



Water heat

1 model



Fan Heater SW02

Quiet fan heater for connection to water in small buildings

Application

SW02 is a compact fan heater with very low sound level designed for water connection. It is ideal for use where fan heaters are traditionally used such as in industrial buildings and warehouses, but also in environments with high demands on low sound levels, for example, stores and assembly halls.

Comfort

Frico's fan heaters are extremely quiet and quickly provide comfortable heating. The SW02 heater fan is equipped with an air director, which has individually adjustable louvres and directs the air flow as required.

Operation and economy

Frico's air fan heaters have a long life, providing fast and effective heating at a low cost. The air flow for SW02 can be controlled in three steps, which gives energy efficient output.

Design

The fan heater has a classic clean design in white enamelled sheet steel.

Product specifications

- Very low sound level.
- Mounted using the enclosed bracket on the wall or ceiling.
- Intended to pump hot water up to +110 °C in the standard design, but available for water temperatures up to +130 °C in special designs.
- Supplied with air director with individually adjustable louvres that direct the air flow on one plane.
- Three fan speeds.
- Corrosion proof housing made of hot zinc-plate and powder enameled steel panels. Colour: RAL 9016, NCS 0500 (white). Aluminium louvres.



Technical specifications | Fan heater SW02

Type	Heat output* ¹	Airflow* ²	Sound level* ³	Voltage	Amperage	Weight
	[W]	[m ³ /h]	[dB(A)]	[V]	[A]	[kg]
SW02	8-10	0,20/0,31	34-45	230V~	0,31	15

*¹) Applicable at water temperature 80/60 °C, surrounding temperature +15 °C, fan position min-max.

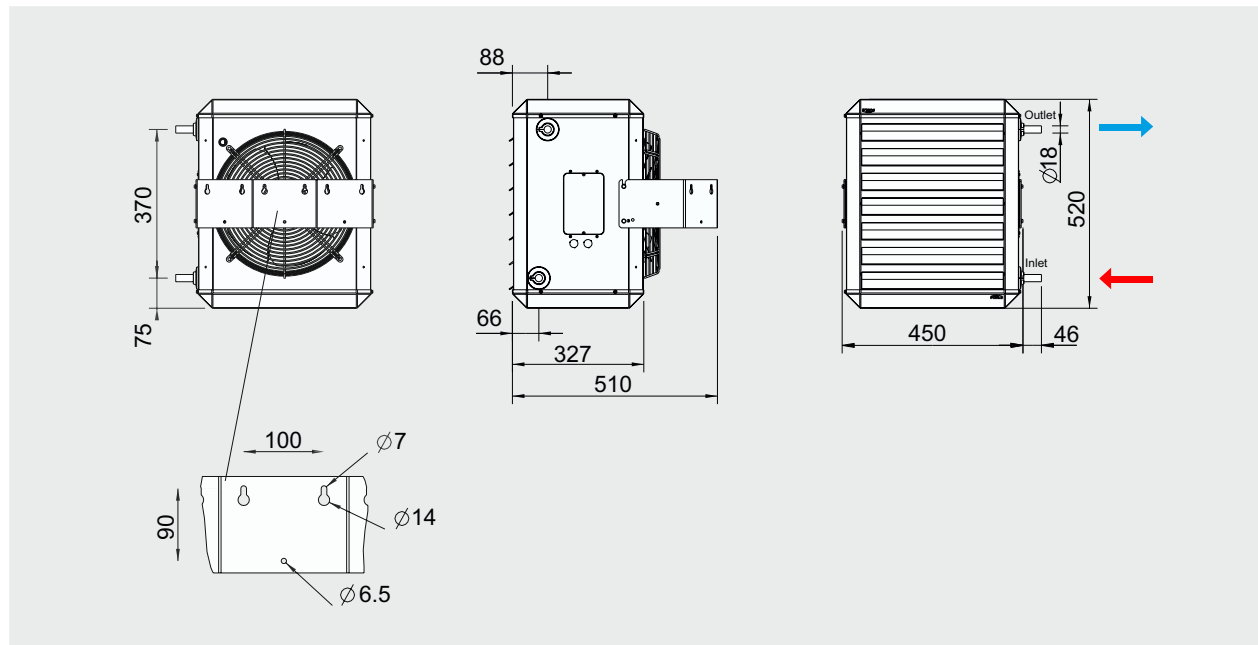
*²) Applicable at fan position min-max

*³) Applicable at fan position min-max. Conditions: Distance to fan 5 m. Direction factor: 2. Equivalent absorption area: 200 m².

Protection class: IP44.

CE compliant.

Dimensions



Mounting and connection

Mounting

The SW02 fan heater can be mounted on the wall for horizontal air inflow or on the ceiling for vertical air inflow.

Installation of the heating coil

Pipe connections can be made on either side of the fan heater. The heating coil has copper pipes with plain pipe connections, for solder or compression couplings. The bleed valve must be connected on the high point outside of the unit. Bleed and drain valve not included with the unit. For correct inlet and outlet connection of the heating coil, see the dimension diagrams.

Electrical installation

The SW02 fan heater is intended for permanent installation.



Fan Heater SW02

Output charts water

			Incoming / outgoing water temperature 130/65 °C								
			Incoming air temp. = 5 °C			Incoming air temp. = +15 °C			Incoming air temp. = +20 °C		
Type	Fan position	Air flow [m³/s]	Output out [kW]	Air temp. out [°C]	Water flow [l/s]	Output out [kW]	Air temp. out [°C]	Water flow [l/s]	Output out [kW]	Air temp. out [°C]	Water flow [l/s]
SW02	Max	0,31	16,8	47	0,06	14,2	52	0,05	12,9	54	0,05
	Med	0,27	15,2	49	0,06	12,6	54	0,05	11,8	56	0,04
	Min	0,20	12,6	54	0,05	10,6	58	0,04	9,6	60	0,04

			Incoming / outgoing water temperature 90/70 °C								
			Incoming air temp. = 5 °C			Incoming air temp. = +15 °C			Incoming air temp. = +20 °C		
Type	Fan position	Air flow [m³/s]	Output out [kW]	Air temp. out [°C]	Water flow [l/s]	Output out [kW]	Air temp. out [°C]	Water flow [l/s]	Output out [kW]	Air temp. out [°C]	Water flow [l/s]
SW02	Max	0,31	15,7	44	0,19	13,2	49	0,16	11,9	52	0,15
	Med	0,27	14,3	46	0,18	12,0	51	0,15	10,9	53	0,13
	Min	0,20	11,7	51	0,14	9,8	55	0,12	8,9	57	0,11

			Incoming / outgoing water temperature 80/60 °C								
			Incoming air temp. = 5 °C			Incoming air temp. = +15 °C			Incoming air temp. = +20 °C		
Type	Fan position	Air flow [m³/s]	Output out [kW]	Air temp. out [°C]	Water flow [l/s]	Output out [kW]	Air temp. out [°C]	Water flow [l/s]	Output out [kW]	Air temp. out [°C]	Water flow [l/s]
SW02	Max	0,31	13,3	39	0,16	10,8	43	0,13	9,6	46	0,12
	Med	0,27	12,1	40	0,15	9,9	45	0,12	8,8	47	0,11
	Min	0,20	9,9	44	0,12	8,1	48	0,10	7,2	49	0,09

			Incoming / outgoing water temperature 70/40 °C								
			Incoming air temp. = 5 °C			Incoming air temp. = +15 °C			Incoming air temp. = +20 °C		
Type	Fan position	Air flow [m³/s]	Output out [kW]	Air temp. out [°C]	Water flow [l/s]	Output out [kW]	Air temp. out [°C]	Water flow [l/s]	Output out [kW]	Air temp. out [°C]	Water flow [l/s]
SW02	Max	0,31	8,8	27	0,07	6,3	31	0,05	5,0	33	0,04
	Med	0,27	8,0	28	0,06	5,8	32	0,05	4,6	34	0,04
	Min	0,20	6,6	31	0,05	4,6	34	0,04	3,6	35	0,03

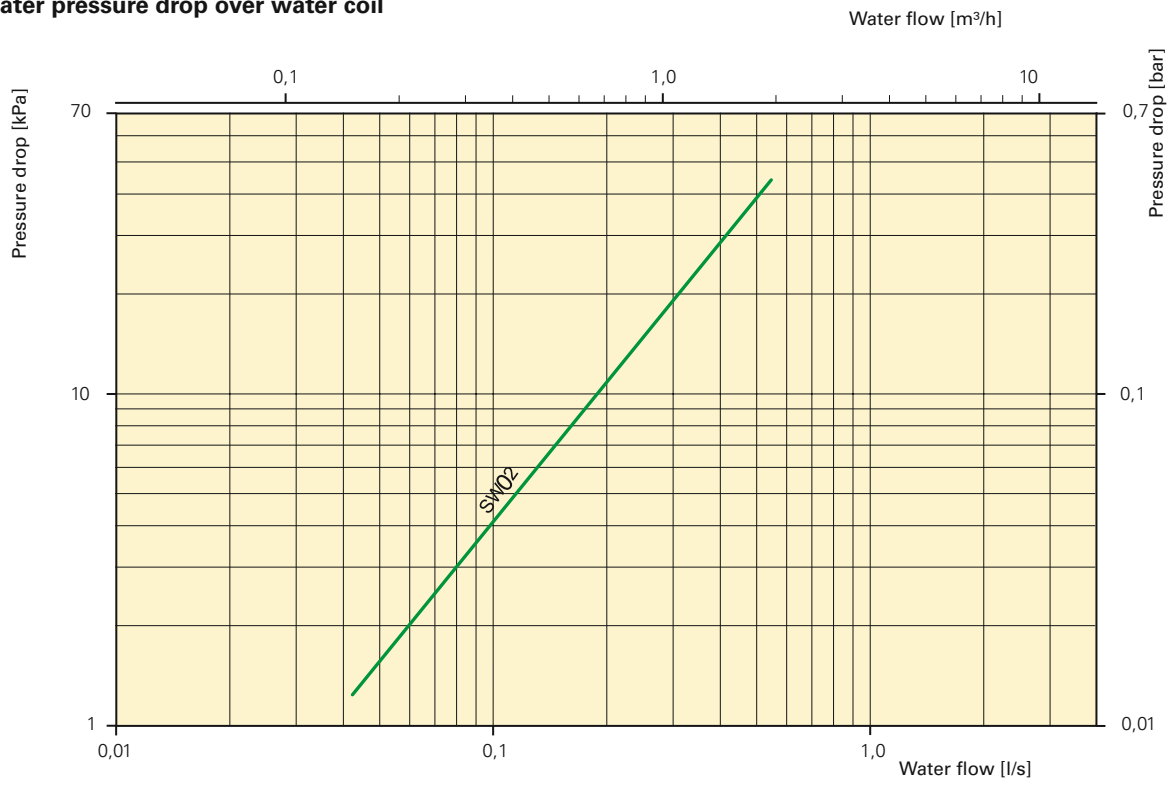
			Incoming / outgoing water temperature 60/40 °C								
			Incoming air temp. = 5 °C			Incoming air temp. = +15 °C			Incoming air temp. = +20 °C		
Type	Fan position	Air flow [m³/s]	Output out [kW]	Air temp. out [°C]	Water flow [l/s]	Output out [kW]	Air temp. out [°C]	Water flow [l/s]	Output out [kW]	Air temp. out [°C]	Water flow [l/s]
SW02	Max	0,31	8,5	26	0,10	6,1	31	0,07	4,9	33	0,06
	Med	0,27	7,7	27	0,09	5,5	32	0,07	4,4	34	0,05
	Min	0,20	6,3	30	0,08	4,5	33	0,05	3,6	35	0,04

			Incoming / outgoing water temperature 60/30 °C								
			Incoming air temp. = 5 °C			Incoming air temp. = +15 °C			Incoming air temp. = +20 °C		
Type	Fan position	Air flow [m³/s]	Output out [kW]	Air temp. out [°C]	Water flow [l/s]	Output out [kW]	Air temp. out [°C]	Water flow [l/s]	Output out [kW]	Air temp. out [°C]	Water flow [l/s]
SW02	Max	0,31	6,1	20	0,05	3,0	23	0,02	2,3	26	0,02
	Med	0,27	5,5	21	0,04	2,9	24	0,02	2,2	27	0,02
	Min	0,20	4,4	22	0,04	2,5	25	0,02	1,9	28	0,02

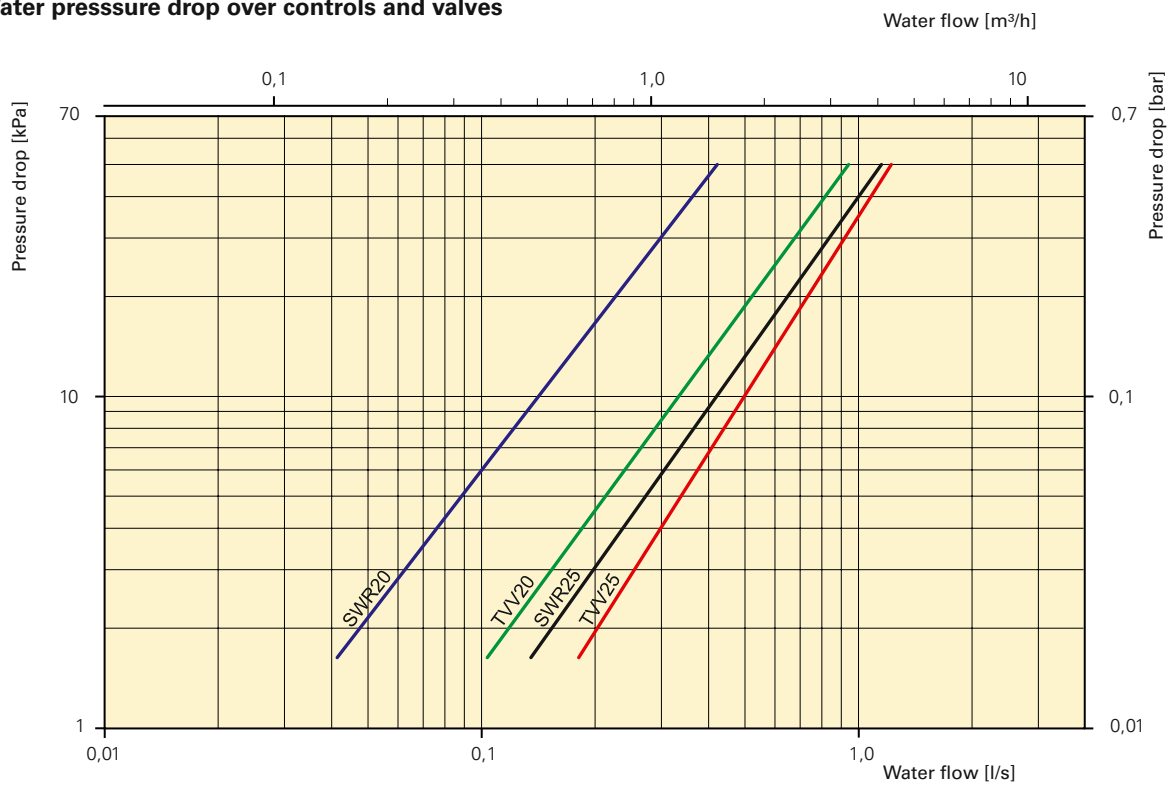
			Incoming / outgoing water temperature 55/35 °C								
			Incoming air temp. = 5 °C			Incoming air temp. = +15 °C			Incoming air temp. = +20 °C		
Type	Fan position	Air flow [m³/s]	Output out [kW]	Air temp. out [°C]	Water flow [l/s]	Output out [kW]	Air temp. out [°C]	Water flow [l/s]	Output out [kW]	Air temp. out [°C]	Water flow [l/s]
SW02	Max	0,31	7,2	23	0,09	4,8	28	0,06	3,5	29	0,04
	Med	0,27	6,6	24	0,08	4,4	28	0,05	3,2	30	0,04
	Min	0,20	5,4	26	0,06	3,5	29	0,04	2,4	30	0,03

Pressure drop water

Water pressure drop over water coil



Water pressure drop over controls and valves



The pressure drop is calculated for an average temperature of 70 °C (PVV 80/60).
 For other water temperatures, the pressure drop is multiplied by the factor K.

Average temp. water °C	40	50	60	70	80	90
K	1.10	1.06	1.03	1.00	0.97	0.93

Fan Heater SW02

Control options

3-step control of airflow only

The airflow is manually controlled in three, fixed steps. No heat control, full water flow through the heating coil. Complete control equipment:

- CB30N, control panel

Thermostat and 3-step control

The thermostat starts/stops the fan and controls heating on/off. The airflow is manually controlled in 3 fixed steps. Complete control equipment:

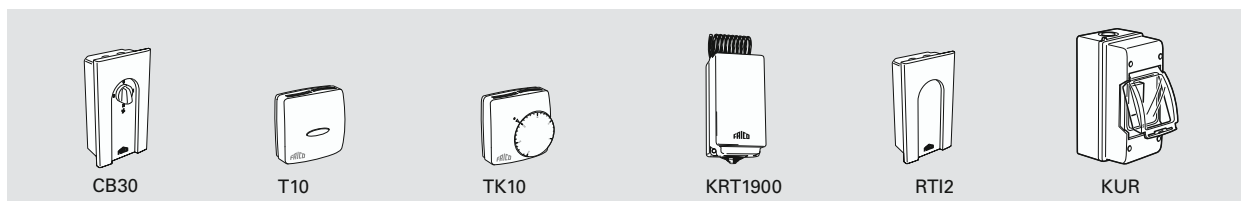
- CB30N, control panel
- KRT1900 or T10/TK10, room thermostat
- SWR20/25, valve set, or TVV20/25, valve + SD20, actuator

Thermostat and 3-step control with save-reduction

The thermostat starts/stops the fan and controls heating on/off. The airflow is manually controlled in 3 fixed steps. Save-reduction saves energy through lower temperatures, for example, at night and weekends. Complete control equipment:

- CB30N, control panel
- RTI2, 2-step thermostat
- SWR20/25, valve set, or TVV20/25, valve + SD20, actuator
- KUR, time switch

Controls and accessories



T10/TK10, thermostats

Processor controlled thermostats with concealed and visible dials. Setting range +5 – +30 °C. Connection voltage: 230 V. Max. breaking current: 10 A. IP30.

KRT1900, capillary tube thermostat

Capillary tube thermostat with concealed dial. Setting range 0 – +40 °C. Max. breaking current: 16/10 A (230/400 V). IP55.

RTI2, electronic 2-step thermostat

Processor controlled 2-step thermostat with concealed dial. Setting range +5 – +35 °C. Connection voltage 230 V (two potential free contacts). Max. breaking current: 16/10 A (230/400 V). IP44.

CB30N, control panel

Regulates the air flow in 3 steps. Supplied enclosed for wall mounting. Can regulate several units. Max. rated current: 10A. IP44.

KUR, digital time switch

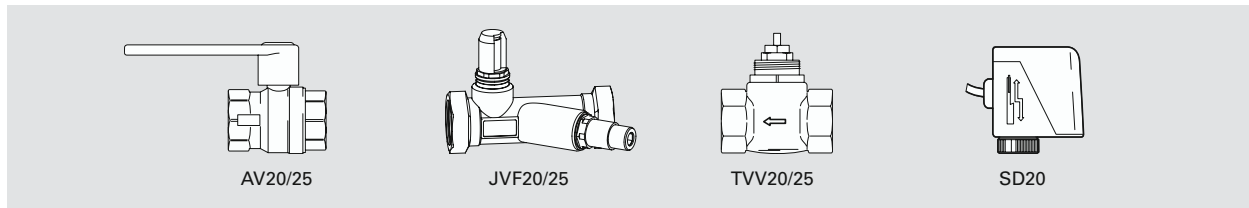
Digital weekly timer with 8 different program steps (36 memory places) equipped with a changeover contact. Max. breaking current: 10 A. IP44.

SWFT02, wire mesh filter

SW02 can be fitted with a wire mesh filter. The filter is fitted in front of the heating coil (slid into the provided slots) and is accessible both from above and below the heater.

Type	Description	HxBxD [mm]
T10	Electronic thermostat	80x80x31
TK10	Electronic thermostat visible knob	80x80x31
KRT1900	Room thermostat	165x57x60
RTI2	2-step room thermostat	155x87x43
CB30N	Control box for SW02	155x87x43
KUR	Digital time switch	175x85x105
SWFT02	Basic filter	

Water regulation



SWR20/25, valve set

This valve set is suitable when there is need for adjusting the water flow and shutting it off (for the purpose of maintenance). The supply of heat is controlled by a thermostat. Pipe dimension for SWR20 is DN 20 (3/4") and for SWR 25, DN 25 (1").

Add a suitable thermostat for controlling SWR20/25, like KRT1900 or T(K)10.

SWR20/25 consists of the following:

- **AV20/25, stop valve**
Stops the water supply to SW. Consists of a ball valve which is either open or closed.
- **JVF20/25, adjustment valve**
To adjust the water to desired flow. (kv value for JVF20 is 3,5 and kv value for JVF25 7,0).
- **TVV20/25, 2-way regulation valve**
Pressure class PN16. Maximum pressure 2MPa (20Bar).
Maximum pressure fall TVV20, 100kPa (1Bar).
Maximum pressure fall TVV25, 62kPa (0,62Bar).
The kv value is adjustable in 3 stages:
TVV20: kv 1,6, kv 2,5 and kv 3,5
TVV25: kv 2,5, kv 4,0 and kv 5,5
- **SD20, actuator on/off 230V~**
A thermostat controls the actuator to open and close, thereby regulating the supply of heat to SW. The closing time of the valve is 5 seconds, prevents sudden pressure changes in the pipe system. IP40.

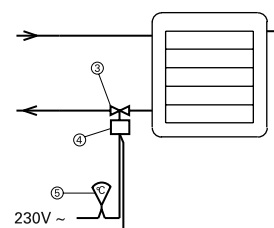
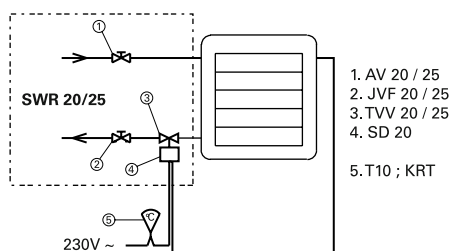
TVV20/25, valve+ SD20, actuator

Water regulation with heat supply controlled by thermostat, but without the option of adjusting or stopping the water flow. Pipe dimension for TVV20 DN 20 (3/4") and for TVV25, DN 25 (1").

Add a suitable thermostat for controlling TVV20/25 + SD20, like KRT1900 or T10/TK10.

For this type of water regulation the following components are required:

- **TVV20/25, 2-way regulation valve**
Pressure class PN16. Maximum pressure 2MPa (20Bar).
Maximum pressure fall TVV20, 100kPa (1Bar).
Maximum pressure fall TVV25, 62kPa (0,62Bar).
The kv value is adjustable in 3 stages:
TVV20: kv 1,6, kv 2,5 and kv 3,5
TVV25: kv 2,5, kv 4,0 and kv 5,5
- **SD20, actuator on/off 230V~**
A thermostat controls the actuator to open and close, thereby regulating the supply of heat to SW. The closing time of the valve is 5 seconds, prevents sudden pressure changes in the pipe system. IP40.

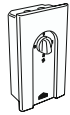


Type	Description
SWR20	Valve set connection 20 mm (3/4")
SWR25	Valve set connection 25 mm (1")
TVV20	2-way control valve 20 mm (3/4")
TVV25	2-way control valve 25 mm (1")
SD20	Actuator on/off 230V~ IP40

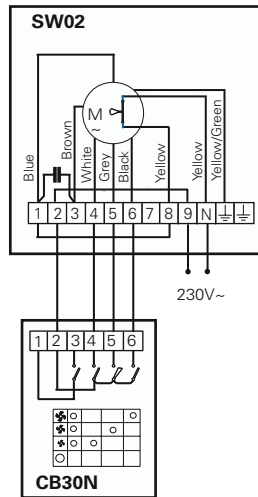
Fan Heater SW02

Wiring diagrams

3-step control of airflow only



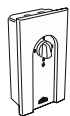
CB30N,
controlbox



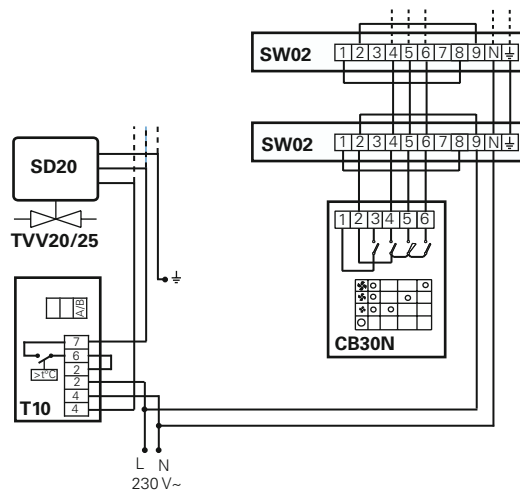
Thermostat and 3-step control



T10,
electronic thermostat



CB30N,
controlbox



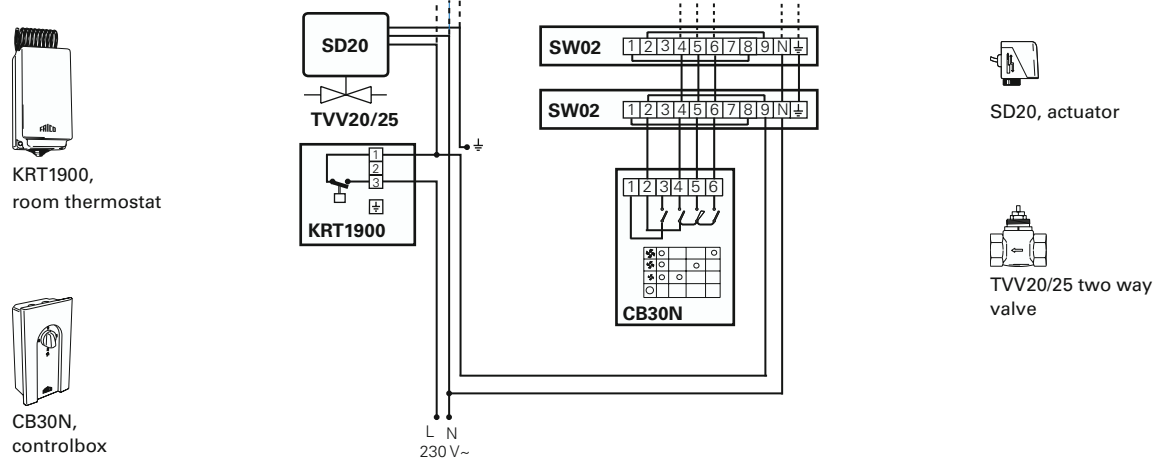
SD20, actuator



TVV20/25 two way
valve

Wiring diagrams

Thermostat and 3-step control



Thermostat and 3-step control with save-reduction

