FAIRCHILD

precision pneumatic & motion control

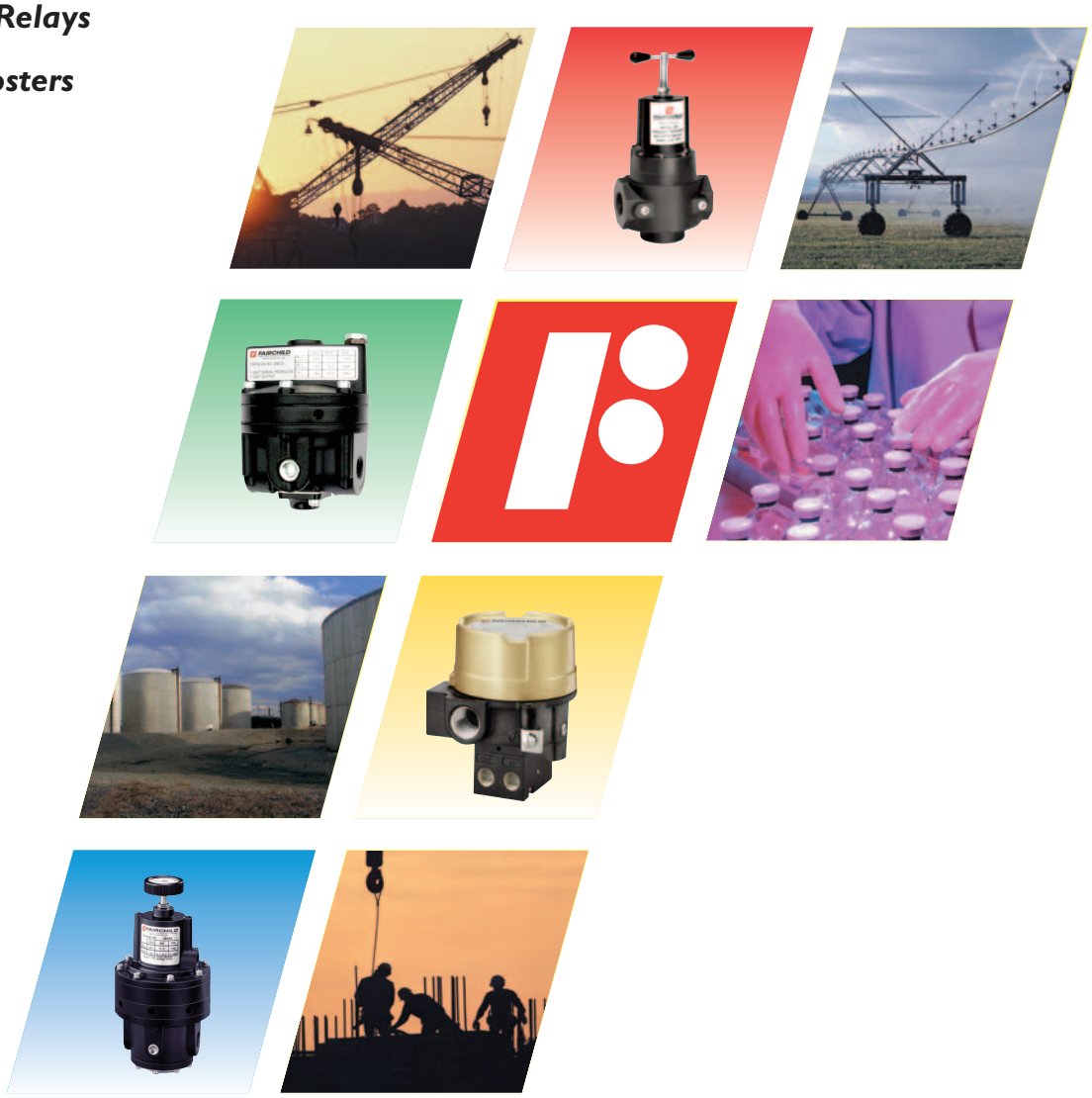
Electro-pneumatic Transducers

Pressure Regulators

Pneumatic Relays

Volume Boosters

Accessories



Product Overview

Fairchild Industrial Products Company

The Widest Range of Products for Diverse Market Applications

For 50 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, ATEX and SAA.

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.

Fairchild Products By Industry

Oil & Gas

Brake Control, Compressor Control, Compressor Starting System, Choke Control, Damper Control, Drilling, Pneumatic Mud Monitoring System, Fuel Supply Louver Control, Process Control and Valve Control.

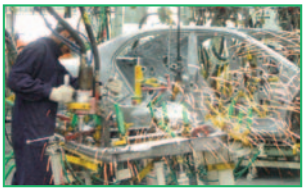
Chemical

Constant Voltage Control, Controlled Air Pressure, Corrosive Material, Heat Exchanger Control, Nitrogen Tank Blanketing, Pneumatic Pressure Switch, Pressure Valve Control, Process Control, and Waste Water Flow Control.

Pharmaceutical

Constant Voltage Control, Corrosive Material, Distillation Process, Mixing Speed Control, Multi-pen Recorder Ink, Nitrogen Tank Blanketing, Pneumatic Pump Control, Tank Blanketing, Tank Level Gage, Valve Control, and Ventilation (Damper).

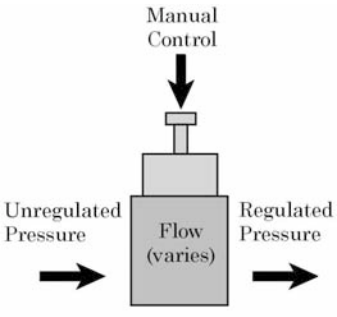
I/P and E/P Transducers	Pressure Regulators	Pneumatic Relays	Volume Boosters
T6000, T7800, TXI7800	10, 10BP, 63, 65, 100, 2400 Series	14, 24, 90, 91	20, 200, 200XLR, 4500A
T5200, T6000, TXI7800, T7900, T7950	10BP, 63, 65, 81	24	20, 200, 4500A
T5700, T6000, T7800, TXI7800	50, 65, 66, 66BP, 70B, 81, 1600A	24	20, 200, 4500A

		I/P and E/P Transducers	Pressure Regulators	Pneumatic Relays	Volume Boosters
Industrial Automation		T5220, T6000	10, 16, 30, 65A, 70, 81, 1000, 1600A, 4000A		4500A
Clean Room Air Pressure/ Temperature Control, Fuel Valve Control, Inflation and Test Pressure, Heat-treating Furnace, Injection Mold Control, Pick and Place Robot, Robot Spray Gun, Test Equipment - Manual and Automated, and Weld Pressure Cylinder Control.					
Medical/Biotech		T5700, T6000, T7800, TXI7800	50, 65, 2400 Series	15	20, 4500A
Biotherapeutic Delivery Devices, Damper Control, Heart/Shunt Devices, Fluid Testing, Hyperbaric Chambers, Infant Respirators, Microfluidics, Protein Crystallization, Gas Management, Tank Blanketing, Valve Control, and Ventilatory Systems.					
Food & Beverage		T5220, T5700, T6000, T7800, TXI7800, T7900, T7950, T8000	10, 30, 65A, 200, 2000, 4000A	14, 24	20
Constant Voltage Control, Controlled Air Pressure, Corrosive Material, Distillation Process, Fill Systems, Heat Exchanger Control, Hopper Blanket, Product Dispensing Control, and Valve Control - Flow and Temperature.					
Power Generation		T7800, TXI7800, T8000	63, 65A, 2400 Series		20, 200, 4500A
Absorption Distillation, Air Purification/ Treatment Analyzer Sampling Systems, Damper Control, Condition Monitoring, Emission Control, Feed Pump Control, Pneumatic Pump Control, Purification Process Control, Steam Process Control, Tank Level Gage and Valve Control.					
Pulp & Paper		T5220, T5221, T6000, T7800, TXI7800, T7900, T7950, T8000	10, 16, 30, 65A, 70, 80, 81, 85, 100, 1000, 2800, 4000A	14, 15, 21, 22, 25, 90, 91, 1500, 2500	20, 200, 2000, 4500A
Brakes - Wind/Unwinds Stands, Damper Control, Edge Guiding, Fiber Stock Forming, Ink Jet Marking Systems, Machine Control, Paper Machinery Felt Guide, Wet Side Sheet Forming, Tension Control, Valve Control, Waste Water Flow Control and Web Tension Control.					
Automotive		T5200, T5220 T6000, T7800, T7900, T7950	10, 16, 30, 65A, 70, 80, 81, 1000, 1600A, 4000A	90, 91	20, 200, 4500A
Concentric Testing, Data Acquisition, Inspection/Gaging, High Pressure Steam Temperature Control, Paint and Finishing Systems, Robotics, Tire Molding, Uniformity Testing, Web Tension and Welding.					
Textile Manufacturing		T5700, T6000, T7800, TXI7800	10, 30, 64A	14, 15, 21	20, 4500A
Brakes - Wind/Rewind, Dye Application, Hopper Blanket, Machine Control, Pneumatic Pump Control, Pressure Control, Tank Refill, Waste Water Flow Control, Web Guide and Web Tension Roll & Stand Brake.					

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.

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



- Pressure accuracy
- Supply pressure immunity
- Low output droop
- Sensitivity
- Drift-free settings

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. Fairchild pressure regulator models are:

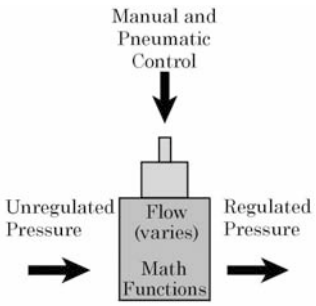
- 10 Series / 10 BP
- 16
- 30 Series / 30BP
- 50 / 50 BP
- 63
- 64A, 65A
- 66 / 66 BP
- 70B
- 80D
- 81
- 100
- 1000
- 1600A
- 24CC, 24CS
- 24XFC, 24XFS
- 2800
- 3400
- 4000A

Pneumatic Relays

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

- Average
- Sum

Fairchild pneumatic relays meet all the requirements of a precision device including:

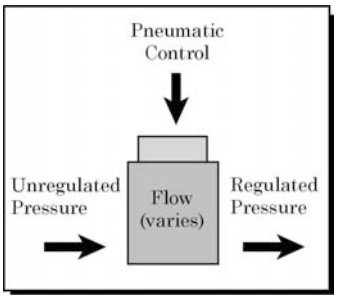


- Accuracy
- Sensitivity
- Fast response

Fairchild pneumatic relay models are:

- 14
- 15
- 21
- 22
- 24
- 25
- 85D
- 90
- 91
- 1500A
- 2500A

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.

Fairchild volume boosters meet all the requirements of a precision device including:

- **Accuracy**
- **Sensitivity**
- **Fast response**
- **Stability**
- **Drift-free settings**
- **Low output droop**
- **Supply pressure immunity**
- **High forward and exhaust flow capacity**

The regulated output of a pneumatic air volume booster can be any of the following:

- **A direct reproduction of the pneumatic control signal**
- **A multiple of the pneumatic control signal**
- **A fraction of the pneumatic control signal.**

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

Fairchild volume booster models are:

- **20**
- **200**
- **2000**
- **200XLR**
- **4500A**

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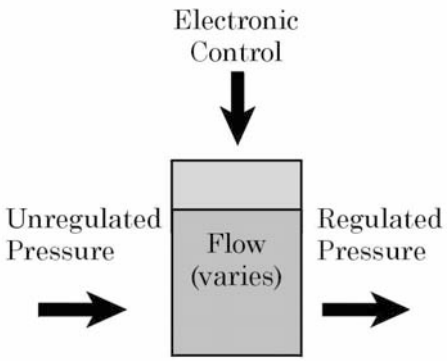
Electro-Pneumatic Transducers

Motorized Regulator

One of the earliest types of electro-pneumatic control is the motor to pressure regulator. This technology uses a motor to turn the hand wheel of a pressure regulator. Regulated output pressure is adjusted using AC, DC, or DC pulse control signals. These units are sturdy, reliable, and lock on the last setting when the power is interrupted.



- **24X Series**
- **24C Series**

Electro-pneumatic Transducers

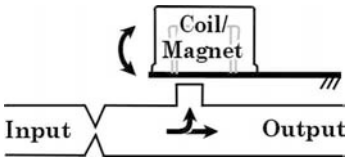
The electro-pneumatic transducer was developed as a smaller, lighter, and more cost effective alternative to the Motorized Regulator. An electro-pneumatic I/P, E/P, D/P, and P/I transducer receives an analog or digital input control signal and converts it to a regulated pneumatic output that is directly or inversely related to the input.

Voice coil technology

This is the earliest type of control technology. In voice coil systems, a flapper nozzle is attached to a voice coil that is immersed in a magnetic field. The strength of an electronic signal to the coil moves the coil into or out of the magnetic field. This movement causes a flapper nozzle to open or partially close an orifice and change the regulated output.

Fairchild's voice coil technology transducers are:

- **T5200 Series**
- **T5220 Series**
- **T5221**
- **T5400**
- **T5420**
- **T5700**
- **T6000 Series**



Electro-Pneumatic Transducers

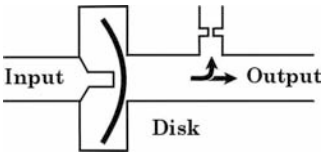
Fairchild transducers are accurate, compact, lightweight, and fast responding. Some models include an analog feedback input option that controls the process variable independent of transducer output. Many models are approved for splash-proof, explosion-proof, and intrinsically safe use. With a large combination of inputs and outputs, we can provide transducers for every application.

Piezo-ceramic Technology

This technology is relatively new to I/P and E/P control. A piezo electric ceramic disk covers an orifice. An electronic signal to the disk causes a deflection that opens or partially closes the orifice. Internal electronic feedback assures precise output pressure control. This technology is extremely resistant to shock, vibration, and changes in position.

Fairchild's piezo-ceramic technology transducers are:

- **T7800**
- **TX17800**
- **T**



Regulators






	10 Precision Regulator	16 Vacuum Regulator	30 Compact Precision Regulator	55 Mini Precision Regulator	63 Filter Regulator	64A, 65A Filter Regulator
Flow Capacity: SCFM (m³/HR) Supply =100 psig	40 (68)	2.5 (4) @ 29" Vacuum w/inlet port open 40 (68) Positive Flow	40 (68)	10 (17.0) Supply = 120 psig	25 (42.5)	22 (37.4)
Exhaust Capacity: SCFM (m³/HR) Downstream pressure 5 psig above 20 psig set point	5.5 (9.4)	5.5 (9.4)	2.0 (3.4)	2.0 (3.4) Downstream pressure is 5 psig	0.4 (0.68)	1.0 (1.7)
Sensitivity: Inch/WC (cm)	0.125 (0.32)	0.50 (1.27)	0.25 (0.63)	5.0 (12.7)	1.0 (2.54)	1.0 (2.54)
Supply Pressure Var: PSIG (kPa)	<0.1 (<0.7)	<0.1 (<0.7)	<0.2 (1.4)	<0.1 (<0.7)	1.6 (11)	<0.1 (<0.7)
For Supply Change:	100 psig	100 psig	100 psig	10 psig	100 psig	25 psig
Supply Pressure Max: PSIG (kPa)	500 (3500)	250 (1700)	250 (1700)	150 (1000)	250 (1700)	300 (2100)
Dimensions (Approx): Inches (mm)	Dia. 3 H 6 1/2 (Dia. 76 H 165)	Dia. 3 H 8 (Dia. 76 H 203)	2 1/2 x 1 3/4 x 5 1/4 (57 x 44 x 133)	1.84 x 3.73 (46.7 x 94.7)	2 x 3 x 7 3/4 (76 x 76 x 197)	3 x 3 x 9 (76 x 76 x 229)
Range PSIG (kPa)	0-2 (0-15), 0-10 (0-70), 1-20 (0-150), 0.5-30 (3-200), 1-60 (10-400), 2-150 (15-1000), 3-200 (20-1500), 5-300 (35-2100), 5-400 (35-2800)	Vacuum-2 (Vacuum-15), Vacuum-10 (Vacuum-70), Vacuum-30 (Vacuum-200), Vacuum-100 (Vacuum-700), Vacuum-150 (Vacuum-1000)	0-2 (0-15), 0-10 (0-70), 0.5-30 (3-200), 1-60 (10-400), 2-100 (15-700)	0-10 (0-70), .5-30 (3-200), 1-60 (7-400), 2-100 (15-700)	0.5-30 (3-200), 1-60 (10-400), 2-120 (15-800)	0.5-30 (3-200), 1-60 (10-400), 2-120 (15-800)
Pipe Size NPT	1/4", 3/8", 1/2"	1/4", 3/8"	1/4", 3/8"	1/4"	1/4"	1/4"

Pneumatic Relays





	14 Positive/Negative Bias Relay	15 Positive Bias Relay	21 Adjustable Ratio Relay	22 Pneumatic Computing Relay	24 Snap Acting Relay
Flow Capacity: SCFM (m³/HR)	40 (68)	40 (68)	40 (68)	2 (3.4)	14 (23.8)
Exhaust Capacity: SCFM (m³/HR)	5.5 (9.4)	5.5 (9.4)	5.5 (9.4)	Note 1	14 (23.8)
Sensitivity: Inch/WC (cm)	0.5 (1.27)	0.25 (0.64)	0.5 (1.27)	Note 1	0.2" WC to 0.5 psig Depending on model
Supply Pressure Max: PSIG (kPa)	250 (1700)	250 (1700)	250 (1700)	150 (1000)	120 (800)
Signal Pressure Max: PSIG (kPa)	150 (1000)	150 (1000)	150 (1000)	50 (350)	120 (800)
Output Pressure Max: PSIG (kPa)	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)	9 7/8 x 3 5/8 4 7/8 (251 x 92 x 124)	Dia. 3 H 9 (Dia. 76 H 229)	Dia. 3 H 8 1/2 (Dia. 76 H 216)

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, Totalizing and On/Off.*

							
	66 Stainless Regulator	**70B Sub Miniature Regulator**	**81 High Flow Precision Two-Stage Reg.**	**100 High Flow Regulator**	**1000 No Bleed Design Regulator**	**1600A High Flow Vacuum Reg.**	**4000A High Flow No Bleed Design Reg.**
	22 (37.4)	2.5 (4.25)	50 (85)	1500 (2550)	50 (85)	28 (48) @ 29" Vacuum w/inlet port open 150 (255) Positive Flow	150 (255)
	1.0 (1.7)	0.28 (0.48)	5.5 (9.4)	44 (75)	8 (13.6)	20 (34)	40 (65.2)
	1.0 (2.54)	N/A	<0.1 (<0.254)	0.5 (1.27)	0.5 (1.27)	1.0 (2.54)	0.5 (1.27)
	<0.1 (<0.7)	<0.05 (<0.35)	<0.2 (<1.4)	<0.5 (<3.5)	<0.1 (<0.7)	<0.1 (<0.7)	<0.1 (<0.7)
	25 psig	5 psig	100 psig	100 psig	100 psig	100 psig	100 psig
	500 (3500)	250 (1700)	2 & 5 psig range 100 (700) All other ranges 150 (1000)	250 (1700)	250 (1700)	250 (1700)	250 (1700)
	Dia. 3 x 6 1/4 Dia. (76 x 159)	Dia. 7/8 H 3 3/16 (Dia. 22 H 81)	Dia. 3 H 6 1/4 (Dia. 76 H 159)	Dia. 5 1/2 H 11 1/4 (Dia. 133 H 286)	2 1/8 x 2 1/8 x 5 (54 x 54 x 127)	Dia. 4 1/2 H 9 1/2 (114 x 241)	Dia. 4 1/2 H 8 (Dia. 114 x 203)
	0-10 (0-70), 0.5-30 (3-200), 1-60 (10-400), 2-100 (15-700), 2-150 (15-1000)	0-5 (0-35), 0-15 (0-100), 0.5-30 (3-200), 1-60 (10-400), 2-100 (15-700)	0-2 (0-14), 0-5 (0-35), 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 (10-400), 2-100 (15-700), 2-150 (15-1000)	0.5-10 (3.5-70), 0.5-30(3.5-200), 1-60 (7-400), 2-150 (15-1000)	Vacuum-10 (Vacuum-70), Vacuum-30 (Vacuum-200), Vacuum-150 (Vacuum-1000)	0.5-10 (3.5-70), 0.5-30 (3.5-200), 1-60 (7-400), 2-150 (14-1000), 5-250 (35-1700)
	1/4"	1/16"	1/4"	1", 1 1/2"	1/4", 3/8"	3/8" x 1/2" x 3/4"	3/8", 1/2", 3/4"

						
	25 Reversing Relay	**85D Two-Stage Biasing Relay**	**1500A High Flow Positive Bias Relay**	**2500A High FLow Bias Reversing Relay**	**90 Low Pressure Selector Relay**	**91 High Pressure Selector Relay**
	40 (68)	14 (23.8)	150 (255)	150 (255)	Note 2	Note 2
	11 (18.7)	2.5 (4.25)	40 (68)	40 (68)	Note 2	Note 2
	.13 (.32)	N/A	1.0 (2.54)	1.0 (2.54)	Note 2	Note 2
	250 (1700)	250 (1700)	250 (1700)	250 (1700)	Note 2	Note 2
	150 (1000)	150 (1000)	150 (1000)	150 (1000)	200 (1400)	200 (1400)
	150 (1000)	150 (1000)	150 (1000)	150 (1000)	200 (1400)	200 (1400)
	Dia. 3 H 7 1/2 (Dia. 76 H 191)	1 3/4 x 1 3/4 x 5 (44 x 44 x 127)	Dia. 4 1/2 x 8 1/2 (Dia. 114 H 216)	Dia. 4 1/2 x 8 1/2 (Dia. 114 H 216)	Dia. 3 H 1 3/4 (Dia. 76 H 44)	Dia. 3 H 1 3/4 (Dia. 76 H 44)

Note 2: *Switching Differential: +0.1 PSID (<0.7); max.differential between signals: 100 PSID (700)*

Volume Boosters





	20 Precision Booster	200 High Flow Booster	200XLR High Forward & Exhaust Flow Booster	2000 No Bleed Design Booster	4500A High Flow No Bleed Design Regulator
Flow Capacity: SCFM (m^3/HR) Supply =100 psig	45 (76.5)	1500 (2550)	1500 (2550)	40 (68)	150 (255)
Exhaust Capacity: SCFM (m^3/HR) Downstream pressure 5 psig above 20 psig set point	7.5 to 11 (12.8 and 18.7) Varies with ratio	65 (110.5)	325 (552.5)	16 (27.2)	40 (65.2)
Sensitivity: Inch/WC (cm)	.25 to 1.50 (.64 to 3.8) Varies with ratio	1.0 (2.54)	1.0 (2.54)	<1.0 (2.54)	1.0 to 3.0 (2.54 to 7.62) Varies with ratio
Supply Pressure Var: PSIG (kPa) For Supply Pressure Change = 100 psig	0.1 to 0.60 (0.7 to 4.0) Varies with ratio	<0.5 (<3.5)	<0.5 (<3.5)	<0.1 (<0.7)	<0.1 to 0.3 (0.7 to 2.1) Varies with ratio
Supply Pressure (Max): PSIG (kPa)	250 (1700)	250 (1700)	250 (1700)	250 (1700)	250 (1700)
Max Signal/Output Pressure: PSIG (kPa)	Varies (see Catalog)	150 (1000)	150 (1000)	150 (1000)	Varies (see Catalog)
Dimensions (Approx): Inches (mm)	Dia. 3 H 4 1/4 (Dia. 76 H 114)	Dia. 5 1/2 H 7 7/8 (Dia. 140 H 200)	9 1/2 x 5 1/2 x 9 3/4 (241 x 140 x 248)	2 x 2 x 3 1/4 (54 x 54 x 83)	Dia. 4 1/2 5 1/4 (Dia. 114 H 133)
Ratio Available	1:1, 1:2, 1:3, 2:1, 3:1 1:4, 4:1, 1:5, 5:1, 1:6	1:1	1:1	1:1, 1:1.6	1:1, 1:2, 1:3, 2:1, 3:1
Pipe Size	1/4", 3/8"	1", 1 1/2"	1 1/2"	1/4" 3/8"	3/8" 1/2" 3/4"

Transducers




	T5700 High Flow Voice Coil Pressure I/P, E/P	T6000 Voice Coil Pressure I/P, E/P	T7800 Piezo Ceramic Pressure I/P, E/P	TXI7800/7850 Explosion-Proof Pressure I/P, E/P
Max Flow Capacity: SCFM (m^3/HR)	47 (79.9) Supply =120 psig	9 (15.3) Supply =120 psig	9 (15.3) Supply =120 psig	9 (15.3) Supply =120 psig
Output Pressure: PSIG (kPa)	3–15 (20–100)	3–15, 0–120 (20–100), (0–800) 6 ranges	3–15, 0–120 (20–100), (0–800) 6 ranges	3–15, 3-27, 6-30 (20–100), (20-180), (40-200)
Exhaust Capacity: SCFM (m^3/HR) Downstream pressure 5 psig above 9 psig setpoint	< 9 (15.3)	2 (3.4)	2 (3.4)	2 (3.4)
Max Air Consumption: SCFH (m^3/HR)	3 (.08)	5.0 to 17.0 (0.14) to (0.48) Varies with model	5.5 to 15.0 (0.16) to (0.42) Varies with model	13.5 (0.38)
Accuracy: % FS	±0.5 Independent Linearity	0.5 to 1.0 Independent Linearity Varies with model	±0.15 (typical)	±0.15 (typical)
Repeatability: % FS	<0.1	0.25 to <1.0	<0.1	<0.1
Supply Pressure: PSIG (kPa)	18–150 (120–1000)	20–150 (150–1000)	20–150 (150–1000)	20–120 (150–800) Maximum
Supply Voltage: DC	Signal Powered	Signal Powered	Current Input Signal Powered Voltage Input 7.2–30 VDC	Signal Powered
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 DC, 0–10 VDC, 1–9 VDC 1-5, 0-5 VDC Limited Availability	4-20 mA DeviceNet
Pipe Size	1/4"	1/4"	1/4"	1/4"
Underwriting Group Approvals: *	CE	F, C, E, CE	F, C, E, CE	A, F, C, E, CE
Dimensions (Apprx.) Inches (mm)	Dia. 3 H 6 1/2 (Dia. 76 H 165)	1 1/2 x 3 1/8 x 3 3/4 (38 x 79 x 95)	1 1/2 x 3 1/8 x 3 3/4 (38 x 79 x 95)	3 11/16 x 3 13/16 x 4 5/8 (94 x 97 x 117.5)

FM APPROVED

*

A	=	SAA, Australia	E	=	ATEX
F	=	FM, Factory Mutual	C	=	CSA, Canadian Standards
CE	=	CONFORMITÉ EUROPEÉNNE			

Accessories

Fairchild offers a variety of accessories for product support. These items are:

- A selection of panel loading stations is available for local control to set or troubleshoot a control loop.
- 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 T 6000, T7800, Series transducers.T

Service Kits

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

Product Information

For detailed information and product specifications, go to your local web site at:

www.binder-engineering.nl

FAIRCHILD
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ISO 9001:2000
FM NO. 25571

ISO 9001:2000 Certified