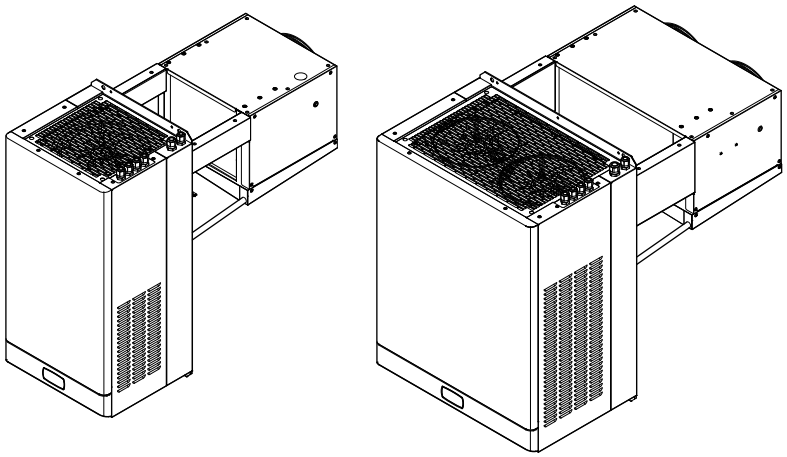
Installation manual

Daikin LMS



LMSEY1A09AVM01
LMSEY1A13AVM01

LMSEY2A19AYE01
LMSEY2A25AYE01

Installation manual
Daikin LMS

English

Table of contents

1 About this document

INFORMATION

Make sure that the user has the printed documentation and ask him/her to keep it for future reference.

Target audience

Authorised installers

Documentation set

This document is part of a documentation set. The complete set consists of:

- **Installation manual:**
  - Installation instructions
  - Format: Paper (in the box of the unit)
- **Operation manual:**
  - Quick guide for basic usage
  - Format: Paper (in the box of the unit)

Latest revisions of the supplied documentation may be available on the regional Daikin website or via your dealer.

The original instructions are written in English. All other languages are translations of the original instructions.

Technical engineering data

- A **subset** of the latest technical data is available on the regional Daikin website (publicly accessible).
- The **full set** of latest technical data is available on the Daikin Business Portal (authentication required).
- A printed version of the declaration of conformity, the wiring- and piping diagrams is included with the unit.

2 General safety precautions

2.1 About the documentation

- The original instructions are written in English. All other languages are translations of the original instructions.
- The precautions described in this document cover very important topics, follow them carefully.
- The installation of the system, and all activities described in the installation manual must be performed by an authorised installer.

2.1.1 Meaning of warnings and symbols

The action-related warnings are there to warn you against residual risks and precede a dangerous action step.

DANGER

Indicates a situation that results in death or serious injury.

WARNING

Indicates a situation that could result in death or serious injury.

CAUTION

Indicates a situation that could result in minor or moderate injury.

NOTICE

Indicates a situation that could result in equipment or property damage.

INFORMATION

Indicates useful tips or additional information.

2.2 For the installer

2.2.1 General

If you are NOT sure how to install or operate the unit, contact your dealer.

WARNING

Make sure installation, testing and applied materials comply with applicable legislation (on top of the instructions described in the Daikin documentation).

WARNING

This unit uses R290 as refrigerant. This is a flammable gas. Inhaling vapors can cause asphyxiation and affect the central nervous system. Direct contact with skin or eyes can lead to serious injuries and burns. Before handling and installing this unit, read the service manual "Systems using R290 refrigerant" ("Systems using R290 refrigerant") available on the regional Daikin website.

NOTICE

The unit is not suitable for working in salty environments. In such case, protect condenser and evaporator with appropriate means.

DANGER: RISK OF EXPLOSION

The unit is NOT suitable for working in explosive environments. Therefore the installation and use of the unit in an explosive-dangerous atmosphere is absolutely forbidden.

WARNING: FLAMMABLE MATERIAL

Fire hazard from flammable refrigerant. Take measures to prevent a dangerous, explosive atmosphere and keep ignition sources away.

WARNING

Improper installation or attachment of equipment or accessories could result in electrical shock, short-circuit, leaks, fire or other damage to the equipment. ONLY use accessories, optional equipment and spare parts made or approved by Daikin.

CAUTION

Wear adequate personal protective equipment (protective gloves, safety glasses,…) when installing, maintaining or servicing the system.

WARNING

Tear apart and throw away plastic packaging bags so that nobody, especially NOT children, can play with them. **Possible consequence:** suffocation.

WARNING

Make sure that the forklift, or any other lifting device used, can bear the weight of the unit.

2.2.2 Refrigerant

The unit is factory charged with refrigerant, no additional charging of refrigerant is required.

DANGER

This unit uses R290 as refrigerant. Do NOT discharge refrigerant in the atmosphere, it must be recovered by specialised technicians using suitable equipment.

DANGER

Take sufficient precautions in case of refrigerant leakage. If refrigerant gas leaks, immediately switch off the power supply (for each unit) and ventilate the area. Possible risks:

- Carbon dioxide poisoning.
- Asphyxiation.
- Fire.

WARNING

- NEVER directly touch any accidental leaking refrigerant. This could result in severe wounds caused by frostbite.
- Do NOT touch the refrigerant pipes during and immediately after operation as the refrigerant pipes may be hot or cold, depending on the condition of the refrigerant flowing through the refrigerant piping, compressor, and other refrigerant cycle parts. Your hands may suffer burns or frostbite if you touch the refrigerant pipes. To avoid injury, give the pipes time to return to normal temperature or, if you must touch them, be sure to wear proper gloves.

WARNING

- Do NOT pierce or burn refrigerant cycle parts.
- Do NOT use cleaning materials or means to accelerate the defrosting process other than those recommended by the manufacturer.
- Be aware that the refrigerant inside the system is odourless.

INFORMATION

R290

R290 is denser than air, so in open air it sinks to floor level.

2.2.3 Electrical

DANGER: RISK OF ELECTROCUTION

- Turn OFF all power supply before removing the switch box cover, connecting electrical wiring or touching electrical parts.
- Disconnect the power supply for more than 10 minutes, and measure the voltage at the terminals of main circuit capacitors or electrical components before servicing. The voltage MUST be less than 50 V DC before you can touch electrical components. For the location of the terminals, see the wiring diagram.
- Do NOT touch electrical components with wet hands.
- Do NOT leave the unit unattended when the service cover is removed.

WARNING

A magneto thermal circuit breaker, having a contact separation in all poles providing full disconnection under overvoltage category III condition, MUST be installed in the fixed wiring. In case of multiple units each unit must have its own circuit breaker.

Note that this magneto thermal circuit breaker should not be used to turn the unit on and off under normal operating conditions. For that, one should use the controller.

WARNING

- ONLY use copper wires.
- Make sure all the wiring work complies with the applicable legislation.
- All field wiring MUST be performed in accordance with the wiring diagram supplied with the product.
- NEVER squeeze bundled cables and make sure they do NOT come in contact with the piping and sharp edges. Make sure no external pressure is applied to the terminal connections.
- Make sure to install earth wiring. Do NOT earth the unit to a utility pipe, surge absorber, or telephone earth. Incomplete earth may cause electrical shock.
- Make sure to use a dedicated power circuit. NEVER use a power supply shared by another appliance.
- Make sure to install the required magneto thermal circuit breakers. In case of multiple units each unit must have its own circuit breaker.
- Make sure to install an earth leakage protector. Failure to do so may cause electrical shock or fire. In case of multiple units each unit must have its own earth leakage protector.
- When installing the earth leakage protector, make sure it is compatible with the inverter (resistant to high frequency electric noise) to avoid unnecessary opening of the earth leakage protector.

WARNING

- After finishing the electrical work, confirm that each electrical component and terminal inside the electrical components box is connected securely.
- Make sure all covers are closed before starting up the unit.

WARNING

Never touch a person receiving an electrical shock, or you could suffer one too. Do not touch the person until you are sure power is turned off.

Electrical shocks always need emergency medical attention, even if the victim seems to be fine afterwards.

CAUTION

- When connecting the power supply: connect the earth cable first, before making the current-carrying connections.
- When disconnecting the power supply: disconnect the current-carrying cables first, before separating the earth connection.
- The length of the conductors between the power supply stress relief and the terminal block itself MUST be as such that the current-carrying wires are tautened before the earth wire is in case the power supply is pulled loose from the stress relief.

DANGER

Tripping over loose wiring can tear it loose and cause electrocution and fire.

NOTICE

Precautions when laying power wiring:

- Do NOT connect wiring of different thicknesses to the power terminal block (slack in the power wiring may cause abnormal heat).
- When connecting wiring which is the same thickness, do as shown in the figure above.
- For wiring, use the designated power wire and connect firmly, then secure to prevent outside pressure being exerted on the terminal board.
- Use an appropriate screwdriver for tightening the terminal screws. A screwdriver with a small head will damage the head and make proper tightening impossible.
- Over-tightening the terminal screws may break them.

Install power cables at least 1 meter away from televisions or radios to prevent interference. Depending on the radio waves, a distance of 1 meter may NOT be sufficient.

NOTICE

ONLY applicable if the power supply is three-phase, and the compressor has an ON/OFF starting method.

If there exists the possibility of reversed phase after a momentary black out and the power goes ON and OFF while the product is operating, attach a reversed phase protection circuit locally. Running the product in reversed phase can break the compressor and other parts.

2.3 Standards and regulations

Directives

Directive and regulations	2006/42/CE
Harmonised standards	EN 378-1:2016: Refrigerating systems and heat pumps - Safety and environmental requirements: Basic requirements, definitions, classification and selection criteria
	EN 378-2:2016: Refrigerating systems and heat pumps. Safety and environmental requirements: Design, construction, testing, marking and documentation
	EN 60204-1:2018: Safety of machinery - Electrical equipment of machines - Part 1, General requirements
	IEC 60335-2-89: Household and similar electrical appliances - Safety - Part 2-89, Particular requirements for commercial refrigerating appliances and ice-makers with an incorporated or remote refrigerant unit or motor-compressor.
	EN 12100 Risk assessment
	EN ISO 13857 :2020 Safety Distances
	EN ISO 13854:2020 Minimum gaps

RED	EMC 2014/30/EU
Harmonised standards	IEC 61000-6-8: Emission
	IEC 61000-6-2: Immunity for Industrial
	EN IEC 61000-3-2: ElectroMagnetic Compatibility (EMC) Part 3-2, Limits - Limits for harmonic current emissions (equipment input current <= 16 A per phase)
	EN IEC 61000-3-3: ElectroMagnetic Compatibility (EMC) - Part 3: Limits - Section 3, Limitation of voltage fluctuations and flicker in low-voltage supply systems for equipment with rated current ≤ 16 A
	EN 301 489-1: ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1, Common technical requirements; Harmonised Standard for ElectroMagnetic Compatibility
	EN 301 489-17, ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 17, Specific conditions for Broadband Data Transmission Systems; Harmonised Standard for ElectroMagnetic Compatibility
	ETSI EN 300 328, Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz band; Harmonised Standard for access to radio spectrum

RoHS	RoHS 2011/65/EU
Harmonised standards	IEC EN 63000

Performance
EN 17432:2021 Packaged refrigerating units for walk-in cold rooms - Classification, performance and energy consumption testing

Regulations	
Regulation (EC) No 1907/2006	Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

3 About the box

- At delivery, the unit MUST be checked for damage and completeness. Any damage or missing parts MUST be reported immediately to the claims agent of the carrier.
- Bring the packed unit as close as possible to its final installation position to prevent damage during transport.
- Prepare in advance the path along which you want to bring the unit to its final installation position.
- When handling the unit, take into account the following:

   Fragile, handle the unit with care.

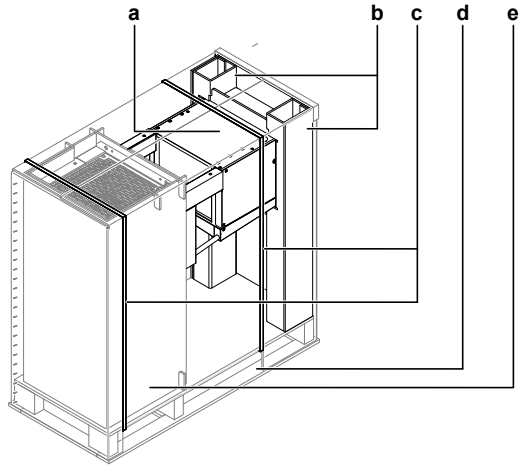
   Keep the unit upright in order to avoid compressor damage.

- A forklift can be used for transport as long as the unit remains on its pallet.

3.1 To unpack the unit

The packaging consists of a wooden pallet (d) on which the unit is fixed in the upright position. The unit is supported with two cardboard pillars (b) keep the evaporator (a) upright.

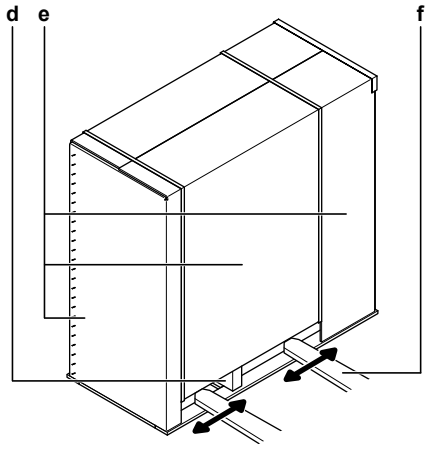
The cardboard protection (e) protects the unit and is secured by straps (c).



a Evaporator
b Cardboard pillars
c Straps
d Pallet
e Condenser cardboard protection

The pallet and unit are protected by a cardboard box (e). Parts of the pallet are intentionally covered to obtain optimal load balance when using a forklift (f).

1 Bring out the unit that is mounted on the pallet (d). Use a forklift or a transpallet (f).



d Pallet
e Cardboard box
f Forklift

WARNING

Make sure that the forklift, or any other lifting device used, can bear the weight of the unit.

INFORMATION

See "10 Technical data" [▶ 27] for the weight of the unit.

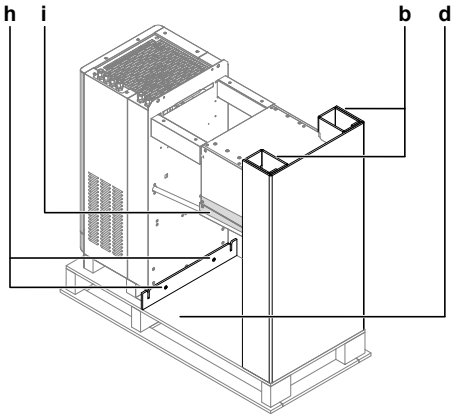
2 Cut the straps (c).

3 Remove the cardboard protection (e) from the condenser.

4 Remove the plastic wrap from around the unit.

WARNING

Tear apart and throw away plastic packaging bags so that nobody, especially NOT children, can play with them. **Possible consequence:** suffocation.



b Cardboard pillars
d Pallet
h Screws
i Protection cover (blue color)

5 Remove the protection cover (i) from the drainpan.

6 Remove the screws (h) that are fixing the unit to the pallet (d).

4 About the unit and options

The LMSEY unit is a compact wall installed refrigeration unit for a small cold room. It optimises the use of space inside the cold room. It is managed by an electronic control unit that has already programmed operating parameters and allows the signalling of any anomalies.

The appliance can operate as a cooler (+10°C to –5°C) or a freezer (–15 to –25°C).

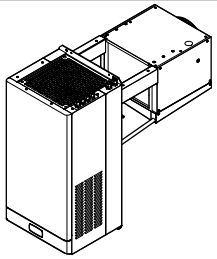
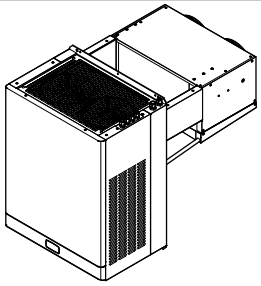
Multiple units can be combined within one cold room. Multiple units are operating according to the primary/secondary principle. (See "4.4 Combining multiple units" [▶ 8]).

4.1 About the system

The LMSEY unit is a refrigeration unit which produces coldness by vaporising a liquid refrigerant (Hydrocarbon R290 type) at low pressure in a heat exchanger (evaporator). The resulting vapour is brought back to liquid state by mechanical compression at a higher pressure, followed by cooling in another heat exchanger (condenser).

Defrosting takes place automatically in pre-set cycles, by injecting hot gas; manual defrosting is also possible.

4.2 About the different models

LMSEY1A09+13AVM01	LMSEY2A19+25AYE01
	

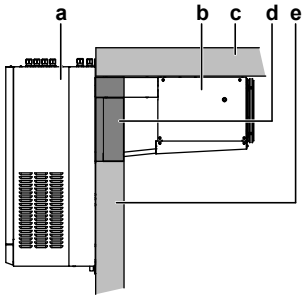
Model	Capacity[a]	Number of cooling circuits
LMSEY1A09AVM01	950 W	1
LMSEY1A13AVM01	1.28 kW	1
LMSEY2A19AYE01	1.9 kW	2
LMSEY2A25AYE01	2.58 kW	2

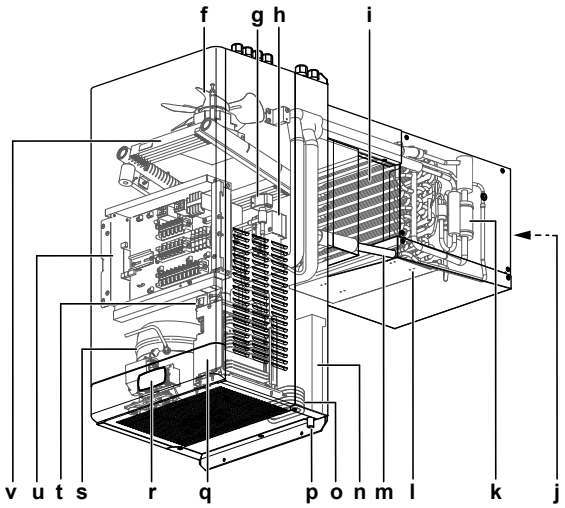
[a] Cooling capacity at a rated empty condition according to EN 17432 (indoor temperature of 0°C, outdoor temperature of 32°C).

In this document, LMSEY1A13AVM01 is shown in the instructions, unless there is a need to treat both models separately.

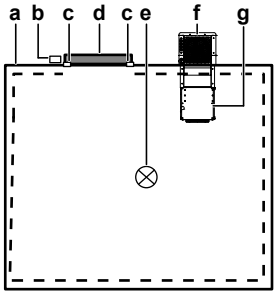
4.3 System layout

LMSEY1A09AVM01 + LMSEY1A13AVM01



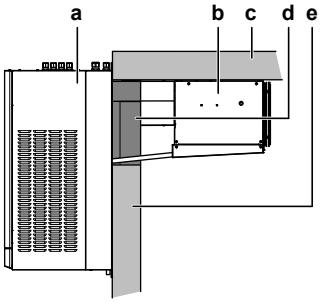


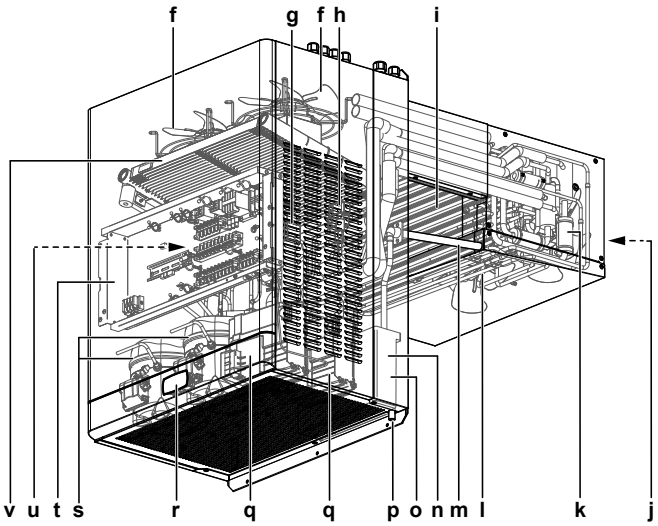
- **a** Unit condenser
- **b** Unit evaporator
- **c** Cold room roof
- **d** Insulation (accessory)
- **e** Cold room roof
- **f** Condenser fan
- **g** High pressure switch
- **h** Electronic expansion valve (with firewall)
- **i** Evaporator
- **j** Evaporator fan
- **k** Thermistor
- **l** Defrost coil (for drain pan)
- **m** Drain pipe
- **n** Water overflow tank
- **o** Refrigerant pipes (hot)
- **p** Drain connection
- **q** Inverter PCB with firewall
- **r** User interface
- **s** Compressor
- **t** Dryer
- **u** Electrical box (with firewall)
- **v** Condenser



- **a** Cold room
- **b** Door microswitch (accessory)
- **c** Door heater (accessory)
- **d** Cold room door
- **e** Cold room lamp (accessory)
- **f** Unit condenser
- **g** Unit evaporator

LMSEY2A19AYE01 + LMSEY2A25AYE01





- **a** Unit condenser
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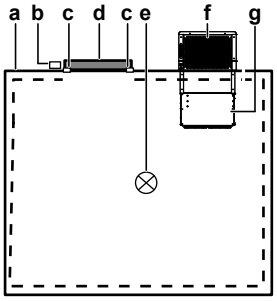
- **f** Condenser fan
- **g** High pressure switch
- **h** Electronic expansion valve (with firewall)
- **i** Evaporator
- **j** Evaporator fan
- **k** Thermistor
- **l** Defrost coil (for drain pan)
- **m** Drain pipe
- **n** Water overflow tank

o Refrigerant pipes (hot)
p Drain connection
q Inverter PCB with firewall
r User interface
s Compressor
t Electrical box (with firewall)
u Dryer
v Condenser



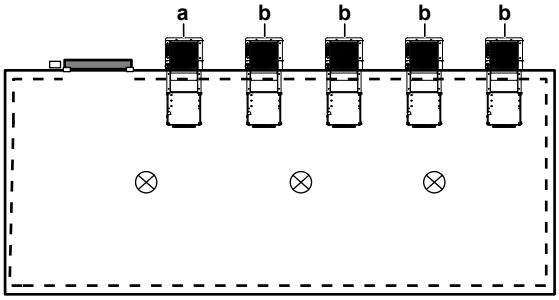
a Cold room
b Door microswitch (accessory)
c Door heater (accessory)
d Cold room door
e Cold room lamp (accessory)
f Unit condenser
g Unit evaporator

4.4 Combining multiple units

When multiple units (maximum of 5) are combined within one cold room, they operate according to the primary/secondary principle.

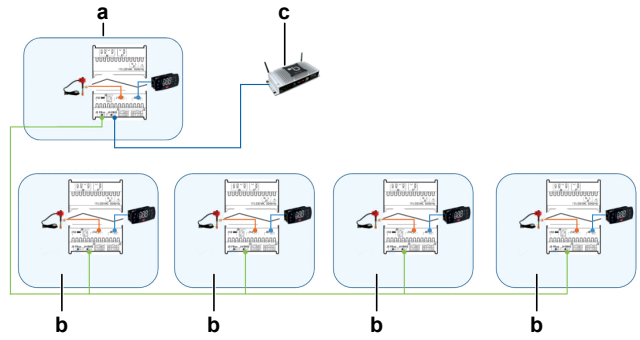
Advantages:

- Higher cooling capacity.
- Redundancy in case of unit breakdown.
- Better airflow.



a Primary unit
b Secondary unit

The main PCB allows easy parallel connection between one primary unit and the secondary units.



a Primary unit
b Secondary unit
c Router (option)

The primary unit performs all monitoring and control functions.

The system can be connected to the internet through the router (optional).

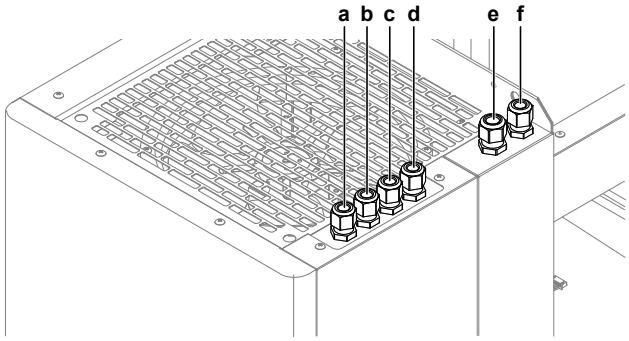
To install connections and set parameters, see "5.6.1 To install multiple units" [▶ 15].

4.5 Possible options for the unit

INFORMATION

Certain options may NOT be available in your country.

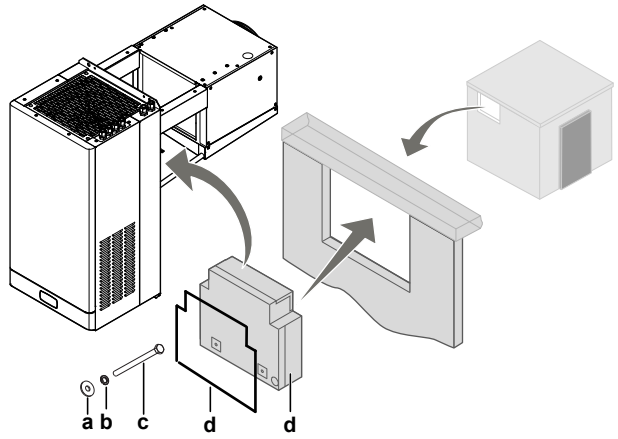
Three cable glands (a, b and c) are provided to bring the option cables into the unit.



a Option
b Option
c Option
d Door heater, pre-wired (5 m)
e Power supply, pre-wired (5 m)
f Door micro switch, pre-wired (5 m)

Insulation pad

The insulation pad is mandatory for wall installation. See "5.4.2 To prepare the cold room" [▶ 11].



a Flat washer (×2)
b Spring washer (×2)
c Metric bolt M8 (×2)
d self-adhesive gasket
e Insulation pad assembly

Door microswitch

To reduce frost on the evaporator, the door microswitch interrupts the unit operation when the cold room door is open. It also controls the cold room lamp. The door microswitch is an accessory. See "5.7.1 To install the door microswitch" [▶ 15].

Door heater

For low temperature applications it is suggested to install a door heater. It prevents the door from freezing. The choice for the most appropriate door heater is left to the installer or cold room manufacturer. Sometimes the door heater is already included in the pre-fabricated door kit. See "5.7.3 To install the door heater" [▶ 16].

INFORMATION

The door heater accessory is only necessary for low temperature applications.

Cold room lamp

The lamp is ON when the cold room door is open. It is controlled by the user interface. The cold room lamp is an accessory. See "5.7.2 To install the cold room lamp" [▸ 16].

INFORMATION

As there are only 3 free cable glands, only 3 more options can be installed.

Alarm

An alarm feature can be installed (light or sound). See "5.8 To connect an alarm signal" [▸ 16].

Router

The unit (or multiple units) can be connected to the internet through a router, available as an option. See "5.9 To connect a router" [▸ 17].

Combining multiple units

To interconnect multiple units, a communication cable must be used. See "5.6.1 To install multiple units" [▸ 15].

5 Installation

5.1 General installation guidelines

INFORMATION

This manual only describes installation instructions specific to this unit. For carrying out mechanical work on the cold room, the instructions of the cold room manufacturer must always be followed.

INFORMATION

Make sure that the unit is not exposed to direct sunlight. Blocking sunlight increases the cooling effect.

INFORMATION

Do not expose the unit to a saline environment (e.g. sea breeze atmosphere). This to prevent corrosion caused by high levels of salt in the air, which can shorten the life of the unit.

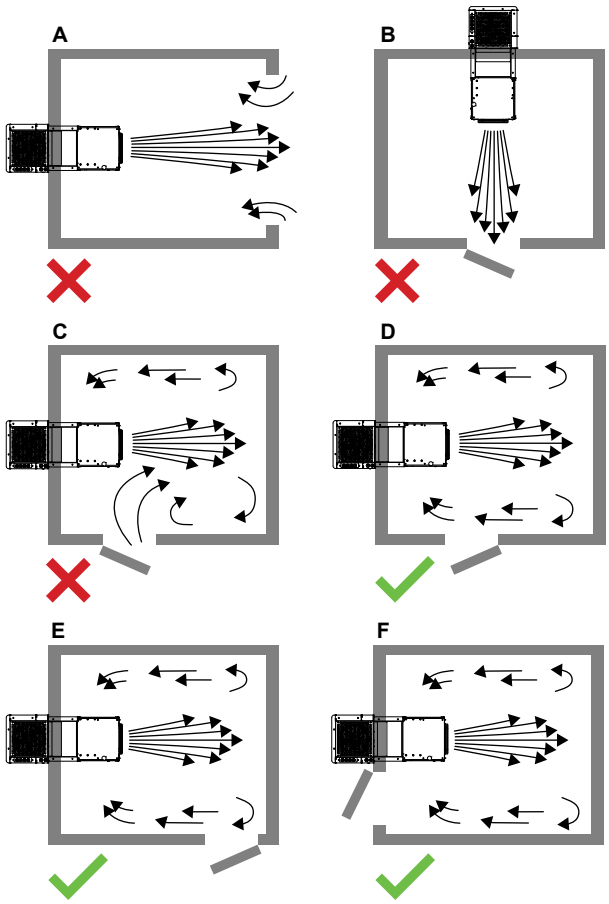
If outside air is sucked into the cold room, the temperature may rise, and condensation (and ice formation) may occur on the surface of the unit evaporator.

Therefore:

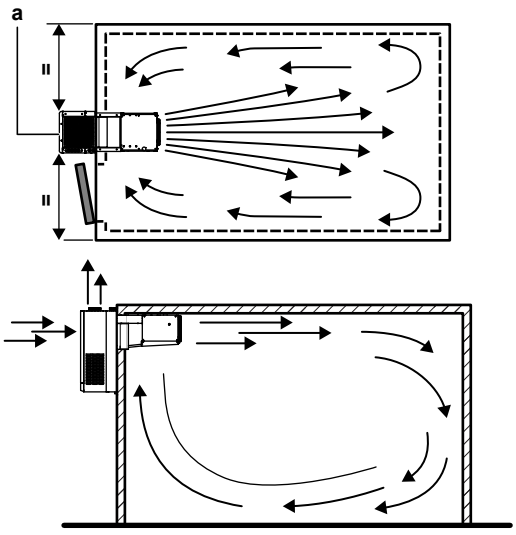
- Don't install the unit with openings right in front of it (A, B).
- Avoid a Venturi effect created by the airstream (C). Install the door-opening in the direction that minimises this effect (D).
- Install the unit as far away as possible from openings that allow outside air to enter, such as doors and pressure regulating valves (E, F).

INFORMATION

Although it is advised to place the unit as far away from the door as possible, this is not mandatory. The presence of the door micro-switch, that interrupts operation when the door is open, limits the in- and outgoing airflow.



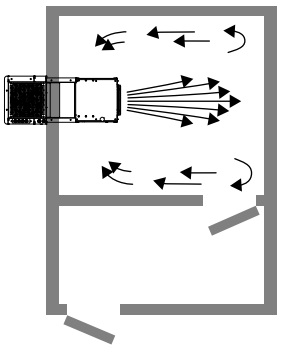
A typical installation is shown below. Installing the unit (a) in this way ensures efficient operation and good cold air circulation.



If possible, provide an anteroom in the cold room. This prevents the cold air from flowing out of the freezer.

It also prevents the inflow of moist containing outside air, causing condensation (and ice) on the surface of the unit evaporator.

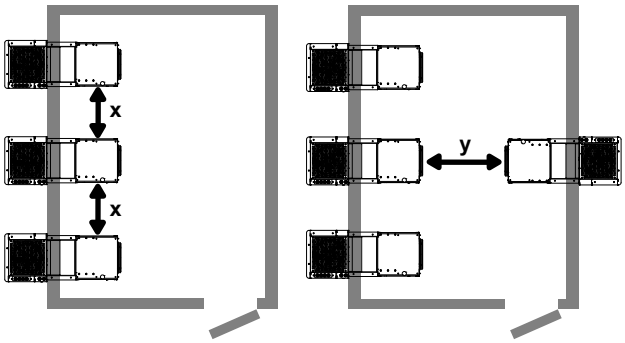
If an anteroom room is not provided, an air curtain or a vinyl curtain can be used to limit the inflow of outside air.



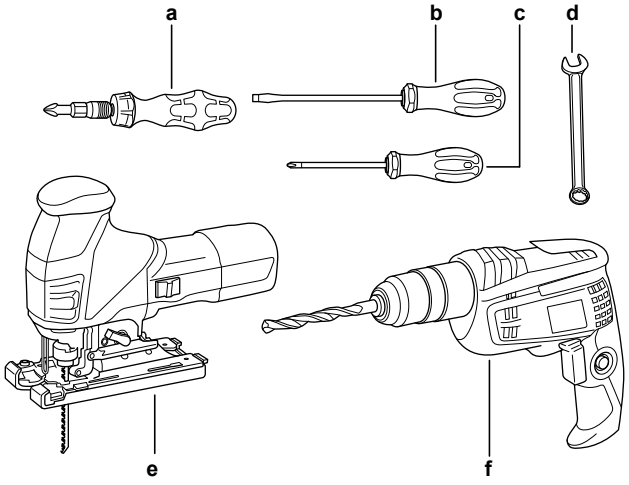
When installing multiple units in a cold room, install them so that they are not affected by the cold air flow between the units:

- Minimum distance "x" = 400 mm
- Minimum distance "y" = 8 m

If you have no choice but to install them face to face, keep sufficient distance or block the cold air flow with an air curtain.



5.2 Tools needed for installation



a Torque screwdriver with Phillips bits
b Flat screwdriver
c Phillips head screwdriver
d Metric spanner set (size 13)
e Saw
f Driller with Ø28 mm dril bit

INFORMATION

Choose the correct saw in function of the wall thickness of the cold room. Make sure the blade is long enough to cut through the entire wall panel.

5.3 Opening and closing the unit

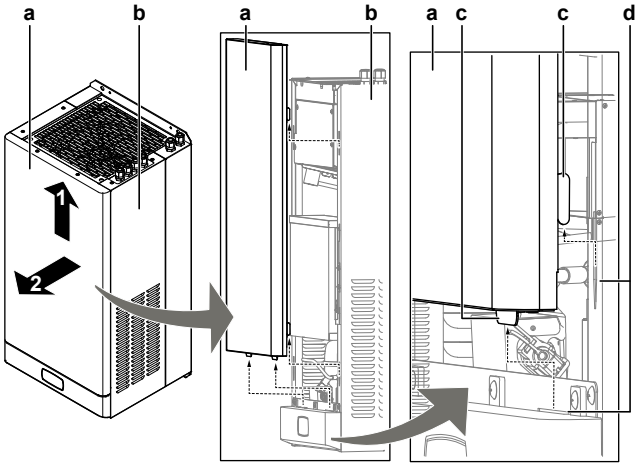
5.3.1 To open the unit

DANGER: RISK OF ELECTROCUTION

Do NOT leave the unit unattended when the service cover is removed.

To access the interior of the unit condenser, the front panel must be removed.

1 Remove the front panel (a) by lifting it, and then pulling it away from the unit. The panel is attached by hooks (c) on the front panel that lock into slots (d) on the side and bottom panels.



a Front panel
b Side panel
c Hook
d Slot

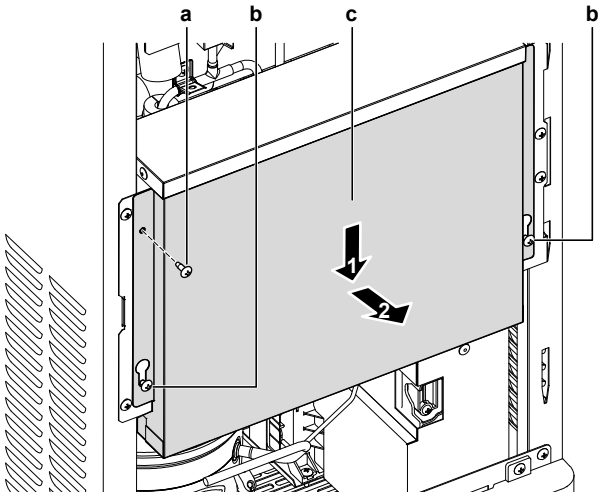
5.3.2 To open the switchbox cover

The options alarm, LAN connection between multiple units and router are not pre-wired. To make these connections, the electrical switchbox must be removed.

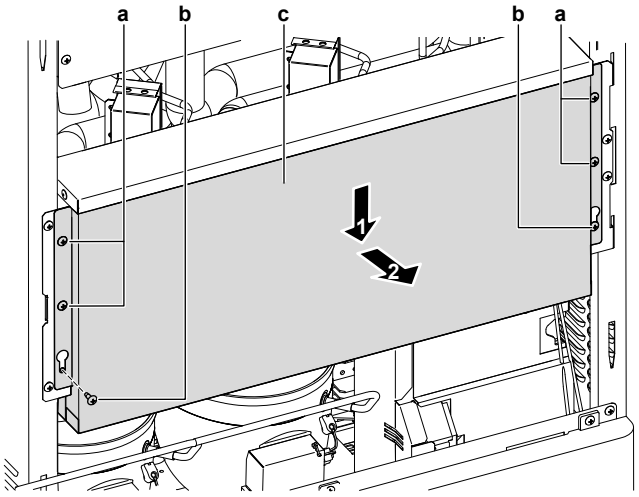
1 Remove the screw (a) completely.

2 Loosen the screws (b).

3 Remove the cover (c) by sliding it downwards, and then pulling it away from the unit.



5–1 For LMSEY1A09+13



5–2 For LMSEY2A19+25

a Screw
b Screw
c Electrical box cover

5.3.3 To close the unit

1 Reinstall the switchbox cover.

2 Reinstall the front panel.

5.4 Mounting the unit

5.4.1 Precautions when mounting the unit

INFORMATION

See the precautions and requirements in the "2 General safety precautions" [▶ 2] chapter.

5.4.2 To prepare the cold room

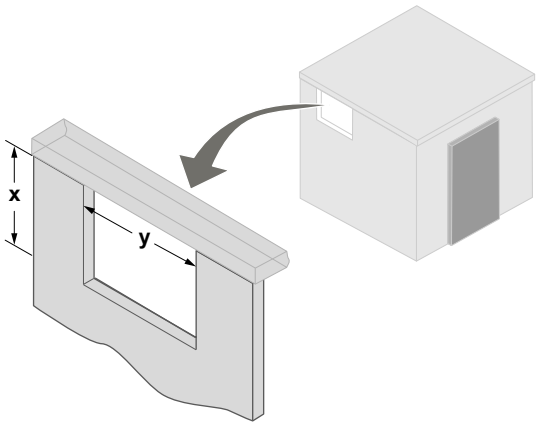
The surfaces of the cold room that contact the unit's mounting pads must be uni-planar to within 3 mm to prevent distortion of the unit and/or cold room.

There are two possible ways to mount the unit:

Wall mounting	▪ The optional pad is mandatory. ▪ The cold room roof can stay in place. See below for more information.
Saddle mounting	▪ The cold room roof must be removed. See below for more information.

To prepare the cold room for wall mounting

1 Make a cutout in the front wall of the cold room. The cutout (x,y) will accommodate the unit evaporator protrusion with the (optional) insulation pad.



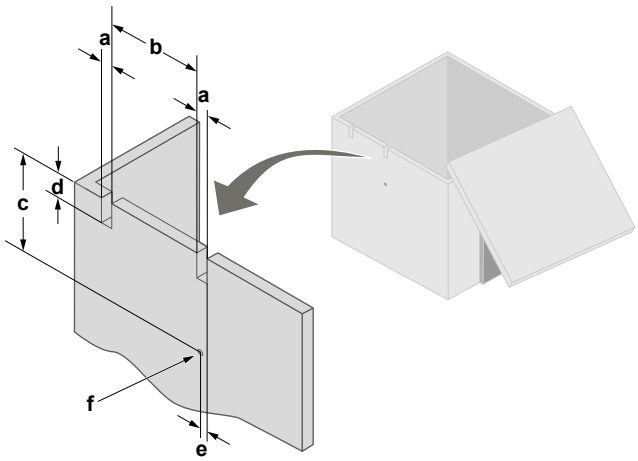
x 335 mm
y 375 mm (LMSEY1A09+13)
595 mm (LMSEY2A19+25)

To prepare the cold room for saddle mounting

2 Remove the cold room roof.

3 Make two cutouts (a, d) in the front of the cold room to accommodate the top frame stays of the unit.

4 Make a hole (f) in the front of the cold room to accommodate the evaporator drain pipe.

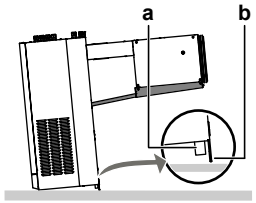


a 43 mm
b 288 mm (LMSEY1A09+13)
508 mm (LMSEY2A19+25)
c 310 mm
d 83 mm (LMSEY1A09+13)
177 mm (LMSEY2A19+25)
e 19 mm
f Ø40 mm

5.4.3 To prepare the unit

CAUTION

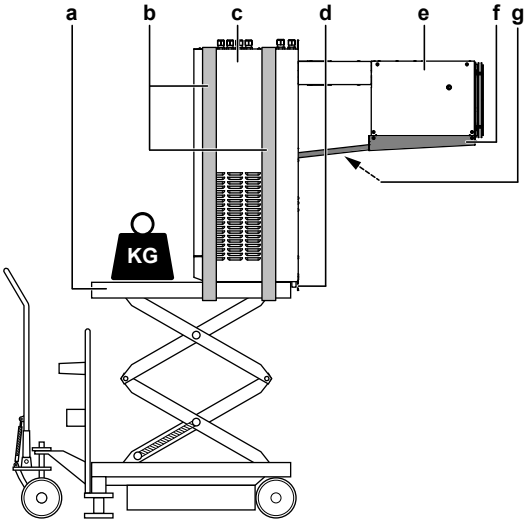
Be careful when putting the unit on the floor; the drain connection (a) and back plate (b) can easily be damaged.



CAUTION

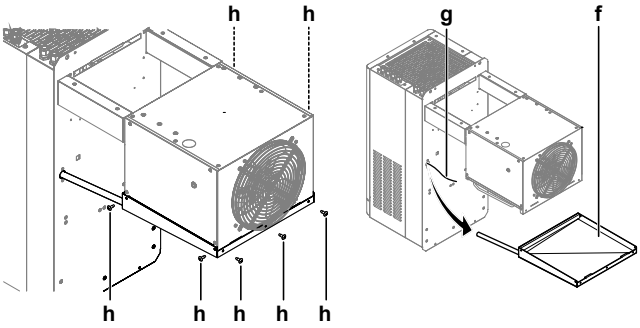
Use a lifting table and straps that can bear the weight, if necessary balance it with additional weight. See "10 Technical data" [▶ 27] for the weight of the unit.

1 Position the unit on a lifting table (a) and secure it with straps (b). Be carefull not to dammage the drain pipe external connection (d).



a Lifting table
b Strap
c Unit condenser
d Drain pipe external connection
e Unit evaporator
f Drain pan assembly
g Electric drain heater (inside the drain pan pipe)

2 Remove the 7 screws (h) and remove the drain pan assembly (f).



NOTICE

When the drain pan is removed, the electric drain heater must be slid out of the drain pan pipe. The electric drain heater must be pushed back into the the drain pan pipe when the drain pan is reinstalled.

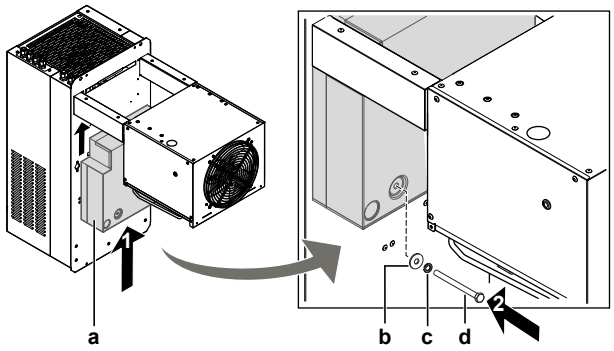
In case of "wall mounting" method

In case of wall mounting method (see "5.4.2 To prepare the cold room" [▶ 11]), the optional insulation pad must be installed on the unit. Refer to the installation instruction included in the insulation pad option.

1 Install the insulation pad (a) at the back of the unit condenser by sliding it in place.

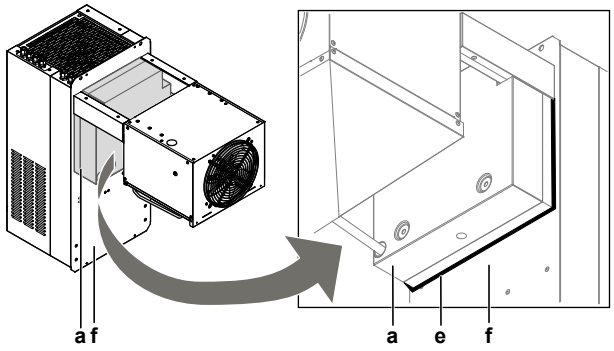
2 Install the screws (d), the flat washers (b) and the spring washers (c) through the holes on the back of the insulation pad (a) and so in to the back panel of the unit condenser.

3 Tighten the screws (d) to the point that the spring washer (c) is flattened.



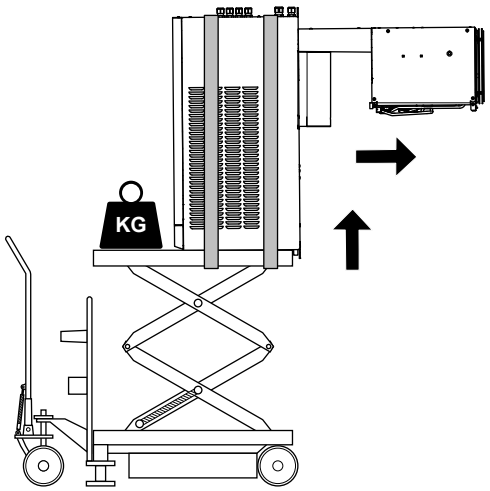
a Insulation pad
b Flat washer
c Spring washer
d Screw

4 Install the self-adhesive gasket (e) against the back panel (f) of the unit condenser all around the insulation pad (a).



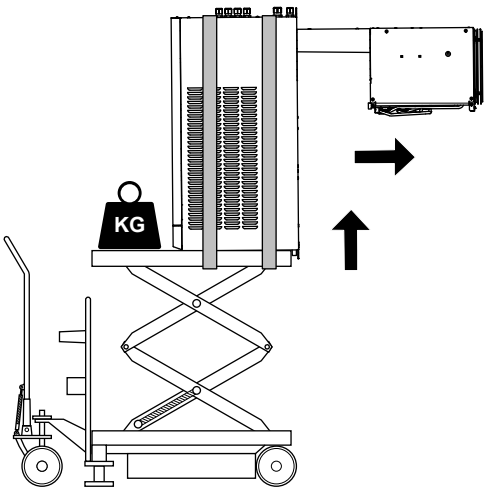
a Insulation pad
e Gasket
f Back panel

5 The unit can now be positioned in front of the cold room wall for installation.



In case of "saddle mounting" method.

In case of saddle mounting method (see "5.4.2 To prepare the cold room" [▶ 11]), the unit can now be positioned in front of the cold room wall for installation.



5.4.4 To mount the unit

INFORMATION

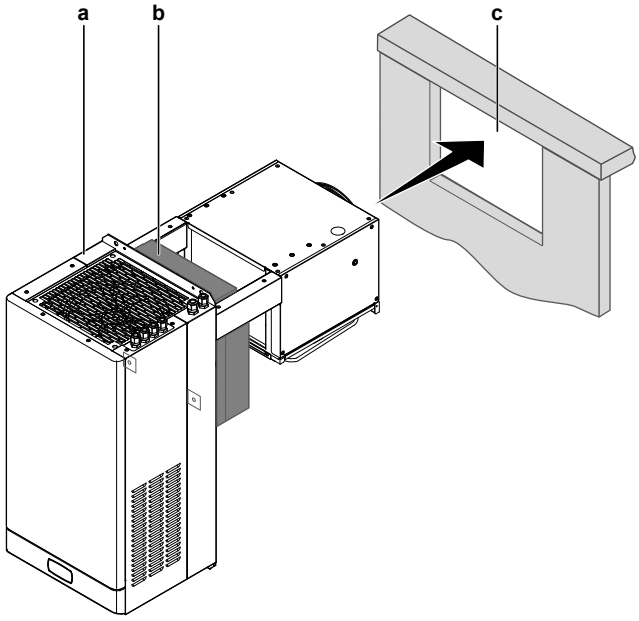
Use a lifting table and straps that can bear the weight, see "10 Technical data" [▶ 27] for the weight of the unit.

In case of "wall mounting" method

1 If not already done, position the unit on a lifting table and secure it with straps, see "5.4.3 To prepare the unit" [▶ 11].

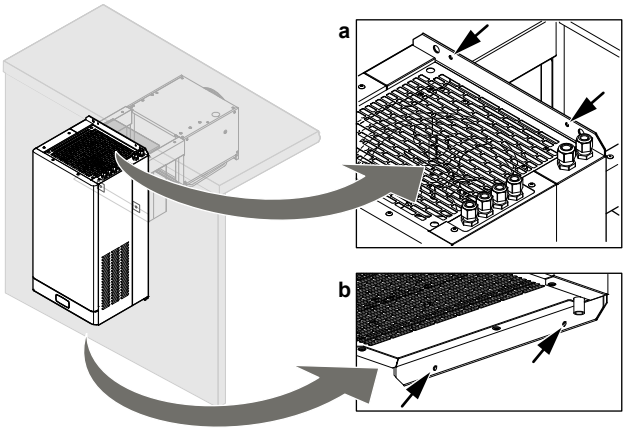
2 Position the unit (a), with the insulation pad (b) in place, in front of the cold room cutout (c).

3 Slide the unit through the cutout.



a Unit
b Insulation pad
c Cutout

4 With the unit in place, fix it with 4 screws through the fixing holes.

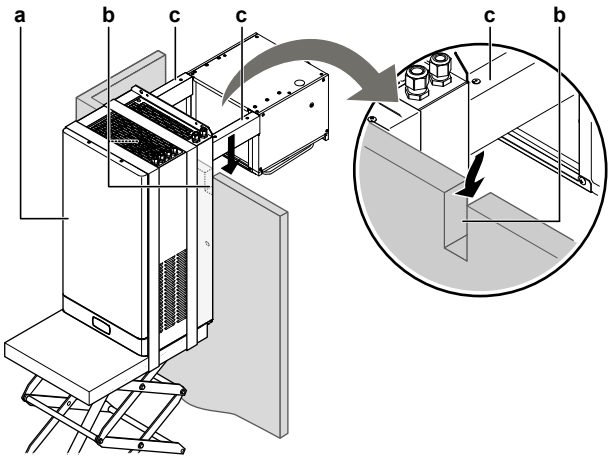


In case of "saddle mounting" method

1 If not already done, position the unit on a lifting table and secure it with straps, see "5.4.3 To prepare the unit" [▶ 11].

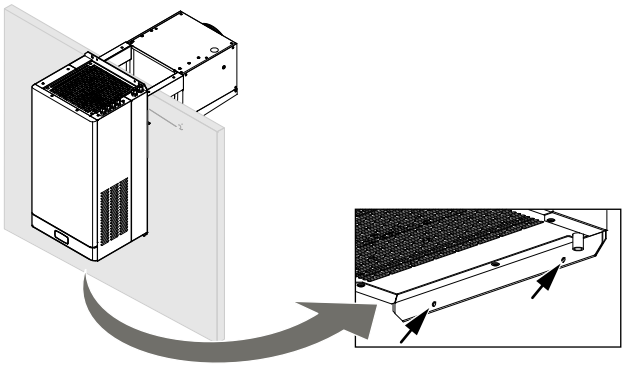
2 Position the unit (a) with the stays (c) right above the cold room cutouts (b).

3 Lower the unit into the cutouts.



a Unit
b Cutout
c Evaporator stay

4 With the unit in place, fix it with 2 screws through the bottom fixing holes.



INFORMATION

It is easier to first seal the unit now before installing the cold room roof.

The top screws will be installed after the unit is sealed and the roof is installed. See "5.4.6 To seal the unit" [▶ 14].

5.4.5 To reinstall the drain pan

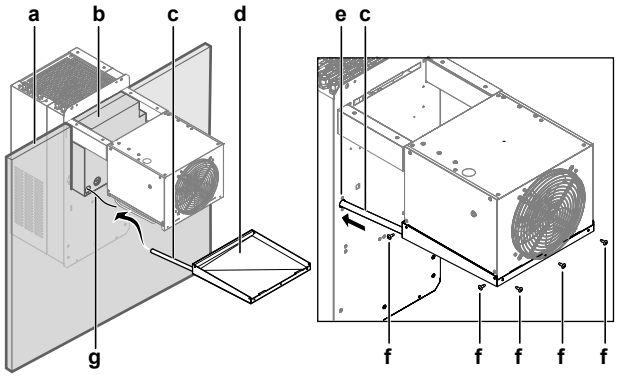
1 Install the drain pan assembly (d):

- When "wall mounting" method was used, guide the drain pan pipe (c) through the hole in the insulation pad (b). Then further guide it into the unit through the hole in the back plate (e).
- When "saddle mounting" method was used, guide the drain pan pipe (c) through the hole in the cold room wall (a). Then further guide it into the unit through the hole in the back plate (e).

2 Instal the 7 screws (f) to fix the drainpan (d) to the evaporator. Tighten the screws to a torque of 2.17 N•m.

NOTICE

When the drain pan is removed, the electric drain heater must be slid out of the drain pan pipe. The electric drain heater must be pushed back into the drain pan pipe when the drain pan is reinstalled.



a Cold room wall
b Insulation pad assembly
c Drain pan pipe
d Drain pan
e Back plate of the unit
f Screw
g Electric drain heater

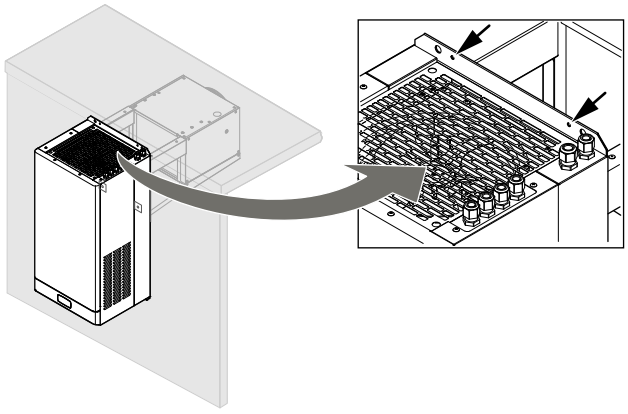
5.4.6 To seal the unit

1 Seal the gaps between the unit and insulation pad and the cold room wall with mastic.

If the saddle mounting method was applied:

2 Reinstall the cold room roof.

3 Complete fixing the unit further with 2 screws through the top fixing holes.



5.4.7 To install the external drain pipe

Frost gradually builds-up on evaporator coils during operation. The unit uses a hot refrigerant to defrost the evaporator coils. Hot refrigerant gas passes through the evaporator coil and melts the frost. The melt water drips into the evaporator drain pan, where the drain pan defrost coil prevents re-icing. It then flows via the drain pipe (a) to the overflow tank (c) in the condenser part of the unit.

Most of the time this water evaporates in the overflow tank (c) that has hot refrigerant pipes (d) going through it. This also works as a "water cooling system" for hot refrigerant at the same time.

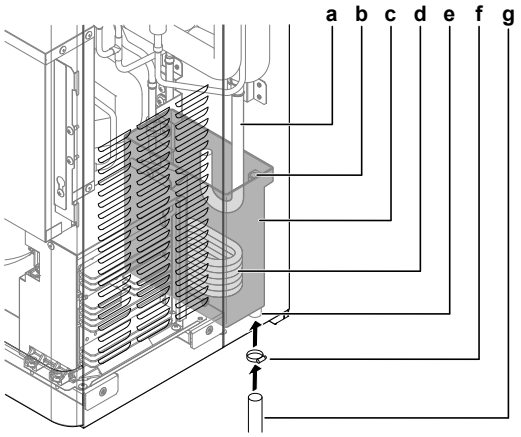
In case of an overflow, the external drain connection (e) must be connected to an external drain pipe or hose (g).

INFORMATION

Fresh meat, fish or vegetables produce a lot of humidity. Already frozen products produce little humidity.

INFORMATION

The internal drain pipe has a siphon, which ensures that warm air from the unit condenser cannot escape to the unit evaporator.



a Drain pipe (internal)
b Overflow opening
c Overflow tank
d Hot refrigerant pipes
e External drain connection (Ø 14 mm)
f Pipe clamp
g Drain pipe or hose (external)

1 Install a pipe clamp (f) over the drain pipe (or hose) (g).

2 Slide the drain pipe (g) with the pipe clamp (f) over the external drain pipe connection (e).

3 Tighten the pipe clamp (f).

4 Make sure condensation water can be evacuated properly through the drain pipe:

- The drain pipe should run as straight as possible down the cold room wall, with no kinks or bends.
- Secure with screws, tie wraps and clamps as required.

NOTICE

Incorrect connection of the drain hose might cause leaks, and damage the installation space and surroundings.

5.5 To connect the power supply

The supply cable for models LMSEY1A09+13 has a ground, line and neutral conductor. The supply cable for models LMSEY2A19+25 has one ground, three line and one neutral conductors. The supply cable is labelled C1.

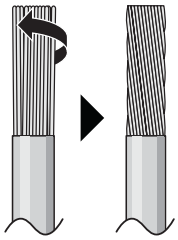
NOTICE

In case of a three-phase power supply the compressor can break down if the wires are not connected correctly.

A number to identify the phases is printed on the surface of the wire insulation. The meaning of the numbers is the following: 1=L1, 2=L2, 3=L3, 4=neutral.

1 Strip insulation (20 mm) from the wires.

2 Slightly twist the end of the conductor to create a "solid-like" connection.



3 Connect to the circuit breaker (Q1). The circuit breaker for models LMSEY1A09+13 must be a single-phase circuit breaker, whereas the circuit breaker for models LMSEY2A19+25 must be a three-phase circuit breaker.

4 Insert the wires into the terminals and secure them.

CAUTION

Do NOT push or place redundant cable length into the unit.

WARNING

The appliance MUST be installed in accordance with national wiring regulations.

The power supply MUST be clamped to the bracket using field supplied clamp material to prevent external force being applied to the terminal. The green and yellow striped wire MUST be used for earthing only.

5.6 Installing multiple units

5.6.1 To install multiple units

To install each individual unit, see "5 Installation" [▸ 9].

NOTICE

Respect the minimum distance between units, see "5.1 General installation guidelines" [▸ 9].

5.6.2 To interconnect multiple units

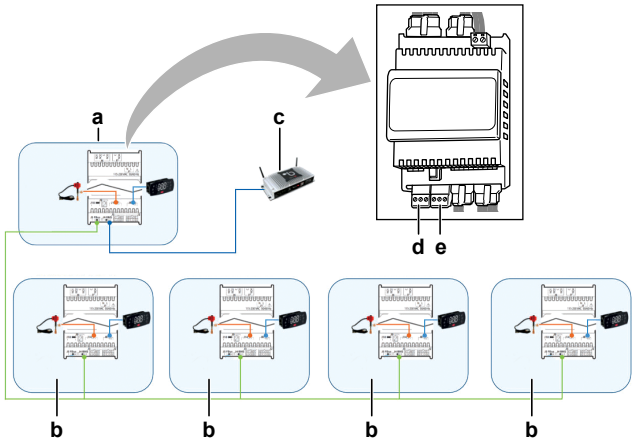
INFORMATION

All the unit displays must be connected to their main PCB controllers.

1 Open the unit condenser front plate and electrical box cover. See "5.3 Opening and closing the unit" [▸ 10].

2 Connect the BMS connector (J4) of the secondary unit:

- for LMSEY1A09+13AVM01: to the fieldbus connector (J5) of the primary unit.
- for LMSEY2A19+25AYE01: to X6M of the primary unit with a shielded cable.



a Primary unit
b Secondary unit
c Router (optional)
d Fieldbus connector (J5)
e BMS connector (J4)

3 Connect the BMS connector (J4) of the primary unit to the router (optional). See "5.9 To connect a router" [▸ 17].

4 Interconnect the BMS connectors (J4) of the secondary units. One to four secondary units can be connected.

CAUTION

Do NOT push or place redundant cable length into the unit.

INFORMATION

The primary unit will perform all the monitoring and control functions.

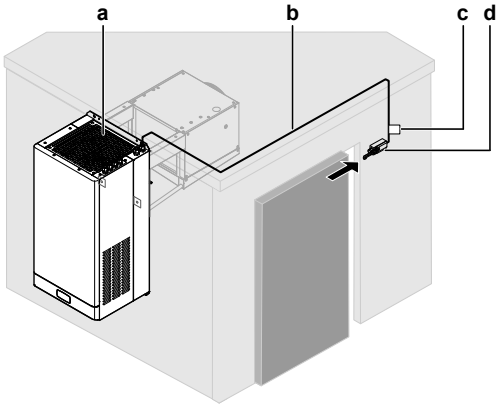
5.7 Installing the options in the cold room

5.7.1 To install the door microswitch

The door microswitch interrupts the unit operation and controls the cold room lamp (if installed) when the cold room door is opened.

INFORMATION

This manual only describes installation instructions specific to this unit. For carrying out mechanical work on the cold room, the instructions of the cold room manufacturer must always be followed.



a Unit condenser
b Wire (5 m long)
c Wire label
d Door microswitch

1 Install the door microswitch (d) at the cold room door. Install it such that the microswitch is operated when the door is closed. In case of cable or switch failure, the unit will react as if the door is opened.

2 Guide the microswitch cable labelled C4 (5 m long) coming out of the unit condenser over the roof of the cold room towards the door microswitch (d).

NOTICE

Check the wire labels. The door heater wire is a live wire (220-240 V), while the microswitch wire is a signal wire. Swapping the wires will cause serious damage to the unit.

CAUTION

Do NOT push or place redundant cable length into the unit.

3 Fix the wiring to the cold room as needed.

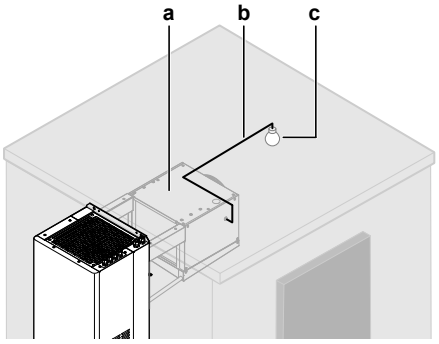
4 Connect the wiring to the NO contact of the microswitch. When the door is closed, the contact must be closed too.

5.7.2 To install the cold room lamp

The cold room lamp is controlled by the user interface. The user interface is triggered by the cold room door microswitch (see "5.7.1 To install the door microswitch" [▶ 15]). The lamp switches on when the cold room door is opened and switches off when the door is closed.

INFORMATION

This manual only describes installation instructions specific to this unit. For carrying out mechanical work on the cold room, the instructions of the cold room manufacturer must always be followed.



a Unit evaporator
b Wire (2 m long)
c Cold room lamp

1 Install the cold room lamp on the cold room ceiling.

2 Guide the cold room lamp cable labelled C3 (2 m long) coming out of the unit evaporator towards the lamp.

3 Fix the wiring to the cold room ceiling as needed.

CAUTION

Do NOT push or place redundant cable length into the unit.

NOTICE

The cold room lamp must be suitable for 220-240 V, and the total load of the control circuit must NOT exceed 4 A.

INFORMATION

For the cold room lamp, usually a LED bulb of 0.1 A is used, with a maximum 0.3 A.

4 Connect the wiring to the lamp.

5.7.3 To install the door heater

For low temperature applications it is suggested to install a door heater. It prevents the door from freezing solid.

The choice for the most appropriate door heater is left to the installer or cold room manufacturer.

NOTICE

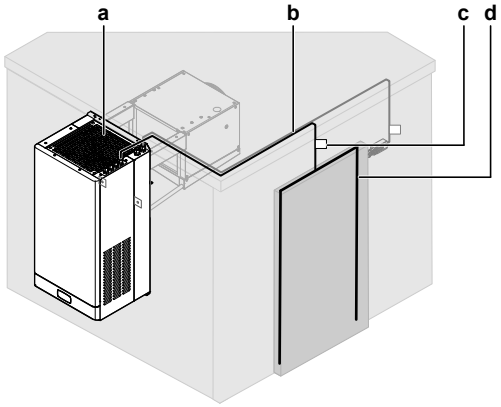
The door heater must be suitable for 220-240 V, and the total load of the control circuit must NOT exceed 5 A.

INFORMATION

The door heater (commercial type) usually has an electric current of 0.4/0.5 A (depending on the length of the wiring), with a maximum of 0.7 A.

INFORMATION

This manual only describes installation instructions specific to this unit. For carrying out mechanical work on the cold room, the instructions of the cold room manufacturer must always be followed.



a Unit condenser
b Wire (5 m long)
c Wire Label
d Door heater

1 Install the door heater (d) at the cold room door opening.

2 Guide the door heater cable labelled C2 (5 m long) coming out of the unit condenser over the roof of the cold room towards the door heater (d).

NOTICE

Check the wire labels. The door heater wire is a live wire (220-240 V), while the microswitch wire is a signal wire. Swapping the wires will cause serious damage to the unit.

CAUTION

Do NOT push or place redundant cable length into the unit.

3 Fix the wiring to the cold room as needed.

4 Connect the wires to the door heater.

5.8 To connect an alarm signal

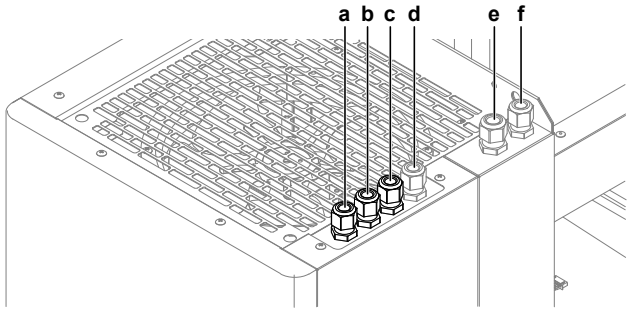
This option is not pre-wired. The connection has to be made inside the unit condenser.

1 Open the unit condenser front plate and electrical box cover. See "5.3 Opening and closing the unit" [▶ 10].

Three cable glands (a, b and c) are provided to bring option cables into the unit.

2 Guide the cable towards the cable gland, and into the unit. Secure the cable into the cable gland.

3 Fix the cable along its path outside the unit condenser as needed.



a Option
b Option
c Option
d Door heater, pre-wired
e Power supply, pre-wired
f Door microswitch, pre-wired

CAUTION

Do NOT push or place redundant cable length into the unit.

NOTICE

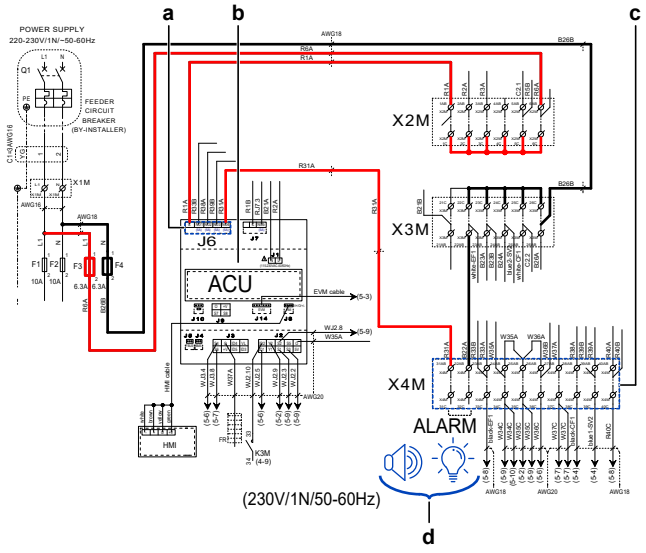
The alarm signal must be suitable for 220-240 V, and the total load of the control circuit must NOT exceed 5 A.

INFORMATION

Usually an alarm of 0.2 A is used, with maximum of 0.5 A.

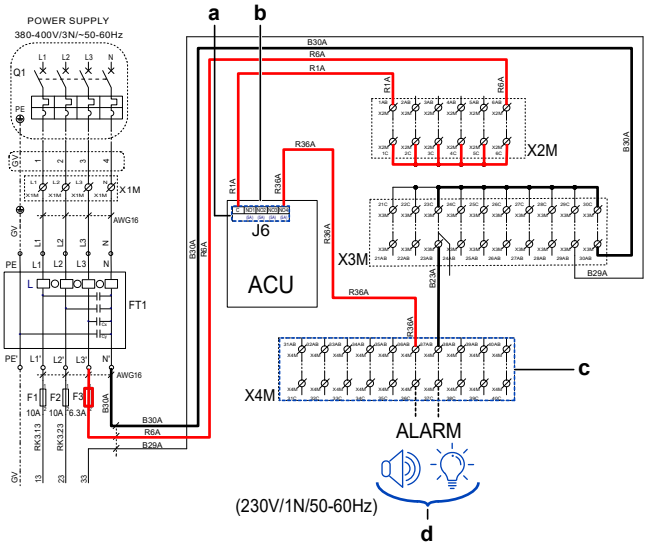
4 Connect the alarm wiring to the X4M connector (c) (230 V/1N/50-60 Hz).

	LMSEY1A09+13	LMSEY2A19+25
Line terminal	31C	36C
Neutral terminal	32C	



5–3 For LMSEY1A09+13AVM01

a Connector J6
b Controller
c Connector X4M
d Alarm (light or sound)



5–4 For LMSEY2A19+25AYE01

a Connector J6
b Controller
c Connector X4M
d Alarm (light or sound)

The alarm is managed by the user interface that shows the related alarm code.

5.9 To connect a router

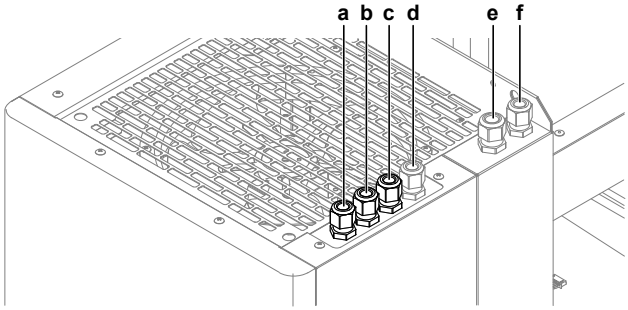
This option is not pre-wired. The connection has to be made inside the unit condenser.

1 Open the unit condenser front plate and electrical box cover. See "5.3 Opening and closing the unit" [▶ 10].

Three cable glands (a, b and c) are provided to bring option cables into the unit.

2 Guide the cable towards the cable gland, and into the unit. Secure the cable into the cable gland.

3 Fix the cable along its path outside the unit condenser as needed.

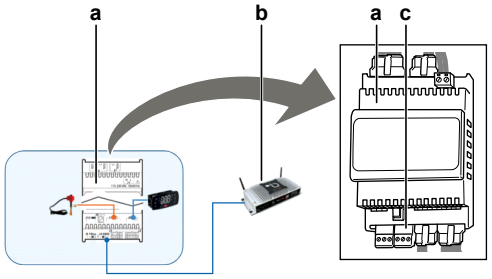


a Option
b Option
c Option
d Door heater, pre-wired
e Power supply, pre-wired
f Door microswitch, pre-wired

CAUTION

Do NOT push or place redundant cable length into the unit.

4 Connect the router (b) wiring to the BMS connector (c) of the controller (a).



a Control unit
b Router
c BMS connector (J4)

6 Configuration

6.1 To connect your device with Daikin Installer

INFORMATION

Setting parameters is best done via the app (Daikin User or Daikin Installer). However, some of the parameters can also be set via the user interface.

The Daikin Installer app is required to configure the controller, set up parameters or check trends and information.

From a mobile device (smartphone, tablet), via BLE (Bluetooth Low Energy), the Daikin Installer app can configure the commissioning parameters and set groups of preset parameters according to specific needs (configurations).

Use the "hamburger" menu at the top left of the screen to set the parameters on the controller and manage parameter configurations.

Procedure to install the app:

1 Download the “Daikin Installer” app.

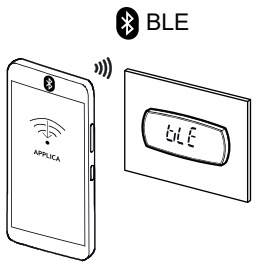
2 On the mobile device, start the app for commissioning the controller.

3 Turn on Bluetooth on your device. Open Daikin Installer and select the Bluetooth icon to show the available devices.

4 Select “BLUETOOTH SCAN” to view the controller devices available within a range of 10 m.

5 Select the device to connect to.

Result: “BLE” will blink on the user interface display to confirm that the connection is established.



6 In the profile select page, select "Service".

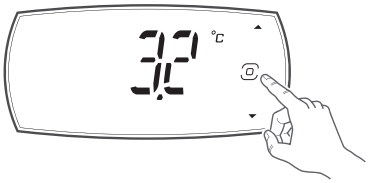
7 Enter the password: 22.

INFORMATION

During the first connection, the app (Daikin User or Daikin Installer) synchronises with the controller software via a cloud connection. This means that an internet connection is required, at least for this first connection. If not, the required packet can also be retrieved from the cloud as soon as the connection is restored (via the “Packet Manager” section of the app).

6.2 To unlock the user interface

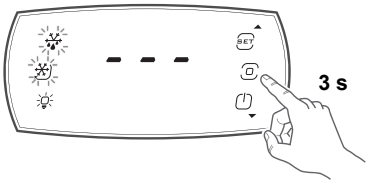
To unlock the user interface



1 Press any button.

Result: The display shows the message “Loc”.

2 Press the PROGRAM button for three seconds to exit lock mode.



Result: The display shows three dashes in sequence.

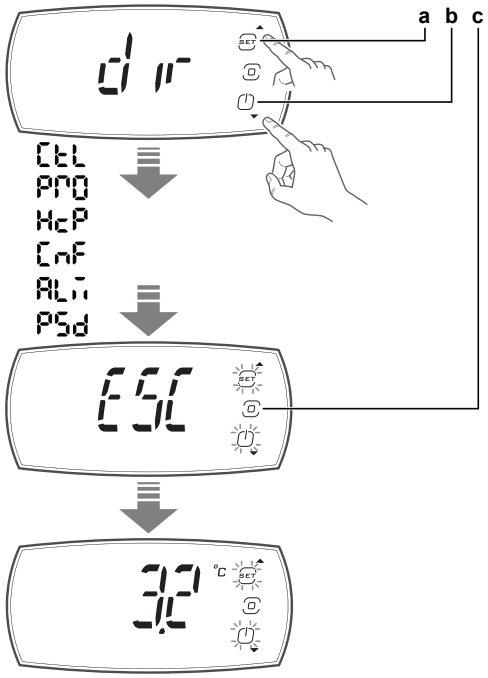
6.3 To change the parameters

1 Unlock the user interface. See "6.2 To unlock the user interface" [▸ 18].

2 Press the PROGRAM button to enter “dir” mode.

Result: The display shows “dir”.

3 Use the UP (a) and DOWN (b) buttons to navigate towards the desired menu, then press the PROGRAM (c) button to enter the menu.



a UP button
b DOWN button
c PROGRAM button
CtL Control menu
Pro Display probes menu
HcP HACCP menu
CnF Configuration menu
ALM Alarms menu
PSd Service menu
ESC Exit the menu loop

Note: To return to the standard display, go to "ESC" and press the PROGRAM (c) button.

INFORMATION

If no button is pressed, the terminal will return to the standard display after 7 seconds.

6.4 Parameters

Name	Description	Default	Min.	Max.	UoM	Menu[a]	App
/5[b]	Unit of measure: ▪ 0: °C ▪ 1: °F	0	0	1		● Pro	●
/6	Display decimal point: ▪ 0: Yes ▪ 1: No	0	0	1		● Pro	●
/t1	Display on user terminal: ▪ 0: not configured ▪ 1: value of S1 ▪ 2: value of S2 ▪ 3: value of S3 ▪ 4: value of S4 ▪ 5: value of S1H ▪ 6 to 8: not available ▪ 9: control probe ▪ 10: virtual probe ▪ 11 to 14: not available ▪ 15: current control setpoint	9	0	15		● Pro	●
/t2	Display on remote display: ▪ 0 to 15, see /t1 (above)	0	0	15		● Pro	●
A1[b]	Alarm thresholds (AH, AL) relative to the setpoint St or absolute: ▪ 0: relative ▪ 1: absolute	0	0	1			●
A3[b]	Defrost terminated after maximum time signal: ▪ 0: disabled ▪ 1: enabled	0	0	1			●
Ad[b]	Delay time for high and low temp. alarms (AH, AL)	120	0	240	min	● ALM	●
Add[b]	High temp. alarm bypass time for door open	5	1	240	min	● ALM	●

Name	Description	Default	Min.	Max.	UoM	Menu[a]	App
AH[b]	Relative high temperature alarm threshold	0	0	555/ 999	Δ°C/°F	● ALM	●
AL[b]	Relative low temperature alarm threshold	0	0	200/ 360	Δ°C/°F	● ALM	●
Alr[b]	Alarm present	0	0	1			●
d2[b]	Network end defrost synchronised for Primary unit controller	0	0	1			●
d6[c]	Display on terminals during defrosts: ▪ 0: temperature alternating with "PSd" ▪ 1: freeze display ▪ 2: "PSd"	1	0	2			●
d8	Bypass time high temperature alarm after defrost	1	1	240	hours		●
dAs[b]	DAY status/ECO mode	1	0	1			●
dC[b]	Time base for defrosts: ▪ 0: dI in hours, dP1, and dP2 in minutes ▪ 1: dI in minutes, dP1 and dP2 in seconds	0	0	1			●
dC1[b]	Time base for d8: ▪ 0: d8 in minutes ▪ 1: d8 in seconds	0	0	1			●
dfM[b]	Defrost command: ▪ 0: no ▪ 1: yes	0	0	1			●
dFn[b]	Defrost request from serial: ▪ 0: no ▪ 1: yes	0	0	1			●
dFr[b]	Defrost status	0	0	1			●
dFs[b]	Defrost state	idle					●
dI[b]	Maximum interval between consecutive defrosts	8	0	240	hours		●
dP1[b]	Maximum defrost duration	45	1	240	min		●
dP2[b]	Maximum defrost duration auxiliary evaporator	45	1	240	min		●
dS_1[b]	Network defrost synchronisation for Secondary unit 1: ▪ 0: No synchronisation performed, ▪ 1: Only starting, ▪ 2: Start & Stop.	0	0	2			●
dS_2[c]	Network defrost synchronisation for Secondary unit 2: ▪ 0: No synchronisation performed, ▪ 1: Only starting, ▪ 2: Start & Stop.	0	0	2			●
dS_3[c]	Network defrost synchronisation for Secondary unit 3: ▪ 0: No synchronisation performed, ▪ 1: Only starting, ▪ 2: Start and stop.	0	0	2			●
dS_4[c]	Network defrost synchronisation for Secondary unit 4: ▪ 0: No synchronisation performed, ▪ 1: Only starting, ▪ 2: Start and stop.	0	0	2			●
dt1[c]	End defrost temperature (read by Sd)	4/ 39.2	-50/ 58	50/ 122	°C/°F		●
dt2	Auxiliary evaporator end defrost temperature (read by Sd2)	4/ 39.2	-50/ 58	50/ 122	°C/°F		●
Eco	Eco mode status: ▪ 0 OFF ▪ 1 ON	1	0	1		dir	
ESP_1	Enable shared parameters for secondary unit 1	0	0	1			●

Name	Description	Default	Min.	Max.	UoM	Menu[a]	App
ESP_2[c]	Enable shared parameters for secondary unit 2	0	0	1			●
ESP_3[c]	Enable shared parameters for secondary unit 3	0	0	1			●
ESP_4[c]	Enable shared parameters for secondary unit 4	0	0	1			●
F0	Evaporator fan management: ▪ 0: always on ▪ 1: activation based on Sd- Sv ▪ 2: activation based on Sd ▪ 3: activation based on Sv	0	0	3			●
F2	Evaporator fans with compressor off: ▪ 0: always on ▪ 1: always off with compressor off ▪ 2: on for anti-stratification ▪ 3: on for humidity control	1	0	3			●
FIA	Status of the external alarm function	0	0	1			●
FIE	Door status with compressor deactivation	0	0	1			●
FIF	Status of the remote on/off function	0	0	1			●
FIP	Door status without compressor deactivation	0	0	1			●
FOb	Logical status of the digital output	0	0	1			●
FOE	Logical status of the digital light output	0	0	1			●
FOG	Logical status of the digital output	0	0	1			●
FOI	Logical status of the digital output	0	0	1			●
FOI_1	Logical status of the digital output	0	0	1			●
FOI_2	Logical status of the digital output	0	0	1			●
FOI_3	Logical status of the digital output	0	0	1			●
FOI_4	Logical status of the digital output	0	0	1			●
Fot	Logical status of the fan output	0	0	1			●
Fr	SW version of the controller (read only)	r.04	0	0		dir	
H0	Serial address	1	1	247			●
H10	BMS serial port baud rate (bit/s): ▪ 0: 1200 ▪ 1: 2400 ▪ 2: 4800 ▪ 3: 9600 ▪ 4: 19200 ▪ 5: 38400 ▪ 6: 57600 ▪ 7: 115200	4	0	8		● CnF	●
H11	BMS serial port configuration (stop bits and parity): ▪ 0: 1 stop bit, no parity ▪ 1: 2 stop bits, no parity ▪ 2: 1 stop bit, even parity ▪ 3: 2 stop bits, even parity ▪ 4: 1 stop bit, odd parity ▪ 5: 2 stop bits, odd parity					● CnF	●
H13	Evd Mini/ICE serial address	99	1	247			●
H14[b]	Time light stays on after closing the door	0	0	240	min		●
HA1	Date of the first intervention	dd/mm/yyyy	0	0			
HA2	Date of the second intervention	dd/mm/yyyy	0	0			
HA3	Date of the third intervention	dd/mm/yyyy	0	0			

Name	Description	Default	Min.	Max.	UoM	Menu[a]	App
HAn	Number of type HA alarms (read-only)	0	0	6		● PSd	●
Hb[b]	Buzzer: ▪ 0: disabled ▪ 1: enabled	1	0	1		● CnF	●
Hdh[b]	Delta for anti-heating function	0	0	200/ 360	Δ°C/°F		●
HF1	Date of the first intervention	dd/mm/ yyyy					●
HF2	Date of the second intervention	dd/mm/ yyyy					●
HF3	Date of the third intervention	dd/mm/ yyyy					●
HFn	Number of type HF alarms (read-only)	0	0	6		● PSd	●
Htd	HACCP alarm delay	0					●
HU	Humidity level: 0: low; 1: medium; 2: high	1	0	2		● PSd	
In[c]	Type of unit: ▪ 0: Secondary unit ▪ 1: Primary unit	1	0	1			●
Lht	Light state	0	0	1			●
nrt_1[c]	Network temperature regulation for secondary unit 1: ▪ 0: The controller regulates through the probe connected to itself, ▪ 1: The controller regulates through the probe connected to the Primary unit.	0	0	1			●
nrt_2[c]	Network temperature regulation for secondary unit 2: ▪ 0: The controller regulates through the probe connected to itself, ▪ 1: The controller regulates through the probe connected to the Primary unit.	0	0	1			●
nrt_3[c]	Network temperature regulation for secondary unit 3: ▪ 0: The controller regulates through the probe connected to itself, ▪ 1: The controller regulates through the probe connected to the Primary unit.	0	0	1			●
nrt_4[c]	Network temperature regulation for secondary unit 4: ▪ 0: The controller regulates through the probe connected to itself, ▪ 1: The controller regulates through the probe connected to the Primary unit.	0	0	1			●
On[b]	ON/OFF command (button on user interface): ▪ 0: Off ▪ 1: On	0	0	1			●
PAL	Probes Alarm active	0	0	1			●
PDS	Service password	22	0	999			●
PDU[b]	User password	0	0	999			●
PPu	Valve opening percentage	0	0	100	%		●
PPuB	Valve opening percentage 2	0	0	100	%		●
r4	Automatic night-time set point variation	3	-50	50	Δ°C/°F		●
r4d	Night temperature regulation differential	4	0,1	99.9	Δ°C/°F		●
rd	Temperature control differential	2/ 3.6	0.1/ 0.2	99.9/ 179.2	Δ°C/°F	● CtL	●
rSA	Reset alarms	0	0	1			●
rH	Maximum monitored probe value (read only)	0	0	0	°C/°F		●

Name	Description	Default	Min.	Max.	UoM	Menu[a]	App
rHP	Reset HACCP event log	0	0	1		● PSd	●
rL	Minimum monitored probe value (read only)	0	0	0	°C/°F		●
rM	Enable temperature monitoring	0	0	1			●
rSA	Reset alarms	0	0	1		ALM	●
rt	Monitoring session period (read only)	0	0	0	h		●
rtA	Current date	dd/mm/ yyyy	0	0			●
rtL	Monitoring period reset	0	0	1			●
rtm	/	dd/mm/ yyyy	0	0			●
SAK	Alarm history visualisation (read only)	E6	0	0		dir	
Sc	Condenser temperature	-17.1					●
ScB	Condenser temperature circuit 2	0					●
Sdt	Discharge temperature compressor 1	55.4					●
SdtB	Discharge temperature compressor 2	0					●
SH	Actual superheating reading circuit 1	0.6					●
SHB	Actual superheating reading circuit 2	0					●
Sn[c]	Number of secondary units: ▪ 0: no secondary unit	0	0	4			●
SrG	Regulation sensor (read only)	0	0	0	°C/°F	dir	
SSd	Delay between two starts of different compressors	20	0	300	s		●
St[b]	Temperature control setpoint	50/ 122	r1	r2	°C/°F	● CtL	●
St_1	Temperature control setpoint 1	0	-25	10	°C/°F		●
St_2	Temperature control setpoint 2	0	-25	10	°C/°F		●
St_3	Temperature control setpoint 3	0	-25	10	°C/°F		●
St_4	Temperature control setpoint 4	0	-25	10	°C/°F		●
StH	Setpoint for humidity	90	0	0	%	CtL	
Sv	Virtual probe (read only)	20.2	0	0			●
Sv_1	Virtual probe secondary unit 1 (read only)	0	0	0			●
Sv_2	Virtual probe secondary unit 2 (read only)	0	0	0			●
Sv_3	Virtual probe secondary unit 3 (read only)	0	0	0			●
Sv_4	Virtual probe secondary unit 4 (read only)	0	0	0			●
td1-d	Timespan 1 – day						●
td1-time	Time datatype 1	0:00:00	0:00:00	23:59:59			●
td2-d	Timespan 2 – day	0:00:00	0:00:00	23:59:59			●
td2-time	Time datatype 2	0:00:00	0:00:00	23:59:59			●
td3-d	Timespan 3 – day	0:00:00	0:00:00	23:59:59			●
td3-time	Time datatype 3	0:00:00	0:00:00	23:59:59			●
td4-d	Timespan 4 – day	0:00:00	0:00:00	23:59:59			●
td4-time	Time datatype 4	0:00:00	0:00:00	23:59:59			●
td5-d	Timespan 5 – day	0:00:00	0:00:00	23:59:59			●
td5-time	Time datatype 5	0:00:00	0:00:00	23:59:59			●
td6-d	Timespan 6 – day	0:00:00	0:00:00	23:59:59			●
td6-time	Time datatype 6	0:00:00	0:00:00	23:59:59			●
td7-d	Timespan 7 – day	0:00:00	0:00:00	23:59:59			●
td7-time	Time datatype 7	0:00:00	0:00:00	23:59:59			●
tE8-d	Timespan 8 – day	0:00:00	0:00:00	23:59:59			●
td8-time	Time datatype 8	0:00:00	0:00:00	23:59:59			●
tE1-d	End timespan 1 – day	0:00:00	0:00:00	23:59:59			●
tE1-time	End time datatype 1	0:00:00	0:00:00	23:59:59			●
tE2-d	End timespan 2 – day	0:00:00	0:00:00	23:59:59			●
tE2-time	End time datatype 2	0:00:00	0:00:00	23:59:59			●
tE3-d	End timespan 3 – day	0:00:00	0:00:00	23:59:59			●

Name	Description	Default	Min.	Max.	UoM	Menu[a]	App
tE3-time	End time datatype 3	0:00:00	0:00:00	23:59:59			●
tE4-d	End timespan 4 – day	0:00:00	0:00:00	23:59:59			●
tE4-time	End time datatype 4	0:00:00	0:00:00	23:59:59			●
tE5-d	End timespan 5 – day	0:00:00	0:00:00	23:59:59			●
tE5-time	End time datatype 5	0:00:00	0:00:00	23:59:59			●
tE6-d	End timespan 6 – day	0:00:00	0:00:00	23:59:59			●
tE6-time	End time datatype 6	0:00:00	0:00:00	23:59:59			●
tE7-d	End timespan 7 – day	0:00:00	0:00:00	23:59:59			●
tE7-time	End time datatype 7	0:00:00	0:00:00	23:59:59			●
tE8-d	End timespan 8 – day	0:00:00	0:00:00	23:59:59			●
tE8-time	End time datatype 8	0:00:00	0:00:00	23:59:59			●
tEu	Evaporator Temperature (read only)	0	0	0	°C/°F		●
tEuB	Evaporator Temperature Circuit 2 (read only)	0	0	0	°C/°F		●
tGs	Suction Temperature (read only)	0	0	0	°C/°F		●
tGsB	Suction Temperature Circuit 2 (read only)	0	0	0	°C/°F		●
tS1-d	Start timespan 1 - day	0:00:00	0:00:00	23:59:59			●
tS1-time	Start time datatype 1	0:00:00	0:00:00	23:59:59			●
tS2-d	Start timespan 2 - day	0:00:00	0:00:00	23:59:59			●
tS2-time	Start time datatype 2	0:00:00	0:00:00	23:59:59			●
tS3-d	Start timespan 3 - day	0:00:00	0:00:00	23:59:59			●
tS3-time	Start time datatype 3	0:00:00	0:00:00	23:59:59			●
tS4-d	Start timespan 4 - day	0:00:00	0:00:00	23:59:59			●
tS4-time	Start time datatype 4	0:00:00	0:00:00	23:59:59			●
tS5-d	Start timespan 5 - day	0:00:00	0:00:00	23:59:59			●
tS5-time	Start time datatype 5	0:00:00	0:00:00	23:59:59			●
tS6-d	Start timespan 6 - day	0:00:00	0:00:00	23:59:59			●
tS6-time	Start time datatype 6	0:00:00	0:00:00	23:59:59			●
tS7-d	Start timespan 7 - day	0:00:00	0:00:00	23:59:59			●
tS7-time	Start time datatype 7	0:00:00	0:00:00	23:59:59			●
tS8-d	Start timespan 8 - day	0:00:00	0:00:00	23:59:59			●
tS8-time	Start time datatype 8	0:00:00	0:00:00	23:59:59			●
U/	Supply voltage (read only)	0	0	0	V		●
vSr	Compressor speed request (read only)	10	0	0	Hz		●

[a] The menu where the parameter is situated is indicated in this column.
[b] User password suffices.
[c] For multiple units.

6.5 To set up for multiple units

6.5.1 To set the adress of the units

To set the parameters for multiple units, the address of the controllers MUST be sequential:

Example:

Controller	Sequence order	Address value
Primary unit controller	Start	3
Secondary unit controller 1	+1	4
Secondary unit controller 2	+2	5

INFORMATION

Address 99 cannot be used because it is occupied by the expansion valve controller.

1 Power on all controllers.

2 Connect one by one to each controller and change the serial address ("H0" parameter in "CnF" menu). The changes can be done both via the user interface and via Bluetooth using the Daikin Installer app.

3 On the primary unit controller, set:

- The number of secondary unit controllers (Sn).
- The definition that it is the primary unit controller (In=1).

Name	Description	Default	Min.	Max.
Sn	Number of secondary units in the local network. 0: no secondary unit	0	0	4
In	Type of unit. 0: secondary unit 1: primary unit	1	0	1

6.5.2 To activate the shared parameters for multiple units

It is possible to share some parameters between the primary unit controller and its secondary unit controllers. This way these settings only have to be done on the primary unit.

The list of the shared parameters is:

- Setpoint,
- Differential,
- PID for compressor control (cdt, cPr, cti),
- PID for valve control (P4, P5,P6),
- Defrost parameters (dt1, dP1, dd, Fd),
- High and low alarms (AL, AH, ALA, AHA, A1),
- Date & time,
- Eco timebands (tS1-tS8, tE1-tE8).

INFORMATION

ONLY the primary unit controller can change these parameters when the sharing procedure is enabled. These parameters can't be changed on secondary unit controllers.

It is possible to enable/disable the sharing procedure for each controller. To do this:

1 On the primary unit controller, set the parameter ESP_n of the secondary unit controller to "1" to enable, "0" to disable.

- E.g. with ESP_1 = 0 and ESP_2 = 1, the sharing procedure is only enabled with secondary unit controller 2 and not with secondary unit controller 1.

Name	Description	Default	Min.	Max.
ESP_1	Enable shared parameters for secondary unit controller 1	0	0	1
ESP_2	Enable shared parameters for secondary unit controller 2	0	0	1
ESP_3	Enable shared parameters for secondary unit controller 3	0	0	1
ESP_4	Enable shared parameters for secondary unit controller 4	0	0	1

6.5.3 To set the shared functions for multiple units

Lights

Lights can be connected to all controllers in the network and the light status is always synchronised. Each controller will turn the lights on and off simultaneously.

The time during which the light stays on after opening and closing the door is set by parameter H14, and can be set from 0 to 240 minutes. See "6.3 To change the parameters" [▶ 18].

Door open

The door microswitch must be connected to the primary unit controller in the network. Door status is "open" if the switch is open.

As for the lights, also the door status is shared to all controllers. Every controller knows if the door(s) is/are open or not, and each controller can perform the actions that are set in parameters "DIE", "DIP", "rIE" and "rIP".

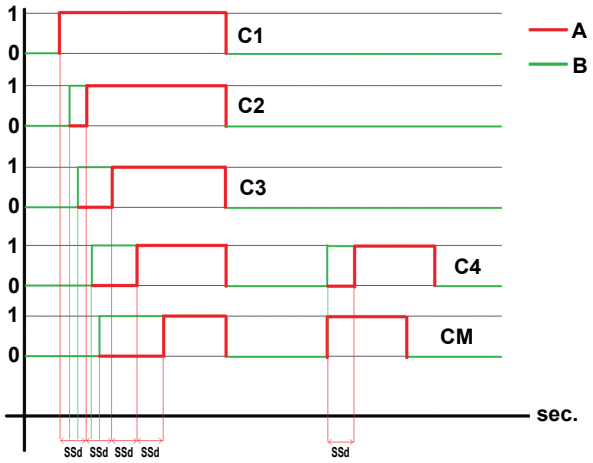
Network temperature regulation

The temperature regulation can be performed in two ways depending on the parameter "nrt" with the following values:

- 0: The relative controller regulates through the probe connected to itself.
- 1: The relative controller regulates through the probe connected to the primary unit controller.

The network logic allows avoiding simultaneous starts of compressors. Using the "SSd" parameter it is possible to set a delay between starts of different LMSEY units.

If it is necessary to start several units at the same time, the first unit to signal to start will be the first one to start. After "SSd" the next unit will also start and so on (See the example below).



1 On
0 Off
A Compressor status
B Request status
C1 Compressor secondary unit 1
C2 Compressor secondary unit 2
C3 Compressor secondary unit 3
C4 Compressor secondary unit 4
CM Compressor primary unit
SSd Delay between start up [s]

Note: LMSEY2A19+25AYE01 units have two compressors, but work in a similar way.

Name	Description	Default	Min.	Max.
nrt_1	Network temperature regulation for secondary unit 1. ▪ 0: The relative controller regulates through the probe connected to itself. ▪ 1: The relative controller regulates through the probe connected to the primary unit controller.	0	0	1
nrt_2	Enable shared parameters for secondary unit 2	0	0	1
nrt_3	Enable shared parameters for secondary unit 3	0	0	1
nrt_4	Enable shared parameters for secondary unit 4	0	0	1
SSd	Delay between the start up of different compressors (in seconds).	20	0	300

Network defrost

It is possible to enable/disable this functionality for each controller separately.

Defrost can be synchronised between the primary unit controller and secondary unit controllers using parameters dS_1, dS_2, dS_3, and dS_4 with the following values:

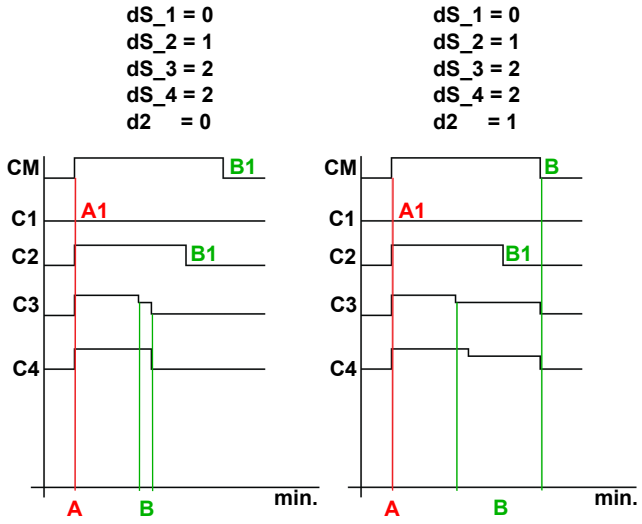
- 0: No synchronisation performed.

- 1: Only starting.

  Only starting: secondary unit controllers will start to defrost at the same time as the primary unit controller, and all controllers can finish in different moments.

- 2: Start & Stop.

  Start & Stop: secondary unit controllers will start to defrost at the same time as the primary unit controller. If one controller ends defrosting before the others, the corresponding defrost relay is de-energised and the dripping phase will only start when all other controllers have finished the defrosting phase.



A Start
A1 Start not synchronised
B End synchronised
B1 End not synchronised
C1 Controller secondary unit 1
C2 Controller secondary unit 2
C3 Controller secondary unit 3
C4 Controller secondary unit 4
CM Primary unit controller
dS1~4 Defrost synchronisation parameters
d2 Network end defrost synchronised for primary unit

Name	Description	Default	Min.	Max.
dS_1	Network defrost synchronised for secondary unit controller 1. ▪ 0: No synchronisation performed. ▪ 1: Only at start. ▪ 2: Start & stop.	0	0	2
dS_2	Network defrost synchronised for secondary unit controller 2.	0	0	2
dS_3	Network defrost synchronised for secondary unit controller 3.	0	0	2
dS_4	Network defrost synchronised for secondary unit controller 4	0	0	2
d2	Network end defrost synchronised for primary unit controller.	0	0	1

Local defrosting on a LMSEY unit is still possible in two ways:

- Manually (from app, supervisory system or user interface).
- With parameter “dI” (maximum interval between consecutive defrosts) taking control. This will happen when a network connection fault occurs that lasts longer than the "dI" parameter setting. Therefore the "dI" parameter must always be set.

6.6 About the alarms

To check and reset alarms (error codes), see the operation manual.

7 Commissioning

CAUTION

Preliminary electrical system checks such as earth continuity, polarity, resistance to earth and short circuit must be carried out by using a suitable test meter by a competent person.

WARNING

ONLY qualified persons should conduct commissioning.

Final checks for correct installation

☐	Check that there is no air gap between unit and cold room wall.
☐	Check the labels of the wires connected to the door micro switch and the door heater. The door heater wire is a live wire, while the micro switch wire is a signal wire. Swapping the wires will cause serious damage to the unit.
☐	Check that all covers are closed correctly.
☐	Check that the electrical wiring of the door micro switch, door heater and cold room lamp are properly fixed to the cold room panels.
☐	Check that all the electrical wiring work is correctly connected.
☐	Check that all cable glands are properly tightened.

DANGER

Tripping over loose wiring can tear it loose and cause electrocution and fire.

Final checks for correct setup

☐	Check that the programming logic is suitable to control the unit and the system in question.
☐	Check that the time has been set on the controller.
☐	Check that the time bands have been set correctly.
☐	Check that the standard display (showing the setpoint) has been set on the user terminal.
☐	Check that the appropriate unit of measure has been set for the temperature probes (°C or °F).

Test run

☐	Connect the unit's electrical plug to the mains outlet.
☐	Turn on the unit.
☐	Set the cold room temperature.
☐	Check that the setpoint of the cold room temperature is reached.
☐	Start defrost mode.
☐	Check for water leaks.
☐	Check that no alarms occur on the user interface (see user manual).
☐	Switch off the unit.

WARNING

- NEVER directly touch any accidental leaking refrigerant. This could result in severe wounds caused by frostbite.
- Do NOT touch the refrigerant pipes during and immediately after operation as the refrigerant pipes may be hot or cold, depending on the condition of the refrigerant flowing through the refrigerant piping, compressor, and other refrigerant cycle parts. Your hands may suffer burns or frostbite if you touch the refrigerant pipes. To avoid injury, give the pipes time to return to normal temperature or, if you must touch them, be sure to wear proper gloves.

NOTICE

At the end of the commissioning procedure, the alarm log can be reset (if necessary) via the Daikin Installer app.

8 Hand-over to the user

Once the test run is finished and the unit operates properly, make sure the following is clear for the user:

- Make sure that the user has the printed documentation and ask him/her to keep it for future reference. Inform the user that he can find the complete documentation at the URL mentioned earlier in this manual.
- Explain the user how to properly operate the system and what to do in case of problems.

9 Disposal

Wooden, plastic and polystyrene packing must be disposed of according to the regulations in force in the country where the unit is used.

NOTICE

Do NOT try to dismantle the system yourself: dismantling of the system, treatment of the refrigerant, oil and other parts MUST comply with applicable legislation.

Final disposal of the unit must be done by an authorised area technical assistance service, that has proper training, equipment and instructions for the dismantling. They are also responsible for reuse, recycling and recovery.

CAUTION

There are potential environmental hazards involved in dismantling the unit.

10 Technical data

- A **subset** of the latest technical data is available on the regional Daikin website (publicly accessible).
- The **full set** of latest technical data is available on the Daikin Business Portal (authentication required).

10.1 Wiring diagram

- A printed version of the declaration of conformity, the wiring- and piping diagrams is included with the unit.

Wiring diagram legend

For applied parts and numbering, refer to the wiring diagram on the unit. Part numbering is by Arabic numbers in ascending order for each part and is represented in the overview below by "*" in the part code.

Symbol	Meaning	Symbol	Meaning
	Circuit breaker contact		Noise filter
MS 3~	Compressor		Power supply plug
	Connection	P	Pressure switch
	Connector		Protective earth
	Contactor contact		Relay
M	Expansion valve		Relay contact
MS	Fan		Resistor
	Fuse		Solenoid valve
M	Fuel pump		Speed sensor
M 3~	Generator	t°	Temperature sensor
	Heater		Terminal
	Inverter reactor		Terminal strip
	Main switch		Transformer

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Symbol	Meaning
ACU	Unit controller
CF1	Condensor fan
C1	Compressor
C1 (cable)	Supply cable
C2 (cable)	Door heater cable
C3 (cable)	Room light cable
C4 (cable)	Door switch cable
C5 (cable)	Inverter supply cable
C6 (cable)	PWM inverter 1 cable
EDH	Evaporator drain heater
EF1	Evaporator fan
EVM	Electronic expansion valve
F1	Main line fuse
F2	Main neutral fuse
F3	Line aux fuse
F4	Neutral aux fuse
HMI	User interface
HMI cable	User interface cable connection
HPS	High pressure switch
INV	Inverter compressor

Symbol	Meaning
J21A	TH1-TH7 probes male connector
J21B	TH1-TH7 probes female connector
J22A	PWM inverter male connector
J22B	PWM inverter female connector
J23A	TH3-TH5-TH6 probes male connector
J23B	TH3-TH5-TH6 probes female connector
J24A	Room light + door switch male connector
J24B	Room light + door switch female connector
J29A	Supply inverter male connector
J29B	Supply inverter female connector
K1M	Drain heater relay
K2M	Drain heater relay
K3M	Compressor relay
RDH	Room door heater
RDS	Room door switch
RL	Room light
SV2	Defrost solenoid valve 1
TH1	Discharge compressor probe
TH3	Suction air probe
TH5	Evaporator inlet probe
TH6	Evaporator outlet probe
TH7	Condensor probe
X1M	Suppy cable terminal
X2M	Phase terminal
X3M	Neutral terminal
X4M	Output terminal

LMSEY2A19+25AYE01

Symbol	Meaning
ACU	Unit controller
EVD	EEV controller
CF1	Condensor fan 1
CF2	Condensor fan 2
C1	Compressor 1
C2	Compressor 2
C1 (cable)	Supply cable
C2 (cable)	Door heater cable
C3 (cable)	Room light cable
C4 (cable)	Door switch cable
C5A (cable)	Inverter 1 supply cable
C5B (cable)	Inverter 2 supply cable
C6A (cable)	PWM inverter 1 cable
C6B (cable)	PWM inverter 2 cable
EDH	Evaporator drain heater
EF1	Evaporator fan 1
EF2	Evaporator fan 2
EVM1	Electronic expansion valve 1
EVM2	Electronic expansion valve 2
F1	Main line fuse
F2	Main neutral fuse
F3	Line aux fuse
HMI	User interface
HMI cable	User interface cable connection
HPS1	High pressure switch 1
HPS2	High pressure switch 1

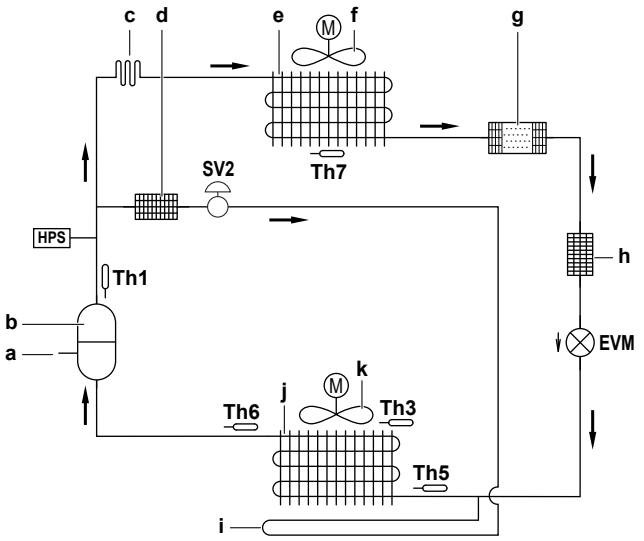
Symbol	Meaning
INV1	Inverter compressor 1
INV2	Inverter compressor 2
J21/1A	TH1-TH7 probes male connector
J21/1B	TH1-TH7 probes female connector
J21/2A	TH12-TH72 probes male connector
J21/2B	TH12-TH72 probes female connector
J22/1A	PWM inverter 1 male connector
J22/1B	PWM inverter 1 female connector
J22/2A	PWM inverter 2 male connector
J22/2B	PWM inverter 2 female connector
J23/1A	TH3-TH5-TH6 probes male connector
J23/1B	TH3-TH5-TH6 probes female connector
J23/2A	TH52-TH62 probes male connector
J23/2B	TH52-TH62 probes female connector
J24A	Room light + door switch male connector
J24B	Room light + door switch female connector
J27A	Drain heater male connector
J27B	Drain heater female connector
J29/1A	Supply inverter 1 male connector
J29/1B	Supply inverter 1 female connector
J29/2A	Supply inverter 2 male connector
J29/2B	Supply inverter 2 female connector
K1M	Drain heater relay
K2M	Drain heater relay
K3M	Compressor relay
RDH	Room door heater
RDS	Room door switch
RL	Room light
SV2A	Defrost solenoid valve 1
SV2B	Defrost solenoid valve 2
TH1	Discharge compressor probe
TH12	Discharge compressor probe
TH3	Suction air probe
TH5	Evaporator inlet probe
TH52	Evaporator inlet probe
TH6	Evaporator outlet probe
TH62	Evaporator outlet probe
TH7	Condensor probe
TH72	Condensor probe
X1M	Suppy cable terminal
X2M	Phase terminal
X3M	Neutral terminal
X4M	Output terminal
X5M	Output terminal
X6M	FBUS terminal
S1-EVD	Connector S1-EVD
S2-EVD	Connector S2-EVD
FT1	Three phase filter

10.2 Piping diagram

INFORMATION

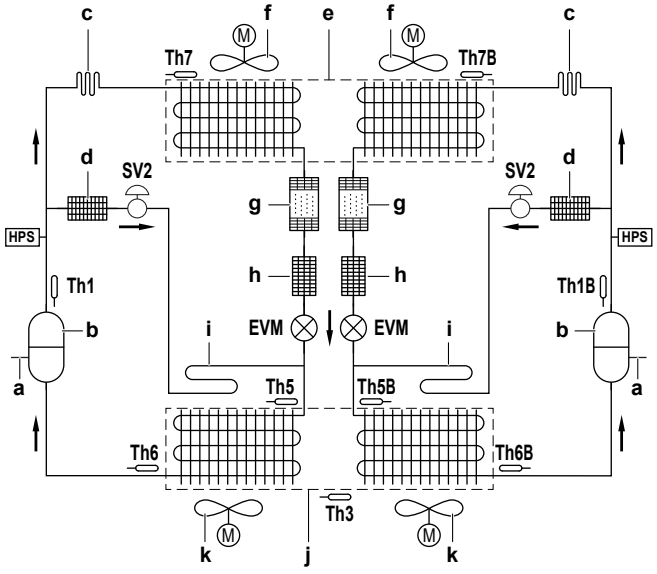
The diagrams shown in this manual may be incorrect due to changes/updates to the unit. Correct diagrams are supplied with the unit and can also be found in the technical data book.

LMSEY1A09+13



a Refrigerant charge pipe
b Compressor
c Drain evaporation piping
d Strainer (hot gas)
e Condenser
f Condenser fan
g Drier
h Strainer (main)
i Defrost coil (for drain pan)
j Evaporator
k Evaporator fan
HPS High pressure switch
SV2 Solenoid valve
EVM Expansion valve
Th1 Thermistor (discharge)
Th3 Thermistor (inlet air)
Th5 Thermistor (evaporator inlet)
Th6 Thermistor (evaporator outlet)
Th7 Thermistor (condenser)

LMSEY2A19+25



a Refrigerant charge pipe
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g Drier
h Strainer (main)
i Defrost coil (for drain pan)
j Evaporator
k Evaporator fan
HPS High pressure switch
SV2 Solenoid valve
EVM Expansion valve
Th1(B) Thermistor (discharge)
Th3 Thermistor (inlet air)
Th5(B) Thermistor (evaporator inlet)
Th6(B) Thermistor (evaporator outlet)
Th7(B) Thermistor (condenser)

10.3 Weight

Model	Type	Weight
LMSEY1A09AVM01	A	52 kg
LMSEY1A13AVM01		
LMSEY2A19AYE01	B	83.5 kg
LMSEY2A25AYE01		

WARNING

Make sure that the forklift, or any other lifting device used, can bear the weight of the unit.

11 Glossary

Dealer
Sales distributor for the product.

Authorised installer
Technical skilled person who is qualified to install the product.

User
Person who is owner of the product and/or operates the product.

Applicable legislation
All international, European, national and local directives, laws, regulations and/or codes that are relevant and applicable for a certain product or domain.

Service company
Qualified company which can perform or coordinate the required service to the product.

Installation manual
Instruction manual specified for a certain product or application, explaining how to install, configure and maintain it.

Operation manual
Instruction manual specified for a certain product or application, explaining how to operate it.

Maintenance instructions
Instruction manual specified for a certain product or application, which explains (if relevant) how to install, configure, operate and/or maintain the product or application.

Accessories
Labels, manuals, information sheets and equipment that are delivered with the product and that need to be installed according to the instructions in the accompanying documentation.

11 Glossary

Optional equipment

Equipment made or approved by Daikin that can be combined with the product according to the instructions in the accompanying documentation.

Field supply

Equipment NOT made by Daikin that can be combined with the product according to the instructions in the accompanying documentation.

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