

CVK TRENCH HEATING AND COOLING UNITS

MDL: PROFESSIONAL GRADE HVAC SOLUTIONS





VERANO CVK UNITS

COMFORTABLE TEMPERATURES THROUGHOUT THE YEAR

Trench heating and cooling units are installed in the floor and provide the proper temperature and optimal micro-climate in both summer and winter. Our 2-pipe fan assisted units (CKV2) use the same 2-pipe installation for both heating or cooling 4-pipe units (CVK4) have 2 separate exchangers: one for heating and one for cooling.

Thanks to our high efficiency exchangers for both cooling and heating, as well as our safe 24 V DC EC fans, VERANO heating and cooling units are ideally suited for low-temperature systems that cooperate with, for example, heat pumps.

The smooth regulation of the fan mode with an analogue 0-10 V signal guarantees the device is adjusted to the current room demand for heating or cooling. Fan coil units also have automatic balancing valves that precisely regulate the flow and pressure in the installation.

CVK units are equipped with a drip tray that allows the removal of condensate drainage via gravity or a condensate pump (additional equipment).

Warm or cold air is distributed by the fan directly to the glass facade. This creates a barrier that reduces heat loss in winter and heat gains in summer. Thus, maintaining an appropriate temperature in the room throughout the year.

The heating and cooling units outputs have been tested in accordance with the European Standard EN 16430.

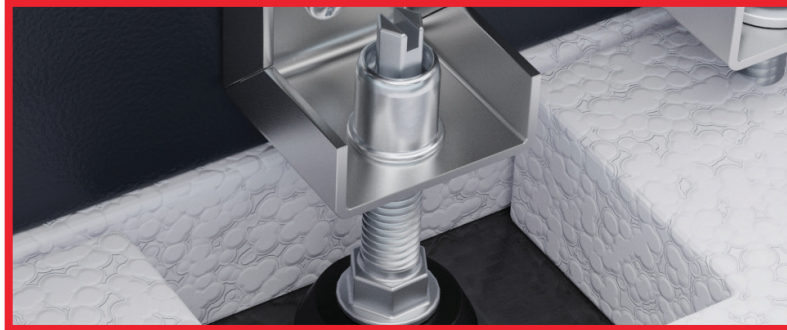
The wireless control system (*only available in Europe*) allows the CVK unit to be incorporated into BMS (BACnet standards, KNX and Modbus) and makes the CVK unit work in any building, regardless of the planned control or automation system.

OUR ADVANTAGES



HIGHLY EFFICIENT HEAT EXCHANGER AND FAN

With aluminum fins and copper tubing, the highly efficient heat exchanger with a EC 24 V DC fan maintains thermal comfort in the room.



LEVELING FEET SYSTEM

Adjustable legs allow for easy adjustment and leveling of heater height.



STANDARD HYDRONIC INSTALLATION BALANCING

Units are equipped with PICV valves and 0-10 V thermal actuators that regulate installation pressure and heating/cooling water temperature.



DEDICATED CONTROL SYSTEM

Modern room controllers allow for full control of heater operations.



BMS CONTROLS

BMS options are available through VERANO.



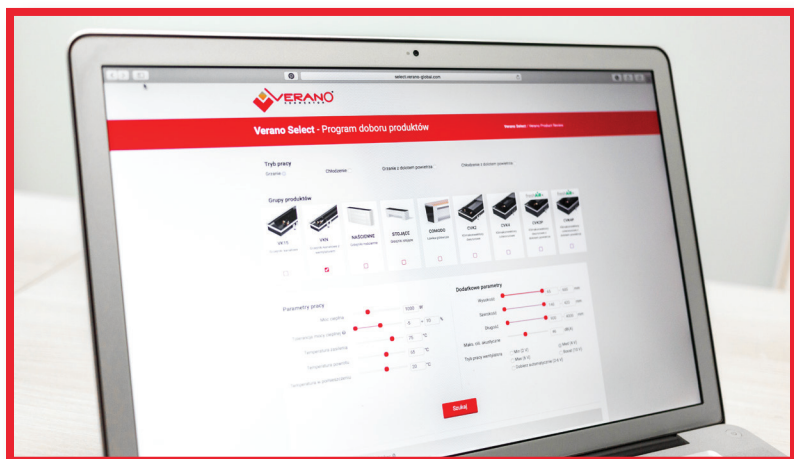
TOOL FOR DESIGNERS

We offer full product support, including dedicated CPD seminars, as well as access to BIM drawings and libraries at the project design stage.



EN16430 STANDARD

CVK units have been tested according to the European Standard EN 16430, confirming our high quality products.



VERANO SELECT

Our program allows for selecting the proper heating and cooling units according to the requested heating/cooling loads. *Currently this feature is only available in Europe.*

HIGH QUALITY



CVK fan-assisted units are designed for heating and cooling residential, office, service, hotel, sport and other spaces.

A wide range of available finishing variants and an individual approach to each project make VERANO products the first-choice solution.

The trouble-free and economical use of our devices is appreciated throughout the world. CVK units ensure the comfort of users of luxury apartments, modern office buildings or industrial settings.

Our knowledge and experience in the design of heating and cooling systems is rooted in years of analysis and research. Cooperation with scientists from the Warsaw, Krakow and Lublin Universities of Technology, the Polish Academy of Sciences, as well as other private research centers, allows us to continually improve and verify the performance of our products.

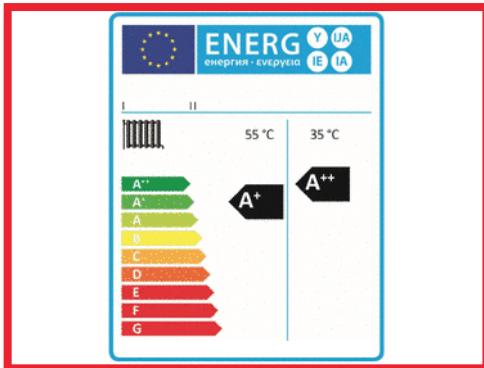
The excellent technical properties of CVK units have been confirmed at the HLK Stuttgart. Measurements of heating and cooling capacity were carried out in accordance with EN-16430.

CVK heating and cooling units are manufactured in Poland in accordance with EU regulations.

VERANO trench convectors are characterized by the following documents required by the European Union:

- National declaration of properties in accordance with EN 16430
- EU declaration of properties
- Hygienic certificate PZH

RESEARCH AND DEVELOPMENT



New CVK units are modern devices with highly efficient heating and cooling outputs. CVK units are available in four heights, the smallest being 3.5 inches high.

The fancoils have been designed for use with the latest high efficiency heat pumps and condensing boilers that serve both heating and cooling requirements.

Research concerning the heating and cooling capabilities of the CVK trench units was carried out in a specially prepared climatic chamber, in accordance with the requirements of the European Standard EN-16430, in cooperation with the HLK Stuttgart laboratory at the Institut für Gebäude Energetik Universität Stuttgart.

Our high quality is not only based on performance. It is also based on the ability to work with the latest technologies and trends in construction. VERANO makes every effort to ensure that CVK units fulfill this obligation both at the design stage (BIM selection programs and technology) as well as at the assembly and use stage (modules for connection to BMS).

PRODUCT SPECIFICATIONS

STANDARD FEATURES

- Casing made of zinc-magnesium galvanized sheet steel, powder coated in black RAL 9005.
- Highly efficient copper-aluminum heat exchanger with air vent
- Modern fan with silent and efficient 24 V DC EC motor
- Connection space cover
- Fan cover with airstream nozzles
- 1/2" connection threads
- Assembly struts
- Fixing anchors
- Condensate tray
- Connector for condensate drainage
- Trench positioning adjustment system
- Tray position adjustment system

OPTIONAL FEATURES

- Casing powder coated in any RAL colour
- Drainage pump
- Stainless steel grille
- Assembly fibreboard cover to protect the unit during transport or assembly
- Raised floor support system
- Adjustable casing edge
- Casing protective film
- Foil sleeve for heat exchanger
- Anti-dust filter in black painting installed on fan (increases height by 0.4 inches)
- BMS controls
- Decorative frame (F or L-type) made of natural or anodized aluminum
- Decorative grille made of natural or anodized aluminum, roll-up or linear type
- Connection set: PICV valve, 0-10 V thermal actuator, lockshield valve



QUICK REFERENCE HEATING/COOLING OUTPUTS FOR CVK2 - 2 PIPE UNITS

									HEATING				COOLING			
									140/120/68°				45/55/80° (50% RH)			
STYLE	MDL DESCRIPTION	MDL#	H INCH	L INCH	HX	D INCH	WATTS	AIRFLOW CFM	BTU/H	FLOWRATE (USGPM)	BTU/H/FT	PD (FT H2O)	TOTAL BTU/h	SENSIBLE BTU/h	FLOWRATE (USGPM)	PD (FT H2O)
HEAT COOL CLIMA CVK	VERANO TRENCH FAN COIL	CVK2-09/17/700	3.5	27.5	2-PIPE	6.5	8.5	100.0	3083	0.31	1999	0.13	2135	1664	0.43	0.24
		CVK2-09/17/1100		43.5			10.8	175.0	5674	0.57	1974	0.41	3618	2820	0.72	0.64
		CVK2-09/17/1450		57			14.5	255.0	8269	0.83	2067	0.82	4484	3499	0.90	0.96
		CVK2-09/17/1900		75			21.6	345.0	11352	1.14	2064	1.48	5435	4239	1.09	1.36
		CVK2-09/35/950	3.5	37.5	2-PIPE	14	19.2	100.0	3659	0.37	1541	0.18	3042	2336	0.61	0.47
		CVK2-09/35/1100		43.5			24	175.0	4211	0.42	1465	0.24	3594	2738	0.72	0.63
		CVK2-09/35/1250		49			33.6	175.0	5432	0.54	1630	0.38	4692	3464	0.94	1.04
		CVK2-09/35/1450		57			40	255.0	6349	0.63	1587	0.50	5500	4051	1.10	1.40
		CVK2-09/35/1650		65			43.2	255.0	7321	0.73	1569	0.66	6049	4672	1.21	1.66
		CVK2-09/35/1800		71			48	345.0	7870	0.79	1523	0.75	6598	5074	1.32	1.95
		CVK2-09/35/2000		78.5			55.2	345.0	9094	0.91	1570	0.98	7625	5800	1.52	2.55
		CVK2-12/35/950	4.5	37.5	2-PIPE	14	19.2	100.0	6482	0.65	2729	0.52	3376	2592	0.68	0.56
		CVK2-12/35/1100		43.5			24	175.0	7601	0.76	2644	0.70	3986	3038	0.80	0.77
		CVK2-12/35/1250		49			33.6	175.0	9626	0.96	2888	1.09	5207	3846	1.04	1.26
		CVK2-12/35/1450		57			40	255.0	11246	1.12	2811	1.45	6104	4498	1.22	1.69
		CVK2-12/35/1650		65			43.2	255.0	12971	1.30	2780	1.89	6714	5183	1.34	2.02
		CVK2-12/35/1800		71			48	345.0	14083	1.41	2726	2.20	7324	5630	1.46	2.37
		CVK2-12/35/2000		78.5			55.2	345.0	16108	1.61	2781	2.83	8463	6438	1.69	3.10
		CVK2-14/35/800	5.5	31.5	2-PIPE	14	19.2	100.0	6878	0.69	3668	0.58	3410	3066	0.68	0.58
		CVK2-14/35/1000		39.5			21.6	175.0	9803	0.98	3857	1.13	5388	4365	1.08	1.34
		CVK2-14/35/1250		49			33.6	175.0	13912	1.39	4174	2.16	8139	6199	1.63	2.88
		CVK2-14/35/1550		61			40	255.0	20115	2.01	4642	4.27	11123	8228	2.22	5.14
		CVK2-14/35/1750		69			43.2	255.0	19604	1.96	3921	4.07	11805	8733	2.36	5.74
		CVK2-14/35/2000		78.5			55.2	345.0	23712	2.37	4094	5.79	14076	10564	2.82	7.95
		CVK2-14/35/2250		88.5			67.2	345.0	27821	2.78	4199	7.78	16753	12395	3.35	10.98
		CVK2-14/35/2500		98.5			52.8	500.0	26379	2.64	3537	7.05	18185	13271	3.64	12.78
		CVK2-14/35/2750		108.5			76.8	500.0	39231	3.92	4731	14.70	21680	15825	4.34	17.69
		CVK2-14/35/3000		118			88.8	500.0	37625	3.76	4142	13.60	22949	16760	4.59	19.66
		CVK2-14/35/3250		128			100	500.0	41737	4.17	4209	16.49	25820	18591	5.16	24.45
		CVK2-18/35/800	7	31.5	2-PIPE	14	21.6	100.0	10564	1.06	5634	1.29	6319	5500	1.26	1.80
		CVK2-18/35/1000		39.5			25.2	175.0	14888	1.49	5857	2.44	9606	7751	1.92	3.92
		CVK2-18/35/1250		49			42	255.0	20647	2.06	6194	4.48	13967	10751	2.79	7.84
		CVK2-18/35/1550		61			46.8	255.0	25451	2.55	5873	6.60	17411	13247	3.48	11.79
		CVK2-18/35/1750		69			50.4	345.0	29775	2.98	5955	8.82	20674	15498	4.13	16.20
		CVK2-18/35/2000		78.5			67.2	425.0	35535	3.55	6135	12.24	24340	18502	4.87	21.92
		CVK2-18/35/2250		88.5			84	425.0	41304	4.13	6235	16.17	28592	21496	5.72	29.54
		CVK2-18/35/2500		98.5			88.4	500.0	44659	4.47	5988	18.69	31047	23249	6.21	34.41
		CVK2-18/35/2750		108.5			92.4	500.0	50422	5.04	6081	23.40	35483	26249	7.10	44.06
		CVK2-18/35/3000		118			109.2	500.0	56188	5.62	6186	28.59	39517	29243	7.90	53.79
		CVK2-18/35/3250		128			126	900.0	61951	6.20	6247	34.26	44172	32247	8.83	66.10

1. Above table shows outputs at fan full speed only. Outputs at medium and minimum speed in following tables.
2. Standard heating/cooling output compliant to EN-16430 at room air temperature 68°F for heating and 80°F for cooling.
3. For all tables: Working Fluid is pure water. Heating Entering Water = 140°F, Leaving Water = 120°F. Cooling Entering Water = 45°F, Leaving Water = 55°F. For outputs with Glycol solution and/or different EWT/LWT, please consult MDL Solutions.

The manufacturer reserves the right to make changes to the design, colour and specifications of the product shown. All images are for illustrative purposes only and some features such as grilles are optional accessories and not considered as standard equipment



CVK2 3.5 INCHES HIGH

DIMENSIONS

DIMENSIONS	[INCH]
Trench Height	3.5
Trench Width	6.7, 13.7
Top Width/Grille Width(Bk)	14.7
Trench Length (Lk)	27.5-78.5

Non-standard (NS) length heaters can be made on order.

ORDER CODE

CVK2-09/35/Lk

Trench Height[in]

Trench Width[in]

Trench LengthLk[in]

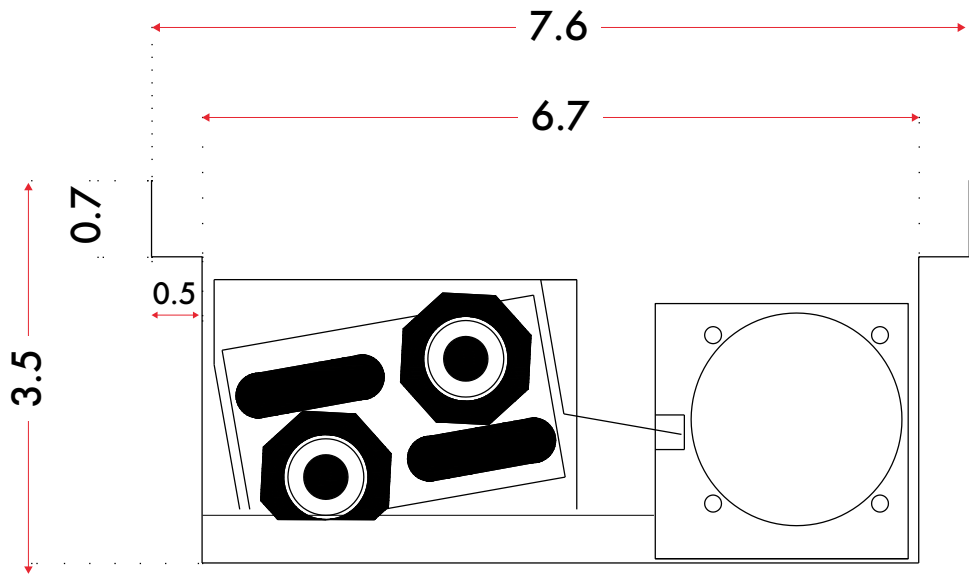
CVK2 - 3.5" HEIGHT - 7" WIDTH

CVK2-09/17/L-23

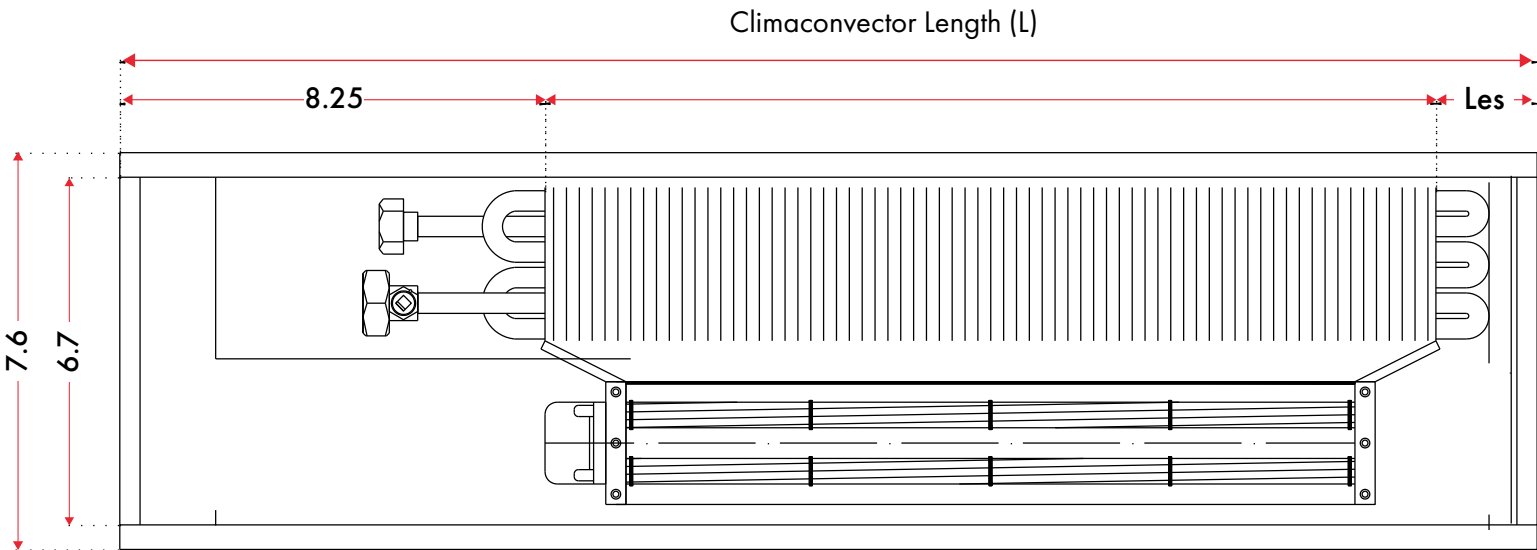
DIMENSIONS	[INCH]
Trench Height(H)	3.5
Trench Width(W)	6.7
Grille Width(Wg)	7.6
Trench Length (Lk)	27.5-75
Fin Type	23

CONNECTIONS	TYPE
Connection Threads	3/4" one-sided
Side connection to be chosen	Standard Right – P optional Left – L
Far from the room side	Standard

ACCESSORIES	TYPE
Grille 18mm high	Roll-up/Linear
Frame	L or F
Additional Accessories	<ul style="list-style-type: none">• Drainage pump• Fibreboard cover• Raised floor support system• Adjustable casing edge• Dust filter



CROSS-SECTION OF THE CLIMAVECTOR



DIMENSIONS ARE IN INCHES

DETAILED OUTPUT DATA

MODEL NUMBER	L INCH (MM)	WATTS	MAX SOUND PRESSURE LEVEL	MAX SOUND POWER LEVEL	FAN SPEED	VOLTS (0-10)	AIRFLOW CFM	140/120/68°F		45/55/80°F(50% RH)		
								HEATING BTU/h	FLOWRATE U _s GPM	TOTAL BTU/h	SENSIBLE BTU/h	FLOWRATE U _s GPM
CVK2-09/17/700	27.5 (700)	8.5	28	36	Max	10V	100	3083	0.31	2135	1664	0.43
			<18	<26	Med	5V	75	2568	0.26	1449	1132	0.29
			<18	<26	Min	3V	35	1507	0.15	948	740	0.19
CVK2-09/17/1100	43.5 (1100)	10.8	28	36	Max	10V	175	5674	0.57	3618	2820	0.72
			<18	<26	Med	5V	140	4726	0.47	2725	2124	0.54
			<18	<26	Min	3V	60	2769	0.28	1630	1272	0.33
CVK2-09/17/1450	57 (1450)	14.5	28	36	Max	10V	255	8269	0.83	4484	3499	0.90
			<18	<26	Med	5V	205	6885	0.69	3785	2953	0.90
			<18	<26	Min	3V	60	4037	0.40	2629	2053	0.53
CVK2-09/17/1900	75 (1900)	21.6	31	39	Max	10V	345	11352	1.14	5435	4239	1.09
			<18	<26	Med	5V	275	9456	0.95	4876	3805	0.98
			<18	<26	Min	3V	120	5541	0.55	3219	2513	0.64

- Standard heating/cooling output compliant to EN-16430
- Cooling Relative Humidity - 50%
- Sound power levels according to ISO-3745 standard, sound pressure level measured at distance of 6.5ft to the unit, in a 3531ft³ volume room. Reverb time - 0.5s, room damping - 8dB(A)

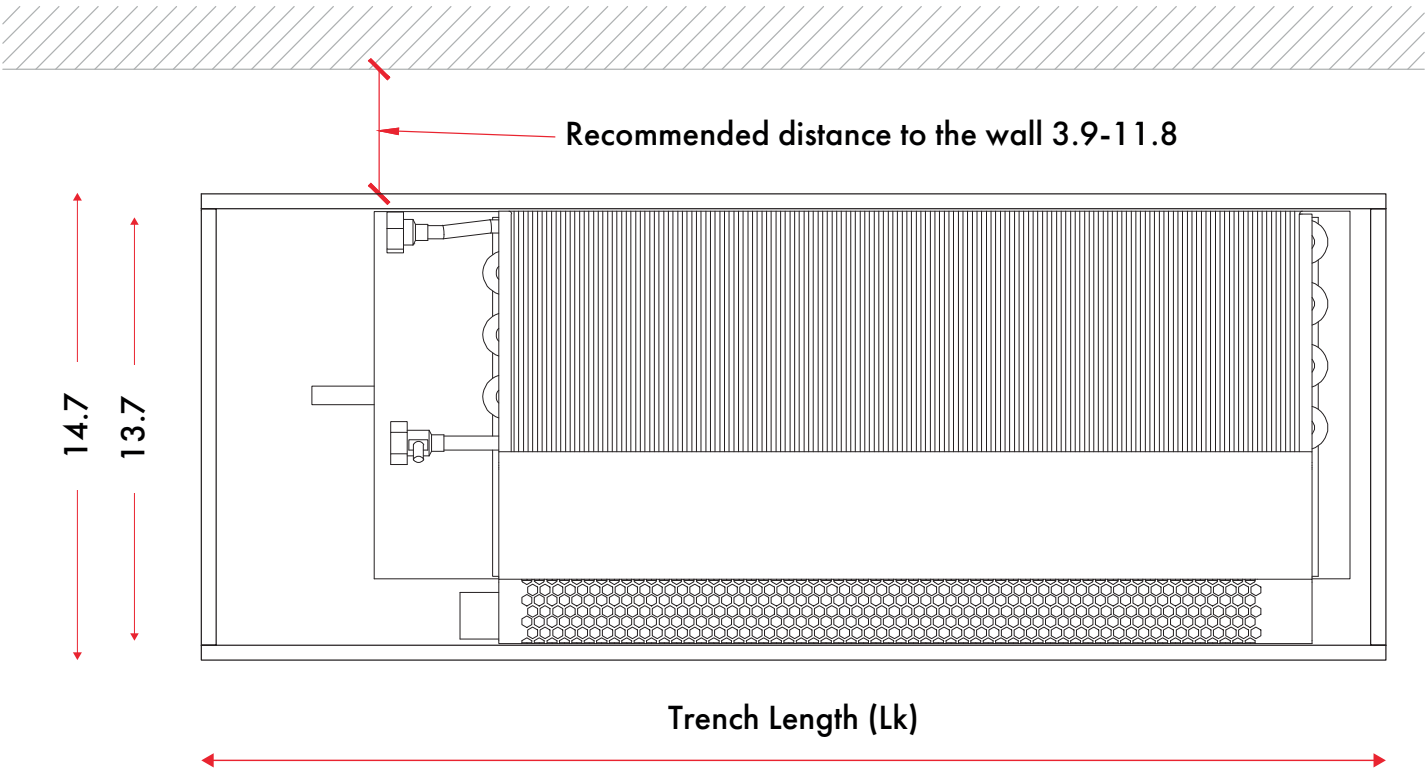
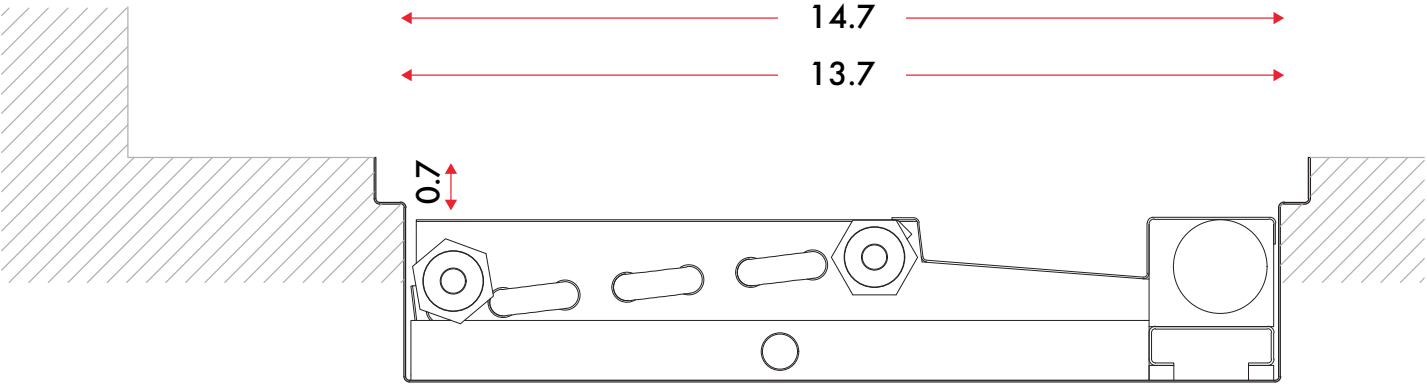
CVK2 - 3.5" HEIGHT - 14" WIDTH

ORDER CODE: CVK2-09/35/L-38

DIMENSIONS	UNIT [INCH]
Trench Height	3.5
Trench Width	13.7
Top Width/Grille Width (Bk)	14.7
Trench Length (Lk)	37.5-78.5

CONNECTIONS	TYPE
Connection Thread	½" Female Thread
Connection Side	Left(L) standard Right(R) optional

ACCESSORIES	TYPE
Grille .70 in/18mm high	Roll-Up/Linear
Frame	L or F
Additional Accessories	<ul style="list-style-type: none">• Drainage pump• Fibreboard cover• Raised floor support system• Adjustable casing edge• Dust filter



DIMENSIONS ARE IN INCHES

DETAILED OUTPUT DATA

MODEL NUMBER	L INCH (MM)	WATTS	MAX SOUND PRESSURE LEVEL	MAX SOUND POWER LEVEL	FAN SPEED	VOLTS (0-10)	AIRFLOW CFM	140/120/68°F		45/55/80°F(50% RH)		
								HEATING BTU/h	FLOWRATE UsGPM	TOTAL BTU/h	SENSIBLE BTU/h	FLOWRATE UsGPM
CVK2-09/35/950	37.5 (950)	19.2	28	36	Max	10V	100	3659	0.37	3042	2336	0.61
			<18	<26	Med	5V	75	2537	0.25	1688	1326	0.16
			<18	<26	Min	3V	35	1766	0.18	955	760	0.19
CVK2-09/35/1100	43.5 (1100)	24	28	36	Max	10V	175	4211	0.42	3594	2738	0.72
			<18	<26	Med	5V	140	2922	0.29	2053	1555	0.22
			<18	<26	Min	3V	60	2032	0.20	1135	893	0.23
CVK2-09/35/1250	49 (1250)	33.6	28	36	Max	10V	175	5432	0.54	4692	3464	0.94
			<18	<26	Med	5V	140	3768	0.38	2677	1964	0.37
			<18	<26	Min	3V	60	2622	0.26	1504	1129	0.30
CVK2-09/35/1450	57 (1450)	40	28	36	Max	10V	255	6349	0.63	5500	4051	1.10
			<18	<26	Med	5V	205	4406	0.44	3188	2298	0.51
			<18	<26	Min	3V	95	3062	0.31	1797	1316	0.36
CVK2-09/35/1650	65 (1650)	43.2	28	36	Max	10V	255	7321	0.73	6049	4672	1.21
			<18	<26	Med	5V	205	5077	0.51	3666	2649	0.66
			<18	<26	Min	3V	95	3533	0.35	2090	1521	0.42
CVK2-09/35/1800	71 (1800)	48	31	39	Max	10V	345	7870	0.79	6598	5074	1.32
			<18	<26	Med	5V	275	5459	0.55	3996	2881	0.77
			<18	<26	Min	3V	120	3799	0.38	2309	1657	0.46
CVK2-09/35/2000	78.5 (2000)	55.2	31	39	Max	10V	345	9094	0.91	7625	5800	1.52
			<18	<26	Med	5V	275	6305	0.63	4583	3294	1.00
			<18	<26	Min	3V	120	4389	0.44	2639	1892	0.53

- Standard heating/cooling output compliant to EN-16430
- Cooling Relative Humidity - 50%
- Sound power levels according to ISO-3745 standard, sound pressure level measured at distance of 6.5ft to the unit, in a 3531 ft³ volume room. Reverb time - 0.5s, room damping - 8dB(A)



CVK2 4.5 INCHES HIGH

DIMENSIONS

DIMENSIONS	[INCH]
Trench Height	4.7
Trench Width	13.7
Top Width/Grille Width(Bk)	14.7
Trench Length (Lk)	37.5-78.5

Non-standard (NS) length heaters can be made on order.

ORDER CODE

CVK2-12/35/Lk

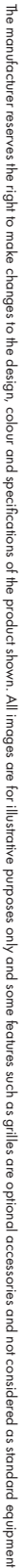
Trench Height[cm]

Trench Width[cm]

Trench LengthLk[cm]

ORDER CODE: CVK2-12/35/L-38

ACCESSORIES	TYPE
Grille 0.70 in/ 18mm high	Roll-up/Linear
Frames	L or F
Additional Accessories	<ul style="list-style-type: none"> • Drainage pump • Fibreboard cover • Raised floor support system • Adjustable casing edge • Dust filter



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DETAILED OUTPUT DATA

MODEL NUMBER	L INCH (MM)	WATTS	MAX SOUND PRESSURE LEVEL	MAX SOUND POWER LEVEL	FAN SPEED	VOLTS (0-10)	AIRFLOW CFM	140/120/68°F		45/55/80°F(50% RH)		
								HEATING BTU/h	FLOWRATE U _s GPM	TOTAL BTU/h	SENSIBLE BTU/h	FLOWRATE U _s GPM
CVK2-12/35/950	37.5 (950)	19.2	40	48	Max	10V	100	6482	0.65	3376	2592	0.68
			28	36	Med	5V	75	4917	0.49	1872	1473	0.37
			<18	<26	Min	3V	35	3587	0.36	1057	842	0.21
CVK2-12/35/1100	43.5 (1100)	24	40	48	Max	10V	175	7601	0.76	3986	3038	0.80
			28	36	Med	5V	140	5766	0.58	2278	1725	0.46
			<18	<26	Min	3V	60	4201	0.42	1262	992	0.25
CVK2-12/35/1250	49 (1250)	33.6	40	48	Max	10V	175	9626	0.96	5207	3846	1.04
			28	36	Med	5V	140	7301	0.73	2970	2182	0.59
			<18	<26	Min	3V	60	5326	0.53	1667	1255	0.33
CVK2-12/35/1450	57 (1450)	40	40	48	Max	10V	255	11246	1.12	6104	4498	1.22
			28	36	Med	5V	205	8532	0.85	3539	2551	0.71
			<18	<26	Min	3V	95	6220	0.62	1995	1459	0.40
CVK2-12/35/1650	65 (1650)	43.2	43	51	Max	10V	255	12971	1.30	6714	5183	1.34
			31	39	Med	5V	205	9834	0.98	4068	2943	0.81
			21	29	Min	3V	95	7174	0.72	2319	1688	0.46
CVK2-12/35/1800	71 (1800)	48	43	51	Max	10V	345	14083	1.41	7324	5630	1.46
			31	39	Med	5V	275	10683	1.07	4436	3198	0.89
			21	29	Min	3V	120	7795	0.78	2564	1838	0.51
CVK2-12/35/2000	78.5 (2000)	55.2	43	51	Max	10V	345	16108	1.61	8463	6438	1.69
			31	39	Med	5V	275	12218	1.22	5088	3659	1.02
			21	29	Min	3V	120	8913	0.89	2929	2100	0.59

- Standard heating/cooling output compliant to EN-16430
- Cooling Relative Humidity - 50%
- Sound power levels according to ISO-3745 standard, sound pressure level measured at distance of 6.5ft to the unit, in a 3531ft³ volume room. Reverb time - 0.5s, room damping - 8dB(A)

The manufacturer reserves the right to make changes to the design, colour and specifications of the product shown. All images are for illustrative purposes only and some features such as grilles are optional accessories and not considered as standard equipment



CVK2 5.5 INCHES HIGH

DIMENSIONS

DIMENSIONS	[INCH]
Trench Height	5.5
Trench Width	13.7
Top Width/Grille Width(Bk)	14.7
Trench Length (Lk)	31.5-128

Non-standard (NS) length heaters can be made on order.

ORDER CODE

CVK2-14/35/Lk

Trench Height[cm]

Trench Width[cm]

Trench LengthLk[cm]

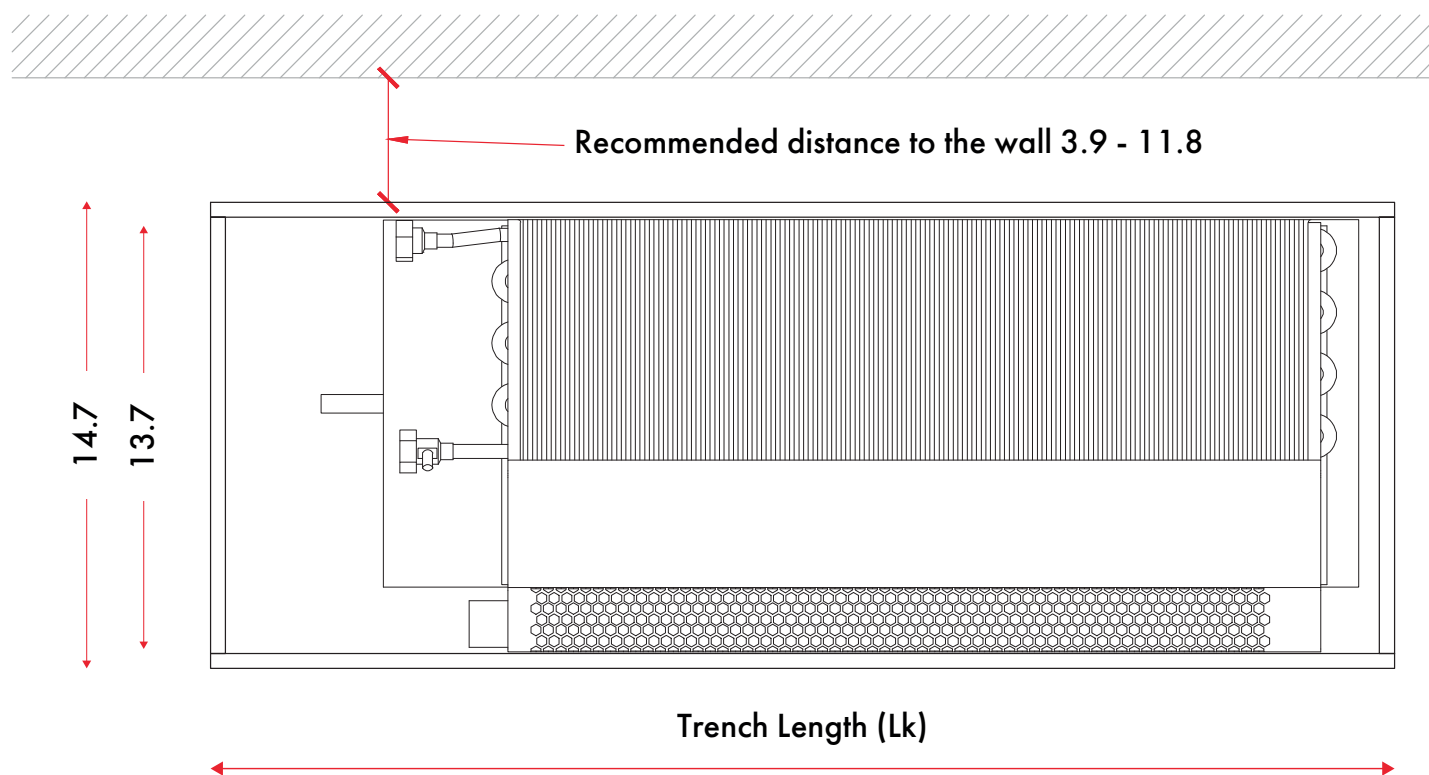
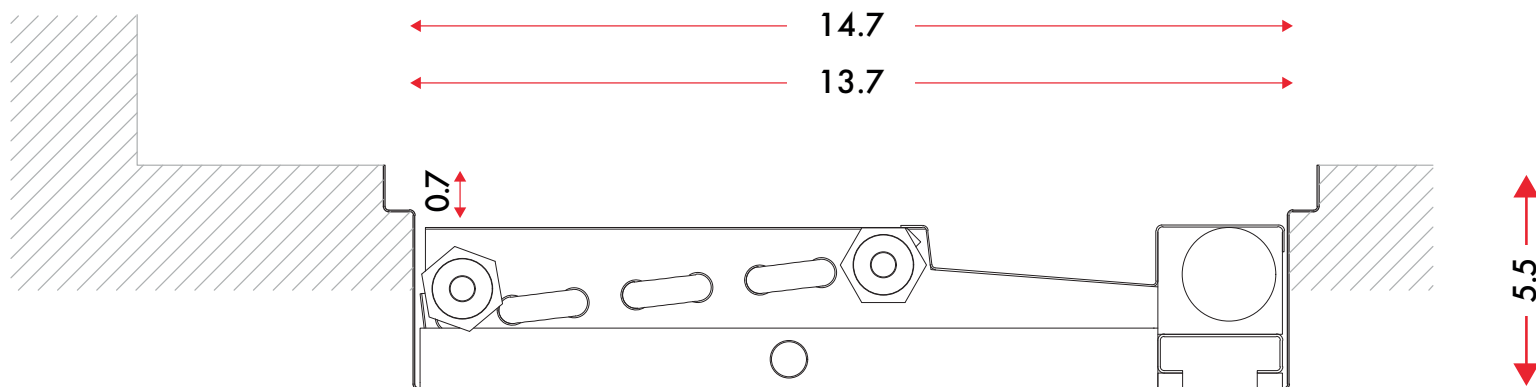
CVK2 - 5.5" HEIGHT - 14" WIDTH

ORDER CODE: CVK2-14/35/L-38

DIMENSIONS	UNIT [INCH]
Trench Height	5.5
Trench Width	13.7
Top Width/Grille Width (Bk)	14.7
Trench Length (Lk)	31.5-128

CONNECTIONS	TYPE
Connection Thread	GW ½"
Connection Side	Left(L) standard Right(R) optional

ACCESSORIES	TYPE
Grille 0.70/ 18mm high	Roll-up/Linear
Frames	L or F
Additional Accessories	<ul style="list-style-type: none"> • Drainage pump • Fibreboard cover • Raised floor support system • Adjustable casing edge • Dust filter



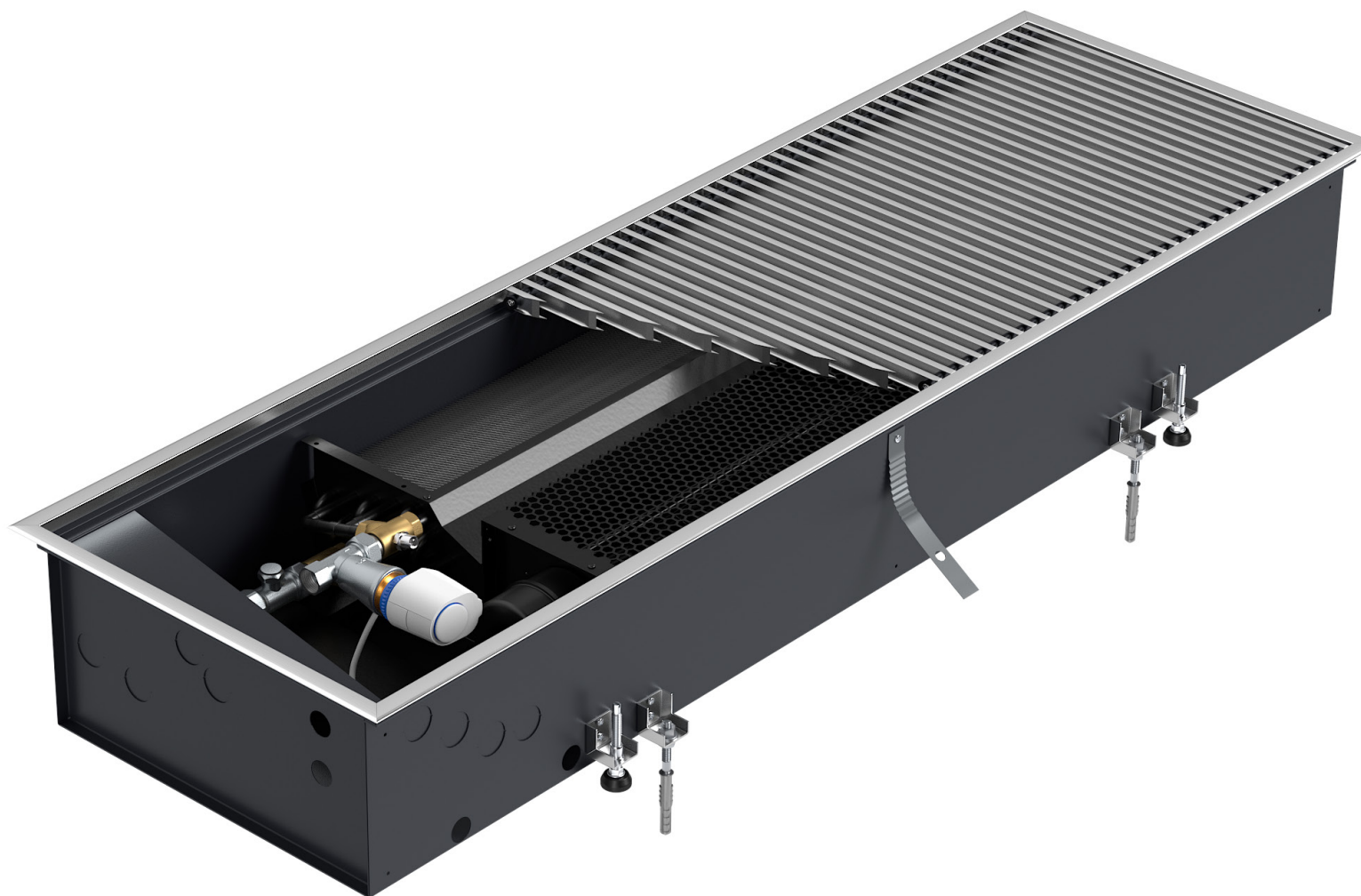
DIMENSIONS ARE IN INCHES

DETAILED OUTPUT DATA

								140/120/68°		45/55/80° (50% RH)		
MDL#	L INCH (mm)	WATTS	MAX SOUND PRESSURE LEVEL	MAX SOUND POWER LEVEL	FAN SPEED	Volts (0-10)	AIRFLOW CFM	HEATING BTU/h	FLOWRATE UsGPM	TOTAL BTU/h	SENSIBLE BTU/h	FLOWRATE UsGPM
CVK2-14/35/800	31.5 (800)	19.2	40	48	Max	10V	100	6878	0.69	3410	3066	0.68
			25	33	Med	5V	75	5125	0.51	2090	1933	0.42
			<18	<26	Min	3V	35	3352	0.34	1357	1115	0.27
CVK2-14/35/1000	39.5 (1000)	24	41	49	Max	10V	175	9803	0.98	5388	4365	1.08
			26	34	Med	5V	140	6895	0.69	3301	2752	0.66
			19	27	Min	3V	60	4781	0.48	1906	1586	0.38
CVK2-14/35/1250	49 (1250)	33.6	41	49	Max	10V	175	13912	1.39	8139	6199	1.63
			29	37	Med	5V	140	9790	0.98	5132	3904	1.03
			23	31	Min	3V	60	6789	0.68	2933	2254	0.59
CVK2-14/35/1550	61 (155)	40	43	51	Max	10V	255	20115	2.01	11123	8228	2.22
			30	38	Med	5V	205	14458	1.45	7079	5180	1.42
			24	32	Min	3V	95	10516	1.05	4109	2994	0.82
CVK2-14/35/1750	69 (1750)	43.2	43	51	Max	10V	255	19604	1.96	11805	8733	2.36
			30	38	Med	5V	205	13796	1.38	7515	5500	1.50
			24	32	Min	3V	95	9568	0.96	4361	3178	0.87
CVK2-14/35/2000	78.5 (2000)	48	44	52	Max	10V	345	23712	2.37	14076	10564	2.82
			31	39	Med	5V	275	16685	1.67	8873	6653	1.77
			24	32	Min	3V	120	11573	1.16	5241	3843	1.05
CVK2-14/35/2250	88.5 (2250)	55.2	44	52	Max	10V	345	27821	2.78	16753	12395	3.35
			32	40	Med	5V	275	19580	1.96	10666	7805	2.13
			26	34	Min	3V	120	13578	1.36	6158	4508	1.23
CVK2-14/35/2500	98.5 (2500)	40	45	53	Max	10V	500	26379	2.64	18185	13271	3.64
			33	40	Med	5V	400	20712	2.07	11600	8361	2.32
			26	34	Min	3V	200	15484	1.55	6680	4828	1.34
CVK2-14/35/2750	108.5 (2750)	40	45	53	Max	10V	500	39231	3.92	21680	15825	4.34
			33	41	Med	5V	400	28193	2.82	13834	9971	2.77
			27	35	Min	3V	200	20507	2.05	7966	5759	1.59
CVK2-14/35/3000	118 (3000)	43.2	45	53	Max	10V	500	37625	3.76	22949	16760	4.59
			33	41	Med	5V	400	26478	2.65	14663	10557	2.93
			27	35	Min	3V	200	18362	1.84	8579	6097	1.72
CVK2-14/35/3250	128 (3250)	48	46	54	Max	10V	500	41737	4.17	25820	18591	5.16
			34	42	Med	5V	400	29369	2.94	16275	11710	3.26
			28	36	Min	3V	200	20367	2.04	9493	6762	1.90

- Standard heating/cooling output compliant to EN-16430
- Cooling Relative Humidity - 50%
- Sound power levels according to ISO-3745 standard, sound pressure level measured at distance of 6.5ft to the unit, in a 3531ft³ volume room. Reverb time - 0.5s, room damping - 8dB(A)

The manufacturer reserves the right to make changes to the design, colour and specifications of the product shown. All images are for illustrative purposes only and some features such as optional accessories and not considered as standard equipment



CVK2 7 INCHES HIGH

DIMENSIONS

DIMENSIONS	[INCH]
Trench Height	7.1
Trench Width	13.7
Top Width/Grille Width (Bk)	14.7
Trench Length (Lk)	30-127

Non-standard (NS) length heaters can be made on order.

ORDER CODE

CVK2-18/35/Lk

Trench Height[cm]

Trench Width[cm]

Trench LengthLk[cm]

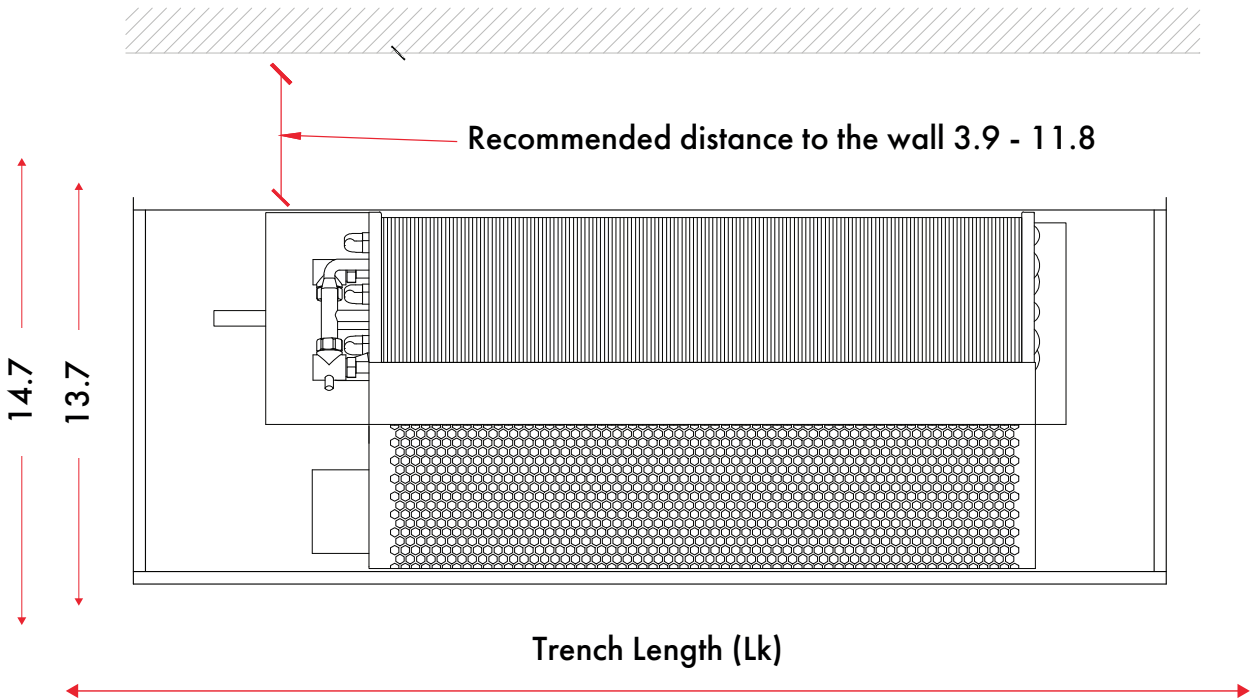
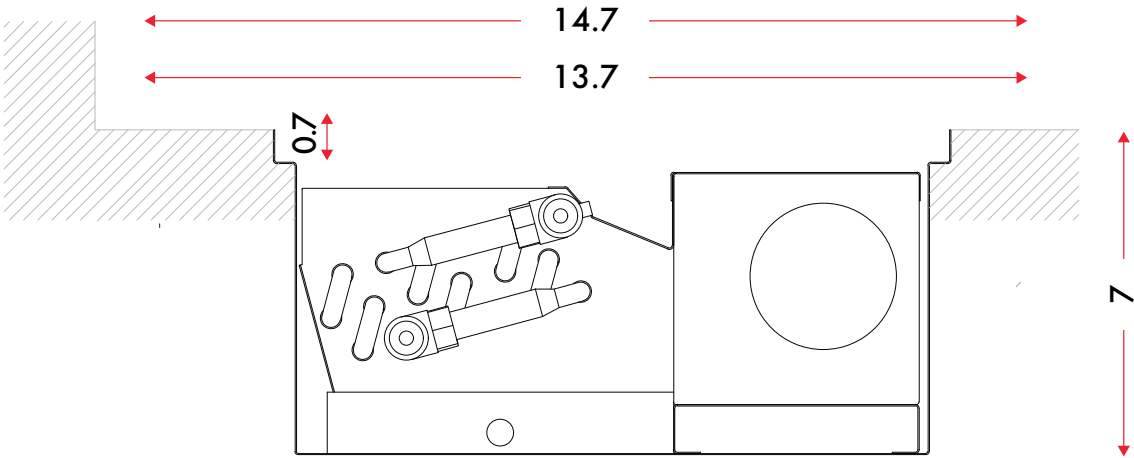
CVK2 - 7" HEIGHT - 14" WIDTH

ORDER CODE: CVK2-18/35/L-38

DIMENSIONS	UNIT [INCH]
Trench Height	7.1
Trench Width	13.7
Top Width/Grille Width (Bk)	14.7
Trench Length (Lk)	31.5 - 128

CONNECTIONS	TYPE
Connection Thread	GW ½"
Connection Side	Left(L) standard Right(R) optional

ACCESSORIES	TYPE
Grille 0.70/18mm high	Roll-up/Linear
Frames	L or F
Additional Accessories	<ul style="list-style-type: none">• Drainage pump• Fibreboard cover• Raised floor support system• Adjustable casing edge• Dust filter



DIMENSIONS ARE IN INCHES

DETAILED OUTPUT DATA

								140/120/68°		45/55/80° (50% RH)		
MDL#	L INCH (mm)	WATTS	MAX SOUND PRESSURE LEVEL	MAX SOUND POWER LEVEL	FAN SPEED	Volts (0-10)	AIRFLOW CFM	HEATING BTU/h	FLOWRATE UsGPM	TOTAL BTU/h	SENSIBLE BTU/h	FLOWRATE UsGPM
CVK2-18/35/800	31.5 (800)	19.2	42	45	Max	10V	100	10564	1.06	6319	5500	1.26
			29	37	Med	5V	75	8296	0.83	4692	4150	0.94
			21	29	Min	3V	35	6203	0.62	3301	2943	0.66
CVK2-18/35/1000	39.5 (1000)	24	43	51	Max	10V	175	14888	1.49	9606	7751	1.92
			32	40	Med	5V	140	11689	1.17	7222	5851	1.44
			23	31	Min	3V	60	8740	0.87	5207	4150	1.04
CVK2-18/35/1250	49 (1250)	33.6	46	54	Max	10V	255	20647	2.06	13967	10751	2.79
			35	43	Med	5V	140	16214	1.62	10520	8109	2.10
			25	33	Min	3V	60	12119	1.21	7478	5756	1.50
CVK2-18/35/1550	61 (155)	40	46	54	Max	10V	255	25451	2.55	17411	13247	3.48
			34	42	Med	5V	205	19982	2.00	13305	9998	2.66
			26	34	Min	3V	95	14939	1.49	9459	7089	1.89
CVK2-18/35/1750	69 (1750)	43.2	46	54	Max	10V	345	29775	2.98	20674	15498	4.13
			35	43	Med	5V	275	23375	2.34	15798	11693	3.16
			26	34	Min	3V	120	17472	1.75	11219	8296	2.24
CVK2-18/35/2000	78.5 (2000)	48	48	56	Max	10V	425	35535	3.55	24340	18502	4.87
			36	44	Med	5V	345	27903	2.79	18366	13960	3.67
			27	35	Min	3V	155	20855	2.09	13196	9899	2.64
CVK2-18/35/2250	88.5 (2250)	55.2	49	57	Max	10V	425	41304	4.13	28592	21496	5.72
			38	46	Med	5V	345	32428	3.24	21629	16224	4.33
			28	36	Min	3V	155	24241	2.42	15542	11512	3.11
CVK2-18/35/2500	98.5 (2500)	40	48	56	Max	10V	500	44659	4.47	31047	23249	6.21
			37	45	Med	5V	400	35067	3.51	23716	17544	4.74
			28	36	Min	3V	200	26212	2.62	16790	12446	3.36
CVK2-18/35/2750	108.5 (2750)	40	49	57	Max	10V	500	50422	5.04	35483	26249	7.10
			38	46	Med	5V	400	39589	3.96	26761	19801	5.35
			29	37	Min	3V	200	29595	2.96	19245	14049	3.85
CVK2-18/35/3000	118 (3000)	43.2	50	58	Max	10V	500	56188	5.62	39517	29243	7.90
			38	46	Med	5V	400	44114	4.41	29803	22069	5.96
			29	37	Min	3V	200	32974	3.30	21445	15651	4.29
CVK2-18/35/3250	128 (3250)	48	51	49	Max	10V	900	61951	6.20	44172	32247	8.83
			40	48	Med	5V	400	48642	4.86	33100	24333	6.62
			30	38	Min	3V	200	36360	3.64	23975	17258	4.80

- Standard heating/cooling output compliant to EN-16430
- Cooling Relative Humidity - 50%
- Sound power levels according to ISO-3745 standard, sound pressure level measured at distance of 6.5ft to the unit, in a 3531ft³ volume room. Reverb time - 0.5s, room damping - 8dB(A)

The manufacturer reserves the right to make changes to the design, colour and specifications of the product shown. All images are for illustrative purposes only and some features such as grilles are optional accessories and not considered as standard equipment

QUICK REFERENCE HEATING/COOLING OUTPUTS FOR CVK4 - 4 PIPE UNITS

									HEATING				COOLING			
									140/120/68°				45/55/80° (50% RH)			
STYLE	MDL DESCRIPTION	MDL#	H INCH	L INCH	HX	D INCH	WATTS	AIRFLOW CFM	BTU/H	FLOWRATE (USGPM)	BTU/H/FT	PD (FT H2O)	TOTAL BTU/h	SENSIBLE BTU/h	FLOWRATE (USGPM)	PD (FT H2O)
HEAT COOL CLI- MA CVK	VERANO TRENCH FAN COIL	CVK4-14/35/800	5.5	31.5	4-PIPE	14	19.2	100.0	5258	0.53	2804	0.36	3263	2943	0.65	0.53
		CVK4-14/35/1000		39.5			21.6	175.0	7495	0.75	2949	0.69	5241	4194	1.05	1.28
		CVK4-14/35/1250		49			33.6	175.0	10639	1.06	3192	1.31	7846	5582	1.57	2.69
		CVK4-14/35/1550		61			40.8	255.0	12756	1.28	2944	1.84	9517	7137	1.90	3.85
		CVK4-14/35/1750		69			43.2	345.0	19658	1.97	3932	4.09	11328	8388	2.27	5.32
		CVK4-14/35/2000		78.5			55.2	345.0	23784	2.38	4107	5.82	13527	10144	2.71	7.39
		CVK4-14/35/2250		88.5			67.2	425.0	27903	2.79	4212	7.82	16091	11907	3.22	10.19
		CVK4-14/35/2500		98.5			50.4	425.0	29492	2.95	3954	8.67	17745	12958	3.55	12.21
		CVK4-14/35/2750		108.5			76.8	500.0	33615	3.36	4054	11.04	19638	14335	3.93	14.73
		CVK4-14/35/3000		118			88.8	500.0	37734	3.77	4154	13.68	22031	16095	4.41	18.23
		CVK4-14/35/3250		128			100.8	500.0	41860	4.19	4221	16.58	24780	17854	4.96	22.66
		CVK4-18/35/800	7	31.5	4-PIPE	14	19.2	100.0	6639	0.66	3541	0.55	5023	4436	1.00	1.18
		CVK4-18/35/1000		39.5			21.6	175.0	9357	0.94	3681	1.03	7700	6247	1.54	2.60
		CVK4-18/35/1250		49			33.6	175.0	12975	1.30	3892	1.89	11253	8661	2.25	5.25
		CVK4-18/35/1550		61			40.8	255.0	15996	1.60	3691	2.79	14223	10676	2.84	8.10
		CVK4-18/35/1750		69			43.2	345.0	18710	1.87	3742	3.73	16862	12490	3.37	11.11
		CVK4-18/35/2000		78.5			55.2	345.0	22331	2.23	3856	5.18	19610	14908	3.92	14.69
		CVK4-18/35/2250		88.5			67.2	425.0	25953	2.60	3917	6.84	23095	17322	4.62	19.89
		CVK4-18/35/2500		98.5			50.4	425.0	28084	2.81	3765	7.92	25946	19194	5.19	24.68
		CVK4-18/35/2750		108.5			76.8	500.0	31688	3.17	3822	9.90	28592	21152	5.72	29.54
		CVK4-18/35/3000		118			88.8	500.0	35306	3.53	3887	12.09	32295	23569	6.46	37.01
		CVK4-18/35/3250		128			100.8	1000.0	38927	3.89	3925	14.49	35593	25987	7.12	44.31

1. Above table shows outputs at fan full speed only. Outputs at medium and minimum speed in following tables.
2. Standard heating/cooling output compliant to EN-16430 at room air temperature 68°F for heating and 80°F for cooling.
3. For all tables: Working Fluid is pure water. Heating Entering Water = 140°F, Leaving Water = 120°F. Cooling Entering Water = 45°F, Leaving Water = 55°F. For outputs with Glycol solution and/or different EWT/LWT, please consult MDL Solutions.



CVK4 5.5 INCHES HIGH

DIMENSIONS

DIMENSIONS	[INCH]
Trench Height	5.5
Trench Width	13.7
Top Width/Grille Width(Bk)	14.7
Trench Length (Lk)	31.5-128

Non-standard (NS) length heaters can be made on order.

ORDER CODE

CVK4-14/35/Lk

Trench Height[cm]

Trench Width[cm]

Trench LengthLk[cm]

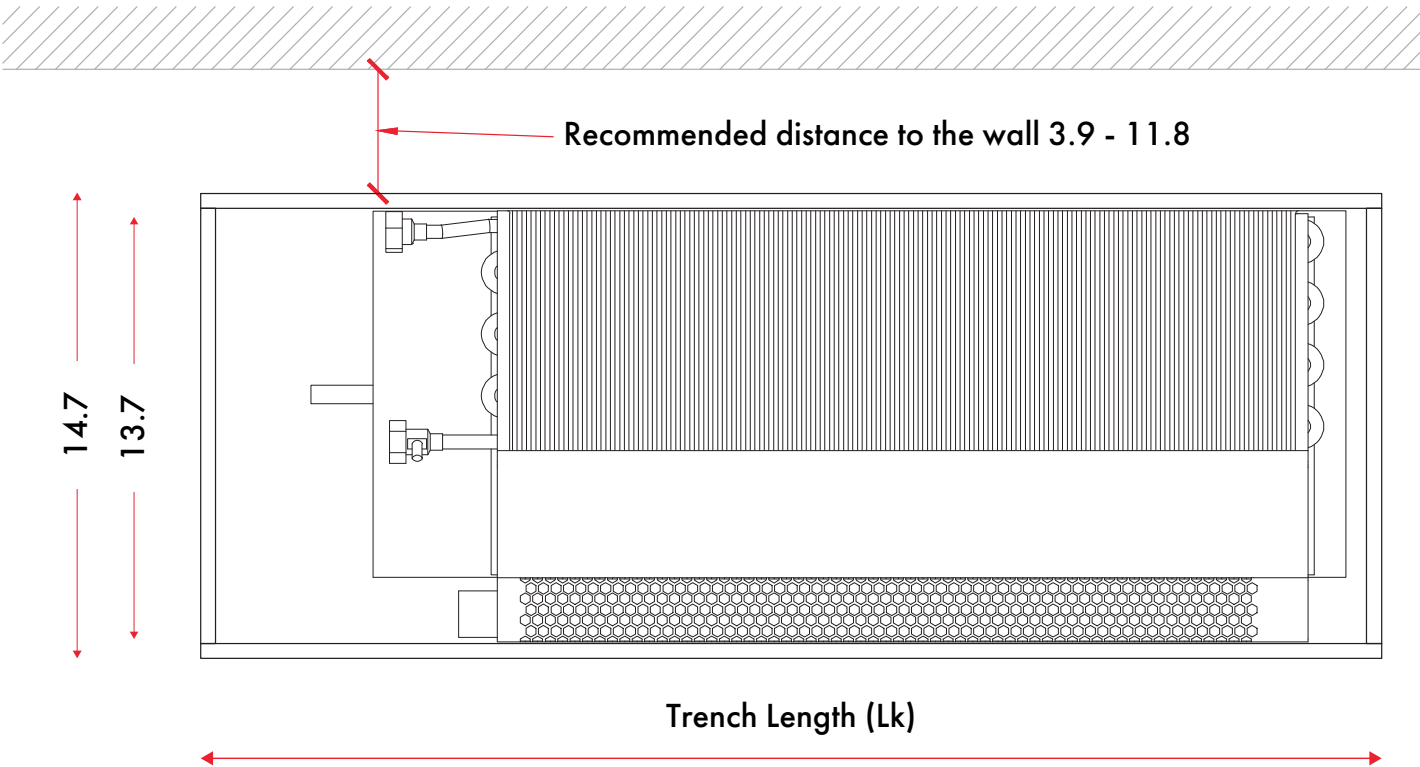
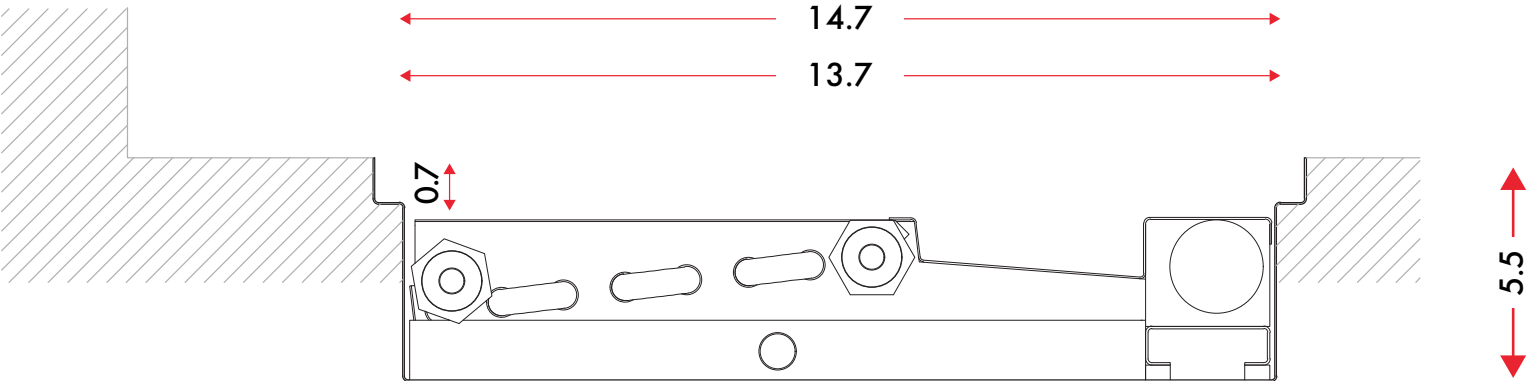
CVK4 - 5.5" HEIGHT - 14" WIDTH

ORDER CODE: CVK5-14/35/L-38

DIMENSIONS	UNIT [INCH]
Trench Height	5.5
Trench Width	13.7
Top Width/Grille Width (Bk)	14.7
Trench Length (Lk)	31.5-128

CONNECTIONS	TYPE
Connection Thread	GW½"
Connection Side	Left(L) standard Right(R) optional

ACCESSORIES	TYPE
Grille 0.70/ 18mm high	Roll-up/Linear
Frames	L or F
Additional Accessories	<ul style="list-style-type: none">• Drainage pump• Fibreboard cover• Raised floor support system• Adjustable casing edge• Dust filter



DIMENSIONS ARE IN INCHES

DETAILED OUTPUT DATA

								140/120/68°		45/55/80° (50% RH)		
MDL#	L INCH (mm)	WATTS	MAX SOUND PRESSURE LEVEL	MAX SOUND POWER LEVEL	FAN SPEED	Volts (0-10)	AIRFLOW CFM	HEATING BTU/h	FLOWRATE UsGPM	TOTAL BTU/h	SENSIBLE BTU/h	FLOWRATE UsGPM
CVK4-14/35/800	31.5 (800)	19.2	40	48	Max	10V	100	5258	0.53	3263	2943	0.65
			25	33	Med	5V	75	3724	0.37	1981	1807	0.40
			<18	<26	Min	3V	35	2534	0.25	1248	1023	0.25
CVK4-14/35/1000	39.5 (1000)	24	41	49	Max	10V	175	7495	0.75	5241	4194	1.05
			26	34	Med	5V	140	5306	0.53	3154	2578	0.63
			19	27	Min	3V	60	3614	0.36	1797	1463	0.36
CVK4-14/35/1250	49 (1250)	33.6	41	49	Max	10V	175	10639	1.06	7846	5582	1.57
			29	37	Med	5V	140	7532	0.75	4801	3659	0.96
			23	31	Min	3V	60	5128	0.51	2677	2073	0.54
CVK4-14/35/1550	61 (155)	40	43	51	Max	10V	255	12756	1.28	9517	7137	1.90
			30	38	Med	5V	205	9029	0.90	5940	4385	1.19
			24	32	Min	3V	95	6148	0.61	3372	2486	0.67
CVK4-14/35/1750	69 (1750)	43.2	43	51	Max	10V	345	19658	1.97	11328	8388	2.27
			30	38	Med	5V	275	13837	1.38	7076	5152	1.42
			24	32	Min	3V	120	9595	0.96	3996	2919	0.80
CVK4-14/35/2000	78.5 (2000)	48	44	52	Max	10V	345	23784	2.38	13527	10144	2.71
			31	39	Med	5V	275	16736	1.67	8320	6237	1.66
			24	32	Min	3V	120	11604	1.16	4692	3529	0.94
CVK4-14/35/2250	88.5 (2250)	55.2	44	52	Max	10V	425	27903	2.79	16091	11907	3.22
			32	40	Med	5V	345	19638	1.96	10008	7314	2.00
			26	34	Min	3V	155	13616	1.36	5681	4143	1.14
CVK4-14/35/2500	98.5 (2500)	40	45	53	Max	10V	425	29492	2.95	17745	12958	3.55
			33	40	Med	5V	345	20753	2.08	11065	7966	2.21
			26	34	Min	3V	155	14393	1.44	6261	4515	1.25
CVK4-14/35/2750	108.5 (2750)	40	45	53	Max	10V	500	33615	3.36	19638	14335	3.93
			33	41	Med	5V	400	23658	2.37	12245	8811	2.45
			27	35	Min	3V	200	16405	1.64	6929	4996	1.39
CVK4-14/35/3000	118 (3000)	43.2	45	53	Max	10V	500	37734	3.77	22031	16095	4.41
			33	41	Med	5V	400	26553	2.66	13745	9156	2.75
			27	35	Min	3V	200	18413	1.84	7880	5606	1.58
CVK4-14/35/3250	128 (3250)	48	46	54	Max	10V	500	41860	4.19	24780	17854	4.96
			34	42	Med	5V	400	31201	3.12	15249	10976	3.05
			28	36	Min	3V	200	20429	2.04	8760	6216	1.75

- Standard heating/cooling output compliant to EN-16430
- Cooling Relative Humidity - 50%
- Sound power levels according to ISO-3745 standard, sound pressure level measured at distance of 6.5ft to the unit, in a 3531ft³ volume room. Reverb time - 0.5s, room damping - 8dB(A)

The manufacturer reserves the right to make changes to the design, colour and specifications of the product shown. All images are for illustrative purposes only and some features such as grilles are optional accessories and not considered as standard equipment



CVK4 7 INCHES HIGH

DIMENSIONS

DIMENSIONS	[INCH]
Trench Height	7.1
Trench Width	13.7
Top Width/Grille Width(Bk)	14.7
Trench Length (Lk)	31.5-128

Non-standard (NS) length heaters can be made on order.

ORDER CODE

CVK4-18/35/Lk

Trench Height[cm]

Trench Width[cm]

Trench LengthLk[cm]

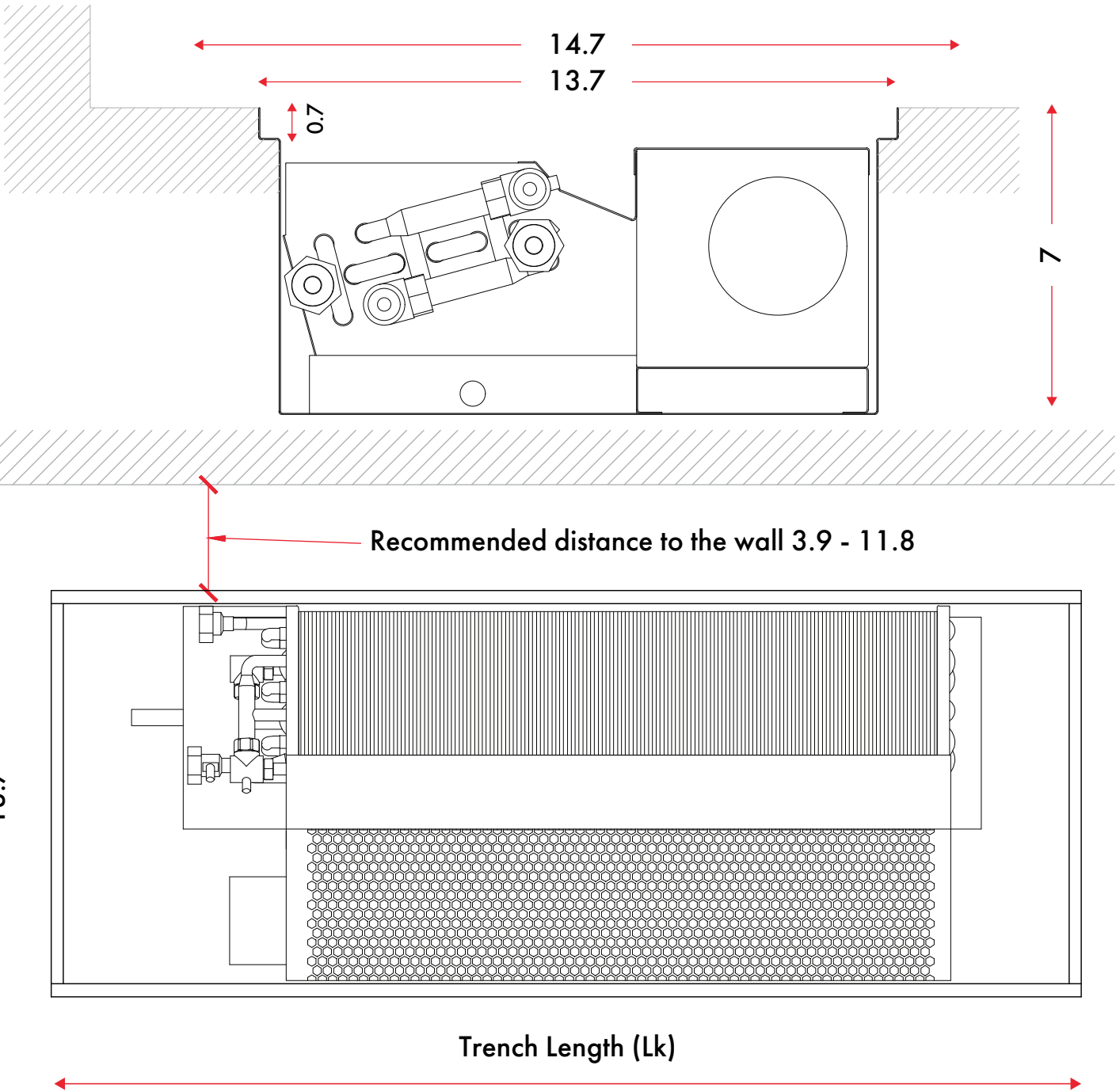
CVK4 - 7" HEIGHT - 14" WIDTH

ORDER CODE: CVK4-18/35/L-38

DIMENSIONS	UNIT [INCH]
Trench Height	7.1
Trench Width	13.7
Top Width/Grille Width (Bk)	14.7
Trench Length (Lk)	30 - 127

CONNECTIONS	TYPE
Connection Thread	GW 1/2"
Connection Side	Left(L) standard Right(R) optional

ACCESSORIES	TYPE
Grille 0.7" high	Roll-up/Linear
Frames	L or F
Additional Accessories	<ul style="list-style-type: none">• Drainage pump• Fibreboard cover• Raised floor support system• Adjustable casing edge• Dust filter



DIMENSIONS ARE IN INCHES

DETAILED OUTPUT DATA

								140/120/68°		45/55/80° (50% RH)		
MDL#	L INCH (mm)	WATTS	MAX SOUND PRESSURE LEVEL	MAX SOUND POWER LEVEL	FAN SPEED	Volts (0-10)	AIRFLOW CFM	HEATING BTU/h	FLOWRATE (USGPM)	TOTAL BTU/h	SENSIBLE BTU/h	FLOWRATE (USGPM)
CVK4-18/35/800	31.5 (800)	19.2	42	45	Max	10V	100	6639	0.66	5023	4436	1.00
			29	37	Med	5V	75	5647	0.56	3812	3372	0.76
			21	29	Min	3V	35	4484	0.45	2568	2387	0.51
CVK4-18/35/1000	39.5 (1000)	24	43	51	Max	10V	175	9357	0.94	7700	6247	1.54
			32	40	Med	5V	140	7955	0.80	5865	4753	1.17
			23	31	Min	3V	60	6322	0.63	4150	3362	0.83
CVK4-18/35/1250	49 (1250)	33.6	46	54	Max	10V	175	12975	1.30	11253	8661	2.25
			35	43	Med	5V	140	11034	1.10	8579	6598	1.72
			25	33	Min	3V	60	8767	0.88	6121	4658	1.22
CVK4-18/35/1550	61 (155)	40	46	54	Max	10V	255	15996	1.60	14223	10676	2.84
			34	42	Med	5V	205	13602	1.36	10850	8129	2.17
			26	34	Min	3V	95	10806	1.08	7771	5746	1.55
CVK4-18/35/1750	69 (1750)	43.2	46	54	Max	10V	345	18710	1.87	16862	12490	3.37
			35	43	Med	5V	275	15911	1.59	12831	9510	2.57
			26	34	Min	3V	120	12640	1.26	9091	6718	1.82
CVK4-18/35/2000	78.5 (2000)	48	48	56	Max	10V	345	22331	2.23	19610	14908	3.92
			36	44	Med	5V	275	18990	1.90	15140	11352	3.03
			27	35	Min	3V	120	15089	1.51	10704	8020	2.14
CVK4-18/35/2250	88.5 (2250)	55.2	49	57	Max	10V	425	25953	2.60	23095	17322	4.62
			38	46	Med	5V	345	22069	2.21	17817	13193	3.56
			28	36	Min	3V	155	17534	1.75	12572	9316	2.51
CVK4-18/35/2500	98.5 (2500)	40	48	56	Max	10V	425	28084	2.81	25946	19194	5.19
			37	45	Med	5V	345	23880	2.39	20026	14611	4.01
			28	36	Min	3V	155	18973	1.90	14137	10322	2.83
CVK4-18/35/2750	108.5 (2750)	40	49	57	Max	10V	500	31688	3.17	28592	21152	5.72
			38	46	Med	5V	400	26945	2.69	22069	16102	4.41
			29	37	Min	3V	200	21407	2.14	15580	11375	3.12
CVK4-18/35/3000	118 (3000)	43.2	50	58	Max	10V	500	35306	3.53	32295	23569	6.46
			38	46	Med	5V	400	30024	3.00	24596	17946	4.92
			29	37	Min	3V	200	23856	2.39	17595	12678	3.52
CVK4-18/35/3250	128 (3250)	48	51	49	Max	10V	1000	38927	3.89	35593	25987	7.12
			40	48	Med	5V	750	33103	3.31	27088	19791	5.42
			30	38	Min	3V	600	26301	2.63	19392	13974	3.88

- Standard heating/cooling output compliant to EN-16430
- Cooling Relative Humidity - 50%
- Sound power levels according to ISO-3745 standard, sound pressure level measured at distance of 6.5ft to the unit, in a 3531ft³ volume room. Reverb time - 0.5s, room damping - 8dB(A)

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ROOM TEMPERATURE CONTROLLER VER-24



TOUCHSCREEN

0.8" FRONT PANEL GLASS

FLUSH MOUNTING

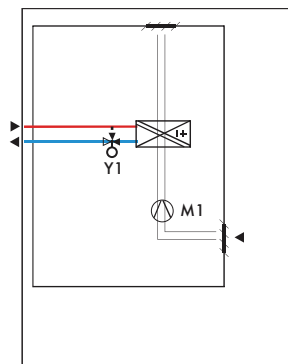
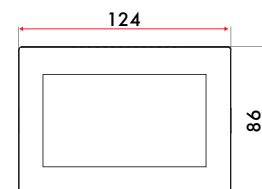
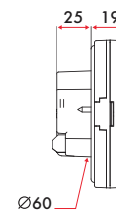
ROOM TEMPERATURE CONTROLLER VER-24

- For fan forced convection
- For heating/cooling 2-pipe and 4-pipe units
- Output 0-0V DC for fan switched electronically (ECM) 24 V
- Control output 0-10 V or ON / OFF (24V valve)
- Heating or cooling mode
- Mode: comfortable, economical and protection
- Mode selection: Manual or weekly program
- Color touch display
- Built-in room sensor

The VER-24 Room controller regulates the fan and valves in order to keep the room temperature at a set point. Depending on the selected mode, the controller will either increase the room temperature (heating mode) or decrease it (cooling mode). The controller smoothly regulates the fan by either gradually increasing or decreasing its speed (depending on the demand) and the valve operation by gradually increasing or decreasing the degree of opening (depending on the demand). In addition, the controller can regulate the work of the second valve—opening or closing it depending on demand.

VER-24 Room controller is designed for a flush mounting.

Currently this feature is only available in Europe.



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CVK UNITS CONTROL OPTIONS

Heating and cooling CVK units are meant to be installed in the floor. They can be divided into two groups depending on the unit's construction and characteristics.

The CVK2 unit heat exchanger has one loop that can be use only for either heating or cooling. Only one set of valves and thermal actuator is required.

The CVK4 unit heat exchanger has two loops, one for heating and one for cooling. Proper CVK unit operation depends on:

- Correct central heating and cooling installation
- Proper installation and setup

Control system includes:

- Room air controller connected to the thermal actuators and fans
- 24 V DC rail power supply (transformer)

Thanks to the built-in temperature sensor, the room air controller ensures the ambient temperature stays at the set level

- By controlling the thermostatic valve opening/closing
- By controlling the fan speed

Due to the ambient temperature sensor, the room air controller should not be covered by furniture or curtains. Each heating/cooling zone should be controlled by one room air controller. For BMS, the room controller and temperature sensor are usually two separate devices. Due to the use of safe fans and low-voltage actuators, fan assisted units must be supplied with 24 V DC.

The 24 V DC power supply should be protected by an appropriate over current circuit breaker and an installation disconnecter that allows the power to be turned off while conducting service work.

IT IS FORBIDDEN TO CONNECT THE UNIT DIRECTLY TO THE AC MAINS POWER GRID. CVK UNITS MUST BE POWERED THROUGH THE 24V DC POWER SUPPLY (TRANSFORMER).

An example of power supply selection is shown the following pages. The recommended type of cabling in the regulatory system is LIY or LIYCY.

NOTE

Electrical work should only be done by a skilled electrician who can confirm their certification. Power can only be switched back on when the accuracy of the entire wiring has been checked and approved.

USING BUILDING MANAGEMENT SYSTEMS

CVK units can work in any building and are compatible with any building management system.

STANDARD ROOM AIR CONTROLLER

Each heating zone has a separate controller, which is responsible for readout of the temperature in the room and controlling the output of connected heating/cooling units. Each controller is independent and does not interfere with controllers in other zones. Each of the controllers must be programmed separately.

Example: VER-24S, VER-24 WiFi, SIEMENS RDG160T

BUILDING MANAGEMENT SYSTEM (BMS)

The aim of BMS is to integrate various installations and devices in the building, which allows to economically and effectively manage an entire facility from one place. BMS is very common in offices and commercial buildings, and is becoming more common in residential housing.

Connection of CVK units to a BMS brings many benefits, such as:

- Linking with the rest of the HVAC system - ventilation, air conditioning, etc.
- The possibility of linking with other systems in the building - blinds, lighting, audio/video, etc.
- Quickly adjust the equipment
- Operation parameters to the expectations of the investor or tenant
- The possibility of assigning devices to other heating zones in the event of a change in the arrangement – e.g. Open Space areas in office buildings

VERANO offers solutions to enable CVK units in the following BMS:

- BACnet

Example: Siemens RDG160KN (for KNX system), VERANO BMS modules

CVK UNITS HYDRONIC CONTROLLING

CVK2 units are designed for 2 pipe changeover applications where a single pipe system is used for heating in the winter and cooling in the summer. CVK4 units are intended for four pipe applications where there is separate & dedicated heating and cooling piping.

Designers and contractors must take care to properly design the system to ensure proper flow rates that optimize heat transfer with ideal temperature differences (Δt) typically being:

- Δt - 10°F for cooling
- Δt - 20°F for heating

Thermostatic and lockshield valves must comply to special requirements due to the high water flow caused by small Δt temperatures. The range of operation of standard radiator valves used in classic wall, floor or trench convectors allows for maximum flow of the medium at the level of 0.5 - 1.0 GPM, while valves dedicated to cooling and heating units allow for flow of up to 2.2 GPM. The use of valves with an incorrect flow range causes installation noise and restrain heating and cooling outputs.

THERMAL ACTUATORS AND PICV VALVES

SIEMENS VPD MINI-COMBI VALVES

- Recommended for CVK units
- Pre-set value of kv - achieved by limiting the valve stroke
- Possibility of manual and temporary operation of the installation during assembly works
- Water flow: 90 - 185 l/h for the KPL1 set: from, and from 200 to 483 l/h for the setvKPL2
- Minimum required differential pressure: 0.06-0.20 bar - depending on the type of unit
- Maximum allowable differential pressure: 2.0 bar
- Thermal actuator thread: M30x1,5



0-10V DC CONTROLLING THERMAL ACTUATOR

- Supplied with 24 V DC
- 1W power consumption
- Max current: 300 mA
- Open/Closed time: 150s



ADAPTATION MODULE FOR CVK2

This module is recommended for facilities with a 4-pipe installation in which the heater has connection only to a 2-pipe system. In addition, it allows you to connect a heater to the central heating system supplied from the municipal network and from the chilled water installation.

The module includes:

- 6-port control ball valve Siemens VWG41
- Actuator for ball valves Siemens GDB161
- Lockshield valves set (4x ½" elbow, 4 x ½" muff)
- ½" connection threads for heating and cooling installation,
- ½" connection threads for CVK unit.



Example of Assembly



ADAPTATION MODULE FOR CVK2

Size: 5.5 or 7 in deep,
13.7 in wide, 15.7 in long

CVK UNIT ADDITIONAL EQUIPMENT

- Condensate pump - can be installed inside of the heater casing
- Assembly protective fiberboard cover
- Dust filter that can be installed on the fan (increases heater height by 0.4 in)
- Support system for raised floor
- Frames and grilles (aluminum, stainless steel etc.)

RAIL POWER SUPPLY SELECTION

1. Using the tables for CVK units in this catalog, determine the maximum fan power demand and maximum current. Choose the maximum value for units (value for boost mode).
2. Using the data sheet for thermal actuator define the maximum power demand and maximum current. For VERSST24 0-10 VDC maximum power is 1W and maximum current is 0.3A.
3. Using the data sheet for the controller define the maximum power demand and maximum current. For VER-24(S) 0-10 VDC maximum power is 1.3W and maximum current is 0.06A.
4. Sum all power values. Then sum all current values.
5. Choose the proper rail power supply by choosing the one that has slightly higher power and current values than your power and current values.

Selecting rail power supply with power demand value lower than heater power demand might cause the fan to deactivate at higher speeds and eventual failure.

EXAMPLE OF RAIL POWER SUPPLY SELECTION

There are two heating and cooling units in the room:

- 1x CVK2-14/35/1550
- 2x CVK2-14/35/2250.

There are 3 thermal actuators (1 per CVK unit). And one Room air controller VER-24. Using the power and current data for CVK units and controls following values has been defined.

TYPE	MAX CURRENT	MAX POWER
1X CVK2-14/35/1550 HEATING AND COOLING UNIT	1 x 40.8	1 x 1.7
2 X CVK2-14/35/2250 HEATING AND COOLING UNIT	2 x 67.2	2 x 2.8
3X 0-10 THERMAL ACTUATOR	3 x 1 W	3 x 0.3 A
1X VER-24 ROOM AIR CONTROLLER	1 x 1.3 W	1 x 0.06 A
SUM	179.5 W	8.26 A

CVK SINGULAR CONTROLS



VER-24 S / VER-24 WIFI

- For 2-pipe installation
- Room air temperature control
- Built-in temperature sensor
- Inputs for 0-10V DC thermal actuator and for ON/OFF NC/NO thermal actuator
- 24 V DC control voltage
- Wireless controlling via Wifi (for VER-24 Wifi only)
- *Currently this feature is only available in Europe*



VER-44 WIFI

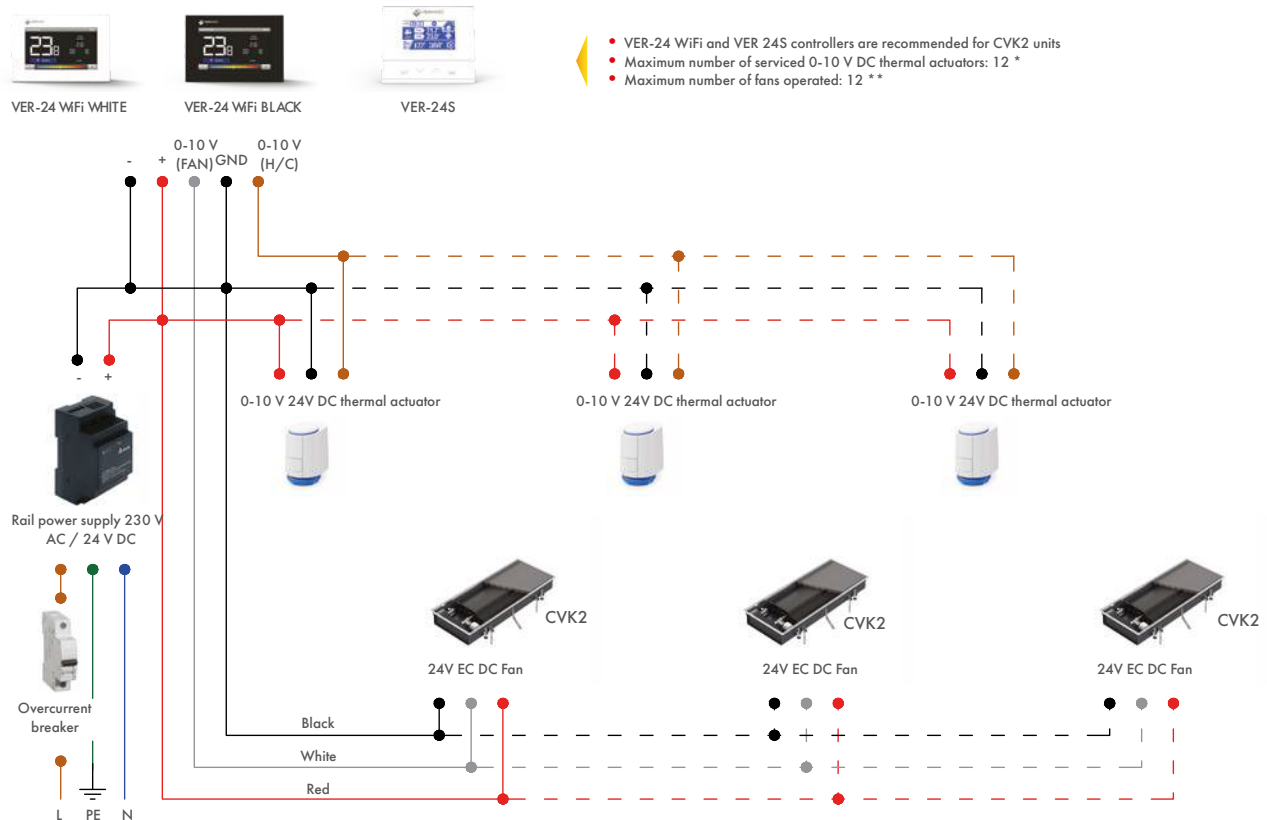
- For 2-pipe installation
- Room air temperature control
- Built-in temperature sensor
- Inputs for 0-10V DC thermal actuator and for ON/OFF NC/NO thermal actuator
- 24 V DC control voltage
- Colourful display
- *Currently this feature is only available in Europe*



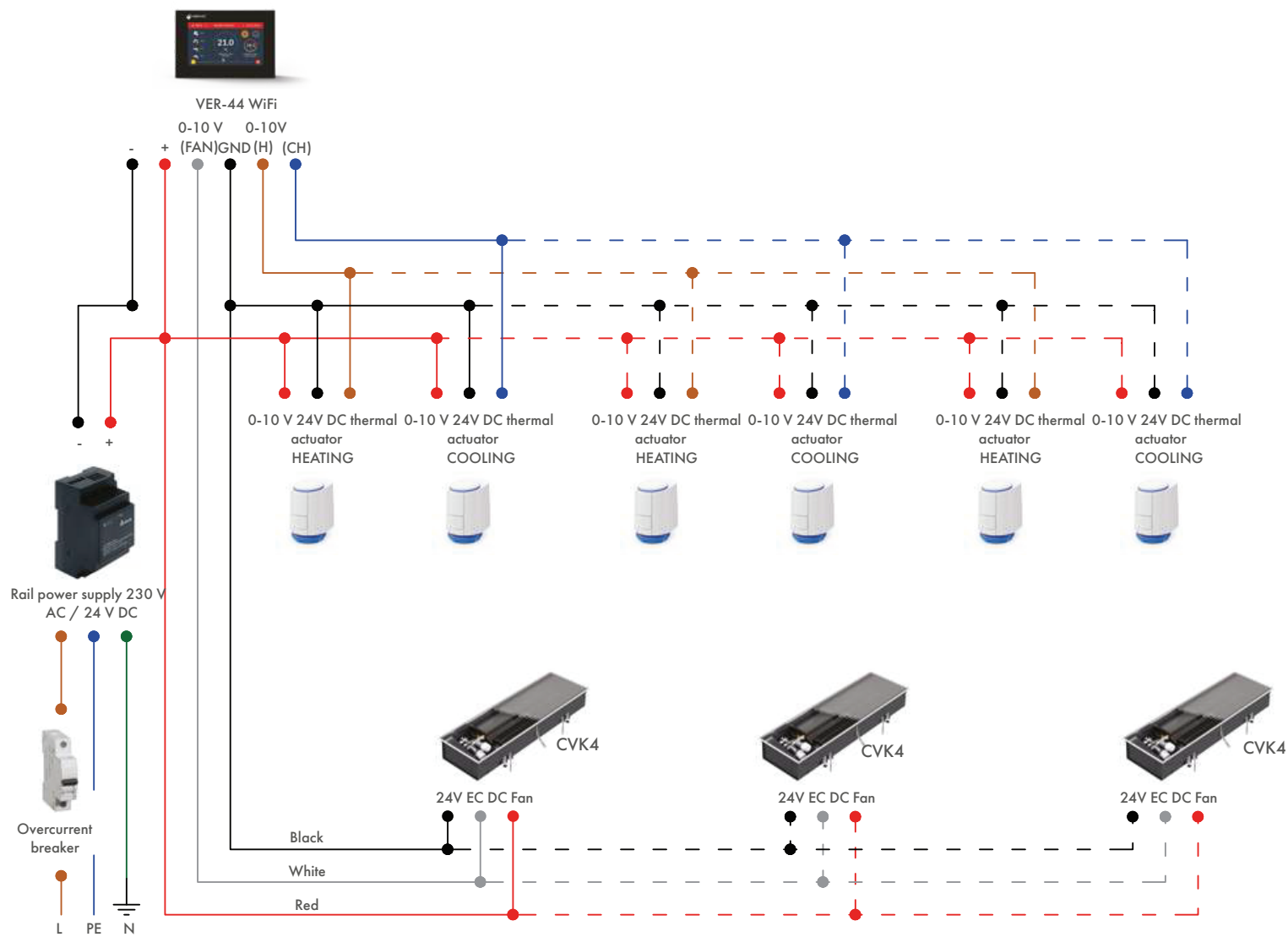
RDG160T

- For 2-pipe installation
- Room air temperature control
- Built-in temperature sensor
- Inputs for 0-10V DC thermal actuator and for ON/OFF NC/NO thermal actuator
- 24 V DC control voltage

CVK2 CONNECTION SCHEME - WITH VER-24 / VER-24 S ROOM AIR CONTROLLER

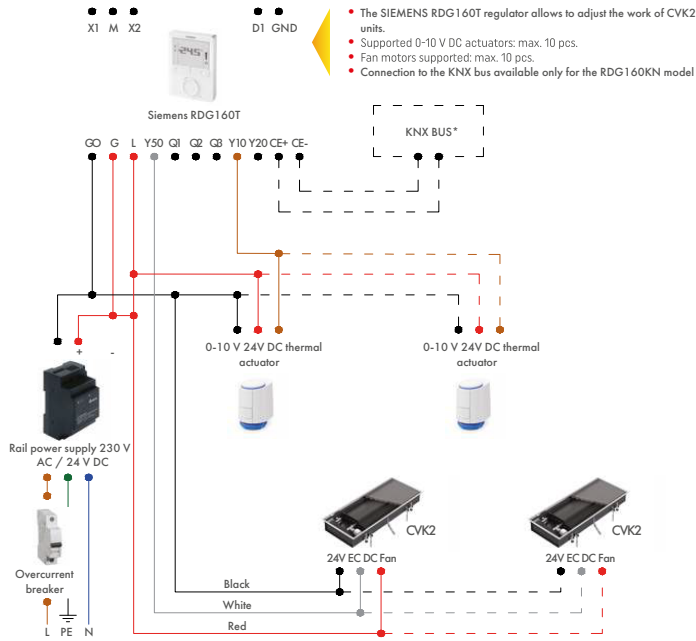


CVK4 CONNECTION SCHEME - WITH VER-44 WIFI ROOM AIR CONTROLLER

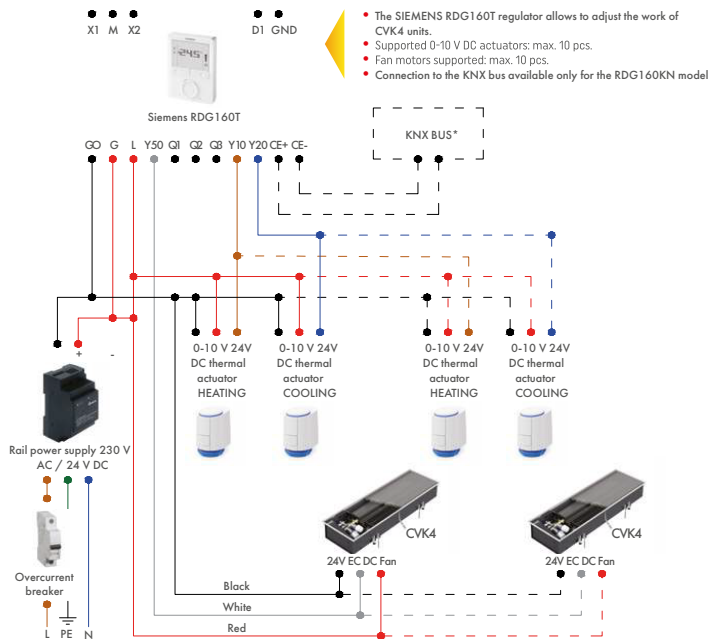


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CVK2 / CVK4 CONNECTION SCHEME - WITH RDG160T / RDG160KN ROOM AIR CONTROLLER



Przykładowy schemat podłączeniowy jednego lub kilku klimakonwektorów CVK2



An exemplary connection diagram of one or several CVK4 units

CONFIGURATION OF BASIC WORK PARAMETERS RDG160T CVK4 UNIT

CONFIGURATION OF SWITCHES INSIDE THE REGULATOR

DIP1	OFF	<div>ON</div> <div> <div></div> <div></div> <div></div> <div></div> <div></div> </div> <div>1 2 3 4 5</div>
DIP2	OFF	
DIP3	ON	
DIP4	OFF	
DIP5	OFF	

SETTING OF OPERATION PARAMETERS RDG160T

Press the two buttons on the regulator for at least 3 seconds. Then release both buttons and press the left button for another 3 seconds. Without releasing, turn the controller's knob half a turn anti-clockwise.

The display will show the symbol of parameter, which confirms the entry into the service settings mode.

The parameter is selected by turning the knob and confirming with the right button (OK). Use the knob to set the desired value, eg changing the setting P52=1, after changing P52=2. Use the right button to accept the selection. After finishing the settings, press the left button (ESC).

CONFIGURATION OF BASIC WORK PARAMETERS RDG160T CVK2 UNIT

CONFIGURATION OF SWITCHES INSIDE THE REGULATOR

DIP1	ON	<div>ON</div> <div> <div></div> <div></div> <div></div> <div></div> <div></div> </div> <div>1 2 3 4 5</div>
DIP2	OFF	
DIP3	OFF	
DIP4	OFF	
DIP5	OFF	

CVK2 RECOMMENDED SETTINGS OF INDIVIDUAL WORK PARAMETERS

PARAMETER	SETTING	DESCRIPTION
P01	0	HEATING ONLY
	1	COOLING ONLY
P05	-3...3K	SENSOR CALIBRATION
P30	0.5...6K	P-BAND/SWITCHING DIFFERENTIAL IN HEATING MODE
P31	0.5...6K	P-BAND/SWITCHING DIFFERENTIAL IN COOLING MODE
P38	0	FUNCTIONALITY OF EXTERNAL SENSOR
P40	0	
P42	0	
P46	2	OUTPUT FOR 0-10V DC
P52	1	FAN OPERATION
P60	89 MIN	FAN KICK INTERVAL IN COMFORT MODE
P61	359 MIN	FAN KICK INTERVAL IN ECONMY MODE

CVK4 RECOMMENDED SETTINGS OF INDIVIDUAL WORK PARAMETERS

P01	4	CONTROL SEQUENCE - HEATING AND COOLING
P05	-3...3K	SENSOR CALIBRATION
P30	0.5...6K	P-BAND/SWITCHING DIFFERENTIAL IN HEATING MODE
P31	0.5...6K	P-BAND/SWITCHING DIFFERENTIAL IN COOLING MODE
P33	0.5...6K	DEAD ZONE IN COMFORT MODE
P38	0	FUNCTIONALITY OF EXTERNAL SENSOR
P40	0	
P42	0	
P46	2	OUTPUT FOR 0-10V DC(HEATING)
P47	2	OUTPUT FOR 0-10V DC(COOLNG)
P52	1	FAN OPERATION
P60	89 MIN	FAN KICK INTERVAL IN COMFORT MODE
P61	359 MIN	FAN KICK INTERVAL IN ECONMY MODE

Heat Exchanger
(Copper- Aluminum)

Connection Space Cover

Trench (casing)

Fan Cover

Fan

Airflow Targeting Sheet

Heat Exchanger Fixing Element

Air Vent

Supply and Return Connection for Central Heating

Fixing Anchor

Additional Opening For The Connection Pipes

Leveling/ Fixing Anchor

VCVK4 4-PIPE VENTILATION CLIMACONVECTOR – AIR INTAKE

EQUIPMENT

STANDARD EQUIPMENT

- Trench (casing) made of steel coated with zinc-magnesium, standard powder coating black RAL 9005
- High capacity copper - aluminum heat exchanger coated in black with air vent, 24 V DC fan with EC motor (Tangential fan option)
- Connection space cover
- Fan cover
- Strut assembly
- Coated condensate drip pan
- 3/4" condensate connection
- Fixing anchors
- Duct connection Ø 4inch mechanical ventilation
- Built-in air flow modulator

ADDITIONAL EQUIPMENT

- Trench (casing) powder coated in any color RAL
- Condensate removal kit
- Decorative frame around trench casing type L or F made natural aluminum or anodized, power coated in RAL, anodized
- Aesthetic grille made of aluminum (natural anodized or powder coated in any color RAL) or stainless steel
- Installation cover to protect fan coil unit from damage during transport and installation
- Dust filter
- Insulation between trench casing and grille
- Height adjustments
- Mounting kit for raised floor

DIMENSIONS

DIMENSIONS	[INCH]
Trench Height	7
Trench Width	14
Trench Length (Lk)	49-108.5

Non-standard (NS) length heaters can be made on order.

ORDER CODE

VCVK4-18/35/Lk

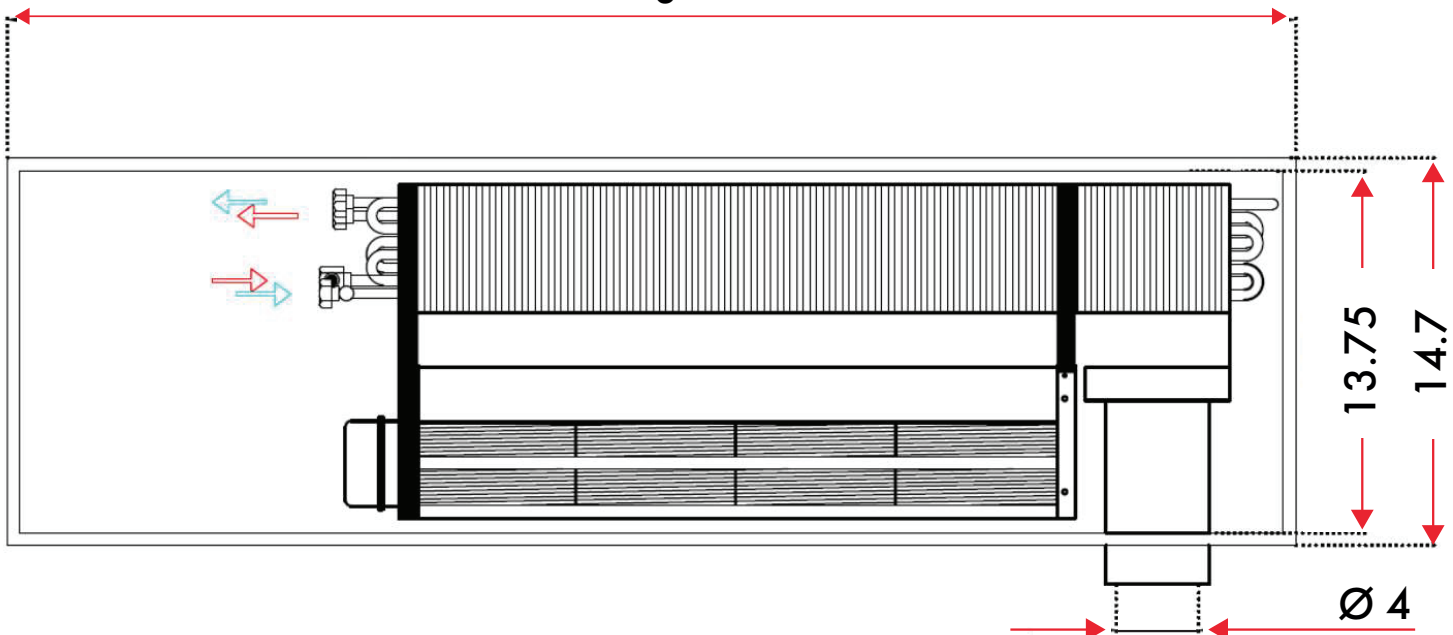
Trench Height[cm]

Trench Width[cm]

Trench LengthLk[cm]

ORDER CODE: VCVK4-18/35/L

ACCESSORIES	TYPE
Grille	Roll-up/Linear/Modular
Aluminum Frame	L or F
Additional Accessories	<ul style="list-style-type: none"> • Protective Installation cover • Sound Damping, raised floor mount bracket • Height adjustable Particle filter



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QUICK REFERENCE OUTPUT

							HEATING				COOLING			
							140/120/68°F				45/55/80°F(50% RH)			
MDL#	H INCH	L INCH	HX	D INCH	WATTS	AIRFLOW CFM	BTU/h	FLOWRATE U _s GPM	BTU/h/FT	PD (FT-H ₂ O)	TOTAL BTU/h	SENSIBLE BTU/h	FLOWRATE U _s GPM	PD (FT-H ₂ O)
VCVK4-14/35/800	7	31.5	2-PIPE	14	24	345	7621	0.76	2286	0.71	6332	4948	1.27	1.81
VCVK4-14/35/1000		39.5			26.4	425	13302	1.33	2297	1.98	11246	8787	2.25	5.25
VCVK4-14/35/1250		49			48	500	18976	1.90	2289	3.83	16088	12569	3.22	10.18

- Standard heating/cooling output compliant to EN-16430
- Cooling Relative Humidity - 50%
- Sound power levels according to ISO-3745 standard, sound pressure level measured at distance of 6.5ft to the unit, in a 3531ft³ volume room. Reverb time - 0.5s, room damping - 8dB(A)

DETAILED OUTPUT DATA

								140/120/68°F		45/55/80°F(50% RH)		
MODEL NUMBER	L INCH (MM)	WATTS	MAX SOUND PRESSURE LEVEL	MAX SOUND POWER LEVEL	FAN SPEED	VOLTS (0-10)	AIRFLOW CFM	HEATING BTU/h	FLOWRATE U _s GPM	TOTAL BTU/h	SENSIBLE BTU/h	FLOWRATE U _s GPM
VCVK4-18/35/1250	49 (1250)	24	47	56	Max	10V	345	7621	0.76	6332	4948	1.27
			35	45	Med	5V	275	5961	0.60	4682	3655	0.94
			<18	<26	Min	3V	120	4191	0.42	2646	2066	0.53
VCVK4-18/35/2000	78.5 (2000)	26.4	50	59	Max	10V	425	13302	1.33	11246	8787	2.25
			38	48	Med	5V	345	10455	1.05	7754	6059	1.55
			<18	<26	Min	3V	155	7311	0.73	4610	3601	0.92
VCVK4-18/35/2750	108.5 (2750)	48	51	61	Max	10V	500	18976	1.90	16088	12569	3.22
			41	50	Med	5V	400	15000	1.50	11140	8705	2.23
			19	20	Min	3V	200	10427	1.04	6574	5135	1.31

Cooling output according to EN 16430 Cooling capacity may vary depending on the temperature of the supply air; Shown at 50% RH.

- Standard heating/cooling output compliant to EN-16430
- Cooling Relative Humidity - 50%
- Cooling capacity may vary depending on the temperature of the supply air
- Sound power levels according to ISO-3745 standard, sound pressure level measured at distance of 6.5ft to the unit, in a 3531ft³ volume room. Reverb time - 0.5s, room damping - 8dB(A)

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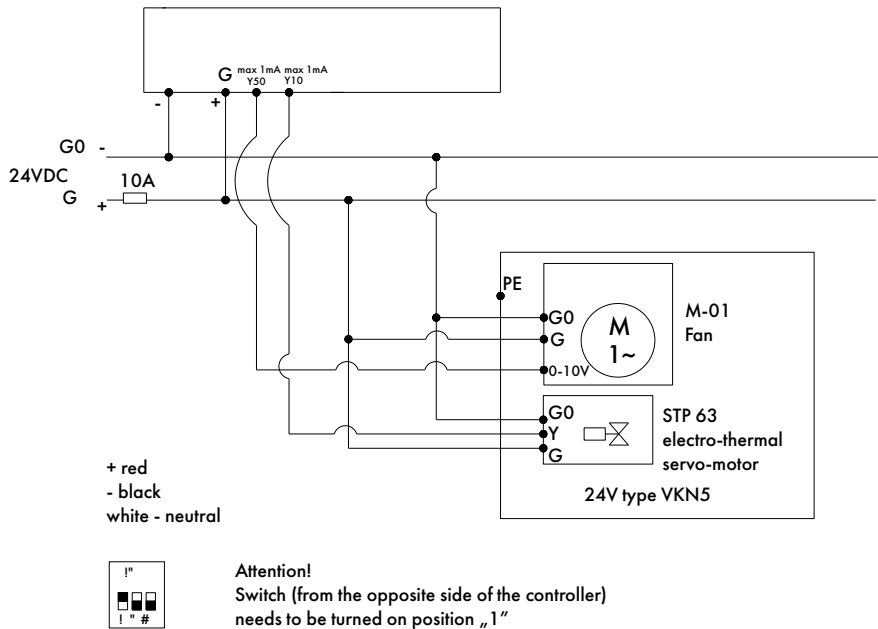
LOW VOLTAGE

ELECTRICAL CONNECTION INSTRUCTION

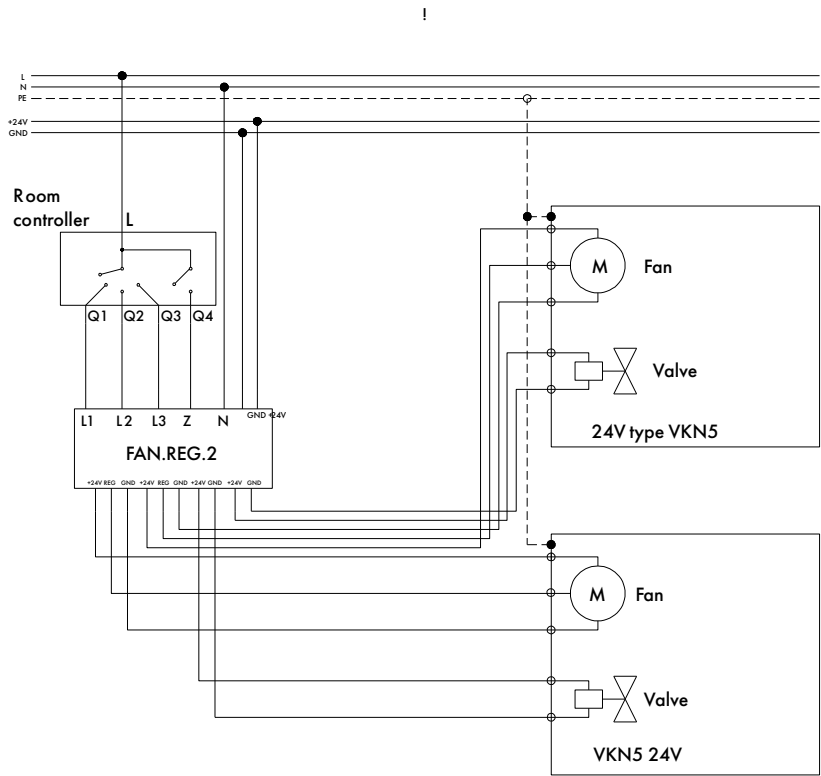
Attention!

Electrical connections may only be completed by appropriately licensed personnel and in compliance with the local electrical building codes.

Voltage can only be turned on after thorough inspection of the entire connection diagram. It is prohibited to supply power directly from the main voltage of 120 - 230 V




Wiring diagram for the RDG160T



Wiring diagram for the other controllers

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CONTROL DEVICES FOR CVK TRENCH UNITS

NAME	DESCRIPTION	
Straight thermostatic valve type Siemens VDN 215	Valve diameter 15 DN	
Angular thermostatic valve type Siemens VEN 215	Valve diameter 15 DN	
Straight return valve type Siemens ADN 15	Valve diameter 15 DN	
Angular return valve type Siemens AEN 15	Valve diameter 15 DN	
Straight thermostatic valve type Schlösser 601200004	Valve diameter 15 DN	
Angular thermostatic valve type Schlösser 601200005	Valve diameter 15 DN	
Straight return valve type Schlösser 601300004	Valve diameter 15 DN	
Angular return valve type Schlösser 601300002	Valve diameter 15 DN	
Thermal servo-motor type Siemens STA 73 or STA 73/00	Supply voltage 24 V AC/DC, 2-position control. STA73 with 1 m connection cable, STA73/00 – need a separate cable ASY23L...	
Cable – type Siemens ASY23L...	Connection cable for STA 73/00 control mode 0...10 V, length of 6.6 ft, 9.8 ft and 16.4 ft, 2-position control	
VERANO controller type VER-24B (White)	The control mode 0 ... 10V or ON / OFF (valve 24V). Ability to work in heating or cooling mode. Operating modes: comfort, economical and security.	
VERANO controller type VER-24C (Black)	The control mode 0 ... 10V or ON / OFF (valve 24V). Ability to work in heating or cooling mode. Operating modes: comfort, economical and security.	
Room temperature controller type Siemens RDG160T	The control mode 0 ... 10V or ON / OFF (valve 24V). Ability to work in heating or cooling mode. Operating modes: comfort, economical and security.	
Rail Power Supply Z030-24VDC	Input voltage 100-240V AC, Input frequency 50-60Hz, Output voltage 24V DC, Max output current 1.25A	
Rail Power Supply Z060-24VDC	Input voltage 100-240V AC, Input frequency 50-60Hz, Output voltage 24V DC, Max output current 2.5A	
Rail Power Supply Z100-24VDC	Input voltage 100-240V AC, Input frequency 50-60Hz, Output voltage 24V DC, Max output current 3.8A	
Rail Power Supply Z120-24VDC	Input voltage 100-240V AC, Input frequency 50-60Hz, Output voltage 24V DC, Max output current 5A	
Rail Power Supply Z240-24VDC	Input voltage 100-240V AC, Input frequency 50-60Hz, Output voltage 24V DC, Max output current 10A	
Rail Power Supply Z480-24VDC	Input voltage 100-240V AC, Input frequency 50-60Hz, Output voltage 24V DC, Max output current 20A	

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