

2-way Control Valves type H1F, Cast steel

PN 40, DN 15/4 – 50 mm

2.4.02-I

GB-1

Characteristics

- Nominal pressure PN 40
- Regulating capability $\frac{k_{vs}}{k_{vr}} > 25$
- Single-seated, tight closing
- Quadratic characteristic

Applications

Control valves type H1F are designed for regulating hot water, steam and hot oil systems.

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 and cone - are made of stainless steel.

The valve body is made of cast steel GP240GH (GS-C25) with flanges drilled according to EN 1092-1 or ANSI B16.5 Class 150. 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).



Function

Without the actuator being connected, the valve is held in open position by means of a spring. 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 valve can be used.

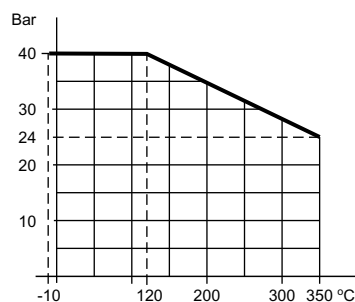
The quadratic characteristic will not cease until the flow has dropped below 4% of the full flow.

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.

Pressure/Temperature Diagram
According to DIN 2401



Specifications

| Type | Flange connection DN in mm | Opening mm | k_{vs} -value m ³ /h | Lifting height mm | Weight kg |
|-------------|-------------------------------|---------------|--------------------------------------|----------------------|--------------|
| 15 / 4 H1F | 15 | 4 | 0.20 | 6 | 3.3 |
| 15 / 6 H1F | 15 | 6 | 0.45 | 6 | 3.3 |
| 15 / 9 H1F | 15 | 9 | 0.95 | 6 | 3.4 |
| 15 / 12 H1F | 15 | 12 | 1.7 | 6 | 3.4 |
| 15 H1F | 15 | 15 | 2.75 | 6 | 3.4 |
| 20 / 4 H1F | 20 | 4 | 0.2 | 6.5 | 4.7 |
| 20 / 6 H1F | 20 | 6 | 0.45 | 6.5 | 4.7 |
| 20 / 9 H1F | 20 | 9 | 0.95 | 6.5 | 4.7 |
| 20 H1F | 20 | 20 | 5 | 6.5 | 4.9 |
| 25 H1F | 25 | 25 | 7.5 | 7 | 6.1 |
| 32 H1F | 32 | 32 | 12.5 | 8 | 9.0 |
| 40 H1F | 40 | 40 | 20 | 9 | 10.8 |
| 50 H1F | 50 | 50 | 30 | 10 | 15.5 |

Technical Data

Materials:

| | |
|---------------------------------|---|
| Valve body | Cast steel GP240GH (GS-C25) |
| - trim | Stainless steel |
| - bolts, nuts | 24 CrMo 4/A4 |
| Nominal pressure | PN 40 |
| Seating | Single seated |
| Flow characteristic | Quadratic |
| Regulating capability | $\frac{k_{vs}}{k_{vr}} > 25$ |
| Seat leakage | $\leq 0.05\%$ of k_{vs} |
| Temperature range | See diagram |
| Mounting | See page 2 |
| Flanges drilled according to | EN 1092-1 PN 40 or ANSI B16.5 Class 150 |
| Counter flanges | DIN 2635 |
| Colour | Green |

Subject to changes without notice.

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GB-2

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 m³/h through the fully open valve by a constant differential pressure, Δp_V , of 1 bar.

Mounting

The valves can be installed with vertical as well as horizontal spindles. For valve temperatures of max. 170°C, the thermostat/actuator can be fitted below or above the valve. For valve temperatures above 170°C, a cooling unit of type KS has to be applied with connection downwards - according to the following instructions:

| Valve Temperature | Cooling Unit | Suitable for |
|-------------------|--------------|---------------|
| 170°C - 250°C | KS-4 | All actuators |
| 250°C - 350°C | KS-5 | Thermostats |
| 250°C - 350°C | KS-6 | Valve Motors |

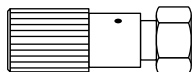
KS-5 or KS-6 must be applied to hot oil systems.

Strainer

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

Accessories

Manual Adjusting Device



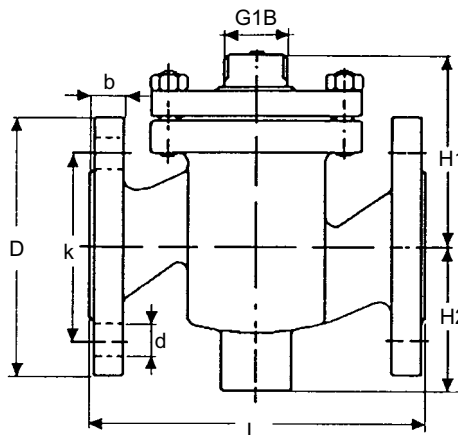
The device has a built-in stuffing box. For sealing and manual operation of valves when an actuator has not been fitted, e.g. during periods of construction.

Cooling Unit KS-4



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

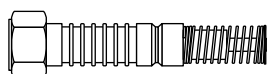
Dimension sketch



Dimensions

| Type | | | | | EN 1092-1 | | | ANSI B16.5 Class 150 | | |
|-------------|---------|----------|----------|---------|-------------------|-------------------|--------------------------|----------------------|-------------------|--------------------------|
| | L mm | H1 mm | H2 mm | b mm | D (dia.) mm | k (dia.) mm | d mm dia. (number) | D (dia.) mm | k (dia.) mm | d mm dia. (number) |
| 15 / 4 H1F | 130 | 80 | 60 | 16 | 95 | 65 | 14x(4) | 89 | 61 | 16x(4) |
| 15 / 6 H1F | 130 | 80 | 60 | 16 | 95 | 65 | 14x(4) | 89 | 61 | 16x(4) |
| 15 / 9 H1F | 130 | 80 | 60 | 16 | 95 | 65 | 14x(4) | 89 | 61 | 16x(4) |
| 15 / 12 H1F | 130 | 80 | 60 | 16 | 95 | 65 | 14x(4) | 89 | 61 | 16x(4) |
| 15 H1F | 130 | 80 | 60 | 16 | 95 | 65 | 14x(4) | 89 | 61 | 16x(4) |
| 20 / 4 H1F | 150 | 85 | 65 | 18 | 105 | 75 | 14x(4) | 98 | 70 | 16x(4) |
| 20 / 6 H1F | 150 | 85 | 65 | 18 | 105 | 75 | 14x(4) | 98 | 70 | 16x(4) |
| 20 / 9 H1F | 150 | 85 | 65 | 18 | 105 | 75 | 14x(4) | 98 | 70 | 16x(4) |
| 20 H1F | 150 | 85 | 65 | 18 | 105 | 75 | 14x(4) | 98 | 70 | 16x(4) |
| 25 H1F | 160 | 95 | 70 | 18 | 115 | 85 | 14x(4) | 108 | 79 | 16x(4) |
| 32 H1F | 180 | 105 | 75 | 18 | 140 | 100 | 18x(4) | 118 | 89 | 16x(4) |
| 40 H1F | 200 | 110 | 85 | 18 | 150 | 110 | 18x(4) | 127 | 98 | 16x(4) |
| 50 H1F | 230 | 125 | 95 | 20 | 165 | 125 | 18x(4) | 153 | 121 | 19x(4) |

Cooling Unit KS-5



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 250°C and in hot oil systems.

Cooling Unit KS-6



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