

# ST3000 Series 900 Smart Transmitter

## Pressure Transmitters with FOUNDATION™ fieldbus

### Model STG940/STG960/STG981

#### OVERVIEW

The ST3000 Series 900 with FOUNDATION™ fieldbus is an accurate, stable, and reliable pressure / differential pressure transmitter, which fully complies with the 31.25kbps voltage mode FOUNDATION™ fieldbus. Its built-in AI function blocks provide process variables to devices on the Fieldbus and its PID control function block enables process control in the field.

Since the ST3000 Series 900 is FOUNDATION™ registered, it can operate seamlessly with other registered field devices as well as host systems in a wide range of control applications.



#### 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.

##### **Wide measuring range (range ability)**

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

- The measuring range of the STD920, for example, is 0.75 to 100 kPa (rangeability = 1:135).
- STG940: 35 to 3500 kPa (range ability: 1 to 100)

##### **A diverse lineup**

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

##### **Function to correct the temperature of the fill fluid of the capillary section**

Changes in the density of the fill fluid caused by temperature fluctuations are calculated, and the output is corrected accordingly. This function substantially reduces (to 1/5-1/10) the effect of seasonal fluctuations in temperature.

FOUNDATION™ is a registered trademark of the Fieldbus Foundation.

**APPLICATION**

**Petroleum/Petrochemical/Chemical**

For measuring pressures and liquid levels in pipes and tanks.

**Electric power/City gas/Other utilities**

For measurement applications that require high degrees of stability and accuracy.

**Pulp and paper**

For lines that need transmitters resistant to chemical liquids, corrosive fluids and the like

**Iron and steel/Nonferrous metal/Ceramics**

For lines that require stable measurement under strictly controlled (temperature, humidity, etc.) conditions.

**Machinery/Shipbuilding**

For lines that require stable measurement under strictly controlled (temperature, humidity, etc.) conditions.

**FUNCTIONAL SPECIFICATIONS**

**Type of protection**

JIS C0920 watertight: NEMA3 and 4X

JIS F8001 class 2 watertight: IEC IP67

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

	Measuring Span	Setting Range	Working Pressure Range	Overload Resistant Value
STG 940	35 to 3500kPa {0.35 to 35kgf/cm <sup>2</sup> }	-100 to 3500kPa {-1 to 35kgf/cm <sup>2</sup> }	2.0kPa abs. to 3500kPa {15mmHg abs to 35kgf/cm <sup>2</sup> } Note 1 See Figure 1 on page 2	5250kPa {52.5kgf/cm <sup>2</sup> }
STG 960	0.7 to 14MPa {7 to 140kgf/cm <sup>2</sup> }	-0.1 to 14MPa {-1 to 140kgf/cm <sup>2</sup> }	2.0kPa abs. to 14MPa {15mmHg abs to 140kgf/cm <sup>2</sup> } Note 2 See Figure 1 on page 2	21MPa {210kgf/cm <sup>2</sup> }
STG 981	0.7 to 42MPa {7 to 420kgf/cm <sup>2</sup> }	-0.1 to 42MPa {-1 to 420kgf/cm <sup>2</sup> }	2.0kPa abs. to 42MPa {15mmHg abs to 420kgf/cm <sup>2</sup> } Note 3 See Figure 1 on page 2	63MPa {630kgf/cm <sup>2</sup> }

Note) 1) With PVC wetted parts, the maximum working pressure is 1.5 MPa {15 kgf/cm<sup>2</sup>}.

Note) 2) With SUS304 bolts and nuts, the maximum working pressure is 7 MPa {70 kgf/cm<sup>2</sup>}.

Note) 3) With SUS304 bolts and nuts, the maximum working pressure is 23 MPa {230 kgf/cm<sup>2</sup>}.

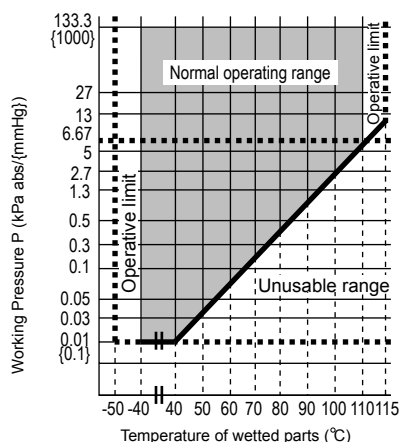


Figure 1 Working Pressure and Temperature of Wetted Parts Section (for General purpose models)

**Supply voltage**

9 to 32V DC.

**Ambient temperature limits**

**Normal operating range**

- 40 to 85°C for general purpose models
- 10 to 75°C for oxygen and chlorine models
- 20 to 70°C for models with digital indicators

**Operative limits**

- 50 to 93°C for general purpose models
- 40 to 80°C for oxygen and chlorine models
- 30 to 80°C for models with digital indicators

**Transportation and storage conditions**

-50 to 85°C

**Temperature ranges of wetted parts**

**Normal operating range**

- 40 to 110°C for general purpose models
- 10 to 75°C for oxygen and chlorine models

**Operative limits**

- 50 to 115°C for general purpose models
- 40 to 80°C for oxygen and chlorine models

**Ambient humidity limits**

5 to 100% RH

**Stability against supply voltage change**

±0.005% FS/V

**Lightning protection**

Peak value of voltage surge: 12kV

Peak value of current surge: 1000A

**Optional specifications**

**Built-in indicating meter**

The digital LCD indicator (optional) indicates engineering units and can be set freely between -19999 and 19999 (4.5 digits).

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

Carbon steel (SNB7), SUS304, SUS630

(Pressure rating 7000kPa {70kgf/cm<sup>2</sup>} or Flange rating)

Baked acrylic paint.

**Corrosion-resistant finish**

**Corrosion-resistant finish**

Corrosion-resistant paint (Baked acrylic paint), fungus-proof finish.

**Corrosion-proof finish**

Corrosion-proof paint (Baked epoxy paint), fungus-proof finish.

**Corrosion-resistant finish (silver paint)**

Transmitter case is coated with silver paint in addition to the above corrosion-resistant finish.

**Oil free finish**

The transmitter is shipped with oil-free wetted parts.

**Long vent/drain plugs**

A longer (58 mm) drain than the standard (24 mm) can be used for maintenance, process, and safety reasons.

**Elbow**

This is an adaptor for changing the electrical conduit connection port from the horizontal to the vertical direc-

tion, 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.

**PHYSICAL SPECIFICATIONS****Materials****Fill fluid**

Silicone oil for general purpose and high-temperature vacuum models

Fluorine oil for oxygen and chlorine models

**Center body**

SUS316

**Transmitter case**

Aluminum alloy

**Meter body cover**

Carbon steel (SF440A), galvanized

Carbon steel (SF440A), nickel plated

SCS14A (Equivalent to SUS316) or SUSF316, PVC

**For Wetted parts****Adapter flange (option)**

SCS14A (Equivalent to SUS316), PVC

**Center body**

SUS316 (Diaphragm SUS316L)

Hastelloy C, Tantalum, SUS316L

**Vents and plugs**

SUS316, PVC

**Gaskets**

FEP, SFVC2A for STG981

**Finish**

Baked acrylic paint

Housing light beige (Munsell 4Y7.2/1.3)

Cap dark beige (Munsell 10YR4.7/0.5)

**Weight**

Approx. 4.4 kg

**INSTALLATION****Electrical connection**

1/2NPT internal thread

**Grounding**

Resistance 100  $\Omega$  max

**Mounting**

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

**Process connection**

Rc1/2, 1/2NPT internal thread and Rc1/4, 1/4NPT internal thread

**PERFORMANCE SPECIFICATIONS****Accuracy**

Shown for each item is the percentage ratio for  $\chi$  (kPa), which is the greatest value of either XD\_SCALE\_EU\_100, XD\_SCALE\_EU\_0, or the span.

**STG940**

(Material of wetted parts: Diaphragm; SUS316L, Others; SUS316)

Accuracy (*3)		$\pm 0.075\%$	(For $\chi \geq 1750\text{kPa}$ {17.5kgf/cm <sup>2</sup> })
		$\pm 0.1\%$	(1750kPa {17.5kgf/cm <sup>2</sup> } > $\chi \geq 5.0\text{kPa}$ {500mmH <sub>2</sub> O})
		$\pm \left(0.025 + 0.075 \times \frac{140}{\chi}\right) \%$	(For $\chi < 140\text{kPa}$ {1.4kgf/cm <sup>2</sup> })
Temperature characteristics (Shift from the set range) Change of 55°C (*3)	Zero shift:	$\pm \left(0.25 + 0.3 \times \frac{350}{\chi}\right) \%$	
	Combined shift: (including zero and span shifts)	$\pm 0.8\%$	(For $\chi \geq 350\text{kPa}$ {3.5kgf/cm <sup>2</sup> })
		$\pm \left(0.35 + 0.45 \times \frac{350}{\chi}\right) \%$	(For $\chi < 350\text{kPa}$ {3.5kgf/cm <sup>2</sup> })

**STG960**

(Material of wetted parts: Diaphragm; SUS316L, Others; SUS316)

Accuracy (*3)		$\pm 0.15\%$	(For $\chi \geq 2.1\text{MPa}$ {21kgf/cm <sup>2</sup> })
		$\pm \left(0.05 + 0.1 \times \frac{3.5}{\chi}\right) \%$	(For $\chi < 2.1\text{MPa}$ {21kgf/cm <sup>2</sup> })
Temperature characteristics (Shift from the set range) Change of 55°C (*3)	Zero shift:	$\pm \left(0.25 + 0.3 \times \frac{3.5}{\chi}\right) \%$	
	Combined shift: (including zero and span shifts)	$\pm 0.8\%$	(For $\chi \geq 3.5\text{MPa}$ {35kgf/cm <sup>2</sup> })
		$\pm \left(0.35 + 0.45 \times \frac{3.5}{\chi}\right) \%$	(For $\chi < 3.5\text{MPa}$ {35kgf/cm <sup>2</sup> })

**STG981**

(Material of wetted parts: Diaphragm; SUS316L, Others; SUS316)

Accuracy (*3)		$\pm 0.15\%$	(For $\chi \geq 7\text{MPa}$ {70kgf/cm <sup>2</sup> })
		$\pm \left(0.05 + 0.1 \times \frac{7}{\chi}\right) \%$	(For $\chi < 7\text{MPa}$ {70kgf/cm <sup>2</sup> })
Temperature characteristics (Shift from the set range) Change of 55°C (*3)	Zero shift:	$\pm \left(0.25 + 0.3 \times \frac{7}{\chi}\right) \%$	
	Combined shift: (including zero and span shifts)	$\pm 0.8\%$	(For $\chi \geq 7\text{MPa}$ {70kgf/cm <sup>2</sup> })
		$\pm \left(0.35 + 0.45 \times \frac{7}{\chi}\right) \%$	(For $\chi < 7\text{MPa}$ {70kgf/cm <sup>2</sup> })

Note (\*1): XD\_SCALE\_EU\_100 denotes the upper limit of the calibration range.

(\*2): XD\_SCALE\_EU\_0 denotes the lower limit of the calibration range.

(\*3): Within a range of XD\_SCALE\_EU\_100  $\geq$  0 and XD\_SCALE\_EU\_0  $\geq$  0.

**STG940**

(Material of wetted parts: Diaphragm; Hastelloy C, Tantalum, SUS316L Others; Hastelloy C, Tantalum, SUS316L)

Accuracy (*3)		$\pm 0.2\%$	(For $\chi \geq 140kPa$ {1.4kgf/cm <sup>2</sup> })
		$\pm\left(0.05 + 0.15 \times \frac{140}{\chi}\right) \%$	(For $\chi < 140kPa$ {1.4kgf/cm <sup>2</sup> })
Temperature characteristics (Shift from the set range) Change of 30°C (*3)(Range from -5 to 55°C)	Zero shift:	$\pm\left(0.15 + 0.45 \times \frac{350}{\chi}\right) \%$	
	Combined shift: (including zero and span shifts)	$\pm 0.85\%$	(For $\chi \geq 350kPa$ {3.5kgf/cm <sup>2</sup> })
		$\pm\left(0.35 + 0.5 \times \frac{350}{\chi}\right) \%$	(For $\chi < 350kPa$ {3.5kgf/cm <sup>2</sup> })

**STG960**

(Material of wetted parts: Diaphragm; Hastelloy C, Tantalum, SUS316L Others; Hastelloy C, Tantalum, SUS316L)

Accuracy (*3)		$\pm 0.2\%$	(For $\chi \geq 2.1MPa$ {21kgf/cm <sup>2</sup> })
		$\pm\left(0.05 + 0.15 \times \frac{2.1}{\chi}\right) \%$	(For $\chi < 2.1MPa$ {21kgf/cm <sup>2</sup> })
Temperature characteristics (Shift from the set range) Change of 30°C (*3) (Range from -5 to 55°C)	Zero shift:	$\pm\left(0.15 + 0.45 \times \frac{3.5}{\chi}\right) \%$	
	Combined shift: (including zero and span shifts)	$\pm 0.85\%$	(For $\chi \geq 3.5MPa$ {35kgf/cm <sup>2</sup> })
		$\pm\left(0.35 + 0.5 \times \frac{3.5}{\chi}\right) \%$	(For $\chi < 3.5MPa$ {35kgf/cm <sup>2</sup> })

Note) (\*3): Within a range of  $XD\_SCALE\_EU\_100 \geq 0$  and  $XD\_SCALE\_EU\_0 \geq 0$ .

**FIELDBUS SPECIFICATIONS****Block supported by the S900**

Name of block	Number of block	Description	Max. execution time msec.
Resource block	1	The Resource Block (RB) maintains overall resources of the S900.	-
Transducer block	1	The Transducer Block (XB) interfaces with the sensing element of the S900, converts the measured value into specified engineering unit, and sends it to the AI Function Block.	-
AI Function Block	2	The AI Function Block (AI FB) accepts an analog input signal from the XB, scales it, detects alarm conditions, and provides it in a uniform format on the Fieldbus network.	75
Diagnostics Block	1	The Diagnostics Block (DB) is Yamatake proprietary block which provides the result of self-diagnostics of the S900.	-
PID Function Block	1	The PID Function Block (PID FB) accepts a process variable (PV) from an AI Function Block on the Fieldbus network, calculates the valve position using the PID algorithm, and sends a new valve output signal to the AO Function Block.	125

**VCR structure**

The S900 has 16 VCRs (Virtual Communication Relationships), of which the first one is dedicated to the SMIB/NMIB as defined by Foundation Fieldbus specifications. The rest of the VCRs are fully configurable. Their default configurations are shown below:

VCR No.	Configuration	VCR No.	Configuration
1	QUB (Server) for NIMIB/SMIB	9	QUU (Source)
2	BNU (Subscriber)	10	QUU (Source)
3	BNU (Subscriber)	11	QUU (Source)
4	BNU (Subscriber)	12	QUB (Server)
5	BNU (Subscriber)	13	QUB (Server)
6	BNU (Publisher)	14	QUB (Server)
7	BNU (Publisher)	15	QUB (Server)
8	QUU (Source)	16	QUB (Server)

**Network parameters**

The following table lists the key parameter values that affect the interoperability of the Fieldbus devices. The LAS must be configured to satisfy these parameters. If other devices on the same Fieldbus network require a greater number for them, the greater number must be used. This however will degrade network performance.

Symbol	Parameter name	Range of value
V (ST)	Slot Time	4 to 100
V (MID)	Minimum Interframe Gap	10 to $(V (MRD) - 1) \times V (ST)$ , less than 120 inclusive.
V (MRD)	Maximum Response Delay	$V (MRD) \times V (ST)$ shall be greater than 20 and $V (MRD)$ shall be less than 11, inclusive.
T1	SM step timer	96000 (3 seconds)
T2	SM set address sequence timer	1920000 (60 seconds)
T3	SM set address wait timer	480000 (15 seconds)

- Note)
- An LAS requires parameters other than those listed here for operation. Please refer to the user's manual that is provided with your LAS device.
  - The T3 must be set between 15 seconds and 60 seconds.

**MODEL SELECTION**

**ST3000 series 900 electric pressure transmitter**

**Model STG940 (Low gauge pressure)**

Model No.: STG940 - I II III - 00000 - Option I - Option II

Basic Model No.

	Measuring Span	35 to 3500kPa(0.35 to 35kgf/cm <sup>2</sup> )	STG940
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Selection I						Code	Material Code												
I	Material	Meter Body Cover	Adapter Flange	Vent/Drain Plugs	Center Body		A	B	D	E	F	H	U	M	P	8	9		
		Carbon steel	SCS14A*1	SUS316	Diaphragm:SUS316L Others: SUS316	A													
		Carbon steel	SCS14A*1	SUS316	Diaphragm: Hastelloy C Others: Hastelloy C	B													
		Carbon steel	SCS14A*1	SUS316	Diaphragm: Tantalum Others: Tantalum	D													
		SCS14A*1	SCS14A*1	SUS316	Diaphragm:SUS316L Others: SUS316	E													
		SCS14A*1	SCS14A*1	SUS316	Diaphragm: Hastelloy C Others: Hastelloy C	F													
		SCS14A*1	SCS14A*1	SUS316	Diaphragm: Tantalum Others: Tantalum	H													
		SCS14A*1	SCS14A*1	SUS316	Diaphragm:SUS316L Others: SUS316L	U													
		PVC	PVC	PVC	Diaphragm: Hastelloy C Others: Hastelloy C *8	M													
		PVC	PVC	PVC	Diaphragm: Tantalum Others: Tantalum *8	P													
		Carbon steel Ni plating	SCS14A*1	SUS316	Diaphragm: Hastelloy C Others: Hastelloy C	8													
		Carbon steel Ni plating	SCS14A*1	SUS316	Diaphragm:SUS316L Others: SUS316	9													
II	Fill Fluid	Regular type (Silicone oil)				1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
		For oxygen service (Fluorine oil) *3				2				✓	✓	✓	✓	✓	✓				
		For chlorine service (Fluorine oil) *3				5						✓			✓				
III	Process Connection	Front Connection	Rc1/2 with adapter flange		L	✓	✓		✓	✓						✓	✓		
			1/2NPT internal thread with adapter flange		G	✓	✓		✓	✓								✓	✓
			Rc1/4 with adapter flange		D	✓	✓		✓	✓								✓	✓
			1/4NPT internal thread with adapter flange		A	✓	✓		✓	✓								✓	✓
			1/4NPT internal thread on head		B	✓	✓		✓	✓								✓	✓
	Top or Bottom Connection	Front Connection	Rc1/2 with adapter flange *7		Q			✓			✓	✓	✓	✓	✓				
			1/2NPT internal thread with adapter flange *7		R			✓			✓	✓	✓	✓	✓				
			Rc1/4 with adapter flange *7		S			✓			✓	✓	✓	✓	✓				
			1/4NPT internal thread with adapter flange *7		T			✓			✓	✓	✓	✓	✓				
			1/4NPT internal thread on head *7		U			✓			✓	✓	✓	✓	✓				
						-													
						00000													
						-													
Options I	No options				X	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	Built-in indicating smart meter (0 to 100% liner scales)				P	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	Built-in indicating smart meter (engineering unit scales)				R	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	SUS304 Bolt and nuts material *10				W	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	SUS630 Bolt and nuts material				U	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	Corrosion-resistant finish				A	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	Corrosion-proof finish				B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	Corrosion-resistant finish, silver paint				D	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	Oil Free finish				K	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	Long Vent/drain plugs				J	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
						-													
Options II	No option				XX	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	Water free finish (with Oil free finish)				A7	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	Custom calibration				C7	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	One Elbow				E1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	Two Elbows				E2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	Mounting bracket				E9	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	Side vent/drain top				F1	✓	✓		✓	✓						✓	✓		
	Side vent/drain bottom				F2	✓	✓		✓	✓						✓	✓		
	SI unit				U1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	FOUNDATION™ fieldbus *33				D6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	Fieldbus communication stack BASIC class *33				L1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		

- Note) \*1 SCS14A (Equivalent SUS316) or SUSF316  
 \*3 In case "For oxygen or chlorine (Fluorine oil) service" is used, "oil free finish - code K" must be selected.  
 \*7 Applicable for wetted parts of center body material; Tantalum, SUS316L  
 \*8 SUS304 bolts and nuts material (-W) must be selected when PVC meterbody cover is selected (-M or -P)  
 \*10 Max working pressure rating: 3.5MPa (35kgf/cm<sup>2</sup>) MAX. Model STG940  
 \*33 "FOUNDATION™ fieldbus - code D6" and "Fieldbus communication stack BASIC class - code L1" must be selected.

**ST3000 series 900 electric pressure transmitter**

**Model STG960 (Medium gauge pressure)**

Model No.: STG960 - I II III - 00000 - Option I - Option II

Basic model No.

Measuring Span	0.7 to 14MPa(7 to 140kgf/cm <sup>2</sup> )	STG960
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Selection I						Code	Material Code										
I	Material	Meter Body Cover	Adapter Flange	Vent/Drain Plugs	Wetted Parts of Center Body		A	B	D	E	F	U	8	9	A		
		Carbon steel	SCS14A*1	SUS316	Diaphragm:SUS316L Others: SUS316	A											
		Carbon steel	SCS14A*1	SUS316	Diaphragm: Hastelloy C Others: Hastelloy C	B											
		Carbon steel	SCS14A*1	SUS316	Diaphragm: Tantalum Others: Tantalum	D											
		SCS14A*1	SCS14A*1	SUS316	Diaphragm:SUS316L Others: SUS316	E											
		SCS14A*1	SCS14A*1	SUS316	Diaphragm: Hastelloy C Others: Hastelloy C	F											
		SCS14A*1	SCS14A*1	SUS316	Diaphragm: Tantalum Others: Tantalum	H											
		SCS14A*1	SCS14A*1	SUS316	Diaphragm:SUS316L Others: SUS316L	U											
		Carbon steel Ni plating	SCS14A*1	SUS316	Diaphragm: Hastelloy C Others: Hastelloy C	8											
		Carbon steel Ni plating	SCS14A*1	SUS316	Diaphragm:SUS316L Others: SUS316	9											
II	Fill Fluid	Regular type (Silicone oil)				1	✓	✓	✓	✓	✓	✓	✓	✓	✓		
		For oxygen service (Fluorine oil) *3				2				✓	✓	✓	✓				
		For chlorine service (Fluorine oil) *3				5						✓	✓				
III	Process Connection	Front Connection	Rc1/2 with adapter flange		L	✓	✓		✓	✓				✓	✓		
			1/2NPT internal thread with adapter flange		G	✓	✓		✓	✓					✓	✓	
			Rc1/4 with adapter flange		D	✓	✓		✓	✓						✓	✓
			1/4NPT internal thread with adapter flange		A	✓	✓		✓	✓							✓
			1/4NPT internal thread on head		B	✓	✓		✓	✓							✓
			Rc1/2 with adapter flange *7		Q			✓						✓	✓		
	Top or Bottom Connection		1/2NPT internal thread with adapter flange *7		R			✓				✓	✓				
			Rc1/4 with adapter flange *7		S			✓				✓	✓				
			1/4NPT internal thread with adapter flange *7		T			✓				✓	✓				
			1/4NPT internal thread on head		U			✓				✓	✓				
					-												
					00000												
		-															
Options I		No options		X	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
		Built-in indicating smart meter (0 to 100% liner scales)		P	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
		Built-in indicating smart meter (engineering unit scales)		R	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
		SUS304 Bolt and nuts material *11		W	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
		SUS630 Bolt and nuts material		U	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
		Corrosion-resistant finish		A	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
		Corrosion-proof finish		B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
		Corrosion-resistant finish, silver paint		D	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
		Oil Free finish		K				✓	✓	✓	✓	✓	✓	✓			
		Long Vent/drain plugs		J	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
				-													
Options II		No option		XX	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
		Water free finish (with Oil free finish)		A7				✓	✓	✓	✓	✓	✓	✓			
		Custom calibration		C7	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
		One Elbow		E1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
		Two Elbows		E2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
		Mounting bracket		E9	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
		Side vent/drain top		F1	✓	✓		✓	✓				✓	✓			
		Side vent/drain bottom		F2	✓	✓		✓	✓				✓	✓			
		SI unit		U1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
		FOUNDATION™ fieldbus *33		D6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
		Fieldbus communication stack BASIC class *33		L1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			

- Note) \*1 SCS14A (Equivalent SUS316) or SUSF316  
 \*3 In case "For oxygen or chlorine (Fluorine oil) service" is used, "oil free finish - code K" must be selected.  
 \*7 Applicable for wetted parts of center body material; Tantalum, SUS316L  
 \*11 Max working pressure rating: 7MPa(70kgf/cm<sup>2</sup>) MAX. Model STG960  
 \*33 "FOUNDATION™ fieldbus - code D6" and "Fieldbus communication stack BASIC class - code L1" must be selected.

**ST3000 series 900 electric pressure transmitter  
Model STG987 (High gauge pressure)**

Model No.: STG981 - I II III - 00000 - Option I - Option II

Basic model No.

Measuring Span	0.7 to 42MPa(7 to 420kgf/cm2)	STG981
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Selection I			Code	Material Code						
I	Material	Meter Body Cover Vent/Drain Plugs Wetted Parts of Center Body		A	B	E	F	8	9	
		Carbon steel	SUS316	Diaphragm:SUS316L Others: SUS316	A					
		Carbon steel	SUS316	Diaphragm: Hastelloy C Others: Hastelloy C	B					
		SCS14A*1	SUS316	Diaphragm:SUS316L Others: SUS316	E					
		SCS14A*1	SUS316	Diaphragm: Hastelloy C Others: Hastelloy C	F					
		Carbon steel Ni plating	SUS316	Diaphragm: Hastelloy C Others: Hastelloy C	8					
		Carbon steel Ni plating	SUS316	Diaphragm:SUS316L Others: SUS316	9					
II	Fill Fluid	Regular type (Silicone oil)		1	✓	✓	✓	✓	✓	✓
		For oxygen service (Fluorine oil) *3		2			✓	✓		
		For chlorine service (Fluorine oil) *3		5						
III	Process Connection	Front Connection	Rc1/2	L						
			1/2NPT internal thread	G						
			Rc1/4	D						
			1/4NPT internal thread	A						
		Top or Bottom Connection	Rc1/2	Q						
			1/2NPT internal thread	R						
			Rc1/4	S	✓	✓	✓	✓	✓	✓
			1/4NPT internal thread	T	✓	✓	✓	✓	✓	✓
				-						
				00000						
				-						
Options I	No options		X	✓	✓	✓	✓	✓	✓	✓
	Built-in indicating smart meter (0 to 100% liner scales)		P	✓	✓	✓	✓	✓	✓	✓
	Built-in indicating smart meter (engineering unit scales)		R	✓	✓	✓	✓	✓	✓	✓
	SUS304 Bolt and nuts material *12		W	✓	✓	✓	✓	✓	✓	✓
	SUS630 Bolt and nuts material		U	✓	✓	✓	✓	✓	✓	✓
	Corrosion-resistant finish		A	✓	✓	✓	✓	✓	✓	✓
	Corrosion-proof finish		B	✓	✓	✓	✓	✓	✓	✓
	Corrosion-resistant finish, silver paint		D	✓	✓	✓	✓	✓	✓	✓
	Oil Free finish		K			✓	✓			
	Long Vent/drain plugs		J	✓	✓	✓	✓	✓	✓	✓
				-						
Options II	No option		XX	✓	✓	✓	✓	✓	✓	✓
	Water free finish (with Oil free finish)		A7			✓	✓			
	Custom calibration		C7	✓	✓	✓	✓	✓	✓	✓
	One Elbow		E1	✓	✓	✓	✓	✓	✓	✓
	Two Elbows		E2	✓	✓	✓	✓	✓	✓	✓
	Mounting bracket		E9	✓	✓	✓	✓	✓	✓	✓
	Side vent/drain top		F1							
	Side vent/drain bottom		F2							
	SI unit		U1	✓	✓	✓	✓	✓	✓	✓
	FOUNDATION™ fieldbus *33		D6	✓	✓	✓	✓	✓	✓	✓
	Fieldbus communication stack BASIC class *33		L1	✓	✓	✓	✓	✓	✓	✓

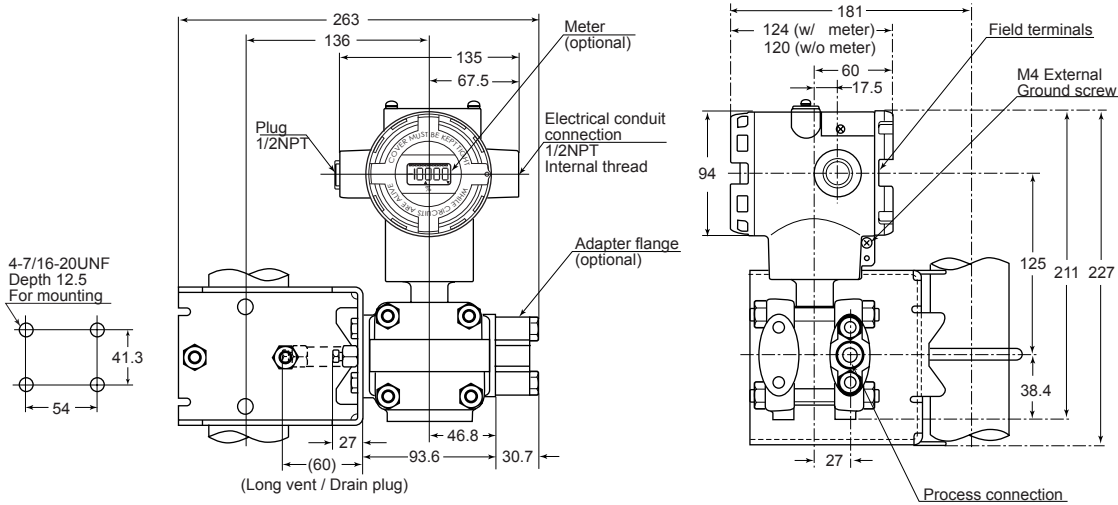
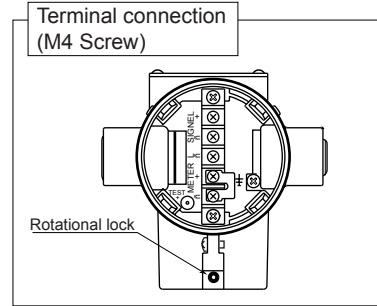
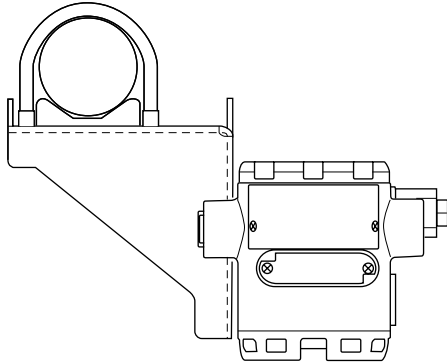
- Note) \*1 SCS14A (Equivalent SUS316) or SUSF316  
 \*3 In case “For oxygen or chlorine (Fluorine oil) service” is used, “oil free finish - code K” must be selected.  
 \*12 Max working pressure rating: 23MPa(230kgf/cm2) MAX. Model STG981  
 \*33 “FOUNDATION™ fieldbus - code D6” and “Fieldbus communication stack BASIC class - code L1” must be selected.

**DIMENSIONS**

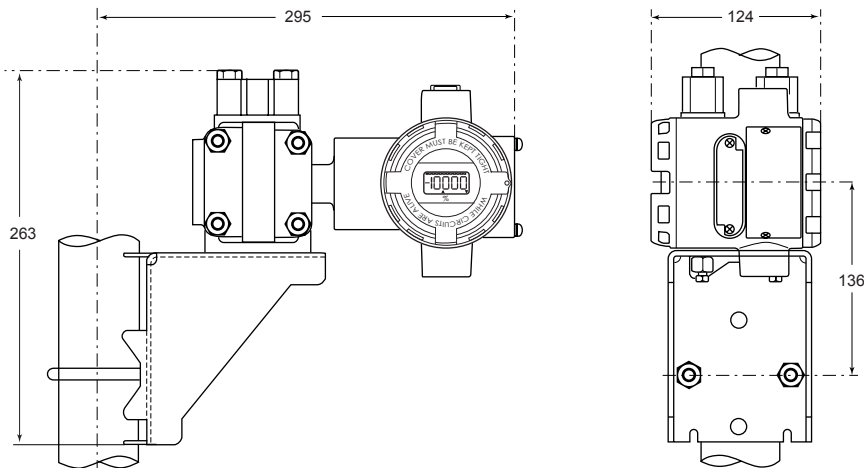
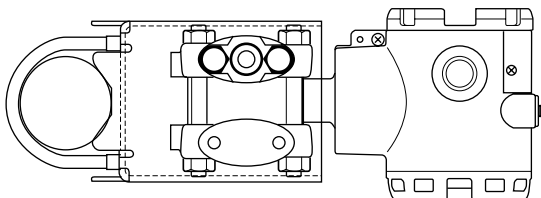
STG940/960

[Unit: mm]

Process connection: Front side



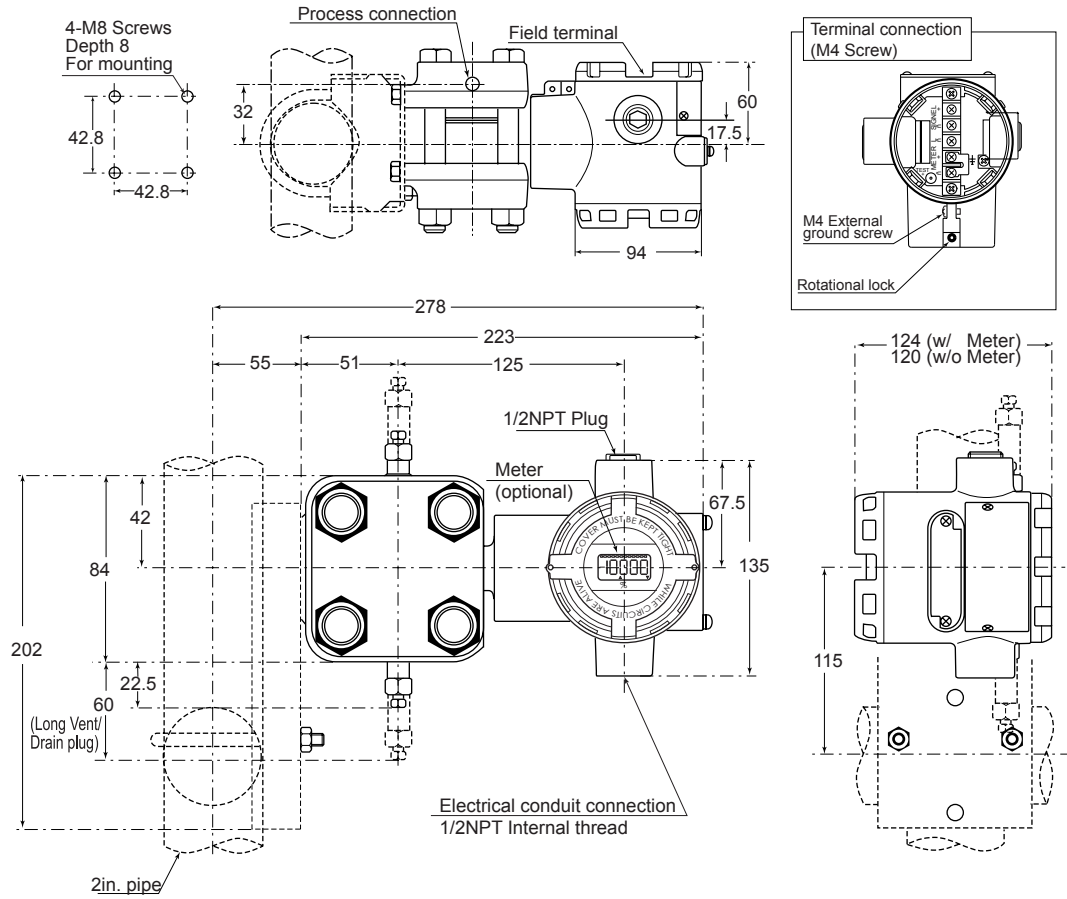
Process connection: Top or bottom side



STG981

[Unit: mm]

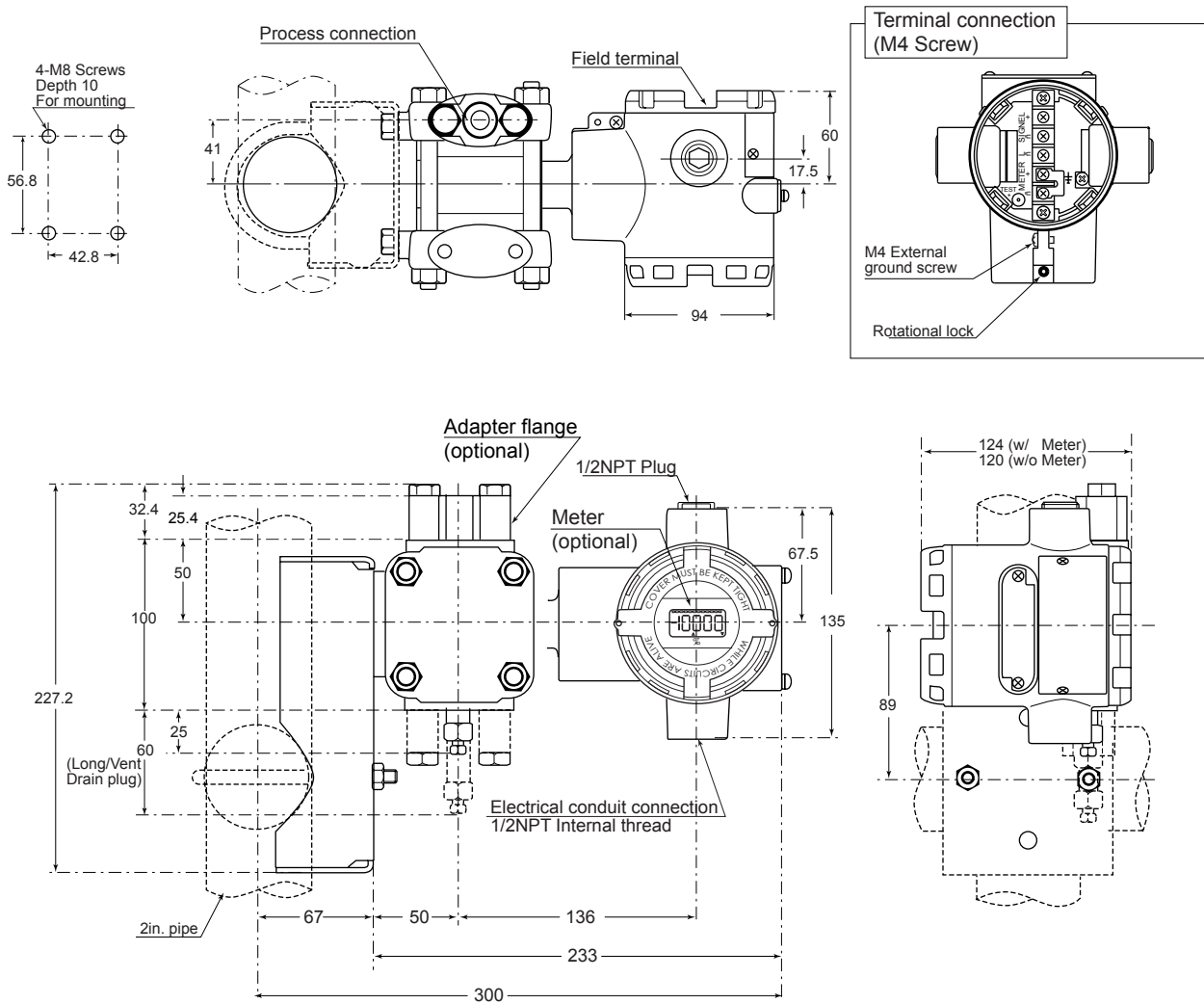
Process connection: Top or bottom side



STG940/960 (Wetted parts materials: Tantalum, SUS316L)

[Unit: mm]

Process connection: Top or bottom side







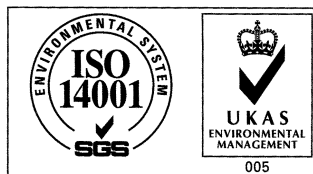


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Certificate No. E8318  
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