

# Electro-Pneumatic Positioner

# EPR



Ⓔ ATEX / Ⓐ KC / Ⓐ NEPSI flameproof



IECEX / Ⓔ ATEX / Ⓐ KC intrinsically safe

## Specifications

|                        | EPR                                                                 |                    |
|------------------------|---------------------------------------------------------------------|--------------------|
|                        | Rotary Type (Cam Feedback)                                          |                    |
|                        | 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 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°

3) High temperature option : up to +120 °C without feedback options  
up to +85 °C with feedback options

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

## Features

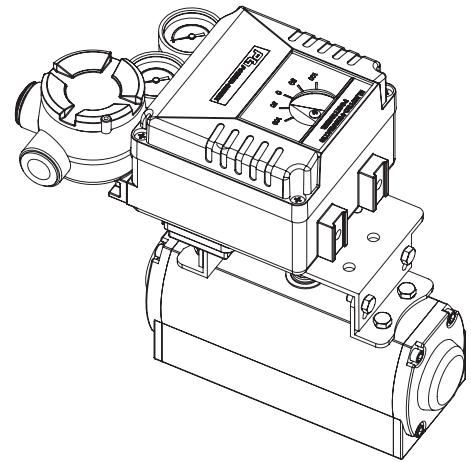
- ▶ Easy maintenance
- ▶ Precise calibration with simple SPAN and ZERO adjustments
- ▶ Simple conversion to direct acting or reverse acting
- ▶ 1/2 split range available
- ▶ Rugged aluminum housing with corrosion-resistant coating
- ▶ Vibration resistant design
- ▶ Stainless steel gauges standard
- ▶ Restricted pilot valve orifice kit for small actuators included
- ▶ Ⓔ ATEX-certified flameproof Ex dmb IIB T5
- ▶ Ⓐ KC-certified flameproof Ex dmb IIB+H<sub>2</sub> T6
- ▶ Ⓐ KC-certified flameproof Ex dmb IIC 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)
- ▶ 2 x SPDT limit switch
- ▶ 2 x P&F proximity sensor NJ2 - V3 - N
- ▶ Visual dome indicator ▶ High temperature



With Dome Indicator

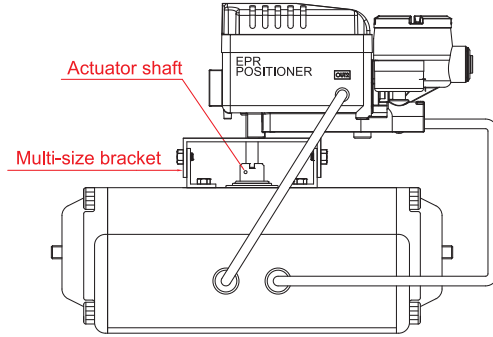


USKON AKIŞKAN KONTROL SİSTEMLERİ SANAYİ VE TİCARET LTD. ŞTİ.

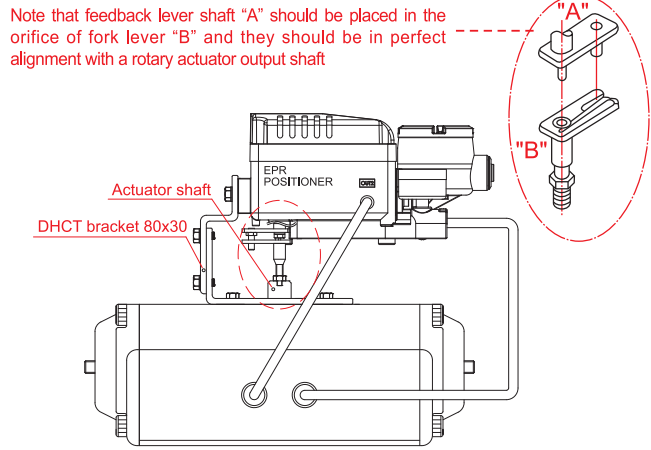
Kemankeş Kara MustafaPaşa Mah. Ağaç Tulumba Sok. No: 4/A Karaköy / İstanbul Tel: +90 (212) 251 05 05 Fax: +90 (212) 251 05 79 info@us-kon.com.tr

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## Mounting



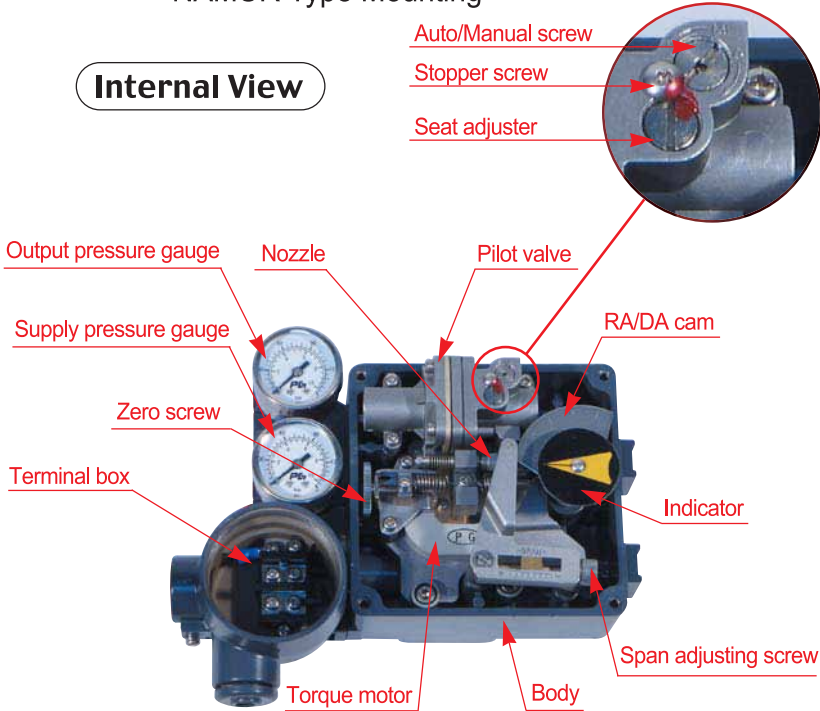
NAMUR Type Mounting



Fork Lever Type Mounting

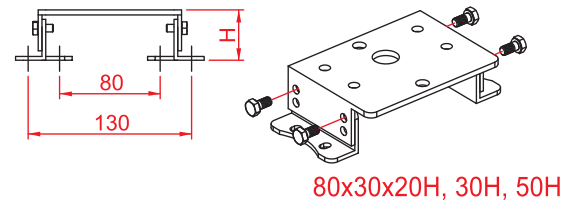
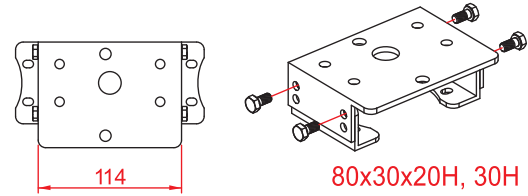
Note that feedback lever shaft "A" should be placed in the orifice of fork lever "B" and they should be in perfect alignment with a rotary actuator output shaft

## Internal View



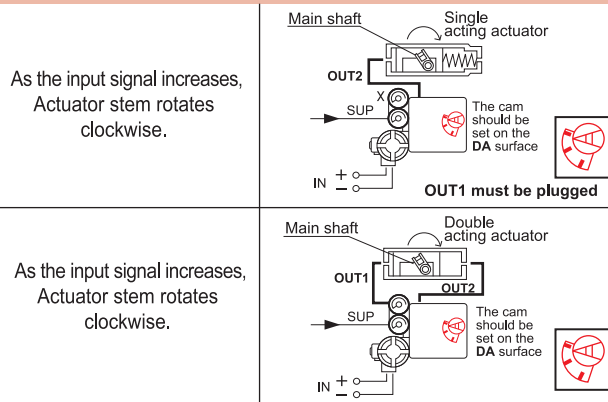
## Multi-size Bracket

| 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 |

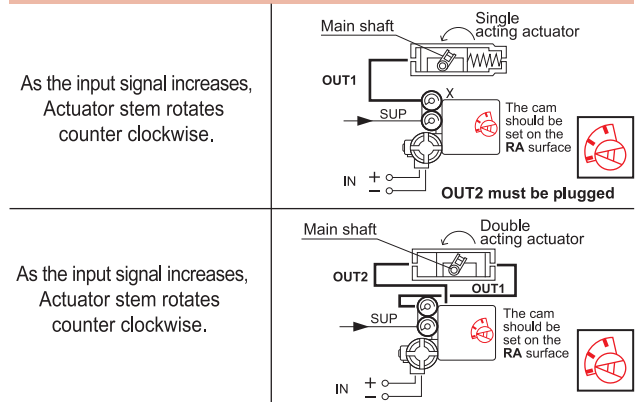


## Air Connections

### Direct Acting (DA)

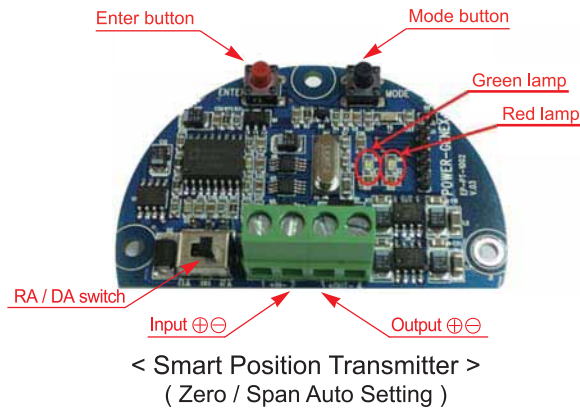
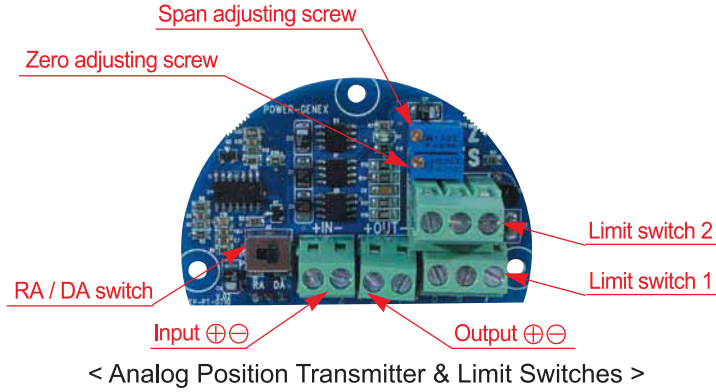


### Reverse Acting (RA)



## Position Transmitter Options (Built-in Type)

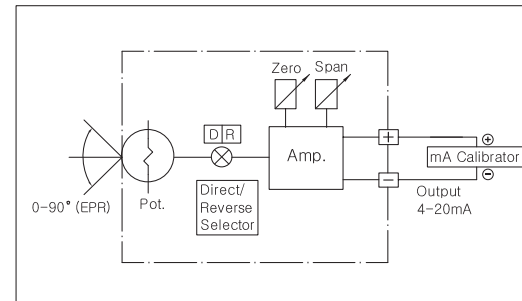
### 1. Board View



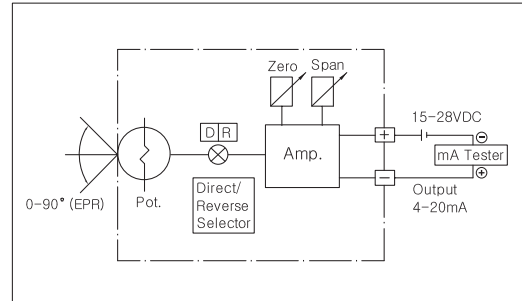
### 2. Position Transmitter (4-20mA output signal) a. Specifications

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

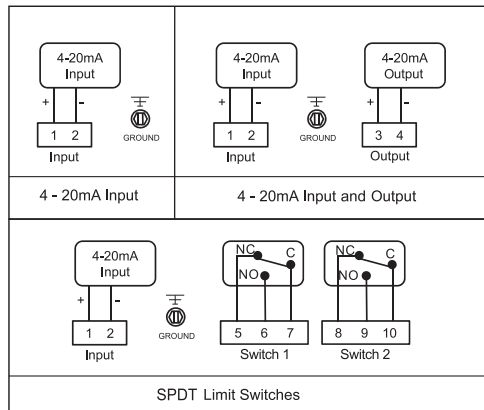
### b. with mA calibrator



### c. with multimeter



### 3. Wiring Diagram

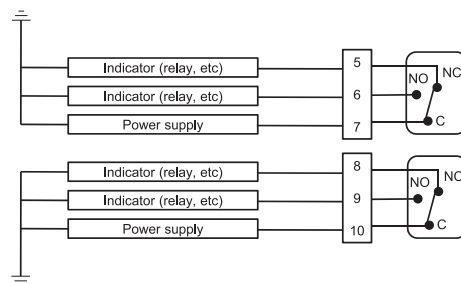


### 4. SPDT Limit Switches

#### 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

High Temp

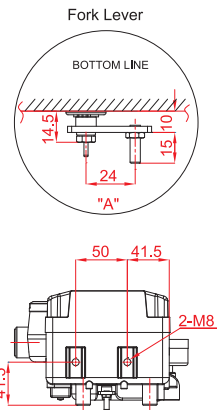
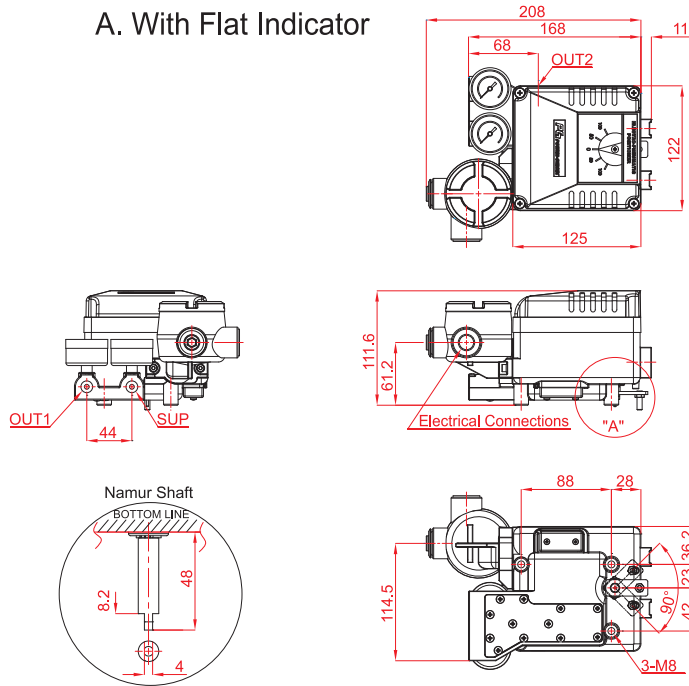
Mounting  
Bracket

| 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 : KC flameproof Ex dmb IIC 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>K : KC intrinsically safe Ex ia IIC T6<br>W : Weatherproof to IP66 |
| <b>Feedback Lever :</b>                                    | A : NAMUR shaft (direct mounting)<br>B : Fork lever M6 x 40L<br>C : 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>High Temperature :</b><br>(only for weatherproof type) | T : 70°C (standard)<br>H : 120°C<br>(without position feedback option)<br>85°C<br>(with position 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

