Make you positive

3S—*World leading company*

3S Co., Ltd.

MP series

Features

- Easy operation
- LCD display
- Protection against lightning
- Flexible configuration
- Feedback signal function (option)
- HART communication (option)

Specification

Specification	MP
Input signal	4 to 20 mA (minimum range: 4 mA) minimum drive current : 3.8 mA *1 (Voltage across terminals 10.5 V Typ)
Supply air pressure	0.14 to 0.50MPa
Stroke / Open angle	Linear motion: 10 to 100 mm Rotation angle of feedback lever 45° (40 to 100°) Rotary motion: Rotation angle of feedback lever 40 to 100°
Air connection	Standard: Rc 1/4 (Pressure gauge Rc 1/8) Option: 1/4 NPT (Pressure gauge 1/8 NPT)
Power connection	Standard: G 1/2 Option1: 1/2 NPT Option2: M20 × 1.5 (Not available for TIIS flameproof.)
Protection of enclosure	IP65 (IEC 60529:1989 / AMD2:2013)
Type of Protection	Standard: Non-explosion proof (Flameproof construction Ex d IIC T6)
Operating temperature range	Standard model: -20 to 80℃ Frameproof model: -20 to 60℃
Flow characteristics	Linear, near equal-percentage, quick open, user setting (17 setting points)
Manual action	A/M switch function (Single acting only)
Weight	Approx. 3.8 kg
Material	Aluminum Diecasting

*1 In case input signal goes below this limit, the unit goes "wait mode" (shutdown status). To change settings, at least 4 mA power is required.

Option

Function	Items	Specification
Feedback signal	Output signal range	4 to 20 mA (reverse output is available)
	Input voltage	12 to 36 V DC (Flameproof:12 to 24 V DC)
	Accuracy	± 1.0% F.S. to the position cognized internally
Communication function	HART communication	HART7

* In case input signal goes below 3.8mA, the feedback signal falls stand-by value.

Easy operation with 4 buttons

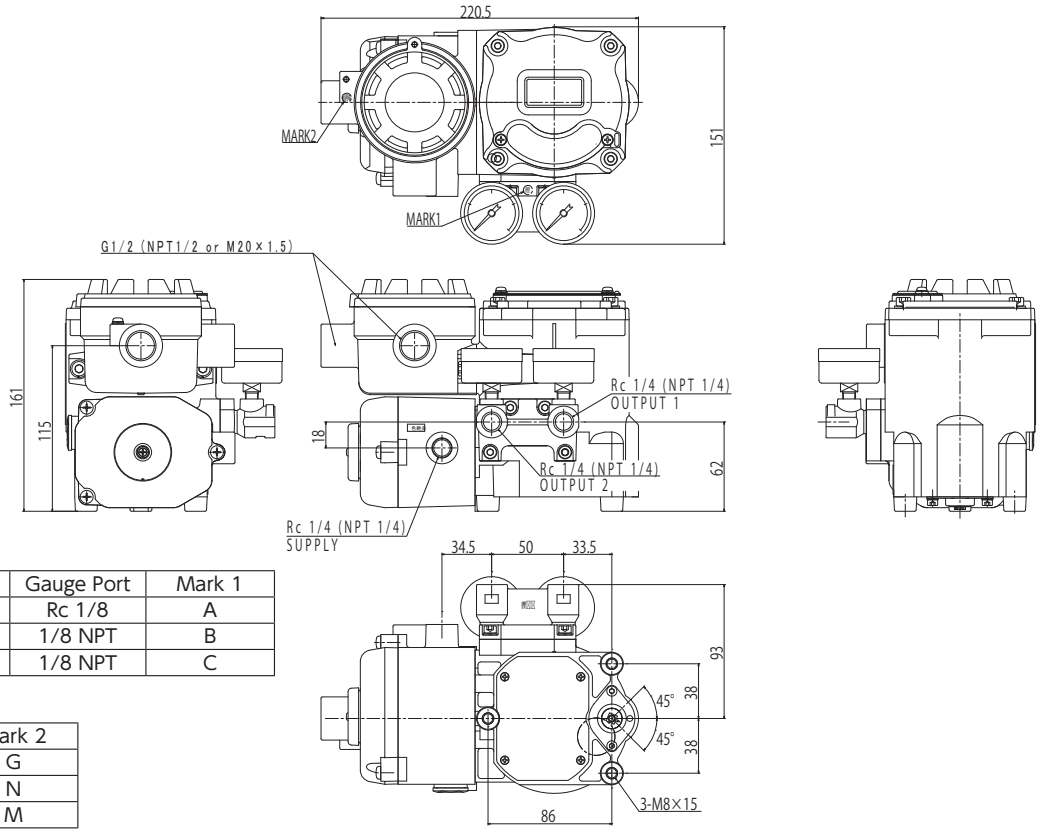
Rotatable LCD display

Notation table

1	2	3a	3b	3c	4	5	6

	Specification	Definition	Code
1	Series	Smart positioner	MP1
2	Housing	Standard (non-explosion proof)	0
		Flameproof Ex d IIC T6	6
3a	Connection & acting	Single acting, Rc 1/4 (gauge: Rc 1/8)	1
		Double acting, Rc 1/4 (gauge: Rc 1/8)	2
		Single acting, 1/4 NPT (gauge: 1/8 NPT)	3
		Double acting, 1/4 NPT (gauge: 1/8 NPT)	4
3b	Electric connection	G1/2	1
		1/2 NPT	2
		M20 × 1.5 (Not available for TIIS flameproof.)	3
3c	Option	N/A	1
		Feedback signal	2
		HART communication	3
4	Ambient temp.	Non-explosion proof: –20 to 80℃ Ex d IIC T6: –20 to 60℃	5
5	Actuator	Linear motion	L
		Rotary motion	R
86	Output press. gauge	0.2 MPa	M2
		0.4 MPa	M4
		1.0 MPa	M0

Dimension



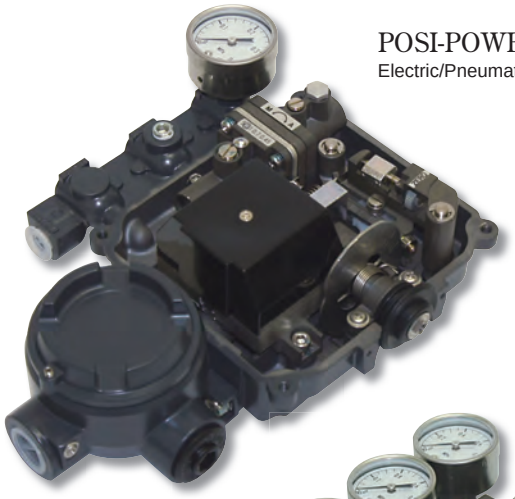
Air Connection Port

Supply Port	Output Port	Gauge Port	Mark 1
Rc 1/4	Rc 1/4	Rc 1/8	A
1/2 NPT	1/4 NPT	1/8 NPT	B
Rc 1/4	Rc 1/4	1/8 NPT	C

Cable Entry Conduit

Cable Entry Conduit	Mark 2
G1/2	G
1/2 NPT	N
M20 × 1.5	M

X series



POSI-POWER XE100
Electric/Pneumatic Positioner

POSI-POWER XP100
Pneumatic/Pneumatic Positioner

Features

Mounting kits interchangeable between E/P and P/P

Linear Motion and Rotary Motion are available

3 kinds of pilot relays. normal, stable and quick speed

No resonance 5 to 200 Hz (2G)

Innovative design supports various mounting position

4 types of characteristics are available with a single standard cam

Specification

XE

Specification	Single acting	Double acting
Input signal / Resistance	4 to 20 mA/250 Ω (1/2 split range adjustment is also available.)	
Supply air pressure	0.14 to 0.7 MPa	
Stroke / Open angle	Linear motion: 10 to 100 mm Rotary motion: 60 to 90°	
Air connection	Standard: Rc1/4 (Gauge Rc1/8) Option: 1/4 NPT (Gauge 1/8 NPT)	
Electrical connection	Standard: G1/2 (PF1/2) Option: 1/2 NPT	
Wiring method	Conduit method or Pressure-tight packing method	
*1 Pressure gauge (output pressure)	Standard: 0 to 0.2 MPa, 0 to 0.4 MPa, 0 to 1.0 MPa(R) Option: kPa (R, NPT), psi, bar (NPT)	
Protection of enclosure	IP65 (IEC 529-1989)	
*2 Construction	Standard: Non-explosion proof Flameproof: Ex d IIB T6 Flameproof H_2: Ex d IIB+H_2 T6	
Cam	Standard: Linear characteristics Option: Eq%, (S3 model) reverse Eq%, square-law	
*3 Ambient temperature	Standard: (S) -20 to 83℃ Low temp. construction: (L) -50 to 60℃ High temp. construction: (H) 0 to 100℃ Ex d IIB T6: -20 to 60℃ Ex d IIB+H_2 T6: -20 to 60℃	
Weight	Approx.2 to 2.6 kg	Approx.2.3 to 2.7 kg
Material	Base: Aluminium Diecasting Standard cover: PBT resin (Mixed Glass Fiber) Option cover: Aluminium Diecasting	

*1 Contact us for kPa, psi, bar displays.
*2 Type of certificates are listed on the page 21.
*3 The explosion proof type is only available for the standard products.
* Dry air (dew point -30℃) is required.
* Air filter 5 μm is required.

XP

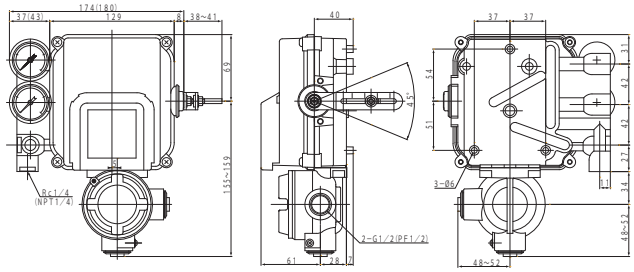
Specification	Single acting	Double acting
Input signal	Standard: 20 to 100 kPa (1/2 split range adjustment is also availabe.)	
Supply air pressure	0.14 to 0.7 MPa	
Stroke	Linear motion: 10 to 100 mm Rotary motion: 60 to 90°	
Air connection	Standard: Rc1/4 (Gauge Rc1/8) Optional: 1/4 NPT (Gauge 1/8 NPT)	
*1 Pressure gauge (output pressure)	Standard: 0 to 0.2 MPa, 0 to 0.4 MPa, 0 to 1.0 MPa(R) Option: kPa (R, NPT), psi, bar (NPT)	
Construction	Non-explosion proof	
Cam	Standard: Linear characteristics Option: Non-linear characteristics	
Ambient temperature	Standard: (S) -20 to 83 ℃ Low temp. : (L) -50 to 60 ℃ High temp. : (L) 0 to 100 ℃	
Weight	Approx. 1.3 kg	Approx. 1.4 kg
Material	Base: Aluminium Diecasting Standard cover: PBT resin (Mixed Glass Fiber) Option cover: Aluminium Diecasting	

*1 Contact us for kPa,psi,bar displays.
* Dry air (dew point -30℃) is required.
* Air filter 5 μm is required.

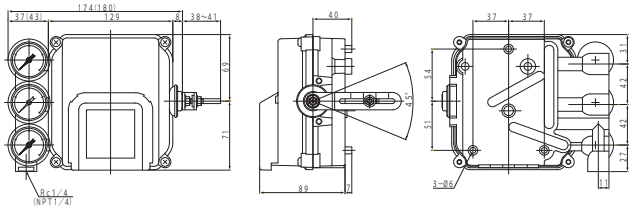
Dimension

Linear motion / Side lever type

XE1●●-SS1

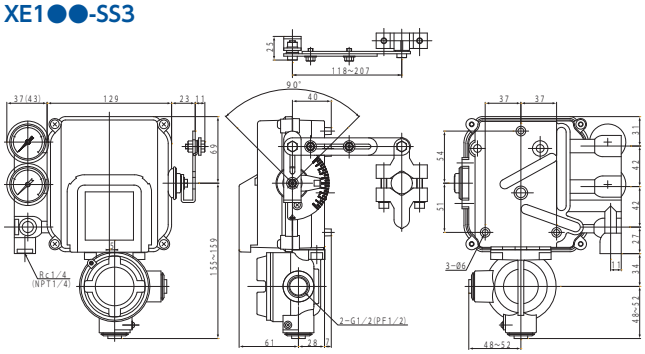


XP10●-SS1

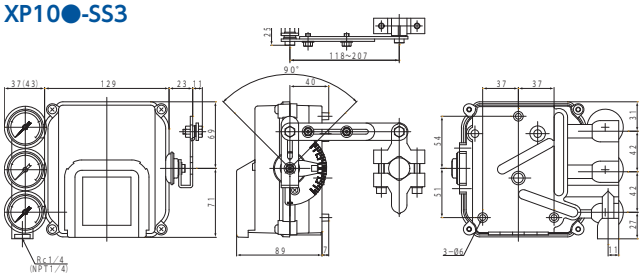


Rotary motion / Linkage lever type

XE1●●-SS3

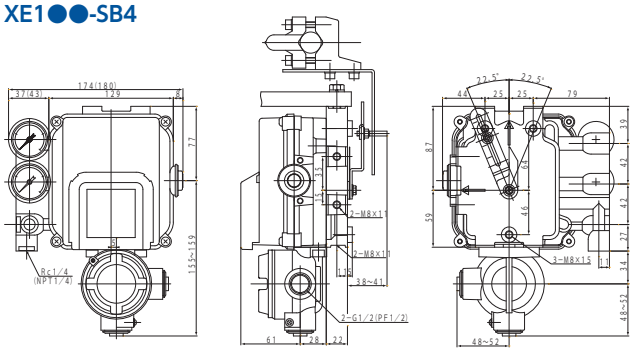


XP10●-SS3

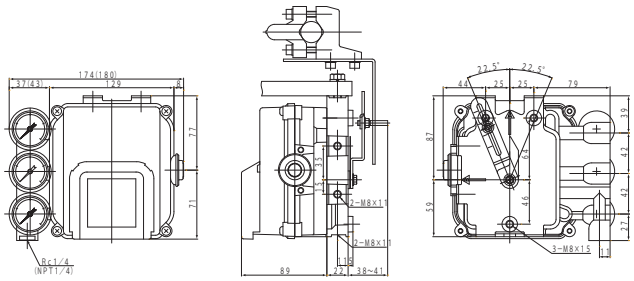


Linear motion / Back lever type

XE1●●-SB4

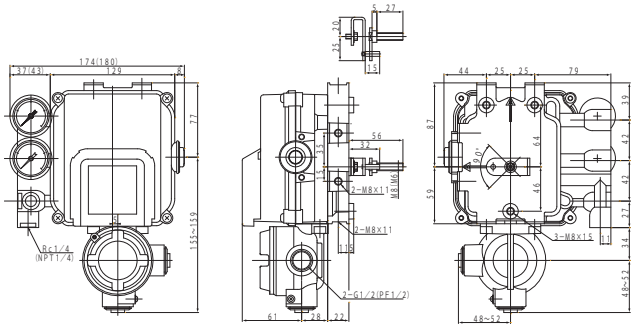


XP10●-SB4

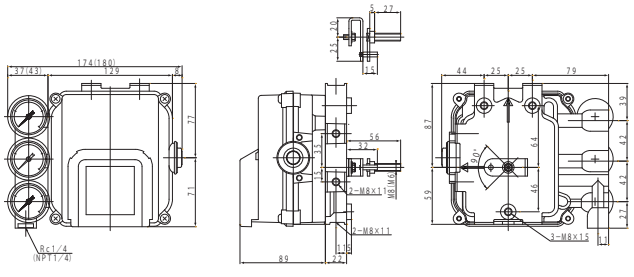


Concentric rotary motion / Back lever type

XE1●●-SB7



XP10●-SB7



Notation table

1	2	3	-	4	5	/	6	7	8	9

Specification		Definition	Code	
1	Basic code	XE100 - I/P Positioner XP100 - P/P Positioner	XE 1	XP 1
2	Construction *	Non-explosion proof	0	0
		Flameproof IP65 Ex d IIB T6 (TIIS) enclosure	5	—
		Flameproof IP65 Ex d IIB+H_2 T6 (TIIS) enclosure	6	—
3	Connection & acting	Single acting, Rc 1/4	1	
		Double acting, Rc 1/4	2	
		Single acting, 1/4 NPT	3	
		Double acting, 1/4 NPT	4	
4	Ambient temperature	Standard: -20 to 60 ℃ (Flameproof) Standard: -20 to 83 ℃ (Non-explosion proof)	S	
		Low temp construction: -50 to 60 ℃	L	
		High temp construction: 0 to 100 ℃	H	
5&9	Mounting & Cam	Linear motion / side lever type / 4 phases cam: linear & near equal %	S1 / C1a	
		Rotary motion / linkage lever type / 2 phases cam: linear	S3 / C3L	
		Rotary motion / linkage lever type / 2 phases cam: near equal %	S3 / C3E	
		Rotary motion / linkage lever type / 2 phases cam: square-law	S3 / C3B	
		Rotary motion / linkage lever type / 2 phases cam: near reverse equal %	S3 / C3P	
		Linear motion / back lever type / 4 phases cam: linear & near equal %	B4 / C4La	
		Rotary motion / top mount type / 2 phases cam: linear	B7 / C7L	
6	Outlet pressure gauge	0.2 MPa, 0.4 MPa, 1.0 MPa	M2, M4, M0	
		200 kPa, 400 kPa, 1000 kPa	K2, K4, K0	
		30 psi, 60 psi, 150 psi	P2, P4, P0	
		2 bar, 4 bar, 10 bar	B2, B4, B0	
7	Pilot relay	Standard: with filter mesh protector	F1 - F6	
		Standard: with cleaning pin	Q1 - Q6	
		Stable: with filter mesh protector	G1 - G6	
		Stable: with cleaning pin	J1 - J6	
		Quick speed: with filter mesh protector	R1	
		Quick speed: with cleaning pin	T1	
		*Number represents orifice size: 1= ϕ 5.0 2= ϕ 2.0 4= ϕ 1.0 5= ϕ 0.7 6= ϕ 0.45		
8	Input signal	4 to 20 mA	M1	—
		4 to 12 mA	M2	—
		12 to 20 mA	M3	—
		20 to 100 kPa	—	B1
		20 to 60 kPa	—	B2
		60 to 100 kPa	—	B3

*Type of certificates are listed on the page 21.

Xwired

Valve Positioner with wire feedback.

[Patented in Japan Patent number: 5443706]

Linear motion

Rotary motion

Features

Wire feedback from valves

Independent from vibration and temperature from valves

Tolerable for 10G, 1000Hz vibration

Free mounting style. Install positioner anywhere you want, apart from actuator

Simple installation kits. Linear motion or rotary motion is available

Specification

E/P Positioner XE

Specification	Single acting / Double acting
Input signal / Resistance	4 to 20 mA/250 Ω (1/2 split range adjustment is also available.)
Supply air pressure	0.14 to 0.7MPa
Stroke	Linear: 20 to 100mm Rotary: 60 to 90˚
Air connection	Standard: Rc 1/4 Option: 1/4 NPT
Wiring method	Conduit method / Pressure-tight packing method
Pressure gauge	Standard: 0 to 0.2MPa, 0 to 0.4MPa, 0 to 1.0MPa Option: kPa (R, NPT), psi, bar (NPT)
Protection of enclosure	IP65 (IEC 529-1989)
Construction	Dust proof & Weather proof Exprosion-proof: Ex d IIB T6 Exprosion-proof H2: Ex d IIB+H_2 T6
Cam	Linear
Ambient temperature	Standard: -20 to 83℃ (Flameproof: -20 to 60℃) Low temp.: -50 to 60℃ High temp.: 0 to 100℃
Materal	Base: Aluminium Diecasting Standard cover: PBT resin (Mixed glass fiber) Option cover: Aluminium Diecasting
Accuracy	± 2% (influenced by the length and installation posture of wire)
Air consumption	At SUP 0.4MPa, 10NL/min
Output air capacity	370NL/min to SUP 0.4MPa (on condition OUT is open-to-air, Orifice ϕ 5)

P/P Positioner XP

Specification	Single acting	Double acting
Input signal	Standard: 20 to 100 kPa (1/2 split range adjustment is also availabe.)	
Supply air pressure	0.14 to 0.7 MPa	
Stroke	Linear motion: 20 to 100 mm Rotary motion: 60 to 90˚	
Air connection	Standard: Rc1/4 (Gauge Rc1/8) Optional: 1/4 NPT (Gauge 1/8 NPT)	
*1 Pressure gauge (output pressure)	Standard: 0 to 0.2 MPa, 0 to 0.4 MPa, 0 to 1.0 MPa(R) Option: kPa (R, NPT), psi, bar (NPT)	
Construction	Non-explosion proof	
Cam	Standard: Linear characteristics Option: Non-linear characteristics	
Ambient temperature	Standard: (S) -20 to 83 ℃ Low temp. : (L) -50 to 60 ℃ High temp. : (L) 0 to 100 ℃	
Material	Base: Aluminium Diecasting Standard cover: PBT resin (Mixed Glass Fiber) Option cover: Aluminium Diecasting	

*1 Contact us for kPa,psi,bar displays.
* Dry air (dew point -30℃) is required.
* Air filter 5 μm is required.

Wire

Length	3m / 5m / 7m / 10m
Stroke of wire	75 mm
Ambient temperature	Standard: -30 to 80℃
Housing	Standard: Dust proof & Weather proof Option: bellous
Materials	SUS

Notation table

Model notation

1	2	3	-	4	5

	Specification	Definition	Code
1	Basic code	Feedback wire	FW
2	End cover	Standard	1
		Bellous style	2
3	Length	3m	3
		5m	5
		7m	7
		10m	10
4	Ambient temperature	Standard: -30 to 80 ℃	S
5	Mounting	Linear motion	S1
		Rotary motion	S3

Features

Compact and lightweight

Linear motion and Rotary motion available

Split range available

AUTO / MANUAL function

Specification

Input Signal	4 to 20 mA/250 Ω
Supply air pressure	0.14 to 0.7 MPa(140 to 700 kPa)
Stroke / Angle	Linear motion: 10 to 100mm Rotary motion: 60 to 90°
Air connection	Standard: Rc1/4 (Gauge Rc1/8) Option: 1/4 NPT (Gauge 1/8 NPT)
Electrical connection	G1/2 (Option: 1/2 NPT)
Wireing method	Conduit method or Pressure-tight packing method
*1 Pressure gauge (output pressure)	Standard: 0 to 0.2MPa, 0 to 0.4 MPa, 0 to 1.0 MPa Option: kPa, psi, bar
Construction	Protection dust & drip-proof IP65 Explosion-proof: Ex d IIB T6
Cam	Standard: Linear characteristics
*2 Ambient temperature	Standard: -20 to 83℃ Flame proof: -20 to 60℃ Low temp.: -50 to 60℃ High temp.: 0 to 100℃
Weight	Single acting: Approx. 2.2kg Doublea acting: Approx. 2.3kg
Material	Base: Aluminium Diecasting Standard cover: Aluminium Diecasting

*1 Please contact us available combination of connection and units such as kPa, psi and bar.
*2 The explosion proof type is only available for the standard products.

Notation table

1	2	3	-	4	5	/	6	7	8	9

Specification		Definition	Code
1	Basic code	CE100 E/P positioner Rated dust and weatherproof (IP65)	CE1
2	Construction	Non-explosion proof	0
		Intrinsically Safe EExia IIC T4 to T6 (ATEX)	4
		Flameproof Ex d IIB T6 (TIIS)	5
		Non-explosion proof feedback signal	7
3	Functions and connections	Single acting, Rc 1/4	1
		Double acting, Rc 1/4	2
		Single acting, 1/4 NPT	3
		Double acting, 1/4 NPT	4
4	Ambient temperature	Standard: -20 to 83℃ Flameproof: -20 to 60℃ Intrinsically safe (ATEX) T6: -20 to 50℃ T5: -20 to 65℃ T4: -20 to 80℃	S
		Low temp. construction: -50 to 60℃ Intrinsically safe (ATEX) T6: -40 to 50℃ T5: -40 to 65℃ T4: -40 to 65℃	L
		High temp. construction: 0 - 100℃	H
5&9	Mounting & cam	Back lever (Linear motion) / 45° 4 phase cam Back lever (Rotary motion) / 90° 2 phase cam	B5 / C5La B6 / C6L
6	Outlet pressure gauge	0 to 0.2 MPa, 0 to 0.4 MPa, 0 to 1.0 MPa Option: kPa, psi, bar	M2, M4, M0
7	Pilot relay	Single	V1
		Double	V2
8	Input signal	4 to 20 mA	M1
		4 to 12 mA	M2
		12 to 20 mA	M3
		User specified	M4

Features

Compact and lightweight

Linear motion and Rotary motion available

Split range available

AUTO / MANUAL function

Specification

Input signal	20 to 100 kPa
Supply air pressure	0.14 to 0.7 MPa (140 to 700 kPa)
Stroke / Open angle	Linear: 12 to 100 mm / Rotary: 60 to 90°
Air connection	Standard: Rc1/4 (Gauge Rc1/8) Option: 1/4 NPT (Gauge 1/8 NPT)
*1 Pressure gauge (output pressure)	Standard: 0.2MPa, 0.4 MPa, 1.0 MPa Option: kPa, psi, bar
Cam	Standard: Linear characteristics Option: Non-linear characteristics
Ambient temperature	Standard: -20 to 83℃ Low temp.: -50 to 60℃ Hith temp.: 0 to 100℃
Weight	Single acting: Appox. 1.1kg / Double acting: Approx. 1.3kg
Material	Base: Aluminium Diecasting Standard cover: Aluminium Diecasting

*1 Please contact us available combination of connection and units such as kPa, psi and bar.

Notation table

1	2	3	-	4	5	/	6	7	8	9	10

Specification		Definition	Code
1	Basic code	CP200 P/P positioner Dust and weatherproof	CP2
2	Construction	Standard (Non-explosion proof)	0
3	Functions and connections	Single acting, Rc 1/4	1
		Double acting, Rc 1/4	2
		Single acting, 1/4 NPT	3
		Double acting, 1/4 NPT	4
4	Ambient temperature	Standard: -20 to 83℃	S
		Low temp. construction: -50 to 60℃	L
		High temp. construction: 0 to 100℃	H
5&9	Mounting & cam	Back lever (Linear motion) / 45°	B8 / C8L
		Back lever (Rotary motion) / 90°	B9 / C9L
6	Outlet pressure gauge	0 to 0.2 MPa, 0 to 0.4 MPa, 0 to 1.0 MPa Option: kPa, psi, bar	M2, M4, M0
7	Pilot relay	Single	P1
		Double	P2
		Reverse	P3
8	Input signal	20 to 100 kPa	B1
		20 to 60 kPa	B2
		60 to 100 kPa	B3

TE series

TE100 (with junction box)

TE200 (without junction box)

Features

Small and lightweight design

Filter regulator directly attached (without piping)

Auto / manual function

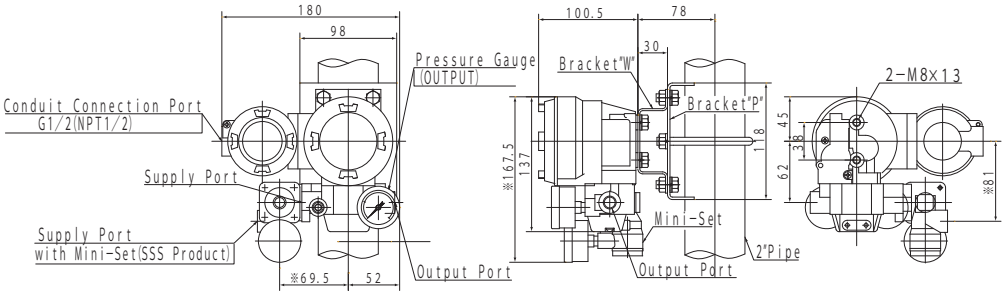
Mounting brackets (wall or pipe)

Specification

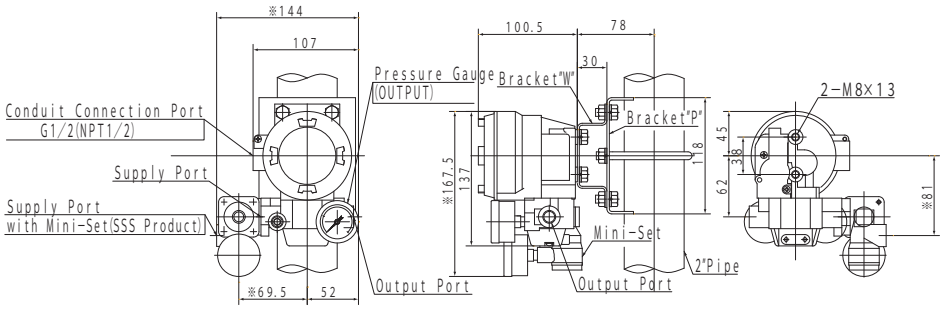
Specification	TE100	TE200
Supply air pressure	140 kPa	
Output pressure	20 to 100 kPa	
Input signal	4 to 20 mA	
Accuracy	Linearity: ± 0.2 % Hysteresis: ± 0.2 % Repeatability: ± 0.1 %	
Required operating voltage	6.5 V @20 mA	
Output air capacity	Max. 40 Nℓ/min	
Air consumption	3 Nℓ/min (4 Nℓ/min: with a filter regulator integrated)	
Ambient temperature	Standard: -20 to 80 ℃	
	Flame proof: -20 to 60 ℃	———
Air connection	Standard: Rc 1/4 (Gauge Rc 1/8), Option: 1/4 NPT (Gauge 1/8 NPT)	
Electrical connection	Standard: G1/2, Option: 1/2 NPT	
Construction	Explosion proof: TIIS flameproof Ex d IIB T6	———
Weight	Approx. 1.6 kg (1.8kg with a filter regulator integrated)	Approx. 1.3 kg (1.5kg with a filter regulator integrated)
Material	Aluminum Diecasting	

Dimension

TE100 (with junction box)



TE200 (without junction box)



Notation table

1	2	3	-	4	5	/	6	7	8	9

Specification		Definition	Code
1	Basic code	TE100 with junction box	TE 1
		TE200 without junction box	TE 2
2	Construction	Non-explositon proof	0
		Ex d IIB T6 (TIIS) Flame proof	5
3&9	Air/Electrical connection	Rc 1/4 G 1/2	1 / R1
		1/4 NPT G 1/2	3 / N1
		1/4 NPT 1/2 NPT	5 / N1
4	Ambient temperature	Standard: -20 to 80 ℃	S
		Flame proof: -20 to 60 ℃	
5	Auto-Manual function	With Auto-manual function	M
6	Pressure gauge	200 kPa	K2
		0.2 MPa	M2
		30 psi	P2
		2 bar	B2
7	Pressure gauge	None	G0
		Outlet only	G1
		Supply & Outlet	G2
8	Input signal	4 to 20 mA	M1
		4 to 12 mA	M2
		12 to 20 mA	M3
		User's specified	M4


XR100

Features

- Compact and lightweight
- No Bracket Required
- 2 air supply inlets and 3 air outlets available
- Built-in Drain Plug
- Polypropylene cloth-free filter
- Panel mounting hole provided

Specification

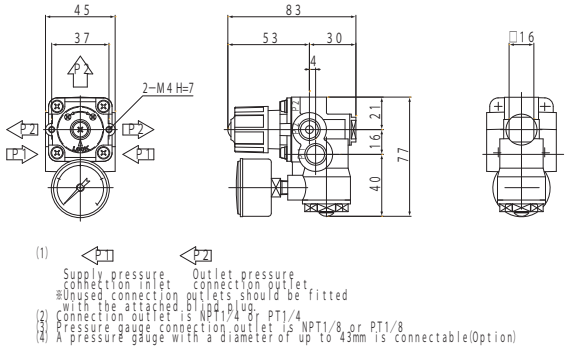
Specification		XR100
Ambient temperature		Standard: -20 to 83℃ Option: 0 to 100℃
Pressure range		0.2 MPa, 0.4 MPa, 0.8 MPa
Output pressure gauge		0.2 MPa, 0.4 MPa, 1.0 MPa Option: kPa, psi, bar
Air connection (pressure gauge)		Standard: Rc1/4(Gauge Rc1/8), Option: 1/4 NPT (Gauge 1/8 NPT)
Filter element	Material	Polypropylene cloth-free filter 5 μ
	Air resistance (Approx.)	1.5kPa at 100Nl/min, 4.5kPa at 300Nl/min, 9.0kPa at 600Nl/min
Air Consumption: Pressure setting (Max.)		0.5Nl/min : 0.14MPa, 0.6Nl/min: 0.24MPa, 0.7Nl/min: 0.40MPa
Max. air supply pressure		0.9MPa
Weight		Approx. 260g

Notation table

1	2	-	3	/	4	5

	Specification	Definition	Code
1	Basic code	XR100 - Filter Regulator	XR 10
2	Pressure range	200 kPa (0.2 MPa)	2
		400 kPa (0.4 MPa)	4
		800 kPa (0.8 MPa)	8
3	Ambient temp.	Standard: -20 to 83 ℃	S
		High temp construction: 0 - 100 ℃	H
4	Outlet pressure gauge	0.2 MPa, 0.4 MPa, 1.0 MPa	M2, M4, M0
		200 kPa, 400 kPa, 1000 kPa	K2, K4, K0
		30 psi, 60 psi, 150 psi	P2, P4, P0
		2 bar, 4 bar, 10 bar	B2, B4, B0
5	Connections	Air connection Rc1/4, 3 outlet model	J3
		Air connection 1/4 NPT, 3 outlet model	U3
		Air connection Rc1/4, 1 outlet model	R1
		Air connection 1/4 NPT, 1 outlet model	N1

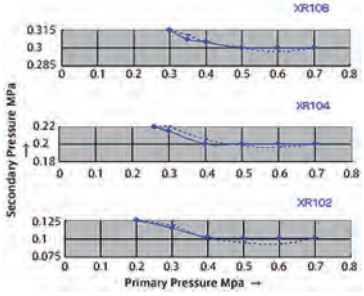
Dimension



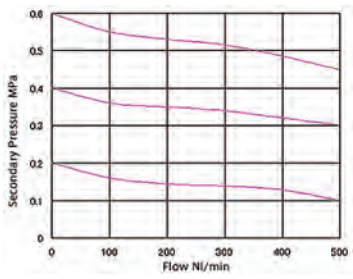
(1) P1 Supply pressure connection inlet P2 Outlet pressure connection outlet
※Unused connection outlets should be fitted with the attached blind plug.
(2) Connection outlet is NPT1/4 or PT1/4
(3) Pressure gauge connection outlet is NPT1/8 or PT1/8
(4) A pressure gauge with a diameter of up to 43mm is connectable(Option)

Characteristics

REGULATION CHARACTERISTICS
Primarily Set Press. : 5 kgf/㎠ (72 psi)



FLOW CHARACTERISTICS
Prim. press. : 6 kgf/㎠ (86 psi)



AS200

Features

Different 3 functions

「SOURCE」 Mode
Emit a current signal of 4 to 20 mA or 1 to 5 V.
Functions as follows are available;
*Signal: 4 to 20 mA or 1 to 5 V
*Step: 25 % step or 0.01 mA step
*Display: in mA or %

「READ」 Mode (option)
Display 4 to 20 mA current of circuit.

「RECEIVE」 Mode
Display output signal of two-wire-system transmitters, e.g. positioners, without external electric power provision.

「TWO-WIRE」 Mode (option)
Available for loop testing of two-wire-system transmitters.

LED light automatically on in response to ambient brightness

Selectable load high limit: 500 Ω or 750 Ω

Specification

Specification			Non-Rechargeable battery (200/201)
Accuracy			SOURCE Mode ± 0.1 %F.S, RECEIVE & READ Mode ± 0.15 %F.S *1
Input / Output range	SOURCE MODE		Current(4 to 20 mA) 0 to 23 mA (-25 to 119 %) , Voltage(1 to 5 V) 0 to 5.76 V (-25 to 119%)
	RECEIVE / 2 WIRE MODE		0 to 23 mA (-25 to 119 %) MAX loop voltage in 2 WIRE MODE: MAX 35V
	READ MODE		0 to 24 mA (-25 to 125 %)
Drive load capacity	Current (at 20 mA) *2		L load mode: 500 Ω MAX / H load mode: 750 Ω MAX
	Voltage (at 5V)		10mA MAX.
Display (LCD)			3,1/2 digits
Temperature influence			50 PPM (TYP.) /℃
*3 Battery life	SOURCE/RECEIVE Mode	L load mode	Approx. 7 hours/Full output
		H load mode	Approx. 5 hours/Full output
	SOURCE(1-5V) Mode		Approx. 8 hours in L load mode / Approx. 5 hours in H load mode
	READ/2WIRE Mode		Approx. 50 hours
Battery			Non-Rechargeable battery (9 V, 006 P) × 1 *4
Recharging time			—
Ambient recharging temperature			—
Length of rechargeable battery life			—
Ambient operating temperature			0 to 50 ℃
Ambient storage temperature			-20 to 70 ℃
Dimemsions			145 × 80 × 40
Weight			Approx. 320 g
Accessories			Connecting cord / Carrying case / Non-Rechargeable battery
			Option: AC adaptor (9 V, 300 mA)

*1 FS. Current at 16mA (20 to 4 mA), Voltage at 4V (5 to 1 V)
*2 Drive load capacity at 119 % (23 mA) max output is 90 % of the capacity at 100 % (20mA) output.
*3 Effected by the battery capacity and ambient temperature. Using LED light may shorten the battery life.
*4 Only Alcaline battery is available. Manganese Battery is not available.

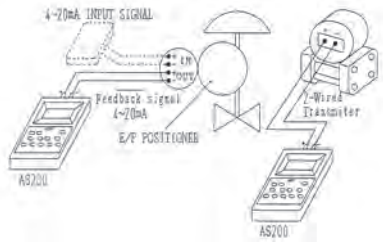
Notation table

1	2	3	-	S	4

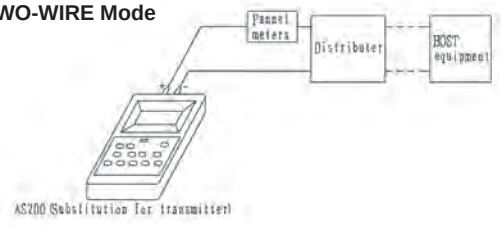
Specification		Definition	Code
1	Basic code	AS200 - Signal Emitter	AS 2
2	Battery	Non-Rechargeable battery	0
3	Mode	READ type	0
		2 Wire type	1
4	AC adaptor	Without AC adaptor	S 0
		With AC adaptor	S 1

Connection

RECEIVE Mode



TWO-WIRE Mode



XB series

XB100

Features

Flow characteristics suitable for control valves

Secondary pressure partition plate (seal plate) to detect stable secondary pressure

Built-in bypass valve for adjusting sensitivity

Filter for supply pressure side

All the exposed bolts and nuts are made of stainless steel

Specification

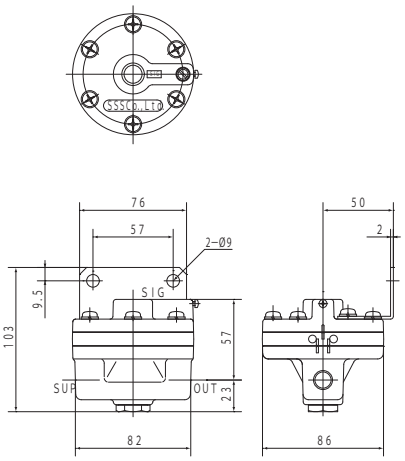
Specification	XB100
Max. supply pressure	1.03 MPa
Max. signal pressure	1.03 MPa
Max Cv.	1.2
Ambient temperature	Standard: -30 to 83 ℃ Option: -55 to 60 ℃ , 0 to 100℃
In/Out ratio	1:1
Connection	Standard: Rc 1/4 Option: Rc 3/8, 1/4 NPT
Net weight	Approx. 0.6 kg

Notation table

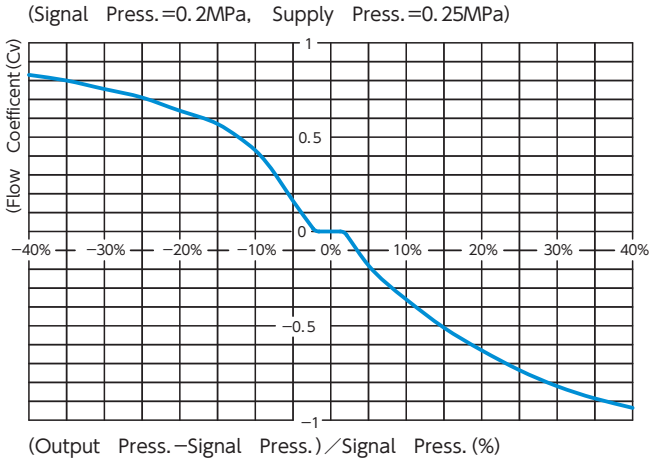
1	2	3	4

	Specification	Definition	Code
1	Basic code	XB100 - Booster Relay	XB 1
2	Ambient temperature	-30 to 83 ℃	0
		-55 to 60 ℃	1
		0 to 100 ℃	2
3	Air connection	SUP: Rc 1/4 SIG: Rc 1/4	1
		SUP: Rc 3/8 SIG: Rc 1/4	2
		SUP: 1/4 NPT SIG: 1/4 NPT	3
4	Mounting bracket	With bracket	B
		Without bracket	N

Dimension



Characteristics



XB200

Features

- Large Cv suitable for large valves
- Secondary pressure partition plate to detect stable secondary pressure
- Built-in bypass valve for adjusting sensitivity
- Filter for supply pressure side
- All the exposed bolts and nuts are made of stainless steel

Specification

Specification	XB200
Max. supply pressure	0.99 MPa
Max. signal pressure	0.99 MPa
Max Cv.	2.6
Ambient temperature	Standard: -30 to 80 ℃
In/Out ratio	1:1
Connection	Standard: Rc 1/2 Option: 1/2 NPT
Net weight	Approx. 1.5 kg

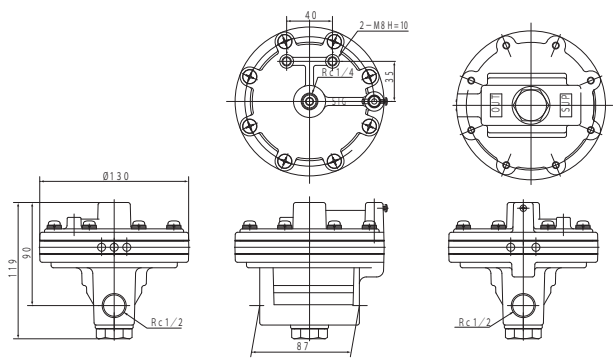
Notation table

1	2	3

Specifications		Definition	Code
1	Basic code	XB200 - Booster Relay	XB 2
2	Ambient temperature	-30 to 80 ℃	0
3	Pneumatic connection	SUP: Rc 1/2 (SIG : Rc 1/4)	1
		SUP: 1/2 NPT (SIG : 1/4 NPT)	2

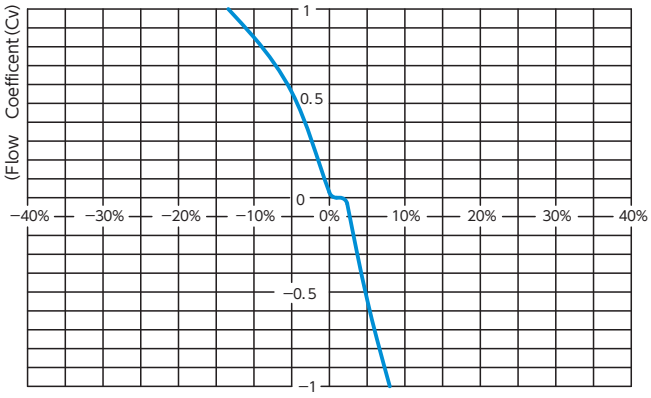
*Please ask us for mounting bracket.

Dimension



Characteristics

(Signal Press.=0.2MPa, Supply Press.=0.25MPa)



(Output Press.-Signal Press.)/Signal Press.(%)

SE series

Features

Durable SUS 304 frame

Easy and flexible installation and maintenannce.

Various output torque

Manual operation handle

Operation changeable by cam setting.

Specification

Specification	Control Drive SE series
Structure	Totally enclosed outdoor type
Ambient tempertature	Standard: -10 to 50℃ High temp: 0 to 100℃
Humidity	Below 85% (Noncondensing)
Rated use	Continuity
Input signal	Electric signal: DC 4 to 20 mA Pneumatic signal: 20 to 100 kPa
Supply air pressure	0.14 to 0.70 MPa
Air consumption	11 Nl/min at balancing position supplying air 0.4 MPa
Materials	Standard: SUS 304 Option: SS material (painted in Munsell 7.5BG 6/1.5 light gray)
Hysterisis	2 %
Linearity	± 3 %
Characteristics	Linear, Equal%, Reverse equal%

Notation table

Model	Rated Torque N-m (kgf-m)			Dimensions of the cylinder (mm)			Estimated weight (kg)
	Supply air pressure						
	0.4 MPa	0.5 MPa	0.55 MPa	The diameter of the piston	Stroke	The diameter of the rod	
SE-01H	123 (12.6)	152 (15.5)	167 (17.0)	ϕ100	100	ϕ30	70
SE-02H	196 (20.0)	245 (25.0)	274 (28.0)	ϕ125	100	ϕ36	80
SE-05H	323 (33.0)	412 (42.0)	451 (46.0)	ϕ160	100	ϕ40	160
SE-08H	627 (64.0)	784 (80.0)	872 (89.0)	ϕ180	150	ϕ45	190
SE-15H	1039 (106.0)	1313 (134.0)	1421 (145.0)	ϕ200	200	ϕ50	280
SE-25H	1568 (160.0)	1960 (200.0)	2156 (220.0)	ϕ200	300	ϕ50	380
SE-40H	2489 (254.0)	3126 (319.0)	3430 (350.0)	ϕ250	300	ϕ60	440
SE-60H	4155 (424.0)	5194 (530.0)	5684 (580.0)	ϕ300	350	ϕ70	620
SE-80H	5341 (545.0)	6664 (680.0)	7350 (750.0)	ϕ300	450	ϕ70	720
SE-80H (IP-TYPE)	5428 (553.9)	6785 (692.3)	7464 (761.6)	ϕ340	350	ϕ60	720
SE-100H (IP-TYPE)	6946 (708.8)	8683 (886.0)	9551 (974.6)	ϕ385	350	ϕ70	820
SE-150H (IP-TYPE)	9923 (1012.6)	12404 (1265.7)	13645 (1392.3)	ϕ385	500	ϕ70	1350
SE-200H (IP-TYPE)	12762 (1302.2)	15953 (1627.9)	17548 (1790.6)	ϕ435	500	ϕ70	1500

*) NORMAL MODEL and IP-TYPE is different by the cylinder inside. So the rated torque is different, too.

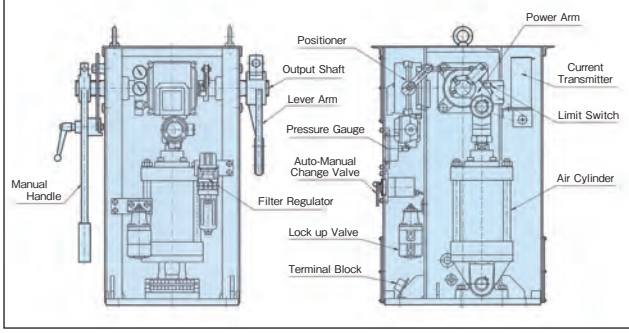
Dimension

(mm)

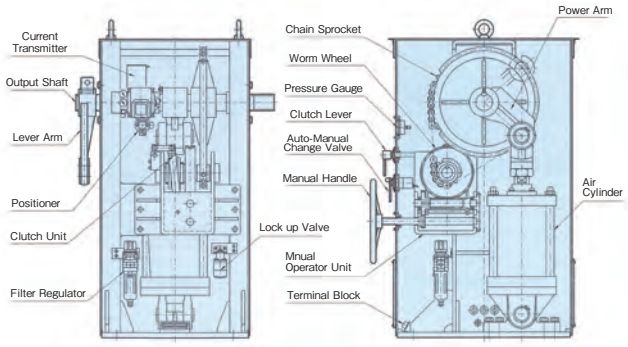
Model	W	D	H	t
SE-01H	360	475	595	16
SE-02H	360	475	610	16
SE-05H	360	475	675	16
SE-08H	420	560	860	19
SE-15H	460	620	964	19
SE-25H	530	755	1170	22
SE-40H	545	805	1285	22
SE-60H	630	930	1495	25
SE-80H	650	1050	1700	25
SE-80H (IP-TYPE)	682	912	1427	25
SE-100H (IP-TYPE)	682	912	1427	25
SE-150H (IP-TYPE)	752	1077	1560	30
SE-200H (IP-TYPE)	752	1077	1560	30

*) Projections are not figured in this table.

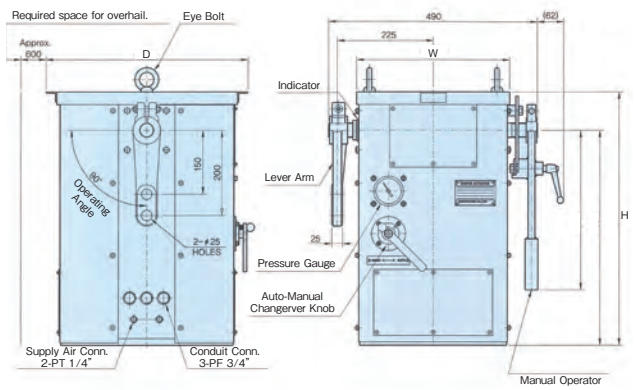
(SE-01H ~ 05H manual lever type)

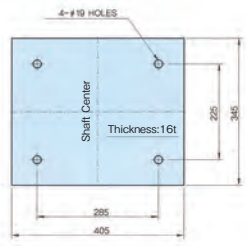


(SE-08H ~ 200H manual handle type)



(SE-01H ~ 05H manual lever type)



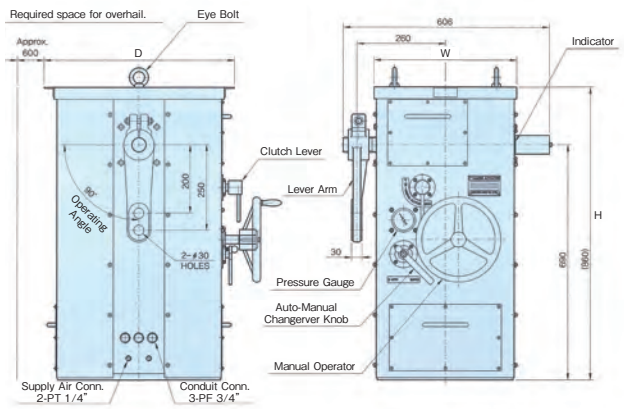


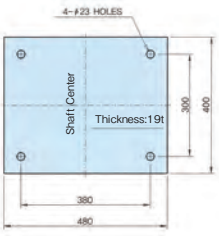
MOUNTING DIMENSIONS

NOTE

1. Lever Arm can be installed at any direction around the shaft.

(SE-08H ~ 200H manual handle type)





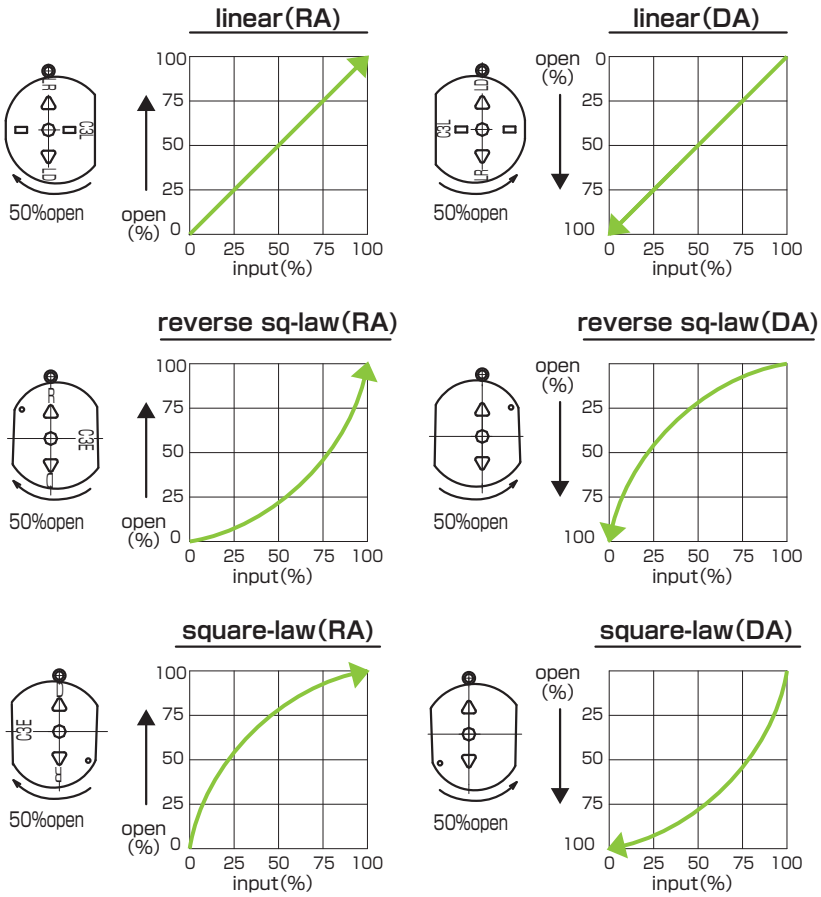
MOUNTING DIMENSIONS

NOTE

1. Lever Arm can be installed at any direction around the shaft.
2. Lever Arm can be installed at opposite side.

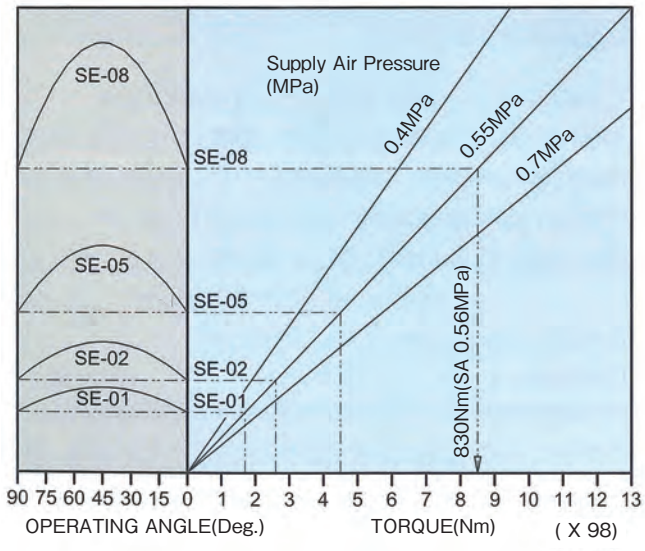
Setting characteristics of the equiptment with Cam

Concerning linear Cam, both RA and DA characteristics are designed face side. To change from RA to DA and vice versa, turn the Cam 180 degrees, both RA and DA.
Concerning Equal percent and Square-law, face side is designed for RA and back side is designed for DA.To change from RA to DA and vice versa, turn the Cam face to back.
*) Explanation above is based on the condition that signal increase to counter clockwise. The condition signal increase to clockwise will reverse all the actions.

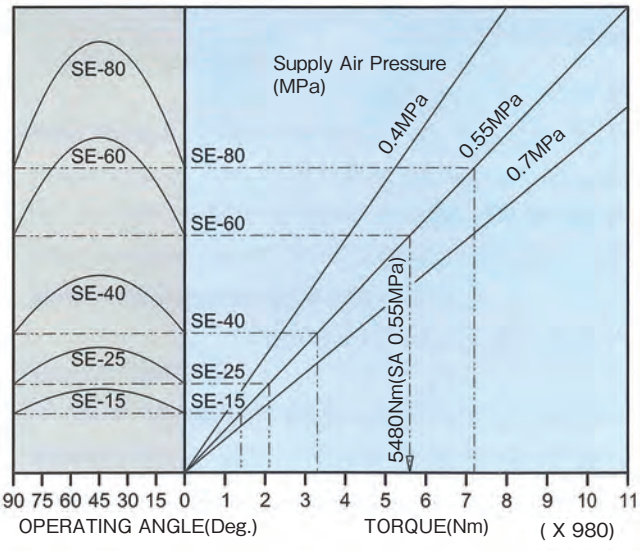


Characteristic curve figure

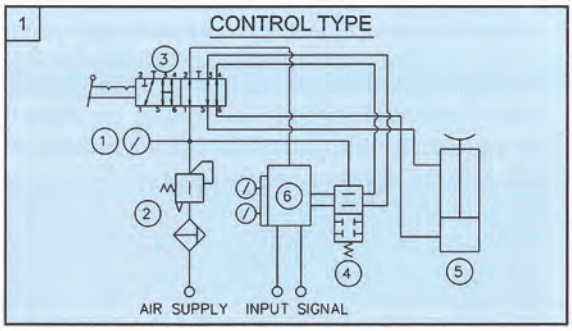
SE-01H～SE-08H



SE-15H～SE-200H

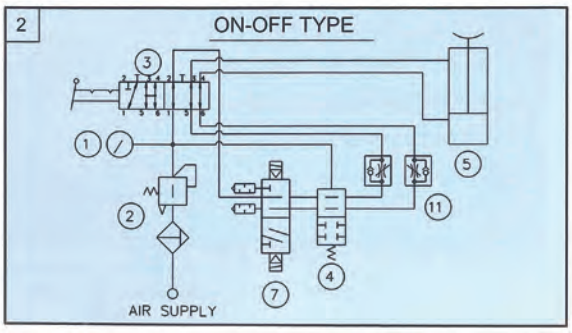


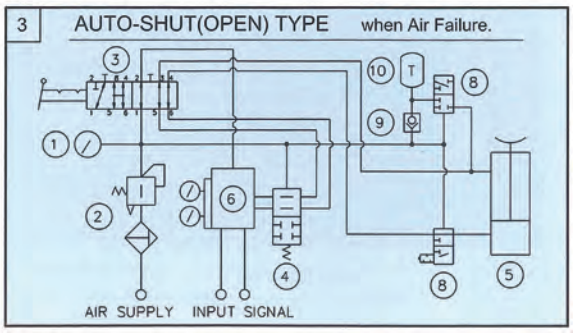
Installation chart



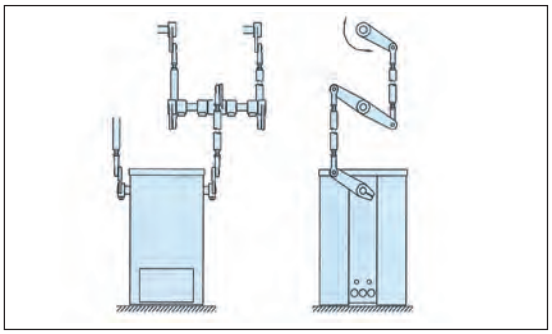
● Air Accessories

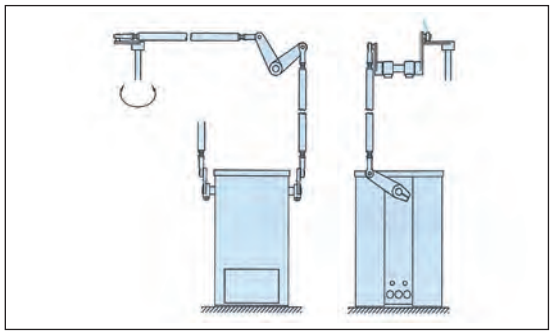
1. Pressure gauge
2. Filter regulator
3. Auto/Manual switch valve
4. Lock-up valve
5. Air Cylinder
6. Positioner
7. Solenoid valve
8. Master valve
9. Check valve
10. Air reserve tank
11. Speed controller

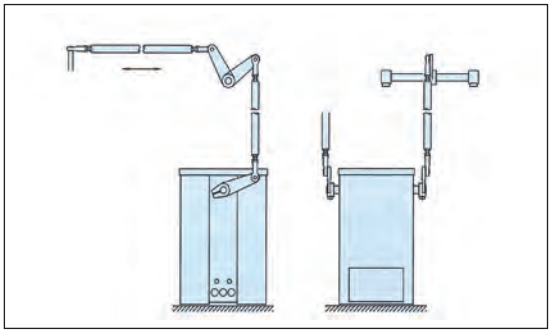


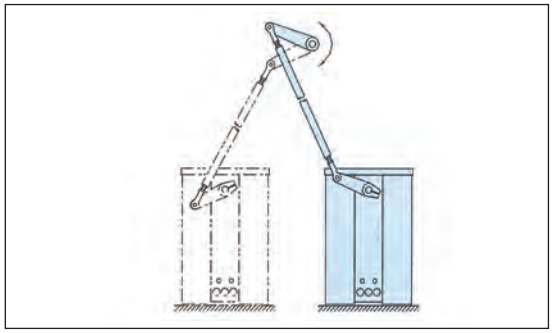


Organization Structure









Standard spare items

● A/M change valve (SH-7-1/4-B)

● Manual Handle ● Air Filter Regulator (AW30 or AW40)

● Pressure Gauge (P110×10)

WP series

actuator for damper WP201

Features

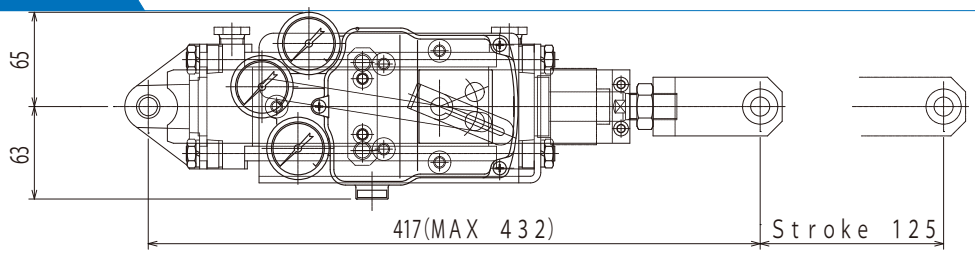
Ambient temperature –10 to 83℃

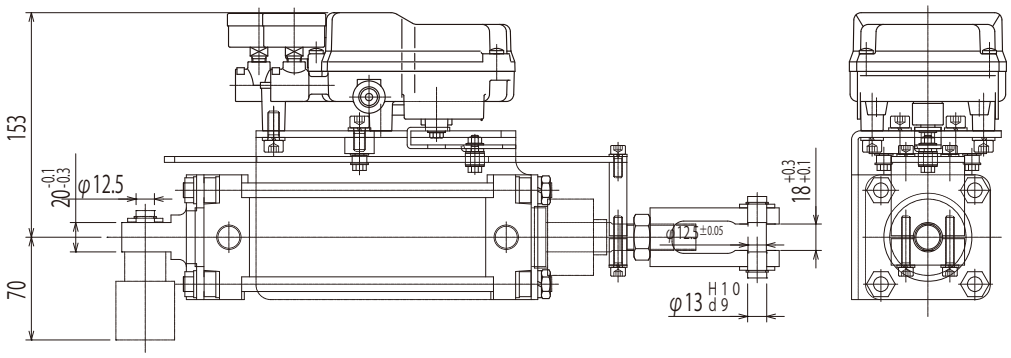
IP / EP both available

Specification

Specification	WP201 - Double Acting
Input signal	20 to 100 kPa (1/2 split available with range adjustment)
Supply air pressure	0.14 to 0.7MPa
Stroke	125 mm
Air connection	Standard: Rc 1/4 (Pressure gauge Rc 1/8) Option: 1/4 NPT (Pressure gauge 1/8 NPT)
Pressure gauge	Standard: 0.2MPa, 0.4MPa, 1.0MPa Option: kPa, psi, bar
Construction	Dust proof & Weather proof
Cam	Standard: Linear characteristics Option:Non-linear characteristics
Ambient temperature	Standard: -10 to 83℃
Weight	Approx. 8.0 kg
Material	Body / Cover: Aluminum Diecasting
Cylindar	Heat resistant (model: CA2C63-125-DCP5769P)
Linearity	± 3.5%
Hysterisys	2.0 %
Repeatability	1.0 %
Sensitivity	1.0 %
Range of supply air	0.3 % / 0.01 MPa
Tolerance by posture	10° : 0.5 % / 90° : 1.0 %
Resistance against vibration	1 % / 1 G
Air consumption	10NL/min At SUP 0.4 MPa and Output75%balancing
Output air capacity	140NL/min At SUP 0.4 MPa
Balancing pressure	75 %

Dimension





Appendix

Type of flame-proof certificates of XE

TIIS	Ex d IIB T6 Ex d IIB+H_2 T6 corresponding Hydrogen
ATEX 94/9/EC	II 2GEx d IIB+H_2 T6Gb Standards: EN60079-0:2009 EN60079-1:2007
IECEx02	Ex d IIB T6Gb Standards: IEC60079-0: 2007 IEC60079-1:2007
KOSHA	Ex d IIB+H_2 T6Gb

FAQ for X series

Q	We have SSS products and need to replace. How can we specify the full model?
A	Please kindly inquire us with S/N, written on the product plate. We can specify full model No by that.

Q	What is the range of air pressure for positioner?
A	140 to 700 kPa. Below 500 kPa is recommended. Also filter regulator XR100 is recommended for air suppily.

Q	Is positioners available in high temperature environment?
A	High temperature model (0 to 100 ℃) is available. Please be noted that flame-proof product is limited to the use in ambient temperature -20 to 60 ℃ . High temperature model is not flame-proof.

Q	Concerning pressure gauge, psi indicator or NPT connection is available?
A	We have option for indicator MPa, kPa, psi, bar. Also NPT is available. Please ask us for lead time.

Q	How can we choose orifice dia?
A	Please kindly refer to the table below.

Actuator type and Orifice dia

Actuator type	Capacity of actuator (litter)	Orifice dia
Double acting	below 0.3	0.45
	0.3 to 0.7	0.7
	0.7 to 1.5	1.0
	1.5 to 10.0	2.0
	10.0 or more	2.0 (5.0)
Single acting	below 0.1	0.45
	0.1 to 0.5	0.7
	0.5 to 1.0	1.0
	1.0 to 3.0	2.0
	3.0 or more	2.0 (5.0)

* Capacity of double acting actuator is total capacity of 2 rooms.

Company Profile

3S was established in 1986 in Tokyo, Japan as a unique expert-manufacturer of valve positioners. We have been in service for over 30 years .

We are highly trusted in Japanese industry because of high quality in products and services based on long years of experience. Our products - E/P and P/P positioners, smart positioners, I/P converters and peripherals - are used in various industries. Petrochemical, Chemical, Steel, Pulp & Paper, Power & Gas and more. They are often selected especially in hard-duty environment.

We have so much technological know-how that our products can be attached to a variety of different valve actuators.

We also serve various countries. We are willing to support our customers anywhere in the world.

Location

3S Head office and factory are located in Tokyo, Japan. This is our main manufacturing site.

We have sales branch at Osaka. Cooperating with distributors, our service is broadly covering customers all over Japan.

We have a representative office in Hanoi, Vietnam. Based on this office we will offer our service and products to Asian markets.

Vietnam

3S Co.,Ltd. (Representative office in Viet Nam)
14 Floor, VIT Tower, 519 Kim Ma Str, Ba Dinh Dist, Hanoi, Vietnam.

3S Customers

3S is the number one supplier in Japanese positioner industry. We have OEM contracts with leading Japanese valve manufacturers, with which we have been in long trusted relationship. We are very proud that many of our customers are satisfied with our high quality products and service.

Customers
Asahi Organic Chemicals Industry Co., Ltd.
Azbil Corporation
NBS Corporation
OKM(OKUMURA ENGINEERING Corporation)
KITZ Corporation
Konan electronic Co.,Ltd.
CKD Corporation
CCI Corporation
Toko Valex Co.,Ltd.
Tomoe Valve Co.,Ltd.
Nihon KOSO Co.,Ltd.
Nippon Daiya Valve Co.,Ltd.
Dresser Japan, Ltd.
Pentair Valves & Controls Japan Co.,Ltd.
Motoyama Eng. Works, Ltd.
YKV Corporation

Sales Record

Domestic (Japanese) end users.

- **Petrochemical**
  – JX (formerly Japan Oil), Idemitsu, Showa Shell, Cosmo Oil, etc.
- **Chemical**
  – Mitsubishi, Sumitomo, Mitsui, Asahi Kasei, Shin-Etsu, etc.
- **Steel**
  – Nippon Steel & Sumitomo Metal, JFE, Kobe Steel, etc.
- **Pulp & Paper**
  – Oji Paper, Nippon Paper, Daio Paper, Rengo, etc.
- **Power**
  – Tokyo Electric Power, Osaka EP, Tokyo Gas, etc.
- **Foods and Beverages**
  Coca-cola, Kirin, Sapporo, Suntory, Ajinomoto, etc
- **Sugar**
  Nippon Beet Sugar, Hokkaido sugar, etc

Other Indusries

- **Gas, Fiver, Medicine, Glass, Cigarettes, Plant engineerings, Cement, Shipbuilders, etc**

Overseas sales

Asia-Pacific
China, Taiwan, South Korea,VietNam, Philippines, Singapore, Thailand, India, Indonesia, Malaysia, Myanmar, Pakistan, Turkey

Middle East
Iran, Qatar, Saudi Arabia, UAE

Europe
Denmark, Germany, Portugal, Spain, Switzerland, UK, France

Other
Canada, Chile, USA, Zambia

Sales partners

Shanghai SSS Instrument Co.,Ltd.
1010shi, A zuo, 988hao, Datonglu, Zhabeiqu, Shanghaishi
TEL:+86-21-6630-7110
FAX:+86-21-3653-2336
E_mail: sss_cbi @126.com

Taiwan
Lamson Trading Corporation
2F, No.202 Pa teh Road Sec.2 Taipei Taiwan R.O.C.
台灣台北市松山區八德路二段 202 號 2F
TEL: +886-2-27521257(Rep)
FAX: +886-2-27711337

Korea
Ucontech Co., Ltd.
10F, Geumkang Bldg, 14-35, Yeouido-dong,
Yeongdeungpo-Gu, Seoul, 150-871 Korea
TEL: +82-2-780-6002(Rep)
FAX: +82-2-6008-6111

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