



Water heat

3 models

CE

## Fan heater SWT

### Ceiling mounted fan heater with water heat

#### Application

The SWT fan heater is used for heating entrances, stores, industrial premises, workshops, sports halls, garages and shops. The low height means that SWT can also be recessed into a suspended ceiling.

#### Comfort

Frico's fan heaters are extremely quiet and quickly provide comfortable heating.

#### Operation and economy

Frico's fan heaters have a long life, providing fast and effective heating at a low cost. SWT is very easy to install and very reliable. The hinge on the front panel allows for inspection and cleaning.

#### Design

The SWT fan heater has a robust design in white enamelled steel panels. SWT is intended for water connection and is ceiling mounted.

#### Product specifications

- Installed directly to the ceiling or suspended from brackets.
- Intended for water temperatures up to +80 °C and 10 bar.
- Two fan speeds.
- Front panel with hinge.
- Simple 230V~ installation.
- Maximum ambient temperature +30 °C.
- The water coil has copper pipes and aluminium flanges.
- Bearing carried fan motor with thermal protection.
- Outer casing in galvanised white enamelled steel panels.

**Technical specifications** | Fan heater SWT with water heat 

Type	Heat output* <sup>1</sup> [kW]	Air flow [m <sup>3</sup> /h]	Air flow [m <sup>3</sup> /s]	Sound level* <sup>2</sup> [dB(A)]	Δt* <sup>1,3</sup> [°C]	Air throw* <sup>4</sup> [m]	Air throw* <sup>4</sup> with extension collar [m]
SWT02	7,8/11	700/1100	0,19/0,31	37/53	33/29	2,2/4	4/7
SWT12	14/18	1300/2000	0,36/0,56	44/57	25/22	2,7/4,5	5/8
SWT22	29/40	2500/3900	0,69/1,08	48/60	34/30	4,5/7,5	7/12

Type	Water volume* <sup>5</sup> [l]	Voltage [V]	Amperage [A]	LxWxH [mm]	Weight [kg]
SWT02	1,2	230V~	0,4	705x535x330	19
SWT12	1,7	230V~	0,6	825x625x355	26
SWT22	3,9	230V~	1,0	1135x735x415	41

\*<sup>1</sup>) Applicable at water temperature 80/60 °C, air temperature, in +15 °C.

\*<sup>2</sup>) Conditions: Distance to the unit 5 metres.

\*<sup>3</sup>) Δt = temperature rise of passing air at maximum heat output and lowest/highest airflow.

\*<sup>4</sup>) The air throw data above is valid when the horizontally adjustable air director is used and the outlet temperature is +40 °C and the room temperature is +18 °C. The air throw is defined as the distance in a straight angle from the fan heater to the the point where the air speed has dropped to 0,2 m/s.

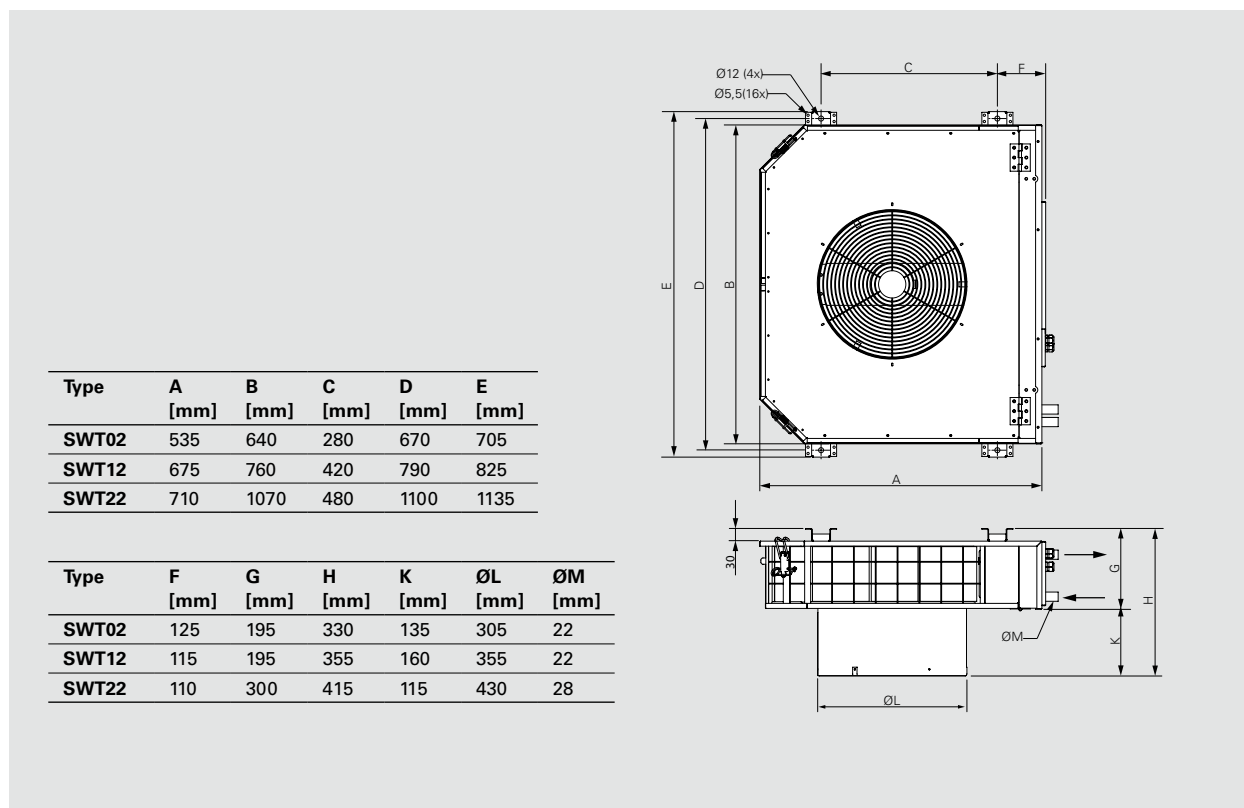
\*<sup>5</sup>) Water volume inside battery.

Protection class: IPX4.

CE compliant.



## Dimensions



## Mounting and connection

### Mounting

Fan heater SWT is installed directly to the ceiling or suspended from brackets. The heater is screwed into place in the ceiling using brackets. For minimum dimensions with permanent installation, see diagram 1.

### Connection of heating coil

The water inlet, with or without valve, is connected to the heater's lowest positioned pipe and the outlet to the highest positioned pipe. The connections to SWT02 and SWT12 are 22 mm, external thread and on SWT22 28 mm, external thread. The bleed valve must be connected to the high point outside of the unit or to the outlet pipe in the installation. Bleed and drain valves not included with the unit. Installations that are exposed to frost must be equipped with an external automatic frost protection to ensure that the water coil does not split when frozen.

### Connection

SWT fan heaters are designed for permanent installation and are connected via knock-outs on the rear of the heater.

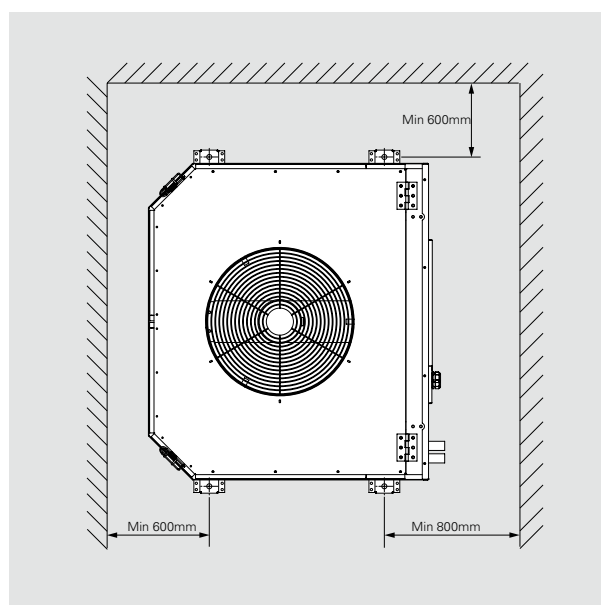


Fig. 1: Minimum distance for fixed installation.

## Control options

### Control by thermostat only

The thermostat starts/stops the fan and also controls the heat supply on/off. The fan is set to run on high speed.

Complete regulation kit:

- KRT1900 or T10/TK10, room thermostat
- TVV20/25, 2-way valve or TRV20/25 3-way valve + SD20, acuator

### 2-step control of airflow only

The air flow is manually regulated in 2 steps. No heat regulation, maximum water flow through the heating coil.

Complete regulation kit:

- CB20, control panel

### Thermostat and 2-step control

The thermostat starts/stops the fan and also controls the heat supply on/off. The air flow is manually regulated in 2 steps.

Complete regulation kit:

- CB20, control panel
- KRT1900 or T10/TK10, room thermostat
- TVV20/25, valve + SD20, actuator

### 5-step control of airflow only

The air flow is manually regulated in 5 steps. No heat regulation, maximum water flow through the heating coil.

Complete regulation kit:

- RE1,5, 5-step regulator max 1,5A, or
- RE3, 5-step regulator max 3A, or
- RE7, 5-step regulator max 7A

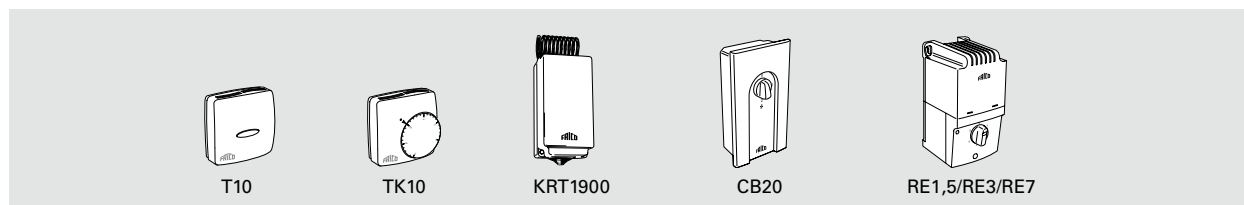
### Thermostat and 5-step control

The thermostat starts/stops the fan and also controls the heat supply on/off. The air flow is manually regulated in 5 steps.

Complete regulation kit:

- RE1,5, 5-step regulator max 1,5A, or
- RE3, 5-step regulator max 3A, or
- RE7, 5-step regulator max 7A
- KRT1900 or T10/TK10, room thermostat
- TVV20/25, 2-way valve or TRV20/25 3-way valve + SD20, actuator

## Controls



### 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.

### CB20, control box

Controls the airflow in 2 steps. Can control several units. Max input 12 A. IP44.

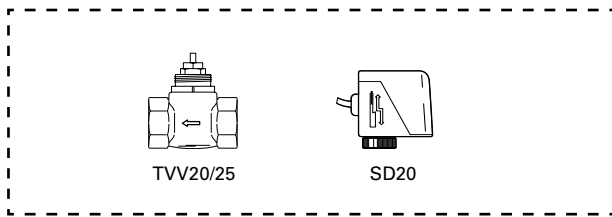
### RE1,5/RE3/RE7, 5-step change-over switch for air flow

Controls the air flow in 5 steps. **RE1,5** controls maximum 1,5 A. **RE3** controls maximum 3 A. **RE7** controls maximum 7 A. To control the heat, a suitable thermostat and a valve + actuator are needed. IP54.

Type	Description	LxHxW [mm]
T10	Electronic thermostat	80x80x31
TK10	Electronic thermostat with visible knob	80x80x31
KRT1900	Capillary tube thermostat	165x57x60
CB20	Control box	155x87x43
RE1,5	5-step change-over switch for air flow 1,5 A	200x105x105
RE3	5-step change-over switch for air flow 3 A	200x105x105
RE7	5-step change-over switch for air flow 7 A	257x147x145

# Fan heater SWT

## Water control



### TVV20/25, valves + SD20, actuator

TVV20/25, 2-way regulation valve and SD20, actuator on/off provides a basic form of water regulation, without the possibility of adjusting or shutting the water flow off, e.g. when making maintenance. A suitable thermostat is chosen to regulate TVV20/25 and SD20. DN20/25.

For further information and options regarding our water controls, see the "Controls" section.

Type	Description
TVV20	2-way valve DN20
TVV25	2-way valve DN25
SD20	Actuator on/off 230V

## Accessories

### SWTCF, filter

With the filter installed the interval for cleaning the water coil is extended. The filter is delivered in two pieces.

### SWTCL, air director

To avoid draughts at low ceiling heights the air director can be installed to direct air more to the side.

### SWTCE, extension collar

At high installation the outlet collar for the SWT can be extended. This increases the throw pattern of the air. SWTCE02 increases the throw pattern to 4-7 m, SWTCE12 increases it to 5-8 m and SWTCE22 to 7-12 m.



- 1) Fan heater SWT
- 2) Filter SWTCF
- 3) Air director SWTCL
- 4) Extension collar SWTCE

Type	Description
SWTCE02	Extension collar 350 mm to SWT02, increases the throw pattern to 4-7 m
SWTCE12	Extension collar 350 mm to SWT12, increases the throw pattern to 5-8 m
SWTCE22	Extension collar 350 mm to SWT22, increases the throw pattern to 7-12 m
SWTCF02	Filter for SWT02
SWTCF12	Filter for SWT12
SWTCF22	Filter for SWT22
SWTCL02	Air director for SWT02
SWTCL12	Air director for SWT12
SWTCL22	Air director for SWT22

## Output charts water

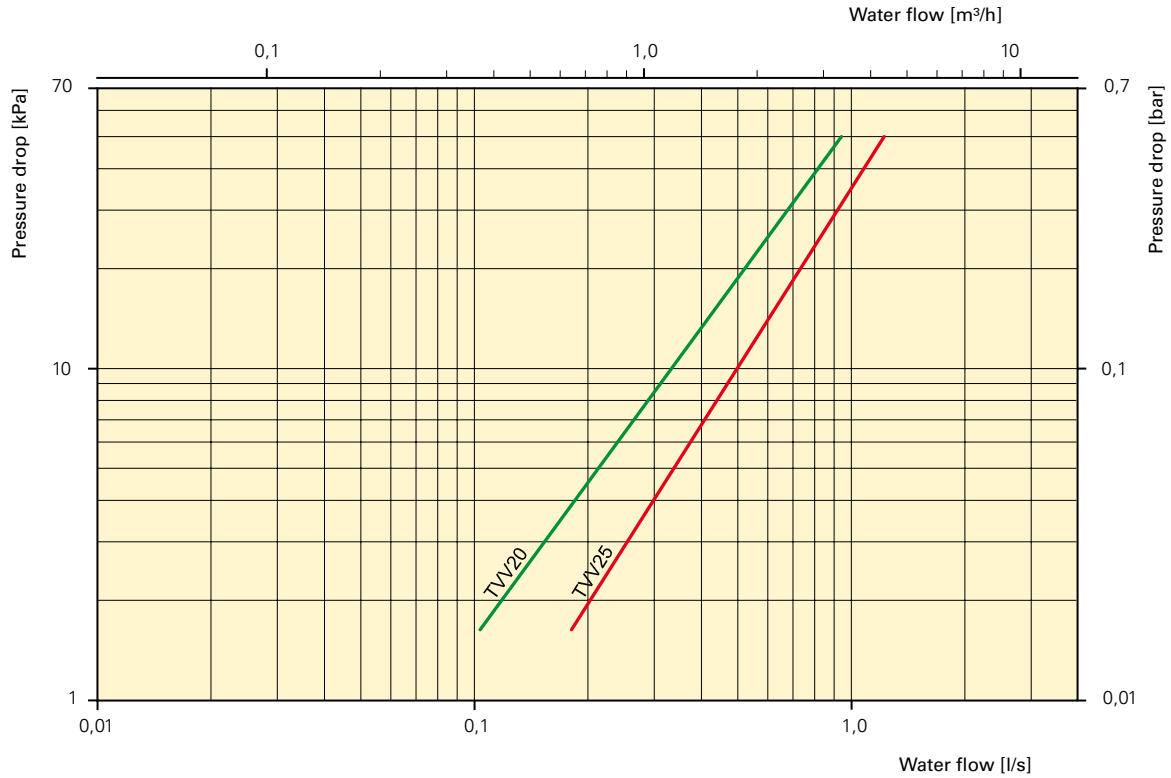
Incoming / outgoing water temperature 80/60 °C														
Type	Fan position	Airflow [m³/s]	Air temp. in = +10 °C				Air temp. in = +15 °C				Air temp. in = +20 °C			
			Output [kW]	Air temp. out [°C]	Water flow [l/s]	Pressure drop [kPa]	Output [kW]	Air temp. out [°C]	Water flow [l/s]	Pressure drop [kPa]	Output [kW]	Air temp. out [°C]	Water flow [l/s]	Pressure drop [kPa]
SWT02	max	0,31	12,0	42	0,15	11,2	10,8	44	0,13	9,3	9,6	46	0,11	7,5
	min	0,19	8,7	46	0,10	6,2	7,8	48	0,09	5,1	6,9	50	0,09	4,1
SWT12	max	0,56	20,3	39	0,25	17,8	18,4	42	0,23	14,8	16,5	44	0,20	12,1
	min	0,36	15,4	44	0,19	10,7	13,9	46	0,17	9,0	12,5	49	0,15	7,4
SWT22	max	1,08	44,0	43	0,53	14,0	39,6	45	0,48	11,5	35,5	47	0,43	9,3
	min	0,69	32,0	47	0,39	7,8	28,9	49	0,35	6,5	25,7	51	0,31	5,2

Incoming / outgoing water temperature 60/40 °C														
Type	Fan position	Airflow [m³/s]	Air temp. in = +10 °C				Air temp. in = +15 °C				Air temp. in = +20 °C			
			Output [kW]	Air temp. out [°C]	Water flow [l/s]	Pressure drop [kPa]	Output [kW]	Air temp. out [°C]	Water flow [l/s]	Pressure drop [kPa]	Output [kW]	Air temp. out [°C]	Water flow [l/s]	Pressure drop [kPa]
SWT02	max	0,31	7,5	30	0,09	4,9	6,4	40	0,08	3,8	5,3	34	0,06	2,7
	min	0,19	5,4	33	0,06	2,8	4,6	34	0,06	2,1	3,8	36	0,05	1,5
SWT12	max	0,56	13,0	29	0,16	8,3	11,1	31	0,13	6,3	9,2	34	0,11	4,4
	min	0,36	9,9	32	0,12	5,1	8,4	34	0,10	3,8	7,0	36	0,09	2,7
SWT22	max	1,08	27,1	30	0,33	5,9	23,2	33	0,28	4,5	19,3	35	0,23	3,2
	min	0,69	19,9	33	0,24	3,4	16,8	35	0,20	2,5	14	37	0,17	1,8

Incoming / outgoing water temperature 55/45 °C														
Type	Fan position	Airflow [m³/s]	Air temp. in = +10 °C				Air temp. in = +15 °C				Air temp. in = +20 °C			
			Output [kW]	Air temp. out [°C]	Water flow [l/s]	Pressure drop [kPa]	Output [kW]	Air temp. out [°C]	Water flow [l/s]	Pressure drop [kPa]	Output [kW]	Air temp. out [°C]	Water flow [l/s]	Pressure drop [kPa]
SWT02	max	0,31	8,1	34	0,2	20,5	6,9	34	0,17	15,4	5,8	36	0,14	11,1
	min	0,19	5,8	34	0,14	11,2	5,0	36	0,12	8,4	4,2	38	0,1	6,1
SWT12	max	0,56	13,6	26	0,33	31,9	11,7	32	0,28	24,3	9,9	34	0,23	16,8
	min	0,36	10,3	30	0,25	19,2	8,8	35	0,21	14,7	7,5	36	0,18	10,1
SWT22	max	1,08	32,1	33	0,71	25,6	25,3	34	0,62	19,1	21,2	37	0,51	13,7
	min	0,69	21,5	35	0,52	14,1	18,4	37	0,45	10,6	15,4	39	0,37	7,6

**Pressure drop water**

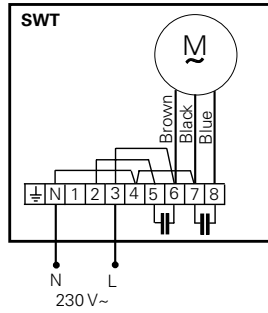
**Water pressure drop over controls and valves**



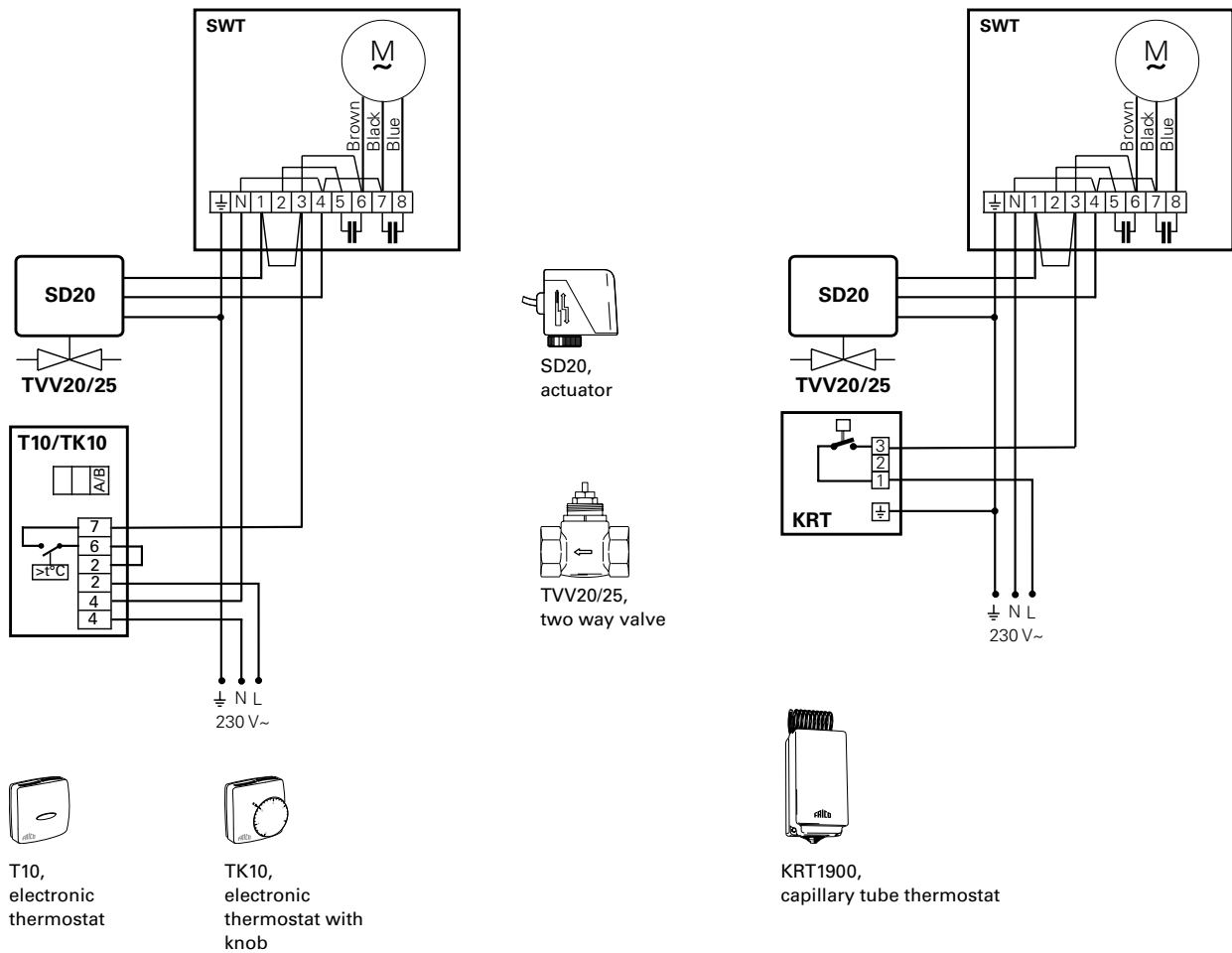
The pressure drop is calculated for an average temperature of 70 °C (PVV 80/60). For other water temperatures, the pressure drop is multiplied by the factor K.

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

Internal wiring diagram



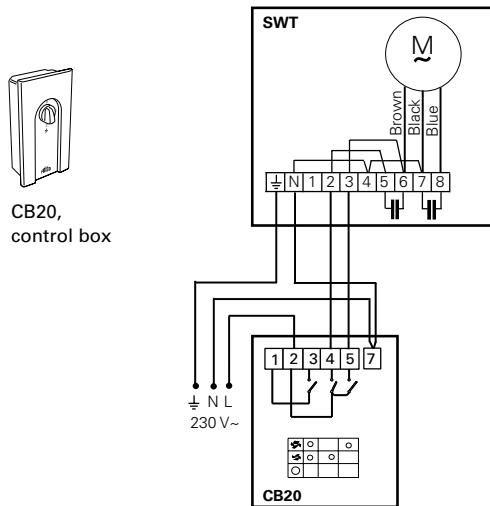
Control by thermostat only



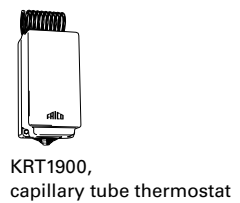
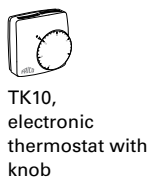
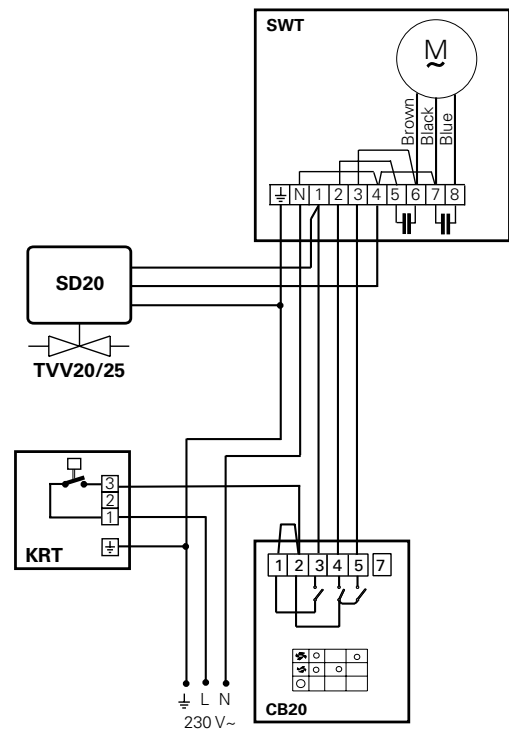
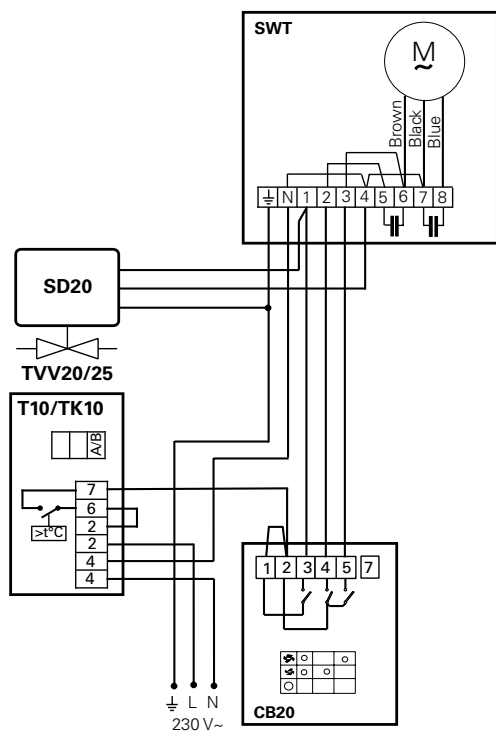


# Fan heater SWT

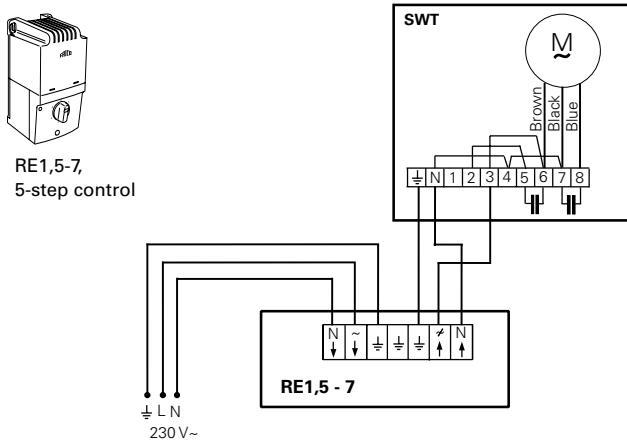
## 2-step control of airflow only



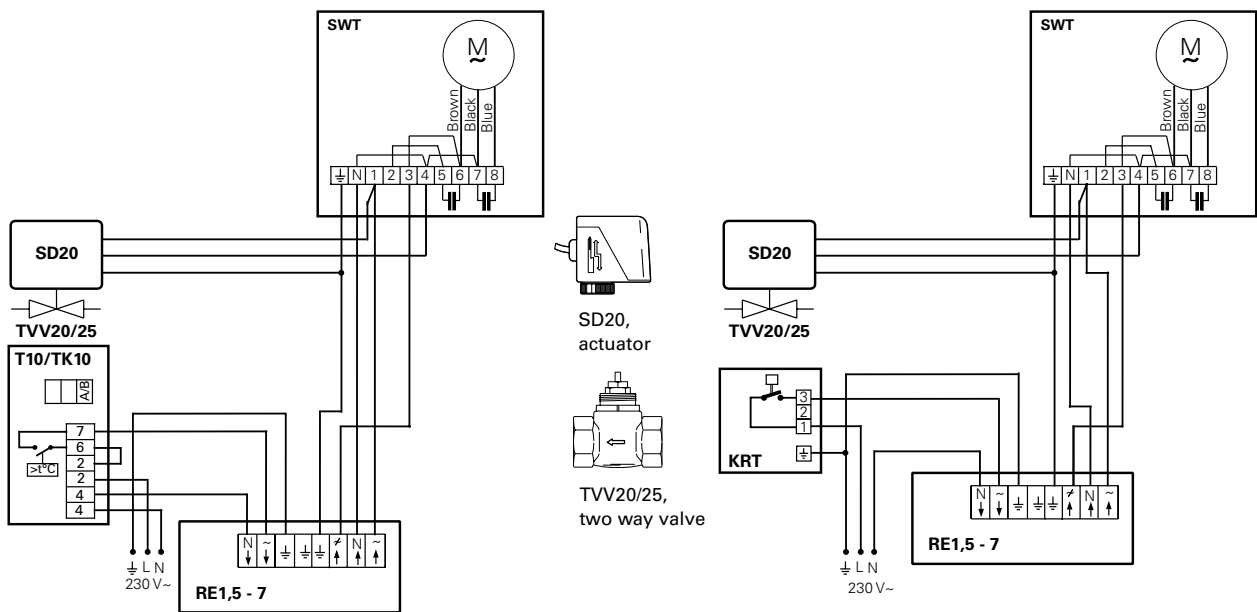
## Thermostat and 2-step control



5-step control of airflow only



Thermostat and 5-step control



RE1,5-7,  
5-step control



T10,  
electronic  
thermostat



TK10,  
electronic  
thermostat with  
knob



RE1,5-7,  
5-step control



KRT1900,  
capillary tube thermostat