FlowCon K

Control valve with pressure regulation

FlowCon international

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.

FlowCon K - Flexible to adjust to any flow situation.

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 Cartridge Catalogue) 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, pls. 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 kPa, 22-210 kPa, 40-390 kPa and 90-880 kPa. *This is 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 female by female, ISO parallel threaded.

Valve Location

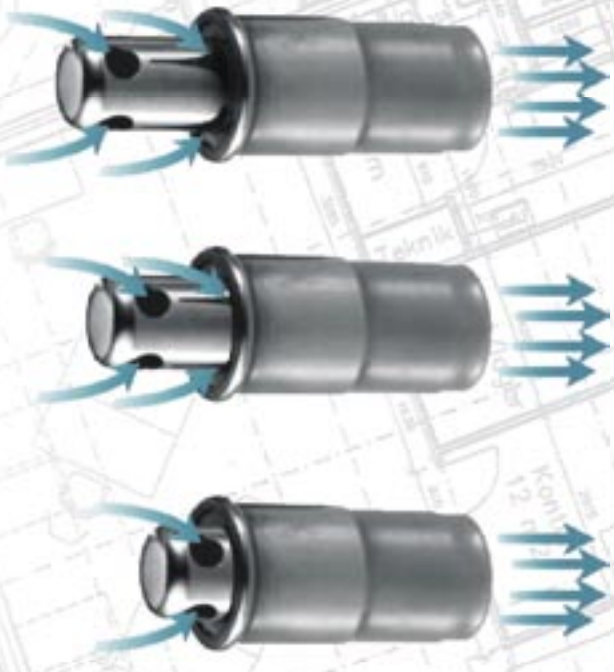
The hydronic function of the valve is not affected by whether it is installed on the supply or return side of the unit. The orientation of the cartridge access should be considered in order to have the ability to change or clear the cartridge of debris if necessary. Similarly, the pressure/temperature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



Cartridge operation.

Cartridge Selection Chart - extract

FlowCon K - 15/20/25mm

flow	20mm Stainless Steel Cartridge			
	RANGE 1	RANGE 2	RANGE 4	RANGE 8
l/s	10-95 kPa	22-210 kPa	40-390 kPa	90-880 kPa
0.021	F360111			
0.032	F360101			
0.035		F360211		
0.042	F360102			
0.047		F360201	F360411	
0.063	F360103	F360202	F360401	
0.069				F360811
0.084	F360104		F360402	
0.095		F360203		F360801
0.105	F360105			
0.126	F360106	F360204	F360403	F360802
0.147	F360107			
0.158		F360205		
0.168	F360108		F360404	
0.189		F360206		F360803
0.210	F360110		F360405	
0.221		F360207		
0.252	F360112			
0.295				

FlowCon K - 25/32/40mm

flow	40mm Stainless Steel Cartridge			
	RANGE 1	RANGE 2	RANGE 4	RANGE 8
l/s	10-95 kPa	22-210 kPa	40-390 kPa	90-880 kPa
0.189	F361109			
0.210	F361110			
0.252	F361112			
0.284		F361209		
0.295	F361114			
0.315		F361210		
0.336	F361116			
0.379	F361118	F361212	F361409	
0.421	F361120		F361410	
0.442		F361214		
0.462	F361122			
0.505	F361124	F361216	F361412	
0.547	F361126			
0.568		F386218		F361809
0.589	F361128		F361414	
0.631	F361130	F361220		
0.673	F361132		F361416	

FlowCon K - 40/50mm

flow	50mm Stainless Steel Cartridge			
	RANGE 1	RANGE 2	RANGE 4	RANGE 8
l/s	10-95 kPa	22-210 kPa	40-390 kPa	90-880 kPa
0.757	F3C2136			
0.883	F3C2142			
1.009	F3C2148			
1.136	F3C2154	F3C2236		
1.262	F3C2160			
1.325		F3C2242		
1.388	F3C2166			
1.814	F3C2172	F3C2248	F3C2436	
1.640	F3C21			
1.703		F3C2254		
1.767				
		2260		

FlowCon K - 50/65/80mm

flow	80mm Stainless Steel Cartridge			
	RANGE 1	RANGE 2	RANGE 4	RANGE 8
l/s	10-95 kPa	22-210 kPa	40-390 kPa	90-880 kPa
0.88	F324135			
1.01	F324140			
1.10		F324235		
1.14	F324145			
1.26	F324150	F324240		
1.39	F324155			
1.42		F324245		
1.47			F324435	
1.51	F324160			
1.58				
1.64	F3241			
1.68				
1.74				

For furter information pls. see FlowCon K technote or the Cartridge Catalogue.

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