

CONTROL VALVE ACCESSORIES

CVA : 0611

ELECTRO PNEUMATIC / PNEUMATIC POSITIONER POSITION TRANSMITTER



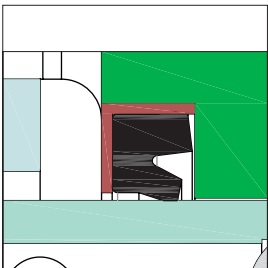
Next generation of Positioner design featuring better performance and ease of setup has taken

ELECTRO-PNEUMATIC POSITIONER

RTX1000

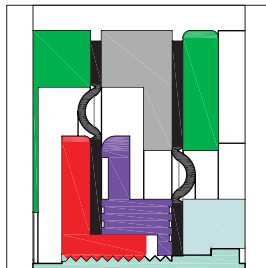
FEATURES

- Compact design, rugged construction with rigid ISO 5211 Mounting
- Vibration resistant because of its unique design and construction
- Quick and ultra-precise response of the torque motor
- Special polymer shaft bush with built in grease reservoir to avoid shaft seizure due to formation of Aluminium oxide
- Split range control can be easily adopted by change in few internal components
- Simple to convert from direct acting to reverse acting or vice versa
- The springs exhibit a stable force along with a highly balanced diaphragm
- Low hysteresis due to lip seal instead of an O-ring which result in high gain and low friction
- Various orifice size option available for different volume of actuator to prevent from hunting and also for controlling speed
- Easy and precise calibration with Zero and Span adjustment
- All the internal parts are hard anodized
- Bright visual indicator on both flat and high dome type positioners
- Internal and external mounting of the position transmitter and limit switch made possible and easy
- No component is exposed, thus preventing from corrosion in hazardous environment
- IP66 protection
- CE certified



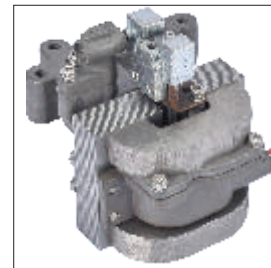
LIP SEAL IN POPPET VALVE

- Increased sensitivity
- Reduced dead-band
- Reduced threshold movement of the poppet
- Low friction



POLYETHYLENE DIAPHRAGM

- Special polymer diaphragm results in high flexibility
- Increased response
- Increased sensitivity
- Reduced dead-band

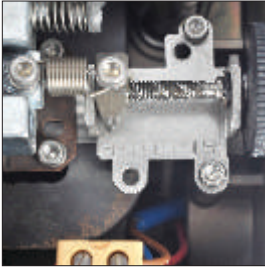


TORQUE MOTOR

- High performance Nickel flapper.
- Unique rocker mechanism to give low dead band
- Non sliding parts

Rotex to new horizon in engineering for the future with proven large installation base

RTX1000



ZERO ADJUSTMENT

- Highly precise zero adjustment
- Ease of setting and calibration
- Wide range of zero setting



SPAN ADJUSTMENT

- Highly precise span adjustment
- Well designed spring force for uniform setting



HIGHLY BALANCED SPRING MECHANISM

- High repeatability and linearity
- Critically designed springs avail wide range of zero and span setting



ADAPTABILITY

- Positioner can be easily converted from direct acting to reverse acting and vice versa
- SS cam for long life
- Unique clamping mechanism



TRANSMITTER

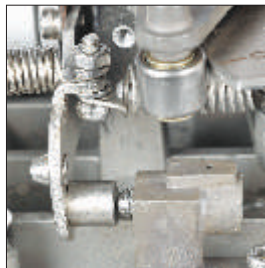
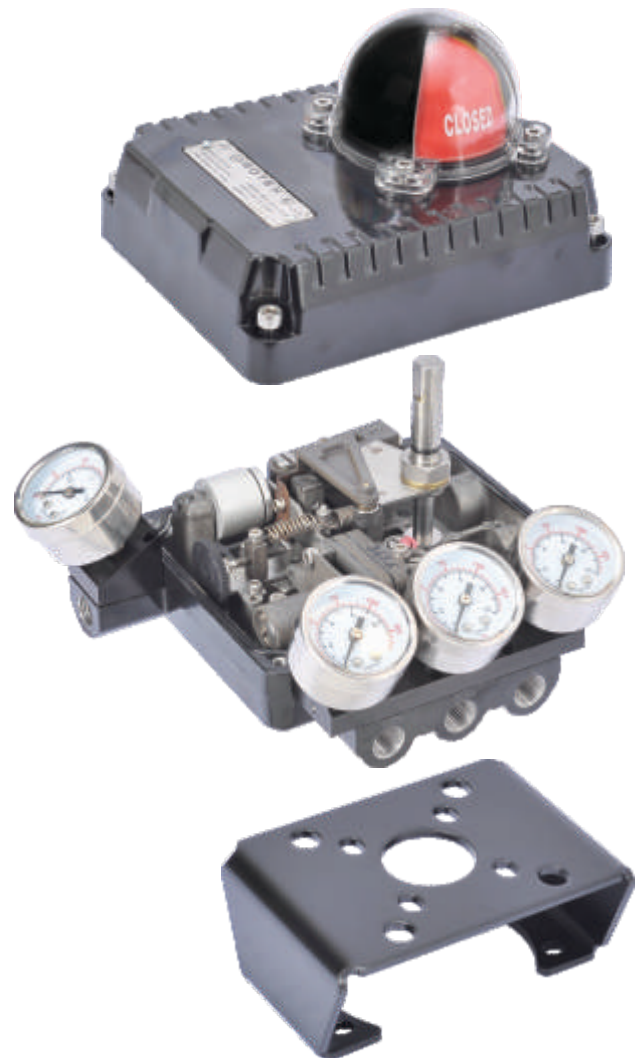
- Spring loaded mechanism to give zero backlash
- Large zero and span setting available
- Extreme long life transducer 10^7 revolutions

PNEUMATIC POSITIONER

RTX1200

FEATURES

- Special polyethylene low pressure diaphragm direct acting valve ensures quick and precise response to minor changes in signal pressure
- Zero hysteresis increases overall efficiency
- Normal operation in extreme environmental conditions such as vibration
- High life of diaphragm and zero maintenance
- Compact design, rugged construction with as rigid ISO 5211 mounting
- Wide range of Zero and Span adjustment, for easy and precise calibration
- Stable, fast and accurate response with change in supply pressure due to unique poppet and diaphragm valve design
- All the internal parts are hard anodized
- Split range control can be easily adopted by change in few internal parts
- Simple to convert from direct acting to reverse acting or vice versa
- Throughout there is a stable spring force along with a highly balanced diaphragm
- Low hysteresis due to lip seal instead of an O-ring which result in high gain and low friction
- Orifice option prevents from hunting and also for controlling speed
- Bright visual indicator on both flat and high dome type positioners
- Internal and external mounting of the position transmitter and limit switch made possible and easy
- Internal circuit of the positioner is highly corrosion resistant as no part (metal plate) is exposed
- IP66 protection
- CE certified



ZERO HYSTERESIS DIAPHRAGM VALVE

- Special polymer diaphragm
- Quick and precise response to change in signal pressure

FLAPPER MECHANISM

- Extremely high sensitivity
- Lower dead-band and hysteresis
- Excellent response to Poppet

RIGID CONNECTING PORTS

- Available in NPT/BSP
- Heavy duty cast pads ensure rugged application
- Adaptive gauge block can accommodate gauges Ø25-40

RTX1200

RTX1200R WITH IP67 DXLW LIMITSWITCH

FEATURES

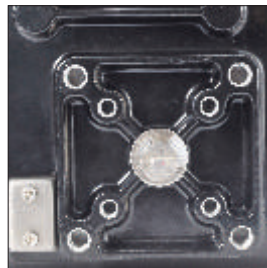
- Aluminium Diecast, with powder coating, for superior corrosion resistance
- Shatterproof Polycarbonate Dome
- Easily settable colour coded cam
- The locked serrated cams, ensures the secured settings against any vibration
- Complies to NAMUR Mounting standards
- Possible Solenoid termination inside the switch box
- The switch box confirms to the UL508, UL file no. E249752
- Temperature range -20 °C to +80 °C
On request -40 °C to +80 °C



RTX1200R WITH Ex d DNLF LIMITSWITCH

FEATURES

- Aluminium Diecast, with powder coating, for superior corrosion resistance
- Shatterproof Polycarbonate Dome
- Easily settable colour coded cam
- The locked serrated cams, ensure the secured settings against any vibration
- Switch Box confirms to Ex d IIC, T4 Highest level of safety
- Cable Entry M20, 1/2" NPT or 3/4" NPT
- All fasteners in stainless steel
- Water, Rain Proof to IP67
- ATEX, certified by IEC Ex, BASEEFA, UK, Certification no. BASEEFA09, ATEX0126
- UL Certified confirms to file no. UL1203 and UL508, File no. 246615
- Temperature range -20 °C to +80 °C
On request -40 °C to +80 °C
- Cable entry
Dual cable entry
Optional 4 cable entry
- Optional
Stainless Steel version is also available



LINEAR KIT

- Stainless steel for long life
- Special linear kit available for stroke above 200mm

ISO 5211 MOUNTING

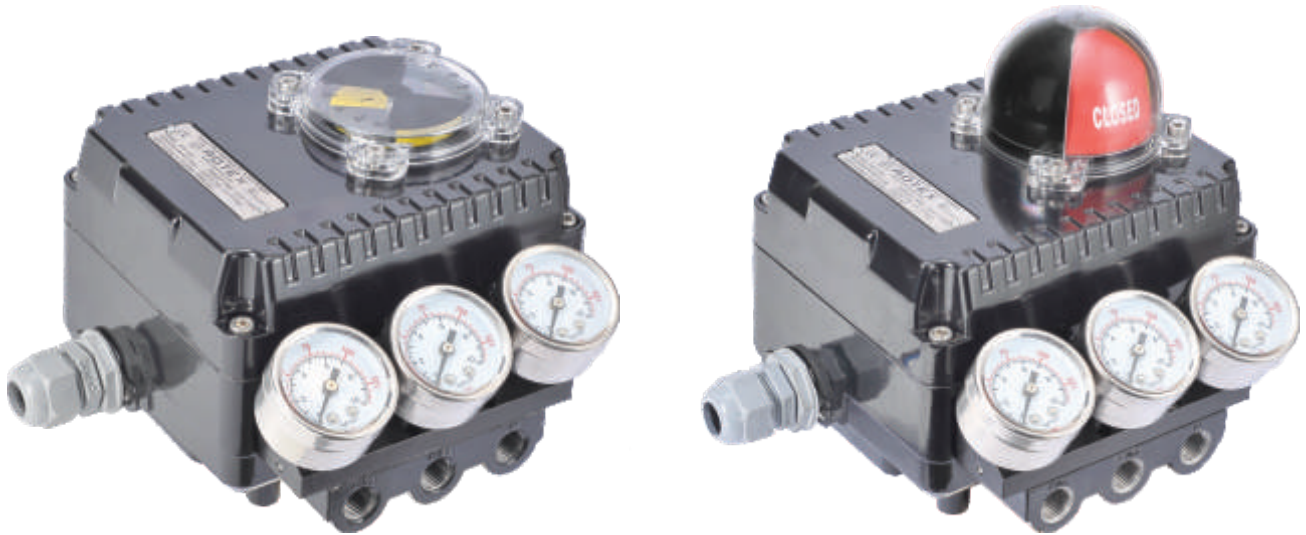
- For standardization of mounting accessories.
- Also available as per standard UNC imperial mounting

ACCESSORY MOUNTING

- Easy access to accessory mounting
- Junction box can be added on site

RTX1000

ELECTRO PNEUMATIC POSITIONER



SPECIFICATION

TYPE	LINEAR		ROTARY	
	Single Acting	Double Acting	Single Acting	Double Acting
Operation	Single Acting	Double Acting	Single Acting	Double Acting
Supply Pressure	0.3 bar above actuator requirement (minimum 1.4 bar and maximum 7 bar)			
Input Signal	4 to 20 mA DC constant current with maximum 30 VDC			
Pressure				
Stroke	10-150 mm		0-90°	
Air Connection	1/4" BSP/ NPT			
Explosion Proof	ATEX			
Protection	IP 66			
Cam	Equal/ Square/ Square Root			
Ambient Temp.	-40 °C to +80 °C			
Linearity	±1%	±2%	±1%	±2%
Hysteresis	±1%	±1%	±1%	±1%
Sensitivity	±0.2%	±0.5%	±0.5%	±0.5%
Repeatability	±0.5%	±0.5%	±0.5%	±0.5%
Internal Bleeding	3lpm (sup. Pre. 1.4 kgf/ cm ²), 11lpm (Sup. Pre.4.0 kgf/ cm ²)			
Flow Capacity	80lpm (Sup. Pre. 1.4 kgf/ cm ²), 200lpm (Sup. Pre.4.0 kgf/ cm ²)			
Material	Aluminium Die Casting			
Weight	2.9 kg	2.9 kg	2.8 kg	2.8 kg

RTX1200

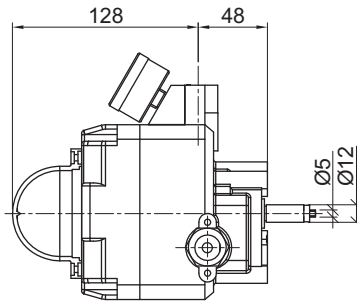
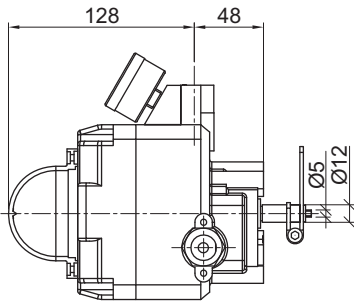
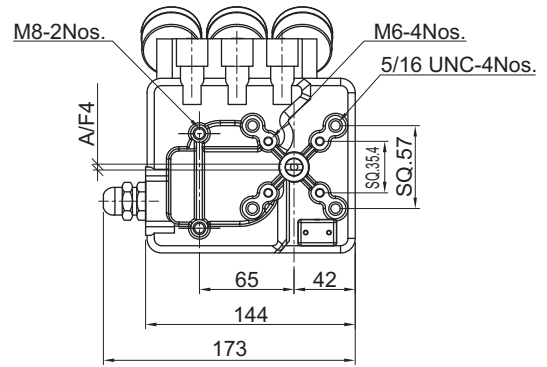
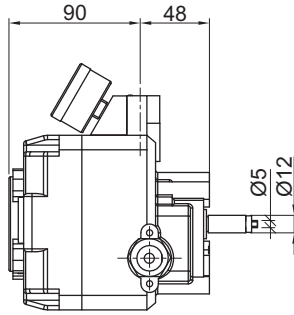
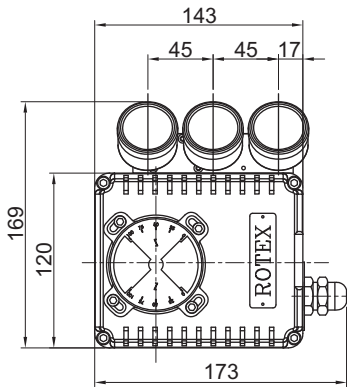
PNEUMATIC POSITIONER



SPECIFICATIONS

TYPE	LINEAR		ROTARY	
	Single Acting	Double Acting	Single Acting	Double Acting
Operation	Single Acting	Double Acting	Single Acting	Double Acting
Supply Pressure	1.4-8.0 kgf/ cm ² (20-120 psi)			
Input Signal	0.2-1 kgf/ cm ² (3-15 psi)			
Pressure				
Stroke	10-150 mm		0-90°	
Air Connection	1/4" BSP/ NPT			
Explosion Proof	ATEX			
Protection	IP 66			
Cam	Equal/ Square/ Square Root			
Ambient Temp.	-40 °C to +80 °C			
Linearity	±1%	±2%	±2%	±2%
Hysteresis	±1%	±1%	±1%	±1%
Sensitivity	±0.2%	±0.5%	±0.5%	±0.5%
Repeatability	±0.5%	±0.5%	±0.5%	±0.5%
Internal Bleeding	3lpm (sup. Pre. 1.4 kgf/ cm ²), 11lpm (Sup. Pre.4.0 kgf/ cm ²)			
Flow Capacity	80lpm (Sup. Pre. 1.4 kgf/ cm ²), 200lpm (Sup. Pre.4.0 kgf/ cm ²)			
Material	Aluminium Die Casting			
Weight	2.1 kg	2.1 kg	2.0 kg	2.0 kg

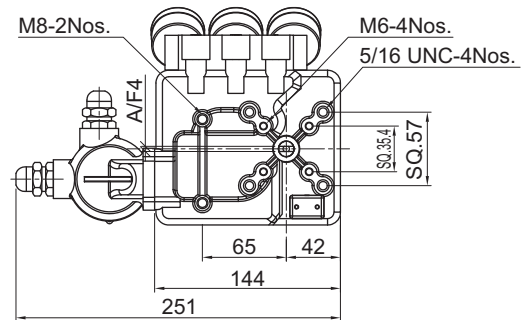
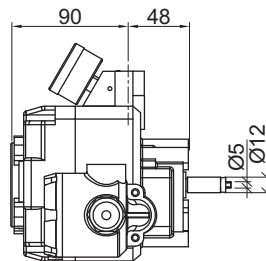
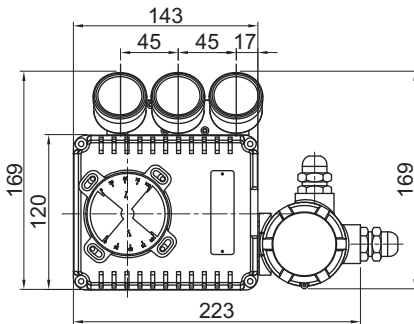
RTX1000



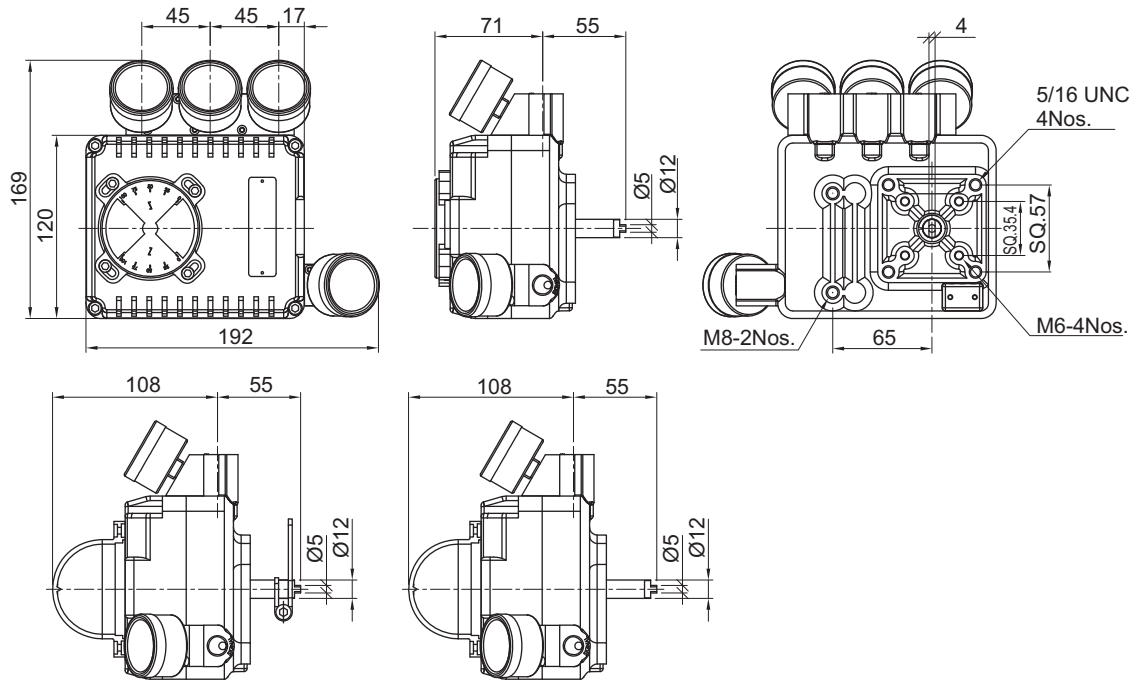
LINEAR

ROTARY

RTX1000 WITH EXPLOSION PROOF POSITION TRANSMITTER



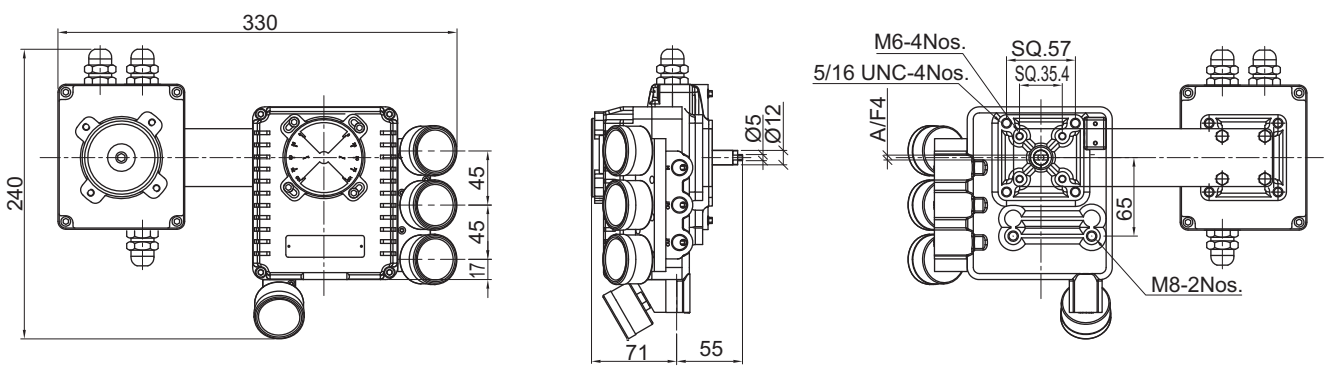
RTX1200



LINEAR

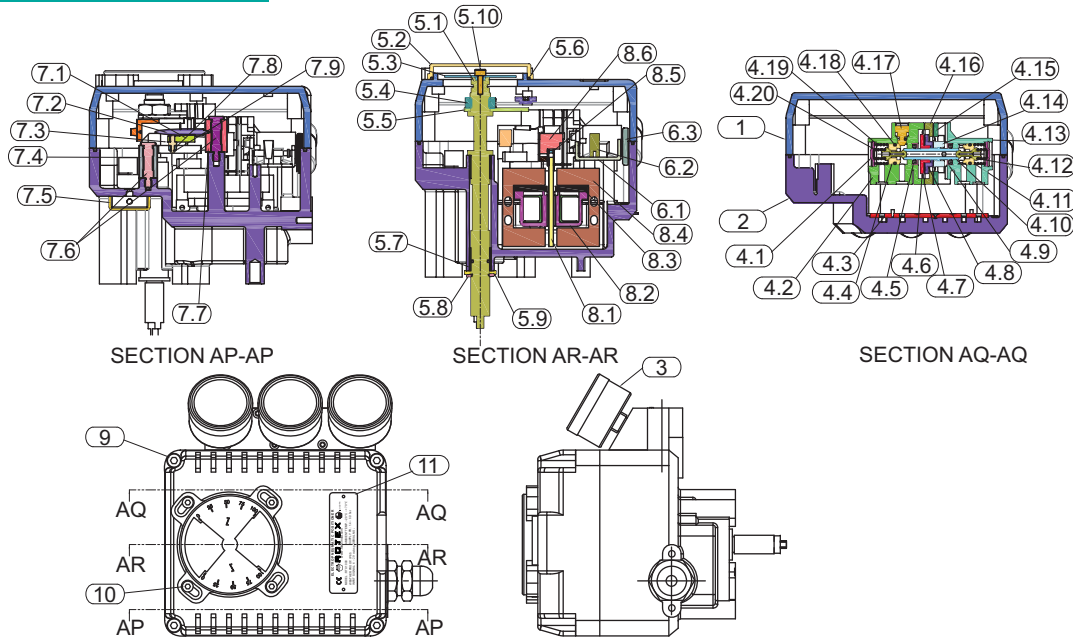
ROTARY

RTX1200 WITH WEATHER PROOF POSITION TRANSMITTER



CROSS SECTION WITH BOM

RTX1000

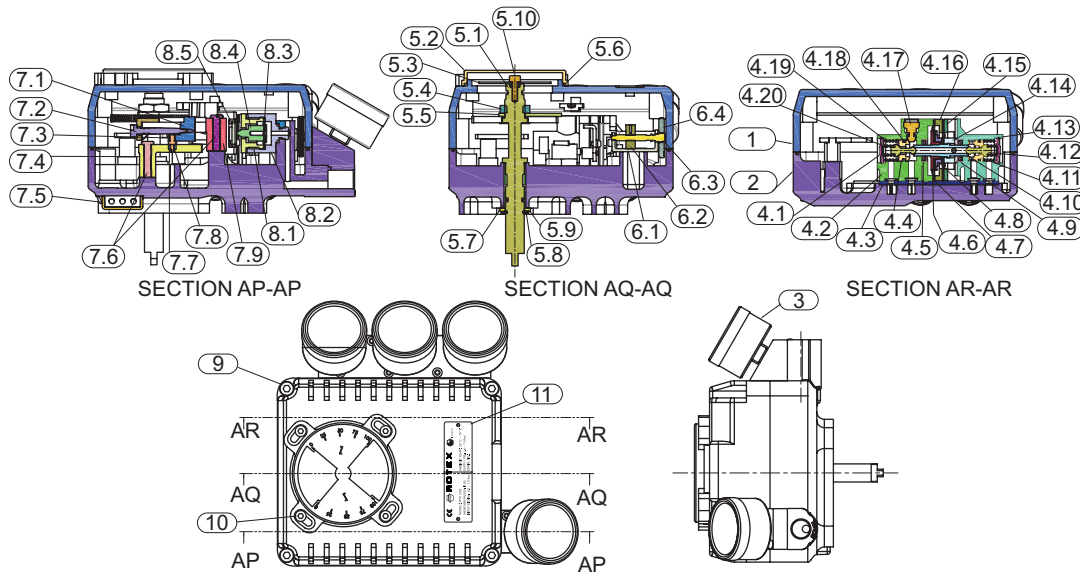


NO.	DESCRIPTION	QTY.	MATERIAL
1	COVER	1	ALUMINIUM ALLOY
2	BODY	1	ALUMINIUM ALLOY
3	PRESSURE GAUGE	3	-
4	POPPET VALVE ASSEMBLY	1	-
4.1	CIRCLIP FOR END PLATE	2	SPRING STEEL
4.2	FRONT BODY	1	ALUMINIUM ALLOY
4.3	CIRCUIT PLATE	1	SS304
4.4	PISTON	1	BRASS
4.5	LIP SEAL	2	NBR
4.6	PISTON 1	1	ALUMINIUM
4.7	DIAPHRAGM	1	PU
4.8	PISTON 2	1	ALUMINIUM
4.9	LIP SEAL COVER	2	SS410
4.10	SPOOL	1	SS
4.11	STOPPER	1	BRASS
4.12	POPPET	2	SS304
4.13	REAR BODY	1	ALUMINIUM ALLOY
4.14	POPPET ARM	1	ALUMINIUM ALLOY
4.15	LOCATING PLATE	1	ALUMINIUM ALLOY
4.16	CENTER PLATE	1	ALUMINIUM ALLOY
4.17	SENSITIVITY SCREW	1	SS304
4.18	O RING	1	NBR
4.19	PISTON SPRING	1	SPRING STEEL
4.20	POPPET SPRING	1	SPRING STEEL
5	SHAFT ASSEMBLY	1	-
5.1	SHAFT	1	SS304
5.2	FLAT INDICATOR	1	POLYCARBONATE
5.3	INDEX PLATE	1	POLYCARBONATE
5.4	NUT	1	SS304
5.5	NORD LOCK WASHER	1	BRASS

NO.	DESCRIPTION	QTY.	MATERIAL
5.6	O RING	1	NBR
5.7	BUSH	2	SPECIAL GRADE POLYMER
5.8	CIRCLIP	1	SPRING STEEL
5.9	WASHER	1	DERLIN
5.10	SOCKET HEAD CAP SCREW	1	SS304
6	ZERO UNIT ASSEMBLY	1	-
6.1	ZERO ADJUSTMENT PLATE	1	SS304
6.2	ZERO BLOCK	1	ALUMINIUM ALLOY
6.3	ZERO KNOB	1	PA6
7	SPAN UNIT ASSEMBLY	1	-
7.1	SPAN BLOCK	1	BRASS
7.2	SPAN SCREW	1	SS304
7.3	PIN FOR BEARING	1	SS304
7.4	SPRING TENSIONER	1	ALUMINIUM ALLOY
7.5	NRV COVER	1	SS304
7.6	SCREW FOR SPRING TENSIONER	1	SS304
7.7	SPAN BODY	1	ALUMINIUM ALLOY
7.8	BEARING	1	SS304
7.9	CIRCLIP FOR BEARING	1	SPRING STEEL
8	MAGNETIC COIL ASSEMBLY	1	-
8.1	FLAPPER	1	MU METAL
8.2	COIL BODY	1	ALUMINIUM ALLOY
8.3	COIL COVER	1	ALUMINIUM ALLOY
8.4	MAGNET	2	-
8.5	CLAMP	1	PH. BRONZE
8.6	STOPPER	1	SS304
9	SOCKET HEAD CAP SCREW	4	SS304
10	SOCKET HEAD CAP SCREW	4	SS304
11	NAME PLATE	1	ALUMINIUM

CROSS SECTION WITH BOM

RTX1200

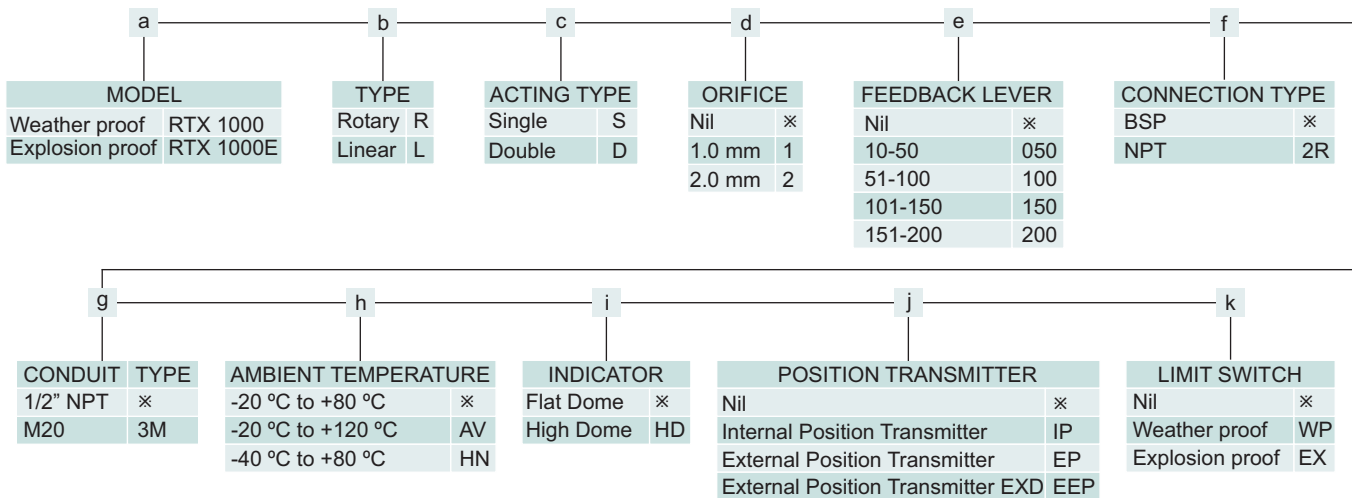


NO.	DESCRIPTION	QTY.	MATERIAL
1	COVER	1	ALUMINIUM ALLOY
2	BODY	1	ALUMINIUM ALLOY
3	PRESSURE GAUGE	4	-
4	POPPET VALVE ASSEMBLY	1	-
4.1	CIRCLIP FOR END PLATE	2	SPRING STEEL
4.2	FRONT BODY	1	ALUMINIUM ALLOY
4.3	CIRCUIT PLATE	1	SS304
4.4	PISTON	1	BRASS
4.5	LIP SEAL	1	NBR
4.6	PISTON 1	1	ALUMINIUM
4.7	DIAPHRAGM	1	PU
4.8	PISTON 2	1	ALUMINIUM
4.9	LIP SEAL COVER	1	SS410
4.10	SPOOL	1	SS304
4.11	STOPPER	1	BRASS
4.12	POPPET	2	SS304
4.13	REAR BODY	1	ALUMINIUM ALLOY
4.14	POPPET ARM	1	ALUMINIUM ALLOY
4.15	LOCATING PLATE	1	ALUMINIUM ALLOY
4.16	CENTER PLATE	1	ALUMINIUM ALLOY
4.17	SENSITIVITY SCREW	1	SS304
4.18	O RING	1	NBR
4.19	PISTON SPRING	1	SPRING STEEL
4.20	POPPET SPRING	1	SPRING STEEL
5	SHAFT ASSEMBLY	1	-
5.1	SHAFT	1	SS304
5.2	FLAT INDICATOR	1	POLYCARBONATE
5.3	INDEX PLATE	1	POLYCARBONATE
5.4	NUT	1	SS304
5.5	NORD LOCK WASHER	1	BRASS

NO.	DESCRIPTION	QTY.	MATERIAL
5.6	O RING	1	NBR
5.7	BUSH	2	SPECIAL GRADE POLYMER
5.8	CIRCLIP	1	SPRING STEEL
5.9	WASHER	1	DERLIN
5.10	SOCKET HEAD CAP SCREW	1	SS304
6	ZERO UNIT ASSEMBLY	1	-
6.1	ZERO ADJUSTMENT PLATE	1	SS304
6.2	ZERO BLOCK	1	ALUMINIUM ALLOY
6.3	SCREW FOR ZERO ADJUSTMENT	1	SS304
6.4	ZERO KNOB	1	PA6
7	SPAN UNIT ASSEMBLY	1	-
7.1	SPAN BLOCK	1	BRASS
7.2	SPAN SCREW	1	SS304
7.3	PIN FOR BEARING	1	SS304
7.4	SPRING TENSIONER	1	ALUMINIUM ALLOY
7.5	NRV COVER	1	SS304
7.6	SCREW FOR SPRING TENSIONER	1	SS304
7.7	BEARING	1	SS304
7.8	CIRCLIP FOR BEARING	1	SPRING STEEL
7.9	SPAN BODY	1	ALUMINIUM ALLOY
8	DIAPHRAGM VALVE ASSEMBLY	1	-
8.1	DIAPHRAGM COVER	1	ALUMINIUM
8.2	DIAPHRAGM BODY	1	ALUMINIUM
8.3	LOW PRESSURE DIAPHRAGM	1	PU
8.4	PIN FOR VALVE	1	SS
8.5	FLAPPER	1	SS304
8.6	CLAMP	1	PH. BRONZE
9	SOCKET HEAD CAP SCREW	4	SS304
10	SOCKET HEAD CAP SCREW	4	SS304
11	NAME PLATE	1	ALUMINIUM

RTX1000

ORDERING CODE



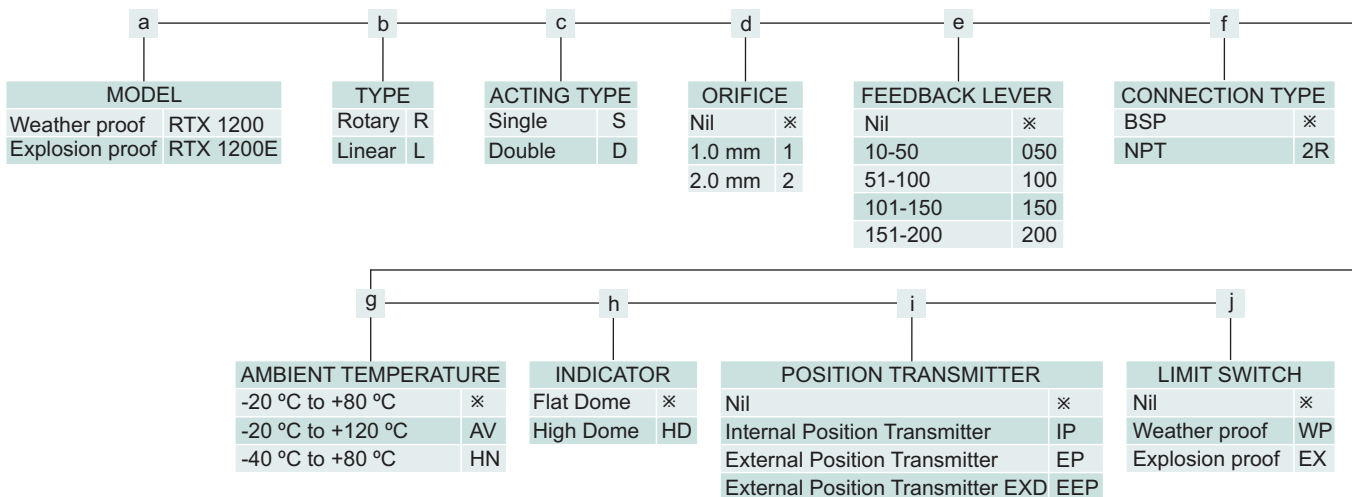
ORDERING EXAMPLE

- RTX1000-R-S : RTX1000 weather proof single acting rotary type positioner
- RTX1000E-R-D-LT-HD-EEP : RTX1000 explosion proof double acting rotary type low temperature positioner with an external explosion proof position transmitter, with 1/2" NPT conduit connection

RTX1200

PNEUMATIC POSITIONER

ORDERING CODE



ORDERING EXAMPLE

- RTX1200-R-S : RTX1200 weather proof single acting rotary type positioner
- RTX1200E-R-D-LT-HD-EEP : RTX1200 explosion proof double acting rotary type low temperature positioner with an external explosion proof position transmitter

TYPE

Rotary R and linear L are two selection available. Basically there is no difference internally. The Linear version can be adapted to lever to convert the linear motion to rotary. The version R rotary cannot adopt Feedback lever option...

SINGLE OR DOUBLE ACTING

In single acting version the poppet is built only for one out let and one exhaust. Thus it has better response and accuracy...but in any case the double acting can be used as single acting by plugging the outlet port Double acting version has all the poppet assembly as needed

ORIFICE

Each positioner is supplied with restrictor which can be installed in poppet. The restrictor will avoid hunting on smaller actuator. The larger actuator may not need any restrictor. On removing the orifice the positioner will provide full flow. This is recommended when the actuator size is large. Changing orifice in the poppet is a responsible work. The procedure for replacing the orifice is available in installation, operation and maintenance manual. Special orifice sizes are available on request

FEEDBACK LEVER

The feedback lever is dependent on the stroke of the control valve. It is better to install right size of lever for better performance. The mark on the lever requests assembler to install travel pin at the right position. All feedback levers are designed for 90 degree rotation. Feedback lever has a spring which ensures zero play in operation

AMBIENT TEMPERATURE

NBR seals can stand -20 °C to +80 °C Deg C. The Viton seals are used for high temperature and HNBR for the low temperature. Seals cannot be replaced in field. It is factory fitted

POSITION TRANSMITTER

Position Transmitter can be installed in many ways

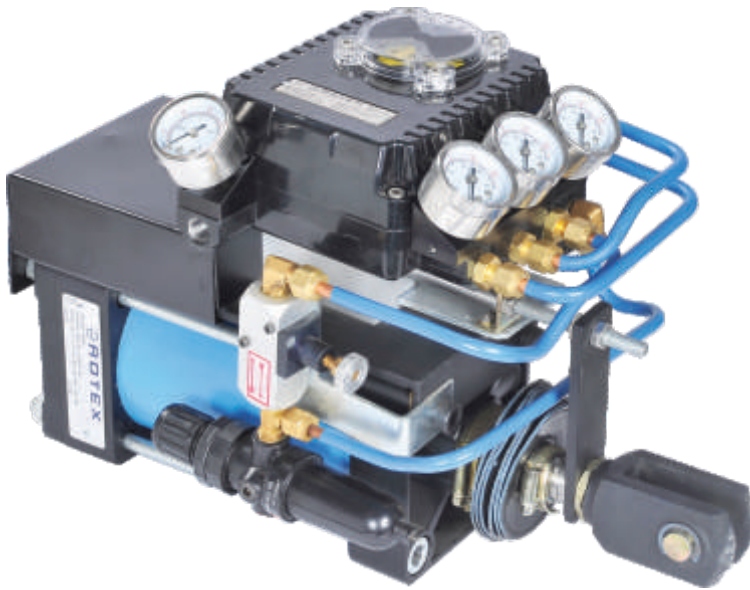
- Internal PTR compact and is integral to RTX positioner
 - Non Exd for safe area
 - Exd for Hazardous area
- External PTR is selected when remote transmitter is needed and can be serviced without disturbing Positioner
 - Non Exd for remote mounting
 - Exd for remote mounting and for Hazardous area only

Accuracy 0.3 %, repeatability 0.5%

It has zero and span adjustment. Unit has a very special feedback potentiometer having life of over 10 million rotations. The design is very unique has no temperature rise during continuous working...

LIMITSWITCH

Refer to Limit switch catalogue VLS:11:10



FEATURES

- Linear Cylinder with cam plate
- Cam plate can be reversed at site for fail safe open (Reverse Actuation)
- Cam can be profiled to Equal, Square root, Linear Cylinder or equal percentage

BUTTERFLY VALVE WITH ACTUATOR

- 90° Rotation Positioner
- Zero backlash due to ISO mounting
- Characteristic of flow can be adjusted to need by ordering special cam
- Double acting and Single acting both can be installed by ROTEX Positioners





BALL VALVE WITH ACTUATOR

- Various ball valve like, 'O' ball, 'V' notch ball can be regulated by ROTEX
- Speed of rotation can be adjusted by replacing different orifices
- Calibration of valve can be matched precisely with opening and closing due to low hysteresis

3 WAY BALL VALVE WITH ACTUATOR

- 3 way valve can be used for continuous line diverting liquid back to tank. Provides unique constant pressure system
- Special cam profiles available on ROTEX for this application
- Speed can be controlled to avoid over travel





Engineering For The Future

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