

Electro-Pneumatic Positioner

(Lever type / Rotary type)

Series MSVP2100/2101



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Electro-Pneumatic Positioner (Lever type / Rotary type)

How to Order

ATEX directive compliance and connection

Z14	ATEX directive category 2 Intrinsically safe explosion-proof item Air connection port: 1/4 NPT Conduit connection port: M20 x 1.5 With blue cable gland
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Option

Symbol	Option	Applicable model	
		MSVP2100-Z14	MSVP2101-Z14
N	-20 to 80°C	●	●
L	Low temperature (-50 to 60°C)	●	●

ATEX Directive Intrinsically Safe Explosion proof

Standard

MSVP2 **100**-**0****1****0**-[]-[]-**Z14**-[]

MSVP2 **100**-**0****1****0**-[]-[]-[]

Type	Description
100	Electro-pneumatic lever type
101	Electro-pneumatic rotary type

Pressure gauge

Symbol	Pressure
0	None
1	0.2 MPa
2	0.3 MPa
3	1.0 MPa

CE marking

R	CE marked product
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Connection

Symbol	Air	Electric	Applicable model	
			MSVP 2100	MSVP 2101
—	Rc1/4	G1/2	●	●
M	Rc1/4	M20 x 1.5	●	—
N	Rc1/4	1/2NPT	●	—
1	1/4NPT	G1/2	●	●
2	1/4NPT	M20 x 1.5	●	—
3	1/4NPT	1/2NPT	●	—
4	G1/4	G1/2	●	●
5	G1/4	M20 x 1.5	●	—
6	G1/4	1/2NPT	●	—



Lever type MSVP2100



Rotary type MSVP2101

Construction Note 1

0	1
No terminal box	With terminal box (ExsdIIBT6) explosion-proof item

Symbol	Accessories	Applicable model	
		MSVP 2100	MSVP 2101
—	None (Standard)	●	●
A	ø0.7 Output restriction with pilot valve ^{Note 3)}	●	●
B	ø1.0 Output restriction with pilot valve ^{Note 3)}	●	●
C	Fork lever-type fitting M ^{Note 4)}	—	●
D	Fork lever-type fitting S ^{Note 5)}	—	●
E	For stroke 35 to 100 mm with lever unit ^{Note 6)}	●	—
F	For stroke 50 to 140 mm with lever unit ^{Note 6)}	●	—
G	Compensation spring (A) ^{Note 7)}	●	●
H	With external scale plate	—	●
J	With opening current transmission (4 to 20 mA DC)/Positive operation ^{Note 8)}	—	●
JR	With opening current transmission (4 to 20 mA DC)/Reverse operation ^{Note 8)}	—	●

Note 1) For construction No.1(with terminal box), the ambient and fluid temperatures are as follows:

- ExdIIBT5 — -20 to 60°C
 - ExdIIBT6 — -50 to 60°C
 - Non-explosion proof (non hazardous locations only) — -20 to 80°C
- The positioner body is EXdIIBT6 labeled.

Note 2) If two or more accessories are required, the part numbers should be made according to alphabetical order. (ex. MSVP2100-01-AG)

Note 3) "A" is applied to approx 90cm³-capacity actuator.
"B" is applied to approx 180cm³-capacity actuator.

Note 4) Fork lever-type fitting MX (Connection thread: M6 x 1) for MSVP2100-0 0- -Z14.

Note 5) Fork lever-type fitting SX (Connection thread: M6 x 1) for MSVP2100-0 0- -Z14.

Note 6) Standard lever is not attached.

Note 7) It is to be used together with "A" or "B" when tending to overshoot by the use of "A" or "B".

It is mounted to the body as a replacement of the standard compensation spring.

Note 8) Symbol J/JR is with terminal box, non-explosion proof specification. Select 1 for Construction. Positive operation signifies clockwise rotational direction by the main actuator shaft when positioner cover is viewed from the front.

Specifications

(Note 1)

Electro-Pneumatic Positioner Smart Positioner **Series MSVP210**

Item	Type	MSVP2100		MSVP2101		MSVP2102		MSVP2103	
		Electro-Pneumatic Positioner				Smart Positioner			
		Lever type lever feedback		Rotary type cam feedback		Lever type		Rotary type	
		Single action	Double action	Single action	Double action	Single action / Double action			
Input current	4 to 20 mA DC (Standard) ^{Note 2)}								
Min. operating current	3.85 mA DC or more								
Intra-terminal voltage	12 V DC (equivalent to 600 Ω input resistance, at 20 mA DC)								
Max. supplied power	1 W (Imax: 100 mA DC, Vmax: 28 V DC)								
Input resistance	235 ± 15 Ω (4 to 20 mA DC)								
Supply air pressure	0.14 to 0.7 MPa								
Standard stroke	10 to 85 mm (Allowable deflection angle 10 to 30°)		60 to 100° ^{Note 3)}		10 to 85 mm (Allowable deflection angle 10 to 30°)		60 to 100° ^{Note 3)}		
Sensitivity ^{Note 4)}	Within 0.1% F.S.		Within 0.5% F.S.		Within 0.2% F.S.				
Linearity ^{Note 4)}	Within ±1% F.S.		Within ±2% F.S.		Within ±1% F.S.				
Hysteresis ^{Note 4)}	Within 0.75% F.S.		Within 1% F.S.		Within 0.5% F.S.				
Repeatability ^{Note 4)}	Within ±0.5% F.S.								
Coefficient of temperature	Within 0.1% F.S./°C				Within 0.05% F.S./°C				
Supply pressure fluctuation	Within 0.3% F.S./0.01 MPa				— ^{Note 5)}				
Output flow ^{Note 6)}	80 l/min (ANR) or more (SUP = 0.14 MPa) 200 l/min (ANR) or more (SUP = 0.4 MPa)								
Air consumption ^{Note 6)}	5 l/min (ANR) or less (SUP = 0.14 MPa)		11 l/min (ANR) or less (SUP = 0.4 MPa)		2 l/min (ANR) or less (SUP = 0.14 MPa)		4 l/min (ANR) or less (SUP = 0.4 MPa)		11 l/min (ANR) or less (SUP = 0.4 MPa)
Ambient and fluid temperature	General structure: -20 to 80°C								
	Explosion-proof : -20 to 85°C				ATEX intrinsically safe explosion-proof: -20 to 80°C (T6)				
	ATEX intrinsically safe explosion-proof: -20 to 80°C (T6)				ATEX intrinsically safe explosion-proof -20 to 80°C (T4/T5)				
	-50 to 60°C (T6)/L type low-temperature specification				-50 to 60°C (T6)				
Explosion proof construction ^{Note 7)}	ATEX intrinsically safe explosion-proof construction (II2G Ex ibIIC5/T6)				ATEX intrinsically safe explosion-proof construction (II1G Ex iaIIC4/T5/T6)				
ATEX intrinsically safe explosion-proof parameter (current circuit)	Ui ≤ 28 V, Ii ≤ 125 mA, Pi ≤ 1.2 W, Ci ≤ 0 nF, Li ≤ 0 mH				Ui ≤ 28 V, Ii ≤ 100 mA, Pi ≤ 0.7 W, Ci ≤ 12.5 nF, Li ≤ 1.5 mH				
Exterior covering enclosure	IS/IEC 60529 :2001, IP68								
	IS/IEC 60079-0 : 2017 AND IS/IEC 60079-1 :2014								
Air connection port ^{Note 8)}	Rc 1/4 female thread, NPT 1/4 female thread, G 1/4 female thread								
Electrical connection port ^{Note 8)}	G 1/2 female thread, M20 x 1.5 female thread, NPT 1/2 female thread								
Material/coating	Aluminum diecast body/baking finish with denatured epoxy resin								
Weight	2.4 kg (Without terminal box)/2.6 kg (With terminal box)				2.6 kg				

Note 1) Specification values are given at normal temperature (-40°C).

Note 2) 1/2 Split range (Standard)

Note 3) Stroke adjustment: 0 to 60°, 0 to 100°

Note 4) Characteristics relating to accuracy differ depending on combination with other constituent loop equipment, such as positioners and actuators.

Note 5) While there is no output changes due to pressure fluctuations, when the pressure supply setting is changed following calibration, once again adjust balance current and perform calibration.

Note 6) (ANR) indicates standard air.

Note 7) Model selection required for explosion proof construction and HART transmission.

Note 8) Thread type can be specified by model selection.

Optional Specifications

Item	Type	MSVP2100-□ (Non-explosion proof)		MSVP210-□		□-MSVP210-□	
		Electro-Pneumatic Positioner		Smart Positioner			
Analogue output	Wiring	2-line					
	Output signal	4 to 20 mA DC					
	Power supply voltage	12 to 35 V DC			10 to 28 V DC		
	Load resistance	(Power supply voltage - 12 V) ÷ 20 mA DC or less			0 to 750 Ω		
	Accuracy	±2% F.S. or less ^{Note 1)}			±0.5% F.S. or less ^{Note 2)}		
	Hysteresis	Within 1% F.S.			—		
Alarm output 1, 2	Wiring	—					
	Applicable standards	—					
	Power supply voltage	—			10 to 28 V DC		DIN19234/NAMUR Standard
	Load resistance	—			10 to 40 mA DC		(Constant current output)
	Alarm ON	—			R = 350 Ω ± 10%		≥ 2.1 mA DC
	Alarm OFF (Leakage current)	—			0.5 mA DC or less		≤ 1.2 mA DC
	Response time	—					
		50 msec or less					

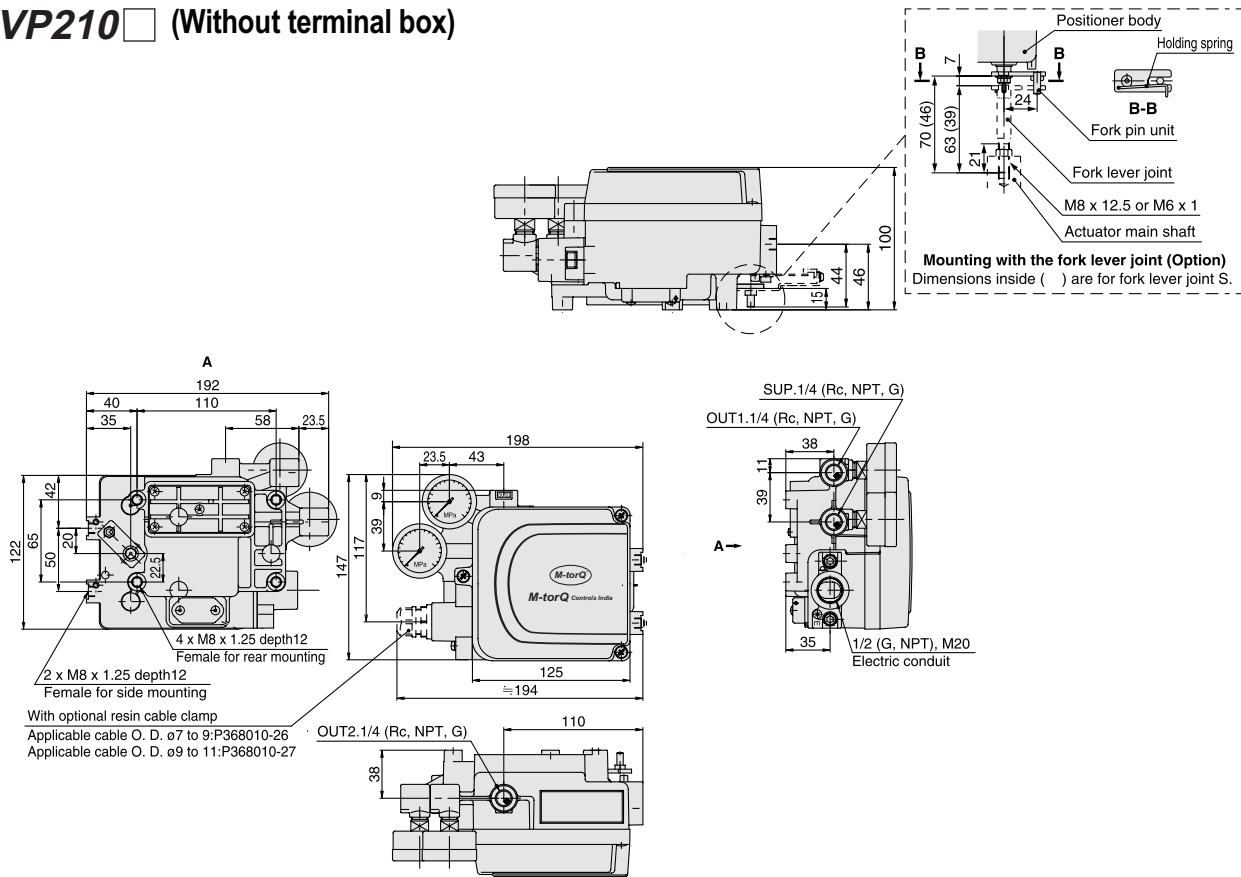
Note 1) Indicates analogue output accuracy with respect to actuator angle.

Note 2) Indicates analogue output accuracy with respect to LCD display position value (P value).

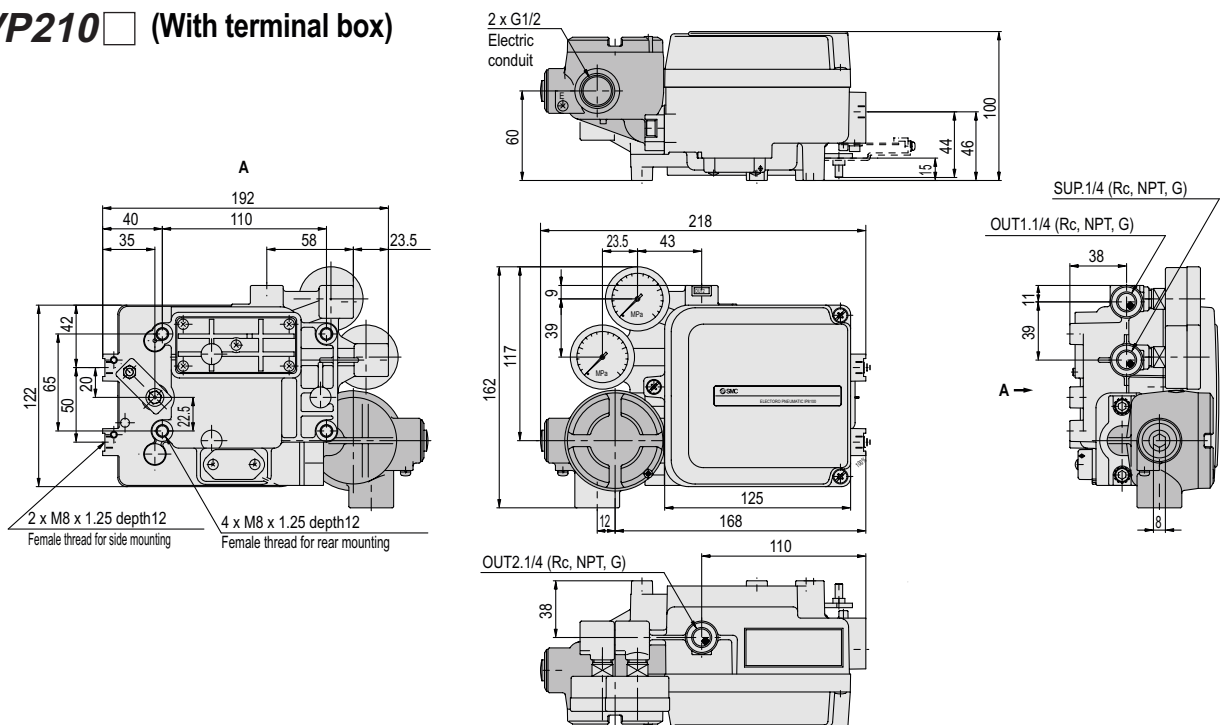
Series MSVP210

Dimensions

MSVP210 (Without terminal box)



MSVP210 (With terminal box)



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