



**IECEX / ATEX / KC / NEPSI flameproof**



**IECEX / ATEX / KC intrinsically safe**

## Specifications

|                        | <b>EPL</b>                                                             |                   |
|------------------------|------------------------------------------------------------------------|-------------------|
|                        | <b>Linear Type (Lever Feedback)</b>                                    |                   |
|                        | Single                                                                 | Double            |
| Input Signal           | 4~20 mA DC (Note. 1)                                                   |                   |
| Input Resistance       | 235 ± 15 Ω                                                             |                   |
| Air Supply             | Max. 7.0 bar (100 psi) free of oil, water, and moisture                |                   |
| Standard Stroke        | 10 ~ 80mm (Note. 2)                                                    |                   |
| Pneumatic Connections  | PT(Rc) 1/4 or NPT 1/4                                                  |                   |
| Electrical Connections | PF(G) 1/2 or NPT 1/2                                                   |                   |
| Protection Class       | Ex dmb IIB+H <sub>2</sub> T6 / Ex dmb IIC T6/T5<br>Ex ia IIC T6 / IP66 |                   |
| Ambient Temperature    | -20 ~ +70°C (Note. 3)                                                  |                   |
| Pressure Gauge         | Stainless steel                                                        |                   |
| Output Characteristics | Linear                                                                 |                   |
| Linearity              | Within ±1.0 % F.S                                                      | Within ±1.5 % F.S |
| Sensitivity            | Within ±0.2 % F.S                                                      | Within ±0.5 % F.S |
| Hysteresis             | Within 1.0 % F.S                                                       |                   |
| Repeatability          | Within ±0.5 % F.S                                                      |                   |
| Air Consumption        | 5 LPM (Sup. 1.4 kgf/cm <sup>2</sup> )                                  |                   |
| Flow Capacity          | 80 LPM (Sup. 1.4 kgf/cm <sup>2</sup> )                                 |                   |
| Material               | Aluminum die-cast                                                      |                   |
| Weight                 | 3.3 kg (with terminal box)<br>3.0 kg (without terminal box)            |                   |

**Note** : 1) 1/2 split range is available for 4~12mA input signal or 12~20mA input signal  
2) Feedback lever can be extended to stroke 80 ~ 150mm

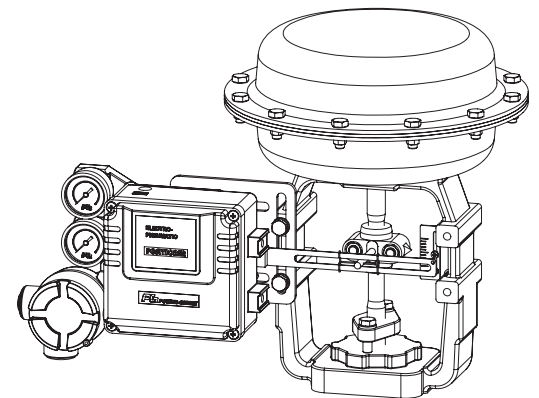
**Robust valve control device giving a confidence in reliable performance and outstanding durability under harsh working environments**

## Features

- ▶ Easy maintenance
- ▶ Precise calibration with simple SPAN and ZERO adjustments
- ▶ Simple conversion to direct acting or reverse acting
- ▶ 1/2 split range available
- ▶ Rugged aluminum housing with corrosion-resistant coating
- ▶ Vibration resistant design
- ▶ Stainless steel gauges standard
- ▶ Restricted pilot valve orifice kit for small actuators included
- ▶ ATEX-certified flameproof Ex md IIB T5
- ▶ KC-certified flameproof Ex dmb IIB+H<sub>2</sub> T6
- ▶ IECEX / KC-certified flameproof Ex dmb IIC T6/T5
- ▶ NEPSI-certified flameproof Ex dmb IIB+H<sub>2</sub> T6
- ▶ IECEX-certified intrinsically safe Ex ia IIC T6
- ▶ ATEX-certified intrinsically safe Ex ia IIC T6
- ▶ KC-certified intrinsically safe Ex ia IIC T6

## Options

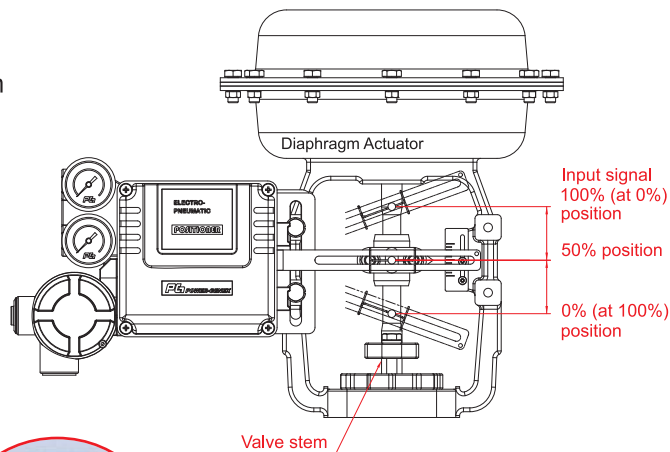
- ▶ Position transmitter (4...20 mA output signal)
- ▶ High temperature



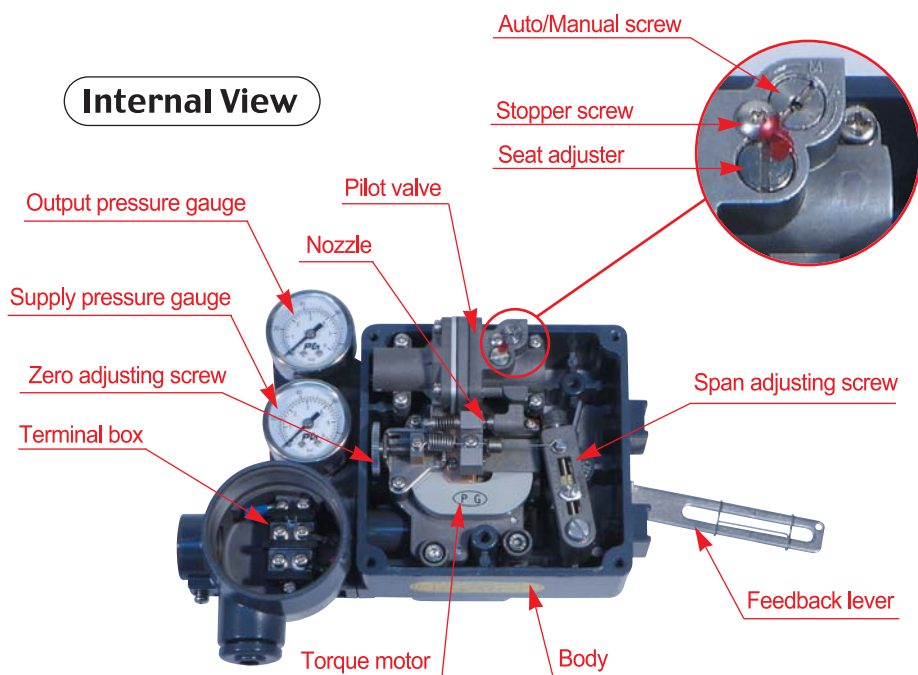
up to +120°C without feedback options  
3) Temperature option : up to +85°C with feedback options  
up to -40°C without feedback options

## Mounting

1. Install the EPL positioner so that the angle between the valve stem and the feedback lever can be  $90^\circ$  at 12mA input signal (50%) as shown to the right.
2. The operating angle of the EPL feedback lever is minimum  $10^\circ$  to maximum  $30^\circ$ .



## Internal View



## Air Connections

### Direct Acting (DA)

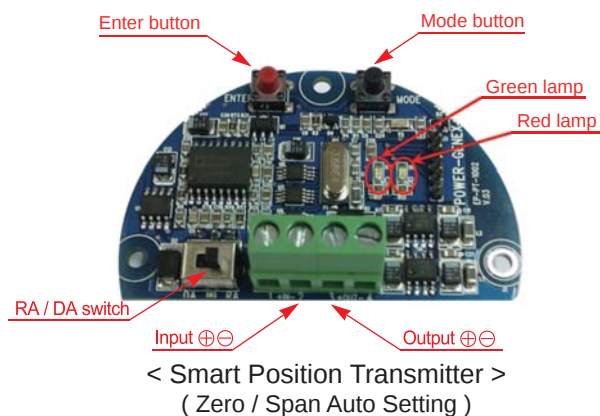
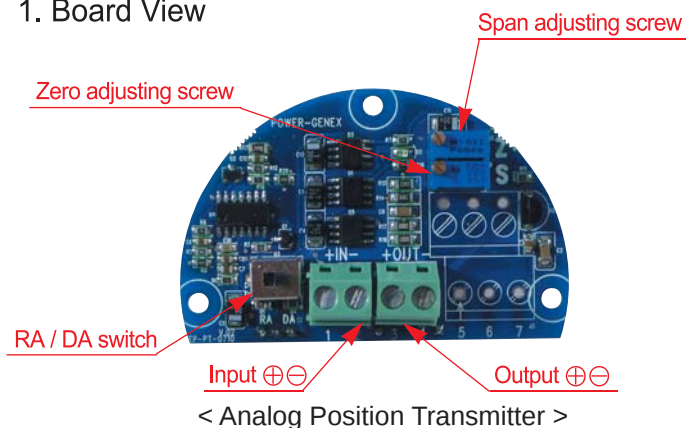
|                                                                                                     |  |
|-----------------------------------------------------------------------------------------------------|--|
| As the input signal increases,<br>Valve stem moves downwards<br>Actuator : DA<br>Connection : out 1 |  |
| As the input signal increases,<br>Valve stem moves downwards<br>Actuator : DA<br>Connection : out 2 |  |
| As the input signal increases,<br>Valve stem moves downwards                                        |  |

### Reverse Acting (RA)

|                                                                                                   |  |
|---------------------------------------------------------------------------------------------------|--|
| As the input signal increases,<br>Valve stem moves upwards<br>Actuator : RA<br>Connection : out 2 |  |
| As the input signal increases,<br>Valve stem moves upwards<br>Actuator : RA<br>Connection : out 1 |  |
| As the input signal increases,<br>Valve stem moves upwards                                        |  |

## Position Transmitter Options (Built-in Type)

### 1. Board View

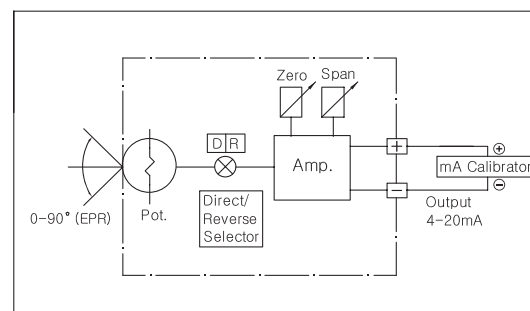


### 2. Position Transmitter (4-20mA output signal)

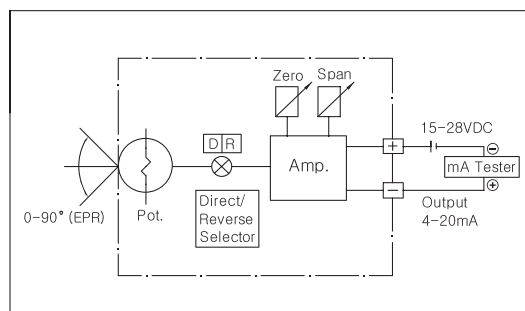
#### a. Specifications

|                          |                               |
|--------------------------|-------------------------------|
| Power Supply Rating      | 5.5 - 30 VDC loop power       |
| Recommended Power Supply | 24 VDC                        |
| Output Signal            | 4 - 20 mA, 2-wire             |
| Operating Temperature    | -20 °C ~ +85 °C               |
| Load Impedance           | 0 ~ 600 ohms                  |
| Max. Output              | 30 mA DC                      |
| Linearity                | ±1.0 %                        |
| Hysteresis               | 1.0 % of full scale           |
| Repeatability            | ±0.5 % of full scale          |
| Adjustment               | Zero and Span in terminal box |

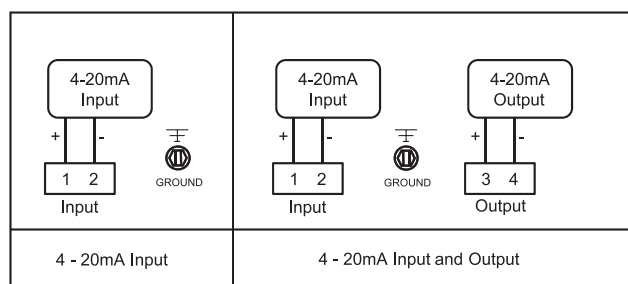
#### b. with mA calibrator



#### c. with multimeter

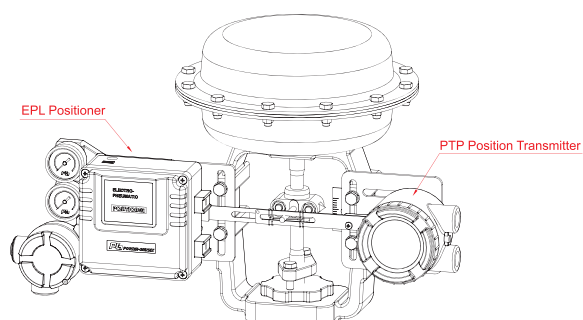


### 3. Wiring Diagram

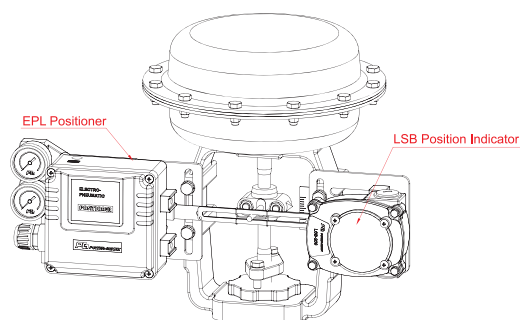


## Application for Limit Switches (External Type)

### 1) With explosion proof PTP-L



### 2) With non-explosion proof LSB-200



## How to Order

**EPL** —

Protection  
Class

Feedback  
Lever

Pressure  
Gauge  
(SUP. OUT)

Pilot  
Valve  
Orifice

Position  
Feedback

Connection  
Threads

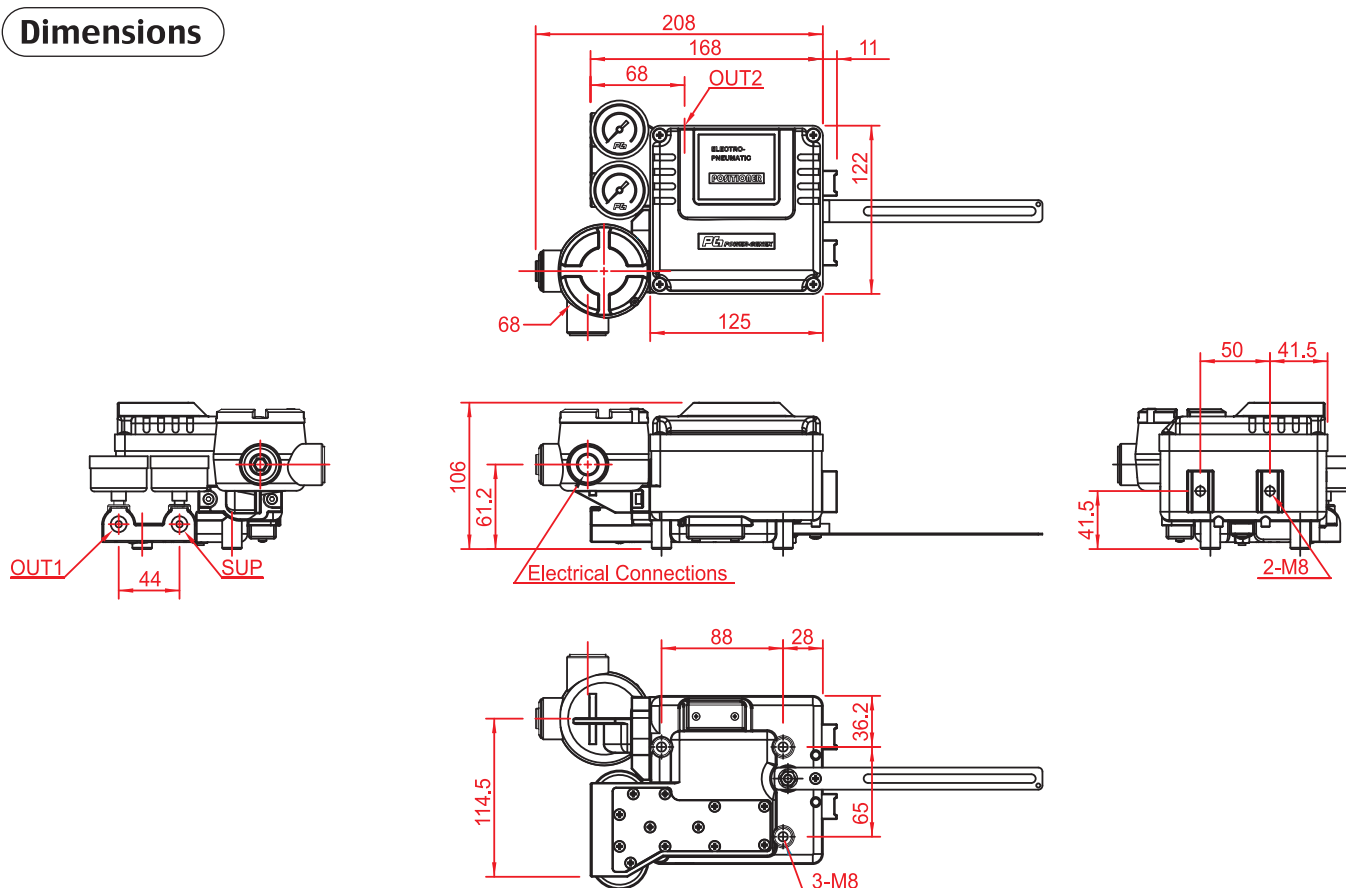
Operating  
Temp.

Mounting  
Bracket

| Description                  | Code                                                                                                                                                                                                                                                                                                                                       |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Protection Class :</b>    | F : KC flameproof Ex dmb IIB+H <sub>2</sub> T6<br>NEPSI flameproof Ex dmb IIB+H <sub>2</sub> T6<br>D : IECEx / KC flameproof Ex dmb IIC T6/T5<br>A : ATEX flameproof Eex md IIB T5<br>I : IECEx intrinsically safe Ex ia IIC T6<br>ATEX intrinsically safe Eex ia IIC T6<br>KC intrinsically safe Ex ia IIC T6<br>W : Weatherproof to IP66 |
| <b>Feedback Lever :</b>      | A : Stroke 10 ~ 40mm<br>B : Stroke 10 ~ 80mm<br>C : Stroke 80 ~ 150mm                                                                                                                                                                                                                                                                      |
| <b>Pressure Gauge :</b>      | 1 : 6 bar (90 psi)<br>2 : 10 bar (150 psi)                                                                                                                                                                                                                                                                                                 |
| <b>Pilot Valve Orifice :</b> | S : Standard (Actuator volume over 180cm <sup>3</sup> )<br>M : Small orifice (φ1.0 or φ0.7)<br>(Actuator volume over 90 ~ 180cm <sup>3</sup> )                                                                                                                                                                                             |

| Description                                                    | Code                                                                                                                                               |
|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Position Feedback :</b><br>(only for weatherproof type)     | N : None (standard)<br>O : Analog position transmitter<br>(4 ~ 20mA output signal)<br>S : Smart position transmitter<br>(4 ~ 20mA output signal)   |
| <b>Connection Threads :</b><br>(pneumatic - electrical)        | 3 : PT(Rc) 1/4 - PF(G) 1/2 (standard)<br>4 : NPT 1/4 - NPT 1/2<br>5 : PT(Rc) 1/4 - M20 x 1.5                                                       |
| <b>Operating Temperature :</b><br>(only for weatherproof type) | T : 70°C (standard)<br>H : 120°C (without position feedback option)<br>85°C (with position feedback option)<br>L : -40°C (without feedback option) |
| <b>Mounting Bracket :</b>                                      | N : None<br>L : IEC 60534-6-1                                                                                                                      |

## Dimensions





**IECEX / ATEX / KC / NEPSI flameproof**



**IECEX / ATEX / KC intrinsically safe**

## Specifications

|                        | <b>EPR</b>                                                             |                   |
|------------------------|------------------------------------------------------------------------|-------------------|
|                        | <b>Rotary Type (Cam Feedback)</b>                                      |                   |
|                        | Single                                                                 | Double            |
| Input Signal           | 4~20 mA DC (Note. 1)                                                   |                   |
| Input Resistance       | 235 ± 15 Ω                                                             |                   |
| Air Supply             | Max. 7.0 bar (100 psi) free of oil, water, and moisture                |                   |
| Operating Angle        | 60 ~ 100° (Note. 2)                                                    |                   |
| Pneumatic Connections  | PT(Rc) 1/4 or NPT 1/4                                                  |                   |
| Electrical Connections | PF(G) 1/2 or NPT 1/2                                                   |                   |
| Protection Class       | Ex dmb IIB+H <sub>2</sub> T6 / Ex dmb IIC T6/T5<br>Ex ia IIC T6 / IP66 |                   |
| Ambient Temperature    | -20 ~ +70°C (Note. 3)                                                  |                   |
| Pressure Gauge         | Stainless steel                                                        |                   |
| Output Characteristics | Linear                                                                 |                   |
| Linearity              | Within ±1.0 % F.S                                                      | Within ±1.5 % F.S |
| Sensitivity            | Within ±0.5 % F.S                                                      |                   |
| Hysteresis             | Within 1.0 % F.S                                                       |                   |
| Repeatability          | Within ±0.5 % F.S                                                      |                   |
| Air Consumption        | 5 LPM (Sup. 1.4 kgf/cm <sup>2</sup> )                                  |                   |
| Flow Capacity          | 80 LPM (Sup. 1.4 kgf/cm <sup>2</sup> )                                 |                   |
| Material               | Aluminum die-cast                                                      |                   |
| Weight                 | 3.5 kg (with terminal box)<br>3.2 kg (without terminal box)            |                   |

**Note** : 1) 1/2 split range is available for 4~12mA input signal or 12~20mA input signal  
2) Operating angle can be adjusted to 0~60° or 0~100°

**Robust valve control device giving a confidence in reliable performance and outstanding durability under harsh working environments**

## Features

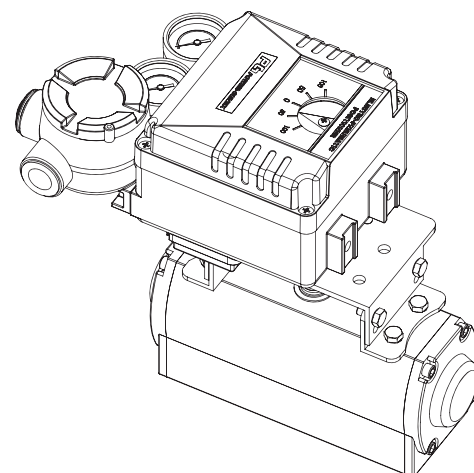
- ▶ Easy maintenance
- ▶ Precise calibration with simple SPAN and ZERO adjustments
- ▶ Simple conversion to direct acting or reverse acting
- ▶ 1/2 split range available
- ▶ Rugged aluminum housing with corrosion-resistant coating
- ▶ Vibration resistant design
- ▶ Stainless steel gauges standard
- ▶ Restricted pilot valve orifice kit for small actuators included
- ▶ **Ex** ATEX-certified flameproof Eex md IIB T5
- ▶ **KC** KC-certified flameproof Ex dmb IIB+H<sub>2</sub> T6
- ▶ **IECEX** **KC** IECEX / KC-certified flameproof Ex dmb IIC T6/T5
- ▶ **NEPSI** NEPSI-certified flameproof Ex dmb IIB+H<sub>2</sub> T6
- ▶ **IECEX** IECEX-certified intrinsically safe Ex ia IIC T6
- ▶ **Ex** ATEX-certified intrinsically safe Eex ia IIC T6
- ▶ **KC** KC-certified intrinsically safe Ex ia IIC T6

## Options

- ▶ Position transmitter (4...20 mA output signal)
- ▶ 2 x SPDT limit switch
- ▶ 2 x P&F proximity sensor NJ2-V3-N
- ▶ Visual dome indicator ▶ High temperature

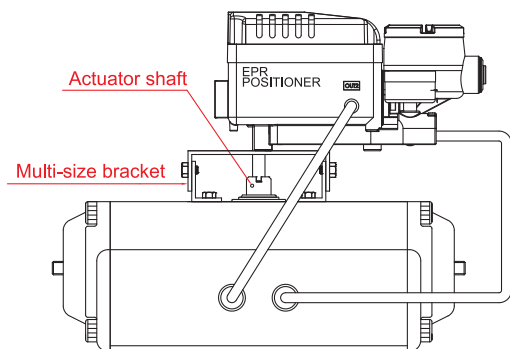


**With Dome Indicator**



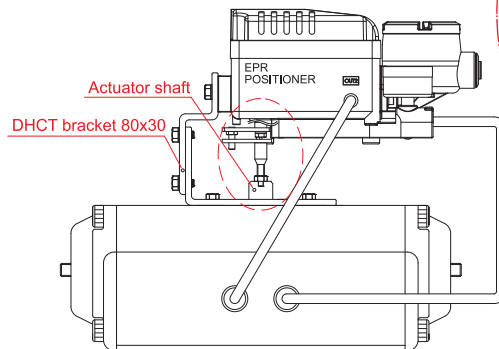
up to +120°C without feedback options  
3) Temperature option : up to +85°C with feedback options  
up to -40°C without feedback options

## Mounting

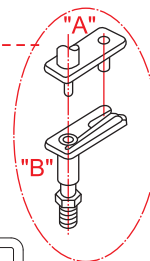


NAMUR Type Mounting

Note that feedback lever shaft "A" should be placed in the orifice of fork lever "B" and they should be in perfect alignment with a rotary actuator output shaft



Fork Lever Type Mounting

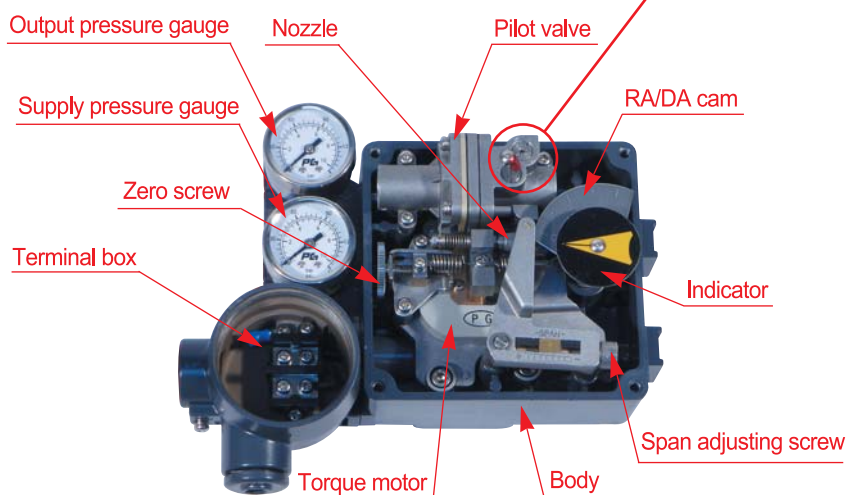


## Internal View

Auto/Manual screw

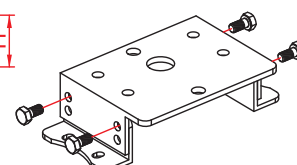
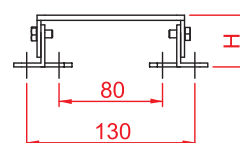
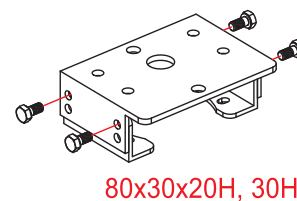
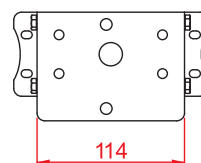
Stopper screw

Seat adjuster



## Multi-size Bracket

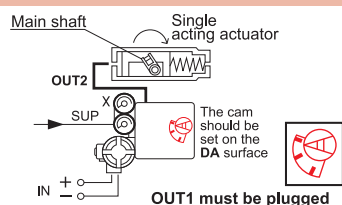
| TYPE           | H  |
|----------------|----|
| 80 x 30 x 20H  | 41 |
| 80 x 30 x 30H  | 51 |
| 130 x 30 x 20H | 41 |
| 130 x 30 x 30H | 51 |
| 130 x 30 x 50H | 71 |



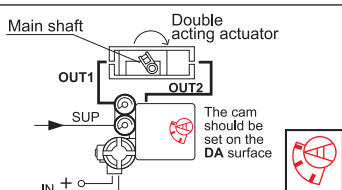
## Air Connections

### Direct Acting (DA)

As the input signal increases, Actuator stem rotates clockwise.

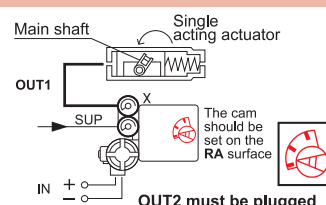


As the input signal increases, Actuator stem rotates clockwise.

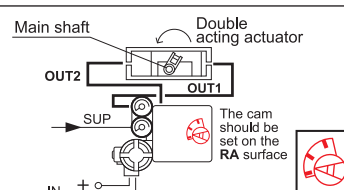


### Reverse Acting (RA)

As the input signal increases, Actuator stem rotates counter clockwise.

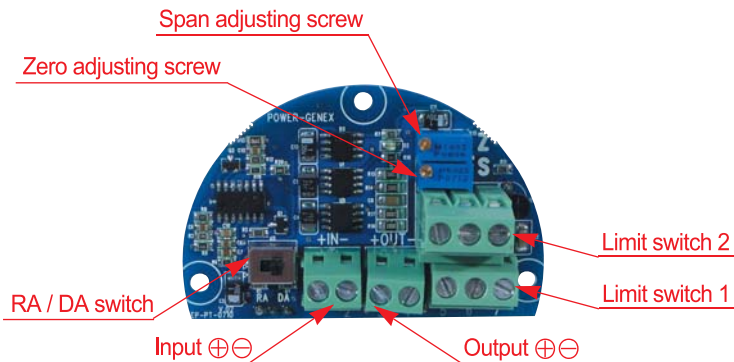


As the input signal increases, Actuator stem rotates counter clockwise.

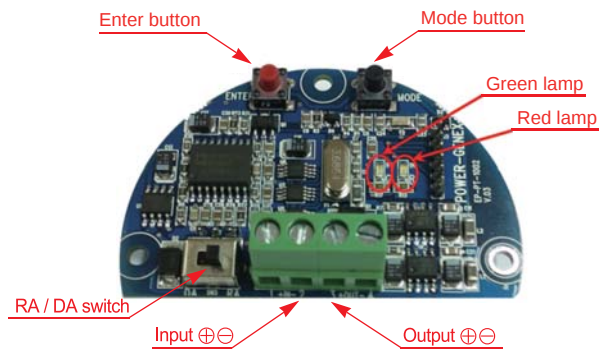


## Position Transmitter Options (Built-in Type)

### 1. Board View



< Analog Position Transmitter & Limit Switches >

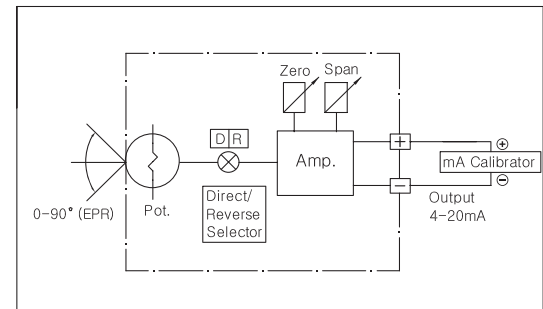


< Smart Position Transmitter >  
( Zero / Span Auto Setting )

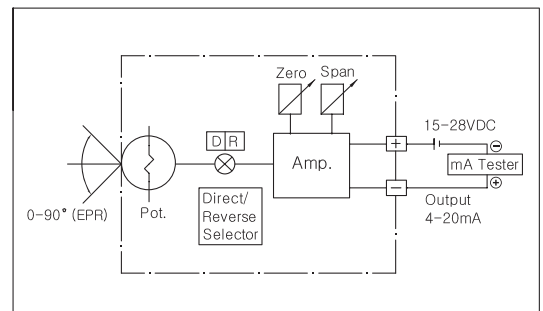
### 2. Position Transmitter (4-20mA output signal) a. Specifications

|                          |                               |
|--------------------------|-------------------------------|
| Power Supply Rating      | 5.5 - 30 VDC loop power       |
| Recommended Power Supply | 24 VDC                        |
| Output Signal            | 4 - 20 mA, 2-wire             |
| Operating Temperature    | -20 °C ~ +85 °C               |
| Load Impedance           | 0 ~ 600 ohms                  |
| Max. Output              | 30 mA DC                      |
| Linearity                | ±1.0 %                        |
| Hysteresis               | 1.0 % of full scale           |
| Repeatability            | ±0.5 % of full scale          |
| Adjustment               | Zero and Span in terminal box |

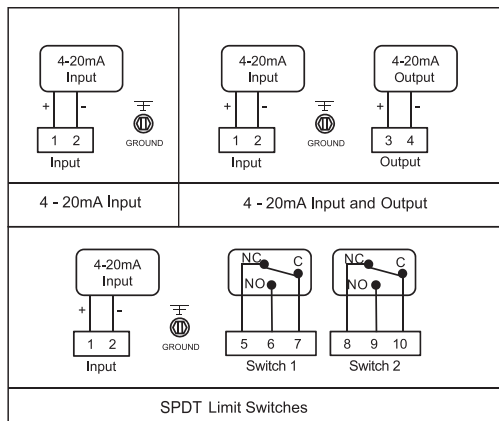
### b. with mA calibrator



### c. with multimeter



### 3. Wiring Diagram

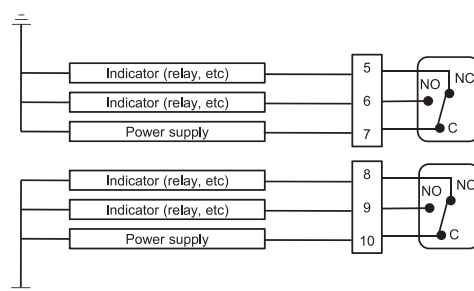


### 4. SPDT Limit Switches

#### a. Specifications

|            |                                                         |
|------------|---------------------------------------------------------|
| Contacts   | SPDT Form C                                             |
| AC Rating  | 16 A 1/2 HP 125/250 VAC                                 |
| DC Rating  | 0.6 A 125 VDC / 0.3 A 250 VDC                           |
| Adjustment | Cams with set screws<br>(L-wrench included for setting) |

#### b. Wiring and Application



## How to Order

**EPR**

Protection  
Class

Feedback  
Shaft

Pressure  
Gauge  
(SUP. OUT)

Pilot  
Valve  
Orifice

Position  
Feedback

Connection  
Threads

Dome  
Indicator

Operating  
Temp.

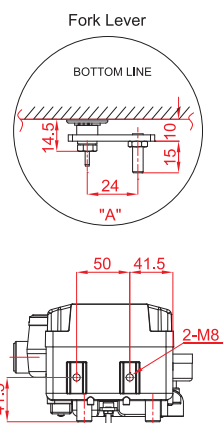
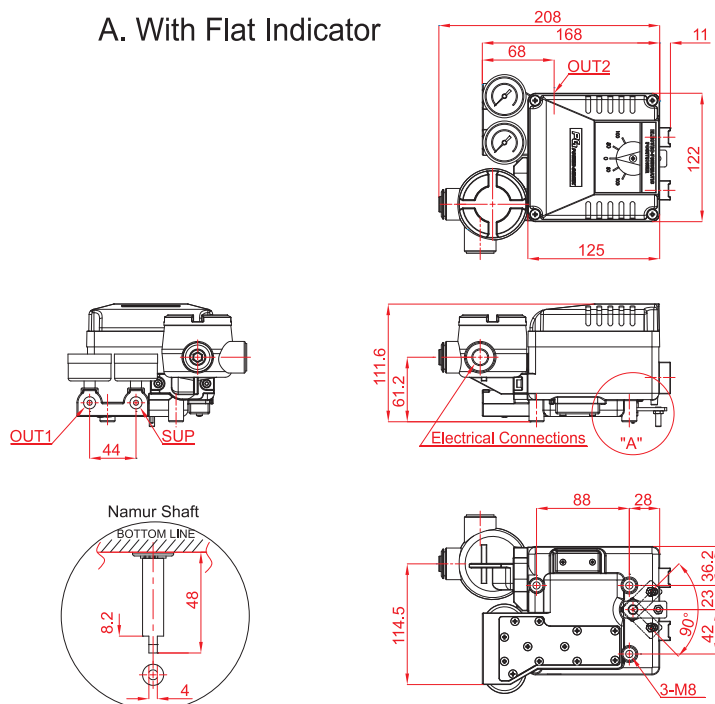
Mounting  
Bracket

| Description                                                | Code                                                                                                                                                                                                                                                                                                                                     |
|------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Protection Class :</b>                                  | F : KC flameproof Ex dmb IIB+H <sub>2</sub> T6<br>NEPSI flameproof Ex dmb IIB+H <sub>2</sub> T6<br>D : IECEx/KC flameproof Ex dmb IIC T6/T5<br>A : ATEX flameproof Eex md IIB T5<br>I : IECEx intrinsically safe Ex ia IIC T6<br>ATEX intrinsically safe Eex ia IIC T6<br>KC intrinsically safe Ex ia IIC T6<br>W : Weatherproof to IP66 |
| <b>Feedback Shaft :</b>                                    | N : NAMUR shaft (direct mounting)<br>A : Fork lever M6 x 40L<br>B : Fork lever other size on request                                                                                                                                                                                                                                     |
| <b>Pressure Gauge :</b>                                    | 1 : 6 bar (90 psi)<br>2 : 10 bar (150 psi)                                                                                                                                                                                                                                                                                               |
| <b>Pilot Valve Orifice :</b>                               | S : Standard (Actuator volume over 180cm <sup>3</sup> )<br>M : Small orifice (φ1.0 or φ0.7)<br>(Actuator volume over 90 ~180cm <sup>3</sup> )                                                                                                                                                                                            |
| <b>Position Feedback :</b><br>(only for weatherproof type) | N : None (standard)<br>O : Analog position transmitter<br>(4 ~ 20mA output signal)<br>S : Smart position transmitter<br>(4 ~ 20mA output signal)<br>L : 2 x SPDT limit switch<br>P : 2 x proximity sensor P&F NJ2-V3-N<br>M : O + L<br>Q : O + P                                                                                         |

| Description                                                    | Code                                                                                                                                                                                                                                                      |
|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Connection Threads :</b><br>(pneumatic - electrical)        | 3 : PT(Rc) 1/4 - PF(G) 1/2 (standard)<br>4 : NPT 1/4 - NPT 1/2<br>5 : PT(Rc) 1/4 - M20 x 1.5                                                                                                                                                              |
| <b>Dome Indicator :</b>                                        | N : Flat indicator (standard)<br>D : Dome indicator                                                                                                                                                                                                       |
| <b>Operating Temperature :</b><br>(only for weatherproof type) | T : 70°C (standard)<br>H : 120°C (without position feedback option)<br>85°C (with position feedback option)<br>L : -40°C (without feedback option)                                                                                                        |
| <b>Mounting Bracket :</b>                                      | N : None<br>R : Multi-size NAMUR bracket<br>for IEC 60534-6-2 /<br>VDI/VDE 3845<br>(130x30x50 bracket on request)<br>F : PG bracket 80x30<br>for fork lever type<br>E : Multi-size NAMUR bracket<br>for fork lever type<br>(130x30x50 bracket on request) |

## Dimensions

### A. With Flat Indicator



### B. With Dome Indicator

