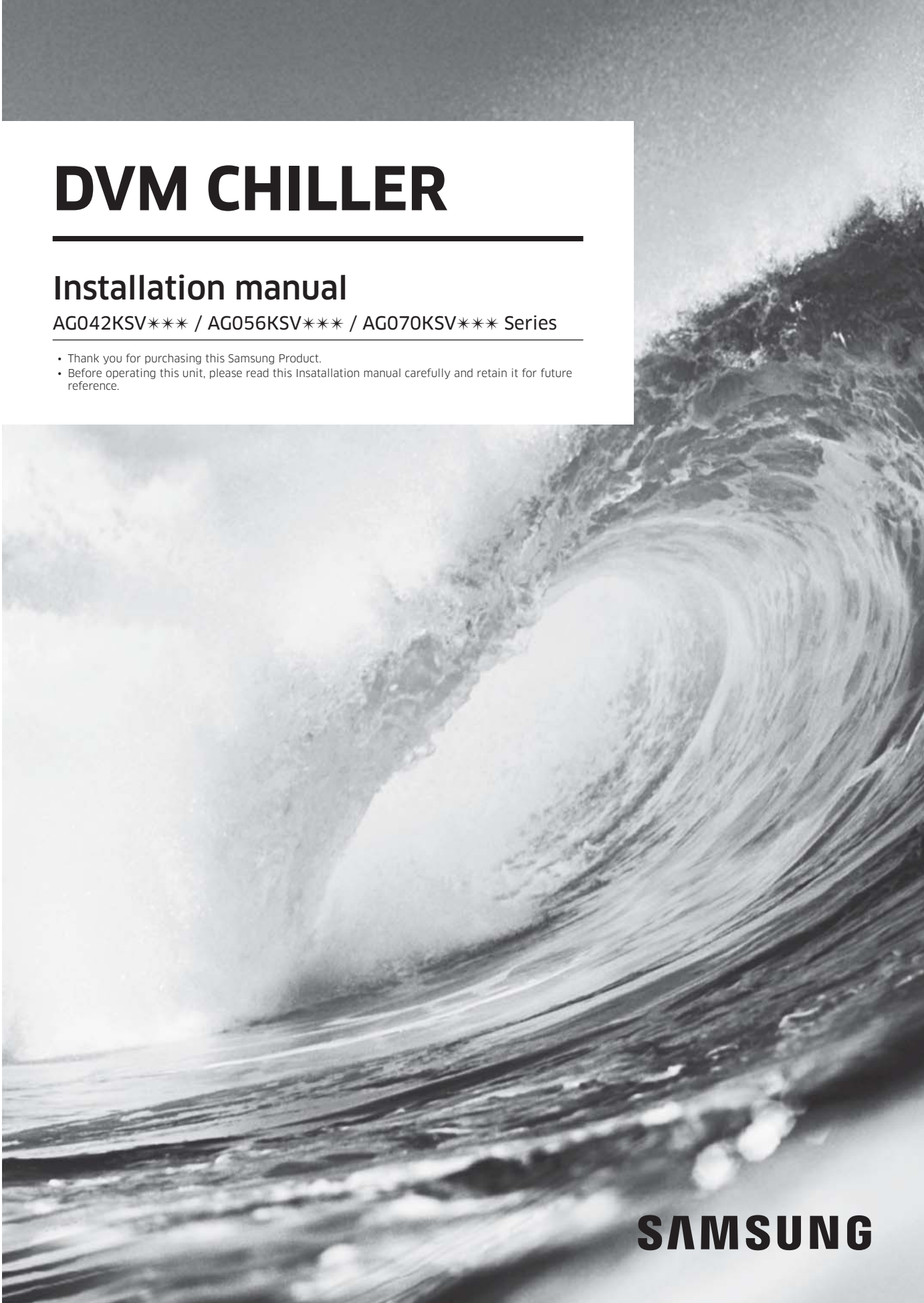
DVM CHILLER

Installation manual

AG042KSV✳✳✳ / AG056KSV✳✳✳ / AG070KSV✳✳✳ Series

- Thank you for purchasing this Samsung Product.
- Before operating this unit, please read this Insatallation manual carefully and retain it for future reference.



SAMSUNG

Contents

Safety information

DVM Chiller uses R-410A refrigerant.

- When moisture or foreign substances enter into the refrigerant pipe using R-410A, it may affect the performance and reliability of the product. Safety precautions must be obeyed when installing the refrigerant pipe.
- Since R-410A is an azeotrope refrigerant, it must be charged in liquid phase. (A blend of the refrigerant may change if you charge in vapor phase which could cause product malfunction.)

The manufacturer is not responsible for any installation or performance problem of the load side indoor unit and water pipes.

- Product for low temperature (below 5 °C) must use anti-freeze to manage freezing point (concentration of anti-freeze) according to usage range.
- Freezing point of anti-freeze should be checked periodically after installation during usage. (once a year or more)
- Maintain the temperature of chilled/heating water to recommended range for stable operation.
  The manufacturer is not responsible for freezing and bursting of heat exchanger occurred by errors on installation.

After completing the installation and test operation, explain to the user how to use and maintain the product. Also, hand over this installation manual so that it can be stored by the user.

The manufacturer of DVM Chiller is not responsible for the incidents occurred by improper installation. Installer is responsible for any installation related claims from the user occurred by neglecting warnings and cautions stated in this manual.

Generally, DVM Chiller should not be relocated after installation. But when it has to be relocated for inevitable reasons, please contact Samsung's qualified dealers for DVM Chiller.

⚠ WARNING

Hazards or unsafe practices that may result in severe personal injury or death.

⚠ CAUTION

Hazards or unsafe practices that may result in minor personal injury or property damage.

- Follow directions.
- Do NOT attempt.
- Make sure the machine is grounded to prevent electric shock.
- Unplug the power plug from the wall socket.
- Do NOT disassemble.

For operation

⚠ WARNING

Do not use water containing chemicals such as chlorine for chilled/heating water as it can cause corrosion on stainless steel or copper.

- This may result in product malfunction.

Do not block air inlet or outlet of the product.

- It may cause performance decrease or malfunction of the product.

Do not attempt to disassemble, modify, or repair the product.

- Failure to do so may result in water leakage, electric shock or fire. Contact the service center.

Do not use the product where oil particles such as cooking oil and machine oil exist.

- There are potential risks of electric shock or fire.

Do not use the product where smokes consisted by oil particles, such as kitchen, flammable gas, corrosive gas, or metallic dust exist.

- Failure to do so may result in fire or phenomenon.

Safety information

Do not operate the product with power switch or circuit breaker.

- Potential risk of electric shock or fire.
- If automatic blackout restore is set, fan may spin suddenly and it may cause injury.

If fuse load switch is used, do not use fuse in incorrect capacity.

- Usage of wire may result in product malfunction or fire.

Do not use flammable gas (such as hair spray or insecticide) near the product.

- There are potential risks of electric shock or fire.

If there is any problem (such as burning smell), stop the operation and close the circuit breaker.

- Otherwise, it may cause product malfunction, electric shock, or fire. Contact the service center.

Use chilled/heating water which is appropriate according to water maintenance standard.

- Deterioration of water may cause water leakage.

Contact the merchandise or service center to clean inside of the product.

- Error on selecting cleaner and cleaning the product may harm rubber part and cause water leakage.
- If the cleaner reaches to electric parts or motor, it may cause product malfunction, smoke, or fire.

⚠ CAUTION

Do not use the product for specific purpose.

- It may affect performance, quality, or life of preservation of precision machinery, food, art work, etc., and breeding animal or plants.

Do not use the holder which is worn out for longtime usage.

- It may cause injury due to falling down of the product.

Do not step onto the product or place any objects on the product.

- It may cause injury due to falling down of the product.

Do not operate the product with the cover of exterior or electric box opened.

- It may cause electric shock or fire.

Do not place any objects that are not allowed to be wet.

- It may get wet by dripping water caused by product or refrigerant pipe freezing, contaminated air filter, blocked drain valve.

Do not change settings for protection device.

- It may cause fire.

Do not use chilled/heating water for drinking.

- It is harmful for humans.
- For hot water supply, use undirective heat exchange.

Do not wash the product with water.

- It may cause electric shock.

Do not operate protect devices forcibly.

- This may result in fire or explosion.

Do not touch high temperature part such as compressor and refrigerant pipe.

- It may cause burns.

Do not touch inlet or aluminum plate.

- It may cause injury.

When outdoor temperatre drops below zero, take appropriate countermeasures for frozen damage.

- Freeze protection such as using brine, heater, pump operation, etc. is necessary.
- Drain all water and cut-off the power supply when the product is not operated during winter time.

Use appropriate refrigerant and refrigerant oil.

- This may result in fire or explosion.

Stop the operation and close the circuit breaker while repair service.

- Otherwise, it may cause electric shock or injury.

Be aware of step board while working on high place.

- This may result in injury by falling down if the step board is not stable.

Use chilled/heating water which is appropriate according to water maintenance standard.
(Refer to page 68 for water maintenance standard.)

- Deterioration of water may cause water leakage.

Follow regulations for disposing brine, cleaner, and refrigerant.

- It is against the law to dispose illegally.

For installation

⚠ WARNING

Do not install the product by users.

- It may result in water leakage, electric shock, or fire if installation is not precise. Contact the merchandise or service center.

Consult qualified installer or dealer for installation.

- When the installation is done by unqualified people, it may cause water leakage, electric shock or fire.

Installation should be done by following the installation manual accurately.

- When installation is not done properly, it may cause water leakage, electric shock or fire.

Do not install the field supply parts by users.

- Do not use any other product other than the manufacturer recommended. It may result in water leakage, electric shock, or fire if installation is not precise. Contact the merchandise or service center.

Do not move or reinstall the product by users.

- It may result in water leakage, electric shock, or fire if installation is not precise. Contact the merchandise or service center.

Do not close the circuit breaker for protect devices.

- Otherwise, a fire may occur.

Do not install power cables between the products.

- It may cause fire.

Make sure to install the product in a place strong enough to withstand its weight.

- Otherwise, it may result in falling down, vibration, noise of the product.

Install the product securely to resist strong wind or earthquake.

- Otherwise, it may result in falling down, vibration, noise of the product.

Fix the product securely to resist natural phenomenon such as earthquake.

- If the product is not properly fixed, it may fall down and cause an accident.
- When installing the unit in a small area, take measure to keep the refrigerant concentration from exceeding allowable safety limits in case of refrigerant leakage. Consult the dealer for precautionary measure before the installation.
- When refrigerant leaks and exceed dangerous concentration level, it may cause suffocation accidents.

Safety information

Check the followings before installation and repair/ maintenance service.

- Before brazing, remove dangerous and/or flammable things around workplace that may cause an explosion and fire.
- Before brazing, remove the refrigerant within the pipe or the product.
- If you perform welding while refrigerant is in the pipe, it may increase the pressure of the refrigerant and cause the pipe to burst. If the pipe bursts or explodes, it may cause severe injury to the installer.
- Use the nitrogen gas to eliminate oxide inside the pipe during brazing.

Electric work must be done by qualified people, complying the national wiring regulations and installed according to the instruction stated in the installation manual and must comply regulated electrical specification.

- Capacity shortage on the power circuit or improper installation may cause electric shock or fire.

Wiring must be connected with the designated wires and it must be fixed securely so that it does not apply any external force to the connection part of the terminals.

- If connection or fixation is not properly done, it may cause heat generation or fire.

Neatly arrange the wires in the electrical parts to make sure that electrical cover is closed securely without any gaps.

- If the cover is not properly closed, heat may generate on the terminal and cause electric shock or fire.

Exclusive circuit breaker (MCCB, ELB) must be installed to the power supply.

- Use ELCB that has harmonic wave prevent function since the product uses inverter compressor.
- If the auxiliary circuit breaker is not installed, power will not be cutoff in case of overcurrent or current leakage and cause electric shock or fire.
- Do not use damaged parts. Otherwise, a fire or electric shock may occur.

You must cut-off the power before you work on, or adjust any power supply part for product installation, maintenance, repair or any other services.

- This may result in electric shock.
- Even when the power is off, it is very dangerous to touch the inverter PCB and the fan PCB since high pressure DC voltage is charged for those parts.
- When replacing/repairing the PCB, cut-off the power and wait until the DC voltage is discharged before replacing/repairing them. (Wait for more than 15 minutes to allow those parts to be fully discharged.)

You must ventilate the room if the refrigerant gas leaks during the installation.

- Toxic gas can be generated when the refrigerant gas gets in contact with flammable substance.

Use chilled/heating water which is appropriate according to water maintenance standard. (Refer to page 68 for water maintenance standard.)

- Deterioration of water may cause water leakage.

Contact the merchandise for refrigerant stagnating.

- When refrigerant leaks and exceed dangerous concentration level, it may cause suffocation accidents. When installing the unit in a small area, take measure to keep the refrigerant concentration from exceeding allowable safety limits in case of refrigerant leakage.

Follow regulations for disposing brine, cleaner, and refrigerant.

- It is against the law to dispose illegally, and also harmful for humans and environment.

Wiring must be connected with the designated wires and it must be fixed securely so that it does not apply any external force to the connection part of the terminals.

- If connection or fixation is not properly done, it may cause heat generation or fire.

Please connect ground wire.

- If the ground wire is not properly fixed, there is potential risk of electric shock or fire.
- Do not connect the grounding cable to a gas pipe, water pipe, lightening conductor or the grounding cable of the telephone.

⚠ CAUTION

Drain system must be constructed according to this installation manual so that condensation water drains properly, and drain system should be kept warm to prevent dew condensation.

- When water management is not done properly, water leakage may occur and cause property damage.

Install the power cable and communication cable of the product at least 1.5 m away from the electric appliances and install it at least 2 m away from the lightning conductor.

- Even if the cables are installed more than 2 m away from electronics, noise can be generated from them depending on the status of the electric wave.

Do not leave any obstacles around the inlet and outlet of the product.

- It may cause product failure or other accidents.

Do not install the product in following places.

- A place where noise and warm air of the product may disturb neighbors
  - It may cause property loss.
- A place full of mineral oil, place where oil scatters or with oil vapors such as a kitchen
  - Plastic parts may get damaged and cause water leakage, or maybe even cause product to fall down.
  - The performance of the heat exchanger may decrease or cause product failure.
- A place near exhaust pipes or ventilation outlet where corrosive gas such as ammonia gas or sulfurous acid gas are being generated
  - Copper pipe and connection parts may corrode causing refrigerant leakage.
- A place with a machine that generates electromagnetic waves
  - Electromagnetic waves may cause problems in control system and product may not operate normally.
- A place where there is a danger of combustible gas leakage or the place where thinner or gasoline is handled
  There is a risk of fire or explosion.
- A place with airborne carbon fiber or flammable dust
- A place near seashore or hot spring where there is risk of product corrosion

Install MCCB for each product.

- Use ELCB that has harmonic wave prevent function since the product uses inverter compressor.
- It may cause electric shock or fire if more than two products are installed on one MCCB.

Make sure to install drain pipe for draining performed correctly.

- If the installation is not done properly, water leakage may occur and cause product malfunction.

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

For use in Europe : This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

Preparing for installation

Specifications of the non-pump models

Model			AG042KSVANH	AG056KSVANH	AG070KSVANH
Power supply			3 Phase 4 Wires 380 ~ 415 V, 50/60 Hz		
Capacity	Cooling (Rated)	kW	42	56	65
	Heating (Rated)	kW	42	56	69.5
Power consumption	Cooling (Rated)	kW	12.35	18.67	26.0
	Heating (Rated)	kW	11.83	17.50	24.39
Operating current	Cooling (Rated)	A	19.6	29.6	41.2
	Heating (Rated)	A	18.8	27.8	38.7
Refrigerant	Type		R-410A	R-410A	R-410A
	Charging amount	kg	18	18	18
Water side heat exchanger	Type		Plate type heat exchanger		
	Flow rate (Cooling/Heating)	LPM	120/120	160/160	186/200
	Maximum operating pressure	MPa	1.0	1.0	1.0
	Head loss	kPa	60	100	120
	Inlet·Outlet connected pipe size	A	40	40	50
Minimum water quantity		L	294	392	490
Net weight		kg	446	446	465
Net dimension	W X H X D	mm	1795 X 1695 X 765	1795 X 1695 X 765	1795 X 1695 X 765
Remote control			Module Control		
Water outlet temperature range	Cooling (If using brine)	℃	5 ~ 25 (-10 ~ 25)	5 ~ 25 (-10 ~ 25)	5 ~ 25 (-10 ~ 25)
	Heating	℃	25 ~ 55	25 ~ 55	25 ~ 55
Surrounding temperature range	Cooling	℃	-15 ~ 48	-15 ~ 48	-15 ~ 48
	Heating	℃	-25 ~ 43	-25 ~ 43	-25 ~ 43
MCA		A	32	46	58
MFA		A	40	60	75

1) Standard for rated cooling capacity: chilled water inlet/outlet temperature 12/7 ℃, outdoor 35 ℃ DB, 24 ℃ WB

2) Standard for rated heating capacity: heating water inlet/outlet temperature 40/45 ℃, outdoor 7 ℃ DB, 6 ℃ WB

3) When using brine, maintain the concentration according to temperature. (Refer to page 76.)

Specifications of the pump integrated models

Model			AG042KSVGNH	AG056KSVGNH	AG070KSVGNH
Power supply			3 Phase 4 Wires 380 ~ 415 V, 50/60 Hz		
Capacity	Cooling (Rated)	kW	42	56	65
	Heating (Rated)	kW	42	56	69.5
Power consumption	Cooling (Rated)	kW	13.59	20.14	28.26
	Heating (Rated)	kW	12.77	18.48	25.84
Operating current	Cooling (Rated)	A	24.2	34.2	45.8
	Heating (Rated)	A	23.4	32.4	43.3
Refrigerant	Type		R-410A	R-410A	R-410A
	Charging amount	kg	18	18	18
Water side heat exchanger	Type		Plate type heat exchanger		
	Flow rate (Cooling/Heating)	LPM	120/120	160/160	186/200
	Maximum operating pressure	MPa	1.0	1.0	1.0
	Head loss	kPa	60	100	120
	Inlet·Outlet connected pipe size	A	40	40	50
Pump	Type		End-Suction		
	Input x n	kW	1.68	1.68	1.68
	Output x n	W	1.45	1.45	1.45
	Normal Water Flow rate (Cooling/Heating)	LPM	120/120	160/160	186/200
		l/s	2.0/2.0	2.7/2.7	3.1/3.3
	External Static Pressure (Max.)	mAq	22.4 / 22.4	15.3 / 15.3	10.2 / 10.2
		kPa	220 / 220	150 / 150	131 / 100
Minimum water quantity		L	294	392	490
Net weight		kg	472	472	493
Net dimension	W X H X D	mm	1795 X 1695 X 765	1795 X 1695 X 765	1795 X 1695 X 765
Remote control			Module Control		
Water outlet temperature range	Cooling (If using brine)	℃	5 ~ 25(-10 ~ 25)	5 ~ 25(-10 ~ 25)	5 ~ 25(-10 ~ 25)
	Heating	℃	25 ~ 55	25 ~ 55	25 ~ 55
Surrounding temperature range	Cooling	℃	-15 ~ 48	-15 ~ 48	-15 ~ 48
	Heating	℃	-25 ~ 43	-25 ~ 43	-25 ~ 43
MCA		A	39	53	65
MFA		A	50	60	75

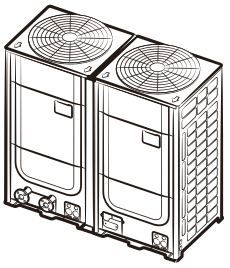
1) Standard for rated cooling capacity: chilled water inlet/outlet temperature 12/7 ℃, outdoor 35 ℃ DB, 24 ℃ WB

2) Standard for rated heating capacity: heating water inlet/outlet temperature 40/45 ℃, outdoor 7 ℃ DB, 6 ℃ WB

3) When using brine, maintain the concentration according to temperature. (Refer to page 76.)

Preparing for installation

DVM CHILLER Classification

Classification	DVM CHILLER
Appearance	
Applied model	AG042/056/070KSV Series

⚠ CAUTION

• Safely store or dispose the packaging materials.
  - Sharp metals such as nails or wooden material packaging that may break into pieces become a cause for personal injury.
  - Make sure to store or dispose the vinyl type packaging material to keep it out of reach of children. Children may put them over their face, which is very dangerous since it may lead them to suffocation.

Moving the product

▶ Select the moving path in advance.

▶ Be sure that moving path can support weight of the product.

▶ Do not slant the product more than 30˚ when carrying it.
(Do not lay the product down in sideways.)

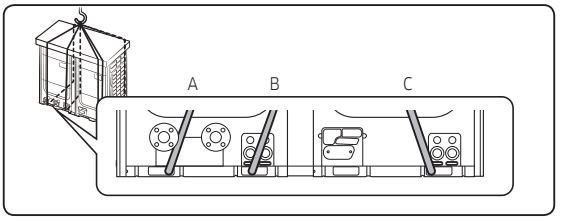
▶ Surface of the heat exchanger is sharp. Be careful not to get injured while moving the product.

⚠ CAUTION

• You must use square holes in the base of the product when moving the product.

1 When moving with a crane

▶ Fasten the wire rope using square holes of the product as shown in the figure.
  - To protect damage or scratches, insert a piece of cloth between the product and the wire rope.
  - Insert hanging softening material to prevent load from the rope on top of the product.



Model name	Rope's Location
AG✳✳✳KSVA Series	B + C
AG✳✳✳KSVG Series	A + C

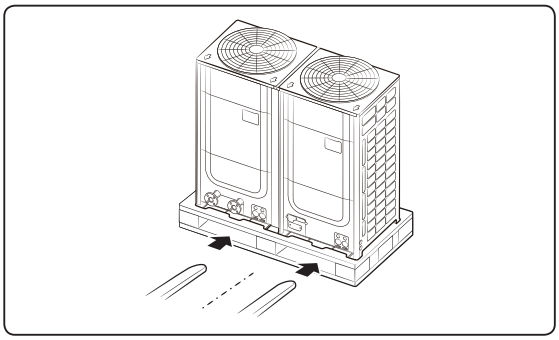
⚠ CAUTION

- Do not hang the rope on side of the water pipe. The rope may force the water pipe to deformed or damaged.

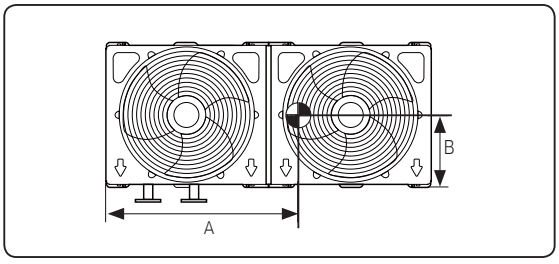
2 When moving with a forklift

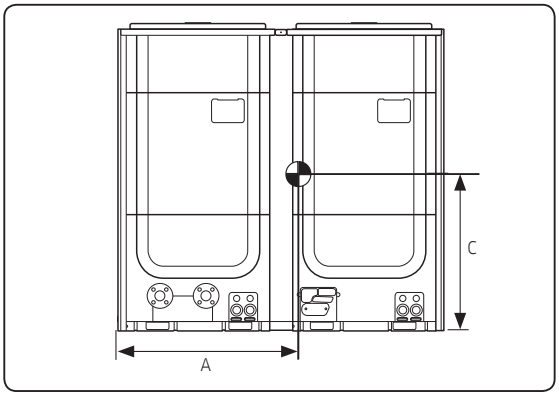
▶ Carefully insert the forklift forks into the forklift holes at the palette.

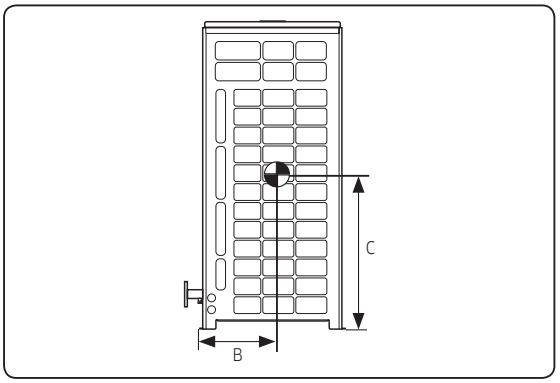
▶ Be careful with the forklift from damaging the product.



Center location





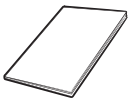


Model name	A	B	C
AG042KSVANH	1020	380	590
AG056KSVANH	1020	380	590
AG070KSVANH	1020	380	590
AG042KSVGNH	950	370	550
AG056KSVGNH	950	370	550
AG070KSVGNH	950	370	550

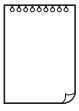
Accessories (Basic specification)

▶ You must keep following accessories not to be lost during installation.

▶ Hand over the installation manual to the customer after finishing the installation.



Installation manual



Installation check card

Field Supply

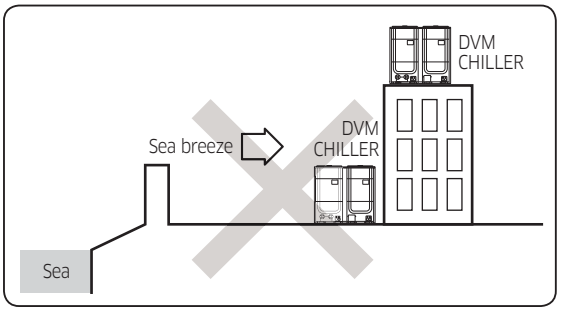
▶ Strainer

Maximum operating pressure	Water pipe connection part	
	AG042/056✳✳	AG070✳✳
1.0 MPa	40 A (1-1/2")	50 A (2")
Mesh size	**Material (Strainer/Mesh)**	
50 Mesh	SUS304	

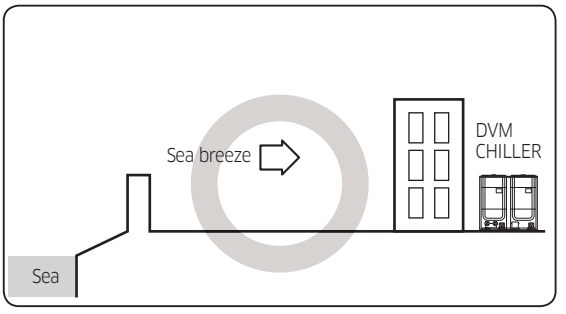
Selecting installation location

Decide the installation location, with the consideration of the following conditions, under user's approval.

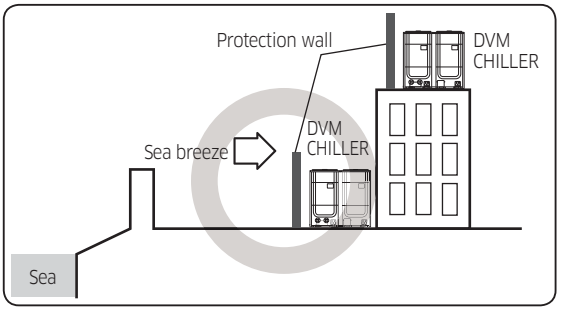
- ▶ Place where hot discharge air or noise from the DVM CHILLER may not disturb the neighbor (Especially in residential areas, keep the operation hours in mind.)
- ▶ Place where structure can bear the weight and vibration of the DVM CHILLER
- ▶ Place with flat surface where rainwater does not settle or leak
- ▶ Place where it is not exposed to strong wind
- ▶ Well ventilated place with sufficient service place for repairs and maintenance (Discharge duct can be purchased separately)
- ▶ Place where it allows easy waterproofing and draining work for the condensation water generated from the DVM CHILLER during heating operation
- ▶ Place where there is no risk of inflammable gas leakage
- ▶ Place where there is no direct influence of snow or rain
- ▶ Do not install the product in a place where it will be directly exposed to sea breeze.
  - Consult an installation expert (or company) since you will need to take extra anti-corrosion measures if you need to install the product in a place where it can be exposed to direct sea breeze. (You have to remove dusts and salinity on the heat exchanger and apply designated rust inhibitor more than once a year.)



- ▶ Caution when installing the product in seashore
  - When installing the product in seashore, make sure to install it behind a structure (such as building) that can block the sea breeze or install protection wall around the DVM CHILLER.



  - Make sure to install the product in a place where it allows smooth drainage.
  - Protection wall should be constructed with a solid material that can block the sea breeze and the height and width of the wall should be 1.5 times larger than the size of the DVM CHILLER. (You must secure more than 700 mm of space between the protection wall and the DVM CHILLER for air circulation.)



⚠ CAUTION

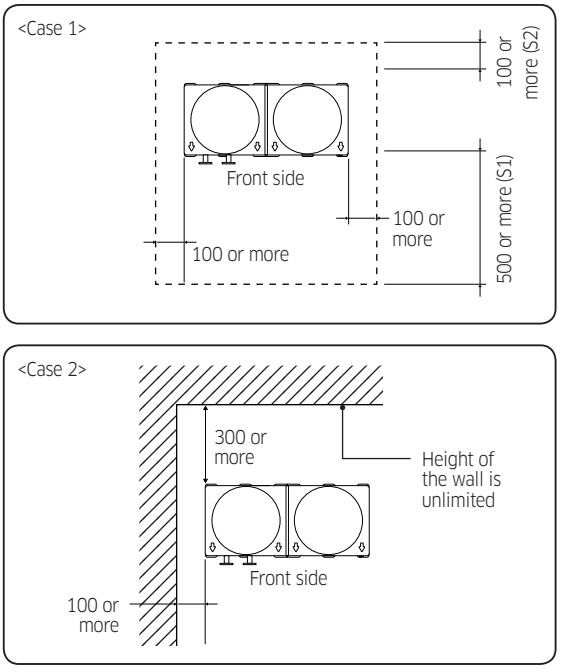
- In regions with heavy snowfall, make sure to install the DVM CHILLER where there is no concerns of direct snowfall on the DVM CHILLER. Also, build higher base support so that accumulated snow does not block the air inlet or the heat exchanger.
- R-410A refrigerant is a safe, nontoxic and nonflammable refrigerant. However, if the place holds any concerns for exceeding dangerous level of refrigerant concentration in case of refrigerant leakage, extra ventilation system is required.
- When you install the product in a high places such as roof, install fence or guardrail around it. When there is no fence or guardrail, service person could fall.
- Do not install the product in places where corrosive gases such as sulfur oxides, ammonia, and sulfurous gases are produced. (e.g. Toilet outlet, ventilation opening, sewage works, dyeing complex, cattle shed, sulfuric hot spring, nuclear power plant, ship etc.) When installing the product in those places, contact an installation specialty store as the copper pipe and brazing part will need additional corrosion proof or anti-rust additive to prevent corrosion.
- Make sure to keep any inflammable materials (such as wooden materials, oil etc.) around the DVM CHILLER. When there's fire, those inflammable material will easily catch the fire and may pass it on to the product.
- Depending on the condition of power supply, unstable power or voltage may cause malfunction of the parts or control system.
  (At the ship or places using power supply from electric generator, etc.)

Required space for installation

- Space requirement was decided based on the following conditions; Cooling mode, outdoor temperature of 35 °C. Larger space is required if the outdoor temperature is higher than 35 °C or if the place is heated easily by quantity of solar radiation.
- When you secure installation space, consider path for people and the direction of the wind.
- Secure installation space as shown in the figure, considering ventilation and the service space.
- If the installation space is narrow, installer or other worker may get injured during work and may also cause a problem with the product.
- If you install multiple number of DVM CHILLERs in one space, make sure to secure enough ventilation space if there's any walls around the product that may disturb the air flow. If enough ventilation space is not secured, the product may malfunction.
- You could install the DVM CHILLERs with 100 mm of space between each unit, but performance may decrease depending on the installation environment.

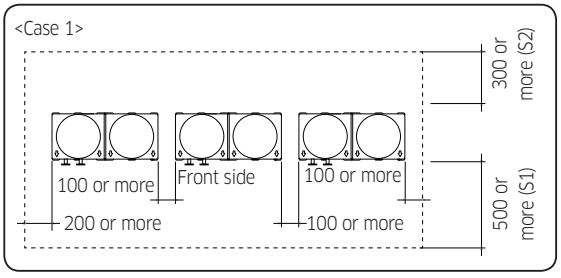
1 Single installation

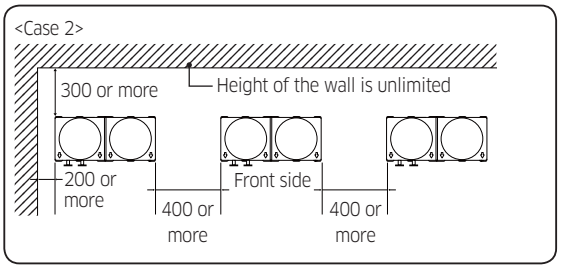
Unit: mm

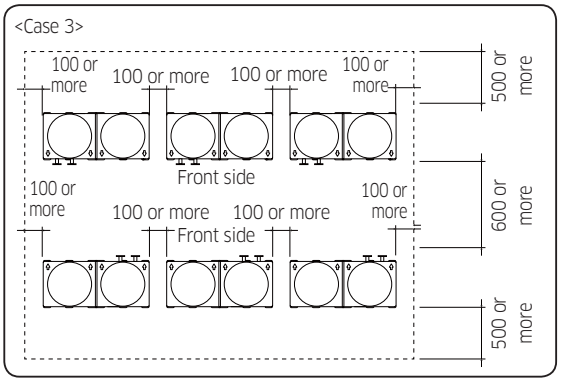


2 Module installation

Unit: mm



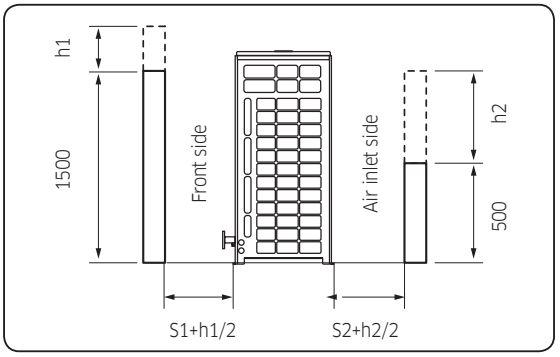




▶ Installing by **<Case 1> or <Case 3>**

- Height of the wall on the front side should not be higher than 1500 mm.
- Height of the wall on the air inlet side should not be higher than 500 mm.
- Height of the wall on the side is not limited.
- If the height of the wall exceeds by certain value (h1, h2), additional clearance [(h1)/2, (h2)/2 : Half of the exceeded distance] should be added to the service space (S1, S2).

Unit: mm



Base construction and installation

⚠ WARNING

- Make sure to remove the wooden pallet before installing the DVM CHILLER. If you do not remove the wooden pallet, there is risk of fire during welding the pipes. If the DVM CHILLER is installed with wooden pallet on, and it was used for long period time, wooden palette may break and cause electrical hazard or high pressure may damage the pipes.
- Fix DVM CHILLER firmly on the base ground with anchor bolts.

⚠ CAUTION

- Manufacturer is not responsible for the damage occurred by not following the installation standards.

1 Make sure that the height of the base ground is 200 mm or higher to protect the product from rain water or other external conditions. Also, install a drainage hole around the supporting base and connect the drain pipe to the drainage pit.

2 Considering the vibration and weight of the product, strength of the base ground must be strong to prevent noise and the top surface of it should be flat.

3 Area of the base ground should be 1.5 times larger than the bottom of the product.

4 Product must be fixed firmly so that it can withstand the wind speed of 30 m/s. If you cannot fix the DVM CHILLER on the supporting base, fix it by side or use extra structure.

5 In heating operation, defrost water may form so you must really care about the drainage and waterproofing the floor. To prevent defrost water from stagnating or freezing, construct a drainage pit with over 1/50 slant. (Ice may form on the floor in the winter time.)

6 It is necessary to add wire mesh or steel bar during concrete construction for the base ground to prevent damage or cracks.

7 When installing multiple DVM CHILLERs at the same place, construct an H beam or a vibration-isolation frame on the base ground to install the product.

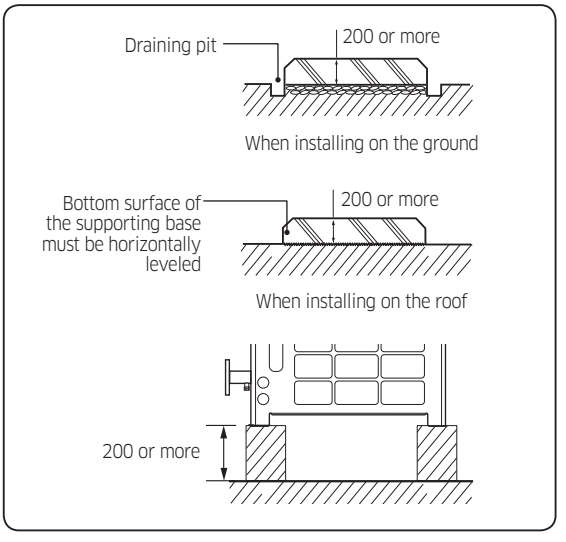
8 After installing an H beam or a vibration-isolation frame, apply corrosion protection and other necessary coating.

9 When concrete construction for product installation is complete, install an isolation pad (t = 20 mm or more) or a vibration-isolation frame to prevent vibration of the product from transferring to the supporting base.

10 Place the product on an H beam or a vibration isolation frame and fix it with the anchor bolt, nut and washer. (The bearing capacity of the anchor bolt has to be over 3.5 kN)

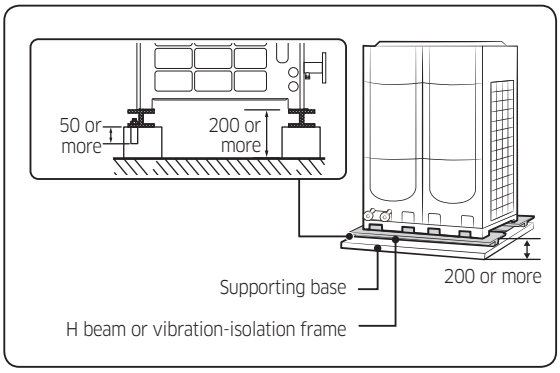
Supporting base construction

Unit: mm

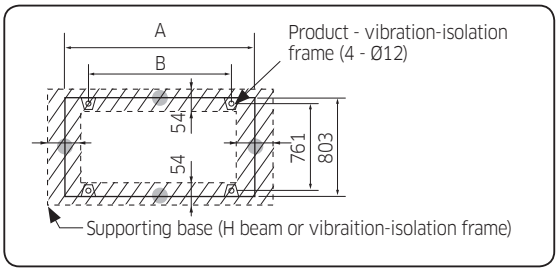


Product installation

Unit: mm



Base mount and anchor bolt position



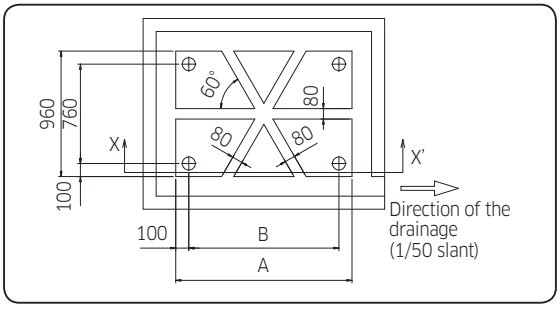
Applied model	Net dimension	
	A	B
AG042/056/070✳✳	1,795	1,655

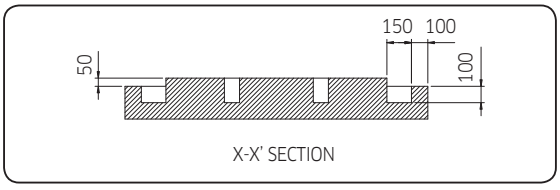
- When applying vibration-isolation frame additionally on supporting base, specification of fixed holes with the base should be referred to specification of the frame.

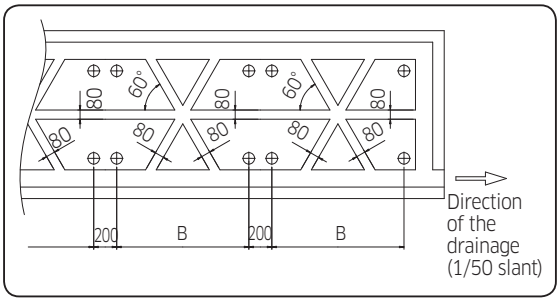
Examples of draining work

- ▶ Use concrete or steel bar for draining work to prevent any damage or cracks.
- ▶ For smooth draining of defrost water, make sure to apply 1/50 slant.
- ▶ Construct a drainage around the product to prevent the defrost water (from the product) from stagnating, overflowing or freezing near the installation space.
- ▶ When the product is installed on the roof, check the strength and waterproof status of the roof.

Unit: mm







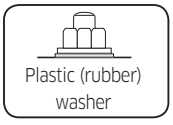
Applied model	Net dimension	
	A	B
AG042/045/070✳✳	1,855	1,655

Base construction and installation

Installation precautions

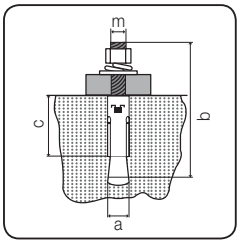
Connecting the anchor bolt

⚠ CAUTION



- Tighten the rubber washer to prevent the bolt connection part of the DVM CHILLER from corroding.

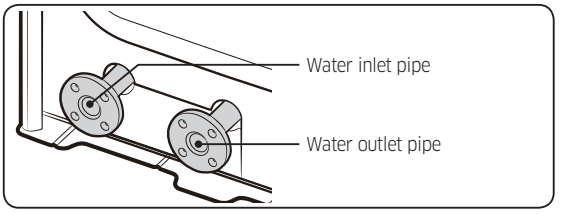
Anchor specification



- Use the anchor bolts and nuts that is zinc plated or made of STS material. Regular anchor bolts or nuts may get damaged by corrosion.

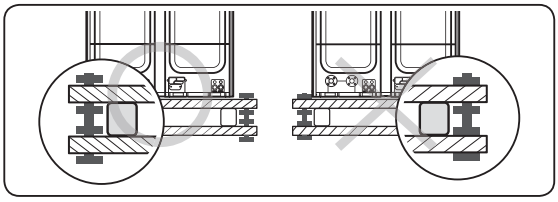
Size	Diameter of drill bit (a)	Anchor length (b)	Sleeve length (c)	Insertion depth	Fastening torque
ø10	14 mm	75 mm	40 mm	50 mm	30 N·m

Connecting the pipe



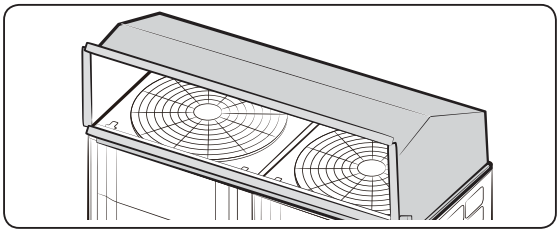
- ▶ If you install the DVM CHILLER on the rooftop, check the strength and make sure to waterproof the rooftop.
- ▶ Construct draining pit around the supporting base and pay attention to the drainage around the product. (Condensation or defrost water may form during product operation.)
- ▶ If there's any possibility of small animals entering into the product through pipe outlet, block the outlet.

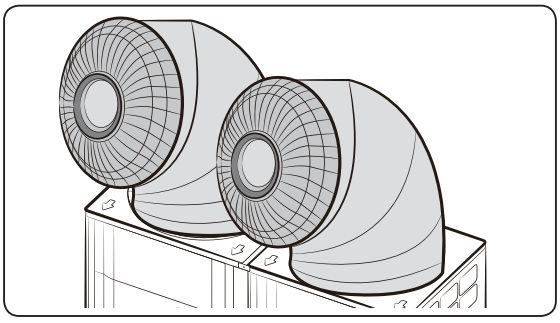
Installing vibraiton-isolation frame



- During installation, make sure there is no gap between the supporting base and the extra structures such as vibration-isolation frame or H beam.
- Supporting base must be constructed strongly to support the bottom part of the vibration-isolation mount.
- After installing the vibration-isolation frame, unscrew the fixing part on the top and bottom part of the frame.

Installing discharge duct



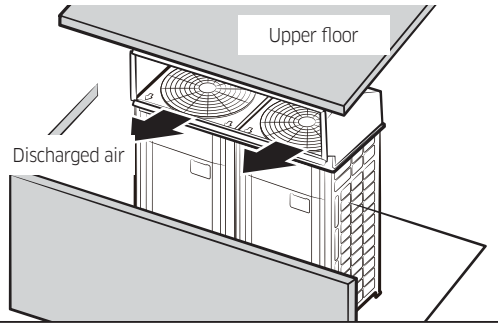


- Static pressure of the discharge duct should be within the standard specification (80 kPa) when installing the duct.
- If you remove the fan guard to install the discharge duct, make sure to install a safety net on the duct outlet.
  Foreign substance may enter into the product and there could be a risk of personal injury.
- Wear protection equipment at all times when making galvanized sheet metal duct, since the worker may get injured by the sharp parts.
- When installing the product under the tree or near forest, leafs may get into the product and cause problems on the product. Therefore, install a discharge duct to prevent foreign substance infiltration.

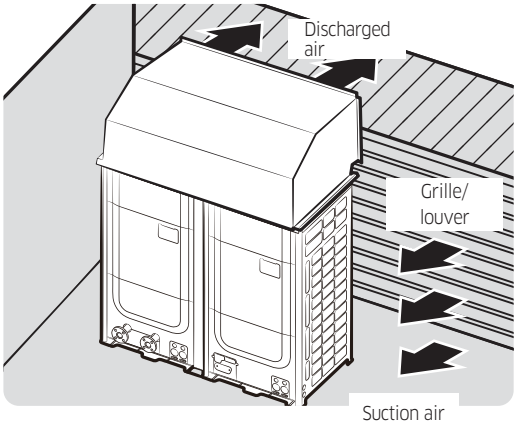
Installing the wind/snow prevention duct

Installing the discharge duct around the obstacles

Ex.) Balcony

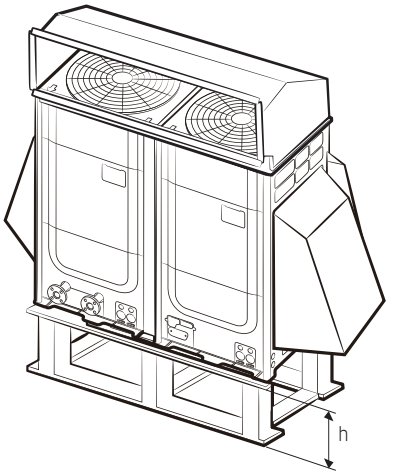


Ex.) Mechanical room



▶ It is necessary to install a wind/snow prevention duct (field supply) to direct exhaust from the fan horizontally, when it is difficult to provide a minimum space of 2 m between the air outlet and a nearby obstacle.

Installing the discharge duct in cold regions



▶ In cold regions with lots of snowfall, install a snow prevention duct, as a sufficient countermeasure, to prevent snow from accumulating on the product. When the snow prevention duct is not installed properly, frost may accumulate on the heat exchanger and heating operation may not work normally.

▶ Air outlet of the duct should not be directed to the enclosed space.

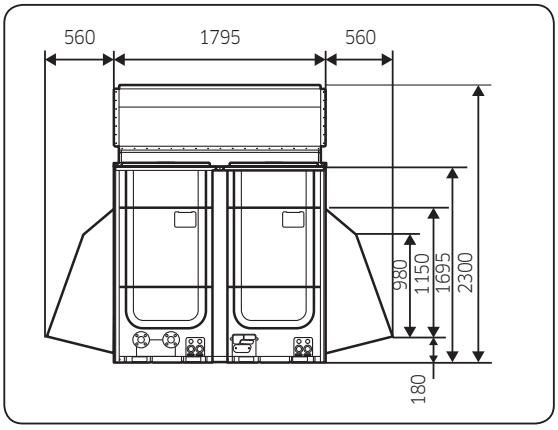
⚠ CAUTION

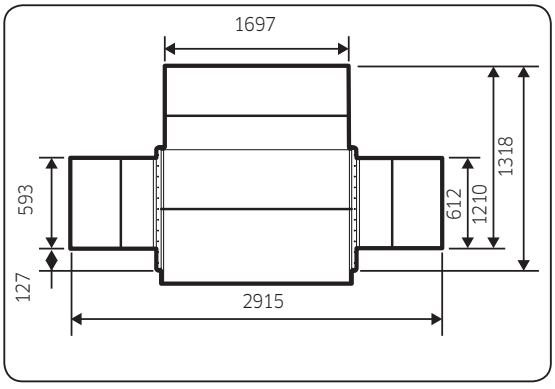
Cautions regarding on installing the frame and selecting the base ground

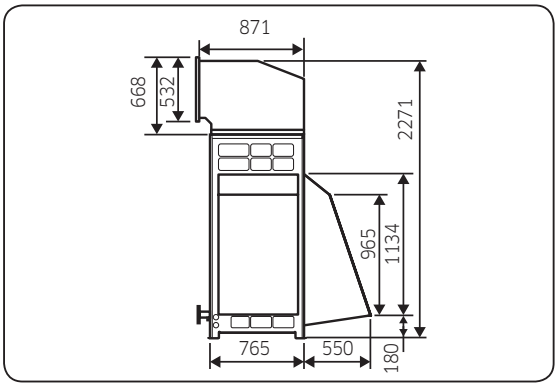
- Height (h) of the frame and the base ground should be higher than the "heaviest expected snowfall".
- Area of the frame and the supporting base should not be larger than the area of the product. Snow may accumulate if the area of the frame or the base ground is larger.

Installing the discharge duct in regions with strong wind

- ▶ In windy regions such as near sea shores, protection wall or wind protection duct must be installed for normal operation of the product. (Refer to the illustration of the snow prevention duct, for installing the wind protection duct.)
- ▶ Install the wind prevention duct with the consideration of major wind direction. If the direction of the discharge part is same as major direction of the wind, it could cause product's performance decrease.







⚠ CAUTION

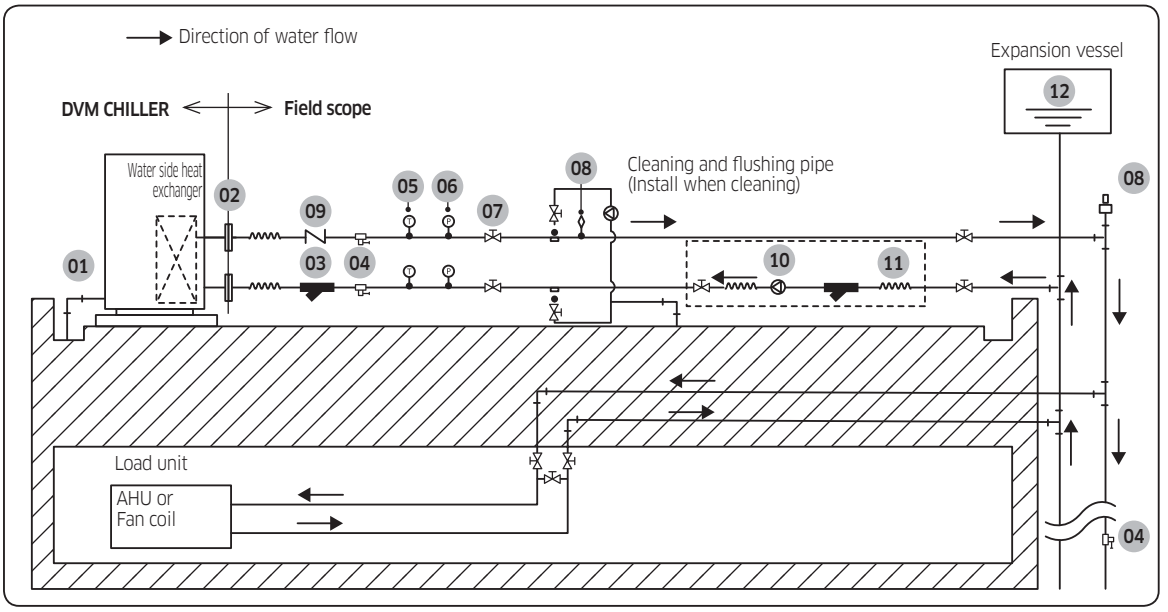
Cautions regarding on installing the frame and selecting the base ground

- The base ground must be solid and the product must be fixed with anchor bolts.
- Make sure to install the product in a place strong enough to withstand its weight.
  If the place cannot withstand the weight of the product, product may fall and cause personal injury.
- When installing on a rooftop subject to strong wind, countermeasures must be taken to prevent the product from falling down.
- Use a frame that is resistant to corrosion.

Water pipe installation

Water pipe diagram

Install the water system according to the diagram.



NOTE

• The part shown in the dotted line is an installation example of AG✶✶✶KSVA series (non-pump models).

No.	Name	Remarks
01	Drain plug	Make 1/100 ~ 1/200 for drain to flow by height difference. To prevent freezing in winter time, make slope steep and distance of level side short as possible. Take appropriate countermeasures such as drain heater to prevent freezing in cold region.
02	Flange	Install flange to allow unit exchange.
03	Strainer	Install strainer at the nearest place of the product to prevent foreign materials flow into water side heat exchanger. (50 Mesh)
04	Drain valve	Install drain valve to drain water for service.
05	Temperature gauge	It is recommended for checking ability and operation.
06	Pressure gauge	It is recommended for checking operation status.

No.	Name	Remarks
07	Valve	Install valves for services such as flowmeter exchange and cleaning.
08	Air vent valve	Install air vent valve where there is a risk of air remaining. (Auto air valve usable)
09	Check valve	Install check valve to prevent water flowing backward when pump is stopped.
10	Pump	Install pump which holds amount for keeping the head loss and delivering enough water amount to the product. (Refer to water flow rate range on page 25.)
11	Flexible joint	It is recommended to prevent noise and vibration of pump.
12	Expansion vessel	To absorb the water volume change caused by temperature variation, be sure to install the expansion vessel.

⚠ WARNING

- The maximum operation water pressure of the product is 1.0 MPa.
- The water strainer is not included in the product. You must install 50 Mesh stainless strainer (field supply). If the strainer is not installed, it may cause breakdown of the product.
- The strainer needs periodical maintenance. Work on pipes considering space for maintenance.
- Companion flange (field supply) should be made of SUS304, DIN PN10 standardized product.

Water pipe installation

Installation precautions

- ▶ Heat source water with high level of foreign substances can cause corrosion or creation of water scale on plate type heat exchanger and pipe, so select installation place where the heat source water is qualified according to water maintenance standard for air conditioning equipment. (Refer to page 68 for water maintenance standard table.)
- ▶ Install strainer (field supply) on heat source water inlet.
- ▶ If sand, dust, corroded particles flow into water system, heat exchanger may get damaged because of sedimentation of metallic particles and blocking the heat exchanger. (Refer to page 11 for specification of strainer.)
- ▶ Be careful not to change inlet/outlet of chilled/heating water.
- ▶ For normal operation, supply chilled/heating water regularly to keep operation conditions stable.
- ▶ Install valves at inlet/outlet of water pipes for services.
- ▶ Install temperature gauge and pressure gauge at inlet/outlet of water pipes to check operation status.
- ▶ Insulate pipes to prevent thermal loss of water pipes and freezing of pipe surface.
- ▶ When insulation is not done thoroughly, you will waste energy caused by thermal loss and may get property damage during cold seasons when water pipe freezes. If the product is stopped at night or not operated for long time during winter time, solution for water pipe freezing may be necessary. Freezing may cause product damage, so take appropriate countermeasures such as pump operation, water drainage, or heating by heater depending on the situation.
- ▶ Install flexible joints at water pipes to prevent vibrations.
- ▶ Support water pipes with holders so that too much weight is not loaded on pipes.
- ▶ Install valves to drain water when the product is not used for a long time or outdoor temperature is below freezing point. Use drain valve to drain water left in plate type heat exchanger and inside the product.
- ▶ Install pipe returning to the pump inside the water to prevent bubbles when thermal storage or tank is installed. If dissolved oxygen is increased, corrosion on water side heat exchanger and pipe can be faster.

Water pipe installation

Installing strainer

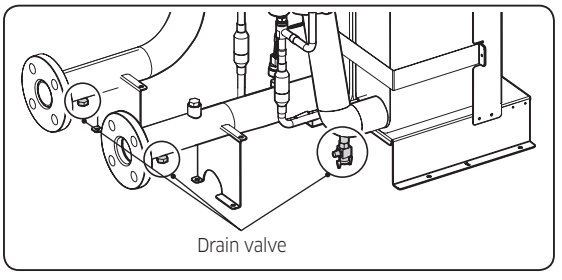
- Install strainer (Field scope: 50 Mesh) that cleaning is possible at the inlet of DVM CHILLER to prevent foreign substances such as bolt and stones from flowing into water side heat exchanger.
  - If strainer is not installed or the mesh is too wide, foreign substances may flow into the system and cause damage by freezing.
- Install drain valves at inlet/outlet pipes to drain water from water side heat exchanger for services.
- Install extra strainer that cleaning is possible near inlet pipe of the water pump.

Maintaining circulating water amount

- If the product is operated below minimum amount of circulating water (more than 50 % of rated flow rate), plate type heat exchanger may freeze and get damage. Use the product within circulating water amount.
- Maintain for water level since it may decrease by blocked strainer, remaining air, malfunction of circulating pump.

Drainage during winter time

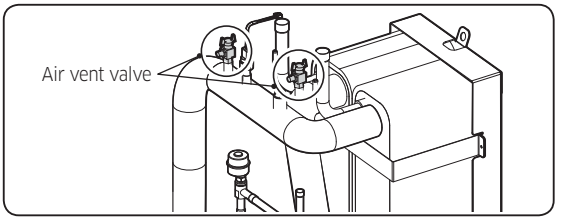
- When DVM CHILLER is not operated during winter time, drain all water by opening drain valves in CHILLER shown in figure and drain valves in the pipes.



Drain valve

Air venting

- Vent air by opening two air vent valves on inlet and middle of the pipe of water side heat exchanger. If air venting is not done properly, it is difficult to maintain rated flow rate, and pipe corrosion or noise by remaining oxygen may occur.



- When venting air, be aware to prevent water get in to the box.

Solution for freeze protection device

When freeze protection device is activated, plate heat exchanger may freeze. Operate the product after taking care of the cause. If you operate the product before the problem has been taken care of, plate type heat exchanger will be frozen and damaged, causing refrigerant leakage or water may enter into the refrigerant cycle.

Solution for pump vibration noise

Install flexible joints at inlet/outlet and use vibration proof rubber on the pump since noise may occur when pump vibration is transferred to pipes.

Maintaining contamination

Foreign substances included in chilled/heating water by small particles pass strainers, and they may be stuck or stacked inside plate type heat exchanger. Some parts of water pipes inside the plate type heat exchanger, and the performance may decrease or it may freeze and get damage. Therefore, clean the plate type heat exchanger periodically.

Turbidity is a standard for water pollution level, and standard water pollution set by Corrosion Prevention Association is under turbidity 4. If the turbidity is high or foreign substance is flew in too much, clean the plate type heat exchanger periodically and maintain the turbidity under 4. If it is over 4, clean the product in about 1 year period since the first operation of the product.

NOTE

- Refer to page 68 for water maintenance standard table.

Solution for water level decrease

When tank or thermal storage is installed open, select pump which can acquire required water amount concerning head loss other than pipe resistance.

⚠ CAUTION

- The product should be operated for 3 minute after it is stopped to protect water side heat exchanger (plate type heat exchanger) from freezing.

NOTE

- Expansion vessel is to buffer expanded water and also to purge air in water pipes. The capacity of expansion vessel should be 2 ~ 2.5 times larger than amount of water expansion or 4 ~ 5 % of total amount of circulating water.

Freeze protection operation

Forced pump operation may be operated periodically to protect water side heat exchanger (plate type heat exchanger) from freezing in winter time or night time when the pump is stopped. Be careful not to be injured.

Water flow rate range

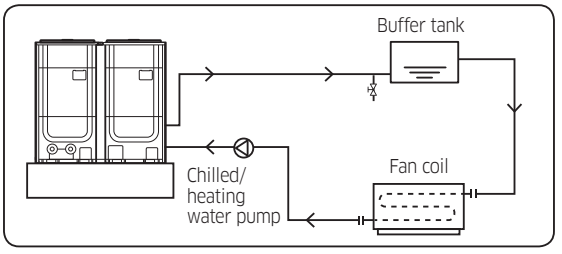
Refer to the table to maintain minimum amount of circulating water. If circulating amount is not enough, the product will not only operate in best performance but also affect the life of the product. Keep the amount above the minimum level.

Model name	Flow rate range (LPM)	
	Min.	Max.
AG042KSV Series	60	240
AG056KSV Series	80	320
AG070KSV Series	93	400

Water pipe installation

Securing water storage

Minimum water storage



▶ If the length of water pipe is too short, water storage within the system becomes lower and ON/OFF operation of the compressor occurs more often. For stable operation, maintain certain water storage by applying header or Buffer tank.

⚠ CAUTION

- When installing tank, inlet pipe of the tank must be installed under the water level.

▶ If total water storage becomes under the minimum storage, install another tank to retain more water storage.

- In case of variable flow system, retain certain amount of water by bypass pipe system.

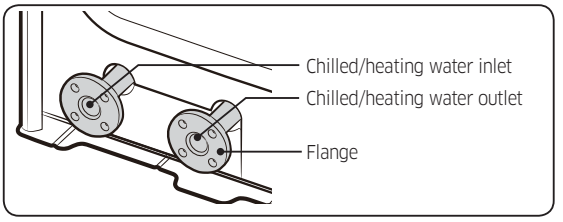
Model name	Minimum water storage (L)
AG042KSV Series	294
AG056KSV Series	392
AG070KSV Series	490

NOTE

- Total water storage in the system = water storage within the water pipe + water storage in DVM CHILLER + water storage in AHU (or fan coil)
- Minimum capacity of buffer tank = Minimum water storage - Total water storage in the system excluding buffer tank
- Select the capacity of buffer tank according to system installation condition of the field.
  Water amount within the DVM CHILLER: AG042✶✶✶, AG056✶✶✶ : 12liter / AG070✶✶✶ : 15.3 liter

Water pipe installation

Connecting water pipe

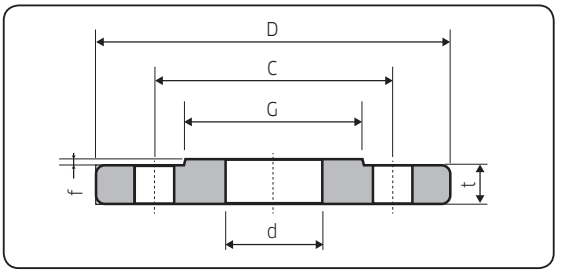


▶ Companion flange is not supplied. Use field supplied one in DIN standardized product.

▶ When connecting the water pipe, use companion flange and bolt made of SUS304, DIN PN10 standardized product.

▶ Maintain the tightening torque for flange as the table.

Water pipe size	Allowable torque for flange (N·m)	Material of gasket
40 A	6.8	EPDM
50 A	12.7	EPDM



	Size	D	t		
			W.N.	Slip-On	Blind
DIN PN10	40	150	16	16	16
	50	165	18	18	18

	G	f	d	Bolting		
				C	Diameter of holes	Bolt size
DIN PN10	88	3	44.5	110	18	4-M16
	102	3	57	125	18	4-M16

Using the pump

NOTE

- The description below applies to AG✶✶✶KSVG series models only.

Startup

⚠ CAUTION

- Do not start the pump until it has been filled with liquid.

⚠ WARNING

- Pay attention to the direction of the vent hole, and make sure that the escaping hot or cold liquid does not cause injury to persons or damage to the equipment.

Checking the direction of rotation

NOTE

- The description below applies to three-phase motors only.

The motor fan cover has an installation indicator. See fig. 1. Based on the motor cooling air, it indicates the direction of rotation of the motor.

Before the motor is started for the first time or if the position of the indicator has been changed, the indicator function should be checked, for instance by moving the indicator field with a finger.

To determine whether the direction of rotation is correct or wrong, compare the indication with the table below.

Indicator field	Direction of rotation
Black	Correct
White/reflecting	Wrong*

* To reverse the direction of rotation, switch off the power supply and interchange any two of the incoming supply wires.

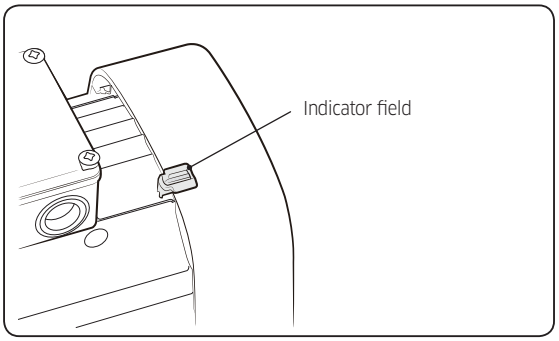


Fig. 1 Installation indicator

You can place the indicator in various positions on the motor, but do not place it between the cooling fins close to the screws that hold the fan cover.

The correct direction of rotation is also shown by arrows on the motor fan cover.

Maintenance

⚠ WARNING

- Before starting work on the pump, switch off the power supply. Make sure that the power supply cannot be accidentally switched on.
- Make sure that the escaping water does not cause injury to persons or damage to the equipment.

The internal pump parts are maintenance-free. You must keep the motor clean in order to ensure adequate cooling of the motor. If the pump is installed in dusty environments, clean and check the pump regularly. Take the enclosure class of the motor into account when cleaning.

The motor has maintenance-free, greased-for-life bearings.

Using the pump

Frost protection

Pumps which are not being used during periods of frost must be drained to avoid damage.

Remove the filling and drain plugs from the pump.

Do not refit the plugs until the pump is taken into operation again.

⚠ CAUTION

- Before startup after a period of inactivity, the pump and the suction pipe must be completely filled with liquid. See Start up (27).

Cleaning

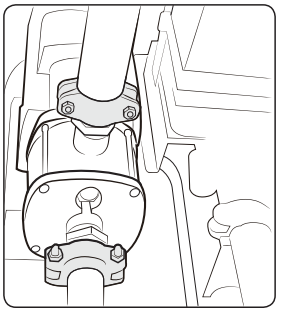
Prior to a long period of inactivity, flush the pump with clean water to prevent corrosion and deposits in the pump.

Use acetic acid to remove possible lime deposits from the pump.

Repairing the pump and connecting the pipe

We recommend that you fit isolating valves on either side of the pump. It is thus not necessary to drain the system if the pump needs service.

The pump must not be stressed by the pipework.



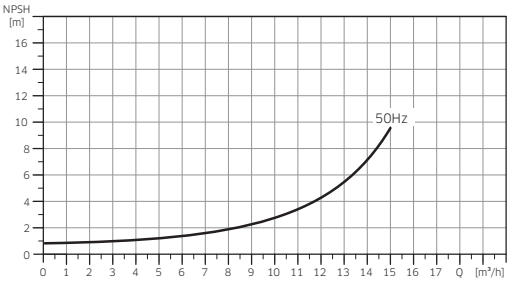
Coupling bolt torque: 200 ± 10% kgfcm

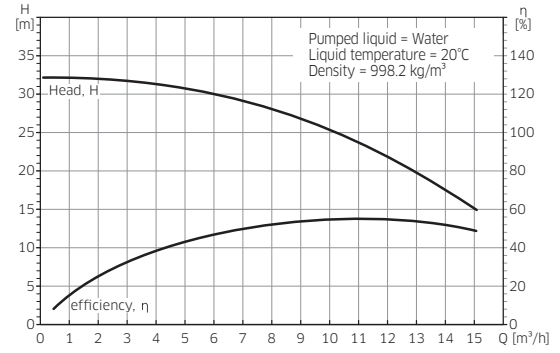
The torque must not be exceeded.

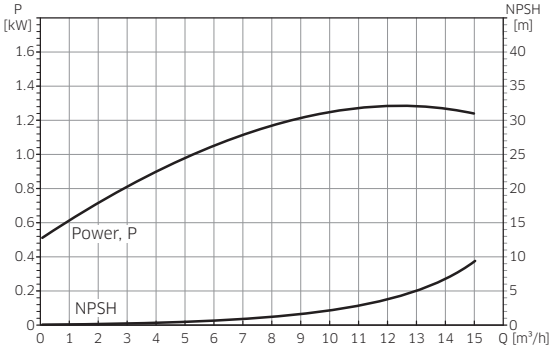
⚠ WARNING

- After product inspection, if the compressor is operated while the refrigerant piping is leaked, air may enter inside the compressor. It may cause abnormal high pressure to develop inside the compressor, leading to product malfunction or an explosion.

Pump performance chart







- NPSH = Net Positive Suction Head
- NPSH is the requirement to keep enough pressure on the system to prevent cavitation.
- Cavitation : flashing the moving fluid into a gas
- Frequency : 50Hz

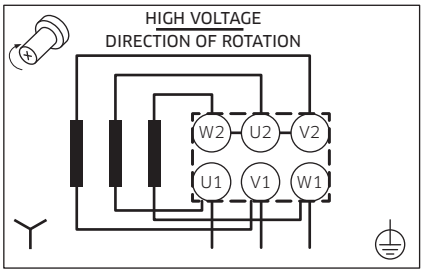
Fault finding

⚠ WARNING

- Before removing the terminal box cover, switch off the power supply. Make sure that the power supply cannot be accidentally switched on.
- The pumped liquid may be scalding hot and under high pressure. Before any removal or dismantling of the pump, the system must therefore be drained, or the isolating valves on either side of the pump must be closed.

Fault	Cause	Remedy
1. The pump does not run.	a) Supply power failure.	Switch on the switch. Check cables and cable connections for defects and loose connections.
	b) Motor protection tripped.	See 2. a), b), c), d), e).
	c) Control-current circuit defective.	Repair or replace the control-current circuit.
2. Motor-protective circuit breaker has tripped (trips immediately when power supply is switched on).	a) Contacts of the motor-protective circuit breaker or magnet coil defective.	Replace the contacts of the motor-protective circuit breaker, the magnet coil or the entire motor-protective circuit breaker.
	b) Cable connection is loose or faulty.	Check cables and cable connections for defects, and replace the fuses.
	c) Motor winding is defective.	Repair or replace the motor.
	d) The pump is mechanically blocked.	Switch off the power supply, and clean or repair the pump.
	e) The setting of the motor-protective circuit breaker is too low.	Set the motor-protective circuit breaker according to the rated current of the motor. See nameplate.
3. The motor-protective circuit breaker trips occasionally.	a) The setting of the motor-protective circuit breaker is too low.	See 2. e).
	b) Periodic supply fault.	See 2. b).
	c) Periodically low voltage.	Check cables and cable connections for defects and loose connections. Check that the power supply cable of the pump is correctly sized.
4. The motor-protective circuit breaker has not tripped, but the pump is inadvertently out of operation.	a) See 1. a), b), c) and 2. d).	
5. The pump performance is unstable.	a) Pump inlet pressure too low.	Check the inlet conditions of the pump.
	b) Suction pipe is partly blocked by impurities.	Remove and clean the suction pipe.
	c) Leakage in suction pipe.	Remove and repair the suction pipe.
	d) Air in suction pipe or pump.	Vent the suction pipe or pump. Check the inlet conditions of the pump.

Using the pump

Fault	Cause	Remedy
6. The pump runs, but gives no water.	a) Pump inlet pressure too low.	See 5. a).
	b) The suction pipe is partly clogged by impurities.	See 5. b).
	c) The foot or non-return valve is stuck in its closed position.	Remove and clean, repair or replace the valve.
	d) Leakage in suction pipe.	See 5. c).
	e) Air in suction pipe or pump.	See 5. d).
7. The pump runs backwards when switched off.	a) Leakage in suction pipe.	See 5. c).
	b) Foot or non-return valve defective.	See 6. c).
	c) The foot valve is stuck in completely or partly open position.	See 6. c).
8. The pump runs with reduced performance.	a) Wrong direction of rotation.	Switch off the power supply with the external circuit breaker, and interchange two phases in the pump terminal box. See Checking the direction of rotation on page 27. 
	b) See 5. a), b), c), d).	

Electrical wiring work

Circuit breaker and power cable specification

Classification	Capacity (HP)	Model	MCA	MFA
Non-pump models	15	AG042KSVANH	32	40
	20	AG056KSVANH	46	60
	25	AG070KSVANH	58	75
Pump integrated models	15	AG042KSVGNH	39	50
	20	AG056KSVGNH	53	60
	25	AG070KSVGNH	65	75

- Power Supply cords of parts of appliances for outdoor use shall not be lighter than polychloroprene sheathed flexible cord. (Code designation IEC:60245 IEC 66 / CENELEC: H07RN-F)

NOTE

- This device is intended for the connection to a power supply system with a maximum permissible system impedance shown in the table (Refer to Circuit breaker and power cable specification on page 31) at the interface point (power service box) of the user's supply.
- The user must ensure that this device is connected only to a power supply system which fulfills the requirement above. If necessary, the user can ask the public power supply company for the system impedance at the interface point.

[Ssc (*2)]

Model	Ssc [MVA]
AG042KSVANH	7.094 [MVA]
AG056KSVANH	7.094 [MVA]
AG070KSVANH	13.983 [MVA]
AG042KSVGNH	8.078 [MVA]
AG056KSVGNH	11.172 [MVA]
AG070KSVGNH	15.081 [MVA]

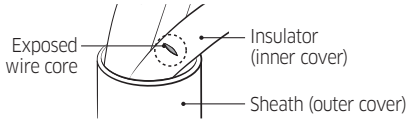
- This equipment complies with IEC 61000-3-12 provided that the short-circuit power Ssc is greater than or equal to Ssc(*2) at the interface point between the user's supply and the public system. It is the responsibility of the installer or user of the equipment to ensure, by consultation with the distribution network operator if necessary, that the equipment is connected only to a supply with a short-circuit power Ssc greater than or equal to Ssc(*2).

⚠ CAUTION

- Please install a circuit breaker.
  - ELCB: Earth Leakage Circuit Breaker
  - MCCB: Molded Case Circuit Breaker
  - ELB: Earth Leakage fuse Breaker
- Use ELCB that has harmonic wave prevent function since the product uses inverter compressor.
- Do not operate the product before completing the water pipe work.
- Do not disconnect or change the cable inside the product. It may cause damage to the product.
- Specification of the power cable is selected based on following installation condition; culvert installation/ ambient temperature 30 °C/ single multi conductor cables. If the condition is different from the ones stated, please consult an electrical installation expert and reselect the power cable.
  - If the length of power cable exceed 50 m, reselect the power cable considering the voltage drop.
- Use a power cable made out of incombustible material for the insulator (inner cover) and the sheath (outer cover).

Electrical wiring work

Example of exposed core wire



- Do not use the power cable with the core wire exposed due to insulator damage occurred during removal of the sheath. When the core wire is exposed, it may cause fire.

Power and communication cable configuration

- ▶ Main power and the ground cable must be withdrawn through the knock-out hole on the bottom-right corner of the front side.
- ▶ Withdraw the communication cable from the designated knock-out hole on the bottom-right corner of the front or side.
- ▶ Install the power and communication cable using separate cable protection tube.
- ▶ Refer to page 33 and 34 for connecting power and communication cable.

Specification of the protection tube

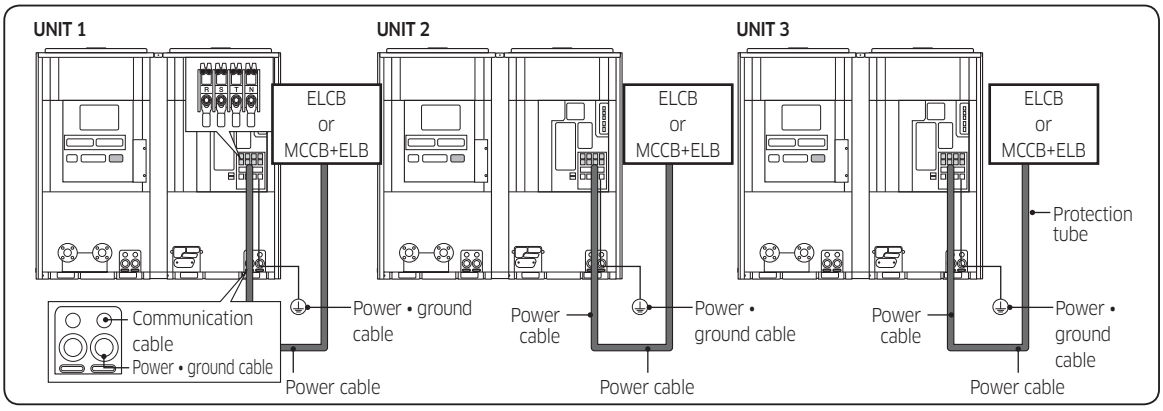
Name	Temper grade	Applicable conditions
CD conduit	PVC	When the protection tube is installed indoor and not exposed to outside, because it is embedded in concrete structure
Class 1 flexible conduit	Galvanized steel sheet	When the protection tube is installed indoor but exposed to outside so there are risk of damage to the protection tube
Class 1 PVC coated flexible conduit	Galvanized steel sheet and Soft PVC compound	When the protection tube is installed outdoor and exposed to outside so there are risk of damage to the protection tube and extra waterproof is needed

⚠ CAUTION

Caution for perforating the knock-out hole

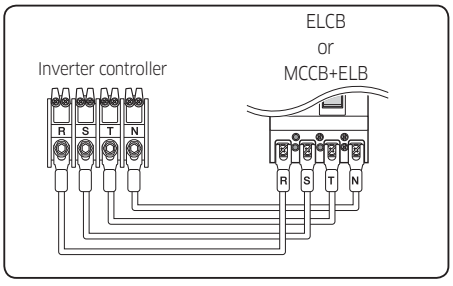
- Perforate a knock-out hole by punching it with a hammer.
- After perforating the knock-out hole, apply rust resisting paint around the hole.
- When you need to pass the cables through the knock-out hole, remove burrs on the hole and protection the cable with a protection tape or bushing etc.
- Use ELCB that has harmonic wave prevent function since the product uses inverter compressor.

Connecting the power cable



- ▶ Fix the cable with a cable tie.
- ▶ ELCB and ELB must be installed since there is risk of electric shock or fire when they are not installed.
- ▶ Install an ELCB or ELB for each unit as shown in the figure.
- ▶ Be sure not to mistakenly connect or forget to connect the power cable. If the power cable is mistakenly connected or not connected, the indoor unit may display an error code, the air conditioner may not turn on, or core components may not work. If the power cable of a pump integrated model is mistakenly connected or not connected, the air conditioner may not operate, a trip of the OCR may occur, or backlash of the pump may occur.

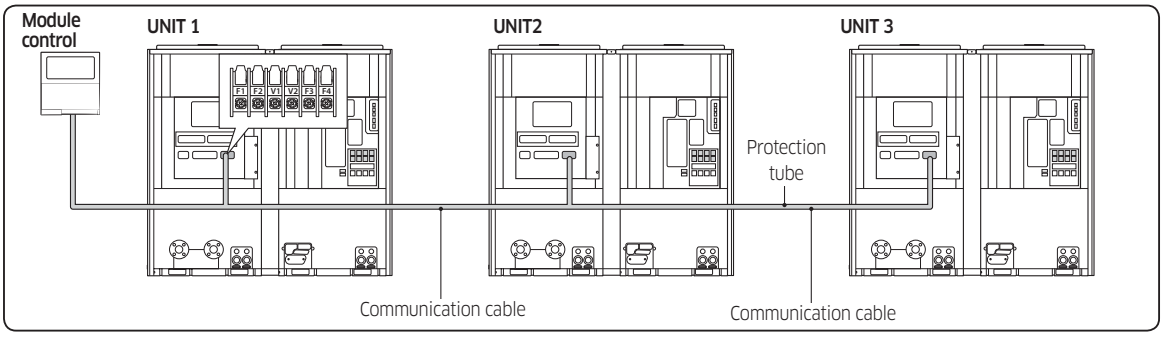
Supplying 3 phase 4 wires 380 - 415 V



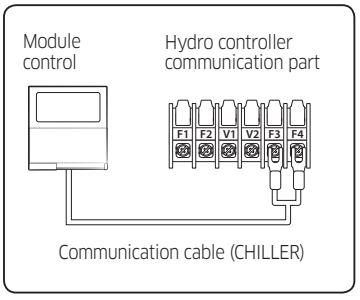
- ▶ Connect a power cable after checking that R-S-T-N (3 phase 4 wire) is properly connected. (If the 380-415 V power is supplied to the N phase, PCB and other electrical part will be damaged.)

Electrical wiring work

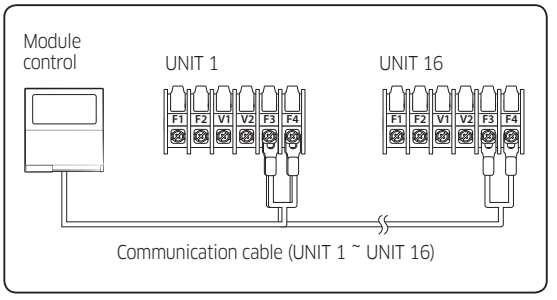
Connecting the communication cable



Single connection



Module/Group connection

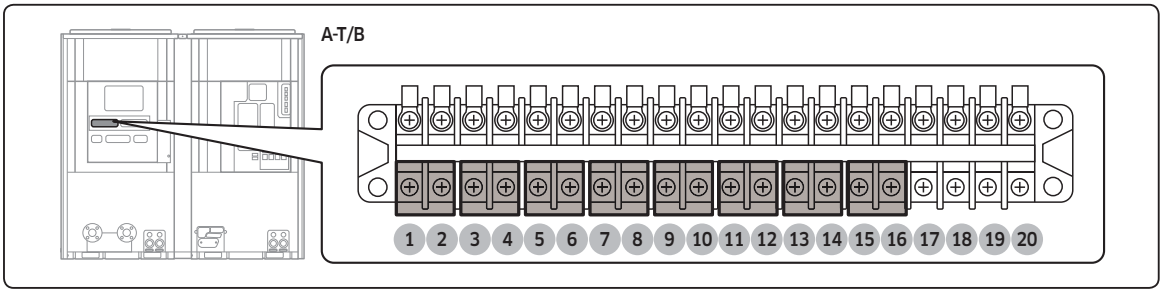


- ▶ Communication cable between DVM CHILLERs has no polarity.
- ▶ Fix the cable with a cable tie.
- ▶ Maximum number of DVM CHILLER that can be controlled by a module control is 16.

Terminal block	Tightening torque (N·m)	
6P T/B	M3.5	0.8 ~ 1.2

External contact wiring work

Output contact



No.		Name	Signal	Function	Contact On (Short)	Contact Off (Open)
A-T/B	1-2	Cooling/Heating display	Zero voltage contact	Display when operates in heating mode	Heat	Cool
	3-4	Operation display		Display when operates	Operate	Stop
	5-6	Warning display		Display when error occurs	Error occurred	No error
	7-8	Defrost operation display		Display when defrosting	Deforst ON	Defrost OFF
	9-10	Pump operation display		Display when pump operates	Pump ON	Pump OFF
	11-12	Comp operation display		Display when compressoroperates	Compressor ON	Compressor OFF
	13-14	Pump operation		Signal of pump operation	Pump signal ON	Pump signal OFF
	15-16	Freeze protection display		Display when freeze protection operates	Pump ON for freeze protection	Others
	17-18	Disuse	-	-	-	-
	19-20	Disuse	-	-	-	-

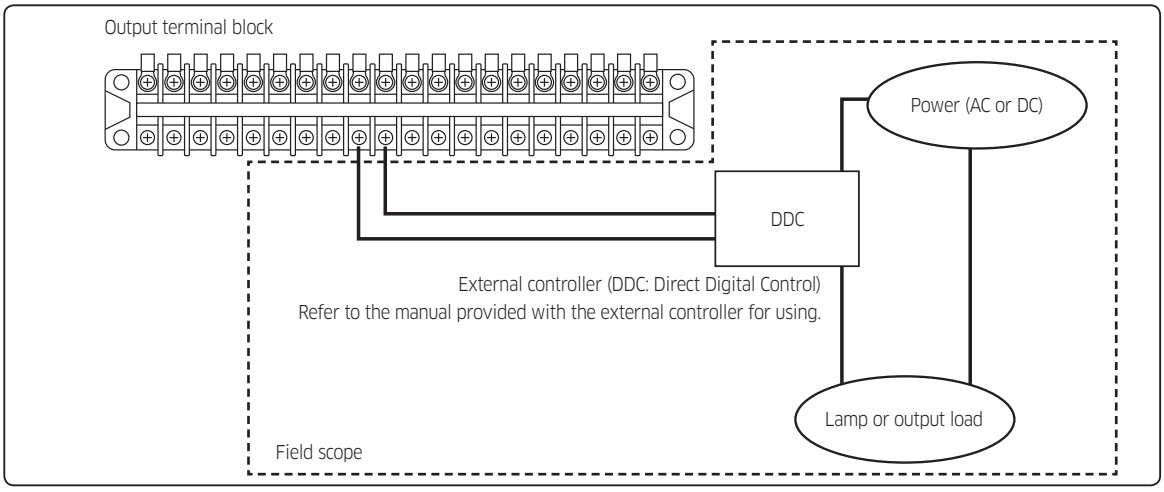
• Output written above is information about individual unit.

⚠ CAUTION

- You must turn off the power before working on external contact wiring.
- Output contact can be connected neutral contact and Open/Short only.
- Be sure to install a buzzer (alarm) on terminals 15 and 16 in order that the operator can check the system when the freeze protection function starts.

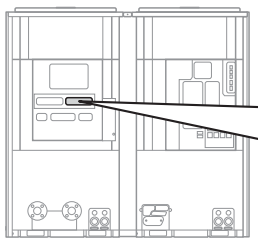
Terminal block	Tightening torque (N·m)	
20P T/B	M3	0.5 ~ 0.75

► Example of output contact installation

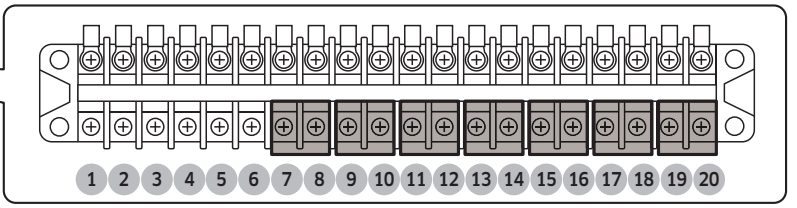


Electrical wiring work

Input contact



B-T/B



No.		Name	Signal	Function	Contact On (Short)	Contact Off (Open)	Signal recognition	Setting unit
B-T/B	1-2	Disuse	-	-	-	-	-	-
	3-4	Disuse	-	-	-	-	-	-
	5-6	Disuse	-	-	-	-	-	-
	7-8	Pump interlock	Zero voltage contact	Signal about pump operation • Pump interlock error (E918) occurs if ON is not input when operating pump	Pump ON	Pump OFF	Usual input	Each unit
	9-10 11-12	Operation ON/ OFF		Controlling operation ON/OFF Note1)	Note3)		Usual/ instant input	Main unit of group NOTE4)
	13-14	Operation mode		Selecting cool/heat mode Note2)	Heat	Cool	Usual input	Main unit of group NOTE4)
	15-16	Hot water (Cool storage) mode		Entering hot water (cool storage) mode by external control • Cool + ON: Cool storage • Heat + ON: Hot water	Cool storage/ Hot water	Cool/Heat	Usual input	Main unit of group NOTE4)
	17-18	Hot water (Cool storage) control standard		Control depending on set temperature when ON Control depending on external hot water (cool storage) thermostat when OFF	Control by set temperature	Control by thermostat	Usual input	Main unit of group NOTE4)
	19-20	Hot water (Cool storage) thermostat signal		When thermostat is set as standard for hot water (cool storage) mode • Thermo ON when ON (Not over range of water outlet temperature) • Thermo OFF when OFF	Thermo ON	Thermo OFF	Usual input	Main unit of group NOTE4)

• To use hot water (cool storage) mode, the function should be activated by Module Control.

• Usual input: Operate by current status of contact
Instant input: Operate when contact signal changes from OFF to ON / from ON to OFF.

Note1) Operates when input method of Opearation On/Off is set as external contact

Note2) Operates when input method of operation mode is set as external contact

Note3) Operation depending on external contact operation ON/OFF input method
(Refer to page 51 for "Operation ON/OFF by exteral contact" in the 28th row in the table)

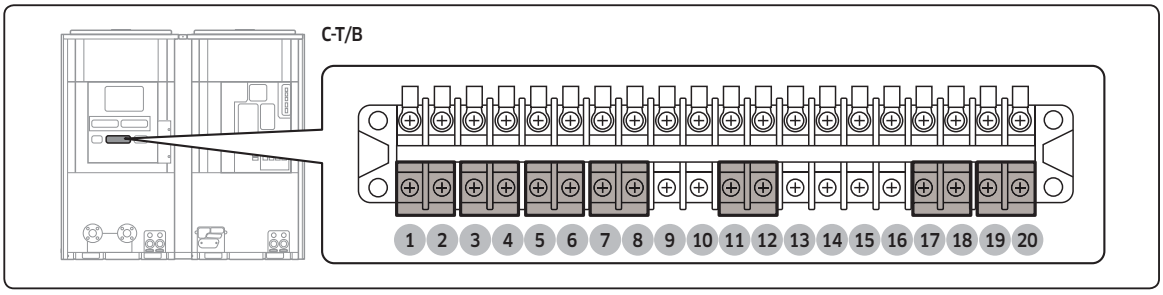
- When set as usual input (0): Operation ON when **9-10** is ON; OFF when **9-10** is OFF
- When set as instant input (1): Operation ON when **9-10** is ON more than 0.1 second; OFF when **11-12** is ON more than 0.1 second

Note4) Main unit of module when group is not available

Note5) Pump integrated models do not need to connect pump interlock contacts (7-8).

NOTE

• Refer to page 39 for example of installation.



No.		Name	Signal	Function	Contact On (Short)	Contact Off (Open)	Signal recognition	Setting unit
C-T/B	1-2	Quiet function	Zero voltage contact	Operate quiet function in level set by main option or module control Note4)	Quiet function	-	Usual input	Main unit of group Note8)
	3-4	Demand function		Operate demand function (current limet control) in level set by main opetion or module control Note5)	Demand function	-	Usual input	Main unit of group Note8)
	5-6	Forced fan function		Operate forced fan function Note6)	Forced fan function	-	Usual input	Main unit of group Note8)
	7-8	Unusual condition reset		Reset on error occurred status • Operates only when remote error reset input function is set to use	Reset error	-	Instant input	Main unit of module
	9-10	Disuse	-	No use (N/A)	-	-	-	-
	11-12	Water law	Zero voltage contact	Operate water law Note7)	Water law control	Water outlet set temperature control	Usual input	Main unit of group Note8)
	13-14	Disuse	-	No use (N/A)	-	-	-	-
	15-16	Disuse	-	No use (N/A)	-	-	-	-

Electrical wiring work

No.		Name	Signal	Function	Contact On (Short)	Contact Off (Open)	Signal recognition	Setting unit
C-T/B	17-18	Set temperature/ room temperature sensor	Analog current	Recognize water outlet set temperature by external input (4 ~ 20 mA) Note1) Recognize value of room temperature sensor (4 ~ 20 mA) when standard for water law is room temperautre Note2)	-	-	Current input	Main unit of group Note8)
	19-20	External water outlet temperature	Analog current	Recognize external water outlet temperature by external temperature sensor (4 ~ 20 mA) Note3)	-	-	Current input	Main unit of group Note8)

• Usual input: Operate by current status of contact
Instant input: Operate when contact signal changes from OFF to ON / from ON to OFF

Note1) Value of water outlet set temperature = 5.625 x Current - 32.5
Heat (Hot water) mode recognizes minimum 25 ℃ and maximum 55 ℃
Cool (Cool storage) mode recognizes minimum 5 ℃ and maximum 25 ℃ (Minimum -10 ℃ when using low temperature function)

Current (mA)	4	6	8	10	12	14	16	18	20
Temperature (℃)	-10.00	1.25	12.50	23.75	35.00	46.25	57.50	68.75	80.00

Note2) Room temperature = 6.25 x Current - 75

Current (mA)	4	6	8	10	12	14	16	18	20
Temperature (℃)	-50.00	-37.50	-25.00	-12.50	0.00	12.50	25.00	37.50	50.00

Note3) If operation pattern is not standard control, control standard temperautre depends on external water outlet temperature sensor. External water outlet temperautre sensor should be installed where can represent the temperature of water pipe system.

Water outlet temperature = 6.25 x current -55

Current (mA)	4	6	8	10	12	14	16	18	20
Temperature (℃)	-30.00	-17.50	-5.00	7.50	20.00	32.50	45.00	57.50	70.00

Note4) Operates when input method for quiet function is set as external contact
- If the contact is short, quiet function operates in Cool/Heat mode.
- Quiet function by Module Control operates in Cool mode and night time.

Note5) Operates when input method for demand function is set as external contact

Note6) Operates when input method for forced fan function is set as external contact

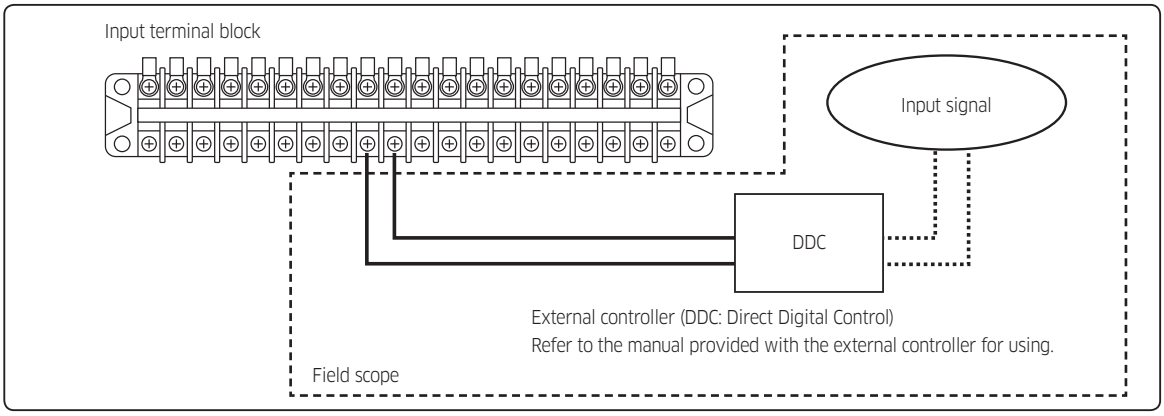
Note7) Operates when input method for water law function is set as external contact

Note8) Main unit of module when group is not available

NOTE

- Room temperature sensor and external water outlet temperature sensor is not supplied. Purchase and install the appropriate sensor according to the usage.
  - Room temperature sensor: 4 ~ 20 mA (4 mA : -50 ˚C, 20 mA : 50 ˚C)
  - External water outlet temperature sensor: 4 ~ 20 mA (4 mA : -30 ˚C, 20 mA : 70 ˚C)

▶ Example of input contact installation

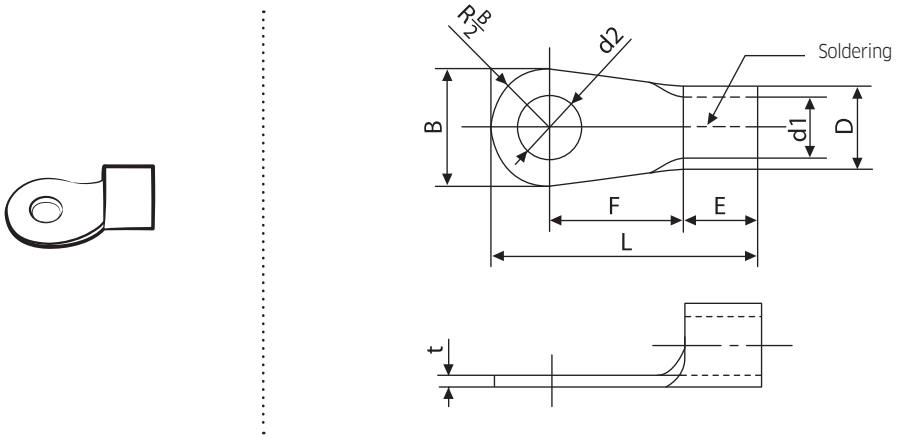


Electrical wiring work

Selecting solderless ring terminal

▶ Select the solderless ring terminal depending on the nominal dimension of the power cable.

▶ Cover and insulate the solderless ring terminal and connection part of the power cable.

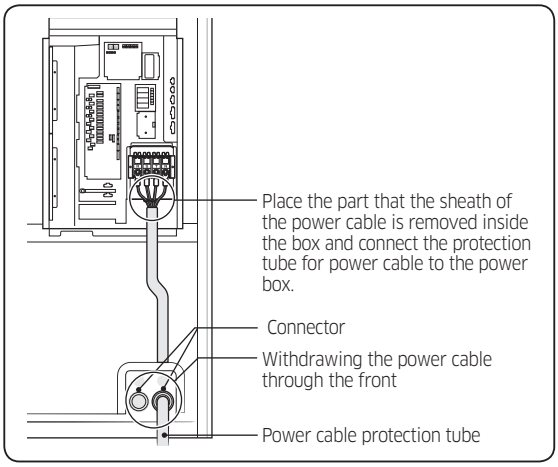


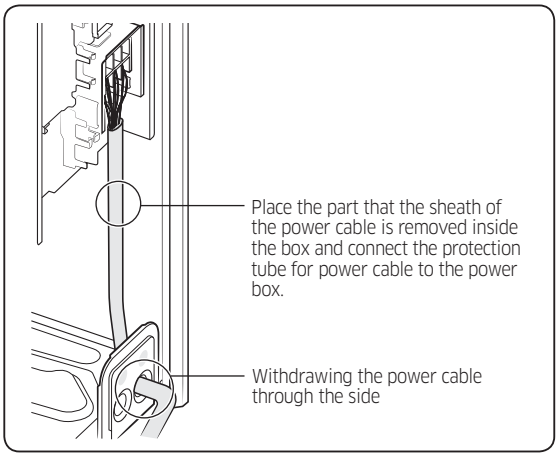
Unit: mm

Nominal dimensions for cable	Nominal dimensions for screw	B		D		d1		E	F	L	d2		t
		Basic size	Allowance	Basic size	Allowance	Basic size	Allowance	Min.	Min.	Max.	Basic size	Allowance	Min.
4/6	4	9.5	± 0.2	5.6	+ 0.3 - 0.2	3.4	± 0.2	6	5	20	4.3	+ 0.2 0	0.9
	8	15							9	28.5	8.4	+ 0.4 0	
10	8	15	± 0.2	7.1	+ 0.3 - 0.2	4.5	± 0.2	7.9	9	30	8.4	+ 0.4 0	1.15
16	8	16	± 0.2	9	+ 0.3 - 0.2	5.8	± 0.2	9.5	13	33	8.4	+ 0.4 0	1.45
25	8	12	± 0.3	11.5	+ 0.5 - 0.2	7.7	± 0.2	11	15	34	8.4	+ 0.4 0	1.7
	8	16.5							13		8.4		
35	8	16	± 0.3	13.3	+ 0.5 - 0.2	9.4	± 0.2	12.5	13	38	8.4	+ 0.4 0	1.8
	8	22							13	43	8.4		
50	8	22	± 0.3	13.5	+ 0.5 - 0.2	11.4	± 0.3	17.5	14	50	8.4	+ 0.4 0	1.8
70	8	24	± 0.3	17.5	+ 0.5 - 0.4	13.3	± 0.4	18.5	20	51	8.4	+ 0.4 0	2.0

Connecting the power terminal

- ▶ Connect the cables to the terminal board with solderless ring terminals.
- ▶ Properly connect the cables by using certified and rated cables and make sure to fix them properly so that external force is not applied to the terminal.
- ▶ Use a driver and wrench that can apply the rated torque when tightening the screws on the terminal board.
- ▶ Connect the terminal screws according to the rated tightening torque.
  If the terminal is loose, fire can occur due to arc heat generation and if the terminal is too tight, terminal board could get damaged.



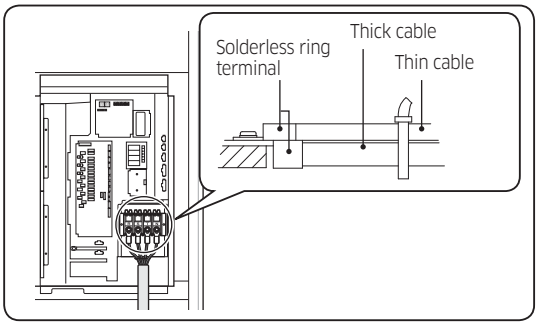


- ▶ Close the cover.

Screw	Tightening torque for terminal	
M8	5.5 ~ 7.3	3 phase (380-415 V) power cable
M4	1.2 ~ 1.8	Single phase (220-240 V) power cable

NOTE

- When connecting two cables to one terminal, separate the solderless terminal up and down to prevent it from getting loose. Place the thin cable upward and the thick cable downward.



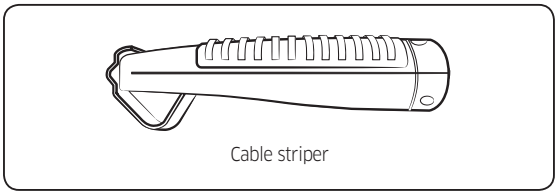
- Fix the power cable with a cable tie.

⚠ CAUTION

- When peeling off outer sheath of the power cable, be careful not to damage the inner sheath of the cable by using a correct tool.
- More than 20 mm of power cable or communication cable of DVM CHILLER should be inside the electric box.
- The installation of communication cable should be separated from power cable or other communication cables.
- Before connecting the power cable, tighten the cover of the control box as there might be danger of electric shock with power supply.
- Before checking a compressor or PBA, you must turn off the power of the product. There is possibility of power being supplied to the compressor that is not operating, and therefore there is risk of electric shock.

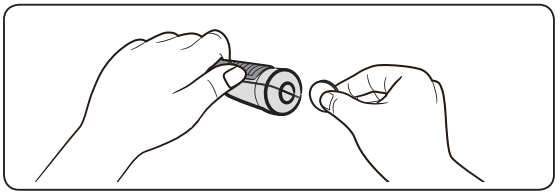
Electrical wiring work

Examples of using the cable striper

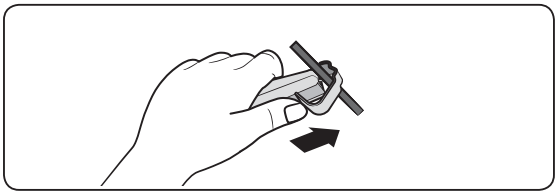


Cable striper

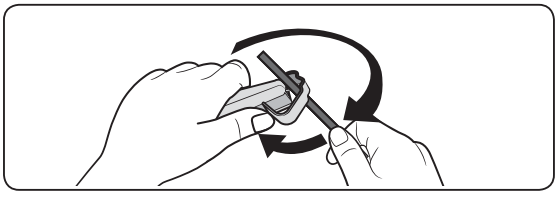
1 Adjust the blade position by coin. (Controller is at the bottom side of the tool.) Fix the blade position according to the outer sheath thickness of the power cable.



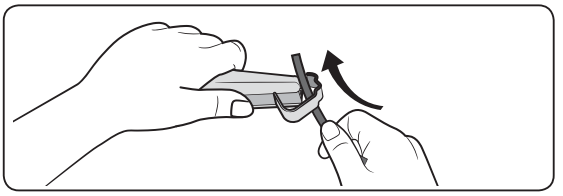
2 Fix the power cable and tool by using the hook at the top side of the tool.



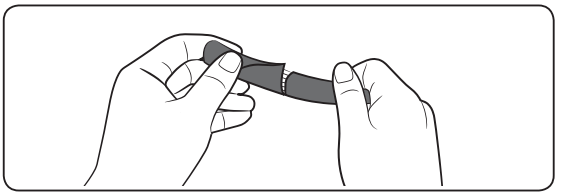
3 Cut out the outer sheath of the power cable by revolving the tool in the direction of the arrow, two or three times.



4 At this moment, cut out the outer sheath of the power cable by moving the tool toward the direction of the arrow as shown in the illustration.



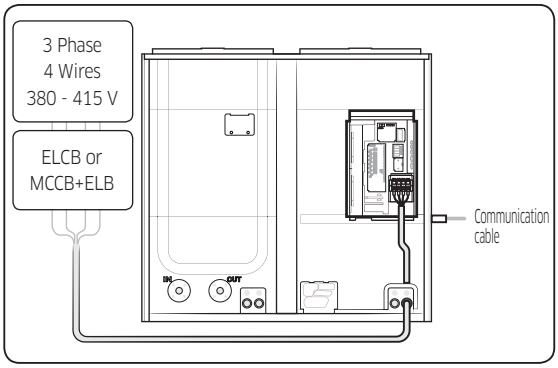
5 Slightly bend the wire and pull out the cut part of the outer sheath.



Fixing the power cable

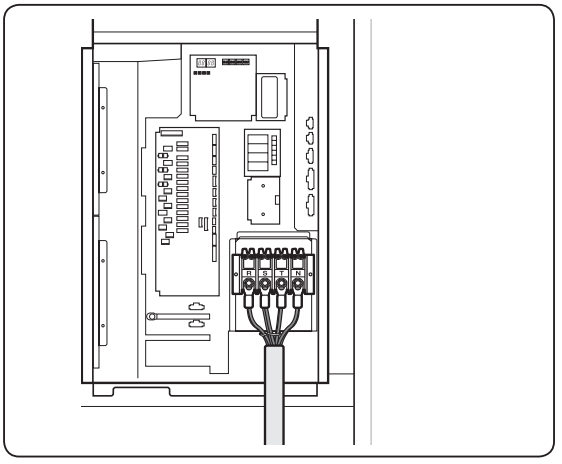
⚠ CAUTION

- Do not let the power cable come into contact with the pipes inside the DVM CHILLER. If the power supply cable touches the pipes, the vibration of the compressor is transferred to the pipes and can damage the power supply cables or pipes, creating the danger of fire or explosion.
- Make sure that the place where the sheath of power supply cable is removed is inside the power supply box. If it is impossible, you should connect the protection tube for power cable to the power supply box.
- After arranging the power cable into the power supply box, tighten the cover.



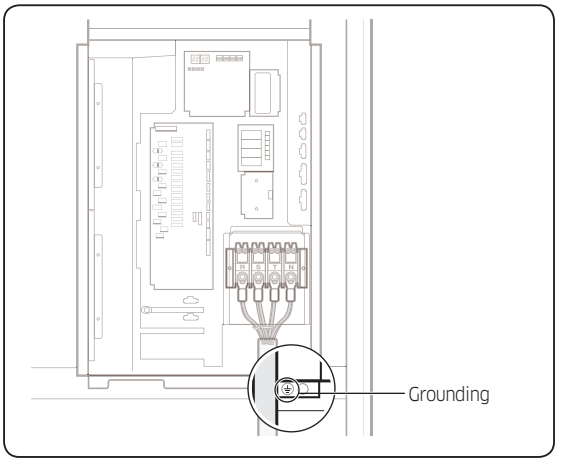
Connecting ring terminal of 3 phase cable

1. Cut the power cable to an appropriate length and connect it with the solderless terminal.
2. After connecting the power cable to the terminal as seen in the illustration, fix it with cable tie.
3. Fix the housing, which has an insulator, to the terminal board.



Fixing the ground cable

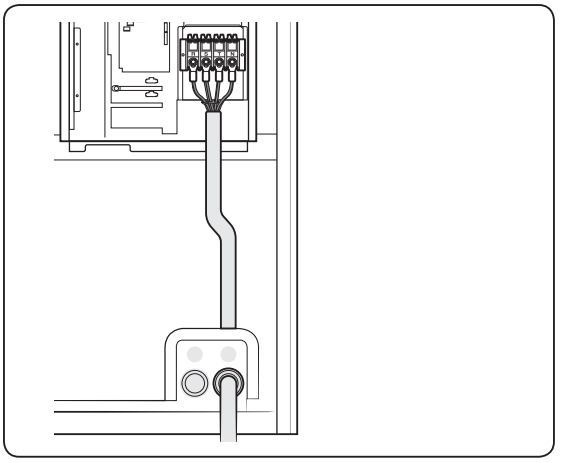
Connect the ground cable to the grounding hole inside the power supply box.



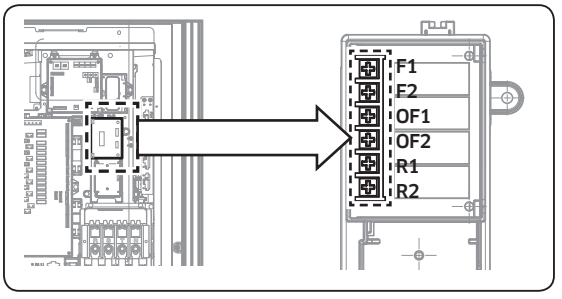
Electrical wiring work

Withdrawing the power cable

Connect the power cable protection tube into the power supply box. Be sure that the power supply cable is not damaged by burr on the knock-out hole.



Installing the Solution device



F1	Terminal block with inverter controller and hydro controller
F2	
OF1	-
OF2	
R1	Terminal block with solution device
R2	

Grounding work

The grounding must be done by a qualified installer for safety.

Grounding the power cable

- ▶ The standard of grounding may vary according to the rated voltage and installation place of the air conditioner.
- ▶ Ground the power cable according to the following table.

Installation place / Power condition	High humidity	Average humidity	Low humidity
Voltage to ground is lower than 150 V		Must perform the grounding work 3. Note 1)	Must perform the grounding work 3. Note 2)
Voltage to ground is over 150 V	Must perform the grounding work 3. Note 1) (Including the case where earth leakage breaker is installed)		

Note 1) About grounding work 3.

- ▶ Grounding work must be done by an expert (with qualification).
- ▶ Check if the grounding resistance is lower than 100 Ω. When installing a earth leakage breaker (that can cut the electric circuit within 0.5 second in case of a short circuit), allowable grounding resistance should be 30 ~ 500 Ω.

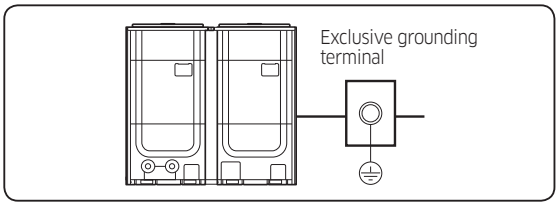
Note 2) Grounding at dry place

- ▶ Check if the grounding resistance is lower than 100 Ω. Check if the grounding resistance is lower than 250 Ω.

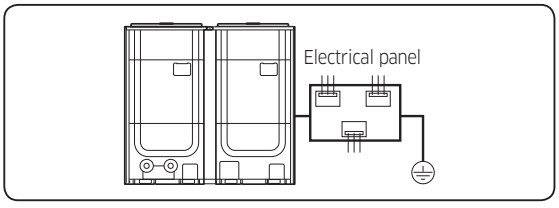
Performing the grounding work

Use a rated grounding cable by referring to the specification of the electric cable for the product.

▶ When using the exclusive grounding terminal (When the exclusive grounding terminal is already built in the house)



▶ When using grounding terminal at the electrical panel



Setting key function

Setting hydro controller option

Basic segment display

	SEG1	SEG2	SEG3	SEG4	SEG5	SEG6	Remarks
Water In	0	1	-	0	5	0	Ex) -5 ℃

View mode display

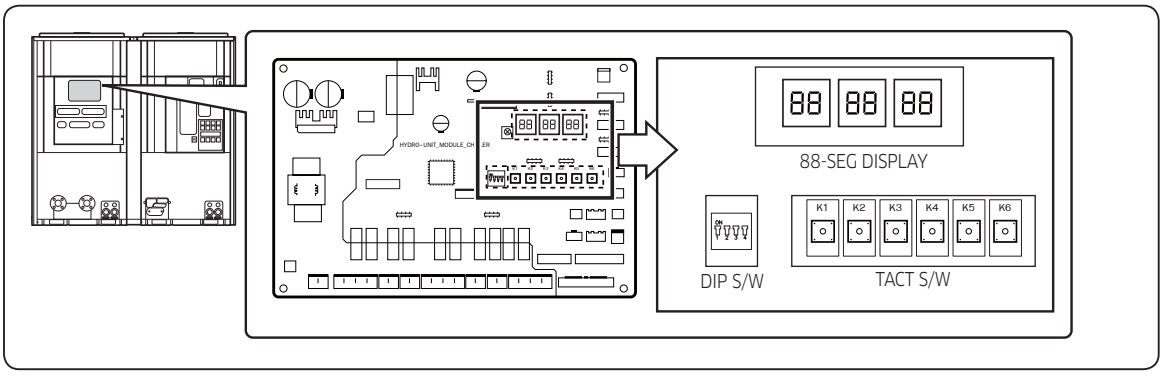
▶ Press and hold K3 and K4 for 3 seconds to enter the view mode.

▶ Press K3 to change view mode in order of the table.

▶ Press K4 to change view mode in reverse order of the table.

▶ **Cancelling view mode display**

- Press and hold K3 for 3 seconds.



Number of press	KEY operation	SEG1	SEG2	SEG3	SEG4	SEG5	SEG6	Remarks
1 time	Water In	0	1	-	0	5	0	ex) -5 ℃
2 times	Water Out	0	2	-	1	1	0	ex) -11 ℃
3 times	Outdoor temperature	0	3	-	1	1	2	ex) -11.2 ℃
4 times	High pressure	0	4		2	9	3	ex) 29.3 kgf/cm^{2}G
5 times	Low pressure	0	5		0	7	5	ex) 7.5 kgf/cm^{2}G
6 times	Comp 1 current frequency	0	6		1	1	0	ex) 110 Hz
7 times	Comp 2 current frequency	0	7		1	1	3	ex) 113 Hz

Number of press	KEY operation	SEG1	SEG2	SEG3	SEG4	SEG5	SEG6	Remarks
8 times	Discharge 1 temperature	0	8		1	0	1	ex) 101.8 ℃ → 101 (Drop)
9 times	Discharge 2 temperature	0	9		1	0	1	ex) 101.8 ℃ → 101 (Drop)
10 times	Top 1 temperature	1	0		1	0	1	ex) 101.8 ℃ → 101 (Drop)
11 times	Top 2 temperature	1	1		1	0	1	ex) 101.8 ℃ → 101 (Drop)
12 times	Total suction temperature	1	2	-	1	1	2	ex) -11.2 ℃
13 times	Suction 1 temperature	1	3	-	1	1	2	ex) -11.2 ℃
14 times	Suction 2 temperature	1	4	-	1	1	2	ex) -11.2 ℃
15 times	COND Out temperature	1	5	-	1	1	2	ex) -11.2 ℃
16 times	Liquid Temperature	1	6		3	5	0	ex) 35 ℃
17 times	EVA In 1 temperature	1	7		3	5	0	ex) 35 ℃
18 times	EVA Out 1 temperature	1	8		5	0	0	ex) 50 ℃
19 times	EVA In 2 temperature	1	9		3	5	0	ex) 35 ℃
20 times	EVA Out 2 temperature	2	0		3	5	0	ex) 35 ℃
21 times	EVI In temperature	2	1		3	5	0	ex) 35 ℃
22 times	EVI Out temperature	2	2		3	5	0	ex) 35 ℃
23 times	IPM 1 temperature	2	3		8	0	0	ex) 80 ℃
24 times	IPM 2 temperature	2	4		8	0	0	ex) 80 ℃
25 times	CT 1	2	5		1	1	0	ex) 11 A
26 times	CT 2	2	6		1	1	0	ex) 11 A
27 times	Operation mode	2	7			Blank/S	C/H	S: Hot water/Cool storage / C: Cooling, H: Heating
28 times	Set temperature	2	8	-	0	5	0	ex) -5 ℃
29 times	Pump output	2	9		0	n/F	Blank/F	On/Off
30 times	Fan Step	3	0		0	2	4	ex) 24 step

Setting key function

Number of press	KEY operation	SEG1	SEG2	SEG3	SEG4	SEG5	SEG6	Remarks
31 times	Hydro EEV 1	3	1		1	0	0	ex) 1007 step → 100 (Drop "/10")
32 times	Hydro EEV 2	3	2		1	0	0	ex) 1007 step → 100 (Drop "/10")
33 times	Main EEV 1	3	3		1	0	0	ex) 1007 step → 100 (Drop "/10")
34 times	Main EEV 2	3	4		1	0	0	ex) 1007 step → 100 (Drop "/10")
35 times	EVI EEV	3	5		4	7	3	ex) 473 step
36 times	PHE inlet pressure	3	6		0	1	2	ex) 1.2 kgf/cm^{2}G
37 times	PHE outlet pressure	3	7		0	0	4	ex) 0.4 kgf/cm^{2}G
38 times	Capacity (Cooling)	3	8		0	7	0	ex) 70 kW
39 times	(Exterior) Room temperature	3	9		2	5	5	ex) 25.5 ℃
40 times	(Exterior) Water outlet temperature	4	0	-	1	1	0	ex) -11 ℃
41 times	Pressure difference calibration	4	1	-	0	0	2	ex) -0.2 kg/cm^2

How to set hydro controller option

	Option No.		Option value			
	SEG1	SEG2	SEG3	SEG4	SEG5	SEG6
Operation On/Off input method	0	1	-	-	-	0
Temperature setting input method	0	2	-	-	-	0

1 Turn on the product.

2 Press and hold the K2 to enter the option setting.

► In option setting, other key input (forced fan, temperature setting, etc.) is not received.

3 Press K1 shortly to display the number for selected option.

4 Press K2 shortly to display the number for set value of the selected option.

5 Finish the option setting.

► Press K2 long to finish the setting with all option values determined and saved.

► Press K1 long to finish the setting with all option values cancelled and keep the values as before entering the setting.

• In option setting, press K4 long to initialize all option values.

No.	Option item	Option value	Factory default	Option	Definition	Setting unit	Module control setting option Note1)
1	Operation On/Off input method	0·1	0	0	Module control/DMS	Main unit of group Note2)	
				1	External contact		
2	Temperature setting input method	0·1	0	0	Module control/DMS	Main unit of group Note2)	
				1	External contact		
3	Operation mode (Cool/Heat, normal/hot water) input method	0·1	0	0	Module control/DMS	Main unit of group Note2)	
				1	External contact		
4	Demand control input method	0·1	0	0	Module control/DMS	Main unit of group Note2)	
				1	External contact		

Setting key function

No.	Option item	Option value	Factory default	Option	Definition	Setting unit	Module control setting option Note1)
5	Demand level	0 ~ 11	3	0	Default (100 %)	Main unit of module	0
				1	95 %		
				2	90 %		
				3	85 %		
				4	80 %		
				5	75 %		
				6	70 %		
				7	65 %		
				8	60 %		
				9	55 %		
				10	50 %		
				11	Not applied (No limit)		
6	Quiet function input method	0·1	0	0	Module control/DMS	Main unit of group Note2)	
				1	External contact		
7	Forced fan function input method	0·1	0	0	Module control/DMS	Main unit of group Note2)	
				1	External contact		
8	Water law input method	0·1	0	0	Module control/DMS	Main unit of group Note2)	
				1	External contact		
9	Pump operation when thermo off	0·1	1	0	Pump OFF when thermo OFF and operation pattern is not standard control. Set key functions only when the pumps are used for each unit or water supply is stopped to the unit whose compressor does not work.	Main unit of module	
				1	Pump ON always when thermo OFF		
10	Remote error reset input	0·1	0	0	Disuse	Main unit of module	
				1	Use		
11	Setting unit address • Module address must be set. (Refer to installation manual of Module Control.)	0 ~ 15	(Not set)		Setting unit address	Each unit	
12	Quiet function level	0 ~ 3	1	0	Default (100 %)	Main unit of module	0
				1	Level1		
				2	Level2		
				3	Level3		
13	Confirm delay for unsecured flow rate when operating	10 ~ 240	30		Delay for inspecting no input for pump interlock and unsecured flow rate (by seconds)	Main unit of module	

No.	Option item	Option value	Factory default	Option	Definition	Setting unit	Module control setting option Note1)
14	Using exterior water outlet temperature sensor	0/1	0	0	Disuse	Main unit of group Note2)	
				1	Use		
15	Water law control standard	0/1	0	0	Outdoor temperature	Main unit of group Note2)	0
				1	Room temperature (external room temperature sensor installation necessary)		
16	AirCool1 (For water law)	0 ~ 20	10		Standard 1 outdoor temperature for cooling	Main unit of group Note2)	0
17	AirCool2 (For water law)	30 ~ 40	35		Standard 2 outdoor temperature for cooling		
18	RoomCool1 (For water law)	15 ~ 24	20		Standard 1 room temperature for cooling		
19	RoomCool2 (For water law)	25 ~ 35	30		Standard 2 room temperature for cooling		
20	Tcool1 (For water law)	-10 ~ 25	15		Standard 1 set temperature for cooling		
21	Tcool2 (For water law)	-10 ~ 25	7		Standard 2 set temperature for cooling		
22	AirHeat1 (For water law)	-20 ~ 5	-10		Standard 1 outdoor temperature for heating		
23	AirHeat2 (For water law)	10 ~ 20	15		Standard 2 outdoor temperature for heating		
24	RoomHeat1 (For water law)	15 ~ 24	20		Standard 1 room temperature for heating		
25	RoomHeat2 (For water law)	25 ~ 35	30		Standard 2 room temperature for heating		
26	Theat1 (For water law)	35 ~ 55	45		Standard 1 set temperature for heating		
27	Theat2 (For water law)	35 ~ 55	35		Standard 2 set temperature for heating		
28	Operation ON/OFF by external contact	0/1	0	0	Recognize usual signal	Main unit of group Note2)	
				1	Recognize instant signal		
29 ~ 33	Function expansion available						
34	Using low temperature function	0/1	0	0	Disuse	Each unit	
				1	Use		
35 ~ 37	Function expansion available						

Note1) For options that can be selected by module control and main option, the option value selected for last time will be saved.

Note2) Main unit of module when group is not available

Setting key function

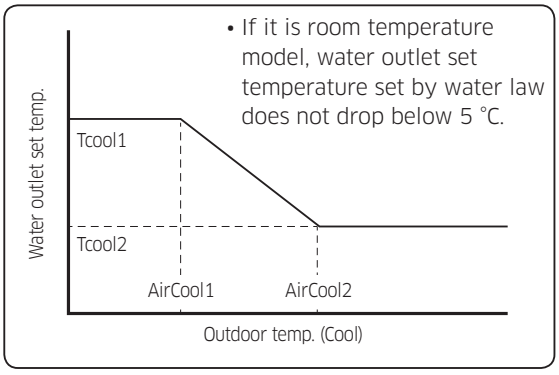
Function description

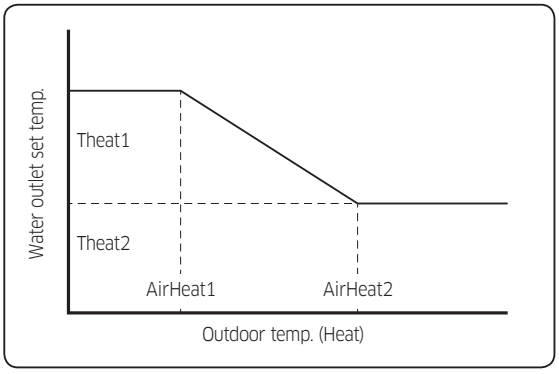
No.	Description
1	Select operation On/Off input method of module/group
2	Select temperature setting input method of module/group
3	Select operation mode (Cool/Heat, Hot water/Cool storage) input method of module/group
4	Select demand control input method of module/group
5	Select demand level • Current will be limited below the set level when "Perform" command is transmitted.
6	Select quiet function input method of module
7	Select forced fan function input method of module • Forced fan: Removes accumulated snow by operating the fan of stopped unit in low frequency • Snow accumulation prevention, which operates occasionally when outdoor temperature is below zero, is basic function.
8	Select water law input method of module/group
9	Select pump operation status when thermo OFF
10	Select to use error clear function by external contact
11	Setting CHILLER unit address: identical with Chiller address (Channel address) used by DMS
12	Select quiet function level • Quiet function will start in set level when "Perform" command is transmitted. • Level comparison: Level3 > Level2 > Level1
13	Confirm delay for unsecured flow rate when operating: Delay for inspecting no input for pump interlock and unsecured flow rate • Compressor will not operate until water flow is detected.
14	Set when controlling water outlet temperature by installing extra water temperature gauge on water pipe header or tank • External water outlet temperature sensor should be installed on main unit of group (or module when group is not available). • Standard for water outlet temperature depends on external water outlet temperature sensor except when operation pattern is standard control.
15	Setting water law standard • To set room temperature as stnadard, external room temperature sensor should be installed. • Room temperature sensor should be installed on main unit of group (or module when group is not available).
16 ~ 27	Water law control constant: Refer to water law operation graph.
28	Recognition of external control operation ON/OFF • 0 (recognizing usual signal): Constantly inspects ON/OFF status of contact and set operation ON/OFF • 1 (recognizing instant signal): Set operation ON/OFF when contact ON/OFF signal is input (when external contact is consisted of button click)
34	Select to use low temperature function • The function will operate when set simultaneously with product option of module control (Seg23 of installation option 02 = 'E') • Low temperature function: Expands water outlet usage range in Cool/Cool stoarge mode (5 ~ 25 °C → -10 ~ 25 °C) • When using low temperature function, use brine and maintain the concentration under freezing point.

Water law

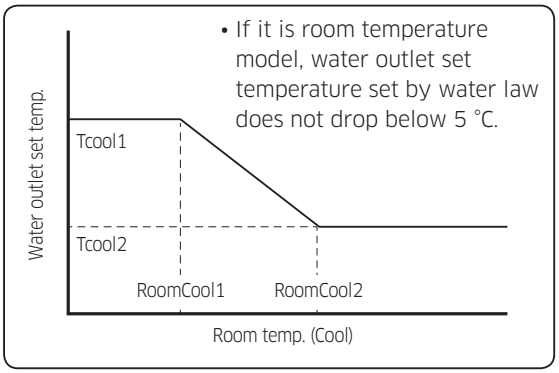
This function allows water outlet temperature to change regarding damand load changes depending on outdoor temperature and room temperature. It can be set to increase energy efficiency and comfort.

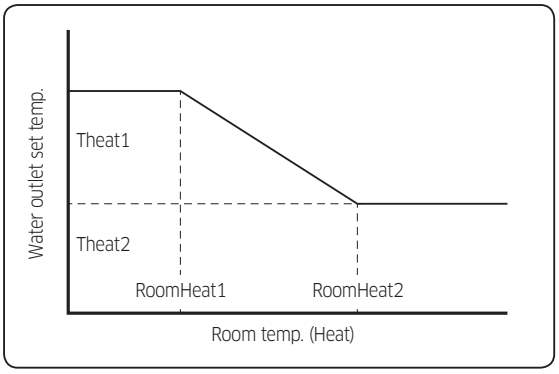
▶ Outdoor temparture standard





▶ Room temperature standard





NOTE

- Refer to page 50 for set values of water outlet set temperature (Tcool1, Tcool2, Theat1, Theat2), outdoor temperature (AirCool1, AirCool2, AirHeat1, AirHeat2), and room temperature (RoomCool1, RoomCool2, RoomHeat1, RoomHeat2) in the hydro controller option table No.15 ~ 27.

Setting key function

MICOM version display

▶ Press and hold K3 and K5 for 3 seconds to enter the view mode.

▶ Press K3 to change view mode in order of the table.

▶ **Cancelling view mode display**

- Press and hold K3 for 3 seconds.

	SEG1	SEG2	SEG3	SEG4	SEG5	SEG6	Remarks	Data Source
Address setting mode	0	1	0	1	1	2	Group address → 01 Module address → 01 Chiller address (Channel address) → 12	Hydro controller
Main MICOM version	M	n	1	5	1	1	ex) ver 151101 → 1511	Inverter controller
Hub MICOM version	H	b	1	3	0	2	ex) ver 130228 → 1302	Inverter controller
Inverter 1 version	I	1	1	3	0	2	ex) ver 130228 → 1302	Inverter controller
Inverter 2 version	I	2	1	3	0	2	ex) ver 130228 → 1302	Inverter controller
Fan 1 version	F	1	1	3	0	2	ex) ver 130228 → 1302	Inverter controller
Fan 2 version	F	2	1	3	0	2	ex) ver 130228 → 1302	Inverter controller
EEP version	E	P	1	5	1	1	ex) ver 151101 → 1511	Inverter controller
Hydro version	H	d	1	5	1	1	ex) ver 151101 → 1511	Hydro controller

⚠ CAUTION

• Do not change settings for the unit by users.

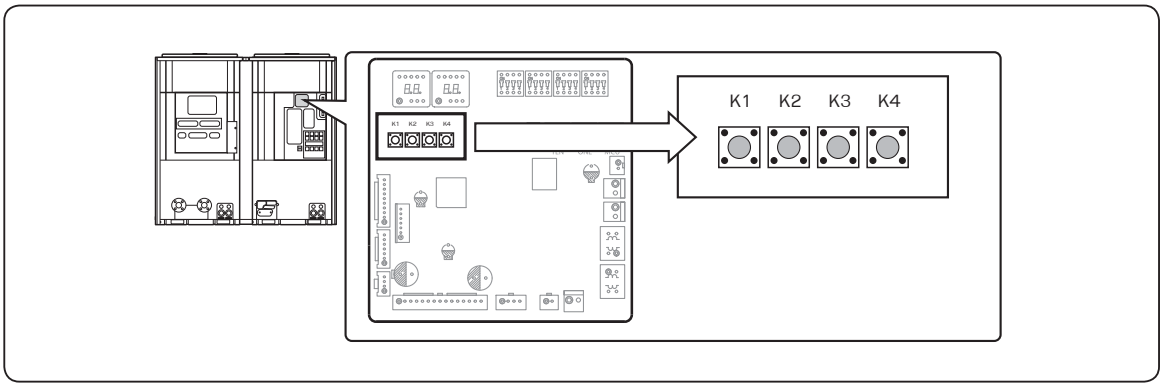
- Electrical wiring may be necessary. It may cause product malfunction if the option is not matching auxiliary equipment.
- Contact the merchandise or service center to change the setting.

Setting inverter controller option

Basic segment display

Step	Display contents	Display			
		SEG1	SEG2	SEG3	SEG4
At initial power supply	Checking segment display	8	8	8	8
Setting communication (Addressing)	-	A	d	0	1
After communication setting (usual occasion)	Transmit/Reception address	Hydro controller: A	Hydro controller: 0	0	0

Setting inverter controller option switch



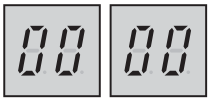
Setting key function

Installing and setting the option with tact switch and functions

1 Press and hold K2 for 3 seconds. (Only available when the operation is stopped)

▶ The display will show the following.

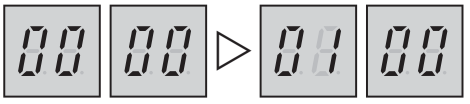
▶ If you have set the Emergency operation for compressor malfunction, 1 or 2 will be displayed on Seg 4.



- Seg 1 and Seg 2 will display the number for selected option.
- Seg 3 and Seg 4 will display the number for set value of the selected option.

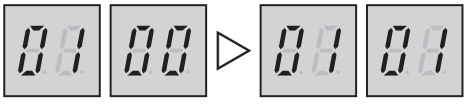
2 If you have entered option setting, you can shortly press the K1 switch to change the value of the Seg 1 and Seg 2 to select desired option.

▶ Refer to the table for the Seg number of the function for each option.



3 If you have selected desired option, you can shortly press the K2 switch to change the value of the Seg 3 and Seg 4 to change the functional setting for the selected option.

▶ Refer to the table for the Seg number of the function for each option.



4 After selecting the function for options, press and hold the K2 switch for 2 seconds. Entire 7-segment will blink to begin tracking mode and value of the option will be be saved. If you do not end the setting mode properly, option will not be saved.

Option item	Input unit	SEG1	SEG2	SEG3	SEG4	Function of the option	Remarks
Emergency operation for compressor malfunction	Individual	0	0	0	0	Disabled	E560 will occur when all the compressors are set as malfunction state.
				0	1	Set compressor 1 as malfunction state	
				0	2	Set compressor 2 as malfunction state	
Unused option	Main	0	1	0	0	Unused option	
Unused option	Main	0	2	0	0	Unused option	
Unused option	Individual	0	3	0	0	Unused option	
Oil collection interval	Main	0	4	0	0	Factory default	
				0	1	Shorten the interval by 1/2	
Temperature to trigger defrost operation	Main	0	5	0	0	Factory default	
				0	1	Apply setting when the product is being installed in humid area such as near river or lake	

Option item	Input unit	SEG1	SEG2	SEG3	SEG4	Function of the option	Remarks
Outdoor unit fan speed correction	Individual	0	6	0	0	Factory default	
				0	1	Increase fan speed	Increase the outdoor unit fan speed to maximum value
Unused option	Main	0	7	0	0	Unused option	
Unused option	Main	0	8	0	0	Unused option	
Unused option	Main	0	9	0	0	Unused option	
Unused option	Main	1	0	0	0	Unused option	
Unused option	Main	1	1	0	0	Unused option	
Unused option	Main	1	2	0	0	Unused option	
Unused option	Main	1	3	0	0	Unused option	
Forced fan function Note1)	Main	1	4	0	0	Enabled (Factory default)	During snow accumulation , the fan may spin even when the unit is not in operation
				0	1	Disabled	
Unused option	Main	1	5	0	0	Unused option	
Unused option	Main	1	6	0	0	Unused option	
Unused option	Main	1	7	0	0	Unused option	
Maximum cooling capacity restriction Note2)	Main	1	8	0	0	Enabled	
				0	1	Disabled	

Note1) Forced fan function: Operates fan periodically to prevent show compiling on the fan while the product is stopped

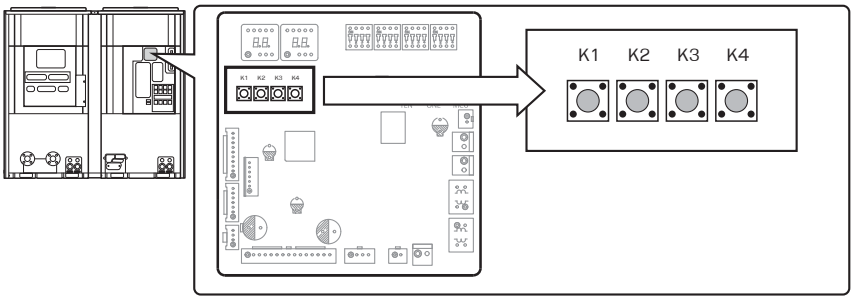
Note2) Maximum cooling capacity restriction: Limits operation capacity of compressor according to load

NOTE

- During option setting, you may press and hold the K1 for 3 seconds to reset the value to previous setting.
- If you want to restore the setting to factory default setting, press and hold the K4 for 3 seconds while you are in the option setting mode.
  - If you press and hold the K4 for 3 seconds, setting will be restored to factory default setting but the setting is not saved. Press and hold the K2 for 3 seconds and when the 7-Segment enters tracking mode, setting will be saved.

Setting key function

Setting key operation and checking the view mode with tact switch



K1 (Number of press)	KEY operation	Display on 7-Segment
1 time	Refrigerant charging in Heating mode	H1
2 times	Trial operation in Heating mode	H2
3 times	Refrigerant discharging in Heating mode	H31
4 times	Disuse	H32
5 times	Disuse	H33
6 times	Disuse	H34
7 times	Vacuum	H41
8 times	Disuse	H42
9 times	Disuse	H43
10 times	Disuse	H44
11 times	Disuse	H4A
12 times	End KEY operation	-

K2 (Number of press)	KEY operation	Display on 7-Segment
1 time	Refrigerant charging in Cooling mode	H5
2 times	Trial operation in Cooling mode	H6
3 times	Pump down all units in Cooling mode	H7
4 times	Auto trial operation	H8
5 times	Checking the amount of refrigerant	H9 X X (Display of last two digits may differ depending on the progress)
6 times	Discharge mode of DC link voltage	HA
7 times	Forced defrost operation	Hb
8 times	Forced oil collection	Hc
9 times	Inverter compressor 1 check	Hd

K2 (Number of press)	KEY operation	Display on 7-Segment
10 times	Inverter compressor 2 check	AE88
11 times	Fan 1 check	AF88
12 times	Fan 2 check	AG88
13 times	End KEY operation	-

▶ To use key operating function for service and maintenance when installing module/group, set as main control or cancel in module/group.

▶ During Discharging mode, voltage of Inv1 and Inv2 will be displayed alternately.

▶ Even when the power is off, it is dangerous when you come in contact with inverter PCB, fan PCB since high pressure DC voltage is charged to those parts.

▶ When replacing or repairing the PCB, cut-off the power and wait until the DC voltage is discharged before replacing/repairing them.

- Wait for more than 15 minutes to allow those parts to be fully discharged.

▶ When there is error, Discharge mode of DC link voltage may not have been effective. Especially when E464 and E364 error is displayed, power element might be damaged so do not use the Discharge mode of DC link voltage.

K3 (Number of press)	KEY operation	Display on 7-Segment
1 time	Intialize (Reset) operation	Same as initial state

K4 (Number of press)	Display contents	Display	
		SEG1	SEG2, 3, 4
1 time	Capacity depending on horsepower	1	AG042K✳✳✳ → 0, 1, 5 AG056K✳✳✳ → 0, 2, 0 AG070K✳✳✳ → 0, 2, 5
2 times	Order frequency (Compressor 1)	2	120 Hz → 1, 2, 0
3 times	Order frequency (Compressor 2)	3	120 Hz → 1, 2, 0
4 times	High pressure (MPa)	4	1.52 MPa → 1, 5, 2
5 times	Low pressure (MPa)	5	0.43 MPa → 0, 4, 3
6 times	Discharge temperature (Compressor 1)	6	87 ℃→ 0, 8, 7
7 times	Discharge temperature (Compressor 2)	7	87 ℃ → 0, 8, 7
8 times	IPM temperature (Compressor 1)	8	87 ℃ → 0, 8, 7
9 times	IPM temperature (Compressor 2)	9	87 ℃ → 0, 8, 7
10 times	CT sensor value (Compressor 1)	A	2 A → 0, 2, 0
11 times	CT sensor value (Compressor 2)	B	2 A → 0, 2, 0
12 times	Suction 1 temperature	C	-42 ℃ → -, 4, 2
13 times	COND Out temperature	D	-42 ℃ → -, 4, 2
14 times	Temperature of liquid pipe	E	-42 ℃ → -, 4, 2
15 times	TOP temperature (Compressor 1)	F	-42 ℃ → -, 4, 2
16 times	TOP temperature (Compressor 2)	G	-42 ℃ → -, 4, 2
17 times	Outdoor temperature	H	-42 ℃ → -, 4, 2
18 times	EVI inlet temperature	I	-42 ℃ → -, 4, 2

Setting key function

K4 (Number of press)	Display contents	Display	
		SEG1	SEG2, 3, 4
19 times	EVI outlet temperature	J	-42 ℃ → -, 4, 2
20 times	Main EEV 1 step	K	2000 steps → 2, 0, 0
21 times	Main EEV 2 step	L	2000 steps → 2, 0, 0
22 times	EVI EEV step	M	300 steps → 3, 0, 0
23 times	H/R EEV step	N	300 steps → 3, 0, 0
24 times	Fan step (SSR or BLDC)	O	13 steps → 0, 1, 3
25 times	Current frequency (Compressor 1)	P	120 Hz → 1, 2, 0
26 times	Current frequency (Compressor 2)	Q	120 Hz → 1, 2, 0
27 times	Suction 2 temperature	R	-42 ℃ → -, 4, 2
28 times	Master indoor unit address	S	Master indoor unit not selected → BLANK, N, D If indoor unit No.1 is selected as the master unit → 0, 0, 1
29 times	Snow accumulation sensor voltage	T	1.80 V → 1, 8, 0
30 times	Total suction temperature	U	-42 ℃ → -, 4, 2

K4 (Number of press) (Press and hold the K4 for 3 seconds to enter the setting)	Display contents	Display			
		Page1	Page2		
1 time	Main version	MAIN	Version (ex.: 1412)		
2 times	Hub version	HUB	Version (ex.: 1412)		
3 times	Inverter compressor 1 check	INV1	Version (ex.: 1412)		
4 times	Inverter compressor 2 check	INV2	Version (ex.: 1412)		
5 times	Fan 1 check	FAN1	Version (ex.: 1412)		
6 times	Fan 2 check	FAN2	Version (ex.: 1412)		
7 times	EEP version	EEP	Version (ex.: 1412)		
8 times	Automatically assigned address of the units	AUTO	Seg1	Seg2	Seg3, 4
			Hydro controller: A	Hydro controller: 0	Address (ex.: 07)
9 times	Manually assigned address of the units	MANU	Seg1	Seg2	Seg3, 4
			Hydro controller: A	Hydro controller: 0	Address (ex.: 15)

Check points after installation

1 Before supplying the power, use DC 500 V insulation resistance tester to measure the power terminal and the product grounding.

▶ 3 phase 4 wires 380 ~ 415 V: R, S, T, N / Single phase: L, N

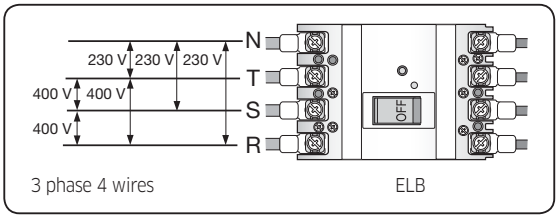
▶ Measurement should be over 30 MΩ.

2 Before supplying the power, use a voltmeter and phase tester to check the voltage and the phase.

▶ 3 phase 4 wires 380 ~ 415 V: 380 ~ 415 V between wires (R-S, S-T, T-R), 220 ~ 240 V between phases (R-N, S-N, T-N)

⚠ CAUTION

- Do not measure the communication terminal as the communication circuit of it can be damaged.
- Use common circuit tester on communication terminal for open/short circuit.



3 When N phase is not correctly connected to R, S and T phase, over-voltage protection control will be in effect and it will cut-off the power of the PCB. Check the power cable connection of the N phase if the PCB is not turning on.

4 Check the following after the installation is completed.

Installation work	• Have you checked the external surface and the inside of the product? • Is there any possibility of short circuit due to the heat generation of the product? • Is the place well-ventilated and ensures service clearance? • Is the product fixed securely to withstand the external force?
Water pipe work	• Have you completed the drain test? • Is the drain pipe properly insulated? • Is the strainer (50 Mesh) properly installed at inlet of plate type heat exchanger?
Electrical wiring work	• Are the power cable and communication cable tightened firmly on the terminal block within the rated torque recommendations? • Have you checked for cross connection of the power and communication cables? • Have you performed the grounding work 3 to the product? • Did you make sure to use 2-core cable (not multi-core cable) for the communication cable? • Is the length of the wire within allowed range? • Is the wiring route correct?
Option	• When there's a possibility of vibration generated from the product, check if the vibration-isolation frame is correctly installed.

Check points after installation

Trial operation

Before the trial operation, check the following list to protect the product.

⚠ PRECAUTIONS BEFORE TRIAL OPERATION

- When the outdoor temperature is low, turn on the main power 6 hours before starting the operation.
  - If you start the operation immediately after turning on the main power, it may cause serious damage to the part within the product.
- Do not touch the refrigerant pipe during or right after the operation.
  - Refrigerant pipe may be hot or cold during or right after the operation depending on the status of the refrigerant which flows through the refrigerant pipe, compressor and other parts of the refrigerant cycle. If you touch the pipe during or right after the operation, you may get burns or frostbite.
- Do not operate the product with its panel or protection nets off.
  - There is risk of personal injury from the parts that rotates, heated or with the high voltage.
- Do not turn off the main power immediately after stopping the operation.
  - Wait for at least 5 minutes before turning off the main power. If not, water leakage or other problems may occur.
- Trial operation should be done after installation and hydro controller option setting are finished.
- Purge air with water within the water system.

▶ Is the power correctly connected?
  - Power specification is 3 phase 4 wires 380 ~ 415 V depending on the model.

▶ Is the grounding work properly done?

▶ Is the pump interlock circuit connected?
  - Only applied to non-pump models

▶ Is the strainer (50 Mesh) properly installed at water inlet?

▶ Is water flowing in water system?
  - Make sure water in the water system flows properly before supplying the power.
  - Make sure if concentration of brine is maintained properly due to the usage temperature range when operating cool storage.
  - Be aware of supplying power and controlling valves on water pipe system due to pump operation during winter time for freeze prevention when the outdoor temperature drops below zero. Countermeasure to prevent water pipe system and heat exchanger from freezing due to low external temperature when not operating is necessary.
    ex) Using brine according to using temperature, pump operation, heater

▶ Is the pump full?
  - Open the water supply valve and make water system full. Vent air at the same time.
  - Check if water is full by opening air vent valve inside of the product or side of load heat exchanger (such as fan coil unit) and close the air vent valve.
  - Refer to page 22 for place of air vent valve and drain plug.

▶ Is water pipe work (strainer, air vent valve, automatic supply valve, place of expansion vessel, etc.) done properly?

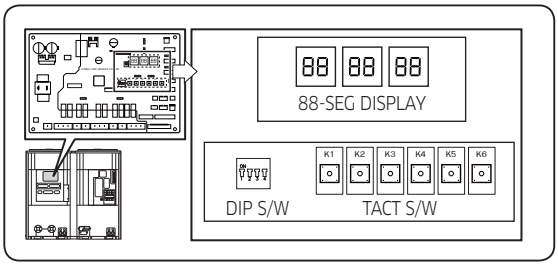
▶ Operate the pump separately after supplying water. Is there no air in water system? Is the flow rate of water system enough for operation?
  - When there is air or insufficient amount of water flowing, it may cause plate type heat exchanger to freeze.
  - Check the flow rate is rated after checking pressure loss of each product.
  - If there is a problem and cannot solve it, stop the trial operation and contact the service center.

▶ Is the strainer in water pipe contaminated after the trial operation?

- Clean the strainer if contaminated.

▶ Is minimum amount of circulating water (over 50 % of rated flow rate) acquired?

Trial operation for each CHILLER unit



1 Turn on the product.

2 Check if DIP S/W 1 is on.

DIP S/W	No.1	
	On	Off
	Main control	Remote control

NOTE

• When set as main control, the product do not receive any control of external contact, module control, and upper controller, and any orders from module/group control.
In order to use the module control after a trial operation, turn off (downward) the DIP S/W 1.

3 Water side pressure sensor calibration

▶ Sensor calibration operates for more precise water rate inspection.

▶ It operates in main control only.

▶ Water flow in the system must not exist when calibrating sensor.

▶ Press and hold K4 and K6 for 3 seconds to start the calibration when operation of the product and the pump is off.

Seg1	Seg2	Seg3	Seg4	Seg5	Seg6
K		C	A	L	I

▶ The operation will finish automatically within 30 seconds.

▶ The product and the pump cannot be operated while calibrating the pressure difference.

4 Forced fan function removes accumulated snow on the fan. Skip this step if snow is not accumulated.

▶ Press and hold K6 for 3 seconds when operation is off and the fan will operate.

Seg1	Seg2	Seg3	Seg4	Seg5	Seg6
K			F	A	N

▶ During forced fan function, press K6 and the operation will stop.

- If the operation is on during forced fan function, the fan will stop.

5 Forced pump function checks if water flow is normal.

▶ Press and hold K5 for 3 seconds when operation is off and the pump will operate.

Seg1	Seg2	Seg3	Seg4	Seg5	Seg6
K		P	U	M	P

▶ During forced pump function, press K5 and the operation will stop.

- If the operation is on during forced pump function, the pump will stop.

6 Operation mode in main control is selected be cooling/heating switch.

DIP S/W	No.2	
	On	Off
	Cool mode	Heat mode

▶ Operation mode can be changed only when operation is off.

Check points after installation

7 Change the set temperature if necessary in main control.

Default value	Cooling	Heating
	7 ℃	45 ℃

▶ Temperature can be adjusted by K3 and K4.

Set temperature	K3	K4
	0.1 ℃ up	0.1 ℃ down

▶ **Set temperature range**

Set temperature range	Cooling		Heating
	Low	Room	
	- 10 ~ 25 ℃	5 ~ 25 ℃	25 ~ 55 ℃

- Use brine when using in low temperature condition and maintain the concentration.

8 Operation on/off by tact switch is only possible when main control is set.

Operation mode	K1	K2
	Operation ON	Operation OFF

9 Press and hold K5 and K6 for 3 seconds to initialize hydro controller.

• After checking the main control, to use the remote control, be sure to configure the following settings.

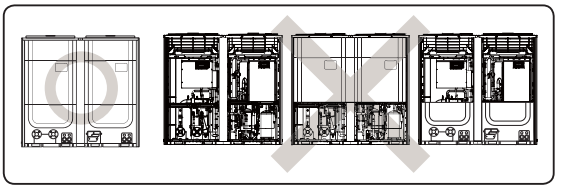
▶ Set the chiller address iin the hydro controller option.

▶ Set the modules for each chiller in service mode of the module control. (The group setting is optional.)

▶ Set the main units for the module and group in service mode of the module control.

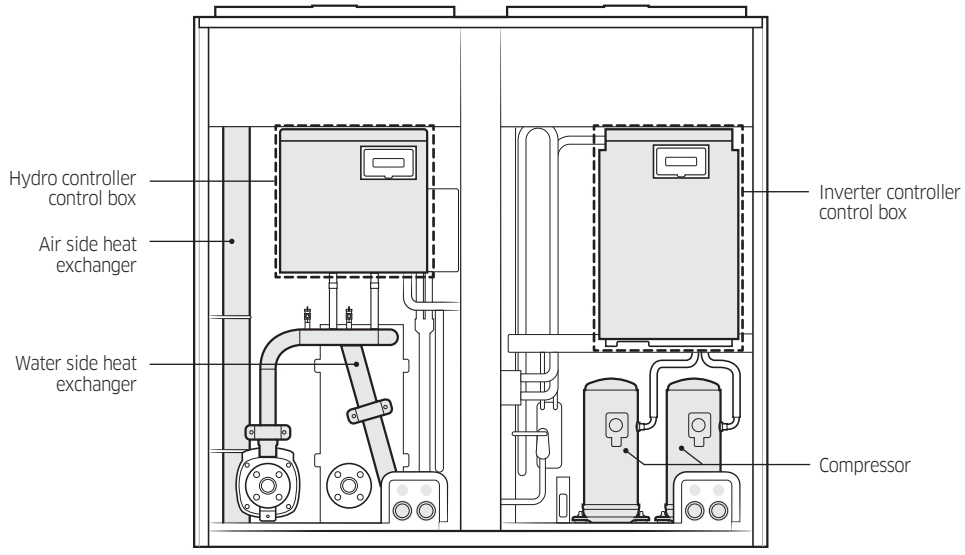
⚠ CAUTION

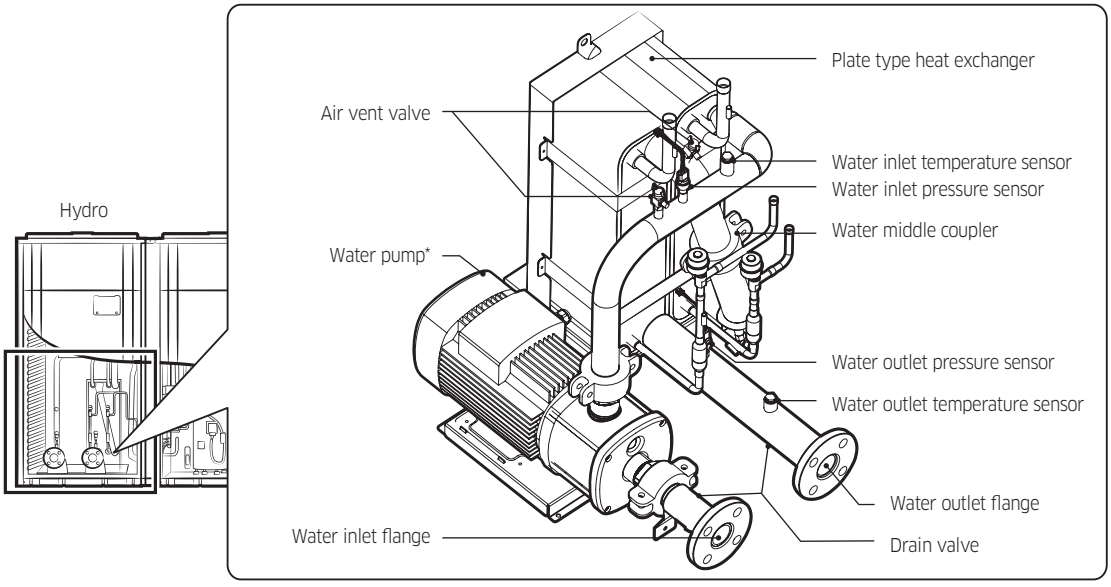
• Make sure to close the top and bottom part of the product cabinet during operation. If you operate the unit with the front cabinet open, it may cause damage to the product and you may not get the precise data from S-NET pro.



Maintenance

Name of the parts

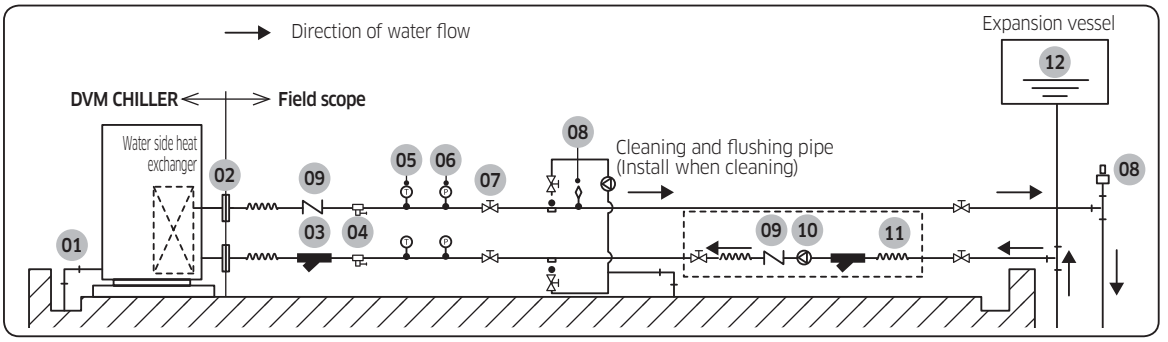




▶ Water pump* is supplied for pump integrated models only.

Maintenance

Water pipe installation



NOTE

• The part shown in the dotted line is an installation example of AG✶✶✶KSVA series (non-pump models).

No.	Name	No.	Name
01	Drain pipe	**07**	Valve
02	Flange	**08**	Air vent valve
03	Strainer	**09**	Check valve
04	Drain valve	**10**	Pump
05	Temperature gauge	**11**	Flexible joint
06	Pressure gauge	**12**	Expansion vessel

- ▶ If water (brine) pipe is not maintained periodically, it may affect the operation and may cause noise, maintenance, and service difficulty.
- ▶ Water (Brine) pipe should be insulated and proofed well. If insulation and proofing is not enough, there may be much heat loss, and also cause frozen damage during winter time.
- ▶ When using indoor units such as fain coil two or more, pipe resistance from the product to heat exchanger should be equal.
- ▶ Install the expansion vessel, that can absorb expansion and contraction of water due to temperature change, and offset the pressure of supply water, at the highest place. Do not install valves between the expansion vessel and the pipe.
- ▶ In case of air inside the pipe cannot be eliminated due to the pipe structure, install automatic air valve at the highest place among pipes.
- ▶ When using expansion vessel or automatic air valve, give 1/250 slant to horizontal pipes.
- ▶ Water or brine throughout the product have to be drained by slopes of pipes and first drain valve. If the product is huge, install drain valves for each main pipes so that draining is easier for winter time maintenance.
- ▶ Install water (brine) pump at inlet of water (brine) pipe, and install strainer (over 50 Mesh) which is able to clean and exchange at pump inlet.
- ▶ Use flexible joint at inlet/outlet of water (brine) pipe to prevent vibration.
- ▶ Install temperature gauge and pressure gauge at inlet/outlet of water (brine) pipe for checking operation, maintenance, and service.

▶ Connect water (brine) pipes to the nearest place of the product by flange, and make the pipe and the product to be separated. Install valve at inlet/outlet of pipes, drain valve at inlet, and air purge valve at outlet of water (brine) pipe.

▶ Maintain the water or brine storage as set standard. If the amount is too low, compressor will be stopped even operated for short time for light load, and repeat operation and stopping. Such operation may result in shortening life of the product and product malfunction due to repetition of compressor operation. Especially, be aware of amount at bypass system if water temperature and capacity control is done by bypass system.

▶ There is a possibility of scale generated on plate type heat exchanger, so periodical chemical cleaning is necessary to remove scale. Install chemical input between valve and the product.

▶ Install auto air valve where air can remain easily in water pipe system.

▶ If the product is stopped for a long time during winter time, or stop the operation for night time, take appropriate countermeasures (water drain, circulating pump operation heater, etc.) to prevent freezing in cold region where outdoor temperature falls below 0 °C . When water pipe freezes, it will cause damage to the plate type heat exchanger and therefore preventive measure must be taken according to the situation.

▶ Water maintenance standard for chilled/heating water is circulating water. If the supplied water is drained out without circulation, it may cause corrosion on its passage.

- Refer to page 68 for water maintenance standard.

▶ Water storage must be used within the range. 50 ~ 200 % of rated water storage can be used, but using rated water storage is recommended.

- If water storage is low, it may cause performance decrease due to scale accumulation, thermo operation to prevent freezing, and gas leakage due to holes created by corrosion.
- If water storage is over, it may cause corrosion.

▶ Do not let air flow into the circulating water system. If dissolved oxygen increases or foreign substances among the air condenses in water, corrosion may occur.

▶ Be aware of cavitation as checking flow speed of water system, installed place of expansion vessel, and air purging place in the middle of pipes.

▶ In case of semi-closed chilled/heating water system with thermal storage, exchange water (once in 1 ~ 2 years), clean and maintain thermal storage periodically. New concrete thermal storage may elute foreign substances, so pH of thermal storage water may be over 10. If pH is over the standard, copper may be corroded faster. Exchange the water before it happens. Also if thermal storage is used for a long time, water leakage may occur due to crack.

- Water leakage is not critical to maintaining water. But in case of using sea water or contaminated underground water, corrosion may occur by slime generated by microbe or calcium carbonate.

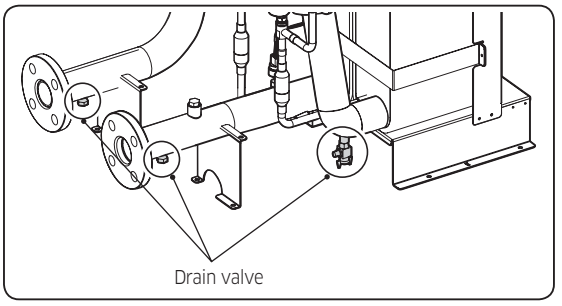
▶ Install flexible joints at water pipes of front and behind side of the product and the pump to prevent vibrations.

⚠ CAUTION

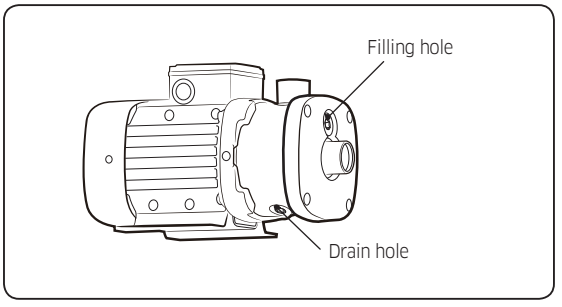
• Be careful not to install inlet/outlet of water pipe reversely. If installed wrong, operation is impossible and may cause product malfunction.

Maintenance

Caution regarding drainage during winter time

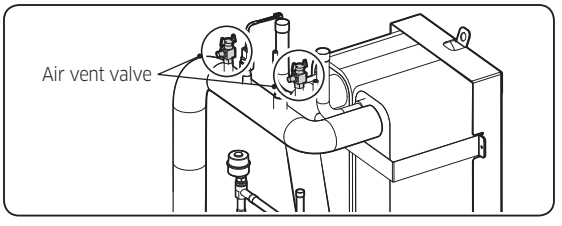


▶ When DVM CHILLER is not operated during winter time, drain all water by opening drain valves in CHILLER shown in figure and drain valves in the pipes.



▶ If the DVM CHILLER has an integrated pump, be sure to also drain all water from the pump by removing its filling and drain hole plugs. (Refer to Using the pump on page 27.)

Air venting



▶ Vent air by opening two air vent valves on inlet and middle of the pipe of water side heat exchanger.
If air venting is not done properly, it is difficult to maintain rated flow rate, and pipe corrosion or noise by remaining oxygen may occur.

▶ When venting air, be aware to prevent water get in to the box.

Water maintenance standard

If chilled/heating water is not maintained by following standard, corrosion and scale accumulation may occur. It may decrease not only the performance of heat exchange, but also cause product malfunction due to heat exchanger damage by freezing. Extra care is necessary, and water should be maintained by expert to keep the water within the standard.

Item		Chilled water system		Heating water system		Effect	
				Low level medium temperature heating gauge			
		Circulation water (Below 20 ℃)	Supply water	Circulation water (Over 20 ℃ below 60 ℃)	Supply water	Corrosion	Forming scale
Basic item	pH (25 ℃)	6.8 ~ 8.0	6.8 ~ 8.0	7.0 ~ 8.0	7.0 ~ 8.0	O	O
	Electric conductivity (mS/m, 25 ℃) {μS/cm, 25 ℃}	Below 40 {Below 400}	Below 30 {Below 300}	Below 30 {Below 300}	Below 30 {Below 300}	O	O
	Chloride ion ($mgCl^-/l$)	Below 50	Below 50	Below 50	Below 50	O	
	Sulfate ion ($mgSO_4^{2-}/l$)	Below 50	Below 50	Below 50	Below 50	O	
Basic item	Acid consumption (pH4.8, $mgCaCO_3/l$)	Below 50	Below 50	Below 50	Below 50		O
	Full hardness ($mgCaCO_3/l$)	Below 70	Below 70	Below 70	Below 70		O
	Calcium hardness ($mgCaCO_3/l$)	Below 50	Below 50	Below 50	Below 50		O
	Ion-like silica ($mgSiO_2/l$)	Below 30	Below 30	Below 30	Below 30		O
Reference item	Iron (mgFe/l)	Below 1.0	Below 0.3	Below 1.0	Below 0.3		O
	Copper (mgCu/l)	Below 1.0	Below 0.1	Below 1.0	Below 0.1	O	
	Sulfide ion (mgS^{2-}/l)	Not detected	Not detected	Not detected	Not detected	O	
	Ammonium ion ($mgNH_4^+/l$)	Below 1.0	Below 0.1	Below 0.3	Below 0.1	O	
	Chlorine residual (mgCl/l)	Below 0.3	Below 0.3	Below 0.25	Below 0.3	O	
	Free carbon ($mgCO_2/l$)	Below 4.0	Below 4.0	Below 0.4	Below 4.0	O	

NOTE

- Circle (O) marks in the chart show the factor relevant to corrosion or water scale.
- When the water temperature is over 40 ˚C, steels without protective coating may corrode when expose to water. Applying corrosion prevention material or degassing can be effective measure to prevent corrosion.
- Circulating water and supply water should satisfy the standard shown in the table.
- Supplied water or make-up water should be supplied by purified water, neutralized water, tap water except softened water, and industrial water.
- 14 items in the table is a typical factor for corrosion and/or water scale.

Maintenance

Maintaining plate type heat exchanger

▶ When the product was not operated for long period of time, check the followings:

- Check the water to see if the water quality is meets the standard.
- Clean the strainer.
- Check to see if there is enough amount of flow rate.
- Check to see if there is any problems on the water pressure, flow rate and the water temperature at inlet/outlet.
- If you are using ground heat source, make sure to check the concentration level of the anti-freeze before the operation to maintain the freezing point at below -8 ℃. (Refer to page 76 for brine freezing point graph.)

▶ Plate type heat exchanger is designed in an impossible way to disassemble part for cleaning. Therefore it has to be cleaned by following methods.

- Check if there is any cleaning hole for chemical cleaning at the inlet water pipe. For water scale cleaning use diluted (down to 5 %) citric acid, oxalic acid, acetic acid, phosphoric acid. However, do not use a cleaning solution containing hydrochloric acid, sulfuric acid or nitric acid since they are highly corrosive.
- Check if there is valve on the inlet/outlet of the plate type heat exchanger.
- Connect an exclusive pipe for cleaning to the inlet/outlet pipe of the plate type heat exchanger and fill the detergent at the temperature of 50 ~ 60˚ C and circulate the detergent for about 2 ~ 5 hours. Cleaning time can be different depending on the temperature of detergent or degree of water scale. Judge the degree of water scale removal by the color of water detergent.
- After cleaning, discharge the detergent within the plate type heat exchanger and fill the plate type heat exchanger with a water mixed with 1 ~ 2 % of sodium hydroxide (NaOH) or sodium bicarbonate ($NaHCO_3$). Circulate the water mixture for 15 ~ 20 minutes to neutralize.
- After neutralizing the pipes, rinse the plate type heat exchanger with distilled water.
- If you are using the detergent sold at local retail stores, make sure that it doesn't cause any corrosion to the stainless steel or copper.
- For detail information on cleaning method (and proper use of detergent), contact the detergent manufacturer.

▶ After cleaning, check to see if it is possible to operate normally.

Stopping during winter time

▶ Do not cut-off the power supply.

- This may result in water leakage or pipe damage because pump will not operate to prevent freezing. Do not cut-off the power supply for the pump.

▶ Stop the operation with water pipe valve opened.

- Stop the operation with valve opened to make water circulate when the pump operates. If the water does not circulate, it may freeze and cause product malfunction due to heat generated on pump.

⚠ CAUTION

• When outdoor temperature drops below zero during winter, do not let water left in water pipe and water side heat exchanger. It may cause plate type heat exchanger freeze and get damage.

- Drain water or exchange to anti-freeze.

Stopping for a long time

▶ Drain water in water pipe and water side heat exchanger.

- Open drain valves on water pipe system and drain plug in DVM CHILLER when draining water. (Refer to page 66 for place of drain plug.)
- Product may get damage by water inside the water pipe and water side heat exchanger freezing during winter time.
- To prevent corrosion inside the pipe, dry by air blowing or charge inert gas. Contact the merchandise or service center for further details.
- For pump integrated models, drain water in the pump also.

▶ Cut-off the power supply after draining water.

- Pump may operate for protection even there is no water when power is supplying, and it may cause pump malfunction.

Maintenance

Inspection for normal operation

Item	Standard	Number of inspection	Side effects when inadequate
Forced drainage	Have you set the electric conductivity value properly?	Once a week	Corrosion, water scale or slime may occur
	Is electric conductivity sensor working properly?		
	Is auto valve working properly?		
Chilled water and water quality inspection	Is chilled water corrupted or have floating particles?	Once a month	Corrosion, water scale or slime may occur
	Is there rust water?		
	Is there any red tides?		
	Is the concentration of the anti-freeze being maintained?	Once a year (before winter season)	-
Chilled water system device	Have you set the make-up water supply value properly?	Once a day	Operation problem at the cooling tower or intensified water concentration
	Is there any excess or deficiency of the make-up water?		
	Is the water level within the tank normal for operation?		

Chilled/Heating water flow rate range

If the flow rate of chilled/heating water exceeds optimal range, stop the operation until cause is taken care before re-start the operation.

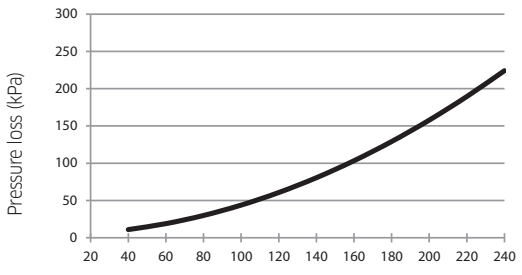
Item	Water flow rate Working range (L/min)					
	Rated condition			Working range		
Model	AG042KSV✱✱✱	AG056KSV✱✱✱	AG070KSV✱✱✱	AG042KSV✱✱✱	AG056KSV✱✱✱	AG070KSV✱✱✱
Cooling/ Heating	120/120	160/160	186/200	60 ~ 240	80 ~ 320	93 ~ 372 / 100 ~ 400

Chilled water management

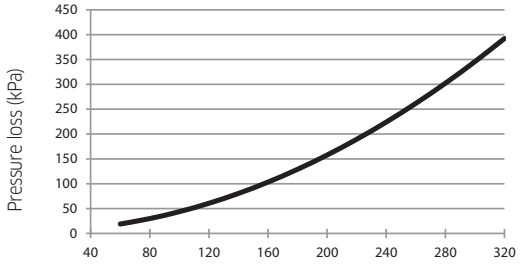
If the chilled water storage exceeds optimal range, stop the operation until cause is taken care before re-start the operation.

▶ Range: 50 ~ 200 % of rated flow rate

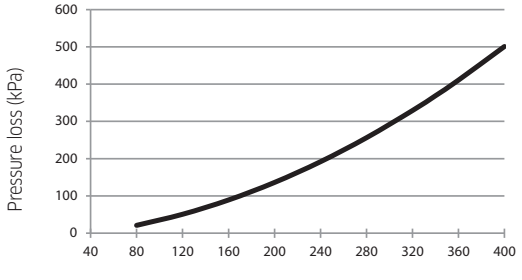
AG042KSVA✳✳



AG056KSVA✳✳

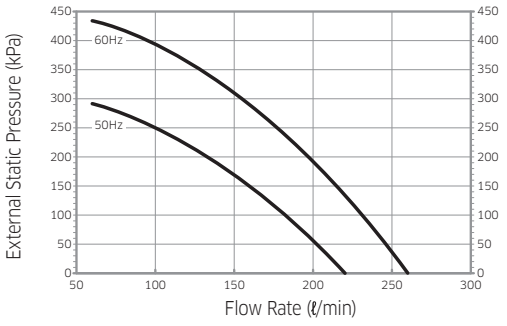


AG070KSVA✳✳

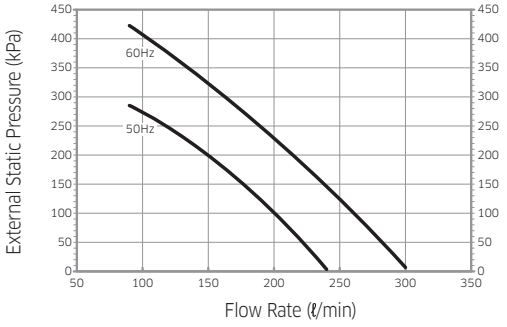


When using a pump integrated model, be sure to set the external static pressure by referring to the chart below so that the flow rate is within 50 to 200% of its rated value.

AG042KSVG✳✳, AG056KSVG✳✳



AG070KSVG✳✳



- Be sure to determine the flow rate by referencing the P-Q curve.
- If the determined flow rate is any value that deviates from the P-Q curve, it may cause failures or malfunction.

Maintenance

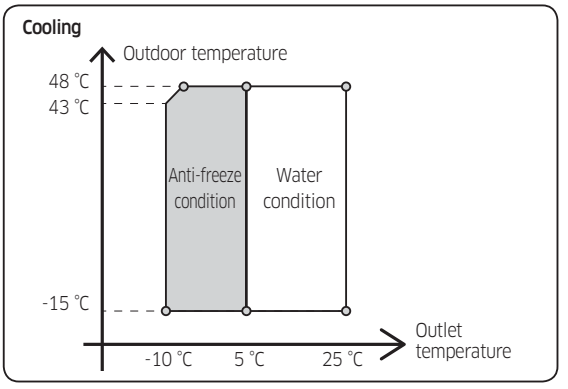
Water temperature range

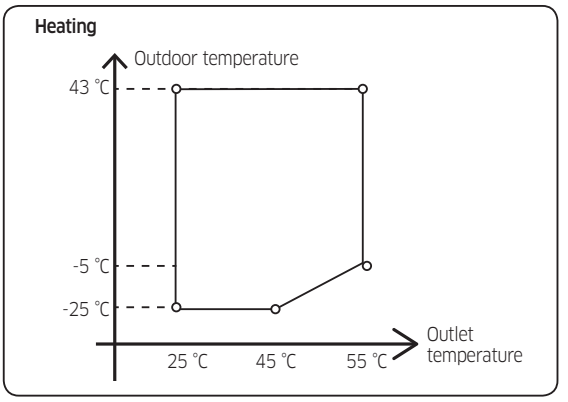
Operate the product within the following range. For product protection, compressor operation may be limited.

Classification	Rated condition (inlet/ outlet)	Range (water outlet)	
		Water	Brine
Cooling	12/7 ℃	5 ℃ ~ 25 ℃	-10 ℃ ~ 25 ℃
Heating	40/45 ℃	25 ℃ ~ 55 ℃	

- ▶ When using in brine condition in cooling mode, maintain concentration of brine properly. Also, the product should be set in low temperature usage. (Refer to page 46 for how to set hydro controller option.)
- ▶ Apply freeze prevention (such as pump operation, inserting brine, using brine, etc.) to use water that is not brine when outdoor temperature is below zero.
- ▶ To use low temperature function, hydro controller option and Seg23 "E" should be all set.
- ▶ Anti-freeze standard data
  - Make sure if brine is charged enough in water system.

Water outlet temperature, ℃	- 10 ~ - 5	- 5 ~ 0	0 ~ 2	2 ~ 5	5 ~ 20
Ethylene glycol, %	40	30	20	10	0
Propylene glycol, %	40	35	25	15	0
Minimum water outlet temperature, ℃	-10	-5	0	2	5





Freeze prevention

Necessity of freeze prevention

When outdoor temperature is low or in winter time, water in pump and water pipe may freeze and may cause damage to the product and the pipe. Insulate the pump and pipe to prevent freezing. If there are possibility of freezing, operate the pump while the product is off and drain water inside the pump and water pipe.

Freeze prevention of water pipe

Follow the list if draining water inside the pump and water pipe is difficult.

Using brine

- Use ethylene glycol, propylene glycol, etc. for brine. Ethylene glycol is inexpensive, and used for general industry, and propylene glycol is used for food industry since it is nontoxic.
- All the circulating water (brine) and additives (corrosion inhibitor, bacteria inhibitor, foam inhibitors) must be used after consulting with the business ordering party or supervisor for its impact on environment, toxicity, corrosiveness, harmfulness to human and management plan.
- Contractor must take extra care regarding on handling, packaging and transporting regulations and procedure of the brine.
- Do not use the brine that is harmful to humans or equipment. In addition, brine must be injected to the pipe according to specification and concentration level that is actually required by system. (Do not directly inject undiluted solution, consult business ordering party or supervisor when undiluted solution was brought to the site)
- Before injecting the brine, evacuate any air that may remain in the system and apply pressure to check for leakage.
- User must monitor and manage periodically to maintain initially designed concentration level of brine. If the concentration level decrease due to leakage or over certain period of time, it may cause due to pipe to freeze and burst.

Selecting brine

When using brine, refer to the following list and select which do not damage the product.

- Effective freezing prevent
- Not corroding metal
- Not permeating into material
- Not generating scale
- Not damaging mechanical seal of the pump
- No risk of fire
- Long duration of freezing prevent effect
- Effective heat exchange performance
- Less toxic

Usage and precaution of brine

- Drain water inside the water system and wash it thoroughly.
- Put clean water in undiluted brine, and then put brine to rated concentration. If concentration is too high, performance of pump may decrease due to viscosity and proportion. The concentration of brine is measured and maintained by a densitometer.
- Be careful of leakage, and add more brine if leakage occurred.
- Brine should be maintained or exchanged periodically (before winter time every year) considering corrosion resistance decrease and water contamination.
- Do not use ethylene glycol for supplying or food.
- Check the concentration before the winter time to prevent freezing.

Type and specification of brine

For low temperature CHILLER, use glycol type brine such as ethylene glycol and propylene glycol. If using other types of brine (chloride type or alcohol type), consult with brine manufacturer and check if it is usable. Maintain the concentration periodically by using densitometer to prevent freezing.

Glycol type brine

- Glycol type brine has less corrosiveness like alcohol type, and also it is less explosive, flammable, and toxic.

Chloride type brine

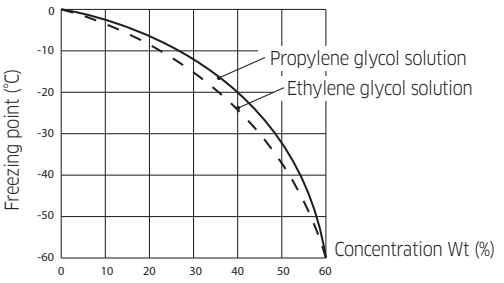
- Chloride type brine such as calcium chloride and magnesium chloride is corrosive to metal. If using chloride type brine, countermeasure for corrosion is necessary. Take appropriate countermeasure such as adding anti-corrosive, maintaining pH and concentration, and closing brine system.

Alcohol type brine

- Alcohol type brine is less corrosive to metal but volatile, and the vapor is explosive and flammable.

Maintenance

Standard data for status of Anti-freeze (Based on temperature of anti-freeze at 15 ℃)

Type of anti-freeze (Based on 15 ℃)	Concentration [% Wt.]	Freezing point (℃)	Brine freezing point graph
Ethylene glycol	10	-3.2	
	20	-7.8	
	30	-14.1	
	40	-22.3	
	42	-25	
Propylene glycol	10	-3.3	
	20	-7.1	
	30	-12.7	
	40	-21.1	
	45	-25	

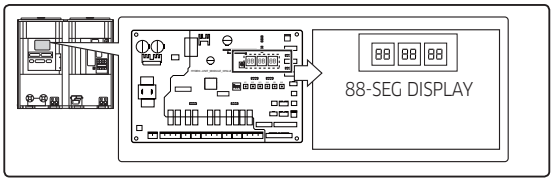
Performance correction factor according to brine concentration

Anti-freeze	Description	10 %	20 %	30 %	40 %	50 %
Ethylene glycol	Cooling capacity	0.996	0.991	0.987	0.983	0.979
	Heating capacity	0.993	0.985	0.977	0.969	0.961
	Pressure loss	1.024	1.068	1.124	1.188	1.263
Propylene glycol	Cooling capacity	0.993	0.987	0.980	0.974	0.968
	Heating capacity	0.966	0.973	0.960	0.948	0.935
	Pressure loss	1.040	1.098	1.174	1.273	1.405

The water flow rate that appears on the module control and DMS is optimized based on the water.
In order to use brine, the water flow rate may appear larger than the actual value.

Error display

► Segment will display error code (4 digit).



Display	Description
101	Communication error between hydro controller and inverter controller (If not received for 3 minutes from outdoor unit)
108	Error due to repeated setting address
109	Communication error of hydro controller address not complete
122	Error on hydro Evap in Sensor (Open/Short)
123	Error on hydro Evap out Sensor (Open/Short)
128	Error on hydro Evap in Sensor (Detached)
129	Error on hydro Evap out sensor (Detached)
144	Error on hydro pipe temperature 2 sensor
145	Error on hydro EVA OUT 2 sensor
151	Hydro EEV open error (2nd detection)
152	Error due to closed EEV of hydro (2nd detection)
153	Error on hydro floating switch (2nd detection)
162	Inverter controller EEPROM error
163	Hydro controller EEPROM option setting error
198	Error due to disconnected thermal fuse (Temperature of terminal block increases.)
201	Communication error between hydro controller and inverter controller
202	Communication error between hydro controller and inverter controller (When there is no response from indoor units after tracking is completed)
203	Communication error of Main and sub MICOM of inverter controller
205	Communication error of inverter controller main PBA - sub PBA (Sub PBA communication all not received)
206	Communication error of inverter controller main PBA - sub PBA (Sub PBA communication partially not received) Specification of PBA display for actual communication error C001: Hub PCB communication error C002: Fan PCB communication error C003: INV1 communication error C004: INV2 communication error
221	Error on outdoor temperature sensor (Short or Open)
231	Error on COND outlet sensor (Short or Open)
241	COND outlet sensor is detached
251	Error on discharge temperature of COMP1 (Short or Open)
257	Error on discharge temperature of COMP2 (Short or Open)
262	Discharge temperature sensor of COMP1 is detached
263	Discharge temperature sensor of COMP2 is detached
266	Top1 temperature sensor is detached
267	Top2 temperature sensor is detached
269	Suction temperature sensor is detached
270	Suction 2 temperature sensor is detached
276	Error on Top 1 temperature sensor (Short or Open)

Display	Description
277	Error on Top 2 temperature sensor (Short or Open)
291	Error on high pressure sensor (Short or Open)
296	Error on low pressure sensor (Short or Open)
308	Error on Suction sensor (Short or Open)
311	Error on double layer pipe sensor (Short or Open)
321	EVI inlet temperature
322	EVI outlet temperature
323	Error on Suction 2 sensor (Short or Open)
326	Error on Total suction sensor (Short or Open)
346	Operation failure of Fan2
347	Unconnected error of Fan2
348	Lock error on Fan2
353	Overheated motor of Fan2
355	Error due to overheated IPM of Fan2
361	INV2 Comp starting error
364	INV2 DC Peak error
365	INV2 Comp V limit error
366	INV2 DC-Link voltage under/over error
367	INV2 Comp Rotation error
368	Error due to full current of INV2
369	INV2 DC Link sensor error
371	INV2 DataFlash error
374	INV2 IPM Heat Sink error
378	Error due to overcurrent of Fan2
383	Error due to special overcurrent of Fan2

Display	Description
385	INV2 input current error
386	Error due to over voltage/low voltage of Fan2
387	Hall IC error of Fan2
389	Outdoor fan2 overload stop
391	Fan2 Date Flash error
393	Fan2 DC output sensor error
396	Fan2 DC Link voltage sensor error
399	Heat sink temperature sensor error of Fan2
400	INV2 IPM OverHeat error
407	COMP down due to high pressure
410	COMP down due to low pressure
416	COMP down due to discharge temperature
425	Phase reversal or phase failure
428	COMP down due to compressor not controlled
438	EVI EEV open error
439	Error due to refrigerant leakage (Examine when system off)
440	Restriction of heating operation by outdoor temperature
441	Restriction of cooling operation by outdoor temperature
442	Restriction of heating charging operation by outdoor temperature
443	Operation prohibited due to low pressure
445	Error due to self-diagnosis of CCH
446	Operation failure of Fan1
447	Unconnected error of Fan1
448	Lock error on Fan1

Display	Description
452	Instant blackout error
453	Overheated motor of Fan1
455	Error due to overheated IPM of Fan1
461	INV1 Comp starting error
462	Compressor stop due to full current control or error due to low current on CT2
464	INV1 DC Peak error
465	INV1 Comp Vlimit error
466	INV1 DC-Link voltage under/over error
467	INV1 Comp Rotation error
468	Error due to full current of INV1
469	INV1 DC Link sensor error
471	INV1 Date Flash error
474	INV1 IPM Heat Sink error
478	Error due to overcurrent of Fan1
483	Error due to special overcurrent of Fan1
485	INV1 input current error
486	Error due to over voltage/low voltage of Fan1
487	Hall IC error of Fan1
489	Outdoor fan1 overload stop
491	Fan1 DataFlash error
493	Fan1 DC output sensor error
496	Fan1 DC Link voltage sensor error
499	Heat sink temperature sensor error of Fan1
500	INV1 IPM OverHeat error
560	Switch option setting error
901	Hydro inlet temperature sensor (Tw1) Short/ Open

Display	Description
902	Hydro outlet temperature sensor (Tw2) Short/Open
907	Frozen damage error
908	Error when freeze prevention Comp Off occurs 4 times
909	Error when freeze prevention Comp Off occurs 3 times
910	Error on hydro outlet temperature (Tw2) sensor (Detached)
911	Flow switch option error
913	Flow switch error (E911) occurs 6 times
918	Error on pump magnetic switch malfunction
971	External sensor (WaterOut Setting Device/ WaterLaw Room Temp sensor) is open/ Short
972	Water inlet side pressure sensor is open/ short
973	Water outlet side pressure sensor is open/ short
974	External WaterOut sensor is open/short

Maintenance

Error history display

▶ Press and hold K3 and K6 for 3 seconds to enter the view mode.

▶ Press K3 to change view mode in order of the table.

▶ **Cancelling view mode display**

- Press and hold K3 for 3 seconds.

	SEG1	SEG2	SEG3	SEG4	SEG5	SEG6	Remarks
Currently occurred	E	1		4	1	0	ex) E410
Currently occurred	E	2		9	0	7	ex) E907
Currently occurred	E	3		9	1	1	ex) E911
Currently occurred	E	4		9	0	7	ex) E907
Currently occurred	E	5		9	1	1	ex) E911

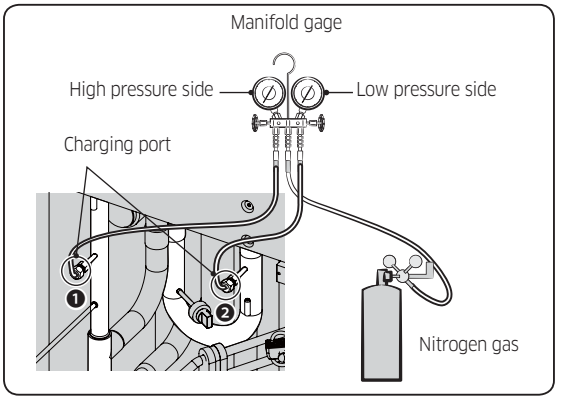
Air tightness test and vacuuming

Air tightness test

▶ Use tools for R-410A to prevent the inflow of foreign substances and resist against the internal pressure.

▶ Do not remove the core of charging port.

▶ Use nitrogen gas for air tightness test.



❶ High pressure when cooling/Low pressure when heating

❷ Low pressure when cooling/heating

Apply nitrogen gas to the each charging port at pressure of 4.1 MPa

- Connect the manifold gauge to each charging port. If you apply pressure at more than 4.1 MPa, pipes may get damaged. Apply pressure with pressure regulator and pay attention to the pressure of the nitrogen.

↓

Keep it for minimum 24 hours to check if pressure drops.

- After applying Nitrogen gas, check there's any change of pressure, using a pressure regulator.

↓

If the pressure drops, check for gas leakage.

- If the pressure is changed, apply soap water to check for leakage and check the pressure of the nitrogen gas again.

↓

Maintain 1.0 MPa of the pressure before performing vacuum drying and check for further gas leakage.

- After checking the first gas leakage, maintain 1.0 MPa to check for further gas leakage.

⚠ CAUTION

- When charging nitrogen gas, use charging port on high pressure side and low pressure side.
- If the pipe is filled in a short time with a highly excessive pressure of Nitrogen gas, the pipes may get damaged. Make sure to use a regulator to prevent the high pressure Nitrogen gas, over 4.1 MPa, from entering into the pipe.

Important information regulation regarding the refrigerant used

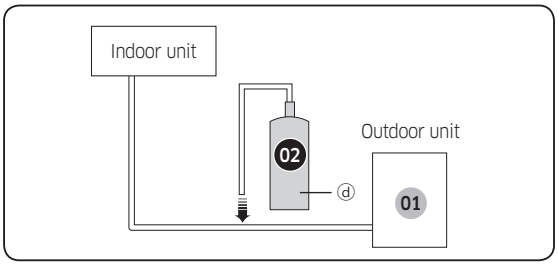
This product contains fluorinated greenhouse gases. Do not vent gases into the atmosphere.

⚠ CAUTION

- Inform user if system contains 5 tCO_2e or more of fluorinated greenhouse gases. In this case, it has to be checked for leakage at least once every 12 months, according to regulation n°517/2014. This activity has to be covered by qualified personnel only. In case situation above (5 tCO_2e or more of R-410A), installer (or recognized person which has responsibility for final check) has to provide a maintenance book, with all the information recorded according to REGULATION (EU) No 517/2014 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 April 2014 on fluorinated greenhouse gases.

Please fill in the following indelible ink on the refrigerant charge label supplied with this product on and on this manual.

- ▶ ⑪ : The factory refrigerant charge of the product.
- ▶ ❷ : The additional refrigerant amount charged in the field.
- ▶ ⑪+❷ : The total refrigerant charge.



Unit	kg	tCO_2e
⑪, a		
❷, b		
⑪+❷, c		

Refrigerant type	GWP value
R-410A	2088

- GWP = Global Warming Potential
- Calculating tCO_2e : kg x GWP / 1000

NOTE

- ⓐ: Factory refrigerant charge of the product: see unit name plate.
- ⓑ: Additional refrigerant amount charged in the field. (Refer to the above information for the quantity of refrigerant replenishment.)
- ⓒ: Total refrigerant charge.
- ⓓ: Refrigerant cylinder and manifold for charging.

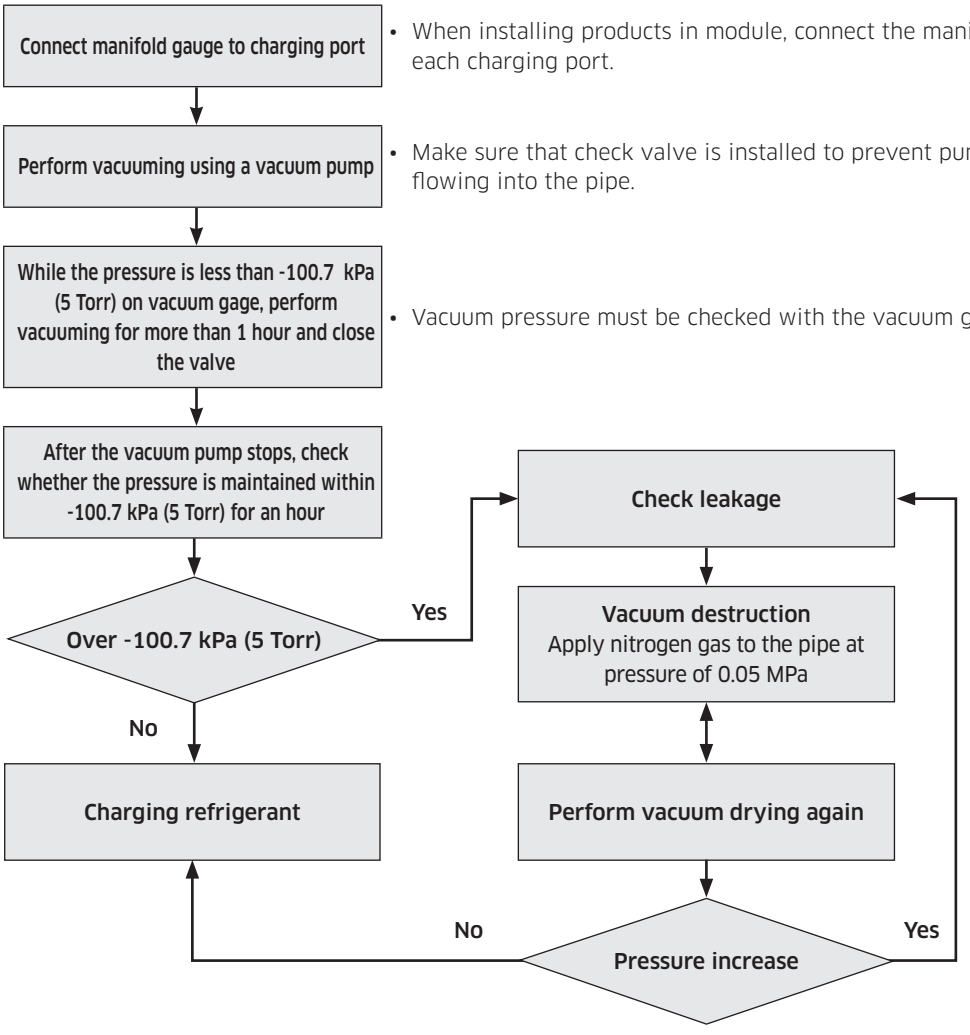
⚠ CAUTION

- The filled-out label must be adhered in the proximity of the product charging port. (ex. onto the inside of the stop valve cover.)

Maintenance

Vacuuming the pipes

- ▶ Use tools for R-410A to prevent the inflow of foreign substances and resist against the internal pressure.
- ▶ Use vacuum pump that allows vacuuming under -100.7 kPa (5 Torr).
- ▶ Use the vacuum pump with the check valve to prevent pump oil from flowing backward while the vacuum pump is stopped.
- ▶ When testing air tightness and vacuuming, use charging port on product.



⚠ CAUTION

- If the pressure rises in an hour, either water is remaining inside the pipe or there is a leakage.
- When the ambient temperature of vacuuming pipe is low (less than 0 °C), moisture might remain within the pipe. Therefore, pay special attention to the pipe sealing in the winter.

Troubleshooting

► Following situations are not product breakdown.

Problem		Cause
When only pump operates during winter time or outdoor temperature is low	Supplying power	Forced pump function to prevent water freezing is available. (Refer to page 63.)
When compressor is heated while the operation stopped	Supplying power	Compressor is heated for starting operation.
When water is dripping from the product	During operation or after it is stopped	Dew may be formed on refrigerant pipe depending on operation condition.
When there is frost on heat exchanger of the product	Heating operation	The surface temperature of heat exchanger drops due to evaporation heat as refrigerant inside the heat exchanger absorbs heat.
When noise occurs	Continuous noise during cooling or defrost	The sound might be caused by running gas (refrigerant) inside the product.
	Noise when starting operation or defrost, or after stopping the operation	The sound might be caused by the flow stopping or changing direction.
	When different noise occurs	The sound might be different as frequency of compressor is changing.
When defrost operation is long	Heating operation	Defrost operation may get longer at most 15 minutes depending on amount of frost complied on heat exchanger of the product.

Maintenance

▶ Before you report the problem of the product, check the following table.

Problem	Monitor	Cause	Solution
When pump and compressor is not starting	Off	Check if there is power failure.	Operate again when the power is on again.
		Check if circuit breaker is closed.	Open the circuit breaker if the switch is OFF. Do not supply power if the switch is tripped.
		Check if the fuse is exhausted.	Check after cut-off the power.
		Check if there is power supply phase failure.	Connect the phase properly.
When water is not circulating even pump is operating	Off	Check if there is enough amount of supplying water.	Supply water to standard. Water will not circulate if water storage of pump and inlet is low.
		Check if rotating direction of pump is reversed.	The proper direction of pump is clockwise while looking from motor side. Adjust the direction properly.
		Check if valves of water pipe is opened enough.	Open the valves enough.
When water outlet temperature is too high or too low	On	Check if water control valve is opened.	Open the water control valve.
		Check if set temperature of water temperature controller is appropriate.	Set the setting of water temperature controller appropriately.
When compressor is stopped running and not restart automatically	Off	Check if water control valve is opened.	Open the water control valve.
		Check if set temperature of water temperature controller is appropriate.	Set the setting of water temperature controller appropriately.
When remote control is not working	Off	Check if main unit setting is set as main control.	Change setting to remote control and try again. (Refer to page 63.)
		Check if restart after blackout function is set .	Select the setting and try again. • Default: Use blackout function – Hydro controller option SEG5 (Use: 4, Disuse: 0)
When operation is not stopping by remote control	On	Check if main unit setting is set as main control.	Change setting to remote control and try again. (Refer to page 63.)

▶ If problem is not solve after checking the list, do not repair by users and contact merchandise or service center. Tell the model and problem together.

Periodic maintenance

For proper operation, check and record the following list periodically. Recommended values are normal operation range. Operation time is 3650 hours/year.

▶ Common items

Name	Periodic maintenance			Preventive maintenance	
	Checklist	Check standard	Check period	Preventive description	Preventive period
Compressor	Insulation resistance	Over 1 MΩ	Every year	Exchange	20,000 hours
	Operating current	Within standard value	Every month		
Fan	Exterior	No crack and noise	Every year	Exchange	10 years
Fan motor	Insulation resistance	Over 1 MΩ	Every year	Exchange	20,000 hours
	Operating current	Within standard value	Every month		
Air side heat exchanger	Exterior	Not blocked	Every year	Exchange or repair	5 years
Water side heat exchanger	Water maintenance standard	Within standard value (Refer to page 68.)	Every year	Chemical cleaning, etc.	5 years
Electronic expansion valve	Check operation	No malfunction and deformation	Every year	Exchange	20,000 hours
High pressure switch	Check operation	Operate in set value	Every year	Exchange	25,000 hours
Electronic valve	Insulation	Over 1 MΩ	Every year	Exchange	20,000 hours
	Check operation	No malfunction	Every month		
Electric switch	Visual check	No malfunction and deformation	Every year	Exchange	25,000 hours
PCB	Visual check	No dust	Every year	Cleaning	25,000 hours
	Check operation	No malfunction		Exchange	
		No loosen terminal		Fastening	
Inverter	Visual check	No expansion, discoloration, and leakage of condenser	Every year	Exchange	25,000 hours
Thermistor	Resistance value	Should be rated resistance value	Every year	Exchange or repair	5 years
	Visual check	No deformation			

Maintenance

Name	Periodic maintenance			Preventive maintenance	
	Checklist	Check standard	Check period	Preventive description	Preventive period
Pressure sensor	Resistance value	Should be rated resistance value	Every year	Exchange	5 years
	Visual check	No deformation			
Structural parts	Visual check	No rust	Every year	Refinishing	13 years
Refrigerant system	Visual check	No leakage and noise	Every year	Modify	13 years
Chilled/heating water system	Visual check	Strainer not blocked	Every year	Cleaning	1 year
	Brine concentration	Should be below freezing point	Every year	Exchange	1 year

NOTE

- Preventive maintenance is planned exchange, overhaul, modification, checking, etc. to prevent breakdown beforehand and maintain the product usable.
- Contact the merchandise or service center for periodic maintenance.
- Preventive maintenance should be shorter in case of: change of temperature, humidity, and power (voltage, frequency, pulse) is dynamic; operation time is long and exposed to dust, salinity, and oil mist environment; vibration or shock is occurred; and the operation is operating out of range.

Maintaining water system

▶ Check and clean water strainer.
- If strainer is blocked, water side heat exchanger may freeze due to lack of water storage.

▶ Check if air is not mixed in inlet/outlet of chilled/heating water pipe system.
- Air may be mixed in the system even if first air purging is done. Vent air constantly.

▶ Check the quality of water.
- Release the air purge valve and drain water by water drain plug. (Refer to page 66.) Contaminated water may cause cooling performance decrease and corrosion on water side heat exchanger or water pipe.
- Refer to page 68 for water maintenance.

▶ Check flow rate of chilled/heating water.
- Low flow rate of chilled/heating water may cause freezing. Check inlet/outlet of water side heat exchanger for blocked strainer, noise occurred by vapor in filter impeller, decreasing flow rate by circulating pump malfunction by measuring temperature or pressure difference. If flow rate decreased, stop the operation and restart after removing the cause.
- Refer to page 72 for usage range.

▶ For pump integrated models, daily and periodic check for pump is necessary.
- If there are water leakage or noise from the product, maintenance may be necessary.

Checking exterior and noise

▶ Clean air side heat exchanger (cross fin coil).
- Performance may decrease if contaminated too much. Clean by water or steam. Dry well after cleaning by water. Touching by hands may cause injury.

▶ Clean the fan if contaminated.
- Cut-off the power supply before cleaning.
- Make sure that power will not be supplied during cleaning.

▶ Contact the merchandise or service center if noise generates.

Maintenance contract

Contract with merchandise or service center which can maintain operation status professionally. Contact the merchandise or service center for further details.

Moving and reinstalling the product

Contact the merchandise or service center to move and reinstall the product. If the product is not properly installed, it may result in electric shock or fire.

Quick Smart Features

⚠ CAUTION

• To change functions of the product, electrical wiring and changing setting are also mandatory. Contact the merchandise or service center for electrical wiring work and changing settings.

Automatic function

▶ Cooling/Heating
- The product contains function that cool/heat circulating water to optional temperature by operating cooling cycle by motor compressor.
- It may take time to reach the optional temperature from starting the operation. Especially for heating operation, start the operation earlier when outdoor temperature is low or it snows.

▶ Pump interlock operation, freeze protection operation while stopping
- This function transmit signals for operating cooling/heating circulating pump interlocking with product operation.
- It operates pump automatically when water temperature is below certain value even the product is not operating to protect water inside water side heat exchanger from freezing.
- Connect control circuit to interlock pump with product for automatic pump operation. Also, connect interlock circuit with pump.
- Do not cut off the power supply of CHILLER and pump for normal operation of freeze protection function.

▶ Auto defrost operation
- During heat operation, the product will automatically defrost to remove frost depending on surrounding environment.
- Water temperature drops while defrosting. To maintain the effect of heatin g, use more water or extra heating appliance.

Hot water (Cool storage) mode

▶ Hot water (Cool storage) temperature control
- This function is to control water temperature for Hot water mode differently from normal operation.
- This function is available when using module control and external contact.

▶ Hot water (Cool storage) thermo control
- In Hot water (Cool storage) mode, set temperature or external thermostat signal can be used as water outlet control standard.
- Refer to external contact wiring work part for selecting the control standard and wiring external thermostat signal.

NOTE

• Low temperature function: Water outlet usage range expands for Cool/Cool storage mode. (5 ~ 25 ℃ → -10 ~ 25 ℃)

• When using low temperature function, use brine and maintain the concentration under freezing point.

Quiet function

▶ When operating CHILLER, noise can be reduced by lowering fan speed and compressor capacity.

▶ When operating quiet function by module control, the function will start in Cool mode during night time.

▶ When operaing quiet function by external contact, the function will start when the contact is short, unrelated to operation mode.

Demand function

▶ Demand operation is to limit power consumption of the product.

▶ Factory default setting is module control. Extra setting is necessary to use external contact. Refer to how to set hydro controller option.

▶ Demand level is set by ratio of ordinary current. Factory default is demand level 85 %. It can be set as no limit or range of 50 ~ 100 % (by 5 %).

▶ Current may be over the set level instantly.

Forced fan function

- ▶ This function operates fan of CHILLER to remove accumulated snow on the fan.
- ▶ Snow accumulation prevention, which operates occasionally when outdoor temperature is below 5 °C, is basic function Use this function by module control or external contact when the snow is actually accumulated on the fan only.
- ▶ The factory default setting for initial entry is module control. Extra setting is necessary to use external contact.

Forced pump function

- ▶ Only pump can be operated while the product is not operating.
- ▶ This function is available when using main control.
- ▶ Refer to page 63 for trial operation for each unit.

Pump operation output

- ▶ Electric switch for pump is field supply, and not included in the product. Install interlock circuit according to electrical wiring diagram when installing the switch.

Connecting module control

Refer to page 34 for wiring of module control.

Remote control wiring

For the remote control circuit (including the module control), use the cord or vinyl sheath cable (0.75-1.25 mm^2) that meets the local power line requirements.

- ▶ PVC cabtire rounded cord (VCTF JIS-C3306)
- ▶ PVC cabtire flat cord (VCTFK JIS-C3306)
- ▶ Control PVC insulated PVC cis cable (CVV JIS-C3401)
- ▶ Control PVC insulated PVC cis cable (CVS JIS-C3401)
- ▶ PVC insulated PVC cis cable rounded (VVR JIS-C3342)
- ▶ PVC insulated PVC cis cable flat (VVF JIS-C3342)
- ▶ 600 V PVC cabtire cable (VCT JIS-C3312)

⚠ CAUTION

- To prevent error, maintain strong cables, such as power cable and voltage input cable, and weak cables, such as module control power cable, separately.

Correct Disposal of This Product
(Waste Electrical & Electronic Equipment)

(Applicable in countries with separate collection systems)

This marking on the product, accessories or literature indicates that the product and its electronic accessories (e.g. charger, headset, USB cable) should not be disposed of with other household waste at the end of their working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take these items for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product and its electronic accessories should not be mixed with other commercial wastes for disposal.

For information on Samsung's environmental commitments and product specific regulatory obligations e.g. REACH visit: samsung.com/uk/aboutsamsung/samsungelectronics/corporatecitizenship/data_corner.html

COMMISSION REGULATION (EU) No 813/2013 [I)]

ECODESIGN REQUIREMENTS FOR SPACE HEATER [II)]

A	Model(s) : AG042KSVANH
B	Air-to-water heat pump : yes
C	Water-to-water heat pump : no
D	Brine-to-water heat pump : no
E	Low-temperature heat pump : no
F	Equipped with a supplementary heater : no
G	Heat pump combination heater : no
H	Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low-temperature heat pump, parameters shall be declared for low-temperature application.
I	Parameters shall be declared for average climate conditions.

Item [J]		Symbol [K]	Value [L]	Unit [M]
N	**Rated heat output**[f)]	Prated [o]	27	kW
Q	**Declared capacity for heating for part load at indoor temperature 20 ℃ and outdoor temperature Tj**			
-	Tj = -7 ℃	Pdh	24.1	kW
-	Tj = +2 ℃	Pdh	15.2	kW
-	Tj = +7 ℃	Pdh	9.6	kW
-	Tj = +12 ℃	Pdh	8.7	kW
T	Tj = bivalent temperature	Pdh	26.7	kW
U	Tj = operation limit temperature	Pdh	26.7	kW
V	For air-to-water heat pumps Tj = -15 ℃ (if TOL < -20 ℃)	Pdh	-	kW
W	Bivalent temperature	Tbiv	-10	℃
Y	Cycling interval capacity for heating	Pcych	-	kW
AB	Degradation co-efficient [*)]	Cdh	0.9	-
AD	**Power consumption in modes other than active mode**			
AF	Off mode	P_{OFF}	0.040	kW
AG	Thermostat-off mode	P_{TO}	0.040	kW
AH	Standby mode	P_{SB}	0.040	kW
AI	Crankcase heater mode	P_{CK}	0.140	kW
AK	**Other items**			
AL	Capacity control	variable [AM]		
AP	Sound power level, indoors/ outdoors	L_{WA}	-/80	dB
AQ	Emissions of nitrogen oxides	NOx	-	mg/kWh
AS	**For heat pump combination heater**			
AT	Declared load profile	-		
AV	Daily electricity comsumption	Q_{elec}	-	kWh
AX	**Contact details**	Http://www.samsung.com		

Item [J]		Symbol [K]	Value [L]	Unit [M]
P	**Seasonal space heating energy efficiency**	η_s	139	%
R	**Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 ℃ and outdoor temperature Tj**			
-	Tj = -7 ℃	COPd [S]	2.12	-
-	Tj = +2 ℃	COPd [S]	3.13	-
-	Tj = +7 ℃	COPd [S]	5.25	-
-	Tj = +12 ℃	COPd [S]	5.73	-
T	Tj = bivalent temperature	COPd [S]	2.38	-
U	Tj = operation limit temperature	COPd or PERd [S]	2.38	-
V	For air-to-water heat pumps Tj = -15 ℃ (if TOL < -20 ℃)	COPd or PERd [S]	-	- or %
X	For air-to-water heat pumps: Operation limit temperature	TOL	-10	℃
Z	Cycling interval efficiency	COPcyc or PERcyc [AA]	-	- or %
AC	Heating water operating limit temperature	WTOL	-	℃
AE	**Supplementary heater**			
N	Rated heat output [*)]	Psup	-	kW
AJ	Type of energy input			
AK	**Other items**			
AN	For air-to-water heat pumps : Rated air flow rate, outdoors	-	21840	m^3/h [AD]
AR	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m^3/h [AD]
AS	**For heat pump combination heater**			
AU	Water heating energy efficiency	η_{wh}	-	%
AW	Daily fuel consumption	Q_{fuel}	-	kWh

AY	[f)] For heat pump space heaters and heat pump combination heaters, the rated that output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).
AZ	[*)] If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0.9.
BA	1) Precautions as described in the installation/user manual must be taken when assembling, installing and maintaining this product.
BB	2) If you are a professional looking for information on non-destructive disassembly and dismantling, please send an email to: erims.sec@samsung.com

A	Model(s) : AG056KSVANH
B	Air-to-water heat pump : yes
C	Water-to-water heat pump : no
D	Brine-to-water heat pump : no
E	Low-temperature heat pump : no
F	Equipped with a supplementary heater : no
G	Heat pump combination heater : no
H	Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low-temperature heat pump, parameters shall be declared for low-temperature application.
I	Parameters shall be declared for average climate conditions.

	Item (J)	Symbol (K)	Value (L)	Unit (M)
N	**Rated heat output**(*)	Prated (o)	35	kW
Q	**Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj**			
-	Tj = -7 °C	Pdh	28.5	kW
-	Tj = +2 °C	Pdh	20.2	kW
-	Tj = +7 °C	Pdh	12.3	kW
-	Tj = +12 °C	Pdh	8.3	kW
T	Tj = bivalent temperature	Pdh	34.8	kW
U	Tj = operation limit temperature	Pdh	34.8	kW
V	For air-to-water heat pumps Tj = -15 °C (if TOL < -20 °C)	Pdh	-	kW
W	Bivalent temperature	Tbiv	-10	°C
Y	Cycling interval capacity for heating	Pcych	-	kW
AB	Degradation co-efficient (**)	Cdh	0.9	-
AD	**Power consumption in modes other than active mode**			
AF	Off mode	P_{OFF}	0.040	kW
AG	Thermostat-off mode	P_{TO}	0.040	kW
AH	Standby mode	P_{SB}	0.040	kW
AI	Crankcase heater mode	P_{CK}	0.140	kW
AK	**Other items**			
AL	Capacity control	variable (AM)		
AP	Sound power level, indoors/ outdoors	L_{WA}	-/83	dB
AQ	Emissions of nitrogen oxides	NOx	-	mg/kWh
AS	**For heat pump combination heater**			
AT	Declared load profile	-		
AV	Daily electricity comsumption	Q_{elec}	-	kWh
AX	**Contact details**	Http://www.samsung.com		

	Item (J)	Symbol (K)	Value (L)	Unit (M)
P	**Seasonal space heating energy efficiency**	η_s	131	%
R	**Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj**			
-	Tj = -7 °C	COPd (S)	1.71	-
-	Tj = +2 °C	COPd (S)	2.92	-
-	Tj = +7 °C	COPd (S)	5.66	-
-	Tj = +12 °C	COPd (S)	5.87	-
T	Tj = bivalent temperature	COPd (S)	2.37	-
U	Tj = operation limit temperature	COPd or PERd (S)	2.37	-
V	For air-to-water heat pumps Tj = -15 °C (if TOL < -20 °C)	COPd or PERd (S)	-	- or %
X	For air-to-water heat pumps: Operation limit temperature	TOL	-10	°C
Z	Cycling interval efficiency	COPcyc or PERcyc (AA)	-	- or %
AC	Heating water operating limit temperature	WTOL	-	°C
AE	**Supplementary heater**			
N	Rated heat output (*)	Psup	-	kW
AJ	Type of energy input			
AK	**Other items**			
AN	For air-to-water heat pumps : Rated air flow rate, outdoors	-	21840	m^3/h (AO)
AR	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m^3/h (AO)
AS	**For heat pump combination heater**			
AU	Water heating energy efficiency	η_{wh}	-	%
AW	Daily fuel consumption	Q_{fuel}	-	kWh

AY	(*) For heat pump space heaters and heat pump combination heaters, the rated that output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).
AZ	(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0.9.
BA	1) Precautions as described in the installation/user manual must be taken when assembling, installing and maintaining this product.
BB	2) If you are a professional looking for information on non-destructive disassembly and dismantling, please send an email to: erims.sec@samsung.com

COMMISSION REGULATION (EU) No 813/2013 [I)]

ECODESIGN REQUIREMENTS FOR SPACE HEATER [II)]

A	Model(s) : AG070KSVANH
B	Air-to-water heat pump : yes
C	Water-to-water heat pump : no
D	Brine-to-water heat pump : no
E	Low-temperature heat pump : no
F	Equipped with a supplementary heater : no
G	Heat pump combination heater : no
H	Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low-temperature heat pump, parameters shall be declared for low-temperature application.
I	Parameters shall be declared for average climate conditions.

Item [J]		Symbol [K]	Value [L]	Unit [M]
N	**Rated heat output**[(*)]	Prated [(o)]	43	kW
Q	**Declared capacity for heating for part load at indoor temperature 20 ℃ and outdoor temperature Tj**			
-	Tj = -7 ℃	Pdh	35.2	kW
-	Tj = +2 ℃	Pdh	24.0	kW
-	Tj = +7 ℃	Pdh	14.9	kW
-	Tj = +12 ℃	Pdh	7.0	kW
T	Tj = bivalent temperature	Pdh	43.0	kW
U	Tj = operation limit temperature	Pdh	43.0	kW
V	For air-to-water heat pumps Tj = -15 ℃ (if TOL < -20 ℃)	Pdh	-	kW
W	Bivalent temperature	Tbiv	-10	℃
Y	Cycling interval capacity for heating	Pcych	-	kW
AB	Degradation co-efficient [(**)]	Cdh	0.9	-
AD	**Power consumption in modes other than active mode**			
AF	Off mode	P_{OFF}	0.040	kW
AG	Thermostat-off mode	P_{TO}	0.040	kW
AH	Standby mode	P_{SB}	0.040	kW
AI	Crankcase heater mode	P_{CK}	0.140	kW
AK	**Other items**			
AL	Capacity control	variable [(AM)]		
AP	Sound power level, indoors/ outdoors	L_{WA}	-/86	dB
AQ	Emissions of nitrogen oxides	NOx	-	mg/kWh
AS	**For heat pump combination heater**			
AT	Declared load profile	-		
AV	Daily electricity comsumption	Q_{elec}	-	kWh
AX	**Contact details**	Http://www.samsung.com		

Item [J]		Symbol [K]	Value [L]	Unit [M]
P	**Seasonal space heating energy efficiency**	η_s	126	%
R	**Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 ℃ and outdoor temperature Tj**			
-	Tj = -7 ℃	COPd [(S)]	1.74	-
-	Tj = +2 ℃	COPd [(S)]	2.84	-
-	Tj = +7 ℃	COPd [(S)]	5.06	-
-	Tj = +12 ℃	COPd [(S)]	5.74	-
T	Tj = bivalent temperature	COPd [(S)]	1.88	-
U	Tj = operation limit temperature	COPd or PERd [(S)]	1.88	-
V	For air-to-water heat pumps Tj = -15 ℃ (if TOL < -20 ℃)	COPd or PERd [(S)]	-	- or %
X	For air-to-water heat pumps: Operation limit temperature	TOL	-10	℃
Z	Cycling interval efficiency	COPcyc or PERcyc [(AA)]	-	- or %
AC	Heating water operating limit temperature	WTOL	-	℃
AE	**Supplementary heater**			
N	Rated heat output [(*)]	Psup	-	kW
AJ	Type of energy input			
AK	**Other items**			
AN	For air-to-water heat pumps : Rated air flow rate, outdoors	-	23520	m^3/h [(AD)]
AR	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m^3/h [(AD)]
AS	**For heat pump combination heater**			
AU	Water heating energy efficiency	η_{wh}	-	%
AW	Daily fuel consumption	Q_{fuel}	-	kWh

AY	[(*)] For heat pump space heaters and heat pump combination heaters, the rated that output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).
AZ	[(**)] If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0.9.
BA	[1)] Precautions as described in the installation/user manual must be taken when assembling, installing and maintaining this product.
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No	English(EN)	Bulgarian(BG)	Spanish(ES)	Czech(CS)
I	COMMISSION REGULATION (EU) No 813/2013	РЕГЛАМЕНТ (ЕС) № 813/2013 НА КОМИСИЯТА	REGLAMENTO (UE) No 813/2013 DE LA COMISIÓN	NAŘÍZENÍ KOMISE (EU) č. 813/2013
II	ECODESIGN REQUIREMENTS FOR SPACE HEATER	Изискванията за екопроектиране на отоплителен топлоизточник	Los requisitos de diseño ecológico de aparato de calefacción	Požadavky na ekodesign pro vytápění vnitřních prostorů
A	Model(s): [information identifying the model(s) to which the information relates]	Модел/модели: [информация за определяне на модела(ите), за който(ито) тя се отнася]	Modelos: [Datos que identifican el modelo o modelos a que se refiere la información]	Model/y: [informace k určení modelu/ů, na který/é se informace vztahují]
B	Air-to-water heat pump: [yes/no]	Термопомпа „въздух-вода": [да/не]	Bomba de calor aire-agua: [sí/no]	Tepelné čerpadlo vzduch-voda: [ano/ne]
C	Water-to-water heat pump: [yes/no]	Термопомпа „вода-вода": [да/не]	Bomba de calor agua-agua: [sí/no]	Tepelné čerpadlo voda-voda: [ano/ne]
D	Brine-to-water heat pump: [yes/no]	Термопомпа „солов разтвор-вода": [да/не]	Bomba de calor salmuera-agua: [sí/no]	Tepelné čerpadlo solanka-voda: [ano/ne]
E	Low-temperature heat pump: [yes/no]	Термопомпа за нискотемпературни приложения: [да/не]	Bomba de calor de baja temperatura: [sí/no]	Nízkoteplotní tepelné čerpadlo: [ano/ne]
F	Equipped with a supplementary heater: [yes/no]	Оборудвана с допълнителен подгревател: [да/не]	Equipado con un calefactor complementario: [sí/no]	Vybavenost přídavným ohřívačem: [ano/ne]
G	Heat pump combination heater: [yes/no]	Комбиниран термопомпен агрегат за отопление и БГВ: [да/не]	Calefactor combinado con bomba de calor: [sí/no]	Kombinovaný ohřívač s tepelným čerpadlem: [ano/ne]
H	Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low-temperature heat pumps, parameters shall be declared for low-temperature application.	Параметрите се обявяват за среднотемпературни приложения, освен при термопомпите с нискотемпературни приложения. При термопомпите с нискотемпературни приложения параметрите се обявяват за нискотемпературните приложения.	Los parámetros se declararán para aplicaciones de media temperatura, excepto si se trata de bombas de calor de baja temperatura. En el caso de las bombas de calor de baja temperatura, los parámetros se declararán para aplicaciones de baja temperatura.	Parametry musí být uvedeny pro středněteplotní aplikaci, s výjimkou nízkoteplotních tepelných čerpadel. U nízkoteplotních tepelných čerpadel musí být parametry uvedeny pro nízkoteplotní aplikaci.
I	Parameters shall be declared for average climate conditions.	Параметрите се обявяват за средни климатични условия.	Los parámetros se indicarán para condiciones climáticas medias.	Parametry musí být uvedeny pro průměrné klimatické podmínky.
J	Item	Характеристика	Elemento	Položka
K	Symbol	Означение	Símbolo	Označení
L	Value	Стойност	Valor	Hodnota
M	Unit	Мерна единица	Unidad	Jednotka
N	Rated heat output(*)	Номинална топлинна мощност(*)	Potencia calorífica nominal (*)	Jmenovitý tepelný výkon (*)
O	Prated	Prated	Prated	Prated
P	Seasonal space heating energy efficiency	Сезонна енергийна ефективност при отопление	Eficiencia energética estacional de calefacción	Sezónní energetická účinnost vytápění
Q	Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj	Обявена отоплителна мощност за частичен товар при температура вътре 20 °C и външна температура Tj	Capacidad de calefacción declarada para una carga parcial a una temperatura interior de 20 °C y una temperatura exterior Tj	Deklarovaný topný výkon pro částečné zatížení při vnitřní teplotě 20 °C a venkovní teplotě Tj
R	Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj	Обявен коефициент на трансформация или коефициент на първичната енергия за частичен товар при температура вътре 20 °C и външна температура Tj	Coeficiente de rendimiento declarado o factor energético primario para una carga parcial a una temperatura interior de 20 °C y una temperatura exterior Tj	Deklarovaný topný faktor či koeficient primární energie pro částečné zatížení při vnitřní teplotě 20 °C a venkovní teplotě Tj
S	COPd or PERd	COPd или PERd	COPd o PERd	COPd nebo PERd
T	Tj = bivalent temperature	Tj = температура на включване на допълнително подгряване	Tj = temperatura bivalente	Tj = bivalentní teplota
U	Tj = operation limit temperature	Tj = гранична работна температура	Tj = temperatura límite de funcionamiento	Tj = mezní provozní teplota
V	For air-to-water heat pumps: Tj = – 15 °C (if TOL < – 20 °C)	За термопомпи „въздух-вода": Tj = – 15 °C (ако TOL < – 20 °C)	Para bombas de calor aire-agua: Tj = – 15 °C (si TOL < – 20 °C)	U tepelných čerpadel vzduch-voda: Tj = – 15 °C (pokud TOL < – 20 °C)
W	Bivalent temperature	Температура на включване на допълнително подгряване	Temperatura bivalente	Bivalentní teplota
X	For air-to-water heat pumps: Operation limit temperature	За термопомпи „въздух-вода": гранична работна температура	Para bombas de calor aire-agua: Temperatura límite de funcionamiento	U tepelných čerpadel vzduch-voda: mezní provozní teplota
Y	Cycling interval capacity for heating	Мощност при повторно-кратковременен режим на отопление	Eficiencia del intervalo cíclico para calefacción	Topný výkon v cyklickém intervalu
Z	Cycling interval efficiency	Ефективност при повторно-кратковременен режим	Eficiencia del intervalo cíclico	Účinnost v cyklickém intervalu
AA	COPcyc or PERcyc	COPcyc или PERcyc	COPcyc o PERcyc	COPcyc nebo PERcyc

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AB	Degradation co-efficient(**)	Коефициент на влошаване на ефективността(**)	Coeficiente de degradación (**)	Koeficient ztráty energie (**)
AC	Heating water operating limit temperature	Гранична температура на загряваната вода	Temperatura límite de calentamiento de agua	Mezní provozní teplota ohřívané vody
AD	Power consumption in modes other than active mode	Консумирана мощност в режими, различни от работен режим	Consumo de electricidad en modos distintos del activo	Spotřeba elektrické energie v jiných režimech než aktivní režim
AE	Supplementary heater	Допълнителен подгревател	Calefactor complementario	Přídavný ohřívač
AF	Off mode	Режим„изключен“	Modo desactivado	Vypnutý stav
AG	Thermostat-off mode	Режим„термостатно изключен“	Modo desactivado por termostato	Stav vypnutého termostatu
AH	Standby mode	Режим„в готовност“	Modo de espera	Pohotovostní režim
AI	Crankcase heater mode	Режим„подгряване на картера на компресора“	Modo de calentador del cárter	Režim zahřívání skříně kompresoru
AJ	Type of energy input	Вид на постъпващата енергия	Tipo de insumo de energía	Energetický příkon
AK	Other items	Други характеристики	Otros elementos	Jiné položky
AL	Capacity control	Регулиране на мощността	Control de capacidad	Regulace výkonu
AM	fixed/variable	фиксирана/регулируема	fijo/variable	pevná/proměnná
AN	For air-to-water heat pumps: Rated air flow rate, outdoors	За термопомпи„въздух-вода“: номинален дебит на въздуха (на открито)	Para bombas de calor aire-agua: Caudal de aire nominal (exterior)	U tepelných čerpadel vzduch-voda: jmenovitý průtok vzduchu ve venkovním prostoru
AO	m^3/h	m^3/h	m^3/h	m^3/h
AP	Sound power level, indoors/outdoors	Ниво на шума (вътре/на открито)	Nivel de potencia acústica (interior/exterior)	Hladina akustického výkonu ve vnitřním prostoru/venkovním prostoru
AQ	Emissions of nitrogen oxides	Емисии на азотни окиси	Emisiones de óxidos de nitrógeno	Emise oxidů dusíku
AR	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	За термопомпи„вода/солов разтвор-вода“: номинален дебит на соловия разтвор, или водата, външен топлообменник	Para bombas de calor agua/salmuera a agua: Caudal de salmuera o de agua nominal, intercambiador de calor de exterior	U tepelných čerpadel voda-voda/solanka-voda: jmenovitý průtok solanky nebo vody, venkovní výměník tepla
AS	For heat pump combination heater:	За комбиниран термопомпен агрегат за отопление и БГВ:	Para calefactores combinados con bomba de calor:	U kombinovaného ohřívače s tepelným čerpadlem:
AT	Declared load profile	Обявен товаров профил	Perfil de carga declarado	Deklarovaný zátěžový profil
AU	Water heating energy efficiency	Енергийна ефективност при подгряване на вода	Eficiencia energética de caldeo de agua	Energetická účinnost ohřevu vody
AV	Daily electricity consumption	Дневно електропотребление	Consumo diario de electricidad	Denní spotřeba elektrické energie
AW	Daily fuel consumption	Дневно потребление на гориво	Consumo diario de combustible	Denní spotřeba paliva
AX	Contact details	Координати за връзка	Datos de contacto	Kontaktní údaje
AY	(*) For heat pump space heaters and heat pump combination heaters, the rated that output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).	(*) За отоплителни термопомпени агрегати и комбинирани термопомпени агрегати, номиналната топлинна мощност Prated е равна на проектния отоплителен товар Pdesignh, а номиналната топлинна мощност на допълнителния подгревател Psup е равна на допълнителната отоплителна мощност sup(Tj)	(*) Para los aparatos de calefacción con bomba de calor y calefactores combinados con bomba de calor, la potencia calorífica nominal Prated es igual a la carga de calefacción de diseño Pdesignh, y la potencia calorífica nominal de un calefactor complementario Psup es igual a la capacidad complementaria de calefacción sup(Tj).	(*) U ohřívačů pro vytápění vnitřních prostorů s tepelným čerpadlem a kombinovaných ohřívačů s tepelným čerpadlem je jmenovitý tepelný výkon Prated roven návrhovému topnému zatížení Pdesignh a jmenovitý tepelný výkon přídavného ohřívače Psup je roven doplňkovému topnému výkonu sup(Tj).
AZ	(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0.9.	(**) Ако Cdh не е определен чрез измерване, съответната ориентировъчно приемана стойност за коефициента на влошаване на ефективността е Cdh = 0,9.	(**) Si no se determina Cdh por medición, el coeficiente de degradación predeterminado será Cdh = 0,9.	(**) Není-li koeficient ztráty energie Cdh stanoven měřením, má implicitní hodnotu 0,9.
BA	1) Precautions as described in the installation/user manual must be taken when assembling, installing and maintaining this product.	1) Описаните в ръководството за монтиране/ръководството за потребителя предпазни мерки трябва да се спазват при сглобяване, монтиране и поддръжка на продукта.	1) Deben tomarse las precauciones que se indican en el manual de instalación/usuario al montar e instalar el producto, así como al realizar tareas de mantenimiento.	1) Při montáži, instalaci a údržbě tohoto produktu je třeba se řídit bezpečnostními opatřeními popsanými v instalační a uživatelské příručce.
BB	2) If you are a professional looking for information on non-destructive disassembly and dismantling, please send an email to: erims.sec@samsung.com	2) Ако сте професионалист и търсите информация относно възможностите за неразрушително разглобяване и демонтаж, моля, изпратете имейл на адрес: erims.sec@samsung.com	2) Si Usted es un profesional que desea obtener información sobre el desmontaje y desmantelamiento no destructivo de este producto, por favor, diríjase a la siguiente dirección de correo electrónico: erims.sec@samsung.com	2) Pokud jste odborným pracovníkem a hledáte informace ohledně bezpečné demontáže produktu, napište e-mail na adresu: erims.sec@samsung.com.

No	Danish(DA)	German(DE)	Estonian(ET)	Greek(EL)
I	KOMMISSIONENS FORORDNING (EU) Nr. 813/2013	VERORDNUNG (EU) Nr. 813/2013 DER KOMMISSION	KOMISJONI MÄÄRUS (EL) nr 813/2013,	ΚΑΝΟΝΙΣΜΌΣ (ΕΕ) αριθ. 813/2013 ΤΗΣ ΕΠΙΤΡΟΠΉΣ
II	Kravene til miljøvenligt design af anlæg til rumopvarmning	Die Ökodesign-Anforderungen an Raumheizgerät	Ökodisaini nõuded ruumi kütmiseks	Οι απαιτήσεις οικολογικού σχεδιασμού για θερμαντήρας χώρου
A	Model(ler): [Information, som identificerer den eller de modeller, som oplysningerne vedrører]	Modell(e): (Angaben zur Bestimmung des Modells/der Modelle, auf das/die sich die Angaben beziehen)	Mudel(id): [mudelit (mudeleid) iseloomustavad näitajad]	Μοντέλο(-α): [πληροφορίες για την ταυτοποίηση του μοντέλου (των μοντέλων) που αφορούν οι πληροφορίες]
B	Luft-vand-varmepumpe: [ja/nej]	Luft-Wasser-Wärmepumpe: (Ja/Nein)	Õhu-vee-soojuspump: [jah/ei]	Αντλία θερμότητας αέρα-νερού: [ναι/όχι]
C	Vand-vand-varmepumpe: [ja/nej]	Wasser-Wasser-Wärmepumpe: (Ja/Nein)	Vee-vee-soojuspump: [jah/ei]	Αντλία θερμότητας νερού-νερού: [ναι/όχι]
D	Brine-vand-varmepumpe: [ja/nej]	Sole-Wasser-Wärmepumpe: (Ja/Nein)	Soojuskandja-vee-soojuspump: [jah/ei]	Αντλία θερμότητας άλμης-νερού: [ναι/όχι]
E	Lavtemperaturvarmepumpe: [ja/nej]	Niedertemperatur-Wärmepumpe: (Ja/Nein)	Külma kliima soojuspump: [jah/ei]	Αντλία θερμότητας χαμηλής θερμοκρασίας: [ναι/όχι]
F	Udstyret med supplerende forsyningsanlæg: [ja/nej]	Mit Zusatzheizgerät: (Ja/Nein)	Koos lisakütteseadmega: [jah/ei]	Εξοπλισμένος με συμπληρωματικό θερμαντήρα: [ναι/όχι]
G	Varmepumpeanlæg til kombineret rum- og brugsvandsopvarmning: [ja/nej]	Kombiheizgerät mit Wärmepumpe: (Ja/Nein)	Soojuspumbaga veesoojendi-kütteseade: [jah/ei]	Θερμαντήρας συνδυασμένης λειτουργίας με αντλία θερμότητας: [ναι/όχι]
H	Parametre skal angives for middeltemperaturanvendelse, dog ikke for lavtemperaturvarmepumper. For lavtemperaturvarmepumper angives parametre for lavtemperaturanvendelse.	Die Parameter sind für eine Mitteltemperaturanwendung anzugeben, außer für Niedertemperatur-Wärmepumpen. Für Niedertemperatur-Wärmepumpen sind die Parameter für eine Niedertemperaturanwendung anzugeben.	Näitajad esitatakse keskmise temperatuuriga kasutuse kohta, välja arvatud külma kliima soojuspumbad. Külma kliima soojuspumpade näitajad esitatakse madalatemperatuurilise kasutuse kohta.	Δηλώνονται οι παράμετροι για εφαρμογή μέσης θερμοκρασίας, εξαιρουμένων των αντλιών θερμότητας χαμηλής θερμοκρασίας. Για τις αντλίες θερμότητας χαμηλής θερμοκρασίας δηλώνονται οι παράμετροι για εφαρμογή χαμηλής θερμοκρασίας.
I	Parametre skal angives for gennemsnitlige klimaforhold.	Die Parameter sind für durchschnittliche Klimaverhältnisse anzugeben:	Näitajad esitatakse keskmiste kliimatingimuste kohta.	Δηλώνονται οι παράμετροι για μέσες κλιματικές συνθήκες.
J	Element	Angabe	Näitaja	Χαρακτηριστικό
K	Symbol	Symbol	Tähis	Σύμβολο
L	Værdi	Wert	Väärtus	Τιμή
M	Enhed	Einheit	Ühik	Μονάδα
N	Nominel nytteeffekt (*)	Wärmenennleistung (3)	Nimisoojusvõimsus (*)	Ονομαστική θερμική ισχύς (*)
O	Prated	Prated	Prated	Prated
P	Årsvirkningsgrad ved rumopvarmning	Jahreszeitbedingte Raumheizungs-Energieeffizienz	Kütmise sesoonne energiatõhusus	Ενεργειακή απόδοση της εποχιακής θέρμανσης χώρου
Q	Angivet varmeydelse for dellast ved indetemperatur på 20 °C og udetemperatur på Tj	Angegebene Leistung für Teillast bei Raumlufttemperatur 20 °C und Außenlufttemperatur Tj	Esitatud soojusvõimsus ruumitemperatuurile 20 °C ja välistemperatuurile Tj vastaval (osalise koormuse) võimsustarbel	Δηλωμένη θερμαντική ισχύς για μερικό φορτίο σε θερμοκρασία εσωτερικού χώρου 20 °C και θερμοκρασία εξωτερικού χώρου Tj
R	Angivet effektfaktor eller primærenergi-effektfaktor for dellast ved indetemperatur på 20 °C og udetemperatur på Tj	Angegebene Leistungszahl oder Heizzahl für Teillast bei Raumlufttemperatur 20 °C und Außenlufttemperatur Tj	Esitatud soojustegur (primaarenergiategur) ruumitemperatuurile 20 °C ja välistemperatuurile Tj vastaval (osalise koormuse) võimsustarbel	Δηλωμένος συντελεστής απόδοσης ή λόγος πρωτογενούς ενέργειας σε θερμοκρασία εσωτερικού χώρου 20 °C και θερμοκρασία εξωτερικού χώρου Tj
S	COPd eller PERd	COPd oder PERd	COPd või PERd	COPd ή PERd
T	Tj = bivalenttemperatur	Tj = Bivalenztemperatur	Tj = tasakaalutemperatuur	Tj = δίτιμη θερμοκρασία
U	Tj = temperaturgrænse for drift	Tj = Betriebstemperaturgrenzwert	Tj = piirtöötemperatuur	Tj = οριακή θερμοκρασία λειτουργίας
V	For luft-vand-varmepumper: Tj = – 15 °C (hvis TOL < – 20 °C)	Für Luft-Wasser-Wärmepumpen: Tj = – 15 °C (wenn TOL < – 20 °C)	Õhu-vee-soojuspump: Tj = – 15 °C (kui TOL < – 20 °C)	Για αντλίες θερμότητας αέρα-νερού: Tj = – 15 °C (εάν TOL < – 20 °C)
W	Bivalenttemperatur	Bivalenztemperatur	Tasakaalutemperatuur	Δίτιμη θερμοκρασία
X	For luft-vand-varmepumper: Temperaturgrænse for drift	Für Luft-Wasser-Wärmepumpen: Betriebsgrenzwert-Temperatur	Õhu-vee-soojuspump: piirtöötemperatuur	Για αντλίες θερμότητας αέρα-νερού: Οριακή θερμοκρασία λειτουργίας
Y	Cyklusintervalydelse for opvarmning	Leistung bei zyklischem Intervall-Heizbetrieb	Tsükli soojusvõimsus	Θερμαντική ισχύς κατά τη διάρκεια ενός κύκλου
Z	Cyklusintervalydelse	Leistungszahl bei zyklischem Intervallbetrieb	Tsükli tõhusus või primaarenergiategur	Απόδοση κατά τη διάρκεια ενός κύκλου
AA	COPcyc eller PERcyc	COPcyc oder PERcyc	COPcyc või PERcyc	COPcyc ή PERcyc
AB	Koefficient for effektivitetstab (**)	Minderungsfaktor (4)	Kaotegur (**)	Συντελεστής υποβάθμισης (**)
AC	Temperaturgrænse for vandopvarmning	Grenzwert der Betriebstemperatur des Heizwassers	Küttevee piirtöötemperatuur	Οριακή θερμοκρασία λειτουργίας για θέρμανση νερού
AD	Elforbrug i andre tilstande end aktiv tilstand	Stromverbrauch in anderen Betriebsarten als dem Betriebszustand	Võimsustarve ajal, kui seade ei ole aktiivses seisundis	Κατανάλωση ισχύος σε καταστάσεις πλην της ενεργού κατάστασης

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AE	Supplerende forsyningsanlæg	Zusatzheizgerät	Lisakütteseade	Συμπληρωματικός θερμαντήρας
AF	Slukket tilstand	Aus-Zustand	Väljalülitatud seisund	Κατάσταση εκτός λειτουργίας
AG	Termostat fra-tilstand	Thermostat-aus-Zustand	Termostaadiga välja lülitatud seisund	Κατάσταση χωρίς λειτουργία θερμοστάτη
AH	Standbytilstand	Bereitschaftszustand	Ooteseisund	Κατάσταση αναμονής
AI	Krumtaphusopvarmningstilstand	Betriebszustand mit Kurbelgehäuseheizung	Kambrikütte seisund	Λειτουργία θερμαντήρα στροφαλοθαλάμου
AJ	Energiinputtype	Art der Energiezufuhr	Sisendenergia liik	Τύπος εισερχόμενης ενέργειας
AK	Andre elementer	Sonstige Angaben	Muud näitajad	Άλλα χαρακτηριστικά
AL	Ydelsesregulering	Leistungssteuerung	Võimsuse reguleerimine	Ρύθμιση ισχύος
AM	fast/variabel	fest/veränderlich	Muutumatu/muudetav	σταθερή/μεταβλητή
AN	For luft-vand-varmepumper: Nominel luftgennemstrømning, ude	Für Luft-Wasser-Wärmepumpen: Nenn-Luftdurchsatz, außen	Õhu-vee-soojuspump: õhu nimivooluhulk, väliskeskkonnas	Για αντλίες θερμότητας αέρα-νερού: Ονομαστική παροχή αέρα, εξωτερικού χώρου
AO	m^3/h	m^3/h	m^3/h	m^3/h
AP	Lydeffektniveau, inde/ude	Schallleistungspegel, innen/außen	Müravõimsustase, siseruumis/väliskeskkonnas	Στάθμη ηχητικής ισχύος, εσωτερικού/εξωτερικού χώρου
AQ	Emissioner af kvælstofilter	Stickoxidausstoß	Lämmastikoksiidide heide	Εκπομπές οξειδίων του αζώτου
AR	For vand/brine-vand-varmepumper: nominel brine- eller vandgennemstrømning, varmeveksler, ude	Für Wasser/Sole-Wasser-Wärmepumpen: Wasser- oder Sole-Nenndurchsatz	Vee-soojuskandja-vee-soojuspump: soojuskandja või vee nimivooluhulk, soojusvaheti väljas	Για αντλίες θερμότητας νερού-/άλμης-νερού: Ονομαστική παροχή άλμης ή νερού, εναλλάκτη θερμότητας εξωτερικού χώρου
AS	For varmepumpeanlæg til kombineret rum- og brugsvandsopvarmning:	Kombiheizgerät mit Wärmepumpe	Soojuspumbaga veesoojendi-kütteseade:	Για θερμαντήρα συνδυασμένης λειτουργίας με αντλία θερμότητας:
AT	Angivet forbrugsprofil	Angegebenes Lastprofil	Esitatud koormusprofiil	Δηλωμένο προφίλ φορτίου
AU	Energieffektivitet ved vandopvarmning	Warmwasserbereitungs-Energieeffizienz	Vee soojendamise kasutegur	Ενεργειακή απόδοση θέρμανσης νερού
AV	Dagligt elforbrug	Täglicher Stromverbrauch	Päevane elektrienergiatarve	Ημερήσια κατανάλωση ηλεκτρικής ενέργειας
AW	Dagligt brændselsforbrug	Täglicher Brennstoffverbrauch	Päevane kütteenergiatarve	Ημερήσια κατανάλωση καυσίμου
AX	Kontaktoplysninger	Kontakt	Kontaktandmed	Στοιχεία επικοινωνίας
AY	(*) For varmepumpeanlæg til rumopvarmning og varmepumpeanlæg til kombineret rum- og brugsvandsopvarmning er den nominelle nytteeffekt Prated lig med den dimensionerende last for opvarmning Pdesignh, og den nominelle nytteeffekt for et supplerende forsyningsanlæg Psup er lig med den supplerende varmeydelse sup(Tj).	(*) Für Heizgeräte und Kombiheizgeräte mit Wärmepumpe ist die Wärmenennleistung Prated gleich der Auslegungslast im Heizbetrieb Pdesignh und die Wärmenennleistung eines Zusatzheizgerätes Psup gleich der zusätzlichen Heizleistung sup(Tj).	(*) Soojuspumbaga kütteseadmete ja soojuspumbaga veesoojendite-kütteseadmete nimisoojusvõimsus Prated on võrdne arvutusliku soojusvõimsusega Pdesignh, lisakütteseadme Psup nimisoojusvõimsus on võrdne lisakütteseadme soojusvõimsusega sup(Tj).	(*) Για θερμαντήρες χώρου με αντλία θερμότητας και θερμαντήρες συνδυασμένης λειτουργίας με αντλία θερμότητας, η ονομαστική θερμική ισχύς Prated ισούται με το θερμαντικό φορτίο σχεδιασμού Pdesignh , και η ονομαστική θερμική ισχύς του συμπληρωματικού θερμαντήρα Psup ισούται με τη συμπληρωματική θερμαντική ισχύ sup(Tj).
AZ	(**) Hvis Cdh ikke bestemmes ved måling, er koefficienten for effektivitetstab som standard Cdh = 0,9.	(**) Wird der Cdh-Wert nicht durch Messung bestimmt, gilt für den Minderungsfaktor der Vorgabewert Cdh = 0,9.	(**) Kui tegur Cdh on määramata, võetakse vaikimisi Cdh = 0,9.	(**) Εάν ο Cdh δεν προσδιοριστεί με μέτρηση, ο εξ ορισμού συντελεστής υποβάθμισης είναι Cdh = 0,9.
BA	1) Du skal tage de forholdsregler, der er beskrevet i installations-/brugervejledningen, når du samler, installerer og vedligeholder dette produkt.	1) Beim Montieren, Installieren und Warten des Geräts müssen die im Installations-/Benutzerhandbuch beschriebenen Vorsichtsmaßnahmen eingehalten werden.	1) Seadme kokkupanekul, paigaldamisel ja hooldusel tuleb rakendada paigaldus-/kasutusjuhendis kirjeldatud ettevaatusabinõusid	1) Όταν συναρμολογείτε, εγκαθιστάτε και συντηρείτε αυτό το προϊόν, πρέπει να λαμβάνετε τις προφυλάξεις που περιγράφονται στο εγχειρίδιο εγκατάστασης/χρήσης.
BB	2) Hvis du er en erhvervsdrivende, der søger information om, hvordan man afmonterer støvsugeren uden at ødelægge nogle dele, bedes du sende en e-mail til: erims.sec@samsung.com	2) Wenn Sie als Fachkraft Informationen zu zerstörungsfreier Demontage und Zerlegung benötigen, schreiben Sie bitte eine E-Mail an: erims.sec@samsung.com.	2) Kui olete professionaal, kes otsib teavet mittekahjustava lahtivõtmise ja demonteerimise kohta, saatke palun e-kiri aadressil: erims.sec@samsung.com.	2) Εάν είστε επαγγελματίας και αναζητάτε πληροφορίες σχετικά με την αποσυναρμολόγηση χωρίς να προκληθούν καταστροφές, στείλτε μήνυμα ηλεκτρονικού ταχυδρομείου στη διεύθυνση: erims.sec@samsung.com

No	French(FR)	Croatian(HR)	Italian(IT)	Latvian(LV)
I	RÈGLEMENT (UE) No 813/2013 DE LA COMMISSION	UREDBA KOMISIJE (EU) br. 813/2013	REGOLAMENTO (UE) N. 813/2013 DELLA COMMISSIONE	KOMISIJAS REGULA (ES) Nr. 813/2013
II	Les exigences d'écoconception applicables aux dispositif de chauffage des locaux	Zahtjevi za ekološki dizajn grijač prostora	Le specifiche per la progettazione ecocompatibile per apparecchio il riscaldamento d'ambiente	Ekodizaina prasības par telpu sildītājs
A	Modèle(s): [informations d'identification du ou des modèles concernés]	Model(i): [informacije za identifikaciju modela na koji(-e) se informacije odnose]	Modelli: [Informazioni per identificare i modelli cui sono riferibili le informazioni]	Modelis(-ļi): [informācija, ar ko identificē modeli(-ļus), uz kuru(-iem) informācija attiecas]
B	Pompes à chaleur air-eau: [oui/non]	Toplinska crpka zrak-voda: [da/ne]	Pompa di calore aria/acqua: [sì/no]	Gaiss-ūdens siltumsūknis: [jā/nē]
C	Pompes à chaleur eau-eau: [oui/non]	Toplinska crpka voda-voda: [da/ne]	Pompa di calore acqua/acqua: [sì/no]	Ūdens-ūdens siltumsūknis: [jā/nē]
D	Pompe à chaleur eau glycolée-eau: [oui/non]	Toplinska crpka slana voda-voda: [da/ne]	Pompa di calore salamoia/acqua: [sì/no]	Sālsūdens-ūdens siltumsūknis: [jā/nē]
E	Pompes à chaleur basse température: [oui/non]	Niskotemperaturna toplinska crpka: [da/ne]	Pompa di calore a bassa temperatura: [sì/no]	Zemas temperatūras diapazona siltumsūknis: [jā/nē]
F	Équipée d'un dispositif de chauffage d'appoint: [oui/non]	Opremljena dodatnim grijačem: [da/ne]	Con riscaldatore supplementare: [sì/no]	Aprīkots ar papildu sildītāju: [jā/nē]
G	Dispositif de chauffage mixte par pompe à chaleur: [oui/non]	Kombinirani grijači s toplinskom crpkom: [da/ne]	Apparecchio misto a pompa di calore: [sì/no]	Siltumsūkņa kombinētais sildītājs: [jā/nē]
H	Les paramètres sont déclarés pour l'application à moyenne température, excepté pour les pompes à chaleur basse température. Pour les pompes à chaleur basse température, les paramètres sont déclarés pour l'application à basse température.	Parametri se navode za uporabu pri srednjoj temperaturi, osim za niskotemperaturne toplinske crpke. Za niskotemperaturne toplinske crpke parametri se navode za uporabu pri niskoj temperaturi.	I parametri sono dichiarati per l'applicazione a temperatura media, tranne per le pompe di calore a bassa temperatura Per le pompe di calore a bassa temperatura, i parametri sono dichiarati per l'applicazione a bassa temperatura.	Parametrus deklarē izmantošanai vidējas temperatūras diapazonā, izņemot zemas temperatūras diapazona siltumsūkņiem. Zemas temperatūras diapazona siltumsūkņiem parametrus deklarē izmantošanai zemas temperatūras diapazonā.
I	Les paramètres sont déclarés pour les conditions climatiques moyennes.	Parametri se navode za prosječne klimatske uvjete.	I parametri sono dichiarati per condizioni climatiche medie.	Parametrus deklarē vidējiem klimatiskajiem apstākļiem.
J	Caractéristique	Stavka	Elemento	Pozīcija
K	Symbole	Oznaka	Simbolo	Apzīmējums
L	Valeur	Vrijednost	Valore	Vērtība
M	Unité	Jedinica	Unità	Vienība
N	Puissance thermique nominale (*)	Nazivna toplinska snaga (*)	Potenza termica nominale (*)	Nominālā siltuma jauda (*)
O	Prated	Prated	Pnominale	Prated
P	Efficacité énergétique saisonnière pour le chauffage des locaux	Sezonska energetska učinkovitost grijanja prostora	Efficienza energetica stagionale del riscaldamento d'ambiente	Telpu apsildes sezonas energoefektivitāte
Q	Puissance calorifique déclarée à charge partielle pour une température intérieure de 20 °C et une température extérieure Tj	Deklarirani ogrjevni kapacitet za djelomično opterećenje pri unutarnjoj temperaturi od 20 °C i vanjskoj temperaturi Tj	Capacità di riscaldamento dichiarata a carico parziale, con temperatura interna pari a 20 °C e temperatura esterna Tj	Deklarētā jauda sildīšanai pie daļējas slodzes, ja temperatūra telpās ir 20 °C un ārgaisa temperatūra ir Tj
R	Coefficient de performance déclaré ou coefficient sur énergie primaire déclaré à charge partielle pour une température intérieure de 20 °C et une température extérieure Tj	Deklarirani koeficijent učinkovitosti ili omjer primarne energije za djelomično opterećenje pri unutarnjoj temperaturi od 20 °C i vanjskoj temperaturi Tj	Coefficiente di prestazione dichiarato o indice di energia primaria per carico parziale, con temperatura interna pari a 20 °C e temperatura esterna Tj	Deklarētais lietderības koeficients vai primārās enerģijas patēriņa rādītājs pie daļējas slodzes, ja temperatūra telpā ir 20 °C un ārgaisa temperatūra ir Tj
S	COPd ou PERd	COPd ili PERd	COPd oppure PERd	COPd vai PERd
T	Tj = température bivalente	Tj = bivalentna temperatura	Tj = temperatura bivalente	Tj = bivalentā temperatūra
U	Tj = température limite de fonctionnement	Tj = granična radna temperatura	Tj = temperatura limite di esercizio	Tj = darba režīma robežtemperatūra
V	Pour les pompes à chaleur air-eau: Tj = – 15 °C (si TOL < – 20 °C)	Za toplinske crpke zrak-voda: Tj = – 15 °C (ako je TOL < – 20 °C)	Per le pompa di calore aria/acqua: Tj = – 15 °C (se TOL < – 20 °C)	Gaiss-ūdens siltumsūkņiem: Tj = – 15 °C (ja TOL < – 20 °C)
W	Température bivalente	Bivalentna temperatura	Temperatura bivalente	Bivalentā temperatūra
X	Pour les pompes à chaleur air-eau: température limite de fonctionnement	Za toplinske crpke zrak-voda: Granična radna temperatura	Per le pompe di calore aria/acqua: temperatura limite di esercizio	Gaiss-ūdens siltumsūkņiem: darba režīma robežtemperatūra
Y	Puissance calorifique sur un intervalle cyclique	Ogrjevni kapacitet intervala ciklusa	Ciclicità degli intervalli di capacità per il riscaldamento	Cikliskā intervāla jauda sildīšanai
Z	Efficacité sur un intervalle cyclique	Učinkovitost intervala ciklusa	Efficienza della ciclicità degli intervalli	Cikliskā intervāla efektivitāte

COMMISSION REGULATION (EU) No 813/2013 l)

No	French(FR)	Croatian(HR)	Italian(IT)	Latvian(LV)
AA	COPcyc ou PERcyc	COPcyc ili PERcyc	COPcyc oppure PERcyc	COPcyc vai PERcyc
AB	Coefficient de dégradation (**)	Koeficijent degradacije (**)	Coefficiente di degradazione (**)	Pazemināju ma koeficients (**)
AC	Température maximale de service de l'eau de chauffage	Granična radna temperatura za grijanje vode	Temperatura limite di esercizio di riscaldamento dell'acqua	Ūdens uzsildīšanas darba režīma robežtemperatūra
AD	Consommation d'électricité dans les modes autres que le mode actif	Potrošnja energije u načinima koji ne uključuju aktivni način rada	Consumo energetico in modi diversi dal modo attivo	Jauda režīmos, kas nav darba režīms
AE	Dispositif de chauffage d'appoint	Dodatni grijač	Riscaldatore supplementare	Papildu sildītājs
AF	Mode arrêt	Stanje isključenosti	Modo spento	Izslēgts režīms
AG	Mode arrêt par thermostat	Stanje isključenosti termostata	Modo termostato spento	Izslēgta termostata režīms
AH	Mode veille	Stanje mirovanja	Modo stand-by	Gaidstāves režīms
AI	Mode résistance de carter active	Način rada grijača kućišta	Modo riscaldamento del carter	Kartera sildītāja režīms
AJ	Type d'énergie utilisée	Vrsta utrošene energije	Tipo di alimentazione energetica	Pievadītās enerģijas veids
AK	Autres caractéristiques	Druge stavke	Altri elementi	Citas pozīcijas
AL	Régulation de la puissance	Upravljanje kapacitetom	Controllo della capacità	Jaudas regulēšana
AM	fixe/variable	fiksno/promjenjivo	fisso/variabile	fiksēta/maināma jauda
AN	Pour les pompes à chaleur air-eau: débit d'air nominal, à l'extérieur	Za toplinsku crpku zrak-voda: Nazivna stopa protoka zraka, na otvorenom	Per le pompe di calore aria/acqua: portata d'aria, all'esterno	Gaiss–ūdens siltumsūkņiem: nominālā gaisa caurplūde, ārpus telpām
AO	m^3/h	m^3/h	m^3/h	m^3/h
AP	Niveau de puissance acoustique, à l'intérieur/à l'extérieur	Razina zvučne snage, unutra/vani	Livello della potenza sonora, all'interno/ all'esterno	Akustiskās jaudas līmenis telpās/ārpus telpām
AQ	Émissions d'oxydes d'azote	Emisija dušikovog oksida	Emissioni di ossidi di azoto	Slāpekļa oksīdu emisijas
AR	Pour les pompes à chaleur eau-eau ou eau glycolée-eau: débit nominal d'eau glycolée ou d'eau, échangeur thermique extérieur	Za toplinske crpke voda/slana voda-voda: Nazivna stopa protoka slane vode ili vode, na vanjskom izmjenjivaču topline	Per le pompe di calore acqua/acqua e salamoia/acqua: flusso di salamoia o acqua nominale, scambiatore di calore all'esterno	Ūdens vai sālsūdens–ūdens siltumsūkņiem: nominālā sālsūdens vai ūdens caurplūde, ārtelpu siltummainis
AS	Pour les dispositifs de chauffage mixtes par pompe à chaleur:	Za kombinirane grijače s toplinskom crpkom:	Per gli apparecchi di riscaldamento misti a pompa di calore:	Siltumsūkņa kombinētajam sildītājam:
AT	Profil de soutirage déclaré	Deklarirani profil opterećenja	Profilo di carico dichiarato	Deklarētais slodzes profils
AU	Efficacité énergétique pour le chauffage de l'eau	Energetska učinkovitost zagrijavanja vode	Efficienza energetica di riscaldamento dell'acqua	Ūdens uzsildīšanas energoefektivitāte
AV	Consommation journalière d'électricité	Dnevna potrošnja električne energije	Consumo quotidiano di energia elettrica	Dienas elektroenerģijas patēriņš
AW	Consommation journalière de combustible	Dnevna potrošnja goriva	Consumo quotidiano di combustibile	Dienas kurināmā patēriņš
AX	Coordonnées de contact	Podaci za kontakt	Recapiti	Kontaktinformācija
AY	(*) Pour les dispositifs de chauffage des locaux par pompe à chaleur et les dispositifs de chauffage mixtes par pompe à chaleur, la puissance thermique nominale Prated est égale à la charge calorifique nominale Pdesignh et la puissance thermique nominale d'un dispositif de chauffage d'appoint Psup est égale à la puissance calorifique d'appoint sup(Tj).	(*) Za toplinske crpke za grijanje prostora i kombinirane grijače s toplinskom crpkom nazivna toplinska snaga Prated jednaka je projektnom ogrjevnom opterećenju Pdesignh, a nazivna toplinska snaga dodatnog grijača Psup jednaka je dodatnom ogrjevnom kapacitetu sup(Tj).	(*) Per gli apparecchi a pompa di calore per il riscaldamento d'ambiente e gli apparecchi di riscaldamento misti a pompa di calore, la potenza termica nominale Pnominale è pari al carico teorico per il riscaldamento Pdesignh e la potenza termica nominale di un riscaldatore supplementare Psup è pari alla capacità supplementare di riscaldamento sup(Tj).	(*) Siltumsūkņa telpu sildītājiem un siltumsūkņa kombinētajiem sildītājiem nominālā siltuma jauda Prated ir vienāda ar aprēķina slodzi sildīšanai Pdesignh un papildu sildītāja nominālā siltuma jauda Psup ir vienāda ar sildīšanas papildu jaudu sup(Tj).
AZ	(**) Si le Cdh n'est pas déterminé par des mesures, le coefficient de dégradation par défaut est Cdh = 0,9.	(**) Ako Cdh nije određen mjerenjem, standardni koeficijent degradacije je Cdh = 0,9.	(**) Se Cdh non è determinato mediante misurazione, il coefficiente di degradazione è Cdh = 0,9.	(**) Ja Cdh nenosaka, izmantojot mērījumus, tad standarta pazemināju ma koeficients ir Cdh = 0,9.
BA	1) Des précautions, comme décrit dans le manuel d'installation/d'utilisation, doivent être prises lors du montage, de l'installation et de l'entretien de l'appareil.	1) Prilikom sastavljanja, instalacije i održavanja proizvoda potrebno je poduzeti mjere opreza navedene u priručniku za instalaciju / korisničkom priručniku.	1) Durante l'assiemaggio, l'installazione e la manutenzione di questo apparecchio vanno poste in atto tutte le avvertenze e le precauzioni che sono indicate nei manuali di installazione e per l'utente.	1) Montāža un produkta apkope jāveic saskaņā ar montāžas/lietošanas instrukciju.
BB	2) Si vous êtes un professionnel à la recherche des informations sur le démontage et le démantèlement, veuillez envoyer un e-mail à l'adresse: erims.sec@samsung.com	2) Ako ste stručnjak u potrazi za informacijama o nerazornom rastavljanju i rasklapanju, pošaljite elektroničku poruku na adresu: erims.sec@samsung.com	2) Se sei un tecnico e vuoi sapere come smontare in modo accurato e non distruttivo il prodotto, invia una email all'indirizzo: erims.sec@samsung.com	2) Ja esat meistars, kas meklē informāciju, kā demontēt un izjaukt ierīci, to nesabojājot, sūtiet e-pasta vēstuli uz adresi: erims.sec@samsung.com.

No	Lithuanian(LT)	Hungarian(HU)	Maltese(MT)	Dutch(NL)
I	KOMISIJOS REGLAMENTAS (ES) Nr. 813/2013	A BIZOTTSÁG 813/2013/EU RENDELETE	REGOLAMENT TAL-KUMMISSJONI (UE) Nru 813/2013	VERORDENING (EU) Nr. 813/2013 VAN DE COMMISSIE
II	Ekologinio projektavimo reikalavimai už patalpų šildytuvas	A környezettudatos tervezésére vonatkozó követelményeket helyiségfűtő berendezés	Rekwiżiti tal-ekodisinn għall ħiter tal-post	De eisen inzake ecologisch ontwerp voor ruimteverwarmingstoestel
A	Modelis (-iai) [modelio (-ų), kuriam (-iems) taikoma informacija, identifikavimo duomenys]	Modell(ek): [az információk tárgyát képező modell(ek) megjelölése]	Mudell(i): [tagħrif li bih jiġi identifikat il-mudell/jiġu identifikati l-mudelli li magħhom huwa relatat dan it-tagħrif]	Model(len): [informatie ter bepaling van het model waarop de informatie betrekking heeft]
B	Oro-vandens šilumos siurblys [taip / ne]	Levegő–víz típusú hőszivattyú: [igen/nem]	Pompa tas-sħana arja-ilma: [iva/le]	Lucht/water-warmtepomp: [ja/neen]
C	Vandens-vandens šilumos siurblys [taip / ne]	Víz–víz típusú hőszivattyú: [igen/nem]	Pompa tas-sħana ilma-ilma: [iva/le]	Water/water-warmtepomp: [ja/neen]
D	Tirpalo-vandens šilumos siurblys [taip / ne]	Sós víz–víz típusú hőszivattyú: [igen/nem]	Pompa tas-sħana salmura-ilma: [iva/le]	Pekel/water-warmtepomp: [ja/neen]
E	Žematemperatūris šilumos siurblys [taip / ne]	Alacsony hőmérsékletű hőszivattyú: [igen/nem]	Pompa tas-sħana b'temperatura baxxa: [iva/le]	Lagetemperatuurwarmtepomp: [ja/neen]
F	Ar yra papildomas šildytuvas [taip / ne]	Rendelkezik-e kiegészítő fűtőberendezéssel: [igen/nem]	Mgħammar b'ħiter supplimentari: [iva/le]	Uitgerust met aanvullend verwarmingstoestel: [ja/neen]
G	Kombinuotasis šildytuvas su šilumos siurbliu [taip / ne]	Hőszivattyús kombinált fűtőberendezés: [igen/nem]	Ħiter ikkombinat b'pompa tas-sħana: [iva/le]	Combinatieverwarmingstoestel met warmtepomp: [ja/neen]
H	Pateikiami naudojimo esant vidutinei temperatūrai parametrai, išskyrus atvejus, kai teikiama informacija apie žematemperatūrius šilumos siurblius. Žematemperatūrių šilumos siurblių atveju pateikiami naudojimo esant žemai temperatūrai parametrai.	A paramétereket az alacsony hőmérsékletű hőszivattyúk kivételével a közepes hőmérsékletű használatra vonatkozóan kell megadni. Az alacsony hőmérsékletű hőszivattyúk esetében a paramétereket az alacsony hőmérsékletű használatra vonatkozóan kell megadni.	Il-parametri għandhom jingħataw għal applikazzjoni b'temperatura medja, ħlief għall-pompi tas-sħana b'temperatura baxxa. Għall-pompi tas-sħana b'temperatura baxxa, il-parametri għandhom jingħataw għal applikazzjoni b'temperatura baxxa.	Parameters moeten worden opgegeven voor toepassing op middelhoge temperatuur, uitgezonderd voor lagetemperatuurwarmtepompen. Voor lagetemperatuurwarmtepompen moeten parameters worden opgegeven bij toepassing op lage temperatuur.
I	Pateikiami naudojimo vidutinėmis klimato sąlygomis parametrai.	A paramétereket az átlagos éghajlati viszonyokra vonatkozóan kell megadni.	Il-parametri għandhom jingħataw għall-kundizzjonijiet klimatiċi medji.	Parameters moeten worden opgegeven voor gemiddelde klimaatomstandigheden.
J	Parametras	Elem	Fattur	Kenmerk
K	Sutartinis ženklas	Jel	Simbolu	Symbool
L	Vertė	Érték	Valur	Waarde
M	Vienetai	Mértékegység	Unità	Eenheid
N	Vardinis šilumos atidavimas (*)	Mért hőteljesítmény (*)	Potenza termika nominali (*)	Nominale warmteafgifte (*)
O	Prated	Prated	Prated	Prated
P	Sezoninis energijos patalpoms šildyti vartojimo efektyvumas	Szezonális helyiségfűtési hatásfok	Effiċjenza enerġetika staġonali tat-tishin tal-post	Seizoensgebonden energie-efficiëntie van ruimteverwarming
Q	Deklaruotasis šildymo pajėgumas su daline apkrova, esant 20 °C patalpų temperatūrai ir lauko temperatūrai Tj .	Névleges fűtőteljesítmény részterhelés mellett, 20 °C beltéri és Tj kültéri hőmérsékleten:	Kapaċità tat-tishin iddikjarata għal tagħbija parzjali b'temperatura ta' ġewwa ta' 20 °C u temperatura ta' barra ta' Tj	Opgegeven verwarmingsvermogen voor deellast bij een binnentemperatuur van 20 °C en een buitentemperatuur Tj
R	Deklaruotasis veiksmingumo koeficientas arba pirminės energijos santykis su daline apkrova, esant 20 °C patalpų temperatūrai ir lauko temperatūrai Tj .	Névleges fűtési jóságfok vagy primerenergia-hányados részterhelés mellett, 20 °C beltéri és Tj kültéri hőmérsékleten	Koeffiċjent iddikjarat tal-prestazzjoni jew proporzjon iddikjarat tal-enerġija primarja għal tagħbija parzjali b'temperatura ta' ġewwa ta' 20 °C u temperatura ta' barra ta' Tj	Opgegeven prestatiecoëfficiënt of primaire-energie-verhouding voor deellast bij een binnentemperatuur van 20 °C en buitentemperatuur Tj
S	COPd arba PERd	COPd vagy PERd	COPd jew PERd	COPd or PERd
T	Tj = perėjimo į dvejopo šildymo režimą temperatūra	Tj = bivalens hőmérséklet	Tj = temperatura bivalenti	Tj = bivalente temperatuur
U	Tj = ribinė veikimo temperatūra	Tj = megengedett üzemi hőmérséklet	Tj = temperatura tal-limitu tat-thaddim	Tj = uiterste bedrijfstemperatuur
V	Oro-vandens šilumos siurblių atveju – Tj = – 15 °C (jei TOL < – 20 °C)	Levegő–víz típusú hőszivattyúk esetében: Tj = – 15 °C (ha TOL < – 20 °C)	Għall-pompi tas-sħana arja-ilma: Tj = – 15 °C (jekk TOL < – 20 °C)	Voor lucht/water-warmtepompen: Tj = – 15 °C (als TOL < – 20 °C)
W	Perėjimo į dvejopo šildymo režimą temperatūra	Bivalens hőmérséklet	Temperatura bivalenti	Bivalente temperatuur
X	Oro-vandens šilumos siurblių atveju – Ribinė veikimo temperatūra	Levegő–víz típusú hőszivattyúk esetében: Megengedett üzemi hőmérséklet	Għall-pompi tas-sħana arja-ilma: Temperatura tal-limitu tat-thaddim	Voor lucht/water-warmtepompen: uiterste bedrijfstemperatuur
Y	Ciklinis pajėgumas šildymo režimu	Fűtési ciklusteljesítmény	Kapaċità tal-intervall ċikliku għat-tishin	Cyclisch-intervalvermogen voor verwarming
Z	Ciklinis efektyvumas	Ciklikus jóságfok	Effiċjenza tal-intervall ċikliku	Cyclisch-intervalefficiëntie
AA	COPcyc arba PERcyc	COPcyc vagy PERcyc	COPcyc jew PERcyc	COPcyc or PERcyc
AB	Blogėjimo koeficientas (**)	Degradációs tényező (**)	Koeffiċjent ta' degradazzjoni (**)	Verliescoëfficiënt (**)
AC	Šildymo vandens ribinė veikimo temperatūra	Fűtővíz megengedett üzemi hőmérséklete	Temperatura limitu tat-thaddim għall-ilma tat-tishin	Uiterste bedrijfstemperatuur van sanitair water

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No	Lithuanian(LT)	Hungarian(HU)	Maltese(MT)	Dutch(NL)
AD	Vartojamoji galia ne aktyviaja veiksena	Energiafogyasztás a főfunkción kívüli üzemmódokban	Konsum tal-enerġija fil-modalitajiet minbarra dik attiva	Elektriciteitsverbruik in andere standen dan de actieve modus
AE	Papildomas šildytuvas	Kiegészítő fűtőberendezés	Ħiter supplimentari	Aanvullend verwarmingstoestel
AF	Išjungties veiksena	Kikapcsolt üzemmód	Modalità Mitfi	Uit-stand
AG	Termostato išjungties veiksena	Termosztát által kikapcsolt üzemmód	Modalità bit-termostat mitfi	Thermostaat-uit-stand
AH	Budėjimo veiksena	Készenléti üzemmód	Modalità Stennija	Stand-by-stand
AI	Karterio šildymo veiksena	Forgattyúház-fűtési üzemmód	Modalità tal-ħiter tal-kisi tal-krank	Carterverwarming-stand
AJ	Tiekiamos energijos rūšis	Energiabevitel jellege	Tip ta' kontribut tal-enerġija	Soort energie-input
AK	Kiti parametrai	További elemek	oġġetti oħra	Andere kenmerken
AL	Pajėgumo valdymas	Teljesítményszabályozás	Kontroll tal-kapaċità	Vermogenscontrole
AM	pastovus/kintamas	rögzített/állítható	fiss/varjabbli	vast/variabel
AN	Oro-vandens šilumos siurblių atveju – vardinis oro srautas (lauke)	Levegő–víz típusú hőszivattyúk esetében: Mért légtömegáram, kültéri	Għall-pompi tas-sħana arja-ilma: Rata nominali ta' fluss tal-arja fuq barra	Voor lucht/water-warmtepompen: nominaal luchtdebiet, buiten
AO	m^3/h	m^3/h	m^3/h	m^3/h
AP	Garso galios lygis (patalpoje/lauke)	Hangteljesítményszint, beltéri/kültéri	Livell ta' qawwa tal-ħoss, fuq barra/fuq ġewwa	Geluidsvermogensniveau, binnen/buiten
AQ	Išmetamų azoto oksidų kiekis	Nitrogén-oxid-kibocsátás	Emissjonijiet tal-ossidi tan-nitroġenu	Emissies van stikstofoxiden
AR	Vandens-vandens ir tirpalo-vandens šilumos siurblių atveju – vardinis tirpalo arba vandens srautas (lauko šilumokaityje)	Víz–/sós víz–víz típusú hőszivattyúk esetében: Mért sósvíz- vagy vízáramlási sebesség, kültéri hőcserélővel	Għall-pompi tas-sħana ilma-/salmura-ilma: Rata nominali ta' fluss tal-ilma jew tas-salmura, skambjatur tas-sħana li jkun jinsab fuq barra	Voor water/water- en pekel/water-warmtepompen: nominaal pekel- of waterdebiet, warmtewisselaar buiten
AS	Kombinuotojo šildytuvo su šilumos siurbliu atveju	Hőszivattyús kombinált fűtőberendezés esetében:	Għall-ħiters ikkombinati b'pompa tas-sħana:	Voor combinatieverwarmingstoestellen met warmtepomp:
AT	Deklaruotasis apkrovos profilis	Névleges terhelési profil	Profil tat-tagħbija ddikjarat	Opgegeven capaciteitsprofiel
AU	Energijos vandeniui šildyti vartojimo efektyvumas	Vízmelegítési hatásfok	Effiċjenza enerġetika tat-tisħin tal-ilma	Energie-efficiëntie van waterverwarming
AV	Elektros energijos suvartojimas per parą	Napi villamosenergia-fogyasztás	Konsum ta' kuljum tal-elettriku	Dagelijks elektriciteitsverbruik
AW	Kuro suvartojimas per parą	Napi tüzelőanyag-fogyasztás	Konsum ta' kuljum tal-fjuwil	Dagelijks brandstofverbruik
AX	Kontaktiniai duomenys	Elérhetőség	Dettalji ta' kuntatt	Contactgegevens
AY	(*) Patalpų šildytuvų su šilumos siurbliu ir kombinuotųjų šildytuvų su šilumos siurbliu atveju vardinis šilumos atidavimas Prated lygus projektinei apkrovai šildymo režimu Pdesignh, o papildomo šildytuvo vardinis šilumos atidavimas Psup lygus papildomam šildymo pajėgumui sup(Tj).	(*) Hőszivattyús helyiségfűtő berendezések és hőszivattyús kombinált fűtőberendezések esetében a Prated mért hőteljesítmény egyenlő a Pdesignh tervezési fűtési terheléssel, emellett a kiegészítő fűtőberendezés Psup mért hőteljesítménye megegyezik a sup(Tj) kiegészítő fűtőteljesítménnyel.	(*) Għall-ħiters tal-post b'pompa tas-sħana u għall-ħiters ikkombinati b'pompa tas-sħana, il-potenza termika nominali, Prated, hija daqs it-tagħbija tad-disinn għat-tisħin, Pdesignh, u l-potenza termika nominali ta' ħiter supplimentari, Psup, hija daqs il-kapaċità supplimentari tat-tisħin, sup(Tj).	(*) Voor ruimteverwarmingstoestellen met warmtepomp en combinatieverwarmingstoestellen met warmtepomp, is de nominale warmteafgifte Prated gelijk aan de ontwerpbelasting voor verwarming Pdesignh, en is de nominale warmteafgifte van een aanvullend verwarmingstoestel Psup gelijk aan het aanvullend vermogen voor verwarming sup(Tj).
AZ	(**) Jei Cdh nenustatomas matuojant, naudojama numatytoji blogėjimo koeficiento vertė Cdh = 0,9.	(**) Amennyiben a Cdh értékét nem méréssel állapítják meg, akkor az alapértelmezett degradációs tényező: Cdh = 0,9.	(**) Jekk il-koeffiċjent ta' degradazzjoni, Cdh, ma jiġix stabbilit bil-kejl, b'mod awtomatiku jitqies li huwa ta' Cdh = 0,9.	(**) Als Cdh niet door meting is bepaald, is de standaardwaarde van de verliescoëfficiënt Cdh = 0,9.
BA	1) Atliekant montavimo ir aptarnavimo darbus privaloma laikytis atsargumo priemonių, nurodytų diegimo/vartotojo vadove.	1) A termék összeszerelése, telepítése és a karbantartása során tartsa be a telepítési/használati útmutatóban leírt óvintézkedéseket.	1) Prekawzjonijiet kif deskritt fl-installazzjoni u l-utent manwali għandhom jittieħdu meta jlaqqa 'installazzjoni, u ż-żamma dan il-prodott	1) De voorzorgsmaatregelen die in de gebruikershandleiding worden beschreven, moeten in acht worden genomen bij montage, installatie en onderhoud van dit product.
BB	2) Jei esate specialistas ir ieškote informacijos kaip išardyti įrangą jos nepažeidžiant, parašykite el. laišką adresu: erims.sec@samsung.com	2) Ha Ön szakember, és információt keres az ártalmatlan szétszereléssel és bontással kapcsolatban, kérjük, küldjön egy e-mailt az: erims.sec@samsung.com címre.	2) Jekk inti persuna professionali u qed tfittex informazjoni fuq armar u zarmar li ma jaghmilx danni, jekk joghbok ibaghat email fuq: erims.sec@samsung.com	2) Als u als professional op zoek bent naar informatie over de niet--destructieve demontage en ontmanteling, stuur dan een e-mail naar: erims.sec@samsung.com

No	Polish(PL)	Portuguese(PT)	Romanian(RO)	Slovak(SK)
I	ROZPORZĄDZENIE KOMISJI (UE) NR 813/2013	REGULAMENTO (UE) N.o 813/2013 DA COMISSÃO	NARIADENIE KOMISIE (EÚ) č. 813/2013	NARIADENIE KOMISIE (EÚ) č. 813/2013
II	Wymogi dotyczące ekoprojektu dla ogrzewaczy pomieszczeń	Os requisitos de conceção ecológica para aquecedor de ambiente	Požiadavky na ekodizajn tepelný zdroj na vykurovanie priestoru	Požiadavky na ekodizajn tepelný zdroj na vykurovanie priestoru
A	Model(-e): [dane określające modele, do których odnoszą się informacje]	Modelo(s): [dados de identificação do(s) modelo(s) a que se refere a informação]	Model(-y): [informácie na určenie modelu(-ov), ktorého(-ých) sa informácie týkajú]	Model(-y): [informácie na určenie modelu(-ov), ktorého(-ých) sa informácie týkajú]
B	Pompa ciepła powietrze/woda: [tak/nie]	Bomba de calor ar-água: [sim/não]	Tepelné čerpadlo vzduch – voda: [áno/nie]	Tepelné čerpadlo vzduch – voda: [áno/nie]
C	Pompa ciepła woda/woda: [tak/nie]	Bomba de calor água-água: [sim/não]	Tepelné čerpadlo voda – voda: [áno/nie]	Tepelné čerpadlo voda – voda: [áno/nie]
D	Pompa ciepła solanka/woda: [tak/nie]	Bomba de calor salmoura-água: [sim/não]	Tepelné čerpadlo slaná voda – voda: [áno/nie]	Tepelné čerpadlo studničná voda – voda: [áno/nie]
E	Niskotemperaturowa pompa ciepła: [tak/nie]	Bomba de calor de baixa temperatura: [sim/não]	Nízkoteplotné tepelné čerpadlo: [áno/nie]	Nízkoteplotné tepelné čerpadlo: [áno/nie]
F	Wyposażona w dodatkowy ogrzewacz: [tak/nie]	Equipada com um aquecedor suplementar: [sim/não]	Vybavené dodatočným tepelným zdrojom: [áno/nie]	Vybavené dodatočným tepelným zdrojom: [áno/nie]
G	Wielofunkcyjny ogrzewacz z pompą ciepła: [tak/nie]	Aquecedor combinado com bomba de calor: [sim/não]	Kombinovaný tepelný zdroj – tepelné čerpadlo: [áno/nie]	Kombinovaný tepelný zdroj – tepelné čerpadlo: [áno/nie]
H	Parametry podaje się dla zastosowań w średnich temperaturach, z wyjątkiem niskotemperaturowych pomp ciepła. W przypadku niskotemperaturowych pomp ciepła parametry podaje się dla zastosowań w niskich temperaturach.	Devem ser indicados parâmetros para aplicação a média temperatura, exceto para as bombas de calor de baixa temperatura. Para as bombas de calor de baixa temperatura, devem ser indicados parâmetros para aplicação a baixa temperatura.	Parametre sa deklarujú pre použitie pri stredných teplotách, okrem tepelných čerpadiel pre nízke teploty. V prípade tepelných čerpadiel pre nízke teploty sa parametre deklarujú pre použitie pri nízkych teplotách.	Parametre majú byť deklarované pre použitie pri stredných teplotách, okrem tepelných čerpadiel pre nízke teploty. V prípade tepelných čerpadiel pre nízke teploty sa parametre majú byť deklarované pre použitie pri nízkych teplotách.
I	Parametry są deklarowane dla warunków klimatu umiarkowanego.	Os parâmetros declarados devem corresponder a condições climáticas médias.	Parametre sa deklarujú pre priemerné klimatické podmienky.	Parametre majú byť deklarované pre priemerné klimatické podmienky.
J	Parametr	Elemento	Položka	Položka
K	Symbol	Símbolo	Symbol	Symbol
L	Wartość	Valor	Hodnota	Hodnota
M	Jednostka	Unidade	Jednotka	Jednotka
N	Znamionowa moc cieplna (*)	Potência calorífica nominal (*)	Menovitý tepelný výkon (*)	Menovitý tepelný výkon (*)
O	Prated	Prated	Prated	Prated
P	Sezonowa efektywność energetyczna ogrzewania pomieszczeń	Eficiência energética do aquecimento ambiente sazonal	Sezónna energetická účinnosť vykurovania	Sezónna energetická účinnosť vykurovania
Q	Deklarowana wydajność grzewcza przy częściowym obciążeniu w temperaturze pomieszczenia 20 °C i temperaturze zewnętrznej Tj	Capacidade declarada para aquecimento a carga parcial a uma temperatura interior de 20 °C e a uma temperatura exterior Tj	Deklarovaný tepelný výkon pre čiastočné zaťaženie pri vnútornej teplote 20 °C a vonkajšej teplote Tj	Deklarovaný tepelný výkon pre čiastočné zaťaženie pri vnútornej teplote 20 °C a vonkajšej teplote Tj
R	Deklarowany wskaźnik efektywności lub wskaźnik zużycia energii pierwotnej przy częściowym obciążeniu w temperaturze pomieszczenia 20 °C i temperaturze zewnętrznej Tj	Coeficiente de desempenho declarado ou rácio de energia primária a carga parcial a uma temperatura interior de 20 °C e a uma temperatura exterior Tj	Deklarovaný vykurovací súčiniteľ alebo súčiniteľ využitia primárnej energie pre čiastočné zaťaženie pri vnútornej teplote 20 °C a vonkajšej teplote Tj	Deklarovaný vykurovací súčiniteľ alebo súčiniteľ využitia primárnej energie pre čiastočné zaťaženie pri vnútornej teplote 20 °C a vonkajšej teplote Tj
S	COPd lub PERd	COPd ou PERd	COPd alebo PERd	COPd alebo PERd
T	Tj = temperatura dwuwartościowa	Tj = temperatura bivalente	Tj = bivalentná teplota	Tj = teplota bivalencie
U	Tj = graniczna temperatura robocza	Tj = temperatura-limite de funcionamento	Tj = prevádzková hraničná teplota	Tj = hraničná prevádzková teplota
V	Pompy ciepła powietrze/woda: Tj = – 15 °C (jeżeli TOL < – 20 °C)	Para bombas de calor ar-água: Tj = – 15 °C (se TOL < – 20 °C)	Pre tepelné čerpadlá vzduch – voda: Tj = – 15 °C (ak TOL < – 20 °C)	Pre tepelné čerpadlá vzduch – voda: Tj = – 15 °C (ak TOL < – 20 °C)
W	Temperatura dwuwartościowa	Temperatura bivalente	Bivalentná teplota	Teplota bivalencie
X	Pompy ciepła powietrze/woda: Graniczna temperatura robocza	Para bombas de calor ar-água: Temperatura-limite de funcionamento	Pre tepelné čerpadlá vzduch – voda: Hraničná prevádzková teplota	Pre tepelné čerpadlá vzduch – voda: Hraničná prevádzková teplota
Y	Wydajność w okresie cyklu w interwale dla ogrzewania	Capacidade de aquecimento em intervalo cíclico	Výkon v rámci cyklického intervalu pre vykurovanie	Výkon v rámci cyklického intervalu pre vykurovanie
Z	Wydajność w okresie cyklu w interwale	Eficiência em intervalo cíclico	Súčiniteľ v rámci cyklického intervalu	Súčiniteľ v rámci cyklického intervalu
AA	COPcyc lub PERcyc	COPcyc ou PERcyc	COPcyc alebo PERcyc	COPcyc alebo PERcyc
AB	Współczynnik strat (**)	Coeficiente de degradação (**)	Súčiniteľ straty účinnosti (**)	Súčiniteľ straty účinnosti (**)
AC	Graniczna temperatura robocza dla podgrzewania wody	Temperatura-limite de funcionamento para água de aquecimento	Hraničná prevádzková teplota pre ohrev úžitkovej vody	Hraničná prevádzková teplota pre ohrev vody
AD	Pobór mocy w trybach innych niż aktywny	Consumo energético em modos distintos do modo ativo	Elektrický príkon v iných režimoch ako aktívny režim	Spotreba el. energie v iných režimoch ako aktívnych

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No	Polish(PL)	Portuguese(PT)	Romanian(RO)	Slovak(SK)
AE	Ogrzewacz dodatkowy	Aquecedor suplementar	Dodatočný tepelný zdroj	Dodatočný tepelný zdroj
AF	Tryb wyłączenia	Modo desligado	Režim vypnutia	Režim vypnutia
AG	Tryb wyłączonego termostatu	Modo termóstato desligado	Režim vypnutia termostatu	Režim vypnutia termostatu
AH	Tryb czuwania	Modo de vigília	Pohotovostný režim	Pohotovostný režim
AI	Tryb włączonej grzałki karteru	Modo de resistência do cárter	Režim ohrevu kľukovej skrine	Režim nahrievania oleja
AJ	Rodzaj pobieranej energii	Tipo de alimentação de energia	Typ elektrického príkonu	Typ elektrického príkonu
AK	Inne parametry	Outros elementos	Alți parametri	Iné položky
AL	Regulacja wydajności	Controlo de capacidade	Regulácia výkonu	Regulácia výkonu
AM	wydajność stała/zmienna	fixo/variável	Pevná/premenlivá	Pevná/premenlivá
AN	Pompy ciepła powietrze/woda: znamionowy przepływ powietrza na zewnątrz	Para bombas de calor ar-água: Caudal de ar nominal, exterior	Pre tepelné čerpadlá vzduch – voda: Menovitý prietok vzduchu, von	Pre tepelné čerpadlá vzduch – voda: Menovitý prietok vzduchu, exteriér
AO	m^3/h	m^3/h	m^3/h	m^3/h
AP	Poziom mocy akustycznej w pomieszczeniu/na zewnątrz	Nível de potência sonora interior/exterior	Vnútorná/vonkajšia hladina akustického výkonu	Vnútorná/vonkajšia hladina akustického výkonu
AQ	Emisje tlenków azotu	Emissões de óxidos de azoto	Emisie oxidov dusíka	Emisie oxidov dusíka
AR	Pompy ciepła woda/solanka-woda: znamionowe natężenie przepływu solanki lub wody, zewnętrzny wymiennik ciepła	Para bombas de calor água/salmoura-água: Caudal nominal de salmoura ou água, permutador térmico exterior	Pre tepelné čerpadlá voda/slaná voda – voda: Menovitý prietok slanej vody alebo vody, vonkajší výmenník tepla	Pre tepelné čerpadlá voda/studničná voda – voda: Menovitý prietok studničnej vody alebo vody, vonkajší výmenník tepla
AS	Wielofunkcyjne ogrzewacze z pompą ciepła:	Para aquecedores combinados com bomba de calor:	Pre kombinovaný tepelný zdroj – tepelné čerpadlo:	Pre kombinovaný tepelný zdroj tepelného čerpadlo:
AT	Deklarowany profil obciążeń	Perfil de carga declarado	Deklarovaný profil zaťaženia	Deklarovaný profil zaťaženia
AU	Efektywność energetyczna podgrzewania wody	Eficiência energética do aquecimento de água	Energetická účinnosť prípravy teplej vody	Energetická účinnosť prípravy teplej vody
AV	Dzienne zużycie energii elektrycznej	Consumo diário de eletricidade	Denná spotreba elektrickej energie	Denná spotreba elektrickej energie
AW	Dzienne zużycie paliwa	Consumo diário de combustível	Denná spotreba paliva	Denná spotreba paliva
AX	Dane kontaktowe	Elementos de contacto	Kontaktné údaje	Kontaktné údaje
AY	(*) W przypadku ogrzewaczy pomieszczeń z pompą ciepła i wielofunkcyjnych ogrzewaczy z pompą ciepła znamionowa moc cieplna Prated jest równa obciążeniu obliczeniowemu dla trybu ogrzewania Pdesignh, a znamionowa moc cieplna ogrzewacza dodatkowego Psup jest równa dodatkowej wydajności grzewczej dla trybu ogrzewania sup(Tj).	(*) Para aquecedores de ambiente com bomba de calor e aquecedores combinados com bomba de calor, a potência calorífica nominal Prated é igual à carga de projeto para aquecimento Pdesignh e a potência calorífica nominal de um aquecedor suplementar Psupp é igual à capacidade de aquecimento suplementar sup(Tj).	(*) Pre tepelné zdroje na vykurovanie priestoru – tepelné čerpadlá a kombinované tepelné zdroje – tepelné čerpadlá sa menovitý tepelný výkon Prated rovná projektovanému vykurovaciemu zaťaženiu Pdesignh, a menovitý tepelný výkon dodatočného tepelného zdroja Psup sa rovná dodatočnému tepelnému výkonu sup(Tj).	(*) Pre tepelné zdroje na vykurovanie priestoru – tepelné čerpadlá a kombinované tepelné zdroje sa menovitý tepelný výkon Prated rovná projektovanému vykurovaciemu zaťaženiu Pdesignh a menovitý tepelný výkon dodatočného tepelného zdroja Psup sa rovná dodatočnému tepelnému výkonu sup(Tj).
AZ	(**) Jeżeli współczynnik Cdh nie został wyznaczony przez pomiar, współczynnik strat przyjmuje wartość domyślną Cdh = 0,9.	(**) Se não se determinar Cdh por medição, o coeficiente de degradação predefinido é Cdh = 0,9.	(**) Ak Cdh nie je určené meraním, implicitný súčiniteľ straty účinnosti je Cdh = 0,9.	(**) Ak Cdh nie je určené meraním, potom predvolený súčiniteľ straty účinnosti je Cdh = 0,9.
BA	1) W trakcie montażu, instalacji i obsługi tego produktu należy zachować zasady bezpieczeństwa opisane w instrukcji instalacji/obsługi.	1) As precauções descritas no manual de instalação/instruções dever ser adotadas durante a montagem, instalação ou manutenção do produto.	1) Trebuie să fiți precauți conform manualului de utilizare/instalare în timpul asamblării, instalării și întreținerii acestui produs.	1) Výstrahy ako sú popísané v inštalačnom/užívateľskom manuáli musia byť uvážené pri montáži, inštalácii a starostlivosti o produkt.
BB	2) Jeśli jesteś profesjonalistą szukającym informacji dotyczących nieniszczących metod demontażu i rozbiórki, uprzejmie prosimy o wysłanie wiadomości email na adres: erims.sec@samsung.com	2) Se é um profissional e pretende obter informações sobre desmontagem e desmantelamento não destrutivos, envie um e-mail para: erims.sec@samsung.com	2) Odborní pracovníci môžu získať informácie týkajúce sa nedeštruktívnej demontáže na nasledujúcej e-mailovej adrese: erims.sec@samsung.com.	2) Odborní pracovníci môžu získať informácie týkajúce sa správnej demontáže na nasledujúcej e-mailovej adrese: erims.sec@samsung.com.

No	Slovenian(SL)	Finnish(FI)	Swedish(SV)
I	UREDBA KOMISIJE (EU) št. 813/2013	KOMISSION ASETUS (EU) N:o 813/2013,	KOMMISSIONENS FÖRORDNING (EU) nr 813/2013
II	Okoljsko primerno zasnovo zahteve za grelnik prostorov	Ekosuunnitteluvaatimukset varten tilalämmittimellä	Ekodesignkraven för rumsuppvärmning
A	Model(-i): [informacije za identifikacijo modela(-lov), na katere se informacije nanašajo]	Malli(t): [tiedot sen mallin (niiden mallien) yksilöimiseksi, joita tiedot koskevat]	Modell(er): [Information som identifierar den modell (de modeller) som informationen gäller]
B	Toplotna črpalka zrak–voda: [da/ne]	Ilma-vesi-lämpöpumppu: [kyllä/ei]	Luft-till-vatten-värmepump: [ja/nej]
C	Toplotna črpalka voda–voda: [da/ne]	Vesi-vesi-lämpöpumppu: [kyllä/ei]	Vatten-till-vatten-värmepump: [ja/nej]
D	Toplotna črpalka slanica–voda: [da/ne]	Suolavesi-vesi-lämpöpumppu: [kyllä/ei]	Saltlösning-till-vatten-värmepump: [ja/nej]
E	Nizkotemperaturna toplotna črpalka: [da/ne]	Matalan lämpötilan lämpöpumppu: [kyllä/ei]	Lågtemperaturvärmepump: [ja/nej]
F	Opremljena z dodatnim grelnikom: [da/ne]	Varustettu lisälämmittimellä: [kyllä/ei]	Utrustad med extra värmegenerator: [ja/nej]
G	Kombinirani grelnik s toplotno črpalko: [da/ne]	Lämpöpumppuyhdistelmälämmitin: [kyllä/ei]	Pannor med inbyggd tappvarmvattenberedning och med värmepump: [ja/nej]
H	Parametri se navedejo za uporabo pri srednji temperaturi, razen za nizkotemperaturne toplotne črpalke. Parametri za nizkotemperaturne toplotne črpalke se navedejo za uporabo pri nizki temperaturi.	Parametrit ilmoitetaan keskilämpötilan sovelluksesta, lukuun ottamatta matalan lämpötilan lämpöpumppuja. Matalan lämpötilan lämpöpumpuista parametrit ilmoitetaan matalan lämpötilan sovelluksesta.	Parametrar ska anges för mediumtemperaturtillämpning, utom för lågtemperaturvärmepumpar. För lågtemperaturvärmepumpar ska parametrarna anges för lågtemperaturapplikationer.
I	Parametri se navedejo za povprečne podnebne razmere.	Parametrit ilmoitetaan keskimääräisissä ilmasto-olosuhteissa.	Parametrarna ska anges för genomsnittliga klimatförhållanden.
J	Postavka	Kohta	Post
K	Oznaka	Symboli	Beteckning
L	Vrednost	Arvo	Värde
M	Enota	Yksikkö	Enhet
N	Nazivna izhodna toplota (*)	Nimellislämpöteho (*)	Nominell avgiven värmeeffekt (*)
O	Prated	Prated	Pmärk
P	Sezonska energijska učinkovitost ogrevanja prostorov	Tilalämmityksen kausittainen energiatehokkuus	Säsongsmedelverkningsgrad för rumsuppvärmning
Q	Prijavljena zmogljivost ogrevanja za delno obremenitev pri temperaturi v notranjih prostorih 20 °C in temperaturi na prostem Tj	Ilmoitettu lämmitysteho osakuormalla sisälämpötilassa 20 °C ja ulkolämpötilassa Tj	Deklarerad kapacitet för uppvärmning för delbelastning vid innetemperatur 20 °C och utetemperatur Tj
R	Prijavljen koeficient učinkovitosti ali razmerje primarne energije za delno obremenitev pri temperaturi v notranjih prostorih 20 °C in temperaturi na prostem Tj	Ilmoitettu lämpökerroin tai primäärienergiakerroin osakuormalla sisälämpötilassa 20 °C ja ulkolämpötilassa Tj	Deklarerad värmefaktor eller primärenergifaktor för delbelastning vid en inomhustemperatur på 20 °C och en utomhustemperatur Tj
S	COPd ali PERd	COPd tai PERd	COPd eller PERd
T	Tj = bivalentna temperatura	Tj = kaksiarvoinen lämpötila	Tj = bivalenttemperatur
U	Tj = mejna delovna temperatura	Tj = toimintarajalämpötila	Tj = gränstemperatur för drift
V	Za toplotne črpalke zrak–voda: Tj = – 15 °C (če je TOL < – 20 °C)	Ilma-vesi-lämpöpumput: Tj = – 15 °C (jos TOL < – 20 °C)	För luft-till-vatten-värmepumpar: Tj = – 15 °C (om TOL < – 20 °C)
W	Bivalentna temperatura	Kaksiarvoinen lämpötila	Bivalenttemperatur
X	Za toplotne črpalke zrak–voda: mejna delovna temperatura	Ilma-vesi-lämpöpumput: Toimintarajalämpötila	För luft-till-vatten-värmepumpar: Gränstemperatur för drift
Y	Zmogljivost intervala cikla za ogrevanje	Lämmityksen vuorottelujaksoteho	Cykelintervallets uppvärmningskapacitet
Z	Učinkovitost intervala cikla	Vuorottelujakson energiatehokkuus	Cykelintervallets verkningsgrad
AA	COPcyc ali PERcyc	COPcyc tai PERcyc	COPcyc eller PERcyc
AB	Koeficient degradacije (**)	Alenemiskerroin (**)	Degraderingskoefficient (**)
AC	Mejna delovna temperatura za ogrevanje vode	Lämmitysveden toimintarajalämpötila	Uppvärmningsvattnets gränstemperatur för drift
AD	Poraba energije v načinih, ki ne vključujejo načina aktivnega delovanja	Tehonkulutus muissa tiloissa kuin aktiivisessa toimintatilassa	Effektförbrukning i andra lägen än aktivt läge
AE	Dodatni grelnik	Lisälämmitin	Extra värmegenerator
AF	Stanje izključenosti	Pois päältä -tila	Frånläge
AG	Stanje izključenosti termostata	Termostaatti pois päältä -tila	Termostatfrånläge
AH	Stanje pripravljenosti	Valmiustila	Standbyläge
AI	Način grelnika ohišja	Kampikammion lämmitys -tila	Vevhusvärmarläge
AJ	Vrsta dovedene energije	Ottoenergian tyyppi	Typ av tillförd energi

COMMISSION REGULATION (EU) No 813/2013 l)

No	Slovenian(SL)	Finnish(FI)	Swedish(SV)
AK	Druge postavke	Muut kohdat	Andra poster
AL	Upravljanje zmogljivosti	Tehonsäätö	Kapacitetsreglering
AM	stalna/spremenljiva	kiinteä/muuttuva	fast/variabel
AN	Za toplotne črpalke zrak–voda: nazivna stopnja pretoka zraka, zunanja	Ilma-vesi-lämpöpumput: nimellisilmavirta, ulkona	För luft-till-vatten-värmepumpar: Nominellt luftflöde (ute)
AO	m^3/h	m^3/h	m^3/h
AP	Nivo zvokovne moči, v notranjih prostorih/na prostem	Äänitehotaso, sisällä/ulkona	Ljudeffektnivå, inomhus/utomhus
AQ	Emisije dušikovih oksidov	Typen oksidien päästöt	Utsläpp av kväveoxider
AR	Za toplotne črpalke voda/slanica–voda: nazivna stopnja pretoka slanice ali vode, zunanji izmenjevalnik toplote	Vesi-/suolavesi-vesi-lämpöpumput: suolaveden tai veden nimellisvirtaus, ulkolämmönsiirrin	För vatten-/saltlösning-till-vatten-värmepumpar: Nominellt saltlösning- eller vattenflöde, värmeväxlare utomhus
AS	Za kombinirani grelnik s toplotno črpalko:	Lämpöpumppuyhdistelmälämmitin:	För pannor med inbyggd tappvarmvattenberedning och med värmepump:
AT	Določeni profil rabe	Ilmoitettu kuormitusprofiili	Deklarerad belastningsprofil
AU	Energijska učinkovitost ogrevanja vode	Vedenlämmityksen energiatehokkuus	Energieffektivitet vid uppvärmning av vatten
AV	Dnevna poraba električne energije	Vuorokautinen sähkönkulutus	Daglig elförbrukning
AW	Dnevna poraba goriva	Vuorokautinen polttoaineenkulutus	Daglig bränsleförbrukning
AX	Kontaktni podatki	Yhteystiedot	Kontakt
AY	(*) Za toplotne črpalke za ogrevanje prostorov in kombinirane grelnike s toplotno črpalko je nazivna izhodna toplota Prated enaka nazivni obremenitvi za ogrevanje Pdesignh, nazivna izhodna toplota dodatnega grelnika Psup pa je enaka dodatni zmogljivosti ogrevanja sup(Tj).	(*) Lämpöpumpputilalämmittimillä ja lämpöpumppuyhdistelmälämmittimillä nimellislämpöteho Prated on yhtä suuri kuin lämmityksen mitoituskuorma Pdesignh ja lisälämmittimen nimellislämpöteho Psup on yhtä suuri kuin lisälämmitysteho sup(Tj).	(*) För värmare med värmepump för rumsuppvärmning och pannor med inbyggd tappvarmvattenberedning och med värmepump är den nominella avgivna värmeeffekten Prated lika med den dimensionerade värmekapaciteten Pdesignh, och den nominella avgivna värmeeffekten hos en extra värmegenerator Psup är lika med den kompletterande uppvärmningskapaciteten sup(Tj).
AZ	(**) Če Cdh ni določen z meritvami, privzeti koeficient degradacije znaša Cdh = 0,9.	(**) Jos Cdh:n arvoa ei määritetä mittaamalla, alenemiskertoimen oletusarvo on Cdh = 0,9.	(**) Om Cdh inte bestäms genom mätningar ska degraderingskoefficienten vara Cdh = 0,9.
BA	1) Pri sestavljanju, nameščanju ter vzdrževanju izdelka upoštevajte previdnostne ukrepe, ki so navedeni v priročniku za uporabo in namestitev.	1) Asennus- tai käyttöoppaassa kuvattuja turvaohjeita on noudatettava laitteen kokoamisen, asentamisen ja huollon aikana.	1) Försiktighetsåtgärderna som beskrivs i installationsmanualen/bruksanvisningen måste följas vid montering, installation och underhåll av denna produkt.
BB	2) Če ste strokovnjak in iščete informacije o neporušitvenem razstavljanju in demontaži, pošljite e-poštno sporočilo na: erims.sec@samsung.com	2) Jos olet ammattiasentaja ja haluat lisätietoja asennuksen turvallisesta purkamisesta, lähettäkää sähköpostia osoitteeseen erims.sec@samsung.com	2) Om du är en professionell användare som letar efter information om icke-destruktiv demontering och isärtagande av dammsugaren, kan du skicka ett e-postmeddelande till: erims.sec@samsung.com

COMMISSION DELEGATED REGULATION (EU) No 811/2013 i)

PRODUCT FICHE (ENERGY LABELLING OF SPACE HEATERS) ii)

a	Supplier's name or trademark			Samsung Electronics Co., Ltd.	Samsung Electronics Co., Ltd.	Samsung Electronics Co., Ltd.
b	Supplier's model identifier			AG042KSVANH/EU	AG056KSVANH/EU	AG070KSVANH/EU
c	Seasonal space heating energy efficiency class	Medium-temperature (p)	-	-	-	-
		Low-temperature (q)	-	A+	A+	A+
d	Rated heat output (Average)	Medium-temperature (p)	kW	-	-	-
		Low-temperature (q)	kW	27	35	43
e	Seasonal space heating energy efficiency (Average)	Medium-temperature (p)	%	-	-	-
		Low-temperature (q)	%	139	131	126
f	Annual energy consumption (Average)	Medium-temperature (p)	kWh	-	-	-
		Low-temperature (q)	kWh	10878	14962	19111
g	L_{WA} (sound power level, indoor)		dB	-	-	-
h	Specific precautions[1)]		-			
i	Rated heat output (Colder)	Medium-temperature (p)	kW	-	-	-
		Low-temperature (q)	kW	25	33	40
j	Rated heat output (Warmer)	Medium-temperature (p)	kW	-	-	-
		Low-temperature (q)	kW	28	37	44
k	Seasonal space heating energy efficiency (Colder)	Medium-temperature (p)	%	-	-	-
		Low-temperature (q)	%	108	107	104
l	Seasonal space heating energy efficiency (Warmer)	Medium-temperature (p)	%	-	-	-
		Low-temperature (q)	%	187	186	183
m	Annual energy consumption (Colder)	Medium-temperature (p)	kWh	-	-	-
		Low-temperature (q)	kWh	19444	25907	32308
n	Annual energy consumption (Warmer)	Medium-temperature (p)	kWh	-	-	-
		Low-temperature (q)	kWh	8385	11140	13464
o	L_{WA} (sound power level, outdoor)		dB	80	83	86

r [1)] Precautions as described in the installation/user manual must be taken when assembling, installing and maintaining this product.

PRODUCT FICHE (ENERGY LABELLING OF PACKAGES OF SPACE HEATER) iii)

a	Supplier's name or trademark		Samsung Electronics Co., Ltd.	Samsung Electronics Co., Ltd.	Samsung Electronics Co., Ltd.
b	Supplier's model identifier		AG042KSVANH/EU	AG056KSVANH/EU	AG070KSVANH/EU
s	Seasonal space heating energy efficiency (Preferential space heater)	%	139	131	126
t	Factor for weighting the heat output (Preferential space heater)	-	0	0	0
u	Mathematical expression : 294 /(11 • Prated) [1)]	-	1.0	0.8	0.6
v	Mathematical expression : 115 /(11 • Prated) [2)]	-	1.0	1.0	1.0
w	The difference between the seasonal space heating energy efficiencies under average and colder climate conditions [3)]	%	114	98	86
x	The difference between the seasonal space heating energy efficiencies under warmer and average climate conditions [4)]	%	-48	-55	-57

y [1)] Whereby Prated is related to the preferential space heater.

z [2)] Whereby Prated is related to the preferential space heater.

aa [3), 4)] For preferential heat pump space heaters.

PRODUCT FICHE (ENERGY LABELLING OF TEMPERATURE CONTROLS) iv)

a	Supplier's name or trademark	-	Samsung Electronics Co., Ltd.	Samsung Electronics Co., Ltd.	Samsung Electronics Co., Ltd.
b	Supplier's model identifier	-	AG042KSVANH/EU	AG056KSVANH/EU	AG070KSVANH/EU
ab	The class of the temperature control	-	Class II	Class II	Class II
ac	The contribution of the temperature control to seasonal space heating energy efficiency	%	139	131	126

COMMISSION DELEGATED REGULATION (EU) No 811/2013 i)

PRODUCT FICHE (ENERGY LABELLING OF SPACE HEATERS) ii)

a	Supplier's name or trademark			Samsung Electronics Co., Ltd.	Samsung Electronics Co., Ltd.	Samsung Electronics Co., Ltd.
b	Supplier's model identifier			AG042KSVGNH/EU	AG056KSVGNH/EU	AG070KSVGNH/EU
c	Seasonal space heating energy efficiency class	Medium-temperature (p)	-	-	-	-
		Low-temperature (q)	-	A	A	A
d	Rated heat output (Average)	Medium-temperature (p)	kW	-	-	-
		Low-temperature (q)	kW	27	35	43
e	Seasonal space heating energy efficiency (Average)	Medium-temperature (p)	%	-	-	-
		Low-temperature (q)	%	121	117	117
f	Annual energy consumption (Average)	Medium-temperature (p)	kWh	-	-	-
		Low-temperature (q)	kWh	12496	16752	20581
g	L_{WA} (sound power level, indoor)		dB	-	-	-
h	Specific precautions[1)]		-			
i	Rated heat output (Colder)	Medium-temperature (p)	kW	-	-	-
		Low-temperature (q)	kW	25	33	40
j	Rated heat output (Warmer)	Medium-temperature (p)	kW	-	-	-
		Low-temperature (q)	kW	28	37	44
k	Seasonal space heating energy efficiency (Colder)	Medium-temperature (p)	%	-	-	-
		Low-temperature (q)	%	97	98	98
l	Seasonal space heating energy efficiency (Warmer)	Medium-temperature (p)	%	-	-	-
		Low-temperature (q)	%	152	161	164
m	Annual energy consumption (Colder)	Medium-temperature (p)	kWh	-	-	-
		Low-temperature (q)	kWh	21649	28286	34286
n	Annual energy consumption (Warmer)	Medium-temperature (p)	kWh	-	-	-
		Low-temperature (q)	kWh	10316	12870	15024
o	L_{WA} (sound power level, outdoor)		dB	80	84	88

r [1)] Precautions as described in the installation/user manual must be taken when assembling, installing and maintaining this product.

PRODUCT FICHE (ENERGY LABELLING OF PACKAGES OF SPACE HEATER) iii)

a	Supplier's name or trademark		Samsung Electronics Co., Ltd.	Samsung Electronics Co., Ltd.	Samsung Electronics Co., Ltd.
b	Supplier's model identifier		AG042KSVGNH/EU	AG056KSVGNH/EU	AG070KSVGNH/EU
s	Seasonal space heating energy efficiency (Preferential space heater)	%	121	117	117
t	Factor for weighting the heat output (Preferential space heater)	-	0	0	0
u	Mathematical expression : 294 /(11 • Prated) [1)]	-	1.0	0.8	0.6
v	Mathematical expression : 115 /(11 • Prated) [2)]	-	1.0	1.0	1.0
w	The difference between the seasonal space heating energy efficiencies under average and colder climate conditions [3)]	%	96	84	77
x	The difference between the seasonal space heating energy efficiencies under warmer and average climate conditions [4)]	%	-31	-44	-47

y [1)] Whereby Prated is related to the preferential space heater.

z [2)] Whereby Prated is related to the preferential space heater.

aa [3), 4)] For preferential heat pump space heaters.

PRODUCT FICHE (ENERGY LABELLING OF TEMPERATURE CONTROLS) iv)

a	Supplier's name or trademark	-	Samsung Electronics Co., Ltd.	Samsung Electronics Co., Ltd.	Samsung Electronics Co., Ltd.
b	Supplier's model identifier	-	AG042KSVGNH/EU	AG056KSVGNH/EU	AG070KSVGNH/EU
ab	The class of the temperature control	-	Class II	Class II	Class II
ac	The contribution of the temperature control to seasonal space heating energy efficiency	%	121	117	117

No	English(EN)	Bulgarian(BG)	Spanish(ES)	Czech(CS)
i	COMMISSION DELEGATED REGULATION (EU) No 811/2013	ДЕЛЕГИРАН РЕГЛАМЕНТ (ЕС) № 811/2013 НА КОМИСИЯТА	REGLAMENTO DELEGADO (UE) No 811/2013 DE LA COMISIÓN	NAŘÍZENÍ KOMISE V PŘENESENÉ PRAVOMOCI (EU) č. 811/2013
ii	PRODUCT FICHE (ENERGY LABELLING OF SPACE HEATERS)	Продуктов фиш (енергийното етикетиране на отоплителни топлоизточници)	Ficha del producto (etiquetado energético de aparatos de calefacción)	Informační list výrobku (energie na energetických štítcích ohřívačů pro vytápění vnitřních prostorů)
iii	PRODUCT FICHE (ENERGY LABELLING OF PACKAGES OF SPACE HEATER)	Продуктов фиш (енергийното етикетиране на КОМПЛЕКТИ ОТ ОТОПЛИТЕЛЕН ТОПЛОИЗТОЧНИК)	Ficha del producto (etiquetado energético de EQUIPOS COMBINADOS DE APARATO DE CALEFACCIÓN)	Informační list výrobku (energie na energetických štítcích ohřívačů pro souprav sestávajících z ohřívače pro vytápění vnitřních prostorů)
iv	PRODUCT FICHE (ENERGY LABELLING OF TEMPERATURE CONTROLS)	Продуктов фиш (енергийното етикетиране на	Ficha del producto (etiquetado energético de CONTROLES DE TEMPERATURA)	Informační list výrobku (energie na energetických štítcích ohřívačů pro regulátoru teploty)
a	Supplier's name or trademark	наименование или търговска марка на доставчика	nombre o marca comercial del proveedor	název nebo ochranná známka dodavatele
b	Supplier's model identifier	идентификатор на доставчика за модела	identificador del modelo del proveedor	identifikační značka modelu používaná dodavatelem
c	Seasonal space heating energy efficiency class	класът на сезонна отоплителна енергийна ефективност	la clase de eficiencia energética estacional de calefacción	třída sezonní energetické účinnosti vytápění
d	Rated heat output (Average)	номиналната топлинна мощност (средни)	la potencia calorífica nominal (medias)	jmenovitý tepelný výkon (průměrných)
e	Seasonal space heating energy efficiency (Average)	сезонната енергийна ефективност при отопление (средни)	la eficiencia energética estacional de calefacción (medias)	sezonní energetická účinnost vytápění (průměrných)
f	Annual energy consumption (Average)	годишното потребление на енергия (средни)	el consumo anual de energía (medias)	roční spotřeba energie (průměrných)
g	L_{WA} (sound power level, indoors)	LWA (нивото на звуковата мощност, на закрито)	LWA (el nivel de potencia acústica, en interiores)	L_{WA} (případně hladina akustického výkonu, vnitřním prostoru)
h	Specific precautions[1)]	специфични предпазни1)	precauciones específicas[1)]	konkrétní preventivní opatření[1)]
i	Rated heat output (Colder)	номиналната топлинна мощност (по-студени)	la potencia calorífica nominal ()	jmenovitý tepelný výkon (chladnějších)
j	Rated heat output (Warmer)	номиналната топлинна мощност (по-топли)	la potencia calorífica nominal ()	jmenovitý tepelný výkon (teplejších)
k	Seasonal space heating energy efficiency (Colder)	сезонната енергийна ефективност при отопление (по-студени)	la eficiencia energética estacional de calefacción (más frías)	sezonní energetická účinnost vytápění (chladnějších)
l	Seasonal space heating energy efficiency (Warmer)	сезонната енергийна ефективност при отопление (по-топли)	la eficiencia energética estacional de calefacción (más cálidas)	sezonní energetická účinnost vytápění (teplejších)
m	Annual energy consumption (Colder)	годишното потребление на енергия (по-студени)	el consumo anual de energía (más frías)	roční spotřeba energie (chladnějších)
n	Annual energy consumption (Warmer)	годишното потребление на енергия (по-топли)	el consumo anual de energía (más cálidas)	roční spotřeba energie (teplejších)
o	L_{WA} (sound power level, outdoors)	LWA (нивото на звуковата мощност, на открито)	LWA (el nivel de potencia acústica, en exteriores)	L_{WA} (případně hladina akustického výkonu, venkovním prostoru)
p	Medium-temperature	среднотемпературни	de temperatura media	střednéteplotní
q	Low-temperature	нискотемпературни	de baja temperatura	nízkoteplotním
r	[1)] Precautions as described in the installation/user manual must be taken when assembling, installing and maintaining this product.	1) Описаните в ръководството за монтиране/ ръководството за потребителя предпазни мерки трябва да се спазват при сглобяване, монтиране и поддръжка на продукта.	[1)] Las precauciones descritas en los manuales de usuario e intalación deber tomarse cuando se ensambla, instala y mantiene este producto	[1)] Při montáži, instalaci a údržbě tohoto produktu je třeba se řídit bezpečnostními opatřeními popsanými v instalační a uživatelské příručce.
s	Seasonal space heating energy efficiency (Preferential space heater)	сезонната енергийна ефективност при отопление (приоритетно използвания отоплителен топлоизточник)	la eficiencia energética estacional de calefacción (aparato de calefacción preferente)	Seasonal space heating energy efficiency (preferovaného ohřívače pro vytápění vnitřních prostorů)
t	Factor for weighting the heat output (Preferential space heater)	тегловният коефициент за претегляне на топлинната енергия (приоритетно използвания отоплителен топлоизточник)	el factor de ponderación de la potencia calorífica (aparato de calefacción preferente)	faktor pro porovnání tepelného výkonu (preferovaného ohřívače pro vytápění vnitřních prostorů)
u	Mathematical expression : 294 /(11 • Prated) [1)]	математическия израз : 294 /(11 • Prated) 1)	la expresión matemática : 294 /(11 • Prated) [1)]	hodnotu matematického výrazu : 294 /(11 • Prated) [1)]
v	Mathematical expression : 115 /(11 • Prated) [2)]	математическия израз : 115 /(11 • Prated) 2)	la expresión matemática : 115 /(11 • Prated) [2)]	hodnotu matematického výrazu : 115 /(11 • Prated) [2)]
w	The difference between the seasonal space heating energy efficiencies under average and colder climate conditions [3)]	разликата между сезонната отоплителна енергийна ефективност при средни климатични условия и тази при по-студени климатични условия 3)	la diferencia entre las eficiencias energéticas estacionales de calefacción en condiciones climáticas medias y más frías, expresado en porcentaje	rozdílu sezonních energetických účinností vytápění za průměrných a chladnějších klimatických podmínek [3)]
x	The difference between the seasonal space heating energy efficiencies under warmer and average climate conditions [4)]	разликата между сезонната отоплителна енергийна ефективност при по-топли климатични условия и тази при средни климатични условия 4)	la diferencia entre las eficiencias energéticas estacionales de calefacción en condiciones climáticas más cálidas y medias, expresado en porcentaje	rozdílu sezonních energetických účinností vytápění za teplejších a průměrných klimatických podmínek [4)]
y	[1)] Whereby Prated is related to the preferential space heater.	1) където Prated е свързана с приоритетно използвания отоплителен топлоизточник	[1)] donde la Prated está relacionada con el aparato de calefacción preferente	[1)] přičemž Prated se vztahuje k preferovanému ohřívači pro vytápění vnitřních prostorů
z	[2)] Whereby Prated is related to the preferential space heater.	2) където Prated е свързана с приоритетно използвания отоплителен топлоизточник	[2)] donde la Prated está relacionada con el aparato de calefacción preferente	[2)] preferovanému ohřívači pro vytápění vnitřních prostorů
aa	[3),4)] For preferential heat pump space heaters	3),4) за приоритетно използвани отоплителни термопомпени агрегати	[3),4)] en lo que respecta a los aparatos de calefacción preferentes con bomba de calor	[3),4)] preferovaných ohřívačů pro vytápění vnitřních prostorů s tepelným čerpadlem navíc
ab	The class of the temperature control	класът на регулатора на температурата	la clase del control de temperatura	třída regulátoru teploty
ac	The contribution of the temperature control to seasonal space heating energy efficiency	приносът на регулатора на температурата към сезонната енергийна ефективност при отопление	la contribución del control de temperatura a la eficiencia energética estacional de calefacción	přínos regulátoru teploty k sezonní energetické účinnosti vytápění

COMMISSION DELEGATED REGULATION (EU) No 811/2013 i)

No	Danish(DA)	German(DE)	Estonian(ET)	Greek(EL)
i	KOMMISSIONENS DELEGEREDE FORORDNING (EU) Nr. 811/2013	DELEGIERTE VERORDNUNG (EU) Nr. 811/2013 DER KOMMISSION	KOMISJONI DELEGEERITUD MÄÄRUS (EL) nr 811/2013	ΚΑΤ' ΕΞΟΥΣΙΟΔΟΤΗΣΗ ΚΑΝΟΝΙΣΜΟΣ (ΕΕ) αριθ. 811/2013 ΤΗΣ ΕΠΙΤΡΟΠΗΣ
ii	Produktdatablad (energimærkning af anlæg til rumopvarmning)	Produktdatenblatt (Energiekennzeichnung von Raumheizgeräten)	Tootekirjeldus (energiamärgistusega kohta kütteseadmest)	Δελτίο προϊόντος (ενεργειακή επισήμανση των θερμαντήρων χώρου)
iii	Produktdatablad (energimærkning af anlæg til pakker med anlæg til rumopvarmning)	Produktdatenblatt (Energiekennzeichnung von Verbundanlagen aus Raumheizgeräten)	Tootekirjeldus (energiamärgistusega kohta kütteseadme, komplekt)	Δελτίο προϊόντος (ενεργειακή επισήμανση των των των συγκροτημάτων θερμαντήρα χώρου)
iv	Produktdatablad (energimærkning af anlæg til temperaturstyring)	Produktdatenblatt (Energiekennzeichnung von Temperaturreglern)	Tootekirjeldus (energiamärgistusega kohta temperatuuriregulaatorist)	Δελτίο προϊόντος (ενεργειακή επισήμανση των ρυθμιστή θερμοκρασίας)
a	leverandørens navn eller varemærke	Name oder Warenzeichen des Lieferanten	tarnija nimi või kaubamärk	το όνομα/η επωνυμία του προμηθευτή ή εμπορικό σήμα·
b	leverandørens modelidentifikation	Modellkennung des Lieferanten	tarnija mudelitähis	το αναγνωριστικό μοντέλου από τον προμηθευτή·
c	klasse for årsvirkningsgrad ved rumopvarmning fastslået	die Klasse für die jahreszeitbedingte Raumheizungs-Energieeffizienz	kütmise sesoonse energiatõhususe klass	η τάξη ενεργειακής απόδοσης της εποχιακής θέρμανσης χώρου
d	den nominelle nytteeffekt (gennemsnitlige)	die Wärmenennleistung (durchschnittlichen)	nimisoojusvõimsus (keskmistel)	η ονομαστική θερμική ισχύς (μέσες)
e	årsvirkningsgraden ved rumopvarmning (gennemsnitlige)	die jahreszeitbedingte Raumheizungs-Energieeffizienz (durchschnittlichen)	kütmise sesoonne energiatõhusus (keskmistel)	η ενεργειακή απόδοση της εποχιακής θέρμανσης χώρου σε (μέσες)
f	det årlige energiforbrug (gennemsnitlige)	den jährlichen Energieverbrauch (durchschnittlichen)	aastane energiatarbimine (keskmistel)	ετήσια κατανάλωση ενέργειας (μέσες)
g	LWA (lydeffektniveauet, inde)	LWA (den Schallleistungspegel, in Innenräumen)	LWA (müravõimsustase, siseruumis)	LWA (η στάθμη ηχητικής ισχύος, εσωτερικού χώρου)
h	specifikke forholdsregler[1)]	besonderen Vorkehrungen[1)]	ettevaatusmeetmed kütteseadme koostamise[1)]	ειδικές προφυλάξεις 1)
i	den nominelle nytteeffekt (koldere)	die Wärmenennleistung (kälteren)	nimisoojusvõimsus (külmema)	η ονομαστική θερμική ισχύς (ψυχρότερες)
j	den nominelle nytteeffekt (varmere)	die Wärmenennleistung (wärmeren)	nimisoojusvõimsus (soojema)	η ονομαστική θερμική ισχύς (θερμότερες)
k	årsvirkningsgraden ved rumopvarmning (koldere)	die jahreszeitbedingte Raumheizungs-Energieeffizienz (kälteren)	kütmise sesoonne energiatõhusus (külmema)	η ενεργειακή απόδοση της εποχιακής θέρμανσης χώρου σε (ψυχρότερες)
l	årsvirkningsgraden ved rumopvarmning (varmere)	die jahreszeitbedingte Raumheizungs-Energieeffizienz (wärmeren)	kütmise sesoonne energiatõhusus (soojema)	η ενεργειακή απόδοση της εποχιακής θέρμανσης χώρου σε (θερμότερες)
m	det årlige energiforbrug (koldere)	den jährlichen Energieverbrauch (kälteren)	aastane energiatarbimine (külmema)	ετήσια κατανάλωση ενέργειας (ψυχρότερες)
n	det årlige energiforbrug (varmere)	den jährlichen Energieverbrauch (wärmeren)	aastane energiatarbimine (soojema)	ετήσια κατανάλωση ενέργειας (θερμότερες)
o	L_{WA} (lydeffektniveauet, ude)	L_{WA} (den Schallleistungspegel, im Freien)	L_{WA} (müravõimsustase, väljas)	LWA (η στάθμη ηχητικής ισχύος, εξωτερικού χώρου)
p	middeltemperatur	Mitteltemperatur	keskmisel temperatuuril	μέσης θερμοκρασίας
q	lavtemperatur	Niedertemperatur	külma kliima	χαμηλής θερμοκρασίας
r	[1)] Du skal tage de forholdsregler, der er beskrevet i installations-/ brugervejledningen, når du samler, installerer og vedligeholder dette produkt.	[1)] Beim Montieren, Installieren und Warten des Geräts müssen die im Installations-/ Benutzerhandbuch beschriebenen Vorsichtsmaßnahmen eingehalten werden.	[1)] Toote kokkupanekul, installimisel ja hooldamisel järgige paigaldus-/ kasutusjuhendis kirjeldatud ettevaatusabinõusid.	1) Όταν συναρμολογείτε, εγκαθιστάτε και συντηρείτε αυτό το προϊόν, πρέπει να λαμβάνετε τις προφυλάξεις που περιγράφονται στο εγχειρίδιο εγκατάστασης/χρήσης.
s	årsvirkningsgraden ved rumopvarmning (det primære anlæg til rumopvarmning)	Seasonal space heating energy efficiency (Vorzugsraumheizgerätes)	kütmise sesoonne energiatõhusus (põhiküttеseadme)	η ενεργειακή απόδοση της εποχιακής θέρμανσης χώρου σε (προτιμώμενου θερμαντήρα χώρου)
t	faktoren for vægtning af den nominelle nytteeffekt (det primære anlæg til rumopvarmning)	Faktor zur Gewichtung der Wärmeleistung (Vorzugsraumheizgerätes)	soojusvõimsuse kaalumistegur vastavalt (põhiküttеseadme kütmise)	ο συντελεστής στάθμισης της θερμικής ισχύος (προτιμώμενου θερμαντήρα χώρου)
u	værdien af det matematiske udtryk : 294 /(11 • Prated) [1)]	Wert des mathematischen Ausdrucks : 294 / (11 • Prated) [1)]	matemaatilise avaldise : 294 /(11 • Prated) [1)]	η τιμή του μαθηματικού τύπου : 294 /(11 • Prated) 1)
v	værdien af det matematiske udtryk : 15 /(11 • Prated) [2)]	Wert des mathematischen Ausdrucks : 115 / (11 • Prated) [2)]	matemaatilise avaldise : 115 /(11 • Prated) [2)]	η τιμή του μαθηματικού τύπου : 115 /(11 • Prated) 2)
w	værdien af forskellen mellem årsvirkningsgraden ved rumopvarmning under gennemsnitlige og koldere klimaforhold [3)]	Wert der Differenz zwischen der jahreszeitbedingten Raumheizungs-Energieeffizienz bei durchschnittlichen und derjenigen bei kälteren Klimaverhältnissen [3)]	keskmistel kliimatingimustel ja külmema kliima korral leitud kütmise sesoonsete energiatõhususte vahe [3)]	διαφοράς της ενεργειακής απόδοσης της εποχιακής θέρμανσης χώρου υπό μέσες και ψυχρότερες κλιματικές συνθήκες 3)
x	værdien af forskellen mellem årsvirkningsgraden ved rumopvarmning under varmere og gennemsnitlige klimaforhold [4)]	Wert der Differenz zwischen der jahreszeitbedingten Raumheizungs-Energieeffizienz bei wärmeren und derjenigen bei durchschnittlichen Klimaverhältnissen [4)]	soojema kliima korral ja keskmistel kliimatingimustel leitud kütmise sesoonsete energiatõhususte vahe [4)]	διαφοράς της ενεργειακής απόδοσης της εποχιακής θέρμανσης χώρου υπό θερμότερες και μέσες κλιματικές συνθήκες 4)
y	[1)] hvor Prated vedrører det primære anlæg til rumopvarmning	[1)] wobei sich Prated auf das Vorzugsraumheizgerät bezieht	[1)] siin Prated iseloomustab põhiküttеseadet	1) όπου Prated αφορά τον προτιμώμενο θερμαντήρα χώρου·
z	[2)] hvor Prated vedrører det primære anlæg til rumopvarmning	[2)] wobei sich Prated auf das Vorzugsraumheizgerät bezieht	[2)] siin Prated iseloomustab põhiküttеseadet	2) όπου Prated αφορά τον προτιμώμενο θερμαντήρα χώρου·
aa	[3),4)] for primære varmepumpeanlæg til rumopvarmning	[3),4)] für Vorzugsraumheizgeräte mit Wärmepumpe	[3),4)] soojuspumbaga põhiküttеseadmete kohta	3),4) για τους προτιμώμενους θερμαντήρες χώρου με αντλία θερμότητας
ab	klasse for temperaturstyring	die Klasse des Temperaturreglers	temperatuuri regulaatori klass	η τάξη του ρυθμιστή θερμοκρασίας·
ac	temperaturstyringens andel af årsvirkningsgraden ved rumopvarmning i procent afrundet til en decimal	Beitrag des Temperaturreglers zur jahreszeitbedingten Raumheizungs-Energieeffizienz	temperatuuriregulaatori osa kütmise sesoonses energiatõhususes	το μερίδιο του ρυθμιστή θερμοκρασίας στην ενεργειακή απόδοση της εποχιακής θέρμανσης χώρου

No	French(FR)	Croatian(HR)	Italian(IT)	Latvian(LV)
i	RÈGLEMENT DÉLÉGUÉ (UE) No 811/2013 DE LA COMMISSION	DELEGIRANA UREDBA KOMISIJE (EU) br. 811/2013	REGOLAMENTO DELEGATO N. 811/2013 DELLA COMMISSIONE EUROPEA	KOMISIJAS DELEĢĒTĀ REGULA (ES) Nr. 811/2013
ii	Fiche de produit (l'étiquetage énergétique des dispositifs de chauffage des locaux)	Informacijski list proizvoda (označivanja energetske učinkovitosti grijača prostora)	Scheda prodotto (l'etichetta indica il consumo d'energia degli apparati per il riscaldamento)	Ražojuma datu lapa (energomarķējumu uz telpu sildītāju)
iii	Fiche de produit (l'étiquetage énergétique des produit combiné constitué d'un dispositif de chauffage des locaux)	Informacijski list proizvoda (označivanja energetske učinkovitosti kompleta koji sadržavaju grijač prostora)	Scheda prodotto (l'etichetta indica il consumo d'energia degli insiemi di apparati per il riscaldamento)	Ražojuma datu lapa (energomarķējumu uz telpu sildītāja iekārtas, komplektu)
iv	Fiche de produit (l'étiquetage énergétique des d'un régulateur de température)	Informacijski list proizvoda (označivanja energetske učinkovitosti uređaj za upravljanje temperaturom)	Scheda prodotto (l'etichetta indica il consumo d'energia dispositivi di controllo della temperatura)	Ražojuma datu lapa (energomarķējumu uz temperatūras regulatori)
a	le nom du fournisseur ou la marque commerciale	naziv ili zaštitni znak dobavljača	il nome o marchio del fornitore	piegādātāja nosaukums vai preču zīme
b	la référence du modèle donnée par le fournisseur	dobavljačeva identifikacijska oznaka modela	Identificativo del modello del fornitore	piegādātāja modeļa identifikators
c	la classe d'efficacité énergétique saisonnière, pour le chauffage des locaux	razred sezonske energetske učinkovitosti pri zagrijavanju prostora	la classe di efficienza energetica stagionale di riscaldamento	telpu apsildes sezonas energoefektivitātes klase
d	la puissance thermique nominale (moyennes)	nazivna toplinska snaga (prosječnim)	la potenza termica nominale (medie)	nominālā siltuma jauda (vidējos)
e	l'efficacité énergétique saisonnière pour le chauffage des locaux (moyennes)	sezonska energetska učinkovitost pri zagrijavanju prostora (prosječnim)	l'efficienza energetica stagionale di riscaldamento dell'ambiente (medie)	telpu apsildes sezonas energoefektivitāte (vidējos)
f	la consommation annuelle d'énergie (moyennes)	godišnja potrošnja energije (prosječnim)	il consumo annuo di energia (medie)	gada enerģijas patēriņš (vidējos)
g	L_{WA} (le niveau de puissance acoustique, à l'intérieur)	L_{WA} (razina zvučne snage, u zatvorenom)	LWA (il livello di potenza sonora, interna)	L_{WA} (akustiskās jaudas līmenis, telpās)
h	les précautions particulières [1]	posebne mjere opreza[1]	eventuali precauzioni[1]	īpaši piesardzības pasākumi[1]
i	la puissance thermique nominale (plus froides)	nazivna toplinska snaga (hladnijim)	la potenza termica nominale (più fredde)	nominālā siltuma jauda (aukstākos)
j	la puissance thermique nominale (plus chaudes)	nazivna toplinska snaga (toplijim)	la potenza termica nominale (più calde)	nominālā siltuma jauda (siltākos)
k	l'efficacité énergétique saisonnière pour le chauffage des locaux (plus froides)	sezonska energetska učinkovitost pri zagrijavanju prostora (hladnijim)	l'efficienza energetica stagionale di riscaldamento (più fredde)	telpu apsildes sezonas energoefektivitāte (aukstākos)
l	l'efficacité énergétique saisonnière pour le chauffage des locaux (plus chaudes)	sezonska energetska učinkovitost pri zagrijavanju prostora (toplijim)	l'efficienza energetica stagionale di riscaldamento (più calde)	telpu apsildes sezonas energoefektivitāte (siltākos)
m	la consommation annuelle d'énergie (plus froides)	godišnja potrošnja energije (hladnijim)	il consumo annuo di energia (più fredde)	gada enerģijas patēriņš (aukstākos)
n	la consommation annuelle d'énergie (plus chaudes)	godišnja potrošnja energije (toplijim)	il consumo annuo di energia (più calde)	gada enerģijas patēriņš (siltākos)
o	L_{WA} (le niveau de puissance acoustique, à l'extérieur)	L_{WA} (razina zvučne snage, na otvorenom)	LWA (il livello di potenza sonora, all'esterno)	L_{WA} (akustiskās jaudas līmenis, ārpus telpām)
p	moyenne température	srednjim temperaturama	media temperatura	vidējas temperatūras
q	basse température	nisko temperaturna	bassa temperatura	Zemas temperatūras
r	[1] Des précautions, comme décrit dans le manuel d'installation/d'utilisation, doivent être prises lors du montage, de l'installation et de l'entretien de l'appareil.	[1] Prilikom sastavljanja, instalacije i održavanja proizvoda potrebno je poduzeti mjere opreza navedene u priručniku za instalaciju / korisničkom priručniku.	[1] Le precauzioni descritte nel manuale Installazione/utente devono essere rispettate in fase di montaggio, installazione e manutenzione del prodotto	[1] Izstrādājuma salikšanas, uzstādīšanas un apkopes laikā jāievēro uzstādīšanas/ lietošanas rokasgrāmatā norādītie piesardzības pasākumi.
s	l'efficacité énergétique saisonnière pour le chauffage des locaux (du dispositif de chauffage des locaux utilisé à titre principal)	sezonska energetska učinkovitost pri zagrijavanju prostora (primarnog grijača prostora)	l'efficienza energetica stagionale di riscaldamento (preferenziale per il riscaldamento)	telpu apsildes sezonas energoefektivitāte (preferenciālā telpu sildītāja)
t	le coefficient de pondération de la puissance thermique (du dispositif de chauffage des locaux utilisé à titre principal)	težinski faktor toplinske snage (primarnog grijača prostora)	il fattore di ponderazione della potenza termica (preferenziale per il riscaldamento d'ambiente)	sildītāja siltuma jaudas svērtās vērtības iegūšanai (preferenciālā telpu sildītāja)
u	l'expression mathématique : 294 /(11 • Prated) [1]	matematičke formule : 294 /(11 • Prated) [1]	espressione matematica : 294 /(11 • Prated) [1]	matemātiskās izteiksmes : 294 /(11 • Prated) [1]
v	l'expression mathématique : 115 /(11 • Prated) [2]	matematičke formule : 115 /(11 • Prated) [2]	espressione matematica : 115 /(11 • Prated) [2]	matemātiskās izteiksmes : 115 /(11 • Prated) [2]
w	la différence entre les efficacités énergétiques saisonnières pour le chauffage des locaux dans les conditions climatiques moyennes et plus froides [3]	razlike između sezonskih energetskih učinkovitosti pri zagrijavanju prostora u prosječnim i hladnijim klimatskim uvjetima [3]	Differenza tra l'efficienza energetica stagionale del riscaldamento in condizioni climatiche medie e più fredde [3]	atšķirībai starp telpu apsildes sezonas energoefektivitāti vidējos un aukstākos apstākļos [3]
x	la différence entre les efficacités énergétiques saisonnières pour le chauffage des locaux dans les conditions climatiques plus chaudes et moyennes [4]	razlike između sezonskih energetskih učinkovitosti pri zagrijavanju prostora u toplijim i prosječnim klimatskim uvjetima [4]	Differenza tra l'efficienza energetica stagionale del riscaldamento in condizioni climatiche più calde e medie [4]	atšķirībai starp telpu apsildes sezonas energoefektivitāti siltākos un vidējos apstākļos [4]
y	[1] dans laquelle Prated renvoie au dispositif de chauffage des locaux utilisé à titre principal	[1] pri čemu se Prated odnosi na primarni grijač prostora	[1] dove Pnominale si riferisce all'apparecchio per il riscaldamento preferenziale	[1] vērtība, kur Prated attiecas uz preferenciālo telpu sildītāju
z	[2] dans laquelle Prated renvoie au dispositif de chauffage des locaux utilisé à titre principal	[2] pri čemu se Prated odnosi na primarni grijač prostora	[2] dove Pnominale si riferisce all'apparato per il riscaldamento preferenziale	[2] vērtība, kur Prated attiecas uz preferenciālo telpu sildītāju
aa	[3],[4] pour les dispositifs de chauffage des locaux par pompe à chaleur utilisés à titre principal	[3],[4] za primarne toplinske crpke za grijanje prostora	[3],[4] per gli apparati per il riscaldamento preferenziali a pompa di calore	[3],[4] preferenciālajiem siltumsūkņa telpu sildītājiem
ab	la classe du régulateur de température	razred uređaja za upravljanje temperaturom	la classe del dispositivo di controllo della temperatura	temperatūras regulatora klase
ac	la contribution du régulateur de température à l'efficacité énergétique saisonnière pour le chauffage des locaux	doprinos uređaja za upravljanje temperaturom sezonskoj energetskoj učinkovitosti pri zagrijavanju prostora	il contributo del dispositivo di controllo della temperatura all'efficienza energetica stagionale di riscaldamento	temperatūras regulatora devums telpu apsildes sezonas energoefektivitātē

COMMISSION DELEGATED REGULATION (EU) No 811/2013 [i)]

No	Lithuanian(LT)	Hungarian(HU)	Maltese(MT)	Dutch(NL)
i	KOMISIJOS DELEGUOTASIS REGLAMENTAS (ES) Nr. 811/2013	A BIZOTTSÁG 811/2013/EU FELHATALMAZÁSON ALAPULÓ RENDELETE	REGOLAMENT TA' DELEGA TAL-KUMMISSJONI (UE) Nru 811/2013	GEDELEGEERDE VERORDENING (EU) Nr. 811/2013 VAN DE COMMISSIE
ii	Gaminio vardinių parametrų lentelė (energijos vartojimo efektyvumo ženklinimo dėl patalpų šildytuvo)	Termékismertető adatlap (energiafogyasztásának címkézése a helyiségfűtő berendezések)	L-iskeda tat-taghrif tal-prodott (tikkettar enerġetiku ta' ħiters tal-post)	Productkaart (de energie-etikettering van ruimteverwarmingstoestellen)
iii	Gaminio vardinių parametrų lentelė (energijos vartojimo efektyvumo ženklinimo dėl patalpų šildytuvo, komplektų)	Termékismertető adatlap (energiafogyasztásának címkézése a helyiségfűtő berendezésből)	L-iskeda tat-taghrif tal-prodott (tikkettar enerġetiku ta' pakketti maghmulin minn ħiter tal-post)	Productkaart (de energie-etikettering van pakketten van ruimteverwarmingstoestellen)
iv	Gaminio vardinių parametrų lentelė (energijos vartojimo efektyvumo ženklinimo dėl temperatūros reguliatoriaus)	Termékismertető adatlap (energiafogyasztásának címkézése a hőmérséklet-szabályozóból)	L-iskeda tat-taghrif tal-prodott (tikkettar enerġetiku ta' regolatur tat-temperatura)	Productkaart (de energie-etikettering van temperatuurregelaars)
a	tiekėjo pavadinimas arba prekės ženklas	a beszállító neve vagy védjegye	isem il-fornitur jew il-marka kummerċjali tiegħu	de naam van de leverancier of het handelsmerk
b	tiekėjo modelio žymuo	a beszállító által megadott modellazonosító	l-identifikatur tal-mudell tal-fornitur	de typeaanduiding van de leverancier
c	sezoninio energijos patalpoms šildyti vartojimo efektyvumo klasė	szezonális helyiségfűtési energiahatékonysági osztálya	il-klassi tal-effiċjenza enerġetika staġonali tat-tisħin tal-post	de seizoensgebonden energie-efficiëntieklasse voor ruimteverwarming
d	vardinis šilumos atidavimas (vidutinio)	a mért hőteljesítmény (átlagos)	il-potenza termika nominali (medji)	de nominale warmteafgifte (gemiddelde)
e	sezoninis energijos patalpoms šildyti vartojimo efektyvumas (vidutinio)	a szezonális helyiségfűtési hatásfok (átlagos)	l-effiċjenza enerġetika staġonali tat-tisħin tal-post (medji)	de seizoensgebonden energie-efficiëntie voor ruimteverwarming (gemiddelde)
f	metinis energijos suvartojimas (vidutinio)	az éves energiafogyasztás (átlagos)	il-konsum annwali tal-enerġija (medji)	het jaarlijkse energieverbruik (gemiddelde)
g	L_{WA} (garso galios lygis, patalpoje decibelais)	L_{WA} (hangteljesítményszint, beltéri)	L_{WA} (il-livell ta' qawwa tal-ħoss, fuq ġewwa)	L_{WA} (het geluidsvermogensniveau, binnen)
h	specialios atsargumo priemonės [1)]	külön óvintézkedések [1)]	prekawzjoni speċifika [1)]	specifieke voorzorgsmaatregelen [1)]
i	vardinis šilumos atidavimas (šaltesnio)	a mért hőteljesítmény (hidegebb)	il-potenza termika nominali (iksaħ)	de nominale warmteafgifte (koudere)
j	vardinis šilumos atidavimas (šiltesnio)	a mért hőteljesítmény (melegebb)	il-potenza termika nominali (isħan)	de nominale warmteafgifte (warmere)
k	sezoninis energijos patalpoms šildyti vartojimo efektyvumas (šaltesnio)	a szezonális helyiségfűtési hatásfok (hidegebb)	l-effiċjenza enerġetika staġonali tat-tisħin tal-post (iksaħ)	de seizoensgebonden energie-efficiëntie voor ruimteverwarming (koudere)
l	sezoninis energijos patalpoms šildyti vartojimo efektyvumas (šiltesnio)	a szezonális helyiségfűtési hatásfok (melegebb)	l-effiċjenza enerġetika staġonali tat-tisħin tal-post (isħan)	de seizoensgebonden energie-efficiëntie voor ruimteverwarming (warmere)
m	metinis energijos suvartojimas (šaltesnio)	az éves energiafogyasztás (hidegebb)	il-konsum annwali tal-enerġija (iksaħ)	het jaarlijkse energieverbruik (koudere)
n	metinis energijos suvartojimas (šiltesnio)	az éves energiafogyasztás (melegebb)	il-konsum annwali tal-enerġija (isħan)	het jaarlijkse energieverbruik (warmere)
o	L_{WA} (garso galios lygis, lauke decibelais)	L_{WA} (hangteljesítményszint, kültéri)	L_{WA} (il-livell ta' qawwa tal-ħoss, fuq barra)	L_{WA} (het geluidsvermogensniveau, buiten)
p	vidutinėje temperatūroje	közepes hőmérsékletű	b'temperatura medja	middentemperatuur
q	žematemperatūris	alacsony hőmérsékletű	b'temperatura baxxa	lagetemperatuur
r	[1)] Montuojant ar įrengiant šį produktą, taip pat atliekant jo techninę priežiūrą, būtina atsižvelgti į montavimo / naudojimo vadove aprašytas atsargumo priemones.	[1)] A termék összeszerelése, telepítése és a karbantartása során tartsa be a telepítési/használati útmutatóban leírt óvintézkedéseket.	[1)] Prekawzjonijiet kif deskritt fl-installazzjoni u l-utent manwali għandhom jittieħdu meta jlaqqa 'installazzjoni, u ż-żamma dan il-prodott	[1)] De voorzorgsmaatregelen die in de gebruikershandleiding worden beschreven, moeten in acht worden genomen bij montage, installatie en onderhoud van dit product.
s	sezoninis energijos patalpoms šildyti vartojimo efektyvumas (pirmiausia naudojamo patalpų šildytuvo)	a szezonális helyiségfűtési hatásfok (az elsődleges helyiségfűtő berendezés)	l-effiċjenza enerġetika staġonali tat-tisħin tal-post (tat-tisħin tal-post tal-ħiter tal-post preferenzjali)	de seizoensgebonden energie-efficiëntie voor ruimteverwarming (ruimteverwarming van de hoofdverwarming)
t	šilumos atidavimo svorinis koeficientas (pirmiausia naudojamo patalpų šildytuvo)	hőteljesítményének súlyozására szolgáló tényező (helyiségfűtő berendezés elsődleges)	il-fattur għall-ippeżar tal-potenza termika tal-ħiters (tat-tisħin tal-post tal-ħiter tal-post preferenzjali)	de factor voor het wegen van de warmteafgifte (ruimteverwarming van de hoofdverwarming)
u	matematinio reiškinio : 294 /(11 • Prated) [1)]	matematikai kifejezés : 294 /(11 • Prated) [1)]	tal-formola matematika : 294 /(11 • Prated) [1)]	de wiskundige formule : 294 /(11 • Prated) [1)]
v	matematinio reiškinio : 115 /(11 • Prated) [2)]	matematikai kifejezés : 115 /(11 • Prated) [2)]	tal-formola matematika : 115 /(11 • Prated) [2)]	de wiskundige formule : 115 /(11 • Prated) [2)]
w	sezoninių energijos patalpoms šildyti vartojimo efektyvumų skirtumo vidutinio ir šaltesnio klimato sąlygomis [3)]	az átlagos és a hidegebb éghajlati viszonyok mellett mért szezonális helyiségfűtési hatásfok közötti különbség [3)]	tad-differenza bejn l-effiċjenza enerġetika staġonali tat-tisħin tal-post f'kundizzjonijiet klimatiċi medji u dik f'kundizzjonijiet klimatiċi iksaħ [3)]	het verschil tussen de seizoensgebonden energie-efficiënties voor ruimteverwarming onder warmere en gemiddelde klimaatomstandigheden [3)]
x	sezoninių energijos patalpoms šildyti vartojimo efektyvumų skirtumo šiltesnio ir vidutinio klimato sąlygomis [4)]	a melegebb és az átlagos éghajlati viszonyok mellett mért szezonális helyiségfűtési hatásfok közötti különbség [4)]	tad-differenza bejn l-effiċjenza enerġetika staġonali tat-tisħin tal-post f'kundizzjonijiet klimatiċi medji u dik f'kundizzjonijiet klimatiċi isħan [4)]	het verschil tussen de seizoensgebonden energie-efficiënties voor ruimteverwarming onder gemiddelde en koudere klimaatomstandigheden [4)]
y	[1)] kur Prated yra susijęs su pirmiausia naudojamu patalpų šildytuvu	[1)] ahol a Prated az elsődleges helyiségfűtő berendezésre vonatkozik	[1)] fejn il-valur ta' Prated huwa marbut mal-ħiter tal-post preferenzjali	[1)] waarbij Prated is gerelateerd aan het ruimteverwarmingstoestel als hoofdverwarming
z	[2)] kur Prated yra susijęs su pirmiausia naudojamu patalpų šildytuvu	[2)] ahol a Prated az elsődleges helyiségfűtő berendezésre vonatkozik	[2)] fejn il-valur ta' Prated huwa marbut mal-ħiter tal-post preferenzjali	[2)] waarbij Prated is gerelateerd aan het ruimteverwarmingstoestel als hoofdverwarming
aa	[3),4)] pirmiausia naudojamų patalpų šildytuvų su šilumos siurbliu	[3),4)] elsődleges hőszivattyús helyiségfűtő berendezések esetében	[3),4)] għall-ħiters tal-post preferenzjali b'pompa tas-sħana	[3),4)] voor ruimteverwarmingstoestellen met warmtepomp als hoofdverwarming
ab	temperatūros reguliatoriaus klasė	a hőmérséklet-szabályozó osztálya	il-klassi tar-regolatur tat-temperatura	de klasse van de temperatuurregelaar
ac	temperatūros reguliatoriaus sandas sezoniniam energijos patalpoms šildyti vartojimo efektyvumui	a hőmérséklet-szabályozó szezonális helyiségfűtési hatásfokhoz való hozzájárulásának	il-kontribut tar-regolatur tat-temperatura għall-effiċjenza enerġetika staġonali tat-tisħin tal-post	de bijdrage van de temperatuurregelaar aan de seizoensgebonden energie-efficiëntie voor ruimteverwarming

No	Polish(PL)	Portuguese(PT)	Romanian(RO)	Slovak(SK)
i	ROZPORZĄDZENIE DELEGOWANE KOMISJI (UE) NR 811/2013	REGULAMENTO DELEGADO (UE) Nº 811/2013 DA COMISSÃO	REGULAMENTUL DELEGAT AL COMISIEI (UE) NR. 811/2013	DELEGOVANÉ NARIADENIE KOMISIE (EÚ) č. 811/2013
ii	Karta produktu (w odniesieniu do etykiet efektywności energetycznej dla ogrzewaczy pomieszczeń)	Ficha de produto (rotulagem energética dos aquecedores de ambiente)	Fișa produsului (ce privește clasa de energie a instalațiilor pentru încălzirea incintelor)	Informačný list (energetické označovanie tepelných zdrojov na vykurovanie priestoru)
iii	Karta produktu (w odniesieniu do etykiet efektywności energetycznej dla zestawów zawierających ogrzewacz pomieszczeń)	Ficha de produto (rotulagem energética dos sistemas mistos de aquecedor de ambiente)	Fișa produsului (ce privește clasa de energie instalațiilor pentru încălzirea incintelor)	Informačný list (energetické označovanie tepelných zdrojov na vykurovanie priestoru)
iv	Karta produktu (w odniesieniu do etykiet efektywności energetycznej dla regulatorów temperatury)	Ficha de produto (rotulagem energética dos dispositivo de controlo de temperatura)	Fișa produsului (ce privește etichetarea energetică a regulatoarelor de temperatură)	Informačný list (energetické označovanie regulátorov teploty)
a	nazwa dostawcy lub jego znak towarowy	Nome do fornecedor	Denumirea sau marca comercială a furnizorului	meno dodávateľa alebo ochranná známka
b	identyfikator modelu dostawcy	Modelo	Modelul identificator al furnizorului	identifikačný kód modelu
c	klasa sezonowej efektywności energetycznej ogrzewania pomieszczeń	Classe de eficiência energética do aquecimento ambiente sazonal	Clasa de eficiență energetică sezonieră aferentă încălzirii incintelor	trieda sezónnej energetickej účinnosti vykurovania priestoru
d	Znamionowa moc cieplna (uśredniona)	Potência calorífica nominal (condições climáticas médias)	Puterea termică nominală (medie)	menovitý tepelný výkon (priemerný)
e	Sezonowa efektywność energetyczna ogrzewania pomieszczeń (uśredniona)	Eficiência energética do aquecimento ambiente sazonal (condições climáticas médias)	Eficiență energetică sezonieră aferentă încălzirii incintelor (medie)	sezónna energetická účinnosť vykurovania priestoru (priemerná)
f	Roczne zużycie energii (uśrednione)	Consumo anual de energia (condições climáticas médias)	Consumul anual de energie (medie)	ročná spotreba energie (priemerná)
g	LWA (poziom mocy akustycznej, w pomieszczeniu)	LWA (Nível de potência sonora, no interior)	LWA (nivelul de putere acustică, la interior)	LWA (hladina akustického výkonu, vnútorné jednotky)
h	Szczególne środki ostrożności[1]	Precauções específicas[1]	Măsură de precauție specifică[1]	osobitné bezpečnostné opatrenie[1]
i	znamionowa moc cieplna (chłodnego)	Potência calorífica nominal (condições climáticas mais frias)	Puterea termică nominală (mai reci)	menovitý tepelný výkon (chladnejší)
j	znamionowa moc cieplna (ciepłego)	Potência calorífica nominal (condições climáticas mais quentes)	Puterea termică nominală (mai calde)	menovitý tepelný výkon (teplejší)
k	sezonowa efektywność energetyczna ogrzewania pomieszczeń (chłodnego)	Eficiência energética do aquecimento ambiente sazonal (condições climáticas mais frias)	Eficiență energetică sezonieră aferentă încălzirii incintelor (mai reci)	sezónna energetická účinnosť vykurovania priestoru (chladnejší)
l	sezonowa efektywność energetyczna ogrzewania pomieszczeń (ciepłego)	Eficiência energética do aquecimento ambiente sazonal (condições climáticas mais quentes)	Eficiență energetică sezonieră aferentă încălzirii incintelor (mai calde)	sezónna energetická účinnosť vykurovania priestoru (teplejší)
m	roczne zużycie energii (chłodnego)	Consumo anual de energia (condições climáticas mais frias)	Consum anual de energie (mai reci)	ročná spotreba energie (chladnejší)
n	roczne zużycie energii (ciepłego)	Consumo anual de energia (condições climáticas mais quentes)	Consum anual de energie (mai calde)	ročná spotreba energie (teplejších)
o	LWA (poziom mocy akustycznej, na zewnątrz)	LWA (Nível de potência sonora, no exterior)	LWA (nivelul de putere acustică, la exterior)	LWA (hladina akustického výkonu, vonkajšie jednotky)
p	średniotemperaturowe	média temperatura	Temperatură medie	stredná teplota
q	niskotemperaturowe	baixa temperatura	Temperatură scăzută	nízkoteplotné
r	[1] Podczas montażu, instalacji oraz serwisowaniu produktu należy stosować szczególne środki ostrożności zgodnie z informacjami zawartymi w instrukcji instalacji/podręczniku użytkownika.	[1] As precauções descritas no manual de instalação/instruções dever ser adotadas durante a montagem, instalação ou manutenção do produto.	[1] Atenționări, descrise în manualul de instalare/ operare, ce trebuie luate în considerare când se asamblează, instalează sau întreține acest produs.	[1] Bezpečnostné opatrenia, ktoré sú popísané v inštalačnej/používateľskej príručke, sa musia vykonať pri inštalácii a údržbe tohto produktu.
s	sezonowa efektywność energetyczna ogrzewania pomieszczeń (podstawowego ogrzewacza pomieszczeń)	Eficiência energética do aquecimento ambiente sazonal (do aquecedor de ambiente preferencial)	Eficiența energetică sezonieră aferentă încălzirii incintelor (al instalației preferențiale pentru încălzirea incintelor)	sezónna energetická účinnosť vykurovania priestoru (uprednostňovaného tepelného zdroja na vykurovanie priestoru)
t	współczynnik ważący moc cieplną ogrzewaczy (podstawowego ogrzewacza pomieszczeń)	o fator de ponderação da potência calorífica (do aquecedor de ambiente preferencial)	factorul de ponderare a puterii termice (al instalației pentru încălzirea incintelor preferențiale)	súčiniteľ na váženie tepelného výkonu (uprednostňovaného tepelného zdroja na vykurovanie priestoru)
u	Wartość wyrażenia matematycznego : 294 /(11 • Prated) [1]	Expressão matemática : 294 /(11 • Prated) [1]	Valoarea expresiei matematice : 294 /(11 • Pnominal) [1]	matematický výraz : 294 /(11 • Prated) [1]
v	Wartość wyrażenia matematycznego : 115 /(11 • Prated) [2]	Expressão matemática : 115 /(11 • Prated) [2]	Valoarea expresiei matematice : 115 /(11 • Pnominal) [2]	matematický výrazu : 115 /(11 • Prated) [2]
w	Różnica między sezonowymi efektywnościami energetycznymi ogrzewania pomieszczeń w warunkach klimatu umiarkowanego i chłodnego [3]	Diferença entre as eficiências energéticas do aquecimento ambiente sazonal em condições climáticas médias e em condições climáticas mais frias [3]	Diferența dintre eficiența energetică sezonieră aferentă încălzirii incintelor în condiții climatice medii și mai reci [3]	hodnota rozdielu sezónnych energetických účinností vykurovania priestoru za priemerných a chladnejších podmienok [3]
x	Różnica między sezonowymi efektywnościami energetycznymi ogrzewania pomieszczeń w warunkach klimatu ciepłego i umiarkowanego [4]	Diferença entre as eficiências energéticas do aquecimento ambiente sazonal em condições climáticas mais quentes e em condições climáticas médias [4]	Diferența dintre eficiența energetică sezonieră aferentă încălzirii incintelor în condiții climatice calde și medii [4]	hodnota rozdielu sezónnych energetických účinností vykurovania priestoru za teplejších a priemerných podmienok [4]
y	[1] gdzie Prated dotyczy podstawowego ogrzewacza pomieszczeń	[1] em que Prated diz respeito ao aquecedor de ambiente preferencial	[1] Unde Pnominal se referă la instalația preferențială pentru încălzirea incintelor.	[1] kde Prated súvisí s uprednostňovaným tepelným zdrojom na vykurovanie priestoru
z	[2] gdzie Prated dotyczy podstawowego ogrzewacza pomieszczeń	[2] em que Prated diz respeito ao aquecedor de ambiente preferencial	[2] Unde Pnominal se referă la instalația preferențială pentru încălzirea incintelor.	[2] kde Prated súvisí s uprednostňovaným tepelným zdrojom na vykurovanie priestoru
aa	[3],[4] Dla podstawowych ogrzewaczy pomieszczeń z pompą ciepła	[3],[4] para os aquecedores de ambiente preferenciais com bomba de calor	[3],[4] Pentru instalațiile preferențiale cu pompă de căldură pentru încălzirea incintelor.	[3],[4] pre uprednostňované tepelné zdroje na vykurovanie priestoru – tepelné čerpadlá
ab	klasa regulatora temperatury	A classe do dispositivo de controlo de temperatura	Clasa regulatorului de temperatură	trieda regulátora teploty
ac	udział regulatora temperatury w sezonowej efektywności energetycznej ogrzewania pomieszczeń	A contribuição do dispositivo de controlo de temperatura para a eficiência energética do aquecimento ambiente sazonal	Contribuția regulatorului de temperatură la eficiența energetică sezonieră aferentă încălzirii incintelor	príspevok regulátora teploty k sezónnej energetickej účinnosti vykurovania priestoru

COMMISSION DELEGATED REGULATION (EU) No 811/2013 [i)]

No	Slovenian(SL)	Finnish(FI)	Swedish(SV)
i	DELEGIRANA UREDBA KOMISIJE (EU) št. 811/2013	KOMISSION DELEGOITU ASETUS (EU) N:o 811/2013	KOMMISSIONENS DELEGERADE FÖRORDNING (EU) nr 811/2013
ii	Podatkovni list izdelka (energijskega označevanja grelnikov prostorov)	Tuoteseloste (tilalämmittimien, energiamerkinnän)	Produktblad (energimärkning av pannor och värmepumpar för rumsuppvärmning)
iii	Podatkovni list izdelka (energijskega označevanja kompletov grelnika prostorov)	Tuoteseloste (tilalämmittimestä, energiamerkinnän)	Produktblad (energimärkning av paket med pannor och värmepumpar för rumsuppvärmning)
iv	Podatkovni list izdelka (energijskega označevanja naprave za uravnavanje temperature)	Tuoteseloste (lämmönsäätölaitteesta, energiamerkinnän)	Produktblad (energimärkning av temperaturregulator)
a	dobaviteljevo ime ali blagovna znamka	tavarantoimittajan nimi tai tavaramerkki	Leverantörens namn eller varumärke
b	dobaviteljeva identifikacijska oznaka modela	tavarantoimittajan mallitunniste	Leverantörens modellbeteckning
c	razred sezonske energijske učinkovitosti pri ogrevanju prostorov	tilalämmityksen kausittainen energiatehokkuusluokka	säsongsrelaterade energieffektivitetsklass vid rumsuppvärmning
d	nazivna izhodna toplota (povprečnih)	nimellislämpöteho, mukaan lukien mahdollisen lisälämmittimen nimellislämpöteho (keskimääräisissä)	Den nominella avgivna värmeeffekten (genomsnittliga)
e	sezonska energijska učinkovitost pri ogrevanju prostorov (povprečnih)	tilalämmityksen kausittainen energiatehokkuus (keskimääräisissä)	Säsongsmedelverkningsgrad för rumsuppvärmning (genomsnittliga)
f	letna poraba energije (povprečnih)	vuotuinen energiankulutus (keskimääräisissä)	Årlig energiförbrukning (genomsnittliga)
g	L_{WA} (raven zvočne moči, notranja)	L_{WA} (äänitehotaso, sisällä desibeleinä)	L_{WA} (Ljudeffektnivå, inomhus)
h	posebni varnostni ukrepi[1)]	erityiset varotoimenpiteet[1)]	särskilda försiktighetsåtgärder [1)]
i	nazivna izhodna toplota (hladnejših)	nimellislämpöteho, mukaan lukien mahdollisen lisälämmittimen nimellislämpöteho (kylmissä)	Den nominella avgivna värmeeffekten (kallare)
j	nazivna izhodna toplota (toplejših)	nimellislämpöteho, mukaan lukien mahdollisen lisälämmittimen nimellislämpöteho (lämpimissä)	Den nominella avgivna värmeeffekten (varmare)
k	sezonska energijska učinkovitost pri ogrevanju prostorov (hladnejših)	tilalämmityksen kausittainen energiatehokkuus (kylmissä)	Säsongsmedelverkningsgrad för rumsuppvärmning (kallare)
l	sezonska energijska učinkovitost pri ogrevanju prostorov (toplejših)	tilalämmityksen kausittainen energiatehokkuus (lämpimissä)	Säsongsmedelverkningsgrad för rumsuppvärmning (varmare)
m	letna poraba energije (hladnejših)	vuotuinen energiankulutus (kylmissä)	Årlig energiförbrukning (kallare)
n	letna poraba energije (toplejših)	vuotuinen energiankulutus (lämpimissä)	Årlig energiförbrukning (varmare)
o	L_{WA} (raven zvočne moči, zunanja)	L_{WA} (äänitehotaso, ulkona desibeleinä)	L_{WA} (Ljudeffektnivå, utomhus)
p	srednjih temperaturah	keskilämpötilan	mediumtemperatur
q	nizkotemperaturna	matalan lämpötilan	lågtemperatur
r	[1)] Pri sestavljanju, nameščanju ter vzdrževanju izdelka upoštevajte previdnostne ukrepe, ki so navedeni v priročniku za uporabo in namestitev.	[1)] Asennus- tai käyttöoppaassa kuvattuja turvaohjeita on noudatettava laitteen kokoamisen, asentamisen ja huollon aikana.	[1)] Försiktighetsåtgärderna som beskrivs i installationsmanualen/bruksanvisningen måste följas vid montering, installation och underhåll av denna produkt.
s	sezonska energijska učinkovitost pri ogrevanju prostorov (za prednostni grelnik prostorov)	tilalämmityksen kausittainen energiatehokkuus (ensisijaisen tilalämmittimen tilalämmityksen)	Säsongsmedelverkningsgrad för rumsuppvärmning (primära pannans eller värmepumpens)
t	utežni faktor izhodne toplote (za prednostni grelnik prostorov)	lämpötehon painotuskerroin (lisälämmittimen tilalämmittimen tilalämmityksen)	Viktningsfaktorn för värmeproduktion för paket (primära pannans eller värmepumpens)
u	matematične enačbe : 294 /(11 • Prated) [1)]	matemaattisen ilmaisun : 294 /(11 • Prated) [1)]	matematiska formeln : 294 /(11 • Prated) [1)]
v	matematične enačbe : 115 /(11 • Prated) [2)]	matemaattisen ilmaisun : 115 /(11 • Prated) [2)]	matematiska formeln : 115 /(11 • Prated) [2)]
w	razlike med sezonskima energijskima učinkovitostma pri ogrevanju prostorov v povprečnih in hladnejših podnebnih razmerah [3)]	keskimääräisissä ja kylmissä ilmasto-olosuhteissa saavutettavien tilalämmityksen kausittaisten energiatehokkuuksien ero [3)]	Skillnaden mellan den säsongsrelaterade energieffektiviteten vid rumsuppvärmning under genomsnittliga och kallare klimatförhållanden [3)]
x	razlike med sezonskima energijskima učinkovitostma pri ogrevanju prostorov v toplejših in povprečnih podnebnih razmerah [4)]	lämpimissä ja keskimääräisissä ilmasto-olosuhteissa saavutettavien tilalämmityksen kausittaisten energiatehokkuuksien ero [4)]	Skillnaden mellan den säsongsrelaterade energieffektiviteten vid rumsuppvärmning under varmare och genomsnittliga klimatförhållanden [4)]
y	[1)] pri čemer se Prated navezuje na prednostni grelnik prostorov	[1)] jossa Prated liittyy ensisijaiseen tilalämmittimeen	[1)] där Prated är relaterat till den primära pannan eller värmepumpen
z	[2)] pri čemer se Prated navezuje na prednostni grelnik prostorov	[2)] jossa Prated liittyy ensisijaiseen tilalämmittimeen	[2)] där Prated är relaterat till den primära pannan eller värmepumpen
aa	[3),4)] prednostne toplotne črpalke za ogrevanje prostorov	[3),4)] ensisijaisista lämpöpumpputilalämmittimistä	[3),4)] för primära värmare med värmepump för rumsuppvärmning
ab	razred naprave za uravnavanje temperature	lämmönsäätölaitteen luokka	Temperaturregulatorns klass
ac	prispevek naprave za uravnavanje temperature k sezonski energijski učinkovitosti pri ogrevanju prostorov	lämmönsäätölaitteen vaikutus tilalämmityksen kausittaiseen energiatehokkuuteen	Temperaturregulatorns bidrag till säsongsmedelverkningsgraden för rumsuppvärmning

Memo

SAMSUNG

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