



Installation and operation manual OilonCooling Ck



Read these instructions carefully before installation, use, or maintenance

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1 Introduction

1.1 Safety notice and warnings

Read these instructions carefully before installation, commissioning, operation, or maintenance of the device. The given instructions must be followed. Throughout this manual, the following symbols are used to point out very important information:



Use special caution. The DANGER symbol indicates an immediate hazard that will result in serious injury or death.



Use special caution. The WARNING symbol indicates a hazard that may result in serious injury or death.



Use caution. The CAUTION symbol indicates a hazard that may result in an injury.



Pay attention. The NOTICE symbol indicates a risk of damage to the equipment, components, or surroundings.



The 'i' (info) symbol indicates important information as well as useful tips and hints.

Keep these instructions as well as the electrical diagrams available near the device.



Installation or commissioning of the appliance is to be carried out by authorized and trained personnel only, adhering to all local regulations and requirements.



Wear proper personal protective equipment, such as protective footwear, gloves, and safety goggles when necessary.



Before any maintenance or servicing, switch off electricity using the main switch.



Use only fuses with the correct rating.



Do not push items into the air inlet or outlet when the cooling unit is in operation, as this may result in an injury or damage to the equipment.



Do not direct the air flow directly towards people.



To avoid slipping, keep floor surfaces dry, and seal off or report any leaks that you detect.



Do not place a heater or other heat source near the unit.



Do not obstruct the air inlet or outlet. Obstructions will lower the unit's performance and may cause a malfunction.



If the unit will be out of use for an extended period of time, disconnect power from the cooling unit's main switch.

1.2 Delivery contents



Check the contents of the delivery immediately. If some of the accessories specified in the order are not included in the delivery, notify the equipment dealer within five days.

The cooling unit is delivered with an installation kit for connecting one cooling unit into a heat pump's brine circuit. If you install several cooling units in the same location, determine the necessary connection components on a case-by-case basis.

Kit contents

- circulation pump
- Pump connector with shut-off valves, 1½" x ¾"
- Miniature ball valve, F ¾"
- Check valve, 1¼"
- Two-way valve and electric actuator
- Relay and circuit breaker for circulation pump control

Removing the packaging

Remove the cardboard packaging from around the product. Check the unit for transportation damage. If there is damage, report the damage immediately to the carrier who delivered the unit.

2 Installation

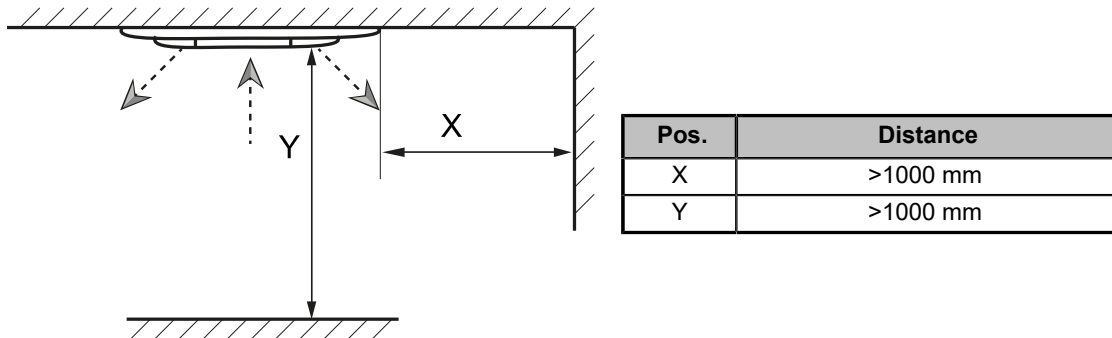
2.1 Installing cooling unit

Place the cooling unit as high as possible. Cold air flows downwards.

If you bring the pipes to the unit through a wall behind the unit, create a passthrough for the pipes. The dimensions required for locating the pass through are indicated on the cooling unit mounting plate.

Installation site requirements

- There are no obstructions 1000 mm in front of or next to the air outlet.



- There are no heat sources or devices that generate water vapor near the unit.
- The location is optimal for air circulation within the room.
- A condensate drain can be installed conveniently.
- The unit is not next to a doorway.
- The installation height is correct.

Making a mounting box for the cooling unit



A service hatch will be mounted inside the mounting box, at the edge of the box.

The cooling unit requires a mounting box for installation. This box must be insulated, as it extends into the cool intermediate floor structure. Make the mounting box from laminated timber or similar material.

- When making the box, leave room for a service hatch (width: around 200 mm) next to the cooling unit for making connections and bleeding pipes.

Minimum mounting box width and length:

- Ck5: 850 mm
- Ck9: 1150 mm

Installing mounting hardware inside the mounting box

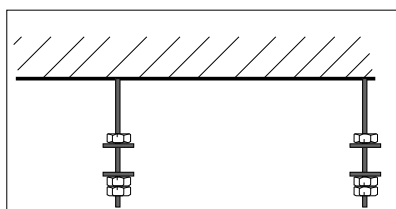


When using screws instead of threaded bars to fasten the unit, install mounting supports inside the box.

The cooling unit can be fastened to the mounting box either with threaded bars or screws.

When using threaded bars to fasten the cooling unit, fasten installation supports to the roof of the box.

- Select a secure mounting method based on the mounting box material.
- Mark the mounting locations for the cooling unit using the cardboard template included in the delivery.
- Do not tighten the nuts after installing the threaded bars.
- Install washers as shown in the image.



Cooling unit installation

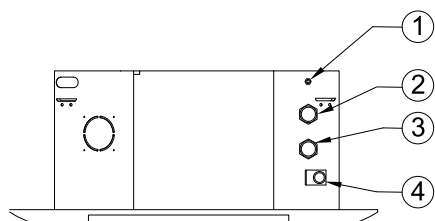
1. Fasten the mounting box between ceiling structures.
2. Carefully lift the cooling unit into place and mount corner brackets onto the threaded bars.
3. Adjust the height using the washers and nuts. Consider the final height of the ceiling lining.
4. Tighten the fastening nuts.
5. Fasten the grille in place with the supplied fastening screws.

Alternatively, fasten the unit with screws to the mounting supports inside the box.

2.2 Pipe installation

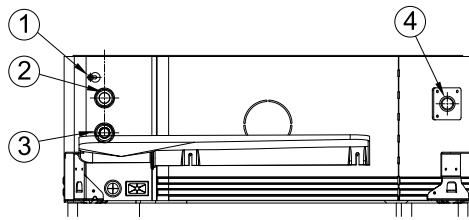
Make the pipe connections as shown in the piping diagram. Check the connections. To prevent condensation, carefully insulate the pipes and pass throughs.

Pipe connections, Ck5



Pos.	Item
1	Bleed valve
2	Brine out, 3/4"
3	Brine in, 3/4"
4	Condensate drain

Pipe connections, Ck9

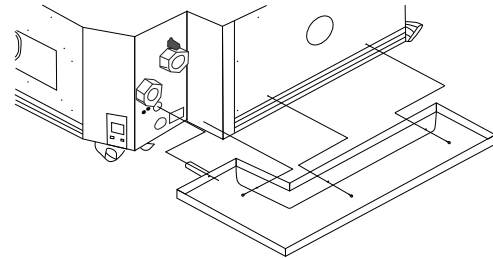
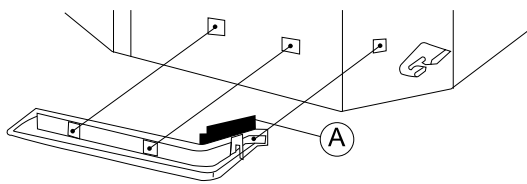


Pos.	Item
1	Bleed valve
2	Brine out, 3/4"
3	Brine in, 3/4"
4	Condensate drain

Condensate tray installation

The condensate tray ensures that any condensate from pipe joints is led back into the unit, preventing moisture damage to any surrounding structures.

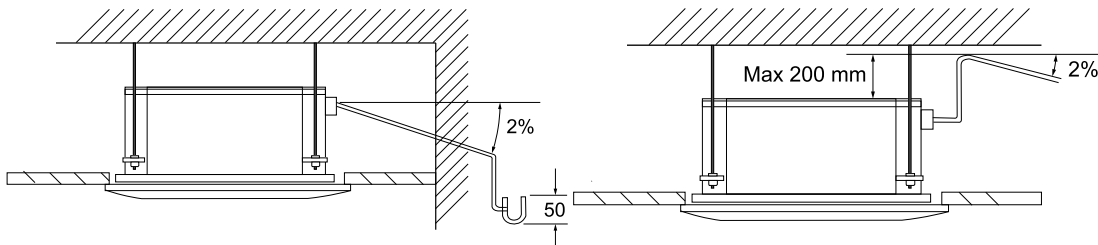
1. Remove plastic plugs.
2. Install the condensate tray as shown in the image.



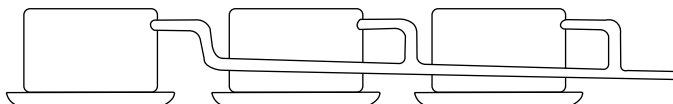
A: insulation

3. Insulate the condensate tray.

Condensate drain installation

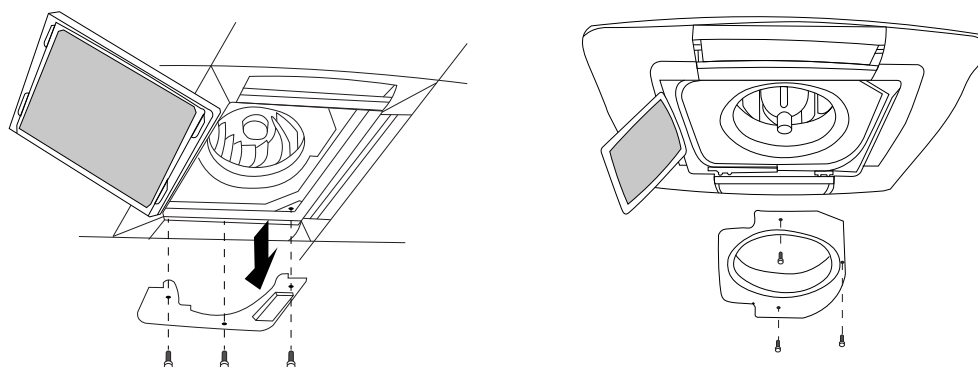


- To prevent air pockets, cut the condensate drain as short as possible and use a downward slope (min: 2%).
- Minimum water seal depth: 50 mm.
- The highest point in the condensate drain must not be higher than 200 mm from the top of the cooling unit.
- Carefully insulate the condensate drain pipe.
- If there are several cooling units in the room, you can chain the condensate drain pipes as shown in the image.

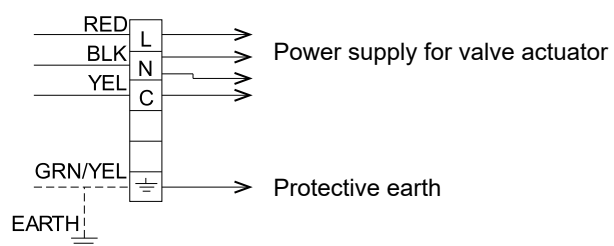


2.3 Electrical installation

To access the control unit, remove the grille and the metal cover plate as shown in the image. Make the electrical connections according to the electrical diagrams.



Two-pipe system



3 Operation

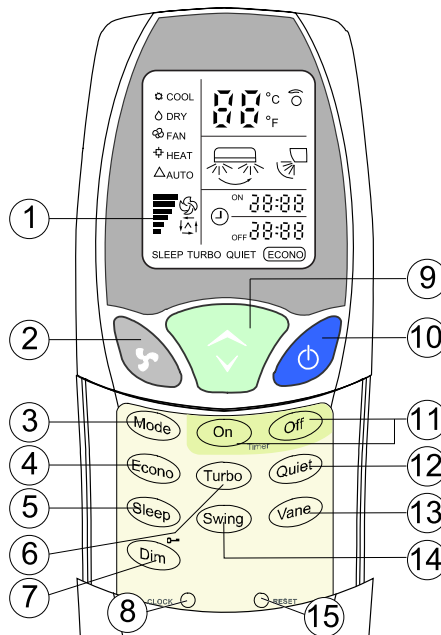
3.1 Remote control

Press only one button at a time. Pressing two or more buttons simultaneously may cause a malfunction.

The cooling unit will beep when it has received a signal from the remote control. If the signal does not reach the unit for some reason, there will be no beep.

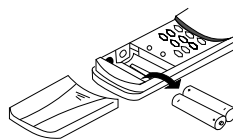
Layout

Pos.	Function
1	Screen
2	Fan speed
3	Mode setting
4	Econo function
5	Sleep function
6	Turbo function
7	Brightness adjustment and keylock
8	Clock setting



Pos.	Function
9	Room temperature setting
10	Power On/Off
11	Timer Off and Off
12	Quiet function
13	Air flow vane
14	Air flow direction
15	Reset button

Batteries



The batteries (2 pcs, AAA) are under a sliding lid at the lower section of the remote control. To fully remove the sliding lid, lift slightly from the top middle part of the lid and slide downwards. Place the batteries the right way around. Reinstall the sliding lid.

- The batteries will last for around 1 year.
- Do not use rechargeable batteries.
- If the unit will be out of use for an extended period of time, remove the batteries.

3.2 General functions

Power On/Off

To turn the unit on or off, press the Power On/Off button. When switched on, the unit will operate with the settings shown on the remote control's screen.

Screen brightness adjustment

To change the screen brightness, press the DIM button.

Keylock

To lock the remote control keys, press and hold the DIM button (with the key icon next to it) for two seconds. A key icon will appear on the screen.

- Unlock the keys by pressing and holding the key button for two seconds.

Air flow direction

When the SWING button is pressed, the unit will automatically adjust the air flow direction. Disable the function by pressing the button again.

Vane adjustment

Press the VANE button to browse between different vane positions.

3.3 Setting the time

1. Remove the sliding lid. Lift slightly from the top middle part of the lid, and slide downwards.
2. Press the small **Clock button** with the tip of a pencil or similar tool.
 - The clock icon and the time will start flashing on the remote control screen.
3. Set the time with the up and down arrow.
 - To browse through numbers faster, keep the arrow button pressed.
4. Press the CLOCK button. The clock icon and the time will stop blinking.
5. Slide the lid back in place.

3.4 Resetting the cooling unit

If there is a malfunction, return the unit to normal mode by resetting the cooling unit.

Remove the sliding lid. Lift slightly from the top middle part of the lid, and slide downwards. Press the small **Reset button** with the tip of a pencil or similar tool.

The system will restart in approximately 2 minutes.

3.5 Adjusting room temperature

Set the room temperature with the arrow buttons. Available temperature range: 18–30 °C.

The set room temperature will be shown on the remote control screen.

3.6 Operating modes

To scroll between different operating modes, press the **Mode** button repeatedly.

Mode	Description
COOL	The unit operates at the set temperature.
FAN	The unit circulates air without cooling. In FAN mode, the Sleep, Econo, and Turbo as well as the arrow buttons are disabled.
DRY	The equipment removes moisture from the air.
HEAT	If the unit is connected to a heating system, the unit will operate at the set temperature.
AUTO	The unit will operate in COOL or HEAT mode depending on the set temperature and the current room temperature.

3.7 Selecting fan speed

Scroll between fan speed modes by pressing the fan button repeatedly. Available modes:

- AUTO (automatic)
- LO (slow)
- MED (medium)
- HI (high)

In AUTO mode, the unit functions automatically. The system determines the fan speed by deducting the room temperature setting from the actual room temperature, see the table.

Difference	Fan speed
3 °C or more	HI (high)
2 °C	MED (medium)
1°C or less	LO (slow)

3.8 Setting a timer

Use the timer functions to switch the unit on or off at a specific time. The timer operates only once and must be set again the next day.

Setting the timer to switch the unit on

1. Press the **timer On** button. The time and the text 'ON' will start flashing.
2. Set the start time with the arrow buttons.
 - Pressing an arrow button will move the time 10 minutes forwards or backwards. To browse through numbers faster, keep the arrow button pressed.
3. Press the **timer On** button. The time will stop blinking.

Setting the timer to switch the unit off

1. Press the **timer Off** button. The time and the text 'Off' will start flashing.
2. Set the stop time with the arrow buttons.
 - Pressing an arrow button will move the time 10 minutes forwards or backwards. To browse through numbers faster, keep the arrow button pressed.
3. Press the **timer Off** button. The time will stop blinking.

3.9 Turbo function

The Turbo function will speed up the current function by opening the brine circuit valve (if present) and setting the fan at maximum speed for half an hour. The function is available in COOL mode, HEAT mode (if the unit is connected to heating), and AUTO mode.

Activate (and deactivate) the function by pressing the **Turbo** button.

- When the TURBO function is on, the text TURBO is shown on the remote control screen.
- The set temperature and fan speed will not be displayed.

The Turbo function will be automatically deactivated when:

- Temperature reaches 18 °C (in COOL mode)
- Temperature reaches 30 °C (in HEAT mode)
- You switch modes by pressing the **Mode** button
- You switch the unit off with the **On/Off** button

3.10 Econo function

Use the Econo function to temporarily run the unit at reduced capacity. The function is available in COOL mode, HEAT mode (if the unit is connected to heating), and AUTO mode.

Activate (and deactivate) the function by pressing the **Econo** button.

- When the ECONO function is on, the text ECONO is shown on the remote control screen.
- The set temperature and fan speed will not be displayed.

The Econo function will be automatically deactivated when:

- Temperature reaches 25 °C (in COOL mode)
- Temperature reaches 25 °C (in HEAT mode)
- You switch modes by pressing the **Mode** button

3.11 Quiet function

When using the Quiet function, the fan will run in power saving mode (at minimum speed).

Activate or deactivate the Quiet function by pressing the **Quiet** button.

- The function is available in COOLING, HEATING, and AUTO mode.
- The text QUIET will be shown on the screen. Fan speed will not be displayed.
- In COOLING mode, the room temperature shown on the screen will automatically increase by 1 °C in one minute.

3.12 Sleep function

The Sleep function automatically adjusts the room temperature setting one hour after the function has been activated.

Activate or deactivate the SLEEP function by pressing the **Sleep** button.

- In COOL mode, the unit will automatically increase the set temperature by one degree after one hour.
- In HEAT mode, the unit will automatically decrease the set temperature by one degree after one hour.
- If the unit is switched off or it shuts down due to a power outage, the SLEEP function will be deactivated.

4 Maintenance

4.1 Tasks at the start and end of the heating season

At the start of the cooling season

- Install new batteries in the remote control.
- Check that the cooling unit is installed correctly.
- Check that the cooling unit's air flow is free of obstructions.
- Check that there are no bends, dents, or blockages in the condensate drain pipe.
- Do not start the cooling unit without air filters. Unfiltered air may cause issues in the unit's operation.

At the end of the cooling season

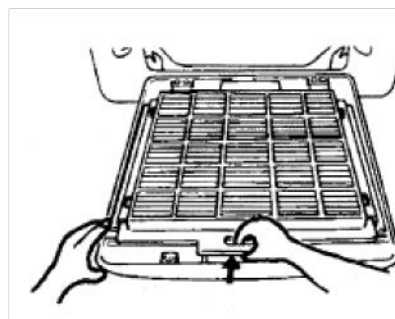
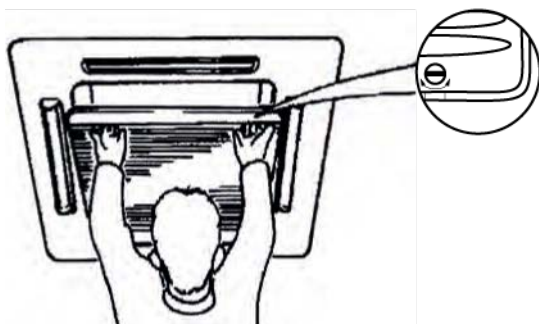
- Turn off power from the main switch.
- Clean the cooling unit and the air filters.
- To remove moisture from inside the unit, run the fan with the FAN function for 2–3 hours.
- Remove the batteries from the remote control.

Outside the cooling season, it is recommended to run the equipment for a short time every 2 months. This will lengthen the life of the circulation pump.

4.2 Cleaning the air filter

Clean the air filter regularly. If the air filter is dirty, air flow will be weaker, which will increase power consumption. In extremely dusty environments, clean the air filter once every two weeks or as often as necessary. The blue air filter prevents bacteria and mold from growing in the dirt captured by the air filter.

1. Detach the grille by turning the fastening screws (2 pcs) one quarter of a turn.
2. Open the grille and detach the filter from the grille.



3. Vacuum the air filter.
4. If necessary, wash the filter with mild detergent. Dry carefully before reinstalling.
5. Reinstall the filter, lift the grill back up to its normal position, and secure with the fastening screws.

4.3 Cleaning the cooling unit

Carefully clean the air outlet and fan. If the air outlet or fan are dirty, clean with a moist towel. If necessary, use mild detergent. Dry with a dry cloth.

NOTICE

Do not use solvents or polishing compounds for cleaning.

4.4 Troubleshooting

Problem	Cause/corrective action
The cooling unit does not start.	Check the wires for damage. Check that the circuit breaker has not tripped.
The unit works but doesn't provide enough cooling.	Check the room temperature setting. Check if the air filter is dirty or clogged. Check if apartment doors or windows are closed. Check if air flow from the cooling unit is blocked. Check if the unit's brine circulation is blocked. Check the brine circulation for air bubbles. Check that the brine circuit pump is operating correctly.
There is steam coming out of the unit when the unit is in operation.	Water vapor may form when hot indoor air and cold cooling air become mixed.
The remote control does not work.	Check the remote control's batteries.

5 Technical data

5.1 Technical data

	Ck5	Ck9
Cooling capacity, kW*	4.250	10.8
Max. input power, fan, W	75	110
Coefficient of performance**	34	68
Cooled floor area, m ²	80–200	200–400
Weight, kg	22	40
Placement	Ceiling	Ceiling

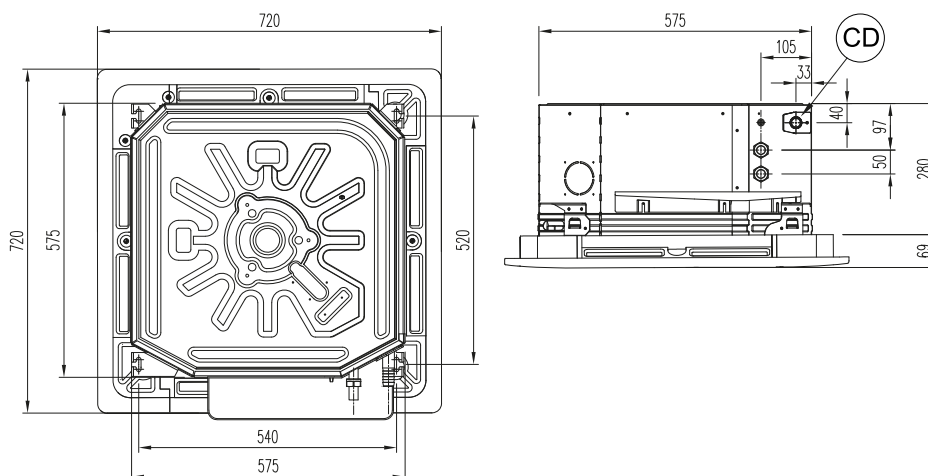
*Cooling capacity in recommended installation conditions, brine inlet temperature: +7 °C, indoor temperature: +27 °C.

**The coefficient of performance calculation accounts for one circulation pump.

5.2 Dimensions

Model	Main dimensions, mm			Dimensions, portion embedded in the ceiling		
	Height	Width	Depth	Height	Width	Depth
Ck5	65	720	720	280	574	574
Ck9	67	950	950	320	844	844

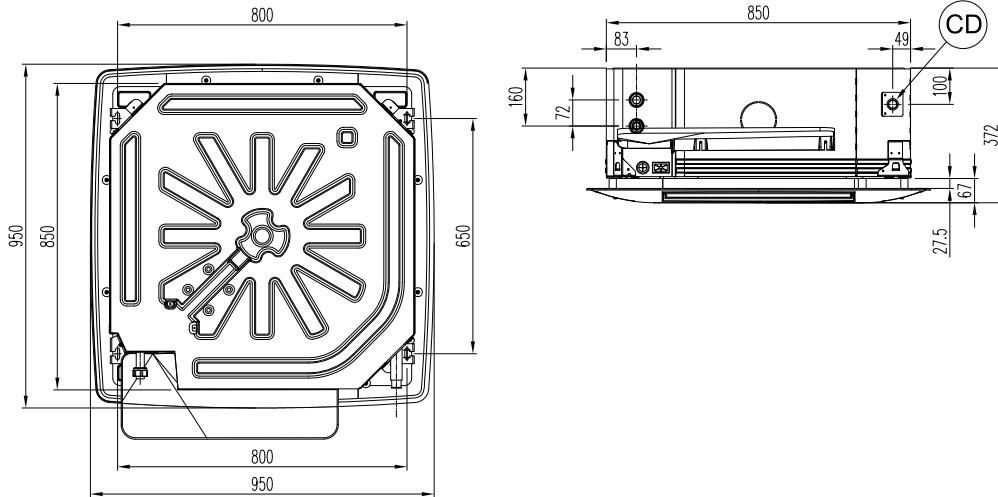
Dimensional drawings, Ck5



Dimensions, Ck5 ver. 1

CD: condensate drain connection

Dimensional drawings, Ck9

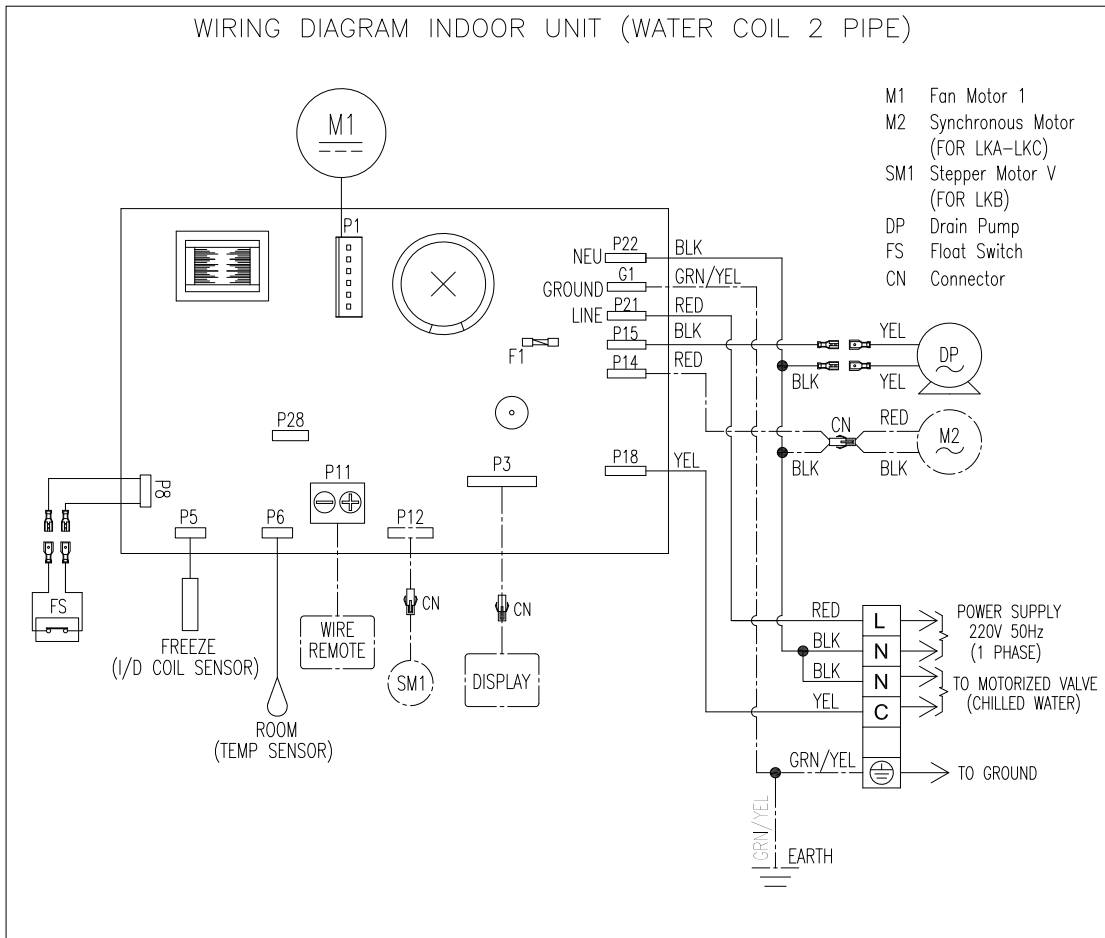


Dimensions, Ck9 ver. 1

CD: condensate drain connection

5.3 Wiring diagram

Wiring diagram, two-pipe system



5.4 Terms of sale and warranty

SUOMEN LÄMPÖPUMPPUTEKNIikka OY'S TERMS OF SALE AND WARRANTY FOR PRODUCTS IN THE OILONCOOLING SERIES

General

In these general terms of sale and warranty, 'the Supplier' refers to Suomen Lämpöpumpputekniikka Oy (Business ID: 0511150-0, "the Supplier"), 'the Customer' to the company, entity, or person who has entered into this contract or to whom the order confirmation has been addressed ("the Customer"), and 'Products' to OilonCooling products sold to the Customer by a dealer authorized by the Supplier ("Products").

These general terms of sale and warranty shall apply to all deliveries of Products between the Supplier and the Customer, unless otherwise agreed, in part or in full, between the parties in writing. If the Customer or end user is a consumer, the mandatory provisions of the Finnish Consumer Act shall also apply to deliveries of Products.

Product information

The information of Products presented in brochures and other marketing materials are for reference only and not binding to the Supplier.

Term of delivery

The term of delivery is Ex Works the Supplier's place of operations in Lapua (Incoterms 2000), unless separately agreed between the parties in writing.

Title

The title to the Products is transferred to the Customer after the Supplier has received full payment for the Products.

Warranty period and warranty contents

The Supplier provides a two (2) year warranty for their Products, effective from the agreed delivery date. The warranty is valid only in Finland.

During the warranty period, the manufacturer is responsible for ensuring that Product characteristics correspond to the characteristics agreed between the parties, and that there are no structural or manufacturing defects in the products during the warranty period. The manufacturer's liability for faults in the Products is limited to the repair or replacement of the defective Products within a reasonable time and at the manufacturer's discretion. The Supplier

shall perform the repairs either through their own maintenance service or a maintenance company authorized by the Supplier. The ownership of any defective components in the Products will transfer back to the Supplier.

The warranty does not cover any faults resulting from the negligence of the Customer or other user of the Product, failure to comply with the Product's instructions for use, maintenance, or care, or those resulting from lightning, fire, or other corresponding

event. Transport damages are not covered by the warranty. The warranty does not cover issues caused by incorrect installation at the place of use or installation contrary to the installation or operation manual, or issues resulting from repair, modification, or installation of Products by some other party than the manufacturer or a maintenance company authorized by the manufacturer.

The warranty does not cover the adjustments or bleeding of air indicated in the Product operation manual. Furthermore, the warranty does not cover any faults caused by use of unauthorized and corrosive fluids in the system.

The Supplier grants only the warranty specified above and, consequently, the warranty described herein comprises the entire warranty granted by the Supplier for the Products. The warranty shall not cover any additional equipment installed in the Products at a later date or accessories that are subject to their own warranty.

Procedure in case of a defect

The Customer shall notify the seller or the Supplier of the defect in writing within reasonable time and, at the latest, 21 days of noticing the defect or the Customer should have become aware of the defect.

The Customer shall, to the best of their ability, limit the damage caused by the defect. The Supplier shall not be liable for damages to the extent that they could have been avoided through the Customer's careful and appropriate conduct.

Limitation of liability

The Supplier shall not, under any circumstances, be liable for indirect damages, excluding damages that the Supplier has caused with willful intent or gross negligence.

The Supplier's maximum liability is always limited to the value of the delivered Products. To the extent that claims are raised against the Supplier based on product liability damages for which the Supplier could be liable, the Supplier's liability shall be limited to the extent of common product liability warranty terms.

Force Majeure

If the Supplier is prevented from fulfilling its obligations in accordance with this contract due to a reason that is considered a force majeure event and that is not dependent on the manufacturer, such as war, civil commotion, industrial action, epidemic, fire, natural forces, government actions, events preventing the procurement of raw materials, or an accident in production, warehousing or transport, or any other reason that is comparable to these, the Customer is not entitled to claim for compensation in accordance with this contract or any other indemnity from the Supplier.

Applicable law and settlement of disputes

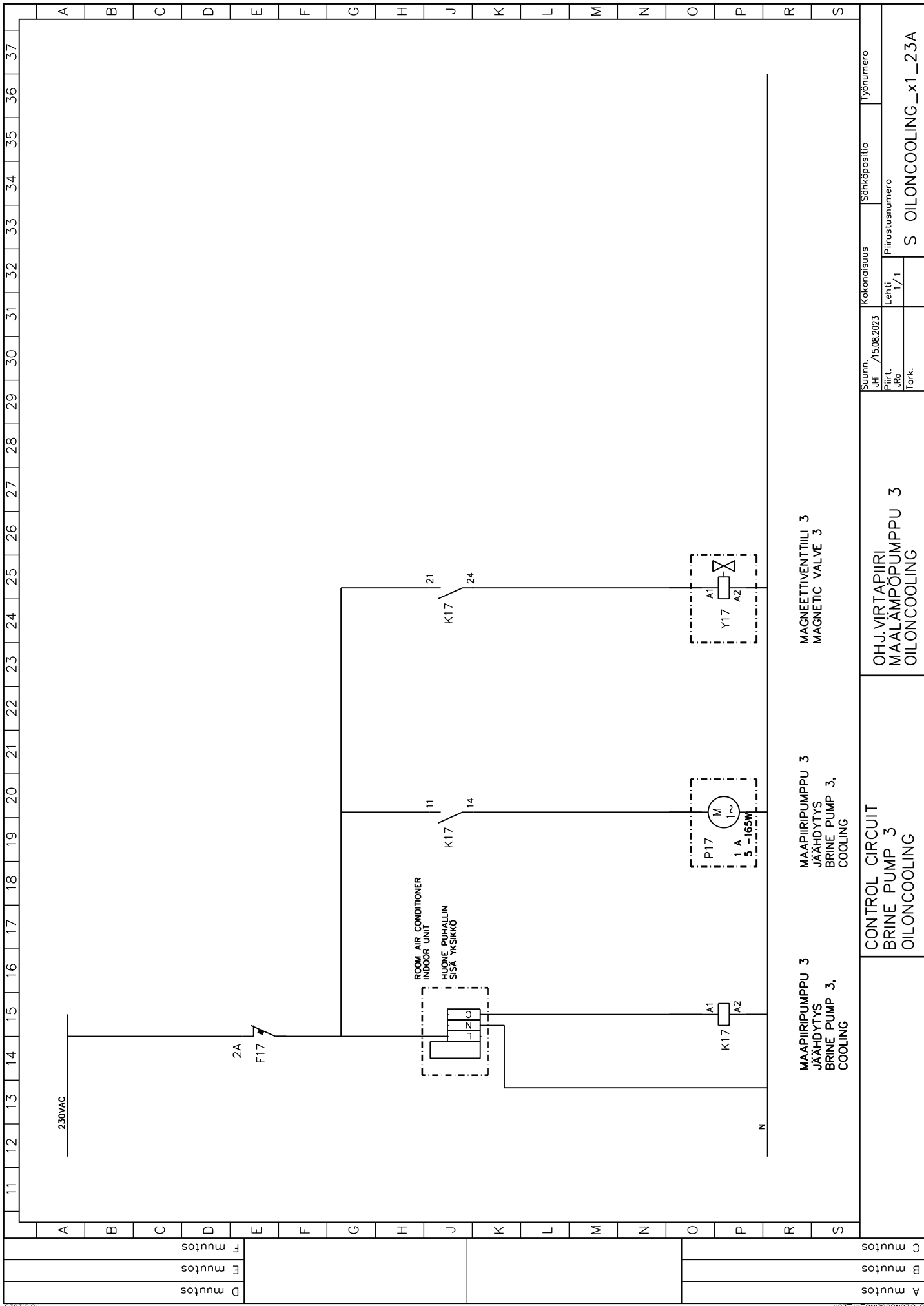
These terms of sale and warranty and/or other agreements between the Seller and the Customer shall be governed by the Laws of Finland. Any dispute, controversy or claim arising out of or relating to this contract, or the breach, termination or validity thereof, shall be finally settled by arbitration in accordance with the Rules for Arbitration of the Finland Chamber of Commerce. The seat of arbitration shall be the District Court of South Ostrobothnia.

Contact information of Oilon dealer:

Date of installation:

The logo for Oilon, featuring the word "oilon" in a white, lowercase, sans-serif font. A small green leaf-like shape is positioned above the letter "i". A registered trademark symbol (®) is located to the upper right of the "n".

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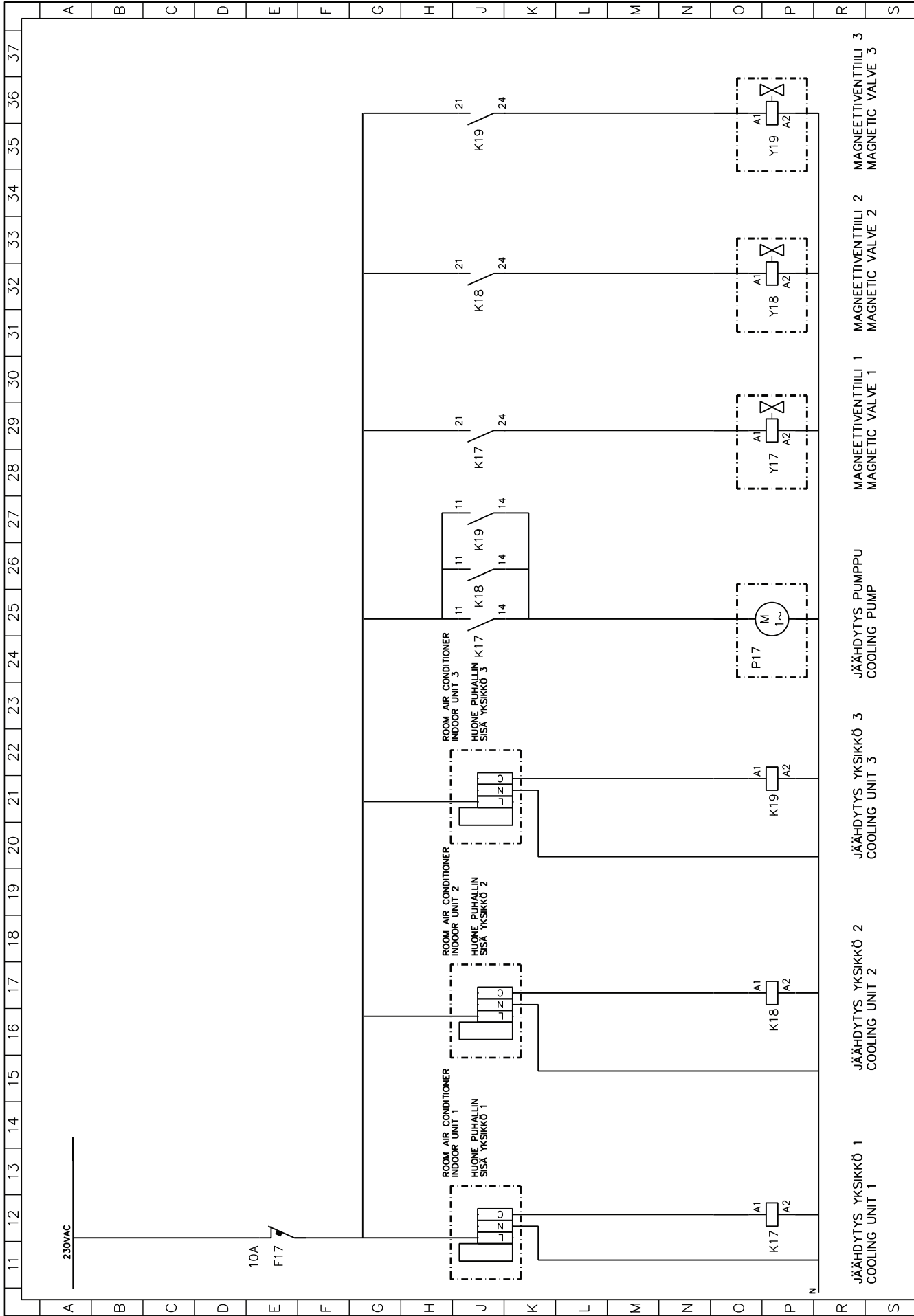


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MAGNEETTIVENTTIILI 3 MAGNETIC VALVE 3	OHJ.VIRTAPIIRI MAALÄMPÖPUMPPU 3 OILONCOOLING
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MAAPIIRIPUMPPU 3 JÄÄHDYTYKSEN BRINE PUMP 3, COOLING	CONTROL CIRCUIT BRINE PUMP 3 OILONCOOLING
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MAAPIIRIPUMPPU 3 JÄÄHDYTYKSEN BRINE PUMP 3, COOLING	
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A	mutos
B	mutos
C	mutos
D	mutos
E	mutos
F	mutos
G	
H	
J	
K	
L	
M	
N	
O	
P	
R	JÄÄHDYTYKSIKÖ 1 COOLING UNIT 1
S	JÄÄHDYTYKSIKÖ 2 COOLING UNIT 2
	JÄÄHDYTYKSIKÖ 3 COOLING UNIT 3
	JÄÄHDYTYSPUMPPU COOLING PUMP
	MAGNEETTIVENTTIILI 1 MAGNETIC VALVE 1
	MAGNEETTIVENTTIILI 2 MAGNETIC VALVE 2
	MAGNEETTIVENTTIILI 3 MAGNETIC VALVE 3
oilon	
CONTROL CIRCUIT BRINE PUMP OILONCOOLING	
OHJ. VIRTAPIIRI MAALÄMPÖPUMPPU OILONCOOLING	
Suunn.	JHI /15.08.2023
Piirt.	JRa
Tark.	
Kokonaisuus	Sähköpositio
Lehti	Piirustusnumero
1/1	S OILONCOOLING_x3_23A
	Työnumero