

Swegon **CASA**[®] Duct mounted air heaters and coolers for supply air

Products for heating

For 125 mm duct; SDHW 125 (LVI nro. 7906803)

- CASA CWW 125-3-2.5 duct heater
- 3-way valve (1/2" DN15, kvs 0,4) Regin ZTR15-0,4

For 160 mm duct; SDHW 160 (LVI nro. 7906804)

- CASA CWW 160-3-2.5 duct heater
- 3-way valve (1/2" DN15, kvs 0,4) Regin ZTR15-0,4

For 200 mm duct; SDHW 200

- CASA CWW 200-3-2,5 duct heater
- 3-way valve (1/2" DN15, kvs 1,0) Regin ZTR15-1,0

For 250 mm duct; SDHW 250

- CASA CWW 250-2-2,5 duct heater
- 3-way valve (1/2" DN15, kvs 1,6) Regin ZTR15-1,6

For 315 mm duct; SDHW 315

- CASA CWW 315-2-2,5 duct heater
- 3-way valve (1/2" DN15, kvs 1,6) Regin ZTR15-1,6

The delivery also includes

- Actuator Regin RVAZ4-24A
- SET connection unit
- Power 24VDC 20W
- Temperature sensor, cable length 3 m (2 pcs)
- Rubber grommet for temperature sensor (2 pcs)

Products for cooling

For 160 mm duct; SDCW 160 (LVI nro. 7906805)

- CASA CWK 160-3-2.5 duct cooler
- 3-way valve (1/2" DN15, kvs 0,6) Regin ZTR15-0,6

For 200 mm duct; SDCW 200 (LVI nro. 7906806)

- CASA CWK 200-3-2.5 duct cooler
- 3-way valve (1/2" DN15, kvs 0,6) Regin ZTR15-0,6

For 250 mm duct; SDCW 250 (LVI nro. 7907002)

- CASA CWK 250-3-2.5 duct cooler
- 3-way valve (1/2" DN15, kvs 1,6) Regin ZTR15-1,6

For 250 mm duct; SDCW 250F (LVI nro. 7906807)

- CASA W2504F duct cooler, fully insulated
- 3-way valve (1/2" DN15, kvs 1,0) Regin ZTR15-1,0
- Wall / ceiling mounting bracket

For 315 mm duct; SDCW 315

- CASA CWK 315-3-2,5 duct cooler
- 3-way valve (1/2" DN15, kvs 1,6) Regin ZTR15-1,6

The delivery also includes

- Actuator Regin RVAZ4-24A
- SET connection unit
- Power 24VDC 20W
- Temperature sensor, cable length 3 m (2 pcs)
- Rubber grommet for temperature sensor (2 pcs)

General Description

Duct mounted heating or cooling unit for supply air.

Meets the demands for leakage class C according to the EN15727.

Heating units

Heating unit utilizes the heating circuit's water. The heater is intended for post heating the supply air.

Cooling units

Cooling unit utilizes the cooling liquid or water from the cooling water circuit. The cooling unit is intended for cooling the supply air.

Planning

Take the pressure loss caused by the air heater / cooler into consideration when sizing the airflows and selection of the ventilation unit.

Shut-off damper must be installed in the outdoor air duct. Relay control for the damper is available in SET connection unit.

Make sure there is free access to the unit for service.

Heating units

When sizing the pump and pipe system, find out the heating net's temperature and flow and the air heater's pressure loss. Swegon recommends its own heating pipe system for air heaters.

Cooling units

When sizing the pump and pipe system, find out the heating net's temperature and flow and the air heater's pressure loss.

NOTE! The manual's original language is English.

 **Important information****Only qualified personnel**

Only qualified personnel should carry out installation, configuration and commissioning.

Observe the following during installation

The air heater / cooler is installed in the supply air duct. The unit must be installed in to the space where is a drain. Shut-off damper must be installed in the outdoor air duct. The unit must be accessible without obstruction.

The unit must not be installed in the immediate vicinity of the ventilation unit or duct bends, as this will prevent an even air flow across the unit resulting in impaired output.

The air heater must be equipped with freeze protection when there is a risk of freezing. The freeze protection switches off the ventilation unit's fans and closes an outside air damper if fitted and activates the alarm.

The air heater can burst if the water freezes in the heater, which in turn causes the pipe system to drain and water damage can occur.

If the air is cooled below the ambient dew point, the cooling unit and the supply air duct must be insulated against condensation!

Commissioning

The duct connection spigots of the unit must be capped during transport, storage and installation.

Make sure that the unit and the ducts are clean and that there are no loose objects in them before you commission the ventilation system.

Ensure that the heating / chilled water pipe system is mounted and insulated and that the venting sleeves and shut-off valves are mounted.

Do not commission the air cooler until all work that produces large quantities of sanding dust or other impurities has been completed.

Observe the following during system maintenance

The ventilation unit must be equipped with Swegon filters and filters must be replaced according to Swegon instructions.

The duct heater/cooler should be inspected and, if needed, cleaned every two years.

Installation of the heating unit

1. Installation

The air heater must be installed in the supply air duct.

The air heater is supported either with the help of a shelf or another approved manner. Make sure that the support will withstand the weight of the unit in its operating condition.

The air heater can be installed in horizontal or vertical ducts with optional direction of airflow.

Water connection

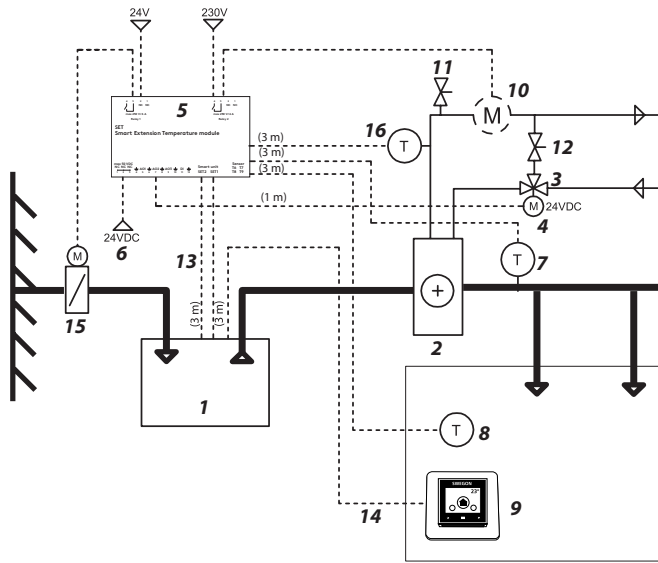
The air heater's connection pipes must not be subjected to distortion or bending movements when the connections are made. Ensure that the unit's expansion forces or the pipe system's own weight does not load the connections on the air heater.

The valve's actuator can be mounted horizontally or so that the actuator is above the pipe system.

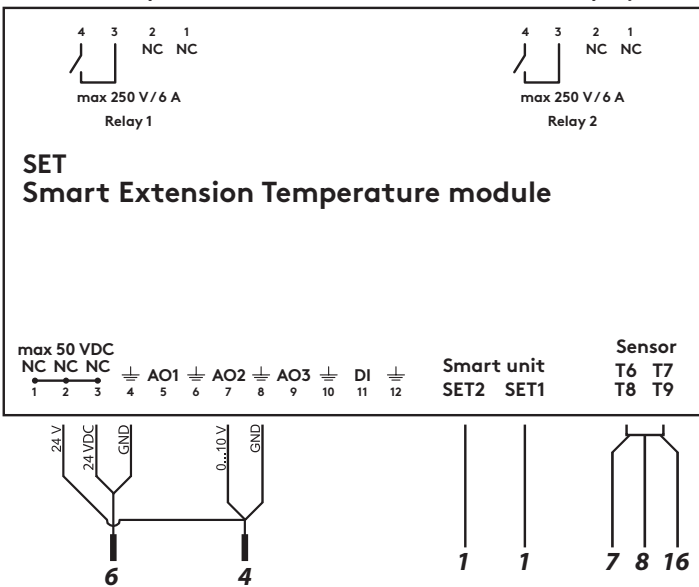
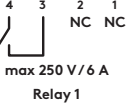
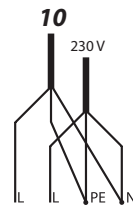
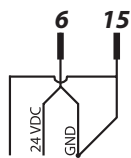
Heating pipes must be fitted with filters. The air heater must be connected so that the pipe system can be drained easily, for example, during repairs, extended periods of downtime or when there is a risk of freezing. The air heater and its connections must be checked for leakage once the pipe system has been completely filled with water. Any leakage can cause water damage.

NOTE! The air heater and supply air duct must be insulated up to the ventilation unit. Insulation must be designed according to national regulations, with nonflammable insulation for example mineral wool. The insulation may not cover the lid as the specification plate and warning sign must be visible and the lid must be accessible for opening.

2. Electric and control cables



1. CASA Smart ventilation unit*
 2. SDHW air heater
 3. 3-way valve |
 4. Actuator
 5. SET connection unit
 6. Power source 24 VDC
 7. Supply air temperature sensor
 8. Room air temperature sensor*
 9. Control panel*
 10. Circulation water pump*
 11. Vent valve*
 12. Flow regulator*
 13. RJ45 cable (2 pcs.)
 14. Modular cable PMK20*
 15. Duct actuator*
 16. Air heater's anti-frost sensor
- *) Not included in the delivery.



NOTE! If the SET module is used for 230 VAC control, the module must be installed, according to the electrical safety directives, in a separate enclosure.

NOTE! Make sure that the strain relief is arranged for the connections according to the electrical safety directives.

NOTE! Only a qualified electrician may make the electrical connections.

- Install the SET-connection unit in an appropriate position in the vicinity of the sensor and actuator.
- Connect the SET-connection unit (5) to the ventilation unit (1) by connecting RJ45 cables to the SET1 and SET2 connectors.
- Install the supplied temperature sensor (7) in the supply air duct, after the air heater seen from the direction of flow. Connect the sensor to the SET module's free *Sensor* connection.
- Install the supplied anti-frost sensor (16) by taping it to the heater's return pipe. Make sure the sensor is sufficiently insulated so that the ambient temperature does not affect the measurement. Connect the sensor to the SET module's free *Sensor* connection.
- Connect the valve motor (4) control and the supplied power source (6) to the SET unit's connectors as shown in the drawing.
- Install a possible room temperature sensor (*PRTG*, accessory) in the room area whose temperature the system should control. Connect the sensor to the SET module's free *Sensor* connection.
- Install any actuators according to the manufacturer's instructions and connect the control cable to the SET unit's relay outputs.

3. Commissioning

Select the functions for the temperature sensors used and fine adjust the measurements if necessary from the *Main menu / Settings / (1234) / Heating/cooling / Sensor/Control* menu.

Supply air sensor

Select the SET sensor input to which supply air sensor is connected:

"SET T6 -T9" = SET-connection unit's Sensor inputs.
("Internal" = The unit's internal supply air temperature sensor.)

Air heater sensor (freeze protection)

Select the SET sensor input to which air heater's anti-frost sensor is connected:

"SET T6 -T9" = SET-connection unit's Sensor inputs.

Room air sensor

Select the room air sensor which is used:

"SET T6 -T9" = SET connection's Sensor inputs.
("Internal" = The unit's internal extract air temperature sensor.)
("UP1" = Internal temperature sensor in Smart control panel 1.)
("UP2" = Internal temperature sensor in Smart control panel 2.)

Relay control functions

If you wish to use relay control functions, e.g. for a circulation water pump or a duct damper, the SET unit's relays can be programmed for the required function.

The commissioning of the air heater is performed from the *Heating/cooling* menu.

Heating function

Put the heating function into service from the menu item *External after heater -> Water*

When using the air heater, heating always occurs primarily through control of the air heater, yet if the air heater's heating capacity is insufficient to maintain the required temperature or if the freeze protection is activated, a possible internal electrically powered air heater in the unit is also controlled. Thus, do not turn off the internal air heater for after-heating when using external after heating.

Outdoor air limit

If necessary set *Outdoor air limit after heating*. After heating is permitted when the outdoor temperature falls below the set value.

4. Use

When the duct heater is commissioned, the after heating is regulated automatically when the outdoor temperature has fallen below the set limit value.

You can select Supply air or Room air control as the after heating control method. *Main menu / Settings / (1234) / Heating/cooling / Control type*.

Supply air control

During the heating season, the aim is to keep the supply air temperature stable.

NOTE! Due to the high efficiency of the heat exchanger, the supply air temperature may be higher than the set point value even though the outdoor air is cool.

Room air control

For room air control, the temperature of the supply air is based on the measurement of the room air temperature. It is possible, from the *Control type* menu, to select the highest and lowest set point for cooling and heating to the supply air. The heating values should be kept close to the comfort temperature for the heating season.

The control's set point

The set point can be changed directly from the *Main menu*. From the *Heating/cooling* menu you can also select separate set point values for Away and Travelling modes.

Diagnostics

Control of heating can be observed from a diagnostics screen. *Main menu/Diagnostics/Heating and cooling*.

Depending on the selected control mode, the set point value is shown for room air control's supply air or the set point value for supply air control, the measured supply air temperature and the heating and or cooling capacity.

Freeze protection

The air heater is equipped with anti-frost sensor that protects the air heater from freezing. The freeze risk alarm is activated if the outdoor temperature is below 0 °C and the return water temperature drops below the alarm limit. If the return water's temperature drops yet further, the unit is switched off to prevent freezing. The unit starts again, when the temperature of the return water or the outdoor temperature has risen to a safe level.

5. Service

NOTE! Disconnect the power to air heater and ventilation unit before servicing.

Service should always be carried out on the air heater when servicing the ventilation unit. Check that dirt has not collected in the air heater, clean if necessary.

The inlet side of the air heater is cleaned first with a brush, and then you can clean the entire air heater. If the compressed air is used, blow off dirt in the direction from the output side towards the input side. Be careful so that the thin edges of the fins are not damaged.

Installation of the cooling unit

1. Installation

The air cooler must be installed in the supply air duct.

The air heater is supported either with the help of a shelf or another approved manner. make sure that the support will withstand the weight of the unit in its operating condition.

The air cooler can only be installed horizontal in the duct. The air cooler must be mounted with 5 – 15 degree angle in the direction towards the condensation water drain so that the condensation water does not remain standing in the unit.

NOTE! The air cooler and supply air duct must be insulated. Insulation must be designed according to national regulations, for example with mineral wool. The insulation may not cover the lid as the specification plate and warning sign must be visible and the lid must be accessible for opening.

Condensate discharge

The discharge hose is connected to the condensate outlet (CWK G1/2", W2504F G3/8").

The condensate is led off to a floor drain or the like using a hose with an inner diameter of at least 12 mm. The hose must not be led off directly to the drain. There must be two water traps or a horizontal section on the condensate hose. The damming height of the water trap should be at least 100 mm.

Check that the condensate discharge outlet is not clogged and check its outflow by pouring water on the bottom of the unit.

The condensate hose (CDH3) is available as an accessory for air cooler W2504F.

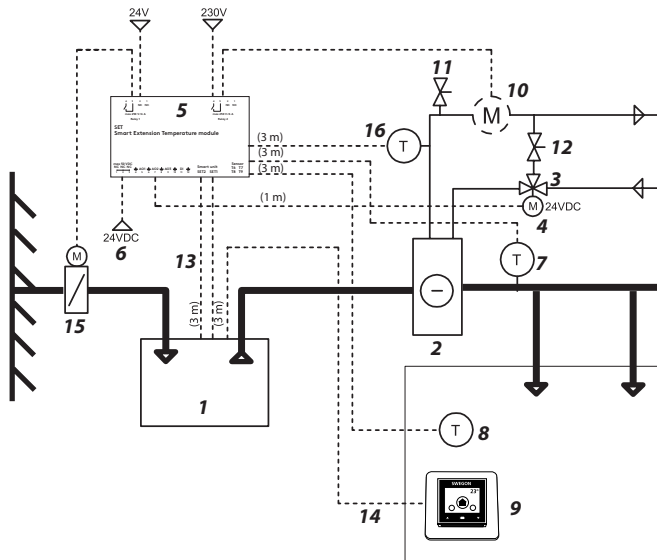
Water connection

The air cooler's connection pipes must not be subjected to distortion or bending movements when the connections are made. Ensure that the unit's expansion forces or the pipe system's own weight does not load the connections on the air heater.

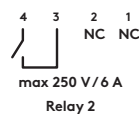
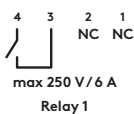
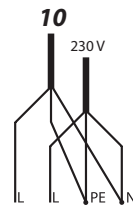
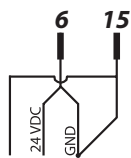
The valve's actuator can be mounted horizontally or so that the actuator is above the pipe system.

Pipes for the chilled water must be fitted with filters. The air cooler must be connected so that the pipe system can be drained easily, for example, during repairs, extended periods of downtime or when there is a risk of freezing. The air cooler and its connections must be checked for leakage once the pipe system has been completely filled with water. Any leakage can cause water damage.

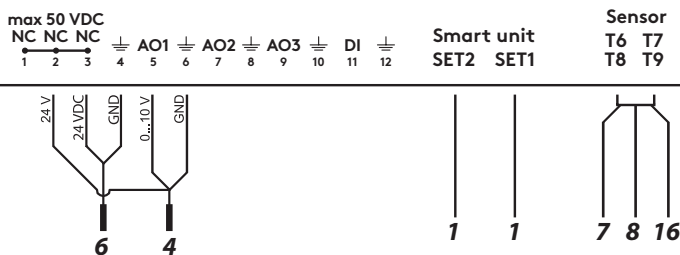
2. Electric and control cables



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 16. Air cooler's anti-frost sensor
- *) Not included in the delivery.



SET
Smart Extension Temperature module



NOTE! If the SET module is used for 230 VAC control, the module must be installed, according to the electrical safety directives, in a separate enclosure.

NOTE! Make sure that the strain relief is arranged for the connections according to the electrical safety directives.

NOTE! Only a qualified electrician may make the electrical connections.

- Install the SET-connection unit in an appropriate position in the vicinity of the sensor and actuator.
- Connect the SET-connection unit (5) to the ventilation unit (1) by connecting RJ45 cables to the SET1 and SET2 connectors.
- Install the supplied temperature sensor (7) in the supply air duct, after the air cooler seen from the direction of flow. Connect the sensor to the SET module's free *Sensor* connection.
- If water is used as the cooling medium, install the supplied anti-frost sensor (16) by taping it to the cooler's return pipe. Make sure the sensor is sufficiently insulated so that the ambient temperature does not affect the measurement. Connect the sensor to the SET module's free *Sensor* connection.
- Connect the valve motor (4) control and the supplied power source (6) to the SET unit's connectors as shown in the drawing.
- Install a possible room temperature sensor (*PRTG*, accessory) in the room area whose temperature the system should control. Connect the sensor to the SET module's free *Sensor* connection.
- Install any actuators according to the manufacturer's instructions and connect the control cable to the SET unit's relay outputs.

3. Commissioning

Select the functions for the temperature sensors used and fine adjust the measurements if necessary from the *Main menu / Settings / (1234) / Heating/cooling / Sensor/Control* menu.

Supply air sensor

Select the SET sensor input to which supply air sensor is connected:

"SET T6 -T9" = SET-connection unit's Sensor inputs.
("Internal" = The unit's internal supply air temperature sensor.)

Air heater sensor (freeze protection)

If water is used as the cooling medium, the anti-frost sensor must be installed in the system. Select the SET sensor input to which air cooler's anti-frost sensor is connected:

"SET T6 -T9" = SET-connection unit's Sensor inputs.

Room air sensor

Select the room air sensor which is used:

"SET T6 -T9" = SET connection's Sensor inputs.
("Internal" = The unit's internal extract air temperature sensor.)
("UP1" = Internal temperature sensor in Smart control panel 1.)
("UP2" = Internal temperature sensor in Smart control panel 2.)

Relay control functions

If you wish to use relay control functions, e.g. for a circulation water pump or a duct damper, the SET unit's relays can be programmed for the required function.

A minimum operating time has been established for the cooling pump's control (10 minutes).

The commissioning of the air cooler is performed from the *Heating/cooling* menu.

Cooling function

Put the cooling function into service from the menu item *External post cooling*.

If the ventilation unit software version is 3.2 or newer, *water* or *liquid* can be selected. If water is used as the cooling medium, the anti-frost sensor must be installed in the system.

Outdoor air limit

If necessary set *Outdoor air limit after cooling*. Cooling is permitted when the outdoor temperature is over the set value.

4. Use

When the duct cooler is commissioned, the cooling is regulated automatically when the outdoor temperature is over the set limit value. The Smart control panel shows a cooling symbol while the cooling function is active.

You can select Supply air or Room air control as the cooling control method. *Main menu / Settings / (1234) / Heating/cooling / Control type*.

Supply air control

While the cooling is in progress, the aim is to keep the supply air temperature stable.

NOTE! When supply air control is used, the setting value for the heating season is also changed, and thus the temperature setting value is selected according to the season.

Room air control

For room air control, the temperature of the supply air is based on the measurement of the room air temperature. This means in the summer, that the warmer the room air is, the cooler the requested supply air.

It is possible, from the Control mode menu, to select the highest and lowest set point for cooling and heating to the supply air. The heating values should be kept close to the comfort temperature for the heating season.

The lowest cooling value should be chosen so that there is no risk of condensation on the pipe system and the highest value so that there is no cooling requirement when the residence is cool.

The control's set point

The set point can be changed directly from the Main menu or from the Heating and cooling menu. It is also possible to select separate set point values for Away and Travelling modes.

NOTE! No cooling is permitted in Travelling mode.

Diagnostics

Control of cooling can be observed from a diagnostics screen. *Main menu/Diagnostics/Heating and cooling*.

Depending on the selected control mode, the set point value is shown for room air control's supply air or the set point value for supply air control, the measured supply air temperature and the heating and or cooling capacity.

Freeze protection

The air cooler is equipped with anti-frost sensor that protects the air heater from freezing. The freeze risk alarm is activated if the outdoor temperature is below 0 °C and the return water temperature drops below the alarm limit. If the return water's temperature drops yet further, the unit is switched off to prevent freezing. The unit starts again, when the temperature of the return water or the outdoor temperature has risen to a safe level.

5. Service

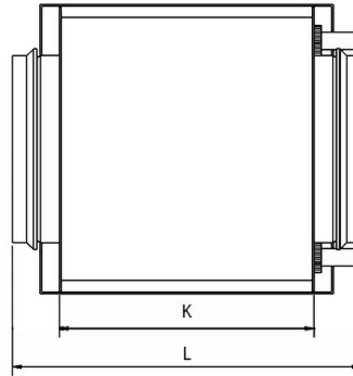
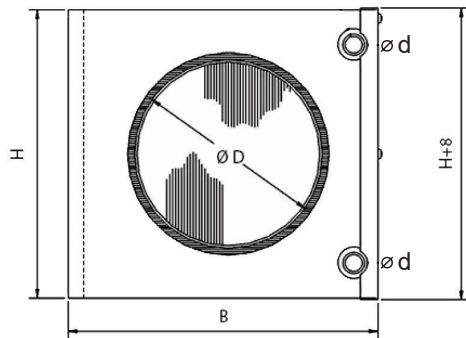
NOTE! Disconnect the power to air cooler and ventilation unit before servicing.

Service should always be carried out on the air cooler when servicing the ventilation unit. Check that dirt has not collected in the air cooler, clean if necessary.

The inlet side of the air cooler is cleaned first with a brush, and then you can clean the entire air cooler. If the compressed air is used, blow off dirt in the direction from the output side towards the input side. Be careful so that the thin edges of the fins are not damaged.

Dimensions

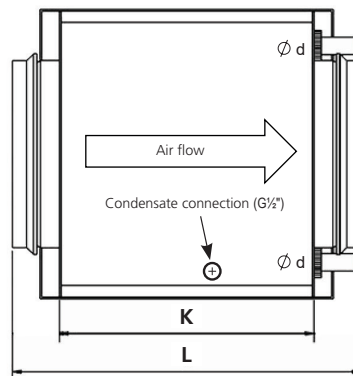
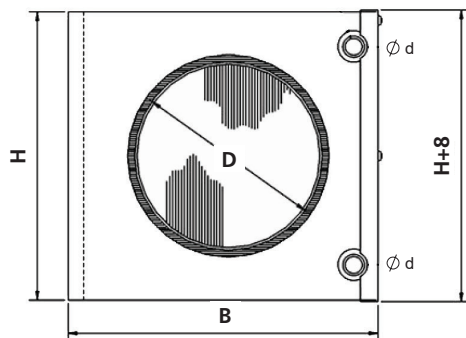
Dimensions of the heating units



Leave at least 40 cm service space in front of the door.

Model	H (mm)	B (mm)	D (mm)	d (mm)	K (mm)	L (mm)	Weight (kg)	Coil inside volume (l)
SDHW 125	255	326	125	10	280	350	5,2	0,4
SDHW 160	255	326	160	10	280	360	5,4	0,4
SDHW 200	330	411	200	22	280	360	8,2	0,7
SDHW 250	330	411	250	22	280	360	7,7	0,45
SDHW 315	405	486	315	22	280	360	9,9	0,7

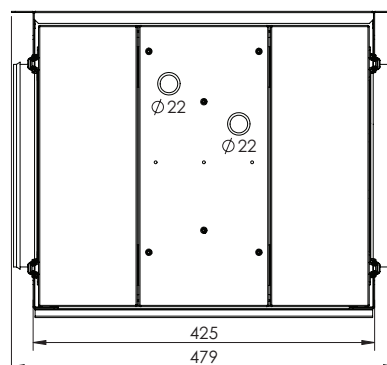
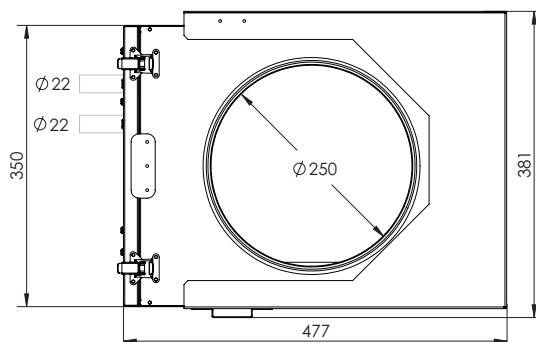
Dimensions of the cooling units



Leave at least 40 cm service space in front of the door.

Model	H (mm)	B (mm)	D (mm)	d (mm)	K (mm)	L (mm)	Weight (kg)	Coil inside volume (l)
SDCW 160	255	326	160	10	280	360	6	0,4
SDCW 200	330	411	200	22	280	360	9	0,7
SDCW 250	405	486	250	22	280	360	11	1,1
SDCW 315	504	560	315	22	280	360	15	1,61

SDCW 250F



Technical data

SDHW 125															
Water temperature			in / out 80 °C / 60 °C				in / out 60 °C / 40 °C				in / out 55 °C / 45 °C				
Air flow		Air pressure drop	Inlet air temp.	Outlet air temp.	Output	Water flow	Water pressure drop	Outlet air temp.	Output	Water flow	Water pressure drop	Outlet air temp.	Output	Water flow	Water pressure drop
l/s	m ³ /h	Pa	°C	°C	kW	l/s	kPa	°C	kW	l/s	kPa	°C	kW	l/s	kPa
24	85	6	-15	66,9	2,7	0,03	5,7	47,3	2,0	0,02	3,5	46,4	2,0	0,05	12,6
24	85	5	-7,5	67,8	2,4	0,03	4,6	48,0	1,8	0,02	2,7	47,2	1,7	0,04	9,6
24	85	5	0	68,6	2,1	0,03	3,7	48,6	1,5	0,02	2,0	48,0	1,5	0,04	7,1
24	85	5	7,5	69,3	1,8	0,02	2,9	49,0	1,2	0,02	1,4	48,7	1,2	0,03	5,0
24	85	5	15	69,9	1,6	0,02	2,2	48,0	1,0	0,01	0,9	49,2	1,0	0,02	3,4
42	150	12	-15	58,4	4,2	0,05	13,7	40,5	3,2	0,04	8,2	40,4	3,2	0,08	30,6
42	150	12	-7,5	60,1	3,8	0,05	11,0	42,0	2,8	0,03	6,3	41,9	2,8	0,07	23,3
42	150	11	0	61,6	3,3	0,04	8,8	43,3	2,3	0,03	4,6	43,3	2,3	0,06	17,2
42	150	11	7,5	63,0	2,9	0,04	6,8	44,4	1,9	0,02	3,2	44,7	2,0	0,05	12,2
42	150	11	15	64,2	2,5	0,03	5,2	45,3	1,6	0,02	2,1	45,9	1,6	0,04	8,2
60	215	20	-15	52,2	5,5	0,07	22,9	35,6	4,2	0,05	13,7	35,9	4,2	0,10	51,8
60	215	20	-7,5	54,4	4,9	0,06	18,5	37,6	3,6	0,04	10,4	37,9	3,6	0,09	39,5
60	215	19	0	56,4	4,4	0,05	14,7	39,5	3,1	0,04	7,6	39,9	3,1	0,08	29,1
60	215	19	7,5	58,3	3,8	0,05	11,5	41,1	2,5	0,03	5,4	41,7	2,6	0,06	20,6
60	215	18	15	60,1	3,3	0,04	8,7	42,6	2,0	0,02	3,5	43,3	2,1	0,05	13,8

SDHW 160															
Water temperature			in / out 80 °C / 60 °C				in / out 60 °C / 40 °C				in / out 55 °C / 45 °C				
Air flow		Air pressure drop	Inlet air temp.	Outlet air temp.	Output	Water flow	Water pressure drop	Outlet air temp.	Output	Water flow	Water pressure drop	Outlet air temp.	Output	Water flow	Water pressure drop
l/s	m ³ /h	Pa	°C	°C	kW	l/s	kPa	°C	kW	l/s	kPa	°C	kW	l/s	kPa
40	145	11	-15	59,0	4,1	0,05	13,0	41,0	3,1	0,04	7,8	40,8	3,1	0,8	29,1
40	145	11	-7,5	60,6	3,7	0,05	10,5	42,4	2,7	0,03	6,0	42,3	2,7	0,07	22,1
40	145	10	0	62,0	3,2	0,04	8,3	43,6	2,3	0,03	4,4	43,7	2,3	0,06	16,4
40	145	10	7,5	63,4	2,8	0,04	6,5	44,7	1,9	0,02	3,1	44,9	1,9	0,05	11,6
40	145	10	15	34,6	2,5	0,03	4,9	45,5	1,5	0,02	2,0	46,1	1,5	0,04	7,8
70	250	25	-15	49,5	6,2	0,08	28,2	33,5	4,6	0,06	16,8	33,9	4,7	0,11	64,0
70	250	24	-7,5	51,9	5,5	0,07	22,8	35,7	4,0	0,05	12,8	36,2	4,1	0,10	48,8
70	250	23	0	54,1	4,9	0,06	18,2	37,8	3,4	0,04	9,4	38,3	3,5	0,08	36,0
70	250	23	7,5	56,2	4,3	0,05	14,1	39,7	2,8	0,03	6,6	40,3	2,9	0,07	25,5
70	250	22	15	58,2	3,7	0,05	10,7	41,4	2,3	0,03	4,3	42,2	2,3	0,06	17,0
99	355	46	-15	42,9	7,9	0,10	45,1	28,5	5,9	0,07	26,6	29,1	6,0	0,15	103,0
99	355	45	-7,5	45,9	7,0	0,09	36,5	31,2	5,1	0,06	20,2	31,9	5,2	0,13	78,5
99	355	43	0	48,7	6,2	0,08	29,0	33,9	4,3	0,05	14,8	34,6	4,4	0,11	58,0
99	355	41	7,5	51,4	5,5	0,07	22,6	36,3	3,6	0,04	10,4	37,1	3,7	0,09	41,0
99	355	40	15	53,9	4,7	0,06	17,1	38,6	2,9	0,03	6,7	39,6	3,0	0,07	27,3

SDHW 200															
Water temperature			in / out 80 °C / 60 °C				in / out 60 °C / 40 °C				in / out 55 °C / 45 °C				
Air flow		Air pressure drop	Inlet air temp.	Outlet air temp.	Output	Water flow	Water pressure drop	Outlet air temp.	Output	Water flow	Water pressure drop	Outlet air temp.	Output	Water flow	Water pressure drop
l/s	m ³ /h	Pa	°C	°C	kW	l/s	kPa	°C	kW	l/s	kPa	°C	kW	l/s	kPa
63	225	8	-15	61,4	6,6	0,08	7,1	42,7	5,0	0,06	4,3	42,6	4,9	0,12	15,9
63	225	8	-7,5	62,7	5,9	0,07	5,8	43,9	4,3	0,05	3,3	43,8	4,3	0,10	12,1
63	225	8	0	64,0	5,2	0,06	4,6	44,9	3,7	0,04	2,4	45,0	3,7	0,09	9,0
63	225	8	7,5	65,1	4,6	0,06	3,6	45,7	3,0	0,04	1,7	46,0	3,0	0,07	6,4
63	225	8	15	66,1	3,9	0,05	2,7	46,2	2,4	0,03	1,1	47,0	2,5	0,06	4,3
108	390	19	-15	52,1	10,0	0,12	15,8	35,5	7,5	0,09	9,5	35,9	7,6	0,18	35,8
108	390	18	-7,5	54,3	8,9	0,11	12,8	37,4	6,5	0,08	7,2	37,9	6,6	0,16	27,3
108	390	18	0	56,3	7,9	0,10	10,2	39,2	5,5	0,07	5,3	39,8	5,6	0,14	20,2
108	390	17	7,5	58,2	7,0	0,09	8,0	40,9	4,6	0,06	3,7	41,6	4,7	0,11	14,3
108	390	17	15	59,9	6,0	0,07	6,0	42,2	3,6	0,04	2,4	43,2	3,8	0,09	9,6
154	555	34	-15	45,7	12,9	0,16	25,6	30,5	9,6	0,12	15,2	31,2	9,8	0,24	58,1
154	555	33	-7,5	48,4	11,5	0,14	20,7	33,0	8,3	0,10	11,5	33,7	8,5	0,21	44,4
154	555	32	0	50,9	10,2	0,13	16,5	35,3	7,1	0,09	8,5	36,2	7,2	0,18	32,8
154	555	30	7,5	53,3	8,9	0,11	12,8	37,5	5,9	0,07	5,9	38,5	6,0	0,15	23,2
154	555	29	15	55,6	7,7	0,09	9,7	39,5	4,7	0,06	3,9	40,6	4,9	0,12	15,5

SDHW 250															
Water temperature			in / out 80 °C / 60 °C				in / out 60 °C / 40 °C				in / out 55 °C / 45 °C				
Air flow		Air pressure drop	Inlet air temp.	Outlet air temp.	Output	Water flow	Water pressure drop	Outlet air temp.	Output	Water flow	Water pressure drop	Outlet air temp.	Output	Water flow	Water pressure drop
l/s	m ³ /h	Pa	°C	°C	kW	l/s	kPa	°C	kW	l/s	kPa	°C	kW	l/s	kPa
100	360	11	-15	37,4	7,2	0,09	5,9	23,6	5,3	0,06	3,4	25,2	5,5	0,13	13,7
100	360	11	-7,5	40,7	6,4	0,08	4,8	26,7	4,6	0,06	2,6	28,3	4,8	0,12	10,4
100	360	10	0	43,9	5,7	0,07	3,8	29,6	3,8	0,05	1,9	31,4	4,1	0,10	7,7
100	360	10	7,5	46,9	5,0	0,06	3,0	32,3	3,1	0,04	1,3	34,3	3,4	0,08	5,4
100	360	10	15	49,8	4,3	0,05	2,2	34,7	2,4	0,03	0,8	37,0	2,7	0,07	3,6
175	630	29	-15	27,7	10,3	0,13	11,6	16,4	7,6	0,09	6,6	17,9	7,9	0,19	27,0
175	630	28	-7,5	31,8	9,2	0,11	9,4	20,3	6,5	0,08	5,0	21,8	6,9	0,17	20,6
175	630	27	0	35,8	8,1	0,10	7,5	24,1	5,5	0,07	3,6	25,7	5,8	0,14	15,2
175	630	26	7,5	39,6	7,1	0,09	5,8	27,7	4,5	0,05	2,5	29,4	4,9	0,12	10,7
175	630	25	15	43,4	6,1	0,08	4,4	31,1	3,5	0,04	1,5	33,0	3,9	0,09	7,0
250	900	55	-15	21,9	12,7	0,16	17,4	12,1	9,3	0,11	9,9	13,5	9,8	0,24	40,7
250	900	53	-7,5	26,5	11,4	0,14	14,1	16,5	8,0	0,10	7,5	18,0	8,5	0,21	31,1
250	900	52	0	31,0	10,1	0,12	11,2	20,8	6,8	0,08	5,4	22,3	7,3	0,18	22,9
250	900	50	7,5	35,3	8,8	0,11	8,7	25,0	5,5	0,07	3,7	26,5	6,0	0,15	16,1
250	900	49	15	39,5	7,6	0,09	6,5	28,9	4,3	0,05	2,3	30,7	4,8	0,12	10,6

SDHW 315															
Water temperature			in / out 80 °C / 60 °C				in / out 60 °C / 40 °C				in / out 55 °C / 45 °C				
Air flow		Air pressure drop	Inlet air temp.	Outlet air temp.	Output	Water flow	Water pressure drop	Outlet air temp.	Output	Water flow	Water pressure drop	Outlet air temp.	Output	Water flow	Water pressure drop
l/s	m ³ /h	Pa	°C	°C	kW	l/s	kPa	°C	kW	l/s	kPa	°C	kW	l/s	kPa
156	560	11	-15	38,0	11,3	0,14	7,2	24,1	8,4	0,10	4,2	25,6	8,7	0,21	16,6
156	560	10	-7,5	41,3	10,1	0,12	5,8	27,2	7,2	0,09	3,2	28,7	7,5	0,18	12,7
156	560	10	0	44,4	9,0	0,11	4,6	30,1	6,1	0,07	2,3	31,7	6,4	0,16	9,4
156	560	10	7,5	47,4	7,9	0,10	3,6	32,7	5,0	0,06	1,6	34,6	5,3	0,13	6,6
156	560	10	15	50,2	6,8	0,08	2,7	35,1	3,9	0,05	1,0	37,3	4,3	0,10	4,3
274	985	27	-15	28,1	16,2	0,20	14,3	16,8	12,0	0,15	8,2	18,2	12,5	0,30	33,2
274	985	26	-7,5	32,2	14,5	0,18	11,6	20,7	10,3	0,13	6,2	22,1	10,8	0,26	25,3
274	985	26	0	36,2	12,9	0,16	9,2	24,4	8,7	0,11	4,5	26,0	9,2	0,22	18,7
274	985	25	7,5	40,0	11,3	0,14	7,1	28,0	7,1	0,09	3,1	29,7	7,7	0,19	13,1
274	985	24	15	43,7	9,7	0,12	5,4	31,4	5,5	0,07	1,9	33,3	6,2	0,15	8,7
392	1410	53	-15	22,3	20,1	0,25	21,4	12,4	14,8	0,18	12,2	13,8	15,5	0,38	50,1
392	1410	52	-7,5	26,9	18,0	0,22	17,4	16,8	12,7	0,15	9,2	18,2	13,5	0,33	38,3
392	1410	50	0	31,3	15,9	0,20	13,8	21,1	10,7	0,13	6,7	22,5	11,5	0,28	28,2
392	1410	48	7,5	35,6	14,0	0,17	10,7	25,2	8,8	0,11	4,6	26,7	9,5	0,23	19,9
392	1410	47	15	39,8	12,0	0,15	8,0	29,2	6,9	0,08	2,9	30,8	7,7	0,19	13,1

SDCW 160								
Water temperature 6 / 12 °C								
Air flow		Pressure drop	Inlet air temperature	Inlet air humidity	Outlet air temperature	Output	Water flow	Water pressure drop
l/s	m ³ /h	Pa	°C	% RH	°C	kW	l/s	kPa
40	145	9	25	50	13,1	0,7	0,03	4,4
40	145	10	30	45	13,9	1,1	0,04	9,8
69	250	21	25	50	14,4	1,1	0,04	9,4
69	250	22	30	45	15,9	1,6	0,06	20,2
99	355	38	25	50	15,3	1,3	0,05	14,6
99	355	40	30	45	17,3	2,0	0,08	31,2

SDCW 200								
Water temperature 6 / 12 °C								
Air flow		Pressure drop	Inlet air temperature	Inlet air humidity	Outlet air temperature	Output	Water flow	Water pressure drop
l/s	m ³ /h	Pa	°C	% RH	°C	kW	l/s	kPa
71	255	9	25	50	13,4	1,2	0,05	2,5
71	255	9	30	45	14,1	1,9	0,07	5,8
108	390	16	25	50	14,2	1,7	0,07	4,7
108	390	17	30	45	15,5	2,5	0,10	10,3
154	555	29	25	50	15,1	2,1	0,08	7,4
154	555	30	30	45	16,8	3,2	0,13	16,1

SDCW 250

Water temperature 6 / 12 °C

Air flow		Pressure drop	Inlet air temperature	Inlet air humidity	Outlet air temperature	Output	Water flow	Water pressure drop
l/s	m ³ /h	Pa	°C	% RH	°C	kW	l/s	kPa
100	360	7	25	50	13,1	1,7	0,07	2,3
100	360	8	30	45	13,6	2,7	0,11	5,4
175	630	17	25	50	14,1	2,7	0,11	5,3
175	630	18	30	45	15,4	4,1	0,16	11,5
250	900	29	25	50	15,0	3,5	0,14	8,4
250	900	31	30	45	16,8	5,3	0,21	17,8

SDCW 250F

Water temperature 6 / 12 °C

Air flow		Pressure drop	Inlet air temperature	Inlet air humidity	Outlet air temperature	Output	Water flow	Water pressure drop
l/s	m ³ /h	Pa	°C	% RH	°C	kW	l/s	kPa
60	216	15	25	50	14,3	1,0	0,04	0,7
60	216	18	30	45	11,0	2,2	0,09	3,5
80	288	24	25	50	12,0	1,8	0,07	2,4
80	288	28	30	45	11,9	2,8	0,11	5,3
100	360	34	25	50	12,3	2,2	0,09	3,4
100	360	39	30	45	12,5	3,4	0,13	7,2
150	540	64	25	50	13,2	3,0	0,12	6,0
150	540	72	30	45	14,1	4,5	0,18	12,3
180	648	84	25	50	13,8	3,4	0,13	7,4
180	648	93	30	45	14,8	5,1	0,20	14,9
250	900	139	25	50	14,8	4,3	0,17	11,0
250	900	154	30	45	16,1	6,4	0,25	22,2

SDCW 315

Water temperature 6 / 12 °C

Air flow		Pressure drop	Inlet air temperature	Inlet air humidity	Outlet air temperature	Output	Water flow	Water pressure drop
l/s	m ³ /h	Pa	°C	% RH	°C	kW	l/s	kPa
156	560	8	25	50	12,8	2,8	0,11	3,4
156	560	9	30	45	13,6	4,3	0,17	7,4
274	985	19	25	50	14,1	4,3	0,17	7,3
274	985	20	30	45	15,6	6,4	0,26	15,5
392	1410	34	25	50	15,1	5,5	0,22	11,5
392	1410	35	30	45	16,9	8,2	0,32	24,0