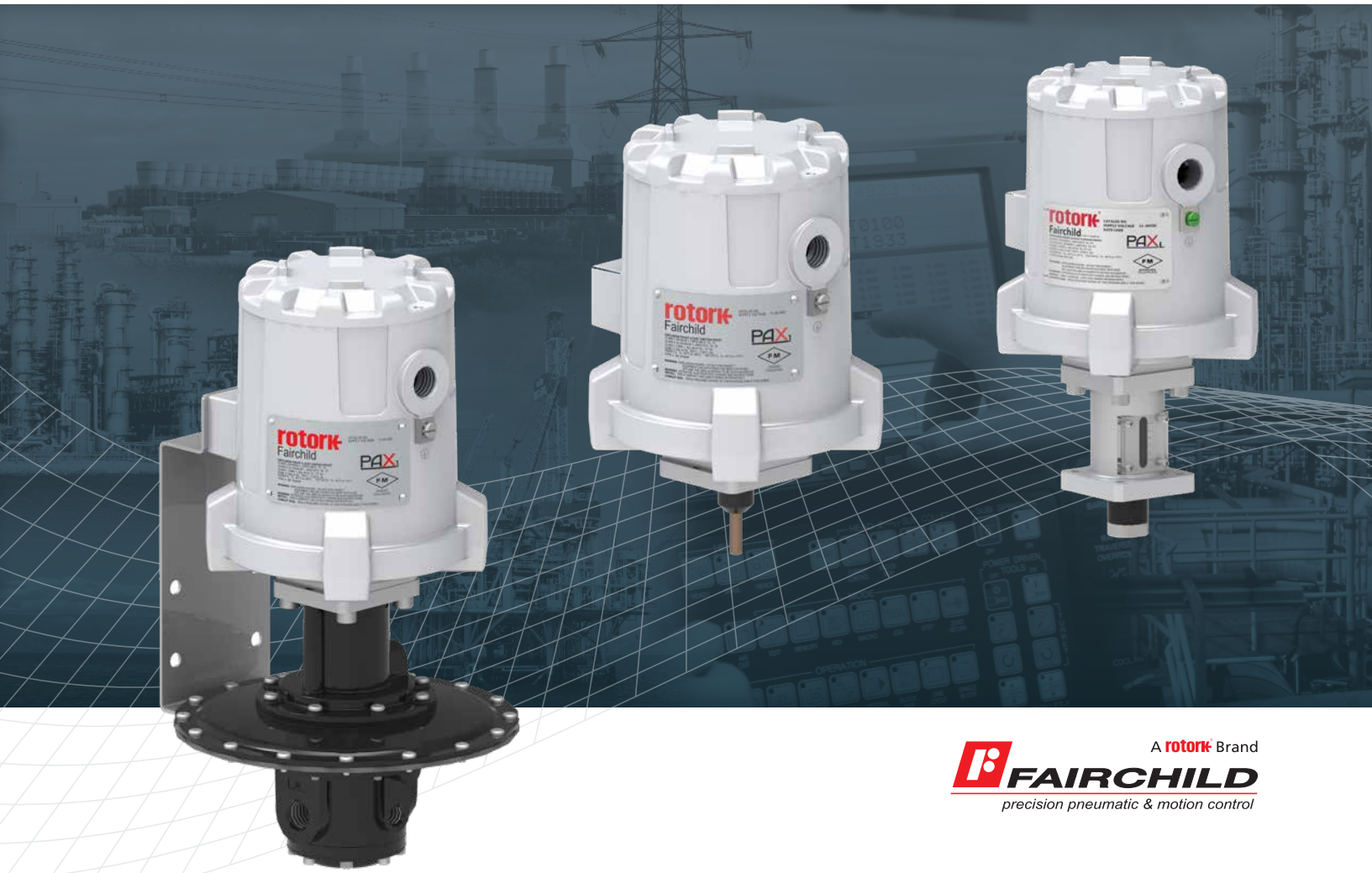
rotork®

Keeping the World Flowing
for Future Generations

PAX Range

Linear Actuators & Motorised Regulators



A rotork Brand
FAIRCHILD
precision pneumatic & motion control

Reliability in critical flow control applications

Reliable operation
when it matters

Assured reliability for critical applications and environments.

Whether used 24/7 or infrequently, Rotork products will operate reliably and efficiently when called upon.

Quality-driven
global manufacturing

Products designed with 60 years of industry and application knowledge.

Research and development across all our facilities ensures cutting edge products are available for every application.

Customer-focused service
worldwide support

Solving customer challenges and developing new solutions.

From initial enquiry through to product installation, long-term after-sales care and Client Support Programmes (CSP).

Low cost
of ownership

Long-term reliability prolongs service life.

Rotork helps to reduce long term cost of ownership and provides greater efficiency to process and plant.

PAX Range

Comprehensive product range
serving multiple industries

Improved efficiency, assured safety and environmental protection.

Rotork products and services are used throughout industry inclusive of Power, Oil & Gas, Water & Wastewater, HVAC, Marine, Mining, Pulp & Paper, Food & Beverage, Pharmaceutical and Chemical industries around the world.

Market leader
technical innovator

The recognised market leader for 60 years.

Our customers have relied upon Rotork for innovative solutions to safely manage the flow of liquids, gases and powders.

Global presence
local service

Global company with local support.

Manufacturing sites, service centres, sales offices and *Centres of Excellence* throughout the world provide unrivalled customer services and fast delivery.

Corporate social
responsibility

A responsible business leads to being the best business.

We are socially, ethically, environmentally responsible and committed to embedding CSR across all our processes and ways of working.

PAX Range Linear Electric Actuators

Rotork Fairchild PAX range actuators can be supplied alone or combined with a time proven Fairchild pressure regulator, enabling remote control of pneumatic instrument pressure.

PAX$_I$ has a rotating linear output rod to control spring return pressure regulators.

PAX$_L$ has a non-rotating linear output rod optimised for automation of small valves, pumps and other devices.

Operation

Low voltage DC powered PAX range actuators are designed for operation in remote explosionproof locations. Thrust output up to 2,890 N (650 lbf) enables actuation of most regulators, small valves and pumps.

Commissioning is performed using integral UP, DOWN and SET push buttons contained within the top enclosure. Manual operation during power loss is possible using an 8 mm ($^5/_{16}$") Allen (hex.) key.

PAX range actuators facilitate open loop control using two optically isolated switch inputs (up and down) to move the actuator thrust rod. Movement is permitted until one of the stroke limits is reached.

PAX range actuators include two fully adjustable SPDT limit switches (High and Low), triggered when the thrust rod reaches one of the set stroke positions. The limit relays are magnetically latched so the switch state is maintained when power is disconnected. An important design feature for typical solar applications that isolate power to conserve energy.

Intermediate position control is available using an isolated 4-20 mA analogue input option or the Modbus RTU network option. Signal is proportional to position across the set stroke. PAX range actuators will lock in place during a loss of signal or loss of power condition.

PAX range actuators can also include an optional 4-20 mA analogue feedback output, proportional to position. Analogue feedback is compatible with pulse control and analogue control configurations. Power is required to enable the analogue feedback output.

Applications

- Pump stroke control
- Damper systems
- Test equipment
- Automation of mechanical spring loaded pressure regulators

Actuator Features and Benefits

- Linear stroke is 25 mm (1")
- Max force is 2,890 N (650 lbf)
- Max linear speed is 60 mm (2.36") / minute
- Temperature ranges:
  -40 to +80 °C (-40 to +176 °F) – intermittent duty
  -40 to +65 °C (-40 to +149 °F) – continuous duty
- Less than 1 Watt power consumption during standby, ideal for installations in isolated locations
- Optional analogue control and feedback
- User defined stroke limits

Approval and Environmental Ratings

Hazardous Area

– FM

– CSA

– ATEX

Ingress Protection

– IP66

– IP68 (7 metres for 72 hours)

– Type 4X

– Type 6P

Product Specifications – PAX1 and PAXL

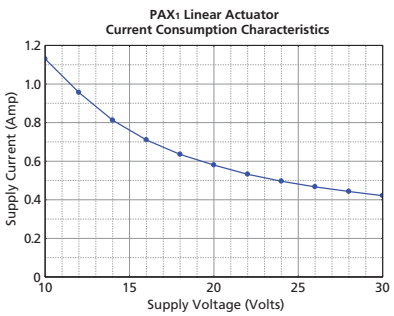
	PAX1	PAXL
		

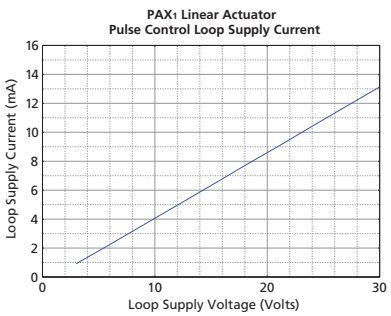
Electrical Supply	11-30 VDC (12-24 VDC nominal)	11-30 VDC (12-24 VDC nominal)
Control Methods	**Analogue Control** 4-20 mA	**Analogue Control** 4-20 mA
	Pulse Control Switch closure (2) UP & DN, 4-30 VDC loop isolated from supply	**Pulse Control** Switch closure (2) UP & DN, 4-30 VDC loop isolated from supply
	Modbus Comm. 2-wire RS-485 network for direct communication to a PLC or DCS using Modbus RTU protocol	**Modbus Comm.** 2-wire RS-485 network for direct communication to a PLC or DCS using Modbus RTU protocol
Thrust Rod Style	Linear rotating rod - push action No coupling connection	Linear non-rotating rod - push and pull action M8 x 1.25 mm female thread coupling
Maximum Stroke	25 mm (1")	25 mm (1")
Mounting Interface	ISO 5211 - F05/F07	ISO 5211 - F07
Accuracy	0.5% of Maximum Stroke	0.5% of Maximum Stroke
Maximum Force	2,890 N (650 lbf)	2,890 N (650 lbf)
Maximum Linear Speed	60 mm (2.36") / min* *at lower supply voltages, slower motor speed may be required to reach maximum force	60 mm (2.36") / min* *at lower supply voltages, slower motor speed may be required to reach maximum force
Operating Temperature Rating	-40 to +80 °C (-40 to +176 °F) intermittent duty -40 to +70 °C (-40 to +158 °F) continuous duty	-40 to +80 °C (-40 to +176 °F) intermittent duty -40 to +70 °C (-40 to +158 °F) continuous duty
Analogue Feedback	4-20 mA, isolated from supply	4-20 mA, isolated from supply
EMC Testing	Testing per IEC/EN 61326-1	Testing per IEC/EN 61326-1
Hazardous Area Ratings	**FM Approval** Class I Div I Groups ABCD T6...T5 Class II, III Div I Groups EFG T6...T5 Class 1, Zone 1, AEx db IIC, T6...T5 Gb Zone 21, AEx tb IIIC T85°C...100°C Db T6[T85°C]: Ta = -40 to +65 °C (-40 to +149 °F) T5[T100°C]: Ta = -40 to +70 °C (-40 to +158 °F) Type 4X/6P, IP 66/68* **CSA Approval** Class I Div I Groups BCD T6...T5 Class II, III Div I Groups EFG T6...T5 Ex db IIC, T6...T5 Gb Ex tb IIIC T85°C...100°C Db T6[T85°C]: Ta = -40 to +65 °C (-40 to +149 °F) T5[T100°C]: Ta = -40 to +70 °C (-40 to +158 °F) IP 66/68* **ATEX / IECEX Approval** Ex db IIC, T6...T5 Gb Ex tb IIIC T85°C...100°C Db Ex II 2GD T6[T85°C]: Ta = -40 to +65 °C (-40 to +149*deg*F) T5[T100°C]: Ta = -40 to +70 °C (-40 to +158*deg*F) IP 66/68* *IP68 - 7 metres (23 feet) for 72 hours	**FM Approval** Class I Div I Groups ABCD T6...T5 Class II, III Div I Groups EFG T6...T5 Class 1, Zone 1, AEx db IIC, T6...T5 Gb Zone 21, AEx tb IIIC T85°C...100°C Db T6[T85°C]: Ta = -40 to +65 °C (-40 to +149 °F) T5[T100°C]: Ta = -40 to +70 °C (-40 to +158 °F) Type 4X/6P, IP 66/68* **CSA Approval** Class I Div I Groups BCD T6...T5 Class II, III Div I Groups EFG T6...T5 Ex db IIC, T6...T5 Gb Ex tb IIIC T85°C...100°C Db T6[T85°C]: Ta = -40 to +65 °C (-40 to +149 °F) T5[T100°C]: Ta = -40 to +70 °C (-40 to +158 °F) IP 66 **ATEX / IECEX Approval** Ex db IIC, T6...T5 Gb Ex tb IIIC T85°C...100°C Db Ex II 2GD T6[T85°C]: Ta = -40 to +65 °C (-40 to +149*deg*F) T5[T100°C]: Ta = -40 to +70 °C (-40 to +158*deg*F) IP 66

Power Supply Sizing

12 VDC system:
12 VDC, 2A power supply recommended

24 VDC system:
24 VDC, 1A power supply recommended





Ordering Information – PAX1 and PAXL

Model Code:	PAX	*	*	*	1	D	*	*

Actuation
Basic
(Push action) _____1
Linear Adapter
(Push and pull action) ___L

Approval
FM _____F
CSA _____C
ATEX _____E

Conduit Port Size
1/2" _____4
3/4" _____6

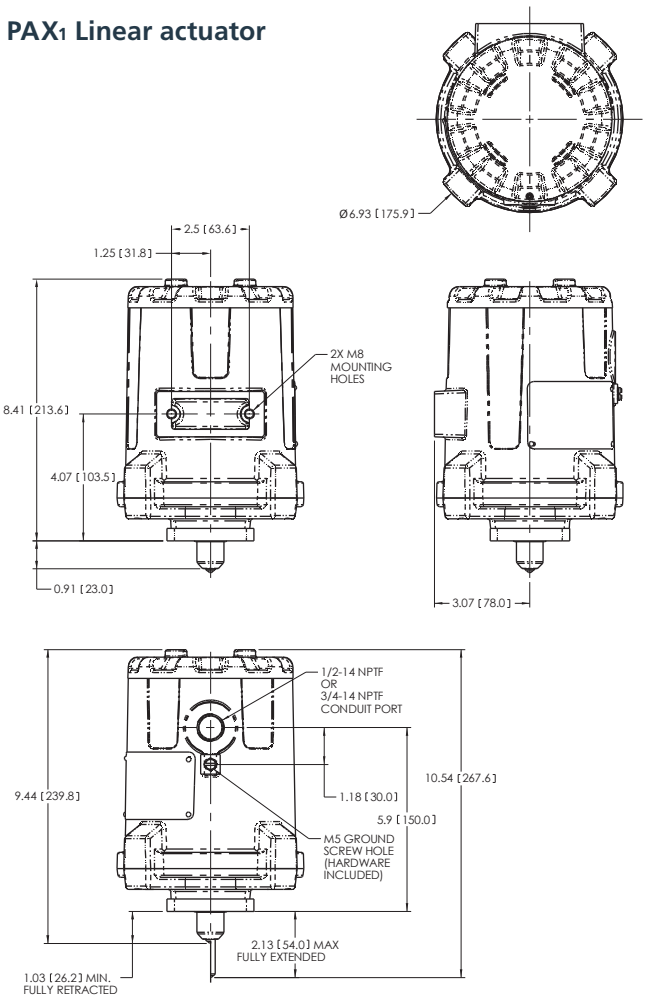
Conduit Port Openings
1 _____1

Power
12-24 VDC _____D

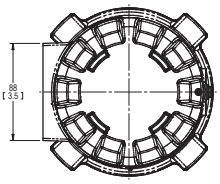
Feedback
None _____0
Analogue Feedback _____1

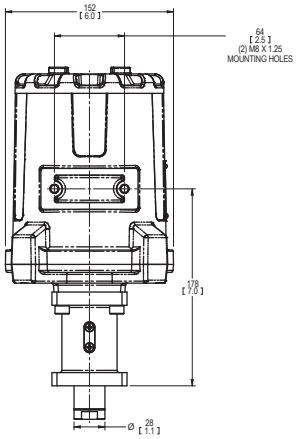
Digital Communications
None _____0
MODBUS Digital Communication _____M

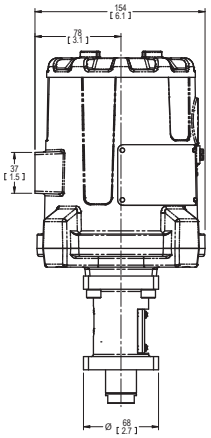
PAX1 Linear actuator

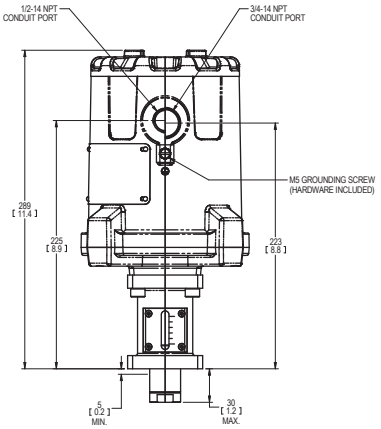


PAXL Linear actuator









PAX1 Motorised Pressure Regulators

The Rotork Fairchild PAX1 is optimised for controlling Fairchild precision pressure regulators. PAX1 can control pressures up to 20,684 kPa (3,000 psig) in isolated locations and hazardous area environments. PAX1 moves in both directions using the integral motor but avoids the requirement for a coupling by acting against or with the regulator spring. PAX1 locks in place to maintain position during power or control signal loss.

Features and Benefits

- Pressure ranges from vacuum to 20,684 kPa (3,000 psig)
- Full range actuation speeds down to 10 secs
- Ingress Protection IP66 / IP68 / Type 4X / Type 6P
- Temperature range -40 to +80 °C (-40 to +176 °F)
- Less than 1 Watt power consumption during standby, ideal for installations in isolated locations
- Optional analogue control and feedback
- User defined stroke limits

Applications

- Natural gas distribution systems
- Natural gas pipeline systems
- Pilot operated regulator systems
- Plunger lift systems

Pneumatic Pressure Regulators

Fairchild manufactures a complete line of precision pneumatic regulators including positive pressure, back pressure and vacuum models. Quality engineering and manufacturing excellence assures our pressure regulators meet all the requirements of a precision device.

Our large selection of pressure ranges and flow capacities lets you select the models that meet your needs for instrument or general industrial control applications.

While we have included our most popular models in this brochure, other pressure regulators and relays are adaptable. Contact Fairchild for your needs.

PAX1 installlled on a solar powered remote pressure control station.

PAX1 installed in pressure control and metering stations for natural gas distribution

PAX1 installed as a pilot on a natural gas Control Valve

PAX1 Motorised Pressure Regulators

	Vacuum	Low Pressure		Standard (Pneumatic) Pressure	
					
	PAX1 with Model 16	**PAX1 with Model 11**	**PAX1 with Model 4100A**	**PAX1 with Model 10**	**PAX1 with Model 4000A**
Flow Capacity - m³/hr (SCFM) Supply = 6.9 bar (100 psi)	4 (2.5) @ Vacuum[1] or 68 (40) Positive Flow	34 (20)	42 (25)	68 (40)	255 (150)
Exhaust Capacity - m³/hr (SCFM)	9.4 (5.5)	0.85 (0.5)[2]	2.55 (1.5)[2]	9.4 (5.5)	65.2 (40)
Sensitivity - cm of WC (inches of WC)	1.27 (0.5)	0.127 (0.05)	0.127 (0.05)	0.32 (0.125)	1.27 (0.5)
Supply Pressure Variation - kPa (psig) **For Supply Pressure Change - kPa (psig)**	<0.7 (<0.1) 689 kPa (100 psig)	<0.07 (<0.01) 689 kPa (100 psig)	<0.07 (<0.01) 689 kPa (100 psig)	<0.07 (<0.01) 689 kPa (100 psig)	<0.07 (<0.01) 689 kPa (100 psig)
Maximum Supply Pressure - kPa (psig)	1,724 (250)	1,034 (150)	1,034 (150)	3,447 (500)	1,724 (250)
Dimensions (Approx.) - mm (Inches)	Dia. 176 x 348 mm (Dia. 6.93 x 13.71")	Dia. 176 x 368 mm (Dia. 6.93 x 14.47")	Dia. 216 x 388 mm (Dia. 8.5 x 15.26")	Dia. 176 x 348 mm (Dia. 6.93 x 13.71")	Dia. 176 x 388 mm (Dia. 6.93 x 15.26")
Output Pressure Range - kPa (psig)	Vacuum - 14 (2) Vaccum - 69 (10) Vaccum - 207 (30) Vaccum - 689 (100) Vaccum - 1,034 (150)	0 - 3.4 (0.5) 0 - 14 (2) 0 - 28 (4) 0 - 41 (6) 0 - 83 (12)	0 - 4.8 (0.7) 0 - 9.7 (1.4) 0 - 21 (3) 0 - 34 (5)	0 - 14 (0 - 2) 0 - 69 (0 - 10) 7 - 138 (1 - 20) 3.4 - 207 (0.5 - 30) 7 - 414 (1 - 60) 14 - 1,034 (2 - 150) 21 - 1,379 (3 - 200) 34 - 2,068 (5 - 300) 34 - 2,758 (5 - 400)	3.4 - 69 (0.5 - 10) 3.4 - 207 (0.5 - 30) 7 - 414 (1 - 60) 14 - 1,034 (2 - 150) 34 - 1,724 (5 - 250)
Port Size	¼", ⅜", ½"	¼", ⅜", ½"	⅜", ½", ¾"	¼", ⅜", ½"	⅜", ½", ¾"
Body Material	Aluminium	Aluminium	Aluminium	Aluminium	Aluminium

[1] - at 29 inHg of vacuum with inlet port open
[2] - Downstream pressure is 0.7 kPa (0.1 psig) above 7 kPa (1.0 psig) set point

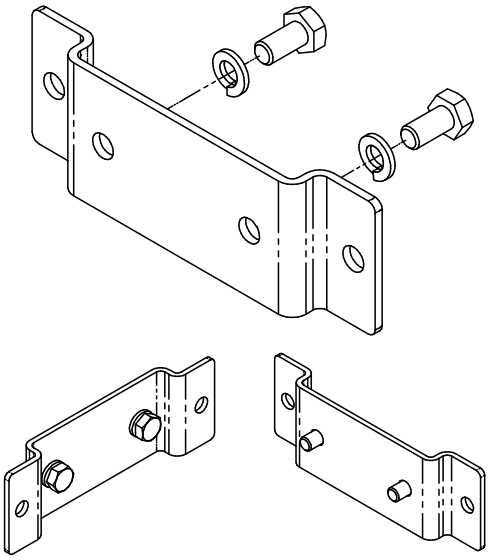
	Standard (Pneumatic) Pressure		High Pressure	
				
	PAX1 with Model 81	**PAX1 with Model 66**	**PAX1 with Model HPD**	**PAX1 with Model HPP**
Flow Capacity - m³/hr (SCFM) Supply = 100 psi	85 (50)	28.9 (17)	Cv 0.06 or Cv 0.25	Cv 0.06
Exhaust Capacity - m³/hr (SCFM)	9.4 (5.5)	1.7 (1.0)	Cv 0.02	Cv 0.02
Sensitivity - cm of WC (inches of WC)	<0.254 (<0.1)	2.54 (1.0)	Not Applicable	Not Applicable
Supply Pressure Variation - kPa (psig) **For Supply Pressure Change - kPa (psig)**	<1.4 (<0.2) 689 (100)	<0.7 (<0.1) 172 (25)	<4 (<0.6) 689 (100)	<379 (<55) 6,895 (1,000)
Maximum Supply Pressure - kPa (psig)	1,034 (150)[3]	3,447 (500)	41,369 (6,000)	41,369 (6,000)
Dimensions (Approx.) - mm (Inches)	Dia. 176 x 348 mm (Dia. 6.93 x 13.71")	Dia. 176 x 348 mm (Dia. 6.93 x 13.71")	Dia. 176 x 325 mm (Dia. 6.93 x 12.81")	Dia. 176 x 325 mm (Dia. 6.93 x 12.81")
Output Pressure Range - kPa (psig)	0 - 14 (0 - 2)[3] 0 - 34 (0 - 5)[3] 0 - 138 (0 - 20) 3.4 - 414 (0.5 - 60) 3.4 - 689 (0.5 - 100)	0 - 69 (0 - 10) 3.4 - 207 (0.5 - 30) 7 - 414 (1 - 60) 14 - 689 (2 - 100) 14 - 1,034 (2 - 150)	0 - 172 (0 - 25) 0 - 345 (0 - 50) 7 - 689 (1 - 100) 14 - 1,724 (2 - 250) 14 - 3,447 (2 - 500)	0 - 6,895 (0 - 1,000) 0 - 13,790 (0 - 2,000) 0 - 20,684 (0 - 3,000)
Port Size	¼"	¼", ⅜", ½"	¼" or SAE AS5202-4	¼" or SAE AS5202-4
Body Material	Aluminium	Stainless Steel	Stainless Steel	Stainless Steel

[3] - Maximum Supply Pressure 689 kPa (100 psig)

PAX Range – Adapter Kits

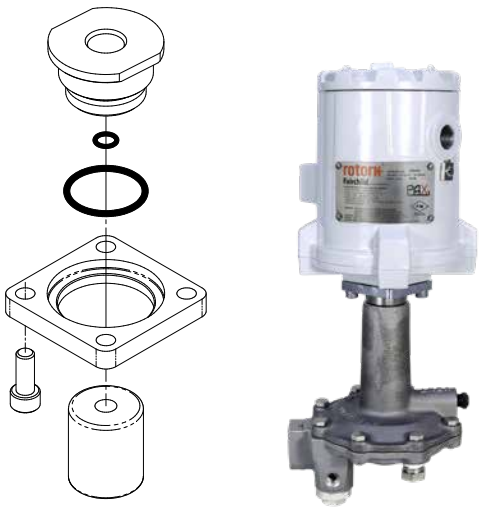
PAX range actuators can directly interface with a regulator or valve to provide a motorised assembly. PAX1 is designed for pressure regulators with motorised push and spring return pull actions. PAXL is designed for valves with motorised push and pull actions.

Universal PAX Mounting Kit P/N 22619-1

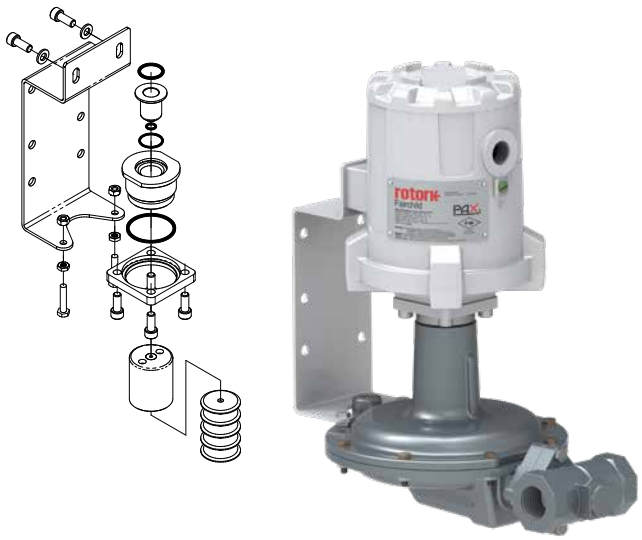


Mounting Kit for the Fisher 161EBM Regulator P/N 23043-1

Mounting Kit for the Mooney 20H and 20L Pilot Regulator P/N 22819-1



Mounting Kit for the Fisher Y600A Pilot Regulator P/N 23027-1



Model 16 Vacuum Regulator

The Model 16 is designed for systems that require system pressure control above and/or below atmospheric pressure

The regulated output pressure is precisely maintained by balancing forces acting on the top and bottom of the diaphragm assembly. The main supply valve is pressure balanced by utilising a rolling diaphragm, ensuring a constant output pressure even under a wide range of supply pressure variations. An aspirator tube automatically adjusts the supply valve in accordance with the flow demand to ensure output pressure is maintained at a constant value under varying flow conditions.

Features

- Control sensitivity of 1.27 cm (0.5") water column, allows precise pressure control
- Pressure balanced supply valve prevents supply pressure changes from affecting the setpoint
- Separate control chamber isolates the diaphragm from the main flow to eliminate hunting and buzzing
- An aspirator tube compensates downstream pressure droop under flow conditions

Specifications

Supply Pressure

- 1,724 kPa (250 psig) maximum

Positive Flow Capacity

- 65.2 m^3/hr (40 SCFM) @ 689 kPa (100 psig) supply and 138 kPa (20 psig) setpoint

Vacuum Flow Capacity

- 4 m^3/hr (2.5 SCFM) @ 74 cmHg (29 "Hg) vaccum with pump connected to the exhaust port
- 65.2 m^3/hr (40 SCFM) @ 689 kPa (100 psig) supply connected to inlet port

Supply Pressure Effect

- <0.7 kPa (0.1 psig) for a 689 kPa (100 psig) change in supply pressure

Sensitivity

- 1.27 cm (0.5") water column

Model 16 Vacuum Regulator

Model Code: **PAX** **1** * * **1** **D** * * – **16** **2** * * * * *

Actuation
Basic (Push Action) _____ 1

Approval
FM _____ F
CSA _____ C
ATEX _____ E

Conduit Port Size
1/2" _____ 4
3/4" _____ 6

 # Conduit Ports: 1 _____ 1

Power: 12-24 VDC _____ D

Feedback
None _____ 0
Analogue Feedback _____ 1

Digital Communication
None _____ 0
MODBUS RTU _____ M

Pressure Regulator Series: 16 _____ 16

Revision: 2 _____ 2

Range

kPa	PSIG	
Vacuum - 14	Vacuum - 2	1
Vacuum - 69	Vacuum - 10	2
Vacuum - 207	Vacuum - 30	3
Vacuum - 689	Vacuum - 100	4
Vacuum - 1,034	Vacuum - 150	5

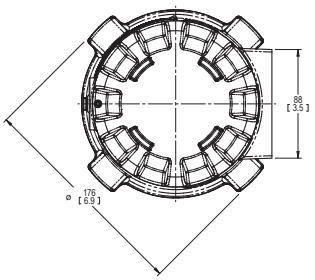
Port Size
1/4" _____ 2
3/8" _____ 3
1/2" _____ 4

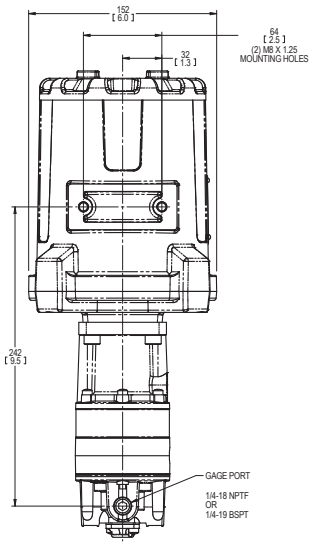
Port Thread
BSPP‡ _____ H
NPTF _____ N
BSPT _____ U

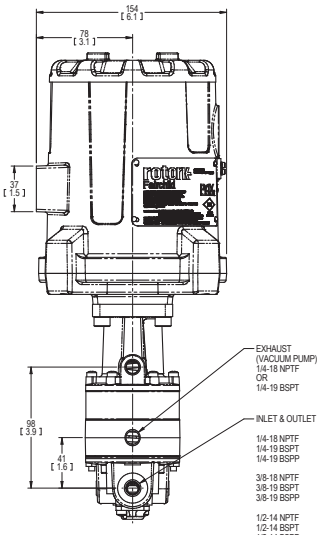
Elastomers
Fluorocarbon _____ J
Nitrile _____ N

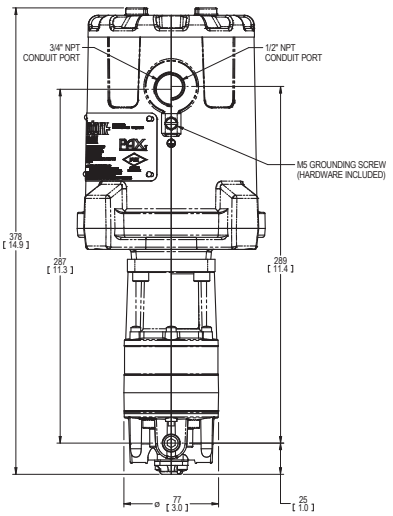
Relief Valve
Relieving, Normal M16 Bleed _____ R
Relieving, Increased Sensitivity _____ L

‡BSPP @ In & Out, BSPT @ Exhaust & Gage









Model 11 Precision Low Pressure Regulator

The Model 11 is designed for applications that require moderate capacity and accurate low pressure control.

The main supply valve is pressure balanced by utilising a rolling diaphragm, ensuring a constant output pressure even during wide supply pressure variations. An aspirator tube automatically adjusts the supply valve in accordance with the flow demand to ensure output pressure is maintained at a constant value under varying flow conditions.

Features

- Large area, high sensitivity diaphragm provides control sensitivity of 0.127 cm (0.05") water column, ideal for precision applications
- Pressure balanced supply valve prevents supply pressure changes from affecting the setpoint
- Separate control chamber isolates the diaphragm from the main flow to eliminate hunting and buzzing
- An aspirator tube compensates downstream pressure droop for flow demand
- Non-relieving option available for applications requiring containment of gas

Specifications

Supply Pressure

- 1,034 kPa (150 psig) maximum

Flow Capacity

- 34 m^3/hr (20 SCFM) @ 689 kPa (100 psig) supply and 7 kPa (1.0 psig) setpoint

Exhaust Capacity

- 0.85 m^3/hr (0.5 SCFM) where downstream pressure is 0.7 kPa (0.1 psig) above 7 kPa (1.0 psig) setpoint

Supply Pressure Effect

- <0.07 kPa (0.01 psig) for 689 kPa (100 psig) change in supply

Sensitivity

- 0.127 cm (0.05") water column

Materials of Construction

Body and housing: Aluminum

Diaphragm: Nitrile or Fluorocarbon

Trim: Zinc plated steel, Stainless steel

Model 11 Precision Low Pressure Regulator

Model Code: **PAX** **1** * * **1** **D** * * – **11** **1** * * * * *

Actuation
Basic (Push Action) _____ 1

Approval
FM _____ F
CSA _____ C
ATEX _____ E

Conduit Port Size
1/2" _____ 4
3/4" _____ 6

 # Conduit Ports: 1 _____ 1

Power: 12-24 VDC _____ D

Feedback
None _____ 0
Analogue Feedback _____ 1

Digital Communication
None _____ 0
MODBUS RTU _____ M

Pressure Regulator Series: 11 _____ 11

Revision: 1 _____ 1

Range

kPa	PSIG	
0 - 3.4	0 - 0.5	1
0 - 14	0 - 2	2
0 - 28	0 - 4	3
0 - 41	0 - 6	4
0 - 83	0 - 12	5

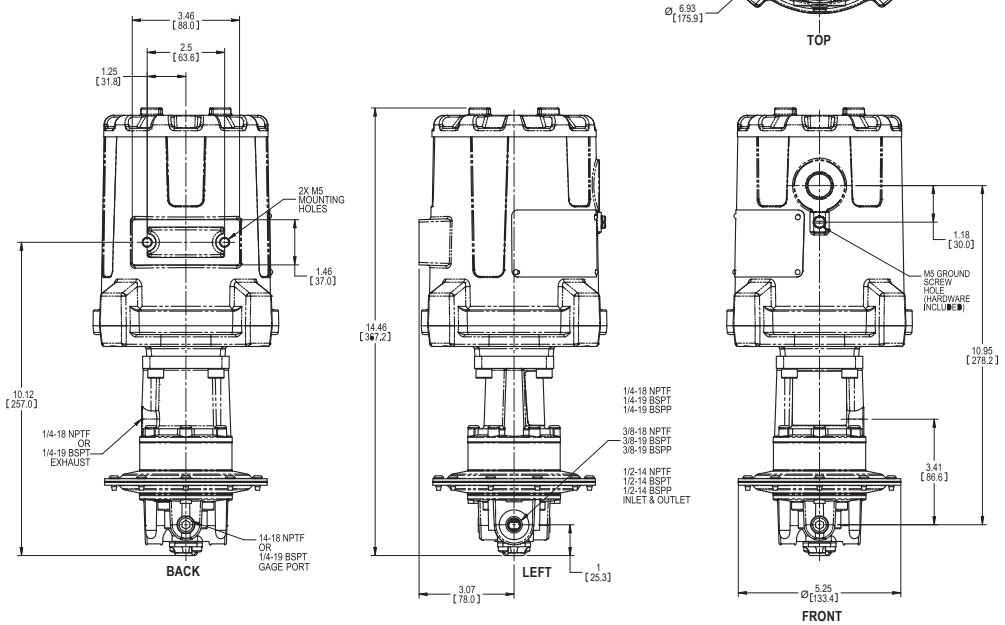
Port Size
1/4" _____ 2
3/8" _____ 3
1/2" _____ 4

Port Thread
BSPP‡ _____ H
NPTF _____ N
BSPT _____ U

Elastomers
Fluorocarbon _____ J
Nitrile _____ N

Relief Valve
Relieving, Normal Bleed _____ R
Relieving, No Bleed _____ D
Non Relieving _____ N

‡BSPP @ In & Out, BSPT @ Exhaust & Gage



Model 4100A High Capacity Low Pressure Regulator

The Model 4100A is designed for applications requiring high flow capacity and accurate low pressure control.

The main supply valve is pressure balanced by utilising a rolling diaphragm, ensuring a constant output pressure even during extreme supply pressure variations. An aspirator tube automatically adjusts the supply valve in accordance with the flow demand to ensure output pressure is maintained at a constant value under varying flow conditions.

Features

- Large area, high sensitivity diaphragm provides control sensitivity of 0.13 cm (0.05") water column for precision control in low pressure applications
- Pressure balanced supply valve prevents supply pressure changes from affecting the setpoint
- Large relief valve provides high exhaust flow capacity
- Soft seat valves minimise air consumption
- Aspirator tube compensates for downstream pressure droop during flow demand

Specifications

Supply Pressure

- 1,034 kPa (150 psig) maximum

Flow Capacity

- 119 m^3/hr (70 SCFM) @ 345 kPa (150 psig) supply, and 21 kPa (3 psig) setpoint

Exhaust Capacity

- 22 m^3/hr (13 SCFM), where downstream pressure is 1.4 kPa (0.2 psig) above 21 kPa (3 psig) setpoint

Sensitivity

- 0.13 cm (0.05") water column

Supply Pressure Effect

- None detected

Materials of Construction

Body and Housing: Aluminum

External Trim: Zinc plated steel, Stainless steel

Diaphragms and seals: Nitrile on Dacron, optional Fluorocarbon on Dacron

Model 4100A High Capacity Low Pressure Regulator

Model Code: **PAX** **1** * * **1** **D** * * – **41** * * **A** * * *

Actuation
Basic (Push Action) _____ 1

Approval
FM _____ F
CSA _____ C
ATEX _____ E

Conduit Port Size
1/2" _____ 4
3/4" _____ 6

 # Conduit Ports: 1 _____ 1

Power: 12-24 VDC _____ D

Feedback
None _____ 0
Analogue Feedback _____ 1

Digital Communication
None _____ 0
MODBUS RTU _____ M

Pressure Regulator Series: 4100A _____ 41

Range

kPa	PSIG	
0-5	0-0.7	1
0-10	0-1.4	2
0-21	0-3	3
0-34	0-5	4

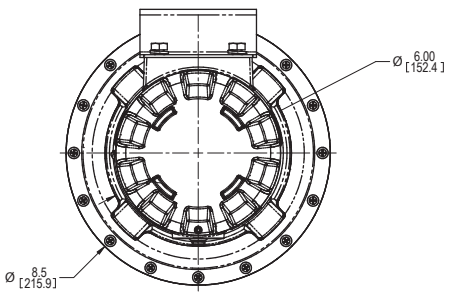
Port Size
1/2" _____ 4
3/4" _____ 6

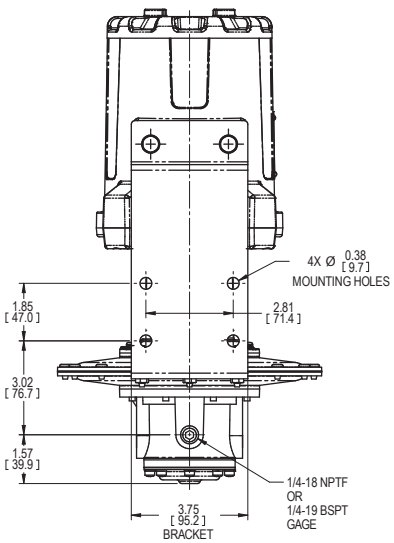
Revision: A _____ A

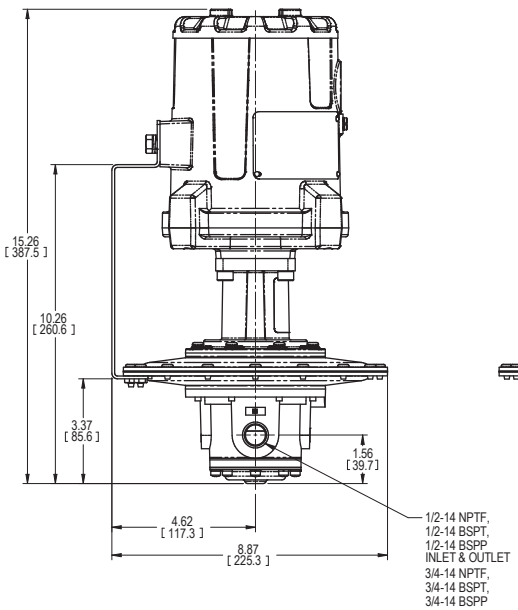
Port Thread
BSPP _____ H
NPTF _____ N
BSPT _____ U

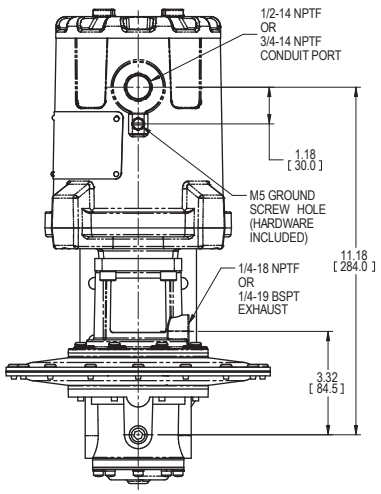
Elastomers
Fluorocarbon _____ J
Nitrile _____ N

Relief Valve
Relieving, No Bleed _____ D









Model 10 Precision Pressure Regulator

The Model 10 is designed for applications that require moderate flow capacity and accurate pressure control.

The main supply valve is pressure balanced by utilising a rolling diaphragm, ensuring a constant output pressure even during wide supply pressure variations. An aspirator tube automatically adjusts the supply valve in accordance with the flow demand to ensure output pressure is maintained at a constant value under varying flow conditions.

Features

- Control sensitivity of 0.32 cm (0.125") water column allows use in precision processes
- Pressure balanced supply valve prevents supply pressure changes from affecting the setpoint
- Separate control chamber isolates the diaphragm from the main flow to eliminate hunting and buzzing
- An aspirator tube compensates downstream pressure droop under flow conditions
- Non-relieving option available for applications requiring containment of gas

Specifications

Supply Pressure

- 3,447 kPa (500 psig) maximum

Flow Capacity

- 68 m^3/hr (40 SCFM) @ 689 kPa (100 psig) supply and 138 kPa (20 psig) setpoint

Exhaust Capacity

- 9.35 m^3/hr (5.5 SCFM) where downstream pressure is 34 kPa (5 psig) above 138 kPa (20 psig) setpoint

Supply Pressure Effect

- Less than 0.7 kPa (0.1 psig) for 689 kPa (100 psig) change in supply pressure

Sensitivity

- 0.32 cm (0.125") water column

Materials of Construction

Body and housing: Aluminum

Diaphragms: Nitrile or Fluorocarbon

Trim: Brass, Zinc plated steel

Model 10 Precision Pressure Regulator

Model Code: **PAX** **1** * * **1** **D** * * – **10** **2** * * * * *

Actuation
Basic (Push Action) _____ 1

Approval
FM _____ F
CSA _____ C
ATEX _____ E

Conduit Port Size
1/2" _____ 4
3/4" _____ 6

 # Conduit Ports: 1 _____ 1

Power: 12-24 VDC _____ D

Feedback
None _____ 0
Analogue Feedback _____ 1

Digital Communication
None _____ 0
MODBUS RTU _____ M

Pressure Regulator Series: 10 _____ 10

Revision: 2 _____ 2

Range

kPa	PSIG	
0 - 14	0 - 2	1
0 - 69	0 - 10	2
0 - 138	0 - 20	0
3 - 207	0.5 - 30	3
7 - 414	1 - 60	4
14 - 1,034	2 - 150	6
21 - 1,379	3 - 200	7
34 - 2,068	5 - 300	8
34 - 2,758	5 - 400	9

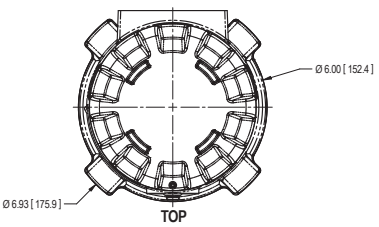
Port Size
1/4" _____ 2
3/8" _____ 3
1/2" _____ 4

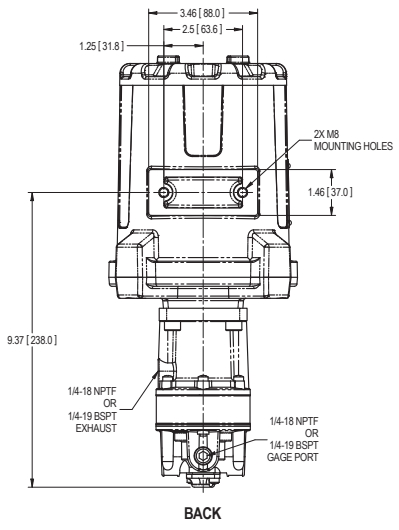
Port Thread
BSPP‡ _____ H
NPTF _____ N
BSPT _____ U

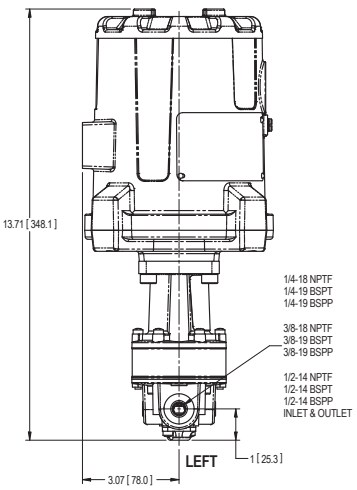
Elastomers
Fluorocarbon _____ J
Nitrile _____ N

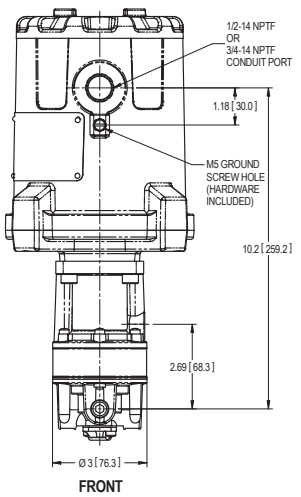
Relief Valve
Relieving, Normal Bleed _____ R
Relieving, No Bleed _____ D
Non Relieving _____ N

‡BSPP @ In & Out, BSPT @ Exhaust & Gage









Model 4000A Precision Pressure Regulator

The Model 4000A is designed for applications that require high flow capacities and accurate pressure control. The intrinsic no constant bleed design minimises gas consumption.

The regulated output pressure is precisely maintained by balancing forces acting on the top and bottom of the diaphragm assembly. The main supply valve is pressure balanced by utilising a rolling diaphragm, ensuring a constant output pressure even under a wide range of supply pressure variations. An aspirator tube automatically adjusts the supply valve in accordance with the flow demand to ensure output pressure is maintained at a constant value under varying flow conditions

Features

- Control sensitivity of 1.27 cm (0.5") water column, allows precise pressure control
- Pressure balanced supply valve prevents supply pressure changes from affecting the setpoint
- Separate control chamber isolates the diaphragm from the main flow to eliminate hunting and buzzing
- An aspirator tube compensates downstream pressure droop under flow conditions

Specifications

Supply Pressure

- 1,724 kPa (250 psig) maximum

Flow Capacity

- 255 m^3/hr (150 SCFM) @ 689 kPa (100 psig) supply and 138 kPa (20 psig) setpoint

Exhaust Flow Capacity

- 65.2 m^3/hr (40 SCFM) where downstream pressure is 34 kPa (5 psig) above 138 kPa (20 psig) setpoint

Supply Pressure Effect

- <0.7 kPa (0.1 psig) for a 689 kPa (100 psig) change in supply pressure

Sensitivity

- 1.27 cm (0.5") water column

Model 4000A Precision Pressure Regulator

Model Code: **PAX** **1** * * **1** **D** * * – **40** * * **A** * * *

Actuation
Basic (Push Action) _____ 1

Approval
FM _____ F
CSA _____ C
ATEX _____ E

Conduit Port Size
1/2" _____ 4
3/4" _____ 6

 # Conduit Ports: 1 _____ 1

Power: 12-24 VDC _____ D

Feedback
None _____ 0
Analogue Feedback _____ 1

Digital Communication
None _____ 0
MODBUS RTU _____ M

Pressure Regulator Series: 4000A _____ 40

Range

kPa	PSIG	
3.4 - 69	0.5-10	2
3.4 - 207	0.5-30	3
7 - 414	1-60	4
14 - 1,034	2-150	6
34 - 1,724	5-250	7

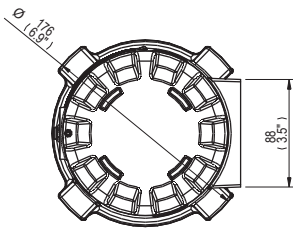
Port Size
1/2" _____ 4
3/4" _____ 6

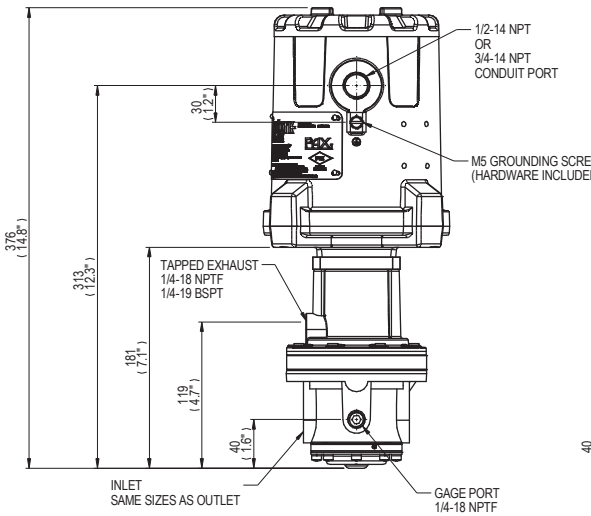
Revision: A _____ A

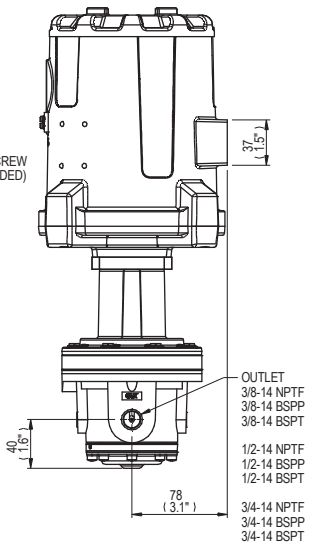
Port Thread
BSPP _____ H
NPTF _____ N
BSPT _____ U

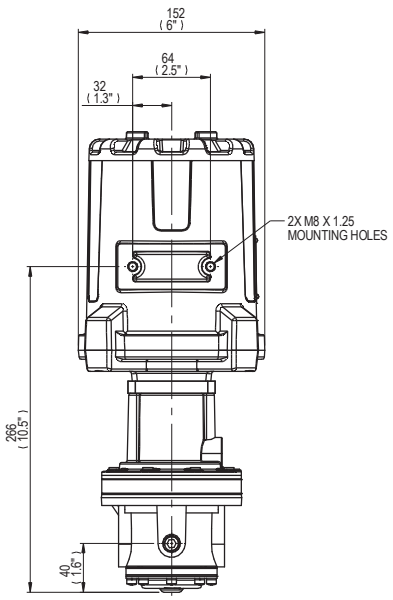
Elastomers
Fluorocarbon _____ J
Nitrile _____ N

Relief Valve
Relieving, No Bleed _____ D









Model 81 Precision Two Stage Pressure Regulator

The Model 81 is designed for applications that require moderate flow capacities and very high accuracy pressure control.

The regulated output pressure is precisely maintained using two stage regulation, combining a pilot control system with a basic force balance system. The main supply valve is also pressure balanced by utilising a rolling diaphragm, ensuring a constant output pressure even under a wide range of supply pressure variations. An aspirator tube automatically adjusts the supply valve in accordance with the flow demand to ensure output pressure is maintained at a constant value under varying flow conditions.

Features

- Control sensitivity of less than 0.25 cm (0.1") of water column, allows high precision pressure control
- Pressure balanced supply valve prevents supply pressure changes from affecting the setpoint
- Separate control chamber isolates the diaphragm from the main flow to eliminate hunting and buzzing
- An aspirator tube compensates downstream pressure droop under flow conditions

Specifications

Supply Pressure

- 689 kPa (100 psig) maximum for ranges 1 and 2
- 1,034 kPa (150 psig) maximum for ranges 3 to 5

Flow Capacity

- 85 m^3/hr (50 SCFM) @ 689 kPa (100 psig) supply and 138 kPa (20 psig) setpoint

Exhaust Flow Capacity

- 9.4 m^3/hr (5.5 SCFM) where downstream pressure is 34 kPa (5 psig) above 138 kPa (20 psig) setpoint

Supply Pressure Effect

- <0.7 kPa (0.1 psig) for a 689 kPa (100 psig) change in supply pressure

Sensitivity

- <0.25 cm (0.1") water column

Model 81 Precision Two Stage Pressure Regulator

Model Code: **PAX** **1** * * **1** **D** * * – **81** **4** * **2** *

Actuation
Basic (Push Action) _____ 1

Approval
FM _____ F
CSA _____ C
ATEX _____ E

Conduit Port Size
1/2" _____ 4
3/4" _____ 6

 # Conduit Ports: 1 _____ 1

Power: 12-24 VDC _____ D

Feedback
None _____ 0
Analogue Feedback _____ 1

Digital Communication
None _____ 0
MODBUS RTU _____ M

Pressure Regulator Series: 81 _____ 81

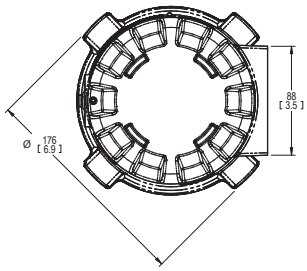
Revision: 4 _____ 4

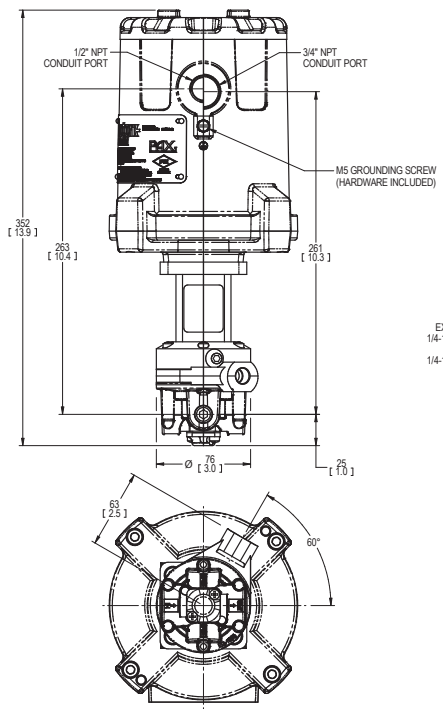
Range

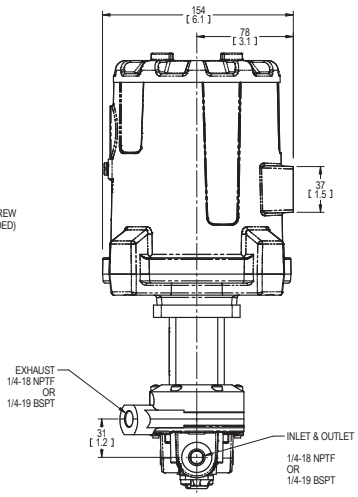
kPa	PSIG	
0 - 14	0 - 2	1
0 - 34	0 - 5	2
0 - 138	0 - 20	3
3.4 - 414	0.5 - 60	4
3.4 - 689	0.5 - 100	5

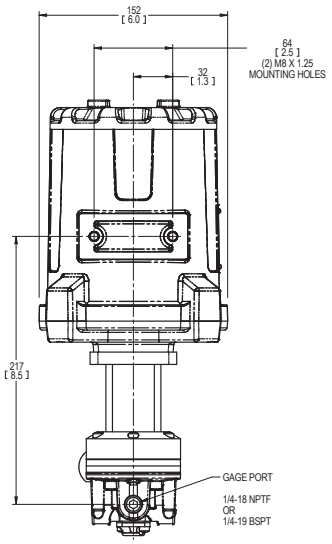
Port Size
1/4" _____ 2

Port Thread
NPTF _____ N
BSPT _____ U









Model 66 Stainless Steel Pressure Regulator

The Model 66 is designed for applications in corrosive material environments that require moderate flow capacities.

The regulated output pressure is well maintained as a result of large control diaphragm, for increased sensitivity. An aspirator port automatically adjusts the supply valve in accordance with the flow demand to maintain output pressure at a constant value under varying flow conditions.

Features

- Control sensitivity of 2.54 cm (1") of water column
- Viton elastomers and stainless steel body are compatible with corrosive materials
- Separate control chamber isolates the diaphragm from the main flow to eliminate hunting and buzzing
- An aspirator design compensates downstream pressure droop under flow conditions

Specifications

Supply Pressure

- 3,447 kPa (500 psig) maximum

Flow Capacity

- 28.9 m^3/hr (17 SCFM) @ 689 kPa (100 psig) supply and 138 kPa (20 psig) setpoint

Supply Pressure Effect

- <0.7 kPa (0.1 psig) for a 172 kPa (25 psig) change in supply pressure

Sensitivity

- 2.54 cm (1") water column

Materials of Construction

Body and housing: Stainless steel

Diaphragms: Viton (Fluorocarbon) with Teflon on control side

Trim: Stainless steel and Teflon

Model 66 Stainless Steel Pressure Regulator

Model Code: **PAX** **1** * * **1** **D** * * – **66** **2** * * * * *

Actuation
Basic (Push Action) _____ 1

Approval
FM _____ F
CSA _____ C
ATEX _____ E

Conduit Port Size
1/2" _____ 4
3/4" _____ 6

 # Conduit Ports: 1 _____ 1

Power: 12-24 VDC _____ D

Feedback
None _____ 0
Analogue Feedback _____ 1

Digital Communication
None _____ 0
MODBUS RTU _____ M

Pressure Regulator Series: 66 _____ 66

Revision: 2 _____ 2

Range

kPa	PSIG	
0 - 69	0 - 10	2
3 - 207	0.5 - 30	3
7 - 414	1 - 60	4
14 - 689	2 - 100	5
14 - 1,034	2 - 150	6

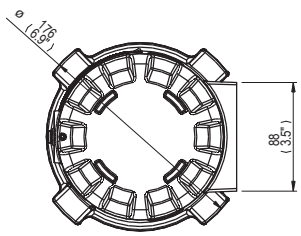
Port Size
1/4" _____ 2
3/8" _____ 3
1/2" _____ 4

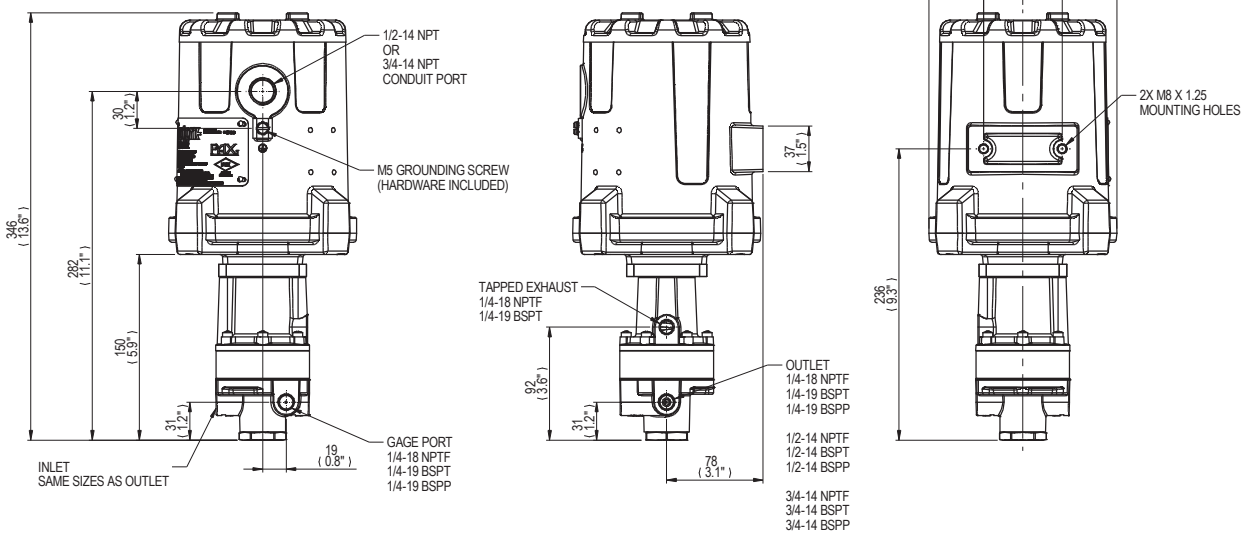
Port Thread
BSPP‡ _____ H
NPTF _____ N
BSPT _____ U

Elastomers
Fluorocarbon _____ J

Relief Valve
Non Relieving - Aluminum Bonet _____ N

‡BSPP @ In & Out, BSPT @ Exhaust & Gage





Model HPD High Pressure Regulator

The Model HPD is a diaphragm sensed low capacity high pressure regulator. A stainless steel supply valve with a polymer seat insures accurate and reliable sealing of the valve for trouble free operation.

The fatigue resistant Inconel diaphragm provides long life and leak free operation. Using metal to metal and Teflon sealing ensures the regulator does not contaminate the medium with rubber type elastomers.

Features

- Three seat material choices for a wide range of chemical compatibility (PEEK, CTFE and Vespel)
- High maximum supply pressure to allow more through put of gas

Specifications

Supply Pressure

- 41,369 kPa (6,000 psig) maximum depending on seal material
- **Supply Valve Cv** 0.06, 0.25
- **Exhaust Valve Cv** 0.02

Supply Pressure Effect

- <4 kPa (0.6 psig) change for a 689 kPa (100 psig) change in supply pressure

Materials of Construction

Body and housing: Alloy 316L stainless steel

Valve: 316L stainless steel

Seal: Teflon

Installation

Refer to the *Fairchild Model HPD Installation, Operation and Maintenance Instructions*, IS-10000HPD.

Model HPD High Pressure Regulator

Model Code: **PAX 1 * * 1 D * * – HPD 1 * 2 * * * ***

Actuation
Basic (Push Action) _____ 1

Approval
FM _____ F
CSA _____ C
ATEX _____ E

Conduit Port Size
1/2" _____ 4
3/4" _____ 6

 # Conduit Ports: 1 _____ 1

Power: 12-24 VDC _____ D

Feedback
None _____ 0
Analogue Feedback _____ 1

Digital Communication
None _____ 0
MODBUS RTU _____ M

Pressure Regulator Series: HPD _____ HPD

Valve
0.06 Cv _____ 1
0.25 Cv _____ 3

Range

kPa	PSIG	
0 - 172	0 - 25	3
0 - 345	0 - 50	4
7 - 689	1 - 100	5
14 - 1,724	2 - 250	7
34 - 3,447	5 - 500	9

Port Size
1/4" _____ 2

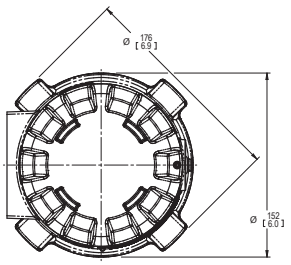
Port Thread
NPTF _____ N
BSPT _____ U

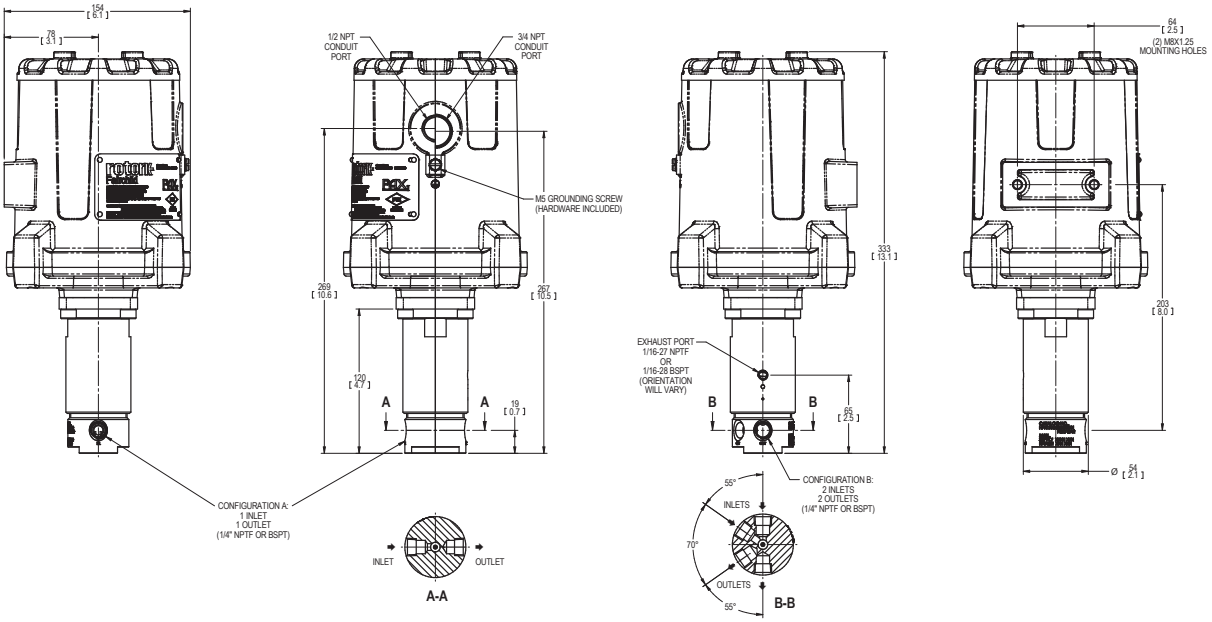
Port Configuration
2 (1 inlet, 1 outlet) _____ A
4 (2 inlets, 2 outlets) _____ B

Seal Material & Max Supply

	kPa	PSIG	
PEEK	41,369	6,000	P
CTFE	24,132	3,500	T
VESPEL	41,369	6,000	V

Relief Valve
Relieving _____ R
Non Relieving _____ N





Model HPP High Pressure Regulator

The Model HPP is a piston sensed low capacity high pressure regulator. A stainless steel supply valve with a polymer seat insures accurate and reliable sealing of the valve for long life, leak free operation.

Features

- Three seat material choices for a wide range of chemical compatibility (PEEK, CTFE and Vespel)
- High maximum supply pressure to allow more through put of gas

Specifications

Maximum Supply Pressure

- 41,369 kPa (6,000 psig) maximum depending on seal material
- **Supply Valve Cv** 0.06
- **Exhaust Valve Cv** 0.02

Supply Pressure Effect

- <34 kPa (5 psig) change for 689 kPa (100 psig) change in supply pressure

Materials of Construction

Body and Housing: Alloy 316L stainless steel

Valve: 316L stainless steel

Seal: Viton A

Installation

Refer to the *Fairchild Model HPP Installation, Operation and Maintenance Instructions*, IS-10000HPP.

Model HPP High Pressure Regulator

Model Code: **PAX** **1** * * **1** **D** * * – **HPP** **1** * **2** * * * * *

Actuation
Basic (Push Action) _____ 1

Approval
FM _____ F
CSA _____ C
ATEX _____ E

Conduit Port Size
1/2" _____ 4
3/4" _____ 6

 # Conduit Ports: 1 _____ 1

Power: 12-24 VDC _____ D

Feedback
None _____ 0
Analogue Feedback _____ 1

Digital Communication
None _____ 0
MODBUS RTU _____ M

Pressure Regulator Series: HPP _____ HPP

Valve: 0.06 Cv _____ 1

Range

kPa	PSIG	
0 - 6,895	0 - 1,000	2
0 - 13,790	0 - 2,000	4
0 - 20,684	0 - 3,000	5

Port Size
1/4" _____ 2

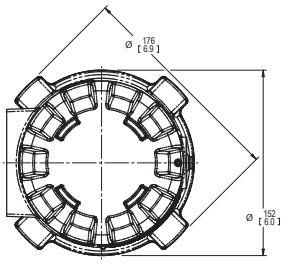
Port Thread
NPTF _____ N
BSPT _____ U

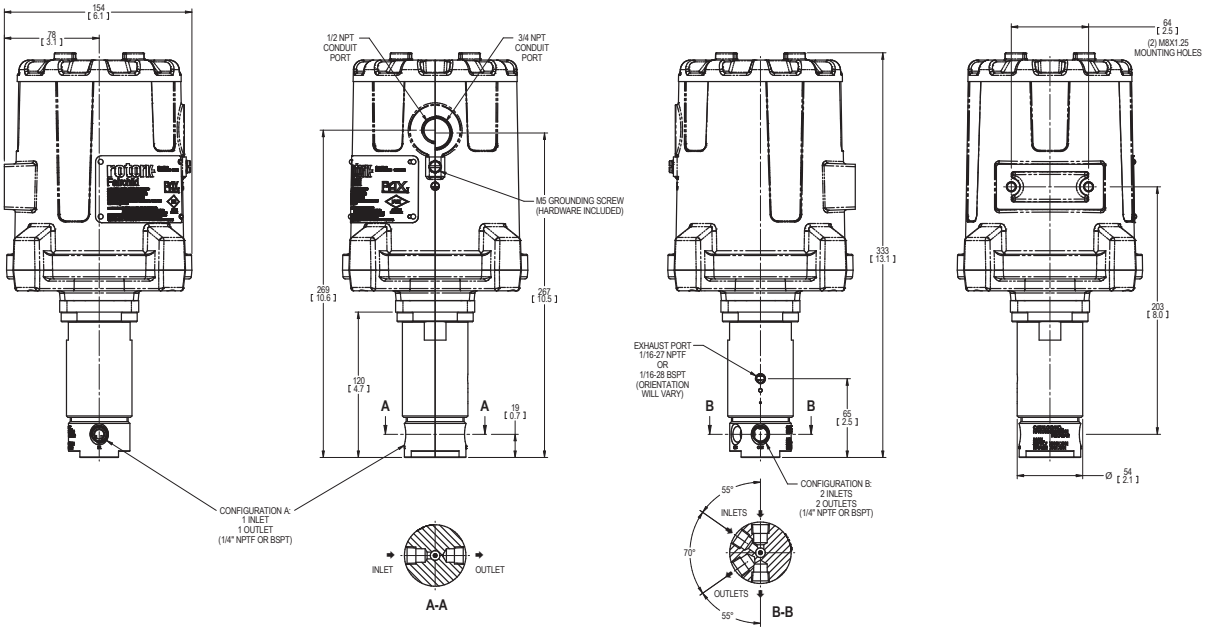
Port Configuration
2 (1 inlet, 1 outlet) _____ A
4 (2 inlets, 2 outlets) _____ B

Seal Material & Max Supply

	kPa	PSIG	
PEEK	41,369	6,000	P
CTFE	24,132	3,500	T
VESPEL	41,369	6,000	V

Relief Valve
Relieving _____ R
Non Relieving _____ N





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Keeping the World Flowing

Precision Control Product Overview

Electro-pneumatic Transducers, Pressure Regulators, Pneumatic Relays, Volume Boosters and Accessories

A rotork Brand

FAIRCHILD

precision pneumatic & motion control

rotork®

Keeping the World Flowing

Reliable operation
when it matters

Assured reliability for critical applications and environments.

Whether used 24/7 or infrequently, Rotork products will operate reliably and efficiently when called upon.

Quality-driven
global manufacturing

Products designed with 60 years of industry and application knowledge.

Research and development across all our facilities ensures cutting edge products are available for every application.

Customer-focused service
worldwide support

Solving customer challenges and developing new solutions.

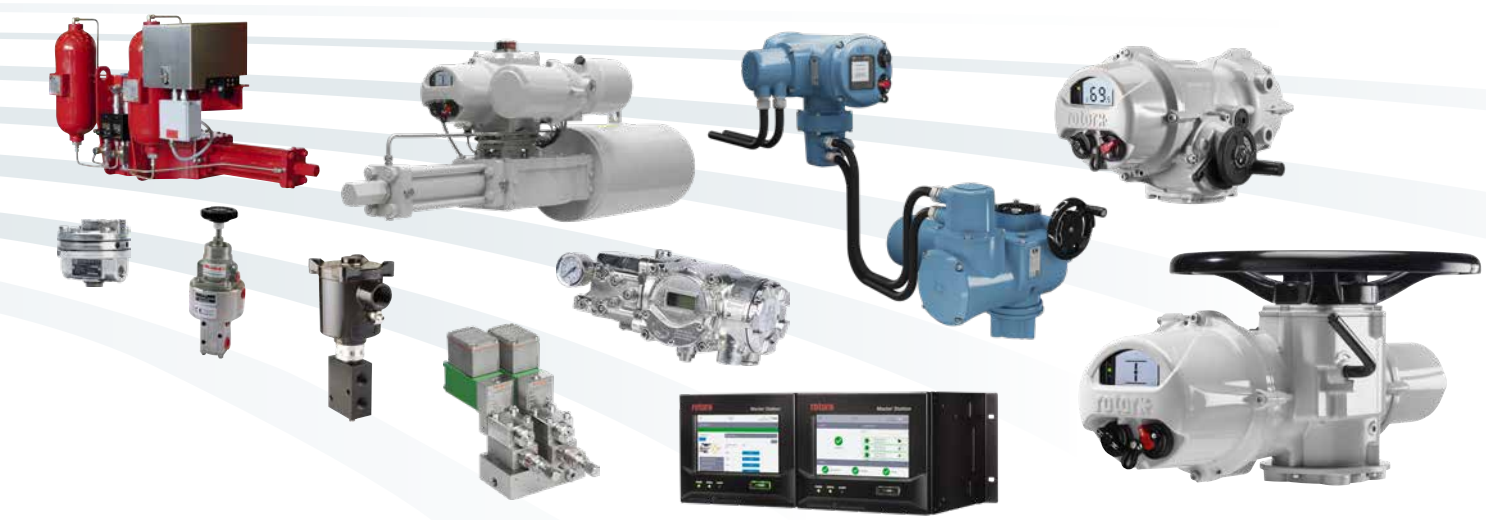
From initial enquiry through to product installation, long-term after-sales care and Client Support Programmes (CSP).

Low cost
of ownership

Long-term reliability prolongs service life.

Rotork helps to reduce long term cost of ownership and provides greater efficiency to process and plant.

Precision Control Product Overview



Comprehensive product range
serving multiple industries

Improved efficiency, assured safety and environmental protection.

Rotork products and services are used throughout industry inclusive of Power, Oil & Gas, Water & Wastewater, HVAC, Marine, Mining, Pulp & Paper, Food & Beverage, Pharmaceutical and Chemical industries around the world.

Market leader
technical innovator

The recognised market leader for 60 years.

Our customers have relied upon Rotork for innovative solutions to safely manage the flow of liquids, gases and powders.

Global presence
local service

Global company with local support.

Manufacturing sites, service centres, sales offices and *Centres of Excellence* throughout the world provide unrivalled customer services and fast delivery.

Corporate social
responsibility

A responsible business leads to being the best business.

We are socially, ethically, environmentally responsible and committed to embedding CSR across all our processes and ways of working.

rotork®

Keeping the World Flowing

Active in every industry and market sector around the world.

Serving customers and working with partners.

Improving efficiency, assuring safety and protecting the environment.

Industry knowledge

Our engineering and application knowledge base, built over 60 years, allows us to provide innovative and reliable solutions for all flow control applications.

We work across the globe, servicing a diverse range of markets and critical applications.

Our experience of flow control is second to none.

Oil & Gas

Rotork products are used on upstream, midstream and downstream activities, ranging from offshore production facilities, to refining and processing, to transportation, storage and distribution.

- Onshore and offshore production
- Refining and petrochemicals
- Distribution and storage
- Pipelines
- LNG liquefaction and regasification
- Unconventional oil & gas

Water & Wastewater

Rotork products are used on modern state-of-the-art water treatment and distribution processes, which maximise existing resources such as desalination plants and water re-use projects, together with conventional water and wastewater plants.

- Sludge and sewage treatment
- Water treatment, desalination and re-use
- Environmental control
- Dams, reservoirs and irrigation

Power

Rotork products are found in traditional power stations, including nuclear power stations where its products are certified for use both inside and outside containment. They are also used for renewable energy generation systems such as thermal solar plants, and emission reduction processes such as flue gas desulphurisation.

- Conventional fuels
- Nuclear energy
- Concentrating solar power
- Geothermal and other renewables

Other Industries

- Marine
- Pharmaceutical
- HVAC
- Mining
- Biomedical
- Rail
- Pulp & Paper
- Food & Beverage
- Chemical
- Industrial Automation
- Power Generation
- Automotive
- Textile Manufacturing

rotork®

Rotork have a number of instrumentation equipment production facilities throughout the world, complemented by a large network of distribution and support centres.

Specialist products for control and measurement of flow and pressure.

Trusted wherever there is a need for high precision and reliability, including oil & gas, pharmaceutical, biomedical, and manufacturing industries.

Worldwide Industry and Application Experience

Rotork offer a complete range of precision control and valve accessory products through our prestigious brands, including Fairchild, YTC, Soldo®, Midland-ACS™, Bifold®, Orange, M&M and Alcon.

Instrument Valves

- Valve actuation accessories
- Solenoid valves
- Piston valves
- Instrument valves
- Medium pressure valves
- Subsea valves and connectors

Controllers

- Valve positioners
- Rail systems
- I/P and E/P converters
- Pressure Regulators
- Volume Boosters
- Pneumatic Relays

Measurement

- Valve position sensors
- Transmitters and switches

Instrument Pumps

- Pumps
- Intensifiers and accumulators

Rotork is proud to offer a diverse range of products which serve many different duties in a wide variety of applications. We also offer a factory customisation service to create one-off units to meet specific needs.

Bifold® A rotork Brand

A rotork Brand FAIRCHILD precision pneumatic & motion control

YTC A rotork Brand

SOLDO® CONTROLS A rotork Brand

M&M International A rotork Brand

MIDLAND-ACS™ A rotork Brand

A rotork Brand

FAIRCHILD

precision pneumatic & motion control

The Widest Range of Products for Diverse Market Applications

For over 60 years, Fairchild Industrial Products Company has maintained an excellent reputation as a manufacturer of precision, high quality, pneumatic, and electro-pneumatic controls.

Our line of industrial control products offers one of the largest varieties of precision pneumatic and electro-pneumatic control devices available for process, machine tool, robotic and OEM applications. Our developing technology in four main product groups pneumatic pressure regulators, volume boosters, relays and electro-pneumatic transducers has been the basis for our growth and leadership.

Fairchild Industrial Products Company is ISO 9001 approved. We are authorized to display the CE mark on our electro-pneumatic products.

Many of our electro-pneumatic products are also approved for intrinsically safe, explosion-proof, and NEMA 4X (IP65) ratings by FM, CSA and ATEX.

Our worldwide network of stocking distributors can assist you with application support at the local level. At the factory, our applications engineering staff can solve your problems with new or existing applications. We can work with your plant and design engineers to develop a custom product to suit a specific application.

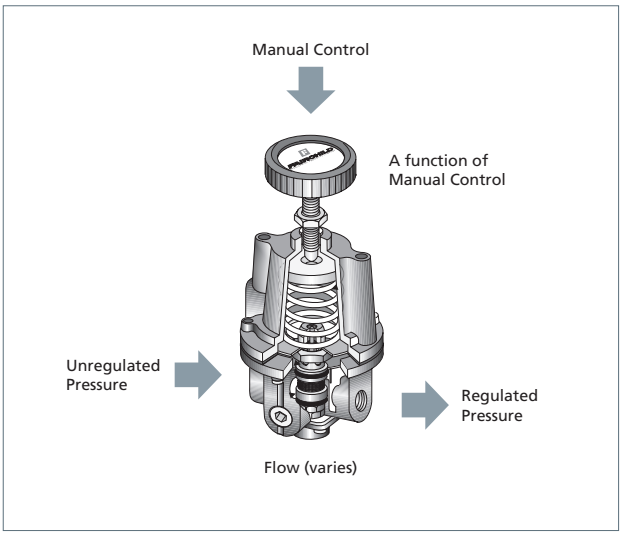
At Fairchild Industrial Products Company, we have built our reputation on providing quality products, excellent customer service, quick delivery, and immediate response to customer emergencies.

	Oil & Gas	Chemical	Pharmaceutical	Industrial Automation	Medical/ Biotech	Food & Beverage	Power Generation	Pulp & Paper	Automotive	Textile Manufacturing
I/P and E/P Transducers and Actuators	T6000 T7800 TXI7800 PAX1	T5200 T6000 TXI7800 T9000 PAX1	T5700 T6000 T7800 TXI7800	T5220 T6000	T5700 T6000 T7800 TXI7800	T5220 T5700 T6000 T7800 TXI7800 T8000	T7800 TXI7800 T8000 PAX1	T5220 T5221 T6000 T7800 TXI7800 T8000 T9000	T5200 T5220 T6000 T7800 T9000	T5700 T6000 T7800 TXI7800
Pressure Regulators	10 10BP 63 65 100 PAX1	10BP 63 65 81 PAX1 4100A	17 18 55 65 66 66BP 70B 81 1600A	10 11 16 30 65 70 81 1000 1600A 4000A 4100A	17 18 55 65	10 30 65 200 2000 4000A	63 65 PAX1	10 16 30 65 70 80 81 85 100 4000A	10 16 30 65 70 80 81 1600A 4000A	10 30
Pneumatic Relays	14 24 90 91	24	24	-	15	14 24	-	14 15 21 22 25 90 91 1500	90 91	14 15 21
Volume boosters	20 200 200XLR 4500A 4800A	20 200 4500A 4800A	20 200 4500A	4500A 4900A	20 4500A 4900A	20 200 4500A 4900A	20 200 4500A 4800A	20 200 2000 4500A	20 200 4500A 4900A	20 4500A

Product Range – Methods of Operation

Pneumatic Pressure Regulators

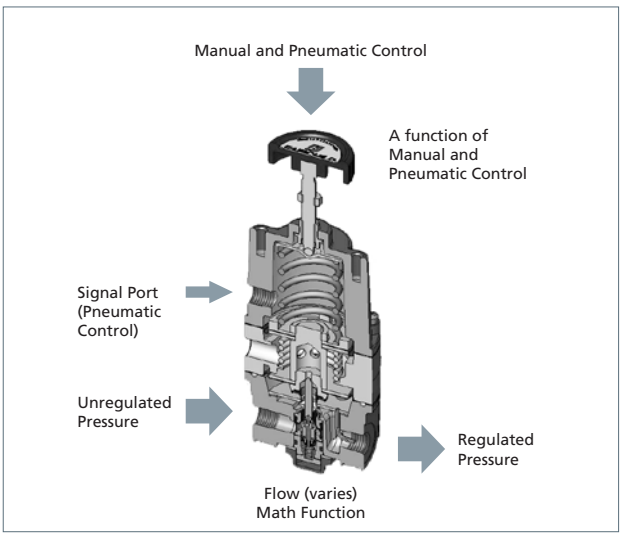
A pressure regulator reduces an unregulated high input pressure to a regulated lower output pressure. Its primary function is to maintain the regulated output pressure under flowing and non-flowing conditions.



Pneumatic Relays

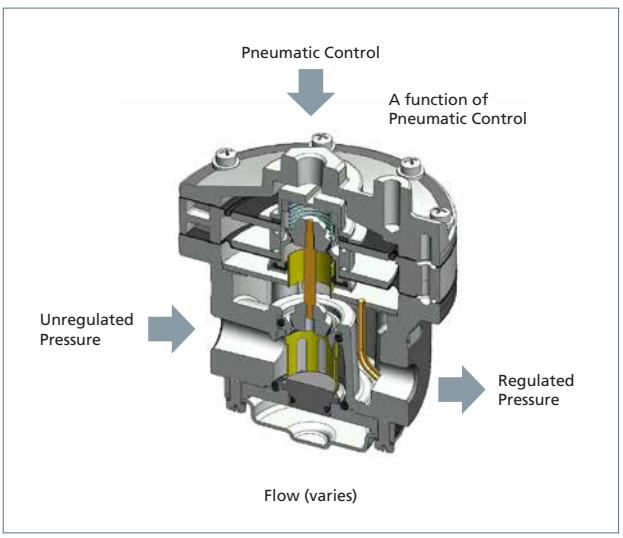
Pneumatic relays perform mathematical functions on one or more input signals that result in a single regulated pneumatic output including:

- Average
- Sum
- Differential
- Multiplying
- Dividing
- High / Low Selection
- Reversing
- Snap-acting (NC or NO)



Pneumatic Volume Boosters

A pneumatic air volume booster reproduces a low flow control signal with a greater flow regulated output pressure. It uses an unregulated input pressure to maintain a regulated output pressure under flowing and non-flowing conditions.

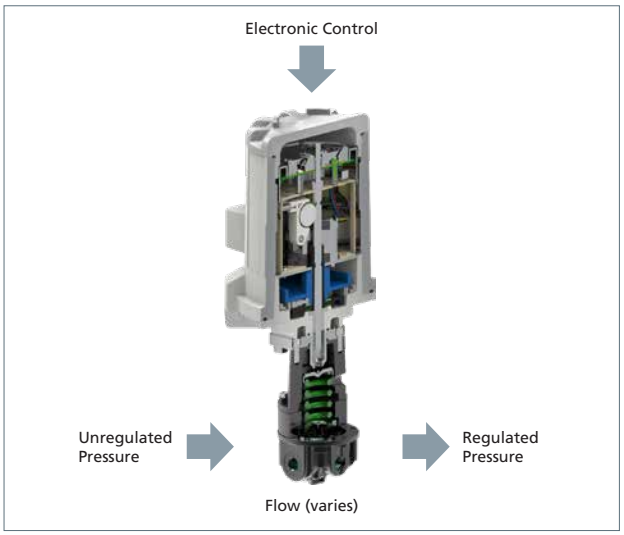


Product Range – Methods of Operation

Electronic Control of Pressure

In today's world of computerized electronic control of processes, there exist the need for electronically controlled devices for controlling pressure. These devices form the important interface between the electronic world and the pneumatic world.

Rotork Fairchild has a number of products employing different technologies for electronic control of pressure.



Motor Set Pressure Regulator

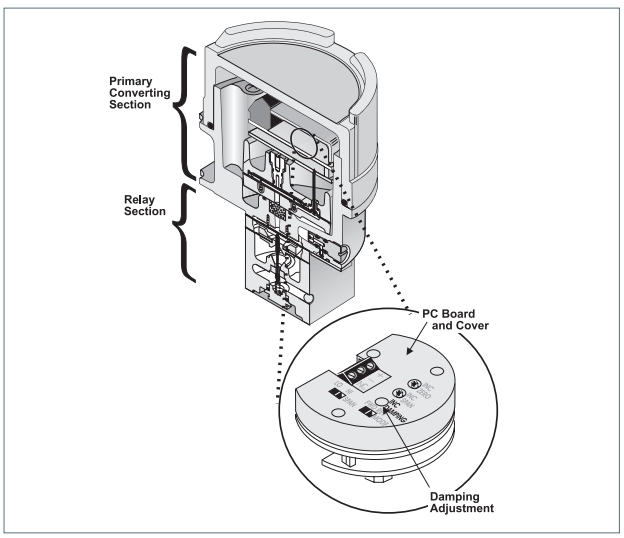
Rotork Fairchild's Motorized Pressure Regulator provides the utmost in bullet proof electronic pressure control. Inherently lock in last place and coupled with virtually any of Rotork Fairchild's time proven pressure regulators, these devices can endure the harshest of pneumatic pressure control environments. The actuator portion of these instruments are housed in an explosion proof, IP66 & IP68 enclosure. Digital pulse as well as analog control, fully configurable end travel limits and NO & NC position limit switches round out the control interface.

Electro-Pneumatic Transducers

Rotork Fairchild's Electro-pneumatic transducers employ simple but highly robust voice coil Flapper Nozzle technology as the primary electro-mechanical converting element for controlling pressure. This is a cost effective, signal powered solution to many electro-pneumatic interface applications. These compact, light weight I/P and E/P transducers are offered in a variety of inputs, outputs and connection options that enable solutions to virtually any application.

Electronic Feedback Transducers

Rotork Fairchild's feedback Electronic transducers are a step up from the voice coil flapper nozzle controlled pressure transducers. These piezo-ceramic flapper nozzle transducers feature vibration resistant piezo-ceramic actuator and high accuracy closed loop pressure feedback control of the output pressure. A high accuracy pressure sensor monitoring the output pressure provides highly accurate and stable feedback pressure control. These transducers are available in a variety of inputs and outputs, and connection methods. These are offered in IP66 intrinsic safety, and explosionproof versions for satisfying both general industrial and hazardous area applications.



Product Range – Methods of Operation

Microprocessor Controlled Pressure Controllers

Rotork Fairchild's microprocessor controlled pressure controllers are feature rich PID controlled pressure controllers. Primarily intended for machine control applications, these have a push button and LCD display user interface providing the utmost in flexibility and configurability. The feed and bleed solenoid valve technology primary pressure control system is highly accurate and efficient and can be configured to be non-consuming in steady state conditions. This technology is also resistant to vibration and shock and changes in position. These pressure controllers feature optional electronic feedback output and are offered in three pressure ranges up to 10 bar.

Product Range – Accessories and Service Kits

Accessories

Fairchild offers a variety of accessories for product support.

These items are:

- Mounting brackets
- Automatic drain filters are available to remove dirt, water, oil and other foreign matter from supply air lines.
- Manifold and rack kits for high density mounting T6000, T7800, T8000 and T9000 Series transducers.

Service Kits

Service kits are available for most products. These kits include elastomers and other wear items that are necessary to restore the unit to it's original operating condition.

Product Specifications – High Precision Pressure Regulators

	Standard (Pneumatic) Pressure Range				
					
	10	**30**	**80D**	**81**	**1000**
Flow Capacity - SCFM (m^3/hr) @ Supply Pressure of 100 psig (700 kPa)	40 (68)	40 (68)	14 (24)	50 (85)	50 (85)
Exhaust Capacity - SCFM (m^3/hr) Downstream pressure 5 psig (35 kPa) above 20 psig (150 kPa) set point	5.5 (9.4)	2.0 (3.4)	2.5 (4.2)	5.5 (9.4)	8 (13.6)
Sensitivity - inches of WC (cm of WC)	0.125 (0.32)	0.25 (0.63)	< 0.125 (< 0.32)	< 0.1 (< 0.254)	0.5 (1.27)
Supply Pressure Variation - psig (kPa) For Supply Pressure Change - psig (kPa)	<0.1 (<0.7) 100 psig (700 kPa)	<0.2 (<1.4) 100 psig (700 kPa)	< 0.2 (< 1.4) 100 psig (700 kPa)	< 0.2 (< 1.4) 100 psig (700 kPa)	< 0.1 (< 0.7) 100 psig (700 kPa)
Maximum Supply Pressure - psig (kPa)	500 (3500)[1]	250 (1700)	150 (1000)	150 (1000)[2]	250 (1700)
Dimensions (Approx.) - Inches (mm)	Dia. 3" H 6½" (Dia. 76 H 165)	2½" x 1¾" x 5¼" (57 x 44 x 133)	2⅛"x 1¾" x 5⅜" (57 x 45 x 137)	Dia. 3" H 6¼" (Dia. 76 H 160)	2⅛"x 2⅛" x 5" (54 x 54 x 127)
Output Pressure Range - psig (kPa)	0-2 (0-15) 0-10 (0-70) 1-20 (7-150) 0.5-30 (3-200) 1-60 (7-400) 2-150 (15-1000) 3-200 (20-1500) 5-300 (35-2100) 5-400 (35-2800) 5-500 (35-3500)[1]	0-2 (0-15) 0-10 (0-70) 0.5-30 (3-200) 1-60 (7-400) 2-100 (15-700)	0-20 (0-150) 1-60 (7-400) 1-100 (7-700)	0-2 (0-15)[2] 0-5 (0-35)[2] 0-20 (0-150) 0.5-60 (3.5-400) 0.5-100 (3.5-700)	0.5-10 (3.5-70) 0.5-30 (3.5-200) 1-60 (7-400) 2-150 (15-1000)
Port Size (NPT, BSPT or BSPP)	¼", ⅜", ½"	¼", ⅜"	⅛", ¼", ⅜"	¼"	¼", ⅜"

[1] - Maximum Supply Pressure for 5-500 psig ("A" Range) is 525 psig (3620 kPa)
[2] - Maximum Supply Pressure for 0-2 & 0-5 psig ranges is 100 psig (700 kPa)

	Standard (Pneumatic) Pressure Range		Low Pressure	
				
	4000A	**100**	**11**	**4100A**
Flow Capacity - SCFM (m^3/hr) @ Supply Pressure of 100 psig (700 kPa)	150 (255)	1500 (2550)	20 (34)	25 (42)
Exhaust Capacity - SCFM (m^3/hr) Downstream pressure 5 psig (35 kPa) above 20 psig (150 kPa) set point	40 (65.2)	44 (75)	0.5 (0.85)[3]	1.5 (2.55)[3]
Sensitivity - inches of WC (cm of WC)	0.5 (1.27)	0.5 (1.27)	0.05 (0.127)	0.05 (0.127)
Supply Pressure Variation - psig (kPa) For Supply Pressure Change - psig (kPa)	< 0.1 (< 0.7) 100 psig (700 kPa)	< 0.5 (< 3.5) 100 psig (700 kPa)	< 0.01 (< 0.07) 100 psig (700 kPa)	< 0.01 (< 0.07) 100 psig (700 kPa)
Maximum Supply Pressure - psig (kPa)	250 (1700)	250 (1700)	150 (1000)	150 (1000)
Dimensions (Approx.) - Inches (mm)	Dia. 4½" H 8" (Dia. 114 H 203)	Dia. 5½" H 11¼" (Dia. 133 H 286)	Dia. 5¼" H 7 3/32" (Dia. 133 H 180)	Dia. 8½" H 8 5/8" (Dia. 216 H 220)
Output Pressure Range - psig (kPa)	0.5-10 (3.5-70) 0.5-30 (3.5-200) 1-60 (7-400) 2-150 (15-1000) 5-250 (35-1700)	0-10 (0-70) 0.5-30 (3.5-200) 1-60 (7-400) 2-100 (15-700) 2-150 (15-1000)	0-0.5 (0-3.5) 0-2 (0-15) 0-4 (0-30) 0-6 (0-40) 0-12 (0-80)	0-0.7 (0-4.8) 0-1.4 (0-9.7) 0-3 (0-21) 0-5 (0-35)
Port Size (NPT, BSPT or BSPP)	⅜", ½", ¾"	1", 1½"	¼", ⅜", ½"	⅜", ½", ¾"

[3] - Downstream pressure is 0.1 psig (0.7 kPa) above 1.0 psig (7 kPa) set point

Product Specifications – High Precision Pressure Regulators

	Vacuum Regulators			
				
	16	**17**	**18**	**1600A**
Flow Capacity - SCFM (m^3/hr) @ Supply Pressure of 100 psig (700 kPa)	2.5 (4) @ Vacuum[4] or 40 (68) Positive Flow	12 (20.4)	8 (13.6)[4]	28 (48) @ Vacuum[4] or 150 (255) Positive Flow
Exhaust Capacity - SCFM (m^3/hr) Downstream pressure 5 psig (35 kPa) above 20 psig (150 kPa) set point	5.5 (9.4)	2.0 (3.4) (Relief Capacity)	Not Applicable	20 (34)
Sensitivity - inches of WC (cm of WC)	0.5 (1.27)	0.125 (0.32)	0.125 (0.32)	1.0 (2.54)
Supply Pressure Variation - psig (kPa) For Supply Pressure Change - psig (kPa)	< 0.1 (< 0.7) 100 psig (700 kPa)	< 0.1 (< 0.7) % Vacuum Change	Not Applicable	< 0.1 (< 0.7) 100 psig (700 kPa)
Maximum Supply Pressure - psig (kPa)	250 (1700)	Minimum 30 inHg (762 Torr) to "Full" Vacuum	Minimum 30 inHg (762 Torr) to "Full" Vacuum	250 (1700)
Dimensions (Approx.) - Inches (mm)	Dia. 3" H 8" (Dia. 76 H 165)	Dia. 3" H 6½" (Dia. 76 H 165)	Dia. 3" H 6½" (Dia. 76 H 165)	Dia. 3" H 8" (Dia. 76 H 165)
Output Pressure Range - psig (kPa)	Vacuum-2 (Vacuum-15) Vacuum-10 (Vacuum-70) Vacuum-30 (Vacuum-200) Vacuum-100 (Vacuum-700) Vacuum-150 (Vacuum-1000)	0-5 inHg (127 Torr) 0-15 inHg (381 Torr) 0-30 inHg (762 Torr)	4 inHg (140 mBar) 20 inHg (700 mBar) 30 inHg (1000 mBar)	Vacuum-10 (Vacuum-70) Vacuum-30 (Vacuum-200) Vacuum-150 (Vacuum-1000)
Port Size (NPT, BSPT or BSPP)	¼", ⅜", ½"	¼", ⅜", ½"	¼", ⅜", ½"	⅜", ½", ¾"

[4] - at 29 inHg of vacuum with inlet port open

	Miniature Regulators		
			
	70B	**72**	**55**
Flow Capacity - SCFM (m^3/hr) @ Supply Pressure of 100 psig (700 kPa)	2.5 (4.25)	2.5 (4.25)	9 (17)
Exhaust Capacity - SCFM (m^3/hr) Downstream pressure 5 psig (35 kPa) above 20 psig (150 kPa) set point	0.28 (0.48)	0.28 (0.48)	2 (3.4)
Sensitivity - inches of WC (cm of WC)	Not Applicable	Not Applicable	Not Applicable
Supply Pressure Variation - psig (kPa) For Supply Pressure Change - psig (kPa)	< 0.05 (< 0.35) 5 psig (35 kPa)	< 0.05 (< 0.35) 5 psig (35 kPa)	< 0.1 (< 0.7) 10 psig (70 kPa)
Maximum Supply Pressure - psig (kPa)	250 (1700)	300 (2000)	150 (1000)
Dimensions (Approx.) - Inches (mm)	Dia. ¾" H 3 3/16" (Dia. 22 H 81)	Dia. 1" H 3 3/16" (Dia. 25.4 H 81)	1½"x 1½" x 4¼" (38 x 38 x 108)
Output Pressure Range - psig (kPa)	0-5 (0-35) 0-15 (0-100) 0.5-30 (3.5-200) 1-60 (7-400) 2-100 (15-700)	0-5 (0-35) 0-15 (0-100) 0.5-30 (3.5-200) 1-60 (7-400) 2-100 (15-700)	0-10 (0-70) 0.5-30 (3.5-200) 1-60 (7-400) 2-100 (15-700)
Port Size (NPT, BSPT or BSPP)	1/16" (NPT only), M5 x 0.8	1/16" (NPT only), M5 x 0.8	⅛" (NPT only)

Product Specifications – High Precision Pressure Regulators

	Back Pressure Regulators				
					
	11BP	**10BP**	**30BP**	**4000ABP**	**66BP**
Flow Capacity - SCFM (m^3/hr) @ Upstream Pressure of 100 psig (700 kPa)	20 (34)	40 (68)	40 (68)	150 (255)	22 (37.4)
Exhaust Capacity - SCFM (m^3/hr) Downstream pressure 5 psig (35 kPa) above 20 psig (150 kPa) set point	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Sensitivity - inches of WC (cm of WC)	0.05 (0.127)	0.125 (0.32)	0.25 (0.63)	0.5 (1.27)	1.0 (2.54)
Supply Pressure Variation - psig (kPa) For Supply Pressure Change - psig (kPa)	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Maximum Inlet Pressure - psig (kPa)	150 (1000)	300 (2100)[6]	250 (1700)	250 (1700)	500 (3500)
Dimensions (Approx.) - Inches (mm)	Dia. 5¼" H 7 3⁄32" (Dia. 133 H 180)	Dia. 3" H 6½" (Dia. 76 H 165)	2½"x 1¾" x 5¼" (57 x 44 x 133)	Dia. 4½" H 8" (Dia. 114 H 203)	Dia. 3" H 6¼" (Dia. 76 H 159)
Output Pressure Range - psig (kPa)	0-0.5 (0-3.5) 0-2 (0-15) 0-4 (0-30) 0-6 (0-40) 0-12 (0-80)	0-2 (0-15) 0-10 (0-70) 1-20 (7-150) 0.5-30 (3-200) 1-60 (7-400) 2-150 (15-1000) 3-200 (20-1500) 5-300 (35-2100)[6] 5-400 (35-2800)[6]	0-2 (0-15) 0-10 (0-70) 0.5-30 (3-200) 1-60 (7-400) 2-100 (15-700)	0.5-10 (3.5-70) 0.5-30 (3.5-200) 1-60 (7-400) 2-150 (15-1000) 5-250 (35-1700)	0-10 (0-70) 0.5-30 (3-200) 1-60 (7-400) 2-100 (15-700) 2-150 (20-1000)
Port Size (NPT, BSPT or BSPP)	¼", ⅜", ½"	¼", ⅜", ½"	¼", ⅜"	⅜", ½", ¾"	¼", ⅜", ½"

[6] - Maximum Inlet Pressure for 5-300 and 5-400 psig ranges is 500 psig (3500 kPa)

Product Specifications – General Purpose Regulators and Air Filters

Stainless Steel Pressure Reducing Regulators

	Standard Pressure	High Pressure Regulators		
				
	66	**HPD**	**HPP**	**HPH**
Flow Capacity - SCFM (m3/hr) @ Supply Pressure of 100 psig (700 kPa)	17 (28.9)	Cv 0.06 or Cv 0.25	Cv 0.06	Cv 0.09
Exhaust Capacity - SCFM (m3/hr) Downstream pressure 5 psig (35 kPa) above 20 psig (150 kPa) set point	1.0 (1.7)	Cv 0.02	Cv 0.02	Cv 0.11
Sensitivity - inches of WC (cm of WC)	1.0 (2.54)	Not Applicable	Not Applicable	Not Applicable
Supply Pressure Variation - psig (kPa) For Supply Pressure Change - psig (kPa)	< 0.1 (< 0.7) 25 psig (172 kPa)	< 0.6 (< 4) 100 psig (700 kPa)	< 55 (< 380) 1000 psig (7000 kPa)	< 85 (< 586) 1000 psig (7000 kPa)
Maximum Supply Pressure - psig (kPa)	500 (3500)	6000 (41400)	6000 (41400)	10000 (68950)
Dimensions (Approx.) - Inches (mm)	Dia. 3" H 6¼" (Dia. 76 H 159)	Dia 2¼" x H 5 3/8" (Dia 60 H 137)	Dia 2¼" x H 5 3/8" Dia 60 H 137	Dia 3" x H 8 3/32" Dia 76 x 205
Output Pressure Range - psig (kPa)	0-10 (0-70) 0.5-30 (3-200) 1-60 (7-400) 2-100 (15-700) 2-150 (20-1000)	0-25 (0-172) 0-50 (0-344) 1-100 (7-700) 2-250 (15-1700) 2-500 (15-3500)	0-1000 (0-6895) 0-2000 (0-13790) 0-3000 (15-20685)	0-500 (0-3450) 0-1000 (0-6895) 0-1500 (0-10350) 0-3000 (0-20685) 0-5000 (0-34475) 0-10000 (0-68950)
Port Size (NPT, BSPT or BSPP)	¼", 3/8", ½"	¼" or SAE AS5202-4	¼" or SAE AS5202-4	¼" or SAE AS5202-4
Body Material	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel

General Purpose Air Filters and Filter Regulators

	Filter Regulators			Filters	
					
	63	**65**	**C Series**	**F Series**	**D Series**
Filter Type	Particulate	Particulate	Particulate	Particulate	Coalescing
Filtering Element	5 microns	5 microns	5 microns	5 microns	0.5 microns, 0.01 microns or 0.003 microns
Flow Capacity - SCFM (m^3/hr) @ Supply Pressure of 100 psig (700 kPa)	25 (42.5)	25 (42.5)	42 - 175 (71 - 297)	25 - 165 (42 - 280)	11 - 98 (18 - 166)
Exhaust Capacity - SCFM (m^3/hr) Downstream pressure 5 psig (35 kPa) above 20 psig (150 kPa) set point	0.8 (1.36)	0.8 (1.36)	N/A	N/A	N/A
Sensitivity - inches of WC (cm of WC)	1.0 (2.54)	1.0 (2.54)	N/A	N/A	N/A
Supply Pressure Variation - psig (kPa) For Supply Pressure Change - psig (kPa)	< 1.25 (< 9) 100 psig (700 kPa)	< 1.25 (< 9) 100 psig (700 kPa)	N/A	N/A	N/A
Maximum Supply Pressure - psig (kPa)	300 (2100)	300 (2100)	250 (1700)	150 (1000)	150 (1000)
Dimensions (Approx.) - Inches (mm)	Dia. 3" x 7¾" (Dia. 76 x 197)	Dia 3"x 7¾" (Dia 98 x 145)	Varies by model	Varies by model	Varies by model
Output Pressure Range - psig (kPa)	0.5-30 (3-200) 1-60 (7-400) 2-120 (15-800)	0.5-30 (3-200) 1-60 (7-400) 2-120 (15-800)	0-125 (0-860) 0-250 (0-1700)	N/A	N/A
Port Size (NPT, BSPT or BSPP)	¼"	¼"	¼", 3/8", ½" or ¾"	¼", 3/8", ½" or ¾"	¼", 3/8", ½" or ¾"

Product Specifications – Volume Boosters

	Industrial Process Volume Boosters				
					
	20	**4500A**	**4900A**	**200**	**200XLR**
Flow Capacity - SCFM (m^3/hr) @ Supply Pressure of 100 psig (700 kPa)	45 (76.5)	150 (255)	500 (850)	1500 (2550)	1500 (2550)
Exhaust Capacity - SCFM (m^3/hr) Downstream pressure 5 psig (35 kPa) above 20 psig (150 kPa) set point	7.5 to 11 (12.8 to 18.7) Varies with ratio	40 (65.2)	100 (170)	65 (110.5)	325 (552.5)
Sensitivity - inches of WC (cm of WC)	0.25 to 1.50 (0.64 to 3.8) Varies with Ratio	1.0 to 3.0 (2.54 to 7.62) Varies with Ratio	0.25 (0.64)	1.0 (2.54)	1.0 (2.54)
Supply Pressure Variation - psig (kPa)	0.1 to 0.60 (0.7 to 4.0)	0.1 to 0.60 (0.7 to 4.0)	< 0.1 (< 0.7)	< 0.5 (< 3.5)	< 0.5 (< 3.5)
For Supply Pressure Change - psig (kPa)	Varies with Ratio	Varies with Ratio	100 psig (700 kPa)	100 psig (700 kPa)	100 psig (700 kPa)
Maximum Supply Pressure - psig (kPa)	250 (1700)	250 (1700)	250 (1700)	250 (1700)	250 (1700)
Maximum Signal/Output Pressure - psig (kPa)	Varies (See Data Sheet)	Varies (See Data Sheet)	150 (1000)	150 (1000)	150 (1000)
Dimensions (Approx.) - Inches (mm)	Dia 3" H 4¼" (Dia 76 H 114)	Dia. 4½" H 5¼" (Dia. 114 H 133)	Dia. 6½" H 8" (Dia. 165 H 204)	Dia. 5 ½" H 7⅞" (Dia. 140 H 200)	9½" x 5½" x 9 ¾" (241 x 140 x 248)
Signal / Outuput Ratio Available	1:1, 1:2, 1:3, 1:4, 1:5, 1:6, 2:1, 3:1, 4:1, 5:1	1:1, 1:2, 1:3, 2:1, 3:1	1:1	1:1	1:1
Port Size (NPT, BSPT or BSPP)	¼", ⅜", ½"	⅜", ½", ¾"	¾", 1"	1", 1½"	1½"

	Back Pressure		Valve Automation Volume Boosters			
						
	20BP	**4500ABP**	**20I**	**4500AI**	**4800A**	**200XLRI**
Flow Capacity - SCFM (m^3/hr) @ Supply Pressure of 100 psig (700 kPa)	45 (76.5)	150 (255)	Cv 0.91 to Cv 0.95	Cv 2 to Cv 3	Cv 5 to Cv 9	Cv 18
Exhaust Capacity - SCFM (m^3/hr) Downstream pressure 5 psig (35 kPa) above 20 psig (150 kPa) set point	Not Applicable	Not Applicable	Cv0.26	Cv 2 to Cv 3.5	Cv 5 to Cv 9	Cv 18
Sensitivity - inches of WC (cm of WC)	0.25 to 0.75 (0.64 to 1.92) Varies with Ratio	1.0 (2.54)	Adjustable by By-Pass Valve	Adjustable by By-Pass Valve	Adjustable by By-Pass Valve	Adjustable by By-Pass Valve
Supply Pressure Variation - psig (kPa) For Supply Pressure Change - psig (kPa)	Not Applicable	Not Applicable	< 0.1 (< 0.7) 100 psig (700 kPa)	< 0.1 (< 0.7) 100 psig (700 kPa)	< 0.1 (< 0.7) 100 psig (700 kPa)	< 0.5 (< 3.5) 100 psig (700 kPa)
Maximum Supply Pressure - psig (kPa)	250 (1700)	250 (1700)	250 (1700)	250 (1700)	250 (1700)	250 (1700)
Maximum Signal/Output Pressure - psig (kPa)	Varies (See Data Sheet)	Varies (See Data Sheet)	150 (1000)	150 (1000)	150 (1000)	150 (1000)
Dimensions (Approx.) - Inches (mm)	Dia 3" H 4¼" (Dia 76 H 114)	Dia. 4½" H 5¼" (Dia. 114 H 133)	Dia 3" H 4¼" (Dia 76 H 114)	Dia. 4½" H 5¼" (Dia. 114 H 133)	Dia. 6½" H 8" (Dia. 165 H 204)	9½" x 5½" x 9 ¾" (241 x 140 x 248)
Signal / Outuput Ratio Available	1:1, 1:2, 1:3	1:1	1:1	1:1	1:1	1:1
Port Size (NPT, BSPT or BSPP)	¼", ⅜", ½"	⅜", ½", ¾"	¼", ⅜", ½"	⅜", ½", ¾"	¾", 1"	1½"

Product Specifications – Pneumatic Relays

	Pos./Negative Bias	Positive Bias		Adjustable Ratio	Pneum. Computing	Snap Acting
						
	14	15	1500A	21	22	24
Flow Capacity - SCFM (m3/hr) @ Supply Pressure of 100 psig (700 kPa)	40 (68)	40 (68)	150 (255)	40 (68)	2 (3.4)	14 (23.8)
Exhaust Capacity - SCFM (m3/hr) Downstream pressure 5 psig (35 kPa) above 20 psig (150 kPa) set point	5.5 (9.4)	5.5 (9.4)	40 (68)	5.5 (9.4)	Note 1	14 (23.8)
Sensitivity - inches of WC (cm of WC)	0.5 (1.27)	0.25 (0.64)	0.5 (1.27)	0.25 (0.64)	Note 1	0.2 (0.51) to 0.5 psig (3.45 kPa)
Maximum Supply Pressure - psig (kPa)	250 (1700)	250 (1700)	250 (1700)	250 (1700)	150 (1000)	120 (800)
Maximum Signal Pressure - psig (kPa)	150 (1000)	150 (1000)	150 (1000)	150 (1000)	50 (350)	120 (800)
Maximum Output Pressure - psig (kPa)	150 (1000)	150 (1000)	150 (1000)	150 (1000)	50 (350)	120 (800)
Dimensions (Approx.) - Inches (mm)	Dia 3"H 8" (Dia 76 H 203)	Dia 3" H 7" (Dia 76 H 177)	Dia. 4½" H 8½" (Dia. 114 H 216)	9⅞" x 3⅝" x 4⅞" (251 x 92 x 124)	Dia 3"H 9" (Dia 76 H 229)	Dia 3" H 8½" (Dia 76 H 216)
Port Size (NPT, BSPT or BSPP)	¼", ⅜", ½"	¼", ⅜", ½"	⅜", ½", ¾"	¼", ⅜"	¼", ⅜"	¼", ⅜", ½"

Note 1: Multiple configurations allowing up to 4 inputs plus positive and negative biasing over a broad range, designed for multiple functions such as Averaging, Differential, Inverting, Totalising and On/Off

	Reversing	2-stage Biasing	Low Pressure Selector	High Pressure Selector
				
	25	85D	90	91
Flow Capacity - SCFM (m3/hr) @ Supply Pressure of 100 psig (700 kPa)	40 (68)	14 (23.8)	Note 2	Note 2
Exhaust Capacity - SCFM (m3/hr) Downstream pressure 5 psig (35 kPa) above 20 psig (150 kPa) set point	11 (18.7)	2.5 (4.25)	Note 2	Note 2
Sensitivity - inches of WC (cm of WC)	0.13 (0.32)	Not Applicable	Note 2	Note 2
Maximum Supply Pressure - psig (kPa)	250 (1700)	250 (1700)	Note 2	Note 2
Maximum Signal Pressure - psig (kPa)	150 (1000)	150 (1000)	200 (1400)	200 (1400)
Maximum Output Pressure - psig (kPa)	150 (1000)	150 (1000)	200 (1400)	200 (1400)
Dimensions (Approx.) - Inches (mm)	Dia 3"H 7 ½" (Dia 76 H 191)	1¾" x 1¾" x 5" (44 x 44 x 127)	Dia 3" H 1¾" (Dia 76 H 44)	Dia 3" H 1¾" (Dia 76 H 44)
Port Size (NPT, BSPT or BSPP)	¼", ⅜, ½"	⅛", ¼", ⅜"	¼" (NPT only)	¼" (NPT only)

Note 2: Switching Differential: +0.1 psid (,0.7); maximum differential between signals: 100 psid (700)

Product Specifications – Transducers

	Industrial Process Transducers					
	I/P, E/P Converters, Proportional Pressure Valves					
						
	T5700	**T6000**	**T6100**	**T7500**	**T7800**	**T9000**
Flow capacity - SCFM (m^3/hr) @ Supply Pressure of 120 psig (800 kPa)	47 (79.9)	9 (15.3)	5 (8.5)	7 (11.9)	9 (15.3)	2 to 700 (3.4 to 1190) Varies by model
Exhaust Capacity - SCFM (m^3/hr) Downstream pressure 5 psig (35 kPa) above 9 psig (62 kPa) set point	< 9 (15.3)	2 (3.4)	< 2 (3.4)	1.8 (3.1)	2 (3.4)	1 to 350 (1.7 to 595) Varies by model
Output Pressure Ranges - psig (kPa)	3-15 (20-100)	3-15 (20-100) 3-27 (20-180) 6-30 (40-200) 0-30 (0-200) 0-60 (0-400) 0-120 (0-800)	3-15 (20-100)	0-2.5 (0-17) 0-5 (0-35) 0-7.5 (0-50) 0-15 (0-100)	3-15 (20-100) 3-27 (20-180) 6-30 (40-200) 0-30 (0-200) 0-60 (0-400) 0-120 (0-800)	0-30 (0-200) 0-75 (0-500) 0-150 (0-1000) Programmable by parameters
Maximum Air Consumption - SCFH (m^3/hr)	3 (0.08)	5.0 to 17.0 (0.14 to 0.48) Varies with model	5 (0.14)	0.06 to 0.36 (0.01 to 0.08) Varies with model	5.0 to 15.0 (0.14 to 0.42) Varies with model	0 at steady state
Accuracy (% F.S.)	±0.5% Independent Linearity	±0.5 to 1.0% Independent Linearity (Varies with model)	±0.5%	±0.25% (±0.15% Typical)	±0.15% (Typical)	±0.5 %
Repeatability (% F.S.)	< 0.1%	0.25 to < 1.0 % (Varies with model)	0.25%	< 0.1 %	< 0.1 %	< 0.1 %
Supply Pressure	18-150 (120-1000)	20-150 (140-1000)	20-150 (140-1000)	20-30 (140-200)	20-150 (140-1000)	200 (1400)
Supply Voltage	Signal Powered	Signal Powered	Signal Powered	Signal Powered for Current Input; 8 to 30 VDC for Voltage Input	Signal Powered for Current Input; 8 to 30 VDC for Voltage Input	24 VDC
Input Signal	4-20 mA 10-50 mA 1-5 VDC 1-9 VDC	4-20 mA 10-50 mA 0-5 VDC 0-10 VDC 1-5 VDC 1-9 VDC	4-20 mA	4-20 mA 0-5 VDC 0-10 VDC	4-20 mA 10-50 mA 0-5 VDC 0-10 VDC 1-5 VDC 1-9 VDC	4-20 mA 0-10 VDC Programmable by parameters
Agency Approvals	CE	F, C, E, CE	CE	CE	F, C, E, CE	CE
Dimensions (Approx.) - Inches (mm)	Dia 3" H 6½" (Dia 76 H 165)	1½" x 3⅛"x 3¾" (38 x 79 x 95)	2½" x 2½"x 6½" (64 x 64 x 165)	1½" x 3⅛"x 3¾" (38 x 79 x 95)	1½" x 3⅛"x 3¾" (38 x 79 x 95)	Varies by Model (see Data Sheet)
Port Size (NPT, BSPT)	¼"	¼"	¼"	¼"	¼"	¼", ⅜", ½", ¾" or 1"

F = FM, Factory Mutual

CE = CONFORMITÉ EUROPÉENNE

E = ATEX, IECx

C = CSA, Canadian Standards

Product Specifications – Transducers

	Explosion Proof Transducers		Pressure Transmitters
	I/P Converters		P/I Converters
			
	TXI7800	TXI7850	T8000
Flow capacity - SCFM (m^3/hr) @ Supply Pressure of 120 psig (800 kPa)	9 (15.3)	9 (15.3)	–
Exhaust Capacity - SCFM (m^3/hr) Downstream pressure 5 psig (35 kPa) above 9 psig (62 kPa) set point	2 (3.4)	2 (3.4)	–
Output Pressure Ranges - psig (kPa)	3-15 (20-100) 3-27 (20-180) 6-30 (40-200) 0-30 (0-200) 0-60 (0-400) 0-120 (0-800)	3-15 (20-100) 3-27 (20-180) 6-30 (40-200) 0-30 (0-200) 0-60 (0-400) 0-120 (0-800)	–
Input Pressure Range - psig (kPa)	–	–	0-5 (0-35) 3-15 (20-100) 3-27 (20-180) 6-30 (40-200) 0-30 (0-200) 0-60 (0-400) 1-120 (0-800)
Maximum Air Consumption - SCFH (m^3/hr)	5.0 to 15.0 (0.14 to 0.42) Varies with model	5.0 to 15.0 (0.14 to 0.42) Varies with model	
Accuracy (% F.S.)	±0.15% (Typical)	±0.15% (Typical)	± 0.15% Independent Linearity
Repeatability (% F.S.)	< 0.1%	< 0.1%	< 0.1%
Supply Pressure	20-150 (140-1000)	20-150 (140-1000)	
Supply Voltage	Signal Powered	Signal Powered	12-50 VDC for 4-20 mA or 12-30 VDC for 10-50 mA
Input Signal	4-20 mA	4-20 mA	–
Output Signal	–	–	4-20 mA 10-50 mA
Agency Approvals	F, C, E, CE	F, C, CE	F, CE
Dimensions (Approx.) - Inches (mm)	1½" x 3⅛"x 3¾" (38 x 79 x 95)	1½" x 3⅛"x 3 ¾" (38 x 79 x 95)	1½" x 3⅛"x 3¾" (38 x 79 x 95)
Port Size (NPT, BSPT)	¼"	¼"	¼"

F = FM, Factory Mutual

CE = CONFORMITÉ EUROPÉENNE

E = ATEX, IECx

C = CSA, Canadian Standards

Product Specifications – Motorized Automation Regulators

	Vacuum	Low pressure		Standard (Pneumatic) Pressure	
					
	PAX1 with Model 16	**PAX1 with Model 11**	**PAX1 with Model 4100A**	**PAX1 with Model 10**	**PAX1 with Model 4000A**
Flow Capacity - SCFM (m^3/hr) Supply = 100 psi	2.5 (4) @ Vacuum[1] or 40 (68) Positive Flow	20 (34)	25 (42)	40 (68)	150 (255)
Exhaust Capacity - SCFM (m^3/hr)	5.5 (9.4)	0.5 (0.85)[2]	1.5 (2.55)[2]	5.5 (9.4)	40 (65.2)
Sensitivity - inches of WC (cm of WC)	0.5 (1.27)	0.05 (0.127)	0.05 (0.127)	0.125 (0.32)	0.5 (1.27)
Supply Pressure Variation - psig (kPa) For Supply Pressure Change - psig (kPa)	< 0.1 (< 0.7) 100 psig (700 kPa)	< 0.01 (< 0.07) 100 psig (700 kPa)	< 0.01 (< 0.07) 100 psig (700 kPa)	< 0.1 (< 0.7) 100 psig (700 kPa)	< 0.1 (< 0.7) 100 psig (700 kPa)
Maximum Supply Pressure - psig (kPa)	250 (1700)	150 (1000)	150 (1000)	500 (3500)	250 (1700)
Dimensions (Approx.) - Inches (mm)	Dia. 6.93" x 13.71" (Dia. 176 x 368)	Dia. 6.93" x 14.47" (Dia. 176 x 368)	Dia. 8.5" x 15.26" (Dia. 216 x 388)	Dia. 6.93" x 13.71" (Dia. 176 x 349)	Dia. 6.93" x 15.26" (Dia. 176 x 388)
Output Pressure Range - psig (kPa)	Vacuum-2 (Vacuum-15) Vacuum-10 (Vacuum-70) Vacuum-30 (Vacuum-200) Vacuum-100 (Vacuum-700) Vacuum-150 (Vacuum-1000)	0-0.5 (0-3.5) 0-2 (0-15) 0-4 (0-30) 0-6 (0-40) 0-12 (0-80)	0-0.7 (0-4.8) 0-1.4 (0-9.7) 0-3 (0-21) 0-5 (0-35)	0-2 (0-15) 0-10 (0-70) 1-20 (7-150) 0.5-30 (3-200) 1-60 (7-400) 2-150 (15-1000) 3-200 (20-1500) 5-300 (35-2100) 5-400 (35-2800)	0.5-10 (3.5-70) 0.5-30 (3.5-200) 1-60 (7-400) 2-150 (15-1000) 5-250 (35-1700)
Port Size	¼", ⅜", ½"	¼", ⅜", ½"	⅜", ½", ¾"	¼", ⅜", ½"	⅜", ½", ¾"
Body Material	Aluminium	Aluminium	Aluminium	Aluminium	Aluminium

[1] - at 29 inHg of vacuum with inlet port open
[2] - Downstream pressure is 0.1 psig (0.7 kPa) above 1.0 psig (7 kPa) set point

PAX1 installed on natural gas pipeline, as a pilot for the Control Valve

Product Specifications – Motorized Automation Regulators

	Standard (Pneumatic) Pressure		High Pressure	
				
	PAX1 with Model 81	PAX1 with Model 66	PAX1 with Model HPD	PAX1 with Model HPP
Flow Capacity - SCFM (m^3/hr) Supply = 100 psi	50 (85)	17 (28.9)	Cv 0.06 or Cv 0.25	Cv 0.06
Exhaust Capacity - SCFM (m^3/hr)	5.5 (9.4)	1.0 (1.7)	Cv 0.02	Cv 0.02
Sensitivity - inches of WC (cm of WC)	< 0.1 (< 0.254)	1.0 (2.54)	Not Applicable	Not Applicable
Supply Pressure Variation - psig (kPa) For Supply Pressure Change - psig (kPa)	< 0.2 (< 1.4) 100 psig (700 kPa)	< 0.1 (< 0.7) 25 psig (172 kPa)	< 0.6 (< 4) 100 psig (700 kPa)	< 55 (< 380) 1000 psig (7000 kPa)
Maximum Supply Pressure - psig (kPa)	150 (1000)[3]	500 (3500)	6000 (41400)	6000 (41400)
Dimensions (Approx.) - Inches (mm)	Dia. 6.93" x 13.71" (Dia. 176 x 365)	Dia. 6.93" x 13.71" (Dia. 176 x 349)	Dia. 6.93" x 12.81" (Dia. 176 x 326)	Dia. 6.93" x 12.81" (Dia. 176 x 326)
Output Pressure Range - psig (kPa)	0-2 (0-15)[3] 0-5 (0-35)[3] 0-20 (0-150) 0.5-60 (3.5-400) 0.5-100 (3.5-700)	0-10 (0-70) 0.5-30 (3-200) 1-60 (7-400) 2-100 (15-700) 2-150 (20-1000)	0-25 (0-172) 0-50 (0-344) 1-100 (7-700) 2-250 (15-1700) 2-500 (15-3500)	0-1000 (0-6895) 0-2000 (0-13790) 0-3000 (15-20685)
Port Size	¼"	¼", ⅜", ½"	¼" or SAE AS5202-4	¼" or SAE AS5202-4
Body Material	Aluminium	Stainless Steel	Stainless Steel	Stainless Steel

[3] - Maximum Supply Pressure for 0-2 & 0-5 psig ranges is 100 psig (700 kPa)

For the Electric Actuator Specifications, please see our catalog PUB136-001

PAX1 installed on solar powered remote pressure control, station. Low power consumption, Modbus communication and Configurable operating modes enables unmanned control of the distributed Natural Gas Pressure

Product Specifications – Electric Actuators

		
	PAX$_1$	**PAX$_L$**
Electrical Supply	11-30 VDC	11-30 VDC
Control Methods	**Analog Control** 4-20 mA	**Analog Control** 4-20 mA
	Pulse Control Switch closure (2) UP & DN, 4-30 VDC loop isolated from supply	**Pulse Control** Switch closure (2) UP & DN, 4-30 VDC loop isolated from supply
	Modbus Comm. 2-wire RS485 network for direct communication to a PLC or DCS using Modbus RTU protocol	**Modbus Comm.** 2-wire RS485 network for direct communication to a PLC or DCS using Modbus RTU protocol
Thrust Rod Style	Unidirectional (Push) Rotating Rod	Bi-directional (Push & Pull), Non-rotating Rod, M8 x 1.25 mm Female Thread
Maximum Stroke	1" (25 mm)	1" (25 mm)
Mounting Interface	ISO 5211 - F07	ISO 5211 - F07
Accuracy	+/- 1% of Maximum Stroke	+/- 1% of Maximum Stroke
Maximum Force	2,890 N (650 lbf)	2,890 N (650 lbf)
Maximum Linear Speed	60 mm/min* *at lower supply voltages, slower motor speed may be required to reach maximum force	60 mm/min* *at lower supply voltages, slower motor speed may be required to reach maximum force
Operating Temperature Rating	-40 to +80 °C (-40 to +176 °F) intermittent duty -40 to +70 °C (-40 to +158 °F) continuous duty	-40 to +80 °C (-40 to +176 °F) intermittent duty -40 to +70 °C (-40 to +158 °F) continuous duty
Analog Feedback	4-20 mA, isolated from supply	4-20 mA, isolated from supply
EMC Testing	Testing per IEC/EN 61326-1	Testing per IEC/EN 61326-1
Hazardous Area Ratings	**FM Approval** Class I Div I Groups ABCD T5/T6 Class II, III Div I Groups EFG T5/T6 Class 1, Zone 1, AEx db IIC, T5/T6 Gb Zone 21, AEx tb IIIC T85°C /100°C Db T6[T85°C]: Ta = -40 to +65 °C T5[T100°C]: Ta = -40 to +70 °C Type 4X/6P, IP 66/68	**FM Approval** Class I Div I Groups ABCD T5/T6 Class II, III Div I Groups EFG T5/T6 Class 1, Zone 1, AEx db IIC, T5/T6 Gb Zone 21, AEx tb IIIC T85°C /100°C Db T6[T85°C]: Ta = -40 to +65 °C T5[T100°C]: Ta = -40 to +70 °C Type 4X/6P, IP 66/68
	CSA Approval Class I Div I Groups BCD T5/T6 Class II, III Div I Groups EFG T5/T6 Ex db IIC, T5/T6 Gb Ex tb IIIC T85°C /100°C Db T6[T85°C]: Ta = -40 to +65 °C T5[T100°C]: Ta = -40 to +70 °C IP 66/68	**CSA Approval** Class I Div I Groups BCD T5/T6 Class II, III Div I Groups EFG T5/T6 Ex db IIC, T5/T6 Gb Ex tb IIIC T85°C /100°C Db T6[T85°C]: Ta = -40 to +65 °C T5[T100°C]: Ta = -40 to +70 °C IP 66
	ATEX Approval Ex db IIC, T5/T6 Gb Ex tb IIIC T85°C /100°C Db Ex II 2GD T6[T85°C]: Ta = -40 to +65°C T5[T100°C]: Ta = -40 to +70°C IP 66/68	**ATEX Approval** Ex db IIC, T5/T6 Gb Ex tb IIIC T85°C /100°C Db Ex II 2GD T6[T85°C]: Ta = -40 to +65°C T5[T100°C]: Ta = -40 to +70°C IP 66

Rotork products are recognised as the best-in-class for reliability and safety in the most demanding applications. To maintain this hard-earned leadership position, Rotork is committed to helping clients maximise the continuous, fault-free operation and working life of all their actuators.

With established worldwide service centres we are able to offer same-day or next-day service to the majority of our customers. Our Rotork factory trained engineers have skills in both multi-purpose and industry specific applications and carry spare parts and specialist test equipment with them. Our operations utilise a documented Quality Management system established in accordance with ISO9001.

Rotork aims to be your number one choice for taking care of fault diagnosis, service repairs, scheduled maintenance and system integration needs.

See PUB056-013 for further details.

Rotork has expertise and specialist knowledge of every aspect of flow control.

Our service solutions increase plant efficiency and reduce maintenance costs.

Workshop services return equipment to as-new condition.

Client Support and Site Services

Global Service and Support

Rotork understands the value of prompt and punctual customer site services and aims to supply our customers with superior flow control solutions, by providing high quality, innovative products and superior service – ***on time, every time.***

Whether you have an actuator requiring on-site servicing, a custom design service requirement or a new actuator installation, we can deliver the fastest turnaround with the least plant disruption.

Accreditation and Assurance

Rotork is accredited with all major safety authorities around the world, providing our clients with reassurance and peace of mind.

Rotork's engineering teams are experts in the design and implementation of actuation solutions for all circumstances and environments. Our global knowledge base draws upon previous installations and environmental situations.

Our track record and commitment to undertaken engineering projects is second to none. Rotork is trusted by major utility and industrial companies to design, install and maintain their actuation stock. We keep their plants operating at peak efficiency, helping them to be more profitable and at the same time meet ever tightening industry watchdog requirements.

Using accredited project managers we have the knowledge and expertise to design, build and install any standard or custom actuator installation for you, on time and in budget.

Asset Management

Rotork is a corporate member of the Institute of Asset Management, the professional body for whole life management of physical assets.

Giving You Peace of Mind, Guaranteed Quality and Improving Your Site Efficiency

Actuator Workshop Overhaul

- Supporting Rotork and non-Rotork products
- Workshop facilities including torque testing and re-coating
- Large OEM stock in all workshops
- Fully trained and experienced service engineers
- Loan actuator facilities

Field Support

- Site repairs and commissioning
- Upgrades
- Fault finding and maintenance
- Call-out with fully equipped service vehicles

Client Support Programme (CSP)

- Select a level of service tailored for you – gold, silver or bronze
- Improves production throughput
- Reduces the cost of maintenance year-on-year
- Allows customers to manage the challenge of 'Risk vs Budget' in maintenance operations
- Lifecycle management includes planned and predictive maintenance with a focus on equipment reliability and availability as well as asset management
- Generated reports detail cost savings and performance improvements

Planned Shutdown Support

- Preventative maintenance
- On-site overhaul and testing
- OEM spares and support
- Support for Rotork and non-Rotork products
- Achieve tight shutdown return to service targets
- Project management and supervision

Valve Automation Centres

- Actuator upgrade
- Manual valve automation
- Control and automation
- System integration

rotork®

Keeping the World Flowing

www.rotork.com

A full listing of our worldwide sales and service network is available on our website.

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