

FlowCon Green 15-40mm

Pressure Independent Control Valves



SPECIFICATIONS

Insert:

| | |
|----------------------------------|---|
| Static pressure: | 2500 kPa / 360 psi |
| Ambient temperature: | +1°C to +50°C / +34°F to +122°F |
| Media temperature ¹ : | -20°C to +120°C / -4°F to +248°F |
| Material: | |
| - Insert: | Glass-reinforced PSU/POM/PPS |
| - Diaphragm: | Green insert 20mm: EPDM Green insert 40mm: Hydrogenated acrylonitrile-butadiene-rubber |
| - Internal metal components: | Stainless steel |
| - O-rings: | EPDM |
| - Cone: | Green insert 40mm: EPDM/PPS |
| Maximum close off pressure: | Green insert 20mm: 600 kPaD / 87 psid Green insert 40mm: 400 kPaD / 58 psid |
| Maximum operational ΔP : | 400 kPaD / 58 psid |
| Shut-off leakage: | ANSI / FCI 70-2 2006 / IEC 60534-4 Class - Class IV |
| Flow rate range: | Green insert 20mm: 0.0089-0.308 l/sec / 0.141-4.89 GPM Green insert 40mm: 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: | A: (only available for Green insert 20mm) Fixed female ISO or NPT AB: Fixed female ISO or NPT ABV: Union end connection in brass alloy ISO or NPT |

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

SPECIFICATIONS (continued)

FlowCon Actuators:

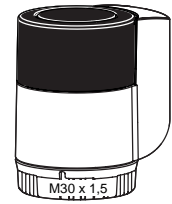
| FlowCon Actuator ² | FT.0.2 ³ | FT.0.3 ³ | FT.0.4 ³ |
|-------------------------------|---------------------------------------|-------------------------|-------------------------|
| Supply voltage | 24V AC ±20%, 50/60Hz | 230V AC ±15%, 50/60Hz | 24V AC/DC ±20%, 50/60Hz |
| Type | Thermal | Thermal | Thermal |
| Power consumption | 3VA | 2.5VA | 3VA |
| Control signal | Analog 0(2)-10V, Normally closed | ON/OFF, Normally closed | ON/OFF, Normally closed |
| Failsafe function | Yes | | |
| Operation time ⁴ | App. 3.5 minutes | | |
| Ambient temperature | 0°C to +50°C | | |
| Protection | IP54 including upside-down, class III | | |
| Cable ⁵ | Plug-in, 1.0 meter | | |
| Weight | 0.18 kg | | |

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

Note 3: Please note if mounted on FlowCon Green 25-40mm specified leakage rate to be exceeded.

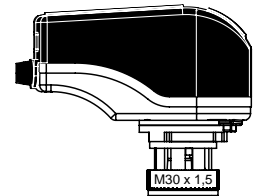
Note 4: Closing time is approximately the double dependent on ambient temperature.

Note 5: The actuator is also available with a cable length of 2, 3, 4, 5, 6, 7, 10 and 15 meter.

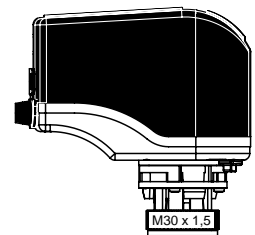


Type FT.0.2,
FT.0.3 and FT.0.4

| FlowCon Actuator ⁶ | FN.0.2 | FN.0.4 | FN.1.2 |
|-------------------------------|---|---|---|
| Supply voltage | 24V AC/DC ±10%, 50/60 Hz | | |
| Motor | Bi-directional synchronous | | |
| Power consumption | 3VA | 3VA | 3VA, 5VA peaks |
| Control signal | Analog 0(2)-10V DC | Digital (2-position / 3-point-floating) | Analog 0(2)-10V DC |
| Position output | 0(2)-10V DC | - | 0(2)-10V DC |
| Failsafe function | No | No | Yes |
| Auto stroke | Yes | No | Yes |
| Operation time | 50 Hz: 18.5 sec/mm | 50 Hz: 18.5 sec/mm | 50 Hz: 19 sec/mm |
| Actuation force | 225N ±10% | 225N ±5% | 225N ±5% |
| Ambient temperature | -18°C to +50°C | | |
| Humidity rating | <95% no condensation | | |
| Protection | IP54, class II | | |
| Cable | 4 wires 22 AWG halogen free cable, 1 meter | 3 wires 22 AWG halogen free cable, 1 meter | 4 wires 22 AWG halogen free cable, 1 meter |
| Weight | 0.25 kg | 0.25 kg | 0.30 kg |



Type FN.0.X



Type FN.1.2

Note 6: FlowCon warranty is voided using other actuators than supplied or recommended by FlowCon International.

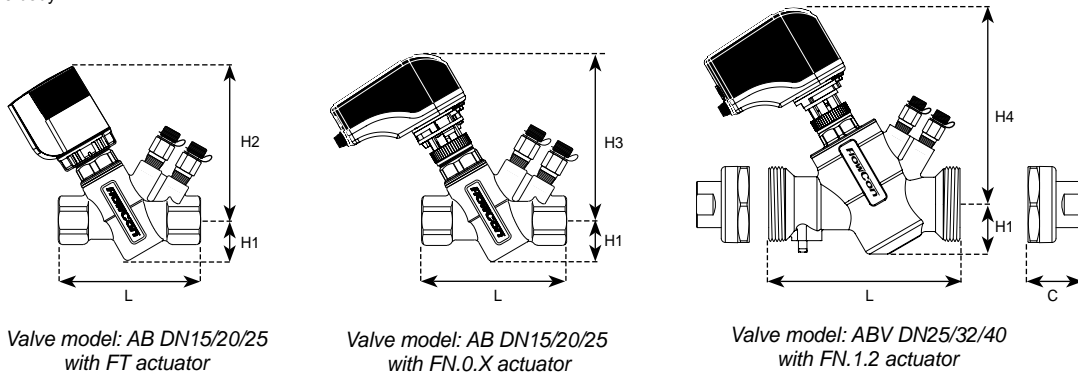
DIMENSIONS AND WEIGHTS (NOMINAL) (measured in mm unless noted)

| Model no. | Valve model | Valve size | Insert size | L | H1 | H2 (FT.0.X act.) | H3 (FN.0.X act.) | H4 (FN.1.2 act.) | End connections C ⁶ | | | Weight ⁷ (kgs.) | Kv ⁸ (m ³ /hr) |
|-----------|-------------|------------|-------------|------|----|---------------------|---------------------|---------------------|--------------------------------|----------|-------|-------------------------------|---|
| | | | | | | | | | ISO female | ISO male | Sweat | | |
| G.X.XX.04 | A | 15 | 20 | 80 | 31 | 115 | 130 | 145 | N/A | N/A | N/A | 0.58 | 2.6 |
| G.X.XX.05 | | 20 | | | | | | | | | | 0.53 | |
| G.X.XX.06 | | 25 | | | | | | | | | | 0.56 | |
| G.X.XX.01 | AB | 15 | 20 | 82 | 31 | 115 | 130 | 145 | N/A | N/A | N/A | 0.51 | 2.6 |
| G.X.XX.02 | | 94 | | 0.56 | | | | | | | | | |
| G.X.XX.07 | | 102 | | 0.62 | | | | | | | | | |
| G.2.XX.14 | | 25 | | 40 | | | | | | | | 128 | |
| G.2.XX.15 | 32 | 1.69 | | | | | | | | | | | |
| G.X.XX.03 | ABV1 | 15 | 20 | 122 | 33 | 115 | 130 | 145 | 22 | 25 | 20 | 0.85 | 2.6 |
| | | 22 | | | | | | | 25 | 20 | | | |
| | | N/A | | | | | | | 39 | 22 | | | |
| G.2.XX.17 | ABV2 | 25 | 40 | 168 | 42 | 131 | 153 | 165 | 35 | 40 | 34 | 2.15 | 12.5 |
| | | 32 | | | | | | | 40 | 37 | | | |
| | | 40 | | | | | | | 42 | 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

Insert flow range:
 0=20mm insert low flow
 1=20mm insert medium flow
 2=40mm insert

Insert type of actuator:
 22=FT.0.2 23=FT.0.3 24=FT.0.4
 32=FN.0.2 34=FN.0.4 42=FN.1.2

Insert type of body:
 20mm insert: 01=AB15 02=AB20 03=ABV1 04=A15 05=A20 06=A25 07=AB25
 40mm insert: 14=AB25 15=AB32 17=ABV2

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- or AB-body or no end connections required

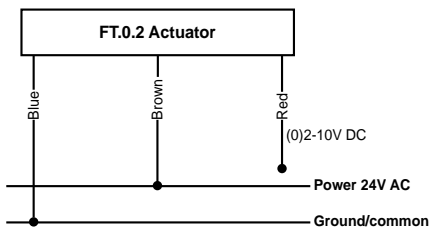
| Body model and size | Female threaded | Male treaded | Sweat |
|--|---|---|----------------------------------|
| G.0.XX.03, 15-25mm, 1/2"-1" G.1.XX.03, 15-25mm, 1/2"-1" | E = 15mm=1/2" F = 20mm=3/4" | H = 15mm=1/2" I = 20mm=3/4" J = 25mm=1" | K = 15mm L = 18mm M = 22mm |
| G.2.XX.17, 25-40mm, 1"-1 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" | N = 28mm W = 35mm |

Insert connections standard:
 I=ISO N=NPT (NPT: not available on A25 and AB25 for 20mm insert)

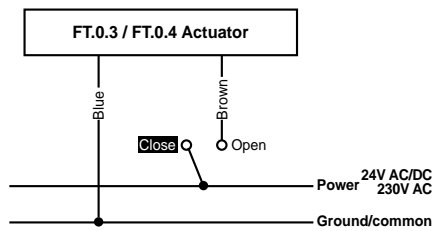
Example: G.1.22.03.B.F.F.I=20mm FlowCon Green, medium flow, with an ABV1-body with p/t plugs and a 24V thermal modulating actuator and 20mm ISO female union end connections.

WIRING INSTRUCTION

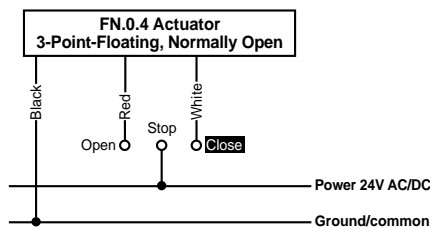
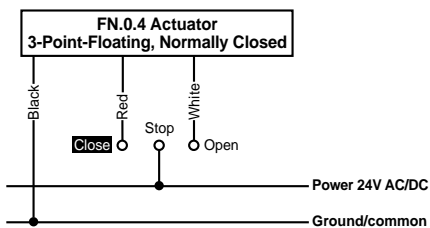
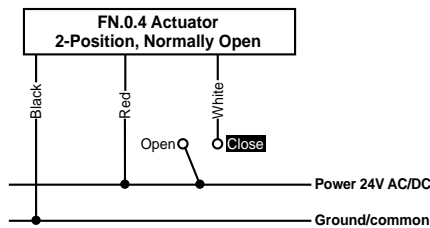
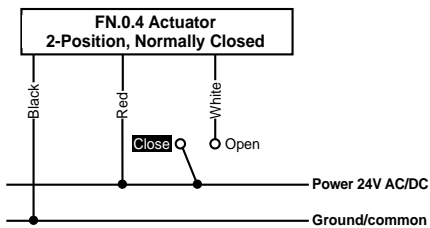
Type FT.0.2



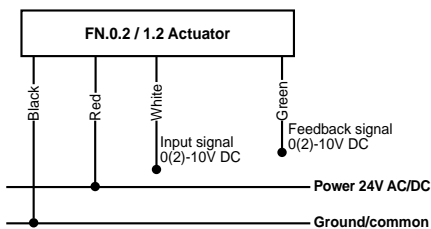
Type FT.0.3 and FT.0.4



Type FN.0.4



Type FN.0.2 and FN.1.2



DESCRIPTION

The FlowCon Green serie is pressure independent control valves that are pressure independent, two-way, modulating to accept digital or analog input signals. The valves accept 0(2)-10V, 3-point-floating or ON/OFF input signals. 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.

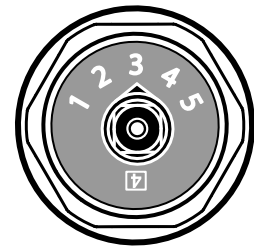
For use in fan-coil units, VAV applications and cooling ceilings for activation of the heating or cooling.

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

MAXIMUM FLOW RATE LIMITATION SETTINGS - VALVE SIZE DN15-DN40

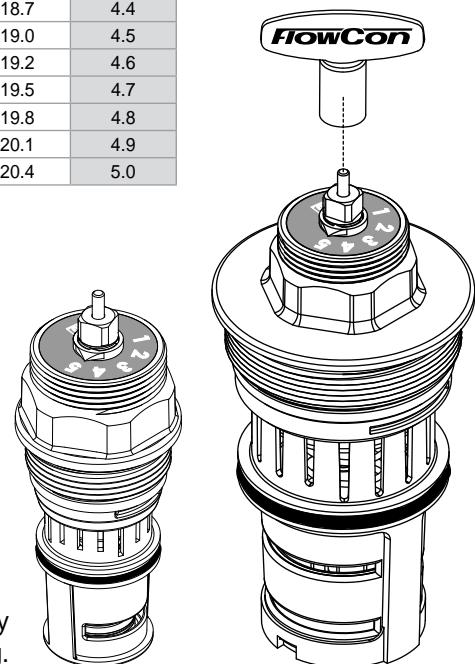
| FlowCon Green | | | | | | | | | | Setting |
|---------------------------|------|-------|---------------------------|------|-------|---|------|------|-----|---------|
| Insert size: 20mm · 3/4" | | | | | | Insert size: 40mm · 1 1/2" | | | | |
| 16-200 kPa · 2.3-29 psid | | | 30-400 kPa · 4.4-58 psid | | | 16-400 kPa · 2.3-58 psid (at setting: 2.6) | | | | |
| Green.0 (green o-ring) | | | Green.1 (black o-ring) | | | Green.2 (black o-ring) | | | | |
| l/sec | l/hr | GPM | l/sec | l/hr | GPM | l/sec | l/hr | GPM | | |
| 0.0089 | 32.0 | 0.141 | 0.0178 | 64 | 0.282 | 0.240 | 865 | 3.81 | 1.0 | |
| 0.0211 | 75.8 | 0.334 | 0.0393 | 142 | 0.624 | 0.282 | 1010 | 4.46 | 1.1 | |
| 0.0323 | 116 | 0.511 | 0.0580 | 209 | 0.920 | 0.322 | 1160 | 5.10 | 1.2 | |
| 0.0426 | 153 | 0.675 | 0.0743 | 268 | 1.180 | 0.361 | 1300 | 5.72 | 1.3 | |
| 0.0521 | 188 | 0.826 | 0.0887 | 319 | 1.41 | 0.399 | 1430 | 6.32 | 1.4 | |
| 0.0610 | 220 | 0.967 | 0.102 | 366 | 1.61 | 0.435 | 1570 | 6.90 | 1.5 | |
| 0.0693 | 250 | 1.10 | 0.113 | 408 | 1.80 | 0.471 | 1700 | 7.47 | 1.6 | |
| 0.0771 | 278 | 1.22 | 0.124 | 446 | 1.96 | 0.506 | 1820 | 8.02 | 1.7 | |
| 0.0844 | 304 | 1.34 | 0.134 | 482 | 2.12 | 0.540 | 1940 | 8.56 | 1.8 | |
| 0.0913 | 329 | 1.45 | 0.143 | 516 | 2.27 | 0.573 | 2060 | 9.08 | 1.9 | |
| 0.0978 | 352 | 1.55 | 0.152 | 549 | 2.42 | 0.605 | 2180 | 9.59 | 2.0 | |
| 0.104 | 374 | 1.65 | 0.161 | 580 | 2.56 | 0.636 | 2290 | 10.1 | 2.1 | |
| 0.110 | 396 | 1.74 | 0.170 | 611 | 2.69 | 0.667 | 2400 | 10.6 | 2.2 | |
| 0.115 | 416 | 1.83 | 0.178 | 641 | 2.82 | 0.696 | 2510 | 11.0 | 2.3 | |
| 0.121 | 435 | 1.92 | 0.186 | 671 | 2.95 | 0.725 | 2610 | 11.5 | 2.4 | |
| 0.126 | 453 | 2.00 | 0.194 | 700 | 3.08 | 0.753 | 2710 | 11.9 | 2.5 | |
| 0.131 | 471 | 2.07 | 0.202 | 728 | 3.21 | 0.780 | 2810 | 12.4 | 2.6 | |
| 0.136 | 488 | 2.15 | 0.210 | 756 | 3.33 | 0.807 | 2900 | 12.8 | 2.7 | |
| 0.140 | 504 | 2.22 | 0.218 | 783 | 3.45 | 0.832 | 3000 | 13.2 | 2.8 | |
| 0.144 | 520 | 2.29 | 0.225 | 810 | 3.56 | 0.858 | 3090 | 13.6 | 2.9 | |
| 0.149 | 535 | 2.35 | 0.232 | 835 | 3.68 | 0.882 | 3180 | 14.0 | 3.0 | |
| 0.153 | 549 | 2.42 | 0.239 | 860 | 3.79 | 0.906 | 3260 | 14.4 | 3.1 | |
| 0.156 | 563 | 2.48 | 0.245 | 883 | 3.89 | 0.930 | 3350 | 14.7 | 3.2 | |
| 0.160 | 577 | 2.54 | 0.252 | 906 | 3.99 | 0.953 | 3430 | 15.1 | 3.3 | |
| 0.164 | 590 | 2.60 | 0.257 | 927 | 4.08 | 0.975 | 3510 | 15.5 | 3.4 | |
| 0.167 | 602 | 2.65 | 0.263 | 946 | 4.17 | 0.997 | 3590 | 15.8 | 3.5 | |
| 0.171 | 614 | 2.70 | 0.268 | 965 | 4.25 | 1.02 | 3670 | 16.1 | 3.6 | |
| 0.174 | 626 | 2.76 | 0.273 | 982 | 4.32 | 1.04 | 3740 | 16.5 | 3.7 | |
| 0.177 | 637 | 2.81 | 0.277 | 998 | 4.39 | 1.06 | 3820 | 16.8 | 3.8 | |
| 0.180 | 649 | 2.86 | 0.281 | 1010 | 4.46 | 1.08 | 3890 | 17.1 | 3.9 | |
| 0.183 | 659 | 2.90 | 0.285 | 1020 | 4.51 | 1.10 | 3960 | 17.4 | 4.0 | |
| 0.186 | 670 | 2.95 | 0.288 | 1040 | 4.57 | 1.12 | 4030 | 17.7 | 4.1 | |
| 0.189 | 681 | 3.00 | 0.291 | 1050 | 4.61 | 1.14 | 4100 | 18.1 | 4.2 | |
| 0.192 | 691 | 3.04 | 0.294 | 1060 | 4.66 | 1.16 | 4170 | 18.4 | 4.3 | |
| 0.195 | 701 | 3.09 | 0.296 | 1070 | 4.70 | 1.18 | 4240 | 18.7 | 4.4 | |
| 0.197 | 711 | 3.13 | 0.299 | 1080 | 4.73 | 1.20 | 4300 | 19.0 | 4.5 | |
| 0.200 | 721 | 3.17 | 0.301 | 1080 | 4.77 | 1.21 | 4370 | 19.2 | 4.6 | |
| 0.203 | 730 | 3.22 | 0.303 | 1090 | 4.80 | 1.23 | 4440 | 19.5 | 4.7 | |
| 0.205 | 740 | 3.26 | 0.305 | 1100 | 4.83 | 1.25 | 4500 | 19.8 | 4.8 | |
| 0.208 | 749 | 3.30 | 0.307 | 1100 | 4.86 | 1.27 | 4570 | 20.1 | 4.9 | |
| 0.210 | 757 | 3.33 | 0.308 | 1110 | 4.89 | 1.29 | 4630 | 20.4 | 5.0 | |

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



A micrometer setting of 3.4 as illustrated beside corresponds to a maximum flow rate of

0.164 l/sec (Green.0),
0.257 l/sec (Green.1),
0.975 l/sec (Green.2).



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

GENERAL SPECIFICATIONS

1. PRESSURE INDEPENDENT DYNAMIC CONTROL VALVE FLOWCON GREEN

- 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

2.a. FlowCon FT-actuators

- 2.a.1 Valve actuator housing shall be rated to IP54, including up-side-down mounting.
- 2.a.2 Actuator shall be driven by 24V or 230V AC, and shall depending on actuator choice accept 0(2)-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.
- 2.a.5 Failsafe function shall be available on all version.

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, 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 modulating version.
- 2.b.7 Optional auto stroke function shall be available on modulating version.
- 2.b.8 Manual override shall be possible without use of tools.

3. VALVE HOUSING

3.a. FlowCon A

- 3.a.1 Valve housing shall consist of forged brass ASTM CuZn40Pb2, rated at no less than 2500 kPa static pressure at +120°C.

OR....

3.b. FlowCon AB

- 3.b.1 Valve housing shall consist of forged brass ASTM CuZn40Pb2, rated at no less than 2500 kPa static pressure at +120°C.
- 3.b.2 Pressure/temperature test plugs for verifying accuracy of flow performance shall be available for all valve sizes.

OR....

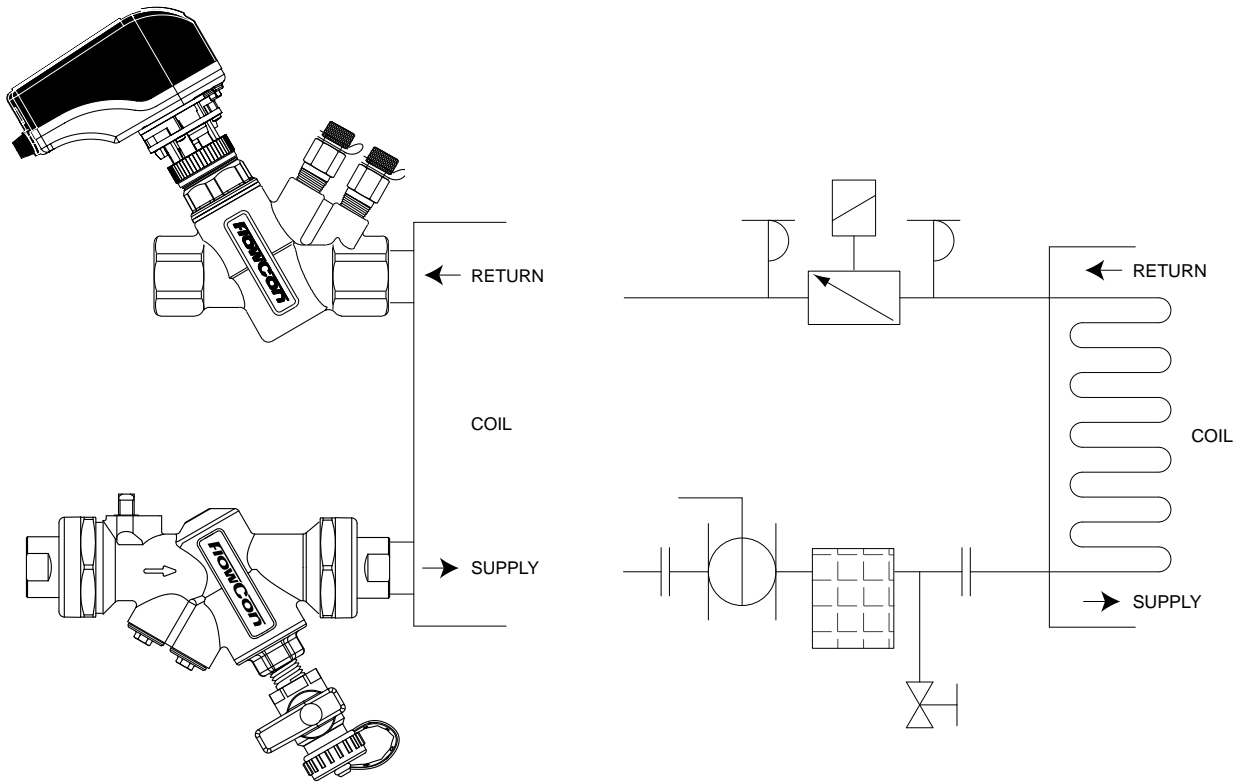
3.c. FlowCon ABV

- 3.c.1 Valve housing shall consist of forged brass ASTM CuZn40Pb2, rated at no less than 2500 kPa static pressure at +120°C.
- 3.c.2 Valve ball shall consist of chemically nickel plated brass (ASTM CuZn40Pb2).
- 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 PSU/POM/PPS with an EPDM diaphragm (20mm insert) or a hydrogenated acrylonitrile-butadiene-rubber diaphragm (40mm insert).
- 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 without limiting the stroke length; shall be available in 2 different kPaD operational ranges for DN15/20/25 and 1 kPaD operational ranges for DN25/32/40; minimum range shall be capable of being activated by minimum 16 kPaD. 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



UPDATES

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