



Smartest valve control device meeting a dynamic performance and a precise setting with a piezoelectric technology and an optimized auto-calibration program

Features

- ▶ Auto-Calibration for optimum conditions
- ▶ Precise control performance and high dynamic response
- ▶ Easy operation with four-key pads and full text graphical LCD
- ▶ Single and double acting
- ▶ Low air consumption due to piezo electric microvalve
- ▶ Pressure regulator built-in to eliminate variations in supply air pressure
- ▶ Problem-free characteristics on a small actuator
- ▶ High resistance against shock and vibration
- ▶ Mounting on rotary actuators according to VDI/DE 3845

Options

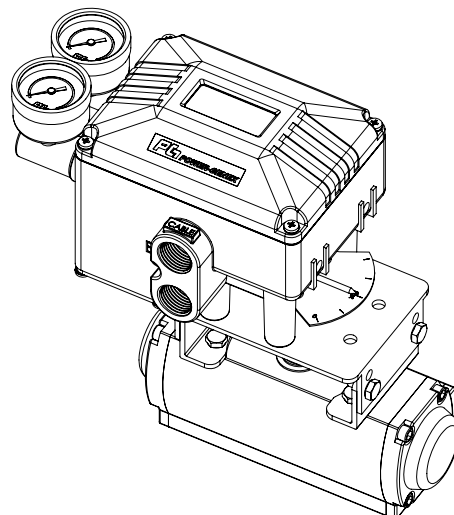
- ▶ Position transmitter (4...20mA output signal)
- ▶ 2 x alarm limit (Min., Max.)
- ▶ Explosion proof type (Exd IIB T6, Exia IIC T6)
- ▶ HART communication (FSK)

Specifications

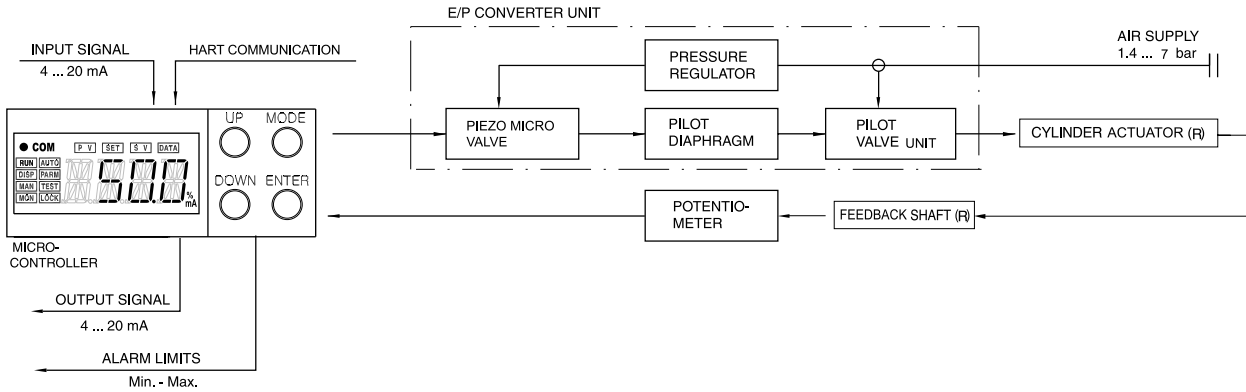
| | |
|---------------------------------------|---|
| Input Signal | 4 - 20 mA @ 24 VDC |
| Voltage Drop | 8.5 VDC @ 20 mA (425 Ω) |
| Min. / Max. Current | 3.6 mA / 50 mA |
| Required Load Voltage (≅ Ω @ 20mA) | Without HART : 8.5V (≅425 Ω) With HART : 9.2V (≅460 Ω) |
| Air Supply Pressure | 1.4 - 7.0 bar (20 - 100 psi) Filtered compressed dry and non-oiled air |
| Output Pressure | 0 - 100% supply air pressure / single or double action |
| Shut-off Value | Range 0 - 5% of position signal |
| Air Capacity | 6.6 kg/h = 5.4N _m ³ /h=3 scfm @ supply air of 1.4 bar (20 psi) |
| Air Consumption | < 0.04 kg/h |
| Humidity Limits | < 90% RH, non-condensing |
| Stroke / Angle | 40 - 90° (max.up to 100°) |
| Adjustable Speed | 1 - 1000 (lowest 1, highest 1000) |
| LCD Indication | 4-digit LCD indicator |
| Scan Time | 2ms |
| Valve Action | Position 0 - 100% / direct action (DA) / reverse action (RA) |
| Characteristic curve | Linear, E.Q. % (1:25 or 1:50), Quick open Linearity <= 0.3% / sensitivity <= 0.2% / hysteresis <= 0.2% |
| Operating Temperature | -20 - +70 °C |
| Protection Class | IP66, intrinsic safety (Exia), flameproof (Exd) |
| Body Material | Aluminum die-cast |
| Pneumatic Connections | Rc 1/4 or 1/4 NPT |
| Electrical Connections | 2 x G 1/2 or 1/2 NPT |
| Weight | 2.5 kg |



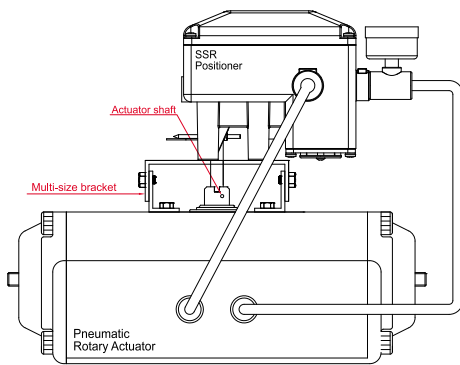
Explosion proof Type (Exd)



Principle of Operation

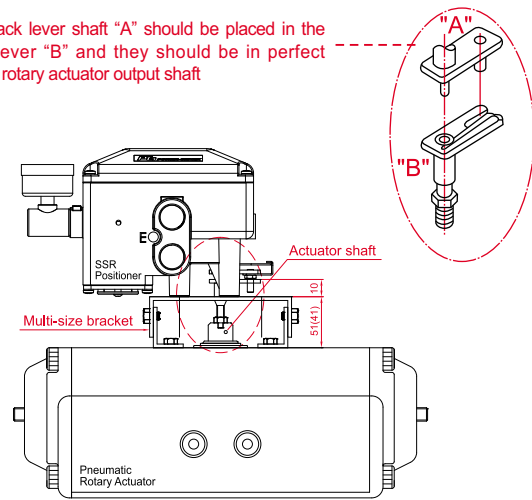


Mounting



NAMUR Type Mounting

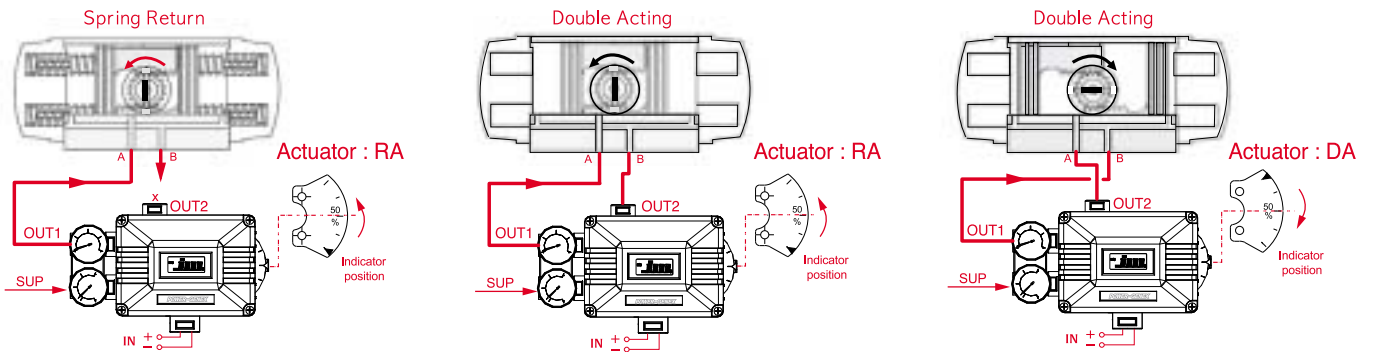
Note that feedback lever shaft "A" should be placed in the orifice of fork lever "B" and they should be in perfect alignment with a rotary actuator output shaft



Fork Lever Type Mounting

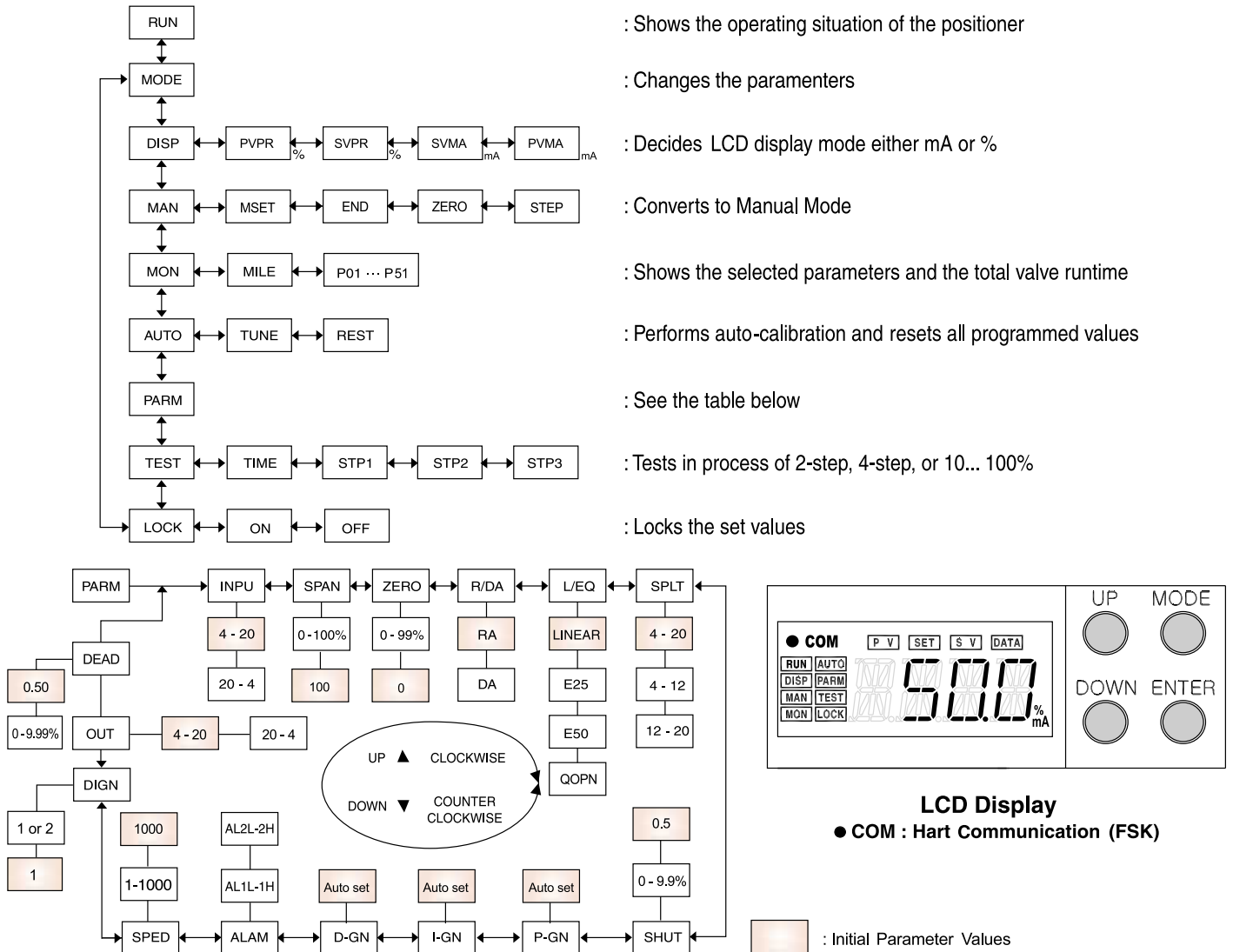
Air Connections

Confirm the rotating direction of the actuator and connect the air lines as below



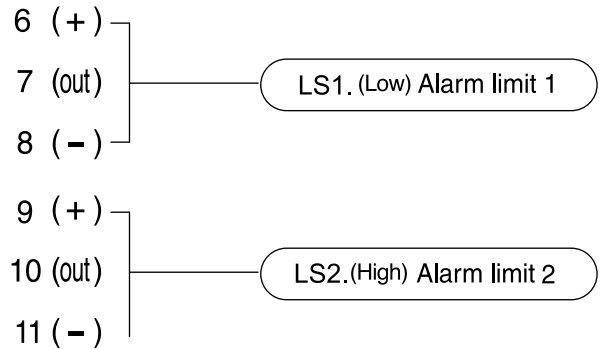
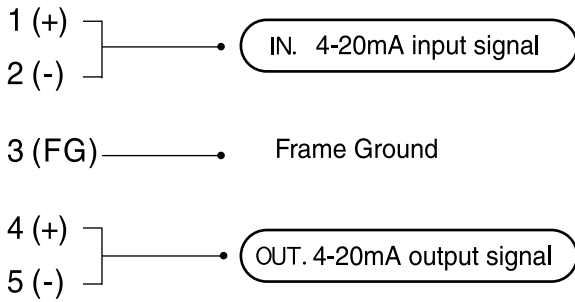
| | Spring Return | Double Acting |
|----------------|-------------------------------|---|
| Reverse Acting | Out 1 : piped, Out2 : plugged | Out 1 : piped to Actuator port A, Out2 : piped to Actuator port B |
| Direct Acting | Out 1 : plugged, Out2 : piped | Out 1 : piped to Actuator port B, Out2 : piped to Actuator port A |

Parameters Diagram



| Parameters | Descriptions | Functions | Initial value |
|----------------|----------------------------|---|---------------------------------|
| INPU | Input signal | 4 - 20mA or 20 - 4mA | 4 - 20 mA |
| SPAN | Span range | 0 - 100% span adjustment | 100 % |
| ZERO | Zero-up | Position Zero up and down 0 - 99% | 0 % |
| R / DA | RA / DA | Reverse or direct acting | RA |
| L / E.Q / QOPN | Linear / E.Q% / Quick open | Linear, E.Q%(1:25 or 1:50) , Quick open | Linear |
| SPLT | Split range | 4 - 12mA or 12 - 20mA | 4 - 20 mA |
| SHUT | Shut-off | Valve shut off at 0 - 9,9 % | 0,5 % |
| P-GN | P-Gain | Proportional gain value | Auto setting |
| I-GN | I-Gain | Integral gain value | Auto setting |
| D-GN | D-Gain | Differential gain value | Auto setting |
| ALAM | Alarm limit low, high | AL1L / AL1H, AL2L / AL2H | Low (0 - 10%), High (90 - 100%) |
| SPED | Speed control | 1 - 1000 | 1000 |
| DIGN | Display digit | Move to one or two decimal places | 1 |
| OUT | Output signal | 4 - 20mA or 20 - 4mA | 4 - 20 mA |
| DEAD | Dead zone | 0 - 9,99% | 0,5% |

Electrical Connections

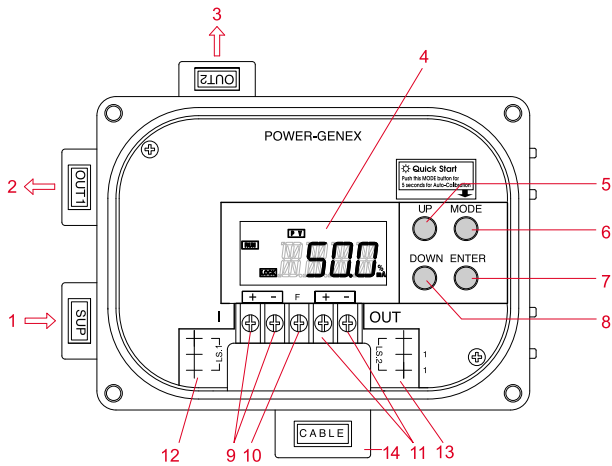


Auto - Calibration

- ① Push MODE button for more than 5 seconds, and Auto Calibration will start.
- ② The time required for this process may be different according to the actuator volume, but it generally takes about 2~3 minutes.

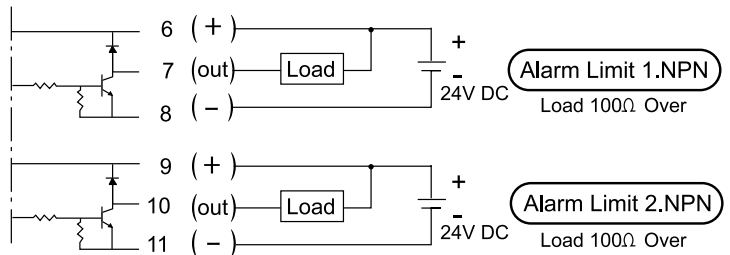
Checking Ambient Temperature

Push ENTER button, and the ambient temperature will be shown on the LCD.

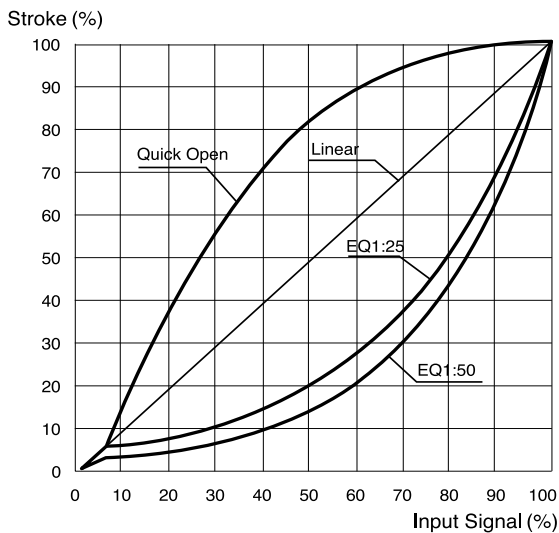


- | | |
|-----------------|-----------------------------|
| 1 : Air supply | 9 : Input signal (+, -) |
| 2 : Output 1 | 10 : Frame ground |
| 3 : Output 2 | 11 : Output signal (+ -) |
| 4 : Display LCD | 12 : Alarm limit 1 |
| 5 : Up key | 13 : Alarm limit 2 |
| 6 : Mode key | 14 : Electrical connections |
| 7 : Enter key | |
| 8 : Down key | |

Measuring Alarm Limits



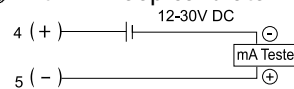
Characteristic Curves



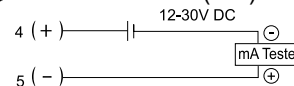
Measuring 4-20mA Output Signal

Note that the input signal should be provided for measurement of output signal.

- ① With mA loop calibrator



- ② With multimeter (mA)



ZERO / SPAN of position feedback will be automatically set after Auto Calibration.

How to Order

SSR

Protection Class

Feedback Lever

Pressure Gauge Block

Position Feedback

HART Communication

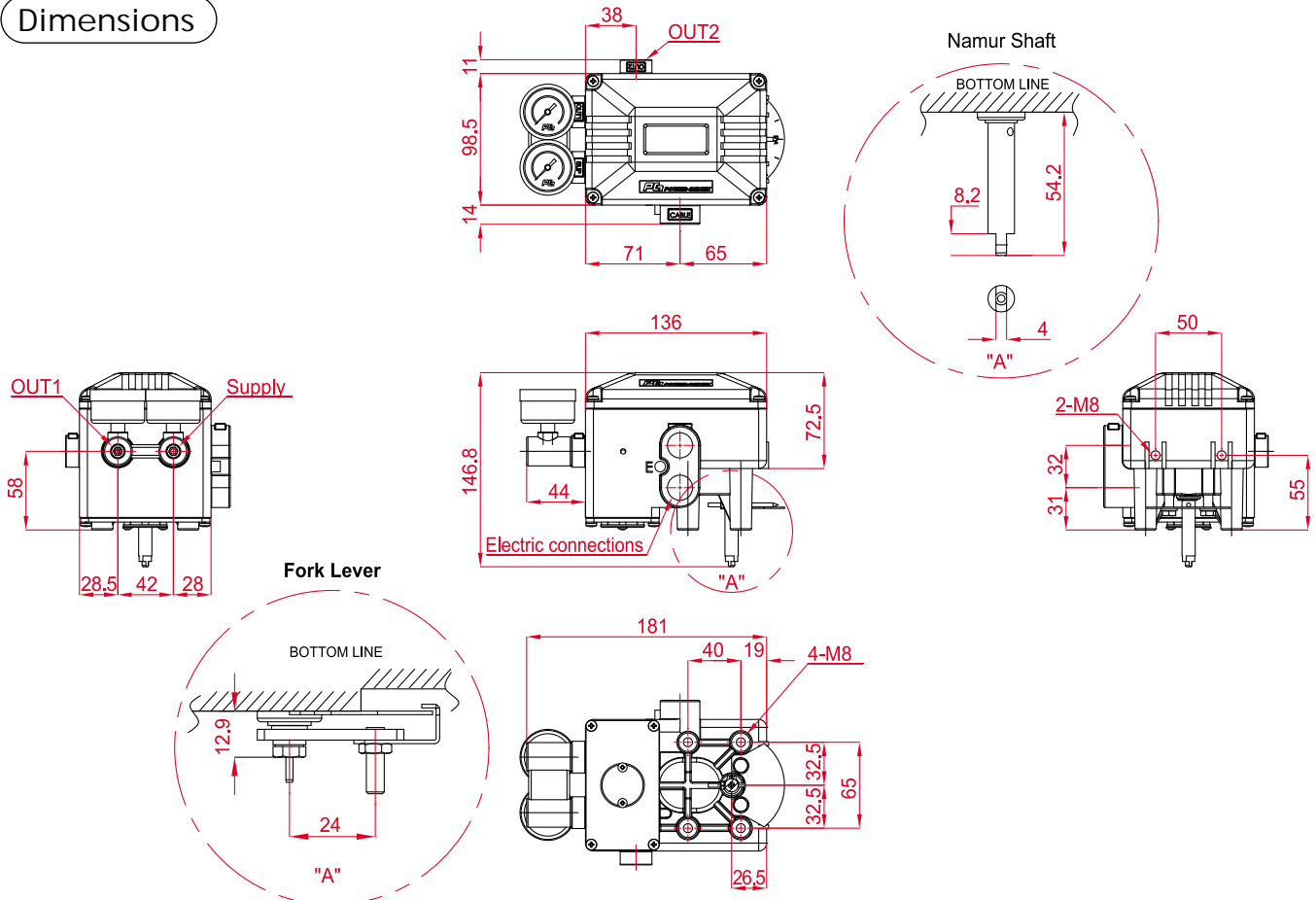
Connection Threads

Mounting Bracket

| Description | Code |
|-------------------------------|--|
| Protection Class : | F : Flameproof (Exd IIB T6) I : Intrinsic safety (Exia IIC T6) W : Weatherproof to IP 66 |
| Feedback Lever | F : Fork lever N : NAMUR shaft (direct mounting) |
| Pressure Gauge Block : | N : None 1 : 6 bar (90 psi) 2 : 10 bar (150 psi) |
| Position Feedback : | N : None O : Position transmitter (4 ~ 20 mA output signal) L : 2 × alarm limit M : O + L |

| Description | Code |
|---|--|
| HART Communication : | N : None H : HART Comm |
| Connection Threads: (pneumatic - electrical) | 3 : Rc 1/4 - G 1/2 (standard) 4 : NPT 1/4 - NPT 1/2 5 : Rc 1/4 - M20 x 1.5 |
| Mounting Bracket : | N : None R : Multi-size bracket for DIN VDI/VDE 3845 (130 × 30 × 50 bracket on request) |

Dimensions



Note : All specifications and characteristics are the same with SSR.

How to Order

RSSR

Protection Class

Feedback Shaft

Pressure Gauge

Position Feedback

Connection Threads

HART Comm.

Cable Length

| Description | Code |
|----------------------------|---|
| Protection Class : | I : Intrinsic safety (Exia IIC T6) W : Weatherproof to IP 66 |
| Feedback Shaft : | F : Fork lever type |
| Pressure Gauge : | 1 : 6 bar (90 psi) 2 : 10 bar (150 psi) |
| Position Feedback : | N : None O : Position transmitter (4 ~ 20 mA output signal) |

| Description | Code |
|--|--|
| Connection Threads : (pneumatic - electrical) | 3 : Rc 1/4 - G 1/2 4 : NPT 1/4 - NPT 1/2 5 : Rc 1/4 - M20 x1.5 |
| HART Communication : | N : None H : HART Communication |
| Cable Length : | 3, 5, 10, 15m Other : On request |

Ex) RSSR-WA103H-3 (weatherproof, fork lever type, 6 bar pressure gauges, position transmitter, Rc 1/4 - G 1/2, HART communication, cable 3m)

Dimensions

