AT9000 Advanced Transmitter
Gauge Pressure Transmitters

OVERVIEW

AT9000 Advanced Transmitter is a microprocessor-based smart transmitter that features high performance and excellent stability. Capable of measuring gas, liquid, vapor, and liquid levels, it transmits 4 to 20 mA DC analog and digital signals according to the measured pressure.

It can also execute two-way communications between the communicator, thus facilitating self-diagnosis, range resetting, and automatic zero/span adjustment.

SFN, HART® and FOUNDATION Fieldbus are available.

* Refer to SS2-GTX00Z-0100 for FOUNDATION Fieldbus type for the items marked with [☆].

FEATURES

High performance and stability

- Unique characterization and composite semiconductor sensors realize high accuracy up to 0.04 % F.S.
- Our proven sensor technology enables Long-term stability up to 0.1 % of URL per 10-year.

Wide measuring range (range ability)

- A wide measuring range is available from a single model. This feature is highly effective in taking measurement over a wide range and reducing the need for inventory.
- Model GTX60G: 17.5 to 3500 kPa (range ability: 200 to 1)

A diverse lineup

- A wide range of models is available to meet user requirements for low, standard, and high pressures.
- A wide variety of corrosion-resistant materials for wetted parts is also available.

Remote communication

- Two-way communication using digital output facilitates self-diagnosis, range resetting, automatic zero adjustment, and other operations.

China RoHS

This device is used in the Oil & Gas, Petrochemical, Chemical, Pulp & Paper, Food & Beverage, Machinery, Steel/Metal & Mining, and Automobile industries and therefore does not fall under the China RoHS Legislation.

If this device is used in semiconductor manufacturing equipment, labeling on the device and documents for the China RoHS may be required. If such documents are required, consult an Azbil Corp. representative.

PRODUCT APPROVALS [☆]

FM Explosionproof for Division System/ Flameproof for Zone System (Code F1)

Explosionproof for Class I, Division 1, Groups A, B, C and D; Class I, Zone 1, AEx d IIC
Dust-Ignitionproof for Class II, III, Division 1, Groups E, F and G
T5 −40 °C≤T_{amb}≤+85 °C
Hazardous locations
Indoor/Outdoor Type 4X, IP67
Factory sealed, conduit seal not required for Division applications
Caution - Use supply wires suitable for 5 °C above surrounding ambient

FM Intrinsic Safety (Code F2)

IS/I, II, III/1/ABCDEFG/T4; −40 °C≤T_{amb}≤+60 °C; 80395278, 80395279, 80395280; Entity; TYPE 4X; IP67
I/0/AEx ia/IIC/T4; −40 °C≤T_{amb}≤+60 °C; 80395278, 80395279, 80395280; Entity; TYPE 4X; IP67
Entity Parameters: Vmax (Ui)=30 Volts, Imax (Ii)=100 mA, Pi=1 W, Ci=10 nF, Li=0.5 mH

FM Nonincendive (Code F5)

NI/I/2/ABCD/T4; −40 °C≤T_{amb}≤+60 °C; 80395494; NIFW; TYPE 4X; IP67
NI/I/2/IIC/T4; −40 °C≤T_{amb}≤+60 °C; 80395494; NIFW; TYPE 4X; IP67
S/II, III/1/EFG/T4; −40 °C≤T_{amb}≤+60 °C; 80395494; NIFW; TYPE 4X; P67
Nonincendive Field Wiring Parameters:
Vmax (Ui)=30 Volts, Ci=10 nF, Li=0.5 mH

Combination of F1, F2 and F5 (Code F6)

ATEX Flameproof (Code A1)

CE 0344 Ex KEMA 08ATEX0004

II 1/2 G Ex d IIC T6 Tprocess=85 °C
−30 °C≤T_{amb}≤+75 °C IP66/67
II 1/2 G Ex d IIC T5 Tprocess=100 °C
−30 °C≤T_{amb}≤+80 °C IP66/67
II 1/2 G Ex d IIC T4 Tprocess=110 °C
−30 °C≤T_{amb}≤+80 °C IP66/67
II 2 D Ex tD A21 IP66/67 T85 Tprocess=85 °C
−30 °C≤T_{amb}≤+75 °C
II 2 D Ex tD A21 IP66/67 T100 Tprocess=100 °C
−30 °C≤T_{amb}≤+75 °C
II 2 D Ex tD A21 IP66/67 T110 Tprocess=110 °C
−30 °C≤T_{amb}≤+75 °C
Caution - Use supply wires suitable for 5 °C above surrounding ambient

ATEX Intrinsic Safety (Code A2)

CE 0344 Ex KEMA 07ATEX0200 X

II 1 G Ex ia IIC T4 Tprocess=105 °C
−30 °C≤T_{amb}≤+60 °C IP66/67
Electrical Parameters: Ui=30 V, Ii=93 mA, Pi=1 W, Ci=5 nF, Li=0.5 mH
II 1 D Ex iaD 20 IP66/67 T105 Tprocess=105 °C
−30 °C≤T_{amb}≤+60 °C

NEPSI Flameproof (Code N1)

Ex d IIC T6 DIP A21 T_A 85 °C Tprocess=80 °C
−30 °C≤T_{amb}≤+75°C
Ex d IIC T5 DIP A21 T_A 100 °C Tprocess=95 °C
−30 °C≤T_{amb}≤+80 °C
Ex d IIC T4 DIP A21 T_A 115 °C Tprocess=110 °C
−30 °C≤T_{amb}≤+80 °C
ENCLOSURE TYPE IP66/67

NEPSI Intrinsic Safety (Code N2)

Ex ia IIC T4 Tprocess=105 °C
−30 °C≤T_{amb}≤+60 °C
Enclosure IP66/67
Electrical Parameters: Ui=30 V, Ii=100 mA, Pi=1 W, Ci=13 nF, Li=0.5 mH

NEPSI Type n (Code N5)

Ex nL IIC T4 Tprocess=110 °C
−30 °C≤T_{amb}≤+60 °C
Enclosure IP66/67
Electrical Parameters: Ui=30 V, Ii=100 mA, Pi=1 W, Ci=13 nF, Li=0.5 mH

IECEx Flameproof (Code E1)

Certificate No. IECEx KEM 08.0001
Ga/Gb Ex d IIC T6 Tprocess=85 °C
−30 °C≤T_{amb}≤+75 °C IP66/67
Ga/Gb Ex d IIC T5 Tprocess=100 °C
−30 °C≤T_{amb}≤+80 °C IP66/67
Ga/Gb Ex d IIC T4 Tprocess=110 °C
−30 °C≤T_{amb}≤+80 °C IP66/67
Ex tD A21 IP66/67 T85 Tprocess=85 °C
−30 °C≤T_{amb}≤+75 °C
Ex tD A21 IP66/67 T100 Tprocess=100 °C
−30 °C≤T_{amb}≤+75 °C
Ex tD A21 IP66/67 T110 Tprocess=110 °C
−30 °C≤T_{amb}≤+75 °C
Caution - Use supply wires suitable for 5 °C above surrounding ambient

IECEx Intrinsic Safety (Code E2)

IECEx KEM 07.0058X
Zone 0 Ex ia IIC T4 Tprocess=105 °C
−30 °C≤T_{amb}≤+60 °C IP66/67
Electrical Parameters: Ui=30 V, Ii=93 mA, Pi=1 W, Ci=5 nF, Li=0.5 mH
Ex iaD 20 IP66/67 T105 Tprocess=105 °C
−30 °C≤T_{amb}≤+60 °C

KOSHA Flameproof (Code K1)

Ex d II C T6 Tprocess=85 °C
−30 °C≤T_{amb}≤+75 °C
Ex d II C T5 Tprocess=100 °C
−30 °C≤T_{amb}≤+80 °C
Ex d II C T4 Tprocess=110 °C
−30 °C≤T_{amb}≤+80 °C

EMC Conformity [☆]

EN 61326-1 (industrial electromagnetic environment)
EN 61326-2-3

PED Conformity (97/23EC)

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	200 bar (20 MPa)	All models except GTX82G
	2	1,000 bar (100 MPa)	All models
Liquid	1	500 bar (50 MPa)	All models
	2	1,000 bar (100 MPa)	All models

Note) Group 1 comprises fluids defines as: explosive, extremely flammable, highly flammable, flammable, very toxic, toxic and oxidizing.

Group 2 comprises all other fluids not refer to group 1

Any AT9000 model having a maximum working pressure that is higher than the pressure corresponding to its group does not conform to SEP.

Models GTX82G conform to PED according to Module A.

FUNCTIONAL SPECIFICATIONS

Type of protection

NEMA 3 and 4X
IEC IP66/67

Measuring span/Setting range/Overload Resistance value

Model	Measuring Span	Setting Range	Overload Resistance value
GTX 60G	17.5 to 3500 kPa {0.175 to 35 kgf/cm²}	−100 to +3500 kPa {−1 to +35 kgf/cm²}*1	5250 kPa {52.5 kgf/cm²}
GTX 71G	0.7 to 14 MPa {7 to 140 kgf/cm²}	−0.1 to +14 MPa {−1 to +140 kgf/cm²}*2	21 MPa {210 kgf/cm²}
GTX 82G	0.7 to 42 MPa {7 to 420 kgf/cm²}	−0.1 to +42 MPa {−1 to +420 kgf/cm²}*3	63 MPa {630 kgf/cm²}

*Note) *1. With PVC parts, the maximum working pressure is 1.5 MPa {15 kgf/cm²}.*

**2. With 304 SST bolts and nuts, the maximum working pressure is 10 MPa {100 kgf/cm²}.*

**3. With 304 SST bolts and nuts, the maximum working pressure is 20 MPa {200 kgf/cm²}.*

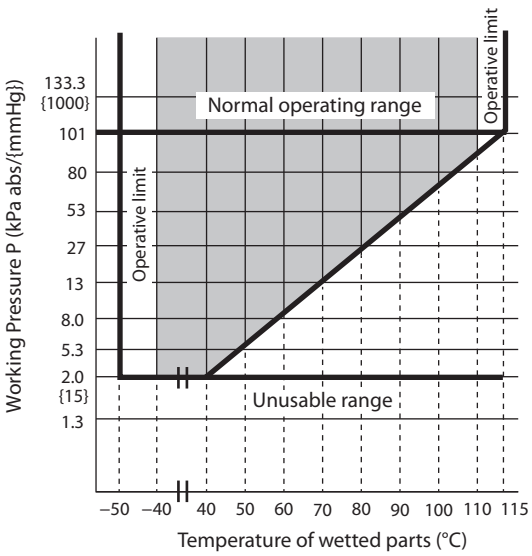

Figure 1. Working pressure and temperature of wetted parts section (for general purpose models)

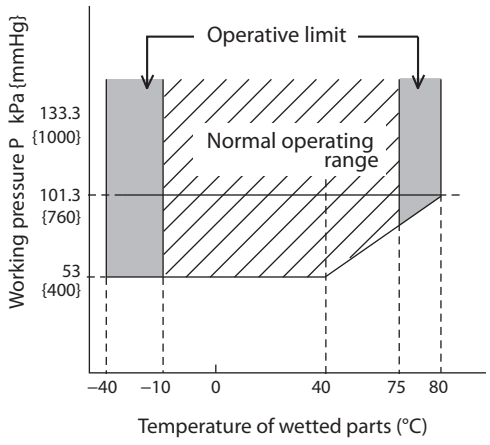

Figure 2. Working pressure and temperature of wetted parts section (for oxygen and chlorine service)

Power Supply [☆]

12.5 to 42 V DC
Limited to 12.5 to 30 V DC for intrinsic safety, Type n, Nonincendive types

Power Supply voltage and load resistance characteristics [☆]

See Figure 3.
Limited to Load resistance: 250 to 1345 Ω for SFN or DE communication. 250 to 600 Ω for HART communication.
Power supply voltage: 12.5 to 30 V DC for intrinsic safety, Type n, Nonincendive types

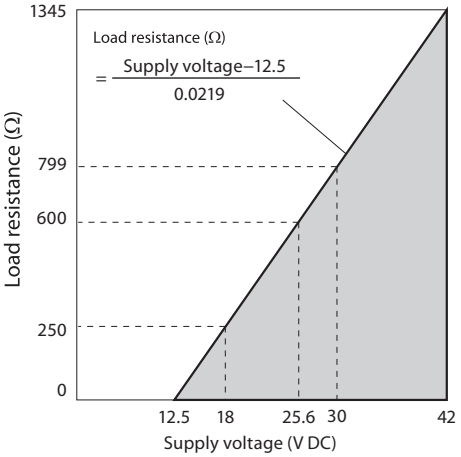

Figure 3. Supply voltage vs. load resistance characteristics

Note) For communication with a communicator, a load resistance of 250 Ω or more is necessary.

Output [☆]

Analog output (4 to 20 mA DC) with DE protocol
Analog output (4 to 20 mA DC) with HART protocol
Digital output (DE protocol)

Output signal [☆]

3.6 to 21.6 mA
3.8 to 20.5 mA (NAMUR NE43 compliant)

Failure Alarm [☆]

Upper: 21.6 mA or more
Lower: 3.6 mA or less

Ambient temperature limit

Normal operating range

−40 to +85 °C for general purpose models
−10 to +75 °C for oxygen and chlorine models
−25 to +80 °C for models with digital indicators
0 to +55 °C for models with PVC meterbody covers

Operative limits

−50 to +93 °C for general purpose models
−40 to +80 °C for oxygen and chlorine models
−30 to +85 °C for models with digital indicators
−10 to +60 °C for models with PVC meterbody covers

Transportation and storage conditions

−50 to +85 °C
−10 to +60 °C for models with PVC meterbody covers

Temperature ranges of wetted parts

Normal operating range

−40 to +110 °C for general purpose models
−20 to +75 °C for oxygen and chlorine models
0 to +55 °C for models with PVC meterbody covers

Operative limits

−50 to +115 °C for general purpose models
−40 to +80 °C for oxygen and chlorine models
−10 to +60 °C for models with PVC meterbody covers

Ambient humidity limits

5 to 100 % RH

Stability against supply voltage change

±0.005 % FS/V

Response time [☆]

Below 100 msec. (when damping time is set to 0 sec.)

Damping time [☆]

Selectable from 0 to 128 sec. (HART)
Selectable from 0 to 32 sec. in ten stages (SFN)

Zero Stability

±0.1 % of URL per 10 year (model GTX60G)
±0.2 % of URL per 10 year (model GTX71G and 82G)

Lightning protection [☆]

Applicable Standards; IEC 61000-4-5
Peak value of current surge (80/20 μ sec.): 6000 A

Indicator

The digital LCD indicator (optional) shows the output in percentage or in engineering units. Range for engineering unit is from -99999 to 99999 when set at the factory, and from -19999 to 19999 when using the communicator. Specify the following items when placing order with engineering units,

- Pressure range
- Engineering unit of pressure
- Method of display, either linear or square-root.

These data may be set or changed using the communicator.

OPTIONAL SPECIFICATIONS

Oil free finish

The transmitter is shipped with oil-free wetted parts.

External zero/span adjustment function

The transmitter can be easily adjusted to zero or span in the field.
Indicator must be selected to enable this option.
Fieldbus type does not have span adjustment.

Elbow

This is an adaptor for changing the electrical conduit connection port from the horizontal to the vertical direction, if required by wiring conditions in the field. One or two elbows may be used as needed.

Conformance to Non SI units
We deliver transmitters set to any Non SI units as specified.

Safety Transmitter
Select this option to be used as a component of Safety Instrument System (SIS).
AT9000 is complied with IEC61508, certified according to Safety Integrity Level2 (SIL-2)
This option is not applicable for FOUNDATION Fieldbus type, DE communication type, external zero/span adjustment (option A2), and Alarm output (option Q7).

Alarm Output (contact output)
Contact output is prepared as alarm output when alarm (Output Alarm/Sensor Temp. Alarm) condition is detected. It can be set to or Normally Close.
Contact output type : One open collector (NPN)
Contact rating: 30 V DC max., 30 mA DC max.
Residual voltage at output ON: 3.0 V max.
Operating mode: Normally Open (default)
Normally Close is not recommended.
When this option is selected, CHECK terminals for current check cannot be used.
This option is not applicable for FOUNDATION Fieldbus type, and with intrinsic safety, Type n, Nonincendive types.

Advanced diagnostics [☆]
This option is applicable for FOUNDATION Fieldbus type.
Refer to SS2-GTX00Z-0100.

Custom calibration
Calibrate for the specified pressure range at the factory.

PHYSICAL SPECIFICATIONS

Materials

Fill fluid
Silicone oil for general purpose models
Fluorine oil for oxygen and chlorine models

Center body
316 SST

Transmitter case
Aluminum alloy, CF8M (Equivalent to 316 SST)

Meter body cover flange
SCS14A (Equivalent to 316 SST) or 316 SST, PVC

Bolts and nuts (for fastening meter body cover)
Carbon steel (SNB7), 304 SST, 316 SST, 630 SST

O-ring
NBR

For Wetted parts

Adapter flange (option)
SCS14A (Equivalent to 316 SST), PVC

Center body
316 SST (Diaphragm 316L SST)
ASTM B575 (Equivalent to Hastelloy C-276), Tantalum, 316L SST

Vents and plugs
316 SST, PVC

Gaskets
PTFE

Mounting Bracket

Bracket
304 SST

U-bolt and nuts
304 SST

Paint
Standard: Baked acrylic paint
Corrosion-proof: Baked urethane paint

Color
Housing: Silver N-8.2
Cap: azbil bordeaux 2.5R 2.25/5

Weight
Approx. 3.4 kg (model GTX60G)
Approx. 3.7 kg (model GTX71G)
Approx. 6.3 kg (model GTX82G)

INSTALLATION

Electrical connection
1/2 NPT internal thread, M20 internal thread.

Grounding
Resistance 100 Ω max.

Mounting
Can be installed on a 2-inch horizontal or vertical pipe (can be directly mounted on a process pipe)

Process connection
Rc 1/2, 1/2 NPT internal thread and Rc 1/4, 1/4 NPT internal thread.

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). Failure to do so may cause a leak of process fluid, resulting in harm from burns, etc. In addition, if the process fluid contains toxic substances, take safety measures such as wearing goggles and a mask to prevent contact with the skin and eyes and to prevent inhalation.
- Use the transmitter within the operating ranges stated in the specifications (for explosion-proofing, pressure rating, temperature, humidity, voltage, vibration, shock, mounting direction, atmosphere, etc.). Using the transmitter outside the operating conditions may cause device failure or fire, resulting in a harmful physical risk of burning or the like.
- When performing wiring work in explosion-proof areas, follow the work method specified in the explosion-proof guidelines.

⚠CAUTION

- After installation, do not use the transmitter as a foothold or put your weight on it. Doing so may cause damage.
- 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.
- Use a power supply with overcurrent protection for this instrument.

Handling precautions for HART specification devices

- If you need to operate with a secondary host (HART communicator, etc.), set the communication interval of the primary host (DCS, device management system) to 8 seconds or more, or suspend communication from the primary host. If the primary host repeats HART communication within 8 seconds, the request from the secondary host may not be received (communication may not be possible).
- If electrical noise in the environment prevents HARTcommunications with the host, take countermeasures such as separating the signal cables from the source of the noise, improving the grounding, changing to shielded signal cables, etc. Even if noise interferes with HART communications, the 4–20 mA analog signal will be unaffected and can be used for control.
- If this product is being operated in multidrop mode, there is a limit to the number of devices that can be used. If you are using multidrop mode, please consult with us.

PERFORMANCE SPECIFICATIONS

Reference accuracy

Shown for each item are the percentage ratio for x (kPa), which is the greatest value of either the upper range value (URV)*1, the lower range value (LRV)*2 or the span.

Model GTX60G (for regular type)

Material of wetted parts: Diaphragm; 316L SST, Others; 316 SST

Reference accuracy *3 *4 *5		±0.04 %	(For $x \geq 350$ kPa {3.5 kgf/cm²})
		$\pm \left(0.008+0.032\times \frac{350}{x} \right)$ %	(For $x < 350$ kPa {3.5 kgf/cm²})
Ambient Temperature effect (Shift from the set range) Change of 30 °C *3	Combined shift: (including zero and span shifts)	±0.15 %	(For $x \geq 350$ kPa {3.5 kgf/cm²})
		$\pm \left(0.075+0.075\times \frac{350}{x} \right)$ %	(For $x < 350$ kPa {3.5 kgf/cm²})

Model GTX60G (for oxygen/chlorine service)

Material of wetted parts: Diaphragm; 316L SST, Others; 316 SST

Reference accuracy *3 *4		±0.075 %	(For $x \geq 1750$ kPa {17.5 kgf/cm²})
		±0.1 %	(1750 kPa {17.5 kgf/cm²}$> x \geq$ 140 kPa {1.4 kgf/cm²})
		$\pm \left(0.025+0.075\times \frac{140}{x} \right)$ %	(For $x < 140$ kPa {1.4 kgf/cm²})
Temperature characteristics (Shift from the set range) Change of 30 °C *3 (Range from −5 to +55 °C)	Combined shift: (including zero and span shifts)	±0.44 %	(For $x \geq 350$ kPa {3.5 kgf/cm²})
		$\pm \left(0.19+0.25\times \frac{350}{x} \right)$ %	(For $x < 350$ kPa {3.5 kgf/cm²})

Model GTX60G (for regular type/oxygen/chlorine service)

Material of wetted parts: Diaphragm; ASTM B575 (Equivalent to Hastelloy C-276), Tantalum, 316L SST Others; ASTM B575 (Equivalent to Hastelloy C-276), Tantalum, 316L SST

Reference accuracy *3 *4		±0.2 %	(For $x \geq 350$ kPa {3.5 kgf/cm²})
		$\pm \left(0.05+0.15\times \frac{350}{x} \right)$ %	(For $x < 350$ kPa {3.5 kgf/cm²})
Ambient Temperature effect (Shift from the set range) Change of 30 °C *3 (Range from −5 to +55 °C)	Combined shift: (including zero and span shifts)	±0.85 %	(For $x \geq 350$ kPa {3.5 kgf/cm²})
		$\pm \left(0.35+0.5\times \frac{350}{x} \right)$ %	(For $x < 350$ kPa {3.5 kgf/cm²})

**1. URV denotes the process value for 100 % (20 mA DC) output.*

**2. LRV denotes the process value for 0 % (4 mA DC) output.*

**3. Within a range of URV≥0 and LRV≥0.*

**4. Reference accuracy at calibrated condition.*

**5. In case code D "Digital output (DE communication)" is selected, reference accuracy becomes the same as one of "for oxygen/chlorine service".*

Model GTX71G (for regular type/oxygen/chlorine service)

Material of wetted parts: Diaphragm; 316L SST, Others; 316 SST

Reference accuracy *3 *4		±0.15 %	(For $x \geq 2.1$ MPa {21 kgf/cm²})
		$\pm \left(0.05+0.1\times\frac{2.1}{x} \right)$ %	(For $x < 2.1$ MPa {21 kgf/cm²})
Ambient Temperature effect (Shift from the set range) Change of 30 °C *3	Combined shift: (including zero and span shifts)	±0.41 %	(For $x \geq 3.5$ MPa {35 kgf/cm²})
		$\pm \left(0.18+0.23\times\frac{3.5}{x} \right)$ %	(For $x < 3.5$ MPa {35 kgf/cm²})

Model GTX71G (for regular type/oxygen/chlorine service)

Material of wetted parts: Diaphragm; ASTM B575 (Equivalent to Hastelloy C-276), Tantalum, 316L SST Others; ASTM B575 (Equivalent to Hastelloy C-276), Tantalum, 316L SST

Reference accuracy *3 *4		±0.2 %	(For $x \geq 2.1$ MPa {21 kgf/cm²})
		$\pm \left(0.05+0.15\times\frac{2.1}{x} \right)$ %	(For $x < 2.1$ MPa {21 kgf/cm²})
Ambient Temperature effect (Shift from the set range) Change of 30 °C *3 (Range from –5 to +55 °C)	Combined shift: (including zero and span shifts)	±0.85 %	(For $x \geq 3.5$ MPa {35 kgf/cm²})
		$\pm \left(0.35+0.5\times\frac{3.5}{x} \right)$ %	(For $x < 3.5$ MPa {35 kgf/cm²})

Model GTX82G (for regular type/oxygen/chlorine service)

Material of wetted parts: Diaphragm; 316L SST, Others; 316 SST

Reference accuracy *3 *4		±0.15 %	(For $x \geq 7$ MPa {70 kgf/cm²})
		$\pm \left(0.05+0.1\times\frac{7}{x} \right)$ %	(For $x < 7$ MPa {70 kgf/cm²})
Ambient Temperature effect (Shift from the set range) Change of 30 °C *3	Combined shift: (including zero and span shifts)	±0.41 %	(For $x \geq 7$ MPa {70 kgf/cm²})
		$\pm \left(0.18+0.23\times\frac{7}{x} \right)$ %	(For $x < 7$ MPa {70 kgf/cm²})

Model GTX82G (for regular type/oxygen/chlorine service)

Material of wetted parts: Diaphragm; ASTM B575 (Equivalent to Hastelloy C-276)

Reference accuracy *3 *4		±0.15 %	(For $x \geq 7$ MPa {70 kgf/cm²})
		$\pm \left(0.05+0.1\times\frac{7}{x} \right)$ %	(For $x < 7$ MPa {70 kgf/cm²})
Ambient Temperature effect (Shift from the set range) Change of 30 °C *3 (Range from –5 to +55 °C)	Combined shift: (including zero and span shifts)	±0.85 %	(For $x \geq 7$ MPa {70 kgf/cm²})
		$\pm \left(0.35+0.5\times\frac{7}{x} \right)$ %	(For $x < 7$ MPa {70 kgf/cm²})

3. Within a range of URV≥0 and LRV≥0.

4. Reference accuracy at calibrated condition.

MODEL SELECTION

Model GTX60G (Standard gauge pressure)

Model No.: **GTX_ _G - Selection I (I II III IV V VI VII) - Selection II (I II III IV V VI)** - Option

Basic Model No.

	Measuring span	17.5 to 3500 kPa (0.175 to 35 kgf/cm^2)	GTX60G

Selection I

I	Output	4 to 20 mA (SFN Communication)	A				
		4 to 20 mA (HART5 Communication)	B				
		FOUNDATION Fieldbus communication	C				
		Digital output (DE communication) *9	D				
		4 to 20 mA (HART7 Communication)	F				
II	Fill fluid	Regular type (Silicone oil)		A			
		For oxygen service (Fluorine oil)		H			
		For chlorine service (Fluorine oil) *5		J			
III	Material (Meterbody cover, Vent/Drain plugs)	Meterbody cover	Vent/Drain plugs				
		SCS14A	316 SST	A			
		PVC *3 *6 *7	PVC *3 *6 *7	C			
IV	Material (center body)	316 SST (Diaphragm: 316L SST)			A		
		ASTM B575 (Equivalent to Hastelloy C-276)			B		
		Tantalum *4 *10			C		
		316L SST *4 *10			D		
V	Process connections	Rc 1/2, with adapter flange				A	
		Rc 1/4, with adapter flange				B	
		Rc 1/4, without adapter flange				C	
		1/2 NPT internal thread, with adapter flange				D	
		1/4 NPT internal thread, with adapter flange				E	
		1/4 NPT internal thread, without adapter flange				F	
VI	Process installation	Vertical piping, top connection					A
		Vertical piping, bottom connection					B
		Horizontal piping, front connection					C
VII	Bolt/nut	304 SST					B
		316 SST *11					D

Selection II

								—
I	Electrical connection	1/2 NPT, Watertight					A	
		M20, Watertight *8					B	
II	Explosion proof [★] *14	None				XX		
		FM Explosionproof for Division system/Flameproof for Zone system				F1		
		FM Intrinsic safety				F2		
		FM Nonincendive				F5		
		Combination of code F1, F2, and F5				F6		
		ATEX Flameproof				A1		
		ATEX Intrinsic safety				A2		
		IECEx Flameproof				E1		
		IECEx Intrinsic safety				E2		
		NEPSI Flameproof				N1		
		NEPSI Intrinsic safety				N2		
		NEPSI Type n				N5		
		KOSHA Flameproof *13				K1		
III	Indicator	None			X			
		With indicator *15			A			
IV	Paint *12	Standard		X				
		None (316 stainless steel housing)		E				
		Corrosion-proof (Urethane)		H				
V	Failure alarm	Upper limit of output at abnormal condition	A					
		Lower limit of output at abnormal condition	B					
		None (for FOUNDATION Fieldbus) *16	X					
VI	Mounting bracket	None						X
		CF8 (L form) *1						1
		CF8M (L form) *11						2
		304 SST (Flat form) *2						6

(Continued)

(Continued from previous page)

**1. Applicable for wetted parts of material (center body); 316 SST and ASTM B575*

**2. Applicable for wetted parts of material (center body); Tantalum and 316L SST.*

**3. 304 SST bolts and nuts material (-B) must be selected when PVC meterbody cover is selected.The max. working pressure is 1.5 MPa.*

**4. In case code C, or D is selected, code A, or B of Process installation should be selected.*

**5. In case code J is selected, code C "Tantalum" of Material (meterbody) should be selected.*

**6. In case PVC is selected, code A, or D of Process connections should be selected.*

**7. In case PVC is selected, code A, or B of Process installation should be selected.*

**8. Not applicable for the combination with code F1, F6 of Explosion proof.*

**9. Not applicable for the combination with code A2 "With external Zero/Span adjustment", Q1 "Safety Transmitter" and Q2 "NAMUR NE43 Compliant Output Signal Limits" of Option.*

**10. Not applicable for the combination with code D of Bolt/nut.*

**11. In case this code is selected, code P8 of Option code should be selected.*

**12. In case code X or H is selected, the material of transmitter case is aluminum alloy.*

**13. Not applicable for the combination with code E of Paint.*

**14. For FOUNDATION Fieldbus type. Refer to SS2-GTX00Z-0100.*

**15. In case the code C "FOUNDATION Fieldbus communication" of output is selected, code A2 of Option code should be selected.*

**16. In case this code is selected, code C of Output should be selected.*

Model No.: **GTX_ _G** - Selection I (I II III IV V VI VII) - Selection II (I II III IV V VI) - **Option**

Option —

	No options	XX
	With external Zero/Span adjustment (With external ZERO adjustment only for FOUNDATION Fieldbus)*8 *9	A2
	One elbow (left) *3 *4 *7	G1
	One elbow (right) *3 *4 *7	G2
	2 elbows *3 *5 *7	G3
	Long vent/drain plugs	G4
	Side vent/drain top *3	G6
	Side vent/drain bottom *3	G7
	Oil and water free finish	K1
	Oil free finish *1	K3
	Au Plating Diaphragm	L1
	316 SST (Parts in contact with atmosphere) *11 *12 *13	P8
	Safety Transmitter *2 *9 *14	Q1
	NAMUR NE43 Compliant Output Signal Limits: 3.8 to 20.5 mA (Output 21.6 mA/selected upper limit, 3.6 mA/selected lower limit) *9 *14	Q2
	Alarm Output (contact output) *10 *14	Q7
	Advanced diagnostics *15	Q8
	Custom calibration	R1
	Test report	T1
	Mill certificate	T2
	Traceability certificate	T4
	NACE certificate *6	T5
	Non SI Unit	W1

**1. No need to select when Fill Fluid code H, or J is selected.*

**2. Not applicable for the combination with code A2, or Q7 of Option.*

**3. Not applicable for the combination with code A, or B of Process installation.*

**4. Not applicable for the combination with code F1, F6 of Explosion proof.*

**5. Not applicable for any Explosion proof. Please select code XX "None" of Explosion proof.*

**6. Applicable for "ASTM B575", code B of Material (center body).*

**7. Not applicable for the combination with code B "M20, Watertight" electrical connection.*

**8. Not applicable for the combination with code X "None" of Indicator. Please select "With indicator".*

**9. Not applicable for the combination with code D "Digital output (DE communication)" and F "4 to 20 mA (HART7 Communication)" of output.*

**10. Not applicable for the combination with code F2, F5, F6, N2, N5, E2, and A2 of Explosion proof.*

**11. In case code P8 is selected, code D of Bolt/nut should be selected.*

**12. In case code P8 is selected, code E of Paint should be selected.*

**13. In case code P8 is selected, code X or 2 of Mounting bracket should be selected.*

**14. Not applicable for the combination with code C "Digital output (FOUNDATION Fieldbus communication)" of output.*

**15. Not applicable for the combination with code A "4 to 20 mA (SFN Communication)", B "4 to 20 mA (HART5 Communication)", and D "Digital output (DE communication)" of output.*

Model GTX71G (High gauge pressure)

Model No.: **GTX_ _G - Selection I (I II III IV V VI VII) - Selection II (I II III IV V VI)** - Option

Basic Model No.

	Measuring span	0.7 to 14 MPa (7 to 140 kgf/cm^2)	GTX71G

Selection I

I	Output	4 to 20 mA (SFN Communication)	A				
		4 to 20 mA (HART5 Communication)	B				
		FOUNDATION Fieldbus communication	C				
		Digital output (DE communication) *7	D				
		4 to 20 mA (HART7 Communication)	F				
II	Fill fluid	Regular type (Silicone oil)		A			
		For oxygen service (Fluorine oil)		H			
		For chlorine service (Fluorine oil) *5		J			
III	Material (Meterbody cover, Vent/Drain plugs)	Meterbody cover	Vent/Drain plugs				
		SCS14A	316 SST	A			
IV	Material (center body)	316 SST (Diaphragm: 316L SST)			A		
		ASTM B575 (Equivalent to Hastelloy C-276)			B		
		Tantalum *4 *8			C		
		316L SST *4 *8			D		
V	Process connections	Rc 1/2, with adapter flange				A	
		Rc 1/4, with adapter flange				B	
		Rc 1/4, without adapter flange				C	
		1/2 NPT internal thread, with adapter flange				D	
		1/4 NPT internal thread, with adapter flange				E	
		1/4 NPT internal thread, without adapter flange				F	
VI	Process installation	Vertical piping, top connection *4					A
		Vertical piping, bottom connection *4					B
		Horizontal piping, front connection					C
VII	Bolt/nut	Carbon steel					A
		304 SST *3					B
		630 SST					C
		316 SST *3 *9					D

Selection II

—

I	Electrical connection	1/2 NPT, Watertight	A				
		M20, Watertight *6	B				
II	Explosion proof [★] *12	None	XX				
		FM Explosionproof for Division system/Flameproof for Zone system	F1				
		FM Intrinsic safety	F2				
		FM Nonincendive	F5				
		Combination of code F1, F2, and F5	F6				
		ATEX Flameproof	A1				
		ATEX Intrinsic safety	A2				
		IECEx Flameproof	E1				
		IECEx Intrinsic safety	E2				
		NEPSI Flameproof	N1				
		NEPSI Intrinsic safety	N2				
		NEPSI Type n	N5				
		KOSHA Flameproof *11	K1				
III	Indicator	None		X			
		With indicator *13		A			
IV	Paint *10	Standard			X		
		None (316 stainless steel housing)			E		
		Corrosion-proof (Urethane)			H		
V	Failure alarm	Upper limit of output at abnormal condition				A	
		Lower limit of output at abnormal condition				B	
		None (for FOUNDATION Fieldbus) *14				X	
VI	Mounting bracket	None					X
		CF8 (L form) *1					1
		CF8M (L form) *9					2
		304 SST (Flat form) *2					6

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**1. Applicable for wetted parts of material (center body); 316 SST, ASTM B575.*

**2. Applicable for wetted parts of material (center body); Tantalum, 316L SST.*

**3. When 304/316 SST bolt/nut is selected, max working pressure rating is 10 MPa (100 kgf/cm^2).*

**4. In case code C, or D is selected, code A, or B of Process installation should be selected.*

**5. In case code J is selected, code C "Tantalum" of Material (centerbody) should be selected.*

**6. Not applicable for the combination with code F1, F6 of Explosion proof.*

**7. Not applicable for the combination with code A2 "With external Zero/Span adjustment", Q1 "Safety Transmitter" and Q2 "NAMUR NE43 Compliant Output Signal Limits" of Option.*

**8. Not applicable for the combination with code D of Bolt/nut.*

**9. In case this code is selected, code P8 of Option code should be selected.*

**10. In case code X or H is selected, the material of transmitter case is aluminum alloy.*

**11. Not applicable for the combination with code E of Paint.*

**12. For FOUNDATION Fieldbus type. Refer to SS2-GTX00Z-0100.*

**13. In case the code C "FOUNDATION Fieldbus communication" of output is selected, code A2 of Option code should be selected.*

**14. In case this code is selected, code C of Output should be selected.*

Model No.: **GTX_ _G** - Selection I (I II III IV V VI VII) - Selection II (I II III IV V VI) - **Option**

Option —

	No options	XX
	With external Zero/Span adjustment (With external ZERO adjustment only for FOUNDATION Fieldbus)*8 *9	A2
	One elbow (left) *3 *4 *7	G1
	One elbow (right) *3 *4 *7	G2
	2 elbows *3 *5 *7	G3
	Long vent/drain plugs	G4
	Side vent/drain top *3	G6
	Side vent/drain bottom *3	G7
	Oil and water free finish	K1
	Oil free finish *1	K3
	Au Plating Diaphragm	L1
	316 SST (Parts in contact with atmosphere) *11 *12 *13	P8
	Safety Transmitter *2 *9 *14	Q1
	NAMUR NE43 Compliant Output Signal Limits: 3.8 to 20.5 mA (Output 21.6 mA/selected upper limit, 3.6 mA/selected lower limit) *9 *14	Q2
	Alarm Output (contact output) *10 *14	Q7
	Advanced diagnostics *15	Q8
	Custom calibration	R1
	Test report	T1
	Mill certificate	T2
	Traceability certificate	T4
	NACE certificate *6	T5
	Non SI Unit	W1

**1. No need to select when Fill Fluid code H, or J is selected.*

**2. Not applicable for the combination with code A2, or Q7 of Option.*

**3. Not applicable for the combination with code A, or B of Process installation.*

**4. Not applicable for the combination with code F1, F6 of Explosion proof.*

**5. Not applicable for any Explosion proof. Please select code XX "None" of Explosion proof.*

**6. Applicable for "ASTM B575", code B of Material (center body).*

**7. Not applicable for the combination with code B "M20, Watertight" electrical connection.*

**8. Not applicable for the combination with code X "None" of Indicator. Please select "With indicator".*

**9. Not applicable for the combination with code D "Digital output (DE communication)" and F "4 to 20 mA (HART7 Communication)"of output.*

**10. Not applicable for the combination with code F2, F5, F6, N2, N5, E2, and A2 of Explosion proof.*

**11. In case code P8 is selected, code D of Bolt/nut should be selected.*

**12. In case code P8 is selected, code E of Paint should be selected.*

**13. In case code P8 is selected, code X or 2 of Mounting bracket should be selected.*

**14. Not applicable for the combination with code C "Digital output (FOUNDATION Fieldbus communication)" of output.*

**15. Not applicable for the combination with code A "4 to 20 mA (SFN Communication)", B "4 to 20 mA (HART5 Communication)", and D "Digital output (DE communication)" of output.*

Model GTX82G (High gauge pressure)

Model No.: **GTX_ _G - Selection I (I II III IV V VI VII) - Selection II (I II III IV V VI)** - Option

Basic Model No.

	Measuring span	0.7 to 42 MPa (7 to 420 kgf/cm²)	GTX82G

Selection I

I	Output	4 to 20mA (SFN Communication)			A	
		4 to 20mA (HART5 Communication)			B	
		FOUNDATION Fieldbus communication			C	
		Digital output (DE communication) *3			D	
		4 to 20mA (HART7 Communication)			F	
II	Fill fluid	Regular type (Silicone oil)			A	
		For oxygen service (Fluorine oil)			H	
III	Material (Meterbody cover, Vent/Drain plugs)	Meterbody cover	Vent/Drain plugs			
		316 SST	316 SST	A		
IV	Material (center body)	316 SST (Diaphragm: 316L SST)			A	
		ASTM B575 (Equivalent to Hastelloy C-276)			B	
V	Process connections	Rc 1/2, with adapter flange, for high pressure model			P	
		Rc 1/4, with adapter flange, for high pressure model			R	
		Rc 1/4, without adapter flange, for high pressure model			S	
		l/2 NPT internal thread, with adapter flange, for high pressure model			T	
		l/4 NPT internal thread, with adapter flange, for high pressure model			W	
		l/4 NPT internal thread, without adapter flange, for high pressure model			Y	
VI	Process installation	Vertical piping, top connection			A	
		Vertical piping, bottom connection			B	
		Horizontal piping, front connection			C	
VII	Bolt/nut	Carbon steel			A	
		304 SST *1			B	
		630 SST			C	
		316 SST *1 *4			D	

Selection II

—

I	Electrical connection	1/2 NPT, Watertight			A	
		M20, Watertight *2			B	
II	Explosion proof [☆] *6	None			XX	
		FM Explosionproof for Division system/Flameproof for Zone system			F1	
		FM Intrinsic safety			F2	
		FM Nonincendive			F5	
		Combination of code F1, F2, and F5			F6	
		ATEX Flameproof			A1	
		ATEX Intrinsic safety			A2	
		IECEx Flameproof			E1	
		IECEx Intrinsic safety			E2	
		NEPSI Flameproof			N1	
		NEPSI Intrinsic safety			N2	
		NEPSI Type n			N5	
		KOSHA Flameproof *5			K1	
III	Indicator	None			X	
		With indicator *7			A	
IV	Paint	Standard			X	
		None (316 stainless steel housing)			E	
		Corrosion-proof (Urethane)			H	
V	Failure alarm	Upper limit of output at abnormal condition			A	
		Lower limit of output at abnormal condition			B	
		None (for FOUNDATION Fieldbus) *8			X	
VI	Mounting bracket	None			X	
		CF8 (L form)			1	
		CF8M (L form) *4			2	

**1. When 304/316 SST bolt/nut is selected, max working pressure rating is 20 MPa (200 kgf/cm²).*

**2. Not applicable for the combination with code F1, F6 of Explosion proof.*

**3. Not applicable for the combination with code A2 "With external Zero/Span adjustment", Q1 "Safety Transmitter" and Q2 "NAMUR NE43 Compliant Output Signal Limits" of Option.*

**4. In case this code is selected, code P8 of Option code should be selected.*

**5. Not applicable for the combination with code E of Paint.*

**6. For FOUNDATION Fieldbus type. Refer to SS2-GTX00Z-0100.*

**7. In case the code C "FOUNDATION Fieldbus communication" of output is selected, code A2 of Option code should be selected.*

**8. In case this code is selected, code C of Output should be selected.*

Model No.: **GTX_ _G** - Selection I (I II III IV V VI VII) - Selection II (I II III IV V VI) - **Option**

Option —

	No options	XX
	With external Zero/Span adjustment (With external ZERO adjustment only for FOUNDATION Fieldbus)*8 *9	A2
	One elbow (left) *3 *4 *7	G1
	One elbow (right) *3 *4 *7	G2
	2 elbows *3 *5 *7	G3
	Long vent/drain plugs	G4
	Side vent/drain top *3	G6
	Side vent/drain bottom *3	G7
	Oil and water free finish	K1
	Oil free finish *1	K3
	Au Plating Diaphragm	L1
	316 SST (Parts in contact with atmosphere) *11 *12 *13	P8
	Safety Transmitter *2 *9 *14	Q1
	NAMUR NE43 Compliant Output Signal Limits: 3.8 to 20.5 mA (Output 21.6 mA/selected upper limit, 3.6 mA/selected lower limit) *9 *14	Q2
	Alarm Output (contact output) *10 *14	Q7
	Advanced diagnostics *15	Q8
	Custom calibration	R1
	Test report	T1
	Mill certificate	T2
	Traceability certificate	T4
	NACE certificate *6	T5
	Non SI Unit	W1

**1. No need to select when Fill Fluid code H, or J is selected.*

**2. Not applicable for the combination with code A2, or Q7 of Option.*

**3. Not applicable for the combination with code A, or B of Process installation.*

**4. Not applicable for the combination with code F1, F6 of Explosion proof.*

**5. Not applicable for any Explosion proof. Please select code XX "None" of Explosion proof.*

**6. Applicable for "ASTM B575", code B of Material (center body).*

**7. Not applicable for the combination with code B "M20, Watertight" electrical connection.*

**8. Not applicable for the combination with code X "None" of Indicator. Please select "With indicator".*

**9. Not applicable for the combination with code D "Digital output (DE communication)" and F "4 to 20 mA (HART7 Communication)"of output.*

**10. Not applicable for the combination with code F2, F5, F6, N2, N5, E2, and A2 of Explosion proof.*

**11. In case code P8 is selected, code D of Bolt/nut should be selected.*

**12. In case code P8 is selected, code E of Paint should be selected.*

**13. In case code P8 is selected, code X or 2 of Mounting bracket should be selected.*

**14. Not applicable for the combination with code C "Digital output (FOUNDATION Fieldbus communication)" of output.*

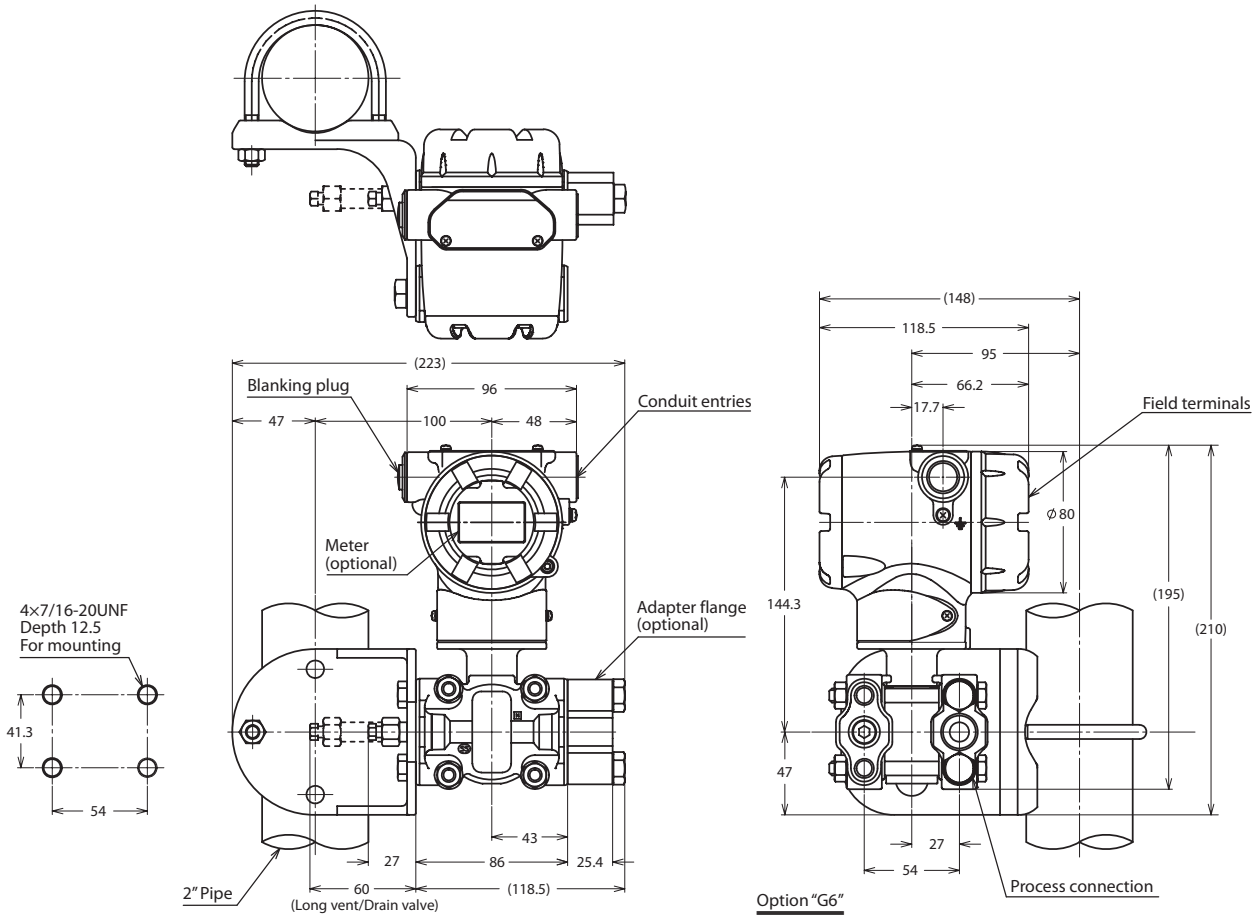
**15. Not applicable for the combination with code A "4 to 20 mA (SFN Communication)", B "4 to 20 mA (HART5 Communication)", and D "Digital output (DE communication)" of output.*

DIMENSIONS

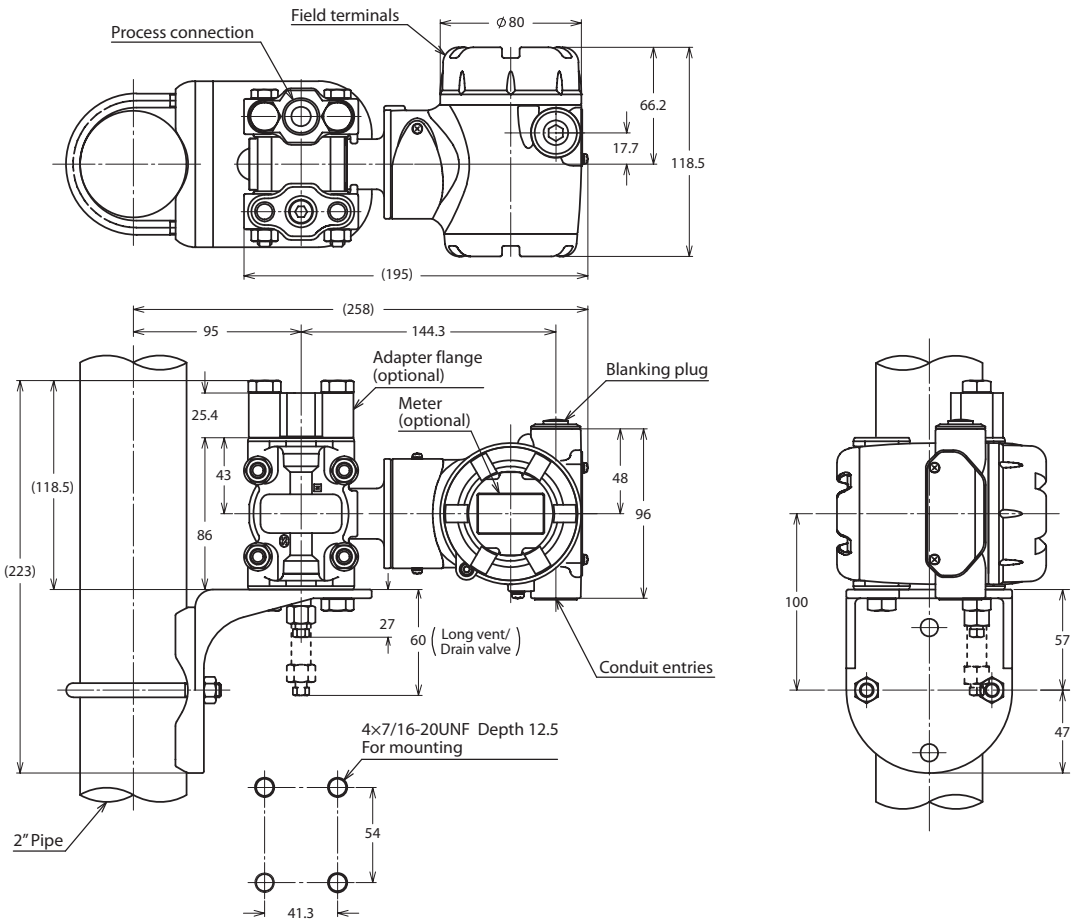
Model GTX60G (Material (center body): 316 SST, ASTM B575)

Process connection: Front side

Unit: mm



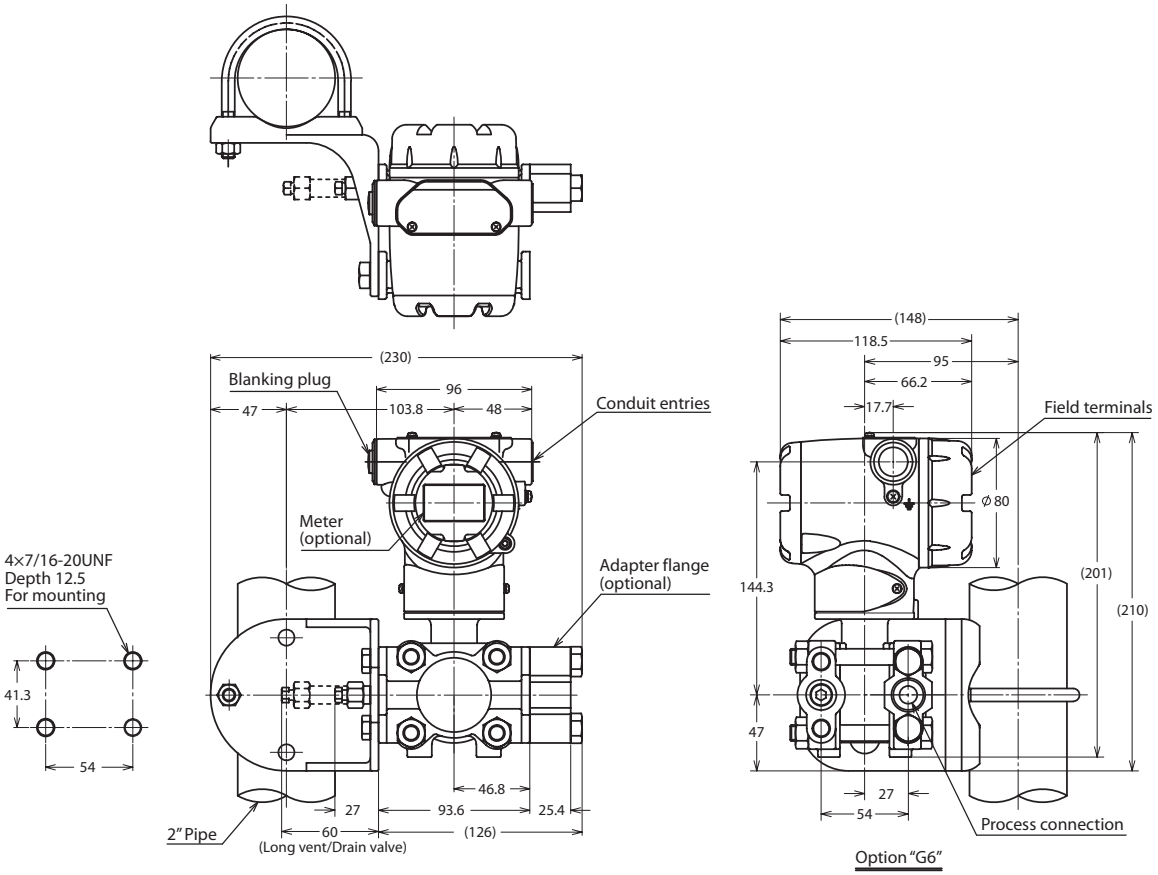
Process Connection: Top or bottom side



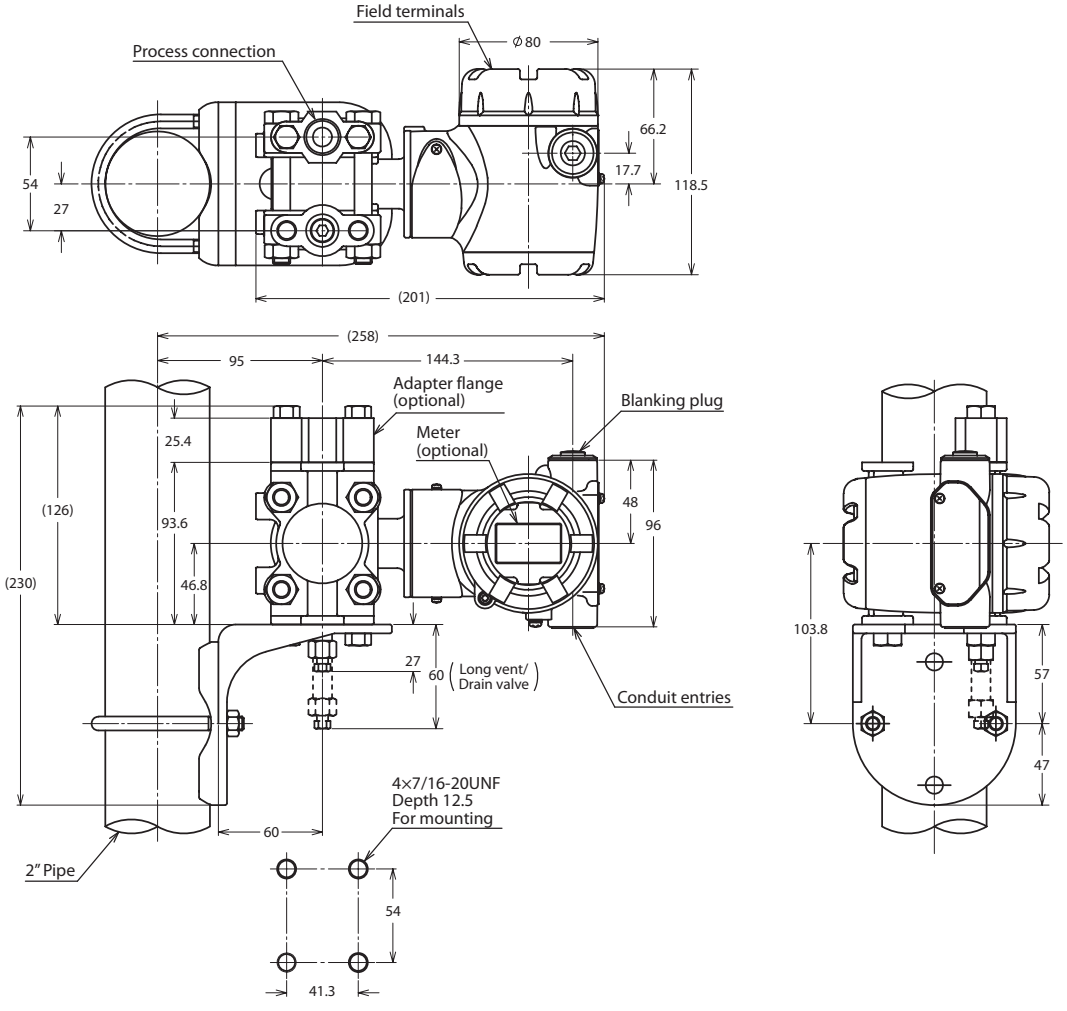
Model GTX71G (Material (center body): 316 SST, ASTM B575)

Process connection: Front side

Unit: mm



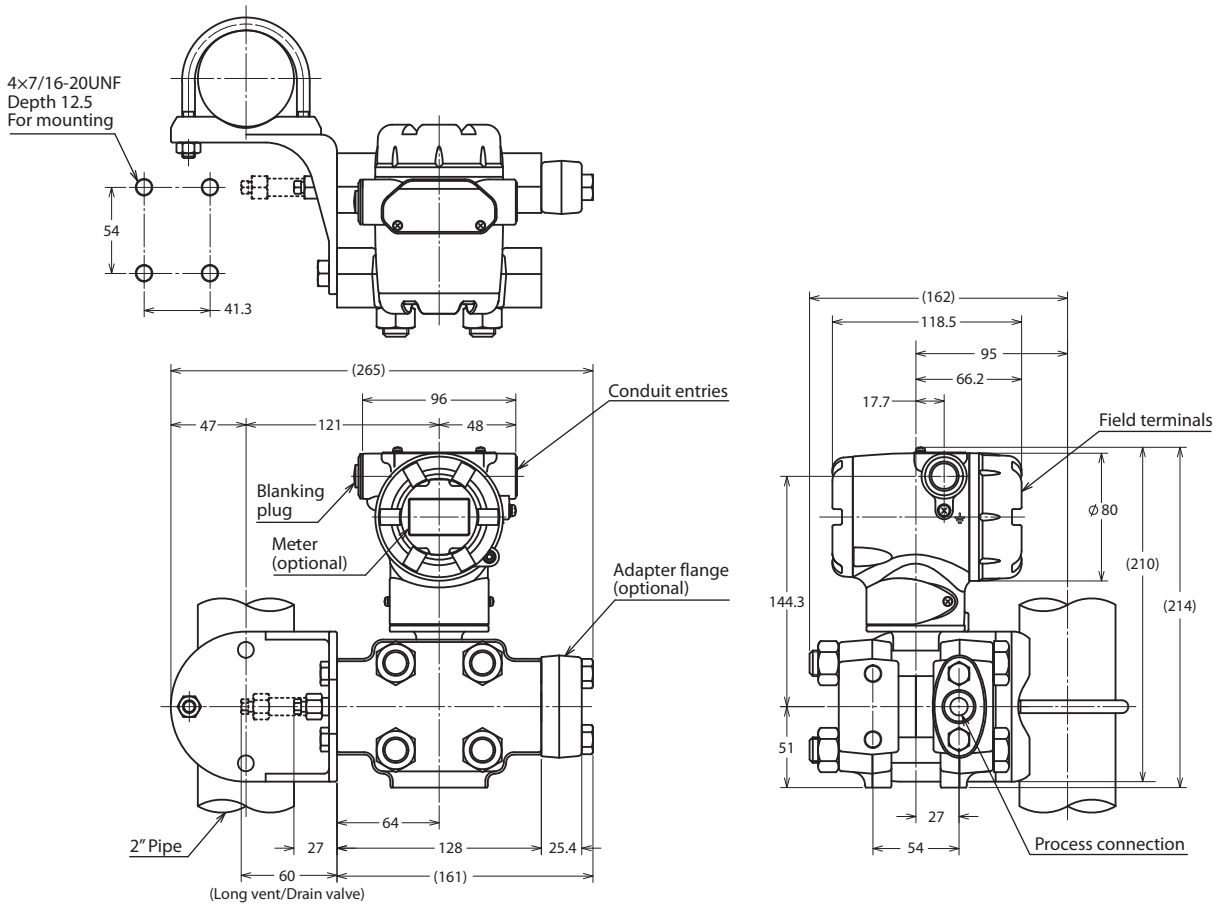
Process connection: Top or bottom side



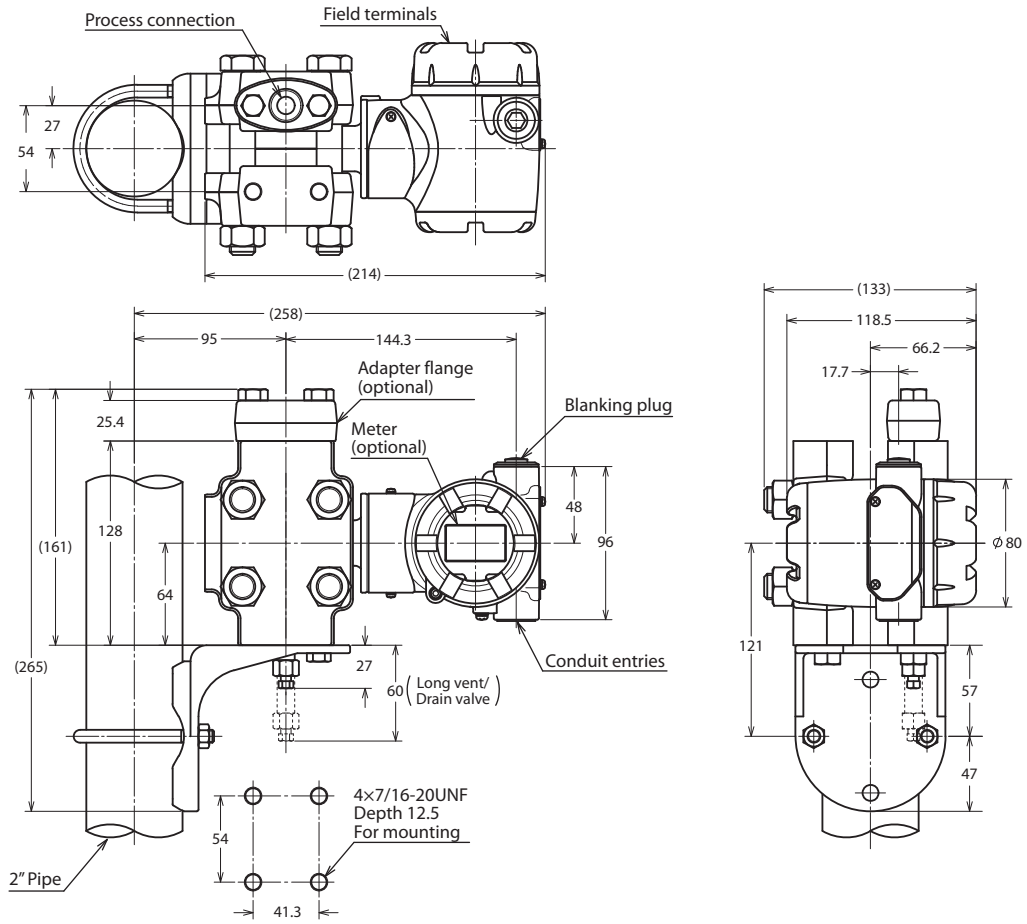
Model GTX82G

Process connection: Front side

Unit: mm

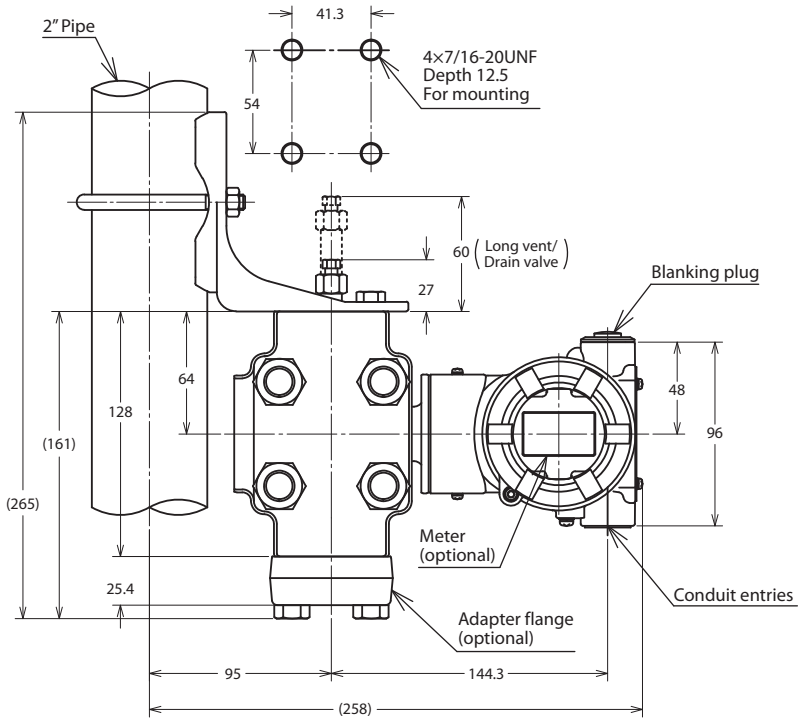


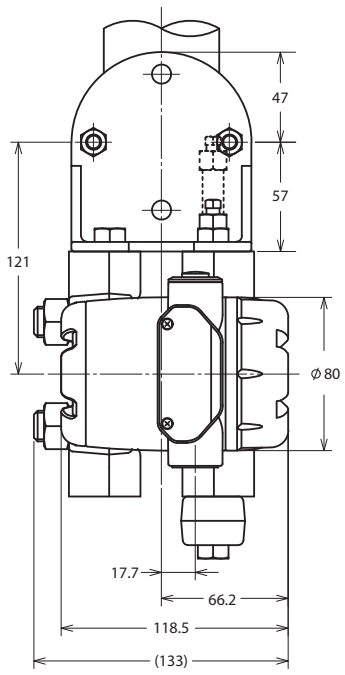
Process connection: Top side

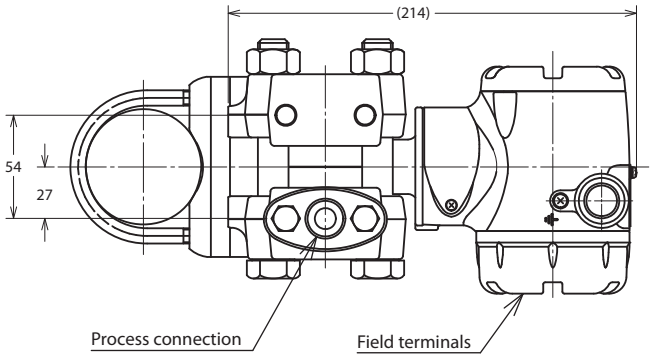


Process connection: Bottom side

Unit: mm



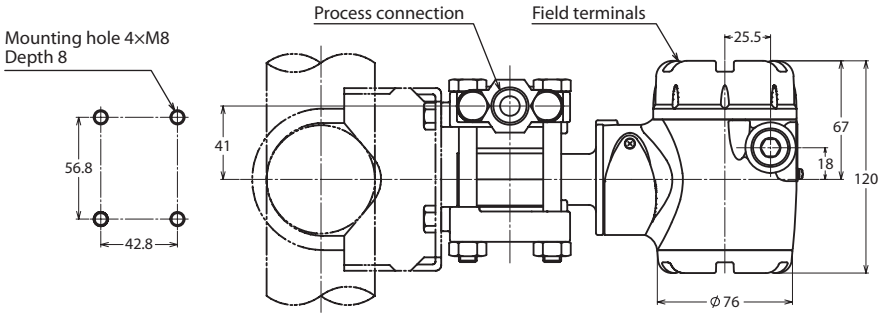


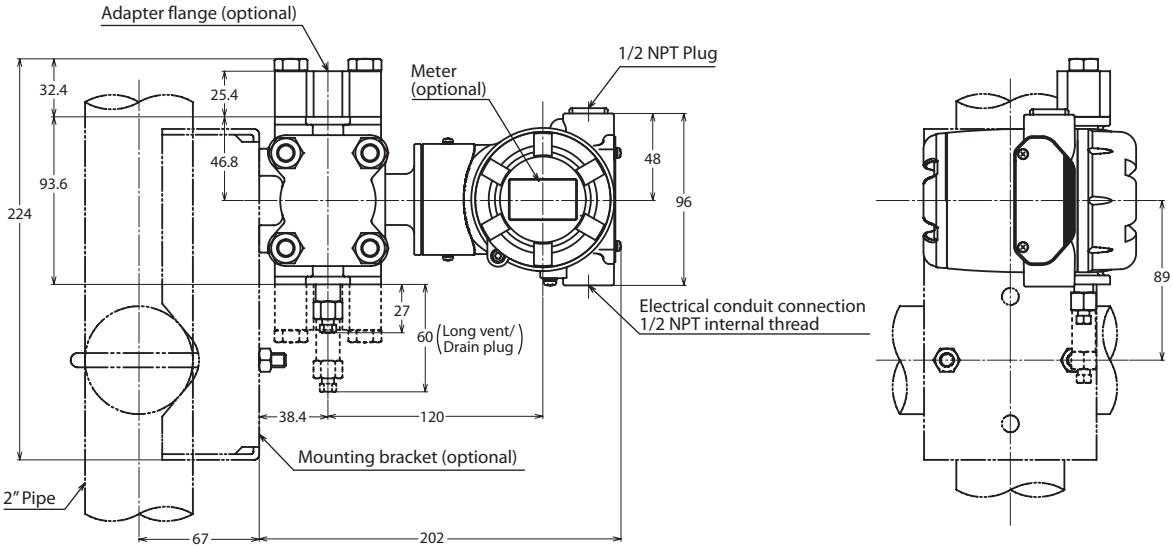


Model GTX60G/71G (Material (center body): Tantalum, 316L SST)

Process connection: Top or bottom side

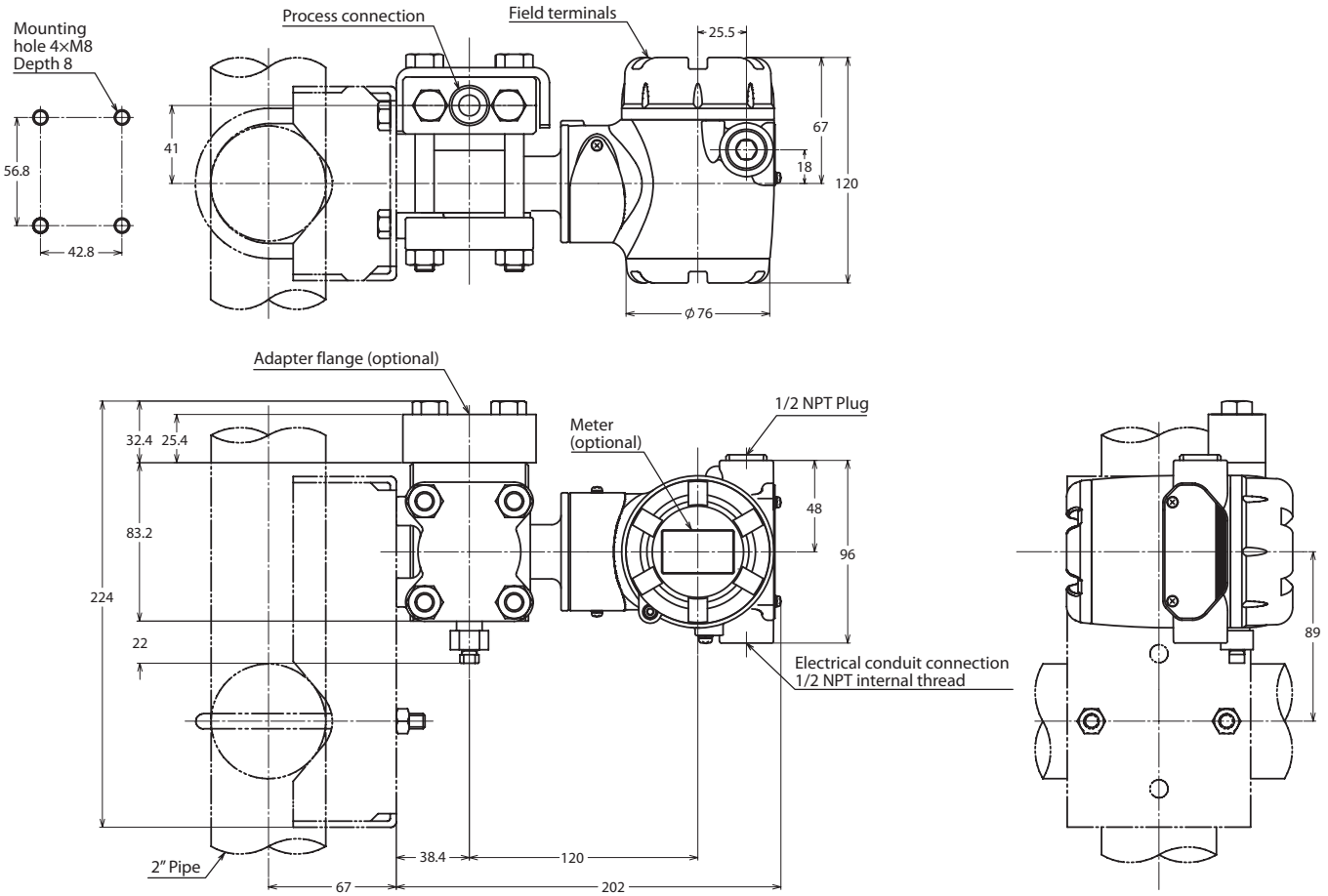
Unit: mm





Model GTX60G (Material (Meter body cover, Vent/Drain plugs): PVC)

Process connection: Top or bottom side



TERMINAL CONNECTION

(Not applicable for Fieldbus. See SS2-GTX00Z-0100 for Fieldbus.)

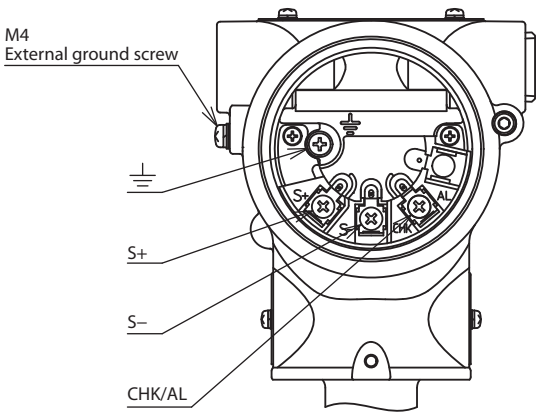


Table 1: Terminal connection

Symbol	Details
S+	Power supply and output signal +
S–	Power supply and output signal –/Check meter –
CHK/AL	Check meter +
⏚	Ground

Table 2: Terminal connection (option "Q7": Alarm output)

Symbol	Details
S+	Power supply and output signal +
S–	Power supply and output signal –
CHK/AL	Alarm +
⏚	Ground/Alarm –

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