

DEVICE DESCRIPTION

CPK-0 unit is a complement of suspended series of types offered by Juwent company with the smallest unit regarding the air capacity 100-500m³/h. It's designed for the offices, shops, houses etc.

At the inlet and outlet the unit is equipped with the elastic spouts (6), throttling valves cutting off the air inflow on inlet side (7), EU5 class pleated filter (1), 2-rows water heater (2), radial-axial fan with single-phase motor with electronic commutation (3). As an option we offer also electric heater. Other elements are described and showed on the picture presenting the unit overall dimensions.

CONSTRUCTION

Unit construction is self-supporting and consists of three layers: external varnished sheet, thermal-acoustic insulation made of 25mm thick mineral wool, internal galvanized sheet. Heat supply to of the unit is realized with the help of elastic hoses with 1 " diameter.

ASSEMBLY

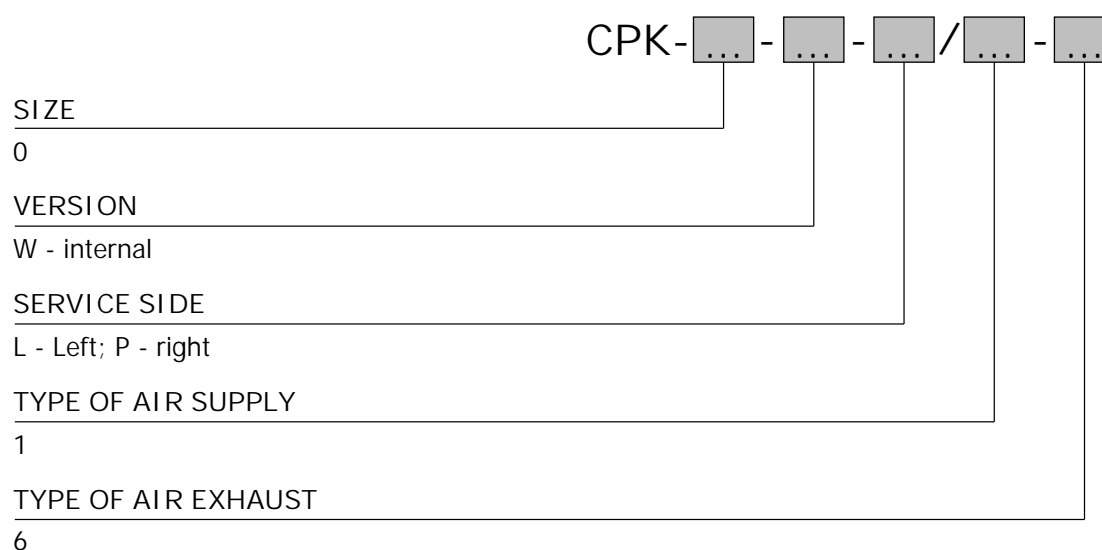
CPK-0 unit can operate in the horizontal or vertical position. As a standard unit is equipped with four assembly jigs (9) with the 13 holes and rubber distance pieces 24/8,5 dampening the vibrations transferred on the assembling elements to the building partitions.

ATTENTION: Assembling elements to the building partitions are not standard equipment of the unit.

OPERATIONAL CONDITIONS

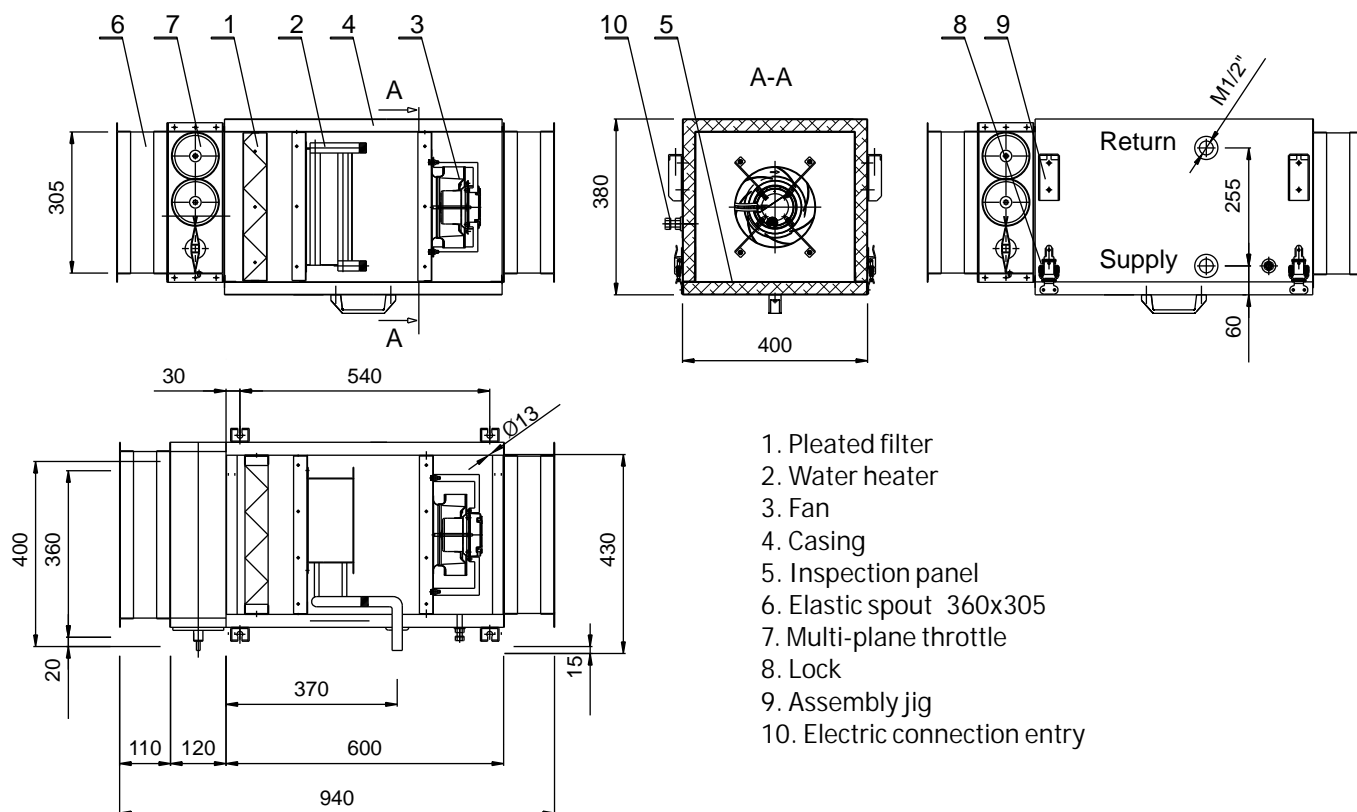
Device can be installed only in the compartments which protect them against atmospheric precipitations and the influence of minus temperatures of external air in the wintertime. The temperature range of transferred air is from - 25°C to +40°C. The other operational conditions are according with service instructions.

DESIGNATION



Example: CPK-0-W-P/1-6 means right unit version: technologic heat connection and electric power supply are on the right side of the unit when looking from the air inflow side.

DIMENSIONS



1. Pleated filter
2. Water heater
3. Fan
4. Casing
5. Inspection panel
6. Elastic spout 360x305
7. Multi-plane throttle
8. Lock
9. Assembly jig
10. Electric connection entry

Fan parameters

Voltage [V]	Frequency [Hz]	Motor power [W]	Current [A]	Revolutions [rpm]	IP	Working temp. [°C]
230	50	120	1,0	4500	44	-25 do 60

NLW.10.18x25.III.20.2.P.V water heater parameters

Heater water capacity is 0,27 dm³.

V _p	t _z	Heating medium 90/70°C				Heating medium 80/60°C			
		Q _{max}	t _{Nmax}	P _H	V _H	Q _{max}	t _{Nmax}	P _H	V _H
[m ³ /h]	[°C]	[kW]	[°C]	[kPa]	[m ³ /h]	[kW]	[°C]	[kPa]	[m ³ /h]
100	-20	2,3	40	0,95	0,10	2,3	40	0,96	0,10
200	-20	4,7	40	3,48	0,20	4,7	40	3,53	0,20
300	-20	7,0	40	7,49	0,30	6,4	35	6,43	0,28
400	-20	9,3	40	12,91	0,40	7,8	30	9,25	0,33
500	-20	10,7	35	16,72	0,46	9,7	30	14,11	0,42

V _p	t _z	Heating medium 90/70°C				Heating medium 80/60°C			
		Q _{max}	t _{Nmax}	P _H	V _H	Q _{max}	t _{Nmax}	P _H	V _H
[m ³ /h]	[°C]	[kW]	[°C]	[kPa]	[m ³ /h]	[kW]	[°C]	[kPa]	[m ³ /h]
100	-20	2,1	35	0,83	0,09	1,9	30	0,70	0,08
200	-20	3,9	30	2,54	0,17	3,5	25	2,11	0,15
300	-20	5,2	25	4,46	0,22	4,7	20	3,62	0,20
400	-20	7,0	25	7,76	0,30	5,4	15	4,84	0,23
500	-20	7,8	20	9,36	0,33	6,8	15	7,37	0,29

V_p – air flow

Q_{max} – maximal heating power

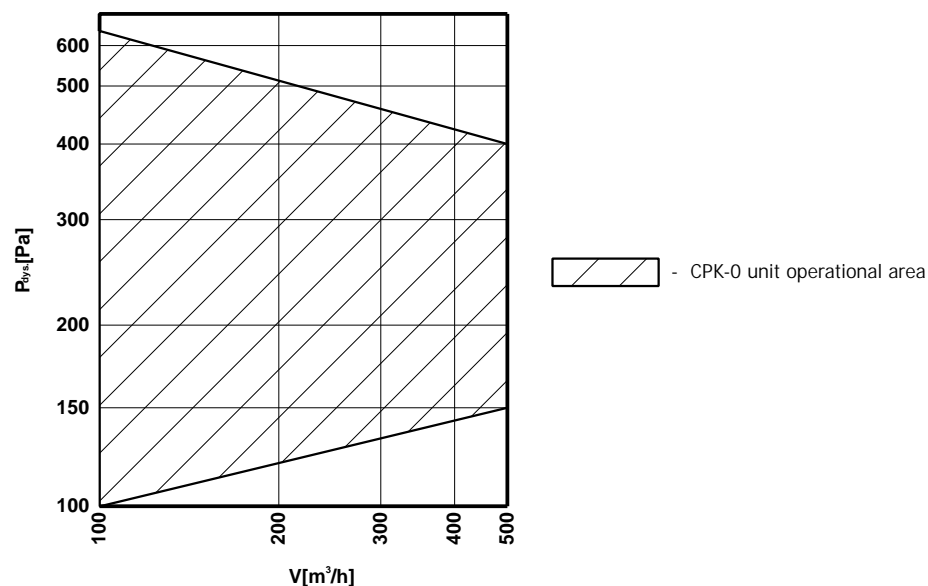
P_H – heating medium resistances

t_z – inflow to the heater temperature

t_{Nmax} – maximal temperature behind the heater

V_H – heating medium flow

SELECTION NOMOGRAM



AUTOMATICS CPK-0 WITH ELECTRIC HEATER

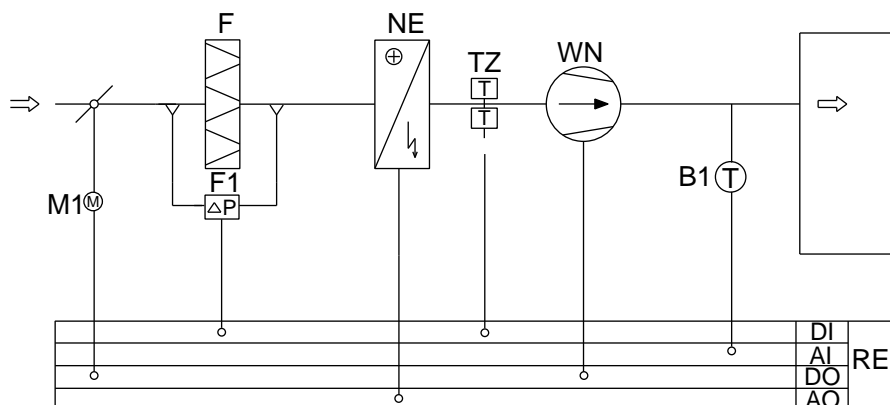
SYSTEM DESCRIPTION:

Automatics system supplying and controlling the supply ventilation unit with heater is intended for keeping constant temperature value with supply temperature limitation.

Ventilation unit work is controlled by the supply-control cabinet. After switching the unit on, the fan is switched on, M1 servo-motor opens the air inlet throttling valves and the controller, depending on temperature measured by B1, switches on the next levels of heating elements of the heater in the duct in the way to set programmed temperature. TZ thermostat protects the units against the excessive heater temperature increase. F1 Pressure switch informs about the excessive filter contamination.

After switching the unit off at first electric heater is switched off, and then (after some time which enable cooling the heater) the fan is also switched off and the throttling valve is closed.

Temperature adjustment is made on the CPU driver with the possibility of readout and setting the adjustment parameters on the display whereas efficiency is adjusted with the help of R potentiometer R.



DESIGNATIONS:

M1- throttling valve servo-motor
F1- filter pressure switch
NE- electric heater

TZ – heater protection thermostat
B1- duct temperature sensor
F- filter

PROTECTIONS AND CONTROL

- against the temperature increase on the heater - heater has built in TZ thermostat protecting it against overheating. In case when the temperature rises above set value the signal lamp „HEATER FAILURE” on the cabinet will be switched on, electric heater will be switched off and the fans will run until the time of temperature decrease.
- fan protection - in case of exceeding the motor nominal current the overload protection is activated and the lamp „Drive failure” on the cabinet is switched on.
- filter pressure switch - filter is equipped with pressure switch measuring the pressure drop on the filter. In the case of filter contamination the lamp „Dirty filter” on the cabinet will be switched on and the electric heater control system will be switched off. Filter and heater alarms are reseted with the manual RESET button placed on the front wall of the control cabinet.
- fan operation - lamp on the cabinet signals the fan operation
- heater operation - lamps on the cabinet signals the heater operation (II level division of heater heating power)

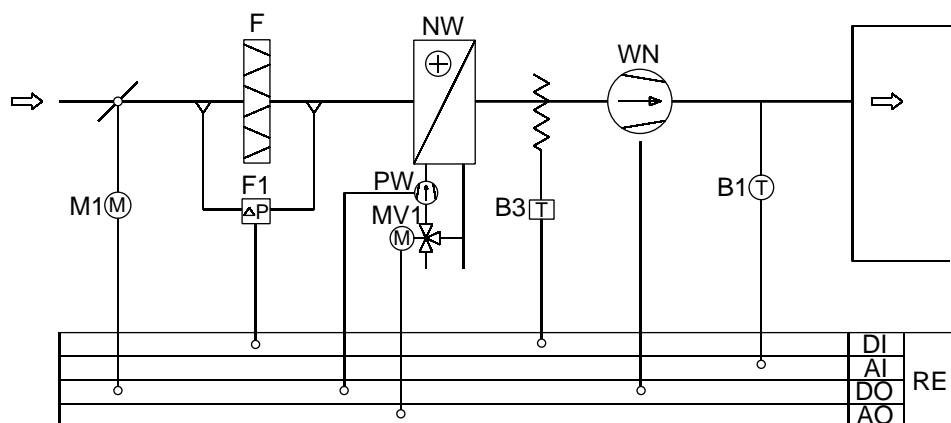
CPK-O WITH WATER HEATER

SYSTEM DESCRIPTION

Automatics system supplying and controlling the supply ventilation unit with heater is intended for keeping constant temperature value with supply temperature limitation.

Ventilation unit work is controlled by the supply-control cabinet. After switching the unit on, the fan is switched on, M1 servo-motor opens the air inlet throttling valves and the controller, depending on temperature measured by B1, sets proper MV1 valve servo-motor which changes medium flow through the heater intensity to keep set temperature value in the channel. Located in the air duct behind the heater B3 anti-freeze sensor protects it against freezing in two ways (active also in standby mode). F1 pressure switch informs about the excessive filter contamination.

Temperature adjustment is made on the CPU driver with the possibility of readout and setting the adjustment parameters on the display whereas efficiency is adjusted with the help of R potentiometer R.



DESIGNATIONS:

- | | |
|-----------------------------------|-------------------------------------|
| M1 – throttling valve servo-motor | MV1 – three-way heater valve |
| F1 – filter pressure switch | PW – water pump |
| B1 – duct temperature sensor | B3 - anti-freeze temperature sensor |
| NW – water heater | F - filter |
| WN - fan | |

PROTECTIONS AND CONTROL

- anti-freeze - in the case of temperature drop behind the heater below the programmed threshold value +5 C, B4 sensor will switch the unit operation off, close the throttling valve, fully open the valve until the temperature increase on the heater, activate the water pump and the signal lamp “Heater failure” on the cabinet will be switched on.
- fan - in case of exceeding the motor nominal currents the overload protection will be activated and the signal lamp “Drive failure” on the cabinet will be switched on.
- filter pressure switch - filter is equipped with pressure switch measuring the pressure drop on the filter. In case of filter contamination the lamp “Dirty filter” on the cabinet will be switched on.
- fan operation - green lamp on the cabinet signals the fan operation
- pump operation - after opening 5% of MV1 valve the water pump and the signal lamp „Pump operation” are switched on.