TRENCH HEATERS FCHV

FOR HEATING

FOR COOLING

VENTILATION

FAN ASSISTED

- 10 models
- Stainless steel casings
- 2 and 4 pipes versions
- Wet cooling and dry cooling ready
- Remarkably low noise level
- Tested according to EN16430 in independent accredited laboratory
- 10 year warranty for casings and heat exchangers
- Fans with most economical and quiet EC type motors
- High rise of cooled air
- Excelent compatibility with heat pumps and condensate boilers
- Max operating pressure 25 bar
- Possibility to control up to 30 units with 1 room thermostat
- Highly efficient and economic copper–aluminium heat exchangers
- Safe voltage of fans – 24V (DC)
- Supply air filters are in standard set
- Reversible reinforced profile grilles
- All fixing brackets and bolts have sound proofing elements
- Possibility to change level of casing at any time during exploitation (when installed in raised floors)

2021

EURONORM EN 16430 TESTED

FCHV

Envi Group
All about HVAC-R

FCHV

TRENCH HEATERS **FCHV**

FCHV are among the most powerful trench heaters designed for **heating and cooling**. In addition, it has an option to **supply air from a ventilation system into the room.** Ventilation ducts are connected directly to the casing from the side of the room. In this way, **fresh air** bypasses the heating-cooling unit and **a wide stream of air is supplied via the window.**

Both heated and cooled air is raised right up the ceiling to result in an **even distribution** throughout the room.

4 and 2 pipe connection versions are available. The 4 pipe connection guarantees maximum flexibility, whereas the 2 pipe connection will ensure the maximum capacity.

The air flow passing through the appliance **is continuously filtered** to trap a considerable part of the dust and dirt in the room and protect the convector from contamination.

Include **drain pans** that allow the device to operate both above and below the dew point.

Quiet and extremely economical EC fans increase the convection efficiency more than 4 times, almost without any sound.

Due to **extremely low inertia**, can quickly increase and precisely maintain the set room temperature, **providing the room with exactly as much heat as you require just when it is required.**

Create an effective warm air curtain for large windows, without allowing cold to penetrate the premises. The **heat is perfectly distributed** throughout the room.

Operates very well with **low-temperature heat sources**, such as heat pumps or condensing boilers.

Fully floor-mounted, and therefore **do not impede free passage.**

Perfect for any interior, as the only visible element is the grill, the material and colour of which can match the floor covering.

May be walked on and can easily **withstand the weight of a number of adults.**

Supplied with a **stainless steel casings** and **copper-aluminium heat exchangers**, to ensure they remain extremely reliable over the long-term.

10-year warranty for the casings and heat exchangers

We are confident in the longevity of our housings and heat exchangers; therefore, we provide them with a 10-year guarantee.

Tested according to EN16430

The outputs of all products manufactured by Konveka have been tested by independent accredited laboratories according to the latest standards.

With us, 1 kW means 1 kW.

Fans with EC technology

All Konveka forced convection devices are equipped with fans that employ **EC technology**. This is far superior to AC technology, as the fans:

1. Are **7 times more economical**.
2. Brushless motors are more durable and are **maintenance-free**.
3. Speed is **adjustable stepless**, using only as much power as required.
4. Starting currents do not exceed the operating currents.
5. Minimum rotation speed is 10% (out of max.)

Work perfectly with low-temperature energy carriers

Due to their high efficiency, FCHV are very **suitable for** operating with low-temperature energy carriers, such as **heat pumps** and **condensing boilers**.

Sound insulation

All the supporting parts have sound-insulating elements, to prevent the spread of sound to the premises below.

Especially quiet operation

We have achieved exceptionally low noise levels using **extremely quiet EC fans** and by the **optimisation** of their **rotational speed** and **design** of the devices.

All body parts are made of stainless steel

Stainless steel provides **100% corrosion protection** for an indefinite time. It is also **54% stronger** and **45% harder** than carbon steel, so it can withstand loads during transportation, installation, and operation.

Reinforced casings

As a standard, the FCHV convector casings are equipped with:

1. **Stiffening elements** to maintain the pressure of the concrete – from 2 to 3 pcs, depending on the length of the casing.
2. M10 **support screws** to withstand the vertical load – from 4 to 12 pcs.
3. Mounting **brackets** for attaching the casing to the floor – 4 pcs.

These structural elements, together with the strong casing material, ensure their stable shape during installation, transportation and operation.

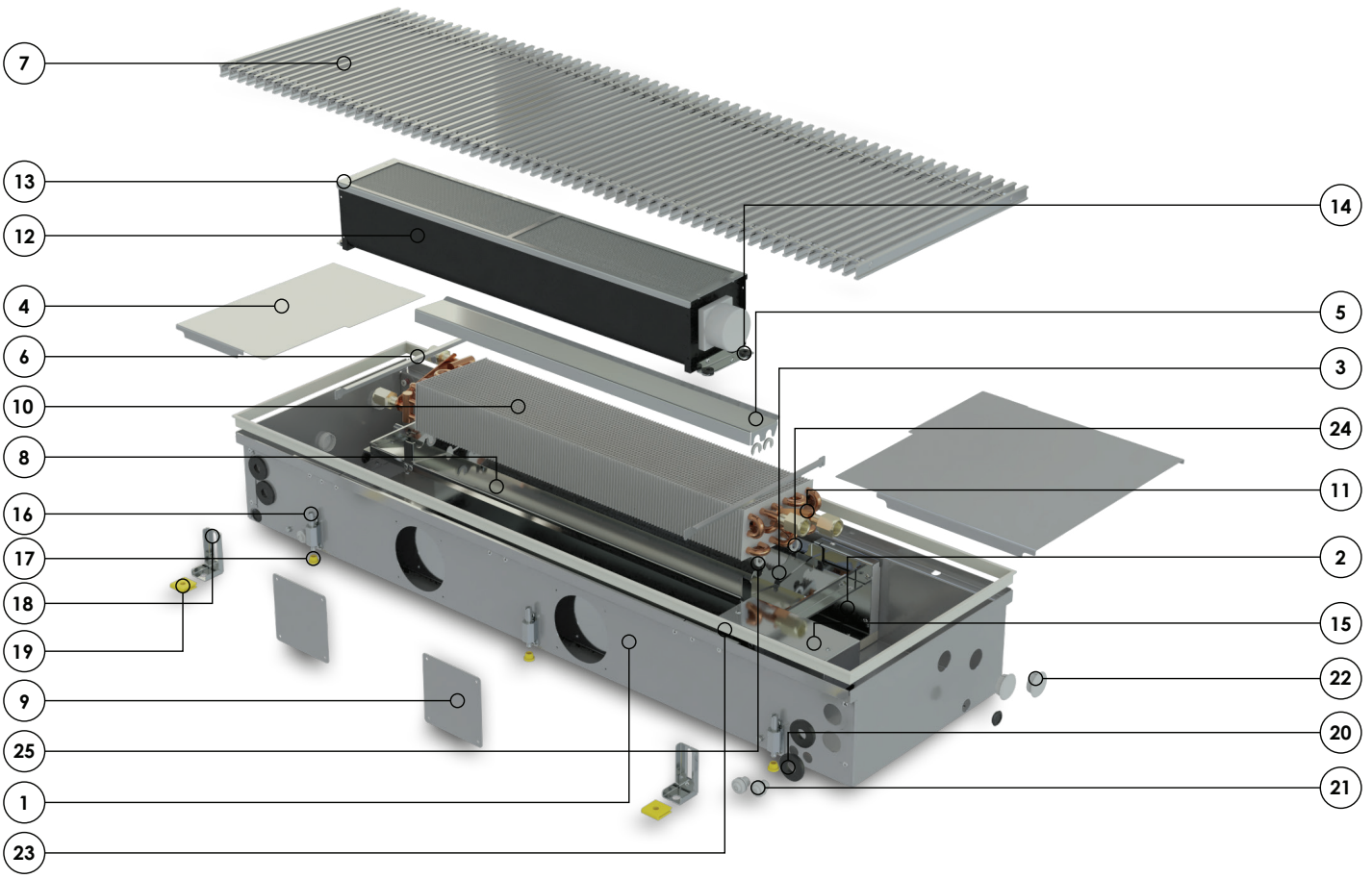
Maximum operating pressure – 25 bar

All the devices are **factory-tested** for leaks at a pressure of **30 bar.** The maximum maintained pressure (strength limit) is **110 bar.** Konveka devices easily withstand hydraulic tests, hydraulic shocks and can be installed in extremely tall buildings.

Safe operating voltage of fans

The operating voltage of all fans is 24V DC. This voltage is safe for humans.

STANDARD SET



1. Stainless steel casing
2. Inner stainless steel casing
3. Brackets for heat exchanger
4. Hydraulic connections cover
5. Air guiding element
6. Casing's stiffening elements
7. Protective - decorative grille (optional)
8. Drain pan
9. Covers for holes for air ducts
10. Copper - aluminium heat exchanger
11. Air vent
12. Fan with EC motor
13. Air filter
14. Vibration dampers for fan
15. Control box (optional)
16. Height adjustment and vertical load supporting bolts
17. Noise isolating elements for adjusting screws
18. Casing fixing to the floor brackets
19. Noise isolation elements for floor brackets
20. Pipe sealing and protection elements
21. Cable sealing and protection elements
22. Plugs for unused casing holes
23. Anodized aluminium frame; colour matches the colour of grille
24. Heat exchanger fixing - protecting elements

All fasteners required for installation

Installation manual

5-layer, 2 parts cardboard box, additionally used for device protecting during installation and construction works

OVERVIEW

FCHV2 (2-pipe version) 6

5 models
Lengths 120, 170, 200, 250, 300 cm
Width 36 cm
Height 15 cm

FCHV4 (4-pipe version) 8

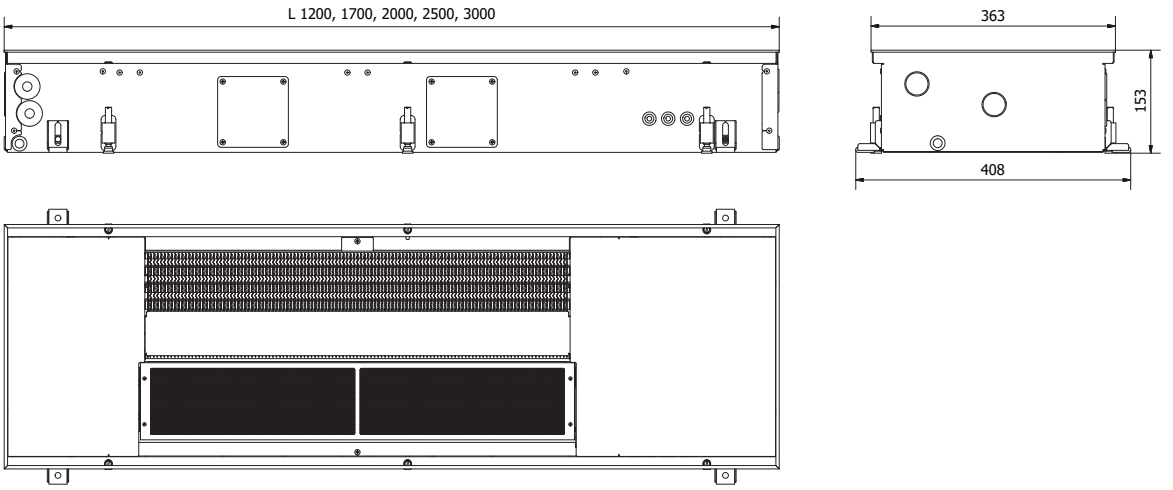
5 models
Lengths 120, 170, 200, 250, 300 cm
Width 36 cm
Height 15 cm

ACCESORIES 10

ELECTRICAL CONNECTION DIAGRAMS 11

GRILLES 12

FCHV2



TECHNICAL DATA

Length	1200-3000 mm	Thread of hydr. connections	G 1/2“
Width	363 mm	Thread type of hydr. connections	inner
Height = installation height	150 mm	Position of the hydr. connections	1 side
Type of fan motors	EC	Operating pressure	25 bar
Fan operating voltage	24V DC	Operating temperature	2 - 120°C
Fan speed control voltage	0 - 10V		

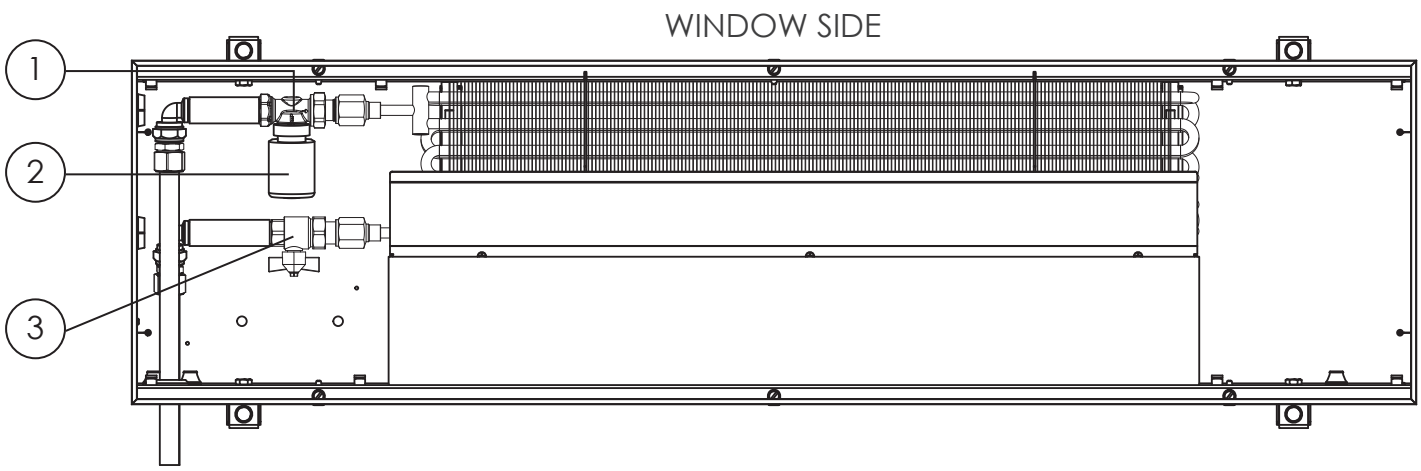
EN16430 certified outputs

Fan speed	Heat outputs, W			Sensible cooling outputs, W			Sound levels		Air flow m³/h	Inlet fresh air flow rate, m³/h
	75/65/20°C Δt = 50°C	55/45/20°C Δt = 30°C	35/30/20°C Δt = 12,5°C	7/12/27°C Δt = 17,5°C	**7/12/25°C Δt = 15,5°C**	14/17/25°C Δt = 9,5°C	Sound pressure level, dB(A)	Sound power level, dB(A)		
FCHV2 120										
100%	**3 326**	1 975	809	974	**870**	552	41	49	0 - 383	160
80%	**2 962**	1 759	720	815	**728**	462	36	45		
60%	**2 487**	1 477	605	652	**582**	369	28	37		
40%	**1 912**	1 135	465	475	**424**	269	23	32		
20%	**1 132**	672	275	277	**248**	157	20	29		
FCHV2 170										
100%	**5 781**	3 433	1 405	1 755	**1 568**	994	42	51	0 - 520	160
80%	**5 264**	3 126	1 280	1 473	**1 316**	835	41	50		
60%	**4 427**	2 629	1 076	1 174	**1 049**	665	34	44		
40%	**3 399**	2 019	826	856	**765**	485	29	38		
20%	**2 014**	1 196	490	500	**446**	283	25	35		
FCHV2 200										
100%	**6 653**	3 951	1 617	1 949	**1 741**	1 104	44	53	0 - 766	240
80%	**5 924**	3 518	1 440	1 630	**1 456**	924	39	48		
60%	**4 975**	2 954	1 210	1 303	**1 164**	738	31	41		
40%	**3 824**	2 271	930	949	**848**	538	24	34		
20%	**2 264**	1 345	551	554	**495**	314	22	32		
FCHV2 250										
100%	**9 107**	5 408	2 214	2 730	**2 438**	1 546	43	54	0 - 903	240
80%	**8 226**	4 885	2 000	2 289	**2 044**	1 296	40	50		
60%	**6 914**	4 106	1 681	1 826	**1 631**	1 034	33	43		
40%	**5 311**	3 154	1 291	1 331	**1 188**	754	26	37		
20%	**3 146**	1 868	765	777	**694**	440	24	33		

Fan speed	Heat outputs, W			Sensible cooling outputs, W			Sound levels		Air flow m^3/h	Inlet fresh air flow rate, m^3/h
	75/65/20°C Δt = 50°C	55/45/20°C Δt = 30°C	35/30/20°C Δt = 12,5°C	7/12/27°C Δt = 17,5°C	**7/12/25°C Δt = 15,5°C**	14/17/25°C Δt = 9,5°C	Sound pressure level, dB(A)	Sound power level, dB(A)		
FCHV2 300										
100%	**11 561**	6 866	2 811	3 511	**3 136**	1 989	43	54	0 - 1 040	320
80%	**10 529**	6 253	2 560	2 947	**2 632**	1 669	42	53		
60%	**8 853**	5 258	2 153	2 348	**2 097**	1 330	33	44		
40%	**6 798**	4 037	1 653	1 712	**1 529**	970	27	38		
20%	**4 027**	2 392	979	999	**893**	566	24	35		

Model	Length, mm	No. of fans, pc	Max el. power, A	Max el. power, W	Length of heat ex-changer, mm	Weight, kg	Water volume, l
FCHV2 120	1 200	1	0,63	15	675	21,2	0,77
FCHV2 170	1 700	1	0,75	18	1 189	28,9	1,35
FCHV2 200	2 000	2	1,25	30	1 431	33,9	1,62
FCHV2 250	2 500	2	1,38	33	1 945	42,2	2,21
FCHV2 300	3 000	2	1,50	36	2 458	51,5	2,79

EXAMPLE OF CONNECTIONS



1 Thermostatic valve, straight 2 Thermostatic valve actuator 3 Straight lockshield valve

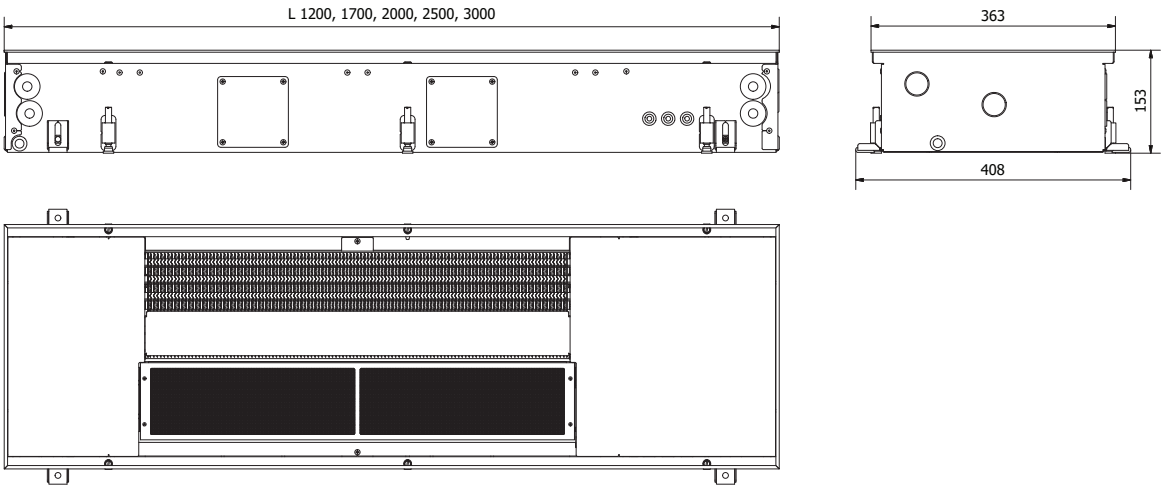
INSTALLATION FEATURES

- Side with heat exchanger is always mounted closer to the window (wall)
- Energy carrier supply pipes has to be connected to heat exchangers connectors which are further from the fans
- Energy carrier outlet pipes has to be connected to heat exchangers connectors which are closer to the fans
- Height of the device can be adjusted at any time of exploitation (when installed in raised floor)

ORDER CODES

Type	Length, cm	Width, cm	Height, cm	Example
FCHV2	250	36	15	FCHV2 250

FCHV4



TECHNICAL DATA

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Fan operating voltage	24V DC	Operating temperature	2 - 120°C
Fan speed control voltage	0 - 10V		

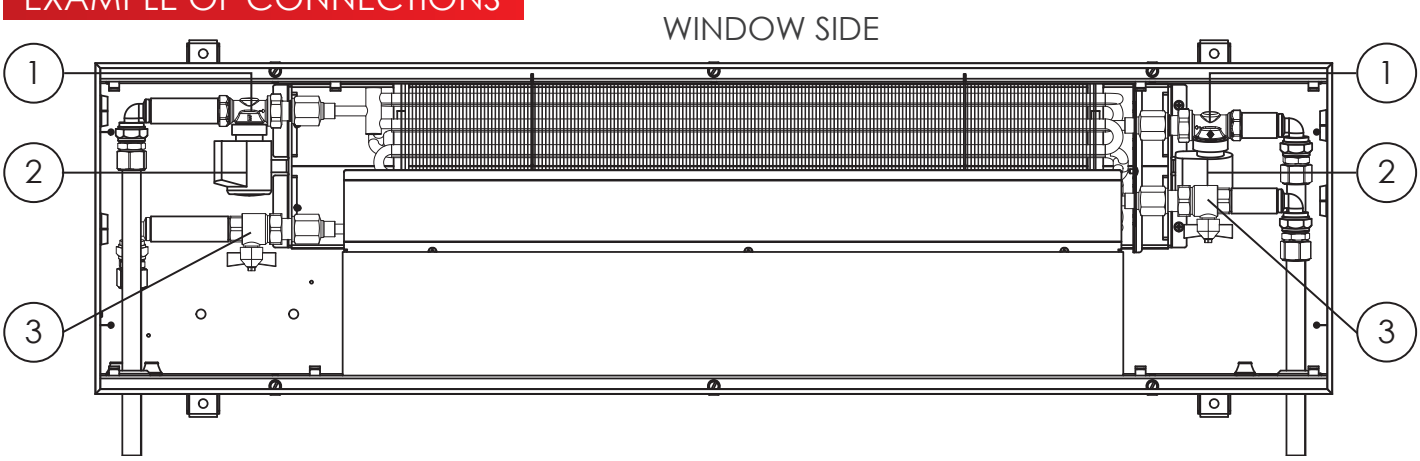
EN16430 certified outputs

Fan speed	Heat outputs, W			Sensible cooling outputs, W			Sound levels		Air flow m^3/h	Inlet fresh air flow rate, m^3/h
	75/65/20°C Δt = 50°C	55/45/20°C Δt = 30°C	35/30/20°C Δt = 12,5°C	7/12/27°C Δt = 17,5°C	**7/12/25°C Δt = 15,5°C**	14/17/25°C Δt = 9,5°C	Sound pressure level, dB(A)	Sound power level, dB(A)		
FCHV4 120										
100%	**2 013**	1 196	490	960	**857**	544	41	49	0 - 383	160
80%	**1 859**	1 104	452	808	**722**	458	36	45		
60%	**1 661**	986	404	647	**578**	367	28	37		
40%	**1 380**	820	336	473	**423**	268	23	32		
20%	**901**	535	219	277	**247**	157	20	29		
FCHV4 170										
100%	**3 624**	2 152	881	1 728	**1 542**	979	42	51	0 - 520	160
80%	**3 347**	1 988	814	1 454	**1 299**	824	41	50		
60%	**2 989**	1 775	727	1 165	**1 040**	660	34	44		
40%	**2 485**	1 476	604	852	**761**	482	29	38		
20%	**1 623**	964	395	499	**445**	283	25	35		
FCHV4 200										
100%	**4 026**	2 392	980	1 920	**1 714**	1 088	44	53	0 - 766	240
80%	**3 718**	2 208	904	1 616	**1 444**	916	39	48		
60%	**3 322**	1 972	808	1 294	**1 156**	734	31	41		
40%	**2 760**	1 640	672	946	**846**	536	24	34		
20%	**1 802**	1 070	438	554	**494**	314	22	32		
FCHV4 250										
100%	**5 637**	3 348	1 371	2 688	**2 399**	1 523	43	54	0 - 903	240
80%	**5 206**	3 092	1 266	2 262	**2 021**	1 282	40	50		
60%	**4 650**	2 761	1 131	1 812	**1 618**	1 027	33	43		
40%	**3 865**	2 296	940	1 325	**1 184**	750	26	37		
20%	**2 524**	1 499	614	776	**692**	440	24	33		

Fan speed	Heat outputs, W			Sensible cooling outputs, W			Sound levels		Air flow m^3/h	Inlet fresh air flow rate, m^3/h
	75/65/20°C Δt = 50°C	55/45/20°C Δt = 30°C	35/30/20°C Δt = 12,5°C	7/12/27°C Δt = 17,5°C	**7/12/25°C Δt = 15,5°C**	14/17/25°C Δt = 9,5°C	Sound pressure level, dB(A)	Sound power level, dB(A)		
FCHV4 300										
100%	**7 248**	4 304	1 762	3 456	**3 084**	1 958	43	54	0 - 1 040	320
80%	**6 694**	3 976	1 628	2 908	**2 598**	1 648	42	53		
60%	**5 978**	3 550	1 454	2 330	**2 080**	1 320	33	44		
40%	**4 970**	2 952	1 208	1 704	**1 522**	964	27	38		
20%	**3 246**	1 928	790	998	**890**	566	24	35		

Model	Length, mm	No. of fans, pc	Max el. power, A	Max el. power, W	Length of heat ex-changer, mm	Weight, kg	Water volume, l	
							Heating	Cooling
FCHV4 120	1 200	1	0,63	15	675	21,2	0,17	0,60
FCHV4 170	1 700	1	0,75	18	1 189	28,9	0,30	1,05
FCHV4 200	2 000	2	1,25	30	1 431	33,9	0,36	1,26
FCHV4 250	2 500	2	1,38	33	1 945	42,2	0,49	1,72
FCHV4 300	3 000	2	1,50	36	2 458	51,5	0,62	2,17

EXAMPLE OF CONNECTIONS



1 Thermostatic valve, straight 2 Thermostatic valve actuator 3 Straight lockshield valve

INSTALLATION FEATURES

- The side with the heat exchanger is always mounted closer to the window (wall)
- Possibility to connect pipes through the side or end of the convector
- The 4-pipe heat exchanger has two independent circuits. They are connected to the heating and cooling systems on both sides of the device as follows:

  - To a cooling system – on a side of the control box;

  - To a heating system – on a side of condensate water outlet.
- Energy carrier supply have to be connected to heat exchanger connection which is further from fans
- Outgoing pipes of both circuits have to be connected to the heat exchanger's connections which is closer to fans
- All fasteners required for mounting are included in the standard kit
- The possibility of adjusting the height of the device after mounting (when mounting into raised floor)

ORDER CODES

Type	Length, cm	Width, cm	Height, cm	Example
FCHV4	250	36	15	FCHV4 250

ACCESSORIES

THERMOSTATIC VALVE **TVS15**

Controls flow of energy carrier. Controled by thermal actuator TA24

- Controls flow with thermoelectric actuator
- Provides possibility to close flow and disconnect heat exchanger from heating system without draining
- DN15 Kvs = 2,00

LOCKSHIELD VALVE (STRAIGHT) **LS15**

Opens, closes or limits flow of energy carrier

- For energy carrier opening, closing and presetting of maximal flow
- Provides possibility to close flow and disconnect heat exchanger from heating system without draining
- DN15 Kvs = 1,74
  DN20 Kvs = 1,93

LOCKSHIELD VALVE (ANGLE) **LA15**

Opens, closes or limits flow of energy carrier

- For energy carrier opening, closing and presetting of maximal flow
- Provides possibility to close flow and disconnect heat exchanger from heating system without draining
- DN15 Kvs = 1,74
  DN20 Kvs = 1,93

THERMOSTATIC VALVE ACTUATOR **TA24**

Opens / closes thermostatic valve. Controled by room thermostat RTB24

- Opening/closing of thermostatic valves (ON/OFF)
- Thermoelectric
- Opened/Closed indicator
- Voltage 24V DC

ROOM THERMOSTAT **RTB24**

Controls thermal actuator TA24 and fans according to preset room temperature

- For maintaining the set room temperature
- Day/night and weekly temperature programmes
- Accuracy of temperature control ± 0.5°C
- Power supply of 24V DC
- Stepless fan rotating speed control, 0–10 V
- Valve actuator control (ON/OFF)
- Backlit LED display

ELECTRIC CONTROL BOX **CB20**

For power supply of fans, actuators TA24 and room thermostat RTB24

- Can be installed inside convector's casing
- Ensures easy and fast connection between convector and room thermostat
- 24V DC power supply included
- El. connectors for fast connection of the cables included

ORDER CODES

Accessory	Order code
Thermostatic valve	TVS15
Thermostatic valve actuator	TA24
Lockshield valve (angle)	LA15
Lockshield valve (straight)	LS15
Room thermostat	RTB24
Electric control box	CB20

CONNECTING ONE **FCHV** TO ROOM THERMOSTAT

ROOM THERMOSTAT **RTB24**

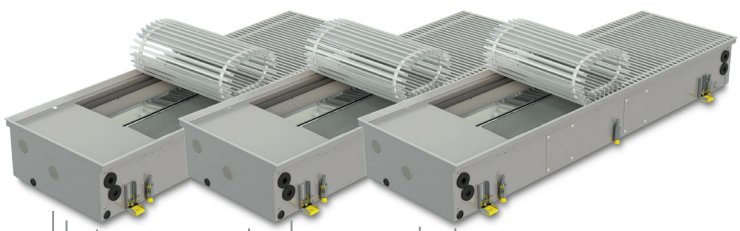
TRENCH HEATER **FCHV**

THERMOSTATIC
VALVE ACTUATOR **TA24**

CONNECTING MULTIPLE **FCHV** TO ROOM THERMOSTAT

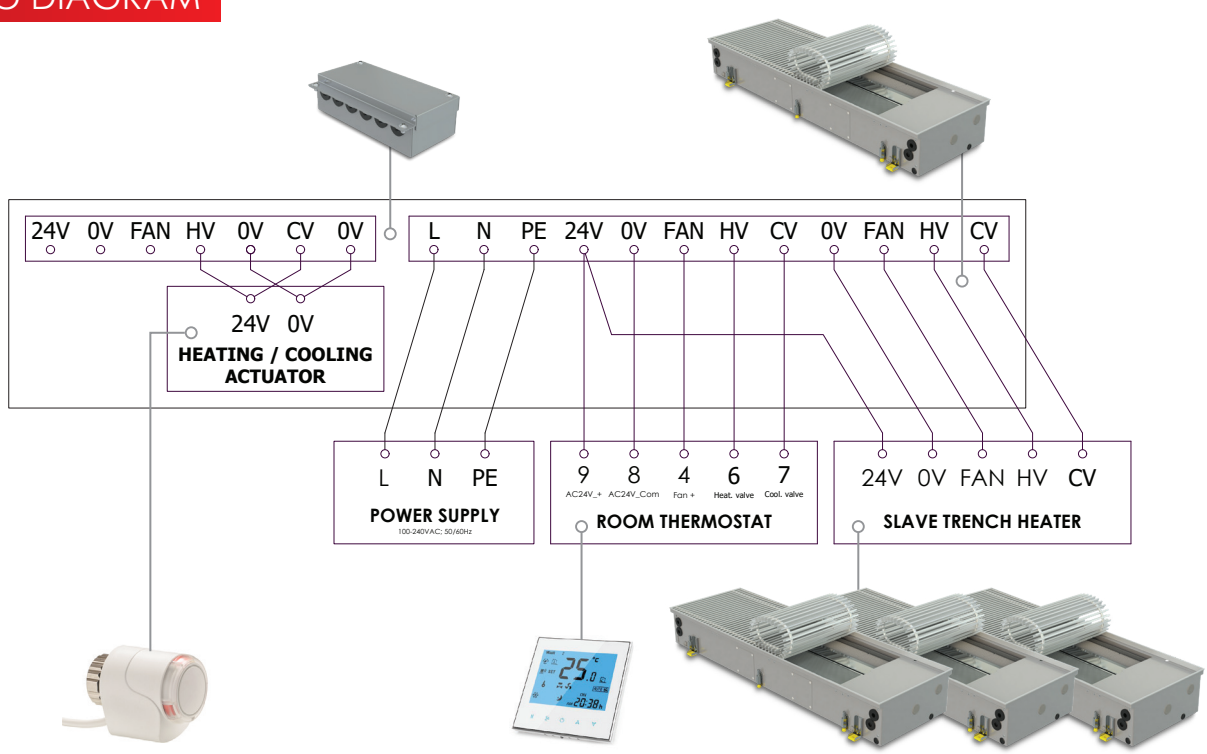
ROOM THERMOSTAT **RTB24**

TRENCH HEATERS **FCHV** (UP TO 30 PCS)



THERMOSTATIC
VALVE ACTUATORS **TA24**

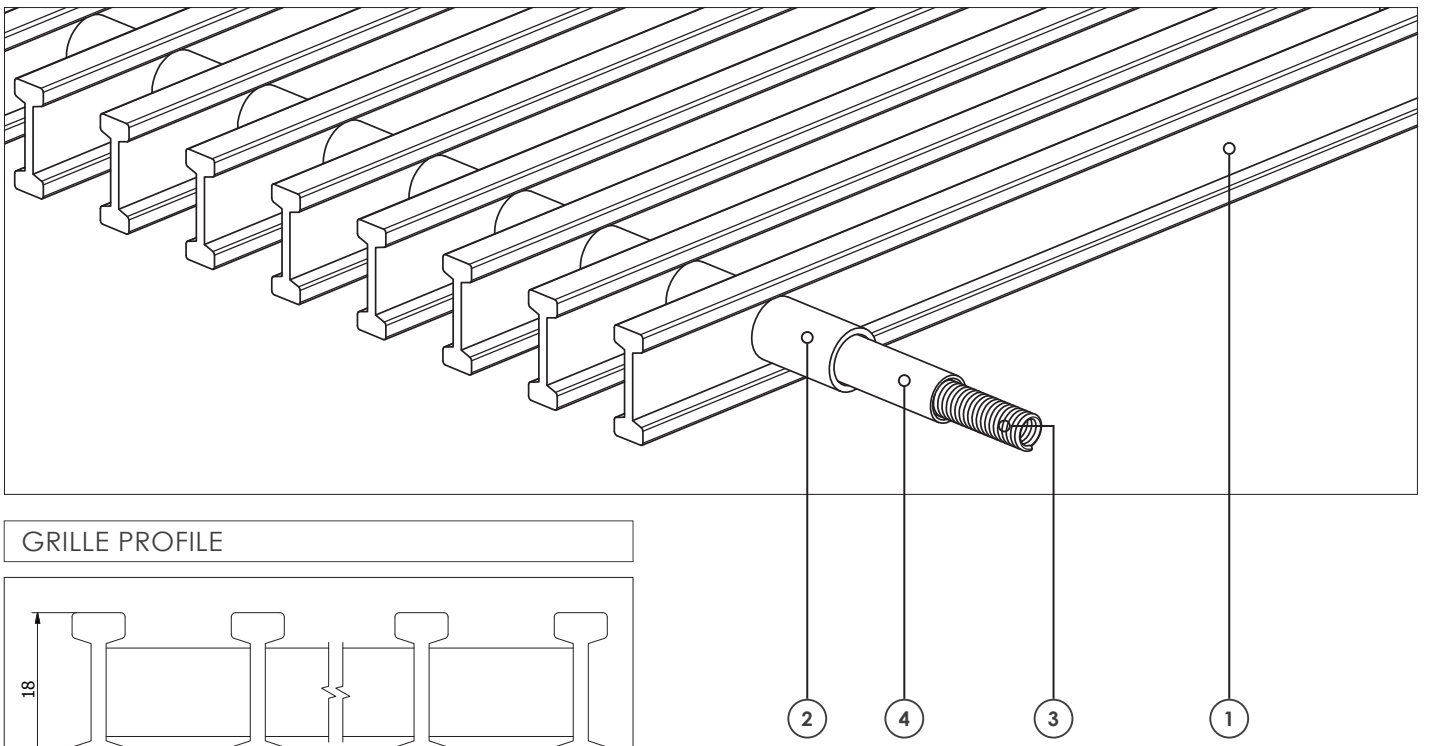
WIRING DIAGRAM



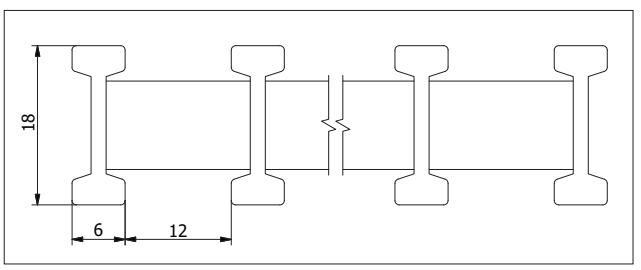
- Trench heaters installed in the same room are controlled based on the Master - Slave principle
- Speed of fans are controlled 0-10 V by room thermostat. Voltage – 24VDC
- Valve actuators are controlled ON/OFF by room thermostat. Voltage – 24VDC
- Up to 30 trench heaters can be controlled with one room thermostat RTB24

GRILLES

ALUMINIUM ROLL-UP GRILLES



GRILLE PROFILE



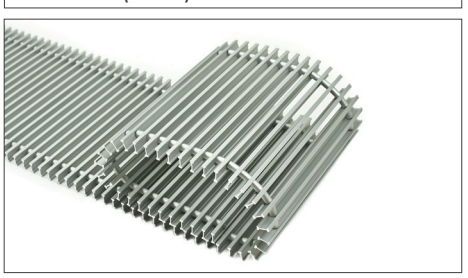
1 Aluminium profile
- made of anodized aluminium
- reinforced reversable double T profile

2 Spacers
- made of anodized aluminium
- does not shrink or crack when exposed on UV or heat
- the colour is exactly the same as colour of profiles

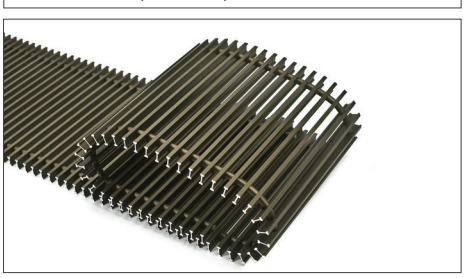
3 Spring

4 Flexible protective pipe

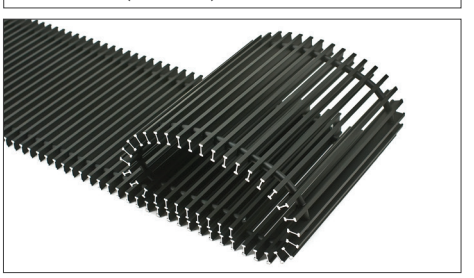
SILVER (ALS)



BROWN (AL 10)



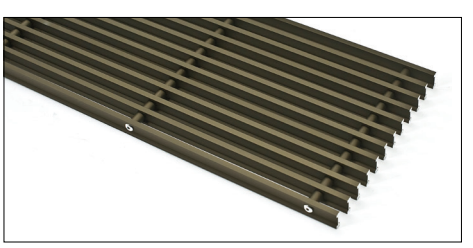
BLACK (AL 50)



ALUMINIUM LINEAR GRILLES

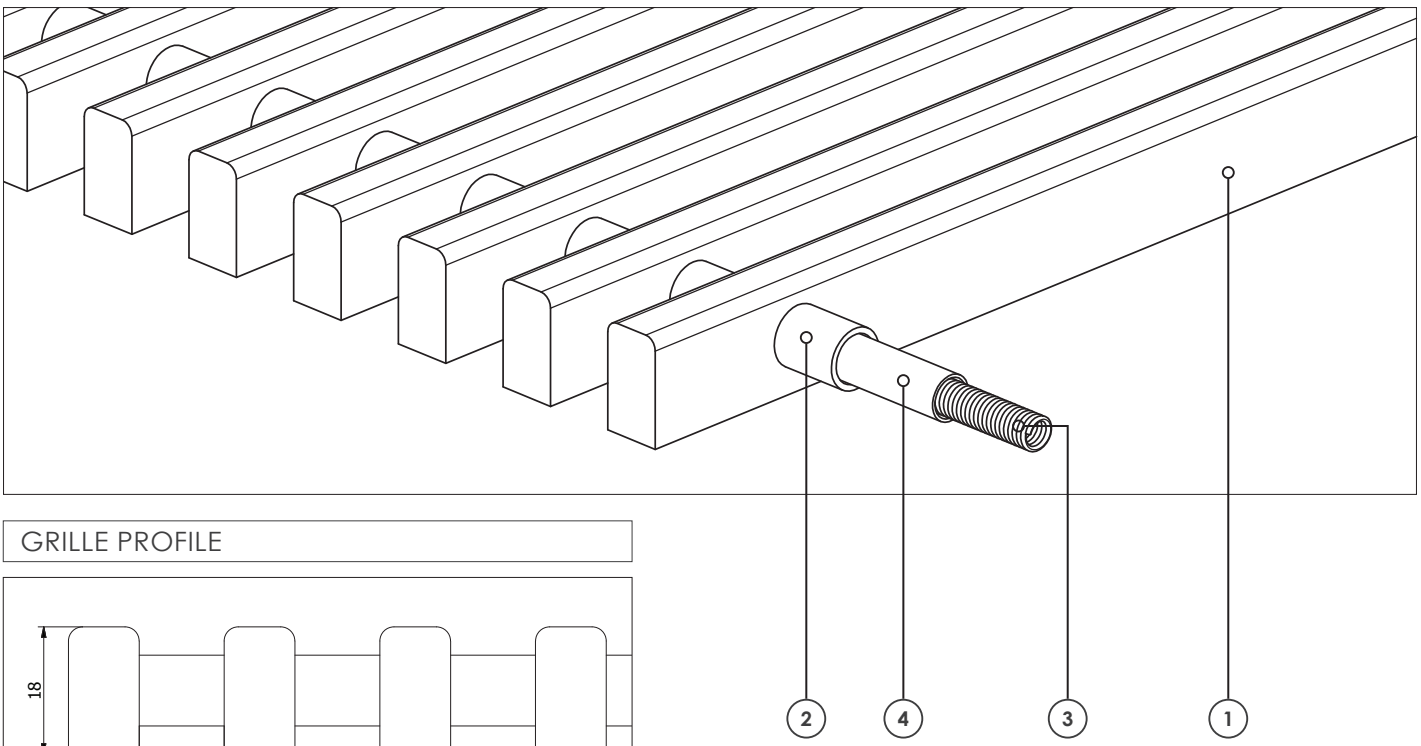
SILVER (ALS)

BROWN (AL 10)

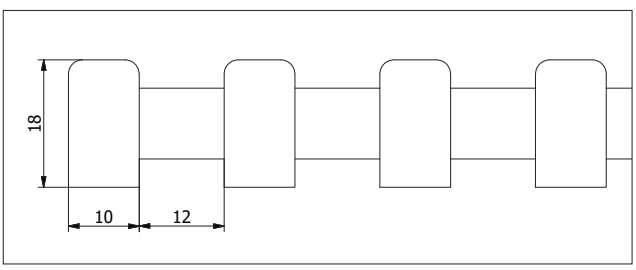


BLACK (AL 50)

WOODEN ROLL-UP GRILLES



GRILLE PROFILE



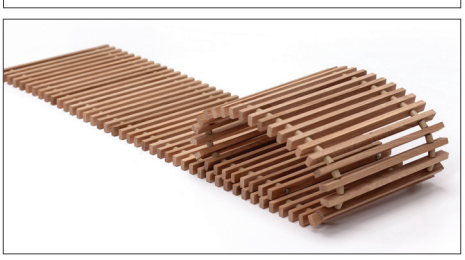
1 Wooden profile
- made of solid wood

2 Spacers
- made of anodized aluminium
- does not shrink or crack when exposed on UV or heat

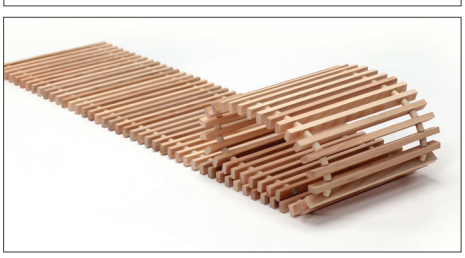
3 Spring

4 Flexible protective pipe

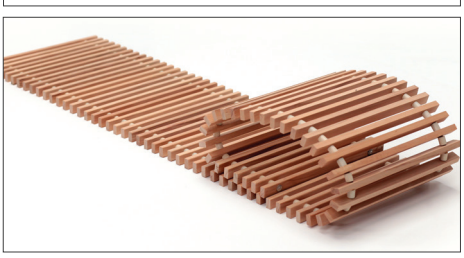
OAK



ASH



BEECH



ORDER CODE FOR GRILLES

Type	Length, cm	Width, cm	Material	Example
GR	200	36	ALS	GR 200-36 ALS

NOTES

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