

MPseries



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 0.70MPa
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	IP66 (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°C Flameproof model: -20 to 60°C
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

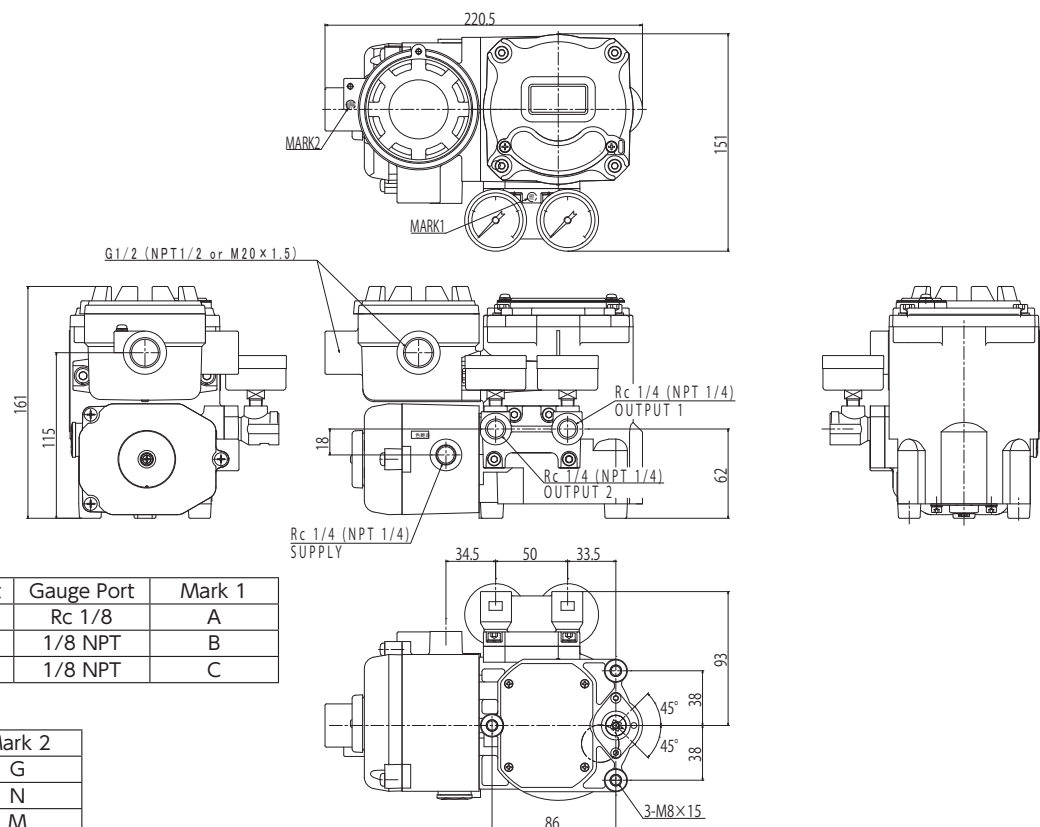
Notation table

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 (Not available for NEPSI flameproof.)	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
		Feedback signal & HART communication	4
4	Ambient temp.	Non-explosion proof: -20 to 80°C	S
		Ex d IIC T6: -20 to 60°C	
5	Actuator	Linear motion	L
		Rotary motion	R
6	Output press. gauge	0.2 MPa	M2
		0.4 MPa	M4
		1.0 MPa	M0

*Type of certificates are listed on the page 21.

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

Xseries



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 M20 x 1.5 (Not available for TIS flame proof)	
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°C Low temp. construction: (L) -50 to 60°C High temp. construction: (H) 0 to 100°C Ex d IIB T6: -20 to 60°C Ex d IIB+H ₂ T6: -20 to 60°C	
Weight	Approx. 2.2 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°C) 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 available.)	
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 °C Low temp. : (L) -50 to 60 °C High temp. : (L) 0 to 100 °C	
Weight	Approx. 1.3 to 1.7 kg	Approx. 1.4 to 1.8 kg
Material	Base: Aluminium Diecasting Standard cover: PBT resin (Mixed Glass Fiber) Option cover: Aluminium Diecasting	

*1 Contact us for kPa,psi,bar displays.

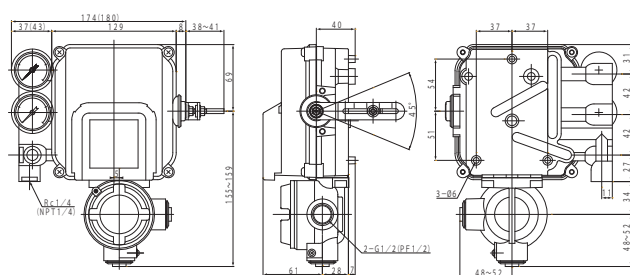
* Dry air (dew point -30°C) is required.

* Air filter 5 μm is required.

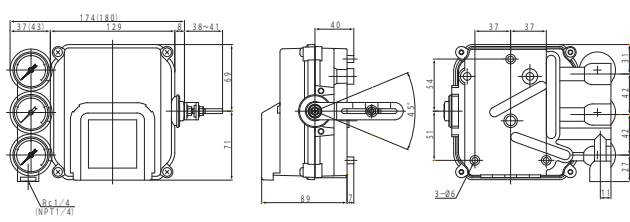
Dimension

Linear motion / Side lever type

XE1●●-SS1

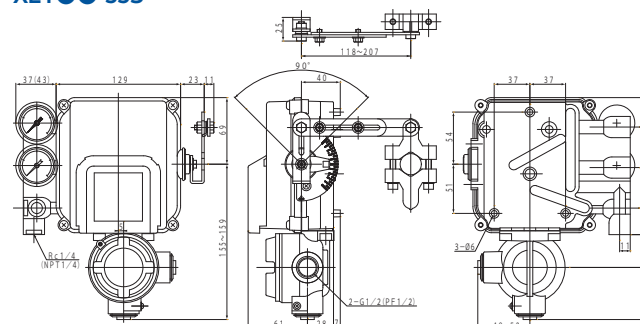


XP10●●-SS1

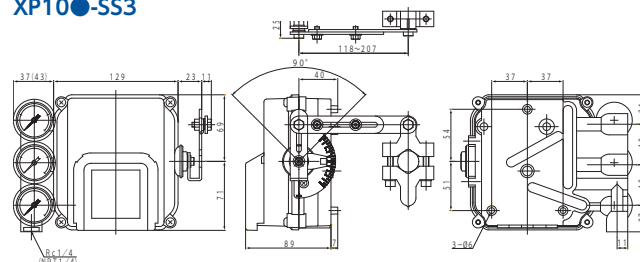


Rotary motion / Linkage lever type

XE1●●-SS3

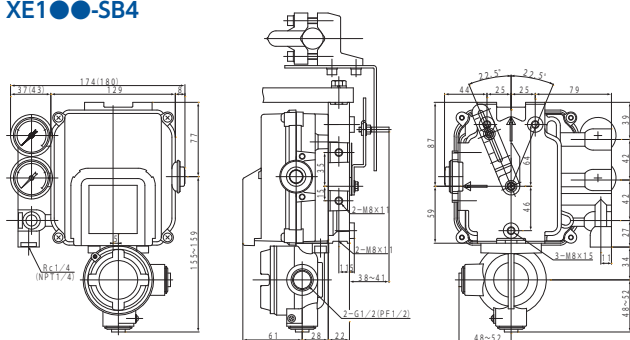


XP10●●-SS3

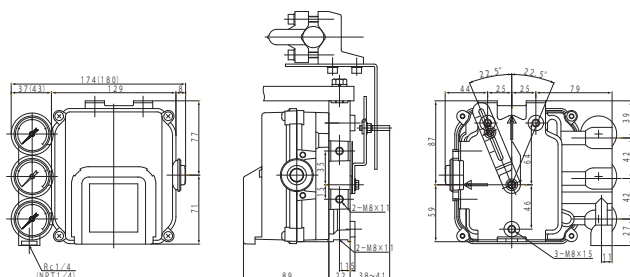


Linear motion / Back lever type

XE1●●-SB4

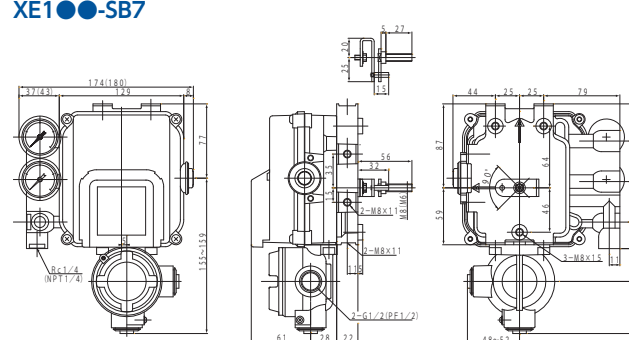


XP10●●-SB4

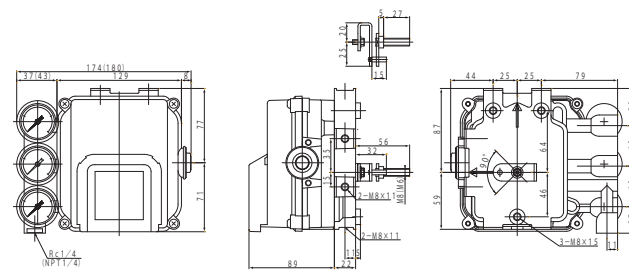


Concentric rotary motion / Back lever type

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 °C (Flameproof) Standard: -20 to 83 °C (Non-explosion proof)	S		
		Low temp construction: -50 to 60 °C	L		
		High temp construction: 0 to 100 °C	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	B4 / C4La		
6	Outlet pressure gauge	Rotary motion / top mount type / 2 phases cam: linear	B7 / C7L		
		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		
7	Pilot relay	2 bar, 4 bar, 10 bar	B2, B4, B0		
		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		
8	Input signal	Quick speed: with cleaning pin	T1		
		*Number represents orifice size:			
		Notation	Orifice diameter	Double Acting	Single Acting
		1	5.0 mm or 2.0 mm (notation "2")	10.0 l ~	3.0 l ~
		2	2.0mm	1.5 ~ 10.0 l	1.0 ~ 3.0 l
		4	1.0mm	0.7 ~ 1.5 l	0.5 ~ 1.0 l
		5	0.7mm	0.3 ~ 0.7 l	0.1 ~ 0.5 l
		6	0.45mm	~ 0.3 l	~ 0.1 l
		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.

