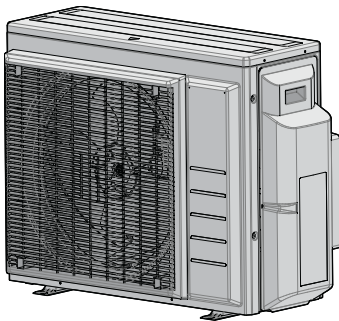




Installation manual

R32 Split series



3AMXM52N2V1B9
3AMXF52A2V1B9
3MXF52A2V1B9
3MXF68A2V1B9

Installation manual
R32 Split series

English

[illegible][illegible][illegible]

UKCA – Safety declaration of conformity

Daikin Industries Czech Republic s.r.o.

declares under its sole responsibility that the products to which this declaration relates:

3MXF52A2V1B9, 3AXMF52A2V1B9, 3AMXM52N2V1B9, 3MXF68A2V1B9,

are in conformity with the following directive(s) or regulation(s), provided that the products are used in accordance with our instructions:

- S.I. 2016/1105: Pressure Equipment (Safety) Regulations 2016**
- S.I. 2008/1597: Supply of Machinery (Safety) Regulations 2008***
- S.I. 2016/1101: Electrical Equipment (Safety) Regulations 2016
- S.I. 2016/1091: Electromagnetic Compatibility Regulations 2016*

as amended,

following the provisions of: BS EN 60335-2-40,

* as set out in <A> and judged positively by according to the Certificate <C>.

** as set out in the Technical Construction File <D> and judged positively by <E> (Applied module <F>). <G>: Risk category <H>. Also refer to next page.

<A>	DAIKIN.TCF.032E2/06-2020
	—
<C>	—
<D>	TCF-0242A-01
<E>	HPI-CEproof Ltd. (NB1521)
<F>	D1
<G>	—
<H>	II

*** DICz# is authorised to compile the Technical Construction File.

#DICz = Daikin Industries Czech Republic s.r.o.

continuation of previous page:

Design Specifications of the products to which this declaration relates:

Maximum allowable pressure (PS): <K> (bar)

Minimum/maximum allowable temperature (TS*):

* TSmin: Minimum temperature at low pressure side: <L> (°C)

* TSmax: Saturated temperature corresponding with the maximum allowable pressure (PS): <M> (°C)

Refrigerant: <N>

Setting of pressure safety device: <P> (bar)

Manufacturing number and manufacturing year: refer to model nameplate

Name and address of the Notified body that judged positively on compliance with the Pressure Equipment (Safety) Regulations: <Q>

<K>	PS	41.7 bar
<L>	TSmin	-35 °C
<M>	TSmax	63.8 °C
<N>		R32
<P>		41.7 bar

<Q>	HPI-CEproof Ltd. The Manor House Howbery Business Park Wallingford OX10 8BA United Kingdom
-----	---




Yasuto Hiraoka
Managing Director
Pilsen, 1st of June 2022

DAIKIN INDUSTRIES CZECH REPUBLIC s.r.o.
U Nové Hospody 1/1155, 301 00 Plzeň Skvrňany, Czech Republic

Table of contents

1	About the documentation	6
1.1	About this document.....	6
2	Specific installer safety instructions	6
3	About the box	8
3.1	Outdoor unit.....	8
3.1.1	To remove the accessories from the outdoor unit.....	8
4	Unit installation	8
4.1	Preparing the installation site	8
4.1.1	Installation site requirements of the outdoor unit	8
4.1.2	Additional installation site requirements of the outdoor unit in cold climates	9
4.2	Mounting the outdoor unit.....	9
4.2.1	To provide the installation structure	9
4.2.2	To install the outdoor unit.....	10
4.2.3	To provide drainage	10
5	Piping installation	10
5.1	Preparing refrigerant piping	10
5.1.1	Refrigerant piping requirements.....	10
5.1.2	Refrigerant piping insulation	10
5.1.3	Refrigerant piping length and height difference	11
5.2	Connecting the refrigerant piping	11
5.2.1	Connections between outdoor and indoor unit using reducers	11
5.2.2	To connect the refrigerant piping to the outdoor unit ..	12
5.3	Checking the refrigerant piping	12
5.3.1	To check for leaks.....	12
5.3.2	To perform vacuum drying.....	12
6	Charging refrigerant	13
6.1	About the refrigerant.....	13
6.2	To determine the additional refrigerant amount	13
6.3	To determine the complete recharge amount	13
6.4	To charge additional refrigerant	13
6.5	To fix the fluorinated greenhouse gases label.....	13
7	Electrical installation	14
7.1	Specifications of standard wiring components	14
7.2	To connect the electrical wiring to the outdoor unit	14
8	Finishing the outdoor unit installation	15
8.1	To finish the outdoor unit installation.....	15
9	Configuration	15
9.1	About standby electricity saving function	15
9.1.1	To turn ON standby electricity saving function.....	15
9.2	About priority room function	16
9.2.1	To set the priority room function	16
9.3	About night quiet mode	16
9.3.1	To turn ON the night quiet mode.....	16
9.4	About heat mode lock.....	16
9.4.1	To turn ON heat mode lock.....	16
9.5	About cool mode lock	16
9.5.1	To turn ON cool mode lock	16
10	Commissioning	17
10.1	Checklist before commissioning.....	17
10.2	Checklist during commissioning	17
10.3	Trial operation and testing.....	17
10.3.1	About wiring error check	17
10.3.2	To perform a test run	18
10.4	Starting up the outdoor unit.....	18
11	Maintenance and service	18
12	Disposal	18

13	Technical data	19
13.1	Wiring diagram	19
13.1.1	Unified wiring diagram legend.....	19
13.2	Piping diagram: Outdoor unit.....	20

1 About the documentation

1.1 About this document



WARNING

Make sure installation, servicing, maintenance, repair and applied materials follow the instructions from Daikin and, in addition, comply with applicable legislation and are performed by qualified persons only. In Europe and areas where IEC standards apply, EN/IEC 60335-2-40 is the applicable standard.

Target audience

Authorised installers



INFORMATION

This appliance is intended to be used by expert or trained users in shops, in light industry, and on farms, or for commercial and household use by lay persons.



INFORMATION

This document only describes installation instructions specific to the outdoor unit. For installation of the indoor unit (mounting the indoor unit, connecting the refrigerant piping to the indoor unit, connecting the electrical wiring to the indoor unit ...), see the installation manual of the indoor unit.

Documentation set

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

- **General safety precautions:**
 - Safety instructions that you **MUST** read before installing
 - Format: Paper (in the box of the outdoor unit)
- **Outdoor unit installation manual:**
 - Installation instructions
 - Format: Paper (in the box of the outdoor unit)
- **Installer reference guide:**
 - Preparation of the installation, reference data, ...
 - Format: Digital files on <https://www.daikin.eu>. Use the search function 🔍 to find your model.

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

The original documentation is written in English. All other languages are translations.

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).

2 Specific installer safety instructions

Always observe the following safety instructions and regulations.

Unit installation (see ["4 Unit installation" \[p 8\]](#))



WARNING

Installation shall be done by an installer, the choice of materials and installation shall comply with the applicable legislation. In Europe, EN378 is the applicable standard.

Installation site (see ["4.1 Preparing the installation site" \[p 8\]](#))



CAUTION

- Check if the installation location can support the unit's weight. Poor installation is hazardous. It can also cause vibrations or unusual operating noise.
- Provide sufficient service space.
- Do NOT install the unit so that it is in contact with a ceiling or a wall, as this may cause vibrations.



WARNING

The appliance shall be stored so as to prevent mechanical damage and in a well-ventilated room without continuously operating ignition sources (e.g. open flames, an operating gas appliance, or an operating electric heater). The room size shall be as specified in the General safety precaution.

Piping installation (see ["5 Piping installation" \[p 10\]](#))



CAUTION

Piping and joints of a split system shall be made with permanent joints when inside an occupied space except joints directly connecting the piping to the indoor units.



CAUTION

- No brazing or welding on site for units with R32 refrigerant charge during shipment.
- During installation of the refrigeration system, joining of parts with at least one part charged shall be performed taking into account the following requirements: inside occupied spaces non-permanent joints are NOT allowed for R32 refrigerant except for site made joints directly connecting the indoor unit to piping. Site made joints directly connecting piping to indoor units shall be of non-permanent type.



CAUTION

Do NOT connect the embedded branch piping and the outdoor unit when only carrying out piping work without connecting the indoor unit in order to add another indoor unit later.



WARNING

Connect the refrigerant piping securely before running the compressor. If the refrigerant piping is NOT connected and the stop valve is open when the compressor is run, air will be sucked in. This will cause abnormal pressure in the refrigeration cycle, which may result in equipment damage and even injury.



CAUTION

- Incomplete flaring may cause refrigerant gas leakage.
- Do NOT re-use flares. Use new flares to prevent refrigerant gas leakage.
- Use flare nuts that are included with the unit. Using different flare nuts may cause refrigerant gas leakage.



CAUTION

Do NOT open the valves before flaring is complete. This would cause refrigerant gas leakage.



DANGER: RISK OF EXPLOSION

Do NOT open the stop valves before the vacuum drying is finished.

Charging refrigerant (see ["6 Charging refrigerant" \[p 13\]](#))



WARNING

- The refrigerant inside the unit is mildly flammable, but normally does NOT leak. If the refrigerant leaks in the room and comes in contact with fire from a burner, a heater, or a cooker, this may result in fire, or the formation of a harmful gas.
- Turn OFF any combustible heating devices, ventilate the room, and contact the dealer where you purchased the unit.
- Do NOT use the unit until a service person confirms that the part from which the refrigerant leaked has been repaired.



WARNING

- Only use R32 as refrigerant. Other substances may cause explosions and accidents.
- R32 contains fluorinated greenhouse gases. Its global warming potential (GWP) value is 675. Do NOT vent these gases into the atmosphere.
- When charging refrigerant, ALWAYS use protective gloves and safety glasses.



WARNING

NEVER directly touch any accidental leaking refrigerant. This could result in severe wounds caused by frostbite.

Electrical installation (see ["7 Electrical installation" \[p 14\]](#))



WARNING

- All wiring MUST be performed by an authorised electrician and MUST comply with the applicable legislation.
- Make electrical connections to the fixed wiring.
- All components procured on-site and all electrical construction MUST comply with the applicable legislation.



WARNING

ALWAYS use multicore cable for power supply cables.



WARNING

Use an all-pole disconnection type breaker with at least 3 mm between the contact point gaps that provides full disconnection under overvoltage category III.



WARNING

If the supply cord is damaged, it MUST be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.



WARNING

Do NOT connect the power supply to the indoor unit. This could result in electrical shock or fire.



WARNING

- Do NOT use locally purchased electrical parts inside the product.
- Do NOT branch the power supply for the drain pump, etc. from the terminal block. This could result in electrical shock or fire.

3 About the box



WARNING

Keep the interconnection wiring away from copper pipes without thermal insulation as such pipes will be very hot.



DANGER: RISK OF ELECTROCUTION

All electrical parts (including thermistors) are powered by the power supply. Do NOT touch them with bare hands.



DANGER: RISK OF ELECTROCUTION

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.

Finishing the outdoor unit installation (see "8 Finishing the outdoor unit installation" [p 15])



DANGER: RISK OF ELECTROCUTION

- Make sure that the system is earthed properly.
- Turn OFF the power supply before servicing.
- Install the switch box cover before turning ON the power supply.

Commissioning (see "10 Commissioning" [p 17])



CAUTION

Do NOT perform the test operation while working on the indoor units.

When performing the test operation, NOT ONLY the outdoor unit, but the connected indoor unit will operate as well. Working on an indoor unit while performing a test operation is dangerous.



CAUTION

Do NOT insert fingers, rods or other objects into the air inlet or outlet. Do NOT remove the fan guard. When the fan is rotating at high speed, it will cause injury.

Maintenance and service (see "11 Maintenance and service" [p 18])



DANGER: RISK OF ELECTROCUTION



DANGER: RISK OF BURNING/SCALDING



WARNING

- Before carrying out any maintenance or repair activity, ALWAYS switch off the circuit breaker on the supply panel, remove the fuses or open the protection devices of the unit.
- Do NOT touch live parts for 10 minutes after the power supply is turned off because of high voltage risk.
- Please note that some sections of the electric component box are hot.
- Make sure you do NOT touch a conductive section.
- Do NOT rinse the unit. This may cause electric shocks or fire.



DANGER: RISK OF ELECTROCUTION

- Use this compressor on a grounded system only.
- Turn the power off before servicing the compressor.
- Reattach the switch box cover and service lid after servicing.



CAUTION

ALWAYS wear safety glasses and protective gloves.



DANGER: RISK OF EXPLOSION

- Use a pipe cutter to remove the compressor.
- Do NOT use the brazing torch.
- Use approved refrigerants and lubricants only.



DANGER: RISK OF BURNING/SCALDING

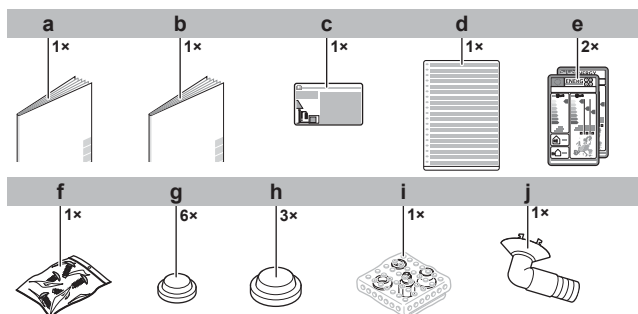
Do NOT touch the compressor with bare hands.

3 About the box

3.1 Outdoor unit

3.1.1 To remove the accessories from the outdoor unit

Make sure you have all following accessories delivered with the unit:



- a Outdoor unit installation manual
- b General safety precautions
- c Fluorinated greenhouse gases label
- d Multilingual fluorinated greenhouse gases label
- e Energy label
- f Screw bag. The screws will be used for fixing the electrical wire anchor bands.
- g Drain cap (small)
- h Drain cap (large)
- i Reducer assembly
- j Drain socket

4 Unit installation



WARNING

Installation shall be done by an installer, the choice of materials and installation shall comply with the applicable legislation. In Europe, EN378 is the applicable standard.

4.1 Preparing the installation site

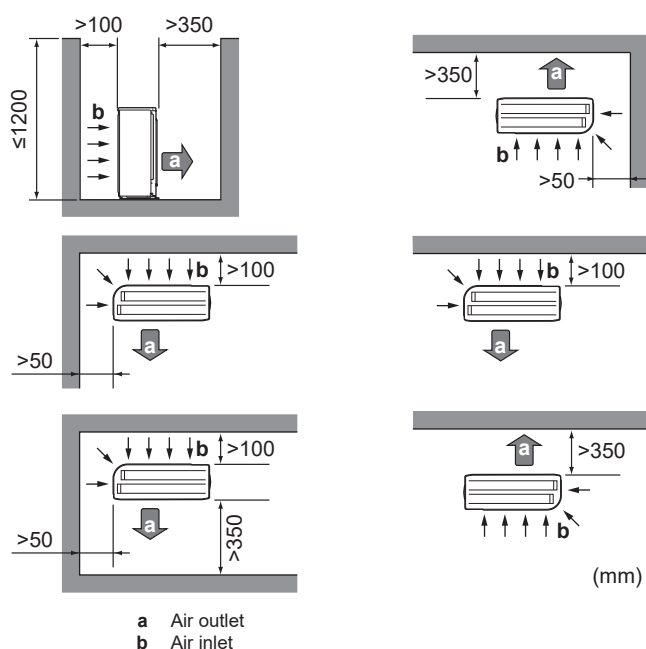


WARNING

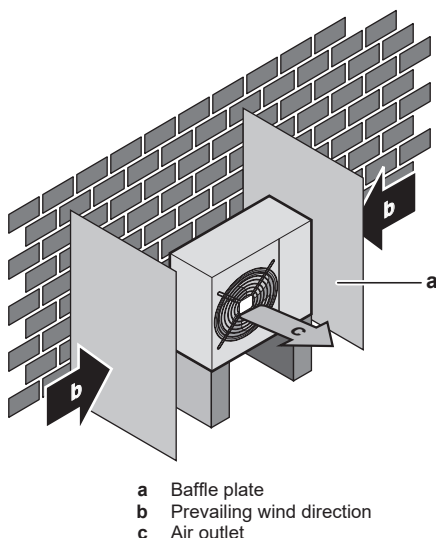
The appliance shall be stored so as to prevent mechanical damage and in a well-ventilated room without continuously operating ignition sources (e.g. open flames, an operating gas appliance, or an operating electric heater). The room size shall be as specified in the General safety precaution.

4.1.1 Installation site requirements of the outdoor unit

Mind the following spacing guidelines:



Allow 300 mm of work space below the ceiling surface and 250 mm for piping and electrical servicing.



Do NOT install the unit in sound sensitive areas (e.g. near a bedroom), so that the operation noise will cause no trouble.

Note: If the sound is measured under actual installation conditions, the measured value might be higher than the sound pressure level mentioned in "Sound spectrum" in the data book due to environmental noise and sound reflections.



INFORMATION

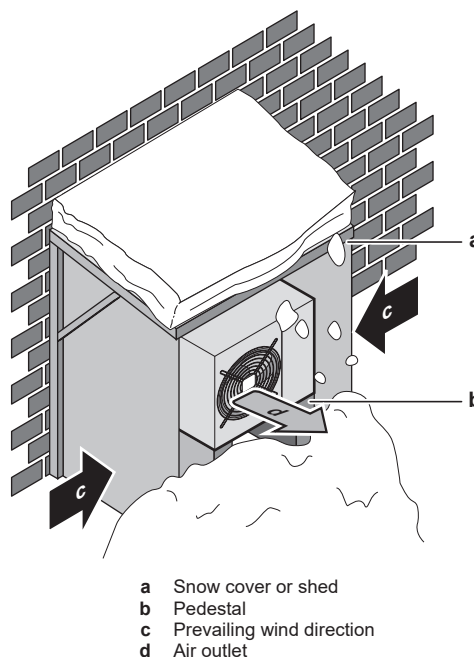
The sound pressure level is less than 70 dBA.

The outdoor unit is designed for outdoor installation only, and for ambient temperatures within the following ranges (unless otherwise specified in the operation manual of the connected indoor unit):

Cooling mode	Heating mode
-10~46°C DB	-15~24°C DB

4.1.2 Additional installation site requirements of the outdoor unit in cold climates

Protect the outdoor unit against direct snowfall and take care that the outdoor unit is NEVER snowed up.



It is recommended to provide at least 150 mm of free space below the unit (300 mm for heavy snowfall areas). Additionally, make sure the unit is positioned at least 100 mm above the maximum expected level of snow. If necessary, construct a pedestal. See "4.2 Mounting the outdoor unit" [p. 9] for more details.

In heavy snowfall areas it is very important to select an installation site where the snow will NOT affect the unit. If lateral snowfall is possible, make sure that the heat exchanger coil is NOT affected by the snow. If necessary, install a snow cover or shed and a pedestal.

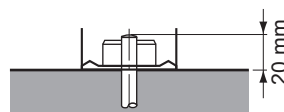
4.2 Mounting the outdoor unit

4.2.1 To provide the installation structure

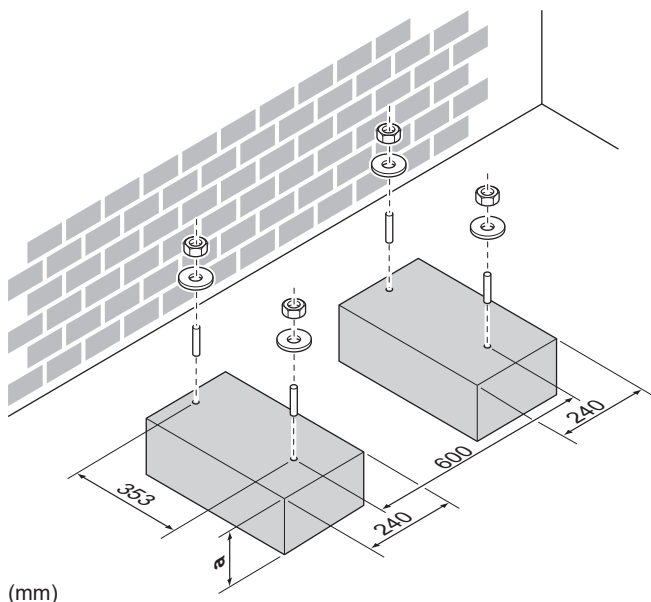
Use a vibration-proof rubber (field supply) in cases where vibrations may be transmitted to the building.

The unit may be installed directly on a concrete veranda or another solid surface as long as it provides proper drainage.

Prepare 4 sets of M8 or M10 anchor bolts, nuts and washers (field supply).

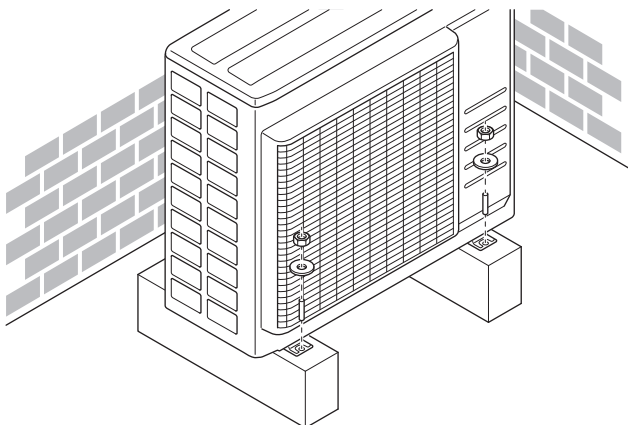


5 Piping installation



a 100 mm above expected level of snow

4.2.2 To install the outdoor unit



4.2.3 To provide drainage



NOTICE

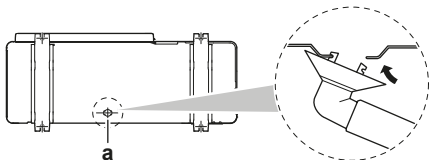
In cold areas, do NOT use a drain socket, hose and caps (large, small) with the outdoor unit. Take adequate measures so that the evacuated condensate CANNOT freeze.



NOTICE

If the drain holes of the outdoor unit are blocked up by a mounting base or floor surface, place additional foot bases ≤30 mm under the outdoor unit's feet.

- Use a drain socket for drainage if necessary.

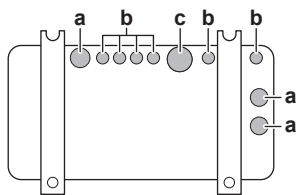


a Drain hole

To close the drain holes and attach the drain socket

- Install drain caps (accessory f) and (accessory g). Make sure the edges of the drain caps close off the holes completely.

- Install the drain socket.



- a Drain hole. Install a drain cap (large).
- b Drain hole. Install a drain cap (small).
- c Drain hole for drain socket

5 Piping installation

5.1 Preparing refrigerant piping

5.1.1 Refrigerant piping requirements



CAUTION

Piping and joints of a split system shall be made with permanent joints when inside an occupied space except joints directly connecting the piping to the indoor units.



NOTICE

The piping and other pressure-containing parts shall be suitable for refrigerant. Use phosphoric acid deoxidised seamless copper for refrigerant piping.

- Foreign materials inside pipes (including oils for fabrication) must be ≤30 mg/10 m.

Refrigerant piping diameter

Liquid piping	Gas piping
3× Ø6.4 mm (1/4")	1× Ø9.5 mm (3/8")
	2× Ø12.7 mm (1/2")



INFORMATION

Usage of reducers might be required based on the indoor unit. See "5.2.1 Connections between outdoor and indoor unit using reducers" [p 11] for more information.

Refrigerant piping material

- Piping material:** phosphoric acid deoxidised seamless copper
- Flare connections:** Only use annealed material.
- Piping temper grade and thickness:**

Outer diameter (Ø)	Temper grade	Thickness (t) ^(a)	
6.4 mm (1/4")	Annealed (O)	≥0.8 mm	
9.5 mm (3/8")			
12.7 mm (1/2")			

^(a) Depending on the applicable legislation and the maximum working pressure of the unit (see "PS High" on the unit name plate), larger piping thickness might be required.

5.1.2 Refrigerant piping insulation

- Use polyethylene foam as insulation material:
 - with a heat transfer rate between 0.041 and 0.052 W/mK (0.035 and 0.045 kcal/mh°C)
 - with a heat resistance of at least 120°C
- Insulation thickness

Pipe outer diameter (Ø _p)	Insulation inner diameter (Ø _i)	Insulation thickness (t)
6.4 mm (1/4")	8~10 mm	≥10 mm
9.5 mm (3/8")	12~15 mm	≥13 mm
12.7 mm (1/2")	14~16 mm	≥13 mm



If the temperature is higher than 30°C and the humidity is higher than RH 80%, the thickness of the insulation materials should be at least 20 mm to prevent condensation on the surface of the insulation.

Use separate thermal insulation pipes for the gas and liquid refrigerant piping.

5.1.3 Refrigerant piping length and height difference



INFORMATION

For the Hybrid for Multi application and the DHW generator for Multi, see the indoor unit installation manual for the maximum allowable refrigerant piping length and height difference.

The shorter the refrigerant piping, the better the performance of the system.

The piping length and height differences must comply with the following requirements.

Shortest allowable length per room is 3 m.

Refrigerant piping length to each indoor unit	Refrigerant piping total length
≤25 m	≤50 m

	Height difference outdoor-indoor	Height difference indoor-indoor
Outdoor unit installed higher than indoor unit	≤15 m	≤7.5 m
Outdoor unit installed lower than at least 1 indoor unit	≤7.5 m	≤15 m

5.2 Connecting the refrigerant piping



DANGER: RISK OF BURNING/SCALDING



CAUTION

- No brazing or welding on site for units with R32 refrigerant charge during shipment.
- During installation of the refrigeration system, joining of parts with at least one part charged shall be performed taking into account the following requirements: inside occupied spaces non-permanent joints are NOT allowed for R32 refrigerant except for site made joints directly connecting the indoor unit to piping. Site made joints directly connecting piping to indoor units shall be of non-permanent type.



CAUTION

Do NOT connect the embedded branch piping and the outdoor unit when only carrying out piping work without connecting the indoor unit in order to add another indoor unit later.

5.2.1 Connections between outdoor and indoor unit using reducers



INFORMATION

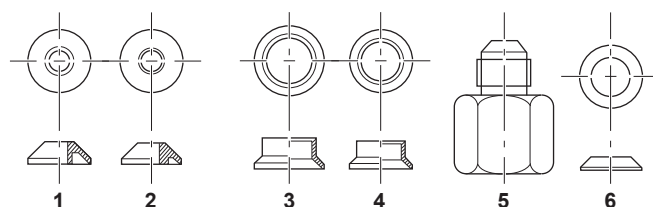
- For the DHW generator for Multi use the same reducer as for the 20 class indoor unit.
- For the Hybrid for Multi, see the indoor unit installation manual for the capacity class and applicable reducer.

Total indoor unit capacity class that can be connected to this outdoor unit:

Total indoor unit capacity class that can be connected to this outdoor unit
≤9.0 kW

Port	Class	Reducer
3AMXM52		
A (Ø9.5 mm)	15, 20, 25, 35, (42) ^(a)	—
B + C (Ø12.7mm)	15, 20, 25, 35	2+4
	42, 50	—
3MXF52, 3AMXF52, 3MXF68		
A (Ø9.5 mm)	20, 25, 35	—
B + C (Ø12.7mm)	20, 25, 35	2+4

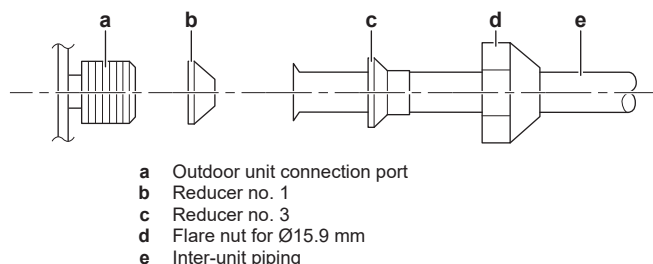
^(a) Only in case of connection with FTXM42R.



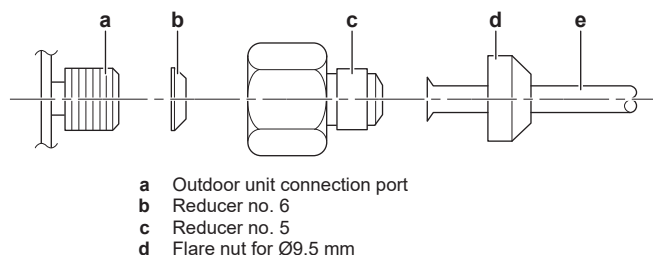
Reducer type	Connection
1	Ø15.9 mm → Ø12.7 mm
2	Ø12.7 mm → Ø9.5 mm
3	Ø15.9 mm → Ø12.7 mm
4	Ø12.7 mm → Ø9.5 mm
5	Ø15.9 mm → Ø9.5 mm
6	Ø15.9 mm → Ø9.5 mm

Connection examples:

- Connecting a Ø12.7 mm pipe to a Ø15.9 mm gas pipe connection port



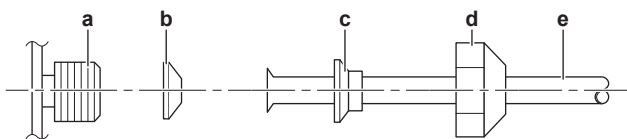
- Connecting a Ø9.5 mm pipe to a Ø15.9 mm gas pipe connection port



5 Piping installation

e Inter-unit piping

- Connecting a Ø9.5 mm pipe to a Ø12.7 mm gas pipe connection port



- a Outdoor unit connection port
- b Reducer no. 2
- c Reducer no. 4
- d Flare nut for Ø12.7 mm
- e Inter-unit piping

Coat the threaded connection port of the outdoor unit where the flare nut comes in with refrigeration oil.

Flare nut for (mm)	Tightening torque (N·m)
Ø9.5	33~39
Ø12.7	50~60
Ø15.9	62~75



NOTICE

Use an appropriate wrench to avoid damaging the connection thread by overtightening the flare nut. Be careful NOT to overtighten the nut, or the smaller pipe may be damaged (about 2/3-1× the normal torque).

5.2.2 To connect the refrigerant piping to the outdoor unit

- Piping length.** Keep field piping as short as possible.
- Piping protection.** Protect the field piping against physical damage.



WARNING

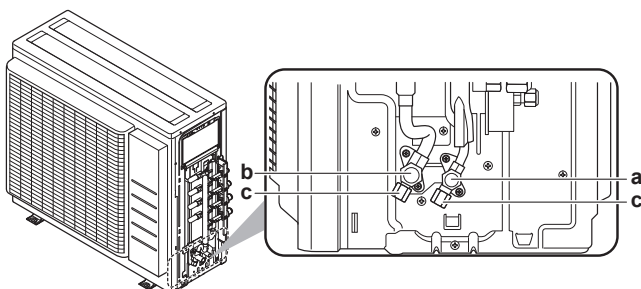
Connect the refrigerant piping securely before running the compressor. If the refrigerant piping is NOT connected and the stop valve is open when the compressor is run, air will be sucked in. This will cause abnormal pressure in the refrigeration cycle, which may result in equipment damage and even injury.



NOTICE

- Use the flare nut fixed to the main unit.
- To prevent gas leakage, apply refrigeration oil only to the inside of the flare. Use refrigeration oil for R32 (FW68DA).
- Do NOT reuse joints.

- 1 Connect the liquid refrigerant connection from the indoor unit to the liquid stop valve of the outdoor unit.



- a Liquid stop valve
- b Gas stop valve
- c Service port

- 2 Connect the gas refrigerant connection from the indoor unit to the gas stop valve of the outdoor unit.



NOTICE

It is recommended that the refrigerant piping between indoor and outdoor unit is installed in a ducting or the refrigerant piping is wrapped with finishing tape.

5.3 Checking the refrigerant piping

5.3.1 To check for leaks



NOTICE

Do NOT exceed the unit's maximum working pressure (see "PS High" on the unit name plate).



NOTICE

ALWAYS use a recommended bubble test solution from your wholesaler.

NEVER use soap water:

- Soap water may cause cracking of components, such as flare nuts or stop valve caps.
- Soap water may contain salt, which absorbs moisture that will freeze when the piping gets cold.
- Soap water contains ammonia which may lead to corrosion of flared joints (between the brass flare nut and the copper flare).

- 1 Charge the system with nitrogen gas up to a gauge pressure of at least 200 kPa (2 bar). It is recommended to pressurize to 3000 kPa (30 bar) in order to detect small leaks.
- 2 Check for leaks by applying the bubble test solution to all connections.
- 3 Discharge all nitrogen gas.

5.3.2 To perform vacuum drying



DANGER: RISK OF EXPLOSION

Do NOT open the stop valves before the vacuum drying is finished.

- 1 Vacuum the system until the pressure on the manifold indicates -0.1 MPa (-1 bar).
- 2 Leave as is for 4-5 minutes and check the pressure:

If the pressure...	Then...
Does not change	There is no moisture in the system. This procedure is finished.
Increases	There is moisture in the system. Go to the next step.

- 3 Vacuum the system for at least 2 hours to a manifold pressure of -0.1 MPa (-1 bar).
- 4 After turning the pump OFF, check the pressure for at least 1 hour.
- 5 If you do NOT reach the target vacuum or CANNOT maintain the vacuum for 1 hour, do the following:
 - Check for leaks again.
 - Perform vacuum drying again.



NOTICE

Be sure to open the gas stop valve after piping installation and vacuuming. Running the system with the valve closed, the compressor may break down.

6 Charging refrigerant

6.1 About the refrigerant

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

Refrigerant type: R32

Global warming potential (GWP) value: 675

Periodical inspections for refrigerant leaks may be required depending on the applicable legislation. Contact your installer for more information.



WARNING: MILDLY FLAMMABLE MATERIAL

The refrigerant inside this unit is mildly flammable.



WARNING

- The refrigerant inside the unit is mildly flammable, but normally does NOT leak. If the refrigerant leaks in the room and comes in contact with fire from a burner, a heater, or a cooker, this may result in fire, or the formation of a harmful gas.
- Turn OFF any combustible heating devices, ventilate the room, and contact the dealer where you purchased the unit.
- Do NOT use the unit until a service person confirms that the part from which the refrigerant leaked has been repaired.



WARNING

The appliance shall be stored so as to prevent mechanical damage and in a well-ventilated room without continuously operating ignition sources (e.g. open flames, an operating gas appliance, or an operating electric heater). The room size shall be as specified in the General safety precaution.



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.



WARNING

NEVER directly touch any accidental leaking refrigerant. This could result in severe wounds caused by frostbite.



NOTICE

Applicable legislation on **fluorinated greenhouse gases** requires that the refrigerant charge of the unit is indicated both in weight and CO₂ equivalent.

Formula to calculate the quantity in CO₂ equivalent tonnes: GWP value of the refrigerant × total refrigerant charge [in kg] / 1000

Contact your installer for more information.

6.2 To determine the additional refrigerant amount

If the total liquid piping length is...	Then...
≤30 m	Do NOT add additional refrigerant.

If the total liquid piping length is...	Then...
>30 m	$R = (\text{total length (m) of liquid piping} - 30 \text{ m}) \times 0.020$ $R = \text{Additional charge (kg) (rounded in units of 0.1 kg)}$



INFORMATION

Piping length is the one-way length of liquid piping.

Maximum allowable refrigerant charge amount	
3AMXM52, 3MXF52, 3AMXF52	2.2 kg
3MXF68	2.4 kg

6.3 To determine the complete recharge amount



INFORMATION

If a complete recharge is necessary, the total refrigerant charge is: the factory refrigerant charge (see unit name plate) + the determined additional amount.

6.4 To charge additional refrigerant



WARNING

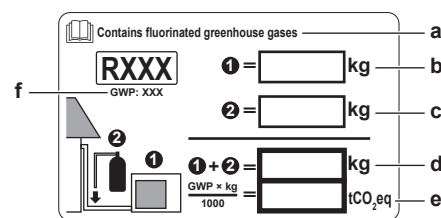
- Only use R32 as refrigerant. Other substances may cause explosions and accidents.
- R32 contains fluorinated greenhouse gases. Its global warming potential (GWP) value is 675. Do NOT vent these gases into the atmosphere.
- When charging refrigerant, ALWAYS use protective gloves and safety glasses.

Prerequisite: Before charging refrigerant, make sure the refrigerant piping is connected and checked (leak test and vacuum drying).

- 1 Connect the refrigerant cylinder to the service port.
- 2 Charge the additional refrigerant amount.
- 3 Open the gas stop valve.

6.5 To fix the fluorinated greenhouse gases label

- 1 Fill in the label as follows:



- If a multilingual fluorinated greenhouse gases label is delivered with the unit (see accessories), peel off the applicable language and stick it on top of a.
- Factory refrigerant charge: see unit name plate
- Additional refrigerant amount charged
- Total refrigerant charge
- Quantity of fluorinated greenhouse gases** of the total refrigerant charge expressed as tonnes CO₂ equivalent.
- GWP = Global warming potential

7 Electrical installation



NOTICE

Applicable legislation on **fluorinated greenhouse gases** requires that the refrigerant charge of the unit is indicated both in weight and CO₂ equivalent.

Formula to calculate the quantity in CO₂ equivalent tonnes: GWP value of the refrigerant × total refrigerant charge [in kg] / 1000

Use the GWP value mentioned on the refrigerant charge label.

- Fix the label on the inside of the outdoor unit near the gas and liquid stop valves.

7 Electrical installation



DANGER: RISK OF ELECTROCUTION



WARNING

ALWAYS use multicore cable for power supply cables.



WARNING

Use an all-pole disconnection type breaker with at least 3 mm between the contact point gaps that provides full disconnection under overvoltage category III.



WARNING

If the supply cord is damaged, it MUST be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.



WARNING

Do NOT connect the power supply to the indoor unit. This could result in electrical shock or fire.



WARNING

- Do NOT use locally purchased electrical parts inside the product.
- Do NOT branch the power supply for the drain pump, etc. from the terminal block. This could result in electrical shock or fire.



WARNING

Keep the interconnection wiring away from copper pipes without thermal insulation as such pipes will be very hot.



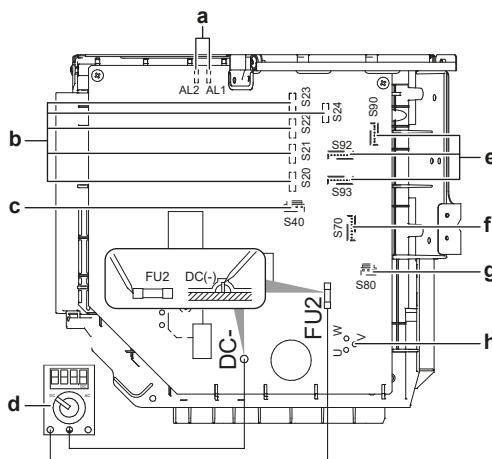
DANGER: RISK OF ELECTROCUTION

All electrical parts (including thermistors) are powered by the power supply. Do NOT touch them with bare hands.



DANGER: RISK OF ELECTROCUTION

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.



- a AL1, AL2 - solenoid valve lead wire connector*
- b S20~24 - electronic expansion valve coil lead wire connector (room A, B, C, D, E)*
- c S40 - thermal overload relay lead wire and high pressure switch connector*
- d Multimeter (DC voltage range)
- e S90~93 - thermistor lead wire connector
- f S70 - fan motor lead wire connector
- g S80 - 4-way valve lead wire connector
- h Compressor lead wire connector

*May differ depending on the model.

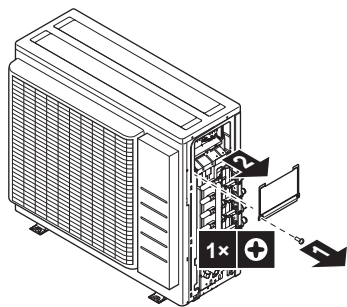
7.1 Specifications of standard wiring components

Component		
Power supply cable	Voltage	220~240 V
	Phase	1~
	Frequency	50 Hz
	Wire type	3- core cable 2.5 mm ² H05RN-F (60245 IEC 57) H07RN-F (60245 IEC 66) 3- core cable 4.0 mm ² H07RN-F (60245 IEC 66)
Interconnection cable (indoor↔outdoor)		4-core cable 1.5 mm ² or 2.5 mm ² and applicable for 220~240 V H05RN-F (60245 IEC 57)
Recommended circuit breaker		20 A
Residual current device		MUST comply with applicable legislation

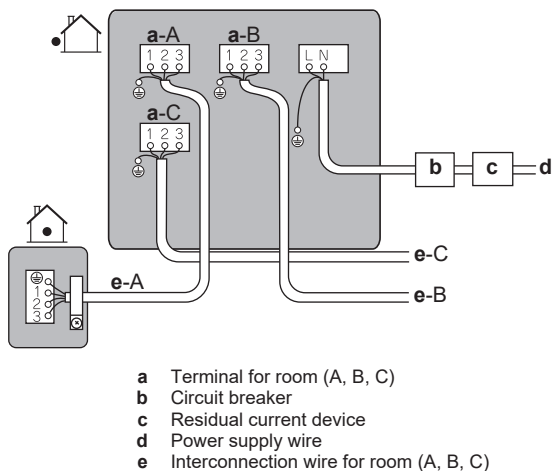
Electrical equipment must comply with EN/IEC 61000-3-12, the European/International Technical Standard setting the limits for harmonic currents produced by equipment connected to public low-voltage systems with input current >16 A and ≤75 A per phase.

7.2 To connect the electrical wiring to the outdoor unit

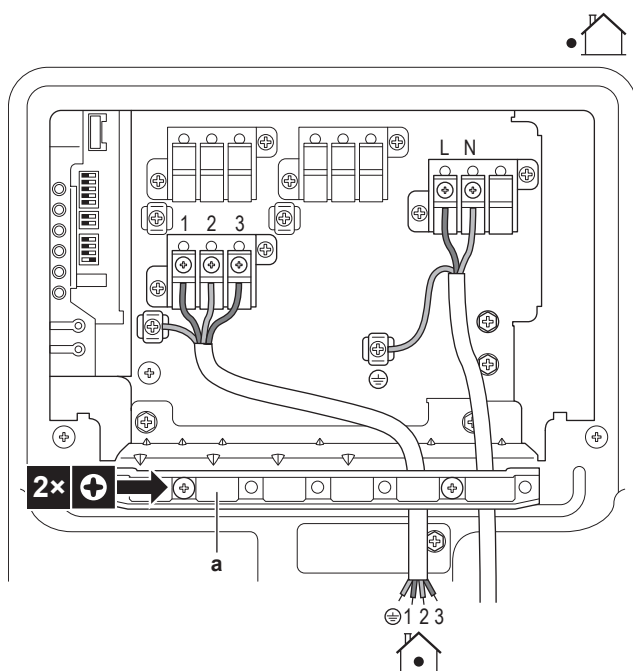
- Remove the switch box cover (1 screw).



- 2 Connect the wires between the indoor and outdoor units so that the terminal numbers match. Make sure to match the symbols for piping and wiring.
- 3 Make sure to connect correct wiring to correct room.



- 4 Tighten the terminal screws securely using a Philips screwdriver.
- 5 Check that the wires do not disconnect by pulling them lightly.
- 6 Firmly secure the wire retainer to avoid external stress on wire terminations.
- 7 Pass the wiring through the cutout on the bottom of the protection plate.
- 8 Make sure the electrical wiring does not contact with the gas piping.



a Wire retainer

- 9 Reattach the switch box cover and the service cover.

8 Finishing the outdoor unit installation

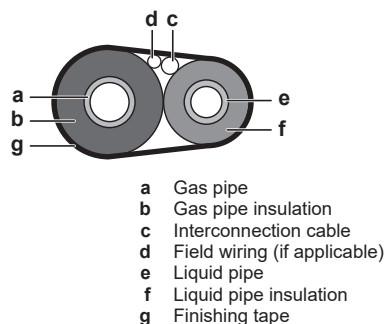
8.1 To finish the outdoor unit installation



DANGER: RISK OF ELECTROCUTION

- Make sure that the system is earthed properly.
- Turn OFF the power supply before servicing.
- Install the switch box cover before turning ON the power supply.

- 1 Insulate and fix the refrigerant piping and cables as follows:



- 2 Install the service cover.

9 Configuration

9.1 About standby electricity saving function

The standby electricity saving function:

- turns OFF the power supply to the outdoor unit and,
- turns ON the standby electricity saving mode on the indoor unit.

The standby electricity saving function works with following units:

3AMXM52	FTXM, FTXP, FTXJ, FVXM

If another indoor unit is used, the connector for standby electric saving MUST be plugged in.

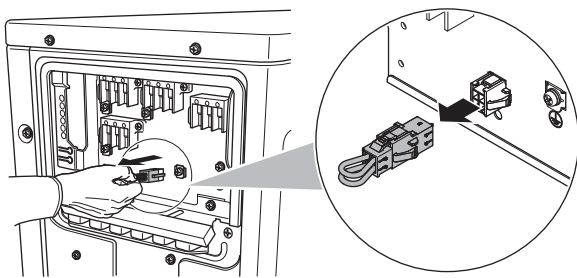
The standby electricity saving function is turned OFF before shipping.

9.1.1 To turn ON standby electricity saving function

Prerequisite: The main power supply MUST be turned OFF.

- 1 Remove the service cover.
- 2 Disconnect the selective standby electricity saving connector.

9 Configuration



- 3 Turn ON the main power supply.

9.2 About priority room function

i INFORMATION

- The priority room function requires initial settings to be made during the installation of the unit. Ask the customer in which rooms he plans to use this function and make the necessary settings during installation.
- The priority room setting is only applicable for an air conditioner indoor unit and only one room can be set.

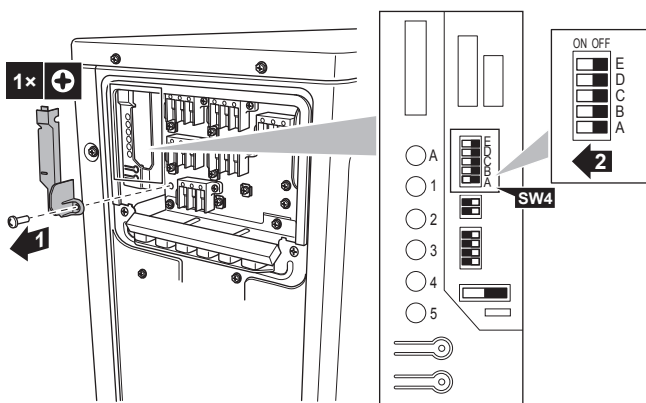
The indoor unit for which the priority room setting is applied takes priority in the following cases:

- **Operation mode priority:** If the priority room function is set on an indoor unit, all other indoor units enter the standby mode.
- **Priority during high-power operation:** If the indoor unit on which the priority room function is set operates at high power, the other indoor units will run with reduced capabilities.
- **Quiet operation priority:** If the indoor unit on which the priority room function is set to quiet operation, the outdoor unit will also run quietly.

Ask the customer in which rooms he plans to use this function and make the necessary settings during installation. Setting it in the guest rooms is convenient.

9.2.1 To set the priority room function

- 1 Remove the switch cover on the service PCB.
- 2 Set the switch (SW4) for the indoor unit for which you want to activate the priority room function to ON.



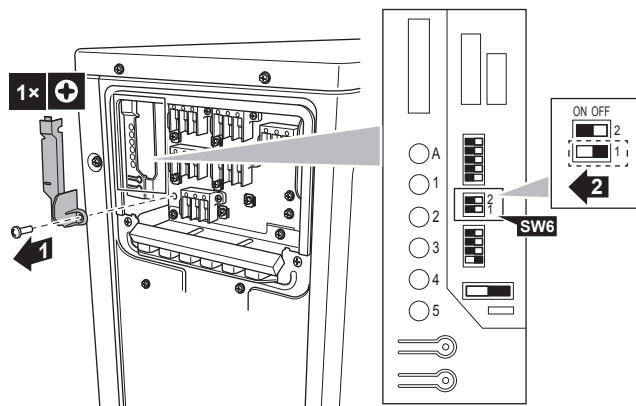
- 3 Reset the power.

9.3 About night quiet mode

The night quiet mode function makes the outdoor unit run more quietly at nighttime. This will reduce the cooling capacity of the unit. Explain Night quiet mode to the customer and confirm if customer wants to use this mode.

9.3.1 To turn ON the night quiet mode

- 1 Remove the switch cover on the service PCB.



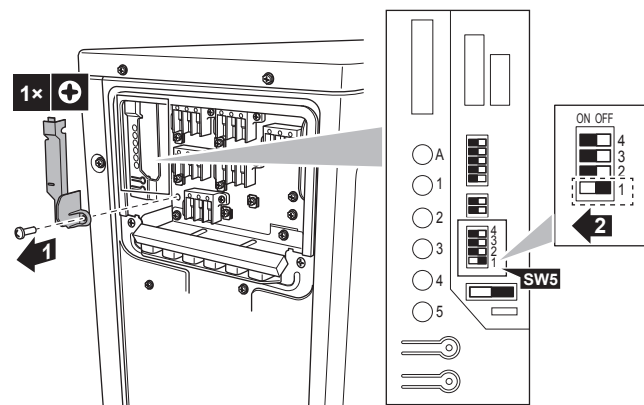
- 2 Set the night quiet mode switch (SW6-1) to ON.

9.4 About heat mode lock

Heat mode lock limits the unit to heat operation.

9.4.1 To turn ON heat mode lock

- 1 Remove the switch cover on the service PCB.
- 2 Set the heat mode lock switch (SW5-1) to ON.



9.5 About cool mode lock

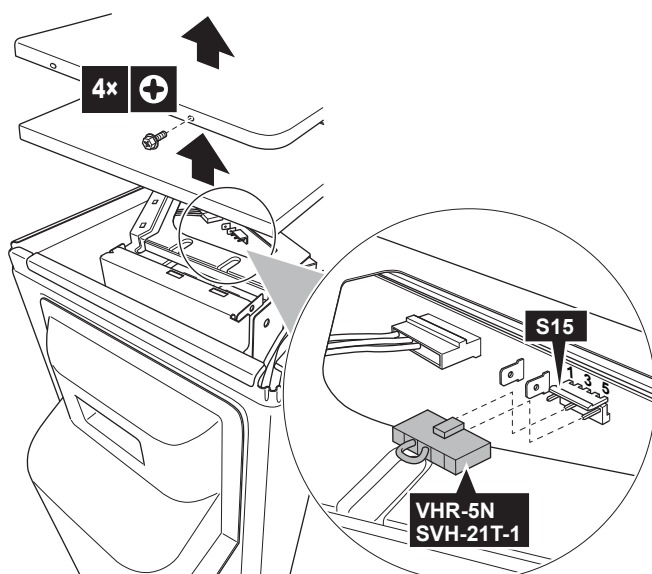
Cool mode lock limits the unit to cool operation. Forced operation remains possible in cool mode.

Specifications for the connector housing and pins: ST products, housing VHR-5N, pin SVH-21T-1,1

When cool mode lock is used in combination with the Hybrid for Multi, these units will NOT operate by the heat pump.

9.5.1 To turn ON cool mode lock

- 1 Short-circuit pins 3 and 5 of connector S15.



10 Commissioning



NOTICE

General commissioning checklist. Next to the commissioning instructions in this chapter, a general commissioning checklist is also available on the Daikin Business Portal (authentication required).

The general commissioning checklist is complementary to the instructions in this chapter and can be used as a guideline and reporting template during commissioning and hand-over to the user.



NOTICE

ALWAYS operate the unit with thermistors and/or pressure sensors/switches. If NOT, burning of the compressor might be the result.

10.1 Checklist before commissioning

- 1 After the installation of the unit, check the items listed below.
- 2 Close the unit.
- 3 Power up the unit.

☐	The indoor unit is properly mounted.
☐	The outdoor unit is properly mounted.
☐	The system is properly earthed and the earth terminals are tightened.
☐	The power supply voltage matches the voltage on the identification label of the unit.
☐	There are NO loose connections or damaged electrical components in the switch box.
☐	There are NO damaged components or squeezed pipes on the inside of the indoor and outdoor units.
☐	There are NO refrigerant leaks .
☐	The refrigerant pipes (gas and liquid) are thermally insulated.
☐	The correct pipe size is installed and the pipes are properly insulated.
☐	The stop valves (gas and liquid) on the outdoor unit are fully open.

☐	Drainage Make sure drainage flows smoothly. Possible consequence: Condensate water might drip.
☐	The indoor unit receives the signals of the user interface .
☐	The specified wires are used for the interconnection cable .
☐	The fuses, circuit breakers , or locally installed protection devices are installed according to this document, and have NOT been bypassed.
☐	Check if marks (room A~C) on the wiring and piping match for each indoor unit.
☐	Check if the priority room setting is set for 2 or more rooms. Keep in mind that the DHW generator for Multi or the Hybrid for Multi shall not be selected as the priority room.

10.2 Checklist during commissioning

☐	To perform a wiring check .
☐	To perform an air purge .
☐	To perform a test run .

10.3 Trial operation and testing

For the Hybrid for Multi, certain precautions are required before using this function. For more information, see the indoor unit installation manual and/or the indoor installer reference guide.

☐	Before starting the test run, measure the voltage at the primary side of the safety breaker .
☐	The piping and wiring work match.
☐	The stop valves (gas and liquid) on the outdoor unit are fully open.

Initialization of the Multi system can take several minutes depending on the number of indoor units and options used.

10.3.1 About wiring error check

The wiring error check function will check and automatically correct any wiring errors. This is useful for checking wiring that CANNOT be checked directly, such as underground wiring.

This function CANNOT be used within 3 minutes after activating the safety breaker or when the outside air temperature is $\leq 5^{\circ}\text{C}$.

To perform a wiring error check

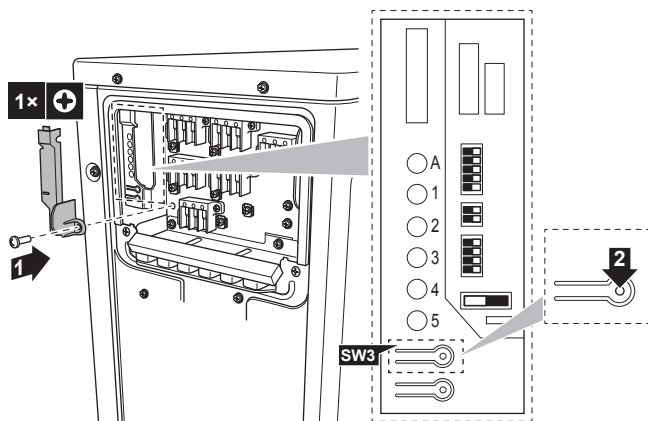


INFORMATION

- You only have to perform a wiring error check if you are not sure that the electrical wiring and piping is connected correctly.
- If you perform a wiring error check, the hybrid for multi indoor unit will not operate by heat pump for 72 hours. During this time, the gas boiler will take over the hybrid operation.

- 1 Remove the service PCB switch cover.

11 Maintenance and service



- 2 Press shortly the wiring error check switch (SW3) on the outdoor unit service PCB.

Result: The service monitor LEDs indicate whether correction is possible or not. For details about how to read the LED display, refer to the service manual.

Result: Wiring errors will be corrected after 15-20 minutes. If automatic correction is not possible, check the indoor unit wiring and piping in the usual way.



INFORMATION

- The number of LEDs displayed depends on the number of rooms.
- The wiring error check function will NOT work if outside temperature is $\leq 5^{\circ}\text{C}$.
- After wiring error check operation is completed, LED indication will continue until normal operation starts.
- Follow the product diagnosis procedures. For details of product error diagnosis refer to service manual.

Status of LEDs:

- All LEDs flash: automatic correction is NOT possible.
- LEDs flash alternately: automatic correction is completed.
- One or more LEDs are permanently on: abnormal stop (follow the diagnosis procedure on the back of the right side plate and refer to service manual).

10.3.2 To perform a test run

Prerequisite: Power supply MUST be in the specified range.

Prerequisite: Test run operation may be done in cooling or heating mode.

Prerequisite: Test run should be done in accordance with the operation manual of the indoor unit to make sure that all functions and parts are working properly.

- 1 In cooling mode, select the lowest programmable temperature. In heating mode, select the highest programmable temperature.
- 2 Measure the temperature at the indoor unit inlet and outlet after running the unit for about 20 minutes. The difference should be more than 8°C (cooling) or 20°C (heating).
- 3 First check operation of each unit individually, then check simultaneous operation of all indoor units. Check both heating and cooling operation.
- 4 When test run is finished, set the temperature to a normal level. In cooling mode: $26\sim 28^{\circ}\text{C}$, in heating mode: $20\sim 24^{\circ}\text{C}$.



INFORMATION

- Test run can be disabled if necessary.
- After the unit is turned OFF, it cannot be started again for 3 minutes.
- When the test run is started in the heat mode right after turning the safety breaker on, in some cases no air will be output for about 15 minutes in order to protect the unit.
- Operate only air conditioner during test run. Do NOT operate the Hybrid for Multi or the DHW generator during test run.
- During cooling operation, frost may form on the gas stop valve or other parts. This is normal.



INFORMATION

- Even if the unit is turned OFF, it consumes electricity.
- When the power turns back on after a power break, the previously selected mode will be resumed.

10.4 Starting up the outdoor unit

See the indoor unit installation manual for configuration and commissioning of the system.

11 Maintenance and service



NOTICE

General maintenance/inspection checklist. Next to the maintenance instructions in this chapter, a general maintenance/inspection checklist is also available on the Daikin Business Portal (authentication required).

The general maintenance/inspection checklist is complementary to the instructions in this chapter and can be used as a guideline and reporting template during maintenance.



NOTICE

Maintenance MUST be done by an authorised installer or service agent.

We recommend performing maintenance at least once a year. However, applicable legislation might require shorter maintenance intervals.



NOTICE

Applicable legislation on **fluorinated greenhouse gases** requires that the refrigerant charge of the unit is indicated both in weight and CO_2 equivalent.

Formula to calculate the quantity in CO_2 equivalent tonnes: $\text{GWP value of the refrigerant} \times \text{total refrigerant charge [in kg]} / 1000$

12 Disposal



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. Units MUST be treated at a specialised treatment facility for reuse, recycling and recovery.

13 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).

13.1 Wiring diagram

13.1.1 Unified 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		Protective earth
	Connection		Protective earth (screw)
	Connector		Rectifier
	Earth		Relay connector
	Field wiring		Short-circuit connector
	Fuse		Terminal
	Indoor unit		Terminal strip
	Outdoor unit		Wire clamp
	Residual current device		

Symbol	Colour	Symbol	Colour
BLK	Black	ORG	Orange
BLU	Blue	PNK	Pink
BRN	Brown	PRP, PPL	Purple
GRN	Green	RED	Red
GRY	Grey	WHT	White
SKY BLU	Sky blue	YLW	Yellow

Symbol	Meaning
A*P	Printed circuit board
BS*	Pushbutton ON/OFF, operation switch
BZ, H*O	Buzzer
C*	Capacitor
AC*, CN*, E*, HA*, HE*, HL*, HN*, HR*, MR*_A, MR*_B, S*, U, V, W, X*A, K*R_*, NE	Connection, connector
D*, V*D	Diode
DB*	Diode bridge
DS*	DIP switch
E*H	Heater
FU*, F*U, (for characteristics, refer to PCB inside your unit)	Fuse
FG*	Connector (frame ground)
H*	Harness
H*P, LED*, V*L	Pilot lamp, light emitting diode

Symbol	Meaning
HAP	Light emitting diode (service monitor green)
HIGH VOLTAGE	High voltage
IES	Intelligent eye sensor
IPM*	Intelligent power module
K*R, KCR, KFR, KHuR, K*M	Magnetic relay
L	Live
L*	Coil
L*R	Reactor
M*	Stepper motor
M*C	Compressor motor
M*F	Fan motor
M*P	Drain pump motor
M*S	Swing motor
MR*, MRCW*, MRM*, MRN*	Magnetic relay
N	Neutral
n=*, N=*	Number of passes through ferrite core
PAM	Pulse-amplitude modulation
PCB*	Printed circuit board
PM*	Power module
PS	Switching power supply
PTC*	PTC thermistor
Q*	Insulated gate bipolar transistor (IGBT)
Q*C	Circuit breaker
Q*DI, KLM	Earth leak circuit breaker
Q*L	Overload protector
Q*M	Thermo switch
Q*R	Residual current device
R*	Resistor
R*T	Thermistor
RC	Receiver
S*C	Limit switch
S*L	Float switch
S*NG	Refrigerant leak detector
S*NPH	Pressure sensor (high)
S*NPL	Pressure sensor (low)
S*PH, HPS*	Pressure switch (high)
S*PL	Pressure switch (low)
S*T	Thermostat
S*RH	Humidity sensor
S*W, SW*	Operation switch
SA*, F1S	Surge arrester
SR*, WLU	Signal receiver
SS*	Selector switch
SHEET METAL	Terminal strip fixed plate
T*R	Transformer
TC, TRC	Transmitter
V*, R*V	Varistor
V*R	Diode bridge, Insulated-gate bipolar transistor (IGBT) power module
WRC	Wireless remote controller
X*	Terminal

13 Technical data

Symbol	Meaning
X*M	Terminal strip (block)
Y*E	Electronic expansion valve coil
Y*R, Y*S	Reversing solenoid valve coil
Z*C	Ferrite core
ZF, Z*F	Noise filter

- High pressure switches: category IV
- Compressor: category II
- Accumulator: category I
- Other components: refer to PED article 4, paragraph 3



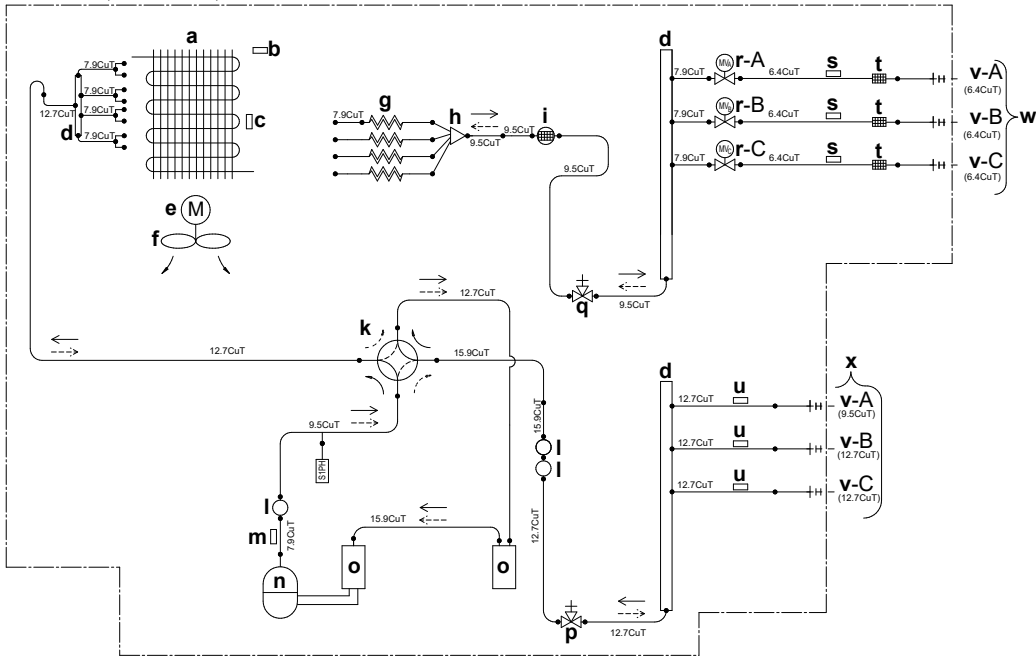
NOTICE

When the high pressure switch is activated, it MUST be reset by a qualified person.

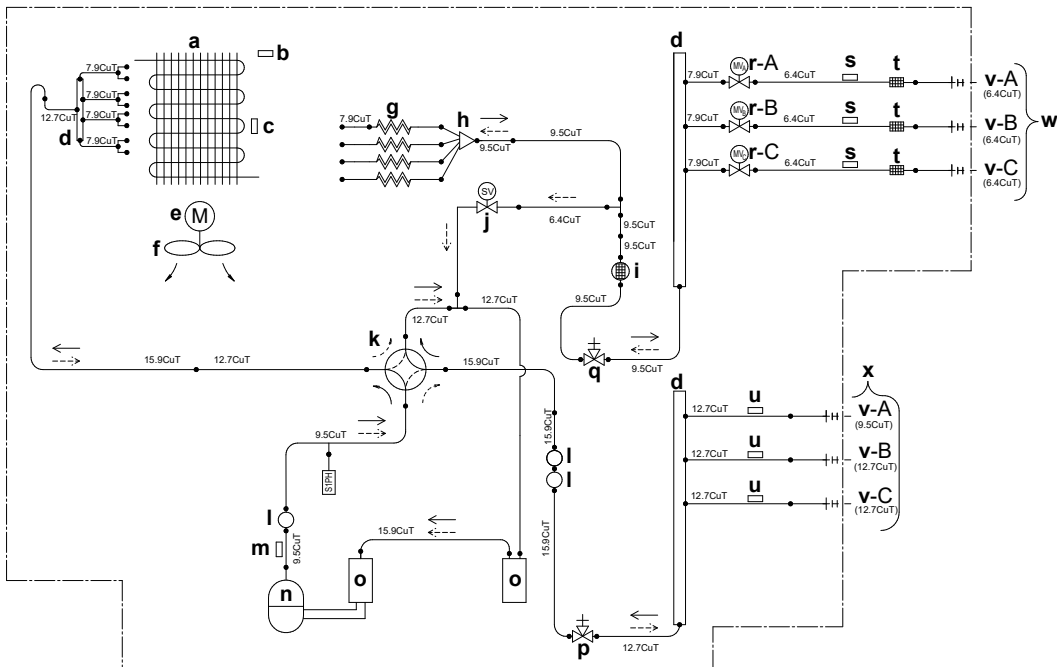
13.2 Piping diagram: Outdoor unit

Component PED category classification:

3AMXM52, 3AMXF52, 3MXF52



3MXF68



- a Heat exchanger
- b Outdoor air temperature thermistor
- c Heat exchanger thermistor
- d Fanet header
- e Fan motor
- f Propeller fan

- g Capillary tube
- h 4-way valve
- i Muffler
- k Discharge pipe thermistor
- l Compressor
- m Accumulator
- n Gas stop valve
- o Liquid stop valve

- p Thermistor (gas)
- q Room
- r Field piping – liquid
- s Field piping – gas
- t Liquid receiver
- u High pressure switch (automatic reset)
- v High pressure switch (automatic reset)
- w High pressure switch (automatic reset)
- x High pressure switch (automatic reset)
- y High pressure switch (automatic reset)
- S1PH High pressure switch (automatic reset)

h Distributor
i Muffler with filter
j Solenoid valve

r Electronic expansion valve
s Thermistor (liquid)
t Filter

→ Refrigerant flow: cooling
⇌ Refrigerant flow: heating





EAC



DAIKIN INDUSTRIES CZECH REPUBLIC s.r.o.

U Nové Hospody 1/1155, 301 00 Plzeň Skvrňany, Czech Republic

DAIKIN EUROPE N.V.

Zandvoordestraat 300, B-8400 Oostende, Belgium

Copyright 2019 Daikin

3P600450-1R 2022.05