



PGV
Rectangular duct heaters
for hot water

PGV

Rectangular duct heaters for hot water

PGV duct heaters with rectangular duct connection use hot water as energy medium and are used to heat the ventilation air in a ventilation system. PGV duct heaters can also be used as fresh air heater units. To regulate the room or inlet air temperature, the duct heaters are complemented with regulators, sensors, actuators, valves and a frost-protection control.

- 23 standard sizes in stock
- Nipples for draining and venting
- Coil with copper pipes and aluminium fins
- Internally threaded connection for installation of antifreeze sensors
- Air tightness class C as per EN 15727

Design

The casing is made of hot-dip galvanised sheet steel Magnelis ZM200.

Coil with copper pipes and aluminium fins.

The duct heater is also equipped with nipples for draining and venting as well as an internally threaded connection for installation of antifreeze sensors.



Operating Data

Max. operating temperature: +150 °C
 Max. operating pressure: 1.0 MPa (10 bar)
 The coils have been pressurised and leak tested.

Capacity

Dimensioning can easily be achieved with our web-based calculation program VEAB Select (www.veab.com).
 If necessary, contact our sales staff for help.

Installation

PGV duct heaters can be installed in a horizontal or a vertical duct with the air flow in any direction.

Control Unit

See pages 4 to 6 for a list of regulators, sensors, valves and actuators.

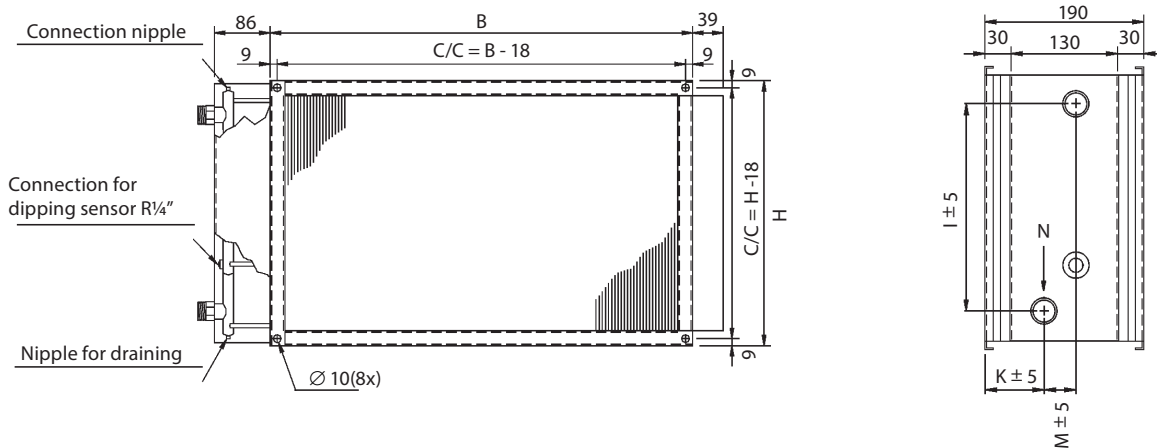
Air Tightness Class C

PGV duct heaters meet air tightness class C as per EN 15727, which ensures that the heated air reaches its destination and does not leak out of the ventilation system—that saves both energy and money.



Product Range Overview with Dimensional Drawing

Type	B mm	H mm	I mm	K mm	M mm	N conn. R	Inner pipe volume l
PGV 250x150-2-2,5	288	188	113	84	22	1/2"	0.32
PGV 400x200-2-2,5	438	238	150	63	43	3/4"	0.7
PGV 400x200-4-2,5	438	238	150	63	65	3/4"	1.2
PGV 500x250-2-2,5	538	288	200	63	43	3/4"	0.8
PGV 500x250-4-2,5	538	288	200	63	65	3/4"	1.4
PGV 500x300-2-2,5	538	338	250	63	43	3/4"	1.2
PGV 500x300-4-2,5	538	338	250	63	65	1"	2.2
PGV 500x400-2-2,5	538	438	350	63	43	3/4"	1.5
PGV 500x400-4-2,5	538	438	350	61	47	1"	3.0
PGV 600x300-2-2,5	638	338	250	63	43	3/4"	1.3
PGV 600x300-4-2,5	638	338	250	63	65	1"	2.6
PGV 600x350-2-2,5	638	388	300	63	43	3/4"	1.5
PGV 600x350-4-2,5	638	388	300	63	65	1"	3.0
PGV 700x400-2-2,5	738	438	350	61	47	1"	2.5
PGV 700x400-3-2,5	738	438	350	66	58	1"	3.5
PGV 800x400-2-2,5	838	438	350	61	47	1"	2.7
PGV 800x400-3-2,5	838	438	350	66	58	1"	3.9
PGV 800x500-2-2,5	838	538	450	61	47	1"	3.4
PGV 800x500-3-2,5	838	538	450	66	58	1"	4.9
PGV 1000x500-2-2,5	1038	538	450	61	47	1"	4.1
PGV 1000x500-3-2,5	1038	538	450	66	58	1"	5.9
PGV 1200x600-2-2,5	1238	638	545	61	47	1"	5.7
PGV 1200x600-3-2,5	1238	638	545	66	58	1 1/4"	8.6



Project Design/Orders

Description – PGV

Duct heater, VEAB type PGV, with casing made of hot-dip galvanised sheet steel Magnelis, coil with copper pipes and pipe connections as well as aluminium fins. The duct heater meets air tightness class C. Feedback control is achieved by means of an external regulator, sensors, valves and actuators to be ordered separately.

Type designation PGV 400x200 - 2 - 2.5

(example)

Size designation

Number of rows of pipes

Fin spacing mm

Specify the following when configuring/ ordering

1. Air flow: - m³/h
2. Inlet air temperature: - °C
3. Outlet air temp. or desired output: - °C or kW
4. Duct dimensions: - mm
5. Inlet water temperature: - °C
6. Outlet water temp. or water flow: - °C or l/s
7. Antifreeze agent: - type / %

Regulators



AQUA24TF



RC



RC-DO



OPTIGO OP10

AQUA

Complete regulator with integrated room sensor. Floating feedback control for control of three-position actuators. Cascade connection with minimum limitation of inlet air in case of room feedback control. Can be fitted with external room and/or duct sensor as well as external setpoint adjuster. Temperature range 0-30 °C, depending on choice of sensor.

AQUA24TF

24 V supply. The regulator includes an integrated regulating antifreeze device with two alarm relays and automation for standstill heater.

REGIO MINI

Complete regulator with integrated room sensor. Can be fitted with external room and/or duct sensor. Includes two control outputs for sequential heating and cooling, for example.

RC

24 V supply. 0...10 V outgoing control signal. Base setpoint 20-26 °C is adjusted with DIP switches. The base setpoint can be adjusted by ± 3 °C using the setpoint knob.

RC-DO

24 V supply. 0...10 V outgoing control signal. RC-DO includes a backlighted display and temperature range from 0-50 °C.

OPTIGO

Regulator with display. One knob for all adjustments. To be mounted on DIN rail. Operates with PT1000 sensor within the -20 °C to +40 °C range. Started/stopped with "run" signal from fan.

OP5

24 V supply. 0...10 V outgoing control signal. Operates with a room or duct sensor. Convertible for heating or cooling feedback control.









OP10

24 V supply. Adjustable for 0...10 V outgoing control signal or 3-point feedback control. Two control outputs for sequential heating and cooling, for example. Input for two sensors and possible antifreeze sensor. Inlet air feedback control or room feedback control with cascade controlled inlet air. Antifreeze control with standstill heater. Output for starting/stopping fans, for example, via relay 230 VAC 1-ph., 5 A. Programmable weekly timer for control of both fans and heating/cooling. Outputs for external timer that extends operating time. Can be equipped with an external setpoint adjuster.








OP10-230

Same functions as OP10 but with 230 VAC 1-ph supply.

AQUA Accessories

	Product	Range	Design
	Duct sensor TG-K330	0-30 °C	IP20 degree of protection
	Room sensor TG-R430 With setpoint adjuster	0-30 °C	IP30 degree of protection
	Room sensor TG-R530	0-30 °C	IP30 degree of protection
	Room sensor TG-R630	0-30 °C	IP54 degree of protection
	Strap-on temperature sensor TG-A130 Supplied with clamp	0-30 °C	IP65 degree of protection
	Dipping sensor TG-D130 made of stainless steel for water temp. measurement	0-30 °C	Connection R $\frac{1}{4}$ " Diameter \varnothing 6 mm Insertion length 135 mm IP65 degree of protection
	Dipping sensor TG-D230 made of stainless steel for water temp. measurement	0-30 °C	Connection R $\frac{1}{4}$ " Diameter \varnothing 6 mm Insertion length 220 mm IP65 degree of protection
	Transformer 60 Enclosed transformer for wall mounting. Integrated two-pole protection on secondary side.		Input voltage 230 VAC 1-ph. Output voltage 24 VAC 1-ph. Maximum load 60 VA IP44 degree of protection

OPTIGO and REGIO Accessories

	Product	Range	Design
	Duct sensor TG-K3/PT1000	-30...+70 °C	IP20 degree of protection
	Room sensor TG-R5/PT1000	0-50 °C	IP30 degree of protection
	Room sensor TG-UH/PT1000	-30...+120 °C	IP65 degree of protection
	Strap-on temperature sensor TG-A1/PT1000 Supplied with clamp	-30...+150 °C	IP65 degree of protection
	Dipping sensor TG-D1/PT1000 made of stainless steel for water temp. measurement	-30...+150 °C	Connection R $\frac{1}{4}$ " Diameter \varnothing 4 mm Insertion length 135 mm IP65 degree of protection
	Dipping sensor TG-D2/PT1000 made of stainless steel for water temp. measurement	-30...+150 °C	Connection R $\frac{1}{4}$ " Diameter \varnothing 4 mm Insertion length 220 mm IP65 degree of protection
	Transformer 60 Enclosed transformer for wall mounting. Integrated two-pole protection on secondary side.		Input voltage 230 VAC 1-ph. Output voltage 24 VAC 1-ph. Maximum load 60 VA IP44 degree of protection

Actuators and Valves with Kvs 0.25 – 8.0 (110 °C max.)

Designation		Type
3-way actuator for ZTV/ZTR valves, IP44 degree of protection		RVAZ4-24
0...10 V actuators for ZTV/ZTR valves, IP44 degree of protection		RVAZ4-24A
Designation	Kvs	Type
2-way valve ½"	0.25	ZTV15-0,25
2-way valve ½"	0.4	ZTV15-0,4
2-way valve ½"	0.6	ZTV15-0,6
2-way valve ½"	1.0	ZTV15-1,0
2-way valve ½"	1.6	ZTV15-1,6
2-way valve ¾"	2.0	ZTV20-2,0
2-way valve ¾"	2.5	ZTV20-2,5
2-way valve ¾"	4.0	ZTV20-4,0
2-way valve ¾"	6.0	ZTV20-6,0
2-way valve 1"	8.0	ZTVB25-8
3-way valve ½"	0.25	ZTR15-0,25
3-way valve ½"	0.4	ZTR15-0,4
3-way valve ½"	0.6	ZTR15-0,6
3-way valve ½"	1.0	ZTR15-1,0
3-way valve ½"	1.6	ZTR15-1,6
3-way valve ¾"	2.0	ZTR20-2,0
3-way valve ¾"	2.5	ZTR20-2,5
3-way valve ¾"	4.0	ZTR20-4,0
3-way valve ¾"	6.0	ZTR20-6,0
3-way valve 1"	8.0	ZTRB25-8



RVAZ4-24 actuator



ZTV valve



ZTR valve



RVAN5-24 actuator



MTVS valve



MTRS valve

Actuators and Valves with Kvs 1.0 – 16.0 (150°C max.)

Designation		Type
3-way actuator for MTVS/MTRS valves, IP54 degree of protection		RVAN5-24
0...10 V actuators for MTVS/MTRS valves, IP54 degree of protection		RVAN5-24A
Designation	Kvs	Type
2-way valve ½"	1.0	MTVS15-1,0
2-way valve ½"	1.6	MTVS15-1,6
2-way valve ½"	2.1	MTVS15-2,1
2-way valve ½"	2.7	MTVS15-2,7
2-way valve ¾"	4.2	MTVS20-4,2
2-way valve ¾"	5.6	MTVS20-5,6
2-way valve 1"	10.0	MTVS25-10
2-way valve 1 ¼"	16.0	MTVS32-16
3-way valve ½"	0.63	MTRS15-0,63
3-way valve ½"	1.0	MTRS15-1,0
3-way valve ½"	1.6	MTRS15-1,6
3-way valve ½"	2.1	MTRS15-2,1
3-way valve ½"	2.7	MTRS15-2,7
3-way valve ¾"	4.2	MTRS20-4,2
3-way valve ¾"	5.6	MTRS20-5,6
3-way valve 1"	10.0	MTRS25-10
3-way valve 1 ¼"	16.0	MTRS32-16

Valve and Actuator Selection Guide for PGV

Water temp. 110 °C max.

Actuators RVAZ4-24 (3-position) or RVAZ4-24A (0...10 V) can be used for all ZTV/ZTR valves.

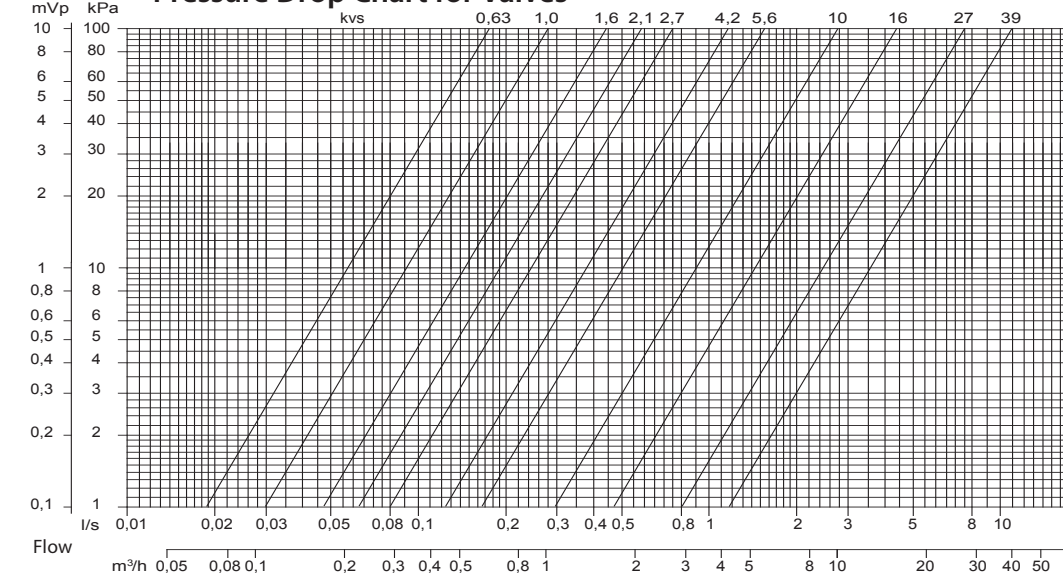
Type of PGV	Valve type	Kvs
PGV 400×200-2-2.5	2-way ZTV15-1.6 3-way ZTR15-1.6	1.6
PGV 400×200-4-2.5	2-way ZTV20-2.5 3-way ZTR20-2.5	2.5
PGV 500×250-2-2.5	2-way ZTV20-2.5 3-way ZTR20-2.5	2.5
PGV 500×250-4-2.5	2-way ZTV20-2.5 3-way ZTR20-2.5	2.5
PGV 500×300-2-2.5	2-way ZTV20-2.5 3-way ZTR20-2.5	2.5
PGV 500×300-4-2.5	2-way ZTV20-2.5 3-way ZTR20-2.5	2.5
PGV 500×400-2-2.5	2-way ZTV20-2.5 3-way ZTR20-2.5	2.5
PGV 500×400-4-2.5	2-way ZTV20-4.0 3-way ZTR20-4.0	4.0
PGV 600×300-2-2.5	2-way ZTV20-2.5 3-way ZTR20-2.5	2.5
PGV 600×300-4-2.5	2-way ZTV20-4.0 3-way ZTR20-4.0	4.0
PGV 600×350-2-2.5	2-way ZTV20-2.5 3-way ZTR20-2.5	2.5
PGV 600×350-4-2.5	2-way ZTV20-4.0 3-way ZTR20-4.0	4.0
PGV 700×400-2-2.5	2-way ZTV20-6.0 3-way ZTR20-6.0	6.0
PGV 700×400-3-2.5	2-way ZTV20-6.0 3-way ZTR20-6.0	6.0
PGV 800×400-2-2.5	2-way ZTV20-6.0 3-way ZTR20-6.0	6.0
PGV 800×400-3-2.5	2-way ZTV20-8.0 3-way ZTR20-8.0	8.0
PGV 800×500-2-2.5	2-way ZTV20-6.0 3-way ZTR20-6.0	6.0
PGV 800×500-3-2.5	2-way ZTVB25-8.0 3-way ZTRB25-8.0	8.0
PGV 1000×500-2-2.5	2-way ZTVB25-8.0 3-way ZTRB25-8.0	8.0
PGV 1000×500-3-2.5	2-way ZTVB25-8.0 3-way ZTRB25-8.0	8.0
PGV 1200×600-2-2.5	2-way ZTVB32-15 3-way ZTRB32-15	15.0
PGV 1200×600-3-2.5	2-way ZTVB32-15 3-way ZTRB32-15	15.0

Water temp. 150 °C max.

Actuators RVAN5-24 (3-position) or RVAN5-24A (0...10 V) can be used for all MTVS/MTRS valves.

Type of PGV	Valve type	Kvs
PGV 400×200-2-2.5	2-way MTVS15-1.6 3-way MTRS15-1.6	1.6
PGV 400×200-4-2.5	2-way MTVS15-2.7 3-way MTRS15-2.7	2.7
PGV 500×250-2-2.5	2-way MTVS15-1.6 3-way MTRS15-1.6	1.6
PGV 500×250-4-2.5	2-way MTVS15-2.7 3-way MTRS15-2.7	2.7
PGV 500×300-2-2.5	2-way MTVS15-2.7 3-way MTRS15-2.7	2.7
PGV 500×300-4-2.5	2-way MTVS15-2.7 3-way MTRS15-2.7	2.7
PGV 500×400-2-2.5	2-way MTVS15-2.7 3-way MTRS15-2.7	2.7
PGV 500×400-4-2.5	2-way MTVS15-4.2 3-way MTRS15-4.2	4.2
PGV 600×300-2-2.5	2-way MTVS15-2.7 3-way MTRS15-2.7	2.7
PGV 600×300-4-2.5	2-way MTVS20-4.2 3-way MTRS20-4.2	4.2
PGV 600×350-2-2.5	2-way MTVS15-2.7 3-way MTRS15-2.7	2.7
PGV 600×350-4-2.5	2-way MTVS20-4.2 3-way MTRS20-4.2	4.2
PGV 700×400-2-2.5	2-way MTVS20-5.6 3-way MTRS20-5.6	5.6
PGV 700×400-3-2.5	2-way MTVS20-5.6 3-way MTRS20-5.6	5.6
PGV 800×400-2-2.5	2-way MTVS15-5.6 3-way MTRS15-5.6	5.6
PGV 800×400-3-2.5	2-way MTVS15-5.6 3-way MTRS15-5.6	5.6
PGV 800×500-2-2.5	2-way MTVS20-5.6 3-way MTRS20-5.6	5.6
PGV 800×500-3-2.5	2-way MTVS20-5.6 3-way MTRS20-5.6	5.6
PGV 1000×500-2-2.5	2-way MTVS20-5.6 3-way MTRS20-5.6	5.6
PGV 1000×500-3-2.5	2-way MTVS20-5.6 3-way MTRS20-5.6	5.6
PGV 1200×600-2-2.5	2-way MTVS25-10 3-way MTRS25-10	10
PGV 1200×600-3-2.5	2-way MTVS25-10 3-way MTRS25-10	10

Pressure drop **Pressure Drop Chart for Valves**





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