

# FlowCon UniQ 15-20mm

*Dynamic Self Balancing Control Valve*



## SPECIFICATIONS

Static pressure:	2500 kPa / 360 psi
Ambient temperature:	+1°C to +50°C / +34°F to +122°F
Media temperature <sup>1</sup> :	-20°C to +100°C / -4°F to +212°F
Material:	
- Plastic components (internal):	Glass-reinforced PSU/PPS/POM
- Metal components (internal):	Stainless steel
- O-rings and seat:	EPDM
- Housing:	Forged brass ASTM CuZn40Pb2
Maximum close off pressure:	200 kPaD / 29 psid
Maximum operational $\Delta P$ :	200 kPaD / 29 psid
Shut-off leakage:	ANSI / FCI 70-2 2006 / IEC 60534-4 - Class IV
Flow rate range:	0.0056-0.2086 l/sec / 0.089-3.305 GPM
End connections:	Fixed female DN15/20 ISO 20mm male ISO suitable for DN15 EuroCone according to EN215, Annex A Multiple union end connections

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

## SPECIFICATIONS (...continued)

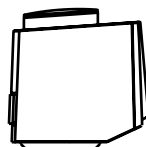
### FlowCon Actuators:

FlowCon Actuator <sup>2</sup>	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 -10%/+20%, 50/60Hz	120V AC ±10%, 50/60Hz	230V AC ±10%, 50/60 Hz	24V AC/DC -10%/+20%, 50/60 Hz
Type	Thermal	Thermal	Thermal	Thermal	Thermal	Thermal
Power consumption	1.0 watt	1.0 watt	1.0 watt	1.0 watt	1.0 watt	1.0 watt
Control signal	0-10V DC normally closed <sup>3</sup>	ON/OFF normally closed <sup>3</sup>	ON/OFF normally closed <sup>3</sup>	ON/OFF normally closed <sup>3</sup>	ON/OFF normally closed <sup>3</sup>	ON/OFF normally closed <sup>3</sup>
Failsafe function	Yes	Yes	Yes	Yes	Yes	Yes
End switch	No	No	No	No	Yes	Yes
Operation time	Approx. 2 min	Approx. 4 min	Approx. 4 min	Approx. 4 min	Approx. 4 min	Approx. 4 min
Ambient temperature	0°C to +60°C	0°C to +60°C	0°C to +60°C	0°C to +60°C	0°C to +60°C	0°C to +60°C
Protection	IP54, class III	IP54, class II	IP54, class III	IP54, class II	IP54, class II	IP54
Cable	Plug-in, 3 wires x 0.22mm <sup>2</sup> PVC, standard 1 meter	Fixed, 2 wires x 0.75mm <sup>2</sup> PVC, standard 1 meter	Fixed, 2 wires x 0.75mm <sup>2</sup> PVC, standard 1 meter	Fixed, 2 wires x AWG18 (0.82mm <sup>2</sup> ) PVC, standard 1 meter	Fixed, 4 wires x 0.75mm <sup>2</sup> PVC, standard 1 meter	Fixed, 4 wires x 0.75mm <sup>2</sup> PVC, standard 1 meter
Weight <sup>4</sup>	0.11 kg	0.10 kg	0.10 kg	0.10 kg	0.15 kg	0.15 kg

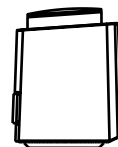
Note 2: FlowCon warranty is voided using other actuators than supplied or recommended by FlowCon International.

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.

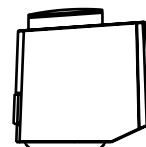
Note 4: Weight without adaptor ring, but with wire.



FlowCon EV.0.2



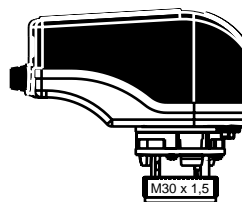
FlowCon EV.0.3,  
EV.0.4 and EV.0.5



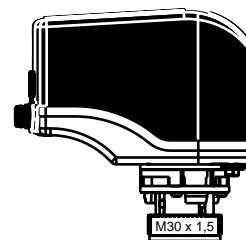
FlowCon EV.1.3  
and EV.1.4

FlowCon Actuator <sup>5</sup>	FN.0.2	FN.0.3	FN.0.4	FN.1.2	FN.1.4
Supply voltage	24V AC/DC ±10%, 50/60 Hz	110/230V AC ±10%, 50/60 Hz	24V AC/DC ±10%, 50/60 Hz	24V AC/DC ±10%, 50/60 Hz	24V AC/DC ±10%, 50/60 Hz
Type	Electrical, Bi-directional synchronous motor				
Power consumption	5VA	5VA	5VA	6VA, 10VA peaks	6VA, 10VA peaks
Control signal	Analog 0(2)-10V DC	Digital (2-position/3-point floating)	Digital (2-position/3-point floating)	Analog 0(2)-10V DC	Digital (2-position/3-point floating)
Feedback	Yes, 0(2)-10V DC	No	No	Yes, 0(2)-10V DC	No
Failsafe function	No	No	No	Yes	Yes
Auto stroke	Yes	No	No	Yes	No
Operation time	50 Hz: 18.5 sec/mm	50 Hz: 18.5 sec/mm	50 Hz: 18.5 sec/mm	50 Hz: 19 sec/mm	50 Hz: 18.5 sec/mm
Ambient temperature	-18°C to +50°C				
Humidity rating	<95% no condensation				
Protection	IP54, class II				
Cable	Fixed, 4 wires 22 AWG halogen free cable, 1 meter	Fixed, 3 wires 22 AWG halogen free cable, 1 meter	Fixed, 3 wires 22 AWG halogen free cable, 1 meter	Fixed, 4 wires 22 AWG halogen free cable, 1 meter	Fixed, 4 wires 22 AWG halogen free cable, 1 meter
Closing point adjustment	During operation the actuator will self-adjust according to the closing point of the valve				
Weight	0.25 kg	0.25 kg	0.25 kg	0.30 kg	0.30 kg

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



FlowCon FN.0.X



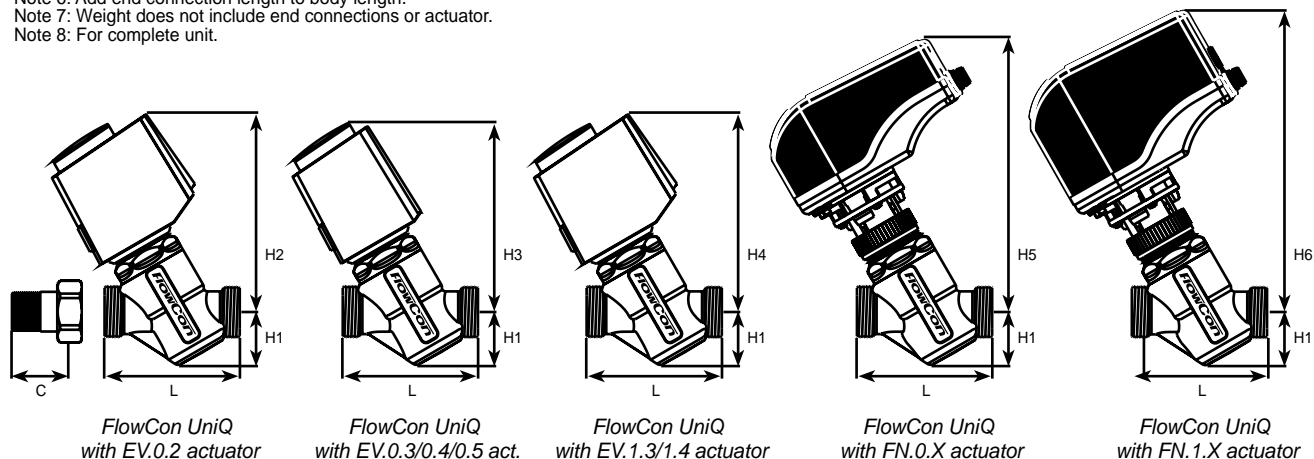
FlowCon FN.1.X

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

Model no.	Valve size	Thread	L	H1	H2 EV.0.2 actuator	H3 EV.0.3-0.5 actuator	H4 EV.1.3/1.4 actuator	H5 FN.0.X actuator	H6 FN.1.X actuator	End connections C <sup>6</sup>						Weight <sup>7</sup> (kgs.)	Kvs <sup>8</sup>
										Size	ISO female	ISO male	Compression	Press	Universal		
U.0.XX.1.I	DN15 F/F	G 1/2"	78	27	99	93	99	142	157	n/a	n/a	n/a	n/a	n/a	n/a	0.34	2.8
U.0.XX.2.I	DN20 F/F	G 3/4"								n/a	n/a	n/a	n/a	n/a	n/a	0.37	2.8
U.0.XX.3.XX.XX.I	DN15 M/M	G 3/4"	70	27	99	93	99	142	157	15	32.7	29.0	9.4	35.6	4.1	0.28	2.8
										18	n/a	n/a					

Note 7: Weight does not include end connections or actuator.

Note 8: For complete unit.



## MODEL NUMBER SELECTION

Insert flow range:  
0=low flow

Insert type of actuator:  
02=EV.0.2 03=EV.0.3 04=EV.0.4 05=EV.1.3 06=EV.1.4 07=EV.0.5  
32=FN.0.2 33=FN.0.3 34=FN.0.4 42=FN.1.2 44=FN.1.4

Insert type of body:  
1=DN15 female/female 2=DN20 female/female 3=20mm male (ISO) suitable for DN15 EuroCone

Insert connection size and type, union end<sup>9</sup>:  
(- leave blank if female/female body is required)

Body size	Female threaded	Male threaded	Compression	Press <sup>10</sup>	Universal
EuroCone end	AG=15mm=1/2"	CG=15mm=1/2" CU=20mm=3/4"	HG=15mm HR=18mm	FG=15mm FR=18mm	EX=one-size

Insert connections standard:  
I=ISO (standard)

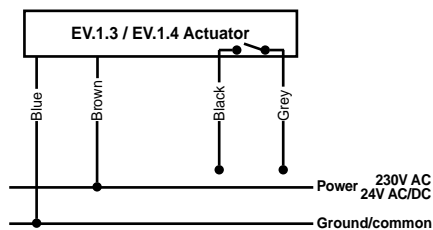
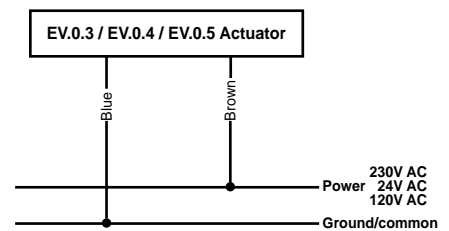
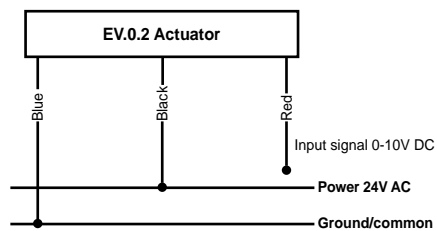
Example: U.0.02.3.CG.CG.I=FlowCon UniQ with a 24V thermo modulating actuator and 15mm ISO male union end connections.

Note 10: Including universal fitting.

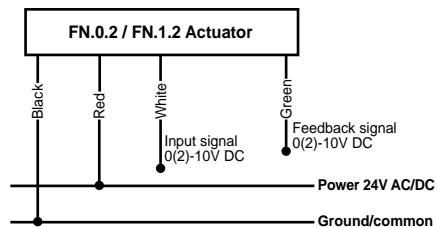
Note 10: Including universal fitting.

## WIRING INSTRUCTION

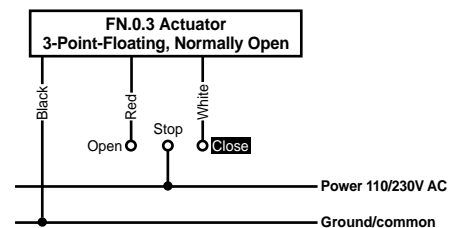
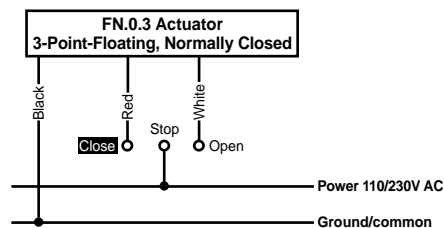
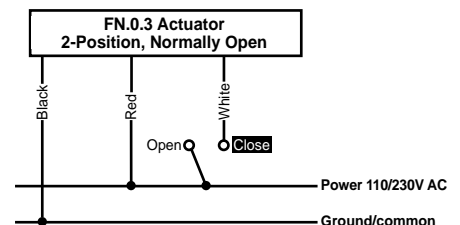
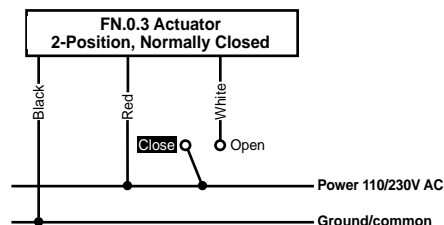
FlowCon EV.0.2  
FlowCon EV.0.3 / 0.4 / 0.5  
FlowCon EV.1.3 / EV.1.4



FlowCon FN.0.2 / 1.2

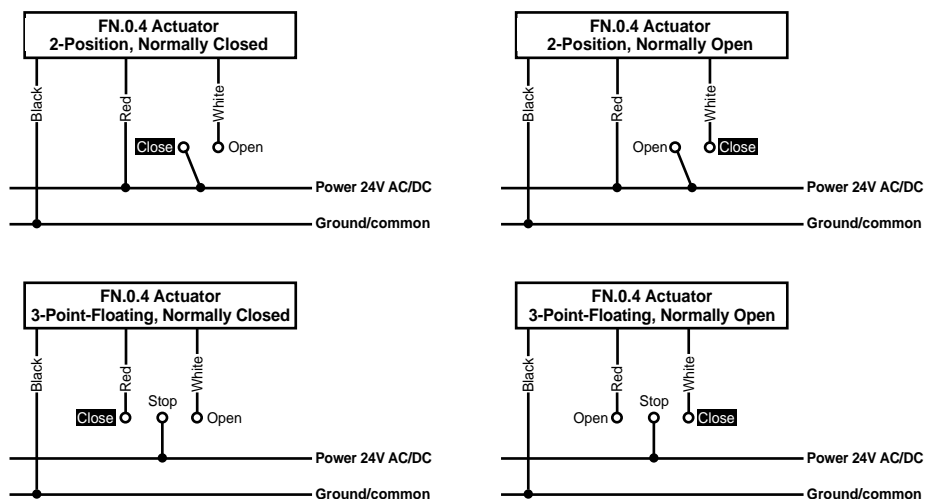


FlowCon FN.0.3

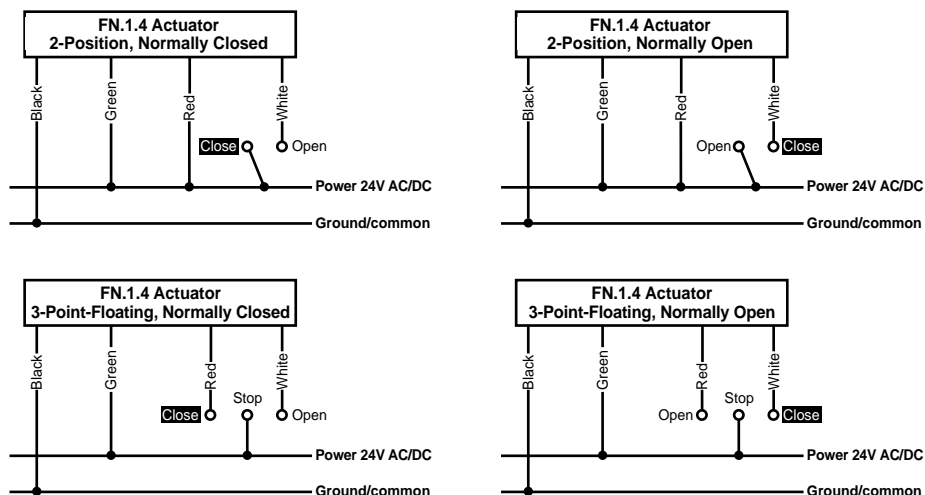


## WIRING INSTRUCTION (...continued)

### FlowCon FN.0.4



### FlowCon FN.1.4



## DESCRIPTION

The FlowCon UniQ is a self balancing dynamic flow control valve that is pressure independent. Each valve has an adjustable maximum flow rate setting maintaining a full stroke to enable flow limitation and balancing to the coil or zone that the valve is controlling.

The valve comes in three different body types, i.e DN15 female/female, DN20 female/female and 20mm male (ISO) suitable for DN15 EuroCone.

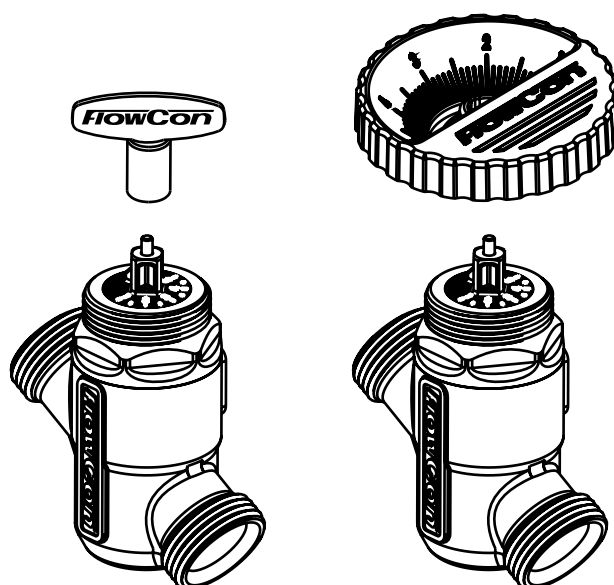
For use in fan-coil units, VAV applications and cooling ceilings for activation of the heating or cooling.

## MAXIMUM FLOW RATE LIMITATION SETTINGS - VALVE SIZE DN15-DN20

FlowCon UniQ				Setting
Nominal flow rate	15/20mm · 1/2" / 3/4"			
	10 <sup>11</sup> -200 kPaD · 1.5 <sup>11</sup> -29 psid			
	l/sec	l/hr	GPM	
	0.0056	20.3	0.089	1.0
	0.0100	36.0	0.158	1.1
	0.0157	56.7	0.249	1.2
	0.0223	80.1	0.353	1.3
	0.0291	105	0.461	1.4
	0.0360	129	0.570	1.5
	0.0426	153	0.675	1.6
	0.0489	176	0.775	1.7
	0.0549	198	0.869	1.8
	0.0604	218	0.957	1.9
	0.0657	237	1.041	2.0
	0.0708	255	1.121	2.1
	0.0757	273	1.199	2.2
	0.0806	290	1.277	2.3
	0.0856	308	1.356	2.4
	0.0908	327	1.439	2.5
	0.0963	347	1.526	2.6
0.1022	368	1.618	2.7	
0.1084	390	1.716	2.8	
0.1149	414	1.820	2.9	
0.1218	439	1.930	3.0	
0.1291	465	2.044	3.1	
0.1365	491	2.162	3.2	
0.1440	518	2.281	3.3	
0.1515	546	2.400	3.4	
0.1589	572	2.516	3.5	
0.1658	597	2.627	3.6	
0.1723	620	2.730	3.7	
0.1782	642	2.823	3.8	
0.1833	660	2.903	3.9	
0.1874	675	2.969	4.0	
0.1907	686	3.020	4.1	
0.1929	695	3.056	4.2	
0.1943	699	3.078	4.3	
0.1947	701	3.084	4.4	
0.1951	702	3.091	4.5	
0.1952	703	3.092	4.6	
0.1958	705	3.102	4.7	
0.1976	711	3.130	4.8	
0.2015	725	3.192	4.9	
0.2086	751	3.305	5.0	

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

Note 11: Min. DP=10 x  $\sqrt{\text{Setting}}$



Use the special designed key (FlowCon part no. ACC0001) for a rough setting of the valve or use the large FlowCon adjustment wheel for a micrometer setting with indication of each of the 41 settings (FlowCon part no. ACC0006).

A setting of 3.4 corresponds to a max. flow rate of 0.1515 l/sec.

## ACCESSORIES

- Adjustment key: ACC0001.
- Adjustment wheel: ACC0006.



Part no. ACC0001



Part no. ACC0006

## GENERAL SPECIFICATIONS

### 1. PRESSURE INDEPENDENT DYNAMIC CONTROL VALVE FLOWCON UNIQ

- 1.1. Contractor shall install the pressure independent dynamic control valve where indicated in drawings.
- 1.2. Valve shall be an electric, 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 settings within the range of the valve size.

### 2. VALVE ACTUATOR, ELECTRIC / THERMO-ELECTRIC

#### 2.a. FlowCon EV-actuators

- 2.a.1 Valve actuator housing shall be rated to IP54.
- 2.a.2 Actuator shall be driven by 24V, 120V or 230V AC voltage, and shall depending on actuator choice accept 0-10V DC or ON/OFF 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.

OR....

#### 2.b. FlowCon FN-actuators

- 2.b.1 Valve actuator housing shall be rated to IP54.
- 2.b.2 Actuator shall be driven by 24V AC/DC or 110V/230V AC, and shall depending on actuator choice accept 0(2)-10V DC, 3-point floating or 2-position 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.
- 2.b.5 Feedback signal 0(2)-10V DC to the control system shall be standard on modulating version.
- 2.b.6 Optional failsafe function shall be available on 24V AC/DC versions.
- 2.b.7 Optional auto stroke function shall be available on 24V version.
- 2.b.8 Manual override shall be possible without use of tools.

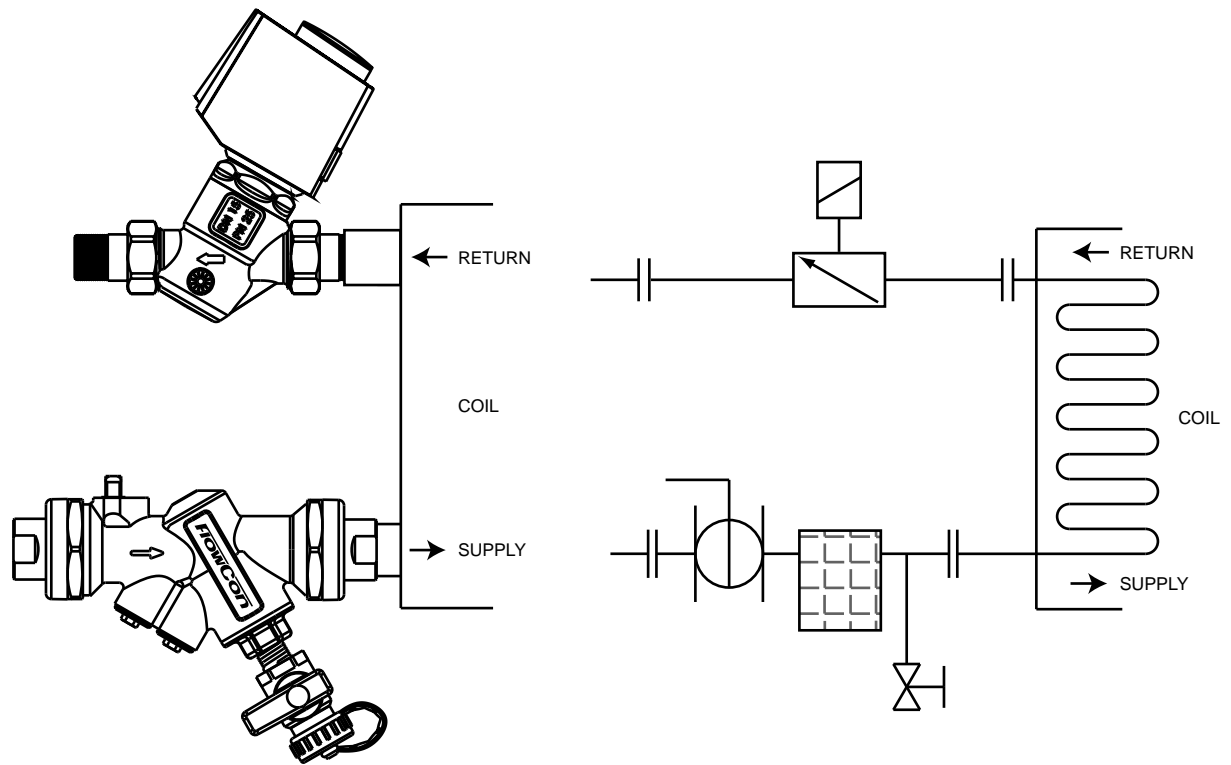
### 3. VALVE HOUSING

Valve housing shall consist of forged brass ASTM CuZn40Pb2, rated at no less than 2500 kPa static pressure and +100°C.

### 4. FLOW REGULATION UNIT

- 4.1. Flow regulation unit shall consist of glass-reinforced PPS, PSU and POM with EPDM diaphragm and sealings.
- 4.2. Flow regulation unit shall be externally adjustable to 1 of 41 flow rates; minimum range shall be capable of being activated by minimum 10 kPaD operation ranges; and shall be capable of controlling the flow within  $\pm 10\%$  of rated flow or  $\pm 5\%$  of maximum flow.

## APPLICATION AND SCHEMATIC EXAMPLE



## UPDATES

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