

FlowCon EVS 15-25mm

Plug-in Insert for Temperature Control of Automatic Balancing Valve



SPECIFICATIONS

Insert:

Pressure rating: Temperature rating, media¹: Temperature rating, ambient: Material: - Cartridge:

- Body:
- Spring:
- Spindel:

- Seat plug and o-rings: Maximum close off pressure: Shut off leakage: Flow rate range:

Valve:

Material: - Body: - Ball valve: End Connections: 1600 kPa / 232 psi -20°C to +120°C / -4°F to +248°F 0°C to +60°C / +32°F to +140°F

Stainless steel AISI type 304 Brass ASTM B584 and polyoxymethylene Stainless steel type 17-7 Brass EPDM 400 kPa / 58 psi Tight 0.0210-0.631 l/sec

Forged brass ASTM CuZn40Pb2 ABV: Chemically nickel plated brass ball A: Female ISO or NPT AB: Female ISO or NPT ABV: Union end connections in brass alloy ISO or NPT

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

SPECIFICATIONS (continued)

FlowCon Actuators:

FlowCon Actuator ²	EV.0.2	EV.0.3	EV.0.4	EV.0.5	EV.1.3	EV.1.4		
Supply voltage	24V AC -10%/+20% 50/60Hz	230V AC ±10% 50/60Hz	24V AC/DC +20/-10% 0-60Hz	120V AC ±10% 50/60Hz	230V AC ±10% 50/60Hz	24V AC/DC +20/-10% 0-60Hz		
Power consumption	1.8 watt		1.8 watt	1.8 watt				
Control signal	0-10V DC normally closed ³		ON/OFF normally closed ³	ON/OFF normally closed ³				
Operation time	Approx. 2 min	Approx. 3 min Approx. 3 min						
Ambient temperature	+0°C to +60°C		+0°C to +60°C	+0°C to +60°C				
Protection	IP54		IP54, class II		IP54, class II			
Cable	Plug-in, 1 meter		Fixed, 1 meter Fixed, 1 meter					
Weight	0.130 kg		0.105 kg	0.105 kg				
Including end switch		No			Yes			
Switching point	N/A	N/A	N/A	N/A	A Approx. 2mm Appro			
Switching capacity	N/A	N/A	N/A	N/A	230V AC 5A ohm resistive load	24V AC 3A ohm resistive load		

Note 2: FlowCon warranty is voided using other actuators than supplied or recommended by FlowCon International A/S. Note 3: To ensure that the valve is in an open position during commission of the system, the actuator will be delivered in a normal open position and remain in this position until it is electrically operated first time.







Type EV.0.3, EV.0.4, EV.0.5, EV.1.3 and EV.1.4 Valve adaptor, green



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Type EV.0.2 Valve adaptor, green

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

Valve	Actuator model	Valve Cartridge	1	H1	H2	End connections C ³			Weight	Kv⁴	
model		size	size	-			ISO female	ISO male	Sweat	(kgs.) w/o end conn.	(m³/hr)
		15	20	80	120	N/A				0.70	
	EV.0.2	20								0.65	2.35
		25		91						0.68	
A	EV.0.3	15		80 91	N/A	106				0.70	2.35
	EV.0.4 EV.0.5 EV.1.3 EV.1.4	20	20							0.65	
		25								0.68	
	EV.0.2	15		82	120	N/A				0.70	
		20	20	94						0.75	2.35
		25		102						0.75	
AB	EV.0.3 EV.0.4 EV.0.515 20EV.1.3 EV.1.425	15		82	N/A	106				0.70	
		20	20	94						0.75	2.35
		25		102						0.75	
	EV.0.2	15		122	120	N/A	22	25	20	1.10	
ABV1		20	20				22	25	20		2.35
		25					-	39	22		
	EV.0.3 EV.0.4 EV.0.5 EV.1.3 EV.1.4	15			N/A	106	22	25	20		
		20	20	122			22	25	20	1.10	2.35
		25					-	39	22		

Note 3: Add end connection length to body length. Note 4: The Kvs-value of 2.35 m³h, which corresponds to the temperature control and valve housing, will provide an additional pressure drop. This additional pressure drop will provide an offset of pressure range, which needs to be added into the control range for the Flow Control Cartridge. This offset is depended off the flow rate for the selected cartridge. See the diagram and example on page 7.



EV.0.3, EV.0.4, EV.0.5, EV.1.3 and EV1.4 on FlowCon A



EV.0.3, EV.0.4, EV.0.5, EV.1.3 and EV1.4 on FlowCon AB 15/20mm



EV.0.3, EV.0.4, EV.0.5, EV.1.3 and EV1.4 on FlowCon ABV1



EV.0.2 on FlowCon AB 15/20mm



EV.0.2 on FlowCon ABV1

MODEL NUMBER SELECTION

		EVS.	•	······
Insert type of actuator: 2=EV.0.2 3=EV.0.3 4=EV.0.4	5 =EV.1.3 6 =EV.1.4 7 =E	V.0.5		
Insert type of body: 01=AB15 02=AB20 03=ABV1 05=A20 06=A25 09=AB25	(15/20/25) 04= A15			
Insert p/t plug requirements: Leave it blank if no p/t plugs are r	equired B =pressure/tempe	rature plugs P =taps plugge		
Insert inlet x outlet union end conn	ections - leave it blank if A-	or AB-body or no end connec	tions required:	
Body size Female threaded		Male treaded	Sweat	
Union end 15-25mm, 1/2"-1"	end 15-25mm, 1/2"-1" E =15mm=1/2" F =20mm=3/4"		K=15mm L=18mm M=22mm	
Insert connection standard: I=ISO N=NPT	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·		
Insert automatic flow limiting cartrid (Determine from cartridge selection	dge code: ו chart)			
Insert kPaD control range:				

1=10-95 kPaD 2=22-210 kPaD 4=40-390 kPaD - leave blank if no cartridge is required

Example: EVS.2.01.P.I.F360206.2=EVS insert in AB 15mm ISO female threaded body with plugs, 24V modulating actuator and a F360206 cartridge (0.189 l/sec, 22-210 kPaD).

FLOW RATE TABLE - STAINLESS STEEL CARTRIDGE - FOR VALVES DN15-DN25

20mm · 3/4" stainless steel cartridge										
	Pressure range, ΔP :			10-95 kPaD 1-14 psid		22-21 2-32	0 kPaD 2 psid	40-390 kPaD 4-57 psid		
				Type 1		Type 2		Type 4		
	l/sec	l/hr	GPM	Marking	FlowCon	Marking	FlowCon	Marking	FlowCon	
	0.0210	75.7	0.333	11-1	F360111					
	0.0315	114	0.500	01-1	F360101					
	0.0347	125	0.550			11-2	F360211			
	0.0421	151	0.667	02-1	F360102					
	0.0473	170	0.750			01-2	F360201	11-4	F360411	
	0.0631	227	1.00	03-1	F360103	02-2	F360202	01-4	F360401	
	0.0694	250	1.10							
	0.0841	303	1.33	04-1	F360104			02-4	F360402	
ate	0.0946	341	1.50			03-2	F360203			
N L	0.105	379	1.67	05-1	F360105					
lg	0.126	454	2.00	06-1	F360106	04-2	F360204	03-4	F360403	
a	0.147	530	2.33	07-1	F360107					
j <u>ä</u>	0.158	568	2.50			05-2	F360205			
۶	0.168	606	2.67	08-1	F360108			04-4	F360404	
	0.189	681	3.00			06-2	F360206			
	0.210	757	3.33	10-1	F360110			05-4	F360405	
	0.221	795	3.50			07-2	F360207			
	0.252	908	4.00	12-1	F360112	08-2	F360208	06-4	F360406	
	0.294	1060	4.67	14-1	F360114			07-4	F360407	
	0.315	1140	5.00	16-1	F360116	10-2	F360210			
	0.336	1210	5.33					08-4	F360408	
	0.379	1360	6.00			12-2	F360212			
	0.421	1511	6.67					10-4	F360410	
	0.442	1590	7.00			14-2	F360214			
	0.505	1820	8.00			16-2	F360216	12-4	F360412	
	0.589	2120	9.33					14-4	F360414	
	0.631	2270	10.0					16-4	F360416	

Accuracy: ±5% of controlled flow rate.

ACCESSORIES

- P/t plugs: 2 x ACC00101
- Plugs and gaskets: 2 x ACC1B03000
- Spare part, black composite part: EVS.0.0.1.

GENERAL DESCRIPTION

The standard actuators available for the FlowCon EVS valve are thermal actuators that operate ON/OFF on 24V AC/DC, 120V AC and 230V AC/DC or modulating on 24V AC respectively. ON/OFF actuators are available with end switches which can be used for controlling the fan in priority to the open position of the valve.

The EVS-insert with stainless steel cartridge will in connection with the FlowCon A, AB and ABV1 valve bodies provide temperature control and dynamic balancing for use in cooling ceilings, fan coil units in air-condition or as zone valve in heating systems.

GENERAL SPECIFICATIONS

1. AUTOMATIC BALANCING AND TEMPERATURE CONTROL VALVES

- FLOWCON EVS + FLOWCON A, AB or ABV1.
- 1.1. Contractor shall install balancing / temperature valves where indicated in drawings.
- 1.2. The flow limiting device shall be available as a plug-in device for an inline valve housing.

2. VALVE ACTUATOR

- 2.1. Actuator shall provide a visual indication of the valve position.
- 2.2. The valve shall be closing when the actuator is not powered.
- 2.3. The valve shall withstand a shut off pressure of at least 400 kPa without allowing internal leakage.
- 2.4. The seat plug shall be manufactured of EPDM rubber.
- 2.5. The packing box for sealing the stem shall be removable with the system in operation, without allowing external leakage.

3. VALVE INSERT

3.1. The insert shall consist of forged brass ASTM B584 and polyoxymethylene, rated at no less than 1600 kPa static pressure and +120°C.

4. VALVE HOUSING

4.a. FlowCon A

- 4.a.1. Valve housing shall consist of forged brass ASTM CuZn40Pb2, rated at no less than 2500 kPa static pressure and +120°C.
- 4.a.2. Valve housing shall be permanently marked to show direction of flow.
- 4.a.3. Housing shall be configured for flow regulation unit accessibility.

OR....

4.b. FlowCon AB

- 4.b.1. Valve housing shall consist of forged brass ASTM CuZn40Pb2, rated at no less than 2500 kPa static pressure and +120°C.
- 4.b.2. Valve housing shall be permanently marked to show direction of flow.
- 4.b.3. Optional pressure/temperature test plugs for verifying accuracy of flow performance shall be available for all valve sizes.
- 4.b.4. Housing shall be configured for flow regulation unit accessibility.

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4.c. FlowCon ABV

- 4.c.1. Valve housing shall consist of forged brass ASTM CuZn40Pb2, rated at no less than 2500 kPa static pressure and +120°C.
- 4.c.2. Valve housing shall be permanently marked to show direction of flow.
- 4.c.3. Valve housing shall be double union end constructed with a range of pipe connections available for the appropriate pipe size.
- 4.c.4. Valve ball shall consist of chemically nickel plated brass (ASTM CuZn40Pb2).
- 4.c.5. Optional pressure/temperature test plugs for verifying accuracy of flow performance shall be available for all valve sizes.
- 4.c.6. Housing shall be configured for flow regulation unit accessibility.

GENERAL SPECIFICATIONS (continued)

5. FLOW REGULATOR / AUTOMATIC BALANCING UNIT

- 5.1. Flow regulation unit assembly shall be manufactured of AISI type 304 stainless steel and stainless steel 17-7 spring.
- 5.2. Flow regulation unit shall be readily accessible for change-out or maintenance.
- 5.3. Flow regulation unit shall be available in 3 different kPaD operational ranges, minium range shall be capable of being activated by minimum 10 kPaD. Further, the flow regulation unit shall be capable of controlling flow within ±5% of rated flow.
- 5.4 Indentification tags shall be available for all valves; tags shall be indelibly marked with part number and flow rate.

APPLICATION AND SCHEMATIC EXAMPLE



OFFSET OF PRESSURE RANGE



Example: The index flow 0.189 l/sec is selec-ted into the cartridge no. F360206, range 2 (22-210 kPaD) from the "cartridge selection chart" on page 4. This selection will result in an offset value of 8 kPa into a new control range of 30-218 kPa for the cartridge.

UPDATES

For latest updates please see www.flowcon.com

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