V212

Two-way Pressure Balanced Valve PN 16 (232 psi)

V212 can be used in a wide range of applications, such as heating, cooling, air handling and domestic hot water systems.

The valve can handle the following types of media:

- Hot and chilled water.
- Water with antifreeze additives such as glycol.

If the valve is used for media at temperatures below 0 °C (32 °F), it should be equipped with a stem heater in order to prevent ice formation on the valve stem.

SPECIFICATIONS

Design . . . . . two-way pressure plug valve
Pressure class . . . . . PN 16 (232 psi)
Flow characteristic . . . . . EQM
Stroke . . . . . .20 mm (0.79 in.)
Rangeability Kv/Kv_{min} . . . . . >50
Leakage . . . . . Tight sealing
ΔPm . . . . . 400 kPa (58 psi), water
Max. temperature of medium: . . . . . 120 °C (248 °F)
Min. temperature of medium: . . . . . –20 °C (–4 °F)
Connections . . . . . Flange according to ISO 7005-2

Materials

Body . . . . . .Nodular iron EN-JS 1030
Stem . . . . . Stainless steel SS 2346
Plug . . . . . Brass CW602N
Sealing . . . . . EPDM
Seat . . . . . .Nodular iron EN-JS 1030
Standard packing box . . . . . .Venta
Pressure Equipment Directive PED 97/23/EC Cat. 0

Size		Kv	Cv	Part number
DN	in.	m^3/h		
25	1”	10	11.7	721-1232-000
32	1¼”	16	18.7	721-1236-000
40	1½”	25	29.3	721-1240-000
50	2”	38	44.5	721-1244-000

Key to Technical specification

- The rangability is the ratio of Kv and Kv_{min} (Cv and Cv_{min}).
- Kv (Cv) is the flow through the valve in m^3/h at the specified valve lift and at a pressure drop of 100 kPa across the valve.
- Kv_{min}(Cv_{min}) is the minimum controllable flow (m^3/h) at a pressure drop of 100 kPa within the range in which the valve characteristics conform to the slope requirements of IEC 534-1.

Schneider Electric

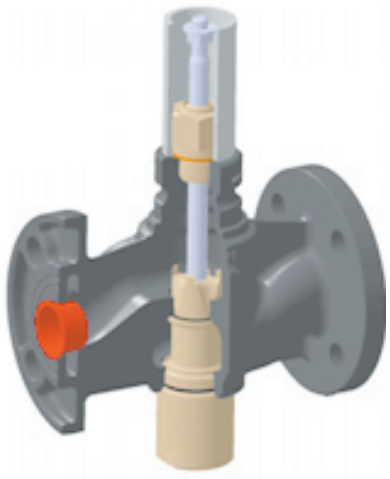
DESIGN AND CHARACTERISTICS

The V212 uses a patented design to balance the pressure. This means that only a moderate force is required to operate tne valve. The design will also handle solid particles in the fluid in an efficient way.

The plug is guided throughout the lift, which reduces the risk for vibrations. The valve closes with the stem up.

The flow characteristics of the V212 is equal percentage modified.

DESIGN



CAVITATIONS

Cavitation takes place in a valve when the velocity of the flow between the plug and seat increases to the extent that gas bubbles are created in the water.

When, after the plug and seat, the velocity decreases, the gas bubbles collapse (implode), generating conciderable noise and causing conciderable wear on the valve.

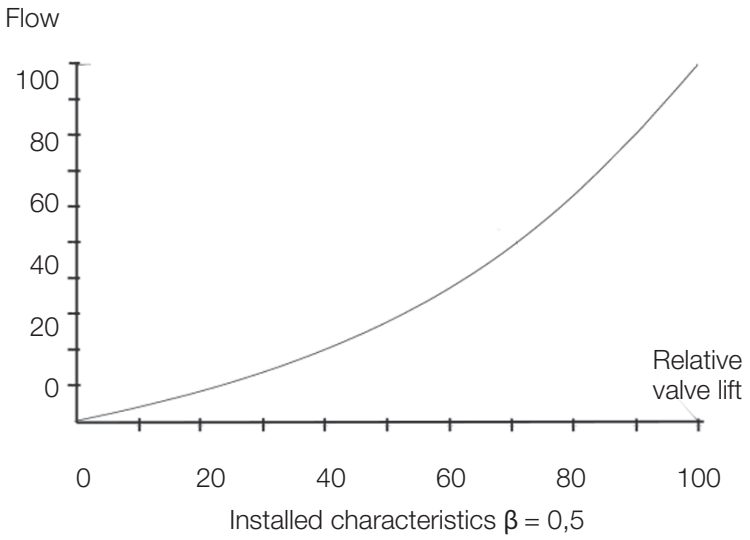
By means of the cavitation diagram shown in the figure it can be checked if risk of cavitation exists with the working conditions in the pertinent installation.

Proceed as follows: Using the static pressure before the valve (e.g. 1000 kPa), plot the horizontal line to the line for the temperature of the liquide (e.g. 120 °C).

From the intersection point, plot a vertical line downwards and read off the max.permissible pressure drop across the valve.

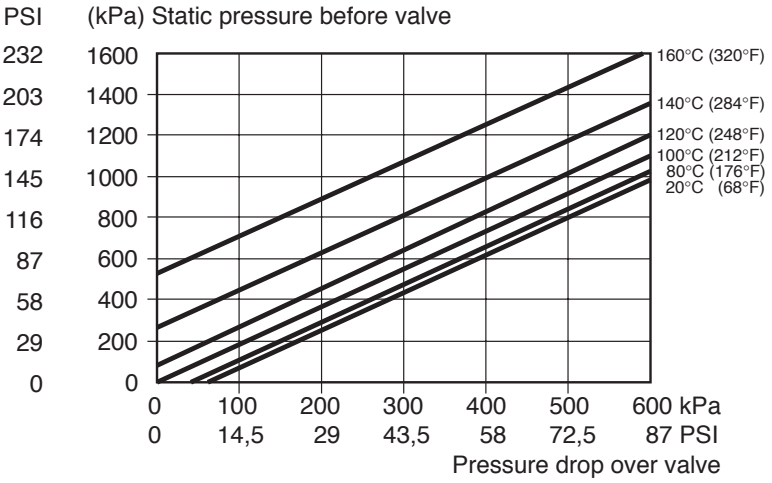
If the computed pressure drop exceeds the value read from the diagram there is risk for cavitation.

CHARACTERISTICS



CAVITATIONS

Pressure drop chart at the beginning of cavitation



Pressure drop limit where caviation might occur. Is dependent of valve inlet pressure and temperature of water.

SPECIFICATION OF ACTUATOR

The ability to close at various differential pressures depends on valve size and available stem force. The later is determined by the selected actuator. The table shows performances for different actuator/valve combinations.

ΔPc = Permissible pressure differential when the valve is closed

Connection		M800 ΔPc		M400 ΔPc	
DN	in.	kPa	psi	kPa	psi
25	1	1600	232	800	116
32	1¼	1600	232	750	109
40	1½	1600	232	700	102
50	2	1600	232	600	87

INSTALLATION

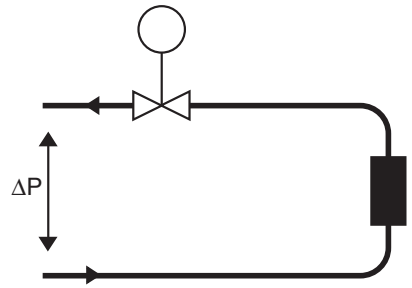
The valve should be mounted with flow direction in accordance with the valve marking.

It is recommended to install the valve in the return pipe, in order to avoid exposing the actuator to high temperatures.

The valve must not be installed with the actuator mounted below the valve.

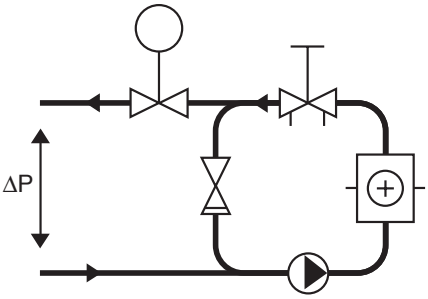
To ensure that suspended solids will not become jammed between the valve plug and seat, a filter should be installed upstream of the valve, and the pipe system should be flushed before the valve is installed.

INSTALLATION



A. Typical installation without local circulating pump.

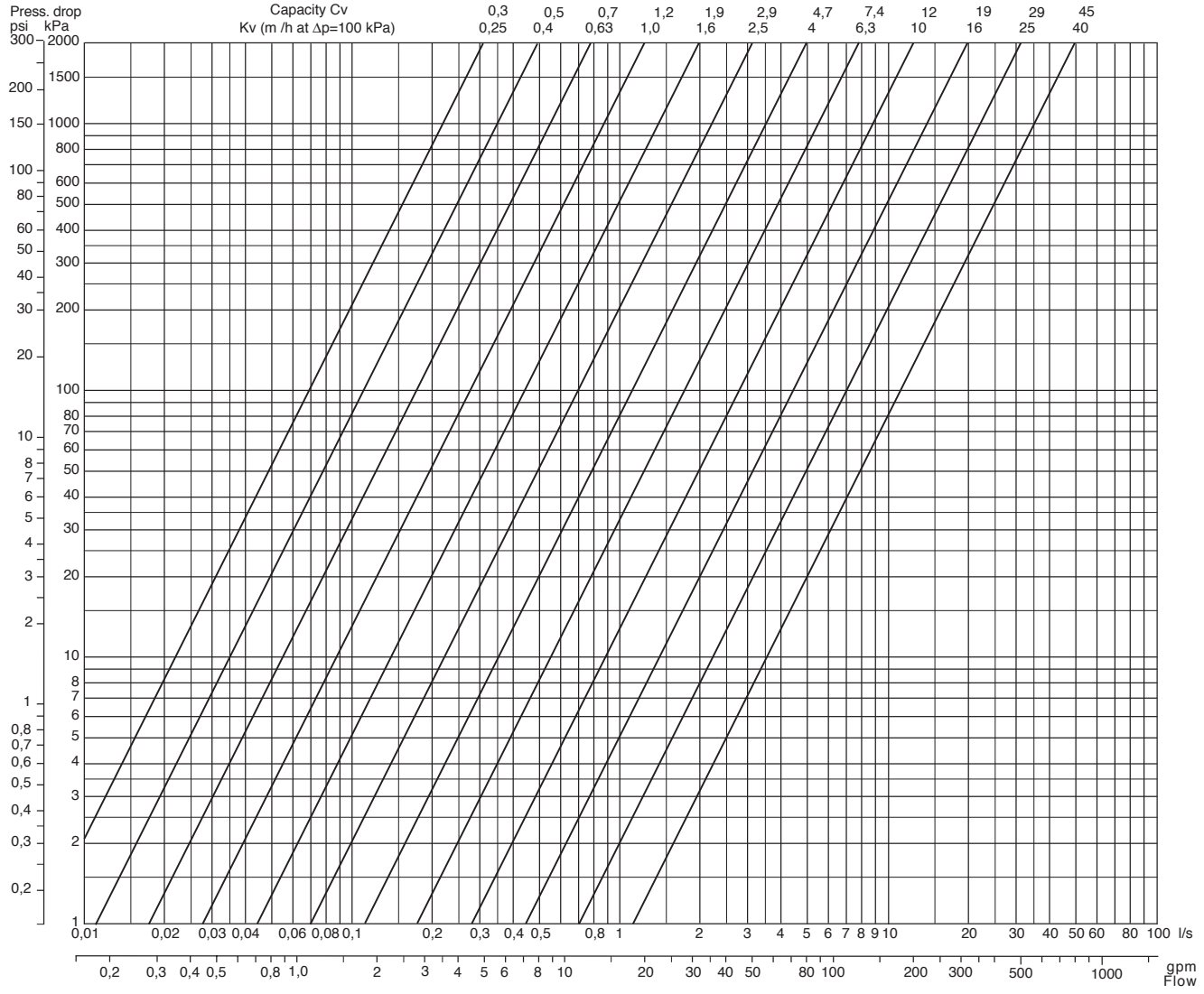
To provide a good function, the pressure drop across the valve should be no less than half of the available pressure (ΔP). This corresponds to a valve authority of 50%.



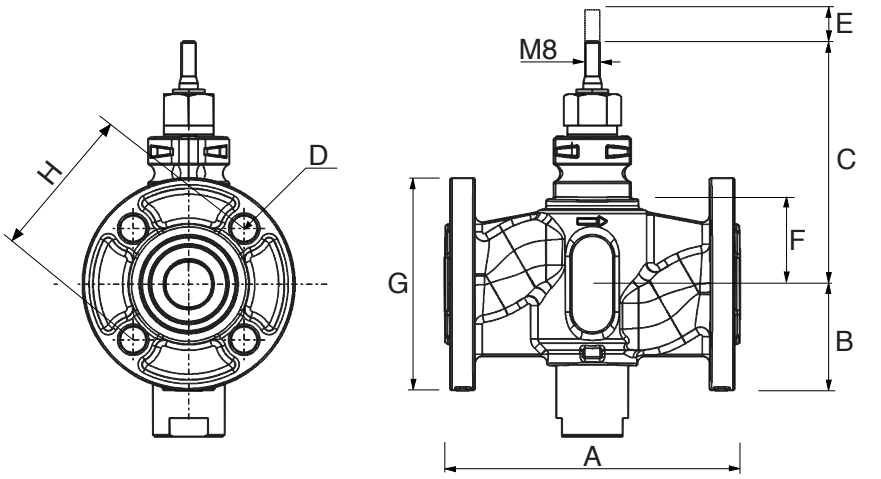
B. Typical installation with local circulating pump.

The K_V (C_V) value of the valve to be selected so that the entire available pressure drop (ΔP) falls across the control valve.

PRESSURE DROP CHART



DIMENSIONS AND WEIGHT



Part No 721-	Conn.		Dimensions																Weight	
			A		B		C		D		E		F		G		H			
	DN	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	kg	lb.
1232	25	1	160	6.30	83	3.27	131	5.16	4x14	4x0.55	20	0.79	46	1.81	115	4.53	85	3.35	3.4	7.5
1236	32	1¼	180	7.09	87.5	3.44	144.5	5.69	4x19	4x0,75	20	0.79	59.5	2.34	140	5.51	100	3.94	5.0	11.0
1240	40	1½	200	7.87	83.5	3.29	146	5.75	4x19	4x0,75	20	0.79	61	2.40	150	5.91	110	4.33	6.1	13.4
1244	50	2	230	9.06	99.5	3.92	161	9.34	4x19	4x0,75	20	0.79	76	3.00	165	6.50	125	4.92	8.3	18.3

SPARE PARTS

Stuffing box

Standard type S . . . . . max 150 °C (302 °F)
Item number. 1-001-0800-0