# Balanced 2-way Control Valves type G1FB
# Nodular cast iron, PN 25, DN 25 – 65 mm



## Characteristics

- Nominal pressure PN 25
- Pressure balanced valve
- Regulating capability $\frac{k_{vs}}{k_{vr}} > 25$
- Single-seated, tight closure
- Quadratic characteristic

## Applications

Balanced control valves type G1FB are designed for regulating hot water, steam and hot oil systems.
Balanced valves are used in installations where the system pressure necessitates a closing force greater than available in the actuator programme for a standard single seated valve, and where the leakage rate for a double-seated valve is unacceptable.
The valves are used in conjunction with our temperature- or pressure differential regulators for controlling industrial processes, district or central heating plants or marine installations.

## Dimensioning

For sizing of control valves and selection of actuators, please see "Quick Choice" leaflet no. 9.0.00.

## Design

The valve components - spindle, seat, cone and bellow - are made of stainless steel.

The bellows for balancing the pressure are fitted on the valve spindle which reduces the force necessary for closing the valve, as the upstream pressure of the medium through the hollow valve spindle acts outside and the pressure after the valve acts inside the bellow system.
The valve body is made of nodular cast iron EN-GJS-400-15 with flanges drilled according to EN 1092-2. The thread for the actuator connection is G1B ISO 228.
The valves are single-seated and designed for tight closure. The leakage rate is less than 0.05% of the full flow (according to VDI/VDE 2174).

## Quality assurance

All valves are manufactured under an ISO 9001 certification and are pressure and leakage tested before shipment.
For marine applications the valves can be supplied with relevant test certificates from recognized classification societies.

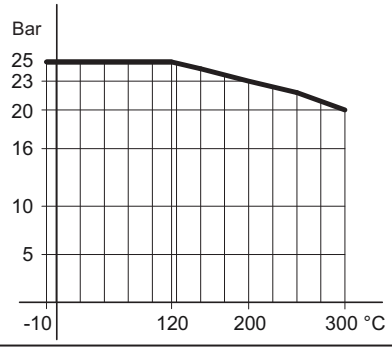
## Function

Without an actuator being connected, the valve is held in open position by means of a spring and the bellow system. With pressure on the spindle the valve will close.
In connection with our thermostats or electronic actuators, the valves will close at rising temperatures. For cooling circuits a reverse acting double-seated valve can be used.
The quadratic characteristic will not cease until the flow has dropped below 4% of the full flow.

## Technical data

| | |
|---|---|
| Materials: | |
| - Valve body | Nodular Cast iron EN-GJS-400-15 |
| - Components | Stainless steel |
| - Nuts, bolts | 24 CrMo 5/A4 |
| Nominal pressure | PN 25 |
| Seating | Single-seated |
| Valve characteristic | Quadratic |
| Regulating capability | $\frac{k_{vs}}{k_{vr}} > 25$ |
| Leakage | ≤ 0.05% of $k_{vs}$ |
| Temperature range | See pressure/temperature diagram |
| Mounting | See page 2 |
| Flanges | EN 1092-2 PN 25 |
| Colour | Blue |

**Pressure/Temperature diagram**




## Specifications

| Type | Flange connection DN in mm | Opening mm | $k_{vs}$-value $m^3/h$ | Lifting height mm | Weight kg |
|---|---|---|---|---|---|
| 25 G1FB | 25 | 25 | 7.5 | 7 | 6 |
| 32 G1FB | 32 | 32 | 12.5 | 8 | 9 |
| 40 G1FB | 40 | 40 | 20 | 9 | 13 |
| 50 G1FB | 50 | 50 | 30 | 10 | 16 |
| 65 G1FB | 65 | 65 | 50 | 13 | 23 |

Subject to changes without notice.

Clorius Controls A/S

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## Definition of $k_{VS}$-value

The $k_{VS}$-value is identical to the IEC flow coefficient $k_V$ and defined as the water flow rate in $m^3/h$ through the fully open valve by a constant differential pressure, $\Delta p_V$, of 1 bar.

## Mounting

Up to 170ºC the valve can be installed vertically as well as horizontally. For media temperature above 170ºC, a cooling unit of type KS has to be applied. It must then be installed with actuator/ thermostats downwards, and according to the following instructions:

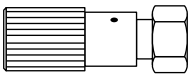
| Valve temperature | Cooling unit | Suitable for |
|---|---|---|
| 170ºC - 250ºC | KS-4 | All actuators |
| 250ºC - 300ºC | KS-5 | Thermostats |
| 250ºC - 300ºC | KS-6 | Valve Motors |

## Strainer

It is recommended to use a strainer in front of the control valve if the liquid contains suspended particles.

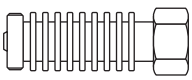
## Accessories

### Manual adjusting device



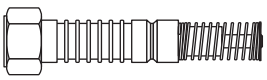
The device has a built-in stuffing box. For sealing and manual operation of valves when an actuator has not been fitted, e.g. during periods of construction.

### Cooling unit KS-4

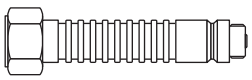


Cooling unit protecting the stuffing box of the motor / thermostat. To be applied at valve temperatures between 170ºC and 250ºC.

### Cooling unit KS-5

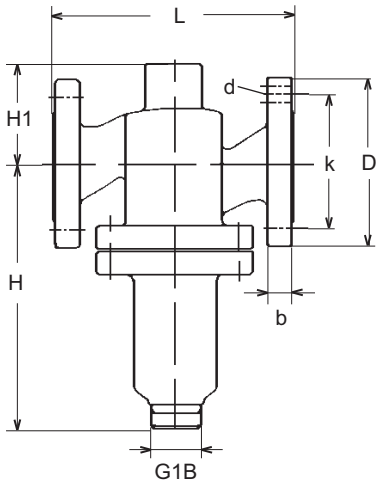


### Cooling unit KS-6



Cooling units with built-in bellow glands, replacing stuffing box of thermostat (KS-5) or valve motor (KS-6). Must be applied at valve temperatures above 250ºC.

## Dimension sketch




**Dimensions**

| Type | L mm | H mm | H1 mm | D (dia.) mm | b mm | k (dia.) mm | d mm dia. (number) |
|---|---|---|---|---|---|---|---|
| 25 G1FB | 160 | 180 | 70 | 115 | 16 | 85 | 14x(4) |
| 32 G1FB | 180 | 195 | 75 | 140 | 18 | 100 | 18x(4) |
| 40 G1FB | 200 | 205 | 85 | 150 | 19 | 110 | 18x(4) |
| 50 G1FB | 230 | 225 | 95 | 165 | 19 | 125 | 18x(4) |
| 65 G1FB | 290 | 260 | 110 | 185 | 19 | 145 | 18x(8) |

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