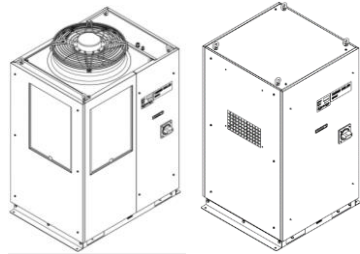




ORIGINAL INSTRUCTIONS

Instruction Manual
Thermo chiller
HRSC100 Series



The intended use of this product is to use its built-in pump to circulate a liquid such as water, adjusted to a constant temperature by the refrigeration circuit. This circulating liquid cools parts of customer's machine that generates heat.

1 Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of "Caution," "Warning" or "Danger." They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC)^{*)}, and other safety regulations.
*)ISO 4414: Pneumatic fluid power — General rules and safety requirements for systems and their components.
ISO 4413: Hydraulic fluid power — General rules and safety requirements for systems and their components
IEC 60204-1: Safety of machinery - Electrical equipment of machines. Part 1: General requirements
ISO 10218-1: Robots and robotic devices - Safety requirements for industrial robots - Part 1: Robots

- Refer to product catalogue, Operation Manual and Handling Precautions for SMC Products for additional information.
- Keep this manual in a safe place for future reference.

| | | |
|--|---------------|--|
| | Danger | Danger indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury. |
|--|---------------|--|

| | | |
|--|----------------|--|
| | Warning | Warning indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury. |
| | Caution | Caution indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury. |

Warning

- **Always ensure compliance with relevant safety laws and standards.**
- All work must be carried out in a safe manner by a qualified person in compliance with applicable national regulations.

Warning



This symbol stands for a warning that this system contains refrigerant under high pressure. Do not tamper with the system. It must be serviced by suitably qualified personnel only

2 Specifications

2.1 Product Specifications

| Model | | | HRSC100-A*-40 | HRSC100-W*-40 | |
|--|-------------------------------------|---|---|----------------------------|------|
| Cooling method | | | Air-cooled refrigeration | Water-cooled refrigeration | |
| Refrigerant | | | R744 (CO ₂ GWP : 1) | | |
| Refrigerant charge | | [kg] | 0.73 | 1.04 | |
| Control method | | | PID control | | |
| Ambient temperature/Altitude/Installation environment ^{*1, *10} | | | Temperature: 5 to 45°C, Altitude: less than 3000 m, Environment: Indoor/Outdoor use | | |
| Circulating fluid system | Circulating fluid ^{*2} | | Water, 15% ethylene glycol aqueous solution, Deionized water | | |
| | Set temperature range ^{*1} | | [°C] | 5 to 35 | |
| | Cooling capacity ^{*3} | | [kW] | 10.5 | 11.5 |
| | Heating capacity ^{*4} | | [kW] | 2.5 | |
| | Temperature stability ^{*5} | | [°C] | ±0.1 | |
| | Pump capacity | Rated flow rate (supply port) ^{*6} | [L/min] | 45 (0.43 MPa) | |
| | | Maximum flow rate | [L/min] | 120 | |
| | | Maximum pump head | [m] | 50 | |

2 Specifications Continued

| Model | | | HRSC100-A*-40 | HRSC100-W*-40 |
|--------------------------|--|-------------------------------|---|--|
| Circulating fluid system | Set pressure range ⁷ | | [MPa] | 0.1 to 0.5 |
| | Minimum operating flow rate ⁸ | | [L/min] | 20 |
| | Tank capacity | | [L] | 25 |
| | Circulating fluid outlet. Circulating fluid return Port size | | | Rc1 (Symbol F: G1, Symbol N: NPT1) |
| | Tank drain port | | | Rc3/4 (Symbol F: G3/4, Symbol N: NPT3/4) |
| | Automatic fluid fill system (Standard) | Supply side pressure range | [MPa] | 0.2 to 0.5 |
| | | Supply side fluid temperature | [°C] | 5 to 35 |
| | | Automatic fluid fill port | | Rc1/2 (Symbol F: G1/2, Symbol N: NPT1/2) |
| | | Overflow port | | Rc1 (Symbol F: G1, Symbol N: NPT1) |
| Fluid contact material | | Metal | Stainless steel, Copper (Heat exchanger brazing), Brass, Bronze | |
| | | Resin | PTFE, PU, EPDM, PVC, NBR, POM, PE, NR, PBT | |
| Facility water system | Temperature range | | [°C] | 10 to 40 |
| | Pressure range | | [MPa] | 0.3 to 0.5 |
| | Required flow rate | | [L/min] | 25 |
| | Inlet-outlet pressure differential of facility water | | [MPa] | 0.3 or more |
| | Facility water inlet/outlet port | | | Rc1 (Symbol F: G1, Symbol N: NPT1) |
| | Fluid contact material | | | Stainless steel, Copper (Heat exchanger brazing), EPDM |
| Electrical system | Power supply | | 50Hz | 3phase 380Y/220VAC to 415Y/240VAC Allowable voltage fluctuation +/-10% (No continuous voltage fluctuation) |
| | | | 60Hz | 3phase 380Y/220VAC to 480Y/277VAC Allowable voltage fluctuation +4%, -10% (Max. voltage less than 500Y/289VAC and no continuous voltage fluctuation) |

| Model | | | | HRSC100-A*-40 | HRSC100-W*-40 |
|--|---------------------------------------|---------------------|------------|---|---------------|
| Electrical system | Earth leakage Breaker (Standard) | Rated current | [A] | 20 | |
| | | Sensitivity current | [mA] | 30 | |
| | Rated operating current ^{*5} | | [A] | 8.5 | 7.7 |
| | Rated power consumption ^{*5} | | [kW (kVA)] | 5.6 (5.9) | 5.0 (5.4) |
| Noise level (Front 1m/Height 1m) ^{*5} | | | [dB(A)] | 69 | 61 |
| Waterproof specification | | | | IPX4 | |
| Accessories | | | | Alarm code list sticker 2 pcs. (English 1 pc. / Japanese 1 pc.) , | |
| | | | | Operation Manual (for installation/operation) 2 pcs. (English 1 pc. / Japanese 1 pc.) , | |
| | | | | Y-strainer (40mesh) 25A 1 pc., Barrel nipple (25A) 1pc., | |
| | | | | Anchor bolt fixing brackets 2 pcs. (including 6 M8 bolts) ^{*10} | |
| Weight ^{*9} | | | [kg] | Approx. 191 | Approx. 174 |

*1: Use a 15% ethylene glycol aqueous solution if operating in a place where the ambient temperature and/or circulating fluid temperature is 10 °C or less.
*2: Use fluid in condition below as the circulating fluid.
Water: Standard of The Japan Refrigeration and Air Conditioning Industry Association (JRA GL-02-1994)
15% ethylen glycol aqueous solution: diluted by water in condition above without any additives such as antiseptics.
Deionized water: Electric conductivity 1 μS/cm or higher (Electric resistivity 1 MΩ·cm or lower)
*3: ①Ambient/Facility water temperature: 32 °C, ②Circulating fluid: Water, ③Circulating fluid temperature: 20 °C, ④Circulating fluid flow rate: Rated flow, ⑤Power supply: 400VAC
*4: ①Ambient/Facility water temperature: 32 °C, ②Circulating fluid: Water, ③Circulating fluid flow rate: Rated flow, ④Power supply: 400VAC
*5: ①Ambient/Facility water temperature: 32 °C, ②Circulating fluid: Water, ③Circulating fluid temperature: 20 °C, ④Load: Same as the cooling capacity, ⑤Circulating fluid flow rate: Rated flow, ⑥Power supply: 400VAC, ⑦Piping length: Shortest
*6: The specification at the supply port of the thermo-chiller when the circulating fluid temp. is 20 °C.
*7: With the pressure control mode by inverter. When the pressure control mode is not used, the pump power frequency set mode can be used.
*8: Fluid flow rate to maintain the cooling capacity. If the actual flow rate is lower than this, install a bypass piping.
*9: Weight in the dry state without circulating fluids.
*10: For the HRSC100-A-40 the upper ambient temperature limit and cooling capacity will be reduced at altitudes above 1000 m.
*11: The anchor bolt fixing brackets (including 6 M8 bolts) are used for fixing to wooden skids when packaging the thermo chiller. No anchor bolt is included.

2 Specifications Continued

2.2 Production Serial Number Code

The production serial number code printed on the label indicates the month and year of production as per the following table:

| Year | | | | | | | | | | | | |
|-------|------|------|------|------|------|------|------|-----|--|--|--|--|
| | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | ... | | | | |
| Month | D | E | F | G | H | i | J | ... | | | | |
| Jan | o | Do | Eo | Fo | Go | Ho | io | Jo | | | | |
| Feb | P | DP | EP | FP | GP | HP | iP | JP | | | | |
| Mar | Q | DQ | EQ | FQ | GQ | HQ | iQ | JQ | | | | |
| Apr | R | DR | ER | FR | GR | HR | iR | JR | | | | |
| May | S | DS | ES | FS | GS | HS | iS | JS | | | | |
| Jun | T | DT | ET | FT | GT | HT | iT | JT | | | | |
| Jul | U | DU | EU | FU | GU | HU | iU | JU | | | | |
| Aug | V | DV | EV | FV | GV | HV | iV | JV | | | | |
| Sep | W | DW | EW | FW | GW | HW | iW | JW | | | | |
| Oct | X | DX | EX | FX | GX | HX | iX | JX | | | | |
| Nov | y | Dy | Ey | Fy | Gy | Hy | iy | Jy | | | | |
| Dec | Z | DZ | EZ | FZ | GZ | HZ | iZ | JZ | | | | |

Warning

Special products (-X) might have specifications different from those shown in this section. Contact SMC for specific drawings.

3 How to Order

| | | | | | | | |
|------------------|--|--|--|--|--|--|--|
| HRSC 100 | | | | | | | |
| Cooling capacity | | | | | | | |
| 100 | 10.5kW*1) | | | | | | |
| | 11.5kW*2) | | | | | | |
| Cooling method | | | | | | | |
| A | Air-cooled refrigeration | | | | | | |
| W | Water-cooled refrigeration | | | | | | |
| Pipe thread type | | | | | | | |
| Nil | Rc | | | | | | |
| F | G (with Rc-G conversion fitting set) | | | | | | |
| N | NPT (with Rc-NPT conversion fitting set) | | | | | | |
| Option | | | | | | | |
| Symbol | Option | | | | | | |
| Nil | None | | | | | | |
| A | With caster adjuster-foot | | | | | | |
| K*3) | With fluid fill port | | | | | | |
| Power supply | | | | | | | |
| Symbol | Power supply | | | | | | |
| 40 | 3phase 380Y/220VAC to 415Y/240VAC (50Hz) 3phase 380Y/220VAC to 480Y/277VAC (60Hz) | | | | | | |

*1) Cooling method: -A (Air-cooled refrigeration) can be chosen.

*2) Cooling method: -W (Water-cooled refrigeration) can be chosen.

*3) This is a manual fluid fill port that is different from the automatic fluid fill port allowing fluid to be supplied manually into the tank without removing the side panel (fluid can be supplied manually for models without option K if the side panel is removed).

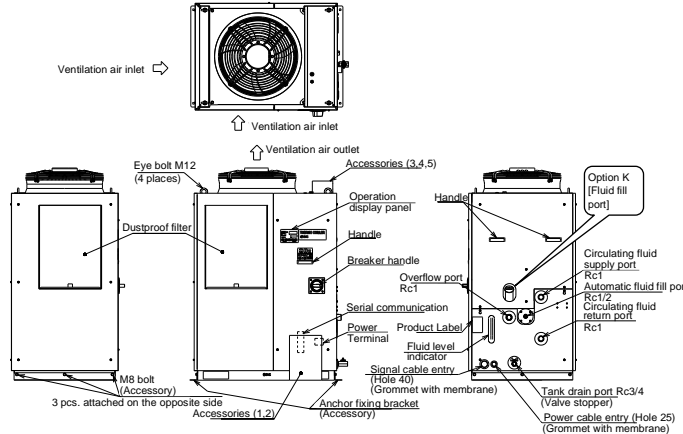
4 Name of Parts and Accessories

4.1 Accessories

| | | | |
|---|--|-------------------------------|-----|
| 1 | Alarm code list label | English 1 pc. /Japanese 1 pc. | |
| 2 | Operation manual | English 1 pc. /Japanese 1 pc. | |
| 3 | Y strainer (40 mesh) 25A | 1 pc. | |
| 4 | Barrel nipple 25A | 1 pc. | |
| 5 | For HRSC100-AF-40: G thread adapter set (HRS-EP014) For HRSC100-WF-40: G thread adapter set (HRS-EP016) For HRSC100-AN-40: NPT thread adapter set (HRS-EP013) For HRSC100-WN-40: NPT thread adapter set (HRS-EP015) | 1 set | |
| - | Anchor brackets (M8 bolts) | 2 pcs. 6 pcs. | --- |

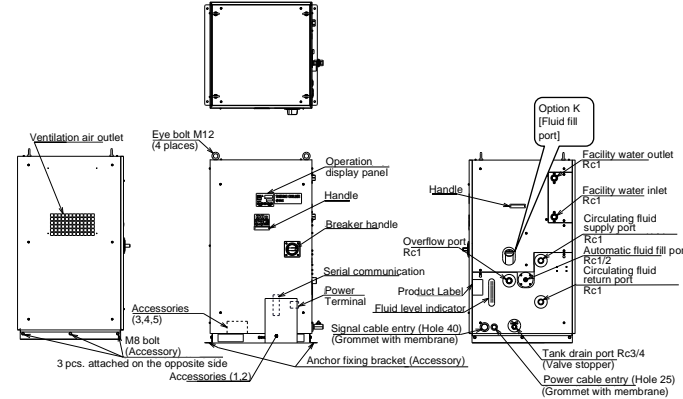
Note) The anchor brackets (including M8 bolts) are used for fixation with the skid when this product is packed. The anchor bolts are not attached.

4.2 HRSC100-A*-40



4 Name of Parts and Accessories Continued

4.3 HRSC100-W*-40



4.4 Function of Parts

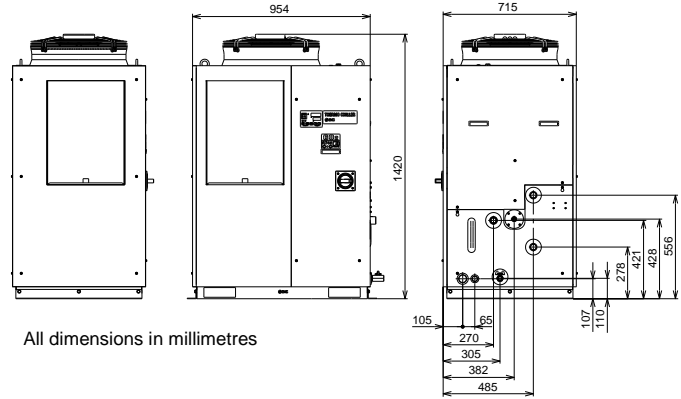
The operation panel on the front of the product controls the basic operation of the product.

| No | Description | Function | |
|----|---------------------------------------|----------|--|
| ① | Digital display (7 segment, 4 digits) | PV | Displays the temperature and pressure of the circulating fluid and alarm codes. |
| | | SV | Displays the set temperature of the circulating fluid and the set values of other menus. |
| ② | [°C] light | | Displays the unit of display temperature (°C). |
| ③ | [MPa] light | | Displays the unit of display pressure (MPa). |
| ④ | [REMOTE] light | | Turns ON during remote operation by communication. |

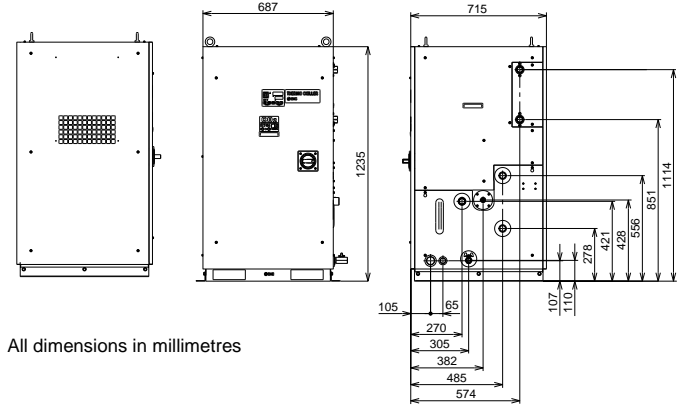
| No | Description | Function | |
|----|----------------|----------|---|
| ⑤ | [RUN] light | | - Turns ON when the product is started and in operation. Turns OFF when the product stops. - Blinks during stand-by for stop (Interval 0.5 seconds). - Blinks during independent operation of the pump (Interval 0.3 seconds). - Blinks while the anti-freezing function is being set (During standby: Interval 2 seconds, During operation: Interval 0.3 seconds). - Blinks during warming up function (During standby: Turns ON for 0.5 seconds and OFF for 3 seconds, During operation: Interval 0.3 seconds.) |
| ⑥ | [ALARM] light | | Blinks with buzzer when alarm occurs (Interval 0.3 seconds). Blinks while AL25 is OFF (Turns ON for 0.5 seconds and OFF for 3 seconds.) |
| ⑦ | [L] light | | Turns ON when the fluid level lowers below "L" (low) level. |
| ⑧ | [T] light | | Turns ON while the run timer or stop timer function is working. |
| ⑨ | [C] light | | Turns ON when the product is in automatic operation. |
| ⑩ | [RUN/STOP] key | | Makes the product start or stop. |
| ⑪ | [MENU] key | | Moves from the main menu (display which shows circulating fluid temperature, pressure and etc.) to the other menus (entry of set values and monitor screen). |
| ⑫ | [SEL] key | | Changes the item in menu and enters the set value. |
| ⑬ | [▼] key | | Decreases the set value. |
| ⑭ | [▲] key | | Increases the set value. |
| ⑮ | [PUMP] key | | When the [MENU] and [RUN/STOP] keys are held down simultaneously, the pump starts running independently. |
| ⑯ | [RESET] key | | Press the [▼] and [▲] keys simultaneously. This will stop the alarm buzzer and turns OFF the [ALARM] light. Keep the [▼] and [▲] keys pressed down simultaneously for 3 seconds to reset AL46 and AL48. (After resetting AL48, WAIT" WAIT" will be displayed and the product cannot start running for 40 seconds. Restart 40 seconds later after resetting. |

5 Dimensions

5.1 HRSC100-A*-40



5.2 HRSC100-W*-40



6 Transportation

Warning

- Only persons who have sufficient knowledge and experience about the product and system are allowed to transport and set up the product.
- Especially pay attention to personal safety.

- When moving the product by a forklift, insert the fork into the right positions referring to section 6.1
- Transportation using forklift and hanging- Moving by forklift and slinging should be done by persons who have the licenses.
- Be sure to use all the four eye bolts when slinging the product.
- The slant angle of each rope should be 60 degrees or less.

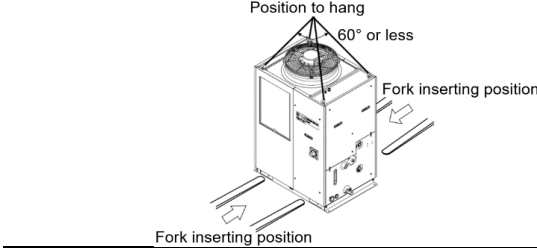
Caution

- Never lay the product on its side. The compressor oil will leak into the refrigerant piping, which may cause early failure of the compressor.
- Drain the residual fluid from the piping as much as possible to prevent any spillage.
- When the product is carried by using a forklift, make sure that the fork does not damage the cover panel or piping port.

6.1 Transportation using forklift and hanging

Warning

- This is a heavy product.
- Moving by forklift and slinging should be done by persons who have the licenses.



| Model | Weight kg | |
|---------------|----------------|-----------------------|
| | Standard model | Option A |
| HRSC100-A*-** | Approx. 190 | [Standard model] + 18 |
| HRSC100-W*-** | Approx. 175 | [Standard model] + 18 |

6.2 Transportation using casters

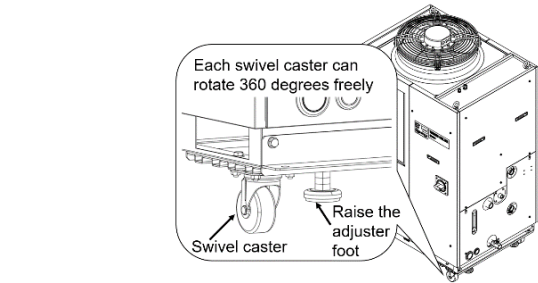
Warning

- This is a heavy product.
- Moving the product by casters should be done by 2 persons or more.

Caution

- Raise the adjuster feet and push the corners of the product when moving the product using the casters.
- Do not hold the piping connections or handles of the panels when moving by casters, or it may cause damage to the product.

6 Transportation Continued



7 Installation

Warning

- Do not set up the product in places possibly exposed to leakage of flammable gas. Should any flammable gas stay around the product, the product may cause a fire.
- The product is not dust-proof. If used in an environment with dust, it may accumulate inside the product and cause not only a malfunction but also a fire hazard.

Caution

- Keep the product upright on a rigid and flat floor which can resist the weight of the product and take measures to prevent the product from tipping over. Improper installation may cause water leakage, tipping, damage of the product or injure the operator.
- Keep the ambient temperature of the product between 5 to 45°C. Operation out of this ambient temperature range may cause a malfunction of the product. Operating the product in an environment temperature of 45 °C may reduce the heat discharging efficiency of the heat exchanger and the safety device may function, resulting in the product operation stoppage.
- The installer/end user is responsible for carrying out an acoustic noise risk assessment on the equipment after installation and taking appropriate measures as required.

7.1 Types of Hazard Labels

The product has various potential hazards, and they are marked with the following labels.

Warning Related to Electricity

| | |
|--|---|
| | This symbol stands for a possible risk of electric shock. |
|--|---|

Warning Related to High Temperatures

| | |
|--|---|
| | Possible risk of hot surface and burns. |
|--|---|

Warning Related to Rotating Objects

| | |
|--|--|
| | Possible risk of cutting fingers or hand, or entanglement by rotating fan (For air-cooled type). |
|--|--|

Warning Related to High Pressure Refrigerant

| | |
|--|---|
| | Possible risk from high pressure refrigerant in system. It must be serviced by suitably qualified persons only. |
|--|---|

Warning Related to other General Dangers

| | |
|--|--|
| | This symbol stands for general danger. |
|--|--|

7.2 Environment

The product must not be operated, installed, stored or transported in the following conditions. Potential malfunction or damage to the product may occur if these instructions are disregarded.

This product is not designed for clean room usage. The pump and ventilating fan inside the product generate particles.

- Location accessible to the general public.
- Location that is exposed to water, water vapour, steam, salt water or oil.
- Location that is exposed to dust or powder material.
- Location that is exposed to corrosive gas, organic solvent, chemical solution, or flammable gas. (The product is not explosion-proof.)
- Location where the ambient temperature is out of the following range: During transportation or storage: 0 to 50°C (No water or circulating fluid in the piping.) During operation – Air-cooling type: 5 to 45°C Water-cooling type: 2 to 45°C

- Location where condensation forms on the inside electrical parts.
- Location that is exposed to direct sunlight or heat radiation.
- Location that is near heat sources and poor in ventilation.
- Location that is subjected to abrupt changes in temperature.
- Location that is subjected to strong electromagnetic noise (intense electric field, intense magnetic field, or surges).
- Location that is subjected to static electricity, or conditions where static electricity can discharge to the product.

- Location that is subjected to strong high frequencies radiation.

7 Installation Continued

- Location that is subjected to potential lightning strike.
- Location at altitude of 3000m or higher (except during product storage and transport). Refer to below for details.
- Location where the product is affected by strong vibrations or impacts.
- Condition that applies external force or weight causing the product to be damaged.
- Location without adequate space for maintenance as required.
- Location that is exposed to splash of water that is higher than IPX4.

For product installation at a place of high altitude of 1000 meters or more, select a thermo-chiller of the applicable capacity referring to the table below.

- (1) Max. ambient temp.: Use the product in lower ambient temperature than the described value at each altitude.
- (2) Cooling capacity correction coefficient: Coefficient to calculate the cooling capacity at each altitude

For the product operation at an altitude of 1800 meters, the cooling capacity at an altitude of 1800 meters = Cooling capacity 8.4 x 0.8.

| Altitude | 1. Max. ambient temp [°C] | 2. Cooling capacity coefficient |
|-----------------|---------------------------|---------------------------------|
| Less than 1000m | 45 | 1.00 |
| Less than 1500m | 42 | 0.85 |
| Less than 2000m | 38 | 0.80 |
| Less than 2500m | 35 | 0.75 |
| Less than 3000m | 32 | 0.70 |

If heat from the product cannot be sufficiently radiated due to a rise in the ambient temperature, a lack of ventilation, high elevation, etc., the refrigerant circuit pressure on the high pressure side will rise. As a result, the compressor will overload, affecting product performance and life, so be sure to check the value of the refrigerant circuit pressure on the high pressure side.

7.3 Installation and Maintenance Space

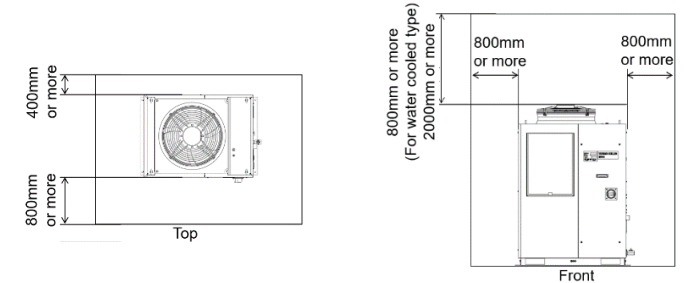
Caution

Have an enough space for the ventilation for the product. Otherwise it may cause a lack of cooling capacity or/and stoppage of the product. Ensure there is enough space for maintenance.

7.4 Mounting

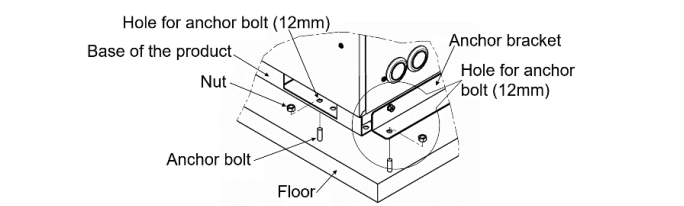
Caution

- Install the product on a vibration free level floor.
- Prepare the M10 anchor bolts that are suitable for the material of the floor that the product will be installed on. Drive the anchor bolts in at least two places on the left and right sides of the product (four places in total).



7.4.1 How to mount the product

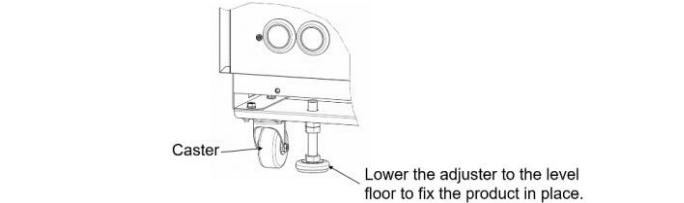
- Insert the product to the anchor bolts that were previously driven on the level floor.
- Fasten the nuts to the anchor bolts.
- Make sure that there is no looseness on all the anchor bolts and nuts.



7.4.2 Option A or “Caster Adjuster-foot kit” (HRS-KS002)

Caution

In case of using “Caster Adjuster-foot kit”, be sure to use the adjuster foot to install on the floor. The adjuster foot is not earthquake-proof. If necessary, make an earthquake-resistant measure on the customer side



7 Installation Continued

7.5 Electrical wiring

Warning

- Do not modify the internal electrical wiring of the product. Incorrect wiring may cause electric shock or fire. Also, modifying the internal wiring will void the product’s warranty.
- NEVER connect the ground to water line, gas pipe or lightning conductor.
- The installation of electrical equipment and wiring work should be performed only by personnel with sufficient knowledge and experience.
- Be sure to shut off the user’s power supply. Wiring with the product energized is strictly prohibited.
- The wiring must be firmly secured to the product to prevent the external force of cables being applied to the terminals. Incomplete wiring, or improper securing of wiring, may cause electrical shock or excessive heat and fire.
- Ensure a stable power supply with no voltage surges.
- Ensure that an earth leakage breaker is used in the power supply of the product.
- Use a power supply suitable for the specifications of the product. Use a power supply of over voltage category 3 (IEC60664-1).
- Be sure to connect the ground connection.
- Ensure that a lock out facility is available on the power supply.
- Each product must have its own separate earth leakage breaker. Otherwise there can be a risk of electric shock or fire.
- Ensure that no harmonics are superimposed at power supply.
- (Do not use inverter, etc.)
- Supply a steady power supply which is not affected by surges or distortion. In particular, if the voltage rate of increase (dv/dt) at zero crossing exceeds 40V/200µsec, it may cause malfunction.

| Model | Power supply voltage | Terminal block screw diameter | Recommended crimp terminal | Cable specifications* | Earth leakage breaker | |
|--------------------------------|---|-------------------------------|----------------------------|--|-----------------------|-------------------------------------|
| | | | | | Rated current (A) | Sensitivity of leakage current (mA) |
| HRSC100-A*-40 HRSC100-W*-40 | 3-phase 380Y/220VAC to 415Y/240VAC (50Hz) 3phase 380Y/220VAC to 480Y/277VAC (60Hz) | M5 | R5.5-5 | 4 cores x AWG10 (4 cores x 5.5 mm²) (Including ground) | 20 | 30 |

*Cable specifications are the examples when using the product at a continuous allowable operating temperature of 70°C, with an operating voltage of 600 V and two kinds of plastic insulated wires at an ambient temperature of 30°C. Please select the proper size cables according to the actual condition.

Warning

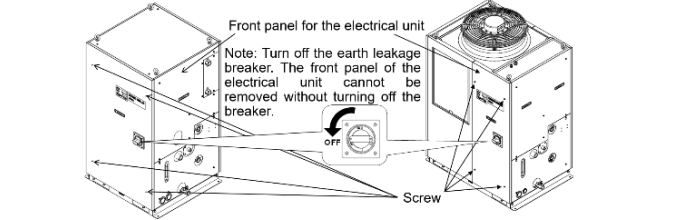
- The electrical facilities should be installed and wired in accordance with local laws and regulations of each country and by a person who has knowledge and experience.
- Check the power supply. Operation with voltages, capacities and frequencies other than the specified values can cause fire and electrical shock.
- Wire with an applicable cable size and terminal. Forcibly mounting with an unsuitable size cable may result in heat generation or fire.
- After tightening the terminal screws, please visually check that the screws are not loosened, and pull the cables to ensure that the screws are tightened completely.
- Otherwise, there can be a risk of heat generation or fire.
- Check that cabling will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges, or any other adverse environmental effects. The check shall also take into account the effects of aging or continual vibration from sources such as compressors or fans.
- Be sure to lock out and tag out the breaker of the facility power supply (customer power supply facility) before wiring.
- Be sure to connect the power supply cable from the product side first, and then connect the breaker of the facility power supply (the user’s machine power supply).

Caution

When the panel is removed or mounted, be sure to wear protective shoes and gloves to prevent injury with the edge of the panel.

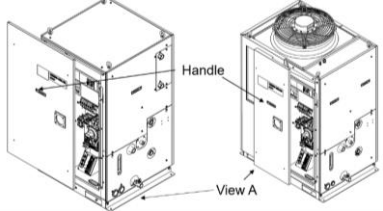
7.6 Preparation for operation

- Remove four screws to remove the front panel for the electrical unit.

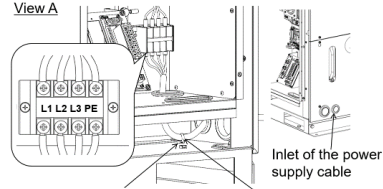


7 Installation Continued

2. Hold the handle and pull up the front panel of the electrical unit and remove it.



3. Connect the power supply cable and the ground cable as shown in the figure below.



Note: Prepare a cable tie. Fasten the power cable to the mount on the base with the cable tie.

7.7 Piping

Caution

- Connect piping firmly. Incorrect piping might cause leakage of supplied or drained fluid and wet surrounding area and facility.
- Use caution not to allow dust and foreign matter to enter the water circuit, etc. during connection of piping.
- During piping work, residual liquid may drip from the circulating fluid circuit or facility water circuit. Prepare a drain pan near the pipe connection so that the residual liquid can be received.
- Securely connect the piping at the piping port with specific wrench when tightening.
- Incorrect piping can burst in service.
- Use corrosion-resistant material for fluid contact parts of circulating fluid and/or facility water.
- Also, the use of corrosion-prone materials such as aluminium or iron for fluid contact parts, such as piping, may not only lead to clogging or leakage in the circulating fluid and facility water circuits but also refrigerant leakage and other unexpected problems. Provide protection against corrosion when you use the product.

- Do not generate a rapid change of pressure by water hammer, etc. Internal parts of the product and/or the piping may be damaged. The temperature at the outlet of the heat-dissipating water (in the case of water-cooled type) may rise up to about 60°C. Select piping with careful consideration of its suitability for the temperature. If necessary, take safety measures such as installing a bypass circuit in the heated water circuit to lower the temperature at the heated water outlet.
- It is recommended to use heat insulation to reduce the heat radiation and absorption to/from customer's piping.

| Description | Port size | Recommended tightening torque | Recommended piping specifications |
|-------------------------------|-----------|-------------------------------|---|
| Circulating fluid supply port | Rc1 | 36 to 38Nm | 1.0 MPa or more |
| Circulating fluid return port | Rc1 | 36 to 38Nm | 1.0 MPa or more |
| Facility water inlet port * | Rc1 | 36 to 38Nm | 1.0 MPa or more. |
| Facility water outlet port * | Rc1 | 36 to 38Nm | (Supply pressure: 0.3 to 0.5 MPa) |
| Automatic fluid fill port | Rc3/8 | 28 to 30Nm | 1.0 MPa or more (Automatic fluid fill pressure: 0.2 to 0.5 MPa) |
| Overflow port | Rc1 | 36 to 38Nm | ID 25 mm or more Length 5m or less |
| Tank drain port | Rc3/4 | 28 to 30Nm | ID 19 mm or more |

* : Water-cooled type only.

7.8 Fill of circulating fluid

7.8.1 Automatic fluid fill function

Caution

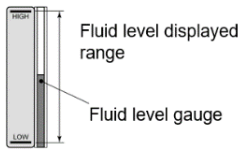
- When water is used, refer to 9.2.
- When ethylene glycol aqueous solution is used, dilute ethylene glycol with water. Additives such as antiseptics cannot be used.
- If deionized water is used, the conductivity should be 1μS/cm and higher (Electrical resistivity: 1MΩ·cm and lower).
- Confirm that the fluid level is between “HIGH” and “LOW” level of the fluid level gauge.

Caution

- Be sure to connect the piping from the overflow port to the drainage pit to drain excessive amount of the fluid from the tank.
- Confirm that the valve of the drain port is closed to prevent the supplied circulating fluid from draining out.
- When the ambient temperature or circulating fluid temperature is 10°C or below, water may be frozen in the thermo-chiller which may damage the product.

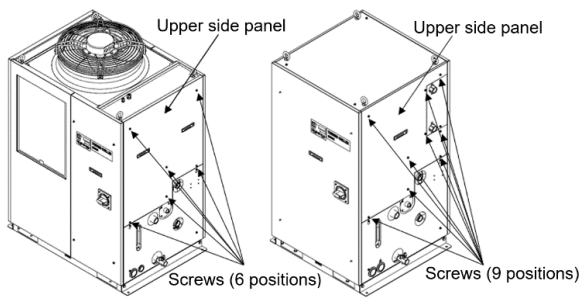
7 Installation Continued

1. Open the fluid supply valve that is connected to the automatic fluid fill port.
2. Fluid supply starts and stops automatically with the ball tap in the tank.

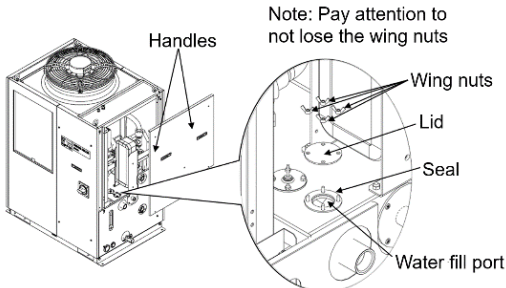


7.8.2 Fluid supply without using the automatic water fill function

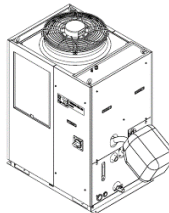
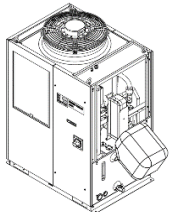
1. Remove the screws to remove the upper panel on the right side.



2. Hold the handles and lift the upper right side panel and remove it. Remove the wing nuts (4 positions) on top of the tank and remove the lid also.



3. Supply the circulating fluid to the water fill port. Please supply the circulating fluid to the fluid level between “HIGH” and “LOW” levels of the fluid level gauge



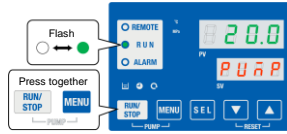
7.8.3 Option K “Water fill port”

Open the cap of the water fill port and supply the circulating fluid to the fluid level between “HIGH” and “LOW” levels of the fluid level gauge.

8 Starting the Product Continued

8.3 Preparation of Circulating Fluid

1. Press the [PUMP] key on the operation panel (press the [RUN/STOP] key and [MENU] key simultaneously). The [RUN] light (green) will blink while the pump is operating independently and the circulating fluid in the tank is supplied to the user's equipment and piping. This discharges air from the piping and reveals any leaks



2. If the fluid level in the tank reaches the lower limit and AL01 is triggered, press the [RESET] key (press the [▼] and [▲] keys simultaneously) to stop the alarm buzzer.



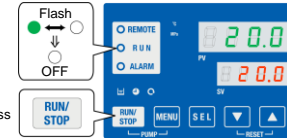
3. Fluid supply using automatic water fill function has been started. Operation shown in step 5 can be performed after some minutes.



4. For the product with option K, “with water fill port”, supply circulating fluid to the water fill port using a portable polyethylene tank, etc.



5. Press the [RESET] key (press the [▼] and [▲] keys simultaneously) to reset the alarm. Press the [PUMP] key (press the [RUN/STOP] key and the [MENU] key simultaneously) again to operate the pump individually.



6. Repeat steps 1 to 5 to supply the circulating fluid to the user's equipment and piping. Keep the fluid level in the tank between the “HIGH” and “LOW” levels of the fluid level gauge of this product.

8.4 Starting the product

1. Press the [RUN/STOP] key on the operation panel. The [RUN] LED (green) turns ON and the product starts running. The circulating fluid supply temperature (PV) is controlled to the set temperature (SV).
2. Be sure to confirm that the circulating fluid level satisfies the minimum required flow rate specified for each model with the check monitor menu.

8.5 Stopping the product

1. Press the [RUN/STOP] key on the operation panel. The [RUN] light on the operation panel blinks green at 1 second intervals and continues operation to prepare to stop. After 20-60 seconds, the [RUN] light turns OFF and the operation stops completely.
2. Turn off the earth leakage breaker of the user's power supply.

9 Maintenance

9.1 General maintenance

Warning

- Do not perform key operation or setting of this equipment with wet hands. Do not touch the electrical parts such as the power supply plug. It may cause an electric shock.
- Do not splash water directly on the product or do not wash with water. It might cause electric shock, fire, or etc.
- Do not touch the fins directly when cleaning the dust-proof filter. It may cause injury.
- Shut off the power supply to this product before performing cleaning, maintenance or inspection, or it may cause electric shock, injury, burn, or etc.
- When the panel has been removed for the purpose of inspection or cleaning, mount the panel after the work is completed. If the product is operated with the panel removed or open, it may cause injury or electric shock.

9 Maintenance Continued

9.2 Control of circulating fluid quality

Warning

Use specified circulating fluids only. If other fluids are used, they may damage the product or result in dangerous hazards. In most areas, water can be used. However, if the water in the area is hard, there is a possibility of failure or performance decline due to limescale build-up. To soften the water and avoid problems, consider using water hardness filters.

Caution

Replace the circulating fluid and/or the facility water if any problems are found in the regular check. Even if no problems are found, some of the water in the tank evaporates and impurity concentration in the circulating fluid increases. Replace the circulating fluid on the tank once in every 3 months.

9.3 Daily Check

| Item | Contents of check | |
|--|--|---|
| Installation condition | Check the installation condition of the product. | Check that there is no heavy object on the product or excessive force applying to the piping. |
| | | Temperature should be within the specification range of the product. |
| Fluid leakage | Check the connected parts of the piping. | Check that there is no fluid leakage from the connected parts of the piping. |
| Amount of circulating fluid | Check the liquid level indicator. | Fluid level should be between “HIGH” and “LOW” levels of the fluid level meter. |
| Operation panel | Check the indications on the display. | The numbers shown on the display should be clear and legible. |
| | Check the functionality. | Check that the keys, [RUN/STOP], [MENU], [SEL], [▼], and [▲], operate correctly. |
| Circulating fluid temperature | Check on the operation panel. | There should be no problem for operation. |
| Circulating fluid flow rate | Check on the operation panel. | There should be no problem for operation. If flow rate has become smaller, check for any clogging of the Y-strainer and clean it. |
| Operating condition | Check the operating condition of the product | There should be no abnormality with noise, vibration, smell, or generation of smoke. |
| Facility water (For water-cooled type) | Check the facility water condition. | Check that the temperature, pressure and flow rate are within the specification ranges. |

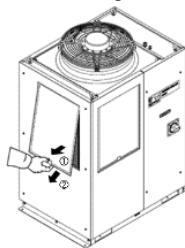
9.4 Monthly check

| Item | Contents of check | |
|---|--------------------------------|---|
| Ventilating condition (For air-cooled type) | Clean the ventilating grilles. | Make sure the ventilating grilles are not clogged with dust, etc. |
| Facility water (For water-cooled type) | Check the facility water. | Make sure the facility water is clean and contains no foreign matter. |

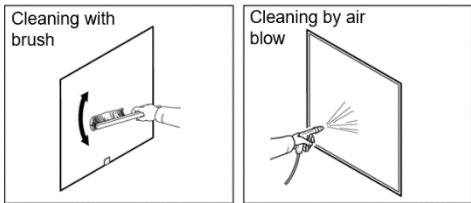
Caution

If the fins of the air-cooled condenser become clogged with dust or debris, heat radiation performance declines. This will result in the reduction of cooling performance and may stop the operation because the safety device is triggered.

1. The dust-proof filters are installed on the front and left sides of the product. The dust-proof filters are mounted at four sections. They are all identical in shape.
2. They can be removed as shown in the drawing below. Care should be taken not to deform or scratch the air-cooled condenser (fins) while removing the filters.



Clean the dust-proof filters with a long-bristled brush or by air blow



Reassemble the filters in the reverse order to the removing procedure.

9 Maintenance Continued

9.5 Inspection every 3 months

| Item | Contents of check | |
|--|---|---|
| Power supply | Check the power supply voltage. | - Make sure the supply voltage is within the specification range. |
| Circulating fluid | Replace the water periodically. | - Ensure that the water has not been contaminated and that there is no algae growth. - Circulating water inside the tank must be clean and there must not be foreign matter inside. - Check the water quality. (When using water) |
| | Density control (When using 15% concentration ethylene glycol aqueous solution) | - Density must be within the range of 15 % +5/-0. |
| | Density control (When using 40% concentration ethylene glycol aqueous solution) | - Density must be within the range of 40 % +5/-0. |
| Facility water (For water-cooled type) | Check the water quality. | - Ensure that the water is clean and contains no foreign matter. Also check that the water has not been contaminated and there is no algae growth. - Check the water quality. |

* It is recommended to replace the circulating fluid every 3 months when periodic maintenance is performed.

9.5.1 Replacement of circulating fluid

- Replace the circulating fluid with new clean fluid periodically, or it may get algae or decompose.
- Make sure that the concentration of ethylene glycol aqueous solution is 15%+5/0 when 15% ethylene glycol solution is used, and when 40% ethylene glycol aqueous solution is used, the concentration is 40% +5/-0.
- When using the Y strainer provided as an accessory for piping, clean the screen mesh inside the strainer at the same time as when replacing the circulating fluid.
 - Ensure that there is no circulating fluid in the thermo-chiller, user's equipment, and piping.
 - Remove the cap and take out the screen mesh inside, and clean the screen mesh with compressed air or detergent. Use caution not to damage the screen mesh.
 - Do not use chlorine-based or such types of detergents or cleansers.
 - Put the screen mesh that has been cleaned into the groove in the cap, and reassemble it to the body of the strainer.

9.5.2 Replacement of facility water (For water cooled type)

Clean the customer's facility water system and replace facility water.

Caution

If there is foreign matter accumulated or clogging in the facility water system, pressure loss increases with less flow rate, and it may damage the screen mesh.

9.6 Inspection during winter season

Caution

- Keep the power supply ON for these products. These functions do not start when the power is OFF.
- **Anti-freezing function:** This function prevents freezing of the circulating fluid while the product stops operation in the winter season with heat generated by automatically operating the pump. When there is a possibility of the circulating fluid freezing due to changes in the installation or operating environment (e.g. season, weather), set this function ON in advance.
 - **Warming up function:** This function maintains the circulating fluid temperature to the set warming-up temperature with heat generated by automatically operating the pump in the winter season or at night. When the time required for increasing the temperature of the circulating fluid needs to be shortened at startup, set this function ON in advance.
 - **Anti-snow coverage function (For air-cooled type):** This function prevents snow coverage on the exhaust port on top of the product during the winter time by automatically operating the fan periodically. When there is a possibility of snow coverage due to changes in the installation or operating environment (e.g. season, weather), set this function ON in advance.
 - **Freezing of the facility water:** When there is a possibility of the facility water being frozen, make sure to discharge all the facility water from the facility water circuit.

9.7 Consumables

| Part number | Name | Qty. | Remarks |
|-------------|---------------------------|-------|-------------------------------------|
| HRS-S0214 | Dust-proof filter (Upper) | 1 pc. | HRSC100-A: 2 pcs. are used per unit |

9.8 Discharge of circulating fluid

Warning

Before discharging the circulating fluid, stop the user's equipment and release the residual pressure.

9 Maintenance Continued

Caution

For relocation or long-term storage, drain the residual liquid in the piping as much as possible. Residual liquid may drip during movement or installation.

1. Turn OFF the breaker of the user's power supply.
2. Close the valve at the automatic water fill port.
3. Open the ball valve at the tank drain port, and discharge the circulating fluid.
4. Confirm that all the circulating fluid has been discharged completely from the user's equipment and piping, and then purge air to the circulating fluid outlet port of the product.
5. Close the ball valve after discharging the circulating fluid.

9.9 Discharge of the facility water (For water-cooled type)

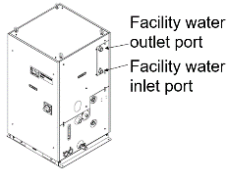
Warning

Before discharging the facility water, stop operation of the user's equipment and release the residual pressure.

Caution

For relocation or long-term storage, drain the residual liquid in the piping as much as possible. Residual liquid may drip during movement or installation.

1. Turn OFF the earth leakage breaker of the user's power supply.
2. Stop supplying the facility water, and make sure that there is no pressure applied inside the piping.
3. Remove the piping from the inlet and outlet ports of the facility water
4. Remove the piping of the outlet of the facility water.
5. Press the [SEL] key 31 times.
The digital display will show the setting screen for forced opening/closing of the proportional valve, so turn it to:



6. After confirming that the discharged water has been fully discharged, turn off the forced opening/closing of the proportional valve that was set in step 5.
7. The facility water in the product will be drained from the facility water inlet port and outlet port.

Caution

Just removing the facility water piping does not discharge the facility water completely. Remove the plug to discharge the facility water.

10 Troubleshooting

Warning

In the event of an unexpected problem or malfunction, switch off the product and investigate the cause. If the cause of the problem cannot be determined, do not use the product, but contact SMC for assistance.

10.1 Alarm code list and troubleshooting

| Code | Alarm name | Operation status | Cause/Countermeasure (Press the reset key after eliminating the cause.) |
|------|---|------------------|---|
| AL01 | Low level in tank | A.STP *1 | The fluid level has fallen below the level indicator. Refill the circulating fluid. |
| AL02 | Circulating fluid supply temperature high | A.STP | - Check that the minimum circulating fluid flow rate is maintained. The circulating fluid flow rate can be checked in the inspection monitor menu. - Review the AS.04 setting value. |
| AL03 | Circulating fluid supply temperature rise | A.RUN *1 | - Check that the ambient temperature, facility water temperature, and/or heat load are within specification. - Wait until the circulating fluid temperature decreases. |
| AL04 | Circulating fluid supply temperature drop | A.RUN *1 | - Check that the ambient temperature and supplied circulating fluid temperature are within specification. - Review the AS.06 setting value. |
| AL05 | Circulating fluid return temperature high | A.STP | - Check that the minimum circulating fluid flow rate is maintained. - Check that the ambient temperature, facility water temperature, and/or heat load are within specification. |
| AL08 | Circulating fluid supply pressure rise | A.STP *1, *2 | Check the customer's piping for closed valves, obstructive bends, or foreign object blockage. If 'EEEE' is displayed on the PI screen in the inspection monitor menu, it indicates a short-circuit or open-circuit in the circulating fluid circuit pressure sensor. Request service for the pressure sensor. |
| AL09 | Circulating fluid supply pressure drop | A.STP *1, *2 | Restart and confirm that the pump is operating. If 'EEEE' is displayed on the PI screen in the inspection monitor menu, it indicates a short-circuit or open-circuit in the circulating fluid circuit pressure sensor. Request service for the pressure sensor. |
| AL10 | Compressor suction temperature high | P.RUN | - Check the circulating fluid return temperature. - Check that the heat load is within the appropriate range. |
| AL11 | Compressor suction temperature low | P.RUN | - Check that the circulating fluid is flowing. - Use 15% ethylene glycol aqueous solution if the set temperature is below 10°C. |
| AL12 | Superheat temperature low | P.RUN | |

10 Troubleshooting Continued

| Code | Alarm name | Operation status | Cause/Countermeasure (Press the reset key after eliminating the cause.) |
|------|--|------------------|---|
| AL13 | Compressor discharge pressure high (sensor) | P.RUN | Check that the ambient temperature, facility water temperature, and/or heat load are within specification. |
| AL14 | Compressor discharge pressure high (switch) | P.RUN | |
| AL15 | Refrigeration circuit pressure (high pressure side) rise | P.RUN | - Check that the ambient temperature is within the specified range. - Possible refrigerant leak detected. Request for service. |
| AL16 | Refrigerant circuit pressure (low pressure side) rise | P.RUN | Check that the ambient temperature, facility water temperature, and/or heat load are within specification. |
| AL17 | Refrigerant circuit pressure (low pressure side) drop | P.RUN | - Check that the circulating fluid is flowing. - Possible refrigerant leak detected. Request for service. |
| AL18 | Compressor overload | P.RUN | Wait 10 minutes, then restart and confirm that the compressor is operating. |
| AL19 | Communication error | OFF *1 | Request message from host computer not received. Please resend the request message. |
| AL20 | Memory error | A.STP | Controller error detected. Power off the device and restart. If the issue continues, request service. |
| AL22 | Circulating fluid supply temperature sensor abnormality | A.STP | Temperature sensor short-circuit or open-circuit detected. Request sensor service. |
| AL23 | Circulating fluid return temperature sensor abnormality | A.STP | |
| AL24 | Compressor suction temperature sensor abnormality | P.RUN | |
| AL25 | Circulating fluid supply pressure sensor abnormality | A.STP *1 | |
| AL26 | Compressor discharge pressure sensor abnormality | P.RUN | Pressure sensor short-circuit or open-circuit detected. Request sensor service. |
| AL27 | Compressor suction pressure sensor abnormality | P.RUN | |
| AL28 | Pump maintenance | OFF *1 | Regular maintenance is due. |
| AL29 | Fan maintenance *4 | OFF *1 | Regular maintenance is due. Recommended to request inspection / service of the component. |
| AL30 | Compressor maintenance | OFF *1 | Every 20,000 hours *3 Every 30,000 ours Every 30,000 hours |
| AL31 | Contact input 1 signal detected | A.STP *1 | Contact input is detected. |
| AL32 | Contact input 2 signal detected | A.STP *1 | |

| Code | Alarm name | Operation status | Cause/Countermeasure (Press the reset key after eliminating the cause.) |
|------|---|------------------|--|
| AL34 | Electrical conductivity rise | OFF *1 | Electrical conductivity is larger than the set value. If an electrical conductivity sensor is used, replace the DI filter. |
| AL35 | Electrical conductivity drop | OFF *1 | Electrical conductivity is smaller than the set value. If an electrical conductivity sensor is used, replace the DI filter. |
| AL36 | Electrical conductivity sensor abnormality | A.RUN | - Check that the electrical conductivity sensor is connected. - The electrical conductivity sensor may have a short-circuit or open-circuit. Replace the sensor. |
| AL37 | Compressor discharge temperature sensor abnormality | P.RUN | Temperature sensor short-circuit or open-circuit detected. Request sensor service. |
| AL38 | Compressor discharge temperature rise | P.RUN | Check that the ambient temperature, facility water temperature, and heat load are within specification. |
| AL40 | Dust-proof filter maintenance *4 | OFF *1 | Regular maintenance notice. Please clean the dust filter. Every 500 hours*5 |
| AL41 | Power outage recovery | A.STP *1 | Power supply was interrupted during operation. Check the power supply and restart the system. |
| AL42 | Compressor operation standby | A.RUN | Waiting until the compressor is ready for operation. Please wait. This will clear automatically after operation starts. |
| AL43 | Fan breaker trip *4 | P.RUN | Check for power supply system abnormalities |
| AL44 | Fan inverter error *4 | P.RUN | (e.g. ground fault, short-circuit, voltage fluctuation, abnormal phase-to-phase voltage, open phase, surge).Power off the device and restart. If the issue continues, ask for service. |
| AL45 | Compressor breaker trip | P.RUN | Reset the fan breaker trip. |
| AL46 | Compressor inverter error | P.RUN | |
| AL47 | Pump breaker trip | A.STP | |
| AL48 | Pump inverter error | A.STP | |
| AL49 | Exhaust fan stopped *6 | A.RUN | Exhaust cooling fan fault detected. Request service for the exhaust cooling fan. |
| AL52 | Ambient temperature abnormality *4 | A.RUN *1 | Check that the ambient temperature is within the specified range. |
| AL53 | Facility water inlet temperature abnormality *6 | A.RUN *1 | Check that the facility water temperature is within the specified range. |
| AL54 | Facility water inlet temperature high *6 | A.STP | Check the customer's piping for closed valves, obstructive bends, or foreign object blockage. |
| AL55 | Facility water outlet temperature rise *6 | A.RUN *1 | - Check the temperature and flow rate of the customer's facility water system. |
| AL56 | Facility water outlet temperature high *6 | A.STP | - Check that the heat load is with the appropriate range. |

10 Troubleshooting Continued

| Code | Alarm name | Operation status | Cause/Countermeasure (Press the reset key after eliminating the cause.) |
|------|---|------------------|---|
| AL57 | Ambient temperature sensor abnormality *4 | A.STP | Temperature sensor short-circuit or open-circuit detected. Request sensor service |
| AL58 | Facility water inlet temperature sensor abnormality *6 | A.STP | |
| AL59 | Facility water outlet temperature sensor abnormality *6 | A.STP | |
| AL60 | Internal communication error | A.STP | Check for power supply system abnormalities (e.g. ground fault, short-circuit, voltage fluctuation, abnormal phase-to-phase voltage, open phase, surge). Power off the device and restart. If the issue continues, ask for service. |
| AL61 | Power supply abnormality | A.STP | |
| AL62 | Compressor Inverter parameter error | P.RUN | |
| AL63 | Compressor Inverter communication error | P.RUN | |
| AL64 | Pump Inverter parameter error | A.STP | |
| AL65 | Pump Inverter communication error | A.STP | |

- *1: This is the factory default setting. The setting can be changed by the customer.
*2: AL25 is forcibly turned OFF when WRN is set.
*3: Notice on mechanical seal replacement. Mechanical seal replacement is limited to 2 times. If the cumulative operation time of the pump exceeds 20,000 hours, please consider asking pump inspection service.
*4: This alarm does not occur on water-cooled refrigeration model.
*5: The setting can be adjusted within the range of 1 to 9999 hours.
*6: This alarm does not occur on air-cooled refrigeration model.
A.STP : Compressor, pump, and fan stop operation.
A.RUN : Compressor, pump, and fan continue operation.
P.RUN : Compressor and fan stop operation, and pump continues operation.
OFF : This alarm will not be generated.

10.2 Other Errors

| Content of failure | Possible cause | Countermeasure |
|--|---|--|
| The operation panel displays nothing. | The breaker of the user's power supply or/and the optional breaker is/are not turned ON. | Turn ON the breaker. |
| | The breaker of the user's power supply or the optional breaker has failed. | Replace the breaker. |
| | No power supply.(e.g. Breaker(s) in the power supplying route has not been turned ON.) | Supply the power. |
| The [RUN] light does not turn ON when the [RUN/STOP] key is pressed. | The breaker for the user's facility or the optional breaker has tripped due to short-circuit or leakage of electricity. | Repair the short-circuited part or the electricity leaking part. |
| | Communication setting has been turned ON. | Check if the communication setting has been turned ON. |
| | Failure of the [RUN] light | Replace the controller. |
| | Failure of the [RUN/STOP] key | Replace the controller. |

11 Limitations of Use

11.1 Limited warranty and disclaimer/compliance requirements

Refer to Handling Precautions for SMC Products.

12 Product Disposal

This product shall not be disposed of as municipal waste. Check your local regulations and guidelines to dispose this product correctly, in order to reduce the impact on human health and the environment.

13 Declaration of Conformity

| <p>Original declaration Doc. No. HRS-C125-0295U</p> <p>EU DECLARATION OF CONFORMITY</p> <p>SMC Corporation, 1-5-5, Kyobashi, Chuo-ku, Tokyo 104-0031, JAPAN</p> <p>Serial No. C0001 onwards Marked H is in conformity with the relevant Union harmonization legislation and has been demonstrated to fulfil the requirements with reference to the harmonized standards or approved standards as listed below:</p> <table><thead><tr><th>Requirement</th><th>Harmonized standards</th></tr></thead><tbody><tr><td>Electromagnetic Compatibility (EMC)</td><td>EN 61326:2009</td></tr><tr><td>Low Voltage Directive (LVD)</td><td>EN 60950-1:2005</td></tr><tr><td>RoHS Directive</td><td>EN 60950-1:2005</td></tr></tbody></table> <p>Name and address of the person authorized to compile the technical file: Mr. T. Matsuda, General Manager, SMC, Inc. 1-5-5, Kyobashi, Chuo-ku, Tokyo 104-0031, JAPAN</p> <p>Importer/Distributor contact details: SMC Corporation, 1-5-5, Kyobashi, Chuo-ku, Tokyo 104-0031, JAPAN</p> <p>Tokyo, Date: 12th May 2020</p> | Requirement | Harmonized standards | Electromagnetic Compatibility (EMC) | EN 61326:2009 | Low Voltage Directive (LVD) | EN 60950-1:2005 | RoHS Directive | EN 60950-1:2005 | <p>Original declaration Doc. No. HRS-C125-0295U</p> <p>UK DECLARATION OF CONFORMITY</p> <p>SMC Corporation, 1-5-5, Kyobashi, Chuo-ku, Tokyo 104-0031, JAPAN</p> <p>Serial No. C0001 onwards Marked H is in conformity with the relevant Union harmonization legislation and has been demonstrated to fulfil the requirements with reference to the harmonized standards or approved standards as listed below:</p> <table><thead><tr><th>Requirement</th><th>Harmonized standards</th></tr></thead><tbody><tr><td>Electromagnetic Compatibility (EMC)</td><td>EN 61326:2009</td></tr><tr><td>Low Voltage Directive (LVD)</td><td>EN 60950-1:2005</td></tr><tr><td>RoHS Directive</td><td>EN 60950-1:2005</td></tr></tbody></table> <p>Name and address of the person authorized to compile the technical file: Mr. T. Matsuda, General Manager, SMC, Inc. 1-5-5, Kyobashi, Chuo-ku, Tokyo 104-0031, JAPAN</p> <p>Importer/Distributor contact details: SMC Corporation, 1-5-5, Kyobashi, Chuo-ku, Tokyo 104-0031, JAPAN</p> <p>Tokyo, Date: 12th May 2020</p> | Requirement | Harmonized standards | Electromagnetic Compatibility (EMC) | EN 61326:2009 | Low Voltage Directive (LVD) | EN 60950-1:2005 | RoHS Directive | EN 60950-1:2005 |
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14 Contacts

Refer to www.smcworld.com or www.smc.eu for your local distributor/importer.

SMC Corporation

URL : <https://www.smcworld.com> (Global) <https://www.smc.eu> (Europe)
SMC Corporation, 1-5-5, Kyobashi, Chuo-ku, Tokyo 104-0031, JAPAN
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