

FlowCon SME 15-25mm

Dynamic Self Balancing Control Valve



SPECIFICATIONS

Insert:

Static pressure:	2500 kPa, 360 psi
Ambient temperature:	+1°C to +50°C, +34°F to +122°F
Media temperature:	+1°C to +110°C, +34°F to +230°F
Material:	
- Cartridge:	Glass-reinforced polyphenyl-sulfide
- Diaphragm:	Hydrogenated acrylonitrile-butadiene-rubber
- Internal components:	Stainless steel
- O-ring:	EPDM
Maximum close off pressure:	400 kPa, 58 psi
Maximum operational ΔP :	400 kPaD, 58 psid
Shut-off leakage:	<3 l/hr, 0.013 GPM

Valve:

Material:	
- Body:	Forged brass ASTM CuZn39Pb2
- Ball valve:	ABV: Chemically nickel plated brass ball
End connections:	A: Fixed female ISO or NPT
	AB: Fixed female ISO or NPT
	ABV: Union end connection in brass alloy ISO or NPT

SPECIFICATIONS (continued)

Actuator:

TYPE FM.0.2

Supply voltage:

FM.0.2: 24V AC/DC $\pm 20\%$, 50/60Hz

Motor:

Stepper motor

Control:

Analog 0-10V DC

Power consumption:

2.5VA

Ambient temperature:

+1°C to +50°C

Protection:

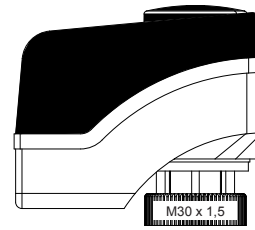
IP40, class III

Cable:

Plug-in, 1.5 meter

Weight:

0.3 kg



Type FM.0.2,
FM.0.3 and FM.0.4

TYPE FM.0.3 and FM.0.4

Supply voltage:

FM.0.3: 230V AC $\pm 15\%$, 50/60Hz

FM.0.4: 24V AC $\pm 20\%$, 50/60Hz

Motor:

Syn. motor

Control:

3 point floating

Power consumption:

FM.0.3: 6.0VA. **FM.0.4:** 0.8VA

Ambient temperature:

+1°C to +50°C

Protection:

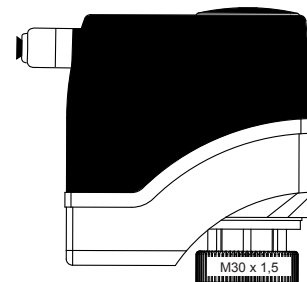
IP40, class II

Cable:

Plug-in, 1.5 meter

Weight:

0.3 kg



Type FM.1.3 and FM.1.4

TYPE FM.1.3 and FM.1.4

Technical details as above, but including 1 change-over switch

Switching point adjustable:

0-100% (pre-set to 50%)

Switching capacity:

max 250V AC, 0.5A

Weight:

0.4 kg

NOTE: FlowCon International A/S does not stay responsible for the control function when using other actuators than supplied by FlowCon International A/S.

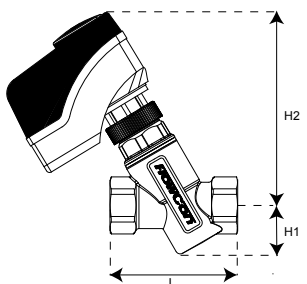
DIMENSIONS AND WEIGHTS (NOMINAL) (measured in mm unless noted)

Model no.	With valve model no.	Size	L	H1	H2 (w. FM.0.x actuator)	H3 (w. FM.1.x actuator)	End connections C ¹			Weight ² (kg)	Kv ³ (m ³ /hr)
							ISO female	ISO male	Sweat		
SME.X.X.04	A	15	80	31	119	137	-	-	-	0.53	2.6
SME.X.X.05		20								0.48	
SME.X.X.01	AB	15	82	31	119	137	-	-	-	0.53	2.6
SME.X.X.02		20								0.58	
SME.X.X.03	ABV1	15	122	34	119	137	22	25	20	0.85	2.6
		20					22	25	20		
		25					-	39	22		

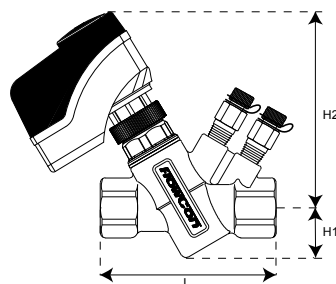
Note 1: Add end connection length to body length.

Note 2: Weight does not include end connections or actuator.

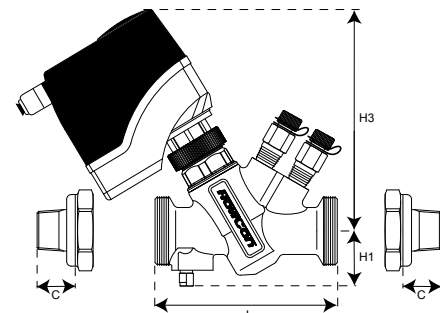
Note 3: For valve body.



Valve model: A



Valve model: AB



Valve model: ABV

MODEL NUMBER SELECTION

SME .

Insert flow range:
0=low flow **1**=medium flow

Insert type of actuator:
2=FM.0.2 **3**=FM.0.3 **4**=FM.0.4 **6**=FM.1.3 **7**=FM.1.4

Insert type of body:
01=AB15 **02**=AB20 **03**=ABV(15/20/25) **04**=A15 **05**=A20

Insert p/t plug requirements:
B=pressure/temperature plugs **P**=taps plugged - leave blank if A-body or no p/t plugs required

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

Body model and size	Female threaded	Male treaded	Sweat
SME.1.3, 15-25mm, 1/2"-1"	E =15mm=1/2" F =20mm=3/4"	H =15mm=1/2" I =20mm=3/4" J =25mm=1"	K =15mm L =18mm M =22mm

Insert connections standard:
I=ISO **N**=NPT/ANSI

Example: SME.1.2.3.B.F.F.I=SME.1 with an ABV1-body with p/t plugs and a 24V modulating actuator and 20mm female connections.

ACTUATOR DESCRIPTION

When the actuator is driven by DC 0-10 V control voltage or by a 3-position signal, it produces a stroke which is transmitted to the valve stem. The description of operation applies only to versions which are fully open when de-energized (NO).

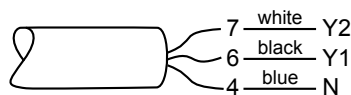
CONNECTION CABLE

Type FM.0.2



Y: 24V AC, control signal 0-10V DC
 G0: System neutral
 G: 24V AC/DC, system potential

Type FM.0.3



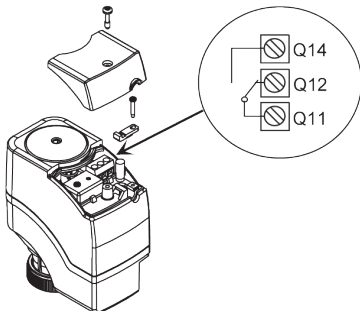
Y2: 230V AC, Control signal CLOSE
 Y1: 230V AC, Control signal OPEN
 N: Neutral

Type FM.0.4



Y2: 24V AC, control signal CLOSE
 Y1: 24V AC, control signal OPEN
 G: 24V AC, system potential

Type FM.1.x



Terminals for auxiliary switch

Pre-set setting:

0-50% Q11 -> Q12

50%-1 Q11 -> Q14

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 0-10V or digital 3-point floating 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.

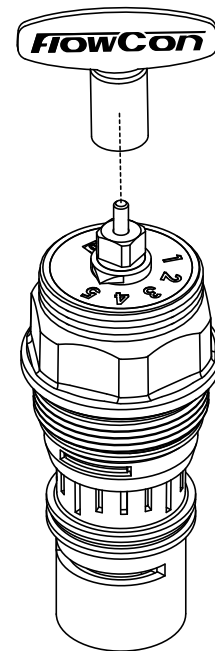
For use in fan-coil units, VAV applications and cooling ceilings for activation of the heating or cooling.

They are available in three different valve bodies, i.e. FlowCon A, AB or ABV1.

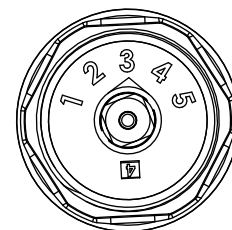
MAXIMUM FLOW RATE LIMITATION SETTINGS - VALVE SIZE DN15-DN25

20mm · 3/4" · SME							Setting
16-200 kPaD · 2.3-29 psid			30-400 kPaD · 4.4-58 psid				
SME.0 (green o-ring)			SME.1 (black o-ring)				
I/sec	l/hr	GPM	I/sec	l/hr	GPM		
0.0111	40	0.176	0.0165	59.3	0.261	1.2	
0.0167	60	0.264	0.0223	80.3	0.353	1.3	
0.0172	62	0.273	0.0331	119	0.526	1.4	
0.0298	107	0.472	0.0481	173	0.762	1.5	
0.0419	151	0.664	0.0630	226	0.993	1.6	
0.0536	193	0.850	0.0770	277	1.22	1.7	
0.0649	234	1.03	0.0910	326	1.44	1.8	
0.758	273	1.20	0.104	374	1.65	1.9	
0.0862	310	1.37	0.117	421	1.86	2.0	
0.0963	347	1.53	0.130	467	2.06	2.1	
0.106	381	1.68	0.142	511	2.25	2.2	
0.115	415	1.83	0.154	554	2.44	2.3	
0.124	447	1.97	0.166	596	2.62	2.4	
0.133	477	2.10	0.177	636	2.80	2.5	
0.141	507	2.23	0.188	675	2.97	2.6	
0.148	534	2.35	0.198	712	3.14	2.7	
0.156	561	2.47	0.208	748	3.29	2.8	
0.163	586	2.58	0.218	783	3.45	2.9	
0.169	610	2.69	0.227	816	3.59	3.0	
0.176	633	2.79	0.236	848	3.74	3.1	
0.182	654	2.88	0.244	879	3.87	3.2	
0.187	674	2.97	0.252	908	4.00	3.3	
0.193	693	3.05	0.260	936	4.12	3.4	
0.197	711	3.13	0.268	963	4.24	3.5	
0.202	727	3.20	0.275	988	4.35	3.6	
0.206	743	3.27	0.281	1010	4.46	3.7	
0.210	757	3.33	0.286	1030	4.56	3.8	
0.214	770	3.39	0.295	1060	4.65	3.9	
0.217	782	3.44	0.300	1080	4.74	4.0	
0.220	793	3.49	0.303	1090	4.82	4.1	
0.223	802	3.53	0.309	1110	4.89	4.2	
0.225	811	3.57	0.314	1130	4.96	4.3	
0.227	819	3.61	0.317	1140	5.03	4.4	
0.229	826	3.63	0.320	1150	5.08	4.5	
0.231	831	3.66	0.325	1170	5.13	4.6	
0.232	836	3.68	0.328	1180	5.18	4.7	
0.233	839	3.70	0.331	1190	5.22	4.8	
0.234	842	3.71	0.331	1190	5.25	4.9	
0.234	844	3.72	0.334	1200	5.28	5.0	

Accuracy: Greatest of either ±10% of controlled flow rate or ±2% of maximum flow rate.
Recommended range: 2.0-5.0.



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 0.193 l/sec (SME.0) and 0.260 l/sec (SME.1).

GENERAL SPECIFICATIONS

1. PRESSURE INDEPENDENT DYNAMIC CONTROL VALVE 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 39 different settings within the range of the valve size.

2. VALVE ACTUATOR, ELECTRONIC

- 2.1. Valve actuator housing shall be rated to IP40.
- 2.2. Actuator shall be driven by 24V or 230V AC voltage, and shall depending on actuator choice accept 0-10V DC or 3-point floating electrical control signal.
- 2.3. Actuator shall use full span and provide full authority.
- 2.4. Actuator shall have visible indication of stroke position.
- 2.5. Manually override to either a fully closed or fully open valve position shall be possible.

3. VALVE HOUSING

3.a. FlowCon A

- 3.a.1 Valve housing shall consist of forged brass ASTM CuZn39Pb2, rated at no less than 2500 kPa static pressure at +100°C.

OR...

3.b. FlowCon AB

- 3.b.1 Valve housing shall consist of forged brass ASTM CuZn39Pb2, rated at no less than 2500 kPa static pressure at +100°C.
- 3.b.2 Pressure/temperature test plugs for verifying accuracy of flow performance shall be available for all valve sizes.

OR...

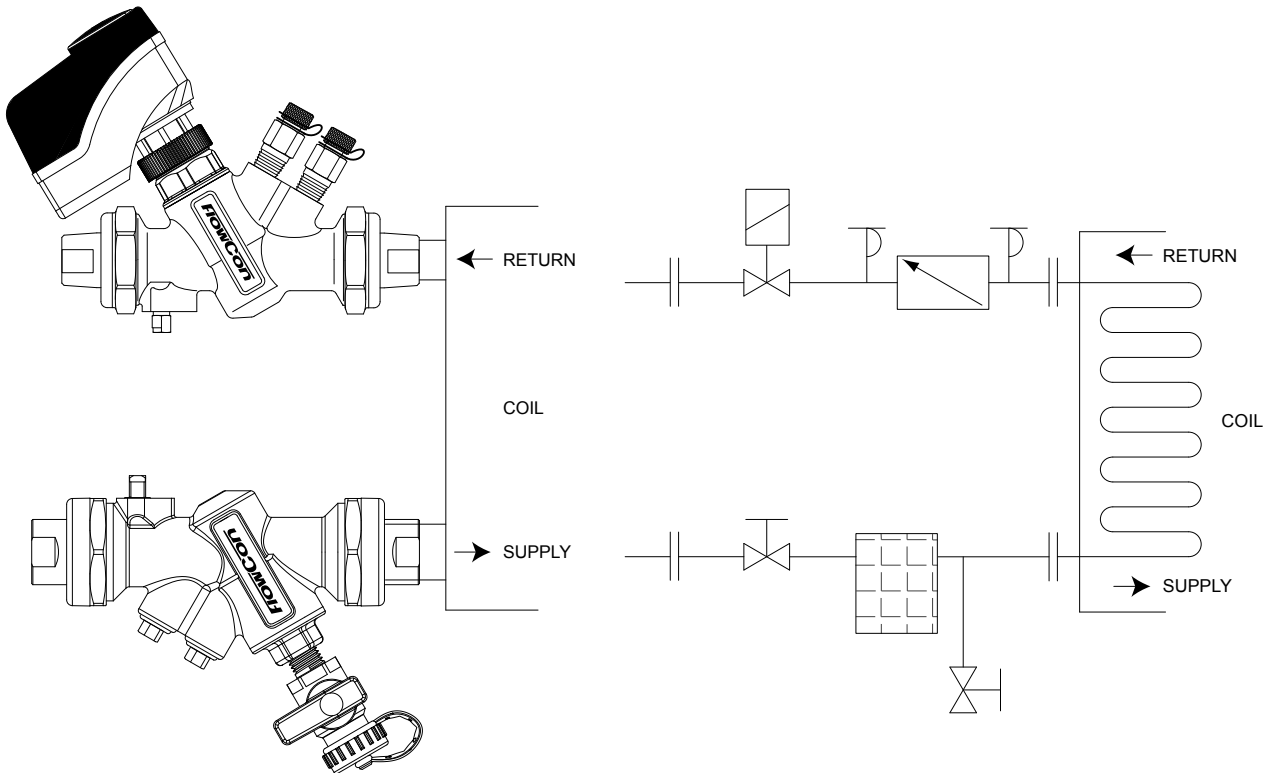
3.c. FlowCon ABV

- 3.c.1 Valve housing shall consist of forged brass ASTM CuZn39Pb2, rated at no less than 2500 kPa static pressure at +100°C.
- 3.c.2 Valve ball shall consist of chemically nickel plated brass (ASTM CuZn39Pb2).
- 3.c.3 Pressure/temperature test plugs for verifying accuracy of flow performance shall be available for all valve sizes.

4. FLOW REGULATION UNIT

- 4.1. Flow regulation unit shall consist of glass-reinforced polyphenyl-sulfide with a hydrogenated acrylonitrile-butadiene-rubber diaphragm.
- 4.2. Flow regulation unit shall be readily accessible, for change-out or maintenance.
- 4.3. Flow regulation unit shall be externally adjustable to 1 of 39 different flow rates; minimum range shall be capable of being activated by minimum 16 kPaD operation ranges; and shall be capable of controlling the flow within $\pm 10\%$ of rated flow or $\pm 2\%$ of maximum flow.

APPLICATION AND SCHEMATIC EXAMPLE



UPDATES

For latest updates please see www.flowcon.com

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