YAMATAKE **Specification**

PREX 3000 Vector Involute Type Pneumatic Differential Pressure Transmitters

Model KDP 33
(Standard Type for Low Differential Pressure)

Introduction

The PREX3000 instruments are pneumatic type transmitters which employ a combination of vector balance mechanism and involute mechanism.

The instruments are featured by high resistance against adverse environments, high turn-down ratio, high accuracy, and ease of maintenance.

Standard Specifications

Item	Specifications
Measuring range (continuously adjustable)	0–0.5 to 0–6kPa {0–50 to 0–600 mmH_2O}
Process connection	Rc 1/2 or 1/2 NPT internal thread
Air supply connection	Rc 1/4 or 1/4 NPT internal thread
Air supply pressure	140±14 kPa {1.4±0.14 kgf/cm^2}
Output	20–100 kPa {0.2–1.0 kgf/cm^2}
External load	ID 4 mm × Length 3 m+20 cm^3 or over
Air supply capacity	20 Nℓ/minute or over, with 6.7 kPa {50 mmH_2O} change
Air consumption	5 Nℓ/minute or less (when balanced at output 100%)
Accuracy	±0.5% FS (for spans 0–1 to 0–6 kPa {0–100 to 0–600 mmH_2O}) ±1.0% FS (for span 0–0.5 to 0–less than 1 kPa {0–50 to 0–Less than 100 mmH_2O})
Dead band	0.1% FS
Working pressure	–50 kPa to +3.5 MPa {–0.5 to +35 kgf/cm^2} (differs by material of cover) [Refer to Fig. 1.]
Operating temperature	Meter body (process fluid): –40 to +120°C Transmitter (ambient): –30 to +80°C [Refer to Fig. 1.]
Operating humidity	10 to 90% RH
Overload protection	Up to 3.5 MPa {35 kgf/cm^2} in either direction
Construction	Dustproof and waterproof, meets IEC IP54, NEMA Type 3R, JIS F8001 Class 3 splashproof, JIS C0920 rainproof
Materials	Center body: SUS304 Wetted parts of center body: SUS316 (diaphragm: SUS316L), SUS316L, Monel, Tantalum Meter body cover (differential pressure chambers): Carbon steel (SF45A), SUS316, Monel, PVC (reinforced with SUS304 plates, working pressure range: –10 kPa to + 1 MPa {0.1 to +10 kgf/cm^2}, operating temperature range: 0 to 50°C) Wetted parts gasket: Teflon Transmitter case: Aluminium alloy
Finish	Acryl baking finish Color: Light beige (munsell 4Y7.2/1.3)
Mounting	On vertical 2-inch pipe
Weight	Approx. 14.6 kg (add 0.8 kg for air-set)

Optional Specifications

Item	Specifications
(1) Suppression and elevation	(unit: kPa {mmH₂O})

Span	Suppression (max.)	Elevation (max.)
0.5 to 6 {50–600}	6 {600}	5.5 {550}

(Note: elevation+span≦maximum span, suppression≦maximum span)

(2) Air-set (filter and pressure regulator)	Primary pressure: 200 to 990 kPa {2–9.9 kgf/cm²} Secondary pressure: 140 kPa {1.4 kgf/cm²} Filter mesh diameter: 5 microns Connections: Rc1/4 or 1/4NPT internal thread

Optional Semi-standard Specifications

Item	Specifications
(1) For vacuum use (Y23)	Y169, Y182 and Y183 are not available for Y23. [Refer to Fig. 3]
(2) Steam block (Y29) (excluding PVC covers and monel covers)	Maximum working pressure: 5 MPa {50 kgf/cm²} Maximum operating temperature: 250°C (except meter body whose temperature must not exceed 120°C) Steam piping connections: Rc1/4 or 1/4 NPT internal thread Material of block: Carbon steel (SF45A)
(3) SUS304 bolts for meter body clamping (Y66)	Maximum working pressure: Carbon steel, SUS16, or Monel cover: 2.5 MPa {25 kgf/cm²} PVC cover: 1 MPa {10 kgf/cm²}
(4) Corrosion-resistant and silver finish (Y138)	Corrosion resistant (acryl baking) finish (Y138A): Resistant against corrosive gases. Corrosionproof (epoxy baking) finish (Y138B): Resistant against corrosive liquids. Silver-normal (acryl baking) finish (Y138C): To prevent temperature rise of instrument caused by direct sunlight or radiation from other source of heat. Silver-corrosion-resistant (acryl baking) finish (Y138D): To prevent temperature rise the same as above, plus resistance against corrosive gases. (note: silver finish is not applicable for alkaline gases.)
(5) Damping adjustment (Y169) (continuously adjustable)	Time constant: Minimum 3 sec. or less, Maximum 15 sec. or over
(6) For oxygen measurement (Y182)	Measuring element material: SUS316 or SUS316L Liquid fill: Fluorine oil (specific gravity: 1.915 at 25°C) Operating temperature (fluid and ambient temperature): −10 to +60°C Wetted parts treatment: Treated for degreasing [Refer to Fig. 2]
(7) For chlorine gas measurement (Y183)	Measuring element material: Tantalum Liquid fill: Fluorine oil (specific gravity: 1.915 at 25°C) Operating temperature (fluid and ambient temperature): −10 to +80°C Wetted parts treatment: Treated for degreasing [Refer to Fig. 2]
(8) Output pressure gauge (Y185)	Pressure gauge (100 mm diameter) 
(9) High vibration resistant type (Y188)	High vibration resistant type with dashpot

Model Number Table

Ex: KDP33-2222A1-5, 7

Base Model No.	Cover Mat'l HP	Cover Mat'l LP	Wetted Parts Mat'l HP	Wetted Parts Mat'l LP	Air Piping Connections	Pressure unit / Output	Options	Description
KDP 33								0–0.5 to 0–6kPa {0–50 to 0–600 mmH_2O}
	–1							Carbon steel (SF45A)
	–2							SUS316
	–3							Monel
	–5							PVC
		1						Carbon steel (SF45A)
		2						SUS316
		3						Monel
		5						PVC
			2					SUS316 (diaphragm: SUS316L)
			3					Monel
			4					Tantalum
			8					SUS316L
				2				SUS316 (diaphragm: SUS136L)
				3				Monel
				4				Tantalum
				8				SUS316L
					A			Rc 1/4 internal thread
					B			1/4 NPT internal therad
						1		kgf/cm^2 (or mmH_2O) / 0.2 to 1.0 kgf/cm^2
						2		PSI / 3 to 15 PSI
						3		bar / 0.2 to 1.0 bar
						4		Pa / 20 to 100 kPa
						8		Pa / 19.6 to 98.1 kPa (equality to 0.2 to 1.0 kgf/cm^2)
							– x	No option
							–5	Elevation
							–6	Suppression
							–7	Air-set

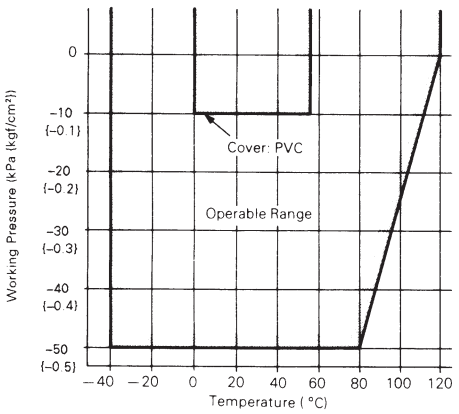


Fig. 1 Working Pressure and Temperature of Wetted Parts

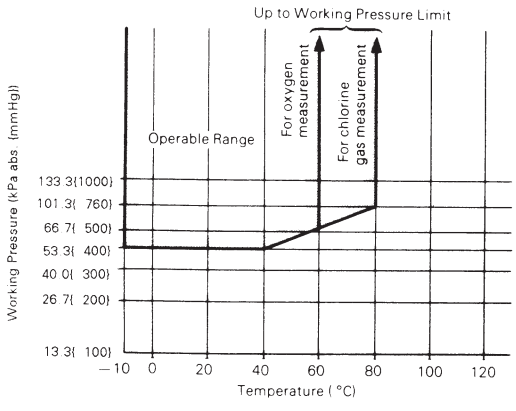


Fig. 2 Working Pressure and Temperature of Wetted Parts for Oxygen or Chlorine Gas Measurement

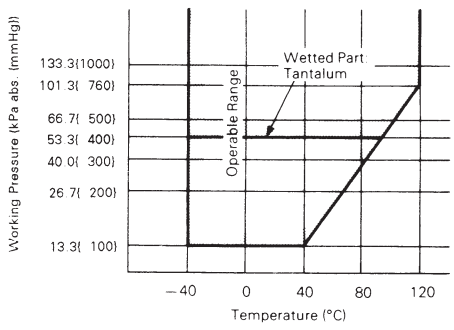
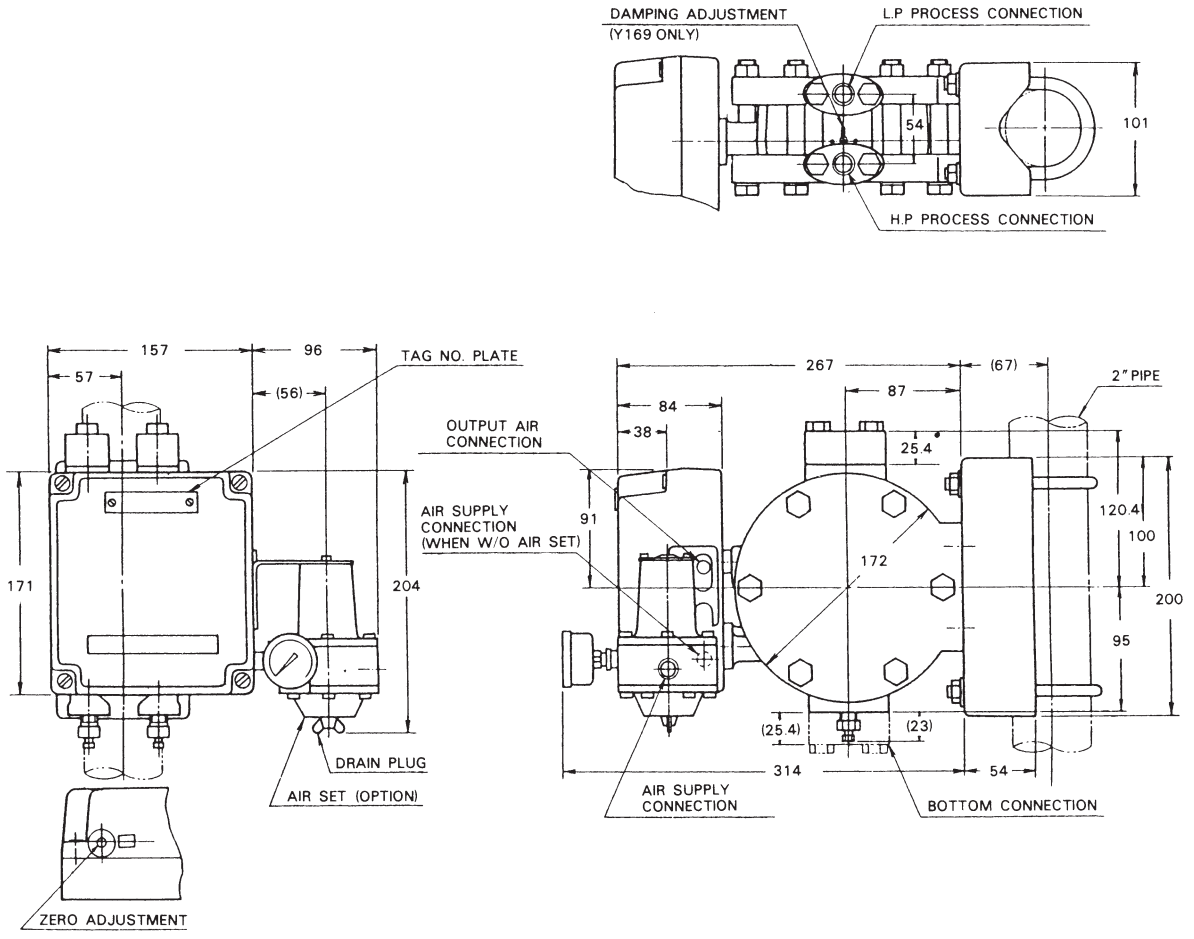


Fig. 3 Working Pressure and Temperature of Wetted Parts for Vacuum Use

Dimensions

(Unit:mm)



Ordering Information

When ordering, please specify:

1) Model No.
2) Measuring range
   Note) PREX3000 Transmitter covers a wide measuring range. At a span close to the minimum range point, however, the instrument exhibits particular characteristics. When operating the instrument at this span, refer to Instrumentation Data Sheet ID2-522-002.
3) Optional specification
4) Optional semi-standard specification
   Note) For any combination of two or more Y-specification items, please consult your Yamatake agent.

Reference instruction manual . . .
OM2-5220-0000/
OM2-5220-1100

YAMATAKE
Savemation
Saving through Automation

Yamatake Corporation
Totate international Building
2-12-19 Shibuya
Shibuya-ku, Tokyo 150-8316
Japan
Tel : 81-3-3486-2310
Fax : 81-3-3486-2593

http://www.yamatake.com/