

ROTEX POSITIONER



POSITIONER

ELECTRO PNEUMATIC | PNEUMATIC

POSITION TRANSMITTER

 **ROTEX**

Engineering For The Future

ROTEX POSITIONER

FEATURES



- ✓ Unique polymer diaphragms developed by Rotex offer long life and prevent malfunctioning of the device.
- ✓ Rotex poppet has all of its internal moving parts in Stainless Steel (SS). This helps fight corrosion and offers an improved surface finish, ensuring long-term repeatability.
- ✓ Rotex has the least air consumption as compared to other positioner manufacturers. The metal spool and metal poppet ensure minimum leakage.
- ✓ Rotex high temperature elastomer and class H E/P coil promise resistance to high temperature applications.
- ✓ Rotex has a strong service team across the globe and provides spares for all the items, leading to low installation and maintenance costs.

WHY ROTEX POSITIONERS?



Does your positioner start to malfunction over a period?



Do you need to reset the zero and the span often?



Do you lose air over and above the theoretically calculated value?



Does your positioner fail in moderately high temperature zones?



Do you get spares and service when needed?



PRODUCT RANGE



RTX 1000 R/L



RTX 1000 E



RTX 1200 R



RTX 1300



RTX 1000 R+ Transmitter



RTX 1200 R+ Transmitter

PRODUCT RANGE



RTX 1300 + Transmitter



Transmitter



SMART RTX 7

Also available:

RTX 1000 R / L in SS

SMART RTX 7 in SS

Transmitter in SS

FEATURES SUMMARY

Type	P/P				E/P		Smart				
Model	RTX 1200	RTX 1200 + Transmitter Contactless (CS)	RTX 1300	RTX 1300+ Transmitter Contactless	RTX 1000	RTX 1000 + Transmitter Contactless (CS)	RTX 6	RTX 7	RTX 8	RTX 9	RTX 5 (IPST)
HARDWARE											
Technology	Flapper Nozzle	Flapper Nozzle	Flapper Nozzle	Flapper Nozzle	Flapper Nozzle	Flapper Nozzle	Piezo	Piezo	Piezo	Piezo	Piezo
Local Buttons	✗	Only for transmitter	✗	Only for transmitter	✗	Only for transmitter	✓	✓	✓	✓	✓
LCD Display	✗	Only for transmitter	✗	Only for transmitter	✗	Only for transmitter	✓	✓	✓	✓	✓
Double Acting/ Single	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rotary/Linear	✓	✓	Linear	Linear	✓	✓	✓	✓	✓	✓	✓
Feedback	X	✓	✗	✓	✗	✓	✓	✓	✓	✓	✓
Fail Safe	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Fail Freeze	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✓
IP rating	IP 66	IP 66	IP 66	IP 66	IP 66	IP 66	IP 66	IP 66	IP 66	IP 66	IP 66
Natural Gas Capability	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✓
Enclosure Material	AL/SS	AL/SS	AL/SS	AL/SS	AL/SS	AL/SS	AL/SS	AL/SS	AL/SS	AL/SS	AL/SS
Remote Mounting	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✓
Operation	Poppet	Poppet	Spool	Spool	Poppet	Poppet	Servo	Servo	Servo	Servo	Servo
Exhaust port	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✓
Encapsulated Electronics	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✓
DIAGNOSTICS											
No Dead zone	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✓
Alerts	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓
Pressure Transducer	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✓
Partial Stroke Test	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
Online Diagnostics	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✓
Offline Test	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✓

FEATURES SUMMARY

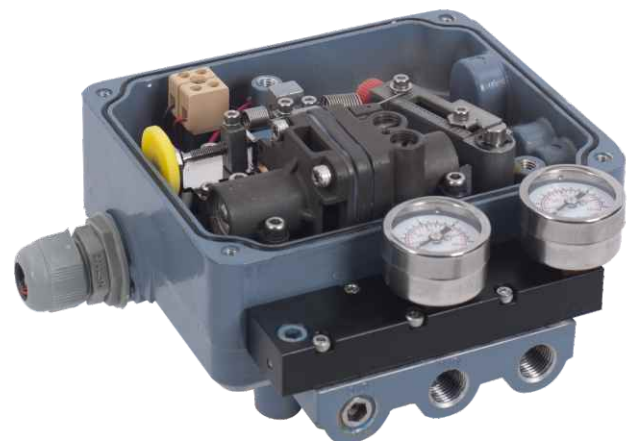
Type	P/P				E/P		Smart				
Model	RTX 1200	RTX 1200 + Transmitter Contactless (CS)	RTX 1300	RTX 1300+ Transmitter Contactless	RTX 1000	RTX 1000 + Transmitter Contactless (CS)	RTX 6	RTX 7	RTX 8	RTX 9	RTX 5 (IPST)
FEEDBACK MODULE											
Analog 4-20 mA	✗	✓	✗	✓	✗	✓	✓	✓	✓	✓	✓
LCD display	✗	✓	✗	✓	✗	✓	Buit-in	Buit-in	Buit-in	Buit-in	Buit-in
Push button for setting	✗	✓	✗	✓	✗	✓	Buit-in	Buit-in	Buit-in	Buit-in	Buit-in
21 Freely configurable setpoint	✗	✓	✗	✓	✗	✓	Buit-in	Buit-in	Buit-in	Buit-in	Buit-in
COMMUNICATION											
HART (version 5 and 7)	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓
CERTIFICATION											
Explosion Proof	✓	✓	✗	✗	✓	✓	✓	✓	✓	✓	✓
Intrinsically Safe	✓	✓	✗	✗	✓	✓	✓	✓	✓	✓	✓
ATEX/ IECEx	✓	✓	✗	✗	✓	✓	✓	✓	✓	✓	✓
CuTR	✓	✓	✗	✗	✓	✓	✓	✓	✓	✓	✓
SIL Certified	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✓
Peso	✓	✓	✗	✗	✓	✓	✓	✓	✓	✓	✓

ELECTRO-PNEUMATIC POSITIONER

RTX1000

FEATURES

- Special low pressure diaphragm direct acting valve ensures quick and precise response to minor changes in signal pressure
- Low hysteresis increases overall efficiency
- Excellent performance under vibration up to 4g (3mm amplitude)
- High life of diaphragm and zero maintenance
- Compact design, rugged construction with a 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 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
- 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 available
- Internal circuit of the positioner is highly corrosion resistant as no part (metal plate) is exposed
- IP 66 protection
- CE certified



TORQUE MOTOR

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



HIGHLY BALANCED SPRING MECHANISM

- High repeatability and linearity
- Critically designed springs avail a 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

ELECTRO-PNEUMATIC POSITIONER

RTX1000

TECHNICAL SPECIFICATIONS

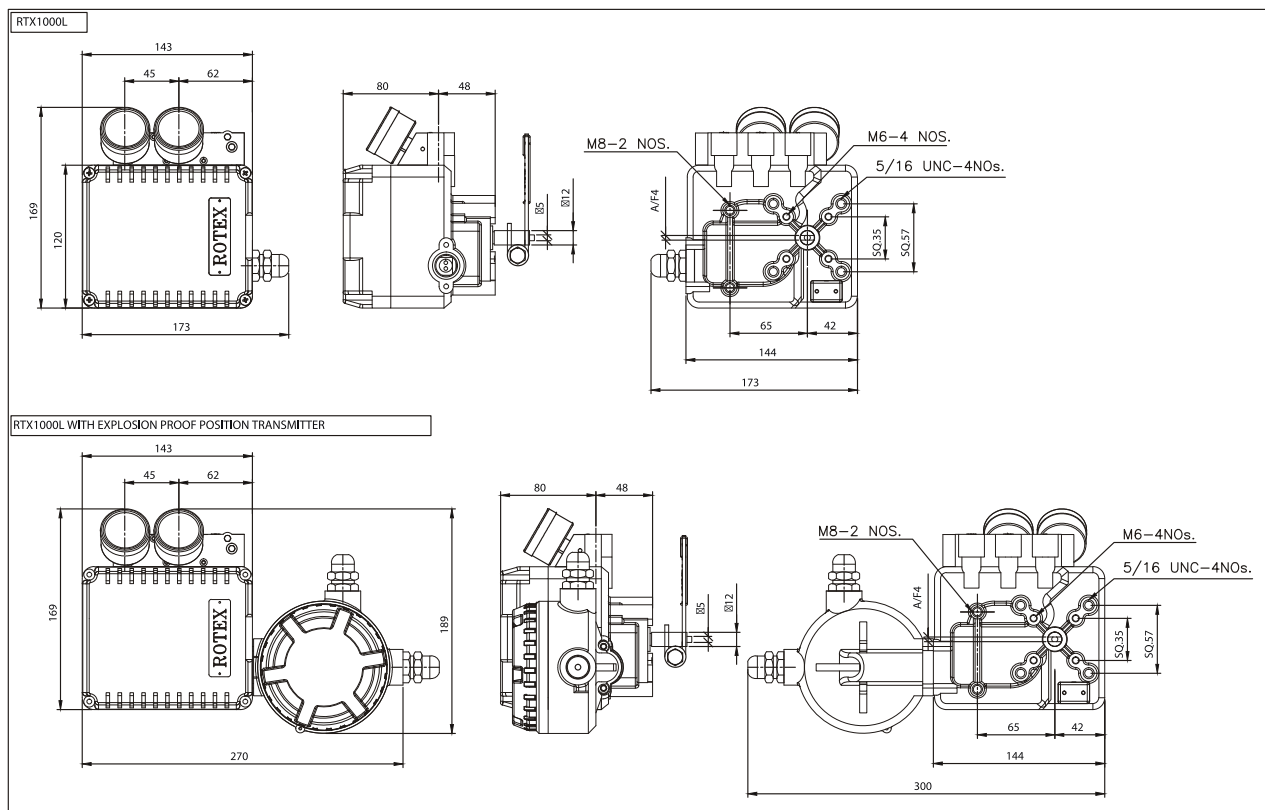
TYPE	LINEAR		ROTARY	
Operation	Single Acting	Double Acting	Single Acting	Double Acting
Supply Pressure	0.3 bar above actuator requirement (minimum 1.4 bar and maximum 7 bar)			
Input Signal	4 to 20 mA DC constant current with maximum 30 VDC			
Stroke	10-150 mm		0-90°	
Air Connection	1/4" BSP / NPT			
Explosion Proof	ATEX			
Protection	IP 66			
Cam	Equal / Square / Square Root			
Ambient Temperature	-40 °C to +120 °C, see ordering code			
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	3 lpm (supply pressure 1.4 kgf / cm2), 11 lpm (supply pressure 4.0 kgf / cm2)			
Flow Capacity	80 lpm (supply pressure 1.4 kgf / cm2), 200 lpm (supply pressure 4.0 kgf / cm2)			
Material	Aluminium Die Casting			
Weight	2.9 Kg	2.9 Kg	3 Kg	3 Kg

BUILT IN SMART TRANSMITTER



RTX1000

DIMENSION DETAILS



ELECTRO-PNEUMATIC POSITIONER

RTX1000

ORDERING CODE

1		2		3	
MODEL		TYPE		ACTUATING TYPE	
Weatherproof	RTX1000	Rotary	R	Double acting	D
Explosion Proof	RTX1000E	Linear for 33°	L	Single acting	S
Explosion Proof Intrinsically Safe	RTX1000I				

4		5		6	
ORIFICE		FEEDBACK LEVER ②		PNEUMATIC PORT CONNECTION	
Nil	*	Nil	*	1/4" BSP	2G
1 mm	1	0-25	L1	1/4" NPT	2R
2 mm	2	26-100	L2		
		101-200	L3		
		80 X 30 - 20 MM PINION HEIGHT	R1		
		80 X 30 - 30 MM PINION HEIGHT	R2		
		80 X 30 - 50 MM PINION HEIGHT	R3		
		130 X 30 - 30 MM PINION HEIGHT	R4		
		130 X 30 - 50 MM PINION HEIGHT	R5		

7		8		9	
CONDUIT ENTRY		TEMPERATURE		INDICATOR	
1/2" NPT	4R	-20 to +80 °C	*	Flat Indicator	FD
M20	3M	-40 to +80 °C	HN	High dome	HD
		-20 to +120 °C	AV	Nil	ND

10		11		12	
POSITION TRANSMITTER (PTR)		GAUGE		SPECIAL CUSTOMISATION	
Nil	*	Dial 40mm, 0-10Bar, MS	41	Rotary Split 4-12 mA	Rs04
Inbuilt Smart PTR	C	Dial 30mm, 0-10Bar, SS	32	Rotary Split 12-20 mA	Rs12
External Smart PTR with Linkage	L	Dial 30mm, 0-4Bar, SS	33	Linear Split 4-12 mA	Ls04
External Smart PTR with Linkage (Ex d)	ECS	Dial 40mm, 0-10Bar, SS	42	Linear Split 12-20 mA	Ls12
				Special Customisation	SU-xx

NOTE

* Default

① For this model temperature will be -20 °C to +80 °C

② L1 to L3 applicable for type "L" models only and R1 to R5 applicable for type "R" models only.

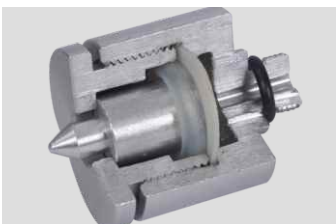
For any special requirement please coordinate with factory, ordering code for special will be MODEL-SUXX.

PNEUMATIC POSITIONER

RTX1200

FEATURES

- Special low pressure diaphragm direct acting valve ensures quick and precise response to minor changes in signal pressure
- Low hysteresis increases overall efficiency
- Excellent performance under vibration up to 4g (3mm amplitude)
- High life of diaphragm and zero maintenance
- Compact design, rugged construction with a 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 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
- Orifice option prevents 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 available
- Internal circuit of the positioner is highly corrosion resistant as no part (metal plate) is exposed
- IP 66 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

PNEUMATIC POSITIONER

RTX1200

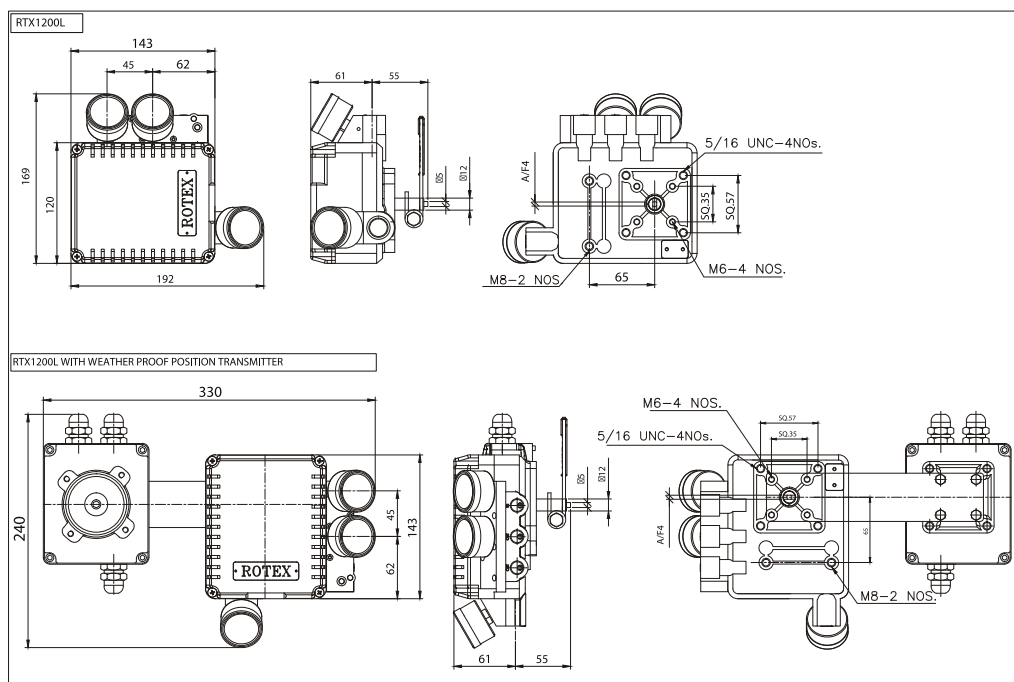
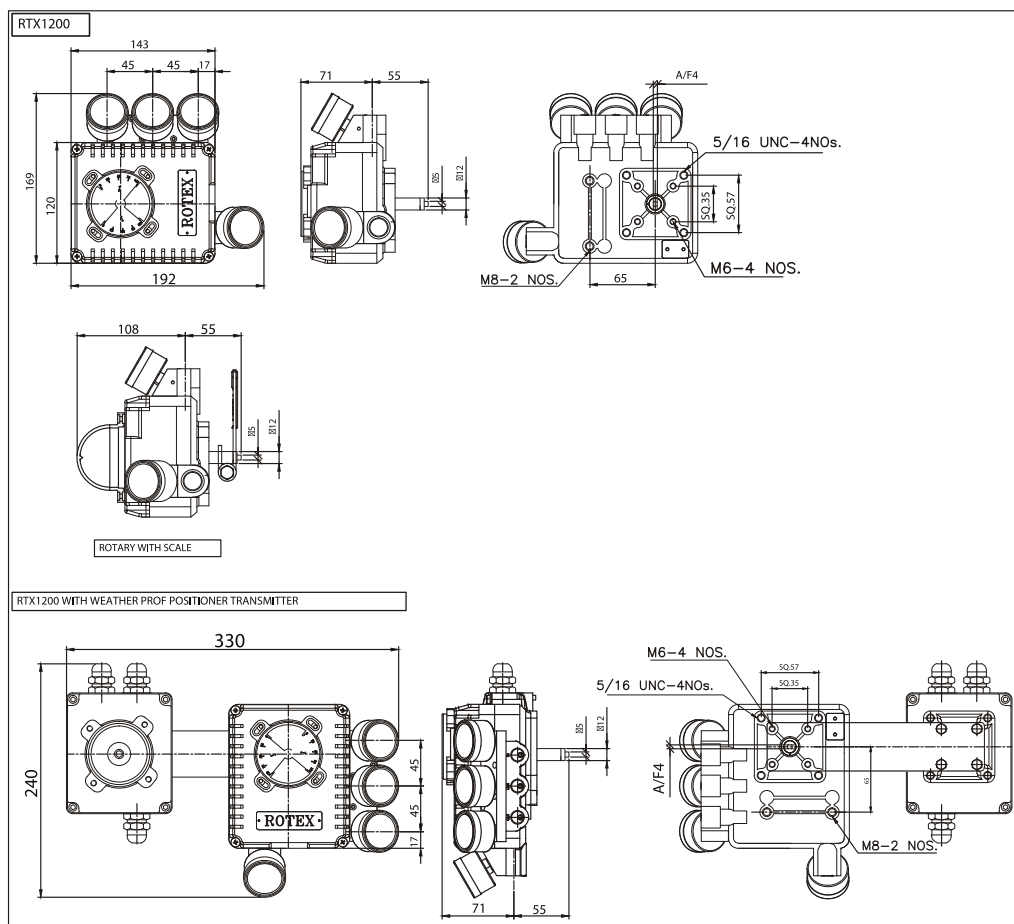
TECHNICAL SPECIFICATIONS

TYPE	LINEAR		ROTARY	
Operation	Single Acting	Double Acting	Single Acting	Double Acting
Supply Pressure	1.4-8.0 kgf / cm2 (20 -120 psi)			
Input Signal Pressure	0.2-1 kgf / cm2 (3-15 psi)			
Stroke	10-150 mm		0-90°	
Air Connection	1/4" BSP / NPT			
Explosion Proof	Not Applicable			
Protection	IP 66			
Cam	Equal / Square / Square Root			
Ambient Temperature	-40 °C to +120 °C, see ordering code			
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	3 lpm (supply pressure 1.4 kgf / cm2), 11 lpm (supply pressure 4.0 kgf / cm2)			
Flow Capacity	80 lpm (supply pressure 1.4 kgf / cm2), 200 lpm (supply pressure 4.0 kgf / cm2)			
Material	Aluminium Die Casting			
Weight	2.1 Kg	2.1 Kg	2.2 Kg	2.2 Kg

PNEUMATIC POSITIONER

RTX1200

DIMENSION DETAILS



PNEUMATIC POSITIONER

RTX1200

ORDERING CODE

1		2		3	
MODEL		TYPE		ACTUATING TYPE	
Weatherproof	RTX 1200	Rotary	R	Double acting	D
		Linear for 33° ①	L	Single acting	S

4		5		6	
ORIFICE		FEEDBACK LEVER		PNEUMATIC PORT CONNECTION	
Nil	*	Nil	*	1/4" BSP	2G
1 mm	1	0-25	L1	1/4" NPT	2R
2 mm	2	26-100	L2		
		101-200	L3		
		80 X 30 - 20 MM PINION HEIGHT	R1		
		80 X 30 - 30 MM PINION HEIGHT	R2		
		80 X 30 - 50 MM PINION HEIGHT	R3		
		130 X 30 - 30 MM PINION HEIGHT	R4		
		130 X 30 - 50 MM PINION HEIGHT	R5		

7		8		9	
TEMPERATURE		INDICATOR		POSITION TRANSMITTER (PTR)	
-20 to +80 °C	*	Flat Indicator	FD	Nil	*
-40 to +80 °C	HN	High dome	HD	Inbuilt Smart PTR	C
-20 to +120 °C	AV	Nil	ND	External Smart PTR with Linkage	L
				External Smart PTR with Linkage (Ex d)	E

10		11	
GAUGE		SPECIAL CUSTOMISATION	
Dial 40mm,0-10Bar, MS	41	SU	XX
Dial 30mm, 0-10Bar, SS	32		
Dial 30mm, 0-4Bar, SS	33		
Dial 40mm,0-10Bar, SS	42		

NOTE

* Default

① For type Linear, indicator will be No Dome (Table 8)

For any special requirement please coordinate with factory, ordering code for special will be MODEL-SUXX.

PNEUMATIC POSITIONER

RTX1300

FEATURES

- Ideal for linear actuators
- Unique mechanism ensures zero over travel
- Metal to metal spool valve
- Linkage mechanism on ball bearings
- Calibrated springs for precise operation
- Very few components ensure ease in maintenance
- Very easy to set zero and span
- Cam driver can decide various steps of operation like quick acting, slow opening or linear
- All parts are anodized
- IP 55
- CE certified



METAL – TO – METAL SPOOL

- Not sensitive to dirt and dust
- Hardened and ground for long life
- Very easy for maintenance

LINKAGE MECHANISM

- Unique ball bearings to support zero play
- Easy to set zero and span

CAM

- Cam can be profiled for various applications
- RTX 1300 is independent of cam performance

PNEUMATIC POSITIONER

RTX1300

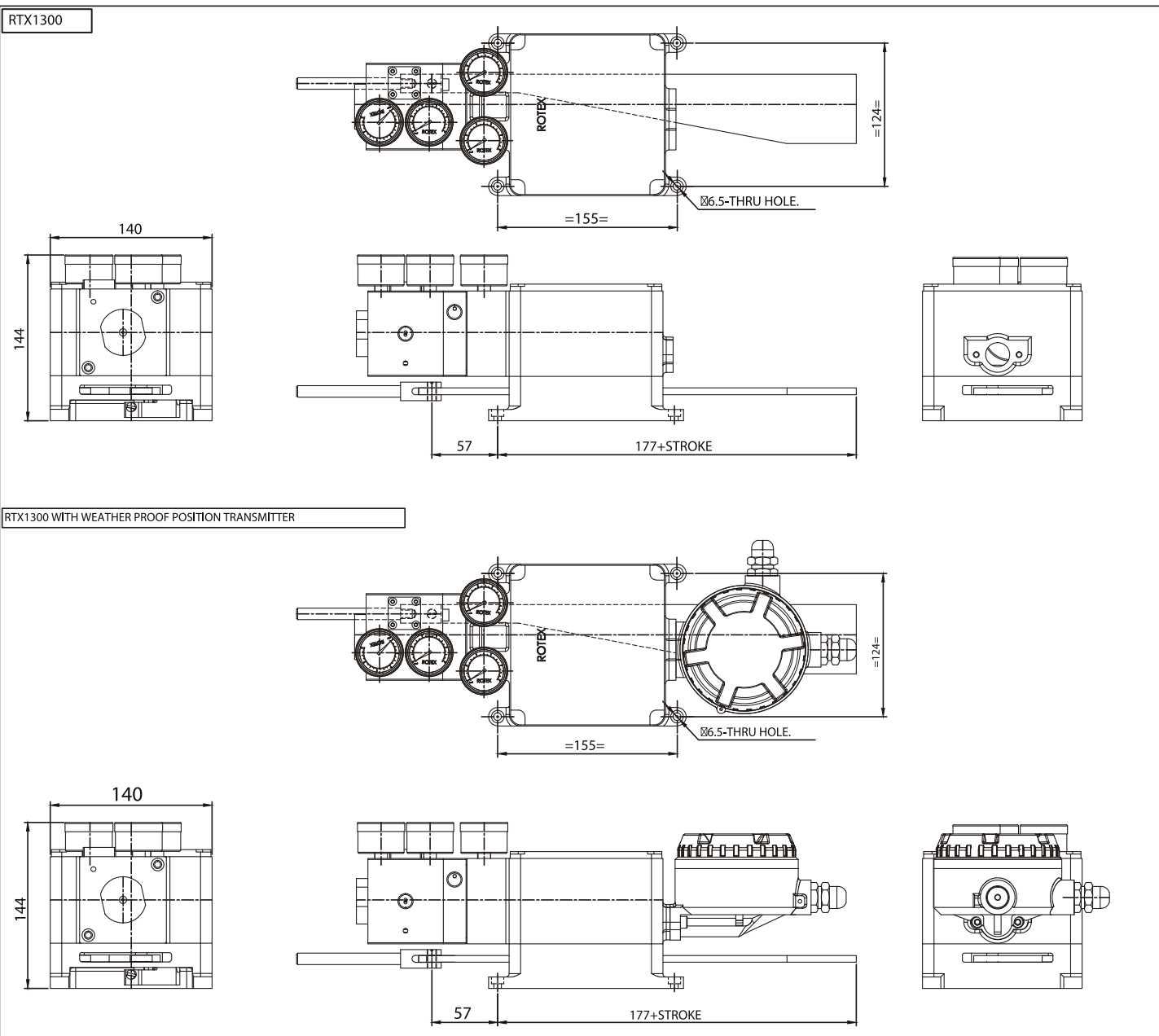
TECHNICAL SPECIFICATIONS

TYPE	LINEAR	
Operation	Single Acting	Double Acting
Supply Pressure	1.4-8.0 kgf / cm ² (20 -120 psi)	
Input Signal Pressure	0.2-1 kgf / cm ² (3-15 psi)	
Stroke	10-900 mm	
Air Connection	1/4" BSP / NPT	
Explosion Proof	Not Applicable	
Protection	IP55	
Cam	Equal / Square / Square Root	
Ambient Temperature	-40 °C to +120 °C, see ordering code	
Linearity	± 1%	± 2%
Hysteresis	± 1%	± 1%
Sensitivity	± 0.2%	± 0.5%
Repeatability	± 0.5%	± 0.5%
Internal Bleeding	10 lpm (supply pressure 1.4 kgf / cm ²), 14 lpm (supply pressure 4.0 kgf / cm ²)	
Flow Capacity	120 lpm (supply pressure 1.4 kgf / cm ²), 300 lpm (supply pressure 4.0 kgf / cm ²)	
Material	Aluminium Die Casting	
Weight	5 kg	

PNEUMATIC POSITIONER

RTX1300

DIMENSION DETAILS



PNEUMATIC POSITIONER

RTX1300

ORDERING CODE

1		2		3	
MODEL		ACTUATING TYPE		STROKE	
RTX1300	RTX1300	Double acting	D	Mention stroke in mm ②	0000
		Single acting	S		

4		5		6	
PNEUMATIC PORT CONNECTION		POSITION TRANSMITTER (PTR)		CONDUIT ENTRY	
1/4" BSP	2G	No PTR	*	Nil ①	*
1/4" NPT	2R	PTR	PT	1/2" NPT	4R
		PTR Ex d	PTE	M20	3M

7	
TEMPERATURE	
-20 to +80 °C	*
-40 to +80 °C	HN
-20 to +120 °C	AV

NOTE

* Default

① Conduit type is Nil when PTR is Nil

② Digit indicates stroke of actuator

For any special requirement please coordinate with factory, ordering code for special will be MODEL-SUNUMBER

POSITION TRANSMITTER (PTR)



FEATURES

- Contactless position feedback
- Extremely reliable under vibration
- Life is practically infinite, as compared to a potentiometer, which wears every time it moves
- Microcontroller, MSP430 based transmitter, extremely reliable with a high performance chip
- Easy to set, by just pushing set buttons
- Digital display for the easy readability
- 21 freely configurable set points, for 4-20 mA output for variable span.
- Weather proof, flameproof and explosion proof available
- IP 67 Rating
- Available in Aluminum, Stainless Steel and Polycarbonate (Makrolon®)



POSITION TRANSMITTER

(PTR)

SPECIFICATIONS

Type	Weatherproof/ Flameproof
Field Calibration	Auto calibration with stroke settings
Custom Set Point	21 freely configurable set points
Position Sensing	Contactless
Indication	LCD display - Current (mA) and Position (%)
Setup	Push button on device
Conduit Entry	½" NPT (F) or M20
Temperature	-20 °C to +60 °C (Standard) -40 C to +80 °C (On Request)

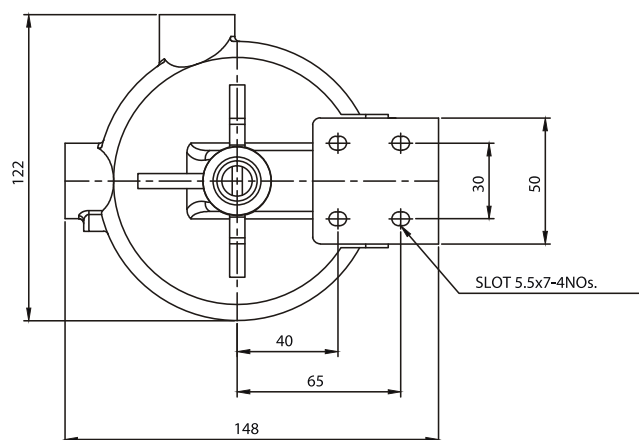
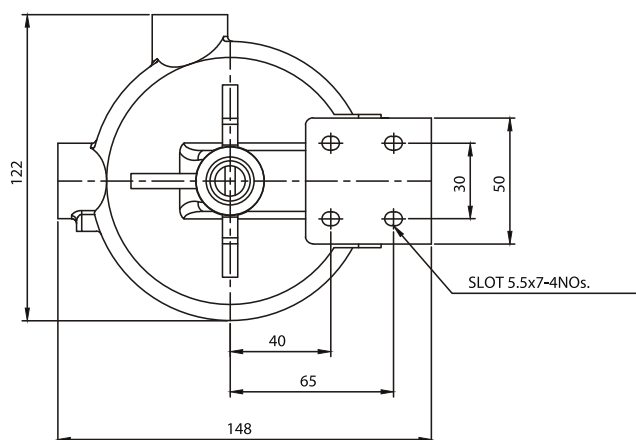
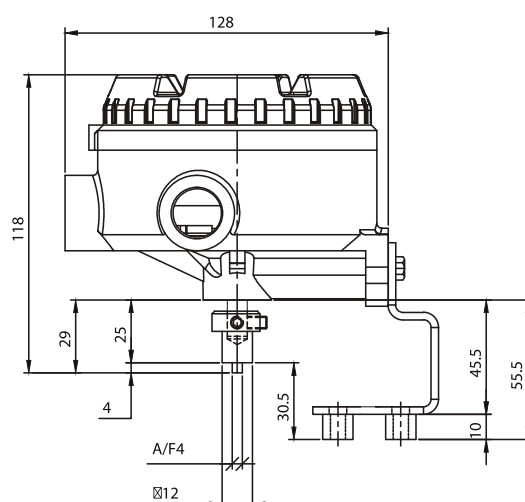
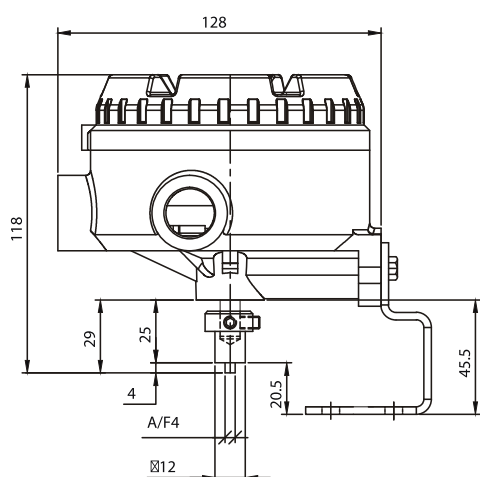
CHARACTERISTICS

Accuracy	0.3% of full scale
Repeatability	0.2% of full scale
Hysteresis	0.3% of full scale
Linearity	0.2% of full scale
Supply Voltage	24V DC + / - 10% (Loop Feedback)
Supply Connection	Screw Terminal (standard), M8 socket 3/4 pin (M) (optional)
Operating Range	3.6 - 21mA
Influence of Temperature	0.35% / 10 °K
Transmission Error	< 0.3%
Electromagnetic	CE, directive EMC 89 / 336 / EEC Compatibility

POSITION TRANSMITTER (PTR)

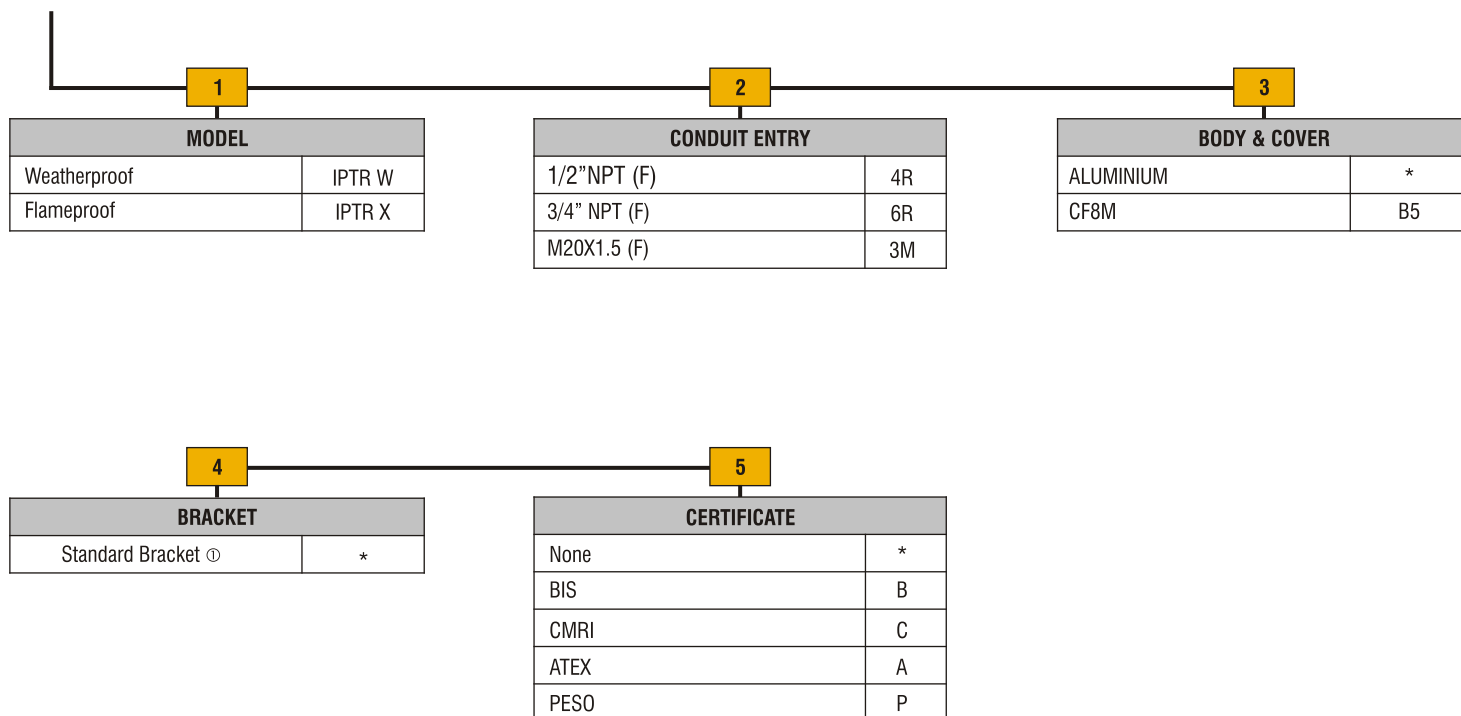
DIMENSION DETAILS

CONTACT LESS POSITION TRANSMITTER



POSITION TRANSMITTER (PTR)

ORDERING CODE



NOTE

* Default

① Conduit type is Nil when PTR is Nil



ROTEX GROUP SALES HEAD QUARTER
B/703/704, Western Edge-II, Off Western Express Highway,
Borivli (East), Mumbai-400066
Phone : +91 22 42111444
Fax : +91 22 42111400
Email : sales-bby@rotexautomation.com

ROTEX MANUFACTURERS AND ENGINEERS PRIVATE LIMITED
Plot No-R-852, TTC Industrial Area, Rabale, Navi Mumbai- 400701
Phone : +91 22-20871065 / 66 / 67 / 68
Email : rmepl@rotexautomation.com

ROTEX AUTOMATION EUROPE
Bierstraat 117
3011 XA Rotterdam
The Netherlands
Phone : +31-88-5053505
E-mail : europe@rotexautomation.com