Calculation and Selection of Pressure Relief Controller

Initial data

10.00 m3/h	Estimated water flow rate	**5.00 bar**	Water pressure before the regulator installation
70 °C	Maximum water temperature at the installation place	**1.00 bar**	Allowable pressure loss across controller
		6.00 bar	The pressure that will be maintained by the controller

Calculation results

[10.00 m3/h] / [1.00 bar]^0.5 = 10.00 [m3/h]	Required Kv value
Tmax 70°C <= 70°C	There will be no cavitation on the controller
([G 10.00 m3/h] / [Kvs 16,0 m3/h])^2 = 0.39 [bar]	Pressure drop across a fully open controller with Kvs=16,0 [m3/h] with flow rate 10.00 [m3/h]
[10.00 m3/h] / {3600 *3.14 *([DN40] *0.001)^2 *0.25} = = 2.2 [m/s]	The flow rate is within normal limits V < 3.0[m/s]

Selection result : Pressure relief controller

Danfoss : AVA

Denmark

maintains the specified pressure at the input to the regulator

opens when the inlet pressure increases

normally closed

DN 40 [mm]	Nominal controller diameter
Kvs 16,0 [m3/h]	Flow coefficient
PN 25 [bar]	Nominal pressure
dP 3.0...11.0 [bar]	Pressure setting range
dT 2 ... 150°C	Operating temperature
brass / cast iron	Body material
63 %	The percentage of the opening of the controller gate at which Kv=10.00 [m3/h], and the pressure loss on the controller will be 1.00 [bar] when passing the calculated flow rate 10.00 [m3/h]