

# AT9000 Advanced Transmitter Gauge Pressure Transmitters In-line model

## OVERVIEW

AT9000 Advanced Transmitter is a microprocessor-based smart transmitter that features high performance and excellent stability. Capable of measuring gas, liquid and vapor, 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)
- Model GTX71G: 0.7 to 14 MPa (range ability: 200 to 1)

### High durability

- Max. range pressure test is cleared more than 100,000 times.
- Anti-vibration specification is up to 3G.



### 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.

HART® is a registered trademark of the FieldComm Group.

FOUNDATION™ is a registered trademark of the FieldComm Group.

**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  $-40\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +85\text{ }^{\circ}\text{C}$   
Hazardous locations  
Indoor/Outdoor Type 4X, IP67  
Factory sealed, conduit seal not required for Division applications  
Caution - Use supply wires suitable for  $5\text{ }^{\circ}\text{C}$  above surrounding ambient

**FM Intrinsic Safety (Code F2)**

IS/I, II, III/1/ABCDEFGH/T4;  $-40\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +60\text{ }^{\circ}\text{C}$ ;  
80395278, 80395279, 80395280; Entity; TYPE 4X; IP67  
I/0/AEx ia/IIC/T4;  $-40\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +60\text{ }^{\circ}\text{C}$ ; 80395278,  
80395279, 80395280; Entity; TYPE 4X; IP67  
Entity Parameters:  $V_{\text{max}}$  ( $U_i$ )=30 Volts,  $I_{\text{max}}$  ( $I_i$ )=100 mA,  
 $P_i$ =1 W,  $C_i$ =10 nF,  $L_i$ =0.5 mH

**FM Nonincendive (Code F5)**

NI/I/2/ABCD/T4;  $-40\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +60\text{ }^{\circ}\text{C}$ ; 80395494; NIFW;  
TYPE 4X; IP67  
NI/I/2/IIC/T4;  $-40\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +60\text{ }^{\circ}\text{C}$ ; 80395494; NIFW;  
TYPE 4X; IP67  
S/II, III/1/EFG/T4;  $-40\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +60\text{ }^{\circ}\text{C}$ ;  
80395494; NIFW; TYPE 4X; P67  
Nonincendive Field Wiring Parameters:  
 $V_{\text{max}}$  ( $U_i$ )=30 Volts,  $C_i$ =10 nF,  $L_i$ =0.5 mH

**Combination of F1, F2 and F5 (Code F6)****ATEX Flameproof (Code A1)**

 0344  KEMA 08ATEX0004

II 1/2 G Ex d IIC T6  $T_{\text{process}}=85\text{ }^{\circ}\text{C}$   
 $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +75\text{ }^{\circ}\text{C}$  IP66/67  
II 1/2 G Ex d IIC T5  $T_{\text{process}}=100\text{ }^{\circ}\text{C}$   
 $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +80\text{ }^{\circ}\text{C}$  IP66/67  
II 1/2 G Ex d IIC T4  $T_{\text{process}}=110\text{ }^{\circ}\text{C}$   
 $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +80\text{ }^{\circ}\text{C}$  IP66/67  
II 2 D Ex tD A21 IP66/67 T85  $T_{\text{process}}=85\text{ }^{\circ}\text{C}$   
 $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +75\text{ }^{\circ}\text{C}$   
II 2 D Ex tD A21 IP66/67 T100  $T_{\text{process}}=100\text{ }^{\circ}\text{C}$   
 $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +75\text{ }^{\circ}\text{C}$   
II 2 D Ex tD A21 IP66/67 T110  $T_{\text{process}}=110\text{ }^{\circ}\text{C}$   
 $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +75\text{ }^{\circ}\text{C}$   
Caution - Use supply wires suitable for  $5\text{ }^{\circ}\text{C}$  above surrounding ambient

**ATEX Intrinsic Safety (Code A2)**

 0344  KEMA 07ATEX0200 X

II 1 G Ex ia IIC T4  $T_{\text{process}}=105\text{ }^{\circ}\text{C}$   
 $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +60\text{ }^{\circ}\text{C}$  IP66/67  
Electrical Parameters:  $U_i=30\text{ V}$ ,  $I_i=93\text{ mA}$ ,  $P_i=1\text{ W}$ ,  $C_i=5\text{ nF}$ ,  
 $L_i=0.5\text{ mH}$   
II 1 D Ex iaD 20 IP66/67 T105  $T_{\text{process}}=105\text{ }^{\circ}\text{C}$   
 $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +60\text{ }^{\circ}\text{C}$

**NEPSI Flameproof (Code N1)**

Ex d IIC T6 DIP A21  $T_A 85\text{ }^{\circ}\text{C}$   $T_{\text{process}}=80\text{ }^{\circ}\text{C}$   
 $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +75\text{ }^{\circ}\text{C}$   
Ex d IIC T5 DIP A21  $T_A 100\text{ }^{\circ}\text{C}$   $T_{\text{process}}=95\text{ }^{\circ}\text{C}$   
 $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +80\text{ }^{\circ}\text{C}$   
Ex d IIC T4 DIP A21  $T_A 115\text{ }^{\circ}\text{C}$   $T_{\text{process}}=110\text{ }^{\circ}\text{C}$   
 $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +80\text{ }^{\circ}\text{C}$   
ENCLOSURE TYPE IP66/67

**NEPSI Intrinsic Safety (Code N2)**

Ex ia IIC T4  $T_{\text{process}}=105\text{ }^{\circ}\text{C}$   
 $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +60\text{ }^{\circ}\text{C}$   
Enclosure IP66/67  
Electrical Parameters:  $U_i=30\text{ V}$ ,  $I_i=100\text{ mA}$ ,  $P_i=1\text{ W}$ ,  
 $C_i=13\text{ nF}$ ,  $L_i=0.5\text{ mH}$

**NEPSI Type n (Code N5)**

Ex nL IIC T4  $T_{\text{process}}=110\text{ }^{\circ}\text{C}$   
 $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +60\text{ }^{\circ}\text{C}$   
Enclosure IP66/67  
Electrical Parameters:  $U_i=30\text{ V}$ ,  $I_i=100\text{ mA}$ ,  $P_i=1\text{ W}$ ,  
 $C_i=13\text{ nF}$ ,  $L_i=0.5\text{ mH}$

**IECEx Flameproof (Code E1)**

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

**IECEx Intrinsic Safety (Code E2)**

IECEx KEM 07.0058X  
Zone 0 Ex ia IIC T4  $T_{\text{process}}=105\text{ }^{\circ}\text{C}$   
 $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +60\text{ }^{\circ}\text{C}$  IP66/67  
Electrical Parameters:  $U_i=30\text{ V}$ ,  $I_i=93\text{ mA}$ ,  $P_i=1\text{ W}$ ,  $C_i=5\text{ nF}$ ,  
 $L_i=0.5\text{ mH}$   
Ex iaD 20 IP66/67 T105  $T_{\text{process}}=105\text{ }^{\circ}\text{C}$   
 $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +60\text{ }^{\circ}\text{C}$

**KOSHA Flameproof (Code K1)**

Ex d II C T6 T<sub>process</sub>=85 °C  
 -30 °C ≤ T<sub>amb</sub> ≤ +75 °C  
 Ex d II C T5 T<sub>process</sub>=100 °C  
 -30 °C ≤ T<sub>amb</sub> ≤ +80 °C  
 Ex d II C T4 T<sub>process</sub>=110 °C  
 -30 °C ≤ T<sub>amb</sub> ≤ +80 °C

**EMC Conformity [☆]**

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

**FUNCTIONAL SPECIFICATIONS**

**Type of protection**

NEMA 3 and 4X  
 IEC IP66/67

**Measuring span/Setting range/Overload Resistance value**

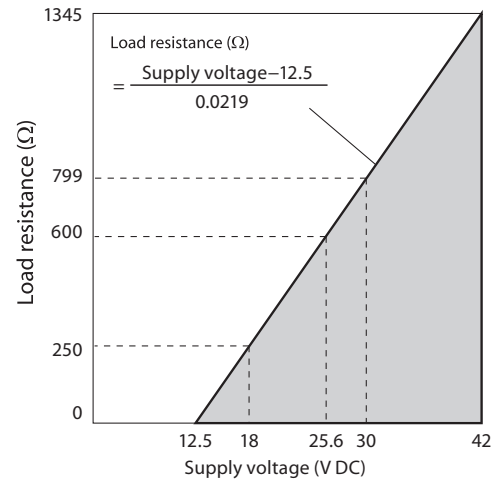
Model	Measuring Span	Setting Range	Overload Resistance value
GTX 60G	17.5 to 3500 kPa {0.175 to 35 kgf/cm <sup>2</sup> }	-100 to +3500 kPa {-1 to +35 kgf/cm <sup>2</sup> }	5250 kPa {52.5 kgf/cm <sup>2</sup> }
GTX 71G	0.7 to 14 MPa {7 to 140 kgf/cm <sup>2</sup> }	-0.1 to +14 MPa {-1 to +140 kgf/cm <sup>2</sup> }	21 MPa {210 kgf/cm <sup>2</sup> }

**Power Supply [☆]**

12.5 to 42 V DC  
 Limited to 12.5 to 30 V DC for intrinsic safety, Type n, Non-incendive 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 [☆]**

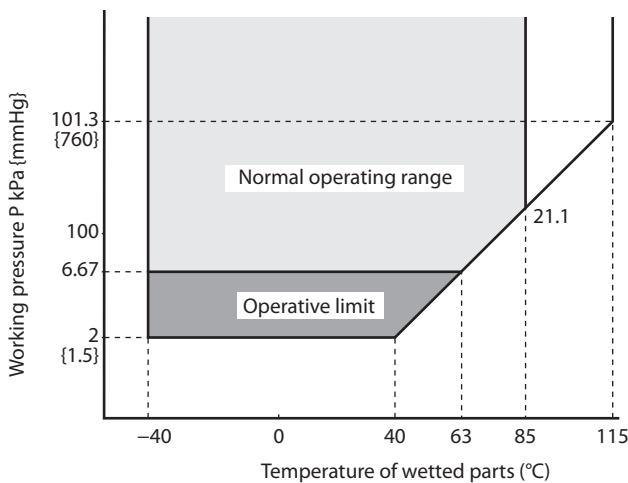
Analog output (4 to 20 mA DC) with DE protocol  
 Analog output (4 to 20 mA DC) with HART protocol  
 Digital output (DE protocol)

**Output signal [☆]**

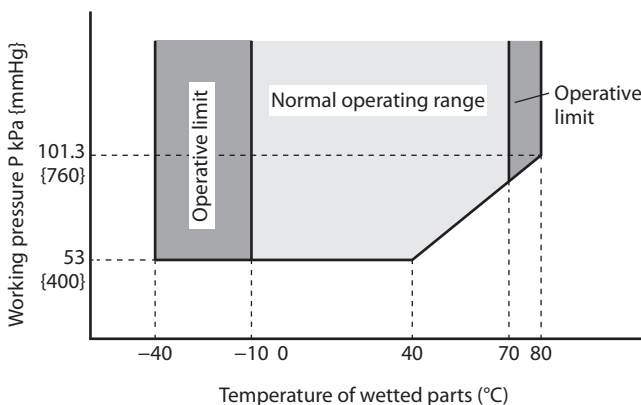
3.6 to 21.6 mA  
 3.8 to 20.5 mA (NAMUR NE43 compliant)

**Failure Alarm [☆]**

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



**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)**

**Ambient temperature limit****Normal operating range**

–25 to +85 °C for general purpose models  
–10 to +85 °C for oxygen and chlorine models

**Operative limits**

–40 to +85 °C for general purpose models  
–40 to +80 °C for oxygen and chlorine models  
–30 to +85 °C for models with digital indicators

**Transportation and storage conditions**

–40 to +85 °C

**Temperature ranges of wetted parts****Normal operating range**

–25 to +85 °C for general purpose models  
–10 to +70 °C for oxygen and chlorine models

**Operative limits**

–40 to +85 °C for general purpose models  
–40 to +80 °C for oxygen and chlorine models

**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 32 sec. in ten stages (SFN)  
Adjustable from 0 to 120 sec. (HART)

**Zero Stability**

±0.1 % of URL per 10 year (GTX60G)  
±0.2 % of URL per 10 year (GTX71G)

**Lightning protection [☆]**

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

**Vibration effect**Paint code X, H

Less than ±0.1 % of URL, field or pipeline with high vibration level (10–60 Hz, 0–0.21 mm peak displacement/60–2000 Hz, 3 g)

Paint code E

Less than ±0.1 % of URL, field with general application or pipeline with low vibration level (10–60 Hz, 0–0.15 mm peak displacement/60–500 Hz, 2 g)

**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 Level 2 (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)

#### O-ring

NBR

#### 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. 1.3 kg

## INSTALLATION

### Electrical connection

1/2 NPT internal thread, M20 internal thread.

### Grounding

Resistance 100  $\Omega$  max.

### Mounting

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

### Process connection

Male: 1/2 NPT, R 1/2, G 1/2, M20×1.5  
Female: 1/2 NPT, Rc 1/2

## 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 HART communications 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)<sup>\*1</sup>, the lower range value (LRV)<sup>\*2</sup> or the span.

### Model GTX60G (for regular type)

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

Reference accuracy <sup>*3 *4 *5</sup>		±0.04 %	(For $x \geq 350$ kPa {3.5 kgf/cm <sup>2</sup> })
		$\pm \left( 0.008 + 0.032 \times \frac{350}{x} \right)$ %	(For $x < 350$ kPa {3.5 kgf/cm <sup>2</sup> })
Ambient Temperature effect (Shift from the set range) Change of 30 °C <sup>*3</sup>	Combined shift: (including zero and span shifts)	±0.15 %	(For $x \geq 350$ kPa {3.5 kgf/cm <sup>2</sup> })
		$\pm \left( 0.075 + 0.075 \times \frac{350}{x} \right)$ %	(For $x < 350$ kPa {3.5 kgf/cm <sup>2</sup> })

### Model GTX60G (for oxygen/chlorine service)

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

Reference accuracy <sup>*3 *4</sup>		±0.075 %	(For $x \geq 1750$ kPa {17.5 kgf/cm <sup>2</sup> })
		±0.1 %	(1750 kPa {17.5 kgf/cm <sup>2</sup> } > $x \geq 140$ kPa {1.4 kgf/cm <sup>2</sup> })
		$\pm \left( 0.025 + 0.075 \times \frac{140}{x} \right)$ %	(For $x < 140$ kPa {1.4 kgf/cm <sup>2</sup> })
Temperature characteristics (Shift from the set range) Change of 30 °C <sup>*3</sup> (Range from –5 to +55 °C)	Combined shift: (including zero and span shifts)	±0.44 %	(For $x \geq 350$ kPa {3.5 kgf/cm <sup>2</sup> })
		$\pm \left( 0.19 + 0.25 \times \frac{350}{x} \right)$ %	(For $x < 350$ kPa {3.5 kgf/cm <sup>2</sup> })

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

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

Reference accuracy <sup>*3 *4</sup>		±0.15 %	(For $x \geq 2.1$ MPa {21 kgf/cm <sup>2</sup> })
		$\pm \left( 0.05 + 0.1 \times \frac{2.1}{x} \right)$ %	(For $x < 2.1$ MPa {21 kgf/cm <sup>2</sup> })
Ambient Temperature effect (Shift from the set range) Change of 30 °C <sup>*3</sup>	Combined shift: (including zero and span shifts)	±0.41 %	(For $x \geq 3.5$ MPa {35 kgf/cm <sup>2</sup> })
		$\pm \left( 0.18 + 0.23 \times \frac{3.5}{x} \right)$ %	(For $x < 3.5$ MPa {35 kgf/cm <sup>2</sup> })

\*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  $URV \geq 0$  and  $LRV \geq 0$ .

\*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 SELECTION

### Model GTX60G (Standard gauge pressure, In-line model)

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 <sup>2</sup> )	GTX60G
----------------	---	--------

#### Selection I

I	Output	4 to 20 mA (SFN Communication)		A	
		4 to 20 mA (HART Communication)		B	
		FOUNDATION Fieldbus communication		C	
		Digital output (DE communication) *1		D	
II	Fill fluid	Regular type (Silicone oil)		A	
		For oxygen service (Fluorine oil) (not yet available)		H	
III	Material (Meterbody cover, Vent/Drain plugs)	Meterbody cover	Vent/Drain plugs		
		None (Direct mount)	None (Direct mount)	X	
IV	Material (center body)	316 SST (Diaphragm: 316L SST)			A
V	Process connections	Rc 1/2 internal thread			1
		1/2 NPT internal thread			2
		1/2 NPT external thread			3
		R 1/2 external thread			4
		G 1/2 external thread			5
		M20×1.5 external thread			7
VI	Process installation	Direct mounting		F	
VII	Bolt/nut	None			X

#### Selection II

I	Electrical connection	1/2 NPT, Watertight			A
		M20, Watertight *2			B
II	Explosion proof [☆] *3	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 *4			K1		
III	Indicator	None			X
		With indicator *5			A
IV	Paint	Standard			X
		None (316 stainless steel housing)			E
		Corrosion-proof (Urethane)			H
V	Failure alarm	UP Scale			A
		DOWN scale			B
		None (for FOUNDATION Fieldbus) *6			X
VI	Mounting bracket	None			X
		CF8 (L form)			I

\*1. Not applicable for the combination with code Q1 "Safety Transmitter" of Option.

\*2. Not applicable for the combination with code F1 and F6 of Explosion-proof.

\*3. For FOUNDATION Fieldbus type. Refer to SS2-GTX00Z-0100.

\*4. Not applicable for combination with code E of paint.

\*5. In case the code C "FOUNDATION Fieldbus communication" of output is selected, code A2 of Option code should be selected.

\*6. Not applicable for the combination with code A "4 to 20 mA (SFN Communication)", B "4 to 20 mA (HART Communication)", and D "Digital output (DE communication)" of output.

**Model GTX71G (High gauge pressure In-line model)**

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 <sup>2</sup> )	GTX71G
----------------	---	--------

**Selection I**

I	Output	4 to 20 mA (SFN Communication)		A
		4 to 20 mA (HART Communication)		B
		FOUNDATION Fieldbus communication		C
		Digital output (DE communication) *1		D
II	Fill fluid	Regular type (Silicone oil)		A
		For oxygen service (Fluorine oil) (not yet available)		H
III	Material (Meterbody cover, Vent/Drain plugs)	Meterbody cover	Vent/Drain plugs	
		None (Direct mount)	None (Direct mount)	X
IV	Material (center body)	316 SST (Diaphragm: 316L SST)		A
V	Process connections	Rc 1/2 internal thread		1
		1/2 NPT internal thread		2
		1/2 NPT external thread		3
		R 1/2 external thread		4
		G 1/2 external thread		5
		M20×1.5 external thread		7
VI	Process installation	Direct mounting		F
VII	Bolt/nut	None		X

**Selection II**

-				
I	Electrical connection	1/2 NPT, Watertight		A
		M20, Watertight *2		B
II	Explosion proof [☆] *3	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
III	Indicator	None		X
		With indicator *5		A
IV	Paint	Standard		X
		None (316 stainless steel housing)		E
		Corrosion-proof (Urethane)		H
V	Failure alarm	UP Scale		A
		DOWN scale		B
		None (for FOUNDATION Fieldbus) *6		X
VI	Mounting bracket	None		X
		CF8 (L form)		1

\*1. Not applicable for the combination with code Q1 "Safety Transmitter" of Option.

\*2. Not applicable for the combination with code F1 and F6 of Explosion-proof.

\*3. For FOUNDATION Fieldbus type. Refer to SS2-GTX00Z-0100.

\*4. Not applicable for combination with code E of paint.

\*5. In case the code C "FOUNDATION Fieldbus communication" of output is selected, code A2 of Option code should be selected.

\*6. Not applicable for the combination with code A "4 to 20 mA (SFN Communication)", B "4 to 20 mA (HART Communication)", and D "Digital output (DE communication)" of output.



Model No.: GTX\_ \_G - Selection I (I II III IV V VI VII) - Selection II (I II III IV V VI) - Option

## 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
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 (not yet available)		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)" 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.

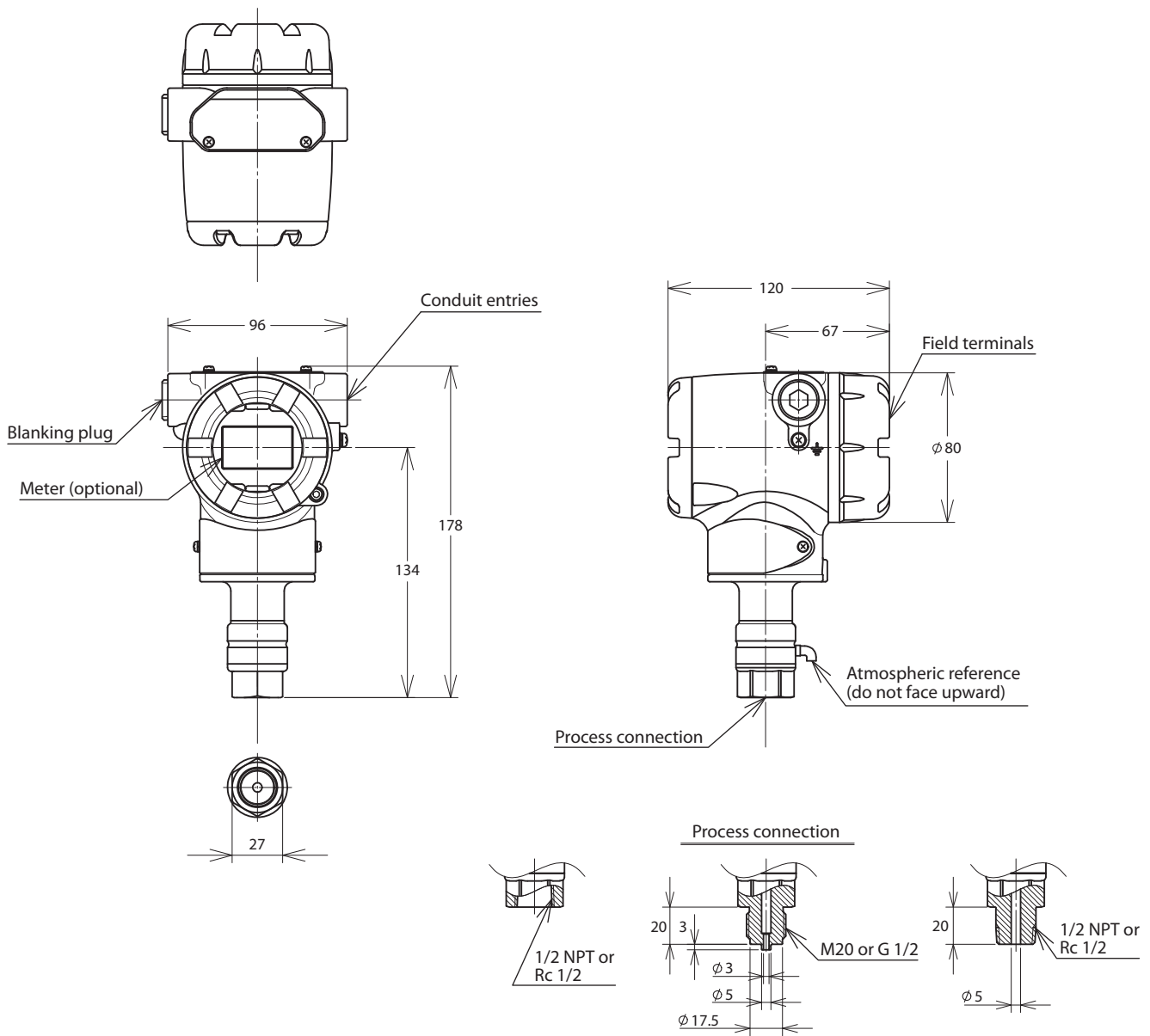
\*13. In case code P8 is selected, code X or 2 of Mounting bracket should be selected.

\*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 (HART Communication)", and D "Digital output (DE communication)" of output.

**DIMENSIONS**

Unit: mm



**TERMINAL CONNECTION**

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

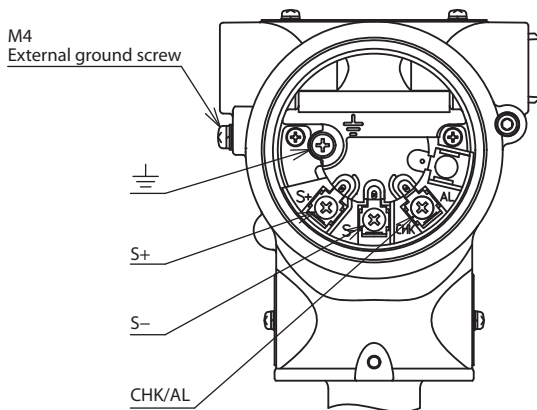


Table 1: Terminal connection

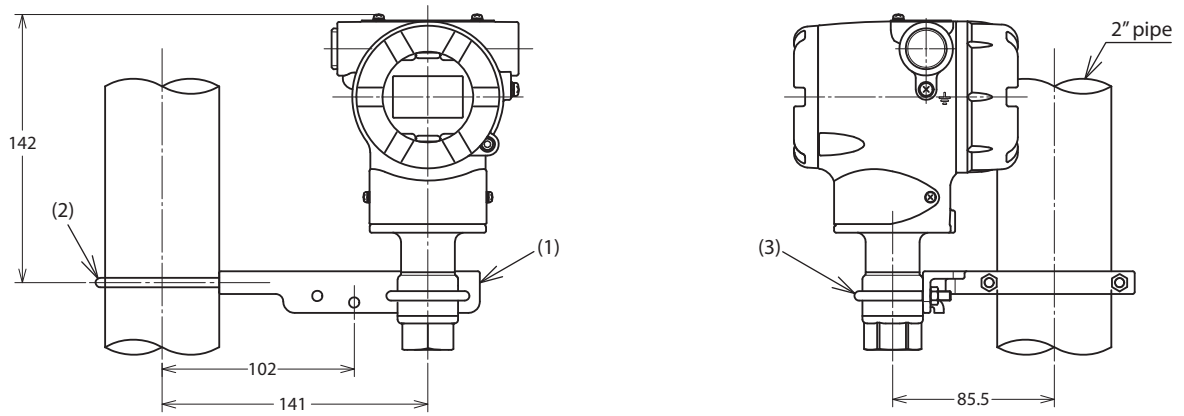
Symbol	Details
S+	Power supply and output signal +
S-	Power supply and output signal -/Check meter -
CHK/AL	Check meter +
$\perp$	Ground

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

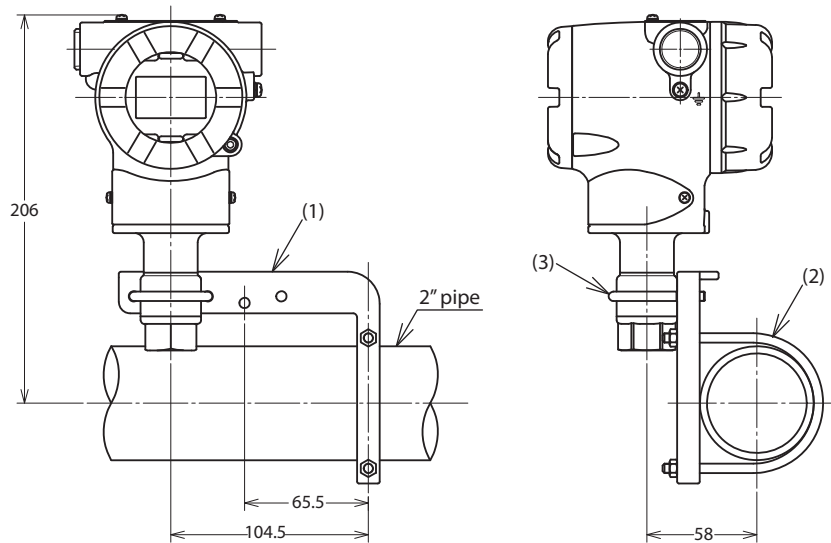
Symbol	Details
S+	Power supply and output signal +
S-	Power supply and output signal -
CHK/AL	Alarm +
$\perp$	Ground/Alarm -

Mounting to vertical 2" pipe

Unit: mm

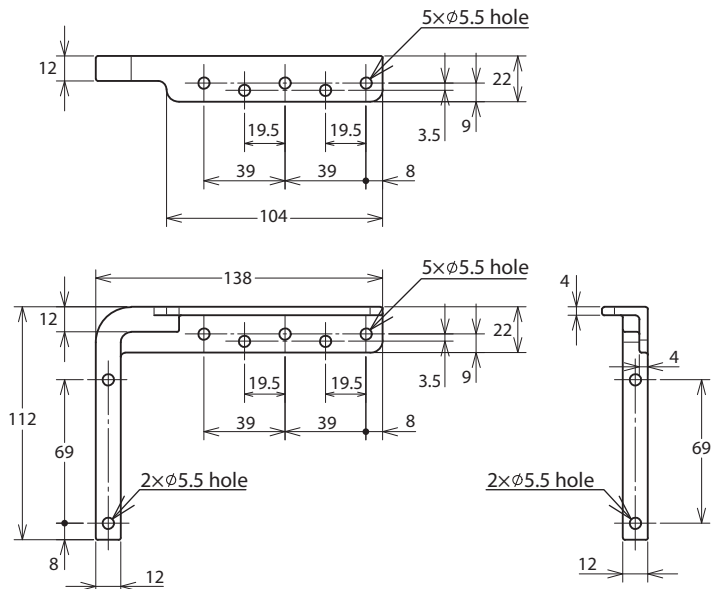
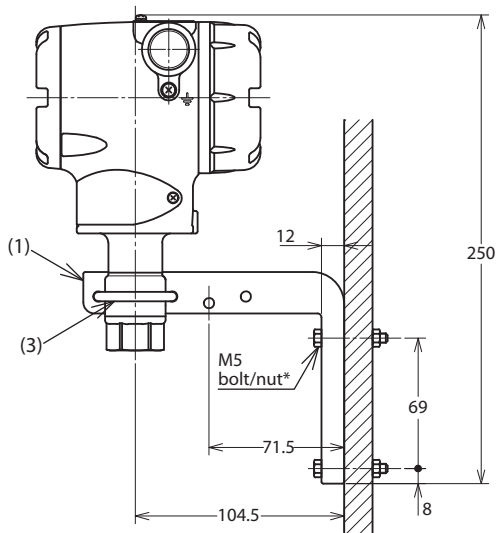


Mounting to horizontal 2" pipe



Mounting to wall

Bracket dimensions



Note) \* Bolts for wall mounting are not included. (Length will vary according to wall thickness)

Materials of construction

Key No.	Description	Material
(1)	Mounting bracket	CF8
(2)	U bolt/nut	SUS304
(3)	U bolt/nut	SUS304

This drawing shows dimensions when optional mounting bracket is used, and shows typical mounting example. Other variations are also possible.

Please, read 'Terms and Conditions' from following URL before the order and use.

<http://www.azbil.com/products/factory/order.html>

*Specifications are subject to change without notice.*

**azbil**

**Azbil Corporation**  
Advanced Automation Company

1-12-2 Kawana, Fujisawa  
Kanagawa 251-8522 Japan  
URL: <http://www.azbil.com/>

1st edition: Aug. 2014  
4th edition: June 2017

*No part of this publication may be reproduced or duplicated without the prior written permission of Azbil Corporation.*