

General Specifications

Model Y/15A and Y/15A1
Pneumatic Differential Pressure
Transmitter

P10 Series

GS 02C01C01-00E

Models Y/15A and Y/15A1 Pneumatic Differential Pressure Transmitters measure differential pressure in spans from 1.25 to 6.2 kPa at static pressure to 3.5 MPa. The instruments transmit a proportional 20 to 100 kPa signal to remote pneumatic receivers.

■ FEATURES

- Time-Proven Pneumatic Differential Pressure Transmitter Design
- Trouble-Free Construction.
- Excellent Performance.
- Easy to Calibrate.
- Wide Range Capability.
- Versatile Applications Capability for Flow, Liquid Level, and Density Measurements.

■ STANDARD SPECIFICATIONS

Span Limits:

1.25 to 6.2 kPa.
Span is continuously adjustable within range limits.

Range Limits:

-12.5 to 12.5 kPa.
* When lower range-value is other than zero, optional kit for elevated-zero or suppressed-zero ranges is installed.

Static Pressure Limits:

3.5 MPa.

Output Signal:

20 to 100 kPa.

Accuracy (includes linearity, hysteresis and repeatability):

±0.5 % of span.

Repeatability:

0.1 % of span.

Dead Band:

0.05 % of span.

Air Supply Pressure:

140 kPa, 1.4 kgf/cm² or bar, 1.4 bar, or 20 psi.

Air Consumption:

0.5 m³/h at 0 °C, 101.3 kPa (1.033 kgf/cm²) absolute (0.3 scfm).

Ambient Operating Temperature Range:

-40 to 120 °C (-40 to 250 °F).

Process Temperature Limits:

-40 and 120 °C (-40 and 250 °F) at capsule.

Mounting:

Bracket for nominal 50 mm (2 inches) horizontal or vertical pipe. Transmitter must be mounted with capsule faces vertical.



Air Connection:

Tapped for JIS R1/4 or 1/4 NPT, whichever specified.

Process Connections:

JIS Rc1/2, Rc1/4, 1/2 NPT, or 1/4 NPT female, whichever specified.

Wetted Parts Material:

Body: Nickel-plated forged carbon steel or forged JIS SUS 316 stainless steel.

Process Connectors: SCS 14 A (equivalent to SUS 316 Stainless Steel casting)

Diaphragm Capsule: SUS 316L stainless steel.

Forced Bar: SUS 316 stainless steel.

Forced Bar Seal: Cobalt-nickel alloy.

Process Connector Gasket: Teflon (PTFE) (see Note 1).

Capsule Gasket: SUS 316L stainless steel coated with Teflon.

Force Bar Seal Gasket: Silicone elastomer.

Connection Hardware:

JIS SCM435 chrome-molybdenum steel cap screws and nuts for body; JIS SCM435 cap screws for process connectors.

Cover:

Cast aluminum, finished with gray polyurethane paint.

Gasketed for National Electrical Manufacturers Association (NEMA) (USA) Type 3 weatherproof service.

Approximate Weight:

15 kg (33 lb).

Table 1. Span, Range and Static Pressure Limits.


Capsule		–	M-calibration	P-calibration	bar-calibration
L	Span Limits	1.25 to 6.2 kPa	125 to 635 mmH ₂ O	5 to 25 inH ₂ O	12.5 to 62 mbar
	Range Limits	-12.5 to 12.5 kPa	-1.27 to 1.27 mmH ₂ O	-50 to 50 inH ₂ O	-125 to 125 mbar
	O. P. Limits	3.5 MPa	35 kgf/cm ²	500 psi	35 bar
Output Signal		20 to 100 kPa	0.2 to 1.0 kgf/cm ²	3 to 15 psi	0.2 to 1.0 bar
Option Code		Standard Specifications	CAL-M	CAL-E	CAL-B

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MODEL AND SUFFIX CODES

Model	Suffix Codes	Description
Y/15A1	Nickel-plated forged carbon steel body.
Y/15A	Forged SUS 316 stainless steel body.
Daiphgram Capsule	-L	Low range capsule. Span: 1.25 to 6.2 kPa.
Body Material *1	K	Nickel-plated forged carbon steel.
	S	Forged SUS 316 stainless steel.
Process Connection	1	JIS Rc 1/4 female.
	2	JIS Rc 1/2 female.
	3 *2 ..	ANSI 1/4 NPT female.
	4 *2 ..	ANSI 1/2 NPT female.
Options	/ <input type="checkbox"/> / <input type="checkbox"/>	

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*1:  Users must consider the characteristics of selected wetted parts material and the influence of process fluids. The use of inappropriate materials can result in the leakage of corrosive process fluids and cause injury to personnel and/or damage to plant facilities. It is also possible that the diaphragm itself can be damaged and that material from the broken diaphragm and the fill fluid can contaminate the user's process fluids.

Be very careful with highly corrosive process fluids such as hydrochloric acid, sulfuric acid, hydrogen sulfide, sodium hypochlorite, and high-temperature steam (150 °C [302 °F] or above). Contact Yokogawa for detailed information of the wetted parts material.

*2: Air connections, vent and drain plug connections are also tapped for ANSI NPT threads in addition to the process connections

OPTIONS

Air Set:

Fixed combination pressure regulator and filter with 35 mm diameter pressure gauge mounted and piped to transmitter. Also available without gauge.

Supply pressure: 0.2 to 1 MPa, 2 to 10 kgf/cm² or bar, or 30 to 150 psi.

Output pressure: 140 kPa, 1.4 kgf/cm² or bar, or 20 psi. Maximum operating temperature: 80 °C (180 °F).

Air Connection	Gauge Scale	Option Code
JIS Rc 1/4 female	0 to 200 kPa	GAS-FP
	0 to 2 kgf/cm ²	GAS-FM
	0 to 30 psi	GAS-FE
	0 to 2 bar	GAS-FB
	Without gauge	GAS-F
1/4 NPT female	0 to 200 kPa	NAS-FP
	0 to 2 kgf/cm ²	NAS-FM
	0 to 30 psi	NAS-FE
	0 to 2 bar	NAS-FB
	Without gauge	NAS-F

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Kit for Elevated-Zero or Suppressed-Zero Ranges:

Permits adjustments up to range limits of capsule. Upper range-value must not exceed range-limit of capsule.

Option code: R-kit for suppressed-zero ranges and L-kit for elevated-zero ranges.

Low Differential Spans:

0.5 to 3.1 kPa, 50 to 318 mmH₂O, 5 to 31 mbar, or 2.5 to 12.5 inH₂O. Accuracy is ±0.5 % of span. (Add 0.5 % with Option code R or L)

Option code: LD.

Cover Color Other Than Standard Finish:

Specify in color block by color code. Refer to GS 22D1F1-E.

Option code: SCF-.

High Process Temperature:

Glass reinforced Teflon gaskets are used in the process connectors and force bar seal. Maximum process temperatures to 190 °C (375 °F).

Option code: DG5.

Steam Tracing:

Internal Steam Trace: Two hollow studs are substituted for the body bolts. Glass reinforced Teflon gaskets are used in the process connectors and force bar seal. Steam connections JIS R1/8 or 1/8 NPT male. Maximum working pressure 2.1 MPa, 21 kgf/cm² or bar, or 300 psi. Maximum temperature limit at body 190 °C (375 °F).

Option code: BSTR.

External Steam Trace: Jacketed on both sides of body.
 Steam connections JIS Rc1/4 or 1/4 NPT female. Maximum steam pressure 0.3 MPa, 3 kgf/cm² or bar, or 40 psi.
 Option code: ESTR.

Stainless Steel Hardware:

JIS SUS 630 cap screws and nuts for the body; JIS SUS 630 cap screws for process connectors.
 Option code: SSB.

Integral Flow Orifice:

Process connections Rc1/2 or 1/2 NPT female. Refer to GS 06P01E01-00E.

Oxygen Service Preparation:

Use SUS 316 stainless steel as body material.
 Degrease cleansing treatment.
 Option code: OSW.
 Degrease cleansing treatment and with Daifloil (see Note 2) filled capsule. Process temperature limits -20 and 45 °C (0 and 110 °F) at capsule.
 Option code: OSFC

High Damping Capsule:

Filled with high viscosity fluid (time constant is approximate 3 sec-approximate 6 times of standard capsule).
 Option code: HVC.

Calibration Units:

M-calibration (Unit kgf/cm²) Option code: CAL-M
 P-calibration (Unit psi) Option code: CAL-E
 bar-calibration (Unit bar) Option code: CAL-B

Notes:

1. Teflon (PTFE): Trademark of E.I. DuPont de Nemours & Company (USA) for polytetrafluoroethylene.
2. Daifloil: Trademark of Daikin Kogyo Company (Japan) for chlorotrifluoroethylene.

ORDERING INSTRUCTIONS

Specify the following when ordering:

1. Model and suffix codes.
2. Option codes.
3. Process and air connections (Rc or NPT).
4. Output signal unit (kpa, kgf/cm², bar or psi).
5. Calibrated range.
6. Tag number and application.

RELATED INSTRUMENTS

Three-valve manifold Refer to GS 22B01C01-00E.
 Integral flow orifice Refer to GS 06P01E01-00E.

DIMENSIONS

Unit : mm

