

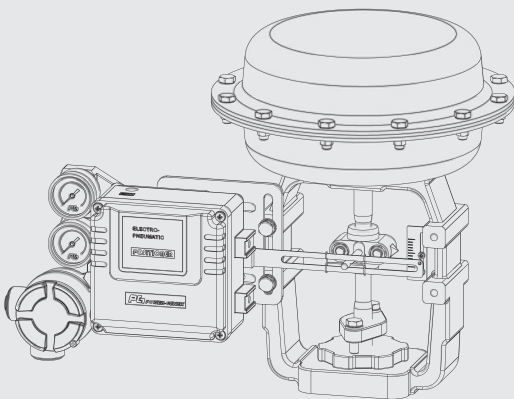
EPL / EPR

Electro-Pneumatic Positioner

0-6.6.02-E

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EPL



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

FEATURES for EPL

- 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
- KC-certified flameproof Ex dmb 11B+H₂ T6
- NEPSI-certified flameproof Ex dmb 11B+H₂ T6
- IECEx-certified flameproof Ex dmb IIC T6/T5
- ATEX-certified flameproof Ex dmb IIC T6/T5
- KC-certified flameproof Ex dmb IIC T6/T5
- 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 (+120°C)
- Low temperature (-40°C)

SPECIFICATIONS

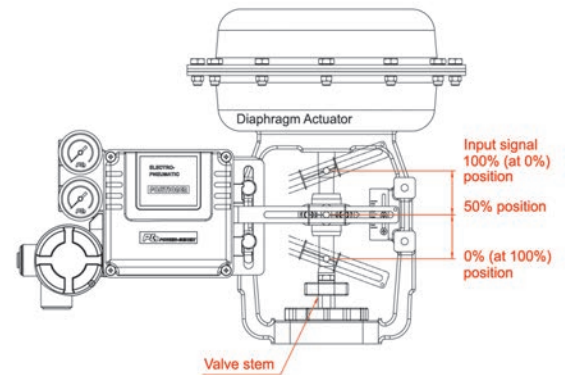
| | EPL | |
|-------------------------------|--|-------------------|
| | Single | Double |
| Input Signal | 4-20mA DC (Note. 1) | |
| Input Resistance | 235 ± 15Ω | |
| Air Supply | Max 7.0 bar (100 psi) free of oil, water and moisture | |
| Standard Stroke | 10-80 mm (Note. 2) | |
| Pneumatic Connections | PT(Rc) 1/4 or NPT 1/4 | |
| Electrical Connections | PF (G) ½ or NPT ½ | |
| Protection Class | Ex dmb IIB+H ₂ T6/ Ex dmb IIC T6/T5 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 bar) | |
| Flow Capacity | 80 LPM (Sup. 1.4 bar) | |
| Body Material | Aluminium die-cast | |
| Weight | 3.3 kg (with terminal box) 3.0 kg (without terminal box) | |

Note:

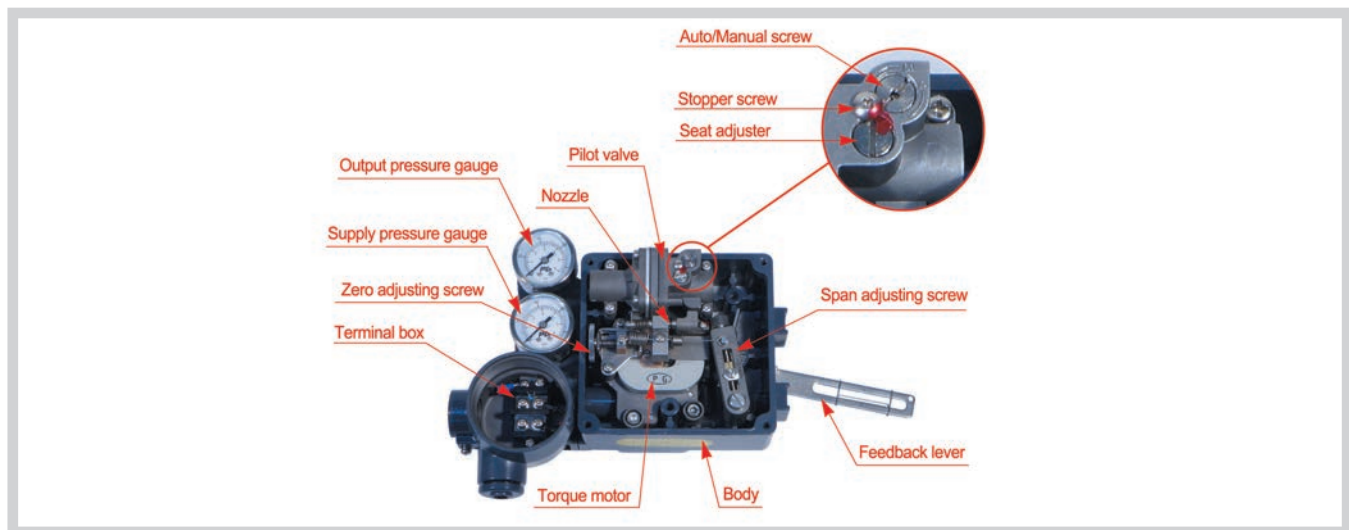
- 1) 1/2 split range is available for 4-12mA input signal or 12-20mA input signal
- 2) Feedback lever can be extended to stroke 80-150mm
- 3) Temperature option: up to +120°C without feedback options
up to +85°C without feedback options
up to -40°C without feedback options

MOUNTING

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



INTERNAL VIEW



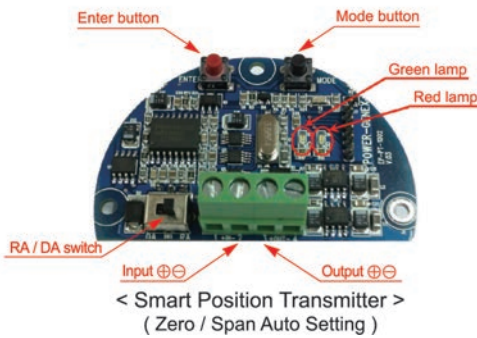
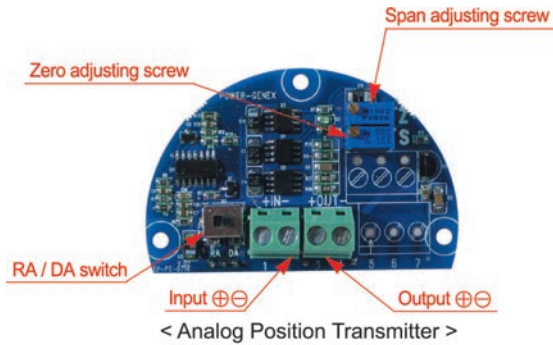
AIR CONNECTIONS

| Direct Acting (DA) | |
|--|--|
| As the input increases, Valve stem moves downwards Actuator: DA Connection: out 1 | |
| As the input increases, Valve stem moves downwards Actuator: DA Connection: out 2 | |
| As the input increases, Valve stem moves downwards | |

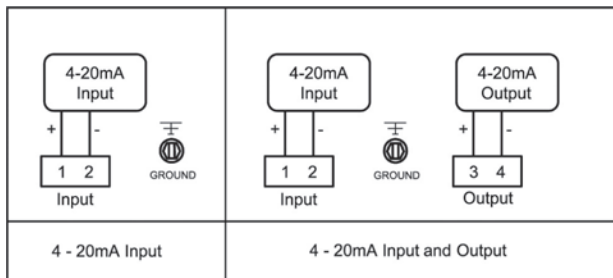
| Reverse Acting (RA) | |
|--|--|
| As the input increases, Valve stem moves upwards Actuator: RA Connection: out 2 | |
| As the input increases, Valve stem moves upwards Actuator: RA Connection: out 1 | |
| As the input increases, Valve stem moves upwards | |

POSITION TRANSMITTER OPTIONS (BUILT-IN TYPE)

1. Board View



3. Wiring Diagram

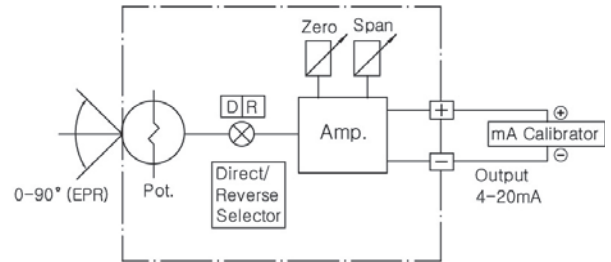


2. Position Transmitter (4-20mA output signal)

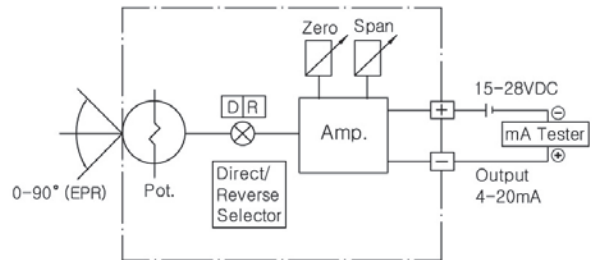
a. Specifications

| | |
|--------------------------|-------------------------------|
| 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

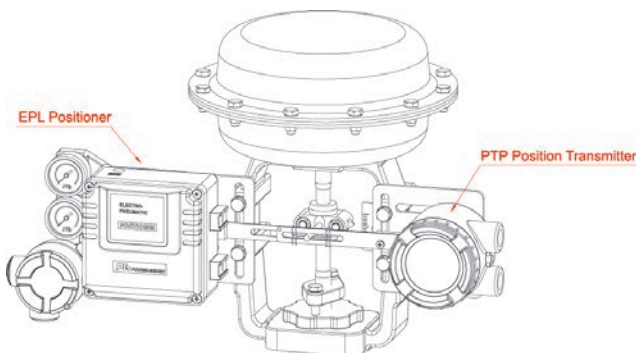


c. with multimeter

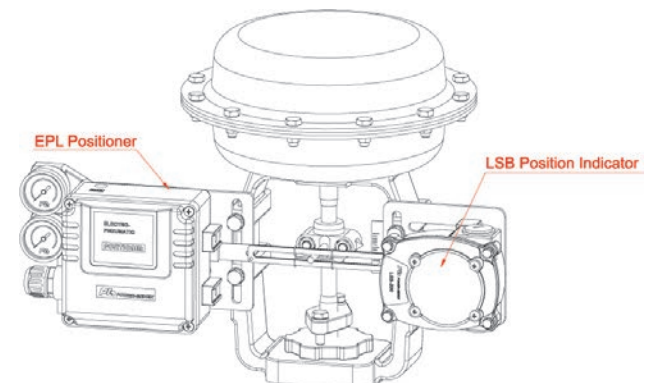


APPLICATION FOR LIMIT SWITCHES (EXTERNAL TYPE)

1) With explosion proof PTP-L



2) With non-explosion proof LSB-200



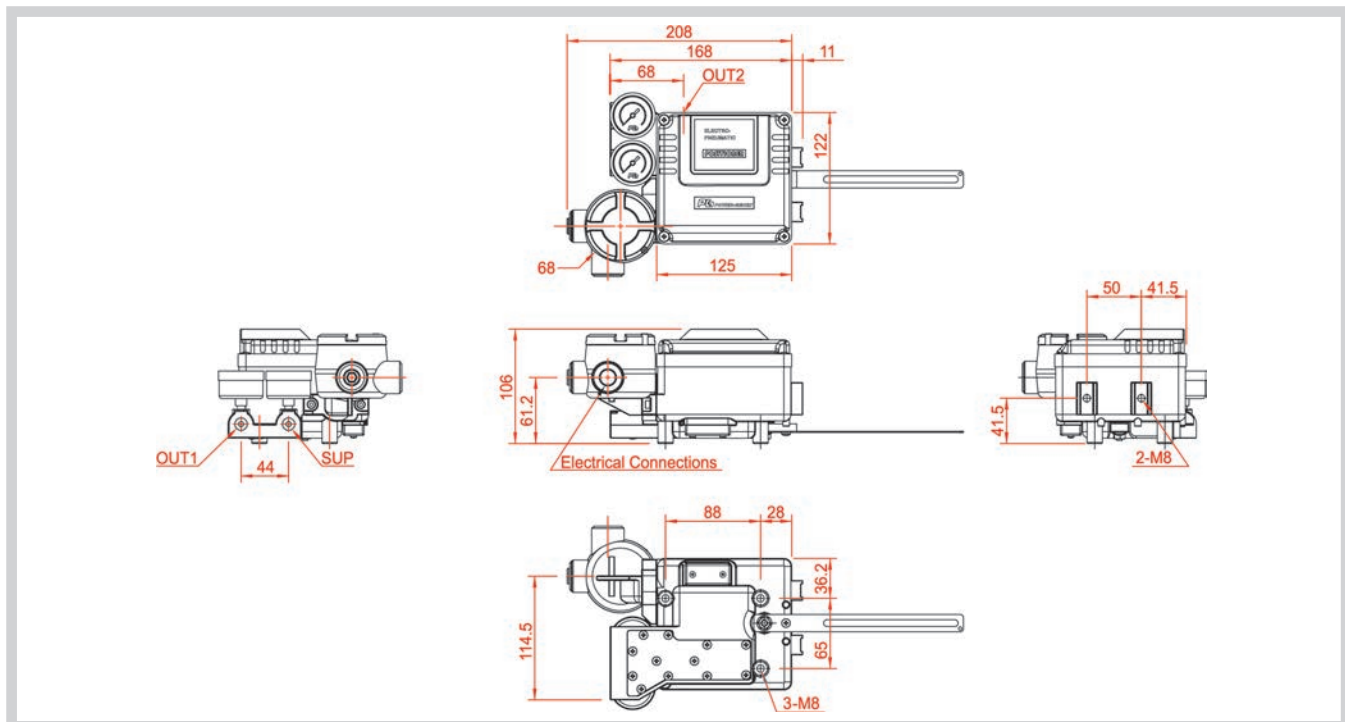
HOW TO ORDER

EPL —

| | | | | | | | |
|------------------|----------------|---------------------------|---------------------|-------------------|--------------------|-----------------|------------------|
| Protection Class | Feedback Lever | Pressure Gauge (SUP, OUT) | Pilot Valve Orifice | Position Feedback | Connection Threads | Operating Temp. | Mounting Bracket |
|------------------|----------------|---------------------------|---------------------|-------------------|--------------------|-----------------|------------------|

| Description | Code | Description | Code |
|-----------------------------|---|---|--|
| Protection Class: | F: KC flameproof Ex dmb IIB+H ₂ T6 NEPSI flameproof Ex dmb IIB+H ₂ T6 A: KC flameproof Ex dmb IIC T6/T5 D: IECEx flameproof Ex dmb IIC T6 I: IECEx intrinsically safe Ex ia IIC T6 ATEX intrinsically safe Ex ia IIC T6 KC intrinsically safe Ex ia IIC T6 W: Weatherproof to IP66 | Position Feedback: (only for waterproof type) | N: None (standard) O: Analog position transmitter (4~20mA output signal) S: Smart position transmitter (4~20mA output signal) |
| Feedback Lever: | A: Stroke 10~40 mm B: Stroke 10~80 mm C: Stroke 80~150 mm | Connection Threads: (pneumatic - electrical) | 3: PT(Rc) ¼ - PF(G) ½ (standard) 4: NPT ¼ - NPT ½ 5: PT(Rc) ¼ - M20 x 1.5 |
| Pressure Gauge: | 1: 6 bar (90 psi) 2: 10 bar (150 psi) | Operating Temperature: (only for waterproof type) | T: 70°C (standard) H: 120°C (without position feedback option) 85°C (with position feedback option) L: -40°C (without position feedback option) |
| Pilot Valve Orifice: | S: Standard (Actuator volume over 180 cm ³) M: Small orifice (Ø1.0 or Ø0.7) (Actuator volume over 90~180 cm ³) | Mounting Bracket: | N: None L: IEC 60534-6-1 |

DIMENSION SKETCH



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EPL / EPR

Electro-Pneumatic Positioner

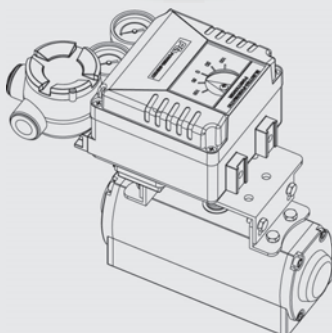
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EPR



With Dome Indicator













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

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 (+120 °C)
 - Low temperature (-40 °C)

FEATURES for EPR

- 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
-  KC-certified flameproof Ex dmb 11B+H₂ T6
-  NEPSI-certified flameproof Ex dmb 11B+H₂ T6
-   IECEx/KC-certified flameproof Ex dmb IIC T6/T5
-   ATEX/TR-CU-certified flameproof Ex dmb IIC T6/T5
-   IECEx/KC-certified intrinsically safe Ex ia IIC T6
-   ATEX/TR-CU-certified intrinsically safe Ex ia IIC T6

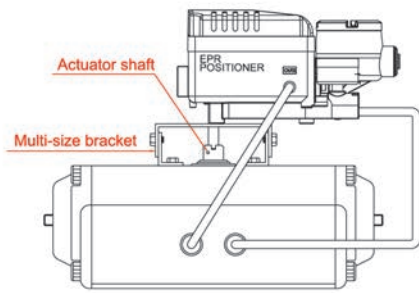
SPECIFICATIONS

| | EPR | |
|-------------------------------|---|-------------------|
| | Rotary Type (Cam Feedback) | |
| | Single | Double |
| Input Signal | 4-20mA DC (Note. 1) | |
| Input Resistance | 235 ± 15Ω | |
| 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) ½ or NPT ½ | |
| Protection Class | Ex dmb IIB+H ₂ T6/ Ex dmb IIC T6/T5 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 bar) | |
| Flow Capacity | 80 LPM (Sup. 1.4 bar) | |
| Body Material | Aluminium die-cast | |
| Weight | 3.5 kg (with terminal box) 3.2 kg (without terminal box) | |

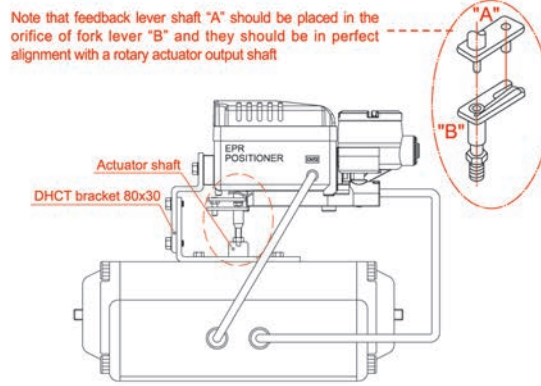
Note:

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

MOUNTING



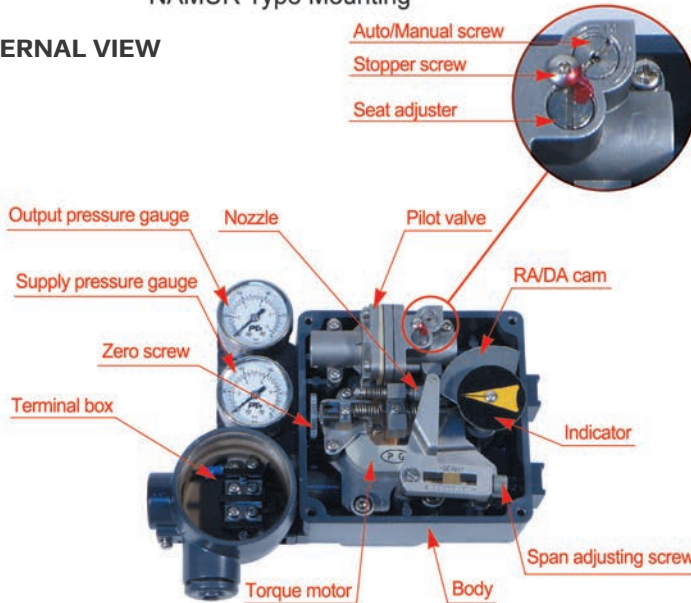
NAMUR Type Mounting



Fork Lever Type Mounting

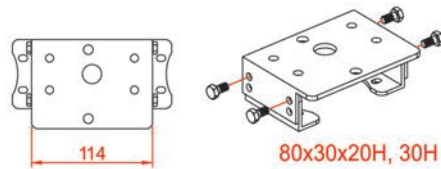
Note that feedback lever shaft "A" should be placed in the orifice of fork lever "B" and they should be in perfect alignment with a rotary actuator output shaft

INTERNAL VIEW

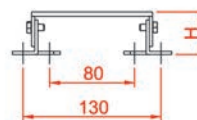


MULTI-SIZE BRACKET

| 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 |



80x30x20H, 30H

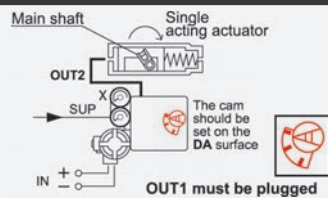


80x30x20H, 30H, 50H

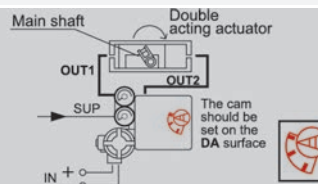
AIR CONNECTIONS

Direct Acting (DA)

As the input increases, Actuator stem rotates clockwise.

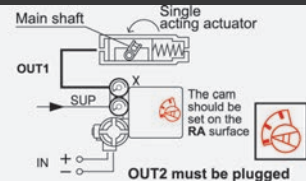


As the input increases, Actuator stem rotates clockwise.

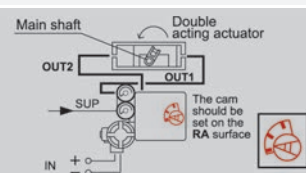


Reverse Acting (RA)

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

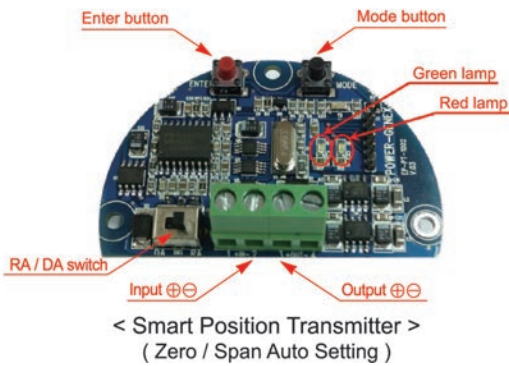
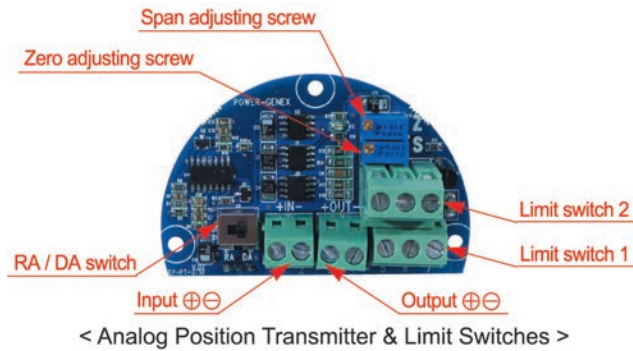


As the input signal increases, Actuator stem rotates counter clockwise.

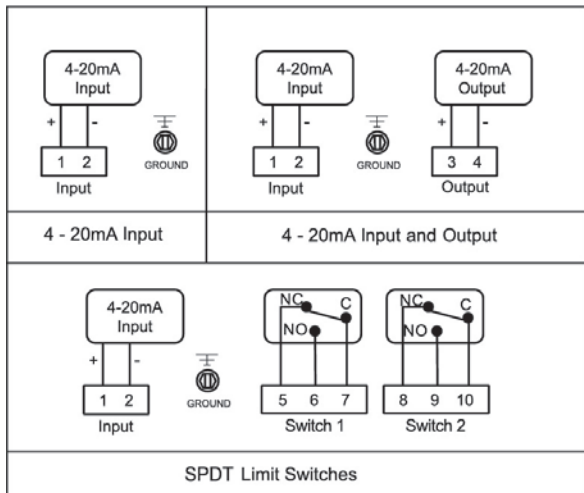


POSITION TRANSMITTER OPTIONS (BUILT-IN TYPE)

1. Board View



3. Wiring Diagram



4. SPDT Limit Switches

a. Specifications

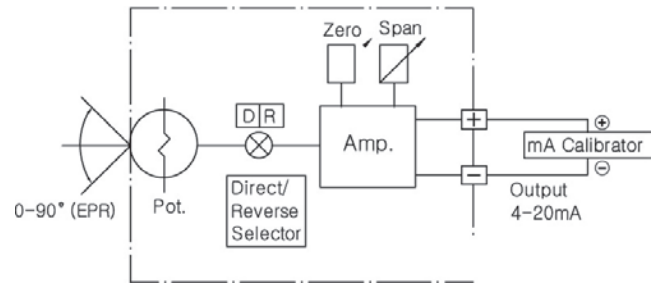
| Contacts | SPDT Form C |
|------------|---|
| AC Rating | 16 A ½ HP 125/250 VAC |
| DC Rating | 0.6 A 125 VDC / 0.3 A 250 VDC |
| Adjustment | Cams with set screws (L-wrench included for setting) |

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

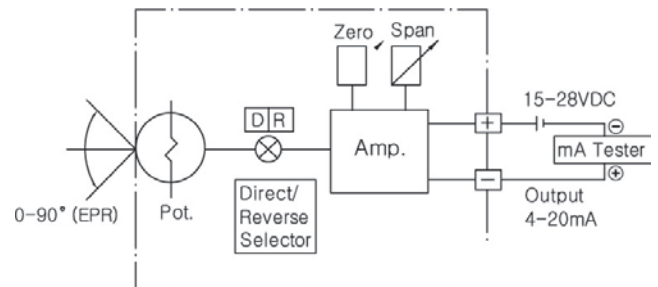
a. Specifications

| 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 |

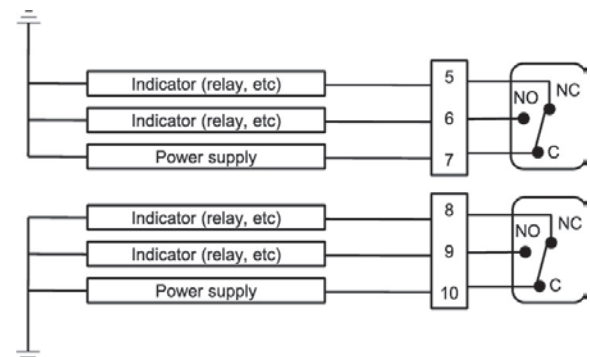
b. with mA calibrator



c. with multimeter



b) Wiring and Application



HOW TO ORDER

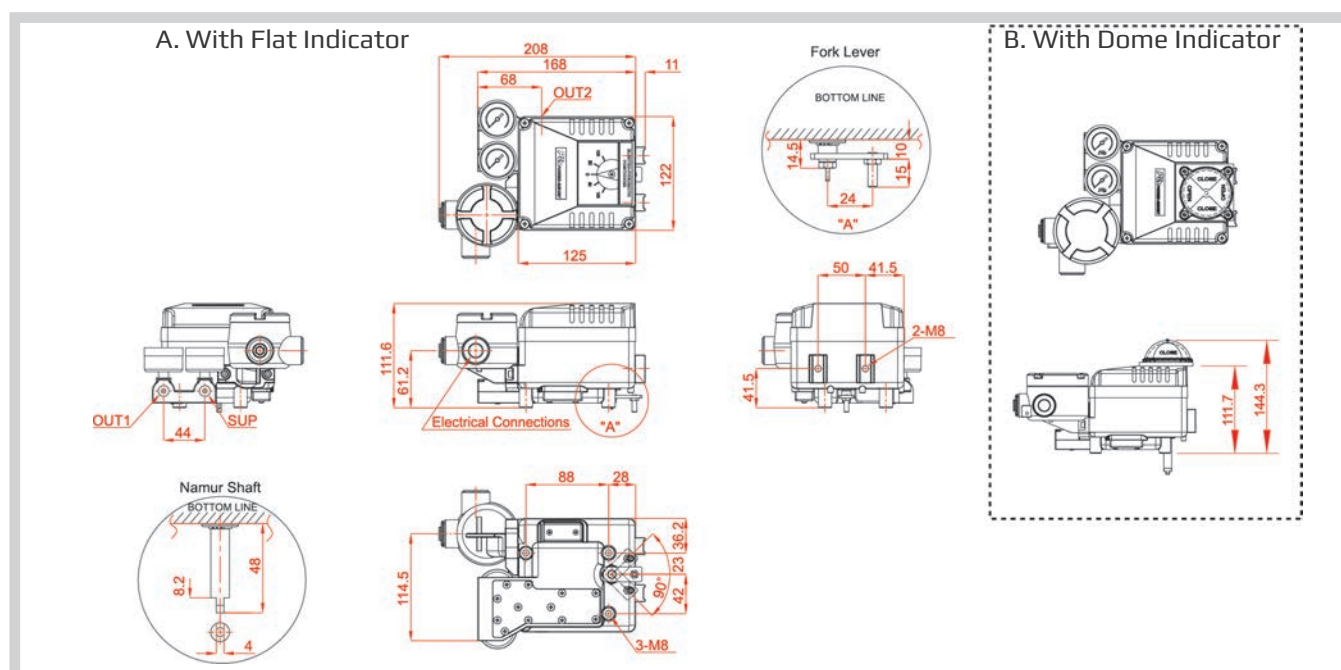
EPR

| | | | | | | | | |
|------------------|----------------|---------------------------|---------------------|-------------------|--------------------|----------------|-----------------|------------------|
| Protection Class | Feedback Shaft | Pressure Gauge (SUP, OUT) | Pilot Valve Orifice | Position Feedback | Connection Threads | Dome Indicator | Operating Temp. | Mounting Bracket |
|------------------|----------------|---------------------------|---------------------|-------------------|--------------------|----------------|-----------------|------------------|

| Description | Code |
|---|---|
| Protection Class: | F: KC flameproof Ex dmb IIB+H2 T6 NEPSI flameproof Ex dmb IIB+H2 T6 A: KC flameproof Ex dmb IIC T6/T5 D: IECEX flameproof Ex dmb IIC T6 I: IECEX intrinsically safe Ex ia IIC T6 ATEX intrinsically safe Ex ia IIC T6 KC intrinsically safe Ex ia IIC T6 W: Weatherproof to IP66 |
| Feedback Shaft: | N: NAMUR shaft (direct mounting) A: Fork lever M6 x 40L B: Fork lever other size on request |
| Pressure Gauge | 1: 6 bar (90psi) 2: 10 bar (150psi) |
| Pilot Valve Orifice: | S: Standard (Actuator volume over 180 cm ³) M: Small orifice (Ø 1.0 or Ø0.7) (Actuator volume 90~180cm ³) |
| Position Feedback: (only for weatherproof type) | N:None (standard) O: Analog position transmitter (4~20mA output signal) S: Smart position transmitter (4~20mA output signal) L: 2 x SPDT limit switch P: 2 x proximity sensor P&F NJ2-V3-N M: O + L Q: O + P |

| Description | Code |
|---|--|
| Connection Threads: (pneumatic) | 3: PT(Rc) ¼ 4: NPT ¼ 5: PR(Rc) ¼ - M20 x 1.5 |
| Dome Indicator: | N: Flat indicator (standard) D: Dome indicator |
| Operating Temperature: (only for weatherproof type) | T: 70°C (standard) H: 120°C (without position feedback option) 85°C (with position feedback option) L: -40°C (without position feedback option) |
| Mounting Bracket | N: None |
| - NAMUR Shaft Type: | R: Multi-size NAMUR bracket for IEC 60534-6-2/VDI/VDE 3845 (130 x 30 x 50 bracket on request) |
| - Fork Lever Type: | F: PG bracket 80x30 for fork lever type E: Multi-size NAMUR bracket for Fork lever type (130 x 30 x 50 bracket on request) |

DIMENSION SKETCH



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