

Advanced Transmitter Absolute Pressure Transmitters

Model GTX30A/GTX60A

OVERVIEW

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

Excellent stability and high performance

- Our proven sensor technology enables Long-term stability.
- Unique characterization and composite semiconductor sensors realize excellent temperature and static pressure characteristics.

Wide measuring range (rangeability)

A wide measuring range is available from a single model. This feature is highly effective in taking measurements over a wide range and reducing the need for inventory.

* Model GTX60A: 35 to 3500 kPa abs. (5 to 508 psia)
(range ability: 1 to100)

A diverse lineup

- A wide range of models is available to meet user needs 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.

PRODUCT APPROVALS [★]**FM Explosionproof for Division System/
Flameproof for Zone System (Code F1)
FM18US0129X**

Explosionproof for Use in Class I, Division 1, Groups A, B, C and D T5; Dust-ignitionproof for Use in Class II, Division 1, Groups E, F and G, Class III Division 1, T5; $-40\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +85\text{ }^{\circ}\text{C}$;

Flameproof for Use in Class I, Zone 0/1, AEx db IIC T5 Ga/Gb; $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +80\text{ }^{\circ}\text{C}$; $-30\text{ }^{\circ}\text{C} \leq T_{\text{process}} \leq 100\text{ }^{\circ}\text{C}$; Hazardous (Classified) locations Indoor/Outdoor Enclosure 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)
FM18US0252X**

Intrinsically Safe for Use in Class I, Division 1, Groups A, B, C and D; Class II, Division 1, Groups E, F and G; Class III, Division 1; $T_4 -40\text{ }^{\circ}\text{C} < T_{\text{amb}} < +60\text{ }^{\circ}\text{C}$; Class I, Zone 0, AEx ia IIC; $T_4\text{ Ga} -30\text{ }^{\circ}\text{C} < T_{\text{amb}} < +60\text{ }^{\circ}\text{C}$; $T_{\text{process}} = 105\text{ }^{\circ}\text{C}$ Hazardous (Classified) Locations; Indoor/Outdoor Enclosure TYPE 4X, IP67; 80395278, 80395279, and 80395280.

Entity Parameters: $V_{\text{max}} (U_i) = 30\text{ Volts}$, $I_{\text{max}} (I_i) = 100\text{ mA}$, $P_i = 1\text{ W}$, $C_i = 10\text{ nF}$, $L_i = 0.5\text{ mH}$

**FM Nonincendive (Code F5)
FM18US0252X**

Nonincendive, with Nonincendive Field Wiring Parameters, for Use in Class I, Division 2, Groups A, B, C and D, T4; Class I, Zone 2, Group IIC, T4; Suitable for Class II & III, Division 2, Groups E, F and G, T4; $-40\text{ }^{\circ}\text{C} < T_{\text{amb}} < +60\text{ }^{\circ}\text{C}$; Hazardous (Classified) Locations; Indoor/Outdoor Enclosure TYPE 4X, IP67; 80395494.

Nonincendive Field Wiring Parameters: $V_{\text{max}} (U_i) = 30\text{ Volts}$, $C_i = 10\text{ nF}$, $L_i = 0.5\text{ mH}$

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

II 1/2 G Ex db IIC T6 Ga/Gb $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +75\text{ }^{\circ}\text{C}$ $T_{\text{process}} \leq 85\text{ }^{\circ}\text{C}$

II 1/2 G Ex db IIC T5 Ga/Gb $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +80\text{ }^{\circ}\text{C}$ $T_{\text{process}} \leq 100\text{ }^{\circ}\text{C}$

II 1/2 G Ex db IIC T4 Ga/Gb $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +80\text{ }^{\circ}\text{C}$ $T_{\text{process}} \leq 110\text{ }^{\circ}\text{C}$

II 2 D Ex tb IIIC T85 °C Db $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +75\text{ }^{\circ}\text{C}$ $T_{\text{process}} \leq 85\text{ }^{\circ}\text{C}$

II 2 D Ex tb IIIC T100 °C Db $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +75\text{ }^{\circ}\text{C}$ $T_{\text{process}} \leq 100\text{ }^{\circ}\text{C}$

II 2 D Ex tb IIIC T110 °C Db $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +75\text{ }^{\circ}\text{C}$ $T_{\text{process}} \leq 110\text{ }^{\circ}\text{C}$

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

**ATEX Intrinsic Safety and Dust certifications
(Code A2)**

II 1 G Ex ia IIC T4 Ga $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +60\text{ }^{\circ}\text{C}$ $T_{\text{process}} = 105\text{ }^{\circ}\text{C}$ IP66/IP67

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 2 D Ex ia IIIC T105 °C Db $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +60\text{ }^{\circ}\text{C}$ $T_{\text{process}} = 105\text{ }^{\circ}\text{C}$ IP66/IP67

II 3 G Ex ic IIC T4 Gc $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +60\text{ }^{\circ}\text{C}$ $T_{\text{process}} = 110\text{ }^{\circ}\text{C}$ IP66/IP67

ELECTRICAL PARAMETERS: $U_i = 30\text{ V}$, $C_i = 5\text{ nF}$, $L_i = 0.5\text{ mH}$

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

Ex d IIC T6 Gb; Ex tD A21 IP66/IP67 T85 °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 Gb; Ex tD A21 IP66/IP67 T100 °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 Gb; Ex tD A21 IP66/IP67 T115 °C $T_{\text{process}} = 110\text{ }^{\circ}\text{C}$; $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +80\text{ }^{\circ}\text{C}$

NEPSI Intrinsic Safety Certification (Code N2)

Ex ia IIC T4 Ga $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +60\text{ }^{\circ}\text{C}$ $T_{\text{process}} = 105\text{ }^{\circ}\text{C}$ IP66/IP67

Ex ia IIIC T105 °C Db $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +60\text{ }^{\circ}\text{C}$ $T_{\text{process}} = 105\text{ }^{\circ}\text{C}$ IP66/IP67

Ex ic IIC T4 Gc $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +60\text{ }^{\circ}\text{C}$ $T_{\text{process}} = 110\text{ }^{\circ}\text{C}$ IP66/IP67

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

Use cable suitable for 5 °C above ambient temperature

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

Certificate No. IECEx KEM 08.0001 X

Ex db IIC T6 Ga/Gb $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +75\text{ }^{\circ}\text{C}$ $T_{\text{process}} \leq 85\text{ }^{\circ}\text{C}$

Ex db IIC T5 Ga/Gb $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +80\text{ }^{\circ}\text{C}$ $T_{\text{process}} \leq 100\text{ }^{\circ}\text{C}$

Ex db IIC T4 Ga/Gb $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +80\text{ }^{\circ}\text{C}$ $T_{\text{process}} \leq 110\text{ }^{\circ}\text{C}$

Ex tb IIIC T85 °C Db $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +75\text{ }^{\circ}\text{C}$ $T_{\text{process}} \leq 85\text{ }^{\circ}\text{C}$

Ex tb IIIC T100 °C Db $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +75\text{ }^{\circ}\text{C}$ $T_{\text{process}} \leq 100\text{ }^{\circ}\text{C}$

Ex tb IIIC T110 °C Db $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +75\text{ }^{\circ}\text{C}$ $T_{\text{process}} \leq 110\text{ }^{\circ}\text{C}$

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

**IECEx Intrinsic Safety and Dust
Certifications (Code E2)**

Certificate No. IECEx KEM 07.0058 X

Ex ia IIC T4 Ga $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +60\text{ }^{\circ}\text{C}$ $T_{\text{process}} = 105\text{ }^{\circ}\text{C}$ IP66/IP67

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 ia IIIC T105 °C Db $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +60\text{ }^{\circ}\text{C}$ $T_{\text{process}} = 105\text{ }^{\circ}\text{C}$ IP66/IP67

Ex ic IIC T4 Gc $-30\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +60\text{ }^{\circ}\text{C}$ $T_{\text{process}} = 110\text{ }^{\circ}\text{C}$ IP66/IP67

ELECTRICAL PARAMETERS: $U_i = 30\text{ V}$, $C_i = 5\text{ nF}$, $L_i = 0.5\text{ mH}$

KCs Flameproof (Code K1)

11-AV4BO-0323 (without option YD)

20-AV4BO-0357X (with option YD)

Ex d IIC T6 -30 °C ≤ T_{amb} ≤ +75 °C T_{process} = 85 °C

Ex d IIC T5 -30 °C ≤ T_{amb} ≤ +80 °C T_{process} = 100 °C

Ex d IIC T4 -30 °C ≤ T_{amb} ≤ +80 °C T_{process} = 110 °C

18-AV4BO-0254X (without option YD)

20-AV4BO-0489X (with option YD)

Ex tD A21 T85 °C -30 °C ≤ T_{amb} ≤ +75 °C
-30 °C ≤ T_{process} ≤ 85 °C

Ex tD A21 T100 °C -30 °C ≤ T_{amb} ≤ +75 °C
-30 °C ≤ T_{process} ≤ 100 °C

Ex tD A21 T110 °C -30 °C ≤ T_{amb} ≤ +75 °C
-30 °C ≤ T_{process} ≤ 110 °C

TIIS Flameproof (Code J1)

Ex d IIC T4

Use cables with the maximum allowable temperature, 70 °C in case ambient temperature excess 50 °C

TAIWAN Flameproof (Code T1)

Certificate No. (2015) 00113X

Ex db IIC T5 Gb -30 °C ≤ T_{amb} ≤ +80 °C T_{process} ≤ 100 °C

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

TAIWAN Intrinsic Safety (Code T2)

Certificate No. (2016) 00227X

Ex ia IIC T4 Ga -30 °C ≤ T_{amb} ≤ +60 °C T_{process} ≤ 105 °C
IP66/IP67

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

Ex ic IIC T4 Gc -30 °C ≤ T_{amb} ≤ +60 °C T_{process} ≤ 110 °C
IP66/IP67

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

Please refer to specification, "SS2-GTX00Z-0100" for the Fieldbus code below.

FM Intrinsic safety ia/ic FISCO and Fieldbus (Code F4)

FM Fieldbus Nonincendive (Code F7)

ATEX Intrinsic safety ia FISCO and Fieldbus (Code A4)

ATEX Intrinsic safety ic FISCO and Fieldbus (Code A7)

IECEx Intrinsic safety ia FISCO and Fieldbus (Code E4)

IECEx Intrinsic safety ic FISCO and Fieldbus (Code E7)

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

| Model | Measuring Span | Setting Range |
|--------|---|---|
| GTX30A | 4 to 104 kPa abs {0.58 to 15 psia} {30 to 780 mmHg abs} | 0 to 104 kPa abs {0 to 15 psia} {0 to 780 mmHg abs} |
| GTX60A | 35 to 3500 kPa abs {5 to 508 psia} {0.35 to 35 kgf/cm ² abs} | 0 to 3500 kPa abs {0 to 508 psia} {0 to 35 kgf/cm ² abs} |

Working Pressure Range/Overload Resistance value

| Model | Working Pressure Range | Overload Resistance value |
|--------|---|--|
| GTX30A | 0.01 to 104 kPa abs *1 {0.0015 to 15 psia} {0.1 to 780 mmHg abs} | 300 kPa abs {43.5 psia} {3.0 kgf/cm ² abs} |
| GTX60A | 0.01 to 3500 kPa abs *1 {0.0015 to 508 psia} {0.1 mmHg abs to 35 kgf/cm ² abs} | 5250 kPa abs {761 psia} {52.5 kgf/cm ² abs} |

Note) *1. See figure 1

*2. With PVC wetted parts, the maximum working pressure is 1.5 MPa {217 psi}.

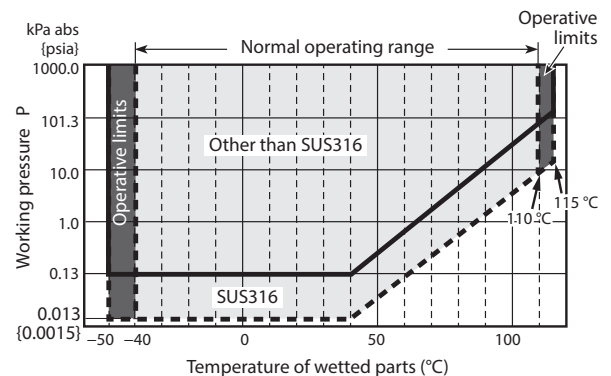


Figure 1. Working pressure and temperature of wetted parts section (for code A of Fill fluid)

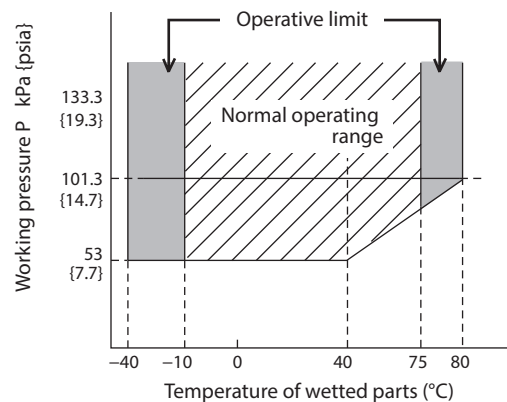


Figure 2. Working pressure and temperature of wetted parts section (for code H and J of Fill fluid)

Power Supply [☆]

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

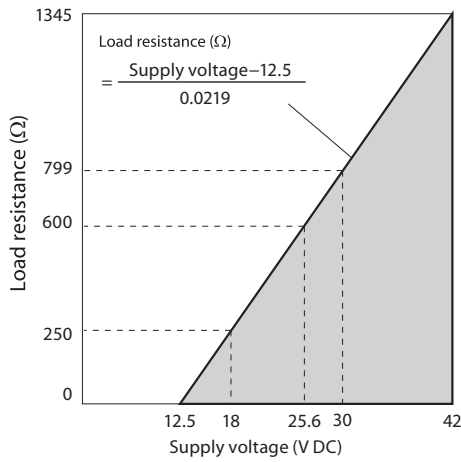


Figure 3. Supply voltage vs. load resistance characteristics

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

Unit: °C

| | | Ambient temperature limit (Operative limits)(*1) | Temperature ranges of wetted parts (Operative limits) | Transportation and storage conditions(*1) |
|--------------------------|---|--|---|---|
| GTX30A,60A | for code A of Fill fluid | -40 to +85 (-50 to +93) | -40 to +110 (-50 to +115) | -50 to +85 |
| | for code J and H of Fill fluid | -10 to +75 (-40 to +80) | -20 to +75 (-40 to +80) | -50 to +85 |
| | PVC meterbody covers | 0 to +55 (-10 to +60) | 0 to +55 (-10 to +60) | -10 to +60 |
| All models | With digital indicators(*1) | -25 to +80 (-30 to +85) | | -25 to +80 |
| For explosion-proof type | Refer to the page on PRODUCT APPROVALS. | | | |

Unit: °F

| | | Ambient temperature limit (Operative limits)(*1) | Temperature ranges of wetted parts (Operative limits) | Transportation and storage conditions(*1) |
|--------------------------|---|--|---|---|
| GTX30A,60A | for code A of Fill fluid | -40 to +185 (-58 to +199) | -40 to +230 (-58 to +239) | -58 to +185 |
| | for code J and H of Fill fluid | 14 to +167 (-40 to +176) | 14 to +167 (-40 to +176) | -58 to +185 |
| | PVC meterbody covers | 32 to 131 (14 to +140) | 32 to 131 (14 to +140) | 14 to 140 |
| All models | With digital indicators(*1) | -13(-22) to +176(185) | | -13 to +176 |
| For explosion-proof type | Refer to the page on PRODUCT APPROVALS. | | | |

*1. For models with an indicator, compare the upper and lower limit temperatures with those of models without an indicator, and apply the lower value for the upper limit and the higher value for the lower limit.

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

± 0.2% of URL per 10-year

Lightning protection [☆]

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

Vibration characteristics

- Amplitude: 0.42 mm / Frequency: 5 to 60 Hz
- Acceleration: 29.4 m/s² (3G)/60 to 200 Hz

Shock characteristics

Acceleration 9.8 m/s² (1G)

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.

Adapters for anticorrosion materials

These are adaptor flanges to connect 82 mm pipes made of anticorrosion materials [excluding Alloy C-276 (Equivalent to Hastelloy C-276)] to 54 mm general-purpose pipes.

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).

Models GTX_ _ _ 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, 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.

Long vent drain:

Maintenance, process conditions, and safety are addressed by using a drain whose length (60 mm) is longer than the standard length (27 mm).

Moisture-free finish (including oil-free finish):

Shipped with water content and oil content removed from the wetted part. (A small amount of fluorine oil is applied to vent/drain plugs in order to prevent sticking.)

Test report:

Shows the results of having tested the appearance, input output characteristics, insulation resistance, dielectric strength, etc., of the transmitter.

Mill sheet:

Shows data related to the chemical composition, heat treatment condition, and mechanical properties of the wetted part material.

Test report (with traceability certificate):

Comprised of three documents: a traceability diagram, a calibration certificate, and a test report.

Withstand pressure and air tight test (general-purpose use):

Shows the results of the wetted part withstand pressure test (10 minutes) and air tight test (10 minutes). For this test, adapter flanges are mounted on the product.

Strength calculation sheet:

Shows the results of having calculated the strength of the meter body cover, flanges, and bolts.

PHYSICAL SPECIFICATIONS

Materials

Fill fluid

Silicone oil for general purpose and high-temperature vacuum models

Fluorine oil for oxygen and chlorine models

Center body

316 SST

Transmitter case

Aluminum alloy, CF8M (Equivalent to 316 SST)

Meter body cover

SCS14A (equivalent to 316 SST) or 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)
Alloy C-276 (Hastelloy C-276 equivalent), 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

INSTALLATION

Electrical connection

G 1/2 internal thread, 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 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)^{*1}, the lower range value (LRV)^{*2} or the span.

Model GTX30A

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

| | | | |
|---|---|--|---------------------------------------|
| Reference accuracy ^{*3 *4} | | ± 0.15 % | (For $x \geq 12$ kPa abs {1.74 psia}) |
| | | $\pm \left(0.05 + 0.1 \times \frac{12}{x} \right)$ % | (For $x < 12$ kPa abs {1.74 psia}) |
| Ambient Temperature effect (Shift from the set range) Change of 30 °C ^{*3} | Combined shift: (including zero and span shifts) | ± 1.2 % | (For $x \geq 12$ kPa abs {1.74 psia}) |
| | | $\pm \left(0.35 + 0.85 \times \frac{12}{x} \right)$ % | (For $x < 12$ kPa abs {1.74 psia}) |

Model GTX30A

Material of wetted parts: Diaphragm; Alloy C-276 (Hastelloy C-276 equivalent), Tantalum, 316L SST
Others; Alloy C-276 (Hastelloy C-276 equivalent), Tantalum, 316L SST

| | | | |
|---|---|--|---------------------------------------|
| Reference accuracy ^{*3 *4} | | ± 0.35 % | (For $x \geq 12$ kPa abs {1.74 psia}) |
| | | $\pm \left(0.25 + 0.1 \times \frac{12}{x} \right)$ % | (For $x < 12$ kPa abs {1.74 psia}) |
| 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) | $\pm \left(0.55 + 1.85 \times \frac{24}{x} \right)$ % | |

Model GTX60A

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

| | | | |
|---|---|---|--|
| Reference accuracy ^{*3 *4} | | ± 0.15 % | (For $x \geq 350$ kPa abs {50.8 psia}) |
| | | $\pm \left(0.05 + 0.1 \times \frac{350}{x} \right)$ % | (For $x < 350$ kPa abs {50.8 psia}) |
| Ambient Temperature effect (Shift from the set range) Change of 30 °C ^{*3} | Combined shift: (including zero and span shifts) | ± 1.2 % | (For $x \geq 350$ kPa abs {50.8 psia}) |
| | | $\pm \left(0.35 + 0.85 \times \frac{350}{x} \right)$ % | (For $x < 350$ kPa abs {50.8 psia}) |

Model GTX60A

Material of wetted parts: Diaphragm; Alloy C-276 (Hastelloy C-276 equivalent), Tantalum, 316L SST
Others; Alloy C-276 (Hastelloy C-276 equivalent), Tantalum, 316L SST

| | | | |
|---|---|---|--|
| Reference accuracy ^{*3 *4} | | ± 0.35 % | (For $x \geq 350$ kPa abs {50.8 psia}) |
| | | $\pm \left(0.25 + 0.1 \times \frac{350}{x} \right)$ % | (For $x < 350$ kPa abs {50.8 psia}) |
| 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) | ± 1.5 % | (For $x \geq 350$ kPa abs {50.8 psia}) |
| | | $\pm \left(0.35 + 1.15 \times \frac{350}{x} \right)$ % | (For $x < 350$ kPa abs {50.8 psia}) |

*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.

MODEL SELECTION**Model GTX30A (Standard absolute pressure)****Model GTX60A (High absolute pressure)**

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

Basic Model No.

| | | |
|----------------|---|--------|
| Measuring span | 4.0 to 104 kPa abs. (0.58 to 15 psia)* ¹ | GTX30A |
| | 35 to 3500 kPa abs. (5 to 508 psia)* ² | GTX60A |

Selection I

| | | | | |
|-----|--|---|---|---|
| I | Output | 4 to 20 mA (SFN Communication) | A | |
| | | 4 to 20 mA (HART5 Communication) | B | |
| | | FOUNDATION Fieldbus communication * ¹³ * ¹⁴ * ¹⁵ | C | |
| | | Digital output (DE communication) * ³ | 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) * ⁴ | J | |
| III | Material (Meterbody cover, Vent/Drain plugs) | Meterbody cover | Vent/Drain plugs | |
| | | SCS14A (Equivalent to 316 SST) | 316 SST | A |
| | | PVC * ⁵ * ⁶ * ⁷ * ⁸ * ¹² | PVC * ⁵ * ⁶ * ⁷ * ⁸ * ¹² | C |
| IV | Material (center body) | 316 SST (Diaphragm: 316L SST) | A | |
| | | Alloy C-276 (Equivalent to Hastelloy C-276)* ⁹ | B | |
| | | Tantalum * ⁹ * ¹⁰ | C | |
| | | 316L SST * ¹⁰ | D | |
| V | Process connections | Rc 1/2, with adapter flange * ⁷ | A | |
| | | Rc 1/4, with adapter flange | B | |
| | | Rc 1/4, without adapter flange | C | |
| | | 1/2 NPT internal thread, with adapter flange * ⁷ | 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 * ⁸ * ⁹ | A | |
| | | Vertical piping, bottom connection * ⁸ * ⁹ | B | |
| | | Horizontal piping, front connection | C | |
| VII | Bolt/nut | Carbon steel | A | |
| | | 304 SST | B | |
| | | 630 SST | C | |
| | | 316 SST * ¹¹ | D | |

*1. Specify range in abs. Pressure. Correct: 0 to 500 mmHg abs.(0 to 9.67 psia) Incorrect: -700 mmHg to 1 kgf/cm²(-13.5 to 14.2 psi).*2. Specify range in abs. Pressure. Correct: 0 to 3 kgf/cm² abs.(0 to 42.7 psia) Incorrect: -1 to 2 kgf/cm² abs.(-14.2 to 28.4 psia).

*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 code J is selected, code C "Tantalum" of Material (Centerbody) should be selected.

*5. 304 SST bolts and nuts material (-B) must be selected when PVC meterbody cover is selected (-C).The max. working pressure is 1.5 MPa (217 psi).

*6. Applicable for wetted parts of center body material; Alloy C-276 or Tantalum.

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

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

*9. Code A, or B of Process installation should be selected.

*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 PVC is selected, Not applicable for the combination with code T2 "Mill certificate" of Option code.

*13. Not applicable for the combination with code Q1 "Safety Transmitter"and Q2 "NAMUR NE43 Compliant Output signal limits" of Option.

*14. In case code A of indicator is selected, code A2 of Option code should be selected.

*15. Not applicable for the combination with code YB "Assembled in China (for use in China)" and YD "Assembled in China (for use outside of China)" of Option.

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

Selection II

| | | — | |
|-------------------------|-----------------------------|--|----|
| I | Electrical connection | G1/2 *2 *13 | 1 |
| | | G1/2 TIIS explosion proof with 1 cable gland attached *3 *13 | 3 |
| | | G1/2 TIIS explosion proof with 2 cable gland attached *3 *13 | 4 |
| | | 1/2 NPT, Watertight | A |
| | | M20, Watertight *1 | B |
| II | Explosion proof [★] *14 *15 | None | XX |
| | | FM Explosionproof for Division system/Flameproof for Zone system | F1 |
| | | FM Intrinsic safety | F2 |
| | | FM Intrinsic safety ia/ic FISCO and Fieldbus *8 | F4 |
| | | FM Nonincendive | F5 |
| | | Combination of code F1, F2, and F5 | F6 |
| | | FM Fieldbus Nonincendive *8 | F7 |
| | | ATEX Flameproof | A1 |
| | | ATEX Intrinsic safety | A2 |
| | | ATEX Intrinsic safety ia FISCO and Fieldbus *8 | A4 |
| | | ATEX Intrinsic safety ic FISCO and Fieldbus *8 | A7 |
| | | IECEX Flameproof | E1 |
| | | IECEX Intrinsic safety | E2 |
| | | IECEX Intrinsic safety ia FISCO and Fieldbus *8 | E4 |
| | | IECEX Intrinsic safety ic FISCO and Fieldbus *8 | E7 |
| | | NEPSI Flameproof | N1 |
| | | NEPSI Intrinsic safety | N2 |
| | | TIIS Flameproof *5 *6 | J1 |
| KCs Flameproof *6 | K1 | | |
| TAIWAN Flameproof | T1 | | |
| TAIWAN Intrinsic Safety | T2 | | |
| III | Indicator | None | X |
| | | With indicator *7 | A |
| IV | Paint *12 | Standard | X |
| | | None (316 stainless steel housing) *4 | 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) *9 | 1 |
| | | CF8M (L form) *9 *11 | 2 |
| | | 304 SST (Flat form) *10 | 6 |

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

*2. Code XX of Explosion proof should be selected.

*3. Code J1 of Explosion proof should be selected.

*4. Not applicable for combination with code 1,3,4 of Electrical connection.

*5. 3 or 4 of Electrical connection should be selected.

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

*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.

*9. Applicable for wetted parts of centerbody material, 316 SST.

*10. Applicable for wetted parts of centerbody material, Alloy C-276, Tantalum, 316L SST.

*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 YB "Assembled in China (for use in China)" and YD "Assembled in China (for use outside of China)" of Option.

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

*15. For option code YB "Assembled in China (for use in China)" and YD "Assembled in China (for use outside of China)" selected, only the following codes can be selected.

YB: XX, N1, N2

YD: XX, F1, F2, F5, F6, A1, A2, E1, E2, T1, T2, K1

Model No.: GTX_ _A - 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 *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 |
| | 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 *16 | T4 |
| | NACE certificate *6 | T5 |
| | Non SI Unit | W1 |
| | Safety label for Taiwan | Y2 |
| | Assembled in China (for use in China) | YB |
| | Assembled in China (for use outside of China) | YD |

*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 “Alloy C-276”, 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, C2, 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.

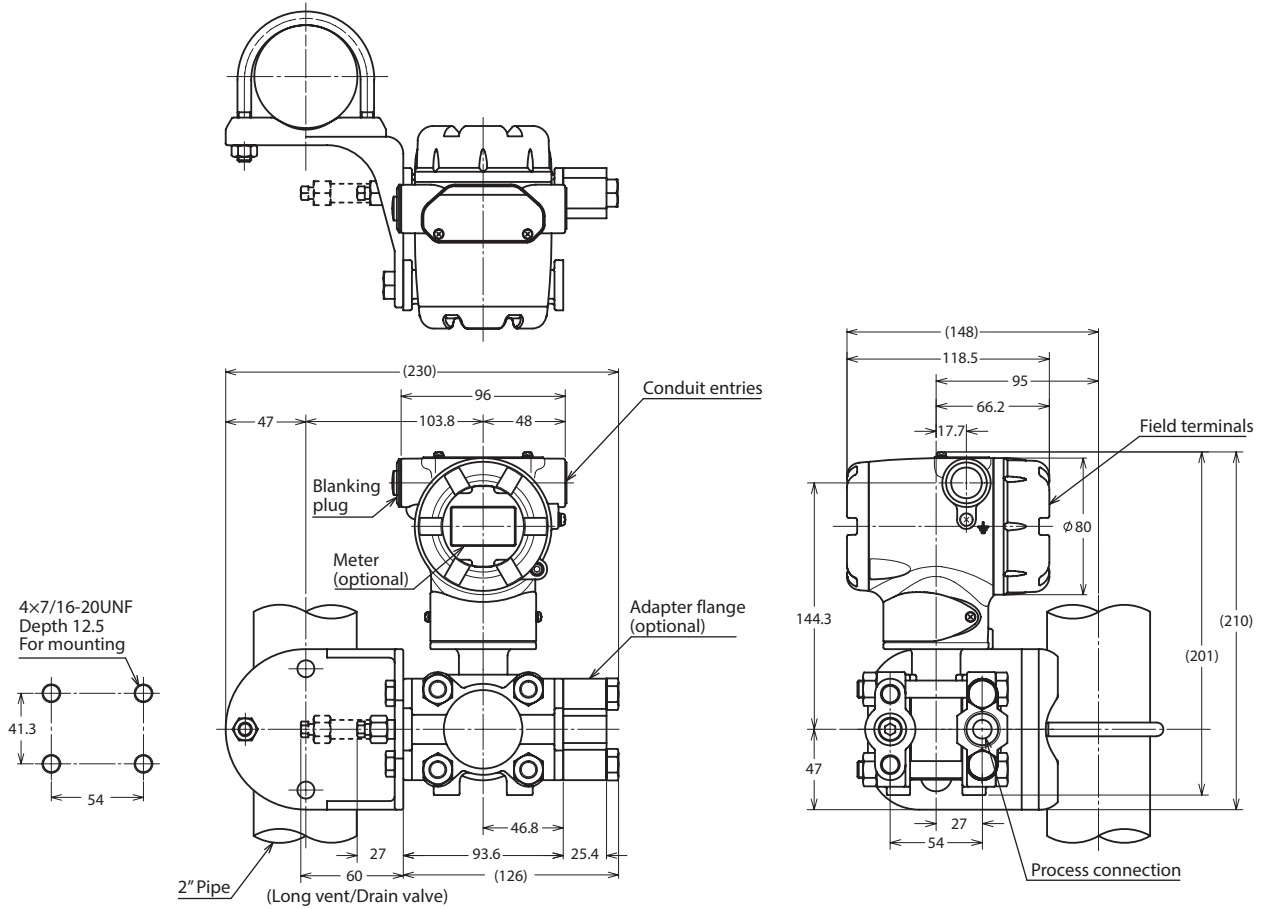
*16. Not applicable for the combination with code YB “Assembled in China (for use in China)” and YD “Assembled in China (for use outside of China)” of Option.

DIMENSIONS

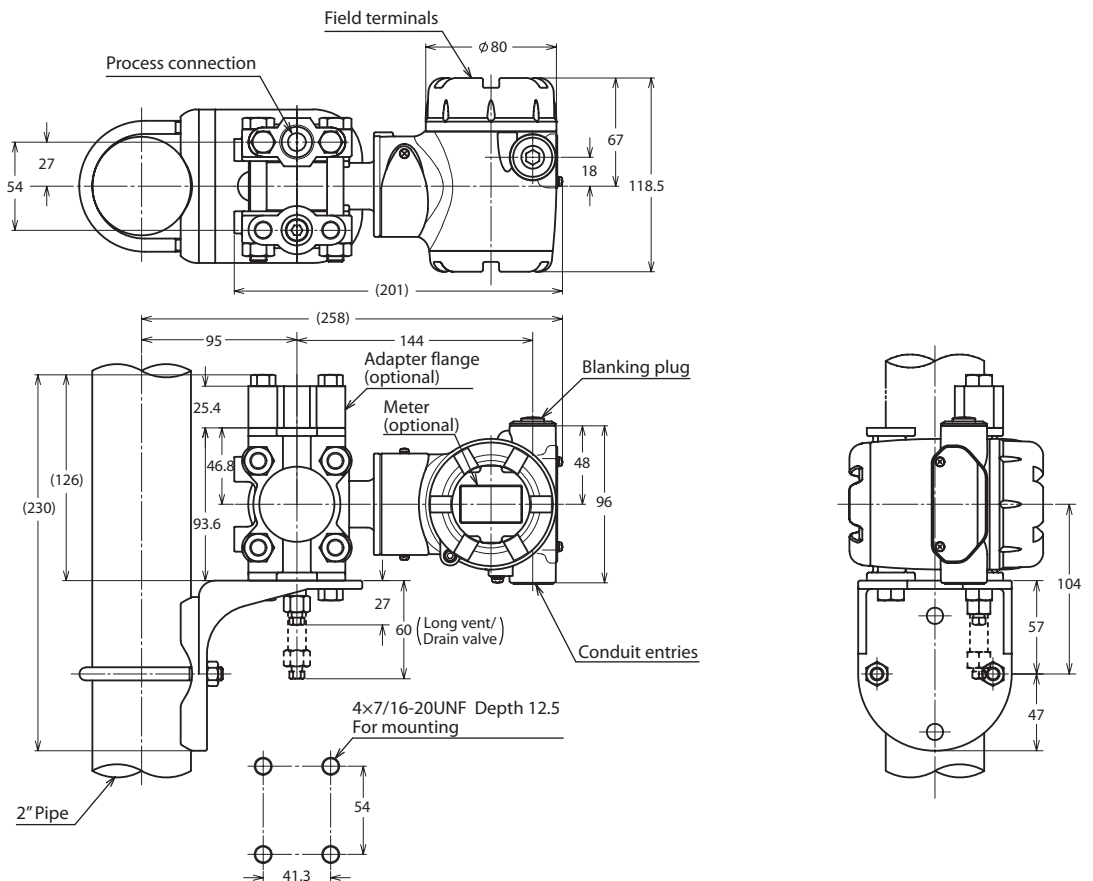
Model GTX30A/60A (Material (center body): 316 SST)

Process connection: Front side

Unit: mm



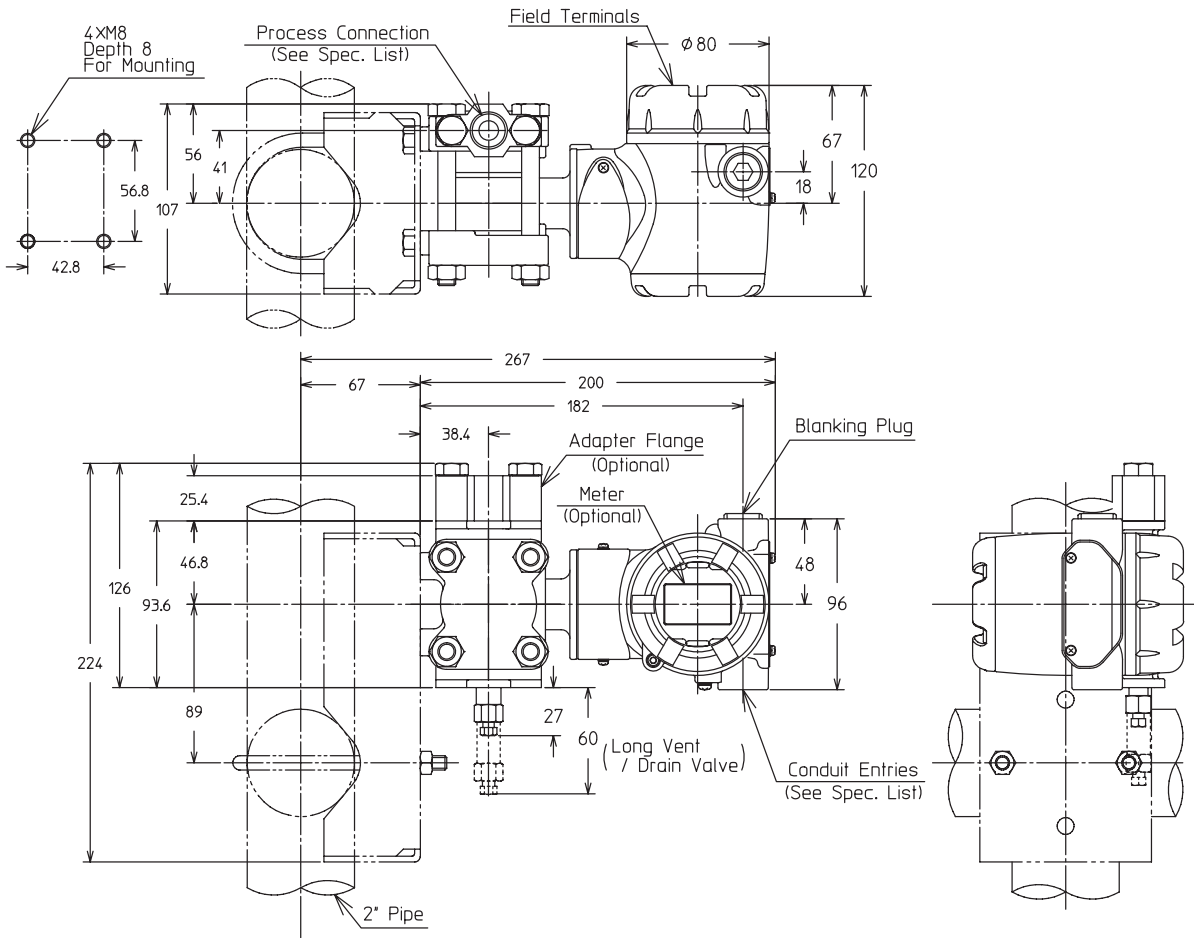
Process Connection: Top or bottom side



Model GTX30A/60A (Material (center body): Alloy C-276, Tantalum, 316L SST)

Process connection: Top or bottom side

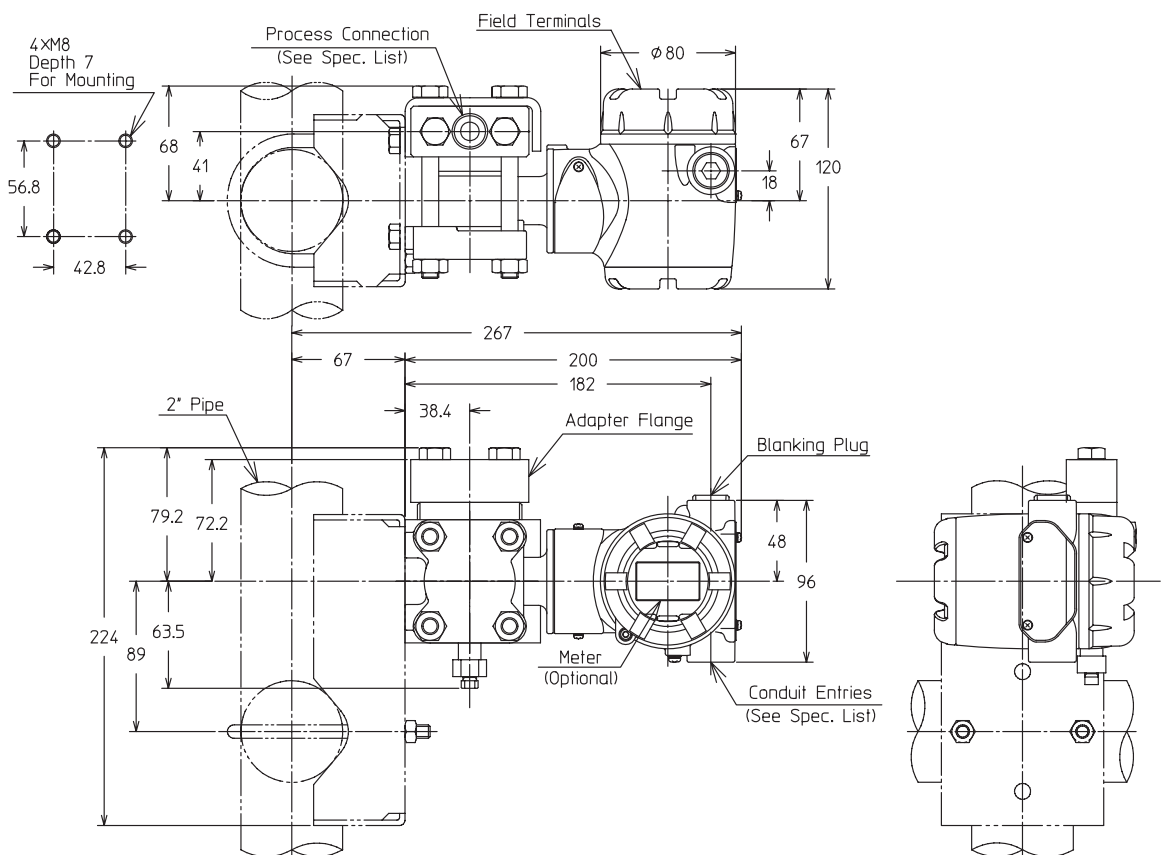
Unit: mm



Model GTX30A/60A (Material (Meter body cover, Vent/Drain plugs): PVC)

Process connection: Top or bottom side

Unit: mm



TERMINAL CONNECTION

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

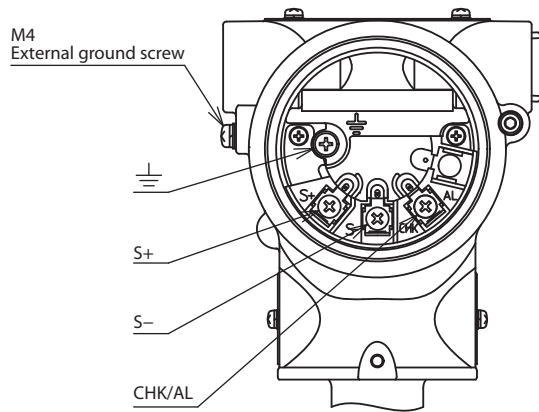


Table 1: Terminal connection

| Symbol | Details |
|--------|--|
| S+ | Power supply and output signal + |
| S- | Power supply and output signal -/Check meter - |
| CHK/AL | Check meter + |
| ⏏ | 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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