer inside diameter	Applicable cable outside diameter ϕD
$\phi 10$	$\phi 10$	$\phi 9 \leq \phi D \leq \phi 10$
$\phi 11$	$\phi 13$	$\phi 10 \leq \phi D \leq \phi 11$
$\phi 12$	$\phi 13$	$\phi 11 \leq \phi D \leq \phi 12$

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