

# Advanced Transmitter

## Remote-sealed type Gauge Pressure Transmitters

Model GTX35U/GTX60U/GTX71U/GTX82U

### 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

- Long-term stability is proven in 500,000 installations worldwide.
- Unique characterization and composite semiconductor sensors realize excellent temperature and static pressure characteristics

#### A diverse lineup

- A diverse flange lineup, ranging from 1/2 inch (15 mm) to 4 inches (100 mm), is available to meet user requirements.
- A wide range of models, including those for general purposes, high-temperature, and high-temperature and high-vacuum service, is available to meet user requirements. In addition, the working temperature range of regular type has been expanded to 180 °C maximum to allow you greater freedom instrumentation.
- 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)**

Explosionproof for Class I, Division 1, Groups A, B, C and D; Class I, Zone 1, AEx d IIC

Dust-Ignitionproof for Class II, III, Division 1, Groups E, F and G

$T_5 -40\text{ }^\circ\text{C} \leq T_{\text{amb}} \leq +85\text{ }^\circ\text{C}$

Hazardous locations

Indoor/Outdoor Type 4X, IP67

Factory sealed, conduit seal not required for Division applications

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

**FM Intrinsic Safety (Code F2)**

IS/I, II, III/1/ABCDEFGH/T4;  $-40\text{ }^\circ\text{C} \leq T_{\text{amb}} \leq +60\text{ }^\circ\text{C}$ ; 80395278, 80395279, 80395280; Entity; TYPE 4X; IP67

I/0/AEx ia/IIC/T4;  $-40\text{ }^\circ\text{C} \leq T_{\text{amb}} \leq +60\text{ }^\circ\text{C}$ ; 80395278, 80395279, 80395280; Entity; TYPE 4X; IP67

Entity Parameters:  $V_{\text{max}} (U_i)=30\text{ Volts}$ ,

$I_{\text{max}} (I_i)=100\text{ mA}$ ,

$P_i=1\text{ W}$ ,  $C_i=10\text{ nF}$ ,  $L_i=0.5\text{ mH}$

**FM Nonincendive (Code F5)**

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:

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

**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  $^\circ\text{C}$  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  $^\circ\text{C}$  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  $^\circ\text{C}$  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  $5\text{ }^\circ\text{C}$  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 1 D Ex ia IIIC T105  $^\circ\text{C}$  Da  $-30\text{ }^\circ\text{C} \leq T_{\text{amb}} \leq +60\text{ }^\circ\text{C}$   $T_{\text{process}}=105\text{ }^\circ\text{C}$  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  $^\circ\text{C}$   $T_{\text{process}}=80\text{ }^\circ\text{C}$ ;  $-30\text{ }^\circ\text{C} \leq T_{\text{amb}} \leq +75\text{ }^\circ\text{C}$

Ex d IIC T5 Gb; Ex tD A21 IP66/IP67 T100  $^\circ\text{C}$   $T_{\text{process}}=95\text{ }^\circ\text{C}$ ;  $-30\text{ }^\circ\text{C} \leq T_{\text{amb}} \leq +80\text{ }^\circ\text{C}$

Ex d IIC T4 Gb; Ex tD A21 IP66/IP67 T115  $^\circ\text{C}$   $T_{\text{process}}=110\text{ }^\circ\text{C}$ ;  $-30\text{ }^\circ\text{C} \leq T_{\text{amb}} \leq +80\text{ }^\circ\text{C}$

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

Ex ia IIC T4 Ga  $-40\text{ }^\circ\text{C} \leq T_{\text{amb}} \leq +60\text{ }^\circ\text{C}$   $T_{\text{process}}=105\text{ }^\circ\text{C}$  IP66/IP67

Ex ic IIC T4 Gc  $-40\text{ }^\circ\text{C} \leq T_{\text{amb}} \leq +60\text{ }^\circ\text{C}$   $T_{\text{process}}=110\text{ }^\circ\text{C}$  IP66/IP67

ELECTRICAL PARAMETERS:  $U_i=30\text{V}$ ,  $I_i=100\text{mA}$ ,  $P_i=1\text{W}$ ,  $C_i=13\text{nF}$ ,  $L_i=0.5\text{mH}$

Use cable suitable for  $5\text{ }^\circ\text{C}$  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  $^\circ\text{C}$  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  $^\circ\text{C}$  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  $^\circ\text{C}$  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  $5\text{ }^\circ\text{C}$  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  $^\circ\text{C}$  Da  $-30\text{ }^\circ\text{C} \leq T_{\text{amb}} \leq +60\text{ }^\circ\text{C}$   $T_{\text{process}}=105\text{ }^\circ\text{C}$  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**

Ex d IIC T6  $-30\text{ }^\circ\text{C} \leq T_{\text{amb}} \leq +75\text{ }^\circ\text{C}$   $T_{\text{process}}=85\text{ }^\circ\text{C}$

Ex d IIC T5  $-30\text{ }^\circ\text{C} \leq T_{\text{amb}} \leq +80\text{ }^\circ\text{C}$   $T_{\text{process}}=100\text{ }^\circ\text{C}$

Ex d IIC T4  $-30\text{ }^\circ\text{C} \leq T_{\text{amb}} \leq +80\text{ }^\circ\text{C}$   $T_{\text{process}}=110\text{ }^\circ\text{C}$

**18-AV4BO-0254X**

Ex tD A21 T85 °C -30 °C ≤ T<sub>amb</sub> ≤ +75 °C  
 -30 °C ≤ T<sub>process</sub> ≤ 85 °C

Ex tD A21 T100 °C -30 °C ≤ T<sub>amb</sub> ≤ +75 °C  
 -30 °C ≤ T<sub>process</sub> ≤ 100 °C

Ex tD A21 T110 °C -30 °C ≤ T<sub>amb</sub> ≤ +75 °C  
 -30 °C ≤ T<sub>process</sub> ≤ 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)00113

Ex db IIC T6 Gb X -30° C ≤ T<sub>amb</sub> ≤ +75° C T<sub>process</sub> ≤ 85 °C

Ex db IIC T5 Gb X -30° C ≤ T<sub>amb</sub> ≤ +80° C T<sub>process</sub> ≤ 100 °C

Ex db IIC T4 Gb X -30° C ≤ T<sub>amb</sub> ≤ +80° C T<sub>process</sub> ≤ 110 °C

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

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/IP67

**Measuring span/Setting range**

	Measuring span	Setting range
GTX35U	2.5 to 100 kPa {250 to 10160 mmH <sub>2</sub> O}	-100 to +100 kPa {-10160 to +10160 mmH <sub>2</sub> O}
GTX60U	35 to 3500 kPa {0.35 to 35 kgf/cm <sup>2</sup> }	-100 to +3500 kPa {-1 to +35 kgf/cm <sup>2</sup> }
GTX71U	0.7 to 10 MPa {7 to 102 kgf/cm <sup>2</sup> }	-0.1 to +10 MPa {-1 to +102 kgf/cm <sup>2</sup> }
GTX82U	0.7 to 42 MPa {7 to 420 kgf/cm <sup>2</sup> }	-0.1 to +42 MPa {-1 to +420 kgf/cm <sup>2</sup> }

**Working pressure range/Overload resistant value**

	Working pressure range	Overload resistant value
GTX35U	Up to flange rating*	None
GTX60U	Up to flange rating*	5250 kPa {52.5 kgf/cm <sup>2</sup> }
GTX71U	Up to flange rating*	15.3 MPa {153 kgf/cm <sup>2</sup> }
GTX82U	Up to flange rating*	63 MPa {630 kgf/cm <sup>2</sup> }

Note) For negative pressures, see Figures 1, 2, 3 and 4.

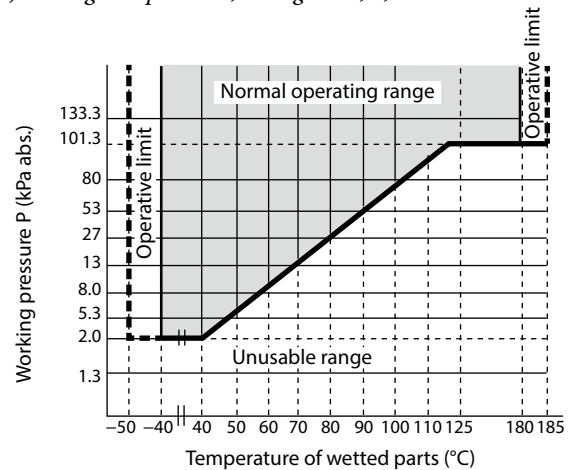


Figure 1. Working pressure and temperature of wetted parts section (for Regular type)

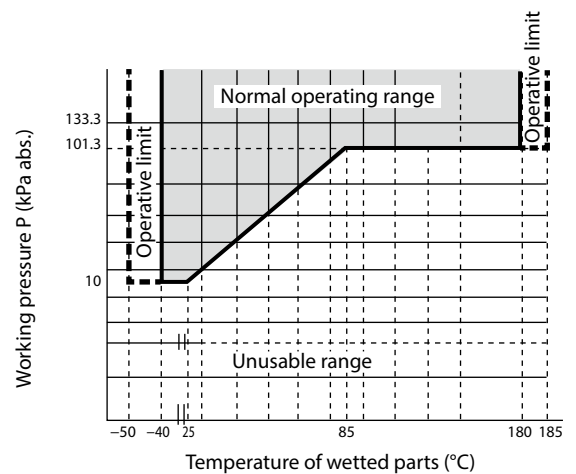
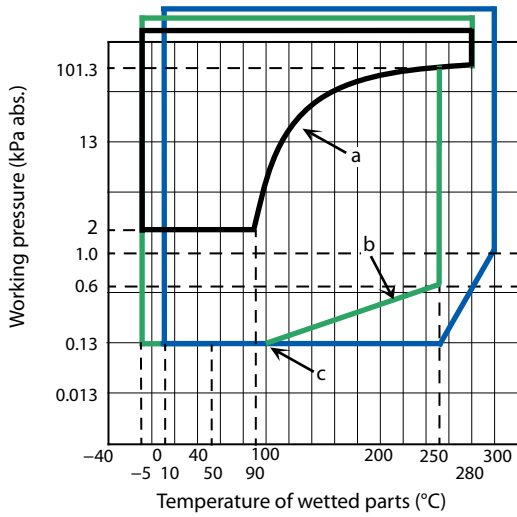
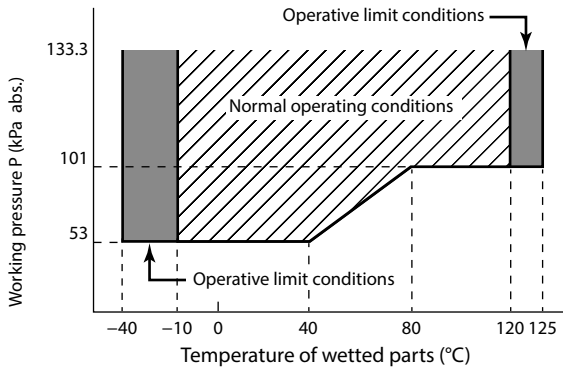


Figure 2. Working pressure and temperature of wetted parts section (for Regular type filled in China)



a. For high temperature,  $P=(3.921 \times T-337.9) \times 0.1333$     b. For high temperature and vacuum,  $P=4.69 \times 10^T \times 0.004428-2$   
 c. For high temperature and high vacuum,  $P=4.83 \times 10^T \times 0.017721-6$

**Figure 3. Working pressure temperature of wetted parts section (For high temperature/high temperature and vacuum/high temperature and high vacuum)**



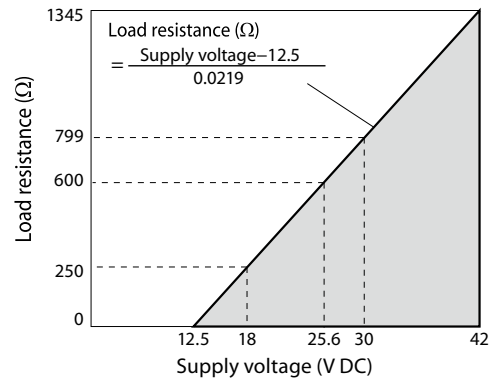
**Figure 4. Working pressure and temperature of wetted parts section (for oxygen and chlorine models)**

**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 5.  
 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 5. 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 limits/Temperature ranges of wetted parts**

		Temperature range (°C) *1 *4				
		Regular type	High-temp. models	High-temp. Vacuum models	High-temp. High Vacuum models	Oxygen and Chlorine models
Wetted parts section	Normal operating range	-40 to +180 *7	-5 to +280 *5	-5 to +280 *5	10 to 300 *5	-10 to +120 *9
	Operative limit range	-50 to +185 *8	-10 to +310 *6	-10 to +310 *6	-10 to +310 *6	-40 to +125 *10
Ambient temperature *2 Flange size: Flush diaphragm type 3 inches (80 mm) Extended diaphragm type 4 inches (100 mm)	Normal operating range	-30 to +75	-5 to +55	-5 to +55	10 to 55	-10 to +75
	Operative limit range	-50 to +80	-10 to +60	-10 to +60	-10 to +60	-40 to +80
Ambient temperature *2 Flange size: Flush diaphragm type 2 inches (50 mm)/1 1/2 inch (40 mm) Extended diaphragm type 3 inches (80 mm)/2 inches (50 mm)	Normal operating range	-15 to +65	-5 to +45	-5 to +55	10 to 55	-10 to +75
	Operative limit range	-30 to +80	-10 to +55	-10 to +60	-10 to +60	-40 to +80
Specific gravity of fill liquid *3		0.935	1.07	1.07	1.09	1.87

Note) \*1. See the working pressures and temperatures of the wetted parts section in Figure 1, 2, 3 and 4.

\*2. Ambient temperatures of the transmitter itself

\*3. Approximate values at the temperature of 25 °C

\*4. Note that if the operating temperature falls below the lower limit of the normal operating range, the response of the transmitter becomes slower.

\*5. When the wetted parts material is tantalum, the upper limit is 180 °C.

\*6. When the wetted parts material is tantalum, the upper limit is 200 °C.

\*7. For G1 1/2" Bottom diaphragm Male connection, the Normal operating range is -40 to +110 °C.

\*8. For G1 1/2" Bottom diaphragm Male connection, the Operative limit range is -50 to +115 °C.

\*9. For G1 1/2" Bottom diaphragm Male connection, the Normal operating range is -10 to +75 °C.

\*10. For G1 1/2" Bottom diaphragm Male connection, the Operative limit range is -40 to +80 °C.

**Flange size: 3/4 inches (20 mm), 1/2 inches (15 mm)**

		Temperature range (°C) *1 *4		
		Regular type	High-temp. models	Oxygen and chlorine models
Wetted parts section	Normal operating range	-40 to +180	-5 to +280	-10 to +120
	Operative limit range	-50 to +185	-10 to +310	-40 to +125
Ambient temperature *2	Normal operating range	-15 to +65	-5 to +45	-10 to +75
	Operative limit range	-30 to +80	-10 to +55	-40 to +80
Specific gravity of fill liquid *3		0.935	1.07	1.87

Note) \*1. See the working pressures and temperatures of the wetted parts section in Figure 1, 2, 3 and 4.

\*2. Ambient temperatures of the transmitter itself.

\*3. Approximate values at the temperature of 25 °C.

\*4. Note that if the operating temperature falls below the lower limit of the normal operating range, the response of the transmitter becomes slower.

**For Explosion proof models with digital indicators, which have to be used within the following ranges**

**Normal operating condition**

-20 to +70 °C

**Operative limit**

-30 to +80 °C

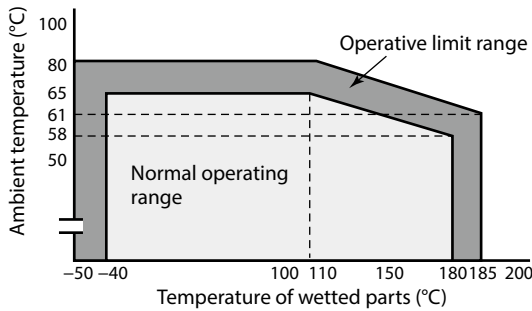
**TIIS explosion proof model**

-20 to +60 °C

**Transportation and storage conditions**

Without indicators: -50 to +85 °C

With indicators: -25 to 80 °C

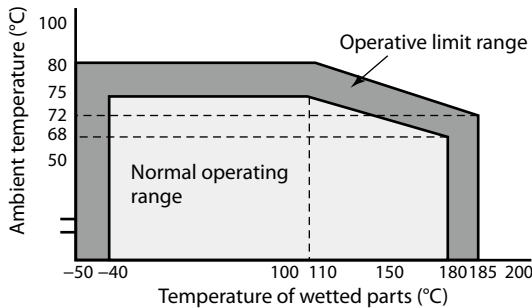


**Figure 6. Ambient temperature and temperature of wetted parts section (for Regular type)**

Flange diameter:

Flush diaphragm 2 inches (50 mm)/1 1/2 inch (40 mm)  
 Extended diaphragm 3 inches (80 mm)/2 inches (50 mm)

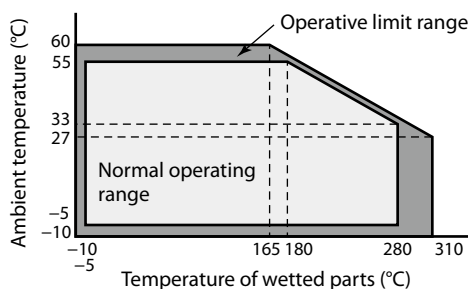
*Note) When the fill liquid is for general purposes, make sure before using your transmitter that the conditions in both Figure 1, Figure 6 and Figure 7 are met.*



**Figure 7. Ambient temperature and temperature of wetted parts section (for Regular type)**

Flange diameter:

Flush diaphragm 3 inches (80 mm)  
 Extended diaphragm 4 inches (100 mm)

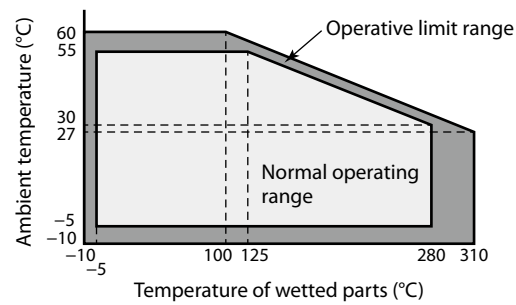


**Figure 8. Ambient temperature and temperature of**

wetted parts section (for high temperature and vacuum 2, 3 m)

Flange diameter:

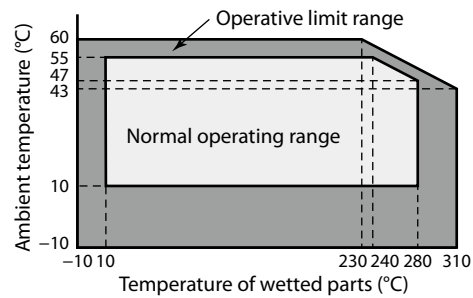
Flush diaphragm 2 inches (50 mm)/1 1/2 inch (40 mm)



**Figure 9. Ambient temperature and temperature of wetted parts section (for high temperature and vacuum 4, 5 m)**

Flange diameter:

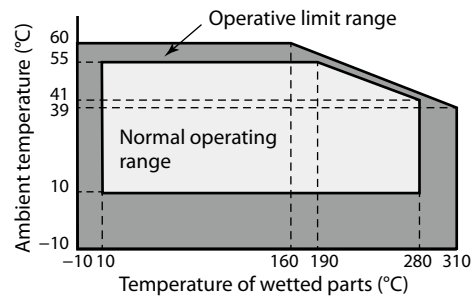
Flush diaphragm 2 inches (50 mm)/1 1/2 inch (40 mm)



**Figure 10. Ambient temperature and temperature of wetted parts section (for high temperature and high vacuum 2, 3 m)**

Flange diameter:

Flush diaphragm 2 inches (50 mm)/1 1/2 inch (40 mm)



**Figure 11. Ambient temperature and temperature of wetted parts section (for high temperature and high vacuum 4, 5 m)**

Flange diameter:

Flush diaphragm 2 inches (50 mm)/1 1/2 inch (40 mm)

**Ambient humidity limits**

5 to 100 % RH

**Stability against supply voltage change**

±0.005 % FS/V

**Response time [☆]**

Approx. 700 ms (ref. value, with 5 m of ordinary capillaries, at room temp.)

**Damping time [★]**

Selectable from 0 to 128 sec. (HART)

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

**Zero Stability**

±0.5 % 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: 0.42mm / Frequency: 5 to 60 Hz

Acceleration: 29.4 m/s<sup>2</sup> (3G)/60 to 200 Hz

**Shock characteristics:**

Acceleration 9.8 m/s<sup>2</sup> (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****FEP protective film**

Use FEP protective films when corrosive fluids are used or to inhibition migration from metal diaphragms.

**Working temperature range**

0 to 110 °C

**Working pressure range**

Atmospheric pressure to flange rating (up to JIS10K, ANSI/JPI 150) (Not usable under negative pressure)

**Oil free finish**

The transmitter is shipped with oil-free wetted parts. (The vent drain plug is coated with a small amount of fluorine oil to prevent galling.)

**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 SI units**

We deliver transmitters set to any 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).

**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

For specific gravity, refer to Table 1 on page 4 .

**Center body**

316 SST

**Transmitter case**

Aluminum alloy, CF8M (Equivalent to 316 SST)

**Meter body cover**

304 SST

**Bolts and nuts (for fastening meter body cover)**

Carbon steel (SNB7), 304 SST, 630 SST

**O-ring**

NBR

**For wetted parts**

316 SST (316L SST for diaphragm only)

ASTM B575 (Hastelloy C-276 equivalent), Tantalum, 316L SST

**Flange materials**

304 SST, 316 SST, 316L SST

**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. 13.5 kg (Including ANSI150 # - 3 inches flange and capillary 5 m long.)

**INSTALLATION****Electrical connection**

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

**Grounding**

Resistance 100 Ω max.

**Mounting**

Direct mounting on the process side

Using 2-inch pipe mounting brackets: Mount the transmitter on a horizontal or vertical 2-inch pipe.

**Process connection****Measured pressure (liquid side)**

Flanges (both higher and lower pressure sides)

**Flush diaphragm**

JIS 10K, 20K, 30K and 63K: 40, 50, 80 mm (RF) equivalents  
ANSI/JPI 150, 300 and 600: 1 1/2, 2, 3 inches (RF) equivalents

ANSI/JPI 150 and 300: 1/2, 3/4 inches (RF) equivalents

**Extended diaphragm**

JIS 10K, 20K and 30K: 50, 80, 100 mm (RF) equivalents  
ANSI/JPI 150, 300 and 600: 2, 3 inches (RF) equivalents  
ANSI/JPI 150 and 300: 4 inches (RF) equivalents

**Flange standard**

JIS; JIS B 2220 (2004)

ANSI; ANSI B 16.5 (1988)

JPI; JPI-7S-15-93

**Screw connection**

G1 1/2 button diaphragm (G1 1/2 external 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.

## To use the remote seal type transmitter correctly

A various accuracy regulation and notes of the remote seal type transmitter are as follows.

### A. Standard accuracy

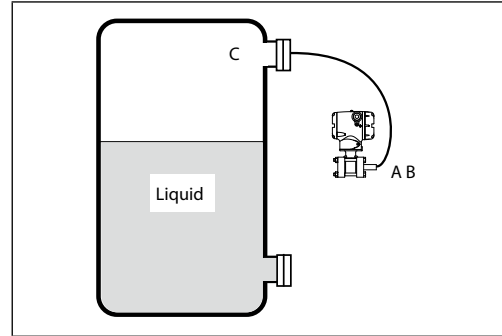
Linearity in constant ambient temperature and constant static pressure is shown. (Refer to "PERFORMANCE SPECIFICATIONS" on page 11)

### B. Ambient temperature characteristics

Accuracy by the ambient temperature change in the main body under constant static pressure is shown. (Refer to "PERFORMANCE SPECIFICATIONS" on page 11)

### D. Wetted parts temperature characteristics

Zero shift is shown, when the temperature fluctuate of process wetted parts of an upper flange and lower flange changes.



Flange type	3 inches flush diaphragm flange, 4 inches Extended diaphragm flange		
Fill fluid	Regular/High temp.	High-temp. and vacuum	High-temp. and high-vacuum
Wetted parts temperature characteristics (zero shift of setting ranges)	$\pm \left\{ \left( 600 + \frac{20L}{50} \right) \times \frac{1}{55} \times \frac{\Delta T}{1000x} \right\} \%$	$\pm \left\{ \left( 900 + \frac{20L}{50} \right) \times \frac{1}{55} \times \frac{\Delta T}{1000x} \right\} \%$	$\pm \left\{ \left( 1200 + \frac{30L}{50} \right) \times \frac{1}{55} \times \frac{\Delta T}{1000x} \right\} \%$

Flange type	2 inches flush diaphragm flange 3 inches Extended diaphragm flange	1/2 inch flush diaphragm flange 1 1/2 inch flush diaphragm flange 2 inches extended diaphragm flange
Fill fluid	Regular/High temp./ High-temp. and vacuum/High-temp. and high-vacuum	
Temperature characteristics of capillary (zero shift of setting ranges)	$\pm \left\{ 10 \times \left( 5 + 0.008L \right) \times \frac{1}{2} \times \frac{\Delta T}{1000x} \right\} \%$	$\pm \left\{ 10 \times \left( 5 + 0.008L \right) \times \frac{\Delta T}{1000x} \right\} \%$

x: 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.

L: Length of capillary tube with temperature difference.

ΔT: Temperature difference between upper flange and lower flange.

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.

### E. Installation position

Azbil Corporation is recommended to set up the main body of the transmitter from a flange downward when the transmitter is set up to the sealed tank. Please meet the following requirements when it is necessary to set up the transmitter by all means in the middle of the tank.

$$P_o + ((-\rho'h)/102) \geq P \quad (1 \text{ kPa} = 102 \text{ mmH}_2\text{O})$$

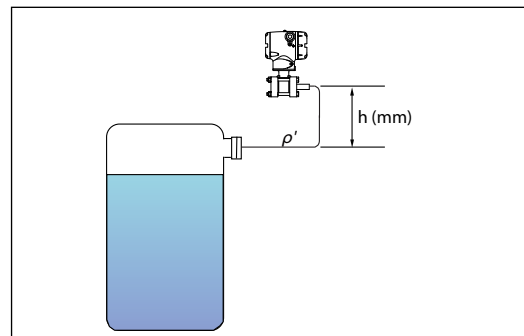
$$\therefore (h \leq (P_o - P)(102/\rho'))$$

P: Permissible pressure lower bound value of the transmitter (kPa abs.)

ρ': Fill fluid gravity of the transmitter

P<sub>o</sub>: Pressure in tank (kPa abs.)

h: Distance from a lower flange (mm)



	Fill fluid gravity ρ'	Permissible pressure lower bound value P (kPa abs.)	Temperature range of wetted parts (°C)
Regular service	0.935	2	-40 to +40
High temp.	1.07	2	-5 to +90
High-temp. and vacuum	1.07	0.1333	-5 to +100
High-temp and high-vacuum	1.09	0.1333	10 to 250
Oxygen, Chlorine	1.87	54	-10 to +40

Note:

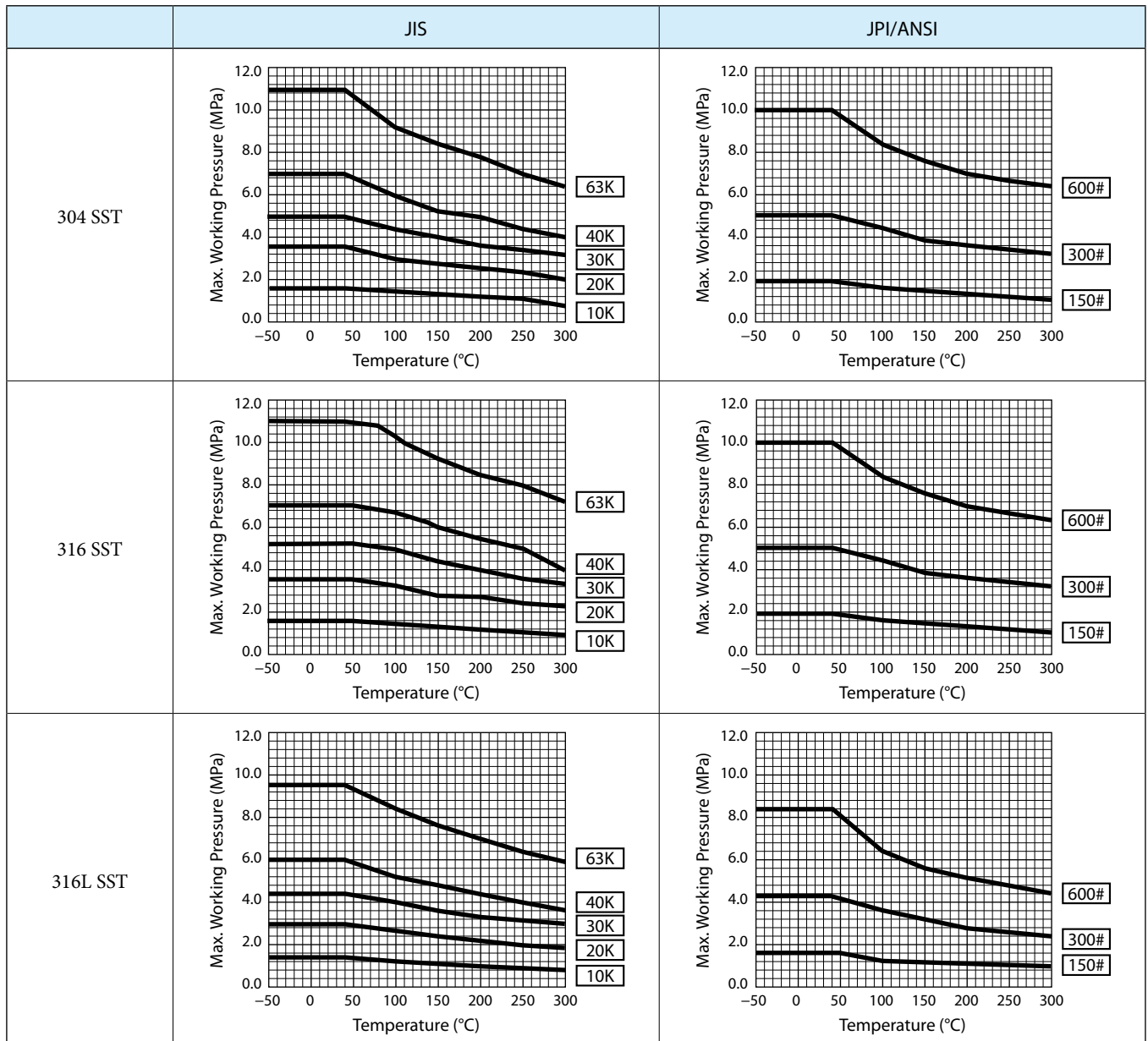
1. Special care is required for applications in which the pressure in the tank (P<sub>o</sub>) changes to vacuum pressure.
2. If the above conditions are violated, negative pressure exceeding the working pressure range will be applied to the surface of the diaphragm. Since the negative pressure also exceeds the saturated vapor pressure of the fill fluid, bubbles will develop in the fill fluid, causing a zero point shift. Also, if the diaphragm is pulled by the negative pressure, it may be deformed or broken.

## PERFORMANCE SPECIFICATIONS

### Max working pressure

Note) 1. Max working pressure depends on flange rating, flange materials and operating temperature. Please refer to the following data.  
Operating range of temperature depends on specification of transmitters.

2. In case of model GTX60U, max working pressure depends on the smaller value of either 1.5 MPa or following data.
3. In case of model GTX71U, max working pressure depends on the smaller value of either 10 MPa or following data.



**Reference accuracy**

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

**Model GTX35U (for regular type/high-temperature/oxygen service)**

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

Flange size: Flush diaphragm 3 inches (80 mm) Extended diaphragm 4 inches (100 mm)

Reference accuracy * <sup>4</sup>		$\pm 0.2\%$	(For $x \geq 12.5$ kPa {1250 mmH <sub>2</sub> O})
		$\pm \left( 0.05 + 0.15 \times \frac{12.5}{x} \right) \%$	(For $x < 12.5$ kPa {1250 mmH <sub>2</sub> O})
Ambient Temperature effect (Shift from the set range) Change of 30 °C (Range from -5 to +55 °C)	Combined shift: (including zero and span shifts)	$\pm 1.3\%$	(For $x \geq 25$ kPa {2500 mmH <sub>2</sub> O})
		$\pm \left( 0.8 + 0.5 \times \frac{25}{x} \right) \%$	(For $x < 25$ kPa {2500 mmH <sub>2</sub> O})

**Model GTX35U (for regular type/high-temperature/oxygen/chlorine service)**

Material of wetted parts: ASTM B575 (Hastelloy C-276 equivalent), Tantalum

Flange size: Flush diaphragm 3 inches (80 mm)

Reference accuracy * <sup>3</sup> * <sup>4</sup>		$\pm 0.3\%$	(For $x \geq 12.5$ kPa {1250 mmH <sub>2</sub> O})
		$\pm \left( 0.15 + 0.15 \times \frac{12.5}{x} \right) \%$	(For $x < 12.5$ kPa {1250 mmH <sub>2</sub> O})
Ambient Temperature effect (Shift from the set range) Change of 30 °C * <sup>3</sup> (Range from -5 to +55 °C)	Combined shift:	$\pm 4.5\%$	(For $x \geq 25$ kPa {2500 mmH <sub>2</sub> O})
		$\pm \left( 1.5 + 3.0 \times \frac{25}{x} \right) \%$	(For $x < 25$ kPa {2500 mmH <sub>2</sub> O})

**Model GTX35U (for regular type and high-temperature/oxygen service) (for option "M5", 0.1 mm thickness diaphragm)**

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

Flange size: Flush diaphragm 3 inches (80 mm) Extended diaphragm 4 inches (100 mm)

Reference accuracy * <sup>4</sup>		$\pm 0.4\%$	(For $x \geq 12.5$ kPa {1250 mmH <sub>2</sub> O})
		$\pm \left( 0.1 + 0.3 \times \frac{12.5}{x} \right) \%$	(For $x < 12.5$ kPa {1250 mmH <sub>2</sub> O})
Ambient Temperature effect (Shift from the set range) Change of 30 °C (Range from -5 to +55 °C)	Combined shift: (including zero and span shifts)	$\pm 5.2\%$	(For $x \geq 25$ kPa {2500 mmH <sub>2</sub> O})
		$\pm \left( 3.2 + 2.0 \times \frac{25}{x} \right) \%$	(For $x < 25$ kPa {2500 mmH <sub>2</sub> O})

**Model GTX60U (for regular type/high-temperature/oxygen service)**

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

Flange size: Flush diaphragm 3 inches (80 mm) Extended diaphragm 4 inches (100 mm)

Reference accuracy * <sup>4</sup>		$\pm 0.2\%$	(For $x \geq 350$ kPa {3.5 kgf/cm <sup>2</sup> })
		$\pm \left( 0.05 + 0.15 \times \frac{350}{x} \right) \%$	(For $x < 350$ kPa {3.5 kgf/cm <sup>2</sup> })
Ambient Temperature effect (Shift from the set range) Change of 30 °C * <sup>3</sup> (Range from -5 to +55 °C)	Combined shift:	$\pm 0.57\%$	(For $x \geq 350$ kPa {3.5 kgf/cm <sup>2</sup> })
		$\pm \left( 0.19 + 0.38 \times \frac{350}{x} \right) \%$	(For $x < 350$ kPa {3.5 kgf/cm <sup>2</sup> })

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

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

\*3. Within a range of  $URV \geq 0$  and  $LRV \geq 0$ .

\*4. Reference accuracy at calibrated condition.

**Model GTX60U (for regular type/high-temperature/oxygen service)**

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

Flange size: Flush diaphragm 2 inches (50 mm), Extended diaphragm 3 inches (80 mm), 2 inches wafer

Reference accuracy *3 *4		$\pm 0.2\%$	(For $x \geq 350$ kPa {3.5 kgf/cm <sup>2</sup> })
		$\pm \left( 0.05 + 0.15 \times \frac{350}{x} \right) \%$	(For $x < 350$ kPa {3.5 kgf/cm <sup>2</sup> })
Ambient Temperature effect (Shift from the set range) Change of 30 °C *3 (Range from -5 to +55 °C)	Combined shift:	$\pm 0.57\%$	(For $x \geq 350$ kPa {3.5 kgf/cm <sup>2</sup> })
		$\pm \left( 0.19 + 0.38 \times \frac{350}{x} \right) \%$	(For $x < 350$ kPa {3.5 kgf/cm <sup>2</sup> })

**Model GTX60U (for regular type/high-temperature/oxygen service)**

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

Flange size: Flush diaphragm 1 1/2 inch (40 mm), 3/4 inches (20 mm), 1/2 inches (15 mm), Extended diaphragm 2 inches (50 mm)

Reference accuracy *3 *4		$\pm 0.3\%$	(For $x \geq 350$ kPa {3.5 kgf/cm <sup>2</sup> })
		$\pm \left( 0.15 + 0.15 \times \frac{350}{x} \right) \%$	(For $x < 350$ kPa {3.5 kgf/cm <sup>2</sup> })
Ambient Temperature effect (Shift from the set range) Change of 30 °C *3 (Range from -5 to +55 °C)	Combined shift:	$\pm 0.57\%$	(For $x \geq 350$ kPa {3.5 kgf/cm <sup>2</sup> })
		$\pm \left( 0.19 + 0.38 \times \frac{350}{x} \right) \%$	(For $x < 350$ kPa {3.5 kgf/cm <sup>2</sup> })

**Model GTX60U (for high temperature and vacuum/high temperature and high vacuum)**

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

Flange Size: Flush diaphragm 3 inches (80 mm) Extended diaphragm 4 inches (100 mm)

Reference accuracy *3 *4		$\pm 0.2\%$	(For $x \geq 350$ kPa {3.5 kgf/cm <sup>2</sup> })
		$\pm \left( 0.05 + 0.15 \times \frac{350}{x} \right) \%$	(For $x < 350$ kPa {3.5 kgf/cm <sup>2</sup> })
Ambient Temperature effect (Shift from the set range) Change of 30 °C *3 (Range from -5 to +55 °C)	Combined shift:	$\pm 0.9\%$	(For $x \geq 350$ kPa {3.5 kgf/cm <sup>2</sup> })
		$\pm \left( 0.35 + 0.55 \times \frac{350}{x} \right) \%$	(For $x < 350$ kPa {3.5 kgf/cm <sup>2</sup> })

**Model GTX60U (for high temperature and vacuum/high temperature and high vacuum)**

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

Flange Size: Flush diaphragm 2 inches (50 mm)/1 1/2 inch (40 mm), Extended diaphragm 3 inches (80 mm)/2 inches (50 mm), 2 inches wafer

Reference accuracy *3 *4		$\pm 0.2\%$	(For $x \geq 350$ kPa {3.5 kgf/cm <sup>2</sup> })
		$\pm \left( 0.05 + 0.15 \times \frac{350}{x} \right) \%$	(For $x < 350$ kPa {3.5 kgf/cm <sup>2</sup> })
Ambient Temperature effect (Shift from the set range) Change of 30 °C *3 (Range from -5 to +55 °C)	Combined shift:	$\pm 0.9\%$	(For $x \geq 350$ kPa {3.5 kgf/cm <sup>2</sup> })
		$\pm \left( 0.35 + 0.55 \times \frac{350}{x} \right) \%$	(For $x < 350$ kPa {3.5 kgf/cm <sup>2</sup> })

\*3. Within a range of  $URV \geq 0$  and  $LRV \geq 0$ .

\*4. Reference accuracy at calibrated condition.

**Model GTX60U (for regular type/high-temperature/oxygen service) (for option “M5”, 0.1 mm thickness diaphragm)**

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

Flange size: Flush diaphragm 3 inches (80 mm) Extended diaphragm 4 inches (100 mm)

Reference accuracy *4		±0.4 %	(For $x \geq 350$ kPa {3.5 kgf/cm <sup>2</sup> })
		$\pm \left( 0.1 + 0.3 \times \frac{350}{x} \right) \%$	(For $x < 350$ kPa {3.5 kgf/cm <sup>2</sup> })
Ambient Temperature effect (Shift from the set range) Change of 30 °C *3 (Range from -5 to +55 °C)	Combined shift:	±2.28 %	(For $x \geq 350$ kPa {3.5 kgf/cm <sup>2</sup> })
		$\pm \left( 0.76 + 1.52 \times \frac{350}{x} \right) \%$	(For $x < 350$ kPa {3.5 kgf/cm <sup>2</sup> })

**Model GTX60U (for regular type/high-temperature/oxygen/chlorine service)**

Material of wetted parts: ASTM B575 (Hastelloy C-276 equivalent), Tantalum

Flange size: Flush diaphragm 3 inches (80 mm)

Reference accuracy *3 *4		±0.2 %	(For $x \geq 350$ kPa {3.5 kgf/cm <sup>2</sup> })
		$\pm \left( 0.05 + 0.15 \times \frac{350}{x} \right) \%$	(For $x < 350$ kPa {3.5 kgf/cm <sup>2</sup> })
Ambient Temperature effect (Shift from the set range) Change of 30 °C *3 (Range from -5 to +55 °C)	Combined shift:	±0.9 %	(For $x \geq 350$ kPa {3.5 kgf/cm <sup>2</sup> })
		$\pm \left( 0.35 + 0.55 \times \frac{350}{x} \right) \%$	(For $x < 350$ kPa {3.5 kgf/cm <sup>2</sup> })

**Model GTX60U (for regular type/high-temperature/oxygen/chlorine service)**

Material of wetted parts: ASTM B575 (Hastelloy C-276 equivalent), Tantalum

Flange size: Flush diaphragm 2 inches (50 mm) 3/4 inches (20 mm), 1/2 inches (15 mm), 1 1/2 inch (40 mm)

Reference accuracy *3 *4		±0.3 %	(For $x \geq 350$ kPa {3.5 kgf/cm <sup>2</sup> })
		$\pm \left( 0.15 + 0.15 \times \frac{350}{x} \right) \%$	(For $x < 350$ kPa {3.5 kgf/cm <sup>2</sup> })
Ambient Temperature effect (Shift from the set range) Change of 30 °C *3 (Range from -5 to +55 °C)	Combined shift:	±0.9 %	(For $x \geq 350$ kPa {3.5 kgf/cm <sup>2</sup> })
		$\pm \left( 0.35 + 0.55 \times \frac{350}{x} \right) \%$	(For $x < 350$ kPa {3.5 kgf/cm <sup>2</sup> })

**Model GTX60U (for high temperature and vacuum/high temperature and high vacuum)**

Material of wetted parts: ASTM B575 (Hastelloy C-276 equivalent), Tantalum

Flange Size: Flush diaphragm 3 inches (80 mm) Extended diaphragm 4 inches (100 mm)

Reference accuracy *3 *4		±0.2 %	(For $x \geq 350$ kPa {3.5 kgf/cm <sup>2</sup> })
		$\pm \left( 0.05 + 0.15 \times \frac{350}{x} \right) \%$	(For $x < 350$ kPa {3.5 kgf/cm <sup>2</sup> })
Ambient Temperature effect (Shift from the set range) Change of 30 °C *3 (Range from -5 to +55 °C)	Combined shift:	±0.9 %	(For $x \geq 350$ kPa {3.5 kgf/cm <sup>2</sup> })
		$\pm \left( 0.35 + 0.55 \times \frac{350}{x} \right) \%$	(For $x < 350$ kPa {3.5 kgf/cm <sup>2</sup> })

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

\*4. Reference accuracy at calibrated condition.

**Model GTX60U (for high temperature and vacuum/high temperature and high vacuum)**

Material of wetted parts: ASTM B575 (Hastelloy C-276 equivalent), Tantalum

Flange Size: Flush diaphragm 2 inches (50 mm)/1 1/2 inch (40 mm)

Reference accuracy *3 *4		$\pm 0.3 \%$	(For $x \geq 350$ kPa {3.5 kgf/cm <sup>2</sup> })
		$\pm \left( 0.3 \times \frac{350}{x} \right) \%$	(For $x < 350$ kPa {3.5 kgf/cm <sup>2</sup> })
Ambient Temperature effect (Shift from the set range) Change of 30 °C *3 (Range from -5 to +55 °C)	Combined shift:	$\pm 0.9 \%$	(For $x \geq 350$ kPa {3.5 kgf/cm <sup>2</sup> })
		$\pm \left( 0.35 + 0.55 \times \frac{350}{x} \right) \%$	(For $x < 350$ kPa {3.5 kgf/cm <sup>2</sup> })

**Model GTX71U (for regular type/high-temperature service/oxygen service)**

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

Flange size: Flush diaphragm 3 inches (80 mm) Extended diaphragm 4 inches (100 mm)

Reference accuracy *3 *4		$\pm 0.2 \%$	(For $x \geq 3.5$ MPa {35 kgf/cm <sup>2</sup> })
		$\pm \left( 0.05 + 0.15 \times \frac{3.5}{x} \right) \%$	(For $x < 3.5$ MPa {35 kgf/cm <sup>2</sup> })
Ambient Temperature effect (Shift from the set range) Change of 30 °C *3 (Range from -5 to +55 °C)	Combined shift:	$\pm 0.57 \%$	(For $x \geq 3.5$ MPa {35 kgf/cm <sup>2</sup> })
		$\pm \left( 0.19 + 0.38 \times \frac{3.5}{x} \right) \%$	(For $x < 3.5$ MPa {35 kgf/cm <sup>2</sup> })

**Model GTX71U (for regular type/high-temperature/oxygen service)**

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

Flange size: Flush diaphragm 2 inches (50 mm), Extended diaphragm 3 inches (80 mm), 2 inches wafer

Reference accuracy *3 *4		$\pm 0.2 \%$	(For $x \geq 3.5$ MPa {35 kgf/cm <sup>2</sup> })
		$\pm \left( 0.05 + 0.15 \times \frac{3.5}{x} \right) \%$	(For $x < 3.5$ MPa {35 kgf/cm <sup>2</sup> })
Ambient Temperature effect (Shift from the set range) Change of 30 °C *3 (Range from -5 to +55 °C)	Combined shift:	$\pm 0.57 \%$	(For $x \geq 3.5$ MPa {35 kgf/cm <sup>2</sup> })
		$\pm \left( 0.19 + 0.38 \times \frac{3.5}{x} \right) \%$	(For $x < 3.5$ MPa {35 kgf/cm <sup>2</sup> })

**Model GTX71U (for regular type/high-temperature/oxygen service)**

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

Flange size: Flush diaphragm 1 1/2 inch (40 mm), 3/4 inches (20 mm), 1/2 inches (15 mm), Extended diaphragm 2 inches (50 mm)

Reference accuracy *3 *4		$\pm 0.4 \%$	(For $x \geq 3.5$ MPa {35 kgf/cm <sup>2</sup> })
		$\pm \left( 0.25 + 0.15 \times \frac{3.5}{x} \right) \%$	(For $x < 3.5$ MPa {35 kgf/cm <sup>2</sup> })
Ambient Temperature effect (Shift from the set range) Change of 30 °C *3 (Range from -5 to +55 °C)	Combined shift:	$\pm 0.57 \%$	(For $x \geq 3.5$ MPa {35 kgf/cm <sup>2</sup> })
		$\pm \left( 0.19 + 0.38 \times \frac{3.5}{x} \right) \%$	(For $x < 3.5$ MPa {35 kgf/cm <sup>2</sup> })

\*3. Within a range of  $URV \geq 0$  and  $LRV \geq 0$ .

\*4. Reference accuracy at calibrated condition.

**Model GTX71U (for high temperature and vacuum/high temperature and high vacuum)**

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

Flange Size: Flush diaphragm 3 inches (80 mm) Extended diaphragm 4 inches (100 mm)

Reference accuracy *3 *4		±0.2 %	(For $x \geq 3.5$ MPa {35 kgf/cm <sup>2</sup> })
		$\pm ( 0.05 + 0.15 \times \frac{3.5}{x} )$ %	(For $x < 3.5$ MPa {35 kgf/cm <sup>2</sup> })
Ambient Temperature effect (Shift from the set range) Change of 30 °C *3 (Range from -5 to +55 °C)	Combined shift:	±0.9 %	(For $x \geq 3.5$ MPa {35 kgf/cm <sup>2</sup> })
		$\pm ( 0.35 + 0.55 \times \frac{3.5}{x} )$ %	(For $x < 3.5$ MPa {35 kgf/cm <sup>2</sup> })

**Model GTX71U (for high temperature and vacuum/high temperature and high vacuum)**

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

Flange Size: Flush diaphragm 2 inches (50 mm)/1 1/2 inch (40 mm) Extended diaphragm 3 inches (80 mm)/2 inches (50 mm)

Reference accuracy *3 *4		±0.2 %	(For $x \geq 3.5$ MPa {35 kgf/cm <sup>2</sup> })
		$\pm ( 0.05 + 0.15 \times \frac{3.5}{x} )$ %	(For $x < 3.5$ MPa {35 kgf/cm <sup>2</sup> })
Ambient Temperature effect (Shift from the set range) Change of 30 °C *3 (Range from -5 to +55 °C)	Combined shift:	±0.9 %	(For $x \geq 3.5$ MPa {35 kgf/cm <sup>2</sup> })
		$\pm ( 0.35 + 0.55 \times \frac{3.5}{x} )$ %	(For $x < 3.5$ MPa {35 kgf/cm <sup>2</sup> })

**Model GTX71U (for regular type/high-temperature/oxygen/chlorine service) (for option "M5", 0.1 mm thickness diaphragm)**

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

Flange size: Flush diaphragm 3 inches (80 mm) Extended diaphragm 4 inches (100 mm)

Reference accuracy *3 *4		±0.4 %	(For $x \geq 3.5$ MPa {35 kgf/cm <sup>2</sup> })
		$\pm ( 0.1 + 0.3 \times \frac{3.5}{x} )$ %	(For $x < 3.5$ MPa {35 kgf/cm <sup>2</sup> })
Ambient Temperature effect (Shift from the set range) Change of 30 °C *3 (Range from -5 to +55 °C)	Combined shift:	±2.28 %	(For $x \geq 3.5$ MPa {35 kgf/cm <sup>2</sup> })
		$\pm ( 0.76 + 1.52 \times \frac{3.5}{x} )$ %	(For $x < 3.5$ MPa {35 kgf/cm <sup>2</sup> })

**Model GTX71U (for regular type/high-temperature/oxygen/chlorine service)**

Material of wetted parts: ASTM B575 (Hastelloy C-276 equivalent), Tantalum

Flange size: Flush diaphragm 3 inches (80 mm)

Reference accuracy *3 *4		±0.2 %	(For $x \geq 3.5$ MPa {35 kgf/cm <sup>2</sup> })
		$\pm ( 0.05 + 0.15 \times \frac{3.5}{x} )$ %	(For $x < 3.5$ MPa {35 kgf/cm <sup>2</sup> })
Ambient Temperature effect (Shift from the set range) Change of 30 °C *3 (Range from -5 to +55 °C)	Combined shift:	±0.9 %	(For $x \geq 3.5$ MPa {35 kgf/cm <sup>2</sup> })
		$\pm ( 0.35 + 0.55 \times \frac{3.5}{x} )$ %	(For $x < 3.5$ MPa {35 kgf/cm <sup>2</sup> })

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

\*4. Reference accuracy at calibrated condition.



**Model GTX71U (for regular type and high-temperature/oxygen/chlorine service)**

Material of wetted parts: ASTM B575 (Hastelloy C-276 equivalent), Tantalum

Flange size: Flush diaphragm 2 inches (50 mm) / 1 1/2 inch (40 mm), 3/4 inches (20 mm), 1/2 inches (15 mm),

Reference accuracy *3 *4		±0.4 %	(For $x \geq 3.5$ MPa {35 kgf/cm <sup>2</sup> })
		$\pm \left( 0.25 + 0.15 \times \frac{3.5}{x} \right) \%$	(For $x < 3.5$ MPa {35 kgf/cm <sup>2</sup> })
Ambient Temperature effect (Shift from the set range) Change of 30 °C *3 (Range from -5 to +55 °C)	Combined shift:	±0.9 %	(For $x \geq 3.5$ MPa {35 kgf/cm <sup>2</sup> })
		$\pm \left( 0.35 + 0.55 \times \frac{3.5}{x} \right) \%$	(For $x < 3.5$ MPa {35 kgf/cm <sup>2</sup> })

**Model GTX71U (for high temperature and vacuum/high temperature and high vacuum)**

Material of wetted parts: ASTM B575 (Hastelloy C-276 equivalent), Tantalum

Flange Size: Flush diaphragm 3 inches (80 mm) Extended diaphragm 4 inches (100 mm)

Reference accuracy *3 *4		±0.2 %	(For $x \geq 3.5$ MPa {35 kgf/cm <sup>2</sup> })
		$\pm \left( 0.05 + 0.15 \times \frac{3.5}{x} \right) \%$	(For $x < 3.5$ MPa {35 kgf/cm <sup>2</sup> })
Ambient Temperature effect (Shift from the set range) Change of 30 °C *3 (Range from -5 to +55 °C)	Combined shift:	±0.9 %	(For $x \geq 3.5$ MPa {35 kgf/cm <sup>2</sup> })
		$\pm \left( 0.35 + 0.55 \times \frac{3.5}{x} \right) \%$	(For $x < 3.5$ MPa {35 kgf/cm <sup>2</sup> })

**Model GTX71U (for high temperature and vacuum/high temperature and high vacuum)**

Material of wetted parts: ASTM B575 (Hastelloy C-276 equivalent), Tantalum

Flange Size: Flush diaphragm 2 inches (50 mm)/1 1/2 inch (40 mm)

Reference accuracy *3 *4		±0.4 %	(For $x \geq 3.5$ MPa {35 kgf/cm <sup>2</sup> })
		$\pm \left( 0.4 \times \frac{3.5}{x} \right) \%$	(For $x < 3.5$ MPa {35 kgf/cm <sup>2</sup> })
Ambient Temperature effect (Shift from the set range) Change of 30 °C *3 (Range from -5 to +55 °C)	Combined shift:	±0.9 %	(For $x \geq 3.5$ MPa {35 kgf/cm <sup>2</sup> })
		$\pm \left( 0.35 + 0.55 \times \frac{3.5}{x} \right) \%$	(For $x < 3.5$ MPa {35 kgf/cm <sup>2</sup> })

**Model GTX82U (for regular type/high temperature/oxygen service)**

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

Flange Size: G1 1/2 External Screw, 2 inch wafer

Reference accuracy *3 *4		±0.2 %	(For $x \geq 7$ MPa {70 kgf/cm <sup>2</sup> })
		$\pm \left( 0.05 + 0.15 \times \frac{7}{x} \right) \%$	(For $x < 7$ MPa {70 kgf/cm <sup>2</sup> })
Ambient Temperature effect (Shift from the set range) Change of 30 °C *3 (Range from -5 to +55 °C)	Combined shift:	±0.57 %	(For $x \geq 7$ MPa {70 kgf/cm <sup>2</sup> })
		$\pm \left( 0.19 + 0.38 \times \frac{7}{x} \right) \%$	(For $x < 7$ MPa {70 kgf/cm <sup>2</sup> })

\*3. Within a range of  $URV \geq 0$  and  $LRV \geq 0$ .

\*4. Reference accuracy at calibrated condition.

## MODEL SELECTION

### Model GTX35U (Remote-sealed type for standard gauge pressure)

### Model GTX60U/GTX71U (Remote-sealed type for high gauge pressure)

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

#### Basic Model No.

Measuring span	2.5 to 100 kPa (250 to 10,160 mmH <sub>2</sub> O)	GTX35U	Flush flange type
	35 to 3500 kPa (0.35 to 35 kgf/cm <sup>2</sup> )	GTX60U	
	0.7 to 10 MPa (7 to 102 kgf/cm <sup>2</sup> )	GTX71U	

#### Selection I

I	Output	4 to 20 mA (SFN Communication)	A	
		4 to 20 mA (HART5 Communication)	B	
		FOUNDATION Fieldbus communication *4 *5 *8	C	
		Digital output (DE communication) *3	D	
		4 to 20 mA (HART7 Communication)	F	
II	Fill fluid	Regular type (Silicone oil)	A	
		For high temperature service (Silicone oil)	B	
		For high temperature vacuum service(Silicone oil) *10	C	
		For high temperature high vacuum service(Silicone oil) *10	D	
		For oxygen service (Fluorine oil)	H	
		For chlorine service (Fluorine oil) *2	J	
		Regular type (Silicone oil) filled in China *9	M	
III	Wetted parts material	316 SST (Diaphragm: 316L SST)	A	
		ASTM B575 (Equivalent to Hastelloy C-276)	B	
		Tantalum *1	C	
		316L SST	D	
IV	Flange rating	ANSI150	A1	
		ANSI300	A2	
		ANSI600	A3	
		JIS10K	J1	
		JIS20K	J3	
		JIS30K	J4	
		JIS63K	J6	
		JPI150 *8	P1	
		JPI300 *8	P2	
		JPI600 *8	P3	
	Flange rating for China (refer to Table 1) *9	-		
V	Flange size	1.5 in./40 A *6	D	
		2 in./50 A *6	E	
		3 in./80 A	F	
VI	Flange type	Flush type	A	
VII	Flange material/bolt and nut material	Flange	Bolt and nut	
		304 SST	304 SST	A
		304 SST	630 SST	C
		304 SST	Carbon steel	D
		316 SST	304 SST	E
		316 SST	630 SST	G
		316 SST	Carbon steel	H
		316L SST	304 SST	J
		316L SST	630 SST	L
316L SST	Carbon steel	M		
VIII	Gasket face finish	None, Standard JISRa3.2 (12.5S)	A	
IX	Capillary length *10	2 m	02	
		3 m	03	
		4 m	04	
		5 m	05	
		6 m *7	06	
		7 m *7	07	
		8 m *7	08	
		9 m *7	09	
		10 m *7	10	
		2 m (with Olefin Cover)	A2	
		3 m (with Olefin Cover)	A3	
		4 m (with Olefin Cover)	A4	
		5 m (with Olefin Cover)	A5	
		6 m (with Olefin Cover) *7	A6	
		7 m (with Olefin Cover) *7	A7	
		8 m (with Olefin Cover) *7	A8	
		9 m (with Olefin Cover) *7	A9	
10 m (with Olefin Cover) *7	A0			

- \*1. In case "Tantalum" is used for diaphragm material and in case of "For high-temperature service", normal operating temperature of wetted parts is -10 to +180 deg.C
- \*2. In case code J is selected, code C "Tantalum" of Wetted parts material should be selected.
- \*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. Not applicable for the combination with code Q1 "Safety Transmitter" and Q2 "NAMUR NE43 Compliant Output signal limits" of Option.
- \*5. In case code A of indicator is selected, code A2 of Option code should be selected.
- \*6. In case GTX35U, code D "1.5 in." or E "2 in." of Flange size code cannot be selected.
- \*7. This length can only be selected code F "3 in." of Flange size.
- \*8. 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.
- \*9. Code "YB" or "YD" of Option code should be selected.

Table 1. Flange rating for China

Flange rating	Code
GB PN1.0	G1
GB PN1.6	G2
GB PN2.5	G4
GB PN4.0	G5
GB PN6.3	G6
HG PN1.0	H1
HG PN1.6	H2
HG PN2.5	H4
HG PN4.0	H5
HG PN6.3	H6

- \*10. In case code C or D of Fill Fluid, capillary length with olefin cover type can not be selected.

**Model GTX35U (Remote-sealed type for standard gauge pressure)**  
**Model GTX60U/GTX71U (Remote-sealed type for high gauge pressure)**

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

**Basic Model No.**

Measuring span	2.5 to 100 kPa (250 to 10,160 mmH <sub>2</sub> O)	GTX35U	Extended flange type
	35 to 3500 kPa (0.35 to 35 kgf/cm <sup>2</sup> )	GTX60U	
	0.7 to 10 MPa (7 to 102 kgf/cm <sup>2</sup> )	GTX71U	

**Selection I**

I	Output	4 to 20 mA (SFN Communication)	A	
		4 to 20 mA (HART5 Communication)	B	
		FOUNDATION Fieldbus communication *4 *5 *9	C	
		Digital output (DE communication) *2	D	
		4 to 20 mA (HART7 Communication)	F	
II	Fill fluid	Regular type (Silicone oil)	A	
		For high temperature service (Silicone oil) *1	B	
		For high temperature vacuum service(Silicone oil) *9	C	
		For high temperature high vacuum service(Silicone oil) *9	D	
		For oxygen service (Fluorine oil)	H	
		Regular type (Silicone oil) filled in China *10	M	
III	Wetted parts material	316 SST (Diaphragm: 316L SST)	A	
		316L SST *3	D	
IV	Flange rating	ANSI150	A1	
		ANSI300 *1	A2	
		ANSI600 *1 *7	A3	
		JIS10K	J1	
		JIS20K	J3	
		JIS30K *3	J4	
		JPI150	P1	
		JPI300 *1	P2	
		JPI600 *1 *7	P3	
Flange rating for China (refer to Table 2) *10	-			
V	Flange size	2 in./50 A *8	E	
		3 in./80 A *7 *8	F	
		4 in./100 A	G	
VI	Flange type	Extended Length 50 mm	B	
		Extended Length 100 mm	C	
		Extended Length 150 mm *1	D	
		Extended Length 200 mm *1	E	
		Extended Length 250 mm *1	F	
		Extended Length 300 mm *1	G	
VII	Flange material/bolt and nut material	Flange	Bolt and nut	
		304 SST	304 SST	A
		304 SST	630 SST	C
		304 SST	Carbon steel	D
		316 SST	304 SST	E
		316 SST	630 SST	G
		316 SST	Carbon steel	H
		316L SST	304 SST	J
		316L SST	630 SST	L
316L SST	Carbon steel	M		
VIII	Gasket face finish	None, Standard JISRa3.2 (12.5S)	A	
IX	Capillary length *11	2 m	02	
		3 m	03	
		4 m	04	
		5 m	05	
		6 m *6	06	
		7 m *6	07	
		8 m *6	08	
		9 m *6	09	
		10 m *6	10	
		2 m (with Olefin Cover)	A2	
		3 m (with Olefin Cover)	A3	
		4 m (with Olefin Cover)	A4	
		5 m (with Olefin Cover)	A5	
		6 m (with Olefin Cover) *6	A6	
		7 m (with Olefin Cover) *6	A7	
		8 m (with Olefin Cover) *6	A8	
		9 m (with Olefin Cover) *6	A9	
		10 m (with Olefin Cover) *6	A0	

*1. In case Wetted Parts material "316L SST", Some combinations of Table are not available.			Extended Length			
Flange size	Fill Fluid	Flange rating	150	200	250	300
G : 4in./100A	A : For Regular type, H:For oxygen service M: Regular type (Silicone oil) filled in China	J4:JIS30K	—	—	—	—
	B : For high temperature service	A2 : ANSI300/P : J PI300	✓	✓	—	—
	C: For high temperature vacuum service	A2: ANSI300/P2:JPI300	✓	—	—	—
	D: For high temperature high vacuum service					
E : 2in./50A	B : For high temperature service, C: For high temperature vacuum service D: For high temperature high vacuum service	A3 : ANSI600/P3 : JPI600	✓	—	—	—

\*2. 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.

\*3. In case Fill Fluid: For high-temperature service, and G"4in." of Flange size not applicable for the combination with wetted parts material "316L SST" and Flange Type "JIS 30K".

\*4:Not applicable for the combination with code Q1 "Safety Transmitter"and Q2 "NAMUR NE43 Compliant Output signal limits" of Option.

\*5:In case code A of indicator is selected, code A2 of Option code should be selected.

\*6. This length can only be selected code G "4 in." of Flange size.

\*7. In case "ANSI600/JPI600" of Flange rating ,not applicable for the combination with F "3in." or G "4in." of Flange size.

\*8. In case GTX35U, not applicable for the combination with E "2in." or F "3in." of Flange size.

\*9. 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.

\*10. Code "YB" or "YD" of Option code should be selected.

Table 2. Flange rating for China

Flange rating	Code
GB PN1.0	G1
GB PN1.6	G2
GB PN2.5	G4
GB PN4.0	G5
HG PN1.0	H1
HG PN1.6	H2
HG PN2.5	H4
HG PN4.0	H5

\*11. In case code C "For high temperature vacuum service" or D "For high temperature high vacuum service " of Fill Fluid,  
Capillary length with Olefin Cover type can not be selected.  
Capillary length of 6m or more can be selected only for flange size 3 inches.

**Model GTX71U (Remote-sealed type for high gauge pressure)**  
**Model GTX82U (Remote-sealed type for highest gauge pressure)**

**G1 1/2 inches Button diaphragm (Male) for regular/oxygen**

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

**Basic Model No.**

Measuring span	0.7 to 10 MPa (7 to 102 kgf/cm <sup>2</sup> )	GTX71U	G1 1/2 inches Button diaphragm (Male)
	0.7 to 42 MPa (7 to 420 kgf/cm <sup>2</sup> )	GTX82U	

**Selection I**

I	Output	4 to 20 mA (SFN Communication)	A				
		4 to 20 mA (HART5 Communication)	B				
		FOUNDATION Fieldbus communication *3 *4 *5	C				
		Digital output(DE communication) *2	D				
		4 to 20 mA (HART7 Communication)	F				
II	Fill fluid	Regular type (Silicone oil)	A				
		For oxygen service (Fluorine oil)	H				
		Regular type (Silicone oil) filled in China*6	M				
III	Wetted parts material	316 SST (Diaphragm: 316L SST)	A				
		316L SST	D				
IV	Flange rating	No flange		XX			
V	Flange size	G1 1/2 in. Button diaphragm Male			H		
VI	Flange type	Flash type				A	
VII	Flange material/bolt and nut material	Flange	Bolt and nut				
		No flange *1	304 SST *1		1		
		No flange	630 SST		3		
		No flange	Carbon steel		4		
VIII	Gasket face finish	None, Standard JISRa3.2 (12.5S)				A	
IX	Capillary length	2 m					02
		3 m					03
		4 m					04
		5 m					05
		2 m (with Olefin Cover)					A2
		3 m (with Olefin Cover)					A3
		4 m (with Olefin Cover)					A4
		5 m (with Olefin Cover)					A5

\*1. Not applicable for GTX82U.

\*2. 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.

\*3. Not applicable for the combination with code Q1 "Safety Transmitter" and Q2 "NAMUR NE43 Compliant Output signal limits" of Option.

\*4. In case code A of indicator is selected, code A2 of Option code should be selected.

\*5. 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.

\*6. Code "YB" or "YD" of Option code should be selected.

**Model GTX60U/GTX71U (Remote-sealed type for high gauge pressure)****Model GTX82U (Remote-sealed type for highest gauge pressure)**

2 inches wafer type for regular//high temperature vacuum/ high temperature high vacuum /oxygen service

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

**Basic Model No.**

Measuring span	35 to 3500 kPa (0.35 to 35 kgf/cm <sup>2</sup> )	GTX60U	2 inches wafer type
	0.7 to 10 MPa (7 to 102 kgf/cm <sup>2</sup> )	GTX71U	
	0.7 to 42 MPa (7 to 420 kgf/cm <sup>2</sup> )	GTX82U	

**Selection I**

I	Output	4 to 20 mA (SFN Communication)	A				
		4 to 20 mA (HART5 Communication)	B				
		FOUNDATION Fieldbus communication *4 *5 *7	C				
		Digital output (DE communication) *1	D				
		4 to 20 mA (HART7 Communication)	F				
II	Fill fluid	Regular type (Silicone oil)	A				
		For high temperature vacuum service (Silicone oil) *2	C				
		For high temperature high vacuum service (Silicone oil) *2	D				
		For oxygen service (Fluorine oil)	H				
		Regular type (Silicone oil) filled in China*8	M				
III	Wetted parts material	316 SST (Diaphragm: 316L SST) *3	A				
		316L SST	D				
IV	Flange rating	No flange		XX			
V	Flange size	2 in. wafer type			J		
VI	Flange type	Flash type				A	
VII	Flange material/bolt and nut material	Flange	Bolt and nut				
		No flange	630 SST		3		
		No flange	Carbon steel		4		
VIII	Gasket face finish	None, Standard JISRa3.2 (12.5S)				A	
IX	Capillary length	2 m					02
		3 m					03
		4 m					04
		5 m					05
		6 m					06
		7 m					07
		8 m					08
		9 m					09
		10 m					10
		2 m (with Olefin Cover) *6					A2
		3 m (with Olefin Cover) *6					A3
		4 m (with Olefin Cover) *6					A4
		5 m (with Olefin Cover) *6					A5
		6 m (with Olefin Cover) *6					A6
		7 m (with Olefin Cover) *6					A7
8 m (with Olefin Cover) *6					A8		
9 m (with Olefin Cover) *6					A9		
10 m (with Olefin Cover) *6					A0		

\*1. 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.

\*2. In case GTX82U, not applicable for the combination with C or D of Fill fluid.

\*3. In case A "316SST" of Wetted parts material, not applicable for the combination with C or D of Fill fluid.

\*4. Not applicable for the combination with code Q1 "Safety Transmitter" and Q2 "NAMUR NE43 Compliant Output signal limits" of Option.

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

\*6. Capillary length "with Olefin Cover" not applicable for the combination with C or D of Fill fluid.

\*7. 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.

\*8. Code "YB" or "YD" of Option code should be selected.

**Model GTX60U/GTX71U (Remote-sealed type for high gauge pressure)**

Flush 3/4 inches, 1/2 inches flange type for regular/ high temperature/oxygen/chlorine service

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

**Basic Model No.**

Measuring span	35 to 3500 kPa (0.35 to 35 kgf/cm <sup>2</sup> )	GTX60U	Flush flange type 3/4 inches (20 mm), 1/2 inches (15 mm)
	0.7 to 10 MPa (7 to 102 kgf/cm <sup>2</sup> )	GTX71U	

**Selection I**

I	Output	4 to 20 mA (SFN Communication)	A	
		4 to 20 mA (HART5 Communication)	B	
		FOUNDATION Fieldbus communication *3 *4 *5	C	
		Digital output (DE communication) *1	D	
		4 to 20 mA (HART7 Communication)	F	
II	Fill fluid	Regular type (Silicone oil)	A	
		For high temperature service (Silicone oil)	B	
		For oxygen service (Fluorine oil)	H	
		Regular type (Silicone oil) filled in China*6	M	
III	Wetted parts material	316 SST (Diaphragm:316L SST)	A	
		ASTM B575 (Equivalent to Hastelloy C-276)	B	
		316L SST	D	
IV	Flange rating	No flange	XX	
V	Flange size	For small size flange model	X	
VI	Flange type	For small flange type adapter assembled, rear connection to capillary *2	1	
		For small flange type with no adapter, rear connection to capillary	3	
VII	Flange material/bolt and nut material	Flange	Bolt and nut	
		No flange	304 SST	1
		No flange	630 SST	3
		No flange	Carbon steel	4
VIII	Gasket face finish	None, Standard JISRA3.2 (12.5S)	A	
IX	Capillary length	2 m	02	
		3 m	03	
		4 m	04	
		5 m	05	
		2 m (with Olefin Cover)	A2	
		3 m (with Olefin Cover)	A3	
		4 m (with Olefin Cover)	A4	
		5 m (with Olefin Cover)	A5	

\*1. 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.

\*2. Small flange mounting kit model (HF-) should be selected.

\*3. Not applicable for the combination with code Q1 "Safety Transmitter" and Q2 "NAMUR NE43 Compliant Output signal limits" of Option.

\*4. In case code A of indicator is selected, code A2 of Option code should be selected.

\*5. 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.

\*6. Code "YB" or "YD" of Option code should be selected.



Model No.: GTX\_\_U - Selection I (I II III IV V VI VII VIII IX) - 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		
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
		304 SST (Flat form)	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.

\*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

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

Option

	No options	XX
	With external Zero/Span adjustment *20 *21	A2
	Oil and water free finish	K1
	Oil free finish *13	K3
	Au Plating Diaphragm	L1
	0.1 mm thickness diaphragm *24 *25	M5
	FEP protective film *15 *16 *17	N1
	Safety Transmitter *14 *21 *23 *26	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) *21 *26	Q2
	Alarm Output (contact output) *22 *26	Q7
	Advanced diagnostics *27	Q8
	Custom calibration	R1
	Test report	T1
	Mill certificate	T2
	Traceability certificate *28	T4
	NACE certificate *18	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

\*13. No need to select when Fill Fluid code H, or J is selected.

\*14. Not applicable for the combination with code A2, or Q7 of Option.

\*15. Not applicable for the combination with code B, C, and D of Fill Fluid. (Max. 110 degree C)

\*16. Not applicable for the combination with Extended Flange Type.

\*17. Not applicable for the combination with 1/2 inches or 3/4 inches flange.

\*18. Applicable for "ASTM B575", code B of Material (center body).

\*19. Not applicable for the combination with code B "M20, Watertight" electrical connection.

\*20. Not applicable for the combination with code X "None" of Indicator. Please select "With indicator".

\*21. Not applicable for the combination with code D "Digital output (DE communication)" and F "4 to 20 mA (HART7 Communication)" of output.

\*22. Not applicable for the combination with code F2, F5, F6, N2, E2, C2 and A2 of Explosion proof.

\*23. Not applicable for the combination with F "4 to 20 mA (HART7 Communication)" of output.

\*24. 0.1 mm thickness diaphragm option is only available for Material of Wetted parts: "316 SST" and "316L SST".

\*25. 0.1 mm thickness diaphragm option is only available for 4 inches Extended Flange or 3inches Flush Flange.

\*26. Not applicable for the combination with code C "Digital output (FOUNDATION Fieldbus communication)" of output.

\*27. 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.

\*28. 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.

**Small flange type mounting kit (Adapter flange)**

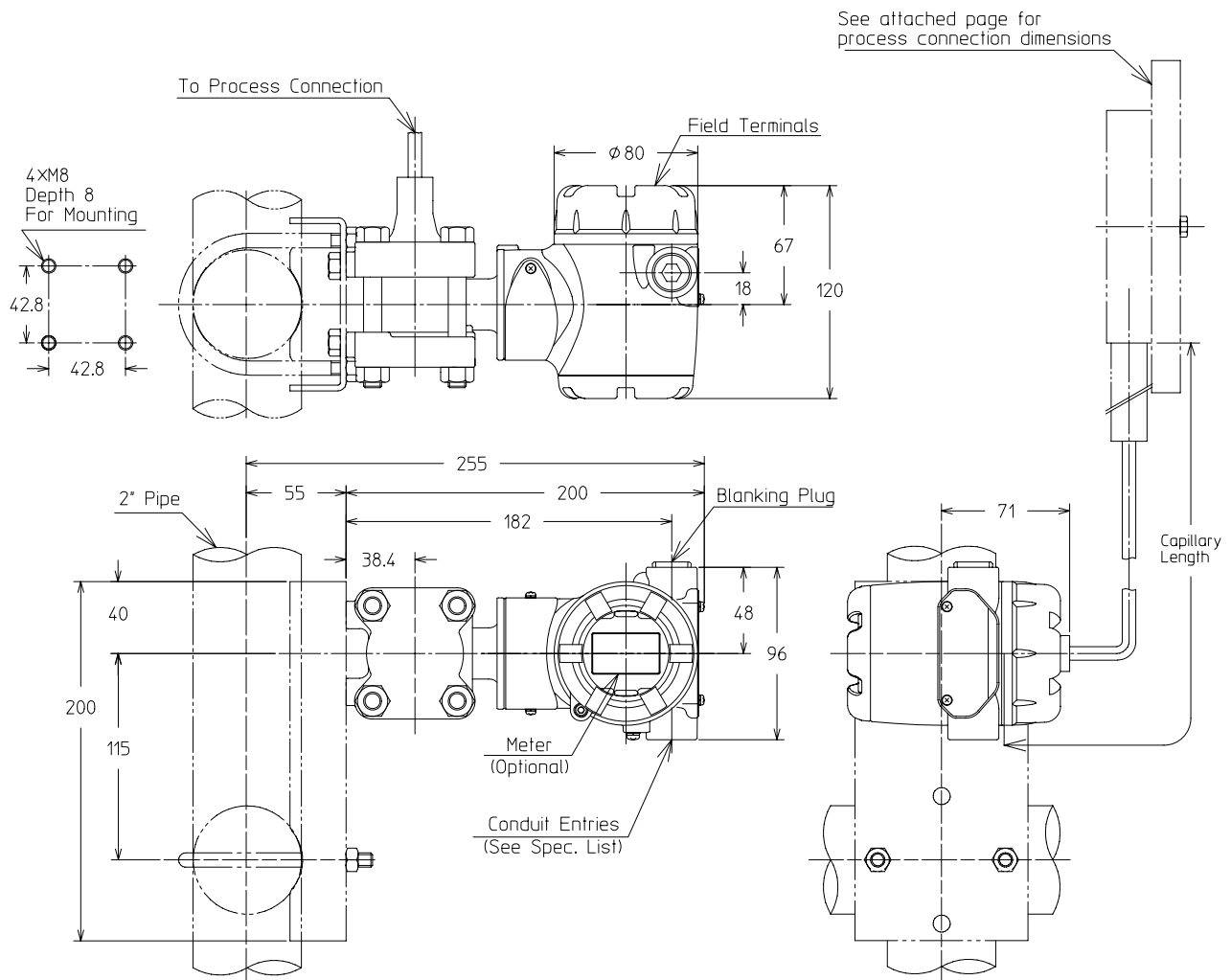
		HF -					-	VI	
		I	II	III	IV	V			
I	Adapter flange quantity	For GP remote (1 piece)					H		
II	Flange size	1/2 in.		1					
		3/4 in.		2					
III	Flange rating	JIS10K			A				
		JIS20K			C				
		JIS30K			D				
		ANSI150			G				
		ANSI300			H				
		JPI150 *28			N				
JPI300 *28			P						
IV	Adapter material	SCS14A or 316 SST				2			
V	Bolt/nut material	630 SST					3		
								-	
VI	Option	None						X	
		Oil and water finish *1						1	
		Oil free finish *1						2	
		Long Vent/Drain Plug						3	
		Assembled with a transmitter						4	

\*1. When this option is selected, the same option for transmitter must be selected.

**DIMENSIONS**

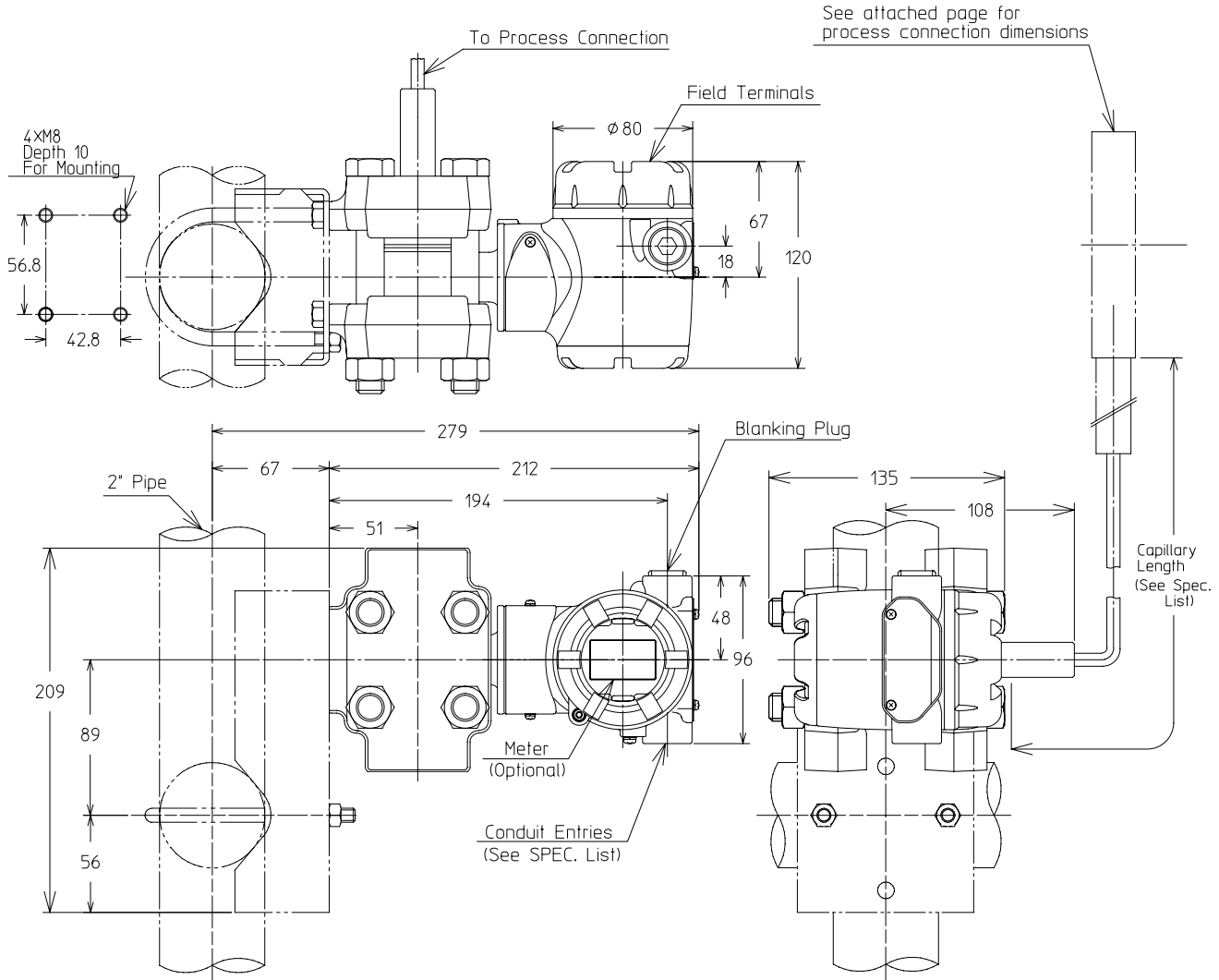
**Model GTX35U/60U/71U**

Unit: mm



Model GTX82U

Unit: mm



**TERMINAL CONNECTION**

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

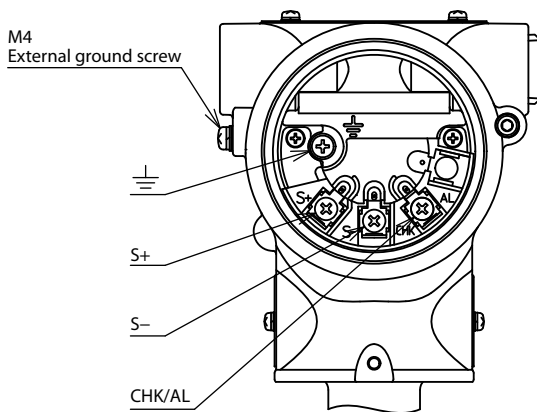


Table 3: Terminal connection

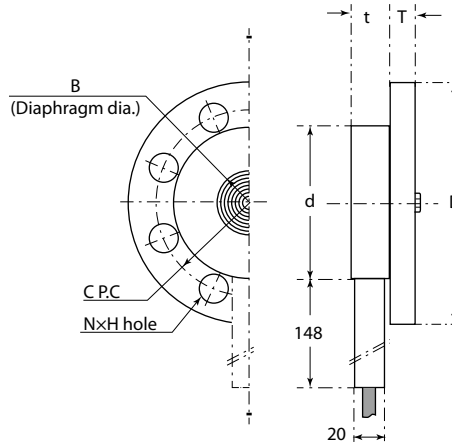
Symbol	Details
S+	Power supply and output signal +
S-	Power supply and output signal -/Check meter -
CHK/AL	Check meter +
⏏	Ground

Table 4: 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 -

Flash diaphragm flange

Unit: mm



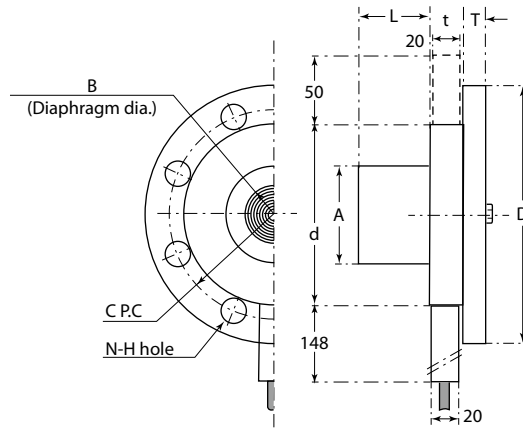
Rating	Flange rating	D	T	C	N	H	d	B	t
1 1/2 inch (40 mm)	JIS 10K-40 mm	140	16	105	4	19	81	25 *1	43
	JIS 20K-40 mm	140	18	105	4	19			
	JIS 30K-40 mm	160	22	120	4	23			
	ANSI 150-1 1/2 inch	127	18	98.6	4	16			
	ANSI 300-1 1/2 inch	155	21	114.3	4	22			
	ANSI 600-1 1/2 inch	155	22.5	114.3	4	22			
	JPI 150-1 1/2 inch	127	18	98.6	4	16			
	JPI 300-1 1/2 inch	155	21	114.3	4	22			
2 inches (50 mm)	JIS 10K-50 mm	155	16	120	4	19	99	25 *1	62 *2
	JIS 20K-50 mm	155	18	120	8	19			
	JIS 30K-50 mm	165	22	130	8	19			
	ANSI 150-2 inches	152	19.5	120.6	4	19			
	ANSI 300-2 inches	165	22.5	127	8	19			
	ANSI 600-2 inches	165	25.5	127	8	19			
	JPI 150-2 inches	152	19.5	120.6	4	19			
	JPI 300-2 inches	165	22.5	127	8	19			
3 inches (80 mm)	JIS 10K-80 mm	185	18	150	8	19	129.5	25	95
	JIS 20K-80 mm	200	22	160	8	23			
	JIS 30K-80 mm	210	28	170	8	23			
	ANSI 150-3 inches	190	24	152.4	4	19			
	ANSI 300-3 inches	210	28.5	168.1	8	22			
	ANSI 600-3 inches	210	32	168.1	8	22			
	JPI 150-3 inches	190	24	152.4	4	19			
	JPI 300-3 inches	210	28.5	168.1	8	22			
JPI 600-3 inches	210	32	168.1	8	22				

Note) \*1. Wetted parts material is ASTMB575 and Fill fluid is for regular, high-temperature, oxygen, or chlorine service: t=26.7

\*2. Wetted parts material is ASTMB575 and Fill fluid is for regular, high-temperature, oxygen, or chlorine service: B=43

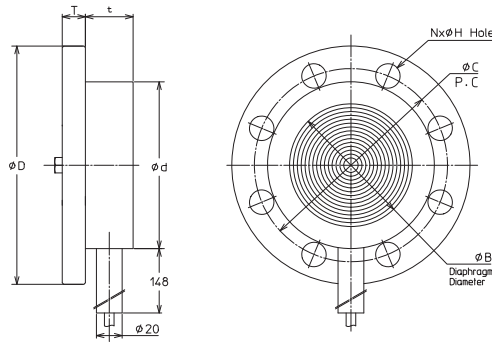
Extended diaphragm flange

Unit: mm



Rating	Flange rating	D	T	C	N	H	d	A	t	B	L
2 inches (50 mm)	JIS 10K - 50 mm	155	16	120	4	19	99	47±1	25	43	50
	JIS 20K - 50 mm	155	18	120	8	19					100
	JIS 30K - 50 mm	165	22	130	8	19					150
	ANSI 150 - 2 inches	152	19.5	120.6	4	19					200
	ANSI 300 - 2 inches	165	22.5	127	8	19					250
	ANSI 600 - 2 inches	165	25.5	127	8	19					300
	JPI 150 - 2 inches	152	19.5	120.6	4	19					
	JPI 300 - 2 inches	165	22.5	127	8	19					
	JPI 600 - 2 inches	165	25.5	127	8	19					
3 inches (80 mm)	JIS 10K - 80 mm	185	18	150	8	19	129.5	69±1	25	62	
	JIS 20K - 80 mm	200	22	160	8	23					
	JIS 30K - 80 mm	210	28	170	8	23					
	ANSI 150 - 3 inches	190	24	152.4	4	19					
	ANSI 300 - 3 inches	210	28.5	168.1	8	22					
	ANSI 600 - 3 inches	210	32	168.1	8	22					
	JPI 150 - 3 inches	190	24	152.4	4	19					
	JPI 300 - 3 inches	210	28.5	168.1	8	22					
	JPI 600 - 3 inches	210	32	168.1	8	22					
4 inches (100 mm)	JIS 10K - 100 mm	210	18	175	8	19	157	95±1	23	90.4	
	JIS 20K - 100 mm	225	24	185	8	23					
	JIS 30K - 100 mm	240	32	195	8	25					
	ANSI 150 - 4 inches	229	24	190.5	8	19					
	ANSI 300 - 4 inches	254	32	200.2	8	22					
	JPI 150 - 4 inches	229	24	190.5	8	19					
	JPI 300 - 4 inches	254	32	200.2	8	22					

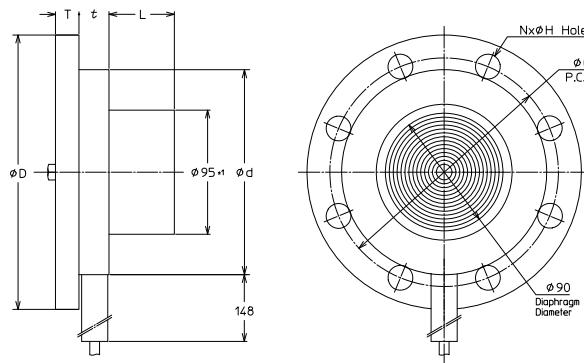
**Flash flange (Optional Code:M5)  
0.1mm thickness diaphragm**



Note 1) Choose gaskets that do not touch diaphragm after installation.

Rating	Flange rating	D	T	C	N	H	d	t	B
3 inches/ 80 mm	JIS 10K - 80 mm	185	18	150	8	19	129.5	25	95
	JIS 20K - 80 mm	200	22	160	8	23			
	JIS 30K - 80 mm	210	28	170	8	23			
	ANSI 150 - 3 inches	190	24	152.4	4	19			
	ANSI 300 - 3 inches	210	28.5	168.1	8	22			
	ANSI 600 - 3 inches	210	32	168.1	8	22			
	JPI 150 - 3 inches	190	24	152.4	4	19			
	JPI 300 - 3 inches	210	28.5	168.1	8	22			
JPI 600 - 3 inches	210	32	168.1	8	22				

**Extended diaphragm flange (Optional Code:M5)  
0.1 mm thickness diaphragm**

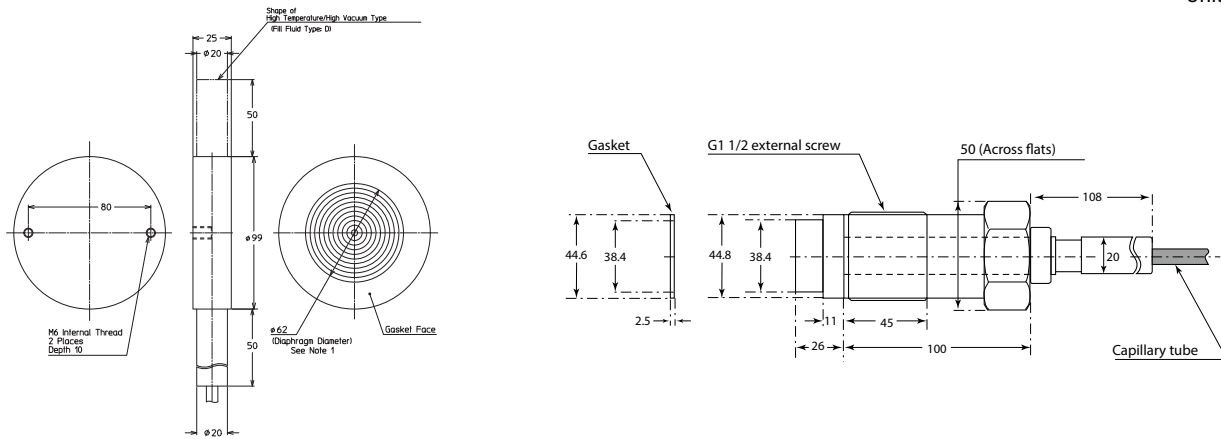


Note 1) Choose gaskets that do not touch diaphragm after installation.

Rating	Flange rating	D	T	C	N	H	d	t	L
4 inches/ 100 mm	JIS 10K - 100 mm	210	18	175	8	19	157	23	50
	JIS 20K - 100 mm	225	24	185	8	23			100
	JIS 30K - 100 mm	240	32	195	8	25			150
	ANSI 150 - 4 inches	229	24	190.5	8	19			200
	ANSI 300 - 4 inches	254	32	200.2	8	22			250
	JPI 150 - 4 inches	229	24	190.5	8	19			300
	JPI 300 - 4 inches	254	32	200.2	8	22			

2-inch wafer Bottom diaphragm

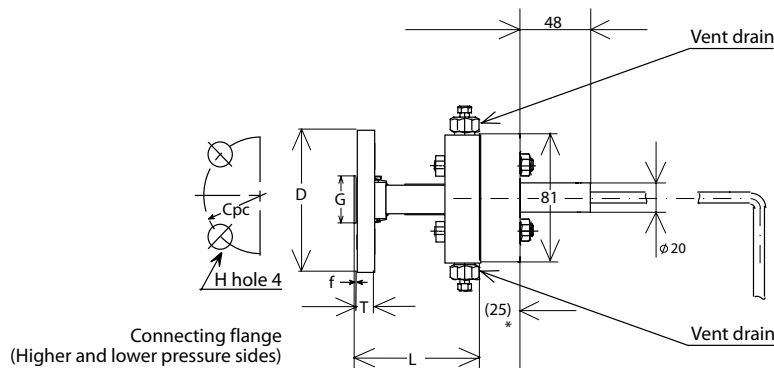
Unit: mm



Model GTX60U/71U

Unit: mm

1/2 or 3/4 inch flange adapter assembly drawing



Flange standard	D	G	T	f	C	H	L
JIS 10K - 15 mm (1/2 inch)	95	51	12	1	70	15	84
JIS 20K - 15 mm (1/2 inch)	95	51	14	1	70	15	84
JIS 30K - 15 mm (1/2 inch)	115	55	18	1	80	19	79
ANSI 150 - 15 mm (1/2 inch)	89	35.1	11.5	1.6	60.5	16	86
ANSI 300 - 15 mm (1/2 inch)	95	35.1	14.5	1.6	66.5	16	92
JPI 150 - 15 mm (1/2 inch)	89	35.1	11.5	1.6	60.5	16	86
JPI 300 - 15 mm (1/2 inch)	95	35.1	14.5	1.6	66.5	16	92
JIS 10K - 20 mm (3/4 inch)	100	56	14	1	75	15	90
JIS 20K - 20 mm (3/4 inch)	100	56	16	1	75	15	90
JIS 30K - 20 mm (3/4 inch)	120	60	18	1	85	19	84
ANSI 150 - 20 mm (3/4 inch)	99	42.9	13	1.6	69.8	16	90
ANSI 300 - 20 mm (3/4 inch)	117	42.9	16	1.6	82.6	19	99
JPI 150 - 20 mm (3/4 inch)	99	42.9	13	1.6	69.8	16	90
JPI 300 - 20 mm (3/4 inch)	117	42.9	16	1.6	82.6	19	99

Note) In the case of tantalum for wetted part material, this is 24 mm.

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1st edition: May 2008  
 25th edition: Jun. 2020

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