VTS EUROHEAT

VOLCANO

VR1 / VR2 / mini

water heater

VOLCANO

VOLCANO water heaters meet the requirements of the most demanding customers

- Low noise operation
- Failure-free operation
- High efficiency

VOLCANO heaters form an integral part of modern heating systems. Used in buildings of medium and large capacity, they eliminate the problem of underheating and the negative influence of atmospheric conditions onto the inside of the building.

NEW

- Immediate availability
- Superb price
- Low maintenance costs
- Durable and aesthetic design made using the latest technology
- Small dimensions and low weight

VOLCANO mini

3 options

decide yourself what your VOLCANO mini will look like

The device is delivered with 3 sets of panels with different patterns.

- **maximum air discharge - 2000 m³/h**
- **3-20 kW power**
- **weight - 9.8 kg**
- **double row exchanger**
- **air guides with reduced air resistance**

* Lifetime warranty on the casing of all VTS EUROHEAT products. Details in Warranty Conditions in Technical Documentation available on www.vtsgroup.com

APPLICATION

- production halls
- workshops
- supermarkets
- sports facilities
- storages
- warehouses

NEW

TECHNICAL DATA

		VOLCANO VR MINI
unit heater row number	-	2
maximum air discharge	m^3/h	2000
heating power range	kW	3-20
maximum heating medium temperature	°C	120
maximum working pressure	MPa	1.6
maximum horizontal air reach	m	14
maximum vertical air reach	m	8
water capacity	dm^3	1.05
connector pipe diameter	"	3/4
device weight	kg	9.8
supply voltage	V/Hz	~ 230/50
motor power	kW	0.124
nominal current	A	0.54
motor revolution	rpm	1350
motor IP	-	44

CONSOLE:

- can be rotated horizontally within the angle of +/-60°
- can be adjusted vertically within the angle of +/-20°

* assembly hole spacing

AUTOMATION

HEATING CAPACITY

		Parameters T_z/T_p [°C]															
		50/30 [°C]				70/50 [°C]				80/60 [°C]				90/70 [°C]			
	Qp [m^3/h]	P_g [kW]	T_{p2} [°C]	Q_w [m^3/h]	Δp [kPa]	P_g [kW]	T_{p2} [°C]	Q_w [m^3/h]	Δp [kPa]	P_g [kW]	T_{p2} [°C]	Q_w [m^3/h]	Δp [kPa]	P_g [kW]	T_{p2} [°C]	Q_w [m^3/h]	Δp [kPa]
0	2000	8.8	13	0.38	3.3	14.3	21	0.63	7.7	17.0	25	0.75	10.4	19.7	29	0.87	13.6
	1200	6.5	16	0.28	1.9	10.6	26	0.47	4.4	12.6	31	0.56	6.0	14.6	36	0.65	7.7
	700	4.6	20	0.20	1.0	7.5	32	0.33	2.4	8.9	38	0.39	3.2	10.3	44	0.46	4.0
5	2000	7.5	16	0.32	2.4	13.1	25	0.57	6.5	15.8	29	0.70	9.1	18.5	33	0.82	12.0
	1200	5.5	19	0.24	1.4	9.7	29	0.43	3.7	11.7	34	0.52	5.2	13.7	39	0.61	6.8
	700	3.9	22	0.17	0.8	6.9	34	0.30	2.0	8.3	40	0.37	2.8	9.7	46	0.43	3.6
10	2000	6.1	19	0.27	1.7	11.8	28	0.52	5.4	14.5	32	0.64	7.8	17.2	36	0.76	10.5
	1200	4.5	21	0.20	1.0	8.8	32	0.38	3.1	10.8	37	0.48	4.5	12.8	42	0.57	6.0
	700	3.2	24	0.14	0.5	6.2	37	0.27	1.7	7.6	43	0.34	2.4	9.0	48	0.40	9.9
15	2000	4.7	22	0.20	1.1	10.5	31	0.46	4.3	13.2	35	0.58	6.6	16.0	39	0.71	9.2
	1200	3.5	24	0.15	0.6	7.8	34	0.34	2.5	9.8	39	0.43	3.8	11.8	44	0.52	5.2
	700	2.3	25	0.10	0.2	5.5	39	0.24	1.4	7.0	45	0.31	2.0	8.4	51	0.37	2.8
20	2000	3.1	25	0.14	0.5	9.2	34	0.40	3.4	12.0	38	0.53	5.4	14.7	42	0.65	7.8
	1200	2.0	25	0.09	0.2	6.8	37	0.30	2.0	8.9	42	0.39	3.1	10.9	47	0.48	4.5
	700	1.1	25	0.05	0.1	4.9	41	0.21	1.1	6.3	47	0.28	1.7	7.7	53	0.34	2.4

T_z - inlet water temperature
T_p - return water temperature
T_{p1} - inlet air temperature
T_{p2} - outlet air temperature
P_g - device heating capacity
Q_p - air flow rate
Q_w - water flow
Δ_p - pressure drop in heat exchanger

SPEED CONTROLLER

The fan of the AGC control 0.6/1	-	III	II	I
controller output voltage	V	230	130	85
fan airflow	m^3/h	2000	1200	700
motor power	W	124	78	38
horizontal reach	m	14	8	5
vertical reach	m	8	5	3
noise level*	dB(A)	52.3	41.6	28.8

* reference conditions: room capacity 1500 m^3, measurements taken at a distance of 5 m

VOLCANO VR1

- 0-30 kW power
- single row exchanger
- very favorable price/heating power ratio

VOLCANO VR2

- 30-60 kW power
- double row exchanger
- very favorable price/heating power ratio

Casing

- resistant to high temperatures and corrosion
- aesthetic appearance
- plastic housing
- promotes ecology and recycling
- lifetime warranty on casing

Air blades

- directing hot air stream in 4 positions
- optimum air stream reach

Console

- possibility to adjust vertically by the angle of ±20°
- in order to facilitate the installation the console is divided into parts: base + handle

Installation

- quick, easy and aesthetic installation
- light and modern construction of the mounting bracket
- possibility of horizontal rotation of the device by the angle of ±60°

Axial flow fan

- high efficiency at low energy consumption
- air discharge adjustment at full range of fan operation
- blade profile and correct bearing ensure silent and effcient operations

Automation

- automations components from renowned global manufactures
- simple, functional and proven control solutions

* Lifetime warranty on the casing of all VTS EUROHEAT products.
Details in Warranty Conditions in Technical Documentation available on www.vtsgroup.com

- RELIABLE EUROPEAN QUALITY AND ATTRACTIVE PRICE
- VERSATILE APPLICATION
- HIGH PRODUCTION CAPACITY
- LOW COSTS OF OPERATION
- LOW LEVEL OF NOISE AND LIGHT WEIGHT OF APPLIANCE
- QUICK & EASY INSTALLATION

a new unit offered within the warranty period
5year
WARRANTY

ADVANTAGES

APPLICATION

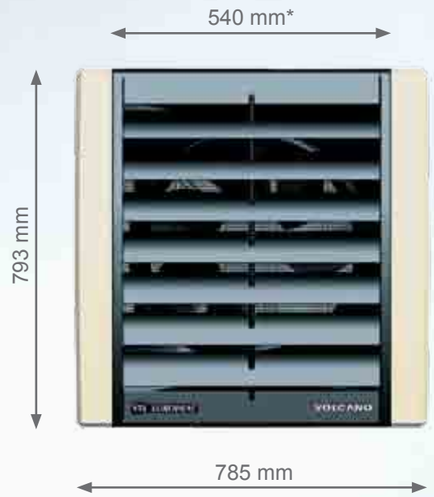
- production halls
- workshops
- supermarkets
- sports facilities
- storages
- warehouses

TECHNICAL DATA

		VOLCANO VR1	VOLCANO VR2
unit heater row number	-	1	2
maximum air discharge	m^3/h	5500	5200
heating power range	kW	10 - 30	30 - 60
maximum heating medium temperature	°C	130	
maximum working pressure	MPa	1.6	
maximum air reach	m	25	
water capacity	dm^3	1.7	3.1
connector pipe diameter	"	3/4	
device weight	kg	29	32
supply voltage	V/Hz	1 ~ 230/50	
motor power	kW	0.53	
nominal current	A	2.4	
motor revolution	rpm	1350	
motor IP	-	54	

ErP READY

VTS



* assembly hole spacing

VOLCANO VR1

		Parameters T_z/T_p [°C]															
		50/30 [°C]				70/50 [°C]				80/60 [°C]				90/70 [°C]			
	Qp [m^3/h]	P_g [kW]	T_{p2} [°C]	Q_w [m^3/h]	Δp [kPa]	P_g [kW]	T_{p2} [°C]	Q_w [m^3/h]	Δp [kPa]	P_g [kW]	T_{p2} [°C]	Q_w [m^3/h]	Δp [kPa]	P_g [kW]	T_{p2} [°C]	Q_w [m^3/h]	Δp [kPa]
0	5500	13.1	7	0.6	2.1	23.1	13	1.0	6.2	28.1	15	1.2	9.0	33.1	18	1.5	12.3
	4000	11.3	9	0.5	1.6	19.8	15	0.9	4.6	24.1	18	1.1	7.0	28.3	21	1.2	9.1
	3000	9.8	10	0.6	1.2	17.2	17	0.7	3.5	20.8	21	0.9	5.0	24.4	25	1.1	6.9
	2000	8.0	12	0.3	0.8	14.0	21	0.6	2.4	16.9	25	0.7	3.0	19.8	30	0.9	4.6
	800	4.9	19	0.2	0.3	8.3	32	0.4	0.9	10.0	38	0.4	1.0	11.6	44	0.1	1.7
5	5500	10.8	11	0.5	1.4	20.9	16	0.9	5.1	25.8	19	1.1	8.0	30.8	22	1.4	10.7
	4000	9.4	12	0.4	1.1	17.9	18	0.8	3.8	22.1	22	1.0	6.0	26.3	25	1.2	7.9
	3000	8.2	13	0.4	0.8	15.5	21	0.7	2.9	19.1	24	0.8	4.0	22.7	28	1.0	6.0
	2000	6.7	15	0.3	0.6	12.7	24	0.5	2.0	15.6	28	0.7	3.0	18.5	33	0.8	4.0
	800	4.2	21	0.2	0.2	7.6	34	0.3	0.7	9.2	40	0.4	1.0	10.9	46	0.1	1.5
10	5500	8.6	15	0.4	0.9	18.6	20	0.8	4.1	23.5	23	1.0	6.0	28.5	26	1.3	9.2
	4000	7.5	16	0.3	0.7	16.0	22	0.7	3.0	20.2	25	0.9	5.0	24.3	28	1.1	6.8
	3000	6.6	17	0.3	0.6	13.8	24	0.6	2.3	17.4	28	0.8	4.0	21.0	31	0.9	5.2
	2000	5.4	18	0.2	0.4	11.3	27	0.5	1.6	14.2	31	0.6	2.0	17.1	36	0.8	3.5
	800	3.4	23	0.1	0.2	6.8	36	0.3	0.6	8.4	42	0.4	1.0	10.1	48	0.1	1.3
15	5500	6.4	19	0.3	0.5	16.3	24	0.7	3.2	21.3	27	0.9	5.0	26.2	29	1.2	7.9
	4000	5.6	19	0.2	0.4	14.0	26	0.6	2.4	18.2	29	0.8	4.0	22.4	32	1.0	5.8
	3000	4.9	20	0.2	0.3	12.2	27	0.5	1.8	15.8	31	0.7	3.0	19.4	34	0.9	4.4
	2000	4.1	21	0.2	0.2	10.0	30	0.4	1.2	12.9	34	0.6	2.0	15.8	39	0.7	3.0
	800	2.6	25	0.1	0.1	6.0	38	0.3	0.5	7.7	44	0.3	1.0	9.3	50	0.1	1.1
20	5500	4.2	22	0.2	0.2	14.0	28	0.6	2.4	19.0	30	0.8	4.0	23.9	33	1.1	6.6
	4000	3.7	23	0.2	0.2	12.1	29	0.5	1.8	16.3	32	0.7	3.0	20.4	35	0.9	4.9
	3000	3.3	23	0.1	0.1	10.5	31	0.5	1.4	14.1	34	0.6	2.0	17.7	38	0.8	3.7
	2000	2.8	24	0.1	0.1	8.6	33	0.4	0.9	11.5	37	0.5	2.0	14.4	42	0.6	2.5
	800	1.8	27	0.1	0.0	5.2	40	0.2	0.4	6.9	46.1	0.3	1.0	8.5	52	0.1	0.9

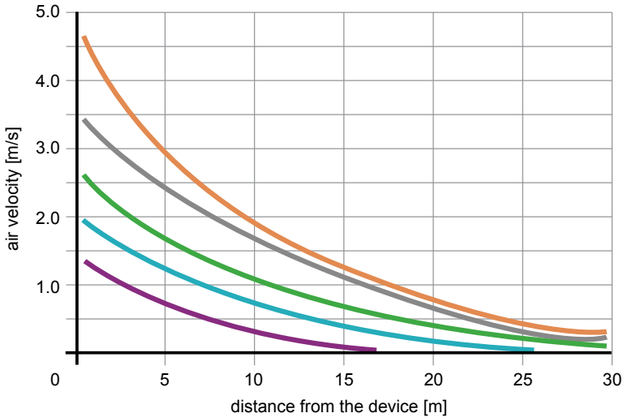
T_z - inlet water temperature
T_p - return water temperature
T_{p1} - inlet air temperature
T_{p2} - outlet air temperature
P_g - device heating capacity
Q_v - air flow rate
Q_w - water flow
Δ_P - pressure drop in heat exchanger

VOLCANO VR2

		Parametres T_z/T_p [°C]															
		50/30 [°C]				70/50 [°C]				80/60 [°C]				90/70 [°C]			
	Qp [m^3/h]	P_g [kW]	T_{p2} [°C]	Q_w [m^3/h]	Δp [kPa]	P_g [kW]	T_{p2} [°C]	Q_w [m^3/h]	Δp [kPa]	P_g [kW]	T_{p2} [°C]	Q_w [m^3/h]	Δp [kPa]	P_g [kW]	T_{p2} [°C]	Q_w [m^3/h]	Δp [kPa]
0	5200	23.9	14	1.0	4.9	40.8	24	1.8	13.0	49.1	28	2.2	18.0	60.5	33	2.5	24.4
	3700	19.4	16	0.8	3.3	33.0	27	1.4	8.8	39.6	32	1.7	12.0	46.2	37	2.0	16.4
	2800	16.3	18	0.7	2.4	27.5	29	1.2	6.3	33.0	35	1.5	9.0	38.4	41	1.7	11.7
	1800	12.3	21	0.5	1.4	20.5	24	0.9	3.6	24.4	41	1.1	5.0	28.4	47	1.3	6.7
	700	6.4	28	0.3	0.4	10.2	45	0.4	1.0	12.1	53	0.5	1.0	14.0	62	0.6	1.8
5	5200	20.1	17	0.9	3.5	36.9	26	1.6	10.9	45.2	31	2.0	16.0	53.5	36	2.4	21.5
	3700	16.3	18	0.7	2.4	29.9	29	1.3	7.3	36.5	35	1.6	11.0	43.1	40	1.9	14.4
	2800	13.7	20	0.6	0.7	25.0	32	1.1	5.3	30.5	38	1.3	8.0	35.9	43	1.6	10.3
	1800	10.5	22	0.5	1.1	18.6	36	0.8	3.0	22.6	43	1.0	4.0	26.5	49	1.2	5.9
	700	5.4	29	0.2	0.3	9.3	46	0.4	0.9	11.2	54	0.5	1.0	13.1	63	0.6	1.6
10	5200	16.2	19	0.7	2.4	33.1	29	1.4	8.8	41.4	34	1.8	13.0	49.6	39	2.2	18.7
	3700	13.3	21	0.6	1.6	26.8	32	1.2	6.0	33.4	37	1.5	9.0	40.0	42	1.8	12.6
	2800	11.2	22	0.5	1.2	22.4	34	1.0	4.3	27.9	40	1.2	7.0	33.3	46	1.5	9.0
	1800	8.6	24	0.4	0.7	16.7	38	0.7	2.5	20.7	45	0.9	4.0	24.6	51	1.1	5.1
	700	4.5	30	0.2	0.2	8.4	47	0.4	0.7	10.3	55	0.5	1.0	12.2	64	0.5	1.4
15	5200	12.4	22	0.5	1.4	29.2	32	1.3	7.0	37.5	37	1.7	11.0	45.7	42	2.0	16.1
	3700	10.2	23	0.4	1.0	23.7	34	1.0	4.8	30.3	40	1.3	8.0	36.9	45	1.6	10.8
	2800	8.6	24	0.4	0.7	19.9	36	0.9	3.4	25.3	42	1.1	5.0	30.7	48	1.4	7.7
	1800	6.7	26	0.3	0.5	14.8	40	0.6	2.0	18.8	46	0.8	3.0	22.8	53	1.0	4.4
	700	3.6	31	0.2	0.1	7.5	48	0.3	0.6	10.4	61	0.1	1.0	11.3	65	0.5	1.2
20	5200	8.5	25	0.4	0.7	25.3	35	1.1	5.4	33.6	39	1.5	9.0	41.8	44	1.8	13.6
	3700	7.1	26	0.3	0.5	20.6	37	0.9	3.7	27.2	42	1.2	6.0	33.8	47	1.5	9.2
	2800	6.0	27	0.3	0.4	17.3	39	0.7	2.7	22.8	44	1.0	4.0	28.2	50	1.2	6.6
	1800	4.7	28	0.2	0.2	12.9	42	0.6	1.6	16.9	48	0.7	3.0	20.9	55	0.9	3.8
	700	2.6	31	0.1	0.1	6.6	49	0.3	0.5	8.5	57	0.4	1.0	10.4	66	0.5	1.0

Data concerning VOLCANO operation with a different heating medium temperature can be obtained on request.

VR1 / VR2



The chart presents the ranges of airflows to the point where the speed in the airflow axis is 0.5 m/s (recommended speed in the occupied zones for the industrial sites) in relation to the place of installing the unit horizontally on the wall and to the position of the direction louvers.
The average air speed in the airflow cross-section is 1/3 of the air speed in the airflow axis. It is important to pay attention to an adequate leveling of the unit while installing it.

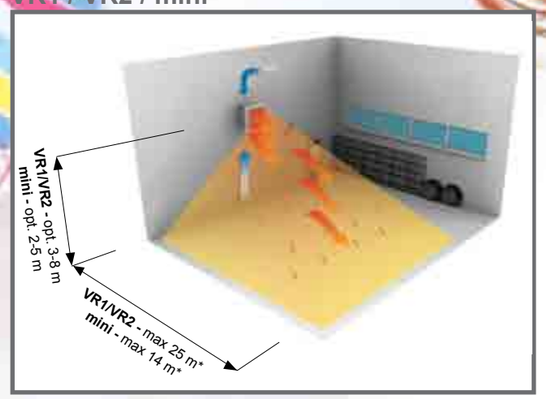
airflow rate [m³/h]

I speed	II speed	III speed	IV speed	V speed
800 700	2000 1800	3000 2800	4000 3700	5500 5200

	Fan speed level [-]	Noise level* [dB(A)]
VOLCANO VR1 / VR2	V	57
	IV	51
	III	42
	II	32
	I	28

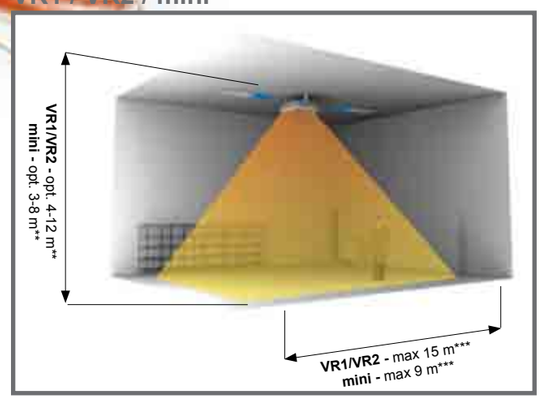
* VOLCANO VR1 and VR2 are working with the same noise level as their design is based on the same fan. Measurements are taken at a distance of 5 m.

WALL MOUNTING
VR1 / VR2 / mini



* for horizontal air blade positioning

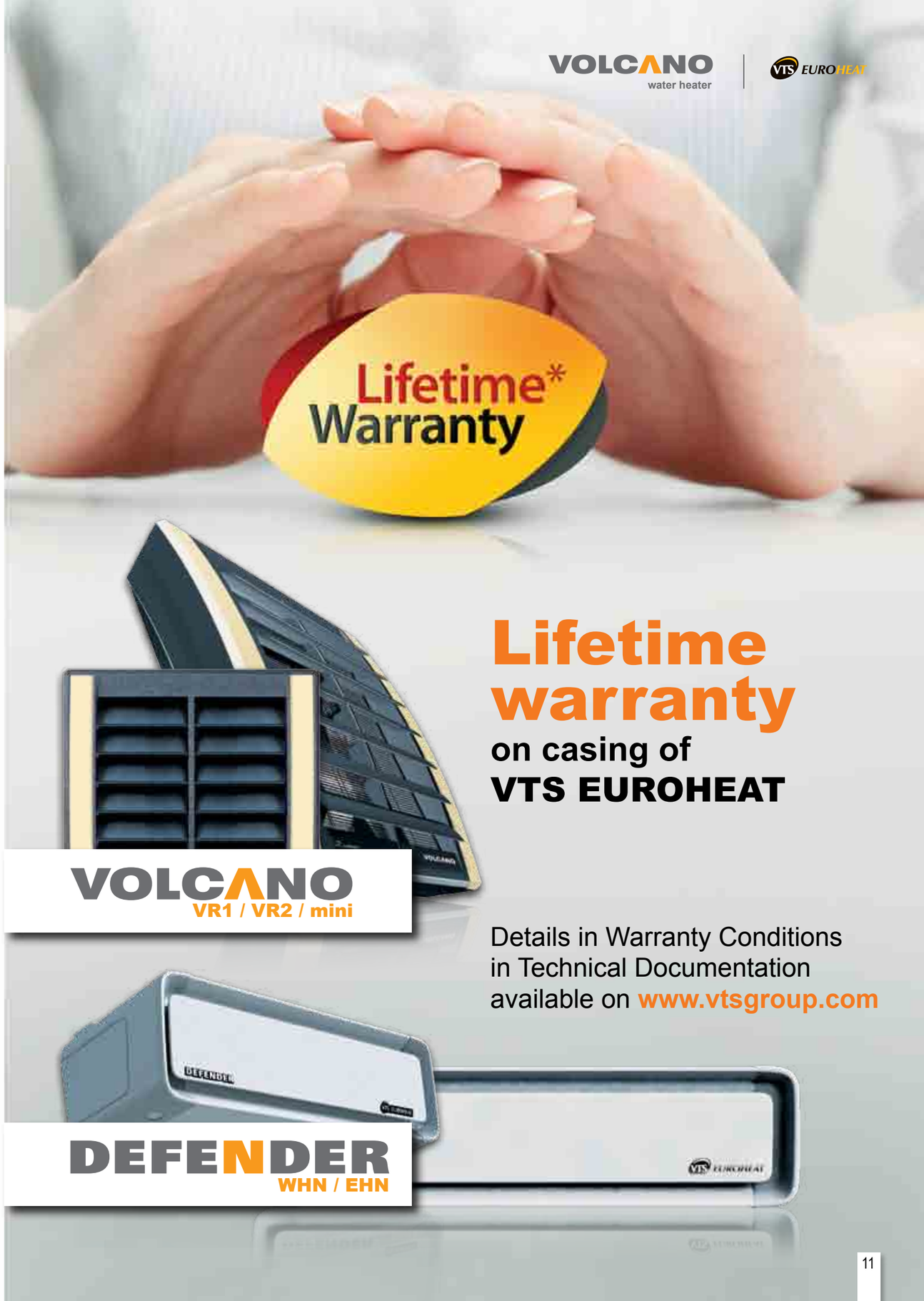
CEILING MOUNTING
VR1 / VR2 / mini



** for vertical air blade positioning
*** for symmetrical air blade positioning at 45°

NOTE!

If the minimum distance of 0.4 m (VR1/VR2) / 0.25 m (mini) from the wall or ceiling is not kept it can cause the device to malfunction, damage the fan or make it operate more loudly.



AUTOMATION

SPEED CONTROLLER
for VOLCANO VR1/VR2/mini

- supply voltage: 230 V AC +/- 10%
- admissible outlet current: 3 A
- adjustment method: in strokes
- number of adjustment degrees: 5
- switch on/off
- protection degree: IP54
- mounting method: wall mounting
- working environment temperature: 0…40°C

Do not connect more than one device VOLCANO VR1/VR2/ mini and more than four devices VOLCANO to the rotational speed controller due to the admissible outlet current values.

SPEED CONTROLLER
for VOLCANO mini

- supply voltage: 230 V AC +/- 10%
- admissible outlet current: 0.6 A
- adjustment method: in strokes
- number of adjustment degrees: 3
- controller output voltage: 85/130/230 V AC
- protection degree: IP54
- mounting method: wall mounting
- working environment temperature: 0…40°C

Do not connect more than one device VOLCANO mini to therotational speed controller due to the admissible outlet current values.

TERMOSTAT

- work voltage: 24…230 V AC
- admissible load: 10 (3) A
- setting range: 10…30°C
- adjustment precision: +/- 1°C
- protection degree: IP30
- mounting method: wall mounting
- working environmeny: -10…+50°C

TRANSRATE CONTROL PANEL (SCR 10)

- supply voltage: 3.3 V DC
- outlet voltage: 0-3.3 V DC
- maximum load current: 10 mA
- protection degree: IP20
- working temperature: 0…40°C
- dimensions: 71x71x25.5 mm

SPEED CONTROLLER (TRANSRATE)

- supply voltage: 1x230 V / 50 Hz +/- 10%
- outlet voltage: 23…230 V AC / 50 Hz
- maximum load current: 3 A
- protection degree: IP54
- working temperature: 0…40°C
- dimensions: 115x90x85 mm

Do not connect more than one device of VOLCANO VR1/ VR2 and more than three devices VOLCANO mini to the rotational speed controller due to the admissible outlet current values. Place of assembly TRANSRATE controller must meet the criteria described in the instructions supplied with the controller.

TEMPERATURE PLC

- supply: 1.5 V alkaline batteries (included)
- setting range: 5…35°C
- setting and indication scale: 0.5°C
- admissible control outlet load: 5 (2) A (24…230 V AC)
- protection degree: IP30
- mounting method: wall mounting
- working environment temperatures: 0…50°C
- operation cycle switching time: 60 min
- pprogrammer: with a weekly clock
- operation mode: factory or individual settings

A detailed description of a temperature PLC can be found in the manual at www.vtsgroup.com The thermostat and temperature PLC should be installed in the "representative" place. Avoid places directly exposed to sunlight, electromagnetic waves etc.

ACTUATOR

- supply voltage: 230 V AC +/- 10%
- closing/ opening time: 5/18 s
- position without supply: closed
- protection degree: IP20
- working environment temperature: 0…60°C
- power cable of 50 cm length, 3x0.75 mm²

VALVE

- connector pipe diameter: 3/4”
- working mode: two positions: close/open
- maximum pressure difference: 100 kPa
- pressure class: PN16
- kvs flow rate: 6.5 m³/h
- maximum heating medium temperature: 93°C
- working environment temperature: 0…60°C

It is recommended to mount a two-way valle on the return pipeline.

FAQ

1. What pipe diameter shall be used in the collector which supplies three VOLCANO heaters?

The diameter of the collector's pipe shall be selected adequately so that the maximal value of water flow speed does not exceed 2.5 m/s. That reason for that is the compromise between the investment costs related to the size of applied pipes and the operational costs related to the resistance of the water flow in the pipelines. The recommended minimal diameters of the pipelines are specified in the tables below. They depend on the number of units and on the type of heater connected to the bus-bar.

Number of heaters VR1*	Maximal flow [m³/h]	Pipeline diameter ["]
1	1.5	3/4
2	3	3/4
3	4.5	1
4	6	1 1/4
5	7.5	1 1/4
6	9	1 1/4
7	10.5	1 1/2
8	12	1 1/2
9	13.5	2
10	15	2

** the heaters connected serially to the pipeline*

Number of heaters VR2*	Maximal flow [m³/h]	Pipeline diameter ["]
1	2.5	3/4
2	5	1
3	7.5	1 1/4
4	10	1 1/2
5	12.5	1 1/2
6	15	2
7	17.5	2
8	20	2
9	22.5	2 1/2
10	25	2 1/2

** the heaters connected serially to the pipeline*

Number of heaters mini*	Maximal flow [m³/h]	Pipeline diameter ["]
1	0.9	1/2
2	1.8	3/4
3	2.7	3/4
4	3.6	1
5	4.5	1
6	5.4	1 1/4
7	6.3	1 1/4
8	7.2	1 1/4
9	8.1	1 1/4
10	9.0	1 1/2

** the heaters connected serially to the pipeline*

2. How to connect the thermostat to make the fan switch off while closing the valve?

The electrical diagrams in the Volcano heaters' technical documentation present all the possible confi gurations of electrical connections for selected operation modes. If only one heater is connected, the thermostat can be connected serially to the phase cord after the main current breaker/fuse of the system. In this case, it is important to pay attention to the maximal capacity of the thermostat's contacts which should not be lower than 10(3)A for one VOLCANO unit. In case of too little load capacity of the thermostat's contacts or a larger number of heaters controlled by the thermostat, it is required to use an electric relay whose inductor will be supplied by the thermostat (230 V AC), the voltage of the working contacts shall be 230 V AC and their load capacity shall be adjusted to the number of controlled VOLCANO units.

3. Can VOLCANO be inbuilt in the ventilation chute?

No it cannot be inbuilt there because the operating pressure of the axial fan used on the air heaters behind the unit is too low.

4. Can VOLCANO VR1/VR2/mini be fed with the non-freezing agent?

Yes, it can. The most commonly used non-freezing agent is the solution of water and glycol. However, since the unit's fittings may not be fully resistant to glycol, it is indispensable to ensure that all the guidelines and instructions in this respect given by the producer of valves, circulation pumps etc. are respected. Glycol concentration must not exceed 50%.

5. Can VOLCANO VR1/VR2/mini also cool the air?

Theoretically, the effect of the VOLCANO unit's operation depends inter alia on the medium flowing inside the heat agent. For instance, if the unit is fed with adequately cold solution of water and glycol or ice water, VOLCANO will start operating as an air cooler. It should be remembered however, that the water vapor condenses on the heat agent as a result of the temperature fall below the dew point of the air for given operation conditions. VOLCANO units are not equipped with the system for condensed vapor drainage which means that the user of the unit should themselves make a dip tray or install a draining spout under the unit. Additionally, if the heater is used for cooling, the condensed vapor may also be raised on the heat agent. In order to avoid this problem, the heater should operate on the lower speed of the fan. The ceiling-mounted heaters cannot be used for cooling because the condensed vapor may drop out of the heater directly onto the floor.

VOLCANO water heater | VTS EUROHEAT

6. Can the heaters VR1/VR2/mini cooperate with the heat pumps?

The water heaters VOLCANO VR1 and VR2 can cooperate with the heat pumps. However, since the parameter of heat agent achieved from the heat pumps is considerably low, it is recommended to apply for such systems VOLCANO VR2 heater due to its rated power which is larger than the power of VOLCANO VR1 heater.

7. What power features the motor of VOLCANO VR1/VR2/mini heaters when running on particular fan speed levels?

The motor power on particular speed levels of fan for both the heaters are the same. The identical motor fitted with a fan is used in both the VOLCANO VR1/VR2/mini heater. Power rates corresponding to the particular speed levels are listed on the table below.

ARW 3.0/2 fan speed level	Motor rated power	VOLCANO VR1 fan flow rate	VOLCANO VR2 fan flow rate
[-]	[W]	[m³/h]	[m³/h]
V	530	5500	5200
IV	360	4000	3700
III	200	3000	2800
II	135	2000	1800
I	100	800	700

VTS GROUP - THE EUROPEAN LEADER IN HVAC TECHNOLOGIES

4 continents
27 countries
84 offices
350 sales representatives and technical advisors

VTS - ALWAYS A STEP AHEAD

A global corporation with a European origin

- VTS Group, a European company established in 1989, is a leading supplier of heating, ventilation and air conditioning units - over 500 000 units sold to date.
- The VTS Capital Group comprises several regional companies worldwide, employing over 350 sales representatives and technical advisors.
- VENTUS air handling units are delivered to 27 countries in Europe, Middle East and the Asia Pacific Region. Our units operate failure-free in different climates in temperatures from -40°C to +70°C.
- VTS product range also includes high quality VOLCANO air heaters and DEFENDER air curtains.

Top quality, competitive pricing

- All the manufacturing processes are carried out in three Production-Logistics Centres purpose-built by the Company, located in Poland, China and India.
- Development of all the components and semi-finished products delivered to the Centers is based on the company's own patents and standards.
- On-going monitoring of quality at all stages: design, manufacturing and assembly.
- Out consistently high quality is confirmed by certificates from independent bodies. The process of selection of VTS units is certified by Eurovent.

The Ventus Knowledge Centre, situated in the Production-Logistics Centre, is a combination of a modern conference center and a show room where our Customers can see the entire VTS offering with their own eyes.

RELIABLE BRAND

The design and operating specifications of VTS products meet the requirements set out by European standards, which is certified by Eurovent and TÜV.

Eurovent

Certifies the conformity of the parameters of the Ventus units selected, calculated using the ClimaCAD On-Line software, with the actual operating parameters.

PN-EN 1886 standard
PN-EN 13053 standard

The two key European standards for ventilation and air conditioning quality and parameters.

ISO 9001
ISO 14001

ISO 0991 ensures fully consistent quality of all VTS units. ISO 14001 ensures effectiveness of the environmental management system.

CE

VTS units conform to the safety standards set out by the European Union.

VENTUS

The VENTUS air handling unit was developed using the latest technology and advanced materials engineering. The design solutions, drawing on the company's knowledge and experience, fully meet the expectations of our Customers and respond to the market demand. As a result, VTS offers versatile, reliable and energy-efficient units.

Ventus N-type belongs to the duct AHUs market and by offering 4 product sizes covers the range of c.a. 2 000 to 8 500 m³/h. The offer includes basic air handling functions provided by an individual sections.

VENTUS N-TYPE

PRODUCT RANGE VTS

ADVANTAGES:

AHU silent operation

- the PLUG type fan rotors are fitted with aerodynamic blades bent to the back of the unit
- low dynamic pressure (the fan air flow rate)
- excellent sound absorption properties of the housing
- low flow rates

Energy recovery

- the energy recovery systems are ideally suited to any climate conditions
- recovery efficiency up to 85%
- separation of the air used and supplied
- recovery of sensible and latent heat

Compact size

- low height AHUs - the suspended AHUs are of 36 cm in height, while the standing one are of 53 cm in height
- adaptation to a technical, utility rooms and ventilating ducts.

Energy-saving

- the PLUG fan with blades bent to the back of the unit
- the fan is driven directly
- control of the fan operating point parameters by regulation of the fan speed
- optimum selection of the functional components - ensuring minimising the air and medium flow losses

Frameless housing

The AHU housing is made of Sandwich-type panels filled with polyurethane foam:

- excellent mechanical and insulation parameters
- high Ingress Protection Rating
- reduction of thermal bridges

Optimal selection of the unit size according to a building cubature

- the units are available in 16 sizes
- optimal selection of the heat exchangers and fan assemblies

ADVANTAGES:

Non skeleton Monocoque chasing

- based on Sandwich-type panels, ensures compact and rigid structure
- reduces thermal bridges as well as the condensation

Plug - Fan type fans

- use of plug fans with direct drive and rotor with blades turned outwards
- ensures high performance and trouble-free operation of the air handling unit

Control system

- the controller integrated with the HMI OPTIMA user interface
- provides convenience and simplicity of the air parameters control

NCAD selection program

- provides accurate calculation of the AHU output parameters
- integrated with the program for automatic tender documentation generation

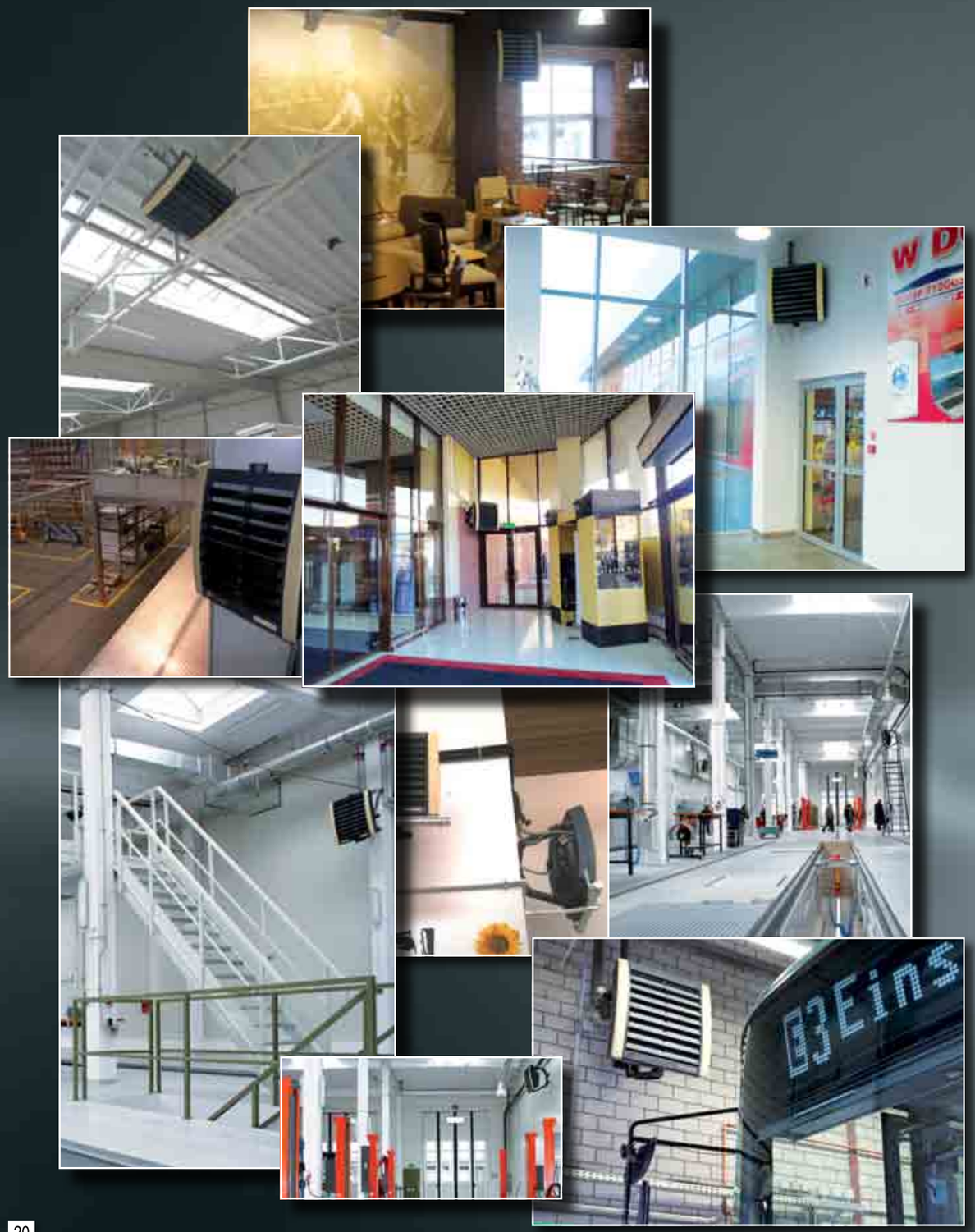
Available for immediate delivery

- we provide full range and uninterrupted delivery of our AHUs

Attractive price

REFERENCES

VOLCANO



VTS EUROHEAT

VOLCANO
water heater

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VTS EUROHEAT

VOLCANO mini

NEW

ADVANTAGES:

- immediate availability
- superb price
- low maintenance costs
- durable and aesthetic design made using the latest technology
- small dimensions and low weight
- lifetime warranty on casing

APPLICATION: production halls, workshops, supermarkets, sports facilities, storages, warehouses

VOLCANO VR1 / VR2

ADVANTAGES:

- reliable European quality and attractive price
- versatile application
- high production capacity
- low costs of operation
- low level of noise and light weight of appliance
- quick and easy installation
- lifetime warranty on casing

APPLICATION: production halls, workshops, supermarkets, sports facilities, storages, warehouses

DEFENDER WHN / EHN

ADVANTAGES:

- reliable European quality and attractive price
- protection of climatic conditions in premises
- reduced costs of heating and cooling compared to typical solutions
- fan made in plastic injection technology
- versatile application
- vertical and horizontal installation of water and electric curtain
- lifetime warranty on casing

APPLICATION: warehouse halls, sports facilities, office blocks, department stores, railway stations, hotels, pharmacies, petrol stations, clinics, restaurants

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