Advanced Transmitter Gauge Pressure Transmitters

Model GTX60G/GTX71G/GTX82G

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

High performance and stability

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

Wide measuring range (range ability)

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

A diverse lineup

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



Remote communication

 Two-way communication using digital output facilitates self-diagnosis, range resetting, automatic zero adjustment, and other operations. No. SS2-GTX00G-0100 Azbil Corporation

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 °C≤Tamb≤+85 °C;

Flameproof for Use in Class I, Zone 0/1, AEx db IIC T5 Ga/Gb; −30 °C≤Tamb≤+80 °C; −30 °C≤Tprocess≤100 °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; T4 –40 °C < Tamb < +60 °C; Class I, Zone 0, AEx ia IIC; T4 Ga –30 °C < Tamb < +60 °C; Tprocess = 105 °C Hazardous (Classified) Locations; Indoor/Outdoor Enclosure TYPE 4X, IP67; 80395278, 80395279, and 80395280. Entity Parameters: Vmax (Ui)=30 Volts, Imax (Ii)=100 mA, Pi=1 W, Ci=10 nF, Li=0.5 mH

FM Nonincendive (Code F5) FM18US0252X

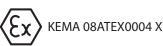
Nonincendive, with Nonincendive Field Wiring Parameters, for Use in Class I, Division 2, Groups A, B, C and D, T4; Class I, Zone 2, Group IIC, T4; Suitable for Class II & III, Division 2, Groups E, F and G, T4; –40 °C < Tamb < +60 °C; Hazardous (Classified) Locations; Indoor/Outdoor Enclosure TYPE 4X, IP67; 80395494.

Nonincendive Field Wiring Parameters: Vmax (Ui)=30 Volts, Ci=10 nF, Li=0.5 mH

Combination of F1, F2 and F5 (Code F6)

ATEX Flameproof and Dust Certifications (Code A1)





II 2 D Ex tb IIIC T85 °C Db -30 °C \leq Tamb \leq +75 °C Tprocess \leq 85 °C II 2 D Ex tb IIIC T100 °C Db -30 °C \leq Tamb \leq +75 °C Tprocess \leq 100 °C II 2 D Ex tb IIIC T110 °C Db -30 °C \leq Tamb \leq +75 °C Tprocess \leq 110 °C Caution - Use supply wires suitable for 5 °C above surrounding ambient

II 1/2 G Ex db IIC T6 Ga/Gb -30 °C≤ Tamb≤ +75 °C Tprocess≤85 °C

II 1/2 G Ex db IIC T5 Ga/Gb -30 °C ≤Tamb≤ +80 °C Tprocess≤100 °C

II 1/2 G Ex db IIC T4 Ga/Gb -30 °C≤ Tamb≤ +80 °C Tprocess≤110 °C

ATEX Intrinsic Safety and Dust certifications (Code A2)





II 1 G Ex ia IIC T4 Ga -30 °C≤T_{amb}≤+60 °C Tprocess=105 °C IP66/IP67

ELECTRICAL PARAMETERS: Ui=30 V, li=93 mA, Pi=1 W, Ci=5 nF, Li=0.5 mH

II 2 D Ex ia IIIC T105 °C Db -30 °C \leq Tamb \leq +60 °C Tprocess= 105 °C IP66/IP67

II 3 G Ex ic IIC T4 Gc -30 °C≤T_{amb}≤+60 °C Tprocess=110 °C IP66/IP67

ELECTRICAL PARAMETERS: Ui=30 V, Ci=5 nF, Li=0.5 mH

NEPSI Flameproof and Dust Certifications (Code N1)

Ex d IIC T6 Gb; Ex tD A21 IP66/IP67 T85 °C Tprocess= 80 °C; -30 °C \leq Tamb \leq +75 °C Ex d IIC T5 Gb; Ex tD A21 IP66/IP67 T100 °C Tprocess= 95 °C; -30 °C \leq Tamb \leq +80 °C Ex d IIC T4 Gb; Ex tD A21 IP66/IP67 T115 °C Tprocess= 110 °C; -30 °C \leq Tamb \leq +80 °C

NEPSI Intrinsic Safety Certification (Code N2)

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

Ex ia IIIC T105 °C Db -30 °C≤T_{amb}≤+60 °C Tprocess=105 °C IP66/IP67

Ex ic IIC T4 Gc -30 °C \leq Tamb \leq +60 °C Tprocess=110 °C IP66/IP67

ELECTRICAL PARAMETERS: Ui=30 V, Ii=93 mA, Pi=1 W, Ci=5 nF, Li=0.5 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 °C \leq Tamb \leq +75 °C Tprocess \leq 85 °C Ex db IIC T5 Ga/Gb -30 °C \leq Tamb \leq +80 °C Tprocess \leq 100 °C Ex db IIC T4 Ga/Gb -30 °C \leq Tamb \leq +80 °C Tprocess \leq 110 °C Ex tb IIIC T85 °C Db -30 °C \leq Tamb \leq +75 °C Tprocess \leq 85 °C Ex tb IIIC T100 °C Db -30 °C \leq Tamb \leq +75 °C Tprocess \leq 100 °C Ex tb IIIC T110 °C Db -30 °C \leq Tamb \leq +75 °C Tprocess \leq 110 °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 °C \leq Tamb \leq +60 °C Tprocess=105 °C IP66/IP67

ELECTRICAL PARAMETERS: Ui=30 V, li=93 mA, Pi=1 W, Ci=5 nF, Li=0.5 mH

Ex ia IIIC T105 °C Db -30 °C \leq Tamb \leq +60 °C Tprocess=105 °C IP66/IP67

Ex ic IIC T4 Gc -30 °C \leq Tamb \leq +60 °C Tprocess= 110 °C IP66/IP67

ELECTRICAL PARAMETERS: Ui=30 V, Ci=5 nF, Li=0.5 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 Tprocess=85 °C

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

Ex d IIC T4 -30 °C \leq Tamb \leq +80 °C Tprocess=110 °C

18-AV4BO-0254X (without option YD) **20-AV4BO-0489X** (with option YD)

Ex tD A21 T85 °C -30 °C \leq Tamb \leq +75 °C -30 °C \leq Tprocess \leq 85 °C

Ex tD A21 T100 °C -30 °C \leq Tamb \leq +75 °C -30 °C \leq Tprocess \leq 100 °C

Ex tD A21 T110 °C -30 °C \leq Tamb \leq +75 °C -30 °C \leq Tprocess \leq 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≤ Tamb ≤+80 °C Tprocess≤100 °C

Caution - Use supply wires suitable for 5 $^{\circ}\text{C}$ above surrounding ambient

TAIWAN Intrinsic Safety (Code T2)

Certificate No.(2016)00227X

Ex ia IIC T4 Ga -30 °C \leq Tamb \leq +60 °C Tprocess \leq 105 °C IP66/IP67

ELECTRIAL PARAMETERS: Ui=30 V, li=93 mA, Pi=1 W, Ci=5 nF, Li=0.5 mH

Ex ic IIC T4 Gc -30 °C \leq Tamb \leq +60 °C Tprocess \leq 110 °C IP66/IP67

ELECTRIAL PARAMETERS: Ui=30 V, Ci=5 nF, Li=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

PED Conformity (2014/68/EU)

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

Measured fluid	Group*	Pressure	Applicable models
	1	200 bar (20 MPa)	All models except GTX82G
Gas	2	1,000 bar (100 MPa)	All models
71	1	500 bar (50 MPa)	All models
Liquid	2	1,000 bar (100 MPa)	All models

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

Group 2 comprises all other fluids not refer to group 1

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

Models GTX82G conform to PED according to Module A.

FUNCTIONAL SPECIFICATIONS

Type of protection

NEMA 3 and 4X IEC IP66/67

Measuring span/Setting range/Overload Resistance value

Model	Measuring Span	Setting Range	Overload Resistance value
GTX	17.5 to 3500 kPa	-100 to +3500 kPa	5250 kPa
60G	{2.54 to 508 psi}	{-14.5 to 508 psi}	{761 psi}
DUG	{0.175 to 35 kgf/cm ² }	{-1 to +35 kgf/cm ² }*1	{52.5 kgf/cm ² }
GTX	0.7 to 14 MPa	−0.1 to +14 MPa	21 MPa
71G	{101 to 2,030 psi}	{-14.5 to 2,030 psi}	{3,045 psi}
/1G	{7 to 140 kgf/cm ² }	{-1 to +140 kgf/cm ² }*2	{210 kgf/cm ² }
GTX	0.7 to 42 MPa	-0.1 to +42 MPa	63 MPa
82G	{101 to 6,091 psi}	{-14.5 to 6,091 psi}	{9,137 psi}
02G	{7 to 420 kgf/cm ² }	{-1 to +420 kgf/cm ² }*3	{630 kgf/cm ² }

- Note) *1. With PVC parts, the maximum working pressure is 1.5 MPa {217 psi}, overload resistance value is 2.25 Mpa {326 psi}.
 - *2. With 304 SST bolts and nuts, the maximum working pressure is 10 MPa {1,450 psi}, overload resistance value is 15 Mpa {2,175 psi}.
 - *3. With 304 SST or 316SST bolts and nuts, the maximum working pressure is 20 MPa {2,900 psi} for process connection code P,R,T and W.

For process connection code S and Y, the maximum working pressure is 23 Mpa {3,336psi}.

Overload resistance value is 30MPa {4,351 psi} for process connection code P, R, T and W.

For Process connection code S and Y, the maximum working pressure is 34.5MPa {5,004 psi}.

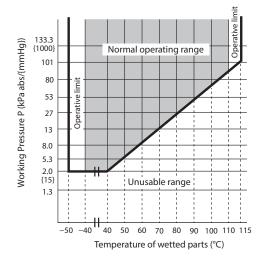


Figure 1. Working pressure and temperature of wetted parts section (for code A of Fill fluid)

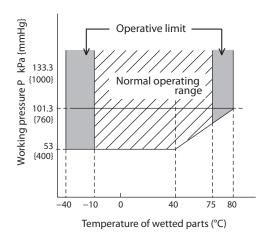


Figure 2. Working pressure and temperature of wetted parts section (for code J and H of Fill fluid)

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

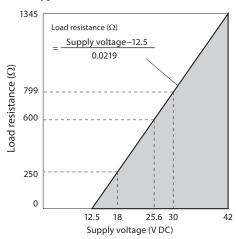


Figure 3. Supply voltage vs. load resistance characteristics

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)
	for code A of Fill fluid	-40 to +85 (-50 to +93)	-40 to +110 (-50 to +115)	-50 to +85
GTX60G, 71G, 82G	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)
	for code A of Fill fluid	-40 to +185 (-58 to +199)	-40 to +230 (-58 to +239)	-58 to +185
GTX60G, 71G, 82G	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 to +176 (-22 to +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

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

Lightning protection [★]

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

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.

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 Level2 (SIL-2)

This option is not applicable for FOUNDATION Fieldbus type, DE communication type, external zero/span adjustment (option A2), and Alarm output (option Q7).

Alarm Output (contact output)

Contact output is prepared as alarm output when alarm (Output Alarm/Sensor Temp. Alarm) condition is detected. It can be set to or Normally Close.

Contact output type: One open collector (NPN) Contact rating: 30 V DC max., 30 mA DC max.

Residual voltage at output ON: 3.0 V max. Operating mode: Normally Open (default)

Normally Close is not recommended.

When this option is selected, CHECK terminals for current check cannot be used.

This option is not applicable for FOUNDATION Fieldbus type, and with intrinsic safety, 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 ength (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 models Fluorine oil for oxygen and chlorine models

Center body

316 SST

Transmitter case

Aluminum alloy, CF8M (Equivalent to 316 SST)

Meter body cover flange

SCS14A (Equivalent to 316 SST) or 316 SST, PVC

Bolts and nuts (for fastening meter body cover)

Carbon steel (SNB7), 304 SST, 316 SST, 630 SST

O-ring

NBR

For Wetted parts

Adapter flange (option)

SCS14A (Equivalent to 316 SST), PVC

Center body

316 SST (Diaphragm 316L SST) Alloy C-276 (Equivalent to Hastelloy C-276), Tantalum, 316L SST

Vents and plugs

316 SST, PVC

Gaskets

PTFE

Mounting Bracket

Bracket

304 SST

U-bolt and nuts

304 SST

Paint

Standard: Baked acrylic paint

Corrosion-proof: Baked urethane paint

Color

Housing: Silver N-8.2

Cap: azbil bordeaux 2.5R 2.25/5

Weight

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

INSTALLATION

Electrical connection

G 1/2 internal thread, 1/2 NPT internal thread, M20 internal thread.

Grounding

Resistance 100Ω 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

MARNING

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

CAUTION

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

Handling precautions for HART specification devices

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

PERFORMANCE SPECIFICATIONS

Reference accuracy

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

Model GTX60G (for regular type)

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

Reference accuracy *3 *4 *5 *6		±0.04 %	(For <i>x</i> ≥350 kPa {50.8 psi})
		$\pm \left(0.008+0.032 \times \frac{350}{x}\right) \%$	(For <i>x</i> <350 kPa {50.8 psi})
Ambient Temperature effect	Combined shift:	±0.15 %	(For <i>x</i> ≥350 kPa {50.8 psi})
(Shift from the set range) Change of 30 °C *3	(including zero and span shifts)	$\pm \left(0.075 + 0.075 \times \frac{350}{x}\right)\%$	(For <i>x</i> <350 kPa {50.8 psi})

Model GTX60G (for oxygen/chlorine service)

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

Reference accuracy *3 *4		±0.075 %	(For <i>x</i> ≥1750 kPa {254 psi})
		±0.1 %	(1750 kPa {254 psi}>x≥140 kPa {20.3 psi})
		\pm (0.025+0.075× $\frac{140}{x}$) %	(For <i>x</i> <140 kPa {20.3 psi})
Temperature characteristics (Shift from the set range)	Combined shift: (including zero and span	±0.44 %	(For <i>x</i> ≥350 kPa {50.8 psi})
Change of 30 °C *3 (Range from –5 to +55 °C)	shifts)	$\pm \left(0.19+0.25 \times \frac{350}{x}\right)\%$	(For <i>x</i> <350 kPa {50.8 psi})

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

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

Reference accuracy *3 *4		±0.2 %	(For <i>x</i> ≥350 kPa {50.8 psi})
		$\pm \left(0.05+0.15 \times \frac{350}{x}\right)\%$	(For x<350 kPa {50.8 psi})
Ambient Temperature effect (Shift from the set range)	Combined shift: (including zero and span shifts)	±0.85 %	(For <i>x</i> ≥350 kPa {50.8 psi})
Change of 30 °C *3 (Range from –5 to +55 °C)		$\pm \left(0.35+0.5 \times \frac{350}{x}\right)\%$	(For x<350 kPa {50.8 psi})

^{*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 $URV \ge 0$ and $LRV \ge 0$.

^{*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".

^{*6.} In case code "YB" or "YD" of Option selected, Linear output is ± 0.05 % (For $x \ge 10.0$ kPa $\{1.45 \text{ psi}\}$).

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

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

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

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

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

Reference accuracy *3 *4		±0.2 %	(For <i>x</i> ≥2.1 MPa {304 psi})
		$\pm \left(0.05 + 0.15 \times \frac{2.1}{x}\right)\%$	(For x<2.1 MPa {304 psi})
	Combined shift: (including zero and span shifts)	±0.85 %	(For <i>x</i> ≥3.5 MPa {508 psi})
Change of 30 °C *3 (Range from –5 to +55 °C)		$\pm (0.35 + 0.5 \times \frac{3.5}{x}) \%$	(For x<3.5 MPa {508 psi})

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

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

Reference accuracy *3 *4		±0.15 %	(For <i>x</i> ≥7 MPa {1,015 psi})
		$\pm \left(0.05+0.1 \times \frac{7}{x}\right)\%$	(For <i>x</i> <7 MPa {1,015 psi})
Ambient Temperature effect	Combined shift:	±0.41 %	(For <i>x</i> ≥7 MPa {1,015 psi})
(Shift from the set range) Change of 30 °C *3	(including zero and span shifts)	$\pm (0.18+0.23 \times \frac{7}{x})\%$	(For <i>x</i> <7 MPa {1,015 psi})

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

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

Reference accuracy *3 *4		±0.15 %	(For <i>x</i> ≥7 MPa {1,015 psi})
		$\pm \left(0.05+0.1 \times \frac{7}{x}\right)\%$	(For <i>x</i> <7 MPa {1,015 psi})
Ambient Temperature effect (Shift from the set range)	Combined shift: (including zero and span shifts)	±0.85 %	(For <i>x</i> ≥7 MPa {1,015 psi})
Change of 30 °C *3 (Range from –5 to +55 °C)		$\pm (0.35+0.5 \times \frac{7}{x})\%$	(For <i>x</i> <7 MPa {1,015 psi})

^{*3.} Within a range of $URV \ge 0$ and $LRV \ge 0$.

 $^{^*4}$. Reference accuracy at calibrated condition.

MODEL SELECTION

Model GTX60G (Standard gauge pressure)

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

Basic Model No.

	Measuring span	17.5 to 3500 kPa (2.54 to 508 psi)	GTX60G

Selection I

I	Output	4 to 20 mA (SFN Comm	unication)	A						
		4 to 20 mA (HART5 Cor		В						
		FOUNDATION Fieldbus communication *1 *2 *12								
		Digital output (DE comr	Digital output (DE communication) *9							
		4 to 20 mA (HART7 Cor		F						
II	Fill fluid	Regular type (Silicone oi	1)		Α					
		For oxygen service (Fluo	rine oil)		Н					
		For chlorine service (Flu	orine oil) *5		J					
III	Material (Meterbody	Meterbody cover	Vent/Drain plugs							
	cover, Vent/Drain plugs)	SCS14A	316 SST			A				
		(Equivalent to 316 SST)								
		PVC *3 *6 *7 *8	PVC *3 *6 *7 *8			С		,		
IV	Material (center body)	316 SST (Diaphragm: 31	: 316L SST)				A			
		Alloy C-276 (Equivalent	to Hastelloy C-276)				В	ļ		
		Tantalum *4 *10					С			
		316L SST *4 *10					D		,	
V	Process connections	Rc 1/2, with adapter flan	ge					A		
		Rc 1/4, with adapter flan	ge					В		
		Rc 1/4, without adapter f	lange					С		
		1/2 NPT internal thread,	with adapter flange					D		
		1/4 NPT internal thread,	with adapter flange					Е		
		1/4 NPT internal thread,	without adapter flange					F		,
VI	VI Process installation Vertical piping, top connection						A			
		Vertical piping, bottom of	connection						В	
		Horizontal piping, front	Horizontal piping, front connection						С	
VII	Bolt/nut	304 SST								В
		316 SST *11								D

^{*1.} Not applicable for the combination with code Q1 "Safety Transmitter" and Q2 "NAMUR NE43 Compliant Output signal limits" of Option.

^{*2.} In case code A of indicator is selected, code A2 of Option code should be selected.

^{*3. 304} SST bolts and nuts material (-B) must be selected when PVC meterbody cover is selected. The max. working pressure is 1.5 MPa {217 psi}.

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

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

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

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

^{*8.} In case PVC is selected, Not applicable for the combination with code T2 "Mill certificate" of Option code.

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

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

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

^{*12.} 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 GTX71G (High gauge pressure)

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

Basic Model No.

Measuring span	0.7 to 14 MPa (101 to 2030 psi)	GTX71G
Tricusuring spun	0.7 to 11 1/11 a (101 to 2030 poi)	0111710

Selection I

I Output		4 to 20 mA (SFN Comm	unication)	A						
		4 to 20 mA (HART5 Cor	4 to 20 mA (HART5 Communication) B							
				С						
				D						
		4 to 20 mA (HART7 Cor	nmunication)	F						
II Fill fluid		Regular type (Silicone oi	l)		A					
		For oxygen service (Fluo	rine oil)		Н					
		For chlorine service (Flu	orine oil) *5		J					
III	Material (Meterbody	Meterbody cover	Vent/Drain plugs							
	cover, Vent/Drain plugs)	SCS14A	316 SST			A				
		(Equivalent to 316 SST)						1		
IV Material (center body)		316 SST (Diaphragm: 316L SST)								
		Alloy C-276 (Equivalent	to Hastelloy C-276)				В			
		Tantalum *4 *8					С			
		316L SST *4 *8					D			
V	Process connections	Rc 1/2, with adapter flange A						A		
		Rc 1/4, with adapter flan	ge					В		
		Rc 1/4, without adapter f	lange					С		
		1/2 NPT internal thread,	with adapter flange					D		
		1/4 NPT internal thread, with adapter flange					Е			
		1/4 NPT internal thread,	without adapter flang	e				F		
VI	Process installation	Vertical piping, top conn	ection *4						A	
		Vertical piping, bottom of	connection *4						В	
		Horizontal piping, front	connection						С	
VII	Bolt/nut	Carbon steel								A
		304 SST *3								В
		630 SST								С
		316 SST *3 *9								D

^{*1.} Not applicable for the combination with code Q1 "Safety Transmitter" and Q2 "NAMUR NE43 Compliant Output signal limits" of Option.

^{*2.} In case code A of indicator is selected, code A2 of Option code should be selected..

^{*3.} When 304/316 SST bolt/nut is selected, max working pressure rating is 10 MPa {1,450 psi}.

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

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

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

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

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

 $^{*10. \} Not \ applicable for \ the \ combination \ with \ code \ YB \ ``Assembled \ in \ China)" \ and \ YD \ ``Assembled \ in \ China \ (for \ use \ outside \ of \ China)" \ of \ Option.$

Model GTX82G (High gauge pressure)

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

Basic Model No.

				ı
	Measuring span	0.7 to 42 MPa (101 to 6,091 psi)	GTX82G	l

Selection I

I	Output	4 to 20mA (SFN Communicati	on)	A						
		4 to 20mA (HART5 Communication)		В						
		FOUNDATION Fieldbus commu	nication *2 *5 *6	С						
		Digital output (DE communication) *3		D						
		4 to 20mA (HART7 Communi	cation)	F						
II	Fill fluid	Regular type (Silicone oil)			A					
		For oxygen service (Fluorine or	il)		Н					
III	Material (Meterbody	Meterbody cover	Vent/Drain plugs							
	cover, Vent/Drain plugs)	316 SST	316 SST			A				
		(Equivalent to 316 SST)						_		
IV	Material (center body)	316 SST (Diaphragm: 316L SST	Γ)				A			
		Alloy C-276 (Equivalent to Has	stelloy C-276)				В			
V	Process connections	Rc 1/2, with adapter flange, for	high pressure model					P		
		Rc 1/4, with adapter flange, for	high pressure model					R		
		Rc 1/4, without adapter flange,	for high pressure mo	del				S		
		1/2 NPT internal thread, with a	dapter flange, for high	pres	sure 1	mode	<u> </u>	Т		
		l/4 NPT internal thread, with a	dapter flange, for high	pres	sure 1	mode	<u> </u>	W		
		l/4 NPT internal thread, withou	ut adapter flange, for l	nigh p	ressu	ire mo	odel	Y		_
VI	Process installation	Vertical piping, top connection						A		
		Vertical piping, bottom connec	tion						В	
		Horizontal piping, front conne	ction						С	
VII	Bolt/nut	Carbon steel							A	
		304 SST *1							В	
		630 SST						С		
		316 SST *1 *4		316 SST *1 *4						D

^{*1.} When 304/316 SST bolt/nut is selected, max working pressure rating is 20MPa {2,900 psi} for Process connection code P,R,T and W. For Process connection code S and Y, the maximum working pressure rating is 23MPa {3,336 psi}

^{*2.} Not applicable for the combination with code Q1 "Safety Transmitter" and Q2 "NAMUR NE43 Compliant Output signal limits" of Option.

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

 $^{^{*}4}$. In case this code is selected, code P8 of Option code should be selected.

^{*5.} In case code A of indicator is selected, code A2 of Option code should be selected.

^{*6.} 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.

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

Sele	ection II		_	7				
I	Electrical connection	G1/2 *2 *13	,	1				
		G1/2 TIIS explosion proof with 1 cable gland attached *3*13		3	1			
		G1/2 TIIS explosion proof with 2 cable gland attached *3*13		4	1			
		1/2 NPT, Watertight		A				
		M20, Watertight *1		В				
II	Explosion proof [★]	None		-	XX			
	*14 *15	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)				Н		_
V	Failure alarm	Upper limit of output at abnormal condition					A	
		Lower limit of output at abnormal condition					В	
		None (for FOUNDATION Fieldbus) *8					X	<u> </u>
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 material (center body);316 SST and Alloy C-276.
- *10. Applicable for wetted parts of material (center body); Tantalum and 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_ _G - Selection I (I II III IV V VI VII) - Selection II (I II III IV V VI) - Option

Option XXNo options With external Zero/Span adjustment (With external ZERO adjustment only for FOUNDATION Fieldbus)*8 *9 A2 One elbow (left) *3 *4 *7 G1 One elbow (right) *3 *4 *7 G2 2 elbows *3 *5 *7 G3 Long vent/drain plugs G4 Side vent/drain top *3 *16 G6 Side vent/drain bottom *3 *16 G7 Oil and water free finish Κ1 Oil free finish *1 K3 Au Plating Diaphragm L1316 SST (Parts in contact with atmosphere) *11 *12 *13 Р8 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, Q2 3.6 mA/selected lower limit) *9 *14 Alarm Output (contact output) *10 *14 Q7 Advanced diagnostics *15 Q8 Custom calibration R1 Test report T1 Mill certificate T2 Traceability certificate *18 Τ4 NACE certificate *6 Т5 Non SI Unit W1 Safety label for Taiwan Y2 Assembled in China (for use in China) YΒ 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 model GTX82G.
- *18. 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.

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DIMENSIONS

Model GTX60G (Material (center body): 316 SST, Alloy C-276)

Process connection: Front side Unit: mm 95 (223) Blanking plug - 66.2 Conduit entries Field terminals Meter (optional) (195) Adapter flange (optional) 144.3 4×7/16-20UNF Depth 12.5 For mounting (210) 0

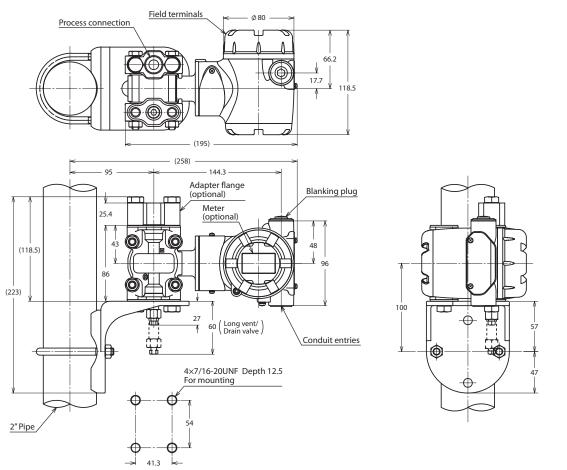
25.4

Option "G6"

Process connection

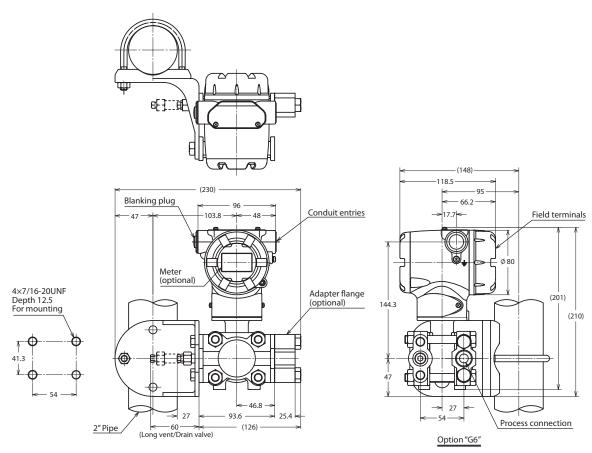
Process Connection: Top or bottom side

2" Pipe

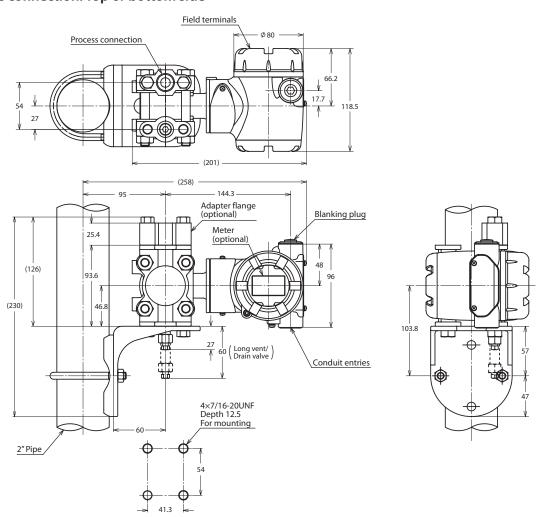


Model GTX71G (Material (center body): 316 SST, Alloy C-276)

Process connection: Front side Unit: mm



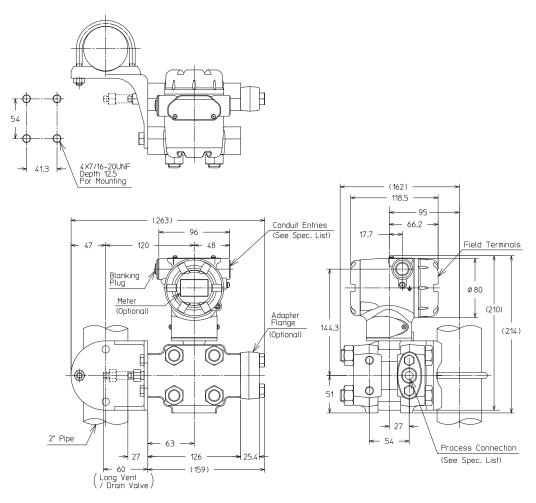
Process connection: Top or bottom side



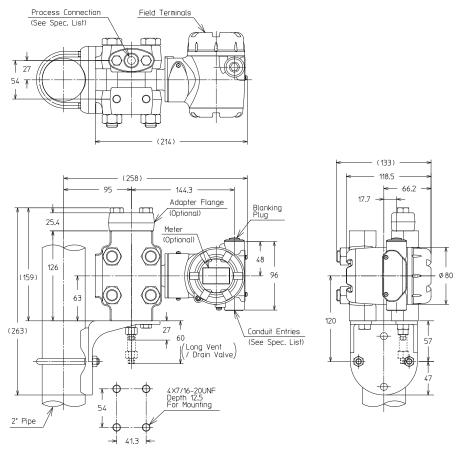
Model GTX82G

Process connection: Front side

Unit: mm



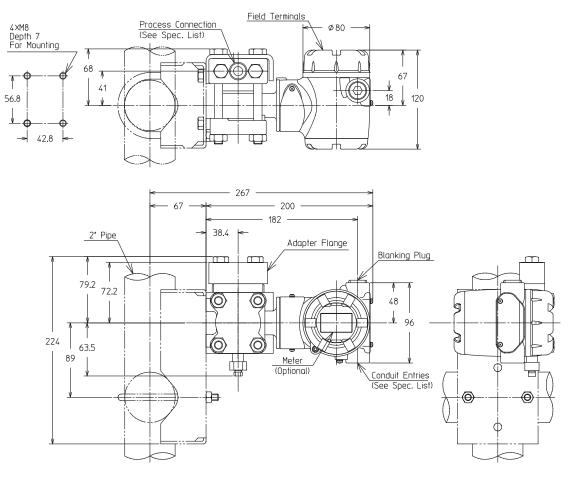
Process connection: Top and bottom side



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

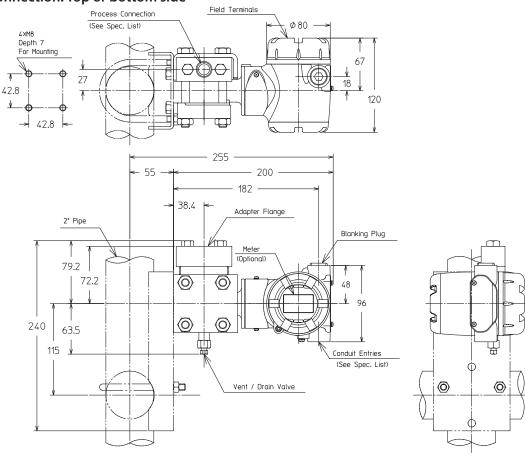
Process connection: Top or bottom side

Unit: mm



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

Process connection: Top or bottom side



TERMINAL CONNECTION

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

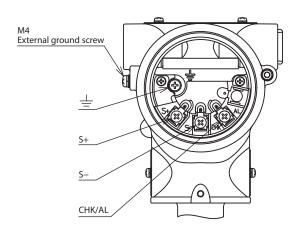


Table 1: Terminal connection

Symbol	Details
S+	Power supply and output signal +
S-	Power supply and output signal -/Check meter -
CHK/AL	Check meter +
<u></u>	Ground

Table 2: Terminal connection (option "O7": Alarm output)

copion Q, illumino outpu						
Symbol Details S+ Power supply and output signal +						
						S-
CHK/AL	Alarm +					
<u></u>	Ground/Alarm –					

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