

PREX 3000 Vector Involute Type Pneumatic Differential Pressure Transmitters

Model KDP 44

(Standard Type for Lowest 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)	0–0.1 to 0–1.2 kPa {0–10 to 0–120 mmH ₂ O}
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 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	20Nℓ/minute or over, with 6.7 kPa {50 mmHg} change
Air consumption	5Nℓ/minute or less (when balanced at output 100%)
Accuracy	±0.5% FS (for spans 0–0.2 to 0–1.2 kPa {0–20 to 0–120 mmH ₂ O}) ±1.0% FS (for spans 0–0.1 to 0–Less than 0.2 kPa {0–10 to 0–Less than 20 mmH ₂ O})
Dead band	0.1% FS
Damping adjustment	Time constant: Minimum 2 sec. or less, Maximum 15 sec. or over
Working pressure	–1.5 kPa to +500 kPa {–150 mmH ₂ O to +5 kgf/cm ² } [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 0.5 MPa {5 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: Aluminium alloy Wetted parts of center body: SUS316 Meter body cover (differential pressure chambers): Carbon steel (SF45A), SUS316 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
Net weight	Approx. 17.5 kg (add 0.8 kg for air-set)

Optional Specifications

Item	Specifications		
(1) Suppression and elevation	(unit: kPa {mmH ₂ O})		
	Span	Suppression (max.)	Elevation (max.)
	0.1 to 1.2 {10-120}	1.2 {120}	1.1 {110}
	(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/cm ² }	
	Secondary pressure:	140 kPa {1.4 kgf/cm ² }	
	Filter mesh diameter:	5 microns	
	Connections:	Rc 1/4 or 1/4 NPT internal thread	

Optional Semi-standard Specifications

Item	Specifications
(1) SUS304 bolts for meter body clamping (Y 66)	Operating pressure: Same as the standard specifications
(2) Corrosion-resistant and silver finish (Y 138)	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.)
(3) For oxygen measurement (Y182)	Measuring element: SUS316 Liquid fill: Fluorine oil (specific gravity: 1.915 at 25°C) Operating temperature (fluid and ambient temperature): -10 to +60°C Wet parts treatment: Treated for degreasing
(4) Output pressure gauge (Y185)	Pressure gauge (100 mm diameter) 
(5) High vibration resistant type (Y188)	High vibration resistant type with dashpot

Model Number Table

Ex: KDP44-2222A1-5, 7

Base Model No.	Cover Mat'l		Wetted Parts Mat'l		Air Piping Connections	Pressure unit / Output	Options	Description
	HP	LP	HP	LP				
KDP 44								0-0.1 to 0-1.2 kPa (0-10 to 0-120 mmH ₂ O)
	-1							Carbon steel (SF45A)
	-2							SUS316
		1						Carbon steel (SF45A)
		2						SUS316
			2					SUS316
				2				SUS316
					A			Rc 1/4 internal thread
					B			1/4 NPT internal thread
						1		kgf/cm ² (or mmH ₂ O) / 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

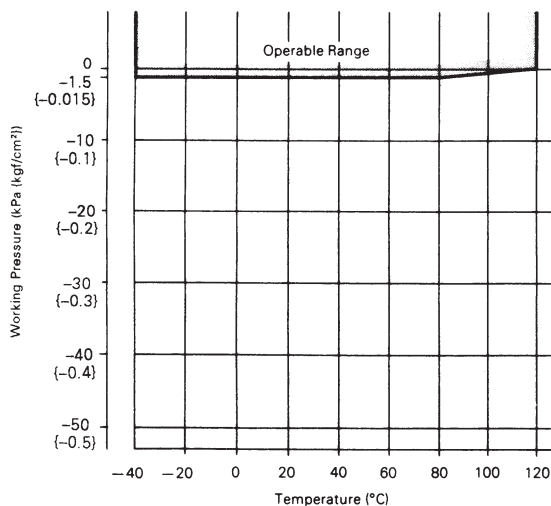


Fig. 1 Working Pressure and Temperature of Wetted Parts

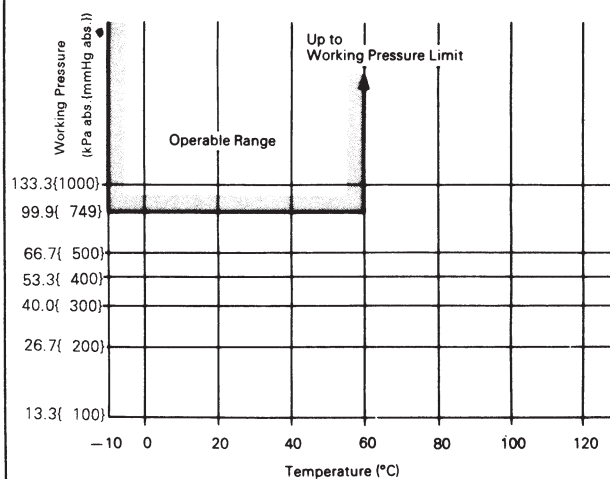
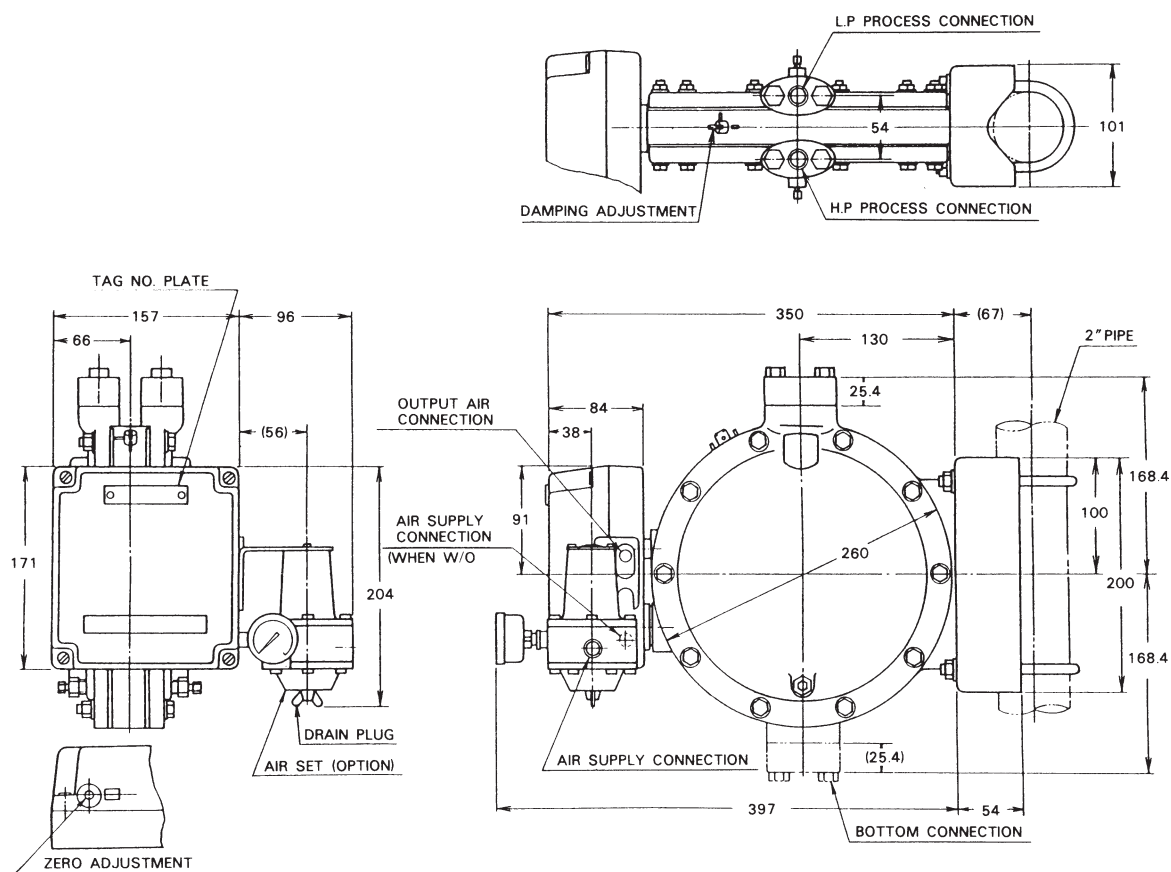


Fig. 2 Working Pressure and Temperature of Wetted Parts for Oxygen Measurement

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.

- 3) Optional specification
- 4) Optional semi-standard specification

Note) For any combination of two or more Y-specification items, please consult your Yamatake agent.

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