



**PGK**  
**Rectangular duct coolers**  
**for cooled water**

# PGK

## Rectangular duct coolers for cooled water

PGK duct coolers are designed for using cooled water as the cooling medium and are used for central cooling of the ventilation air in ventilation systems. The PGK is also used for individual cooling of the air supplied to individual rooms (zones). The duct cooler can be supplemented with regulators, sensors, actuators and valves for controlling the room air or supply air temperature.

- 8 standard sizes
- Same model for left-hand or right-hand installation.
- Stainless steel condensate drip tray. A droplet eliminator can be fitted regardless of the direction of air flow
- Tappings for venting and drainage
- Easily removable drip tray to simplify cleaning and inspection



### Control

VEAB has a complete range of regulators, sensors, actuators and valves for controlling the room air or supply air temperature.

### Operating data

Max. operating press.: 1,0 MPa (10 Bar)  
The coils are tested for leakage.

### Design

The casing is made of Aluzinc-coated sheet steel.  
The coil has copper tubes and aluminium fins.  
Tappings for venting and drainage.  
Stainless steel drip tray for collecting the condensate, with R1/2 drain connection.  
Removable drip tray for inspection and cleaning of the coil.

### Installation

The PGK is intended for installation in a horizontal duct, with the air flow in either direction.

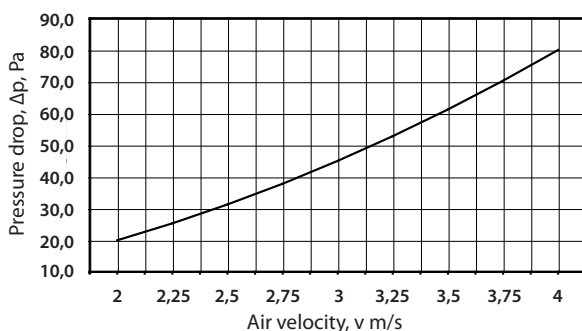
### Droplet eliminator

We recommend that a droplet eliminator should be installed on the outlet side of the coil if the air velocity is in excess of 2.5 m/s. This prevents water droplets being entrained by the air flow out into the duct system. The collected water is discharged through the stainless steel condensate drip tray.  
The droplet eliminator is easily accessible after the drip tray has been removed.



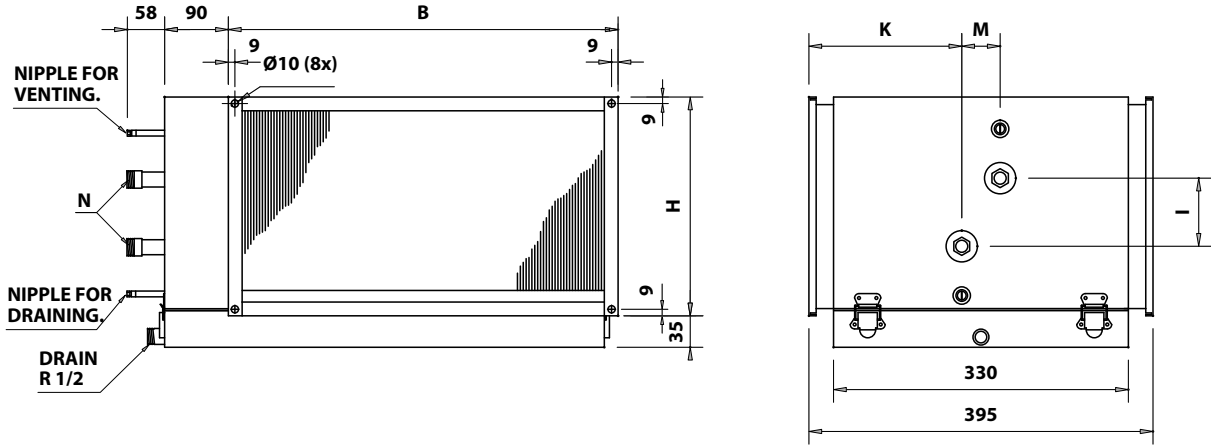
*Droplet eliminator DE*

Pressure drop across droplet eliminator



# Standard sizes of PGK

The tables on the following pages give examples of the capacity for each size.  
If none of these is suitable, we shall be pleased to carry out a computer calculation.



All dimensions in mm

PGK duct cooler	B	H	I	K	M	N	
	mm	mm	mm	mm	mm	connection R	DE
PGK 400x200-3-2,0	438	238	70	176	43	3/4"	DE 40x20
PGK 500x250-3-2,0	538	288	120	176	43	3/4"	DE 50x25
PGK 500x300-3-2,0	538	338	175	176	43	3/4"	DE 50x30
PGK 600x300-3-2,0	638	338	170	176	43	3/4"	DE 60x30
PGK 600x350-3-2,0	638	388	220	176	43	3/4"	DE 60x35
PGK 700x400-3-2,0	738	438	250	170	55	1"	DE 70x40
PGK 800x500-3-2,0	838	538	340	170	55	1"	DE 80x50
PGK 1000x500-3-2,0	1038	538	350	170	55	1"	DE 100x50

## Project design/ordering

**Type designation** PGK 400x200 - 3 - 2,0  
(example)

Size designation \_\_\_\_\_

Number of tube rows \_\_\_\_\_

Fin pitch, mm \_\_\_\_\_

Specify the following when placing your order

1. Air flow rate: - m<sup>3</sup>/h
2. Inlet air temp.: - °C
3. Outlet air temp. or required output: - °C or - kW
4. Size W x H: - mm
5. Inlet water temp.: - °C
6. Outlet water temp. or water flow: - °C or - l/sek
7. Inlet air humidity: - % RH
8. Anti-freeze agent: - type/ %
9. Droplet eliminator, if any:

**Capacity of PGK 400x200-3-2.0      Water temperature 6/12°C**

Air flow	Pressure. drop	Inlet air temp.	Inlet air humidity	Outlet air temp.	Output	Water flow	Water press. drop
m <sup>3</sup> /h	Pa	°C	% RH	°C	kW	l/s	kPa
576	31	25	50	17,0	1,53	0,06	1
576	49	30	45	19,0	2,50	0,10	3
864	66	25	50	18,4	1,89	0,08	2
864	103	30	45	20,2	3,26	0,13	5
1152	113	25	50	19,2	2,20	0,09	2
1152	175	30	45	20,8	4,15	0,17	7

**Capacity of PGK 500x250-3-2.0      Water temperature 6/12°C**

Air flow	Pressure. drop	Inlet air temp.	Inlet air humidity	Outlet air temp.	Output	Water flow	Water press. drop
m <sup>3</sup> /h	Pa	°C	% RH	°C	kW	l/s	kPa
900	31	25	50	17,0	2,38	0,09	2
900	49	30	45	18,6	4,27	0,17	5
1350	66	25	50	18,2	3,02	0,12	3
1350	103	30	45	19,4	6,16	0,25	9
1800	113	25	50	18,9	3,61	0,14	4
1800	175	30	45	19,8	8,34	0,33	15

**Capacity of PGK 500x300-3-2.0      Water temperature 6/12°C**

Air flow	Pressure. drop	Inlet air temp.	Inlet air humidity	Outlet air temp.	Output	Water flow	Water press. drop
m <sup>3</sup> /h	Pa	°C	% RH	°C	kW	l/s	kPa
1080	31	25	50	17,1	2,83	0,11	1
1080	49	30	45	18,8	4,93	0,20	4
1620	66	25	50	18,4	3,56	0,14	2
1620	103	30	45	19,7	6,94	0,28	7
2160	113	25	50	19,1	4,22	0,17	3
2160	175	30	45	20,1	9,40	0,37	12

**Capacity of PGK 600x300-3-2.0      Water temperature 6/12°C**

Air flow	Pressure. drop	Inlet air temp.	Inlet air humidity	Outlet air temp.	Output	Water flow	Water press. drop
m <sup>3</sup> /h	Pa	°C	% RH	°C	kW	l/s	kPa
1296	31	25	50	17,3	3,3	0,13	1
1296	49	30	45	19,0	5,69	0,23	3
1944	66	25	50	18,6	4,13	0,16	2
1944	103	30	45	19,8	8,12	0,32	6
2592	113	25	50	19,3	4,90	0,20	3
2592	175	30	45	20,1	11,18	0,45	11

**Capacity of PGK 600x350-3-2.0      Water temperature 6/12°C**

Air flow	Pressure. drop	Inlet air temp.	Inlet air humidity	Outlet air temp.	Output	Water flow	Water press. drop
m <sup>3</sup> /h	Pa	°C	% RH	°C	kW	l/s	kPa
1512	31	25	50	17,3	3,86	0,15	1
1512	49	30	45	19,0	6,64	0,26	3
2268	66	25	50	18,6	4,82	0,19	2
2268	103	30	45	19,8	9,48	0,38	6
3024	113	25	50	19,3	5,72	0,23	3
3024	175	30	45	20,1	13,05	0,52	11

**Capacity of PGK 700x400-3-2.0      Water temperature 6/12°C**

Air flow	Pressure. drop	Inlet air temp.	Inlet air humidity	Outlet air temp.	Output	Water flow	Water press. drop
m <sup>3</sup> /h	Pa	°C	% RH	°C	kW	l/s	kPa
1920	47	25	50	17,1	5,02	0,20	1
1920	74	30	45	18,1	8,66	0,35	2
2880	91	25	50	18,5	6,20	0,25	1
2880	142	30	45	18,8	12,94	0,52	4
3840	142	25	50	19,3	7,26	0,29	2
3840	222	30	45	19,0	18,41	0,73	8

**Capacity of PGK 800x500-3-2.0      Water temperature 6/12°C**

Air flow	Pressure. drop	Inlet air temp.	Inlet air humidity	Outlet air temp.	Output	Water flow	Water press. drop
m <sup>3</sup> /h	Pa	°C	% RH	°C	kW	l/s	kPa
2743	47	25	50	17,1	7,20	0,29	1
2743	74	30	45	17,6	13,59	0,54	3
4115	91	25	50	18,4	9,04	0,36	1
4115	142	30	45	18,0	21,61	0,86	6
5486	142	25	50	19,0	10,82	0,43	2
5486	222	30	45	18,6	28,41	1,13	10

**Capacity of PGK 1000x500-3-2.0      Water temperature 6/12°C**

Air flow	Pressure. drop	Inlet air temp.	Inlet air humidity	Outlet air temp.	Output	Water flow	Water press. drop
m <sup>3</sup> /h	Pa	°C	% RH	°C	kW	l/s	kPa
3429	47	25	50	17,5	8,56	0,34	1
3429	74	30	45	17,9	16,13	0,64	2
5144	91	25	50	18,7	10,72	0,43	1
5144	142	30	45	18,0	26,77	1,07	6
6858	142	25	50	19,3	12,85	0,51	2
6858	222	30	45	18,6	35,52	1,41	10

## Regulators

The AQUA and OPTIGO regulators are designed for controlling the room air temperature or the supply air temperature in air handling systems. The regulators can be combined with sensors, actuators, valves, etc.



*AQUA 24/230T*



*AQUA 24 TF*



*OPTIGO OP5/10*

### AQUA

- Complete regulator with built-in room sensor
- Floating control for controlling three-position actuators
- Cascade connection with minimum limit for room temperature control
- Can be equipped with external room and/or duct sensor
- Temperature range 0 - 30°C, depending on the sensor employed
- Can be equipped with external setpoint adjustment

### AQUA 24 T

- 24 V supply

### AQUA 230 T

- 230 V AC supply

### AQUA 24 TF

- 24 V supply
- Regulating anti-freeze protection and heating during stoppage

### OPTIGO

- Regulator with display
- One knob for all settings
- For mounting on DIN rail
- Operates with PT1000 sensor in the range of -20°C to + 40°C
- Started/stopped with "run" signal from the fan

### OP 5

- 24 V supply
- 0...10V control signal output
- Operates with one sensor (room or duct sensor)
- Can be reset for heating or cooling control




### OP 10

- 24 V supply
- Can be reset for 0...10V control signal output or 3-point control
- Two control outputs, e.g. for heating and cooling in sequence
- Input for two sensors and anti-freeze sensor
- Supply air temperature control or room temperature control with cascade-controlled supply air
- Anti-freeze control with heating during stoppage
- Output, e.g. for starting/stopping of fans via 230 V AC, 5A relay
- Programmable one-week timer for controlling both fan and heating/cooling
- Terminal for external timer that extends the operating time

### OP 10-230

- Same functions as the OP 10, but with 230 V AC supply

## Accessories for AQUA

	Product	Range	Design
	Duct sensor TG-K330	0-30°C	Degree of protection IP 20
	Room sensor TG-R430 with setpoint adjustment	0-30°C	Degree of protection IP 30
	Room sensor TG-R530	0-30°C	Degree of protection IP 30
	Room sensor TG-R630	0-30°C	Degree of protection IP 65
	Trafo 60 Totally enclosed transformer for wall mounting. Built-in two-pole fuse on secondary side		Primary voltage 230 V AC Secondary voltage 24 V AC Max. rating 60 VA  Degree of protection IP 44

## Accessories for OPTIGO

	Product	Range	Design
	TG-K3/PT1000	-30...+70°C	Degree of protection IP 65
	Room sensor TG-R4/PT1000 with setpoint adjustment	+5...30°C	Degree of protection IP 30
	Room sensor TG-R5/PT1000	+5...30°C	Degree of protection IP 30
	Room sensor TG-UH/PT1000	-30...+120°C	Degree of protection IP 65
	Trafo 60 Totally enclosed transformer for wall mounting. Built-in two-pole fuse on secondary side		Primary voltage 230 V AC Secondary voltage 24 V AC Max. rating 60 VA  Degree of protection IP 44

## Actuators and valves for Kvs 0.25 - 6.3 (95°C max.)

Description	Type
3-position actuator for VST/VMT valves	MVT 44
Actuator for 0...10V signal for VST/VMT valves	MVT 57



*Actuator MVT*

Description	Kvs	Type
2-way 1/2" valve	0,25	VST 09
2-way 1/2" valve	0,4	VST 10
2-way 1/2" valve	0,6	VST 11
2-way 1/2" valve	1,0	VST 12
2-way 1/2" valve	1,6	VST 13
2-way 1/2" valve	2,5	VST 1
2-way 3/4" valve	4,0	VST 2
2-way 3/4" valve	6,3	VSBT 3
3-way 1/2" valve	0,25	VMT 09
3-way 1/2" valve	0,4	VMT 10
3-way 1/2" valve	0,6	VMT 11
3-way 1/2" valve	1,0	VMT 12
3-way 1/2" valve	1,6	VMT 13
3-way 1/2" valve	2,5	VMT 1
3-way 3/4" valve	4,0	VMT 2
3-way 3/4" valve	6,3	VMBT 3



*Valve VST*



*Valve VMT*

## Actuators and valves for Kvs 0.63 - 16.0 (185°C max.)

Description	Type
3-position actuator for STV valves	AQT 1000A-1R
Actuator for 0...10V signal for STR valves	AQM 2000A-1R

Description	Kvs	Type
2-way 1/2" valve	0,63	STV 15-0,63
2-way 1/2" valve	1,0	STV 15-1,0
2-way 1/2" valve	1,6	STV 15-1,6
2-way 1/2" valve	2,1	STV 15-2,1
2-way 1/2" valve	2,7	STV 15-2,7
2-way 3/4" valve	4,2	STV 20-4,2
2-way 3/4" valve	5,6	STV 20-5,6
2-way 1" valve	10,0	STV 25-10,0
2-way 1/4" valve	16,0	STV 32-16,0
3-way 1/2" valve	0,63	STR 15-0,63
3-way 1/2" valve	1,0	STR 15-1,0
3-way 1/2" valve	1,6	STR 15-1,6
3-way 1/2" valve	2,1	STR 15-2,1
3-way 1/2" valve	2,7	STR 15-2,7
3-way 3/4" valve	4,2	STR 20-4,2
3-way 3/4" valve	5,6	STR 20-5,6
3-way 1" valve	10,0	STR 25-10,0
3-way 1/4" valve	16,0	STR 32-16,0

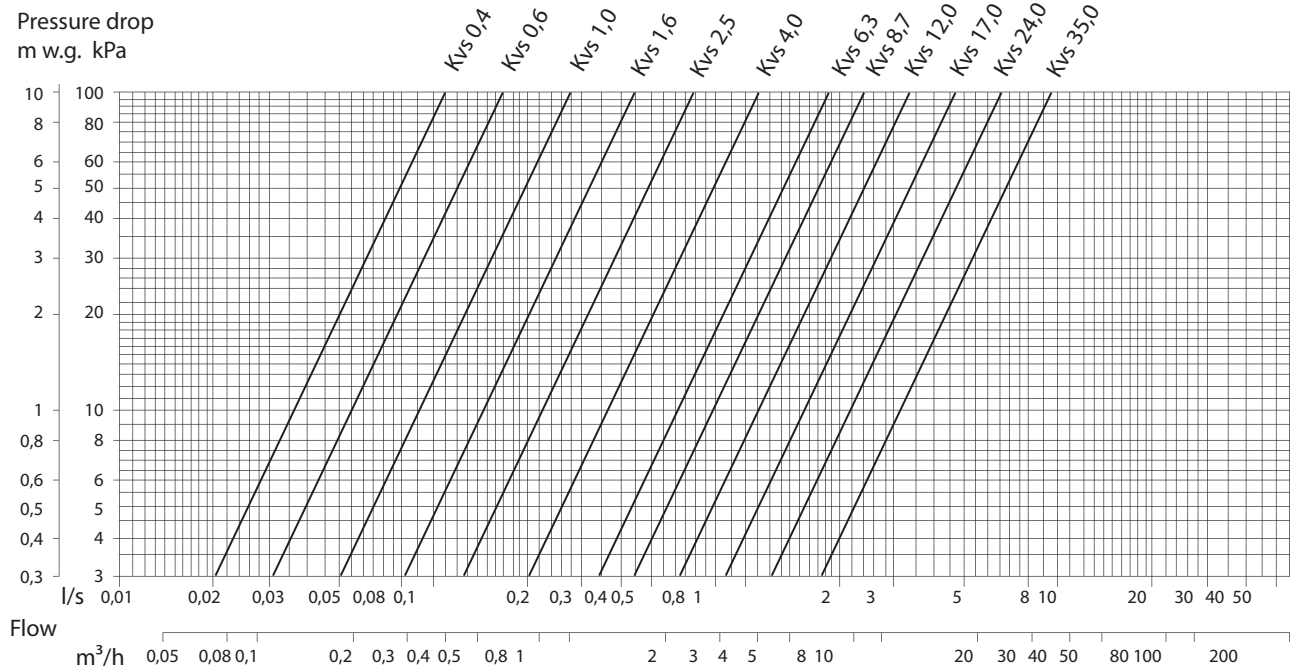


*Actuator AQT with valve STV*

## Guide for selection of valves and actuators for standard PGK cooler

PGK type	Valve type	Kvs	Actuators			
			3-position MVT 44	0...10 V actuator MVT 57	3-position AQT1000A-1R	0...10 V actuator AQM 2000A-1R
PGK 400x200-3-2,0	VST 13	1,6	●	●		
PGK 500x250-3-2,0	VST 1	2,5	●	●		
PGK 500x300-3-2,0	VST 1	2,5	●	●		
PGK 600x300-3-2,0	VST 2	4,0	●	●		
PGK 600x350-3-2,0	VST 2	4,0	●	●		
PGK 700x400-3-2,0	STV 20-5,6	5,6			●	●
PGK 800x500-3-2,0	STV 25-10,0	10,0			●	●
PGK 1000x500-3-2,0	STV 25-10,0	10,0			●	●

## Pressure drop across valves





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