

General Specifications

VP200 Current-to-Pneumatic Positioner

VP200

FEATURES

Model VP200 Current-to-Pneumatic Valve Positioner converts 4 to 20 mA DC or 10 to 50 mA DC signal to a pneumatic signal for control valve actuation.

A valve-stem-position feedback mechanism is provided. This positioner minimizes transmission lag, improves valve characteristics and response, and reduces flow-pressure variation effect.

STANDARD SPECIFICATIONS

Applicable Control Valve:

Diaphragm Actuator Single acting Cylinder Double acting Cylinder.

Materials:

Case: Aluminum die-cast
Paint: Polyurethane resin-baked finish
Color: Deep-sea moss-green (Munsell 0.6GY3.1/2.0 or equivalent)

Pressure Gauge Case:

Stainless steel JIS SUS 304

Input Signals:

4 to 20 mA DC or 10 to 50 mA DC

Input Resistance:

250 to 310 Ω (Input signal 4 to 20 mA DC)
80 to 105 Ω (Input signal 10 to 50 mA DC)

Output signals and pressure gauge scale:

No gauge in standard. Pressure gauge can be selected as option. The supply pressure unit on the name plate for non-gauge model is Pa.

Diaphragm, Single acting Cylinder			
Calibration unit	Supply Air Pressure	Pressure Gauge Scale	
		Supply Air	Output Signal
Pa	140 to 400 kPa	400kPa	400kPa
kgf/cm ²	1.4 to 4 kgf/cm ²	4 kgf/cm ²	4 kgf/cm ²
bar	1.4 to 4 bar	4 bar	4 bar
psi	20 to 60 psi	60 psi	60 psi

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Double acting Cylinder			
Calibration unit	Supply Air Pressure	Pressure Gauge Scale	
		Supply Air	Output Signal
Pa	200 to 700 kPa	1 MPa	1 MPa
kgf/cm ²	2 to 7 kgf/cm ²	10 kgf/cm ²	10 kgf/cm ²
bar	2 to 7 bar	10 bar	10 bar
psi	30 to 105 psi	150 psi	150 psi

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Input/Output Action:

Output increases or decreases as input increases (option in basic Suffix codes)



Manual Operation:

Available using Auto/Manual(A/M) transfer switch

Zero Adjustment Range:

-15 to 85 % of span

Span Adjustment Range:

Within 300 % of span

Split Range:

Available for 50 to 100 %

Valve-stem travel range:

10 to 100 mm (0.4 to 4 in)

Air Consumption and Output Capacity:

	Diaphragm, Single Acting Cylinder	Double Acting Cylinder
Air Supply Pressure	140 kPa (1.4 kgf/cm ²)	400 kPa (4 kgf/cm ²)
Maximum Air Consumption	5 NI/min	12.5 NI/min
Maximum Output Capacity	160 NI/min	330 NI/min

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Ambient temperature:

-10 to 80°C (Operating Temperature Limits Code 1)
-30 to 40°C (Operating Temperature Limits Code 2)

Degrees of Protection:

IP53, NEMA3

Explosion-Proof Construction:

JIS Explosion-proof: Flameproof Exds IIC T6 X
Amb. Temp: -20 to 60°C

Note: In case the ambient temperature exceeds 50°C, use heat-resistant cables with maximum allowable temperature of 70°C or above.

JIS intrinsically safe type: i3aG5

Amb. Temp: -10 to 60°C

NK intrinsically safe type:

Amb. Temp: -10 to 60°C

EMC Conformity Standards: CE , N200

EN61326, AS/NZS 2064

YOKOGAWA ◆

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Connections:

Air Connection: Rc 1/4 or 1/4 NPT female
 Electrical Connection: G 1/2, G 3/4, 1/2 NPT, and 3/4 NPT female
 Pressure Gauge Connection:
 Without pressure gauge(Standard Specification)

		Pressure gauge connection
Connections Codes	1 and 2	Rc 1/8 female
	3 and 4	1/8 NPT female

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With pressure gauge(Optional)

		Pressure gauge connection	
		Optional codes /GP, /GM, and /GB	Optional code /GE
Connections Codes	1 and 2	Rc 1/8 female	1/8 NPT female
	3 and 4		

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Mounting:

Front of Actuator with bracket or Valve yoke

Weight:

3.2 kg (7.1 lb)

■ PERFORMANCE SPECIFICATIONS

Linearity:

±1.0 % (for Diaphragm Actuator, Single Acting Cylinder)
 ±1.5 % (for Double Acting Cylinder)

Hysteresis:

Less than 1.0 % (for Diaphragm Actuator, Single Acting Cylinder)
 Less than 1.5 % (for Double Acting Cylinder)

■ MODEL AND SUFFIX CODES

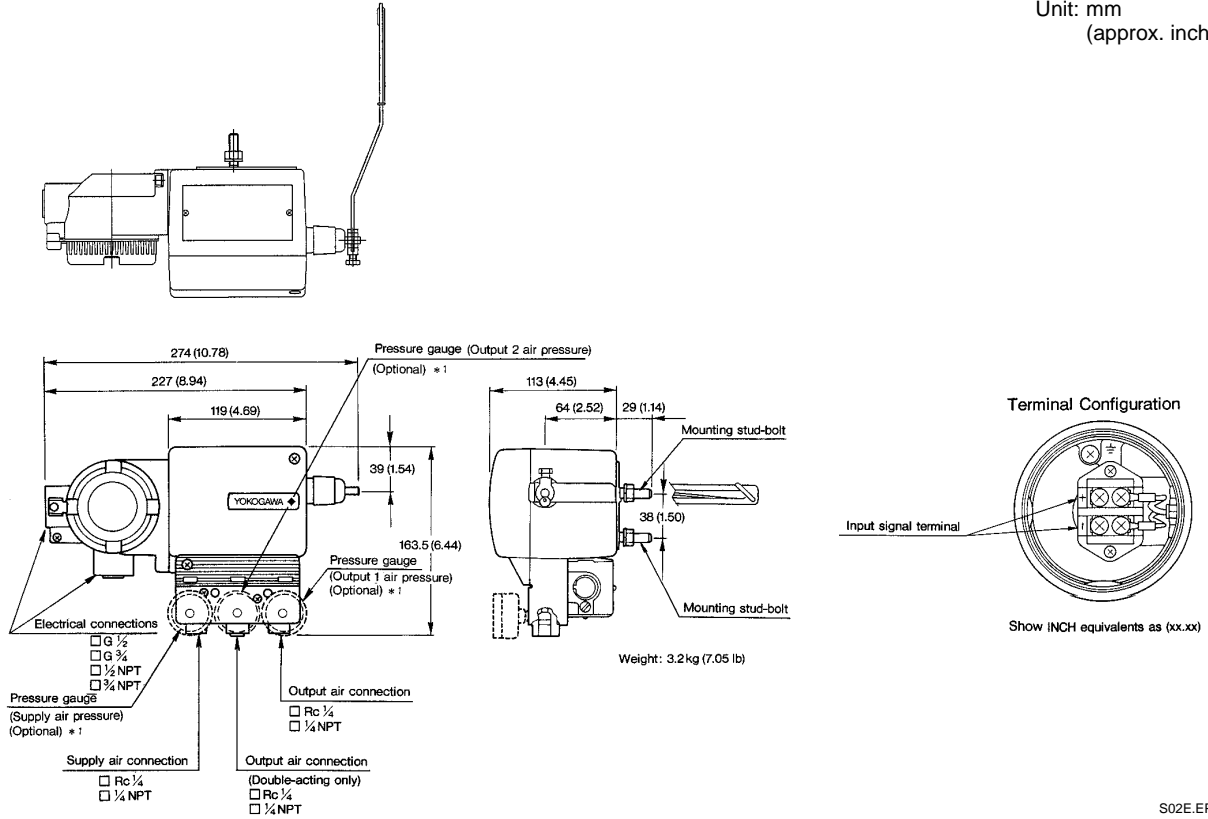
Model	Suffix Codes	Description
VP200	Current-to-pneumatic positioner
Input Signal	-A -B	4 to 20 mA DC 10 to 50 mA DC
Applicable Control Valve	L	Diaphragm Actuator: Direct output ^{*1} (small capacity, less than 0.51) Single Acting Cylinder: Direct output ^{*1} (small capacity, less than 0.51)
	M	Diaphragm Actuator: Direct output ^{*1} Single Acting Cylinder: Direct output ^{*1}
	N	Double Acting Cylinder
	P	Diaphragm Actuator: Reverse output ^{*2} (small capacity, less than 0.51) Single Acting Cylinder: Reverse output ^{*2} (small capacity, less than 0.51)
	Q	Diaphragm Actuator: Reverse output ^{*2} Single Acting Cylinder: Reverse output ^{*2}
Connections	1 2 3 4	Air Connections: Rc1/4, Electrical Connection: G1/2 female Air Connections: Rc1/4, Electrical Connection: G3/4 female Air Connections: 1/4NPT female, Electrical Connection: 1/2NPT female Air Connections: 1/4NPT female, Electrical Connection: 3/4NPT female
Operating Temperature Limits	1 2	-10 to 80°C -30 to 40°C
Optional Codes	/JF3 /G11 /G21 /JS1 /SCF-□ /NK /A1 /X1 /SS /GP /GM /GB /GE /GW /NM /NB /NE /LV /M1	JIS Flameproof type. Apply to connections code 1, 2 and 3. Packing adapter for JIS Flameproof Electrical connection: G 1/2 female, Applicable cable O.D.: 8 to 12 mm Packing adapter for JIS Flameproof Electrical connection: G 3/4 female, Applicable cable O.D.: 10 to 16 mm JIS Intrinsically safe type. Apply to only input signal code-A. ^{*3} Special Color Finished or Positioner Color NK (Nippon Kaiji Kyokai) intrinsically safe type. Apply to only input signal code-A. ^{*3} High pressure gauge for diaphragm-actuator or single acting cylinder. 1 MPa, 10 kgf/cm ² , 10 bar, 150 psi Epoxy resin-baked coating External screw material is SUS304 stainless steel. With pressure gauge. Pa calibration With pressure gauge. kgf/cm ² calibration With pressure gauge. bar calibration With pressure gauge. psi calibration With Double scale pressure gauge. Scale unit: Pa/kgf/cm ² Without pressure gauge. Supply pressure unit: kgf/cm ² Without pressure gauge. Supply pressure unit: bar Without pressure gauge. Supply pressure unit: psi With two levers (long and short) With lever (for Motoyama 3800 series valve)

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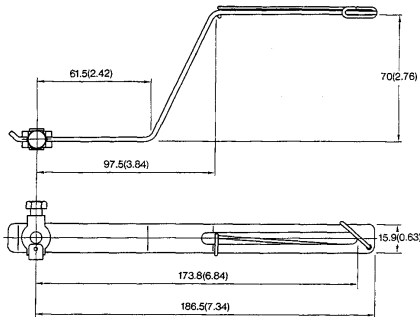
*1: Direct output(increasing input signal increase actuator pressure)
 *2: Reverse output(increasing input signal decreases actuator pressure)
 *3: See page 4 for JIS- and NK-approved safety barrier.

DIMENSIONS

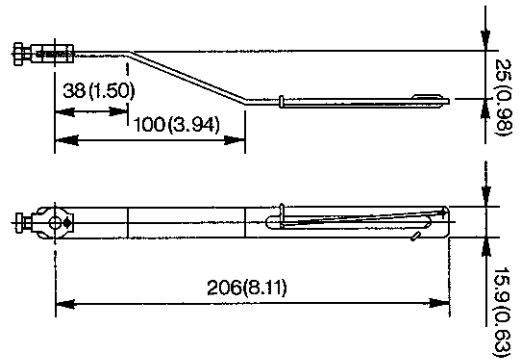
Unit: mm
(approx. inch)



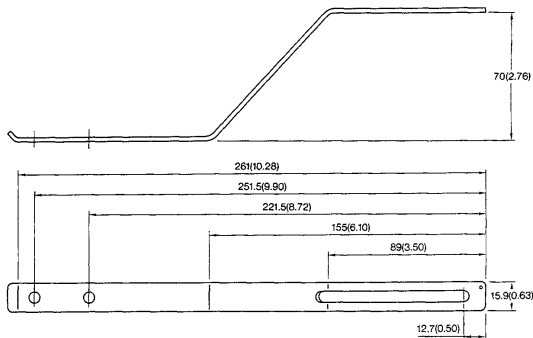
Lever 1 (Parts No. F9173CA)
(Suffix code: /LV)



Lever for Motoyama 3800 series valve
(Suffix code: /M1)



Lever 2 (Parts No. F9173CJ)
(Suffix code: /LV)



< Ordering Information >

Specify the following when ordering

1. Model, suffix codes, and optional codes
2. Tag Number (if required)

< Safety Barrier for JIS Intrinsically Safe Type >

BARD-800 Safety Barrier: Refer to GS 01B04S10-01E

< Safety Barrier for NK Intrinsically Safe Type >

BARD-400 Safety Barrier: Refer to GS 1B4S1-E

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