

FlowCon SME 1-1 1/2"

Dynamic Self Balancing Control Valve



SPECIFICATIONS

Insert:

Pressure rating:	2500 kPa / 360 psi
Temperature rating ¹ , media:	-20°C to +100°C / -4°F to +212°F
Temperature rating, ambient:	0°C to +50°C / +32°F to +122°F
Material:	
- Cartridge:	Glass-reinforced PSU/POM/PPS
- Diaphragm:	Hydrogenated acrylonitrile-butadiene-rubber
- Internal metal components:	Stainless steel
- O-rings and cone:	EPDM
Maximum close off pressure:	400 kPaD / 58 psid
Maximum operational ΔP :	400 kPaD / 58 psid
Shut-off leakage:	ANSI / FCI 70-2 1976 (R1982) / IEC 60534-4 Class - Class IV
Flow rate range:	0.240-1.29 l/sec / 3.81-20.4 GPM

Valve:

Material:	
- Body:	Forged brass ASTM CuZn40Pb2
- Ball valve:	ABV: Chemically nickel plated brass ball
End connections:	AB: Fixed female NPT. Alternatively sweat ABV: Union end connection in brass alloy, NPT

Note 1: Stated temperature rating is defined due to no external cartridge condensation.

SPECIFICATIONS (continued)

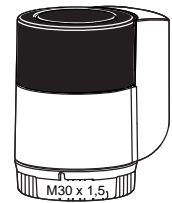
FlowCon Actuators:

FlowCon Actuator ²	FT.0.2 ³	FT.0.3 ³	FT.0.4 ³
Supply voltage	24V AC ±20%, 50/60Hz	230V AC ±15%, 50/60Hz	24V AC/DC ±20%, 50/60Hz
Type	Thermal		
Power consumption	3VA	2.5VA	3VA
Control signal	0...10V (variable), Normally closed	ON/OFF, Normally closed	
Closing and opening time	app. 3.5 minutes		
Ambient temperature	+32°F to +122°F		
Protection	IP54 including upside-down, class III		
Cable ⁴	Plug-in, 3.2 ft		
Weight	0.40 lbs		

Note 2: FlowCon warranty is voided using other actuators than supplied or recommended by FlowCon International A/S.

Note 3: Please note if mounted on FlowCon SME.2 higher leakage rate to be expected.

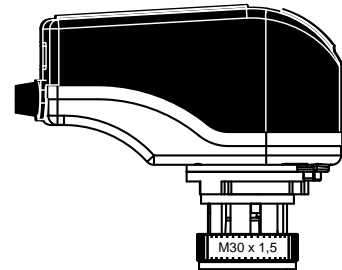
Note 4: The actuator is also available with a cable length of 6.5, 9.8, 13.1, 16.4, 19.7, 22.9, 32.8 and 49.2 feet.



Type FT.0.2,
FT.0.3 and FT.0.4

FlowCon Actuator ⁵	FN.0.2
Supply voltage	24V AC/DC ±10%, 50/60 Hz
Motor	Bi-directional synchronous
Power consumption	3VA
Control signal	Analog 0(2)-10V DC
Position output	0(2)-10V DC
Operation time	18.5 sec/mm
Ambient temperature	-0.4°F to +122°F
Humidity rating	<95% no condensation
Protection	IP54, class II
Cable	3.28 ft 4 wire halogen free cable
Weight	0.88 lbs

Note 5: FlowCon warranty is voided using other actuators than supplied or recommended by FlowCon International A/S.

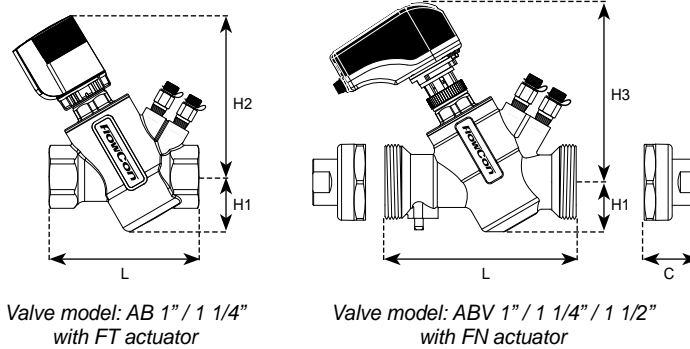


Type FN.0.2

DIMENSIONS AND WEIGHTS (NOMINAL) (measured in inches unless noted)

Model no.	Valve model	Valve size	Cartridge size	L	H1	H2 FT.0.x actuator	H3 FN.0.x actuator	End connections C ⁶			Weight ⁷ (lbs)	Cv ⁸ (GPM)
								NPT female	NPT male	Sweat		
SME.2.X.21	AB	1"	1 1/2"	5.04	1.85	5.18	6.02	N/A	N/A	N/A	4.1	14.5
SME.2.X.22		1 1/4"									3.7	
SME.2.X.15	ABV2	1"	1 1/2"	6.38	1.65	5.18	6.02	1.38	1.57	1.34	4.7	14.5
		1 1/4"						1.38	1.57	1.46		
		1 1/2"						1.57	1.65	N/A		

Note 6: Add end connection length to body length.
 Note 7: Weight does not include end connections or actuator.
 Note 8: For valve body.



MODEL NUMBER SELECTION

SME . 2 N

Insert flow range:
 2=1 1/2" cartridge

Insert type of actuator:
 22=FT.0.2 23=FT.0.3 24=FT.0.4
 32=FN.0.2

Insert type of body:
 1 1/2" cartridge: 21=AB 1" 22=AB 1 1/4" 15=ABV2 (1", 1 1/4", 1 1/2")

Insert p/t plug requirements:
 B=pressure/temperature plugs P=taps plugged

Insert inlet x outlet union end connections: - leave blank if AB-body or no end connections required

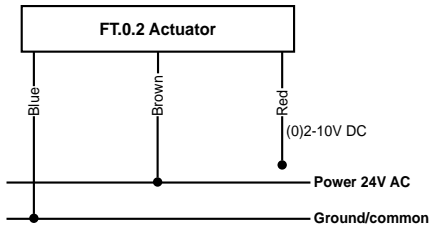
Body model and size	Female threaded	Male treaded	Sweat
SME.2.XX.15, 25-40mm, 1"-1 1/2"	G=25mm=1" P=32mm=1 1/4" Q=40mm=1 1/2"	J=25mm=1" S=32mm=1 1/4" T=40mm=1 1/2"	V=1 1/4" W=1 1/2"

Insert connections standard:
 N=NPT/ANSI

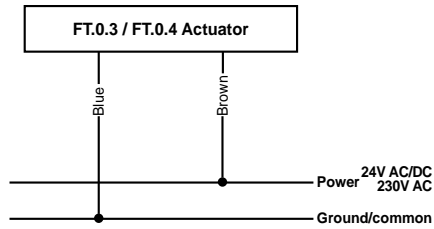
Example: SME.2.32.15.B.G.G.N=SME.2 with an ABV2-body with p/t plugs and a 24V modulating actuator and 1" NPT female union end connections.

WIRING INSTRUCTION

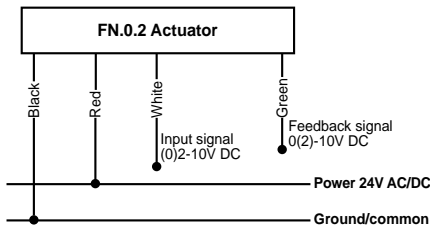
Type FT.0.2



Type FT.0.3/0.4



Type FN.0.2



DESCRIPTION

The SME series are self balancing dynamic flow control valves that are pressure independent, two-way, modulating to accept digital or analog input signals. The valves accept 0(2)-10V or ON/OFF input signals. Each valve has an adjustable maximum flow rate setting to enable flow limitation and balancing to the coil or zone that the valve is controlling.

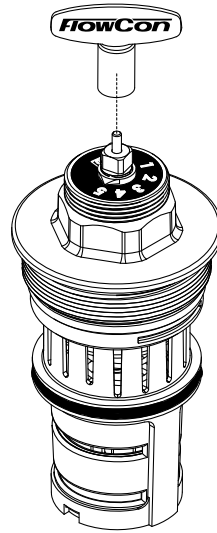
For use in fan-coil units, VAV applications and cooling ceilings for activation of the heating or cooling.

They are available in two different valve bodies, i.e. FlowCon AB or ABV.

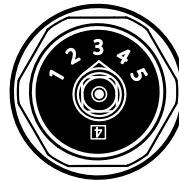
MAXIMUM FLOW RATE LIMITATION SETTINGS - VALVE SIZE: 1"-1 1/2"

40mm · 1 1/2" · SME			Setting
16-400 kPaD · 2.3-58 psid at setting 2.6			
SME.2 (black o-ring)			
l/sec	l/hr	GPM	
0.240	865	3.81	1.0
0.282	1010	4.46	1.1
0.322	1160	5.10	1.2
0.361	1300	5.72	1.3
0.399	1430	6.32	1.4
0.435	1570	6.90	1.5
0.471	1700	7.47	1.6
0.506	1820	8.02	1.7
0.540	1940	8.56	1.8
0.573	2060	9.08	1.9
0.605	2180	9.59	2.0
0.636	2290	10.1	2.1
0.667	2400	10.6	2.2
0.696	2510	11.0	2.3
0.725	2610	11.5	2.4
0.753	2710	11.9	2.5
0.780	2810	12.4	2.6
0.807	2900	12.8	2.7
0.832	3000	13.2	2.8
0.858	3090	13.6	2.9
0.882	3180	14.0	3.0
0.906	3260	14.4	3.1
0.930	3350	14.7	3.2
0.953	3430	15.1	3.3
0.975	3510	15.5	3.4
0.997	3590	15.8	3.5
1.02	3670	16.1	3.6
1.04	3740	16.5	3.7
1.06	3820	16.8	3.8
1.08	3890	17.1	3.9
1.10	3960	17.4	4.0
1.12	4030	17.7	4.1
1.14	4100	18.1	4.2
1.16	4170	18.4	4.3
1.18	4240	18.7	4.4
1.20	4300	19.0	4.5
1.21	4370	19.2	4.6
1.23	4440	19.5	4.7
1.25	4500	19.8	4.8
1.27	4570	20.1	4.9
1.29	4630	20.4	5.0

Nominal flow rate



Use the special designed key (FlowCon part no. ACC0001) for micrometer setting.



A micrometer setting of 3.4 as illustrated above corresponds to a maximum flow rate of 15.5 GPM.

Accuracy: Greatest of either ±10% of controlled flow rate or ±5% of maximum flow rate.

GENERAL SPECIFICATIONS

1. PRESSURE INDEPENDENT DYNAMIC CONTROL VALVES - FLOWCON SME

- 1.1. Contractor shall install the pressure independent dynamic control valves where indicated in drawings.
- 1.2. Valve shall be an electronic, dynamic, modulating, 2-way, pressure independent control device.
- 1.3. Pressure independent dynamic control valve shall accurately control flow, independent of system pressure fluctuation.
- 1.4. Maximum flow setting shall be adjustable to 41 different settings within the range of the valve size.

2. VALVE ACTUATOR, ELECTRONIC

2.a. FlowCon FN-actuators

- 2.a.1 Valve actuator housing shall be rated to IP54.
- 2.a.2 Actuator shall be driven by 24V AC/DC, and shall accept 0(2)-10V DC control signal.
- 2.a.3 Actuator shall use full stroke and provide full authority.
- 2.a.4 Actuator shall have visible indication of stroke position.
- 2.a.5 Feedback signal 0(2)-10V DC to the control system shall be possible.
- 2.a.6 Manual override to either fully closed or fully open valve position shall be possible.

OR....

2.b. FlowCon FT-actuators

- 2.b.1 Valve actuator housing shall be rated to IP54.
- 2.b.2 Actuator shall be driven by 24V or 230V AC, and shall depending on actuator choice accept 0-10V DC or ON/OFF control signal.
- 2.b.3 Actuator shall use full stroke and provide full authority.
- 2.b.4 Actuator shall have visible indication of stroke position.

3. VALVE HOUSING

3.a. FlowCon AB

- 3.a.1. Valve housing shall consist of forged brass ASTM CuZn40Pb2, rated at no less than 360 psi static pressure and +248°F.
- 3.a.2 Valve housing shall be permanently marked to show direction of flow.
- 3.a.3 Optional pressure/temperature test plugs for verifying accuracy of flow performance shall be available for all valve sizes.
- 3.a.4 Housing shall be configured for flow regulation unit accessibility.

OR....

3.b. FlowCon ABV

- 3.b.1. Valve housing shall consist of forged brass ASTM CuZn40Pb2, rated at no less than 360 psi static pressure and +248°F.
- 3.b.2 Valve housing shall be permanently marked to show direction of flow.
- 3.b.3 Valve ball shall consist of chemically nickel plated brass (ASTM CuZn40Pb2).
- 3.b.4 Optional pressure/temperature test plugs for verifying accuracy of flow performance shall be available for all valve sizes.
- 3.b.5 Valve housing shall be double union end constructed with a range of pipe connections available for the appropriate pipe size.
- 3.b.6 Housing shall be configured for flow regulation unit accessibility.

4. FLOW REGULATOR / AUTOMATIC BALANCING UNIT

- 4.1. Flow regulation unit shall consist of glass-reinforced PSU/POM/PPS with a hydrogenated acrylonitrile-butadiene-rubber diaphragm.
- 4.2. Flow regulation unit shall be readily accessible, for change-out or maintenance.
Flow regulation unit shall be adjustable with the valve in-line and the system in operation.
- 4.3. Flow regulation unit shall be externally adjustable to 1 of 41 different flow rates. Shall be available in 1 psid operational range for 1", 1 1/4", 1 1/2". Minimum range shall be capable of being activated by minimum 2.3 psid. Further, the flow regulation unit shall be capable of controlling the flow within $\pm 10\%$ of rated flow or $\pm 5\%$ of maximum flow.

APPLICATION AND SCHEMATIC EXAMPLE

