# Thermostatic valves and control heads

## 204 series

01242/20 EN
replaces dp 01242/19 GB

028

### Function

Thermostatic valves are typically used for regulating the fluid flow to the radiators of central heating systems.
They are provided with a regulating element which automatically controls the opening of the valve to keep the ambient temperature of the room where they are installed constant at the set value. This prevents unwanted temperature rises and achieves considerable energy savings.

### Technical specification of control heads

| | |
|---|---|
| Scale of adjustment: | ❄–5 |
| Setting temperature range: | 7–28 °C |
| Frost protection cut-in: | 7 °C |
| Storage temperature: | -10–50 ° C |

Caleffi valves 220, 221 (sizes 3/8", 1/2", 3/4"); 224, 225 series (sizes 3/8", 1/2"), 222, 223, 226, 227 series (size 1/2") in combination with control heads 204 series, are approved to standard EN 215.
Caleffi valves 222, 223 (sizes 3/8") are not approved to standard EN 215.

### Technical specification of valve bodies

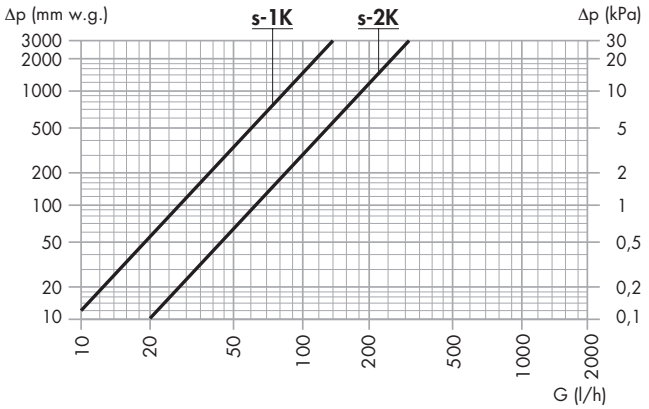
| | |
|---|---|
| Medium: | water, glycol solutions |
| Max percentage of glycol: | 30% |
| Max differential pressure with control fitted: | 1 bar |
| Max working pressure: | 10 bar |
| Temperature range: | 5–100 °C |

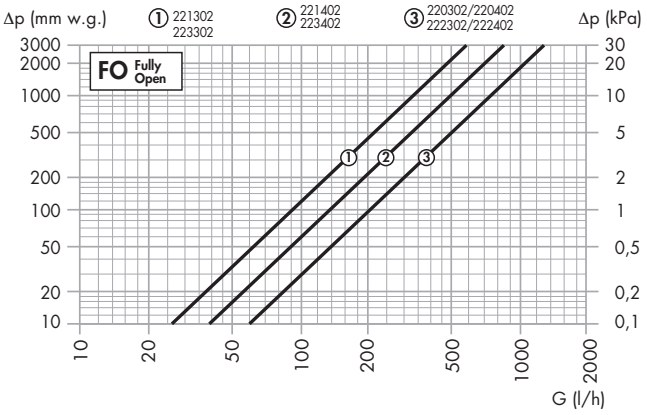
| Code | Hysteresis | Differential pressure influence | Water temperature influence | Response time | Control accuracy - CA value |
|---|---|---|---|---|---|
| | [C] | [D] | [W] | [Z] | [CA] |
| **204**000 | 0,4 K | 0,5 K | 1 K | 23 minuti | 0,6 k |
| **204**100 | 0,4 K | 0,5 K | 0,5 K | 18 minuti | 0,2 k |

### Flow curves

The head loss diagrams are obtained with the thermostatic control head in position 3 and a difference between the ambient temperature and the set temperature of 1K and 2K (curves s-1K and s-2K respectively) as well as with the thermostatic control head fully open, corresponding to the maximum opening of the valve. The diagrams can be used for straight, angled, double angled and reverse valves. For thermotechnical calculations, the pressure loss can be considered equal with optimal approximation.

**220 - 221 - 222 - 223 (3/8" - 1/2")**

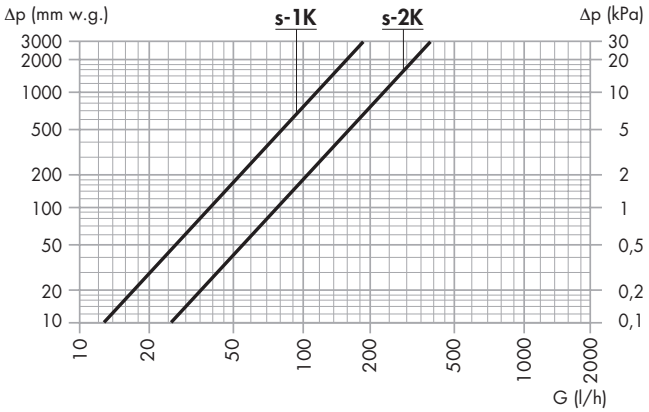


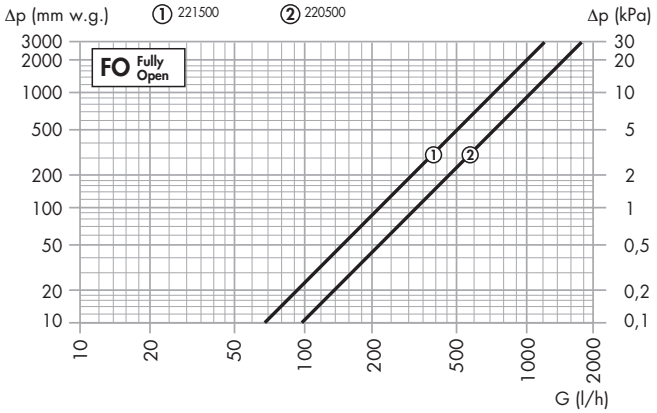




| Valves series and size | Nominal flow rate (l/h) | Obturator authority | Kv ($m^3$/h) s-1K | Kv ($m^3$/h) s-2K | Kv ($m^3$/h) FO | Valve description |
|---|---|---|---|---|---|---|
| **220** *(3/8")* - **222** *(3/8" - 23 p.1,5)* | 180 | 0,92 | 0,32 | 0,57 | 2,29 | Angled connection |
| **220** *(1/2")* - **222** *(1/2" - 23 p.1,5)* | 180 (170*) | 0,92 | 0,32 | 0,57/0,54 | 2,39 | Angled connection |
| **221** *(3/8")* - **223** *(3/8" - 23 p.1,5)* | 180 | 0,60 | 0,32 | 0,57 | 1,05 | Straight connection |
| **221** *(1/2")* - **223** *(1/2" - 23 p.1,5)* | 180/200 | 0,60 | 0,32 | 0,57/0,63 | 1,52 | Straight connection |

** With control head code 204100*

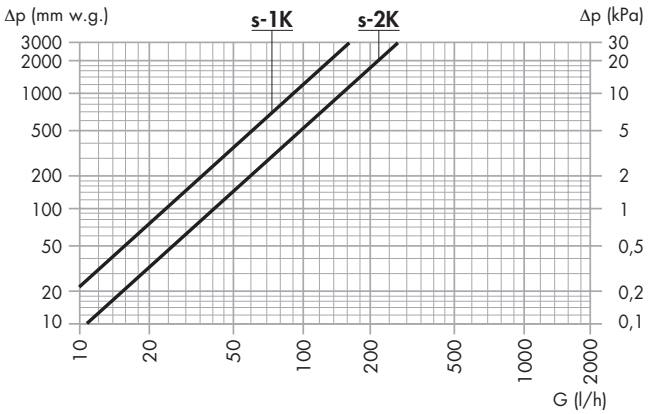
220 - 221 (3/4")

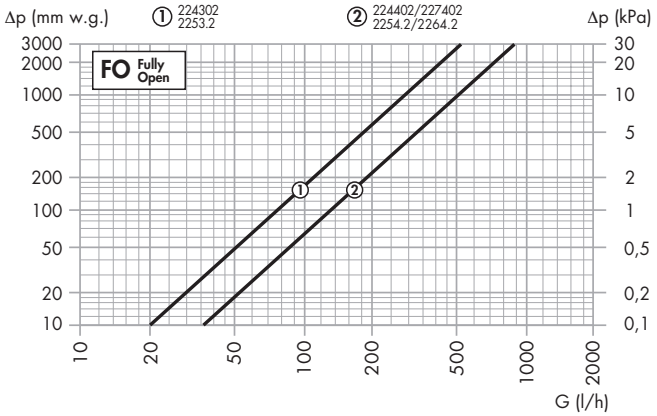



| Valves series and size | Nominal flow rate (l/h) | Obturator authority | Kv ($m^3$/h) s-1K | Kv ($m^3$/h) s-2K | Kv ($m^3$/h) FO | Valve description |
|---|---|---|---|---|---|---|
| **220** *(3/4")* | 240 | 0,93 | 0,40 | 0,76 | 3,19 | Angled connection |
| **221** *(3/4")* | 240 | 0,86 | 0,40 | 0,76 | 2,20 | Straight connection |

224 (3/8" - 1/2") - 225 (3/8" - 1/2") - 226 (1/2") - 227 (1/2")




| Valves series and size | Nominal flow rate (l/h) | Obturator authority | Kv ($m^3$/h) s-1K | Kv ($m^3$/h) s-2K | Kv ($m^3$/h) FO | Valve description |
|---|---|---|---|---|---|---|
| **224** *(3/8")* | 170 | 0,65 | 0,36 | 0,54 | 0,93 | Reverse connection |
| **224** *(1/2")* - **227** *(1/2" - 23 p.1,5)* | 180 | 0,93 | 0,36 | 0,57 | 1,39 | Reverse connection |
| **225** *(3/8")* | 180 | 0,60 | 0,36 | 0,57 | 0,96 | Double angled connection |
| **225** *(1/2")* | 180 | 0,80 | 0,36 | 0,57 | 1,40 | Double angled connection |
| **226** *(1/2" - 23 p.1,5)* | 180 | 0,80 | 0,36 | 0,57 | 1,40 | Double angled connection |



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