

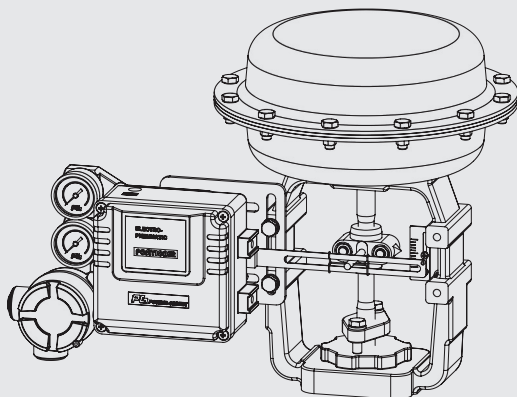
EPL / EPR

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

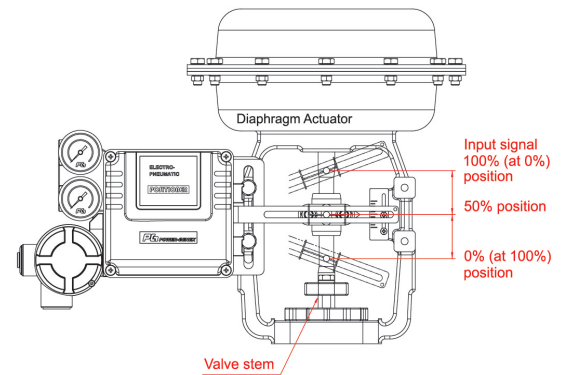
	EPL	
	Single	Double
Input Signal	4-20mA DC (Note. 1)	
Input Resistance	235 ± 15Ω	
Air Supply	Max 7.0 bar (100 psi) free of oil, water and moisture	
Standard Stroke	10-80 mm (Note. 2)	
Pneumatic Connections	PT(Rc) 1/4 or NPT 1/4	
Electrical Connections	PF (G) ½ or NPT ½	
Protection Class	Ex dmb IIB+H 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:

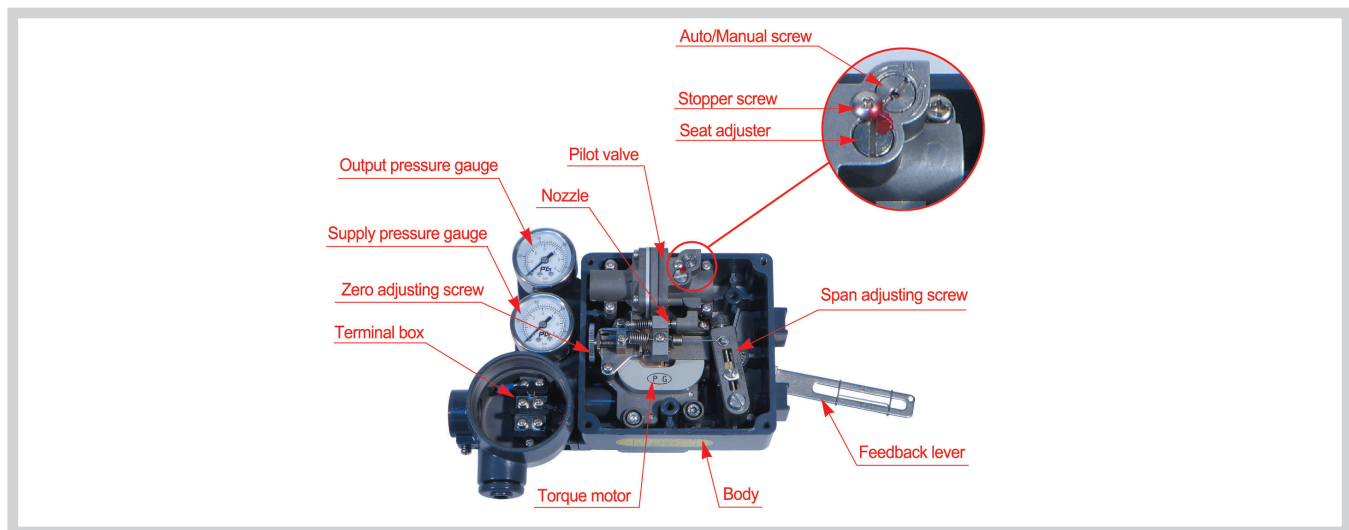
- 1) 1/2 split range is available for 4-12mA input signal or 12-20mA input signal
- 2) Feedback lever can be extended to stroke 80-150mm
- 3) Temperature option: up to +120°C without feedback options
up to +85°C without feedback options
up to -40°C without feedback options

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



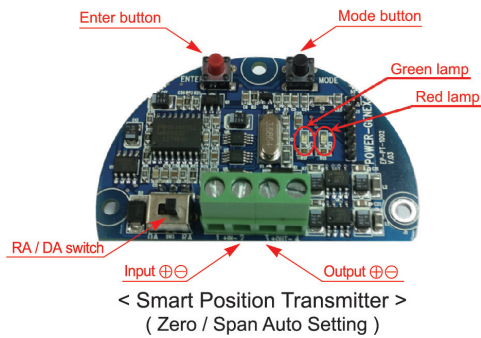
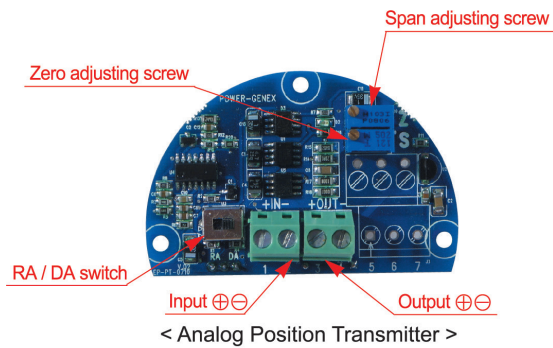
AIR CONNECTIONS

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	

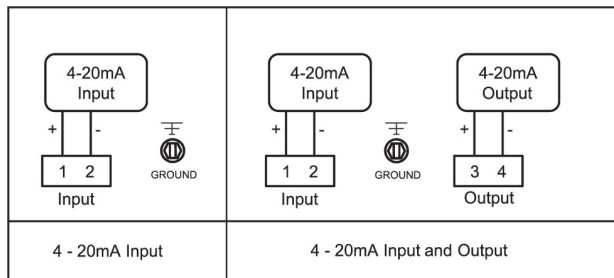
Reverse Acting (RA)	
As the input increases, Valve stem moves upwards Actuator: RA Connection: out 2	
As the input increases, Valve stem moves upwards Actuator: RA Connection: out 1	
As the input increases, Valve stem moves upwards	

POSITION TRANSMITTER OPTIONS (BUILT-IN TYPE)

1. Board View



3. Wiring Diagram

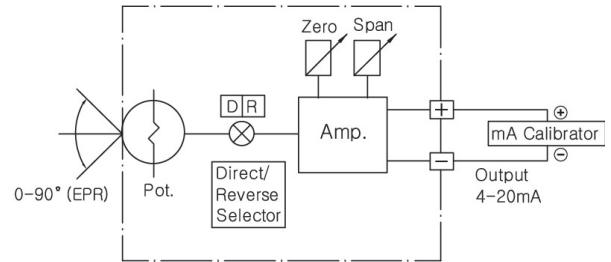


2. Position Transmitter (4-20mA output signal)

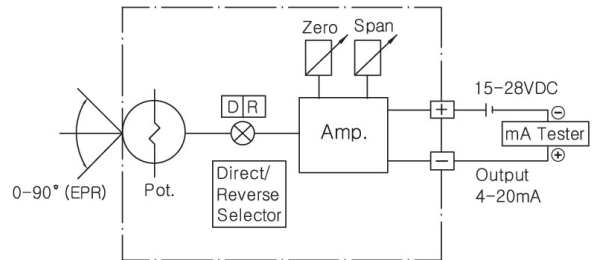
a. Specifications

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

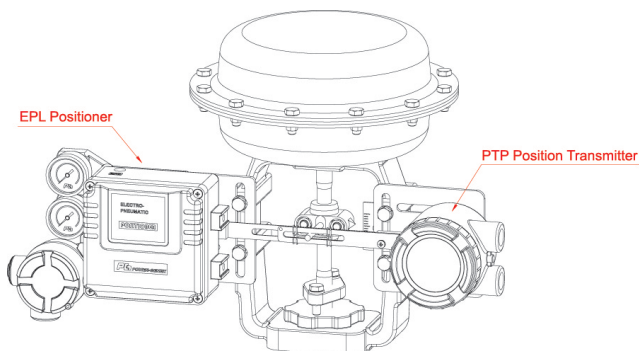


c. with multimeter

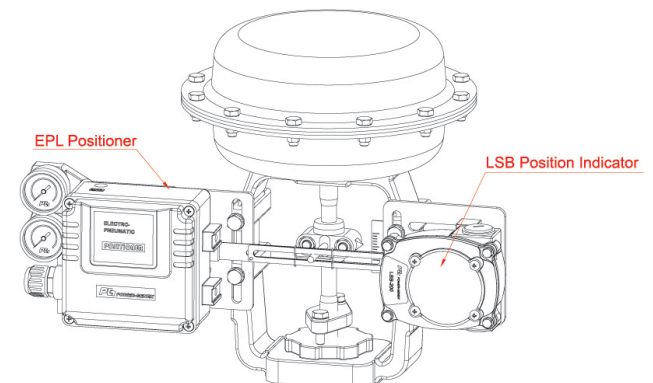


APPLICATION FOR LIMIT SWITCHES (EXTERNAL TYPE)

1) With explosion proof PTP-L



2) With non-explosion proof LSB-200



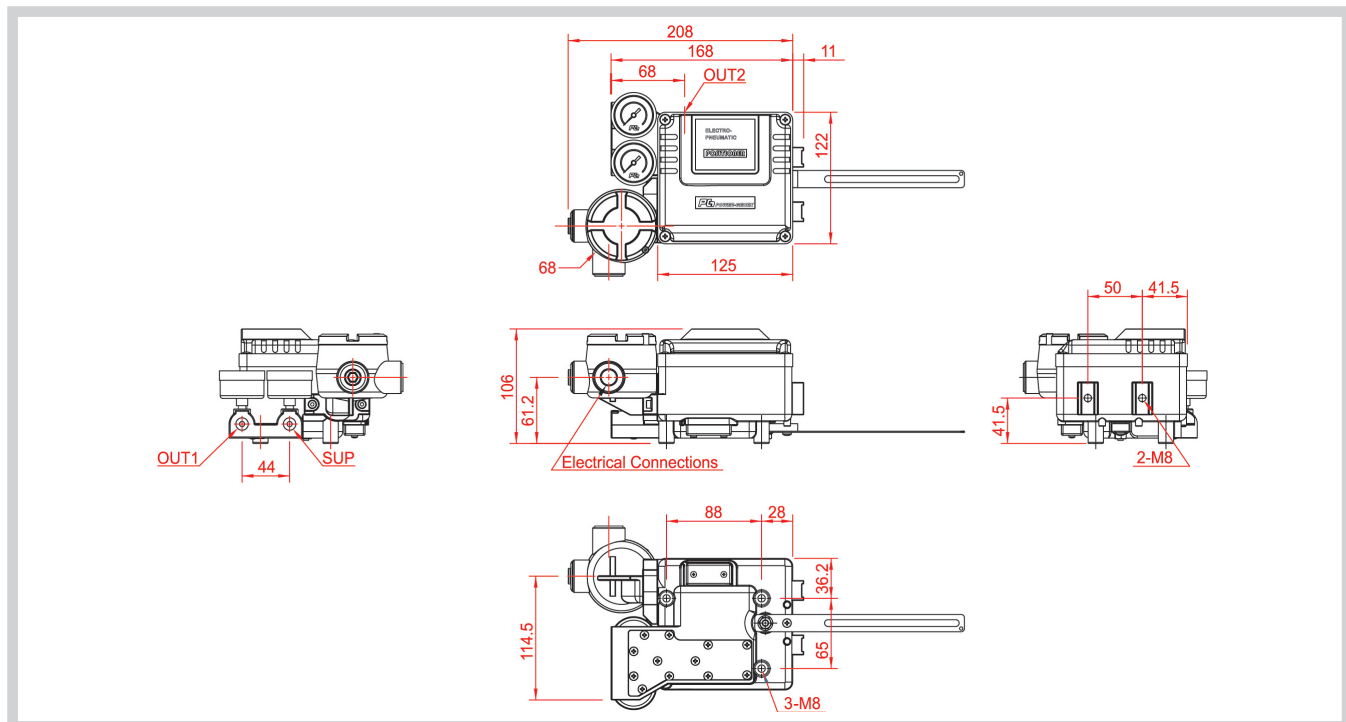
HOW TO ORDER

EPL —

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

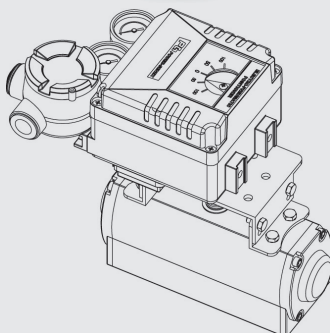
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EPR



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

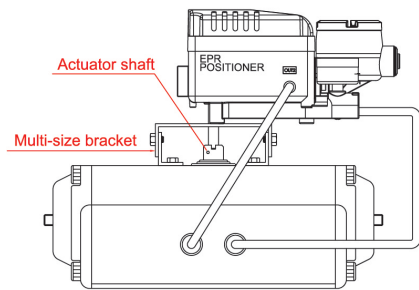
SPECIFICATIONS

	EPR	
	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)	

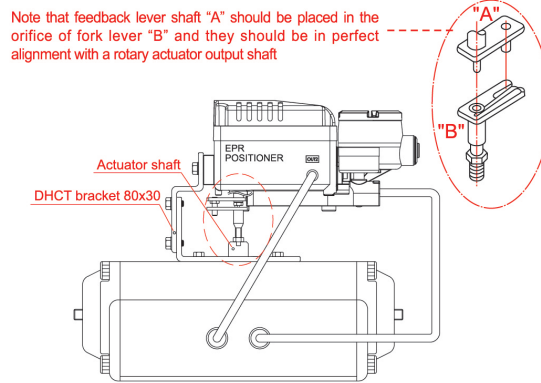
Note:

- 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

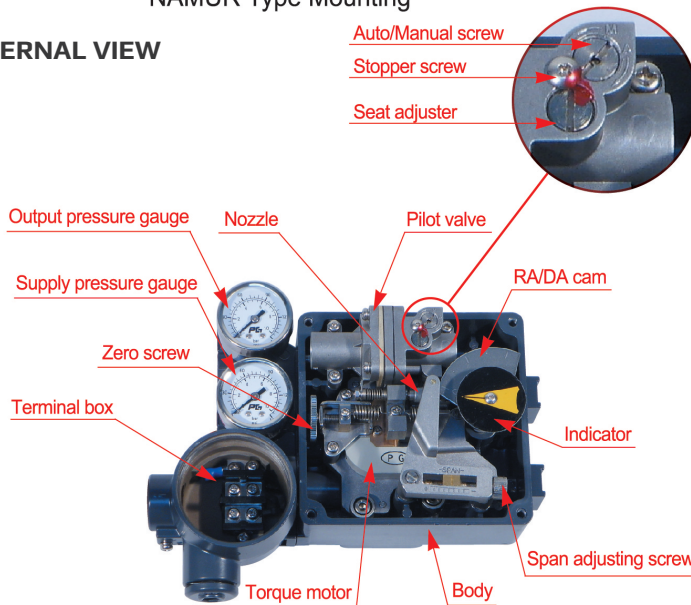


NAMUR Type Mounting



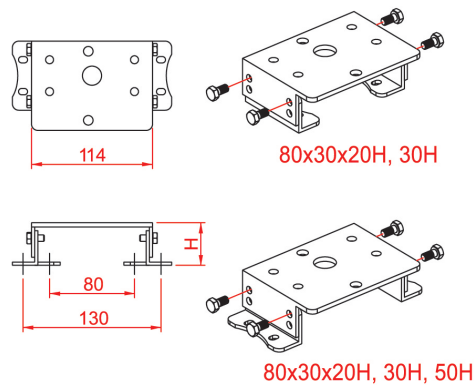
Fork Lever Type Mounting

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)

As the input increases, Actuator stem rotates clockwise.

Main shaft
Single acting actuator
OUT2
SUP
IN
The cam should be set on the DA surface
OUT1 must be plugged

As the input increases, Actuator stem rotates clockwise.

Main shaft
Double acting actuator
OUT1
OUT2
SUP
IN
The cam should be set on the DA surface

Reverse Acting (RA)

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

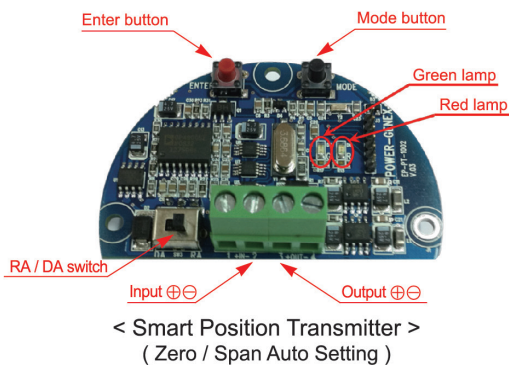
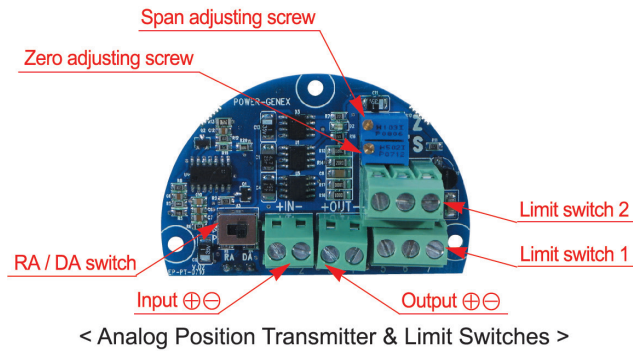
Main shaft
Single acting actuator
OUT1
SUP
IN
The cam should be set on the RA surface
OUT2 must be plugged

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

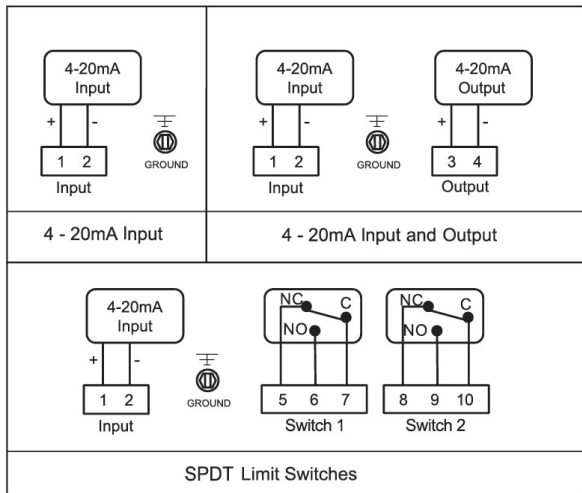
Main shaft
Double acting actuator
OUT2
OUT1
SUP
IN
The cam should be set on the RA surface

POSITION TRANSMITTER OPTIONS (BUILT-IN TYPE)

1. Board View



3. Wiring Diagram



4. SPDT Limit Switches

a. Specifications

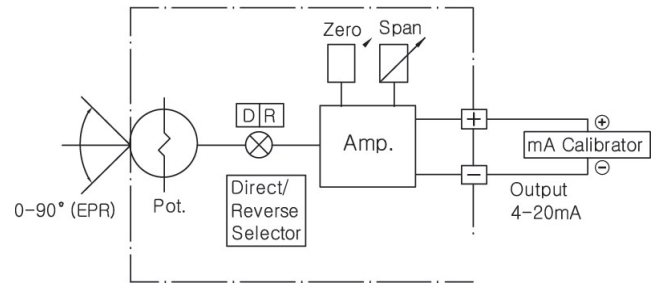
Contacts	SPDT Form C
AC Rating	16 A ½ HP 125/250 VAC
DC Rating	0.6 A 125 VDC / 0.3 A 250 VDC
Adjustment	Cams with set screws (L-wrench included for setting)

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

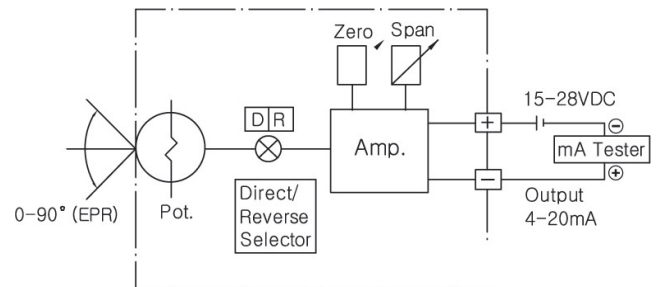
a. Specifications

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

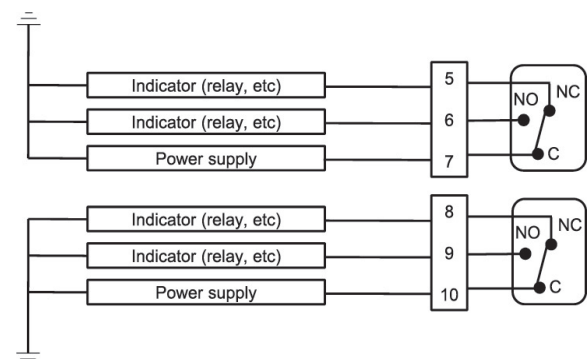
b. with mA calibrator



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
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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 - NAMUR Shaft Type:	N: None 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

