E Kele always comes through.



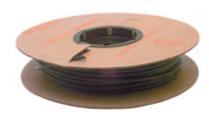




TP970 Series pg. 729



MK-2690 Series pg. 739



T-100 Series pg. 758

MODEL/SERIES PAGE
Damper Actuators
D-3000, D-4000 Series — Pneumatic Damper Actuator
MK-3000, MK-7100 Series — Pneumatic Damper Actuators
MP918A, MP918B, MP920B Series — Pneumatic Damper Actuators 74
E/P Valves
35A Series — Electric/Pneumatic Three-Way Air Valves
EP3 Series — Electric/Pneumatic Three-Way Air Valves
V11 Series — Three-Way Solenoid Air Valve
Fittings and Tubing
B Series, R-3710, F-1000 Series — Pneumatic Air Supply Barb Fittings 75
C-Series — Pneumatic Air Supply Compression Fittings
M Series, F-1000 Series — Miscellaneous Pipe Fittings
S-Series — Pneumatic Air Supply Solder Fittings
T-100 Series, T-141 — Pneumatic Tubing
Pressure Reducing Devices and Accessories
FILN05 — Inline Disposable Filter
K-332 — PRV Station
K-337 , K-339 — Air Filters
K-383 , K-384 , K-387 — Pressure Regulators
PV600 — Air and Water Isolation Valves
Thermostats
2200 Series, TK-1000 thru TK-5000 Series —
Single Setpoint Room Pneumatic Thermostats
T-4000 Series — Single and Dual Setpoint Pneumatic Room Thermostats 73°
TP970 Series — Single Setpoint Pneumatic Thermostat
Valve Actuators
MK-2690, MK-46XX, MK-6XXX Series — Pneumatic Globe Valve Actuators 739
MP953 Series — Pneumatic Globe Valve Actuators
V-3000. MP800 Series — Pneumatic Globe Valve Actuators



SINGLE SETPOINT PNEUMATIC THERMOSTAT TP970 SERIES



DESCRIPTION

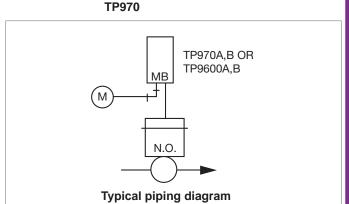
The **TP970 Series** pneumatic thermostat is a two-pipe, single setpoint thermostat used to provide proportional control of pneumatic valves and damper actuators in heating and air conditioning systems. Replacement kits are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell two-pipe pneumatic thermostats.

70 80 90 Honeywell 70 80

Honeywell

FEATURES

- · Shock-resistant, suspension-mounted thermostats provide dependable performance and responsiveness
- Pilot operated for high capacity
- Direct Acting (DA) and Reverse Acting (RA)
- · Adapter plate kits cover existing thermostat wallmark
- · Backplate has molded air connections-no separate fittings needed
- · Universal locking cover with satin chrome finish and horizontal, vertical, or blank window options



SPECIFICATIONS

Connections Barbs for 5/32" OD poly tubing

Number Of Pipes Sensor Element Bimetal Setpoints Single

Adjustable, 2° to 10°F (1° to **Throttling Range** 5°C), factory set at 4°F (2°C)

Remote Bulb No

Air Consumption 0.011 scfm (5.2 mL/s)

Operating Temperature

100°F (37.8°C) maximum

Storage Temperature 150°F (66°C) maximum

Maximum Operating Pressure

25 psi (170 kPa)

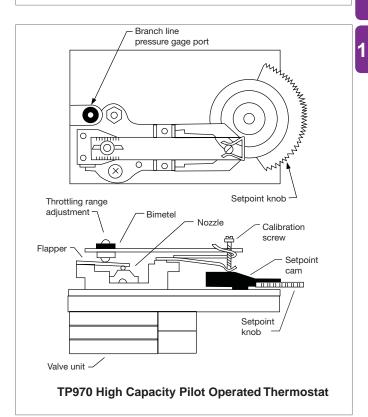
Dimensions 3.3"H x 2.0"W x 1.6"D (8.3 x 5.2

x 4.1 cm)

Weight 0.35 lb (0.2 kg) to 1.3 lb (0.6 kg)

depending on kit/cover

Mounting Wall Warranty 1 year



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SINGLE SETPOINT PNEUMATIC THERMOSTAT **TP970 SERIES**

ORDERING INFORMATION

MODEL	DESCRIPTION
TP970A2004	Direct acting, 60°F to 90°F, (does not include cover)
TP970A2012	Direct acting, 40°F to 70°F, (does not include cover)
TP970A2020	Direct acting, 15°C to 30°C, (does not include cover)
TP970A2038	Direct acting, 60°F to 90°F, large wall plate and satin chrome cover
TP970A2145	Direct acting, 60°F to 90°F, small wall plate and satin chrome cover
TP970A2234	Direct acting, 15°C to 30°C, small wall plate and satin chrome cover
TP970A2242	Direct acting, 60°F to 90°F, thermostat, small wall plate and beige cover
TP970A2259	Direct acting, 60°F to 90°F, thermostat and satin chrome cover
TP970B2002	Reverse acting, 60°F to 90°F, (does not include cover)
TP970B2010	Reverse acting, 15°C to 30°C, (does not include cover)
TP970B2077	Reverse acting, 60°F to 90°F, small wall plate and satin chrome cover
TP970B2150	Reverse acting, 15°C to 30°C, small wall plate and satin chrome cover
TP970B2166	Reverse acting, 60°F to 90°F, small wall plate and beige cover
TP970B2182	Reverse acting, 60°F to 90°F, satin chrome cover
TP970C2000	Direct acting, 60°F to 90°F, (does not include cover)

ACCESSORIES

MODEL	DESCRIPTION
14001865-001	Filter cartridge assembly
14002053-001	Back plate assembly
14002374-004	Restrictor block assembly, .005 in., For TP970A-D; TP971A-E except C; TP972A; TP973A-B; TP9600 family; HP970A-B; and HP972B
14002573-001	Modernization kit to convert all 1 & 2 pipe Honeywell & competitive pneumatic
	stats to TP970, TP971A, TP972, TP973, TP974, TP9600 family, HP970, HP971 and HP972
14003192-001	Wallplate adapter kit. Adapts HP970 or TP970 series stats to HP900 and TP900 flush mounted
	and TP910 series flush or surface mounted installations
14004406-910	Cover kit, satin chrome include a cover, setpoint cover and 6 window inserts for 60°F to 90°F scale
14004407-910	Cover kit, beige, includes cover, setpoint insert cover and 6 window inserts for 60°F to 90°F scale
AK3863	Honeywell thermostat tool kit, TP970/TP900
CCT735A	Thermostat calibration tool includes allen wrench for cover installation
14002362-001	Duct sampling chamber for TP970 pneumatic thermostats
14004447-001	Setpoint cam assembly for TP970A1004, A1012, A1020, A1038, A1046, A1053,
	A1095, A2004, A2012, A2020, A2038, A2053, A2095; TP970C
14004447-002	Setpoint cam assembly for TP970B1002, B1010, B1028, B1036, B2002, B2010, B2028, B2036; TP970D
14004459-001	Repair kit consisting of a thermometer assembly, a thermometer post and a 60° to 90°F Aluminum Scaleplate
14004460-001	Nozzle, throttling plate and bimetal assembly, DA, left side
14004787-910	Cover kit, bright chrome includes cover, setpoint insert cover and 6 window inserts for 60°F to 90°F scale
14004878-910	Cover kit, premier white includes cover, setpoint insert cover and 6 window inserts for 60°F to 90°F scale
CCT729A	Gauge adapter for calibration. Add 305965 0-30 psi gauge for complete tool.
14004447-005	Setpoint Cam Assembly for TP970B1044

	RELATED PRODUCTS	PAGE
FILN05	Inline disposable air filter, straight, with barbs for 1/4" OD tubing	750
FILN05-B	Inline disposable air filter, 90° bent barbs for 1/4" OD tubing	750
T-100	5/32" OD black poly tubing, 1 coil, 500 ft (152 m)	759
T-100-2	5/32" OD black poly tubing, twin, 1 coil, 500 ft (152 m)	759
TOOL-95-1	Pneumatic controls calibration kit	

001-901-382-6084 International | 888-397-5353 USA | **kele.com**

SINGLE AND DUAL SETPOINT PNEUMATIC ROOM THERMOSTATS *T-4000 SERIES*



DESCRIPTION

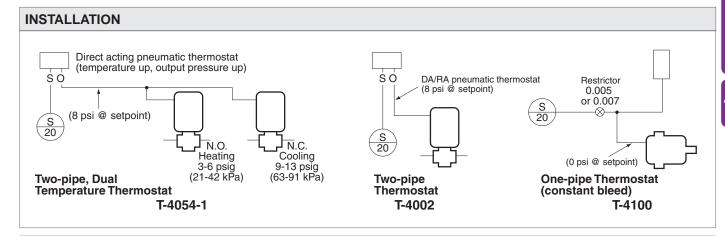
The **T4000 Series** pneumatic room thermostats provide individual space temperature control in all types of heating and cooling applications. By producing a proportional output signal, these thermostats modulate pneumatic valves and damper actuators in response to load changes in the space. A variety of high volume and low volume output thermostats are available to meet the functional requirements of any control system. The **T4000 Series** is provided in one- and two-pipe, dual temperature, horizontal, and vertical configurations.

FEATURES

- · Adjustable sensitivities and set points
- Individual set points on dual temperature thermostats
- Pneumatic feedback for greater accuracy
- Vibration and shock resistant
- Meets governmental and commercial requirements
- · Single and dual bimetal sensing elements
- Optional all-metal covers



T-4002-201 T-4000-2141 T-4002-124



SPECIFICATIONS Connections Barbs for 5/32" OD poly tubing **Air Consumption Number of Pipes** T4002 20 scim (5 mL/s) **Sensor Element Bimetal** T4054 38 scim (10 mL/s) Sensitivity T4100 25 or 45 scim (7 or 12 mL/s), T4002 Adjustable from 0.75 to 4 psig/°F (9 depending on restrictor to 50 kPa/°C) Operating Temperature -20° to 130°F (-29° to 54°C) T4054/T4100 Adjustable from 1 to 3 psig/°F (12 to **Storage Temperature** -20° to 150°F (-29° to 66°C) **Maximum Operating Pressure** 38 kPa/°C) Setpoint Range 55° to 85°F (13° to 29°C) 25 psi (170 kPa) **Dimensions Setpoints** 2.1"H x 3.1"W x 1.8"D T4002/T4100 (5.3 x 8.0 x 4.5 cm) Single T4054 Dual Weight 0.4 lb (0.2 kg)Remote Bulb No Mounting Wall Warrantv 1 year

kele.com 888-397-5353 USA

001-901-382-6084 International



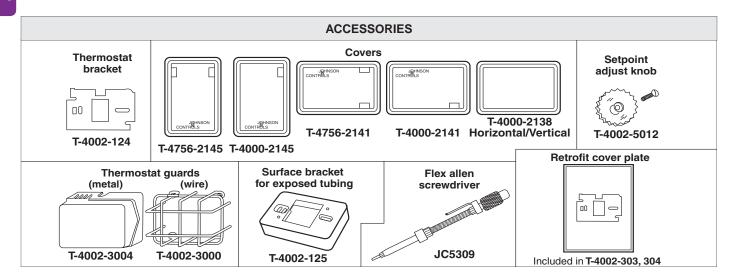
SINGLE AND DUAL SETPOINT PNEUMATIC ROOM THERMOSTATS **T-4000 SERIES**

ORDERING INFORMATION

MODEL	TYPE	PROPORTIONAL	MOUNTING	REQUIRED A	ACCESSORIES
		ACTION		BRACKET	COVER
T-4002-201*	Single temperature	Direct	Horizontal	T-4002-124	T-4000-2141
	Two-pipe				with setpoint
T-4002-202*	Single temperature	Reverse	Horizontal	T-4002-124	T-4000-2141
	Two-pipe				with setpoint
T-4002-203*	Single temperature	Direct	Vertical	T-4002-124	T-4000-2145
	Two-pipe				with setpoint
T-4002-204*	Single temperature	Reverse	Vertical	T-4002-124	T-4000-2145
	Two-pipe				with setpoint
T-4002-303	Single temperature	Direct	Horizontal	Included	Included
retrofit kit	Two-pipe		Vertical	in kit	in kit
T-4002-304	Single temperature	Reverse	Horizontal	Included	Included
retrofit kit	Two-pipe		Vertical	in kit	in kit
T-4054-1*	Dual temperature	Direct	Horizontal	T-4002-124	T-4756-2141
	Two-pipe		Vertical	-	T-4756-2145
T-4054-2*	Dual temperature	Reverse	Horizontal	T-4002-124	T-4756-2141
	Two-pipe		Vertical	-	T-4756-2145
T-4100-1	Single temperature	Direct	Vertical	Included	Included
	One-pipe				
T-4100-2	Single temperature	Reverse	Vertical	Included	Included
	One-pipe				

^{*} Order T-4000 Series cover and T-4002-124 mounting bracket separately when ordering these Johnson thermostats. Call Kele for white, nickel, or brass covers.

For other Johnson Controls pneumatic products, call Kele.



SINGLE SETPOINT ROOM PNEUMATIC THERMOSTATS 2200 SERIES. TK-1000 THRU TK-5000 SERIES



DESCRIPTION

The 2200 Series and TK Series thermostats provide proportional temperature control of pneumatically actuated valves and dampers to maintain room air temperatures in heating, ventilating, and air conditioning systems.

FEATURES

- · Classic appearance
- · Set point and thermometer
- · Blank cover or covers included with exposed setpoint and thermometer
- · Bimetal sensing element
- Adjustable throttling range models







TK-1001

2212-618

SPECIFICATIONS	SP	E	CI	FI	CA	ΙT	0	N	S
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Connections TK-1000/5000 5/32" spring-reinforced plastic tubing 2200 3/16" spring-reinforced plastic tubing **Number of Pipes** 1, 2, or 3 with manual override Sensor Element Bimetal Mounting Wall 55° to 85°F (13° to 29°C) **Setpoint Range**

Setpoints Single, Dual (TK1201, TK1281 only)

Throttling Range

TK1000/5000 Adjustable, 2° to 10°F (1° to 5°C),

factory set at 4°F (2°C)

2200 Adjustable, 2° to 12°F (1° to 6°C),

factory set at 3°F (2°C)

Remote Bulb

Air Consumption

TK1000 13.8 scim (3.8 mL/s) TKR-5x01 41.5 scim (11.3 mL/s) 15.6 scim (4.3 mL/s) 2212 2211 29.4 scim (8.0 mL/s) Operating Temperature 40° to 150°F (4° to 65°C) **Supply Air Pressure**

TK1000/5000 15 or 20 psig (103 or 138 kPa), 30

psig maximum

2200 20 psig (138 kPa), 30 psig maximum

Maximum Operating Pressure

30 psi (207 kPa)

Color

TK1000/5000 Beige; plastic cover has setpoint

and thermometer, blank cover also

provided

2200 White: plastic cover has setpoint

and thermometer, blank cover also

provided

Dimensions

kele.com

TK1000/5000 4.4"H x 2.8"W x 1.6"D (11.1 x 7.0 x

4.1 cm)

2200 2.0"H x 2.0"W x 1.3"D (5.2 x 5.2 x

3.2 cm)

Weight 0.4 lb (0.2 kg) Warranty 2 years

888-397-5353 USA | 001-901-382-6084 International



SCHNEIDER ELECTRIC SINGLE SETPOINT ROOM PNEUMATIC THERMOSTATS **2200 SERIES, TK-1000 THRU TK-5000 SERIES**

ORDERING INFORMATION

Model	Description
TK-1001	Direct acting, 55° to 85°F, two-pipe, heating or cooling
TK-1001-116	Direct acting, 13° to 29°C, two-pipe, heating or cooling
TK-5001	Direct acting, 55° to 85°F, one-pipe, heating or cooling
TK-5001-116	Direct acting, 13° to 29°C, one-pipe, heating or cooling
TK-1101	Reverse acting, 55° to 85°F, two-pipe, heating or cooling
TK-1101-116	Reverse acting, 13° to 29°C, two-pipe, heating or cooling
TKR-5101	Reverse acting, 55° to 85°F, one-pipe, heating or cooling
TK-1301	Direct acting, 55° to 85°F, two- or three-pipe, heating or cooling with day or night
TK-1301-116	Direct acting, 13° to 29°C, two- or three-pipe, heating or cooling with day or night
TK-1381	Reverse acting, 55° to 85°F, two- or three-pipe, heating or cooling with day or night
TK-1601	Direct acting, 55° to 85°F, two- or three-pipe, heating or cooling with day or night and 0/20 output line for PE switch
TK-1201	Reverse/direct acting, 55° to 85°F, two-pipe, heating/cooling
TK-1281	Direct/reverse acting, 55° to 85°F, two-pipe, heating/cooling
2212-618	Direct acting, 55° to 85°F, two-pipe, heating or cooling
2212-619	Reverse acting, 55° to 85°F, two-pipe, heating or cooling
2211-612	Direct acting, 55° to 85°F, one-pipe, heating or cooling
2211-613	Reverse acting, 55° to 85°F, one-pipe, heating or cooling

PNEUMATIC GLOBE VALVE ACTUATORS MP953 SERIES



DESCRIPTION

The **MP953 Series** pneumatic globe valve actuators operate Honeywell V5011 and V5013 Series valves to provide proportional control of steam or hot water or cold water in HVAC systems.

FEATURES

- · Rolling diaphragm for long life and low hysteresis
- · Easily attached to valve
- May be installed after piping valve
- Slide lock feature permits simple engagement to stem
- Direct or reverse-action control
- Models available with pilot positioner





Honeywell

MP953C1000

MP953F1101

INDIVIDUAL S	SPECIFICATIONS				
Model	Action	Positioner	Diaphragm	Stroke	Spring Range
MP953C1000					2-7 psi
MP953C1018			5" (13 cm) diameter, 11 sq. in. (28 sq. cm) effective area		8-12 psi
MP953C1026				3/4" (1.9 cm)	4-11 psi
MP953C1067	Direct acting, normally stem up			3/4 (1.9 (11)	2-7 psi
MP953C1075			8" (20 cm) diameter, 33 sq. in. (84 sq. cm) effective area		8-12 psi
MP953C1083		No			4-11 psi
MP953C1471			13" (33 cm) diameter, 99 sq. in. (251 sq. cm) effective	1-1/2" (3.8 cm)	2-7 psi
MP953C1489			area	1-1/2 (3.0 (111)	4-11 psi
MP953C1547			8" (20 cm) diameter, 33 sq. in. (84 sq. cm) effective area	1-1/2" (3.8 cm)	3-15 psi
MP953C1554			13" (33 cm) diameter, 99 sq. in. (251 sq. cm) effective	3/4" (1.9 cm)	2-7 psi
MP953C1562			area	3/4 (1.9 (111)	4-11 psi
MP953D1107	Reverse acting, normally stem down		7" (18 cm) diameter, 22 sq. in. (56 sq. cm) effective area	3/4" (1.9 cm)	8-13 psi
MP953D1131		No			4-11 psi
MP953D1172	otom dom.				3-7 psi
MP953E1301					3 psi span
MP953E1319		5" (13 cm) diameter, 11 sq. in. (28 sq. cm) effective area		5 psi span	
MP953E1327				3/4" (1.9 cm)	10 psi span
MP953E1368	Direct acting parmally			3/4 (1.7 (111)	3 psi span
MP953E1376	Direct acting, normally stem up	Yes	8" (20 cm) diameter, 33 sq. in. (84 sq. cm) effective area		5 psi span
MP953E1384					10 psi span
MP953E1400			12" (22 cm) diameter 00 cg in (251 cg cm) effective	1-1/2" (3.8 cm)	5 psi span
MP953E1418			13" (33 cm) diameter, 99 sq. in. (251 sq. cm) effective area	1-1/2 (J.U CIII)	10 psi span
MP953E1443			2.50	3/4" (1.9 cm)	10 psi span
MP953F1093	D				3 psi span
MP953F1101	Reverse acting, normally stem down	Yes	7" (18 cm) diameter, 22 sq. in. (56 sq. cm) effective area	3/4" (1.9 cm)	5 psi span
MP953F1119	0.0 40				10 psi span



PNEUMATIC GLOBE VALVE ACTUATORS MP953 SERIES

COMMON SPECIFICATIONS

Operating Temperature

MP953C/E 160°F (71°C) maximum diaphragm

temperature

200°F (93°C) maximum diaphragm MP953D/F

temperature

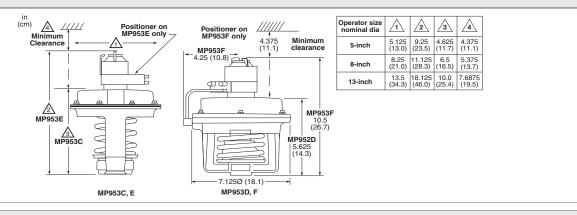
Maximum Pressure 25 psi (172 kPa) Weight

MP953C - 5" 2.0 lb (0.9 kg) MP953C - 8" 6.7 lb (3.0 kg) 22.4 lb (10.2 kg) MP953C - 13" MP953D 5.2 lb (2.4 kg) MP953E - 5" 3.7 lb (1.7 kg) MP953E - 8" 8.6 lb (3.9 kg)

MP953E - 13" 24.4 lb (11.1 kg) MP953F 8.0 lb (3.6 kg)

Warranty 1 year

DIMENSIONS



ORDERING INFORMATION

Model	Description
MP953C1000	2-7 psi spring range, 5" diameter, 3/4" stroke, for 1/2" to 2" valves, normally stem up
MP953C1018	8-12 psi spring range, 5" diameter, 3/4" stroke, for 1/2" to 2" valves, normally stem up
MP953C1026	4-11 psi spring range, 5" diameter, 3/4" stroke, for 1/2" to 2" valves, normally stem up
MP953C1067	2-7 psi spring range, 8" diameter, 3/4" stroke, w/stem ext., for 3/4" to 3" valves, normally stem up
MP953C1075	8-12 psi spring range, 8" diameter, 3/4" stroke, w/stem ext., for 3/4" to 3" valves, normally stem up
MP953C1083	4-11 psi spring range, 8" diameter, 3/4" stroke,w/stem ext., for 3/4" to 3" valves, normally stem up
MP953C1471	2-7 psi spring range, 13" diameter, 1-1/2" travel w/stem ext., for 4" to 6" valves, normally stem up
MP953C1489	4-11 psi spring range, 13" diameter, 1-1/2" stroke, w/stem ext., for 4" to 6" valves, normally stem up
MP953C1547	3-15 psi spring range, 8" diameter, 1-1/2" travel, w/stem ext., for 4" to 6" valves, normally stem up
MP953C1554	2-7 psi spring range, 13" diameter, 3/4" stroke, w/stem ext., for 2-1/2" and 3" valves, normally stem up
MP953C1562	4-11 psi spring range, 13" diameter, 3/4" stroke, w/stem ext., for 2-1/2" and 3" valves, normally stem up
MP953D1107	8-13 psi spring range,7" diameter, 3/4" stroke, for 1/2" to 3" valves, normally stem down
MP953D1131	4-11 psi spring range, 7" diameter, 3/4" stroke, for 1/2" to 3" valves, normally stem down
MP953D1172	3-7 psi spring range, 7" diameter, 3/4" stroke, for 1/2" to 3" valves, normally stem down
MP953E1301	3 psi spring range, 5" diameter, 3/4 stroke, with positioner, for 1/2" to 2" valves, normally stem up
MP953E1319	5 psi spring range, 5" diameter, 3/4 stroke, with positioner, for 1/2" to 2" valves, normally stem up
MP953E1327	10 psi spring range, 5" diameter, 3/4 stroke, with positioner, for 1/2" to 2" valves, normally stem up
MP953E1368	3 psi spring range, 8" diameter, 3/4 stroke, w/stem ext., with positioner, for 3/4" to 3" valves, normally stem up
MP953E1376	5 psi spring range, 8 diameter, 3/4 stroke, with positioner, for 3/4" to 3" valves, normally stem up
MP953E1384	10 psi spring range, 8 diameter, 3/4 stroke, with positioner, for 3/4" to 3" valves, normally stem up
MP953E1400	5 psi spring range, 13 diameter, 1-1/2 stroke, with positioner, for 4" to 6" valves, normally stem up
MP953E1418	10 psi spring range, 13" diameter, 1-1/2 stroke, w/stem ext., with positioner, for 4" to 6" valves, normally stem up
MP953E1443	10 psi spring range, 13" diameter, 3/4 stroke, with positioner, for 2-1/2" and 3" valves, normally stem up
MP953F1093	3 psi spring range, 7" diameter, 3/4 stroke, with positioner, for 2-1/2" and 3" valves, normally stem down
MP953F1101	5 psi spring range, 7" diameter, 3/4 stroke, with positioner, for 2-1/2" and 3" valves, normally stem down
MP953F1119	10 psi spring range, 7" diameter, 3/4 stroke, with positioner, for 2-1/2" and 3" valves, normally stem down

PNEUMATIC GLOBE VALVE ACTUATORS V-3000, MP800 SERIES



DESCRIPTION

Johnson Controls pneumatic valve assemblies accurately control the flow of steam, hot water, or cold water through coils and heat exchangers of all types. These actuators have a molded, synthetic rubber diaphragm contained in a sturdy metal housing that protects against dirt and damage. Optional V-9502 pilot positioners offer increased force for very stable, accurate control, or for sequencing heating/cooling valves.

FEATURES

- · Low profile fits tight spaces
- Barbs for 1/4" or 1/8" OD poly tubing, or 1/8" FNPT air connections
- Fits all VG7000 valves from 1/2" to 2"
- · Replaceable synthetic rubber diaphragm
- · Full selection of spring ranges



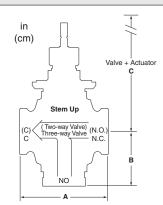




V-3000 (installed)

MP800

DIMENSIONS



Note: See VG7000 Series catalog sheet for valve specifications.

	DIMENSIONS						
VALVE SIZE	A FACE TO FACE	B LOWER VALVE		C V-3000	C MP8000		
	ALL VALVES	Two-way	Three-way	ALL VALVES	ALL VALVES		
1/2	3 (7.62)	13/16 (0.81)	1-13/16 (4.60)	4.75 (12.07)	N/A		
3/4	3-7/32 (8.18)	15/16 (0.94)	2-1/8 (5.40)	4.75 (12.07)	N/A		
1	4-1/8 (10.48)	1-5/32 (2.94)	2-9/16 (6.51)	6 (15.24)	10.6 (26.92)		
1-1/4	4-23/32 (11.99)	1-11/32 (3.41)	2-25/32 (7.06)	N/A	10.6 (26.92)		
1-1/2	5-1/8 (13.02)	2-5/32 (5.48)	3-3/8 (8.57)	N/A	10.6 (26.92)		
2	5-29/32 (15.00)	2-1/8 (5.40)	3-3/4 (9.53)	N/A	10.6 (26.92)		

SPECIFICATIONS

Action		Stroke	
V-3000	Spring return up	V-3000	5/16" to 3/4" (0.8 to 1.9 cm) depends on
MP800	Field reversible action		separately ordered spring
Connections	Barb for 1/4" or 1/8" OD poly tubing; 1/8"	MP821	5/16" (0.8 cm)
	NPT for brass fitting	MP822	1/2" (1.3 cm)
Positioner	-	MP823	3/4" (1.9 cm)
V-3000	Order separately V-9502-75 (and spring	Operating Temperature	-20° to 150°F (-29° to 66°C)
	kit V-9502-6801)	Media Temperature Rang	e Maximum fluid temperature 338°F
MP800	Order separately V-9502-95 (and		(170°C), 100 psig (103 kPa) steam
	mounting kit MP8000-6002)	Maximum Pressure	25 psig (172 kPa)
Diaphragm	,	Dimensions	, , ,
V-3000	4.5" (11.4 cm) diameter, 8 sq. in. (20 sq.	V-3000	3.5"H x 4.1"DIA (8.8 x 10.5 cm)
	cm) effective area	MP800	10.7"H x 8.7"DIA (27.2 x 22.1 cm)
MP800	8.7" (22.1 cm) diameter, 25 sq. in. (64 sq.	Weight	
	cm) effective area	V-3000	0.9 lb (0.41 kg)
Spring Range		MP800	14.0 lb (6.4 kg)
V-3000	Depends on separately ordered spring	Mounting	
	VG7000-100x	V-3000	Set screw to VG-7000 valve bonnet
MP82xC001	3-7 psi	MP800	Threaded nut to VG-7000 valve bonnet
MP82xD001	4-8 psi	Warranty	1 year
MP82xE001	9-13 psi	-	•
	•		

January 2012



PNEUMATIC GLOBE VALVE ACTUATORS V-3000, MP800 SERIES

VALVE CLOSE-OFF TABLE VG SERIES VALVES (shown in N.O./N.C. configurations)

Valve size (See VG7000 page)			Closeoff (psid) - N.O./N.C. for V-3000 actuator			Closeoff (psid) - N.O./N.C. for MP800 actuator		
Valve code	Size	Cv	3-6 psid (VG-7000-1001)	4-8 psid (VG-7000-1002)	9-13 psid (VG-7000-1003)	3-7 psid (MP821C001B	4-8 psid) (MP821D001B	9-13 psid (MP821E001B)
CT ET GT LT	1/2" 1/2" 1/2" 3/4"	0.73 1.8 4.6 7.3	345/100 345/100 225/49 144/29	339/142 339/142 192/68 122/41	191/348 191/348 108/168 69/100	308/280 308/280 308/175 308/81	308/308 308/308 308/183 304/109	308/308 308/308 275/308 175/252
Valve code	Size	Cv	3-6 psid (VG-7000-1004)	4-8 psid (VG-7000-1005)	9-13 psid (VG-7000-1006)	3-7 psid 4-8 psid 9-13 psid (MP822C001A) (MP822D001A) (MP822E001A)		
NT PT	1" 1-1/4"	11.6 18.5	90/17 55/10	76/25 47/14	42/65 26/37	279/70 170/40	257/96 157/55	148/223 90/128
Valve code	Size	Cv				3-7 psid (MP823C001A	4-8 psid) (MP823D001A	9-13 psid) (MP823E001A)
RT ST	1-1/2"	28.9 46.2				109/25 70/16	100/34 64/21	58/79 37/50

ORDERING INFORMATION

Model	Description
V-3000-8011	Valve actuator housing (appropriate VG7000-100x spring kit required, order separately)
VG7000-1001	Spring kit for V-3000-8011 valve actuator, 3-6 psig (21-41 kPa) range, use with 1/2" and 3/4" valves
VG7000-1002	Spring kit for V-3000-8011 valve actuator, 4-8 psig (28-55 kPa) range, use with 1/2" and 3/4" valves
VG7000-1003	Spring kit for V-3000-8011 valve actuator, 9-13 psig (62-90 kPa) range, use with 1/2" and 3/4" valves
VG7000-1004	Spring kit for V-3000-8011 valve actuator, 3-6 psig (21-41 kPa) range, use with 1" valves
VG7000-1005	Spring kit for V-3000-8011 valve actuator, 4-8 psig (28-55 kPa) range, use with 1" valves
VG7000-1006	Spring kit for V-3000-8011 valve actuator, 9-13 psig (62-90 kPa) range, use with 1" valves
MP821C001B	Actuator and spring 3-7 psig (28-55 kPa), includes linkage, for use with 1/2" and 3/4" valves (stainless steel trim models only)
MP821D001B	Actuator and spring 4-8 psig (28-55 kPa), includes linkage, for use with 1/2" and 3/4" valves (stainless steel trim models only)
MP821E001B	Actuator and spring 9-13 psig (62-90 kPa), includes linkage, for use with 1/2" and 3/4" valves (stainless steel trim models only)
MP822C001A	Actuator and spring 3-7 psig (28-55 kPa), includes linkage, for use with 1" and 1-1/4" valves
MP822D001A	Actuator and spring 4-8 psig (28-55 kPa), includes linkage, for use with 1" and 1-1/4" valves
MP822E001A	Actuator and spring 9-13 psig (62-90 kPa), includes linkage, for use with 1" and 1-1/4" valves
MP823C001A	Actuator and spring 3-7 psig (28-55 kPa), includes linkage, for use with 1-1/2" and 2" valves
MP823D001A	Actuator and spring 4-8 psig (28-55 kPa), includes linkage, for use with 1-1/2" and 2" valves
MP823E001A	Actuator and spring 9-13 psig (62-90 kPa), includes linkage, for use with 1-1/2" and 2" valves

	ACCESSORIES
MP8000-6002	Mounting kit for V-9502-95 positioner (MP800 actuators)
V-9502-6801	Spring kit for V-9502-75 positioner (V-3000 actuator)
V-9502-75	Pilot positioner for V-3000 actuator, order VG7000-100x spring kit separately
V-9502-95	Pilot positioner for MP800 actuator, includes six springs

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PNEUMATIC GLOBE VALVE ACTUATORS MK-2690. MK-46XX. MK-6XXX SERIES



DESCRIPTION

The **MK Series** actuators provide proportional pneumatic control of Schneider Electric VB-7000 and VB-8000 Series globe valves.

FEATURES

- Rugged die cast aluminum construction
- MK-46xx, MK-6xxx have rolling diaphragms for long life
- · Multiple spring ranges for various applications

COMMON SPECIFICATIONS

Action Spring return valve stem up

Connections 1/8" NPT

Positioner Order separately AK-42309-500
Operating Temperature Operating Humidity
Maximum Pressure Order separately AK-42309-500
-20° to 220°F (-29° to 104°C)
5 to 95% RH non-condensing
30 psig (207 kPa)

Dimensions

MK-2690 3.6"H x 5.0"W x 2.3"D (9.0 x 12.7 x

5.7 cm)

MK-46xx 3.9"H x 4.8"DIA (9.9 x 12.1 cm) **MK-6xxx** 7.8"H x 10.5"DIA (19.9 x 26.7 cm)

Mounting Vertical upright

Warranty 1 year







MK2690

MK-46xx

INDIVIDUAL SPECIFICATIONS

Model	Spring Range	Stroke	Diaphragm	Linkage
MK-2690	Springs provided in AV-7400 or AV-400 linkage (order separately)	1/2" (1.3 cm) nominal	6 sq. in. (39 sq. cm)	AV-400 or AV-7400, order separately
MK-4601	3-6 psi (21-41 kPa)	1/2" (1.3 cm) nominal	11 sq. in. (71 sq. cm)	AV-401 required, order separately
MK-4611	5-10 psi (34-69 kPa)	1/2" (1.3 cm) nominal	11 sq. in. (71 sq. cm)	AV-401 required, order separately
MK-4621	10-13 psi (69-90 kPa)	1/2" (1.3 cm) nominal	11 sq. in. (71 sq. cm)	AV-401 required, order separately
MK-4641	3-13 psi (21-90 kPa)	1/2" (1.3 cm) nominal	11 sq. in. (71 sq. cm)	AV-401 required, order separately
MK-6601	3-8 psi (21-55 kPa)	1/2" (1.3 cm) nominal	50 sq. in. (323 sq. cm)	AV-430 required, order separately
MK-6611	5-10 psi (34-69 kPa)	1/2" (1.3 cm) nominal	50 sq. in. (323 sq. cm)	AV-430 required, order separately
MK-6621	8-13 psi (55-90 kPa)	1/2" (1.3 cm) nominal	50 sq. in. (323 sq. cm)	AV-430 required, order separately
MK-6801	3-8 psi (21-55 kPa)	1" (2.5 cm) nominal	50 sq. in. (323 sq. cm)	AV-497 required, order separately
MK-6811	5-10 psi (34-69 kPa)	1" (2.5 cm) nominal	50 sq. in. (323 sq. cm)	AV-497 required, order separately
MK-6821	8-13 psi (55-90 kPa)	1" (2.5 cm) nominal	50 sq. in. (323 sq. cm)	AV-497 required, order separately
MK-6911	5-10 psi (34-69 kPa)	1-3/4" (4.4 cm) nominal	50 sq. in. (323 sq. cm)	AV-497 required, order separately

NOMINAL SPRING RANGES

Madal Niveshau	Nominal Spring Range ^a (Spring Color Code)						
Model Number	psig	kPa					
	3 to 7 (Yellow)	21 to 48					
MK-2690	5 to 10 (Black)	34 to 69					
	8 to 13 (Blue)	55 to 90					

 $^{\rm a}$ Nominal (no load) condition, spring range based on 1/2" (13mm) maximum stroke, provided by AV-7400 or AV-400 linkage

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PNEUMATIC GLOBE VALVE ACTUATORS MK-2690, MK-46XX, MK-6XXX SERIES

NOMINAL SPRING RANGES (CONTINUED)

Madel words	Nominal spring range ^a (Spring color code)					
Model number	psig	kPa				
MK-4601	3 to 6	21 to 41				
MK-4611	5 to 10	34 to 69				
MK-4621	10 to 13	69 to 90				
MK-4641	3 to 13	21 to 90				

^aNominal (no load) condition, spring range based on 1/2" (13mm) maximum stroke.

Model number	Nominal spring range	Nominal spring range ^a (Spring color code)					
wiodei flumber	psig	kPa	in (cm)				
MK-6601	3 to 8	21 to 55	0.5 (1.37)				
MK-6611	5 to 10	34 to 69	0.5 (1.37)				
MK-6621	8 to 13	55 to 90	0.5 (1.37)				
MK-6801	3 to 8	21 to 55					
MK-6811	5 to 10	34 to 69	1.0 (2.54)				
MK-6821	8 to 13	55 to 90					
MK-6911bc	5 to 10	34 to 69	1.5 (3.31)				

aNominal (no load) condition, spring range based on 0.5" (13mm) maximum stroke, 1" (25.4mm), or 1.5" (33.1mm) stroke for MK-6911.

ORDERING INFORMATION

Model	Description	
MK-2690	Pneumatic valve actuator, 1/2" stroke, no springs (order AV-400 or AV-7400 linkage kit)	
MK-4601	Pneumatic valve actuator, 1/2" stroke, 3-6 psi spring range, for 1/2" to 1-1/4" VB-7xxx globe valves	
MK-4611	Pneumatic valve actuator, 1/2" stroke, 5-10 psi spring range, for 1/2" to 1-1/4" VB-7xxx globe valves	
MK-4621	Pneumatic valve actuator, 1/2" stroke, 10-13 psi spring range, for 1/2" to 1-1/4" VB-7xxx globe valves	
MK-4641	Pneumatic valve actuator, 1/2" stroke, 3-13 psi spring range, for 1/2" to 1-1/4" VB-7xxx globe valves	
MK-6601	Pneumatic valve actuator, 1/2" stroke, 3-8 psi spring range, for 1-1/2" to 2" VB-7xxx globe valves	
MK-6611	Pneumatic valve actuator, 1/2" stroke, 5-10 psi spring range, for 1-1/2" to 2" VB-7xxx globe valves	
MK-6621	Pneumatic valve actuator, 1/2" stroke, 3-13 psi spring range, for 1-1/2" to 2" VB-7xxx globe valves	
MK-6801	Pneumatic valve actuator, 1" stroke, 3-8 psi spring range, for 2-1/2" to 5" VB-8xxx globe valves	
MK-6811	Pneumatic valve actuator, 1" stroke, 5-10 psi spring range, for 2-1/2" to 5" VB-8xxx globe valves	
MK-6821	Pneumatic valve actuator, 1" stroke, 8-13 psi spring range, for 2-1/2" to 5" VB-8xxx globe valves	
MK-6911	Pneumatic valve actuator, 1-3/4" stroke, 5-10 psi spring range, for 6" VB-8xxx globe valves	

ACCESSORIES

AV-400 Linkage kit for assembling MK-2690 pneumatic actuators to 1-1/2" & 2" globe valves Linkage kit for assembling MK-2690 pneumatic actuator to 1/2" to 2" VB-7xxx globe valves AV-7400 AK-42309-500 Positive positioner kit for MK-2690, MK-46xx, MK-6xxx actuators

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bMK-6911 is only used on 6.0" VB-8xx3-0-5-16. The MK-6911 was used on discontinued 4" to 6" VB-9323-0-5-x.

Recommended for field replacements only where 20 psi air supply pressure is not available and/or required close-off pressure is less than 125 psi.

PNEUMATIC DAMPER ACTUATORS MP918A. MP918B. MP920B SERIES



DESCRIPTION

The MP918A and MP918B pneumatic actuators position damper blades to control airflow in HVAC systems. The MP918A has a positive positioner, otherwise is the same as the MP918B. MP920B actuators have a long 6" stroke and are suitable for fan inlet vane control applications in a VAV system.

FEATURES, MP918A AND B

- · Rolling diaphragm for long life
- · Low friction shaft bearing
- Close tolerance on operating range and stroke
- · Versatile mounting and connecting hardware
- · Nonoverlapping spring ranges for sequencing

FEATURES, MP920B

- · Rolling diaphragm operated for long life
- · Fail-safe on over pressure
- Actuator can be swivel mounted from either end to pipe. floor, or wall surface
- · Optional positive positioner provides accurate positioning under varying load conditions

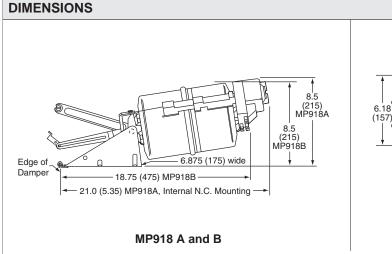


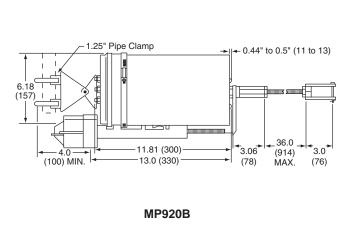
SPECIFICATIONS

Connections **Operating Temperature** MP918A, MP920 Barbs for 5/32" OD (4 mm) tubing for **MP918A** -20° to 160°F (-29° to 70°C) pilot; 1/4" OD (6 mm) tubing for main **MP918B** -40° to 160°F (-40° to 70°C) and branch **MP920** -40° to 160°F (-40° to 70°C) Barbs for 1/4" OD (6 mm) tubing MP920 **Maximum Pressure Rating** Diaphragm **MP918A** 25 psi (172 kPa) **MP918** Neoprene, rolling type, 23.8 sq. in. MP918B, MP920 25 psi (172 kPa) (154 sq. cm) effective area Weight MP920 Neoprene, rolling type, 24.8 sq. in. **MP918A** (160 sq. cm) effective area MP918B **Air Consumption MP920** 13.1 lb (5.9 kg) MP918A, MP920 0.021 scfm (9.9 mL/s) @ 18 psi (124

kPa) **MP918B** None 13.9 lb (6.3 kg) 10.5 lb (4.8 kg)

Warranty 1 year





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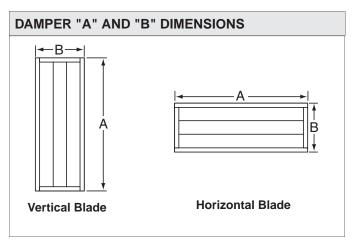


PNEUMATIC DAMPER ACTUATORS MP918A, MP918B, MP920B SERIES

NET FORCE EXCERTED AND STROKE

	Operating Range	Stroke		in Pounds (N) rious Pressures
Model	psi (kPa)	in (cm)	0 psi (0 kPa)	18 psi (124 kPa)
MP918B	3 to 7 (21 to 48)	3.5 (9.0)	52 (231)	244 (1086)
	3 to 13 (21 to 90)	3.5 (9.0)	50 (222)	89 (396)
	5 to 10 (34 to 69)	3.5 (9.0)	96 (427)	162 (721)
	8 to 13 (55 to 90)	3.5 (9.0)	160 (712)	83 (370)
MP918A	8 to 13 (55 to 90) ¹	3.5 (9.0)	160 (712)	83 (370)
Model	Operating Range	Stroke	0 psi (0 kPa)	20 psi (138 kPa)
MP920B	7.25 to 13 (50 to 90)	6 (15.0)	173 (770)	298 (1326)

Note: 1. Also see MP918A Operating Range and Startpoint Pressure.



MAXIMUM DAMPER RATING FOR "B" DIMENSIONS - in (cm)

MP918A										
	Modulatin	g Service	2-Pos. Service							
Operating Range psi (kPa)	13 psi (90 kPa)	18 psi (124 kPa)	18 psi (124 kPa)							
3 to 7 (21 to 48)	123" (84.8)	123" (84.8)	123" (84.8)							
3 to 13 (21 to 90)	N/A	123" (84.8)	123" (84.8)							
5 to 10 (34 to 69)	123" (84.8)	123" (84.8)	205" (141.3)							
8 to 13 (55 to 90)	N/A	123" (84.8)	205" (141.3)							
3 to 7 (21 to 48)	101" (69.6)	101" (69.6)	101" (69.6)							
3 to 13 (21 to 90)	N/A	101" (69.6)	101" (69.6)							
5 to 10 (34 to 69)	101" (69.6)	101" (69.6)	169" (116.5)							
8 to 13 (55 to 90)	N/A	101" (69.6)	169" (116.5)							
	psi (kPa) 3 to 7 (21 to 48) 3 to 13 (21 to 90) 5 to 10 (34 to 69) 8 to 13 (55 to 90) 3 to 7 (21 to 48) 3 to 13 (21 to 90) 5 to 10 (34 to 69)	Operating Range psi (kPa) 13 psi (90 kPa) 3 to 7 (21 to 48) 123" (84.8) 3 to 13 (21 to 90) N/A 5 to 10 (34 to 69) 123" (84.8) 8 to 13 (55 to 90) N/A 3 to 7 (21 to 48) 101" (69.6) 3 to 13 (21 to 90) N/A 5 to 10 (34 to 69) 101" (69.6)	psi (kPa) (90 kPa) (124 kPa) 3 to 7 (21 to 48) 123" (84.8) 123" (84.8) 3 to 13 (21 to 90) N/A 123" (84.8) 5 to 10 (34 to 69) 123" (84.8) 123" (84.8) 8 to 13 (55 to 90) N/A 123" (84.8) 3 to 7 (21 to 48) 101" (69.6) 101" (69.6) 3 to 13 (21 to 90) N/A 101" (69.6) 5 to 10 (34 to 69) 101" (69.6) 101" (69.6)							

N/A = Not applicable

MP918B											
	Operating	Modulatin	g Service	2-Position Service							
Damper Model	Range psi (kPa)	18 psi (124 kPa)	20 psi (138 kPa)	18 psi (124 kPa)	20 psi (138 kPa)						
D640, D641	8 to 13	205" (141.5)	287" (197.9)	205" (141.5)	287" (197.9)						
D642, D643 D644, D645	(55 to 90) ¹	169" (116.5)	236" (162.7)	169" (116.5)	236" (116.5)						

Note: 1. With positive positioner (3, 5, or 10 psi span). Also applies to MP918B 8-13 psi (55 to 90 kPa) slaves used with MP918A.

ORDERING INFORMATION

Model	Description
MP918A1024	Damper actuator with 10 psi span positioner, includes mounting bracket and crank arm
MP918A1057	Damper actuator with 10 psi span positioner, includes internal NC mounting bracket
MP918A1081	Damper actuator with 10 psi span positioner, includes internal NO mounting bracket
MP918B1006	Damper actuator 3-13 psi spring range, includes external mounting bracket and crank arm
MP918B1014	Damper actuator 3-13 psi spring range, includes internal NC mounting bracket
MP918B1022	Damper actuator 3-13 psi spring range, includes internal NO mounting bracket
MP918B1030	Damper actuator 3-13 psi spring range, does not include mounting bracket
MP918B1048	Damper actuator 5-10 psi spring range, includes external mounting bracket and crank arm
MP918B1063	Damper actuator 3-7 psi spring range, includes external mounting bracket
MP918B1071	Damper actuator 3-7 psi spring range, includes internal NC mounting bracket
MP918B1089	Damper actuator 8-13 psi spring range, includes external mounting bracket and crank arm
MP918B1097	Damper actuator 8-13 psi spring range, includes internal NC mounting bracket
MP918B1105	Damper actuator 8-13 psi spring range, includes internal NO mounting bracket
MP918B1113	Damper actuator 8-13 psi spring range, does not include bracket
MP918B1196	Damper actuator 8-13 psi spring range, includes external trunnion mounting bracket
MP920B1002	Damper actuator 7-13 psi spring range, 6" stroke

ACCESSORIES 14004345-001 Positive positioner kit for MP920 damper actuator

PNEUMATIC DAMPER ACTUATOR D-3000, D-4000 SERIES



DESCRIPTION

The Johnson Controls **D-3000 Series** pneumatic damper actuators provide a wide range of forces to handle applications from VAV control dampers to inlet vanes. The D-3062 and D-3153 have models that are UL/ULC listed for smoke damper applications. The **D-4000 Series** actuators are constructed of a glass reinforced polymer with synthetic elastomer diaphragms. They include barb fittings for 5/32" or 1/4" OD poly tubing.



D-3062-3 with D-3062-101

SPECIFICATIONS

Barb for 1/4" OD poly tubing Connections

Diaphragm Synthetic elastomer

Operating Temperature -20° to 150°F (-29° to 66°C)

Maximum Pressure Rating

25 psig (172 kPa)

Warranty 1 year

ORDERING INFORMATION

MODEL	SPI	IINAL RING NGE	(1	alue at	20 psig Suppl		ESTIMATED TORQUE* @90° 20 psig	MOUNTING NOTES† (see below)		ROKE IGTH	EFFE(DAMPER (2 Pos		PILOT POSITIONER	WEIGHT
	psig	kPa	lbf	N	lbf	N	in-lb (Nm)		in	cm	ft ²	ft ²		lb (kg)
D-3062-1	3-7	21-49	85.8	38.2	19.8	80	20 (2.3)	5	2	5.1	6.25	4	-	1.2 (0.54)
D-3062-2	5-10	35-70	66	294	33	147	33 (3.7)	5	2	5.1	6.25	4	-	1.2 (0.54)
D-3062-3	8-13	56-91	46.2	206	52.8	235	46 (5.2)	5	2	5.1	6.25	4	-	1.2 (0.54)
D-4073-1	8-13	56-91	47	209	54	240	71 (8)	3	3	7.6	11.7	6.75	Yes	7.9 (3.6)
D-4073-2	8-13	56-91	47	209	54	240	71 (8)	3	3	7.6	11.7	6.75	-	6.4 (2.9)
D-4073-3	5-10	35-70	67	298	34	151	51 (5.8)	3	3	7.6	11.7	6.75	-	6.4 (2.9)
D-4073-4	8-13	56-91	47	209	54	240	71 (8)	4	3	7.6	11.7	6.75	Yes	6.4 (2.9)
D-4073-5	8-13	56-91	47	209	54	240	71 (8)	4	3	7.6	11.7	6.75	-	4.9 (2.2)
D-4073-6	5-10	35-70	67	298	34	151	51 (5.8)	4	3	7.6	11.7	6.75	-	4.9 (2.2)
D-3153-1	8-13	56-91	105	467	120	534	158 (17.9)	3	3	7.6	25	16	Yes	11.5 (5.2)
D-3153-2	8-13	56-91	105	467	120	534	158 (17.9)	3	3	7.6	25	16	-	10.0 (4.5)
D-3153-3	5-10	35-70	150	667	75	534	113 (12.8)	3	3	7.6	25	16	-	10.0 (4.5)
D-3153-4	8-13	56-91	105	467	120	534	158 (17.9)	4	3	7.6	25	16	Yes	10.0 (4.5)
D-3153-5	8-13	56-91	105	467	120	534	158 (17.9)	4	3	7.6	25	16	-	8.5 (3.9)
D-3153-6	5-10	56-91	105	467	120	534	158 (17.9)	4	3	7.6	25	16	-	8.5 (3.9)
D-3244-1	8-13	56-91	164	729	187	833	328 (37)	1	4	10.2	50	30	Yes	45.5 (20.7)
D-3244-2	8-13	56-91	328	1458	374	1666	656 (74.1)	1, 6	4	10.2	100	60	Yes	63 (28.4)
D-3244-3	8-13	56-91	164	729	187	833	328 (37)	2	4	10.2	50	30	Yes	15 (6.8)
D-3246-1	8-13	56-91	164	729	187	833	492 (55.6)	2	6	15.2	75	45	-	16 (7.0)
D-3246-3	8-13	56-91	328	1458	374	1666	984 (55.6)	1, 6	6	15.2	150	90	Yes	75 (34.0)

NOTES† 1 - Floor-mounted assembly included

- 2 Swivel-mounted assembly included
- 3 Universal-mounting bracket included
- 4 Auxiliary-mounting bracket included 5 **D-3062-101** mounting kit (Order separately)
- 6 Two actuators

* Torque = crank arm length x force x 0.5 (crank arm length = stroke length @ 90-degree rotation)

Order the DS-3062-1 and DS-2153-1 for high temperature smoke damper operation.

ACCESSORIES

D-3062-101 Mounting bracket kit for D-3062 actuators

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PNEUMATIC DAMPER ACTUATORS MK-3000. MK-7100 SERIES

DESCRIPTION

The Schneider Electric MK-3000, MK-7100 Series pneumatic actuators provide damper control for 3-8, 5-10, and 8-13 psig (21-55, 34-69, and 55-90 kPa) pressure ranges. The MK-3000 has a 3.5" (8.9 cm) nominal stroke and is adjustable 2" to 4" (5.1 to 10.2 cm) for smaller applications such as zone dampers and VAV boxes. The MK-7100 has a 4.5" (11.4 cm) nominal stroke and is adjustable 4" to 5" (10.2 to 12.7 cm) for larger applications such as air handler dampers.

SPECIFICATIONS

1/8" NPT Connections

Beaded, molded neoprene Diaphragm **Operating Temperature** -20° to 160°F (-29° to 71°C)

Maximum Pressure Rating 30 psig (207 kPa)

Dimensions

MK-3000 12.0"H x 5.9"W x 5.5"L (30.5 x 14.9 x

14.0 cm)

17.6"H x 7.8"W x 7.6"L (44.8 x 19.7 x MK-7100

19.4 cm)

Weight

MK-3000 5.0 lb (2.2 kg) to 5.5 lb (2.5 kg) MK-7100 15.0 lb (6.8 kg) to 15.5 lb (7.1 kg)

Mounting Any position

Warranty 1 year





APPLICATION

NOMINAL CONTROL DAMPER AREA	PARALLEL E	BLADES ft ² (m ²)	OPPOSED BLADES ft ² (m ²)		
Actuator Model	Proportional	Two-position	Proportional	Two-position	
MK-3101, MK-3111, MK-3121	11.6 (1.07)	34.8 (3.23)	15 (1.39)	45 (4.18)	
MK4-3121**, MK4-3821**	34.8 (3.23)	34.8 (3.23)	45 (4.18)	45 (4.18)	
MK-7101	37.5 (3.48)	112.5 (10.45)	48.2 (4.48)	144.6 (10.65)	
MK-7121*	37.5 (3.48)	112.5 (10.45)	48.2 (4.48)	144.6 (10.65)	
MK4-7121**	112.5 (10.45)	112.5 (10.45)	144.6 (10.65)	144.6 (10.65)	

Damper ratings are nominal and based on standard (not low leakage) dampers at 1" W.C. static pressure and 2000 fpm (10 m/s) velocity. * MK-7121 requires 15 psig (103 kPa) to be available to actuator. **Requires 20 psig (140 kPa) be available to the actuator

					C	RDEF	RING	INFO	RMA	TION								
	MAXIMUM FORCE †† RETURN STROKE POWER STROKE						OMINAL ORTIONA											
MODEL	NOMINAL OPERATING RANGE		Based on 1.5 psig (10 kPa) pressure to actuator		ATING 1.5 psi (10 kPa pressu		(103 Sup	osig kPa) oply essure tem	(103 Su single	psig kPa) pply pressure tem†	(13 Suppl or dual	psig 8 kPa) y single pressure stem†	(10 S dual	5 psig 03 kPa) upply pressure ystem	(103 Sup single p	osig kPa) oply oressure tem†	Supply or dual p	kPa) single
	psiq	kPa	lb	N	lb	N	lb	N	lb	N	in-lb	Nm	in-lb	Nm	in-lb	Nm		
MK-3101	3-8	21-55	12	53	44	196	56	249	96	427	21	2.37	21	2.37	21	2.37		
MK-3111	5-10	34-69	28	125	28	125	40	178	80	356	21	2.37	21	2.37	21	2.37		
MK-3121	8-13	55-90	52	231	4	18	16	71	56	249	7	0.79	21	2.37	21	2.37		
MK4-3121*	8-13	55-90	52	231	4	18	16	71	56	249	7	0.79	28	3.16	91	10.28		
MK-7101	3-8	21-55	30	133	110	489	140	623	240	1068	67.5	7.62	67.5	7.62	67.5	7.62		
MK-7121	8-13	55-90	130	578	10	44.5	40	178	140	623	22.5	2.54	67.5	7.62	67.5	7.62		
MK4-7121*	8-13	55-90	130	578	10	44.5	40	178	140	623	22.5	2.54	90	10.17	293	33.10		

^{*}Factory-installed positive positioner (AK-42309-500) start point adjustable 1 to 12 psig (7 to 83 kPa) with range adjustable 2 to 13 psig (14 to 90 kPa).
**Nominal torque for actuators without positive positioner is based on 1.5 psig (10 kPa) pressure change at the actuator.

ACCESSORIES

AK-42309-500 Positive positioner kit for MK-2690, MK-46xx, MK-6xxx actuators AM-530 Crank arm for 1/2" dia. damper shaft, holes for 3-1/2" and 4-1/2" stroke AM-542 End connector for 5/16" dia. push rod

AM-122 Linkage connector straight type AM-533 Actuator shaft extension AM-161-3 Damper linkage kit

AM-123 Ball joint connector (damper linkage required)

[†]Adjust pressure reducing valve so that listed pressures are available at the actuator.

^{††}Force and torque based on factory set stroke and starting pressure

ELECTRIC/PNEUMATIC THREE-WAY AIR VALVES EP3 SERIES



DESCRIPTION

The **EP3 Series** is an industrial quality, two-position, three-way solenoid air valve with a capacity of 500 scim. A momentary manual override push button provides operation without closing the electrical circuit. An LED provides visual indication of the air valve's status. The valve can be mounted in any position with body mounting holes or with the mounting plate furnished with the valve. Each **EP3** also comes with 16" lead wires and three barbed fittings for 1/4" plastic tubing.

FEATURES

- LED indication
- · Integral mounting plate
- Low capacity
- Manual override
- Universal porting
- . N.C., N.O., diverter, or selector determined by piping

CENTER BEALT WOODEN

EP3-24 VAC

R

SPECIFICATIONS

Supply Voltage

EP3-24VAC 24 VAC, +15%, -10% **EP3-24VDC** 24 VDC, +15%, -10% **EP3-120VAC** 120 VAC, +15%, -10%

Supply Watts 2.5 W

Supply Current

EP3-24VAC, -24VDC 104 mA continuous duty, 157 mA

inrush

EP3-120VAC 20 mA continuous duty, 157 mA

inrush

Connections Three barbed fittings for 1/4" OD

poly tubing

Cv 0.04

Override Momentary pushbutton

IndicatorRed LED - on when energizedAir Capacity500 scim (0.29 scfm) @ 15 psig

(103 kPa)

Operating Temperature 0° to 122°F (-18° to 50°C) **Pressure Range** 0-50 psig (0-345 kPa)

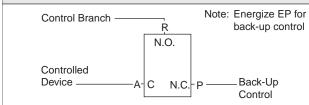
Wiring 16" (40.6 cm) leads with connector

Approvals UL-recognized component

Warranty 1 year

DIMENSIONS in (cm) red -Removable lead wire connector LED 2.39 (6.07) 2.2 (5.59) → Manual Manual override "P" Port #10-32 A" Port #10-32 on + 0.38 opposite side (0.97) Mounting holes 0.19 0.13" (0.32) diameter through two places __1.5 . 0.63 (1.59)Mounting holes 0.17" (0.44) diameter through two places **R** - N.O. Ports (de-energized) A - Common - N.C. P - Normally closed R - Normally open A - Common

BACK-UP APPLICATIONS



ORDERING INFORMATION

MODELDESCRIPTIONEP3-24VAC24 VAC three-way air valveEP3-24VDC24 VDC three-way air valveEP3-120VAC120 VAC three-way air valve

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ELECTRIC/PNEUMATIC THREE-WAY AIR VALVES 35A SERIES

DESCRIPTION

The 35A Series is an industrial-quality, two-position, threeway solenoid air valve with a capacity of 1728 scim.

A non-locking manual override push button provides operation without closing the electrical circuit. Two mounting holes at the base of the valve body provide easy mounting to control panels. Each 35A also comes with 18" lead wires and three barbed fittings for 1/4" OD plastic tubing.





FEATURES

- · Industrial quality
- · Medium capacity
- Manual override
- · Universal porting
- N.C., N.O., diverter, or selector determined by piping

SPECIFICATIONS

Supply Voltage

24 VAC/VDC 50/60 Hz 35A-FW-24VAC

35A-FW-120VAC 120 VAC 60 Hz, 110 VAC 50 Hz

35A-24VDC **24 VDC**

Supply Watts

35A-FW-24VAC 1.8 W 35A-FW-120VAC 1.7 W 35A-24VDC 5.4 W

Connections 1/8" NPT or barb for 1/4" OD tubing

Cv 0.18

Override Momentary pushbutton

1728 scim, 1 scfm (28 lpm) @ 20 **Air Capacity**

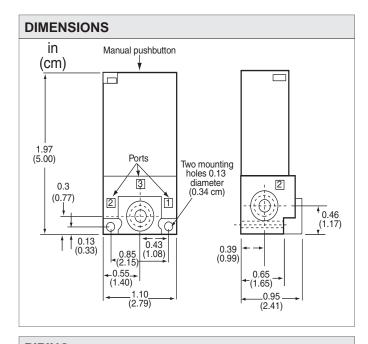
psig (138 kPa)

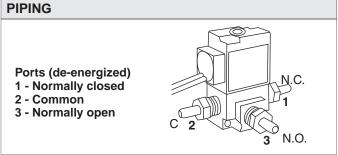
Operating Temperature 0° to 104°F (-18° to 40°C) **Pressure Range**

28" Hg vacuum to 120 psig (827

Wiring 18" leads, 22 AWG

Approvals CE Warranty 1 year





ORDERING INFORMATION

Model Description

35A-FW-24VAC 24 VAC three-way air valve 35A-FW-120VAC 120 VAC three-way air valve 35A-24VDC 24 VDC three-way air valve

THREE-WAY SOLENOID AIR VALVE V11 SERIES



DESCRIPTION

V11 Series three-way solenoid air valves have a capacity of 2592 scim and have three connections: a normally open (N.O.) port with 1/8" FNPT connection, and normally closed (N.C.) and common (COM) ports with barbed fittings for 1/4" OD tubing. The posts in the die cast aluminum valve body have No. 60 mesh (217 micron openings) monel screens to prevent foreign material from entering the valve ports.

APPLICATION

Air Capacity

Operating Temperature

The **V11 Series** is used in applications where the operation of a pneumatic device is dependent upon an electrical circuit. The valves direct supply air to the pneumatic device when the coil is energized or de-energized, depending on the supply and exhaust air connections.

All V11 Series valves are designed for use only as HVAC control system devices. Where system closure, improper flow, or loss of pressure due to valve failure can result in personal injury and/or loss of property, it is recommended that additional devices be added to accommodate proper system operation, such as using a whisker switch to monitor the blade position on smoke dampers.

2592 scim, 1.5 scfm (42 lpm) @ 15

psig (105 kPa) supply







FEATURES

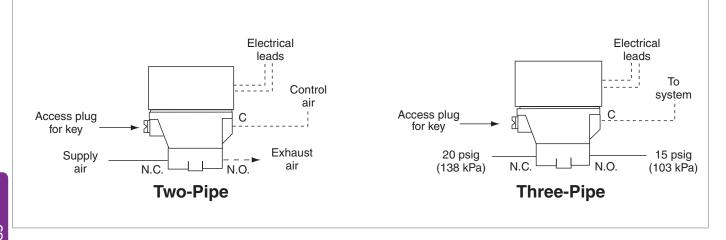
- Three-port connection C, N.O., N.C.
- Two-position operation
- Positive air seal
- Manual operation for testing and checkout of some models
- Compact and lightweight
- · Mounts in any position
- High capacity

SPECIFICATIONS	3		
Supply Voltage	See ordering information	AC models	32° to 140°F (0° to 60°C)
Supply Watts	•	DC models	32° to 104°F (0° to 40°C)
AC models	6W	Pressure Range	0 to 20 psig (0 to 138 kPa)
DC model	9W	Wiring	18" leads, 18 AWG, 7/8" knockout for
Connections	1/8" NPT normally open port; barbs		1/2" conduit connector
	for 1/4" OD tubing on common and	Approvals	UL Listed, CSA
	normally closed port	Warranty	1 year
Override	Separately ordered key, Y99AA-4		•

DIMENSIONS in → 0.68 (1.73) (6.50) (cm) 0.41 (1.70) 0.38 Diameter 0.88 0.19 √ (0.97) 1 conduit (2.24)(0.48)3.13 1.50 -(TTTT 2.0 (7.95)(3.81)(5.08)0.97 0.97 1/4 Barb (2.46) (2.46) \vdash 0.19 0.22 10.37 1 0.38 0.25 $(0.\overline{56})$ (0.94)(0.97)0.20 (0.51) 1/4 Barb (0.64)(4.43)(4.45)0.50 0.57 (1.27)(1.45)

THREE-WAY SOLENOID AIR VALVE V11 SERIES

APPLICATION DIAGRAM



OPERATION

In a typical application, supply air is connected to the normally closed port, and the control device is connected to the common port. When the solenoid is energized, a magnetic field activates a plunger-type valve stem, and supply air is directed to the control device. When the solenoid is de-energized, the supply air connection is closed, and the normally open port exhausts air from the control device. Reverse action may be obtained by connecting the supply air to the normally open port, using the normally closed port for exhaust (see Application Diagram). For day/night or summer/winter two-pressure switching, see the example Three-pipe Application Diagram. To manually operate, remove the access plug, and insert the Y99AA-4 key. The manual opener key is ordered separately.

ORDERING INFORMATION

Model	Description
V11HAA-100	110/120 VAC, 50/60 Hz three-way air valve
V11HBA-100	220/240 VAC, 50/60 Hz three-way air valve
V11HCA-100	208 VAC, 50/60 Hz three-way air valve
V11HDA-100	440/480 VAC, 50/60 Hz three-way air valve
V11HFA-100	277 VAC, 50/60 Hz three-way air valve
V11HGA-100	24 VAC, 50/60 Hz three-way air valve
V11PNA-105	24 VDC three-way air valve

	ACCESSORIES
Y99AA-4	Manual opener key

ISOLATION VALVES. FILTERS AND PRESSURE REGULATORS PV600



DESCRIPTION

PV600 Series air and water two-way isolation valves are rated to 200 psig (1379 kPa) at -40° to 175°F (-40° to 79°C). They are useful in isolating transducers for removal or for bypass operations. They are constructed of a brass body and plastic hand valves. Fittings are 1/8 threaded NPT male or female.



DIMENSIONS Top View (cm) □\$ 0.15 lb solation Valve (.07 kg)PV600

ORDERING INFORMATION

Model Description PV607-2 Male to Male 1/8" NPT isolation valve PV608-2 Female to Male 1/8" NPT isolation valve

DESCRIPTION

K-337 and K-339 air filters are used to provide clean, oil-free air for pneumatic control systems.

SPECIFICATIONS

5 micron prefilter, 0.03 micron oil Filter Type

filter, automatic drain

Air Capacity

K-337 15 scfm (7080 mL/s) K-339 80 scfm (37,760 mL/s) Operating Temperature 150°F (65°C) maximum **Maximum Pressure** 250 psig (1728 kPa)

Weight

K-337 5.5 lb (2.5 kg) K-339 7.0 lb (3.1 kg) Warranty 1 year



ORDERING INFORMATION

Model Description

K-337-1 Air filter, 3/8" ports, 15 scfm capacity

K-339-1 Air filter, 3/4" ports with 1/2" and 1/4" adapters, 80 scfm capacity

DESCRIPTION

The K-383, K-384 and K-387 pressure regulators have a large flow capacity to reduce supply air pressure from the compressor down to the requirements of the pneumatic control system. The regulators have 1/8" gauge ports.

SPECIFICATIONS Connections

K-383 1/4" FNPT pipe connection K-384 1/2" FNPT pipe connection K-387 3/8" FNPT pipe connection Output 0-50 psig (0-345 kPa) Operating Temperature -40° to 200°F (-40° to 93°C) **Maximum Pressure** 400 psig (2,758 kPa)

Weight

K-383 2.0 lb (1.0 kg) K-384 3.4 lb (1.3 kg) K-387 5.0 lb (2.3 kg) Mounting Inline piping Warranty 1 year



	ORDERING INFORMATION
Model	Description
K-383	Pressure regulator, 1/4" pipe, 16 scfm capacity
K-384	Pressure regulator, 1/2" pipe, 32 scfm capacity
K-387	Pressure regulator, 3/8" pipe, 22 scfm capacity

ACCESSORIES

AL-322 2" gauge, 0-30 psi, center back 1/8" NPT connection AL-327 2" gauge, 0-100 psi, center back 1/8" NPT connection K-312 Safety pop-off valve, 1/2" MNPT, 30 psi setpoint, 24 scfm

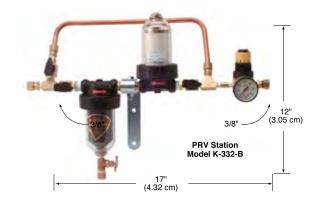
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PRV STATION, FILTERS, CALIBRATION KIT K-332

DESCRIPTION

The **K-332** PRV station is a cartridge-style filter element that removes oil vapor, moisture, and dirt to one micron size. The K-332-B assembly includes a wall mounting bracket, filter cartridge, pressure reducing valve (PRV) and three shut-off/ bypass valves for uninterrupted filter servicing. This complete airflow station is designed for airflow rates and pressure regulation up to 8 scfm and 30 psig (200 kPa). The regulator is adjustable up to 35 psig (241 kPa).



ORDERING INFORMATION

MODEL	DESCRIPTION				
K-332	PRV station with filters				
1/ 000 D	DDV 1 II III III				

PRV station with wall bracket, bypass and three isolating valves K-332-B

DESCRIPTION

The FILN05 is a final-device pneumatic air filter with straight plastic barb fittings for 1/4" OD poly tubing. The FILN05-B model comes with 90° bent fittings. The microfibre disposable filter unit consists of a HEPA Microflex™ filter tube permanently bonded into a sealed nylon casting. As the filter shows signs of contamination, simply remove and replace. A replacement model FILN05-R is available without the barb fittings. NOTE: Not for use with synthetic lubricants.

SPECIFICATIONS

Connections

FILN05-B Plastic barbs, 90 degree, for 1/4" OD

poly tubing

FILN05 Plastic barbs, straight, for 1/4" OD poly

tubing

FILN05-R Replacement filter, no barb fittings

1.4 scfm, 1.5 psid Air Capacity

Operating Temperature 32° to 200°F (0° to 93°C)

Maximum Pressure Rating 100 psi (689 kPa) @ 100°F (38°C) Materials Of Construction Transparent nylon housing, HEPA

Microflex™ filter

Dimensions 2.8"L x 1"DIA (7.0 x 2.5 cm)

Weight 0.3 oz (8.5 g)



FILN05

ORDERING INFORMATION

Model Description

FILN05 Inline disposable air filter, straight, with barbs for 1/4"

OD tubing Inline disposable air filter, 90° bent barbs for 1/4" OD FILN05-B

tubing Inline disposable air filter, replacement, without barbs FILN05-R

DESCRIPTION

The TOOL-95-1 is a pneumatic controls calibration kit. It includes gauges, wrenches, tees, screwdrivers and a squeeze-bulb pump. The TOOL-M-225 is a larger replacement squeeze bulb pump for higher air volumes.

ORDERING INFORMATION

DESCRIPTION MODEL TOOL-95-1 Pneumatic thermostat calibration kit **TOOL-M-225** Large-capacity squeeze bulb pump



PNEUMATIC AIR SUPPLY BARB FITTINGS **B SERIES**



SOLDER	SOLDER ADAPTERS								
Model		Cross Refe	Description (in)	Std. Pack					
	Robertshaw	Johnson	Siemens	Honeywell					
B-121	-	-	-	-	3/16 ID 1/4 OD	100			
					to 5/32 B				
B-122	-	-	-	1610B	3/16 ID 1/4 OD	100			
					to 1/4 B				
B-123	21-375	F-100-12	141-425	1586B	1/4 ID to 1/4 B	100			



MALE AD	MALE ADAPTERS								
Model		Cross Refe	Description (in)	Std. Pack					
	Robertshaw	Johnson	Siemens	Honeywell					
B-130	-	-	-	-	3/16 x 1/8 MPT	100			
B-131-10	21-784	F-100-21	141-249	-	1/4 or 5/32	100			
					x 1/8 MPT				
B-132	20-885	F-100-11	141-202	1590BT	1/4 x 1/8 MPT	100			
B-133	21-005	F-100-35	141-354	1591BT	3/8 x 1/8 MPT	100			
B-134	-	-	141-209	1592BT	3/8 x 1/4 MPT	50			



FEMALE ADAPTERS								
Model		Cross Reference				Std. Pack		
	Robertshaw	Johnson	Siemens	Honeywell				
B-135	20-925	-	141-211	1594B	1/4 x 1/8 FPT	100		



COMPRESSION ADAPTERS								
Model	Cross Reference				Description (in)	Std. Pack		
	Robertshaw	Johnson	Siemens	Honeywell				
B-136	20-892	-	-	-	3/16 x 1/4 Comp	100		
B-137	20-893	F -200-33	141-233	1635B	1/4 x 1/4 Comp	50		



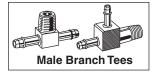
BULKHE	BULKHEAD BARBS								
Model	Cross Reference				Description (in)	Std. Pack			
	Robertshaw	Johnson	Siemens	Honeywell					
B-138	20-894	-	-	1619B	1/4 B x 1/4 Comp	25			
B-139	21-377	-	-	-	3/8 B x 3/8 Comp	25			
B-142	20-874	-	-	-	1/4 B x 1/4 B	50			



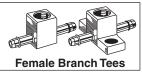
COUPLIN	COUPLINGS										
Model		Cross Refe	erence		Description (in)	Std. Pack					
	Robertshaw	Johnson	Siemens	Honeywell							
B-260	20-875	F-300-31	141-247	1628B	5/32 x 5/32	50					
B-261	21-064	F-300-30	141-246	1606B	1/4 x 5/32	50					
B-262	-	-	-	-	1/4 x 3/16 Solder	100					
B-262-1	21-611	-	-	-	1/4 x 3/16 B	100					
B-263	20-886	F-300-26	141-201	1607B	1/4 x 1/4	50					
B-264	20-887	F-300-27	141-216	1608B	3/8 x 3/8	50					
B-265	20-890	F-300-21	141-217	1610B	3/8 x 1/4	50					
B-266	20-891	F-300-19	141-219	1611B	1/2 x 3/8	25					
B-267	20-888	F-300-36	141-218	1617B	1/2 x 1/2	25					



MALE BR	MALE BRANCHTEES											
Model		Cross Ref	Description	Std. Pack								
	Robertshaw	Johnson	Siemens	Honeywell	"Left x "Right x "Top							
B-371	20-897	F-700-79	141-220	1600	1/4 x 1/4 x 1/8 MPT	25						
B-372	20-905	F-700-63	-	1609BT	1/4 x 1/8 MPT x 1/4	100						



FEMALE	FEMALE BRANCHTEE											
Model		Cross R	Description	Std. Pack								
	Robertshaw	Johnson	Siemens	Honeywell	"Left x "Right x "Top							
B-373	20-904	F-700-76	141-227	1614B	1/4 x 1/4 x 1/8 FPT	100						
B-373-1				-	1/4 x 1/4 x 1/8 FPT Drop Ear	10						



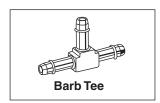
ORDERING INFORMATION



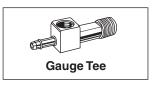
PNEUMATIC AIR SUPPLY BARB FITTINGS

B SERIES, **R-3710**, **F-1000 SERIES**

BARBTE	BARB TEES										
Model		Cross Re		Description	Std.						
	Robertshaw	Johnson	Siemens	Honeywell	"Left x "Right x "Top	Pack					
B-374	20-876	F-700-83	141-245	1637B	5/32 x 5/32 x 5/32	100					
B-375	21-785	F-700-84	-	1630B	1/4 x 1/4 x 5/32	100					
B-376	20-898	F-700-73	141-203	1612B	1/4 x1/4 x1/4	100					
B-377	20-899	F-700-74	141-214	1615B	3/8 x 3/8 x 1/4	100					
B-378	20-900	F-700-75	141-204	1613B	3/8 x 3/8 x 3/8	100					
B-379	20-901	F-700-67	141-223	1616B	1/2 x 1/2 x 1/4	50					
B-380	20-902	F-700-66	141-222	1618B	1/2 x 1/2 x 3/8	50					
B-381	20-903	F-700-65	141-221	1620B	1/2 x 1/2 x 1/2	50					



GAUGETEE										
Model		Cross Ref		Description	Std.					
	Robertshaw	Johnson	Siemens	Honeywell	"Left x "Right x "Top	Pack				
B-387	20-906	F-700-62	141-213	1604BT	1/4 x 1/8 MPT	50				
					x 1/8 FPT					



BARB PLU	BARB PLUGS										
Model		Cross Ref	Description (in)	Std. Pack							
	Robertshaw	Johnson	Siemens	Honeywell							
F-1000-323	-	-	-	-	5/32 and 1/4 Plug	100					
B-391	20-910	-	141-237	1640	1/4 Plug	50					
B-392	21-378	F-1000-241	141-238	-	3/8 Plug	50					
B-393	21-379	-	-	-	1/2 Plug	100					



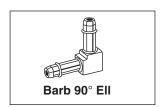
BARB TO MPT 90° ELL										
Model	Cross Reference Description (in) Std. Pac									
	Robertshaw	Johnson	Siemens	Honeywell						
B-570	-	-	141-242	-	5/32 x 1/8 MPT	100				
B-571	20-895	F-500-41	141-200	1595BT	1/4 x 1/8 MPT	100				



BARB TO FPT 90° ELL									
Model		Cross Reference				Std. Pack			
	Robertshaw	Johnson	Siemens	Honeywell					
B-572	20-896	F-500-42	141-208	1589B	1/4 x 1/8 FPT	100			

Barb to FPT 90° EII

BARB 90	BARB 90° ELL										
Model		Cross Re		Description (in)	Std. Pack						
	Robertshaw	Johnson	Siemens	Honeywell							
B-569	-	-	-	-	3/16 x 1/4	10					
B-573	20-908	F-500-39	141-230	1642	1/4 x 1/4	100					
B-574	20-909	F-500-38	141-231	1598B	3/8 x 3/8	100					
B-575	-	F-500-37	141-232	1599B	1/2 x 1/2	50					



INLINE RESTRICTORS	
Model Number	Description
R-3710-2007	Orifice 0.007", 1/4" x 1/4" barbs, aqua-colored thermoplastic
R-3710-2005	Orifice 0.005", 1/4" x 1/4" barbs, red-colored thermoplastic
R-3710-2010	Adjustable restrictor, 5/32" x 5/32", brass



ORDERING INFORMATION

PNEUMATIC AIR SUPPLY COMPRESSION FITTINGS **C-SERIES**



COMPRESSION ADAPTERS TO MPT										
Model		Cross Re	ference		Description (in)	Std. Pack				
	Robertshaw	Johnson	Siemens	Honeywell						
C-132	-	F-200-2	044-126	1433T	3/16 x 1/8 MPT	50				
C-133	20-930	F-200-3	044-128	1435T	1/4 x 1/8 MPT	50				
C-134	20-931	F-1000-36	044-129	1436T	1/4 x 1/4 MPT	50				
C-135	20-933	F-200-4	044-135	1442T	3/8 x 1/8 MPT	25				
C-136	20-934	F-200-5	044-137	1443T	3/8 x 1/4 MPT	25				
C-137	20-935	F-200-6	044-138	1444T	3/8 x 3/8 MPT	25				
C-138	-	F-200-7	-	1446T	1/2 x 1/4 MPT	10				
C-139	-	F-200-8	-	1447T	1/2 x 3/8 MPT	25				
C-140	-	F-200-9	-	1448T	1/2 x 1/2 MPT	25				



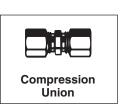
COMPRE	COMPRESSION ADAPTERS TO FPT									
Model		Cross Re		Description (in)	Std. Pack					
	Robertshaw	Johnson	Siemens	Honeywell						
C-146	20-942	-	-	1459	1/4 x 1/8 FPT	25				
C-147	20-943	-	-	1460	1/4 x 1/4 FPT	10				
C-149	-	-	-	1465	3/8 x 1/4 FPT	10				



COMPRESSION LINE VALVES									
Model		Cross Re	Description (in)	Std. Pack					
	Robertshaw	Johnson	Siemens	Honeywell					
C-151	20-914	F-1000-93	-	2135	1/4	10			
C-152	20-919	F-1000-94	-	2136	3/8	10			



COMPRESSION UNIONS									
Model		Cross Re	Description (in)	Std. Pack					
	Robertshaw	Johnson	Siemens	Honeywell					
C-231	-	F-800-1	-	1420	3/16 x 3/16	25			
C-232	-	F-800-2	-	-	1/4 x 3/16	10			
C-233	20-939	F-800-3	-	1421	1/4 x 1/4	50			
C-234	20-941	F-800-4	-	1428	3/8 x 1/4	10			
C-235	20-940	F-800-5	-	1423	3/8 x 3/8	50			
C-236	-	F-800-6	-	1429	1/2 x 3/8	10			
C-237	-	F-800-7	-	1424	1/2 x 1/2	25			



COMPRE	COMPRESSION TEES										
Model		Cross Re	ference	Description	Std.						
	Robertshaw	Johnson	Siemens	Honeywell	"Left x "Right x "Top	Pack					
C-331	-	F-700-8	-	1528	3/16 x 3/16 x 3/16	10					
C-333	20-949	F-700-9	-	1529	1/4 x 1/4 x 1/4	25					
C-335	20-951	F-700-10	-	1538	3/8 x 3/8 x 1/4	10					
C-336	20-950	F-700-11	-	1531	3/8 x 3/8 x 3/8	25					
C-337	-	-	-	1540	1/2 x 1/2 x 1/4	10					
C-338	-	F-700-12	-	1539	1/2 x 1/2 x 3/8	10					



ORDERING INFORMATION

Sold in package quantities only Order quantity 1=1 package

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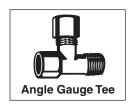


PNEUMATIC AIR SUPPLY COMPRESSION FITTINGS **C-SERIES**

COMPR	COMPRESSION ADAPTERS TO MPT									
Model		Cross	Reference	е	Description	Std.				
	Robertshaw	Johnson	Siemens	Honeywell	"Left x "Right x "Top	Pack				
C-361	20-956	F-700-4	-	1551T	1/4 x 1/4 x 1/8 MPT	10				
C-362	20-952	-	-	1542T	1/4 x 1/8 MPT x 1/4	10				



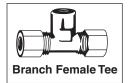
ANGLE GAUGE TEE								
Model		Cross	Reference	Description	Std.			
	Robertshaw	Johnson	Siemens	Honeywell	"Left x "Right x "Top	Pack		
C-369	20-958	-	-	1557T	1/8 MPT x 1/8 FPT x 1/4	10		



GAUGE	TEE					
Model		Cross	Referenc	Description	Std.	
	Robertshaw	Johnson	Siemens	Honeywell	"Left x "Right x "Top	Pack
C-370	20-955	-	-	1559T	1/4 x 1/8 MPT x 1/8 FPT	10



BRANC	BRANCH FEMALE TEE								
Model		Cross	Reference	Description	Std.				
	Robertshaw	Johnson	Siemens	Honeywell	"Left x "Right x "Top	Pack			
C-372	20-957	F-700-7	-	1564T	1/4 x 1/4 x 1/8 FPT	10			



BULKH	BULKHEAD FITTINGS									
Model		Cross	Referenc	Description	Std.					
	Robertshaw	Johnson	Siemens	Honeywell	(in)	Pack				
C-375	-	F-800-8	-	-	1/4 x 1/4	10				
C-376	-	-	-	-	3/8 x 3/8	10				



COMPRESSION PLUG								
Model		Cross	Reference	Description	Std.			
	Robertshaw	Johnson	Siemens	Honeywell	(in)	Pack		
C-378	21-381	F-1000-14	-	1568	1/4	50		



PLASTI	PLASTIC FERRULES									
Model		Description	Std.							
	Robertshaw	Johnson	Siemens	Honeywell	(in)	Pack				
C-381	20-961	F-1000-9	-	1571	1/4	200				
C-382	20-962	F-1000-10	-	1572	3/8	100				
C-383	-	F-1000-11	-	1573	1/2	100				



ORDERING INFORMATION

PNEUMATICS & FITTINGS

PNEUMATIC AIR SUPPLY COMPRESSION FITTINGS **C-SERIES**



PLASTIC TUBING INSERTS									
Model		Cross F	Reference	Description	Std.				
	Robertshaw	Johnson	Siemens	Honeywell	(in)	Pack			
C-384	20-966	F-1000-198	-	1575	1/4	200			
C-385	20-967	F-1000-184	-	1576	3/8	200			
C-386	-	F-1000-8	-	1577	1/2	100			



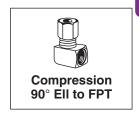
COMPRESSION 90° ELLS									
Cross Reference			Description	Std.					
Robertshaw	Johnson	Siemens	Honeywell	(in)	Pack				
-	F-800-3	-	1479	1/4 x 1/4	10				
-	F-800-4	-	-	3/8 x 1/4	25				
-	F-800-5	-	1481	3/8 x 3/8	10				
-	F-800-7	-	1482	1/2 x 1/2	10				
	Robertshaw - - -	Cross Robertshaw Johnson - F-800-3 - F-800-4 - F-800-5	Cross Reference Robertshaw Johnson Siemens	Cross Reference Robertshaw Johnson Siemens Honeywell - F-800-3 - 1479 - F-800-4 - - - F-800-5 - 1481	Cross Reference Description Robertshaw Johnson Siemens Honeywell (in) - F-800-3 - 1479 1/4 x 1/4 - F-800-4 - - 3/8 x 1/4 - F-800-5 - 1481 3/8 x 3/8				



COMPR	COMPRESSION 90° ELL TO MPT									
Model	Cross Reference				Description	Std.				
	Robertshaw	Johnson	Siemens	Honeywell	(in)	Pack				
C-532	-	F-500-2	-	1488T	3/16 x 1/8 MPT	100				
C-535	20-945	F-500-3	-	1490T	1/4 x 1/8 MPT	50				
C-536	20-946	-	-	1491T	1/4 X 1/4 MPT	50				
C-538	20-947	F-500-5	-	1497T	3/8 x 1/4 MPT	25				
C-539	-	F-500-6	-	1498T	3/8 x 3/8 MPT	25				



COMPRESSION 90° ELL TO FPT								
Model		Cross	Reference	•	Description	Std.		
	Robertshaw	Johnson	Siemens	Honeywell	(in)	Pack		
C-552	20-948	-	-	1511	1/4 x1/8 FPT	25		



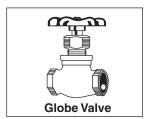
ORDERING INFORMATION

MISCELLANEOUS PIPE FITTINGS M SERIES, F-1000 SERIES

90° DROP EAR ELBOW						
Model	Description	Std. Pack				
M-127	1/8" FPT	25				



GLOBE VALVES								
Model		Cross I	Reference	Description	Std.			
	Robertshaw	Johnson	Siemens	Honeywell	(in)	Pack		
M-132	20-973	F-1000-98	-	2030	1/2 FPT	10		



SHUT OFF COCKS									
Model	Cross Reference Description Std.								
	Robertshaw	Johnson	Siemens	Honeywell	(in)	Pack			
M-135	-	F-1000-218	-	-	1/8 FPT	10			
M-136	-	F-1000-219	-	2108	1/4 FPT	10			



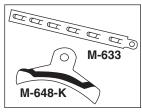
HEX NIF	HEX NIPPLES									
Model		Cross	Reference	Description	Std.					
	Robertshaw	Johnson	Siemens	Honeywell	(in)	Pack				
M-141	20-990	-	-	1739T	1/8 MPT	25				
M-142	20-992	-	-	1751T	1/4 MPT	50				
M-143	-	-	-	1762T	3/8 MPT	25				



GANG STRAPS AND CLIPS							
Model	Description	Std. Pack					
M-633	Copper-plated	100					
	six-gang strap						
M-648-K	Capillary	1					
CC-1G	mounting clip 1/8" maximum Non-metallic capillary clip	1					
	3/8" maximum						

PIPE CLAMPS - Copper Plated							
Model	Model Description (in) Std. Pack						
M-622	1/4 single	100					
M-623	3/8 single	100					
M-628	1/4-1/4 dual	100					







Model	Description	Std. Pack
F-1000-331	Nylon bushing, 1/2" EMT thru-wall conduit	50
F-1000-332	Nylon bushing, 3/4" EMT thru-wall conduit	50
NB12K	Nylon bushing, 1/2" knockout (7/8" hole)	50
CCT1820	Nylon bushing, 1/2" EMT and 1/2" knockout	50
2157	Nylon bushing, 3/4" knockout	1

ORDERING INFORMATION

PNEUMATIC AIR SUPPLY SOLDER FITTINGS S-SERIES



SOLDER ADAPTERS TO MALE PIPE THREAD									
Model		Cross Re	Description	Std.					
	Robertshaw	Johnson	Siemens	Honeywell	(in)	Pack			
S-104	-	F-100-3	-	1104	3/8 OD x 1/4 MPT	25			
S-109	-	F-100-7	-	1109	1/2 OD x 1/2 MPT	100			

SOLDER CAPS									
Model		Cross Re		Description	Std.				
	Robertshaw	Johnson	Siemens	Honeywell	(in)	Pack			
S-141	-	-	-	1161	1/4	50			
S-142	-	-	-	1162	3/8	50			
S-143	-	-	-	1163	1/2	50			

SOLDER COUPLINGS						
Model	Cross Reference Description		Description	Std.		
	Robertshaw	Johnson	Siemens	Honeywell	(in)	Pack
S-202	-	F-300-1	-	1002	3/16 x 3/16	100
S-205	-	F-300-2	-	1003	1/4 x 1/4	100
S-206	-	F-300-4	-	1025	3/8 x 1/4	50
S-207	-	F-300-3	-	1005	3/8 x 3/8	100
S-208	-	F-300-7	-	1029	3/8 x 1/2	50
S-209	-	F-300-5	-	1006	1/2 x 1/2	100

SOLDERTEES						
Model		Cross Re	Description	Std.		
	Robertshaw	Johnson	Siemens	Honeywell	"Left x "Right x "Top	Pack
S-302	-	F-700-17	-	1251	3/16 x 3/16 x 3/16	50
S-306	-	F-700-18	-	1252	1/4 x 1/4 x 1/4	50
S-308	-	F-700-24	-	1270	3/8 x 3/8 x 1/4	50
S-310	-	F-700-20	-	1254	3/8 x 3/8 x 3/8	50
S-312	-	F-700-27	-	1275	1/2 x 1/2 x 1/4	50
S-314	-	F-700-28	-	1276	1/2 x 1/2 x 3/8	50
S-316	-	F-700-25	-	1255	1/2 x 1/2 x 1/2	25

SOLDER 90° ELBOWS						
Model		Cross Re	eference		Description	Std.
	Robertshaw	Johnson	Siemens	Honeywell	(in)	Pack
S-502	-	F-500-19	-	1172	1/4 x 1/4	50
S-504	-	F-500-20	-	1174	3/8 x 3/8	50
S-506	_	F-500-22	_	1175	1/2 x 1/2	50

SOLDER	45° ELBOWS					
Model		Cross Re	eference		Description	Std.
	Robertshaw	Johnson	Siemens	Honeywell	(in)	Pack
S-515	-	-	-	1202	3/8 x 3/8	50
S-516	-	-	-	1203	1/2 x1/2	50













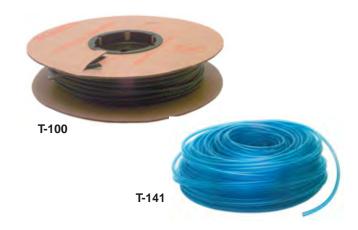
ORDERING INFORMATION



PNEUMATIC TUBING T-100 SERIES. T-141

DESCRIPTION

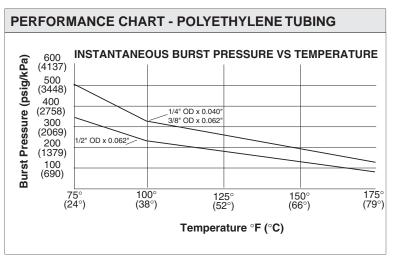
T-100 Series pneumatic tubing is a superior quality, flameretardant, stress-crack resistant, exclusively compounded polyethylene tubing that provides long-term, reliable performance. This tubing is suitable for installation in air ducts, plenums, and other spaces used for environmental air. The T-141 is made of extremely flexible, clear-blue polyurethane that is not flame-retardant-rated and is used only for inside panels. It is kink-resistant, has an excellent memory, and features high compression strength and outstanding abrasive resistance.



FEATURES

T-100 SERIES POLYETHYLENE:

- Flexible and lightweight
- Flame retardant
- High stress-crack resistance
- Easy to handle and install
- · Resistant to ultraviolet breakdown
- · Meets or exceeds every requirement for flame retardant polyethylene tubing set by the pneumatic controls industry
- · Numbering system for multitube identification
- · Available with colored stripes



CAUTION: The polyethylene performance chart indicates short term burst pressures, not long term operating pressures, as indicated in laboratory testing. No representations of operating burst pressures are expressed or implied.

SPECIFICATIONS

Specifications for T-100 Series

Burst Pressure

T-100 Series ASTM Test D-1599; typical value

>500 psig (3,448 kPa)

320 psig (2,206 kPa) @ 75°F (24°C) **T-141 only**

derated to 160 psig (1,103 kPa) @

150°F (66°C)

Bending Modulus ASTM Test D-747; typical value 3000

psig ±5000

Density ASTM Test D-792; typical value 1.1

±0.005 g/cc

Elongation ASTM Test D-638; typical value

Melt Index ASTM Test D-1238; typical value 0.6

±0.1 g/10 min

Polyethylene Classification

ASTM Test D-1248; Type I, Class B

or C, Category 4

Shore A Hardness ASTM Test D-1700; typical value 97

Shore D Hardness ASTM Test D-1700; typical value 45

Smoke Density UL 1820; peak optical density 0.5,

maximum optical density 0.15

Stress Crack Resistance

ASTM Test D-1693; typical value V

200 hours

Flame Propagation UL 1820; typical value 0.5 **Tensile Strength** ASTM Test D-638; typical value

>2000 psig (13,790 kPa)

Water Absorption ASTM Test D-576; maximum value 5

Flammability Rating UL 94 V-2; UL 910 NFPA 90A

001-901-382-6084 International | 888-397-5353 USA | **kele.com**

PNEUMATIC TUBING T-100 SERIES, **T-141**



DIMENS	IONS		
Model	Description	Dimensions	Weight
T-100	5/32" OD black poly tubing, 1 coil, 500 ft (152 m)	0.156" OD, 0.096" ID, 0.030 Wall, 500 ft (152 m) coil	3.0 lb (1.4 kg) per coil
T-100-2	5/32" OD black poly tubing, twin, 1 coil, 500 ft (152 m)	0.156" OD, 0.096" ID, 0.030 Wall, 500 ft (152 m) coil	6.0 lb (2.8 kg) per coil
T-101	1/4" OD black poly tubing, 1 coil, 250 ft (76 m)	0.250" OD, 0.170" ID, 0.040 Wall, 250 ft (76 m) coil	3.3 lb (1.5 kg) per coil
T-101-2	1/4" OD black poly tubing, twin, 1 coil, 250 ft (76 m)	0.250" OD, 0.170" ID, 0.040 Wall, 250 ft (76 m) coil	6.6 lb (3.0 kg) per coil
T-101-B	1/4" OD black with blue stripe poly tubing, 1 coil, 250 ft (76 m)	0.250" OD, 0.170" ID, 0.040 Wall, 250 ft (76 m) coil	3.3 lb (1.5 kg) per coil
T-101-G	1/4" OD black with green stripe poly tubing, 1 coil, 250 ft (76 m)	0.250" OD, 0.170" ID, 0.040 Wall, 250 ft (76 m) coil	3.3 lb (1.5 kg) per coil
T-101-O	1/4" OD black with orange stripe poly tubing, 1 coil, 250 ft (76 m)	0.250" OD, 0.170" ID, 0.040 Wall, 250 ft (76 m) coil	3.3 lb (1.5 kg) per coil
T-101-R	1/4" OD black with red stripe poly tubing, 1 coil, 250 ft (76 m)	0.250" OD, 0.170" ID, 0.040 Wall, 250 ft (76 m) coil	3.3 lb (1.5 kg) per coil
T-101-V	1/4" OD black with violet stripe poly tubing, 1 coil, 250 ft (76 m)	0.250" OD, 0.170" ID, 0.040 Wall, 250 ft (76 m) coil	3.3 lb (1.5 kg) per coil
T-101-W	1/4" OD black with white stripe poly tubing, 1 coil, 250 ft (76 m)	0.250" OD, 0.170" ID, 0.040 Wall, 250 ft (76 m) coil	3.3 lb (1.5 kg) per coil
T-101-Y	1/4" OD black with yellow stripe poly tubing, 1 coil, 250 ft (76 m)	0.250" OD, 0.170" ID, 0.040 Wall, 250 ft (76 m) coil	3.3 lb (1.5 kg) per coil
T-110	3/8" OD black poly tubing, 1 coil, 250 ft (76 m)	0.375" OD, 0.250" ID, 0.062 Wall, 250 ft (76 m) coil	7.6 lb (3.4 kg) per coil
T-130	1/2" OD black poly tubing, 1 coil, 250 ft (76 m)	0.500" OD, 0.375" ID, 0.062 Wall, 250 ft (76 m) coil	10.6 lb (4.8 kg) per coil
T-141	1/4" OD clear blue poly tubing, 1 coil, 250 ft (76 m)	0.250" OD, 0.159" ID, 0.045 Wall, 250 ft (76 m) coil	7.2 lb (3.3 kg) per coil

ORDERING INFORMATION

Model	Description
T-100	5/32" OD black poly tubing, 1 coil, 500 ft (152 m)
T-100-2	5/32" OD black poly tubing, twin, 1 coil, 500 ft (152 m)
T-101	1/4" OD black poly tubing, 1 coil, 250 ft (76 m)
T-101-2	1/4" OD black poly tubing, twin, 1 coil, 250 ft (76 m)
T-101-B	1/4" OD black with blue stripe poly tubing, 1 coil, 250 ft (76 m)
T-101-G	1/4" OD black with green stripe poly tubing, 1 coil, 250 ft (76 m)
T-101-O	1/4" OD black with orange stripe poly tubing, 1 coil, 250 ft (76 m)
T-101-R	1/4" OD black with red stripe poly tubing, 1 coil, 250 ft (76 m)
T-101-V	1/4" OD black with violet stripe poly tubing, 1 coil, 250 ft (76 m)
T-101-W	1/4" OD black with white stripe poly tubing, 1 coil, 250 ft (76 m)
T-101-Y	1/4" OD black with yellow stripe poly tubing, 1 coil, 250 ft (76 m)
T-110	3/8" OD black poly tubing, 1 coil, 250 ft (76 m)
T-130	1/2" OD black poly tubing, 1 coil, 250 ft (76 m)
T-141	1/4" OD clear blue poly tubing, 1 coil, 250 ft (76 m)



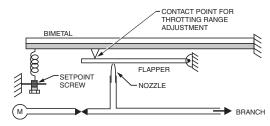
PNEUMATIC SYSTEMS, SENSORS AND ACTUATORS

PNEUMATICS & FITTINGS

INTAKE FILTER PNEUMATIC SYSTEMS COMPRESSOR PRESSURE SWITCH HIGH PRESSURE SAFETY RELIEF VALVE SERVICE DRIVE BELT MOTOR PRESSURE REDUCING VALVE SAFETY REFIEF VALVE HIGH-PRESSURE GAGE MAIN AIR STORAGE TO SYSTEM TANK **(** ❿ OW-PRESSURE GAGE ALITO SEPARATOR FILTER/TRAP SUBMICRON TEST COCK DRAIN COCK NORMALLY OPEN SERVICE/TEST VALVE AUTO TRAF NORMALLY CLOSED S PIPED TO DRAIN SERVICE/TEST VALVE TEST COCK

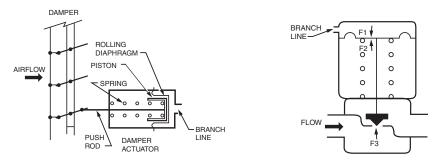
- Pneumatic control systems start with a compressed air supply system consisting of a compressor, tank, dryer and pressure reducing valve assembly. "Main air", typically 25 psi (pounds per square inch) pressure, is used to operate thermostats, actuators, relays and other pneumatic
- Pneumatic systems have some advantages over electric systems:
 - Spring return (fail-safe) functionality is built in to most pneumatic devices.
 - · Pneumatic systems provide safe control for hazardous locations (no electricity, no spark) and cost less than explosion proof and intrinsically safe equipment.
 - A pneumatic system has built-in backup capability for power outage situations (until compressed air tank runs down).
 - Pneumatic actuators are powerful and cost effective, especially for spring-return control of large butterfly valves (for example).
- Pneumatic systems are reliable, powerful, and long lasting when properly installed and maintained.

PNEUMATIC SENSORS



- Control devices consume air to maintain branch pressure and provide modulation. Typically rated in scim (standard cubic inches per minute), pneumatic devices bleed off system pressure, reducing storage tank pressure. The compressor cycles to maintain tank pressure.
- Temperature sensors, for example, consist of a bimetal element linked to a flapper. Changes in temperature move the flapper to open/close the nozzle. The nozzle (in this 1-pipe example) can pass more air than the restrictor, thus controlling (modulating) the branch air and ultimately the device at the end of the branch line.

PNEUMATIC ACTUATORS



- In a spring return actuator, branch air pressure force opposes spring force. Increasing branch pressure compresses the spring, and vice-versa.
- A flexible diaphragm separates the air chamber and spring chamber.
- · Linear motion drives a pushrod, connected to damper linkage or valve stem, to position the damper or valve.
- Spring range and branch air pressure determine the balance of forces, and thus the end device position.
- Spring ranges make sequencing valves or actuators simple; controlling a hot water valve and a cooling valve with one branch signal is common and very effective.