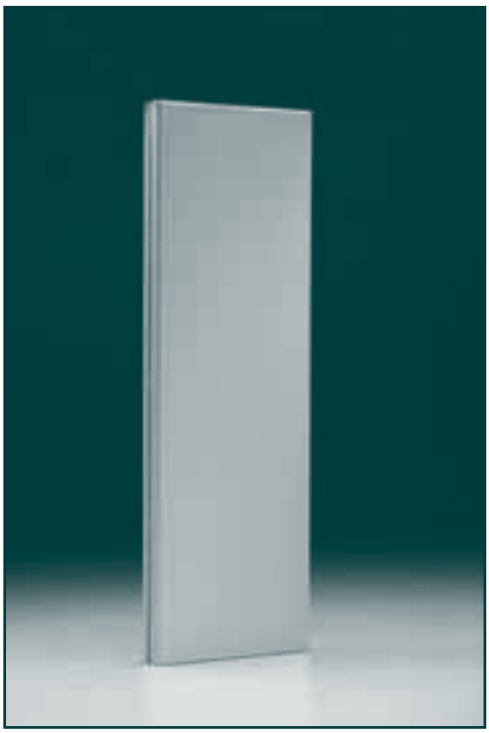
# Index



P5V-D/P5KV-D

# Features

- Elegant, low profile design with compact footprint and closed sides
- Discreet appearance to compliment any architecture
- Ideal source of heat in rooms with limited wall space
- Extremely robust and durable without any clip-on grilles or side panels
- Easy to clean due to flat front and closed sides
- Available with towel rails or pegs
- Electric element with safety thermofuse, option available

# Product description

*P5V-D and P5KV-D*

| | |
|---|---|
| **Description** | Each of the 2 panels has a smooth, flat rebated front plate with solid sides, and pressed steel horizontal waterways. P5KV-D has convector fins welded on the rear of each panel. Water circulates behind the front plate of each panel, and interconnections allow water to circulate between panels. |
| **Material** | Front plate: 2.00 mm steel to DIN 1614, EN 10051<br>Rear plate: 1.25 mm steel EN 10130<br>P5KV-D convector fins: 0.50 mm steel EN 10130 |
| **Test pressure** | 10 bar |
| **Max. operating pressure** | 7.7 bar in accordance with EN 442 |
| **Max. operating temperature** | 95°C |
| **Surface treatment** | Pre-treatment:<br>• Degreasing and iron-phosphating<br>Priming:<br>• Primer with water based paint in pale grey colour<br>Paint finish:<br>• White RAL 9010: Powder PE, gloss approx. 50%<br>• Other colours: Powder painted as above or wet painted, gloss approx. 50%<br>• Surface treatment in accordance with DIN 55900 and EN 442 |
| **Output** | See output tables page 6A.2.1 |

Fig. 6A.1.1
Height and length

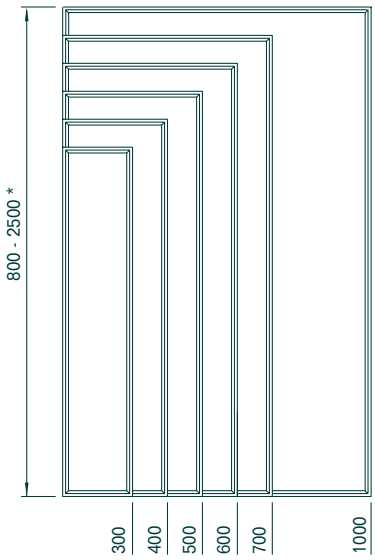



Fig. 6A.1.2
P5V-D, profile


Fig. 6A.1.3
P5KV-D, profile


* Maximum standard height is 2500 mm

**Length**
P5V-D/P5KV-D:
300, 400, 500, 600, 700 and 1000 mm

**Height**
800-2500 mm. Sectional increments of 33.33 mm.
Heights between 2500 mm and 4000 mm - please contact Hudevad. VARIANT

**Depth**
P5V-D: 105 mm
P5KV-D: 123 mm

**Tappings**
1/2" standard. Adapter for 3/8" and 3/4"

**Mounting**
Wall mounted, see pages 6A.3.1
Brackets with coach screws, wall plugs and washers are included, see page 6A.3.1
Air vent is supplied, see page 6A.6.1

**Colour**
Powder coated in white RAL 9010

Option: Painted in other standard RAL and BS colours VARIANT

**Packing**
Packed securely in environmentally friendly materials.

Mounting is possible without unpacking, for protection.
**NOTE:** Max. flow temperature when using before unpacking of radiator is 70°C

**Optional extras (Variant or Individual)**
• Built-in valve, see pages 6A.4.1

## Output

Table 6A.2.1
Output for radiator height 1000 mm

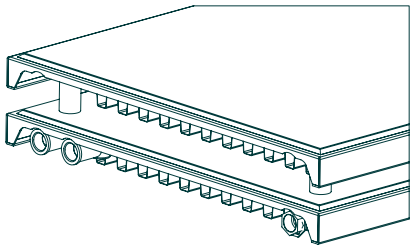
| P5V-D | Output | | | Water content | | Weight | |
|---|---|---|---|---|---|---|---|
| Length mm | W/metre 75/65-20 | W/metre 90/70-20 | W/section 90/70-20 | litres/ metre | litres/ section | kg/ metre | kg/ section |
| 300 | 493 | 635 | 21.2 | 1.6 | 0.05 | 16.1 | 0.54 |
| 400 | 657 | 846 | 28.2 | 2.2 | 0.07 | 21.5 | 0.72 |
| 500 | 822 | 1058 | 35.3 | 2.7 | 0.09 | 26.9 | 0.90 |
| 600 | 986 | 1270 | 42.3 | 3.2 | 0.11 | 32.3 | 1.08 |
| 700 | 1151 | 1481 | 49.4 | 3.8 | 0.13 | 37.7 | 1.26 |
| 1000 | 1644 | 2116 | 70.5 | 5.4 | 0.18 | 53.8 | 1.79 |

Table 6A.2.2
Output for radiator height 1000 mm

| P5KV-D | Output | | | Water content | | Weight | |
|---|---|---|---|---|---|---|---|
| Length mm | W/metre 75/65-20 | W/metre 90/70-20 | W/section 90/70-20 | litres/ metre | litres/ section | kg/ metre | kg/ section |
| 300 | 614 | 771 | 25.7 | 1.6 | 0.05 | 21.6 | 0.72 |
| 400 | 818 | 1029 | 34.3 | 2.2 | 0.07 | 28.8 | 0.96 |
| 500 | 1023 | 1286 | 42.9 | 2.7 | 0.09 | 36.0 | 1.20 |
| 600 | 1227 | 1543 | 51.4 | 3.2 | 0.11 | 43.2 | 1.44 |
| 700 | 1432 | 1800 | 60.0 | 3.8 | 0.13 | 50.4 | 1.68 |
| 1000 | 2045 | 2571 | 85.7 | 5.4 | 0.18 | 72.0 | 2.40 |

**NOTE:** A full list of outputs is available in Hudevads output tables.

## Tapping designation



P5V-D/P5KV-D with bottom tappings

Fig. 6A.2.3
Tapping designation, flow and return

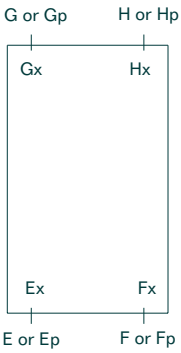
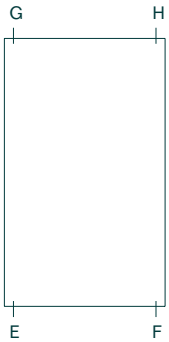



Fig. 6A.2.4
Tapping designation, air vent and drain




BOTTOM FLOW & RETURN TAPPINGS (50 MM IN FROM EDGE)
Radiators requiring bottom tappings will have a rear tube, on the flow pipe, for optimum water flow, i.e Ep or Fp. The return tapping will NOT have a rear tube, i.e. F or E.
Please refer to fig. 6A.2.5

TOP FLOW & RETURN TAPPINGS (50 MM IN FROM EDGE)
Radiators requiring top tappings will have a rear tube, on the return pipe, for optimum water flow, i.e Gp or Hp. The flow tapping will NOT have a rear tube, i.e. H or G.
Please refer to fig. 6A.2.5

DIAGONALLY OPPOSITE TOP AND BOTTOM
Tapping positions E, F, G & H should only be used for flow or return if the radiator is connected diagonally opposite with the flow at the top.
Example: 1/2" flow at H, 1/2" return at E, 1/2" airvent at G or
1/2" flow at G, 1/2" return at F, 1/2" airvent at H

## Top and bottom tappings
## Ep, Fp, Gp, Hp, E, F, G, H

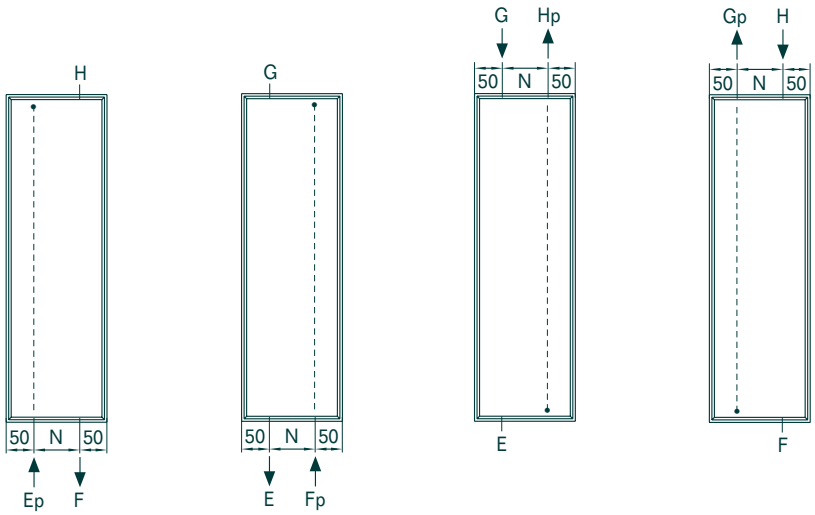
**Sizes**

1/2" standard. Adapter for 3/8" and 3/4"

**Positions**

Flow: Ep, Fp, G or H
Return: F, E, Hp or Gp
Air vent: G, H
Drain: E, F

Fig. 6A.2.5
P5V-D/P5KV-D, top and bottom tappings, radiator length 300 - 700 & 1000 mm




Centre distance N, see table 6A.2.6

**NOTE:** For connection Ep/F - Fp/E or Gp/H - Hp/G positions G or H is used for venting and E or F is used for draining

Table 6A.2.6
Centre distance N

| Radiator length L, mm | Centre distance N, mm Flow/Return |
|---|---|
| 300 | 200 |
| 400 | 300 |
| 500 | 400 |
| 600 | 500 |
| 700 | 600 |
| 1000 | 900 |

Fig. 6A.2.7
P5V-D, profile

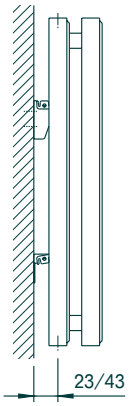



Fig. 6A.2.8
P5KV-D, profile

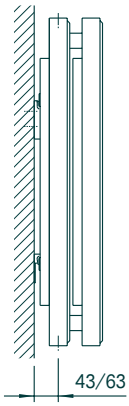
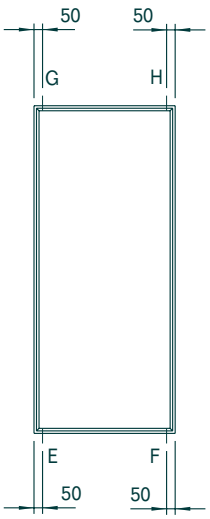



Fig. 6A.2.9
Air vent and drain



## Rear tappings Ex, Fx, Gx, Hx

VARIANT

**Sizes**

1/2" standard. Adapter for 3/8" and 3/4"

**Positions**

Fig. 6A.2.10
Rear tappings

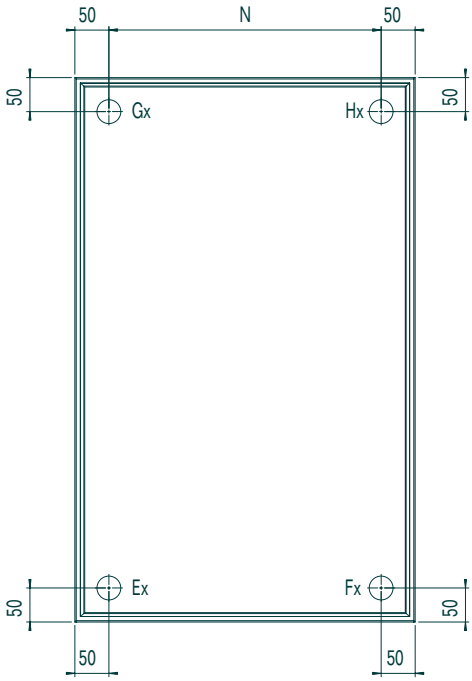



Fig. 6A.2.11
P5V-D, profile

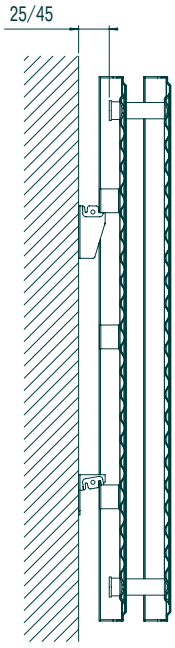



Fig. 6A.2.12
P5KV-D, profile

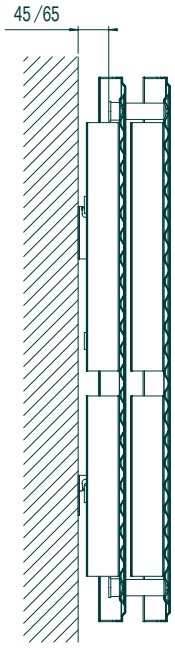



Table 6A.2.13
Centre distance N for Gx-Hx and Ex-Fx tappings

| Radiator-length, mm | Centre distance N, mm |
|---|---|
| 300 | 200 |
| 400 | 300 |
| 500 | 400 |
| 600 | 500 |
| 700 | 600 |
| 1000 | 900 |

Vertical centre distance for Gx-Ex and Hx-Fx is calculated as:
Radiator height – 100 mm

For optimum performance we recommend Gx-Fx or Hx-Ex.

Consideration should be given to the positioning of valves, if rear tappings are ordered.

**Other option**

Rear tappings can be tailored to your requirements. INDIVIDUAL

## Water resistance

| Maximum expected pressure loss - calculated from the largest possible radiator. | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Water temperature - flow | $t_f$ | °C | 75 | 70 | 70 | 65 | 90 | 55 |
| Water temperature - return | $t_r$ | °C | 65 | 40 | 55 | 35 | 70 | 45 |
| At P5V-D: H = 2500 mm and L = 1000 mm | | | | | | | | |
| Pressure loss | | kPa | 0.98 | 0.07 | 0.36 | 0.05 | 0.43 | 0.26 |
| At P5KV-D: H = 2500 mm and L = 1000 mm | | | | | | | | |
| Pressure loss | | kPa | 1.52 | 0.09 | 0.42 | 0.06 | 0.66 | 0.39 |
| Pressure losses for other heights/lengths can be approximated on a proportional basis | | | | | | | | |

## Bracket BP10/30

**Accessory for**

P5V-D and P5KV-D. Supplied unless otherwise specified.

**Construction**

Bracket and spacer in galvanised mild steel with nylon inserts for noise suppression. Coach screws, wall plugs and washers are included.
Optional wall distance: 10 or 30 mm to the rear of the radiator.

Fig. 6A.3.1
Bracket BP10/30

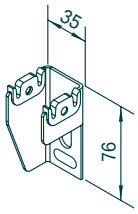



Fig. 6A.3.2
Bracket BP10/30

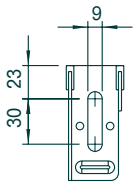
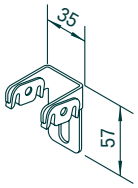



Fig. 6A.3.3
Spacer for bracket BP10/30




**NOTE:** For tamperproof installation the spacer should be fixed to the wall, see page 6A.3.2

**Dimensions**

P5V-D/P5KV-D: All radiator lengths 300 - 700 & 1000 mm

Fig. 6A.3.4
P5V-D, profile

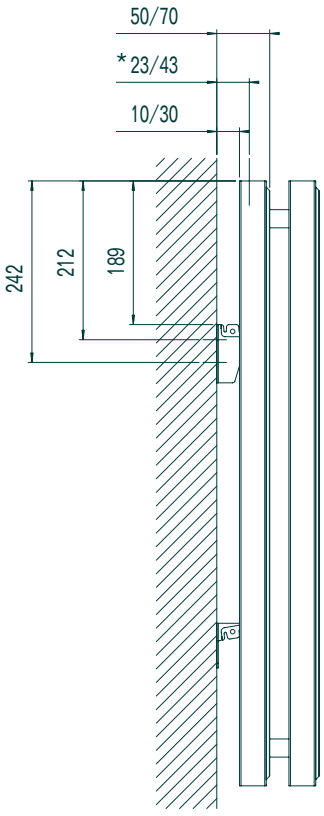
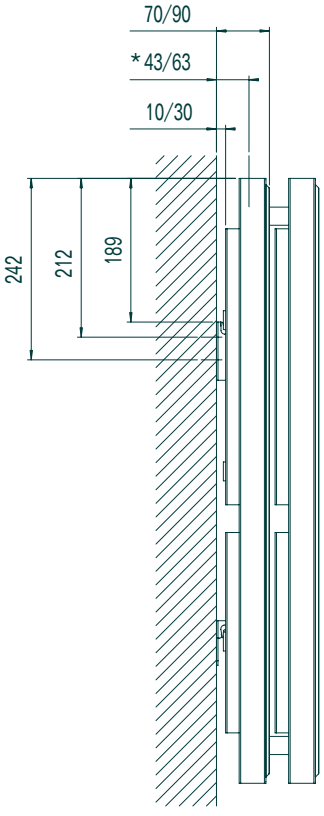



Fig. 6A.3.5
P5KV-D, profile




* Tapping designation

Fig. 6A.3.6
P5V-D/P5KV-D, position of goal posts, rear view, 300 mm

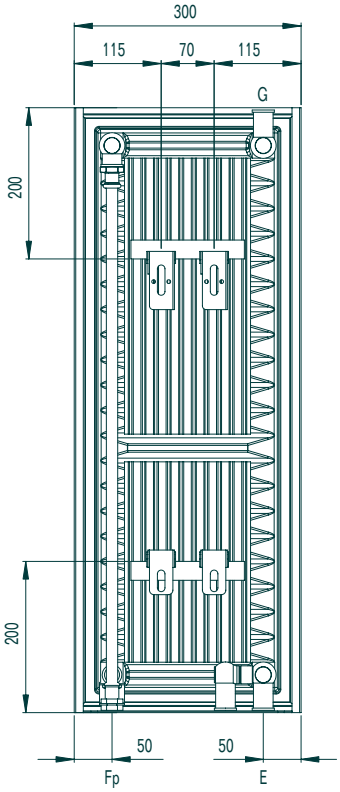



Fig.6A.3.7
P5V-D/P5KV-D, position of goal posts, rear view, 400 - 700 & 1000 mm

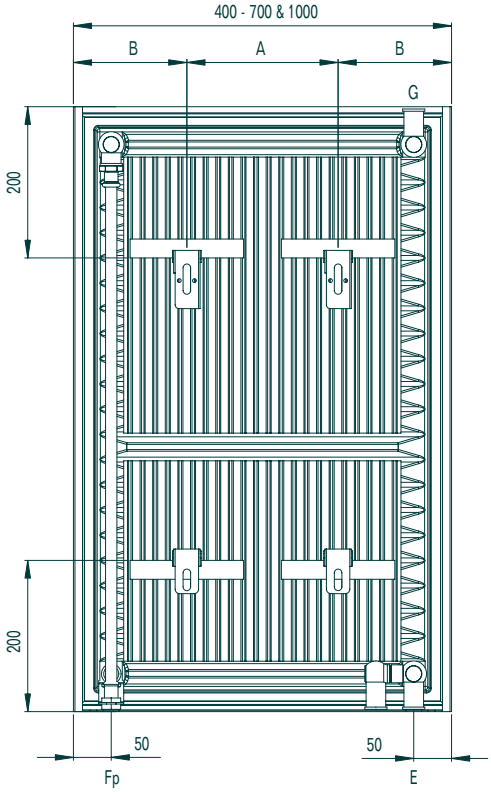



Table 6A.3.8
P5V-D/P5KV-D, no. of goal posts/rails

| Radiator length L, mm | Radiator height H, mm | No. of sections | No. of brackets/ spacers/goal posts |
|---|---|---|---|
| 300 | 800 - 2500 | 24 - 75 | 2/2/2 |
| 400-700 & 1000 | 800 - 2500 | 24 - 75 | 2/2/4 |

Table 6A.3.9
P5V-D/P5KV-D, position of goal posts/rails

| Radiator length L, mm | A mm | B mm |
|---|---|---|
| 400 | 100 | 150 |
| 500 | 200 | 150 |
| 600 | 300 | 150 |
| 700 | 400 | 150 |
| 1000 | 700 | 150 |

**Tamperproof installation**

Spacer can be used for tamperproof installation of radiator, see figs. 6A.3.10 - 12

Fig. 6A.3.10
Loosely mounted spacer

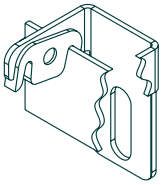


Fig. 6A.3.11
Fixed spacer, elevated for fixing

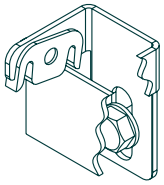
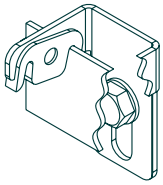


Fig. 6A.3.12
Spacer in fixed position



## Adjustable bracket BP28-70

VARIANT

**Accessory for**

P5V-D and P5KV-D

**Application**

For use where variable wall distance is required or where uneven walls prevent the use of fixed brackets

**Construction**

Bracket in galvanised mild steel with nylon inserts for noise suppression.
Spacer in galvanised mild steel with adjusting screw.
Coach screws, wall plugs and washers are included.

Fig. 6A.3.13
Bracket BP28-70

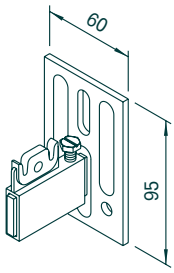



Fig. 6A.3.14
Bracket BP28-70

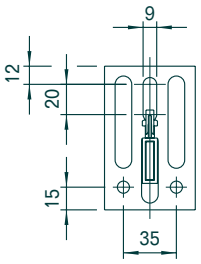
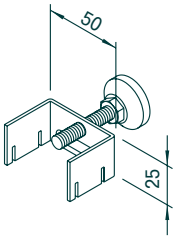



Fig. 6A.3.15
Spacer for bracket BP28-70




**Dimensions**

Fig. 6A.3.16
P5V-D, profile

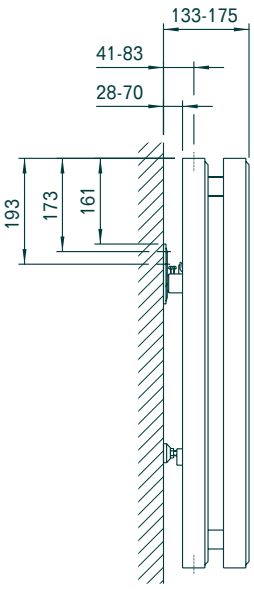
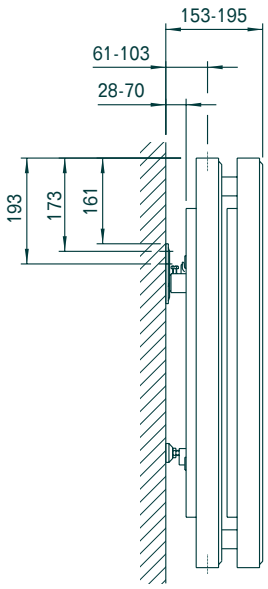



Fig. 6A.3.17
P5KV-D, profile

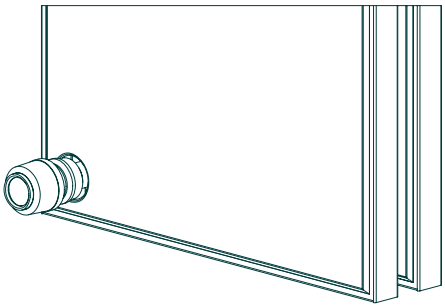



**Position of goal posts/ rails and no. of brackets**

See pages 6A.3.1 - 2

## Built-in valve

VARIANT



P5V-D/P5KV-D with built-in valve Format 1

**Application**

For use where a thermostatic valve is to be integrated within the radiator, where discreet pipework is required or for ease of installation.

**Construction**

The valve and associated pipework are fitted behind the radiator. On P5KV-D the number of convector fins is reduced to accommodate the built-in valve, resulting in a total output loss of approx 30-50 watts depending on height.
The sensor head projects through a hole in the front plate. A special integrated valve with pre-setting for limiting the maximum water flow is used.
There are different valve head options to suit the following valve bodies:
1: Danfoss type RA-N Integrated valve body to suit Danfoss heads having click-on coupling.
2: Danfoss type RA-N Integrated valve body, with M30 x 1.5 mm connection thread adapter, to suit Oventrop, Heimeier, MNG, Drayton and Honeywell sensors.

**Tappings**

1/2" bottom tappings

**Position of goal posts/rails**

See pages 6A.3.1 - 2

# Built-in valve

## *P5V-D and P5KV-D*

**Format 1**

Sensor head through front plate and 1/2" downward facing tappings VARIANT

Fig. 6A.4.1
P5V-D and P5KV-D, radiator length 300-700 & 1000 mm, with built-in valve Format 1

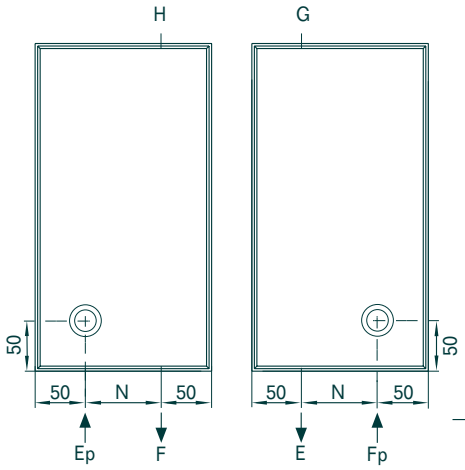



Fig. 6A.4.2
P5V-D, built-in valve Format 1, profile

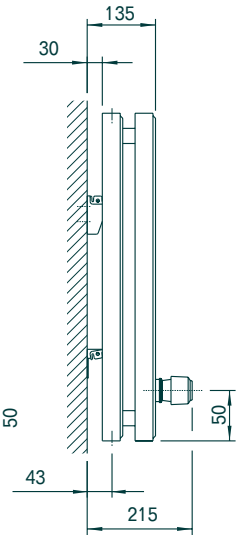
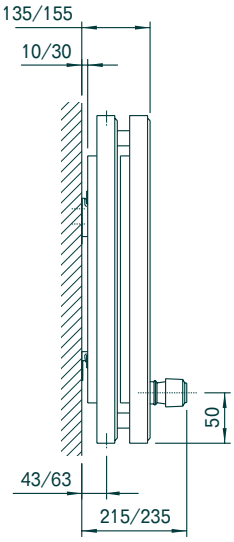



Fig. 6A.4.3
P5KV-D, built-in valve Format 1, profile




**NOTE:** Measurement is for Danfoss sensor head RA 2990.
Other placement - please contact Hudevad.

Table 6A.4.4
Centre distance N

| Radiator length L, mm | Centre distance N, mm |
|---|---|
| 300 | 200 |
| 400 | 300 |
| 500 | 400 |
| 600 | 500 |
| 700 | 600 |
| 1000 | 900 |

**Format 3**

Please contact Hudevad. VARIANT

**Format 4**

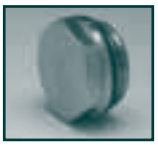
Built-in valve concealed behind the radiator front plate for remote sensor/adjuster or motorised valve, please contact Hudevad. INDIVIDUAL

**Ordering**

When ordering please state the built-in valve format, type of sensor head connections, position of valve - left or right hand - and the tapping requirements.
Example: P5V-D 1800/105 - 500, Format 1, Danfoss, left, 1/2" Ep & F
P5KV-D 1800/123 - 500, Format 1, Danfoss, right, 1/2" Fp & E

**For other sensor heads**

Please contact Hudevad.

| | | |
|---|---|---|
| **Air vent with O-ring** | 1/2" supplied unless otherwise specified. |  |
| **Air vent with O-ring and revolving spout** | 1/2" |  |
| **Plug with O-ring** | 1/2" |  |
| **Square key for air vents** | |  |
| **Sensor head** | Danfoss RA 2990<br>Supplied unless otherwise specified. |  |
| **Electrical heating** | Supplied separately by Hudevad in combination with radiator prepared for electrical heating element | |

# Specification clauses

## *P5V-D and P5KV-D*

**P5V-D**

"Hudevad model P5V-D, 2 panel radiator, with smooth, flat 2.00 mm thick rebated front plate, solid sides with 1.25 mm rear plate and pressed steel, horizontal waterways.
Water circulates directly behind the front plate of each panel, and interconnections allow water to circulate between panels.
No detachable clip-ons or covers. Painted with oven dried powder coat or wet coat.
Surface treatment in accordance with DIN 55900 and EN 442.
Test and operating pressure 10, 7.7 bar respectively."

**P5KV-D**

"Hudevad model P5KV-D, 2 panel radiator, with smooth, flat 2.00 mm thick rebated front plate, solid sides with 1.25 mm rear plate and pressed steel, horizontal waterways.
P5KV-D has 0.50 mm convector fins welded on the rear of each panel.
Water circulates directly behind the front plate of each panel, and interconnections allow water to circulate between panels.
No detachable clip-ons or covers. Painted with oven dried powder coat or wet coat.
Surface treatment in accordance with DIN 55900 and EN 442.
Test and operating pressure 10, 7.7 bar respectively."

**Built-in valve (page 6A.4.1)**

Format 1:
"Built-in valve Format 1 with sensor head through front plate and bottom tappings."

Format 3:
"Please contact Hudevad".

Format 4:
"Built-in valve concealed behind the radiator front plate for remote sensor/adjuster or motorised valve, please contact Hudevad".

**Order guide**

When stating the size and type of radiator, please use the following format: Model height / depth - length. All measurements are to be stated in mm.

P5V-D 1800/105 - 500 1/2" Ep, 1/2" F, 1/2" H
Please state flow and return position.

# Maintenance

| | |
|---|---|
| **Painting of primed radiators** | Paint suitable for steel surfaces should be used |
| **Repair of powder or wet coated radiators** | Water based acrylic paint obtained from a decorating wholesaler can be used |
| **Recoating of powder or wet coated radiators** | After cleaning, powder or wet coated radiators can be recoated with the following:<br>Powder coat: PE powder<br>Wet coat: Synthetic, non yellowing coat. Water based or similar acrylic paint<br>Hardening: 180°C curing temperature for 10 min. |
| **Packaging** | Packaging can be left on the radiators for protection against damage etc. during fitting and re-decoration, but the flow temperature should not exceed 70°C. |
| **Venting** | Venting of the radiators is required at commissioning, or if the heating system has been drained. It is recommended that radiators are vented, using a cloth to prevent splashing, when the system is cold and the pump is off. |
| **Cleaning** | Light household cleaning materials can be used for painted surfaces. Abrasive materials such as scouring powder should not be used.The rear of the radiator can be cleaned with a soft brush, if necessary, together with a vacuum cleaner. |