

General Specifications

Model Y/13FEA
Pneumatic Flange Mounting
Differential Pressure Transmitter

P10 Series

GS 02C01D03-00E

The Flange Mounting Differential Pressure Transmitters measure level or density of practically any liquid in differential spans from 5 to 210 kPa, at static pressures from full vacuum to flange ratings. The instruments transmit a proportional 20 to 100 kPa, signal to remote pneumatic receivers.

■ STANDARD SPECIFICATIONS

Span Limits:

Refer to Table 1.
Span is continuously adjustable within range limits.

Range Limits *:

Refer to Table 1.
*: When lower range-value is other than zero, optional kit for elevated-zero or suppressed-zero ranges is installed.

Static Pressure Limits:

Full vacuum and the flange rating per JIS B 2201 or ANSI B16.5.

Output Signal:

20 to 100 kPa.

Accuracy (includes linearity, hysteresis and repeatability):

Spans between 5 and less than 130 kPa, 500 and less than 13400 mmH₂O, 50 and less than 1300 mbar, or 20 and less than 525 inH₂O differential pressure (ΔP): $\pm 0.5\%$ of span.
Spans between 130 and 210 kPa, 13400 and 21600 mmH₂O, 1300 and 2100 mbar, or 525 and 850 inH₂O differential pressure (ΔP): $\pm 0.75\%$ of span.

Repeatability:

0.1 % of span.

Dead Band:

0.1 % of span.

Supply Pressure:

140 kPa, 1.4 kgf/cm² or 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:

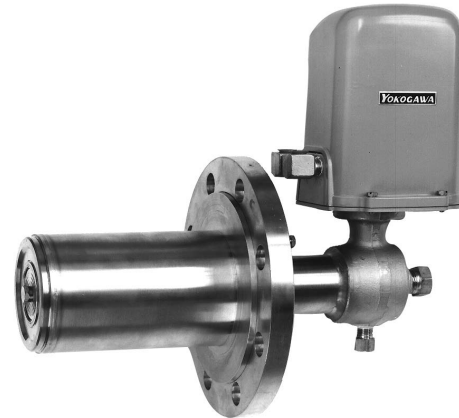
-40 and 120 °C (-40 and 250 °F) at capsule.

Mounting:

Direct to process with connection flange in any position.

Air Connection:

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



Process Connection:

High pressure side: Nominal 100 mm JIS 10 or 20K RF, nominal 4 inches ANSI Class 150 or 300 RF modified flange, or nominal 4 inches JPI Class 150 or 300 RF modified flange.
Low pressure side: Tapped for JIS Rc1/2 or 1/2 NPT whichever specified.

Flange Extension Length (X₁ in Dimensions):

X₁ = 129 mm (5 inches).

Diaphragm Extension Length (X₂ in Dimensions):

X₂ = 50.8 mm (2 inches). For other length, refer to Options.

Wetted Parts Material:

Body and Flange: Forged JIS SUS 316 stainless steel.
Diaphragm Capsule: SUS 316L stainless steel.
Diaphragm Extension: SUS 316 stainless steel.
Force Bar: SUS 316 stainless steel.
Force Bar Seal: Cobalt-nickel alloy.
Capsule Gaskets: Teflon (PTFE) *.
Force Bar Seal Gasket: Silicone elastomer.
*: Trademark of E.I. DuPont de Nemours & Company (USA) for polytetrafluoroethylene.

Cover:

Cast aluminum, finished with gray polyurethane paint.
Gasketed for National Electrical Manufacturers Association (NEMA) (USA) Type 3 weatherproof service.

Approximate Weight:

11 kg (24 lb) for JIS 10K flange version.

Table 1. Span and Range Limits.


Capsule		–	M-calibration	P-calibration	bar-calibration
M	Span Limits	5 to 51 kPa	0.5 to 5.2 mH ₂ O	20 to 205 inH ₂ O	50 to 510 mbar
	Range Limits	-51 to 51 kPa	-5.2 to 5.2 mH ₂ O	-205 to 205 inH ₂ O	-510 to 510 mbar
H	Span Limits	50 to 210 kPa	0.5 to 21.6 mH ₂ O	200 to 850 inH ₂ O	0.5 to 2.1 bar
	Range Limits	-210 to 210 kPa	-21.6 to 21.6 mH ₂ O	-850 to 850 inH ₂ O	-2.1 to 2.1 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/13FEA	Medium and High differential pressure use.
Dia- phragm Capsule	-M	Medium range capsule. Span: 5 to 51 kPa
	-H	High range capsule. Span: 50 to 210 kPa
Body Material *1	S	Forged SUS 316 stainless steel.
Flange Size and Rating	415	100 mm JIS 10K or 4 inches ANSI 150/JPI 150
	435	100 mm JIS 20K or 4 inches ANSI 300/JPI 300
Flange Standard	J	JIS standard.
	A	ANSI standard.
	P	JPI standard.
Diaphragm Extension Length	2	X ₂ =50.8 mm (2 inches) (standard).
	4	X ₂ =101.6 mm (4 inches) (Optional).
	6	X ₂ =152.4 mm (6 inches) (Optional).
Option	/ <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.

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 upper range-limits of capsule. Option code: R-kit for suppressed-zero ranges and L-kit for elevated-zero ranges.

Low Differential Spans:

Refer to Table 2.

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 capsule seal and force bar seal. Maximum process temperatures to 190 °C (375 °F).

Option code: DG5.

High Damping Capsule:

Only available for medium capsule. Filled with high viscosity fluid (time constant is approximate 1.3 sec—approximate 6 times of standard capsule).

Option code: HVC

Table 2. Low Differential Spans

Capsule	Span (kPa)	Accuracy (%)	
		Suffix Code LD	Suffix Code LD+R (L)
M	2.5 to 25	±0.5	±1.0
H	25 to 65	±0.5	
	65 to 105	±0.75	

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ORDERING INSTRUCTIONS

Specify the following when ordering:

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

Optional Diaphragm Extension Length (X₂ in Dimensions):

Suffix code: 4 for X₂ = 101.6 mm (4 inches), 6 for X₂ = 152.4 mm (6 inches).

ANSI Connection:

For transmitters with ANSI process flange, air, low pressure process, drain and vent plug connections with tapped for ANSI NPT threads are available.

Option code: NPT.

DIMENSIONS

Unit : mm

