

SL-Aqua control boards of supply/supply and extract ventilation systems with the water heater

Designed for operating as a part of automation system of supply and air handling units with a water heater.

■ Applications

Control boards are designed for a complex control and protection of ventilation and air conditioning systems. Used in conjunction with air handling units equipped with a water heater, a cross-flow heat exchanger and a DX-cooler.

The control board casing contains the control and protective components of the power section and the automation electronic circuitry. The control board is designed for indoor application in dry environments free of dust and aggressive chemicals.

■ The control board has the following functions:

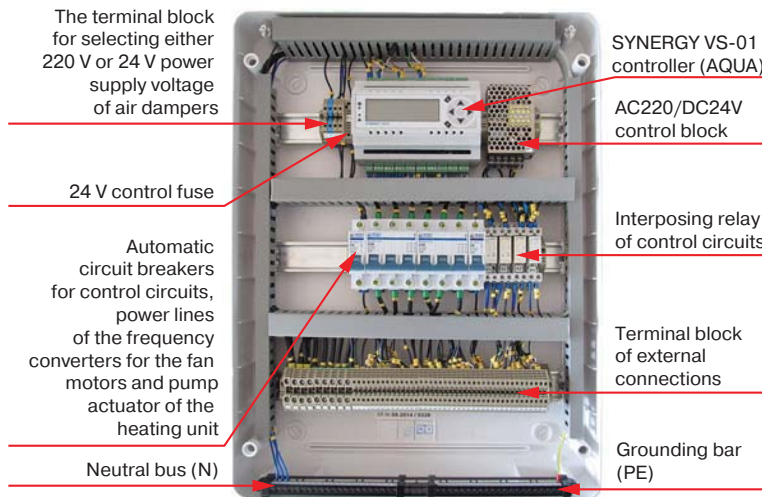
- ▶ Switching the electric motors of the unit ON/OFF.
- ▶ Stepless fan speed control (use of an additional external control device is required).
- ▶ Controlling the fan operation.

- ▶ Maintaining the set supply air temperature by means of controlling the 3-way heat medium control valve
- ▶ Water heater freeze protection on the feedback from the freeze thermostat installed downstream of the heater and the return heat medium temperature sensor.
- ▶ Controlling the external circulation pump installed in the line supplying heat medium to the water heater.
- ▶ Controlling the heat exchanger bypass damper.
- ▶ Freeze protection of the heat exchanger.
- ▶ Controlling the compressor and condensing unit (CCU) of the air cooler.
- ▶ Supply and extract filters clogging control according to hour meter readings.
- ▶ Controlling the electric actuator of the supply and exhaust air dampers.

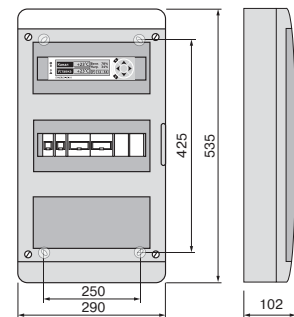
- ▶ Automatic control of the ventilation equipment operation using the weekly timer.
- ▶ System shutdown on a signal from fire fighting system.
- ▶ The control board is designed for indoor application with the ambient temperature ranging from +5°C up to +40°C and relative humidity up to 80%.

■ Mounting

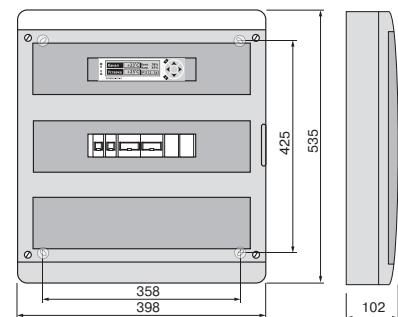
The control board is designed for vertical mounting on the wall. Run the cables using cable passages or in the wall. The spring-loaded return air damper actuators may be connected to the control units. The actuators are available with either 24 V DC or 230 V AC power supply.



Overall dimensions [mm]



SL-Aqua-0.55; SL-Aqua-2.0



SL-Aqua-4.0; SL-Aqua-5.5f; SL-Aqua 11.0

Accessories



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SINUS M, FC51 frequency converter

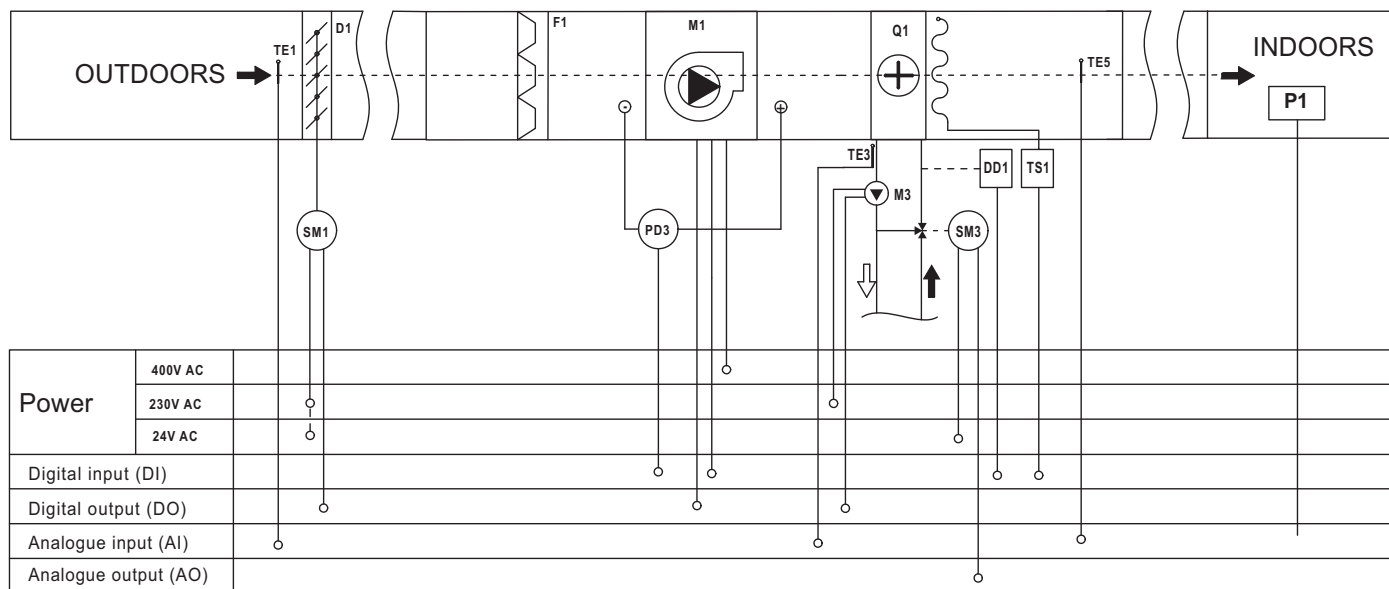
Designation key on the SL-Aqua functional diagrams



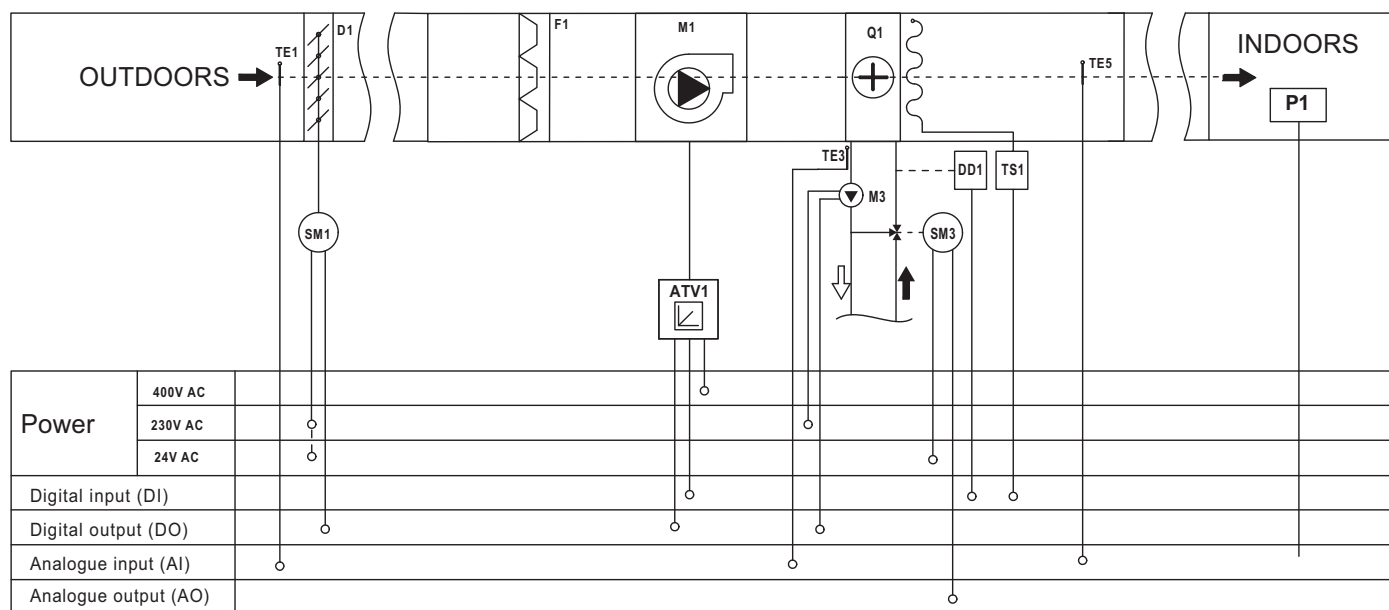
Designation	Name	Type
D1	Supply air damper	to be ordered separately
D2	Exhaust air damper	to be ordered separately
F1	Supply filter	pocket type
F2	Extract filter	pocket type
K1	DX-cooler	
M1	Supply fan	to be ordered separately
M2	Extract fan	to be ordered separately
ATV1	Frequency converter of the supply fan	to be ordered separately
ATV2	Frequency converter of the extract fan	to be ordered separately
PD3	Differential pressure switch of the supply fan	NO
PD4	Differential pressure switch of the extract fan	NO
Q1	Electric heater	max. 25 kW
RK1	Cross-flow heat exchanger	
SM1	Supply air damper electric actuator	LM 230 / LM24
SM2	Exhaust air damper electric actuator	LM 230 / LM24
SM4	Bypass damper electric actuator	LM24A
TE1	Outdoor air temperature sensor	NTC
TE2	Temperature sensor downstream of the heat exchanger	NTC
TE5	Duct temperature sensor	NTC
TK50	Thermal contact of the heater	NC
TK90	Response temperature = +50°C	NC
P1	Thermal contact of the heater	Synergy SP-01
	Response temperature = +90°C	
	Control panel	

SL-Aqua functional diagrams

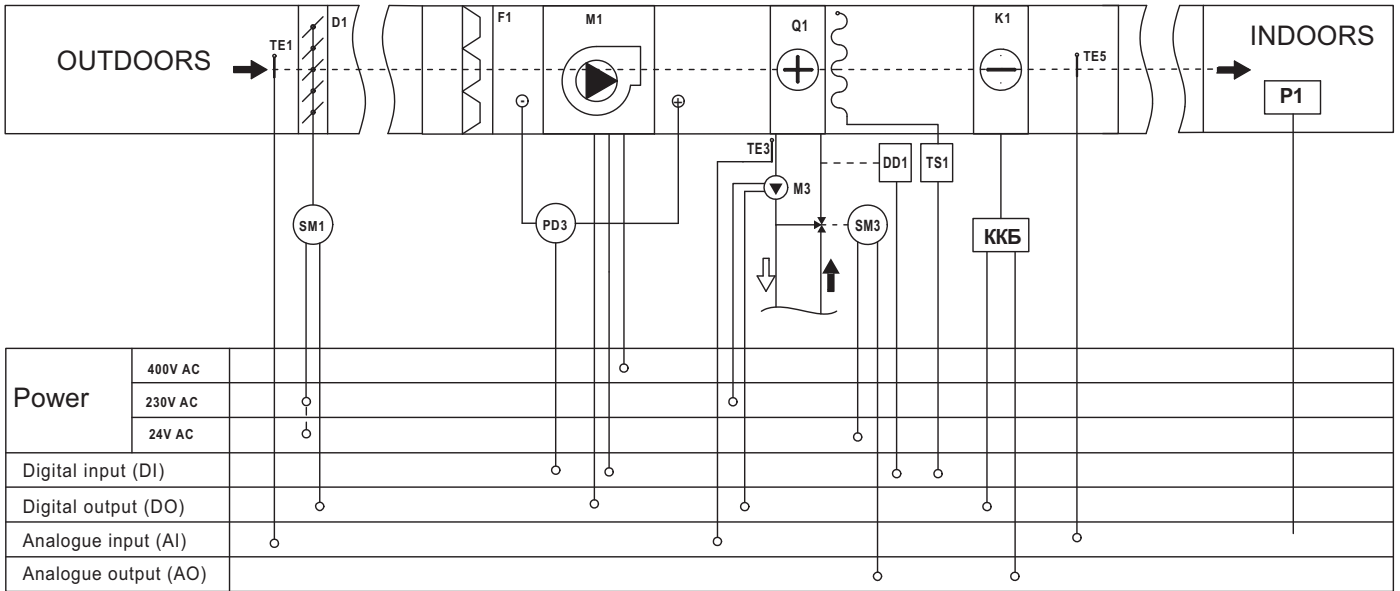
Direct-flow unit (AC/EC motor) with a water heater



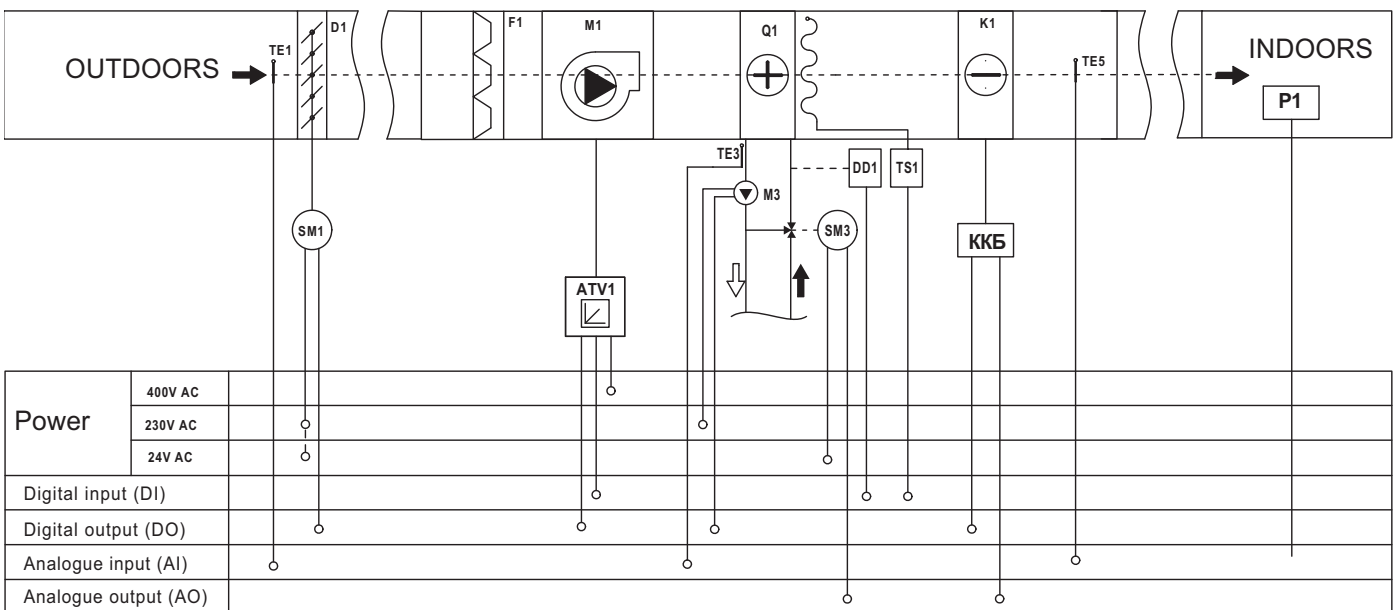
Direct-flow unit (AC motor with a frequency converter/EC motor) with a water heater



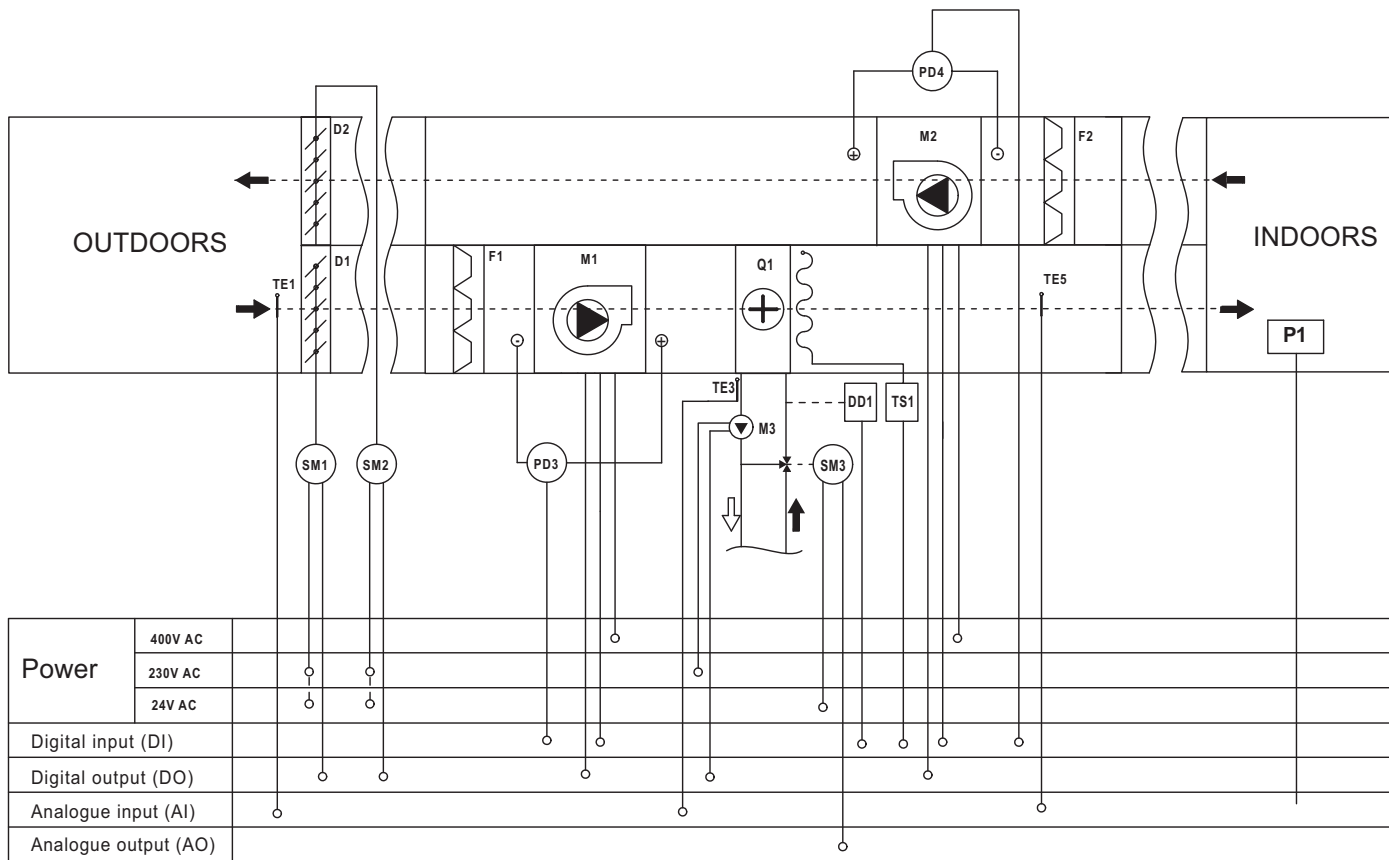
Direct-flow unit (AC/EC motor) with a water heater and a DX-cooler



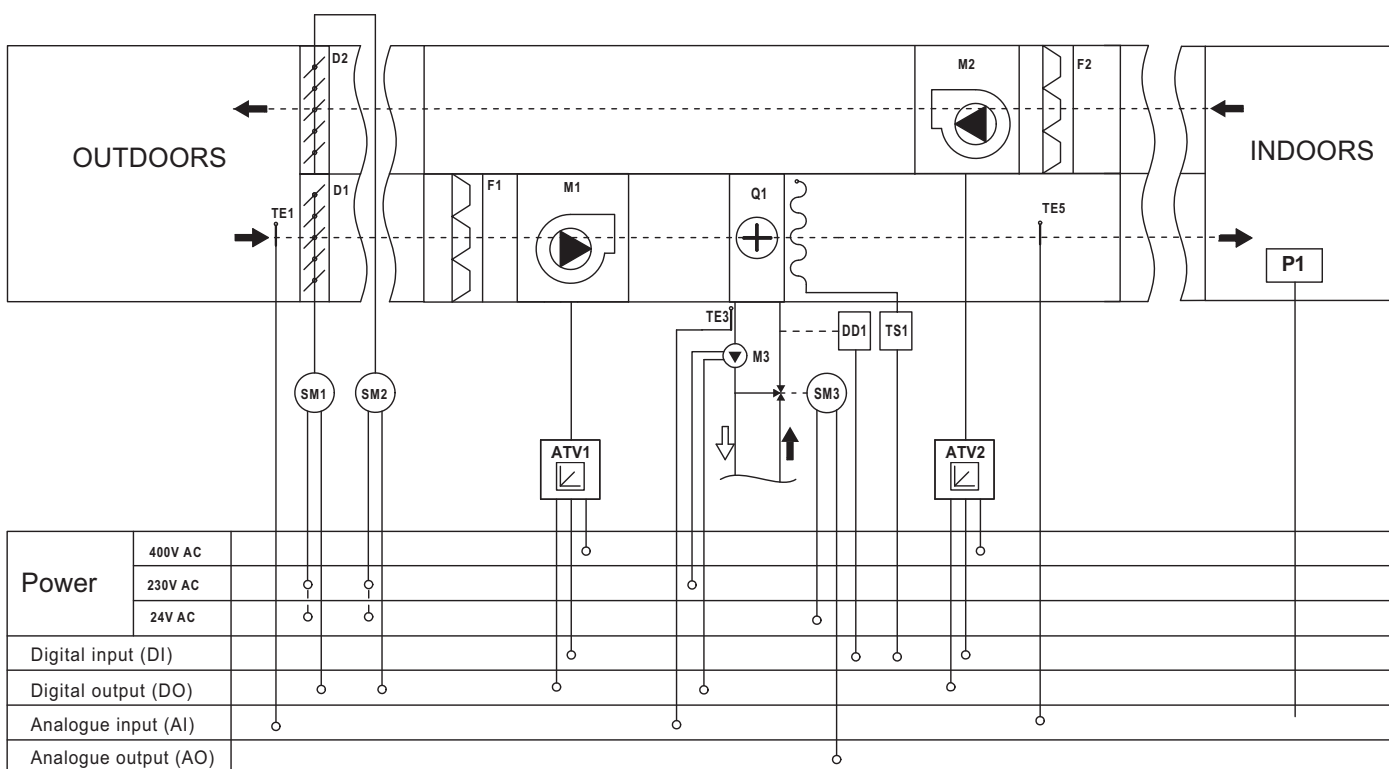
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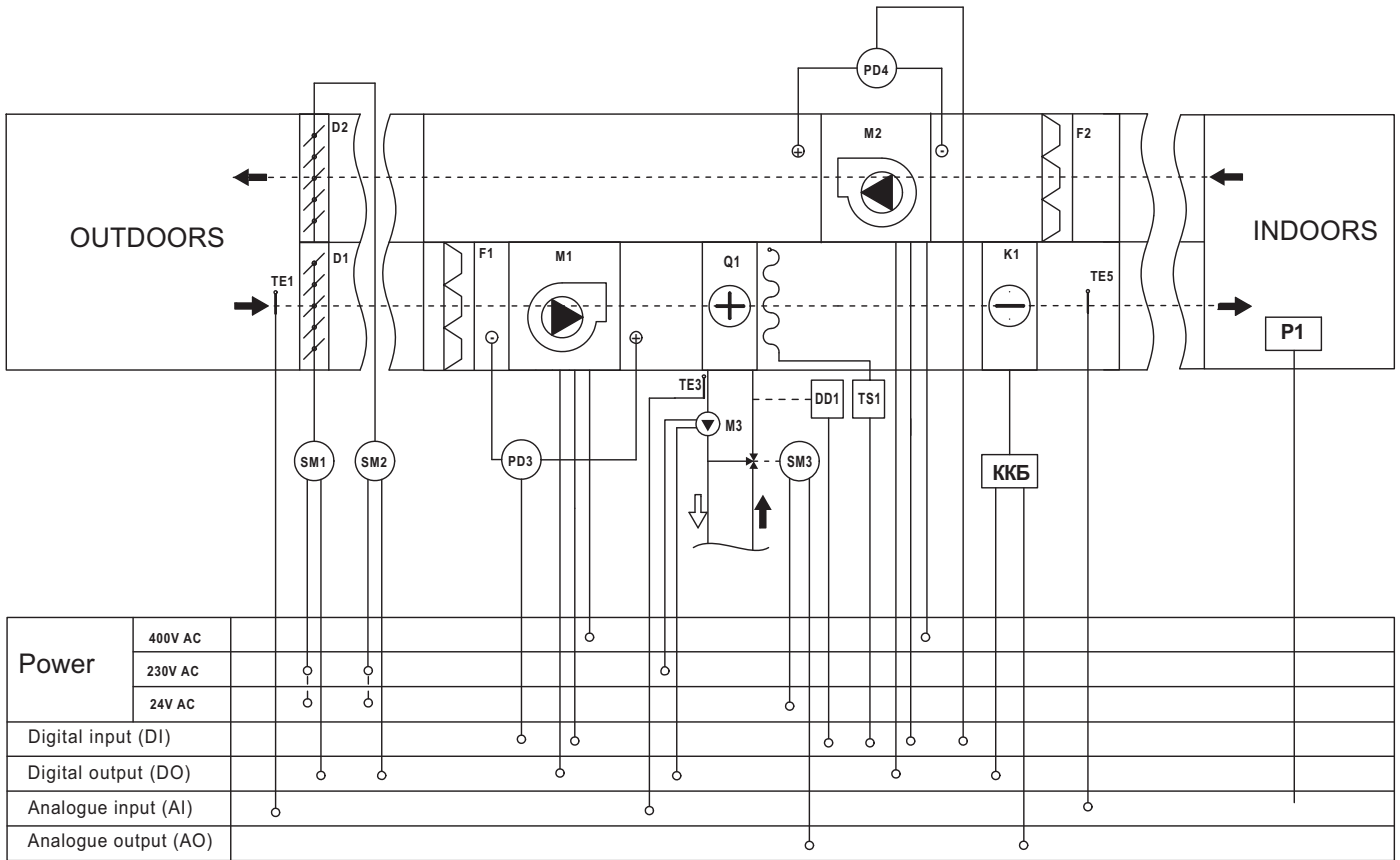
Air handling unit (AC/EC motor) with a water heater



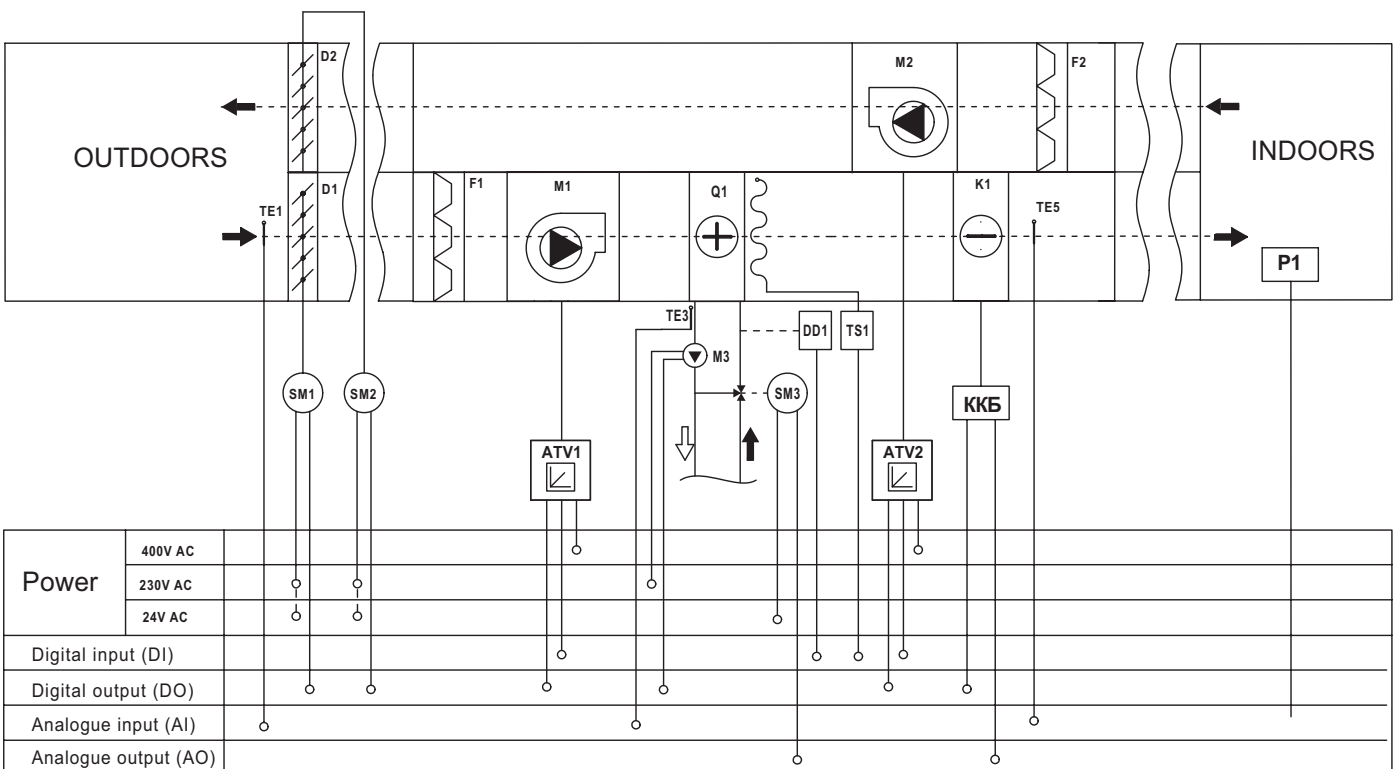
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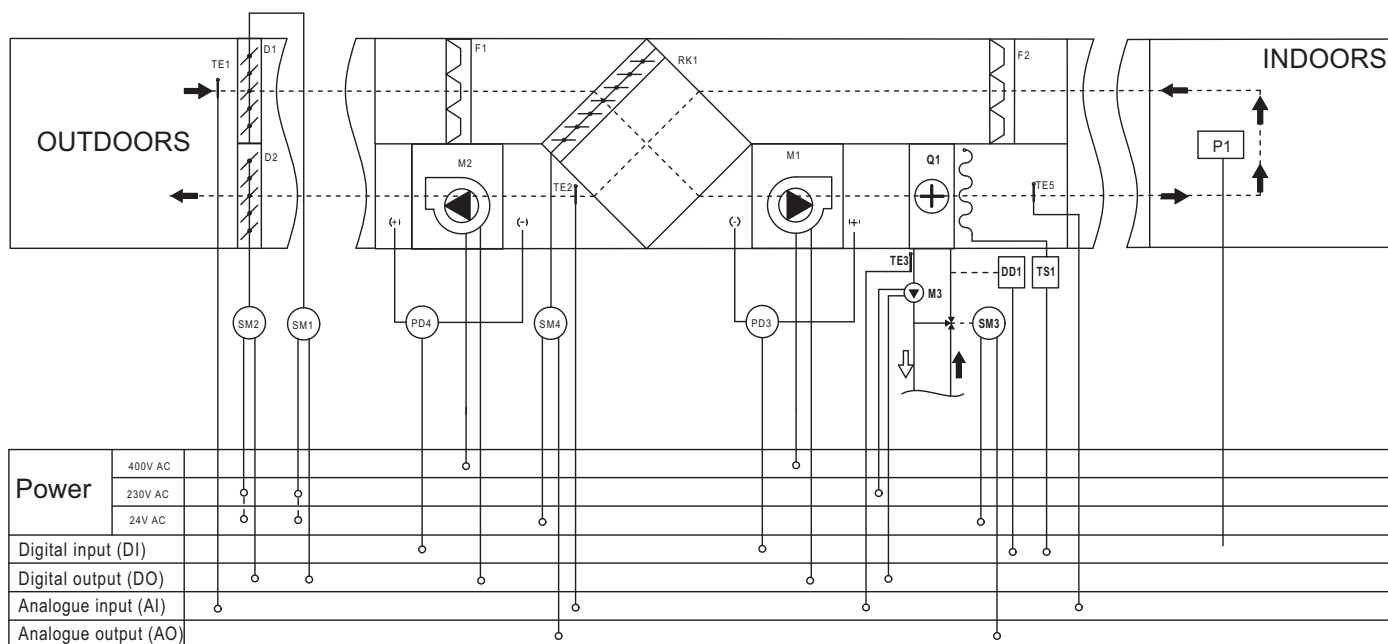
Air handling unit (AC/EC motor) with a water heater and a DX-cooler



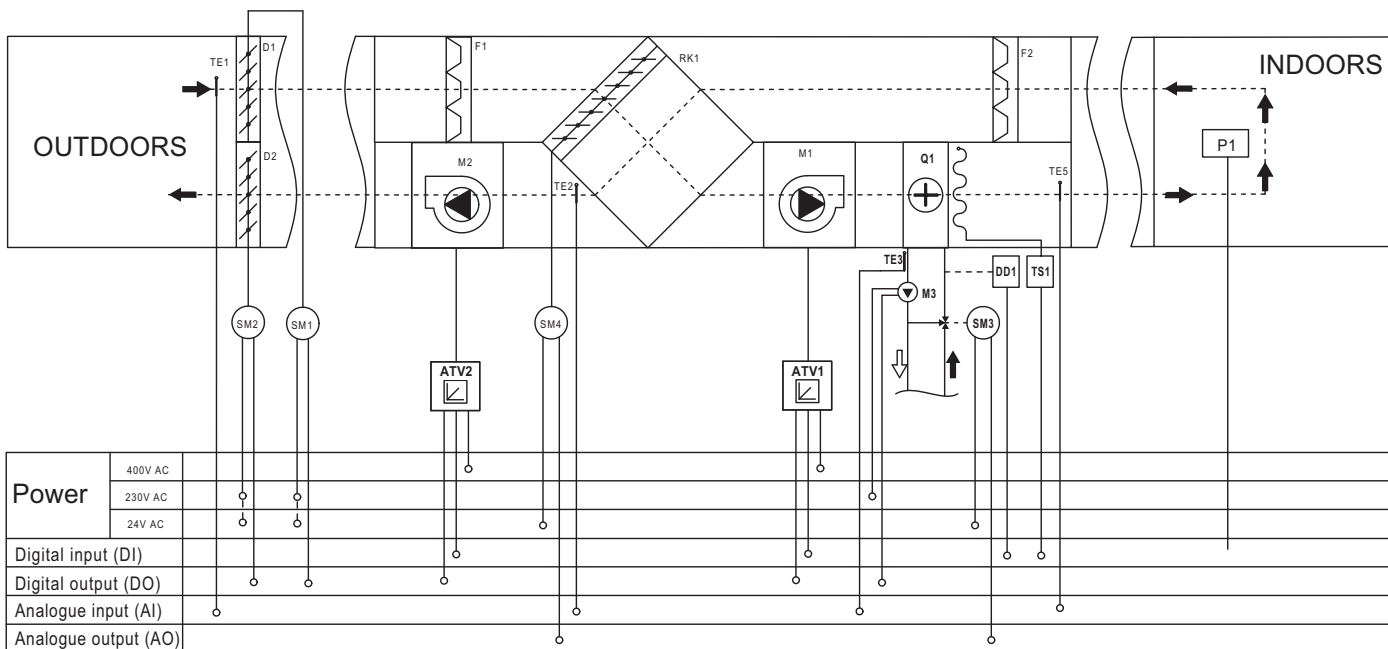
Air handling unit (AC motor with a frequency converter/EC motor) with a water heater and a DX-cooler



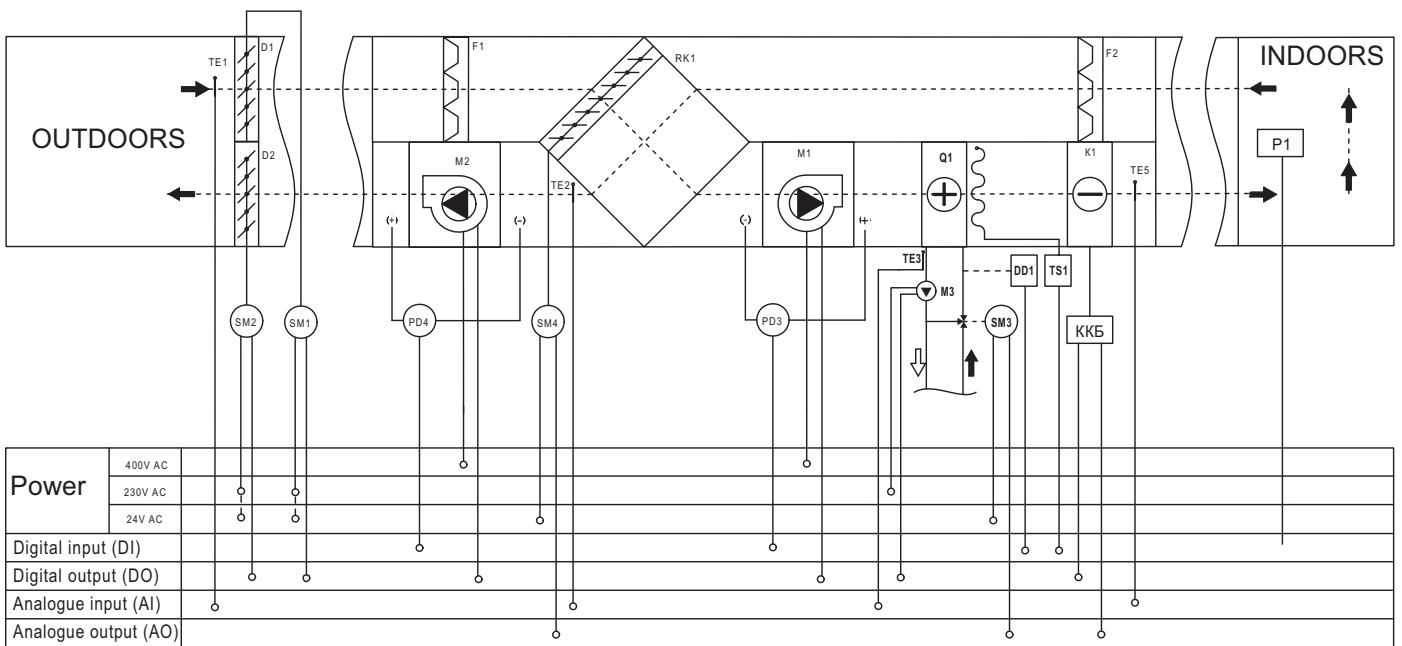
Air handling unit (AC/EC motor) with a water heater, a DX-cooler and a cross-flow heat exchanger



Air handling unit (AC motor with a frequency converter/EC motor) with a water heater, a DX-cooler and a cross-flow heat exchanger



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