

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 insert** for flow rate changing or maintenance.
- **Accuracy** of $\pm 5\%$.
- **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 (please see the catalogue: FlowCon Inserts) 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 inserts are calibrated for water at approximately 16°C. The flow rate of a insert 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

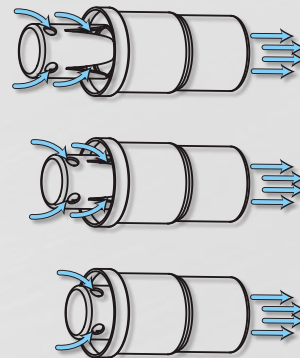
The FlowCon K valves are available in the following sizes: DN15, 20, 25, 32, 40, 50, 65 and 80. Standard FlowCon K valves are fixed female ISO threaded.

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 insert access should be considered in order to have the ability to change or clear the insert 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 insert. 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 insert 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 Inserts.

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 pump head calculations, add the minimum pressure differential for the index circuit to the other components pressure losses (i.e. valves, coil, etc.)										
Valve	(Kv-value) (m³/hr)	5	7	10	20	30	35	52	65			
	(Cv-value) (GPM)	5.8	8.1	11.6	23.2	34.8	40.6	60.3	75.4			

Stainless Steel Insert		F360xxx	F361xxx	F3C2xxxx	F324xxxx
Size of Insert	(mm)	20mm	40mm	50mm	80mm
	(inch)	3/4"	1 1/2"	2"	3"
Pressure Differential	(kPaD)	10-880	10-880	10-880	10-880
	(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



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