

DIN EN 215:2019-12 (E)

Thermostatic radiator valves - Requirements and test methods

Contents		Page
European foreword		4
1	Scope	5
2	Normative references	5
3	Terms and definitions	5
4	Symbols and abbreviations	14
5	Requirements	14
5.1	Dimensions	14
5.2	Mechanical properties	14
5.2.1	Resistance to pressure, leak-tightness of the valve body assembly	14
5.2.2	Leak-tightness of the stem seal	14
5.2.3	Resistance of the valve body assembly to a bending moment	14
5.2.4	Resistance of the temperature selector to a torque	15
5.2.5	Resistance of the temperature selector to a bending moment	15
5.2.6	Exchange of the stem seal	15
5.3	Operating characteristics	15
5.3.1	Nominal flow rate and flow rate at S-1 K	15
5.3.2	Characteristic flow rate at the minimum and maximum setting of the temperature selector	15
5.3.3	Characteristic flow rate for thermostatic valves having a pre-setting facility	15
5.3.4	Sensor temperature at the minimum and maximum setting of the temperature selector	15
5.3.5	Hysteresis at the nominal flow rate	15
5.3.6	Differential pressure influence	15
5.3.7	Influence of the static pressure	16
5.3.8	Temperature difference between temperature point S and the closing and opening temperature respectively	16
5.3.9	Influence of ambient temperature on thermostatic valves with transmission elements	16
5.3.10	Water temperature effect	16
5.3.11	Response time	16
5.4	Endurance and temperature resistance	16
5.4.1	Mechanical endurance	16
5.4.2	Thermal endurance	16
5.4.3	Temperature resistance	16
6	Test apparatus and methods	17
6.1	Test apparatus	17
6.1.1	Apparatus to obtain the hydraulic data	17
6.1.2	Apparatus for testing the thermostatic valve and the integrated thermostatic valve in the water bath	18
6.1.3	Apparatus for testing the thermostatic valve in the air stream	19
6.2	Characteristic curves of thermostatic valves	20
6.2.1	Determination of the characteristic curves	20
6.2.2	Plotting of the theoretical curve	23
6.3	Testing of mechanical properties	24
6.3.1	Resistance to pressure, leak-tightness of the valve body assembly	24
6.3.2	Leak-tightness of the valve closed mechanically by means of the protection cap	24
6.3.3	Leak-tightness of the stem seal	25
6.3.4	Resistance of the valve body assembly to a bending moment	25

6.3.5	Resistance of the temperature selector to a torque	26
6.3.6	Resistance of the temperature selector to a bending moment	27
6.4	Testing of operating characteristics	28
6.4.1	Characteristic data	28
6.4.2	Endurance tests and temperature resistance test	31
6.5	Test schedule	32
7	Technical information to be published by the manufacturer	33
Annex A (normative) Thermostatic Radiator Valves -- Dimensions and details on connection		36
A.1	General	36
A.2	Dimensions	36
A.3	Connection details	39
A.4	Materials for body, tailpiece and nut	40
A.5	Designation	40
A.6	Marking	40
A.7	Calculation of Control Accuracy -- CA value	40
Annex B (informative) Degree of turbulence of the air current in a room		42
Annex C (informative) Test block for thermostatic integrated valves		43
Bibliography		44