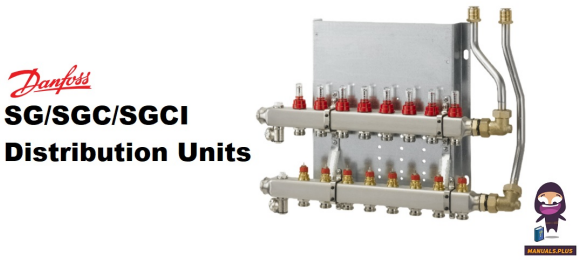

Danfoss SG/SGC/SGCI Distribution Units Instruction Manual

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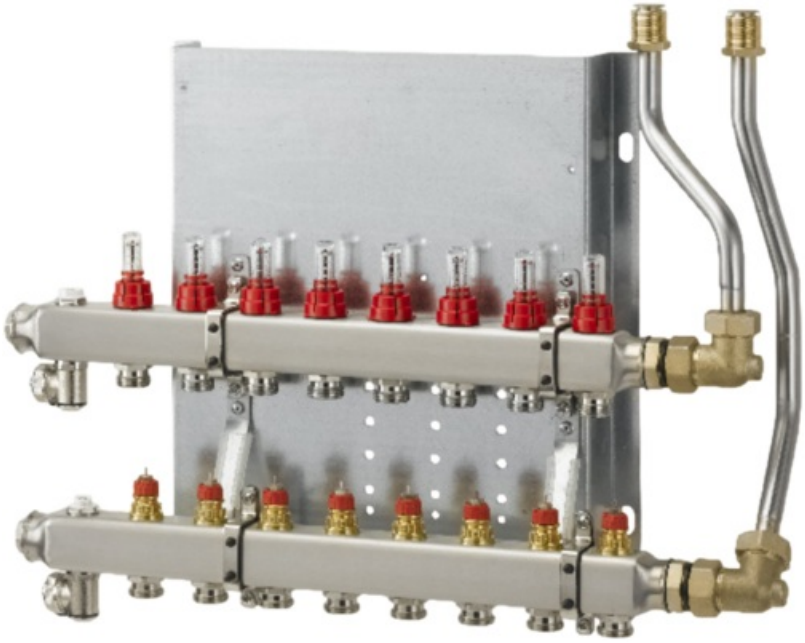
Danfoss SG/SGC/SGCI Distribution Units



Product Usage Instructions

- Before installing and commissioning the unit, carefully read and follow the provided instructions to prevent any risks of injury or property damage.
- Ensure installation, commissioning, and maintenance are conducted by qualified personnel in plumbing and electrical work.
- The distribution system is primarily intended for connection to district heating. Alternative energy sources can be used if they meet equivalent operating conditions.
- These distribution systems are suitable for floor heating installations and can be integrated with flat station ranges or boilers.
- Only use materials that comply with local regulations for installation.
- Avoid lifting the unit by the pipes and ensure all pipe connections are retightened after transport.
- Dispose of packaging following local regulations. The unit materials should be disposed of according to local guidelines for hazardous waste.
- Disconnect all energy sources and connection pipes before dismantling the unit for disposal.
- Ensure potential equalization is implemented to reduce corrosion and secure against dangerous voltage between piping systems.
- Beware of hot surfaces that may cause burn injuries.

FAQ

- **Q: Can this unit be used with sources other than district heating?**
  - **A:** Yes, alternative energy sources can be used if they match the operating conditions of district heating.
- **Q: Who should perform the installation and maintenance of this unit?**
  - **A:** Qualified and authorized personnel in both plumbing and electrical work should handle installation, commissioning, and maintenance.
- **Q: How should I dispose of the unit after use?**
  - **A:** Disconnect all connections, follow local disposal regulations for packaging materials, and dispose of the unit components according to applicable local guidelines for hazardous waste disposal.

Installation guide

Distribution unit SG

Distribution unit SGC - ICON Wiring center

Distribution unit SGCI - ICON2

CONNECTION SAFETY HANDLING

Instructions

- Please read these instructions carefully before installing and commissioning this unit. The manufacturer accepts no liability for loss or damage resulting from failure to comply with these instructions for use. Read and follow these instructions carefully to prevent the risk of physical injury and/or property damage. Exceeding the recommended operating parameters appreciably increases the risk of personal injury and/or property damage.
- Installation, commissioning and maintenance must be carried out by qualified and authorized personnel (both plumbing and electrical work).
- Once the system has been installed and is operating, there is normally no need to alter the settings or other functions. The distribution system unit is very reliable and easy to operate.

Heat source

- The distribution system is primarily designed for connection to district heating. Alternative energy sources can be used if the operating conditions are equivalent to district heating at all times.

Application

- The Danfoss stainless steel distribution systems are prefabricated solutions for floor heating, which can be installed separately or be implemented with the Danfoss flat station range, in connection with a boiler or as an extension of an existing heating system.

Choice of materials

- Only use materials that comply with local regulations.

Storage

- Before installation, the unit(s) must be stored in a dry, heated (i.e.frostfree) room. Relative humidity max. 80 % and storage temp.

- 5 °C to 70 °C. The units must not be stacked higher than the limit at the factory.
- Units supplied in cardboard packaging must be lifted using the handles incorporated in the packaging.
- Units must be placed on pallets for transport/moving across large distances.
- As far as possible, do not lift the unit by the pipes.
- Retighten ALL pipe connections after transport/moving.

Disposal

- Dispose of the packaging under the local regulations for disposal of used packaging materials. The unit is made of materials that cannot be disposed of together with household waste.
- Close all energy sources and disconnect all connection pipes. Disconnect and dismantle the product for disposal under the applicable local regulations for the disposal of the individual components.

Connection

- It must be possible to cut off all energy sources to the system – including electrical connections – at all times.

Potential equalization/grounding
Potential equalization is an electrical equalizer connection to secure against user contact with dangerous voltage, which may occur for example between two piping systems. Potential equalization reduces corrosion in heat exchangers, water heaters, district heating units, and plumbing installations. Equalization of potentials should be evaluated according to local regulations.

Warning! Hot surfaces

- Parts of the unit may be very hot and can cause burn injuries.
- Be very careful when you are in the immediate vicinity of the unit

Emergencies

- In the event of fire, leaks or other hazards, immediately shut off all sources of energy to the unit, if possible, and call for appropriate assistance.
- If the domestic hot water is discolored or malodorous, shut off all ball valves on the unit notify all users and call for professional assistance without delay.

Warning about damage during transport

- On reception of the unit, and before installing it, check for any evidence of damage during transport.
- The unit must be handled and moved with the greatest care and attention.

NB! – Tightening of connections
Before filling the unit with water, ALL pipe connections MUST be retightened, as vibrations during transport may have caused leaks. Once the unit has been lled and the system is hot, ALL pipe connections MUST be retightened once more. DO NOT OVERTIGHTEN THE PIPE CONNECTIONS.

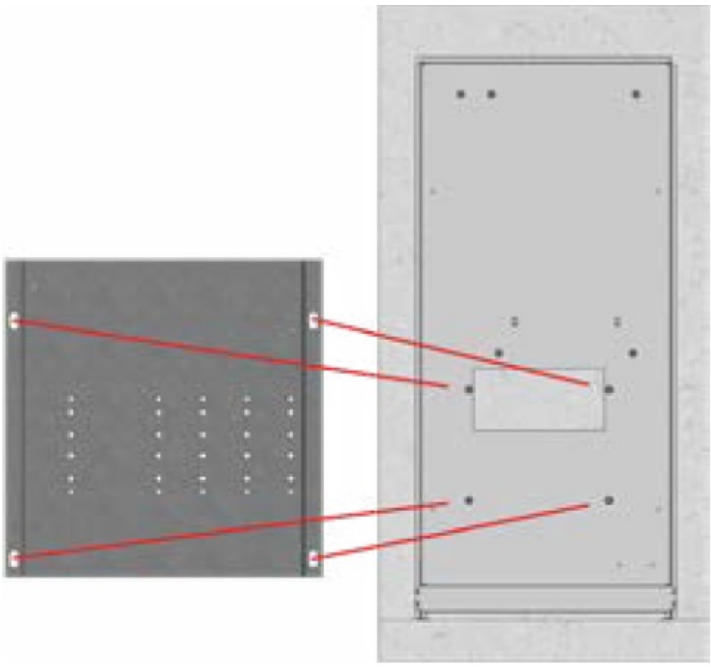
INSTALLATION INSTRUCTIONS GENERAL

General

- The installation, connection and maintenance of the system must be performed by qualified and authorized personnel. Installation must always be performed per the applicable legislation and in compliance with these instructions.
- The system must be installed so that it is freely accessible and can be maintained without unnecessary disruption. Lift the unit by its mounting plate/rear section (to a maximum extent do not lift the unit by the pipes) and secure it to a solid wall or in the recess box using 4 expansion bolts or the like positioned in the two-bore holes in the mounting plate. It is recommended that at least two people are involved in the installation.
- Before commissioning, rinse all the pipes in the household piping system thoroughly to remove any impurities, and check and clean the dirt strainers in the unit.

Test and connections

- Before filling the system with water, retighten all the pipe connections because vibrations and shocks during transport and handling may have caused leaks. Once the system has been filled with water, tighten all the pipe connections once more before performing a pressure test for leaks. After heating of the system, check all the connections and retighten if necessary.
- Please note that the connections may feature EPDM rubber gaskets! Therefore, you mustn’t OVERTIGHTEN the union nuts. Overtightening may result in leaks.
- Leaks caused by overtightening or failure to retighten connections are not covered by the warranty.



PRODUCT INTRODUCTION

- The Danfoss stainless steel distribution systems are prefabricated solutions for floor heating, which can be installed separately or be implemented with the Danfoss flat station range, in connection with a boiler or as an extension of an existing heating system.
- These solutions make it easier for the installer to order a ready-made plug-and-play construction for mounting of distribution pipes for the building section.

- The systems are available as standard solutions with 2 to 12 connections and include a manual air vent and drain valve. In addition, the solutions include a flow meter to maintain the designated flow rate.
- The solution SGC is fitted with an Icon™ Wiring center 230V and thermo-actuators TWA NC for control of the floor heating system.
- The solution SGCI is fitted with an Icon2™ master controller 230V and thermo-actuators TWA NC for control of the floor heating system.
- The distribution systems are used as built-in variants with a recess box, or as on the wall-mounted variants.
- A mounting rail with ball valves for easy mounting in a recess box or on the wall is available as an option.

Flexible solutions
The Danfoss distribution systems are prepared for implementation with the Danfoss flat station ranges EvoFlat and EvoFlat 4.0.

ORDERING

Distribution unit SG

Code no. / Bestell №	Description
145H0902	SGC with 2 heating circuits
145H0903	SGC with 3 heating circuits
145H0904	SGC with 4 heating circuits
145H0905	SGC with 5 heating circuits
145H0906	SGC with 6 heating circuits
145H0907	SGC with 7 heating circuits
145H0908	SGC with 8 heating circuits
145H0909	SGC with 9 heating circuits
145H0910	SGC with 10 heating circuits
145H0911	SGC with 11 heating circuits
145H0912	SGC with 12 heating circuits

Distribution unit SGCI

Code no. / Bestell №	Description
145H0922	SGCI with 2 heating circuits, ICON Wiring center 230V
145H0923	SGCI with 3 heating circuits, ICON Wiring center 230V
145H0924	SGCI with 4 heating circuits, ICON Wiring center 230V
145H0925	SGCI with 5 heating circuits, ICON Wiring center 230V
145H0926	SGCI with 6 heating circuits, ICON Wiring center 230V
145H0927	SGCI with 7 heating circuits, ICON Wiring center 230V
145H0928	SGCI with 8 heating circuits, ICON Wiring center 230V
145H0929	SGCI with 9 heating circuits, ICON Wiring center 230V
145H0930	SGCI with 10 heating circuits, ICON Wiring center 230V
145H0931	SGCI with 11 heating circuits, ICON Wiring center 230V
145H0932	SGCI with 12 heating circuits, ICON Wiring center 230V

Distribution unit SGC

Code no. / Bestell №	Description
145H1942	SG with 2 heating circuits, ICON 2, 230V
145H1943	SG with 3 heating circuits, ICON 2, 230V
145H1944	SG with 4 heating circuits, ICON 2, 230V
145H1945	SG with 5 heating circuits, ICON 2, 230V
145H1946	SG with 6 heating circuits, ICON 2, 230V
145H1947	SG with 7 heating circuits, ICON 2, 230V
145H1948	SG with 8 heating circuits, ICON 2, 230V
145H1949	SG with 9 heating circuits, ICON 2, 230V
145H1950	SG with 10 heating circuits, ICON 2, 230V
145H1951	SG with 11 heating circuits, ICON 2, 230V
145H1952	SG with 12 heating circuits, ICON 2, 230V

RECESS BOXES

Recess box with mounting rail

Code no.	Wide	Height	Depth
183U6030	610 mm	1350 mm	150 mm
183U6031	690 mm	1350 mm	150 mm
183U6032	850 mm	1350 mm	150 mm

On wall panels

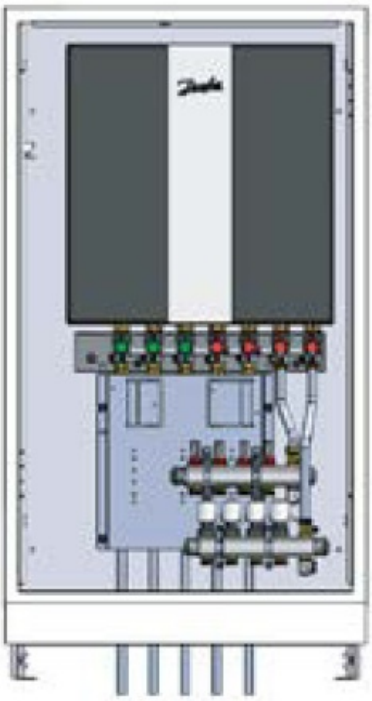
Code no.	Wide	Height	Depth
183U6030	610 mm	1350 mm	150 mm
183U6031	690 mm	1350 mm	150 mm
183U6032	850 mm	1350 mm	150 mm

Accessories

Code no. / Bestel l №	Description	Beschreibung
183L5142	Ball valve set 3/4” w/nuts 7 valves	Kugelhahn Set inschl. Montageschiene
183U6033	Feet set for recess box	

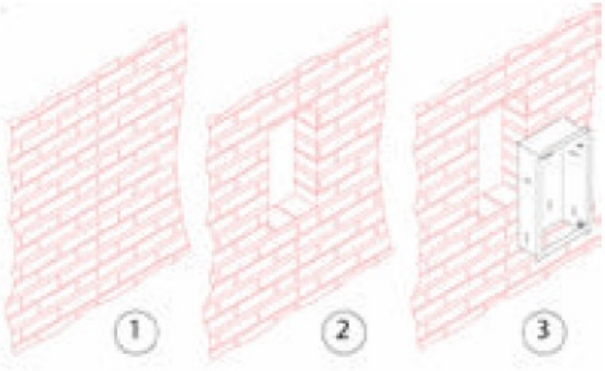
The distributtion units fit on the back plate of the recess boxes but can also be mounted on the wall.
Recess boxes for built-in variants are available in three sizes:

- 2-9 circuits fits the:
- Recess box W 610 / H 1350 / D 150 mm
- 10 circuits fits the:
- Recess box W 690 / H 1350 / D 150 mm
- 11-12 circuits fits the:
- Recess box W 850 / H 1350 / D 150 mm



MOUNTING IN RECESS BOXES

- Recess box is built into the wall or on the wall.

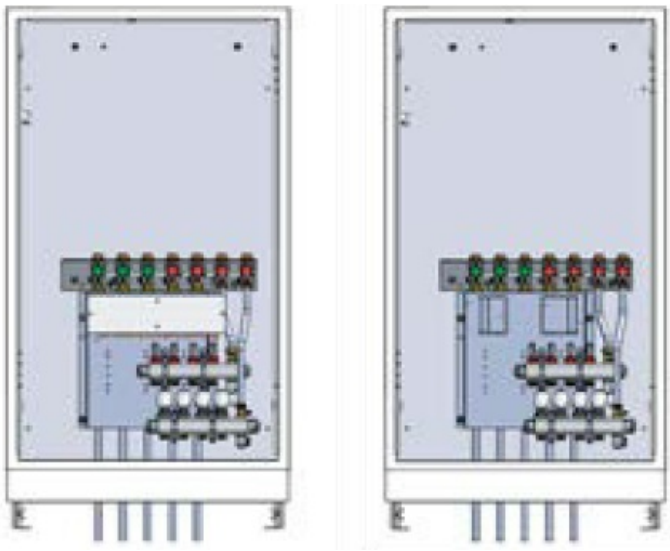


The installer connects the household pipes to the mounting rail:

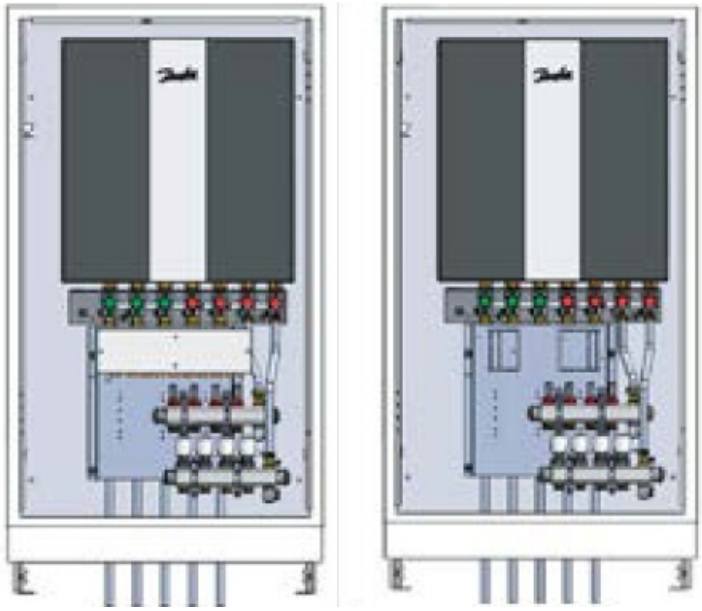
- DCW inlet
- DHW
- DCW outlet
- DH supply
- DH return

(except floor heating) and insulate the pipes.
When installing, please ensure that there is enough space for pipe connection.

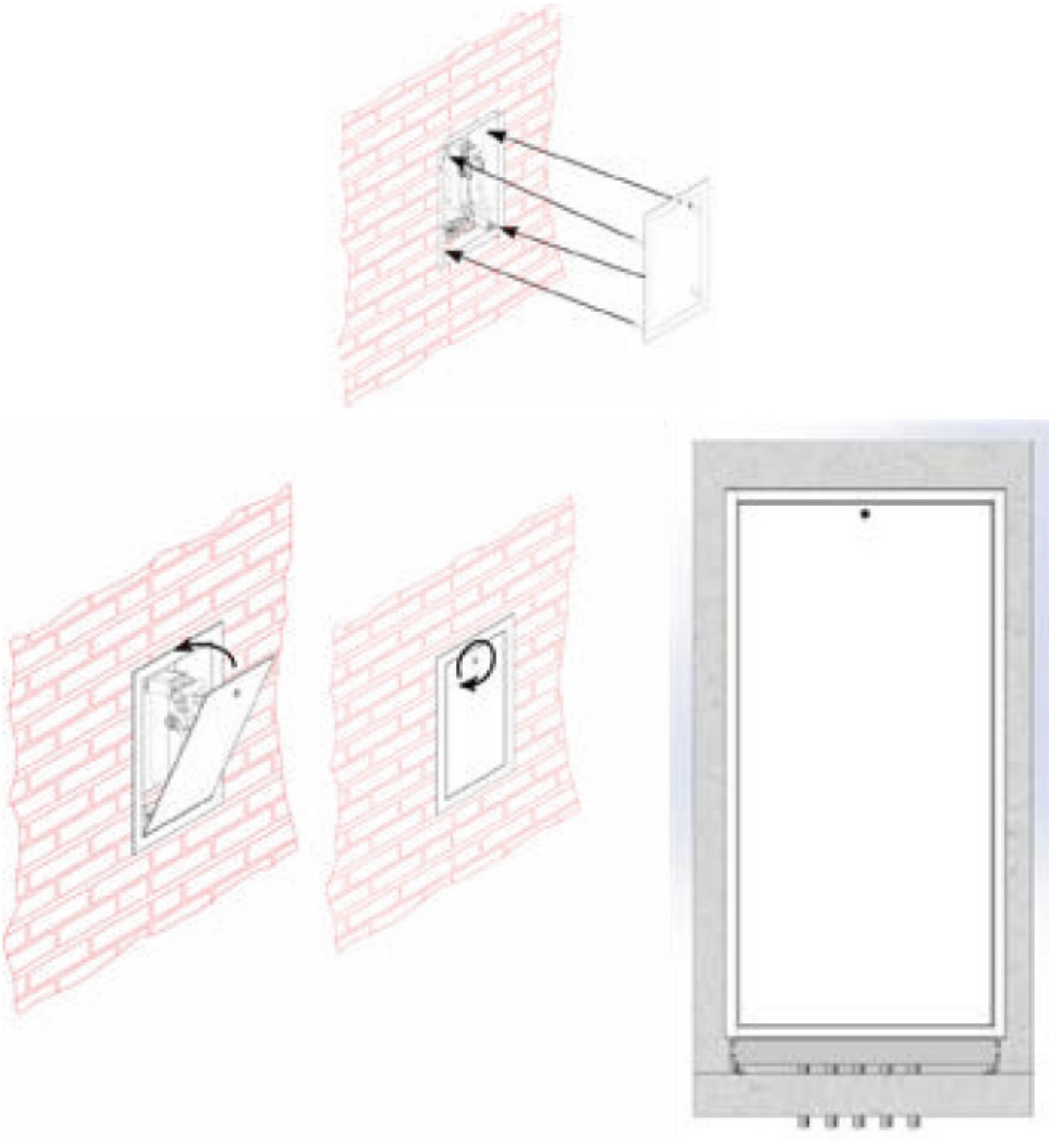
- Mount the distribution unit into position with 4 M8 nuts and connect heating pipes to ball valves on the mounting rail.



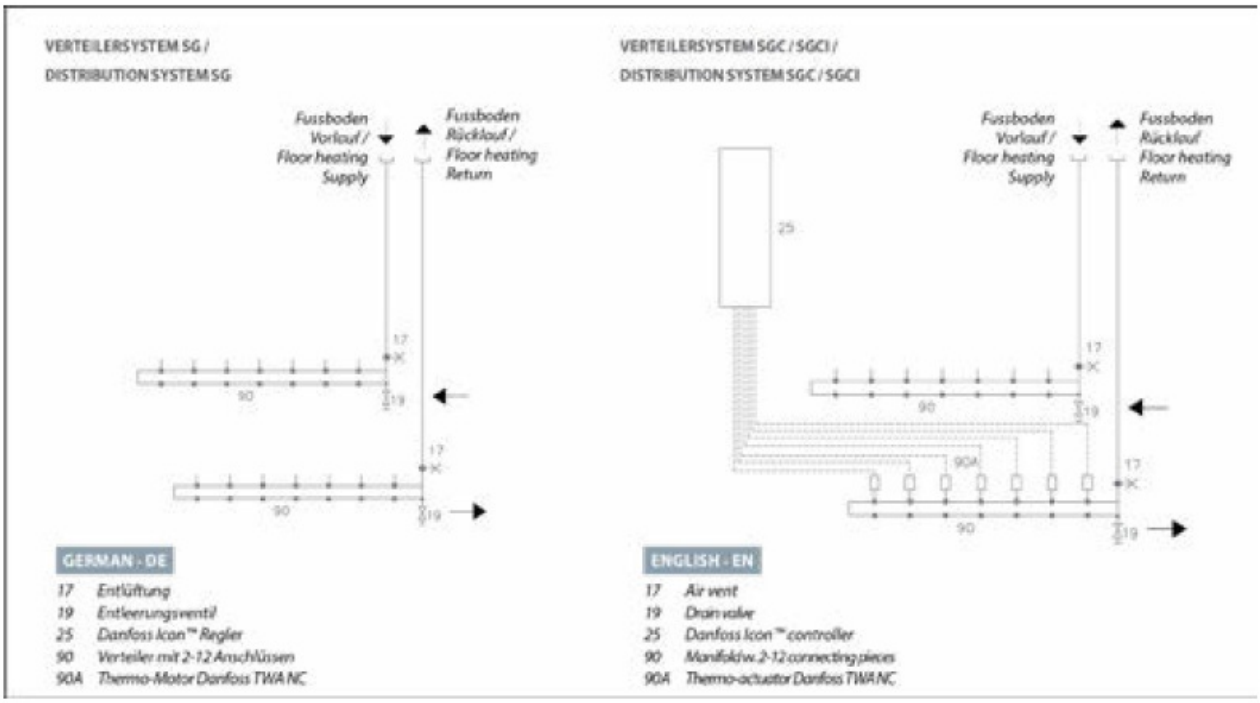
- A substation is placed in the recess box and connected to the 7 ball valves and fixed to the recess box with 2 M8 nuts and 2 washers M8x30 mm.

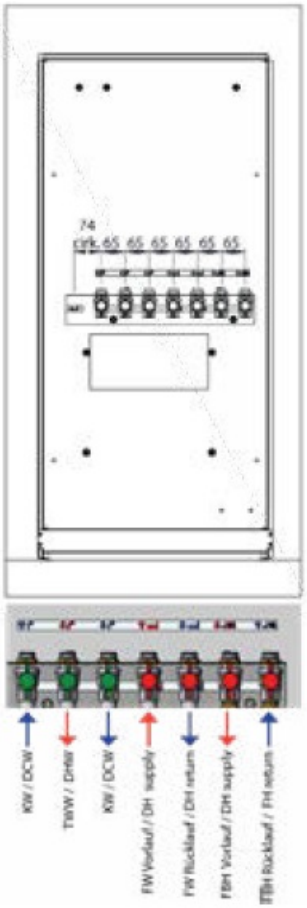


- Mount the white frame after having painted the wall or mounted tiles, if necessary.
- Mount the door.

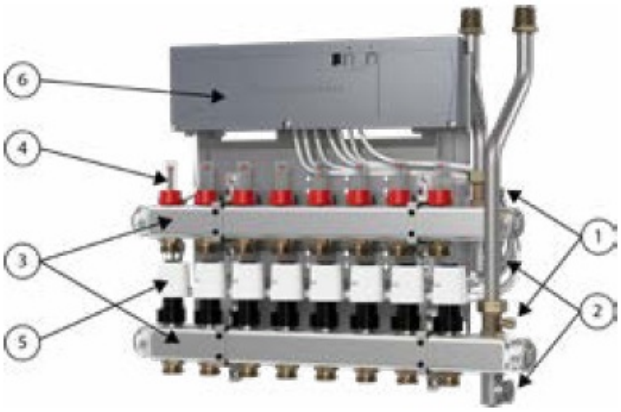


MAIN COMPONENTS & CONNECTIONS



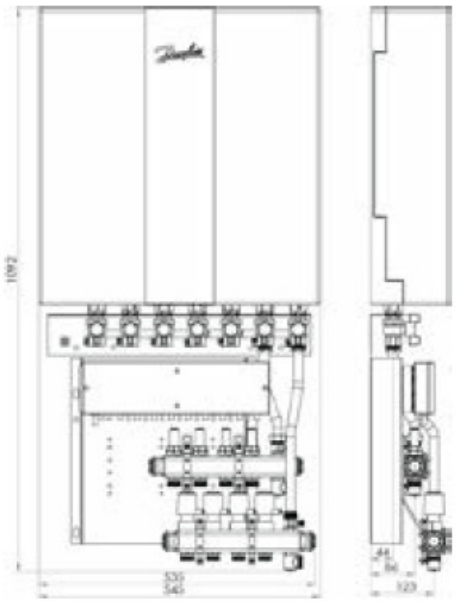


1. Air vent
2. Drain valve
3. Manifold with 2 – 12 connecting pieces
4. Flow meter
5. Thermo motor Danfoss TWA NC (SGC / SGCI)
6. ICON Wiring Center or ICON2 (SGC / SGCI)



TECHNICAL DATA

Heating connection size	3/4”
Heating connection type	G external thread
Pressure normal primary	6 bar
Supply temperature distribution unit	60 °C



Weight (SG)

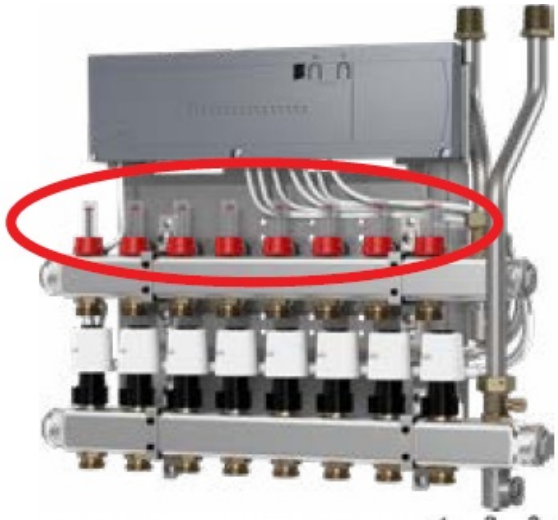
Connections	2	3	4	5	6	7	8	9	10	11	12
Kg	4,2	5,2	5,6	6,0	6,5	6,9	7,4	7,9	8,4	8,9	9,4

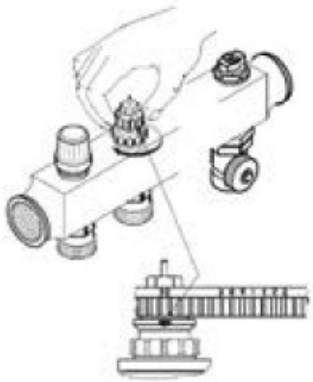
Weight (SGC / SGCI)

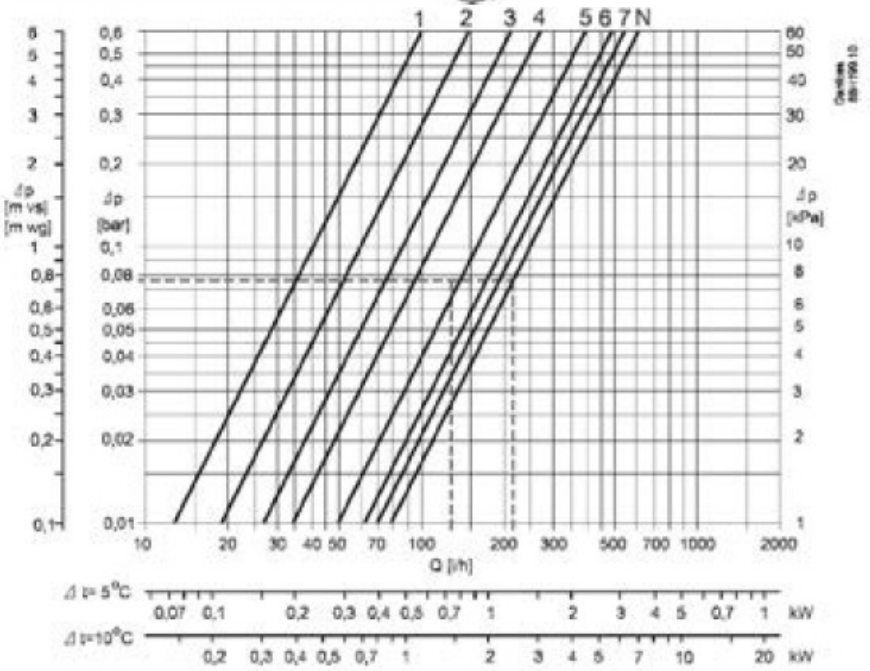
Connections	2	3	4	5	6	7	8	9	10	11	12
Kg	5,5	6,5	6,9	7,5	8,1	8,7	9,3	9,8	10,3	10,9	11,4

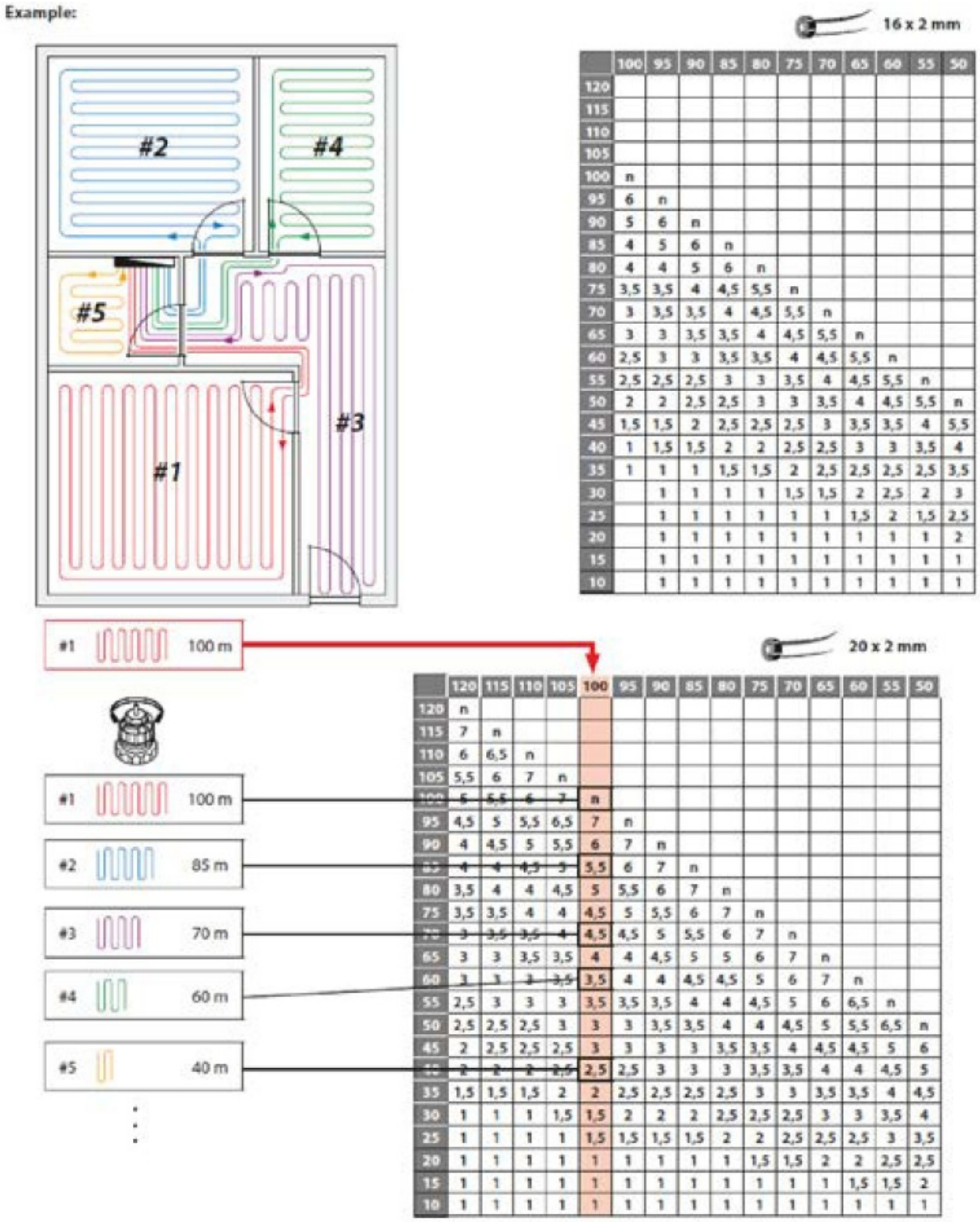
ADJUSTMENT AND COMMISSIONING

- Flow rate can be adjusted by turning the flowmeter. Please see the picture below.









CONTROL – FLOOR HEATING

- The distribution system SGC is provided with Icon™ Wiering center 230 V and SGCI with Icon2™ controller 230V as well as thermo-actuators TWA NC per the number of heating circuits.
- Thereby connection to an electronic programmable room thermostat is enabled.
- Together with the room thermostat, the TWA is used for ON / OF control of the system.
- Electrical wiring between the thermo-actuator Danfoss TWA and the controller is made in the factory.
- Further wiring must be made on-site.

Electrical connection

- The electrical connection of the substation must be performed by a qualified and authorized electrician in compliance with all applicable rules and regulations.
- The station should be connected to a 230 V AC / 24V power supply.
- The power supply/connection must be carried out

MAINTENANCE

Maintenance work

- Is only to be carried out by qualified and authorized personnel.

Inspection

- The water heater should be checked regularly by authorized personnel. Any necessary maintenance must be performed under the instructions in this manual and other sets of instructions.

Measures after maintenance work
After maintenance work and before commissioning:

- Check that all screwed connections are tight.
- Check that all safety features, and covers, that were removed, have been replaced properly.
- Clean the working area and remove any spilled materials.
- Clear all tools, materials, and other equipment from the working area.
- Connect to the energy supply and check for leaks.
- Vent the system.
- Carry out any necessary adjustments again.
- Make sure that all safety features on the device and the system work properly.

SPARE PARTS

Code no.	Description
	Mounting brackets – set (2 pc.)
013G7376	Valve manifold
088U0819	Flow meter
088U1040	Danfoss Wiring center
088U2110	Danfoss ICON 2 controller (advanced – 230V)
088H3250	Thermo actuator TWA NC

CONTACT

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Antingues description a Vertiseminise to and whether made available in the dirt, is only electronically online desia do weight, shall be considered informative, and is cal bia ding road to thuals, extent, explicit reference is made in a quotation or order confirmation. Danfoss cannot accept any responsibility for possible errors in catalogs, brochures, videos, and other material.
Danfoss reserves the right to alter its products without notice. This also applies to products ordered but not delivered provided that such alterations can be made without changes to the form, fit, or function of the product.

Documents / Resources

	Danfoss SG/SGC/SGCI Distribution Units [pdf] Instruction Manual SG, SGC - ICON Wiring center, SGCI - ICON2, SG SGC SGCI Distribution Units, SG SGC SGC I, Distribution Units, Units

References

- Engineering Tomorrow | Danfoss
- User Manual