

# FlowCon Green.3

**Pressure Independent Control Valves**  
**40-50 mm / 1 1/2"-2"**



## 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 +120°C / -4°F to +248°F
Material:	
- Housing and covers:	Forged brass ASTM CuZn40Pb2 or Ductile iron QT450-10 GB1348 / EN-GJS-450-10
- Composite components (internal):	Glass-reinforced PSU/PPS/POM
- Metal components (internal):	Stainless steel
- O-rings and seats:	EPDM
- Diaphragm:	Hydrogenated acrylonitrile-butadiene-rubber
Stroke:	6.2 mm / 0.24 in
Maximum close off pressure:	800 kPaD / 116 psid
Maximum operational ΔP:	800 kPaD / 116 psid
Control characteristic:	linear (may be converted to equal % on actuator)
Control range:	1:1000 / IEC 60534
Rangeability:	100:1
Turn down ratio:	100:1
Shut-off leakage:	ANSI / FCI 70-2 2006, Class IV / IEC 60534-4, Class IV
Flow rate range:	0.528-3.79 l/sec / 8.36-60.0 GPM
End connections <sup>2</sup> :	ISO or NPT
Housing taps:	1/4" ISO

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

Note 2: NPT only available ex. US-factory.

## SPECIFICATIONS (...continued)

### FlowCon FH Actuator:

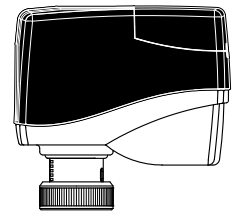
FlowCon Actuator <sup>3</sup>	FlowCon FH		FlowCon FH.1	
Supply voltage	24V AC/DC ±10%, 50/60 Hz			
Type	Electrical, bi-directional synchronous motor			
Power consumption	24V AC: 1.5VA standby / 6VA operating / 8.5VA max. 24V DC: 0.6W standby / 2.6W operating / 4.1W max.		24V AC: 2.6VA standby / 7.9VA operating / 9VA max. 24V DC: 1.2W standby / 3.7W operating / 4.5W max.	
Control signal	Analog 0(2)-10V DC	Digital 2-position / 3-point floating	Analog 0(2)-10V DC	Digital 2-position with constant power supply
Feedback	Yes, control signal	Yes, 0-10V DC (2-position only)	Yes, control signal	Yes, 0-10V DC
Failsafe function	Fail in place		Optional open or closed (set on actuator)	
Operation time	max 22 sec/mm		max 22 sec/mm (failsafe: 5 sec/mm)	
Ambient temperature	0°C to +50°C / +32°F to +122°F			
Media temperature	0°C to +120°C / +32°F to +248°F			
Humidity rating	0..85% rH, no condensation			
Protection	IP54 including upside-down, class III, indoor use only			
Cable	Fixed, 5 wires x 0.50mm², 1.5 meter / 5 wires x AWG20, 4.9 ft			
Closing point detection	During operation the actuator will self-adjust according to the closing point and stroke length of the valve			
Weight	0.30 kg / 0.67 lb		0.34 kg / 0.75 lb	

Note 3: FlowCon warranty is voided using other actuators than supplied by FlowCon International.

### FlowCon FH Actuator (BUS):

FlowCon Actuator <sup>4</sup>	FH-BUS
Supply voltage	24V AC/DC $\pm 10\%$ , 50/60 Hz
Type	Electrical, bi-directional synchronous motor
Power consumption	24V AC: 2.2VA standby / 4.8VA operating / 9.0VA max. 24V DC: 1.1W standby / 2.5W operating / 4.7W max.
Control signal	0-100% (BACnet or Modbus)
Feedback	Yes, 0-100% (BACnet or Modbus)
Failsafe function	Fail in place
Operation time	22 sec/mm (alternatively 16 sec/mm or 28 sec/mm)
Ambient temperature	0°C to +50°C / +32°F to +122°F
Media temperature	-10°C to +120°C / +14°F to +248°F
Humidity rating	0..85% rH, no condensation
Protection	IP54 including upside-down, class III, indoor use only
Cable	Group 1: Fixed, 2 x 2 wires x 0.34 mm <sup>2</sup> , 1.5 m / 2 x 2 wires x AWG22, 4.9 ft Fixed, 2 wires x 0.50 mm <sup>2</sup> , 1.5 m / 2 wires x AWG20, 4.9 ft Group 2: Fixed, 4 wires x 0.50 mm <sup>2</sup> , 1.5 m / 4 wires x AWG20, 4.9 ft
Closing point adjustment	During operation the actuator will self-adjust according to the closing point and stroke length of the valve
Weight	0.40 kg / 0.88 lb

Note 4: FlowCon warranty is voided using other actuators than supplied by FlowCon International.

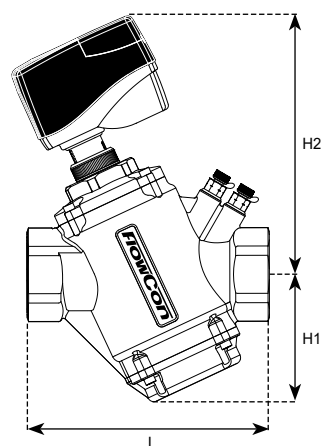


FlowCon FH / FH-BUS / FH.1

## DIMENSIONS AND WEIGHT (NOMINAL)

Model no.	Valve model	Valve size mm (in)	L mm (in)	H1 mm (in)	H2 mm (in)	Weight <sup>5</sup> Brass kg (lb)	Weight <sup>5</sup> Ductile Iron kg (lb)
G.3.X2.4X.B.I	Green.3	40 (1 1/2)	191.0 (7.5)	100.2 (3.9)	194.7 (7.7)	4.6 (10.1)	4.3 (9.5)
G.3.X2.5X.B.I		50 (2)				4.2 (9.3)	3.8 (8.4)

Note 5: Weight does not include actuator.



FlowCon Green DN40/50 (1 1/2"-2")  
with FlowCon FH / FH-BUS / FH.1 actuator

## MODEL NUMBER SELECTION

Type of actuator:

**00** = No actuator

	Gear	Gear failsafe
24V modulating	<b>52</b> = FH <b>72</b> = FH-BUS	<b>62</b> = FH.1

Housing size and material:

**40** = DN40 / 1 1/2" (Forged brass)

**41** = DN40 / 1 1/2" (Ductile iron)

**50** = DN50 / 2" (Forged brass)

**51** = DN50 / 2" (Ductile iron)

P/t plug requirements:

**0** = no (p/t) plugs

**B** = pressure/temperature plugs

**P** = taps plugged

Connection standard:

**I** = ISO

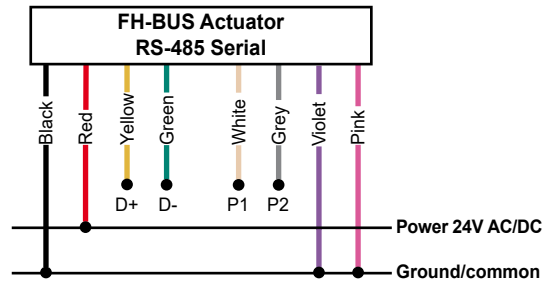
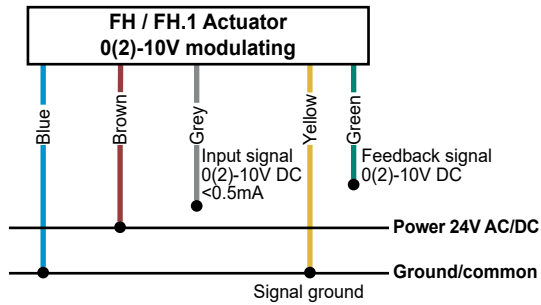
**G . 3 .**      **I**

Example:

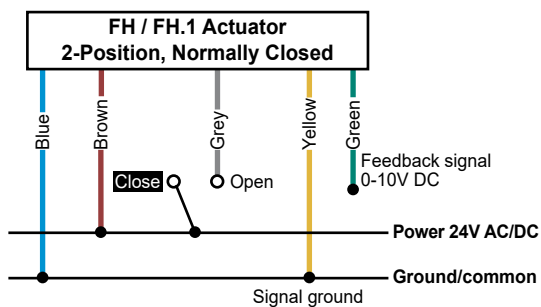
**G.3.52.40.B.I**=40 mm (1 1/2") FlowCon Green (forged brass) with a 24V electrically modulating actuator, p/t plugs and ISO female-female threaded.

## WIRING INSTRUCTION

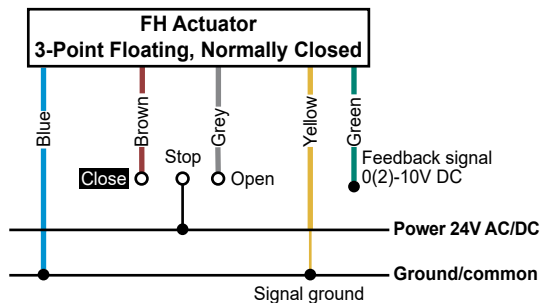
### ELECTRICAL MODULATING



### ELECTRICAL 2-POSITION



### ELECTRICAL 3-POINT FLOATING



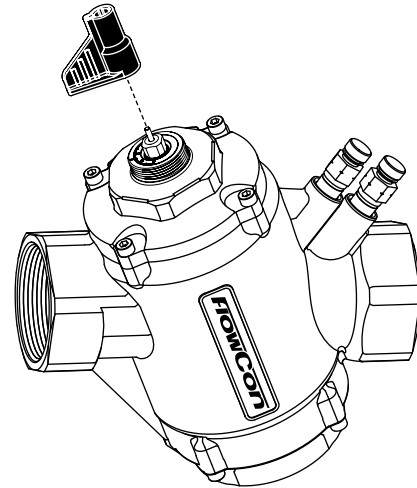
## DESCRIPTION

The FlowCon Green is a series of pressure independent control valves that are two-way, modulating to accept digital or analog input signals. The valves accept 0(2)-10V, 3-point floating or ON/OFF input signals provided by the same actuator. 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.

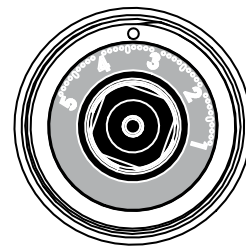
For use in fan-coil units, air-handling units, VAV applications and cooling ceilings for activation of heating or cooling.

## MAXIMUM FLOW RATE LIMITATION SETTINGS

FlowCon Green.3				Setting	
Nominal flow rate	16-800 kPaD · 2.3-116 psid <sup>6</sup>				
	l/sec	l/hr	GPM		
	0.528	1900	8.36	1.0	
	0.633	2278	10.0	1.1	
	0.738	2655	11.7	1.2	
	0.843	3033	13.3	1.3	
	0.947	3410	15.0	1.4	
	1.05	3787	16.7	1.5	
	1.16	4163	18.3	1.6	
	1.26	4537	20.0	1.7	
	1.36	4909	21.6	1.8	
	1.47	5279	23.2	1.9	
	1.57	5646	24.8	2.0	
	1.67	6011	26.4	2.1	
	1.77	6372	28.0	2.2	
	1.87	6730	29.6	2.3	
	1.97	7083	31.2	2.4	
	2.06	7432	32.7	2.5	
	2.16	7776	34.2	2.6	
	2.25	8115	35.7	2.7	
	2.35	8449	37.2	2.8	
	2.44	8777	38.6	2.9	
	2.53	9098	40.0	3.0	
	2.61	9413	41.4	3.1	
	2.70	9721	42.8	3.2	
	2.78	10021	44.1	3.3	
		2.86	10314	45.4	3.4
		2.94	10599	46.6	3.5
	3.02	10875	47.8	3.6	
	3.10	11142	49.0	3.7	
	3.17	11400	50.2	3.8	
	3.24	11649	51.3	3.9	
	3.30	11888	52.3	4.0	
	3.37	12116	53.3	4.1	
	3.43	12334	54.3	4.2	
	3.48	12540	55.2	4.3	
	3.54	12735	56.0	4.4	
	3.59	12919	56.8	4.5	
	3.64	13090	57.6	4.6	
	3.68	13249	58.3	4.7	
	3.72	13395	58.9	4.8	
	3.76	13527	59.5	4.9	
	3.79	13647	60.0	5.0	



Use the special designed key (FlowCon part no. ACC0007) for micrometer setting.



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

2.86 l/sec (45.4 GPM)

Accuracy: Greatest of either  $\pm 10\%$  of controlled flow rate or  $\pm 5\%$  of maximum flow rate.  
Note 6: If used in pressure range 400-800 kPaD (58-116 psid), accuracy of  $-20\%$  /  $+0\%$  applies.

## GENERAL SPECIFICATIONS

### 1. PRESSURE INDEPENDENT DYNAMIC CONTROL VALVE - FLOWCON GREEN.3

- 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.
- 1.5. Valve housing shall be permanently marked to show direction of flow.

### 2. VALVE ACTUATOR - FLOWCON FH

- 2.1. Actuator housing shall be rated to IP54. 360° mounting shall be acceptable.
- 2.2. Actuator shall be driven by 24V AC/DC and accept 0(2)-10V DC, 3-point floating or 2-position control signal.
- 2.3. Actuator shall use full stroke and provide full authority.
- 2.4. Actuator shall have visible indication of stroke position.
- 2.5. Feedback signal equal to control signal shall be standard on 24V versions.
- 2.6. Failsafe version shall be available.
- 2.7. Auto stroke function shall be available.
- 2.8. Override shall be possible.
- 2.9. Optional bus version, with choice of BACnet or Modbus, shall be available. Bus version shall provide remote setting and control of actuator.

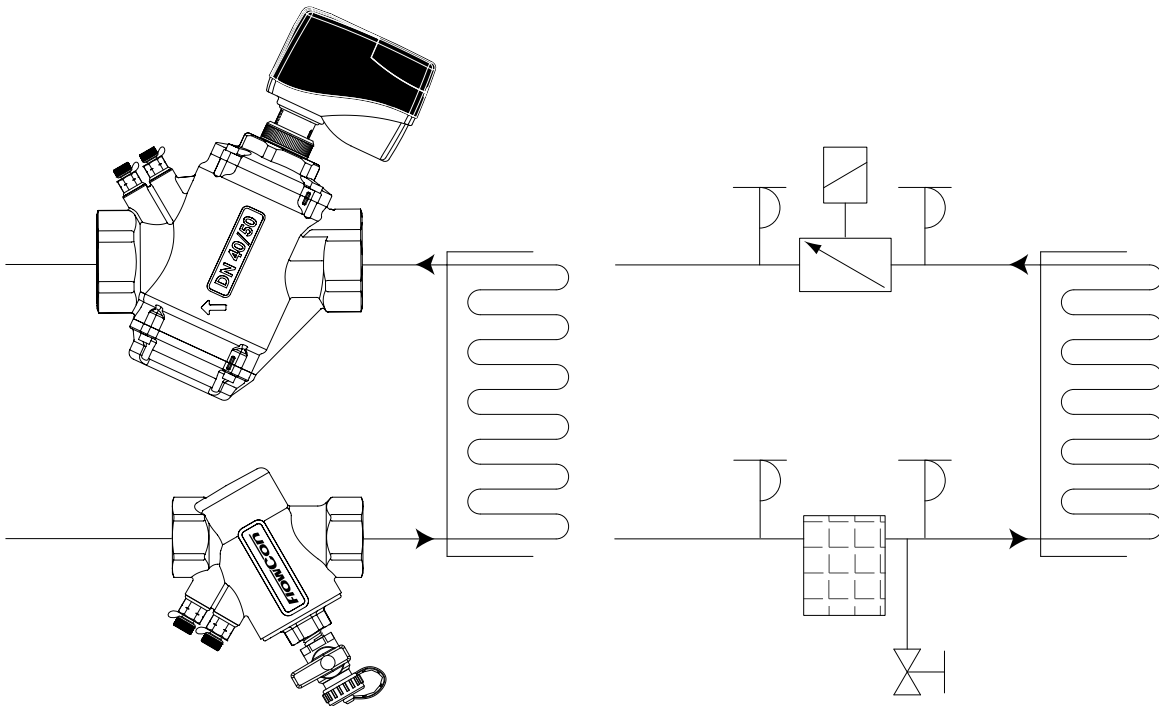
### 3. VALVE HOUSING - FLOWCON GREEN.3

- 3.1. Valve housing DN40-DN50 (1 1/2"-2") female-female shall consist of forged brass ASTM CuZn40Pb2 or Ductile iron QT450-10 GB1348 / EN-GJS-450-10, rated at no less than 2500 kPa (360 psi) static pressure at +120°C (+248°F).
- 3.2. 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 PPS, PSU and POM with HNBR diaphragm and EPDM sealings.
- 4.2. Flow regulation unit shall be externally adjustable to 1 of 41 different flow rates without limiting the stroke length; minimum range shall be capable of being activated by minimum 16 kPaD (2.3 psid) and shall be capable of controlling the flow within  $\pm 10\%$  of controlled flow or  $\pm 5\%$  of maximum flow.

## APPLICATION AND SCHEMATIC EXAMPLE



## UPDATES

**For latest updates please see [www.flowcon.com](http://www.flowcon.com)**

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