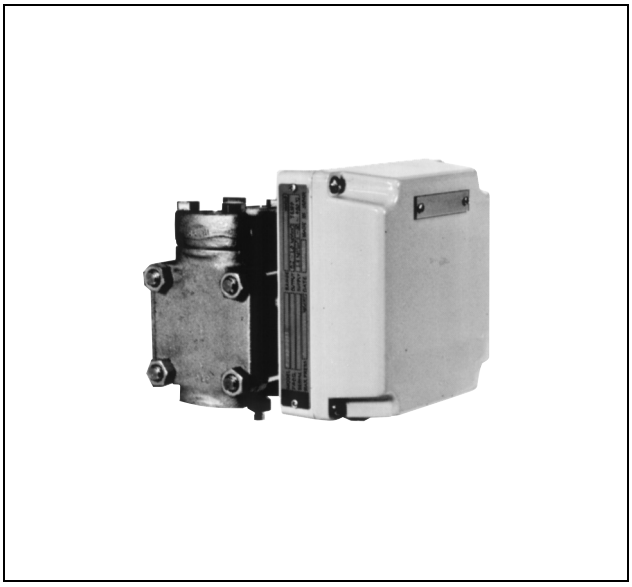
PREX3000 Vector Involute type

Pneumatic Differential Pressure Transmitter
(Standard type for High and Medium Differetial Pressures)
Model KDP11/22

OVERVIEW

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

Measuring range (continuously adjustable)
KDP11: 0-25 to 0-500 kPa {0-2,500 to 0-50,000 mmH_2O}
KDP22: 0-2.5 to 0-53.9 kPa {0-250 to 0-5,500 mmH_2O}

Process connection
Rc1/2 or 1/2NPT internal thread

Air supply connection
Rc1/4 or 1/4NPT 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 l/minute (N) or over, with 6.7 kPa {50 mmHg} change

Air consumption
5 l/minute (N) or less (when balanced at output 100%)

Accuracy
KDP11:
±0.5% F.S. (for span 50 to 500 kPa {5,000 to 50,000 mmH_2O})
±0.75% F.S. (for span 25 less than 50kPa {2,500 to less than 5,000 mmH_2O})
KDP22:
±0.5% F.S. (for span 5 to 53.9 kPa {500 to 5,500 mmH_2O})
±0.75% F.S. (for span 2.5 to less than 5 kPa {250 to less than 500 mmH_2O})

Dead band
0.1% F.S.

Working pressure
-50 kPa to 10 MPa {-0.5 to 100 kgf/cm^2} (differs by material of cover) [Refer to Figure 1]

Operating temperature
Meter body (process fluid)
-40 to +120°C
Transmitter (ambient)
-30 to +80°C [Refer to Figure 1]

Operating humidity
10 to 90% RH

Overload protection
10 MPa {100 kgf/cm^2} (on one side)

Construction
Dustproof and waterproof meets
IEC IP54. NEMA Type 3R.
JIS F8001 Class3 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), SUSF316, Monel,
PVC (reinforced with SUS304 plates,
working pressure range: -10 to +1,500 kPa {-0.1 to 15 kgf/cm^2}
operating temperature range: 0 to 50°C)

Wetted parts gasket
PTFE

Transmitter case
Aluminum alloy, Fill fluid, Silicone oil

Finish
Acryl baking finish

Color
Light beige (Munsell 4Y 7.2/1.3)

Mounting
On vertical or horizontal 2-inch pipe

Net weight
Approx. 8 kg (add 0.8 kg for air-set)

Optional Specifications

(1)Suppression and elevation

[Unit: kPa {mmH$_2$O}]

Model No.	Span	Suppression (max.)	Elevation (max.)
KDP11	25 to 500 {2,500-50,000}	500 {50,000}	475 {47,500}
KDP22	2.5 to 53.9 {250-5,500}	53.9 {5,500}	51.4 {5,250}

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
Rc1/4 or 1/4NPT internal thread

(3)High accuracy

Model No.	Accuracy	Span (kPa {mmH$_2$O})
KDP11	±0.25%	50 to 500 {5,000-50,000}
	±0.5%	25 to 50 {2,500-5,000}
KDP22	±0.25%	5 to 53.9 {500-5,500}
	±0.5%	2.5 to 5 {250-500}

Optional Semi-standard Specifications

(1)For vacuum use (Y23)
Y169, Y182 and Y183 are not available for Y23.
[Refer to Figure 3]

(2)Steam block (Y29) (excluding PVC covers and monel covers)

Maximum working pressure
5 MPa {50 kgf/cm^2}

Maximum operating temperature
250°C (excluding meter body whose temperature must not exceed 120°C)

Steam piping connections
Rc1/4 or 1/4NPT internal thread

Material of block
Carbon steel (SF45A)

(3) SUS304 bolts for meter body clamping (Y66)

Maximum working pressure
Carbon steel, SUSF316, or monel cover: 6 MPa {60 kgf/cm^2}
PVC cover: 1.5 MPa {15 kgf/cm^2}

(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 0.5 sec. or less. Maximum 15 sec. or over. (when KDP11 is incorporated with Y182 or Y183, the minimum time constant is 0.5 sec. or less and the maximum time constant is 3 sec. or more.)

(6)Process connection at instrument rear (Y171)
Applicable only to carbon steel cover, SUS316 cover, and SUS316L cover (only when transmitter is mounted on horizontal 2-inch pipe)

(7)For oxygen measurement (Y182)

Measuring element material
SUSF316 or SUS316L

Liquid fill
Fluorine oil (specific gravity: 1.915 at 25°C)

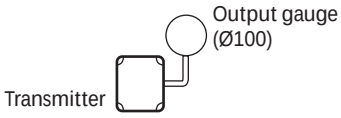
Operating temperature range (fluid and ambient temperature)
-10 to +60°C
Wetted parts treatment
Treated for degreasing [Refer to Figure 2]

(8)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 Figure 2]

(9)Output pressure gauge (Y185)

Pressure gauge (100mm diameter)



(10)High vibration resistant type (Y188)

High vibration resistant type with dashpot.

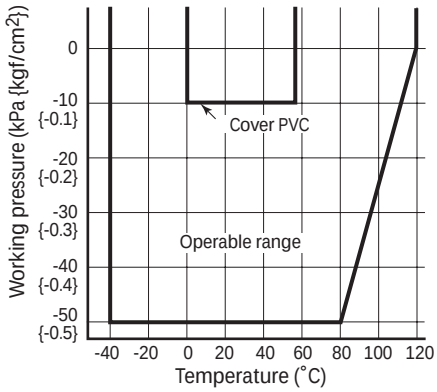


Figure 1 Working pressure and temperature of wetted parts

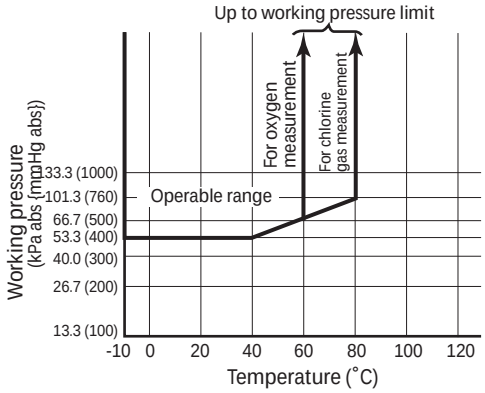


Figure 2 Working pressure and temperature of wetted parts for oxygen or chlorine gas measurement

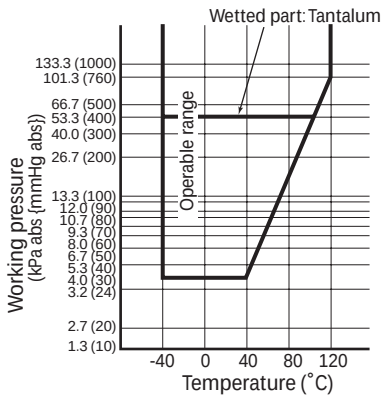


Figure 3 Working pressure and temperature of wetted parts for vacuum use

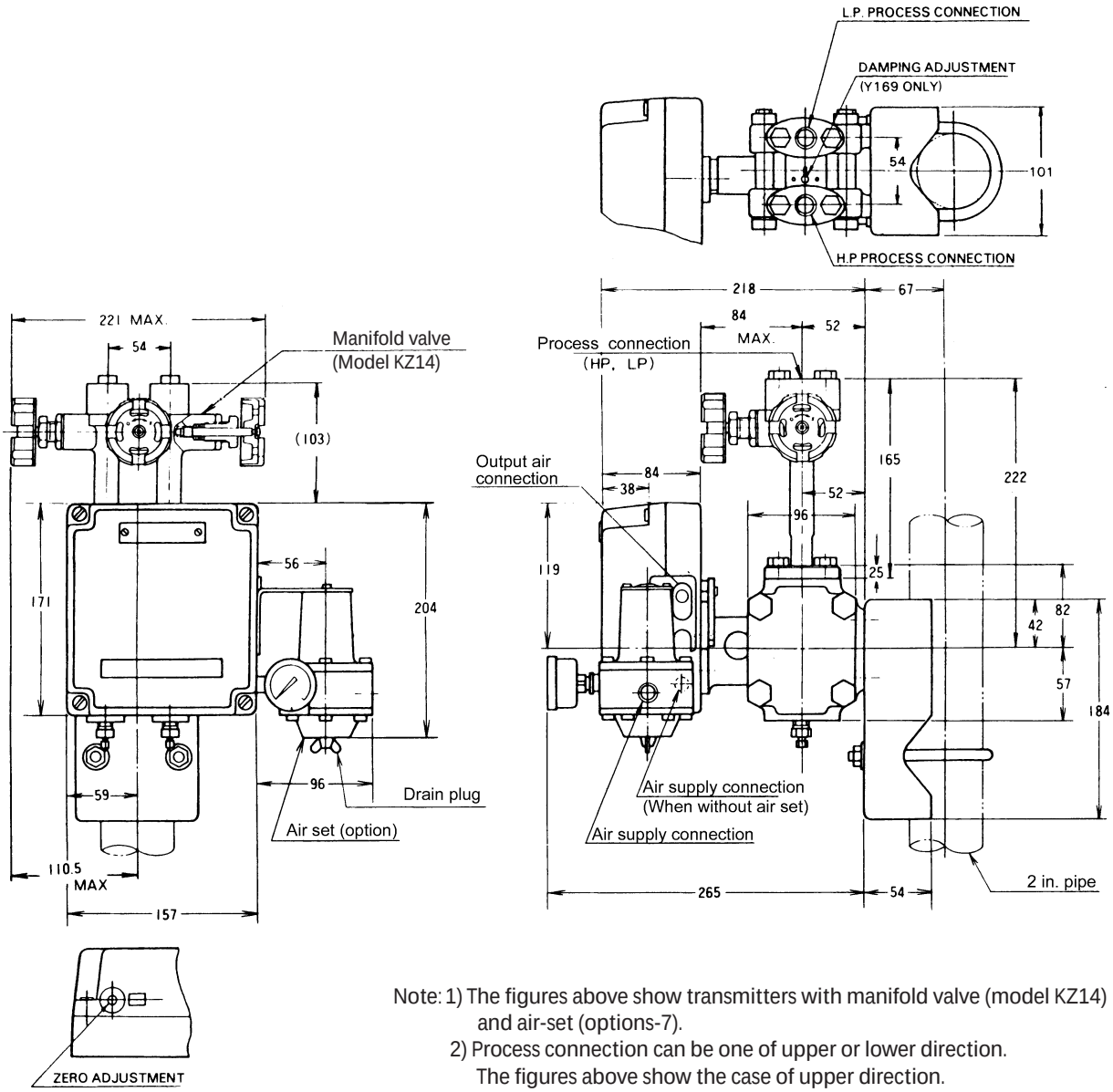
MODEL SELECTION

Basic model no.	Cover material		Wetted parts material		Air piping connections	Pressure unit/ Output	Options	Description
	HP	LP	HP	LP				
KDP11								0-25 to 0-500 kPa {0-2,500 to 0-50,000 mmH_2O}
KDP22								0-2.5 to 0-53.9 kPa {0-250 to 0-5,500 mmH_2O}
	-1							Carbon steel (SF45A)
	-2							SUSF316
	-3							Monel
	-5							PVC
		1						Carbon steel (SF45A)
		2						SUSF316
		3						Monel
		5						PVC
			2					SUS316 (diaphragm: SUS316L)
			3					Monel
			4					Tantalum
			8					SUS316L
				2				SUS316 (diaphragm: SUS316L)
				3				Monel
				4				Tantalum
				8				SUS316L
					A			Rc1/4 internal thread
					B			1/4NPT internal thread
						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
							-H	High circuracy (refer to optional specifications)

Note) When ordering "Y" options, please write as: KDP22Y-2222A 1-5, 7 (Y□)

DIMENSIONS

[Unit: mm]



Note: 1) The figures above show transmitters with manifold valve (model KZ14) and air-set (options-7).
2) Process connection can be one of upper or lower direction. The figures above show the case of upper direction.

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 ID2-5220-0020.
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

Note

Note

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Yamatake Corporation
Advanced Automation Company

1-12-2 Kawana, Fujisawa
Kanagawa 251-8522 Japan

URL:http://www.azbil.com

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