

# 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, 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 Smart Communicator or HART<sup>®</sup> 375 communicator, thus facilitating self-diagnosis, range resetting, and automatic zero adjustment.



## 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: 2.54 to 508 psig (17.5 to 3500 kPa) (range ability: 200 to 1)
- Model GTX71G: 101 to 2030 psig (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.
- HART<sup>®</sup> protocol communication is available. (Option)

### **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<sup>®</sup> is a registered trademark of the HART Communication Foundation.

**FUNCTIONAL SPECIFICATIONS****FM Explosion-proof and Dust Approvals (Code F1)**

Explosion-proof 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 °C above surrounding ambient

**FM Intrinsically safe Approval (Code F2)**

IS/I,II,III/1/ABCEFG/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 Approval (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 and Dust Certifications (Code A1)**

 0344  KEMA 08ATEX0004

II 1/2 G Ex d IIC T6 Tprocess=85 °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 Tprocess=100 °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 Tprocess=110 °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 Tprocess=85 °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 Tprocess=100 °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 Tprocess=110 °C

$-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +75\text{ }^{\circ}\text{C}$

Caution - Use supply wires suitable for 5 °C above surrounding ambient

**ATEX Intrinsic safety and Dust Certifications (Code A2)**

 0344  KEMA 07ATEX0200 X

II 1 G Ex ia IIC T4 TPROCESS = 105 °C

$-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +60\text{ }^{\circ}\text{C}$  IP66 / 67

ELECTRICAL PARAMETERS:  $U_i = 30$  V,  $I_i = 93$  mA,  
 $P_i = 1$  W,  $C_i = 5$  nF,  $L_i = 0.5$  mH

II 1 D Ex iaD 20 IP66 / 67 T105 TPROCESS = 105 °C

$-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +60\text{ }^{\circ}\text{C}$

**ATEX Type n and Dust Certifications (Code A5)**

 0344  KEMA 07ATEX0200 X

II 3 G Ex nL IIC T4 TPROCESS = 105 °C

$-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +60\text{ }^{\circ}\text{C}$  IP66 / 67

ELECTRICAL PARAMETERS:  $U_i = 30$  V,  $C_i = 5$  nF,  $L_i = 0.5$  mH

II 2 D Ex tD A21 IP66 / 67 T85 TPROCESS = 85 °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 TPROCESS = 100 °C

$-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +80\text{ }^{\circ}\text{C}$

II 2 D Ex tD A21 IP66 / 67 T110 TPROCESS = 110 °C

$-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +80\text{ }^{\circ}\text{C}$

**NEPSI Flameproof and Dust Certifications (Code N1)**

Ex d IIC T6 DIP A21  $T_A$  85 °C Tprocess=80 °C  $-40\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +75\text{ }^{\circ}\text{C}$

Ex d IIC T5 DIP A21  $T_A$  100 °C Tprocess=95 °C  $-40\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +80\text{ }^{\circ}\text{C}$

Ex d IIC T4 DIP A21  $T_A$  115 °C Tprocess=110 °C  $-40\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +80\text{ }^{\circ}\text{C}$

ENCLOSURE TYPE IP66/67

**NEPSI Intrinsic Safety Certification (Code N2)**

Ex ia IIC T4 Tprocess=105 °C  $-40\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +60\text{ }^{\circ}\text{C}$   
Enclosure IP66 / 67

Electrical Parameters:  $U_i=30$  V,  $I_i=100$  mA,  $P_i=1$  W,  
 $C_i=13$  nF,  $L_i=0.5$  mH

**NEPSI Type n Certification (Code N5)**

Ex nL IIC T4 Tprocess=110 °C  $-40\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +60\text{ }^{\circ}\text{C}$   
Enclosure IP66 / 67

Electrical Parameters:  $U_i=30$  V,  $I_i=100$  mA,  $P_i=1$  W,  
 $C_i=13$  nF,  $L_i=0.5$  mH

**IECEx Flameproof and Dust Certifications (Code E1)**

Certificate No. IECEx KEM 08.0001

Ga/Gb Ex d IIC T6 Tprocess=85 °C  $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +75\text{ }^{\circ}\text{C}$  IP66/67

Ga/Gb Ex d IIC T5 Tprocess=100 °C  $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +80\text{ }^{\circ}\text{C}$  IP66/67

Ga/Gb Ex d IIC T4 Tprocess=110 °C  $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +80\text{ }^{\circ}\text{C}$  IP66/67

Ex tD A21 IP66/67 T85 Tprocess=85 °C  $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +75\text{ }^{\circ}\text{C}$

Ex tD A21 IP66/67 T100 Tprocess=100 °C  $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +75\text{ }^{\circ}\text{C}$

Ex tD A21 IP66/67 T110 Tprocess=110 °C  $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +75\text{ }^{\circ}\text{C}$

Caution - Use supply wires suitable for 5 °C above surrounding ambient

**IECEX Intrinsic safety and Dust Certifications (Code E2)**

IECEX KEM 07.0058X  
 Zone 0 Ex ia IIC T4 TPROCESS = 105 °C  
 -30 °C ≤ Tamb ≤ +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 ≤ Tamb ≤ +60 °C

**IECEX Type n and Dust Certifications (Code E5)**

IECEX KEM 07.0058X  
 Ex nL IIC T4 TPROCESS = 105 °C  
 -30 °C ≤ Tamb ≤ +60 °C IP66 / 67  
 ELECTRICAL PARAMETERS: Ui = 30 V, Ci = 5 nF, Li = 0.5 mH  
 Ex tD A21 IP66 / 67 T85 TPROCESS = 85 °C  
 -30 °C ≤ Tamb ≤ +75 °C  
 Ex tD A21 IP66 / 67 T100 TPROCESS = 100 °C  
 -30 °C ≤ Tamb ≤ +80 °C  
 Ex tD A21 IP66 / 67 T110 TPROCESS = 110 °C  
 -30 °C ≤ Tamb ≤ +80 °C

**KOSHA Flameproof (Code K1)**

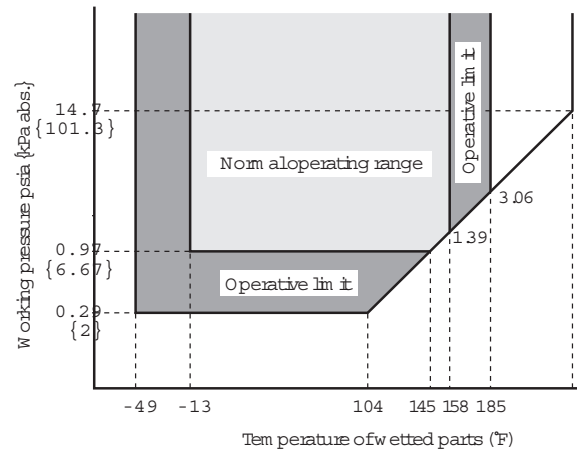
Ex d II C T6 Tprocess = 85 °C -30 °C ≤ Tamb ≤ +75 °C  
 Ex d II C T5 Tprocess = 100 °C -30 °C ≤ Tamb ≤ +80 °C  
 Ex d II C T4 Tprocess = 110 °C -30 °C ≤ Tamb ≤ +80 °C

**EMC Conformity**

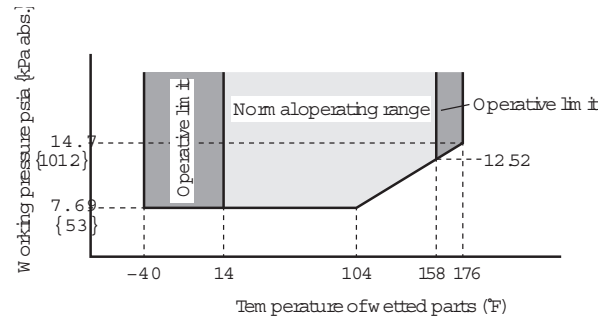
89/336/EEC, 92/31/EEC, 93/68/EEC Electromagnetic Compatibility (EMC) Directive

**Measuring span / Setting range / Working pressure range**

| Model  | Measuring Span                        | Measuring range                        | Overload Resistance value |
|--------|---------------------------------------|--|---------------------------|
| GTX60G | 2.54 to 508 psi<br>(17.5 to 3500 kPa) | -14.5 to 508 psi<br>(-100 to 3500 kPa) | 761 psi<br>(5250 kPa)     |
| GTX71G | 101 to 2030 psi<br>(0.7 to 14 MPa)    | -14.5 to 2030 psi<br>(-0.1 to 14 MPa)  | 3045 psi<br>(21 MPa)      |



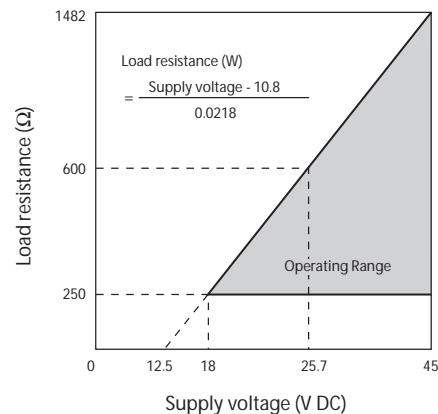
**Figure 1 Working pressure and temperature of wetted parts section (for general purpose models)**



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

**Supply voltage and load resistance**

17.9 to 42 V DC. Reverse polarity protection is standard. A load resistance of 250 Ω or more is necessary between loops. See Figure 3.



**Figure 3 Supply voltage vs. load resistance characteristics**

Note) For communication with HART communicator or Comm-Pad, 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**

-31 to 158 °F (-25 to 70 °C) for general purpose models  
14 to 158 °F (-10 to 70 °C) for oxygen and chlorine models

**Operative limits**

-40 to 185 °F (-40 to 85 °C) for general purpose models  
-40 to 176 °F (-40 to 80 °C) for oxygen and chlorine models  
-22 to 185 °F (-30 to 85 °C) for models with digital indicators

**Transportation and storage conditions**

-40 to 158 °F (-40 to 70 °C)

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

-13 to 158 °F (-25 to 70 °C) for general purpose models  
14 to 158 °F (-10 to 70 °C) for oxygen and chlorine models

**Operative limits**

-40 to 185 °F (-40 to 85 °C) for general purpose models  
-40 to 176 °F (-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  
Adjustable from 0 to 120 sec. (HART communication model)

**Zero Stability**

± 0.1% of URL per 10 year (model GTX60G)

**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 and D

Less than ±0.1% of URL, field or pipeline with high vibration level (10–60 Hz, 0–21 mm peak displacement/ 60–2000 Hz, 3g)

Paint code E

Less than ±0.1% of URL, field with general application or pipeline with low vibration level (10–60 Hz, 0–15 mm peak displacement/ 60–500 Hz, 2g)

**Indicator**

The digital LCD indicator (optional) indicates engineering units and can be set freely between -99999 and 99999 (5 digits). For meter calibration, specify the following items when placing your order

- Meter calibration range
  - Meter calibration unit
  - Linear / Square-root for meter indication.
- Various kinds of data can be set using the Smart Communicator or the HART<sup>®</sup> 375 communicator.

**Paint****Standard**

Corrosion-resistant paint (Baked acrylic paint)

**Corrosion-proof finish**

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

**OPTIONAL SPECIFICATIONS****Oil free finish**

The transmitter is shipped with oil-free wetted parts.

**External zero/span adjustment function**

The transmitter can be easily zero/span adjusted in the field.

**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 Instrumented System (SIS).  
AT9000 is complied with IEC 61508, certified according to Safety Integrity Level2 (SIL-2)

**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 Normally Open. (When alarm is detected, Contact ON).

**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)

**For Wetted parts**

316 SST (Diaphragm 316L SST)

**Weight**

Approx. 1.3 kg

**INSTALLATION****Electrical connection**

1/2NPT 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**

Male: 1/2NPT, R1/2, G1/2, M20 × 1.5

Female: 1/2NPT, Rc1/2

**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  $\chi$  (psi), 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)

|   |  |  |
|---|--|--|
| <b>Reference accuracy</b><br>(*3)(*4)(*5)   | $\pm 0.04\%$   | (For $\chi \geq 50.8$ psi (350 kPa))   |
|   | $\pm \left(0.008 + 0.032 \times \frac{50.8}{\chi}\right) \%$ | (For $\chi < 50.8$ psi (350 kPa))  |
| <b>Ambient Temperature effect</b><br>(Shift from the set range)<br>Change of 86°F (30°C) (*3) | Combined shift:<br>(including zero and span shifts)          | $\pm 0.15\%$ (For $\chi \geq 50.8$ psi (350 kPa))  |
|   |  | $\pm \left(0.075 + 0.075 \times \frac{50.8}{\chi}\right) \%$ (For $\chi < 50.8$ psi (350 kPa)) |

**Model GTX60G (for oxygen)**

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

|   |  |  |
|---|--|--|
| <b>Reference accuracy</b><br>(*3)(*4)   | $\pm 0.075\%$  | (For $\chi \geq 254$ psi (1750 kPa))   |
|   | $\pm 0.1\%$  | (254 psi (1750 kPa) > $\chi \geq 20.3$ psi (140 kPa))  |
|   | $\pm \left(0.025 + 0.075 \times \frac{20.3}{\chi}\right) \%$ | (For $\chi < 20.3$ psi (140 kPa))  |
| <b>Temperature characteristics</b><br>(Shift from the set range)<br>Change of 86°F (30°C) (*3)<br>(Range from 23 to 131°F (-5 to 55°C)) | Combined shift:<br>(including zero and span shifts)          | $\pm 0.44\%$ (For $\chi \geq 50.8$ psi (350 kPa))  |
|   |  | $\pm \left(0.19 + 0.25 \times \frac{50.8}{\chi}\right) \%$ (For $\chi < 50.8$ psi (350 kPa)) |

**Model GTX71G (for regular type / oxygen)**

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

|  |  |  |
|--|--|--|
| <b>Reference accuracy</b> (*3)(*4)   | $\pm 0.15\%$   | (For $\chi \geq 304$ psi (2.1 MPa))  |
|  | $\pm \left(0.05 + 0.1 \times \frac{304}{\chi}\right) \%$ | (For $\chi < 304$ psi (2.1 MPa))   |
| <b>Ambient Temperature effect</b><br>(Shift from the set range)<br>Change of 30°C (*3) | Combined shift:<br>(including zero and span shifts)      | $\pm 0.41\%$ (For $\chi \geq 508$ psi (3.5 MPa))   |
|  |  | $\pm \left(0.18 + 0.23 \times \frac{508}{\chi}\right) \%$ (For $\chi < 508$ psi (3.5 MPa)) |

Note) \*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 | 2.54 to 508 psig (17.5 to 3500 kPa) | GTX60G |
|----------------|-------------------------------------|--------|

Selection I

|     |  |  |                       |
|-----|--|--|-----------------------|
| I   | Output   | 4 to 20mA (SFN Communication)                    | A                     |
|     |  | 4 to 20mA (HART Communication)                   | B                     |
|     |  | 4 to 20 mA (SFN/HART Bilingual Communication) *2 | E                     |
| II  | Fill fluid                                     | Regular type (Silicone oil)                      | A                     |
|     |  | For oxygen service (Fluorine oil)                | H                     |
| III | Material (Meter-body cover, Vent/ Drain plugs) | Meterbody cover                                  | Vent / Drain plugs    |
|     |  | None (Direct mount)                              | None (Direct mount) X |
| IV  | Material (centerbody)                          | 316 SST (Diaphragm:316L SST) A                   |                       |
| V   | Process connections                            | Rc 1/2 internal thread                           | 1                     |
|     |  | 1/2NPT internal thread                           | 2                     |
|     |  | 1/2NPT external thread                           | 3                     |
|     |  | R1/2 external thread                             | 4                     |
|     |  | G1/2 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 *1   | B  |
| II                       | Explosion-proof       | None   | XX |
|                          |                       | FM Explosion-proof   | F1 |
|                          |                       | FM Intrinsically safe  | F2 |
|                          |                       | FM Nonincendive  | F5 |
|                          |                       | Combined of FM Explosion-proof, Intrinsically safe and Nonincendive              | F6 |
|                          |                       | ATEX Explosion-proof   | A1 |
|                          |                       | ATEX Intrinsically safe  | A2 |
|                          |                       | ATEX Type n  | A5 |
|                          |                       | IECEX Explosion-proof  | E1 |
|                          |                       | IECEX Intrinsically safe   | E2 |
|                          |                       | IECEX Type n   | E5 |
|                          |                       | NEPSI Explosion-proof *3   | N1 |
|                          |                       | NEPSI Intrinsically safe *3  | N2 |
|                          |                       | NEPSI Type n *3  | N5 |
| KOSHA Explosion-proof *3 | K1                    |  |    |
| Taiwan Explosion-proof   | T1                    |  |    |
| III                      | Indicator             | None   | X  |
|                          |                       | With indicator   | A  |
| IV                       | Paint *13             | Standard   | X  |
|                          |                       | None (316 stainless steel housing) *This option will be available in the future. | E  |
|                          |                       | Corrosion-proof (Urethane)   | H  |
| V                        | Failure alarm         | UP Scale   | A  |
|                          |                       | DOWN scale   | B  |
| VI                       | Mounting bracket      | None   | X  |
|                          |                       | CF8 (L form)   | 1  |

Note) \*1 Not applicable for the combination with code F1 and F6 of Explosion-proof.  
 \*2 Not applicable for the combination with code Q1 "Safety Transmitter" of Option.  
 \*3 Not applicable for combination with code E of paint.

**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 | 101 to 2030 psig (0.7 to 14 MPa) | GTX71G |
|----------------|----------------------------------|--------|

Selection I

|     |  |  |                     |
|-----|--|--|---------------------|
| I   | Output   | 4 to 20 mA (SFN Communication)                   | A                   |
|     |  | 4 to 20 mA (HART Communication)                  | B                   |
|     |  | 4 to 20 mA (SFN/HART Bilingual Communication) *2 | E                   |
| II  | Fill fluid                                     | Regular type (Silicone oil)                      | A                   |
|     |  | For oxygen service (Fluorine oil)                | H                   |
| III | Material (Meter-body cover, Vent/ Drain plugs) | Meterbody cover                                  | Vent / Drain plugs  |
|     |  | None (Direct mount)                              | None (Direct mount) |
| IV  | Material (center body)                         | 316 SST (Diaphragm: 316L SST) A                  |                     |
| V   | Process connections                            | Rc 1/2 internal thread                           | 1                   |
|     |  | 1/2NPT internal thread                           | 2                   |
|     |  | 1/2NPT external thread                           | 3                   |
|     |  | R1/2 external thread                             | 4                   |
|     |  | G1/2 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 *1   | B  |
| II                       | Explosion-proof       | None   | XX |
|                          |                       | FM Explosion-proof   | F1 |
|                          |                       | FM Intrinsically safe  | F2 |
|                          |                       | FM Nonincendive  | F5 |
|                          |                       | Combined of FM Explosion-proof, Intrinsically safe and Nonincendive              | F6 |
|                          |                       | ATEX Explosion-proof   | A1 |
|                          |                       | ATEX Intrinsically safe  | A2 |
|                          |                       | ATEX Type n  | A5 |
|                          |                       | IECEX Explosion-proof  | E1 |
|                          |                       | IECEX Intrinsically safe   | E2 |
|                          |                       | IECEX Type n   | E5 |
|                          |                       | NEPSI Explosion-proof *3   | N1 |
|                          |                       | NEPSI Intrinsically safe *3  | N2 |
|                          |                       | NEPSI Type n *3  | N5 |
| KOSHA Explosion-proof *3 | K1                    |  |    |
| Taiwan Explosion-proof   | T1                    |  |    |
| III                      | Indicator             | None   | X  |
|                          |                       | With indicator   | A  |
| IV                       | Paint *12             | Standard   | X  |
|                          |                       | None (316 stainless steel housing) *This option will be available in the future. | E  |
|                          |                       | Corrosion-proof (Urethane)   | H  |
| V                        | Failure alarm         | UP scale   | A  |
|                          |                       | DOWN scale   | B  |
| VI                       | Mounting bracket      | None   | X  |
|                          |                       | CF8 (L form)   | 1  |

Note) \*1 Not applicable for the combination with code F1 and F6 of Explosion-proof.  
 \*2 Not applicable for the combination with code Q1 "Safety Transmitter" of Option.  
 \*3 Not applicable for combination with code E of paint.



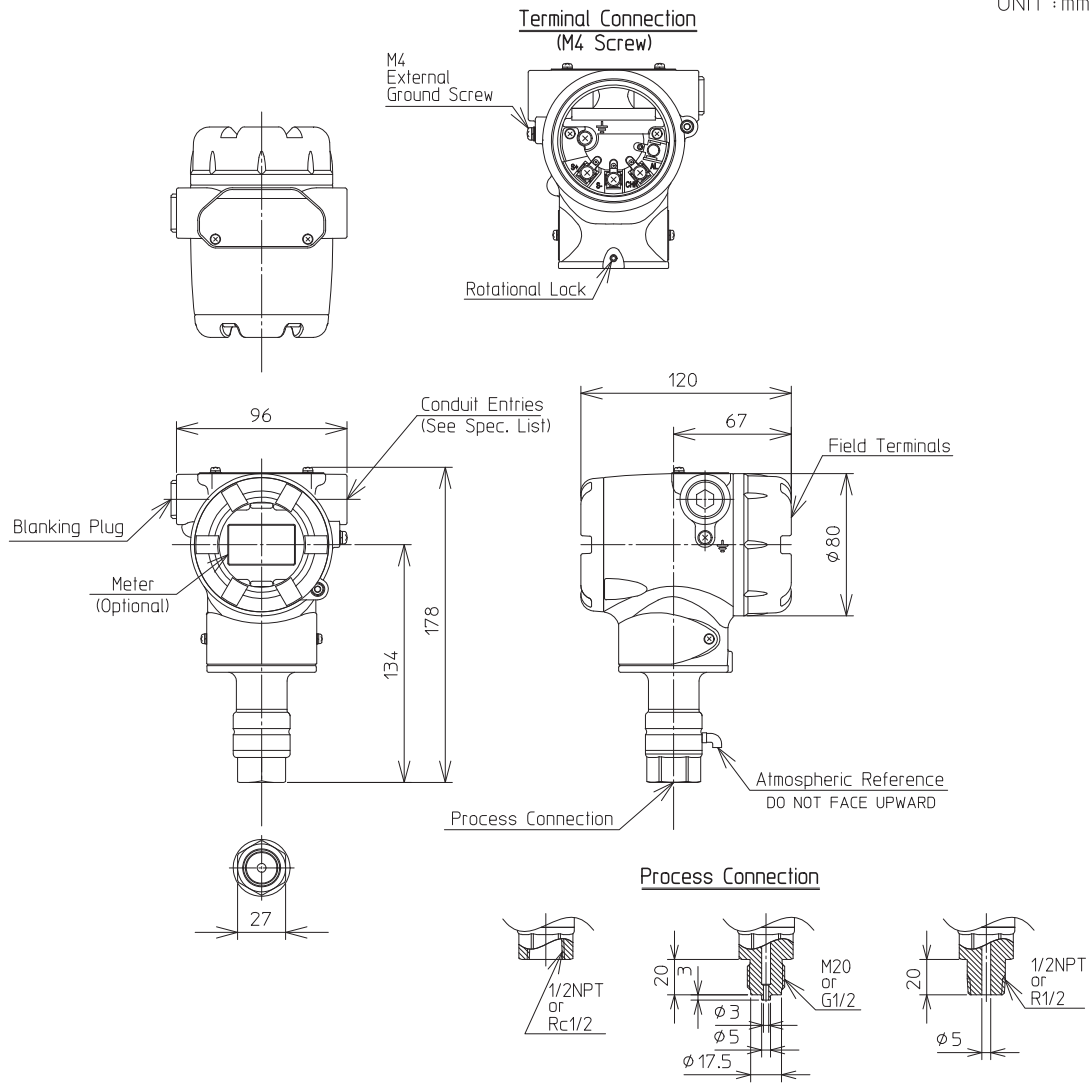
Model No.:GTX\_ \_G-Selection I ( I II III IV V VI VII) - Selection II (I II III IV V VI) - Option

| Option |  |    |
|--------|--|----|
|        | No options   | XX |
|        | With external Zero/Span adjustment *7*8  | A2 |
|        | One elbow (left) *3*4*6  | G1 |
|        | One elbow (right) *3*4*6   | G2 |
|        | 2 elbows *3*5*6  | G3 |
|        | Oil and water free finish  | K1 |
|        | Oil free finish *1   | K3 |
|        | 316 SST (Parts in contact with atmosphere) *10*11  | P8 |
|        | Safety Transmitter *2*8  | 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) *8 | Q2 |
|        | Alarm Output (contact output) *9   | Q7 |
|        | Custom calibration   | R1 |
|        | Test report  | T1 |
|        | Mill certificate   | T2 |
|        | Traceability certificate   | T4 |
|        | Non SI Unit  | W1 |

- Note) \*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 Not applicable for the combination with code B "M20 watertight" of Electrical connection.  
 \*7 Not applicable for the combination with code X "None" of Indicator. Please select "With indicator".  
 \*8 Not applicable for the combination with code D "Digital output(DE communication)" of output  
 \*9 Not applicable for the combination with code F2, F5, F6, N2, N5, E2, E5, A2 and A5 of Explosion-proof.  
 \*10 In case code P8 is selected, code E of Paint should be selected.  
 \*11 In case code P8 is selected, code X of Mounting bracket should be selected.

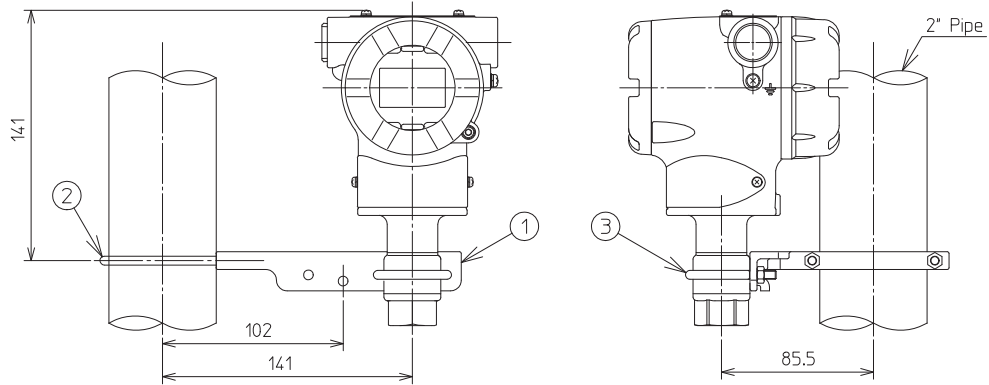
**DIMENSIONS**

UNIT : mm

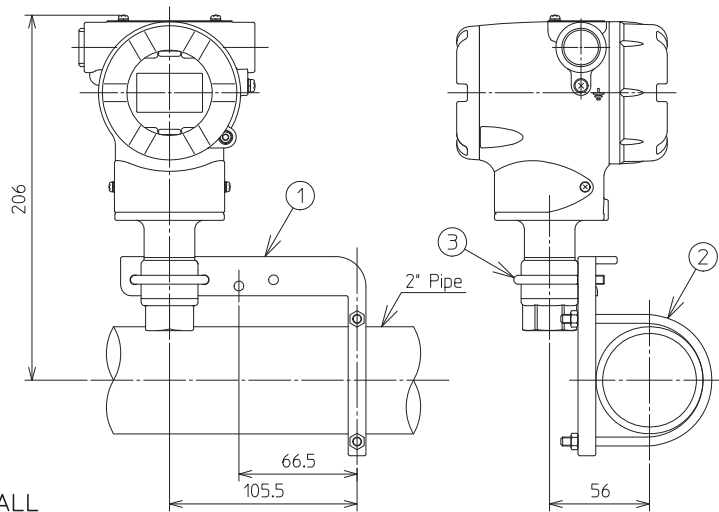


UNIT : mm

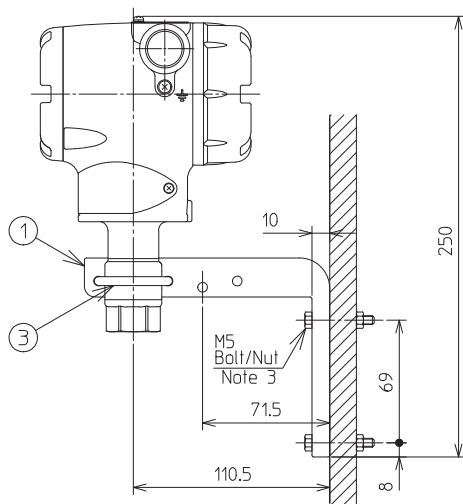
MOUNTING TO VERTICAL 2" PIPE



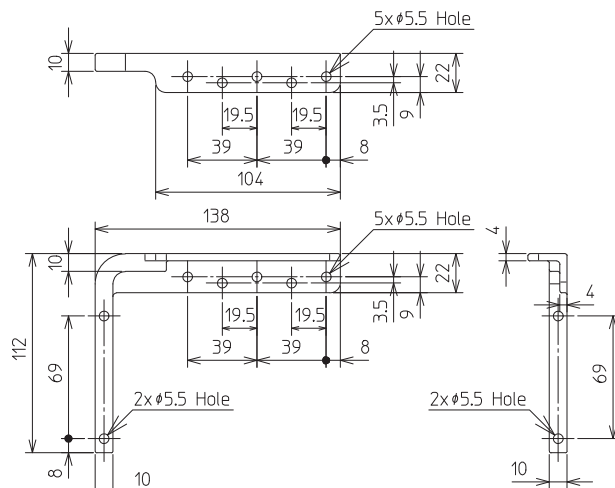
MOUNTING TO HORIZONTAL 2" PIPE



MOUNTING TO WALL



BRACKET DIMENSIONS



Materials of Construction

| KEY No. | Description      | Material |
|---------|------------------|----------|
| 1       | Mounting Bracket | CF8      |
| 2       | U Bolt / Nut     | SUS304   |
| 3       | U Bolt / Nut     | SUS304   |

Notes

- 1) This drawing shows dimensions when optional mounting bracket is used.
- 2) This drawing shows typical mounting example. Other variations are also possible.
- 3) Bolts for wall mounting are not included. (Length will vary according to wall thickness)

*Specifications are subject to change without notice*

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