

ST 3000 Smart Transmitter Electronic Pressure Transmitter

Model JTG840 (for Gauge Pressure)

Measuring Span: 1 to 35kgf/cm²

Introduction

The ST 3000 Pressure Transmitter measures a process pressure and transmits an analog 4 to 20mA DC output or digital output proportional to the measured variable. The transmitter is a microprocessor-based instrument, whose parameters and settings (range, damping time constant, linear or square-root output, constant current output and others) can be remote-controlled from the instrument room via the SFC (Smart Communicator).



Standard Specifications

Item	Specifications
Measuring span (Continuously adjustable)	1 to 35kgf/cm ²
Setting range	$-1 \leq \text{URV}^{(*1)} \leq 35\text{kgf/cm}^2$, $-1 \leq \text{LRV}^{(*2)} \leq 35\text{kgf/cm}^2$
Output	Analog output (4 to 20mA DC) / Digital output
Accuracy ^(*3)	Percentage with respect to x (mmH ₂ O) that represents the URV or LRV of the calibrated range, or the span – whichever is greatest. $\pm 0.2\%$ When x is 3.5 to 35kgf/cm ² . $\pm 0.45\%$ When x is 1 to 3.5kgf/cm ² . (with damping effected)
Supply voltage and load resistance	10.8 to 45V DC (See Figure 1.)
Working pressure rating	35kgf/cm ² max. (For vacuum pressure, see Figure 2.)
Overpressure limit	52.5kgf/cm ² max.
Operating temperature range	Ambient temperature: Normal operating conditions; -15 to +85°C Operative limits (for short period); -50 to +93°C Transportation and storage conditions; -50 to +85°C Meter body (Process fluid) temperature: Normal operating conditions; -15 to +85°C Operative limits (for short period); -50 to +120°C
Operating humidity range	Normal operating conditions: 10 to 90% RH
Temperature effect ^(*3) (Shift with respect to setting range)	Percentage with respect to x (kgf/cm ²) that represents the URV or LRV of the setting range, or the span – whichever is greatest. Zero shift: $\pm 0.5\%/55^\circ\text{C}$ When x is 3.5 to 35kgf/cm ² . Combined shift (Including zero and span shifts): $\pm 1.0\%/55^\circ\text{C}$ When x is 3.5 to 35kgf/cm ² .
Stability against supply voltage change	0.005%FS/V
Dead time	Approx. 0.4 sec.
Damping time constant	Adjustable within a range of 0.2 to 32 sec. by 10 steps. (at 25°C)
Process connection	Rc $\frac{1}{2}$, $\frac{1}{2}$ NPT internal thread, Rc $\frac{1}{4}$, $\frac{1}{4}$ NPT internal thread
Electrical conduit connection	G $\frac{1}{2}$ internal thread
Structure	Water-proof and dust-proof structure: JIS C0920 water-tight, JIS F8001 Class 2 water-tight, NEMA 3 and 4X, IEC IP67

(*1): URV denotes the value for 100% (20mA DC) output. (*3): Within a range of URV ≥ 0 and LRV ≥ 0 .

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

Item	Specifications
Materials	Center body: SUS316 Wetted parts of center body: SUS316 (SUS316L for diaphragm only) Meter body cover (Differential pressure chambers): Carbon steel (SF45A), SUSF316 (Reference pressure side: SUSF304) Bolts: SNB7 Nuts: S45C Gasket: Teflon Transmitter case: Aluminium alloy
Finish	Baked acryl paint, light beige (Munsell 4Y 7.2/1.3)
Burnout feature	Lower limit of output value at abnormal condition.
Installation	Can be installed on a 2-inch horizontal or vertical pipe. (Can be directly mounted on a process pipe.)
Weight	Approx. 7.5kg

Optional Specifications

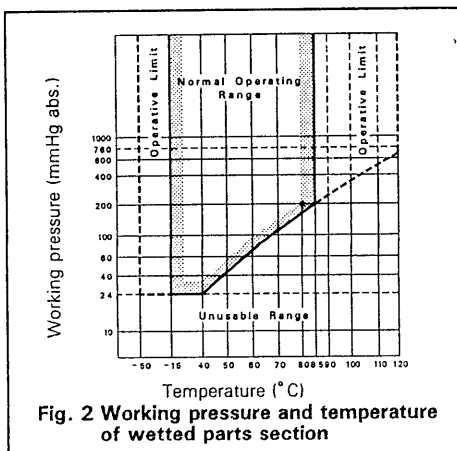
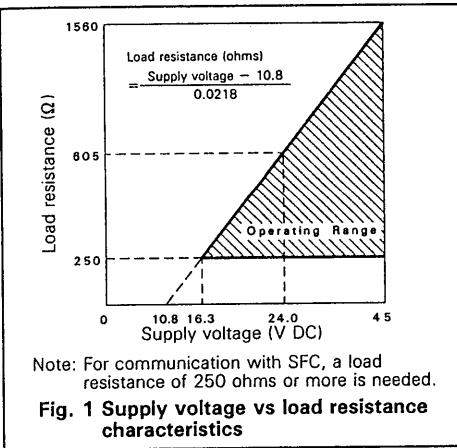
(The items other than the following are identical with those of the Standard Specifications.)

Item	Specifications
Built-in indicating meter (Class 2.5)	Ambient temperature: Normal operating conditions; - 10 to +60° C Operative limits (for short period) and transportation and storage conditions; - 40 to +85° C
Steam block	Pressure rating: 50kgf/cm ² max. Operable temperature: 250° C max. (110° C max. for meter body (Process fluid) temperature) (Not available when side connection meter body cover is specified.)
Corrosion-resistant finish	Corrosion-resistant paint (Baked acryl paint), fungus-proof finish. (Silver paint when meter body cover, adaptor flanges, bolts, nuts, and manifold valves are made of carbon steel.)
Corrosion-proof finish	Corrosion-proof paint (Baked epoxy paint), fungus-proof finish. (Silver paint when meter body cover, adaptor flanges, bolts, nuts, and manifold valves are made of carbon steel.)
Corrosion-resistant finish (Silver paint)	Transmitter case is silver-painted in addition to the above corrosion-resistant finish.
SUS304 bolts and nuts	Pressure rating: 70kgf/cm ² max.
Cable adaptor with flame-proof packing	Used for low-voltage electric cable installation at JIS Class 1 location for special flame-proof structure (ds2G4).
Explosion-proof structures	JIS C0903 ds2G4 special flame-proof structure Ambient temperature: - 10 to +70° C Meter body (Process fluid) temperature: - 10 to +100° C JIS C0903 i3aG4 intrinsic-safety explosion-proof structure Ambient temperature: - 10 to +60° C Meter body (Process fluid) temperature: - 10 to +100° C
No oil finish	Excluding meter body cover of carbon steel

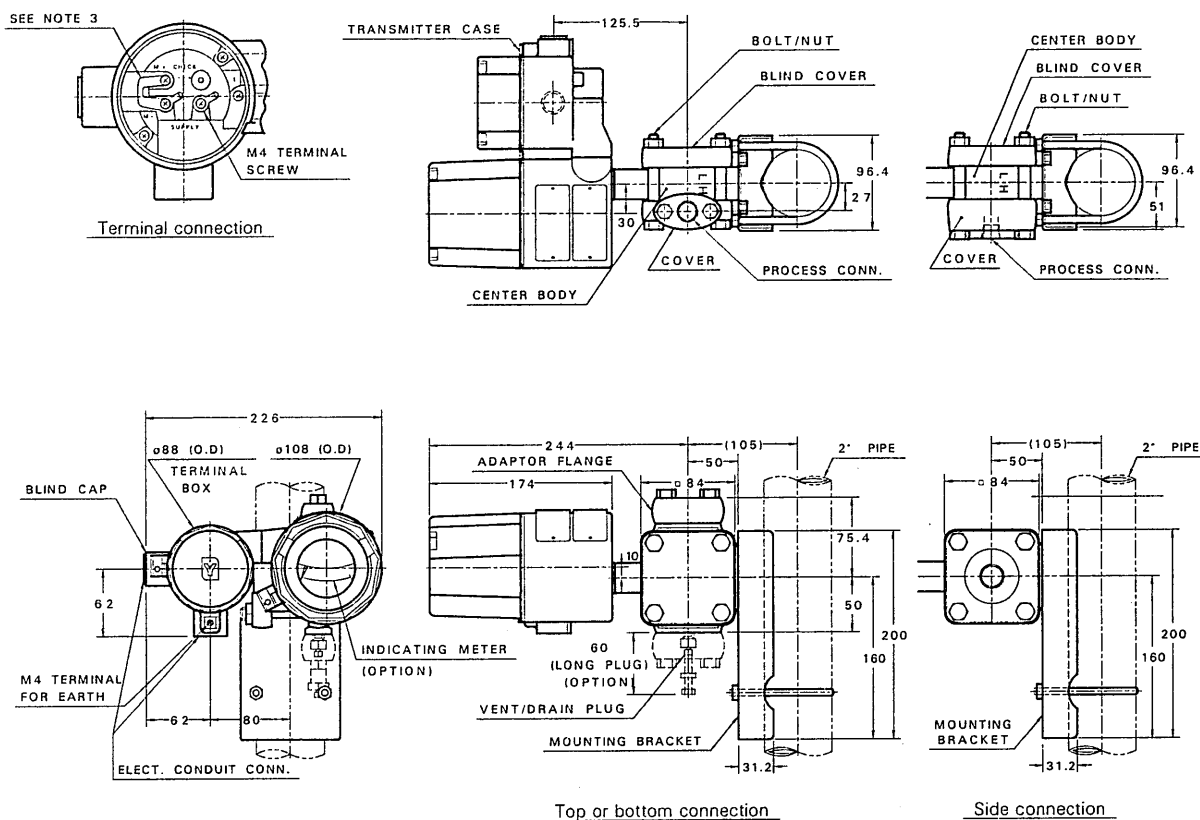
Model Number Table

Basic Model Number	Selection I			Selection II	Options I	Options II	Description		
	Material	Fill Fluid	Process Connection						
JTG 840							Measuring span: 1 to 35kgf/cm ²		
	-A						Meter body cover	Vent/drain plugs(for top/bottom process connection only)	Wetted parts of center body
							Carbon steel	SUS316	SUS316 (Diaphragm: SUS316L)
	-E						SUSF316	SUS316	SUS316 (Diaphragm: SUS316L)
		1							Regular type (Silicone Oil)
			L				Rc1/2		Side conneciton
			G				1/2NPT internal thread		Side conneciton
			D				Rc1/4		Side conneciton
			A				1/4NPT internal thread		Side conneciton
			Q				Rc1/2		Top or bottom connection
			R				1/2NPT internal thread		Top or bottom connection
			S				Rc1/4		Top or bottom connection
			T				1/4NPT internal thread		Top or bottom connection
				-00000					No selection
					-X				No option
					-L				Built-in lightning arrester
					-M				Built-in indicating meter (Standard scale)
					-W				SUS304 bolts and nuts
					-F				With steam block
					-A				Corrosion-resistant finish
					-B				Corrosion-proof finish
					-D				Corrosion-resistant finish, silver paint
					-N				1/2NPT internal-thread electrical conduit connection
					-K				No oil finish
					-P				One cable adaptor with flame-proof packing
					-Q				Two cable adaptors with flame-proof packing
					-J				Long vent/drain plugs
					-1				JIS special flame-proof structure
					-2				JIS intrinsic-safety explosion-proof structure
					-XX				No options
					-A5				Burnout feature (Upper limit of output value at abnormal condition)
					-D1				With DE meter

Note: The items enclosed in the bold line boxes are for Standard Specifications.



5



- Notes: 1) This transmitter can be mounted in various ways by using the holes of the mounting bracket. (The above drawing shows an example of typical mounting.)
2) Mount the transmitter vertically.
3) To use an external indicating meter, disconnect the jumper bar from the M terminals and connect in its place the leadwires of the external indicating meter.

Fig. 3 Dimension drawing

*Specifications are subject to change without notice.