

FlowCon K



Automatic Flow Control Valve with Pressure Regulation



FlowCon K Dynamic Flow Control Valve



The FlowCon K series are designed as a constant flow valve which maintains a specific flow rate independent of pressure fluctuations within a hydronic heating or cooling system. FlowCon K is primarily designed for use in terminal balancing.

The flow rate for the application is selected and FlowCon K does the rest, eliminating time consuming and costly manual balancing. Whether the application is air conditioning or heating, terminal unit or branch balancing, constant or modulating flow, the FlowCon K is the most accurate yet flexible way of balancing any hydronic system completely automatic.

Features and Benefits

- Automatic balancing, the correct flow rate for each circuit is achieved automatically.
- Dynamic balancing, the correct flow rate is maintained as each valve compensates for pressure fluctuations in the system.
- Elimination of branch or "partner" balancing valves (fewer total valves used in each project).
- Easily accessible cartridge for flow rate changing or maintenance.
- Accuracy of ±5%.
- Pressure/temperature measurement plugs for verifying operating pressure differential range.

Selection

In selecting a FlowCon K valve, the following information is needed: 1) flow rate, 2) pressure differential range and 3) pipe size.

1) Flow Rate Selection

In determining the flow rate, it must be decided whether the circuit will be a constant flow or modulating system.

If the valve is being fit into a constant flow system, simply select the flow rate from the Flow Rate Selection Chart (pls. see the catalogue: FlowCon Cartridges) closest to the designed rate. If the valve is being installed in variable flow application (used in series with a modulating control valve), simply select the flow rate closest to the designed maximum flow rate of the circuit. The FlowCon K will then limit the flow to that specific maximum flow rate. Below the maximum, the valve will act as a fixed orifice device adding minimal pressure loss to the system. This allows the modulating valve to have authority up to the maximum flow rate designed for that circuit.

For applications controlling the flow of fluids other than water, the specific gravity, viscosity and operating temperature are needed for proper selection. The cartridges are calibrated for water at approximately 16°C. The flow rate of a cartridge may be influenced by fluids with characteristics other than water (e.g. a valve calibrated for 2 l/sec used in an application with water and glycol at a concentration of 25% glycol will have an adjusted nominal flow rate of 1.969 l/sec).

For questions concerning other fluids and temperatures, please contact your FlowCon representative or one of the FlowCon offices.



2) Pressure Differential Range Selection

FlowCon K valves are available in four different operational pressure differential ranges, i.e. 10-95 kPaD, 22-210 kPaD, 40-390 kPaD and 90-880 kPaD. This is the pressure differential across the valve itself.

To select which range of operation is applicable for a particular circuit, determine the minimum and maximum pressure drops that the valve will experience during operation. The maximum typically occurs when the other circuits are closed, and the minimum when the other circuits are open. Then select one of the operating ranges which is wider than the range of pressure differential fluctuation calculated.

Verification of the pressure differential across the valve is possible through the optional pressure/-temperature test plugs.

3) Size Selection

The FlowCon K valves are available in the following sizes: DN15, 20, 25, 32, 40, 50, 65 and 80. Standard FlowCon K valves are fixed female ISO threaded.

Valve Location

The hydronic function of the valve is not affected by whether it is installed on the supply or return side of the unit. The orientation of the cartridge access should be considered in order to have the ability to change or clear the cartridge of debris if necessary. Similarly, the pressure/temperature plugs should be accessible. It is important that the flow arrow of the valve be pointing in the right direction.

Principle of Operation

The FlowCon K valve utilizes a specific flow rate cartridge. Below its pressure differential range it acts as a fixed orifice (this allows a modulating valve in the same circuit to operate with valve authority up to the flow rate specified for the FlowCon K).



Within the operating pressure differential range, the effective open orifice area of the cartridge is automatically adjusted to the point where the specified flow rate will be delivered (as the pressure differential increases, the open area closes and as it decreases, the area opens).

When the pressure differential range is exceeded, the valve again becomes a fixed orifice device. This ensures that no part of the system is starved or shut down.

Technical Data

For further information please see FlowCon tech note and the catalogue: FlowCon Cartridges. For latest updates please see *www.flowcon.com.*

			K DN15	K DN20	K DN25	K DN25	K DN32	K DN40	K DN40	K DN50	K DN50	K DN65	K DN80
Static Pressure		(kPa)	2500			2500			1600		1600		
		(psi)	360			360			230		230		
Temperature Rating (media)		(°C)	-30 to +120			-30 to +120			-30 to +120		-30 to +120		
		(°F)	-22 to +248			-22 to +248			-22 to +248		-22 to +248		
Pressure	Drop Data		NOTE: For losses (i.e.	pump head valves, coil,	calculations etc.)	, add the mi	nimum press	sure differen	tial for the ir	dex circuit t	o the other o	components	pressure
Valve	(Kv-value)	(m³/hr)	5	7	10	20	3	0	35	52		65	
	(Cv-value)	(GPM)	5.8	8.1	11.6	23.2	34	1.8	40.6	60.3		75.4	75.4
Stainless Steel Cartridge			F360xxx			F361xxx			F3C2xxxx		F324xxxx		
Size of Cartridge		(mm)	20mm			40mm			50mm		80mm		
		(inch)	3/4"			1 1/2"			2"		3"		
Dressure Differential		(kPaD)	10-880			10-880			10-880		10-880		
Pressure	Dillerential	(psid)	1-128			1-128			1-128		1-128		
Flow Rate		(l/sec)	0.021-1.01			0.189-2.78			0.757-7.19		0.883-10.10		
		(GPM)	0.333-16.0			3.00-44.0			12.0-114		14.0-160		



DENMARK

DUBAI

SINGAPORE

USA

— www.flowcon.com –

FlowCon International A/S flowcon@flowcon.com

FlowCon Int. ME, LLC me@flowcon.com

FlowCon Int. Asia office asia@flowcon.com

FlowCon Americas, LLC usa@flowcon.com