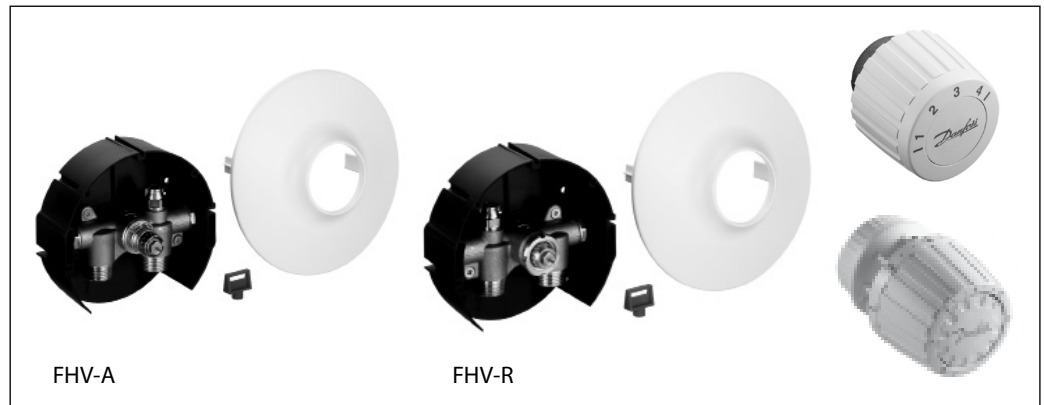


## Data Sheet

# FHV-A/FHV-R

### Application:



The floor-heating valve (FHV) provides an economical method of incorporating a radiant floor heating system into an existing hot water or radiator system. FHV self-acting regulators are well suited to handle underfloor heating temperature in single rooms, such as bathrooms, entry ways or kitchens.

FHV control valves are flexible to use, easily installed and are available in two versions:

**FHV-A** control valves are ideally suited to control individual underfloor heated rooms. The FHV-A is placed on the supply side of a floor heating system, and is capable of providing hydraulic balancing via the FHV-A's integral pre-setting feature. In controlling the room air temperature a standard RA 2000 operator is fitted to the

FHV-A valve.

**FHV-R** valves are designed for systems using floor heating in conjunction with radiators. The valve is placed on the return side of the radiant floor system. The valve's operator, FJVR, senses the return fluid temperature of the system and regulates the valve appropriately. When the FHV-R is used for a radiant heating system, the maximum floor heated area should not be greater than 110 sq. ft.

**Note:** The flow temperature must not be permitted to exceed the maximum supplied water temperature as recommended by the floor heating supplier. This can be accomplished via use of Danfoss' 3-way (MR) or 2-way (FTC with RA 2000 or RAVV with VMT) thermostatic valve and a circulator in the floor heating loop.

### Ordering Information:

When ordering the FHV assembly order the valve body, appropriate operator, tail pieces and union nuts.

**Valve bodies include wall box, cover and valve**

| Code No. | Description                            | Cv*       |
|----------|--|-----------|
| 003L1001 | FHV-A pre-settable valve body          | 0.05-0.92 |
| 003L1000 | FHV-R retur temperature limiting valve | 1.03      |

\*Cv is the water flow rate through the fully open valve at a pressure drop of 1 psi. To determine the pressure drop through the valve at other flow rates use the formula:  $\Delta P = (Q/Cv)^2$ , where Q = water flow in GPM

### Operators

| Code No. | Description                 | Temperature Range        |
|----------|-----------------------------|--------------------------|
| 013G8250 | RA 2000 operator for, FHV-A | 45° - 86°F (7° - 30°C)   |
| 003L1040 | FJVR operator for, FHV-R    | 50° - 122°F (10° - 50°C) |
| 003L1070 | FJVR operator for, FHV-R    | 50° - 176°F (10° - 80°C) |

**Ordering Information:  
(Cont.):**

Tail pieces and union nuts require two of each

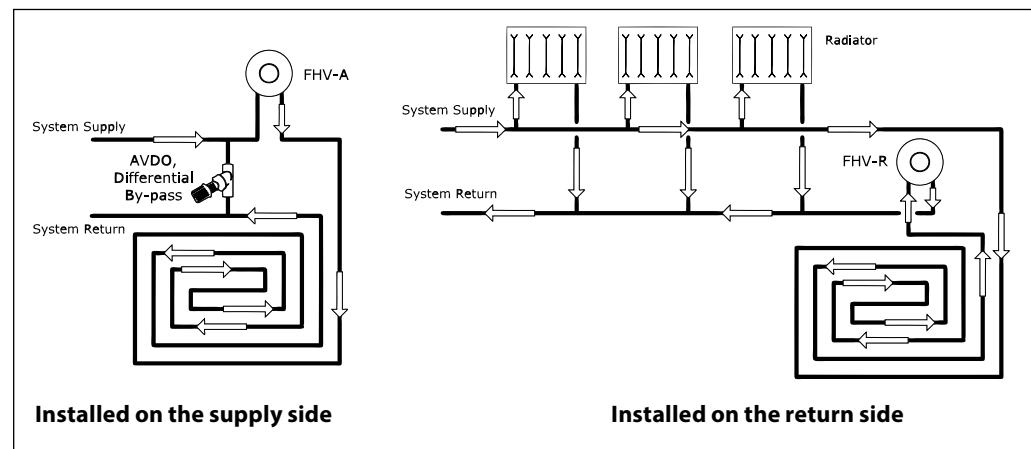
|                 |                              |
|-----------------|------------------------------|
| <b>013U0496</b> | 1/2" Union Nut               |
| <b>013U8608</b> | 1/2" Solder Female Tailpiece |
| <b>013U0496</b> | 1/2" Male Threaded Tailpiece |

**Spare Parts and Accessories:**

| Code No.        | Description             |
|-----------------|-------------------------|
| <b>013G0290</b> | Packing gland for FHV-A |
| <b>013U0070</b> | Packing gland for FHV-R |

**System layout:**

In laying a radiant floor heating system with the FHV valve, it is recommended to utilize the double parallel spiral pattern otherwise known as the counter flow tube layout.



The water supply temperature for the system should be properly monitored to ensure the surface temperature is appropriate for the finished floor material.

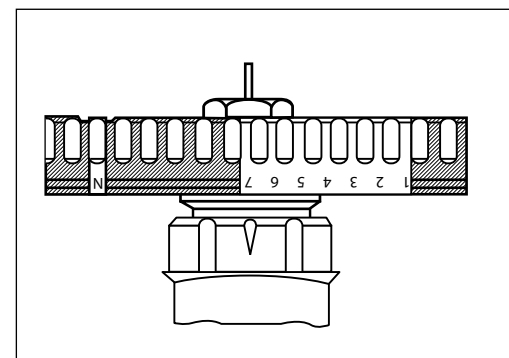
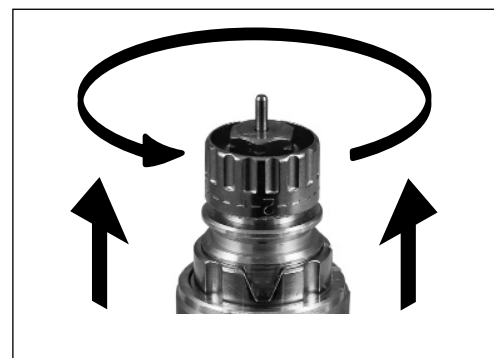
The maximum square footage allowed for the FHV-R application is 110 sq. ft. Since the FHV-R valve monitors the fluid temperature and not the air, it will not completely close. The adjusted set temperature for the operator should be appropriate for the finished floor material.

**Technical Specification:**

The installation of either valves should be on a closed loop system

|  |                   |
|--|-------------------|
| <b>Maximum Flow Temperature</b>              | 194°F (90°C)      |
| <b>Maximum Operating Pressure</b>            | 87 psi (6 bar)    |
| <b>Maximum Differential Pressure (water)</b> | 8.7 psi (0.6 bar) |

**Pre-setting:**



The incorporated pre-settable option on the FHV-A valve body has an easy setting adjustment ring with clearly engraved setting markers scaled from 1-7 and N. Setting the appropriate valve is quick and precise, without the need for a special tool. The preset selections are in 0.5 increments between 1 and 7, with N being in a full flow position. (Refer to Capacity charts for flow rates)

**To set the valve:**

1. Remove the protective cap or sensor element
2. Lift setting ring
3. Rotate ring to the desired flow setting, and align position with indicator located on the collar of the valve
4. Allow setting ring to drop down into position

**Design and Function:**

**FHV-A**

|                 |                  |
|-----------------|------------------|
| 1. Pressure pin | 2. Gland seal    |
| 3. O-ring seal  | 4. Return spring |
| 5. Valve cone   | 6. Valve body    |
| 7. Connection   |                  |

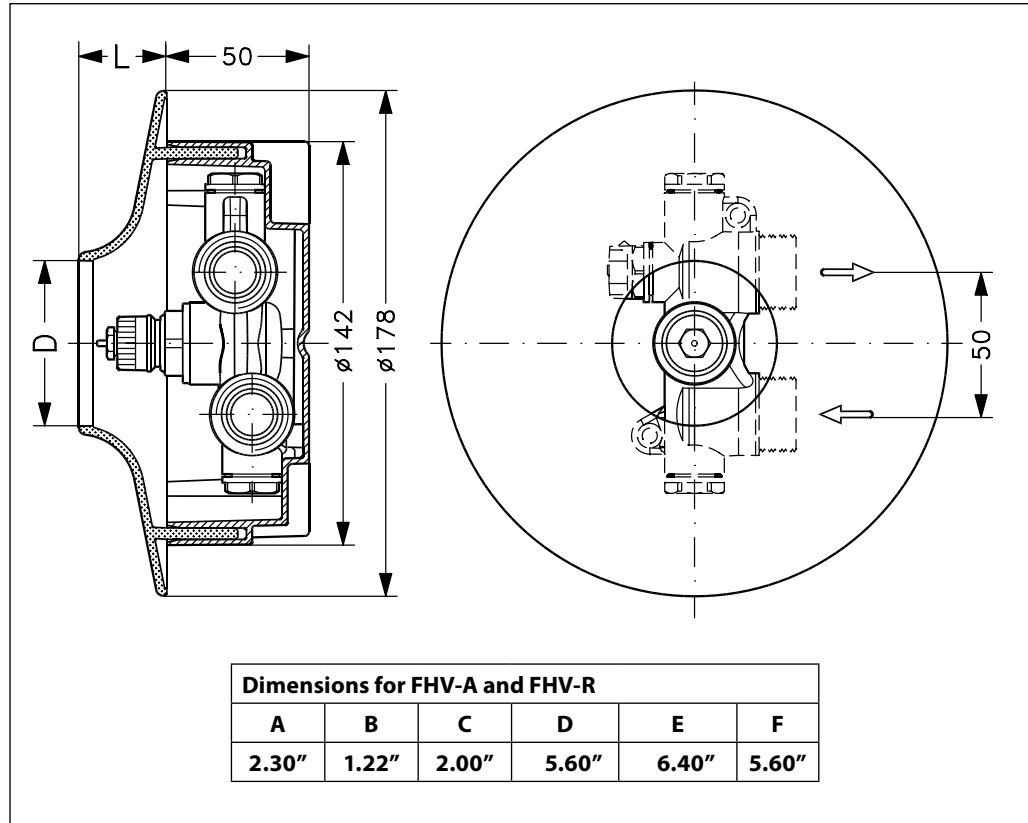
**FHV-R**

|                 |               |
|-----------------|---------------|
| 1. Pressure pin | 2. Gland seal |
| 3. Valve cone   | 4. Valve body |
| 5. Connection   |               |

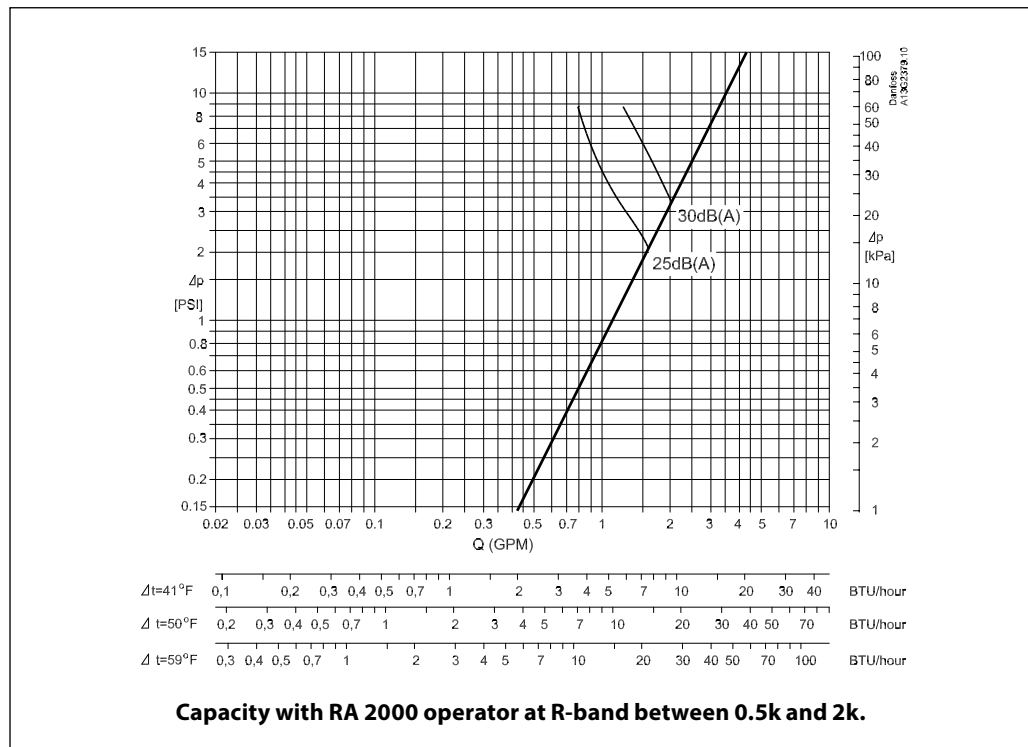
**Materials in contact with water**

|                                      |  |
|--------------------------------------|--|
| <b>Setting cylinder</b>              | PPS                                    |
| <b>Spindle</b>                       | Ms, resistant against de-zincification |
| <b>O-ring</b>                        | EPDM                                   |
| <b>Valve cone</b>                    | NBR                                    |
| <b>Pressure spring, valve spring</b> | Chrome-plated steel                    |
| <b>Valve body, other metal parts</b> | Ms 58                                  |

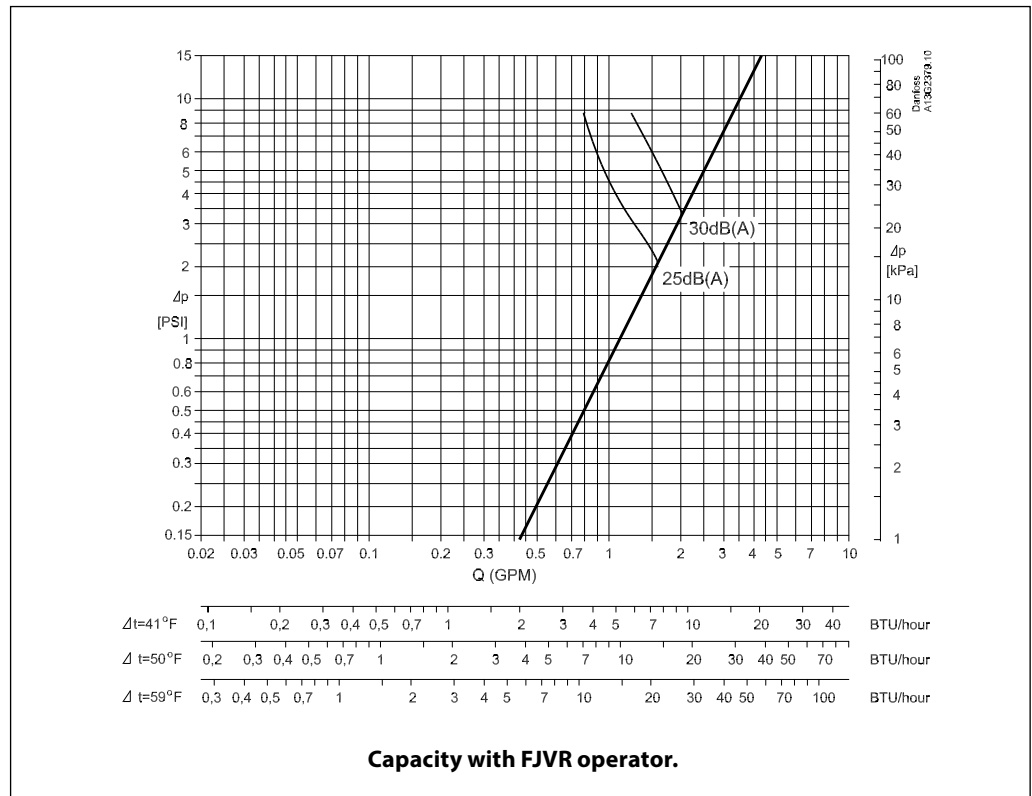
**Dimensions:**



**Capacity Diagrams:**



**Capacity Diagrams  
(Cont.):**



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