

THE SMARTEST POSITIONER: ROTEX POSIDAPT SERIES



 **ROTEX**
Engineering For The Future

RTX 3 and 4 FEATURES

LCD DISPLAY

- Back-lit LCD display for better readability
- Reversible LCD display can rotate 180 degrees based on mounting direction
- No abbreviation or short form used
- User friendly interface
- On-screen display of diagnostics
Structured menu for parameters, setups and diagnostics

SUPERIOR FUNCTIONALITY

- Contactless feedback with patented algorithm.
- Blind Mount eliminates the need to orient mounting angle

MODULAR DESIGN

- Plug and play option for Position
- Transmitter module
- Fewer modules make it easy to install, operate and maintain
- Fewer number of internal components and moving parts, increased reliability and life span
- IP 66 enclosure

ENCASULATED ELECTRONICS

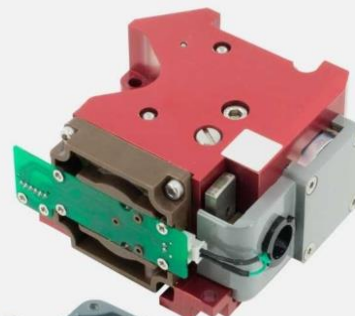
- Epoxy Potted Electronics
- Protection against moisture, humidity and vibration
- Long-life, no failure of electronics

PRECISERVO

- Metal to metal contact, low friction and high sensitivity
- Has built in feedback sensor
- Can accommodate wide variety of actuator volumes without need of flow control valve or volume booster
- Better reliability and functionality with Flapper Technology

GAUGE BLOCK

- External optional gauge block



TECHNICAL SPECIFICATIONS

Overview

General	Microprocessor based electronic positioner
	Loop powered, no external power supply required.
	External 24V DC option available.
	Blind mount
	Suitable for rotary and linear valves.
	Actuator connections in accordance with VDI/VDE 3845 and IEC 60534-6 standards.
	Extensive selection of mounting kits for various kind of actuators
Action	Double or single acting
Failsafe	Failsafe or Stay-put / Fail freeze (only available with RTX 7, RTX 8, RTX 9)

Actuator travel range

Linear	0 position can start anywhere , 3 to 200 mm, other strokes on request
Rotary	0° can start anywhere , max. 359°
Measurement range	0- 359° with freely rotating contactless feedback shaft.
Actuator travel time	0 to 300 seconds (configurable in incremental steps of 60 Seconds)
Actuator travel limit	Freely configurable in 0% to 100%
Deadband time limit	0 to 300 seconds (freely configurable, monitoring parameter until deviations reaches within deadband)

Environmental condition

Standard temperature range	-20 °C to +85 °C / -4 °F to +185 °F
Low temperature range	-40 °C to +85 °C / -40 °F to +185 °F
	-55 °C or +135 °C available on request
Influence of temperature on valve position	0.35% / 10 °K
Influence of vibration on valve position:	< 1 % under 10g 5–85 Hz, 2.5 85-150 Hz 1.5g 150–280 Hz, 0.5g 280–1500 Hz

Construction / Enclosure

Material*	2 = Epoxy coated anodised aluminium housing and cover with Makrolon® (Polycarbonate) see through window
	3 = Explosion proof aluminium housing and cover with Toughened Glass see through window
	4 = Explosion proof stainless steel housing and cover with Toughened Glass see through window
	6 = Intrinsically safe, epoxy coated anodised aluminium housing and cover with Makrolon® (Polycarbonate) see through window
	7 = Intrinsically safe, stainless steel housing and cover with Toughened Glass see through window
	8 = Stainless Steel housing and cover with Toughened Glass see through window
Protection Class	IP66
Pneumatic pressure and exhaust ports	G1/4"
	1/4" NPT
Cable Gland	1/2" NPT
	M20 x 1.5

Weight - RTX 3 and 4 (Without Gauge Block)	
Bare Positioner Material Option 2,6	1.8 kg / 4 lbs
Bare Positioner Material Option 3	4.9 kg / 10.8 lbs
External Gauge Block	0.3 kg / 0.7 lbs

Weight - RTX 7, 8, 9 and 5 (With In-Built Gauges)	
Bare Positioner Material Option 2, 6	2.5 kgs / 5.5 lbs
Bare Positioner Material Option 3	6.6 kgs / 14.5 lbs
Bare Positioner Material Option 4,7,8	9.9 kgs / 21.9 lbs
Positioner Transmitter / Alarm Module	0.08 kgs / 0.2 lbs

Pneumatics

Supply pressure	1.4 ... 8 bar / 24 ... 114 psi (10 bar on request)
Capacity with 4 bar / 60 psi	> 1 ... 41 Nm ³ /h / 0.5 ... 23 scfm (Servo controlled orifice)
Consumption with 4 bar / 60 psi (Steady State)	< 1 lpm / 0.037 scfm @ 4 bar
CV (RTX 3 and RTX 4)	0.55
CV (RTX 7, RTX 8, RTX 9, RTX 5)	0.7

Instrument Air

Air Quality	In accordance to ISO 8573-1
Solid Particles	Class 5 (maximum density 3 mg/m ³ , 5 µm filtration is recommended)
Humidity	Class 1 (dew point 10° C below minimum operating temperature)
Oil	Class 3 (Maximum concentration 5 mg/m ³ or < 1 ppm)

Electronics & Electrical

Supply Power	4 ... 20 mA (2 wire system)
	18 ... 30 VDC (4 wire system) (not available in RTX 3 & 4)
Signal	4 ... 20 mA, 0 ... 20 mA (only with 4 wire system), both with or without HART signal
Minimum Signal	≥ 3.6 mA
Current Max	36 mA (with overload protection)
Load Voltage	9.7 VDC @ 20mA (max 30 VDC)
Impedence	485 Ω at 20 mA
Wire Cross Section	Screw terminals max. 2.5 mm ² (AWG 14)

Characteristic & Performance

Characteristics	Linear, 1:25,1:33, 1:50, 25:1, 33:1, 50:1, and freely configurable
Deadband	Configurable from 0.1% to 10%
Hystersis	≤ 0.5 %
Deviation	≤ 0.5 %

Position Transmitter Module

Output	4 ... 20 mA (2 wire system)
Supply Voltage	12 ... 30 VDC
Total Operating Range	3.6 ... 21 mA
Transmission Error	≤ 0.3 %
Influence of Temperature	0.35% / 10° K

Alarm Module	(not available in RTX 3 & 4)
Supply Voltage	12 ... 30 VDC
Max Supply Voltage	≤ 35 VDC
Signal Current	≥ 2.1 mA (Logically HIGH)
	≤ 1.2 mA (Logically LOW)
Total Digital Output	3
Total Digital Input	2 [^]
Voltage	30 VDC
Communication	HART 5 & 7 (not available in RTX3)
	Foundation Fieldbus** (not available in RTX3 & 4)
	Profibus PA** (not available in RTX3 & 4)
* RTX 3 and RTX 4 only available in options 2,3 and 6	
** On request	
*** Only available with RTX 7,8,9 and 5	
[^] 1 Digital input on board	

ORDERING CODE

A

Series	
Posidapt	RTX

B

Model	
Prime 3 ^	3
Elite 4 #	4

C

Enclosure	
Weatherproof Aluminum Cover and Housing	2
Ex d Aluminum Cover and Housing	3
Ex ia Aluminum Cover and Housing	6

D

Servo	
Double Acting / Single Acting	1*

E

Port Connection	
1/4" BSP	2G
1/4" NPT	2R

F

Communication	
None	*
Hart	H

G

Module	
None	*
Position Transmitter (4 to 20 mA)	P

H

Cable Entry	
1/2"NPT (F)	4R
M20X1.5 (F)	3M

I

Temperature	
-20 °C to +85 °C	*
-40 °C to +85 °C	FS
-55 °C to +85 °C	LT

J

Certifications	
None	*
ATEX	A
PESO	C
IECEX	I
FM	F
TR CU	G
CSA	K

K

Gauge Block	
No Gauge Block *	*
Gauge with 30 mm Gauges (SS)	G1
Gauge with 40 mm Gauges (SS)	G2
Gauge with 40 mm Gauges (MS)	G3

Notes :

1. ^ Prime 3, cannot be supplied with HART Communication.
2. # Elite 4, it is mandatory to select HART communication

ACCESSORIES ORDERING CODE

L

ACCESSORIES ORDERING CODE	
one *	*
Coupler for rotary actuator ISO 5211	Rc001
Linkage for stroke up to 100mm, pin on stem	Ps100
Linkage for stroke up to 200mm, pin on stem	Ps200
Linkage for stroke up to 100mm, pin on lever	Pl100
Linkage for stroke up to 200mm, pin on lever	Pl200
Bracket Type 1 KIT-MS	Rc002
Bracket Type 1 KIT-SS304	Rc003
Bracket Type 2 KIT-MS	Rc004
Bracket Type 2 KIT Ss304	Rc005
IPTR Mounting KIT for rotary actuator	Rc006
Coupler for SMART Positioner -cylinder application	Rc007

Notes:

Multiple Certifications can be selected

* Default; no character included in model number

** Servo with external solenoid valve testing and available with IPST model only

It is mandatory to use Rotex connectors and cables for remote mount version

^ Cannot be supplied with any communication

Example:

RTX-7-2-1-2G-P-4R

Posidapt Expert with Aluminium enclosure, single/double acting
servo valve, pneumatic port connection of 1/4" BSP, built in position
transmitter (4 to 20 mA), cable entry 1/2" NPT