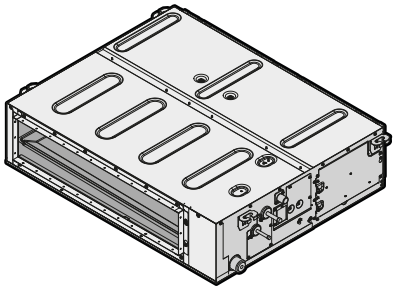
# Installation and operation manual

## $CO_2$ Conveni-Pack: indoor unit



**FXSN50A2VEB**
**FXSN71A2VEB**
**FXSN112A2VEB**

Installation and operation manual
$CO_2$ Conveni-Pack: indoor unit

**English**

CE - DECLARATION-OF-CONFORMITY
CE - KONFORMITÄTSERKLÄRUNG
CE - DECLARATION-DE-CONFORMITE
CE - CONFORMITEITSVERKLARING

CE - DECLARACION-DE-CONFORMIDAD
CE - DICHIARAZIONE-DI-CONFORMITA
CE - ΔΗΛΩΣΗ ΣΥΜΜΟΡΦΩΣΗΣ

CE - DECLARAÇÃO-DE-CONFORMIDADE
CE - ЗАЯВЛЕНИЕ-О-СООТВЕТСТВИИ
CE - OVERENSSTEMMELSESERKLÆRING
CE - FÖRSÄKRAN-OM-ÖVERENSTÄMMELSE

CE - ERKLÆRING OM-SAMSVAR
CE - ILMOITUS-YHDENMUKAISUUDESTA
CE - PROHLÁŠENÍ-O-SHODĚ

CE - IZJAVA-O-USKLAĐENOSTI
CE - MEGFELELŐSÉGI-NYILATKOZAT
CE - DEKLARACJA-ZGODNOŚCI
CE - DECLARAŢIE-DE-CONFORMITATE

CE - IZJAVA O SKLADNOSTI
CE - VASTAVUSDEKLARATSIOON
CE - ДЕКЛАРАЦИЯ-ЗА-СЪОТВЕТСТВИЕ

CE - ATITIKTIES-DEKLARACIJA
CE - ATBILSTĪBAS-DEKLARĀCIJA
CE - VYHLÁSENIE-ZHODY
CE - UYGUNLUK-BEYANI

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

01 (GB) declares under its sole responsibility that the air conditioning models to which this declaration relates:
02 (D) erklärt auf seine alleinige Verantwortung daß die Modelle der Klimageräte für die diese Erklärung bestimmt ist:
03 (F) déclare sous sa seule responsabilité que les appareils d'air conditionné visés par la présente déclaration:
04 (NL) verklaart hierbij op eigen exclusieve verantwoordelijkheid dat de airconditioning units waarop deze verklaring betrekking heeft:
05 (E) declara baja su única responsabilidad que los modelos de aire acondicionado a los cuales hace referencia la declaración:
06 (I) dichiara sotto sua responsabilità che i condizionatori modello a cui è riferita questa dichiarazione:
07 (GR) δηλώνει με αποκλειστική της ευθύνη ότι τα μοντέλα των κλιματιστικών συσκευών στα οποία αναφέρεται η παρούσα δήλωση:
08 (P) declara sob sua exclusiva responsabilidade que os modelos de ar condicionado a que esta declaração se refere:
09 (RUS) заявляет, исключительно под свою ответственность, что модели кондиционеров воздуха, к которым относится настоящее заявление:
10 (DK) erklærer under eneansvar, at klimaanlægmodellerne, som denne deklaration vedrører:
11 (S) deklarerar i egenskap av huvudansvarig, att luftkonditioneringsmodellerna som berörs av denna deklaration innebär att:
12 (N) erklærer et fullstendig ansvar for at de luftkondisjoneringsmodeller som berøres av denne deklarasjon, innebærer at:
13 (FIN) ilmoittaa yksinomaan omalla vastuullaan, että tämän ilmoituksen tarkoittamat ilmastointilaitteiden mallit:
14 (CZ) prohlašuje ve své plné odpovědnosti, že modely klimatizace, k nimž se toto prohlášení vztahuje:
15 (GR) izjavljuje pod isključivo vlastitom odgovornošću da su modeli klima uređaja na koje se ova izjava odnosi:
16 (H) teljes felelőssége tudatában kijelenti, hogy a klímaberendezés modellek, melyekre e nyilatkozat vonatkozik:
17 (PL) deklaruje na własną i wyłączną odpowiedzialność, że modele klimatyzatorów, których dotyczy niniejsza deklaracja:
18 (RO) declară pe proprie răspundere că aparatele de aer conditionat la care se referă această declaraţie:
19 (SLO) z vso odgovornostjo izjavlja, da so modeli klimatskih naprav, na katere se izjava nanaša:
20 (EST) kinnitab oma täielikul vastutusel, et käesoleva deklaratsiooni alla kuuluvad kliimaseadmete mudelid:
21 (BG) декларира на своя отговорност, че моделите климатична инсталация, за които се отнася тази декларация:
22 (LT) visiška savo atsakomybe skelbia, kad oro kondicionavimo prietaisų modeliai, kuriems yra taikoma ši deklaracija:
23 (LV) ar pilnu atbildību apliecina, ka tālāk uzskaitīto modeļu gaisa kondicionētāji, uz kuriem attiecas šī deklarācija:
24 (SK) vyhlasuje na vlastnú zodpovednosť, že tieto klimatizačné modely, na ktoré sa vzťahuje toto vyhlásenie:
25 (TR) tamamen kendi sorumluluğunda olmak üzere bu bildirinin ilgili olduğu klima modellerinin aşağıdaki gibi olduğunu beyan eder:

**FXSN50A2VEB, FXSN71A2VEB, FXSN112A2VEB,**

01 are in conformity with the following standard(s) or other normative document(s), provided that these are used in accordance with our instructions:
02 derlden folgenden Norm(en) oder einem anderen Normdokument oder -dokumenten entspricht/entsprechen, unter der Voraussetzung, daß sie gemäß unseren Anweisungen eingesetzt werden:
03 sont conformes à la/aux norme(s) ou autre(s) document(s) normatif(s), pour autant qu'ils soient utilisés conformément à nos instructions:
04 conform de volgende norm(en) of één of meer andere bindende documenten zijn, op voorwaarde dat ze worden gebruikt overeenkomstig onze instructies:
05 están en conformidad con la(s) siguiente(s) norma(s) u otro(s) documento(s) normativo(s), siempre que sean utilizados de acuerdo con nuestras instrucciones:
06 sono conformi al(i) seguente(i) standard(s) o altro(i) documento(i) a carattere normativo, a patto che vengano usati in conformità alle nostre istruzioni:
07 είναι σύμφωνα με το(α) ακόλουθο(α) πρότυπο(α) ή άλλο έγγραφο(α) κανονισμών, υπό την προϋπόθεση ότι χρησιμοποιούνται σύμφωνα με τις οδηγίες μας:
08 estão em conformidade com a(s) seguinte(s) norma(s) ou outro(s) documento(s) normativo(s), desde que estes sejam utilizados de acordo com as nossas instruções:
09 соответствуют следующим стандартам или другим нормативным документам, при условии их использования согласно нашим инструкциям:
10 overholder følgende standard(er) eller andet/andre retningsgivende dokument(er), forudsat at disse anvendes i henhold til vore instrukser:
11 respektive utrustning är utförd i överensstämmelse med och följer följande standard(er) eller andra normgivande dokument, under förutsättning att användning sker i överensstämmelse med våra instruktioner:
12 respektive utstyr er i overensstemmelse med følgende standard(er) eller andre normgivende dokument(er), under forutssetning av at disse brukes i henhold til våre instrukser:
13 vastaavat seuraavien standardien ja muiden ohjeellisten dokumenttien vaatimuksia edellyttäen, että niitä käytetään ohjeidemme mukaisesti:
14 za předpokladu, že jsou využívány v souladu s našimi pokyny, odpovídají následujícím normám nebo normativním dokumentům:
15 u skladu sa slijedećim standardom(ima) ili drugim normativnim dokumentom(ima), uz uvjet da se oni koriste u skladu s našim uputama:
16 megfelelnek az alábbi szabvány(ok)nak vagy egyéb irányadó dokumentum(ok)nak, ha azokat előírás szerint használják:
17 spełniają wymogi następujących norm i innych dokumentów normalizacyjnych, pod warunkiem że używane są zgodnie z naszymi instrukcjami:
18 sunt în conformitate cu următorul (următoarele) standard(e) sau alt(e) document(e) normativ(e), cu condiţia ca acestea să fie utilizate în conformitate cu instrucţiunile noastre:
19 skladní z naslednjimi standardi in drugimi normativi, pod pogojem, da se uporabljajo v skladu z našimi navodili:
20 on vastavuses järgmis(t)e standardi(te)ga või teiste normatiivsete dokumentidega, kui neid kasutatakse vastavalt meie juhenditele:
21 съответстват на следните стандарти или други нормативни документи, при условие, че се използват съгласно нашите инструкции:
22 atitinka žemiau nurodytus standartus ir (arba) kitus norminius dokumentus su sąlyga, kad yra naudojami pagal mūsų nurodymus:
23 tad, ja lietoti atbilstoši ražotāja norādījumiem, atbilst sekojošiem standartiem un citiem normatīviem dokumentiem:
24 sú v zhode s nasledovnou(ými) normou(ami) alebo iným(i) normatívnym(i) dokumentom(ami), za predpokladu, že sa používajú v súlade s našim návodom:
25 ürünün, talimatlarımıza göre kullanılması koşuluyla aşağıdaki standartlar ve norm belirten belgelerle uyumludur:

EN60335-2-40,

01 following the provisions of:
02 gemäß den Vorschriften der:
03 conformément aux stipulations des:
04 overeenkomstig de bepalingen van:
05 siguiendo las disposiciones de:
06 secondo le prescrizioni per:
07 με τήρηση των διατάξεων των:
08 de acordo com o previsto em:
09 в соответствии с положениями:
10 under iagttagelse af bestemmelserne i:
11 enligt villkoren i:
12 gitt i henhold til bestemmelsene i:
13 noudattaen määräyksiä:
14 za dodržení ustanovení předpisu:
15 prema odredbama:
16 követi a(z):
17 zgodnie z postanowieniami Dyrektyw:
18 în urma prevederilor:
19 ob upoštevanju določb:
20 vastavalt nõuetele:
21 следвайки клаузите на:
22 laikantis nuostatų, pateikiamų:
23 ievērojot prasības, kas noteiktas:
24 održavajúc ustanovenia:
25 bunun koşullarına uygun olarak:

Electromagnetic Compatibility 2014/30/EU *
Machinery 2006/42/EC **

01 Directives, as amended.
02 Direktiven, gemäß Änderung.
03 Directives, telles que modifiées.
04 Richtlijnen, zoals geamendeerd.
05 Directivas, según lo enmendado.
06 Direttive, come da modifica.
07 Οδηγιών, όπως έχουν τροποποιηθεί.
08 Directivas, conforme alteração em.
09 Директив со всеми поправками.
10 Direktiver, med senere ændringer.
11 Direktiv, med företagna ändringar.
12 Direktiver, med foretatte endringer.
13 Direktiivejä, sellaisina kuin ne ovat muutettuina.
14 v platném znění.
15 Smjernice, kako je izmijenjeno.
16 irányelv(ek) és módosításaik rendelkezéseit.
17 z późniejszymi poprawkami.
18 Directivelor, cu amendamentele respective.
19 Direktive z vsemi spremembami.
20 Direktiivid koos muudatustega.
21 Директиви, с техните изменения.
22 Direktyvose su papildymais.
23 Direktīvās un to papildinājumos.
24 Smernice, v platnom znení.
25 Değiştirilmiş halleriyle Yönetmelikler.

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 Note* | as set out in <A> and judged positively by <B> according to the **Certificate <C>**. | 06 Nota* | delineato nel <A> e giudicato positivamente da <B> secondo il **Certificato <C>**. | 11 Information* | enligt <A> och godkänts av <B> enligt **Certifikatet <C>**. | 16 Megjegyzés* | a(z) <A> alapján, a(z) <B> igazolta a megfelelést, a(z) **<C> tanúsítvány** szerint. | 21 Забележка* | както е изложено в <A> и оценено положително от <B> съгласно **Сертификата <C>**. | | |
| 02 Hinweis* | wie in <A> aufgeführt und von <B> positiv beurteilt gemäß **Zertifikat <C>**. | 07 Σημείωση* | όπως καθορίζεται στο <A> και κρίνεται θετικά από το <B> σύμφωνα με το **Πιστοποιητικό <C>**. | 12 Merk* | som det fremkommer i <A> og gjennom positiv bedømmelse av <B> ifølge **Sertifikat <C>**. | 17 Uwaga* | zgodnie z dokumentacją <A>, pozytywną opinią <B> i **Świadectwem <C>**. | 22 Pastaba* | kaip nustatyta <A> ir kaip teigiamai nuspręsta <B> pagal **Sertifikatą <C>**. | | |
| 03 Remarque* | tel que défini dans <A> et évalué positivement par <B> conformément au **Certificat <C>**. | 08 Nota* | tal como estabelecido em <A> e com o parecer positivo de <B> de acordo com o **Certificado <C>**. | 13 Huom* | jotka on esitetty asiakirjassa <A> ja jotka <B> on hyväksynyt **Sertifikaatin <C>** mukaisesti. | 18 Notă* | aşa cum este stabilit în <A> şi apreciat pozitiv de <B> în conformitate cu **Certificatul <C>**. | 23 Piezīmes* | kā norādīts <A> un atbilstoši <B> pozitīvajam vērtējumam saskaņā ar **sertifikātu <C>**. | | |
| 04 Bemerk* | zoals vermeld in <A> en positief beoordeeld door <B> overeenkomstig **Certificaat <C>**. | 09 Примечание* | как указано в <A> и в соответствии с положительным решением <B> согласно **Свидетельству <C>**. | 14 Poznámka* | jak bylo uvedeno v <A> a pozitivně zjištěno <B> v souladu s **osvědčením <C>**. | 19 Opomba* | kot je določeno v <A> in odobreno s strani <B> v skladu s **certifikatom <C>**. | 24 Poznámka* | ako bolo uvedené v <A> a pozitívne zistené <B> v súlade s **osvedčením <C>**. | | |
| 05 Nota* | como se establece en <A> y es valorado positivamente por <B> de acuerdo con el **Certificado <C>**. | 10 Bemærk* | som anført i <A> og positivt vurderet af <B> i henhold til **Certifikat <C>**. | 15 Napomena* | kako je izloženo u <A> i pozitivno ocijenjeno od strane <B> prema **Certifikatu <C>**. | 20 Märkus* | nagu on näidatud dokumendis <A> ja heaks kiidetud <B> järgi vastavalt **sertifikaadile <C>**. | 25 Not* | <A>'da belirtildiği gibi ve <C> **Sertifikasına** göre <B> tarafından olumlu olarak değerlendirildiği gibi. | | |

| | |
|---|---|
| <A> | DAIKIN.TCF.035/04-2020 |
| <B> | TÜV (NB1856) |
| <C> | 60148544 |

01** DICz*** is authorised to compile the Technical Construction File.
02** DICz*** hat die Berechtigung die Technische Konstruktionsakte zusammenzustellen.
03** DICz*** est autorisé à compiler le Dossier de Construction Technique.
04** DICz*** is bevoegd om het Technisch Constructiedossier samen te stellen.
05** DICz*** está autorizado a compilar el Archivo de Construcción Técnica.
06** DICz*** è autorizzata a redigere il File Tecnico di Costruzione.
07** Η DICz*** είναι εξουσιοδοτημένη να συντάξει τον Τεχνικό φάκελο κατασκευής.
08** A DICz*** está autorizada a compilar a documentação técnica de fabrico.
09** Компания DICz*** уполномочена составить Комплект технической документации.
10** DICz*** er autoriseret til at udarbejde de tekniske konstruktionsdata.
11** DICz*** är bemyndigade att sammanställa den tekniska konstruktionsfilen.
12** DICz*** har tillatelse til å kompilere den Tekniske konstruksjonsfilen.
13** DICz*** on valtuutettu laatimaan Teknisen asiakirjan.
14** Společnost DICz*** má oprávnění ke kompilaci souboru technické konstrukce.
15** DICz*** je ovlašten za izradu Datoteke o tehničkoj konstrukciji.
16** A DICz*** jogosult a műszaki konstrukciós dokumentáció összeállítására.
17** DICz*** ma upoważnienie do zbierania i opracowywania dokumentacji konstrukcyjnej.
18** DICz*** este autorizat să compileze Dosarul tehnic de construcţie.
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20** DICz*** on volitatud koostama tehnilist dokumentatsiooni.
21** DICz*** е оторизирана да състави Акта за техническа конструкция.
22** DICz*** yra įgaliota sudaryti šį techninės konstrukcijos failą.
23** DICz*** ir autorizēts sastādīt tehnisko dokumentāciju.
24** Spoločnosť DICz*** je oprávnená vytvoriť súbor technickej konštrukcie.
25** DICz*** Teknik Yapı Dosyasını derlemeye yetkilidir.

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

2P613087-1

DAIKIN

Yasuto Hiraoka
Managing Director
Pilsen, 1st of April 2020

**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

## 1.1 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 + end users

**INFORMATION**

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

**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.

**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 indoor unit)
- **Indoor unit installation and operation manual:**
  - Installation and operation instructions
  - Format: Paper (in the box of the indoor unit)
- **Installer and user reference guide:**
  - Preparation of the installation, good practices, reference data,…
  - Detailed step-by-step instructions and background information for basic and advanced usage
  - Format: Digital files on http://www.daikineurope.com/support-and-manuals/product-information/

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.

**CAUTION**

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

**General installation requirements**

**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.

**WARNING**

- Make sure to install all necessary countermeasures in case of refrigerant leakage according to standard EN378 (see "11.1.2 Additional installation site requirements for $CO_2$ refrigerant" [▶ 13]).
- Make sure to install a $CO_2$ leak detector (field supply) and enable the function for refrigerant leak detection (see "15.1 Field setting" [▶ 21]).

**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.

**Installation site (see "11.1 Preparing the installation site" [▶ 12])**

**CAUTION**

Appliance not accessible to the general public, install it in a secured area, protected from easy access.

This unit, both indoor and outdoor, is suitable for installation in a commercial and light industrial environment.

**WARNING**

Do NOT place objects below the indoor and/or outdoor unit that may get wet. Otherwise condensation on the main unit or refrigerant pipes, air filter dirt or drain blockage may cause dripping, and objects under the unit may get dirty or damaged.

**WARNING**

Install the unit only in locations where the doors of the occupied space are not tight fitting.

**WARNING**

When using safety shut-off valves, make sure to install measures such as a bypassing piping with a pressure relief valve (from liquid pipe to gas pipe). When the safety shut-off valves close and no measures are installed, increased pressure may damage the liquid piping.

**Installing the ducting (see "11.2.2 Guidelines when installing the ducting" [▶ 15])**

**CAUTION**

- Make sure the installation of the duct does NOT exceed the setting range of the external static pressure for the unit. Refer to the technical datasheet of your model for the setting range.
- Make sure to install the canvas duct so vibrations are NOT transmitted to the duct or ceiling. Use a sound-absorbing material (insulation material) for the lining of the duct and apply vibration insulation rubber to the hanging bolts.
- When welding, make sure NOT to spatter onto the drain pan or the air filter.
- If the metal duct passes through a metal lath, wire lath or metal plate of the wooden structure, separate the duct and wall electrically.
- Install the outlet grille in a position where the airflow will not come into direct contact with people.
- Do NOT use booster fans in the duct. Use the function to adjust the fan rate setting automatically (see "15.1 Field setting" [▶ 21]).

**Refrigerant piping installation (see "12 Piping installation" [▶ 17])**

**CAUTION**

Do NOT reuse piping from previous installations.

**CAUTION**

Install the refrigerant piping or components in a position where they are unlikely to be exposed to any substance which may corrode components containing refrigerant, unless the components are constructed of materials that are inherently resistant to corrosion or are suitably protected against corrosion.

**WARNING**

- Use K65 piping for high-pressure applications with a working pressure of 120 bar or 90 bar, depending on its location in the system.
- Use K65 unions and fittings approved for a working pressure of 120 bar or 90 bar, depending on its location in the system.
- Only brazing is allowed for connection of pipes. No other types of connections are allowed.
- Expanding of pipes is not allowed.

**Electrical installation (see "13 Electrical installation" [▶ 18])**

**WARNING**

- If the power supply has a missing or wrong N-phase, equipment might break down.
- Establish proper earthing. Do NOT earth the unit to a utility pipe, surge absorber, or telephone earth. Incomplete earthing may cause electrical shock.
- Install the required fuses or circuit breakers.
- Secure the electrical wiring with cable ties so that the cables do NOT come into contact with sharp edges or piping, particularly on the high-pressure side.
- Do NOT use taped wires, stranded conductor wires, extension cords, or connections from a star system. They can cause overheating, electrical shock or fire.

**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 provide 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.

# For the user

## 3 User safety instructions

Always observe the following safety instructions and regulations.

### 3.1 General

**WARNING**

If you are NOT sure how to operate the unit, contact your installer.

**WARNING**

This appliance is not intended for use by persons, including children, with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Children should be supervised to ensure that they do not play with the appliance.

Cleaning and user maintenance must not be carried out by children without supervision.

**WARNING**

To prevent electrical shocks or fire:

- Do NOT rinse the unit.
- Do NOT operate the unit with wet hands.
- Do NOT place any objects containing water on the unit.

**CAUTION**

- Do NOT place any objects or equipment on top of the unit.
- Do NOT sit, climb or stand on the unit.

- Units are marked with the following symbol:

This means that electrical and electronic products may NOT be mixed with unsorted household waste. Do NOT try to dismantle the system yourself: the dismantling of the system, treatment of the refrigerant, of oil and of other parts must be done by an authorized installer and must comply with applicable legislation.
Units must be treated at a specialized treatment facility for reuse, recycling and recovery. By ensuring this product is disposed of correctly, you will help to prevent potential negative consequences for the environment and human health. For more information, contact your installer or local authority.

- Batteries are marked with the following symbol:

This means that the batteries may NOT be mixed with unsorted household waste. If a chemical symbol is printed beneath the symbol, this chemical symbol means that the battery contains a heavy metal above a certain concentration.
Possible chemical symbols are: Pb: lead (>0.004%).
Waste batteries must be treated at a specialized treatment facility for reuse. By ensuring waste batteries are disposed of correctly, you will help to prevent potential negative consequences for the environment and human health.

### 3.2 Instructions for safe operation

**WARNING**

Do NOT modify, disassemble, remove, reinstall or repair the unit yourself as incorrect dismantling or installation may cause an electric shock or fire. Contact your dealer.

**CAUTION**

If this unit is equipped with an electrically powered safety measure, such as a $CO_2$ refrigerant leak detector

(field supply), in order to be effective, the unit must be electrically powered at all times after installation, except for short service periods.

**CAUTION**

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

**CAUTION**

- NEVER touch the internal parts of the controller.
- Do NOT remove the front panel. Some parts inside are dangerous to touch and appliance problems may happen. For checking and adjusting the internal parts, contact your dealer.

**WARNING**

This unit contains electrical and hot parts.

**WARNING**

Before operating the unit, be sure the installation has been carried out correctly by an installer.

**CAUTION**

It is not good for your health to expose your body to the air flow for a long time.

**CAUTION**

To avoid oxygen deficiency, ventilate the room sufficiently if equipment with burner is used together with the system.

**CAUTION**

Do NOT operate the system when using a room fumigation-type insecticide. Chemicals could collect in the unit, and endanger the health of people who are hypersensitive to chemicals.

**CAUTION**

NEVER expose little children, plants or animals directly to the airflow.

**WARNING**

Do NOT place objects below the indoor and/or outdoor unit that may get wet. Otherwise condensation on the main unit or refrigerant pipes, air filter dirt or drain blockage may cause dripping, and objects under the unit may get dirty or damaged.

**WARNING**

Do NOT place a flammable spray bottle near the air conditioner and do NOT use sprays near the unit. Doing so may result in a fire.

**Maintenance and service (see "7 Maintenance and service" [▷ 9])**

**WARNING: ⇨•⇦ System contains refrigerant under very high pressure.**

The system MUST be serviced by qualified persons only.

**CAUTION: Pay attention to the fan!**

It is dangerous to inspect the unit while the fan is running.

Be sure to turn off the main switch before executing any maintenance task.

**WARNING**

Never replace a fuse with a fuse of a wrong ampere ratings or other wires when a fuse blows out. Use of wire or copper wire may cause the unit to break down or cause a fire.

**CAUTION**

After a long use, check the unit stand and fitting for damage. If damaged, the unit may fall and result in injury.

**CAUTION**

Before accessing terminal devices, make sure to interrupt all power supply.

**DANGER: RISK OF ELECTROCUTION**

To clean the air conditioner or air filter, be sure to stop operation and turn all power supplies off. Otherwise, an electric shock and injury may result.

**WARNING**

Be careful with ladders when working in high places.

**WARNING**

Do NOT let the indoor unit get wet. **Possible consequence:** Electric shock or fire.

**About the refrigerant (see "7.3 About the refrigerant" [▶ 9])**

**WARNING**

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

**WARNING**

The refrigerant R744 ($CO_2$) inside the unit is odourless, non-flammable and, in moderate concentrations, non-toxic, and normally does NOT leak.

If the refrigerant leaks in the room, it may have negative effects on its occupants (asphyxiant in high concentrations). Ventilate the room and contact the dealer where you purchased the unit (see "7.3.1 About refrigerant leak detection" [▶ 10]).

Do NOT use the unit until a service person confirms that the part from which the refrigerant leaked has been repaired.

**Troubleshooting (see "8 Troubleshooting" [▶ 10])**

**WARNING**

**Stop operation and shut off the power if anything unusual occurs (burning smells etc.).**

Leaving the unit running under such circumstances may cause breakage, electric shock or fire. Contact your dealer.

# 4 About the system

**NOTICE**

The appliance shall be stored so as to prevent mechanical damage.

The indoor units can be used for heating/cooling applications.

**WARNING**

Do NOT modify, disassemble, remove, reinstall or repair the unit yourself as incorrect dismantling or installation may cause an electric shock or fire. Contact your dealer.

**NOTICE**

Do NOT use the system for other purposes. In order to avoid any quality deterioration, do NOT use the unit for cooling precision instruments, food, plants, animals, or works of art.

**NOTICE**

For future modifications or expansions of your system:

A full overview of allowable combinations (for future system extensions) is available in technical engineering data and should be consulted. Contact your installer to receive more information and professional advice.

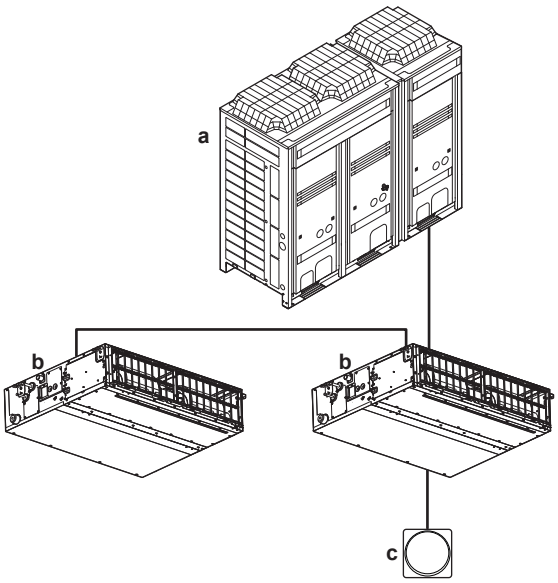
**CAUTION**

If this unit is equipped with an electrically powered safety measure, such as a $CO_2$ refrigerant leak detector (field supply), in order to be effective, the unit must be electrically powered at all times after installation, except for short service periods.

## 4.1 System layout

**INFORMATION**

The following illustration is an example and might NOT match your system layout.




**a** Outdoor unit
**b** Indoor unit
**c** User interface

**CAUTION**

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

# 5 User interface

**CAUTION**

- NEVER touch the internal parts of the controller.
- Do NOT remove the front panel. Some parts inside are dangerous to touch and appliance problems may happen. For checking and adjusting the internal parts, contact your dealer.

This operation manual offers a non-exhaustive overview of the main functions of the system.

For more information about the user interface, see the operation manual of the installed user interface.

# 6 Operation

## 6.1 Operation range

Use the system in the following temperature and humidity ranges for safe and effective operation.

| | Cooling and drying | Heating |
|---|---|---|
| Outdoor unit | –5~43°C DB | –20~16°C WB |
| Indoor unit | 14~24°C WB | 15~27°C DB |
| Indoor humidity | ≤80%[a] | — |

[a] To avoid condensation and water dripping out of the unit. If the temperature or the humidity is beyond these conditions, safety devices may be put in action and the air conditioner may not operate.

## 6.2 About operation modes

**INFORMATION**

Depending on the installed system, some operation modes will not be available.

- The air flow rate may adjust itself depending on the room temperature or the fan may stop immediately. This is not a malfunction.
- If the main power supply is turned off during operation, operation will restart automatically after the power turns back on again.
- **Setpoint.** Target temperature for the Cooling, Heating, and Auto operation modes.
- **Setback.** A function that keeps the room temperature in a specific range when the system is turned off (by the user, the schedule function, or the OFF timer).

### 6.2.1 Basic operation modes

The indoor unit can operate in various operation modes.

| Icon | Operation mode |
|---|---|
| | **Cooling.** In this mode, cooling will be activated as required by the setpoint, or by Setback operation. |
| | **Heating.** In this mode, heating will be activated as required by the setpoint, or by Setback operation. |
| | **Fan only.** In this mode, air circulates without heating or cooling. |
| | **Dry.** In this mode, the air humidity will be lowered with a minimal temperature decrease.<br>The temperature and fan speed are controlled automatically and cannot be controlled by the controller.<br>Dry operation will not function if the room temperature is too low. |
| | **Auto.** In Auto mode, the indoor unit automatically switches between heating and cooling mode, as required by the setpoint. |

### 6.2.2 Special heating operation modes

| Operation | Description |
|---|---|
| **Defrost** | To prevent a loss of heating capacity due to frost accumulation in the outdoor unit, the system will automatically switch to defrost operation.<br>During defrost operation, the indoor unit fan will stop operation, and the following icon will appear on the home screen:<br>  <br>In order to protect the system, cold air may come from the indoor unit when the defrost operation starts on the outdoor unit side.<br>The system will resume normal operation after approximately 6 to 8 minutes. |
| **Hot start** | During hot start, the indoor unit fan will stop operation, and the following icon will appear on the home screen:<br>  |

## 6.3 To operate the system

**INFORMATION**

For setting of the operation mode or other settings, see the reference guide or operation manual of the user interface.

# 7 Maintenance and service

## 7.1 Precautions for maintenance and service

**WARNING: ⇨●⇦ System contains refrigerant under very high pressure.**

The system MUST be serviced by qualified persons only.

**NOTICE**

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

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

**CAUTION**

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

**NOTICE**

Never inspect or service the unit by yourself. Ask a qualified service person to perform this work. However, as end user, you may clean the air filter, suction grille, air outlet and outside panels.

**WARNING**

Never replace a fuse with a fuse of a wrong ampere ratings or other wires when a fuse blows out. Use of wire or copper wire may cause the unit to break down or cause a fire.

**CAUTION**

After a long use, check the unit stand and fitting for damage. If damaged, the unit may fall and result in injury.

**CAUTION**

Before accessing terminal devices, make sure to interrupt all power supply.

**DANGER: RISK OF ELECTROCUTION**

To clean the air conditioner or air filter, be sure to stop operation and turn all power supplies off. Otherwise, an electric shock and injury may result.

**WARNING**

Be careful with ladders when working in high places.

## 7.2 Cleaning the air filter and air outlet

### 7.2.1 To clean the air outlet

**WARNING**

Do NOT let the indoor unit get wet. **Possible consequence:** Electric shock or fire.

**NOTICE**

- Do NOT use gasoline, benzene, thinner polishing powder or liquid insecticide. **Possible consequence:** Discoloration and deformation.
- Do NOT use water or air of 50°C or higher. **Possible consequence:** Discoloration and deformation.

Clean with a soft cloth. If it is difficult to remove stains, use water or a neutral detergent.

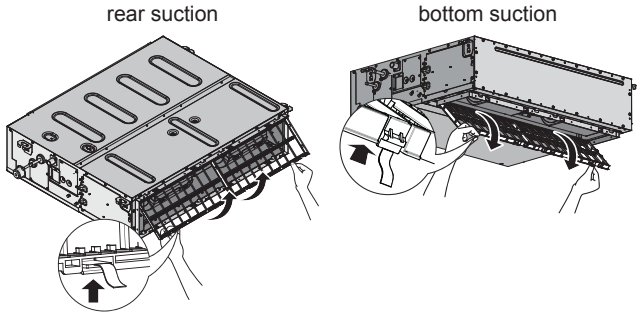
### 7.2.2 To clean the air filter

**When to clean the air filter:**

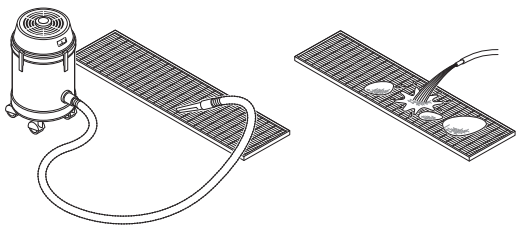
- Rule of thumb: Clean every 6 months. If the air in the room is extremely contaminated, increase the cleaning frequency.
- Depending on the settings, the user interface can display the **TIME TO CLEAN AIR FILTER** notification. Clean the air filter when the notification is displayed.
- If the dirt becomes impossible to clean, change the air filter (= optional equipment).

**How to clean the air filter:**

1 Remove the air filters by pulling their cloth upward (in case of rear suction) or backward (in case of bottom suction).

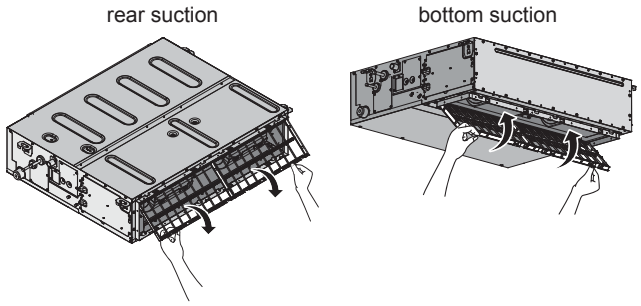



2 Clean the air filter. Use a vacuum cleaner or wash with water. If the air filter is very dirty, use a soft brush and neutral detergent.



3 Dry the air filter in the shadow.

4 Re-attach the air filter. Align the 2 hanger brackets and push the 2 clips in their place and pull the cloth if necessary.




5 Confirm that 4 hangers are fixed.

6 In case of bottom suction, close the air inlet grille.

7 Turn ON the power.

8 To remove warning screens, see the reference guide of the user interface.

## 7.3 About the refrigerant

This product contains refrigerant gases.

Refrigerant type: R744 ($CO_2$)

**WARNING**

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

**WARNING**

The refrigerant R744 ($CO_2$) inside the unit is odourless, non-flammable and, in moderate concentrations, non-toxic, and normally does NOT leak.

If the refrigerant leaks in the room, it may have negative effects on its occupants (asphyxiant in high concentrations). Ventilate the room and contact the dealer where you purchased the unit (see "7.3.1 About refrigerant leak detection" [▸ 10]).

Do NOT use the unit until a service person confirms that the part from which the refrigerant leaked has been repaired.

### 7.3.1 About refrigerant leak detection

In order to detect refrigerant leaks, a $CO_2$ refrigerant leak detector (field supply) MUST be installed. The $CO_2$ refrigerant leak detector may require annual tests. For more details, see the documentation of the installed device.

**In case a $CO_2$ refrigerant leak is detected**

- the fan of the indoor unit is stopped to prevent the refrigerant from being spread,
- the user interface displays error code A0 or U9 (⚠ for the Madoka; to display error codes, refer to the reference guide of the Madoka),
- a warning sound will come from the user interface ( only for Madoka with buzzer, see option list) or from another safety alarm in combination with a $CO_2$ refrigerant leak detector (field supply).

**Actions required by the user**

1 Ventilate the room and immediately contact the dealer where you purchased the unit. Do NOT use the unit before the fault is fixed.

**Actions required by the installer or the service person**

**INFORMATION**

During detection of the refrigerant leakage, the contact between terminals T1 and T2 disconnects. During normal operation, the contact between terminals T1 and T2 is closed (acting as a short circuit).

1 If field supplied stop-valves are NOT installed: Close the stop valves of the gas and liquid pipe on the outdoor unit.

2 If field supplied shut-off valves are installed: If the refrigerant leak to the room has stopped, you can use the air conditioner for other rooms where the refrigerant leak did NOT occur.

3 Locate and repair the cause of the refrigerant leak. If necessary, replace the indoor unit.

4 Refill the refrigerant if needed.

5 Perform manual power reset and resume operation.

**NOTICE**

After the refrigerant leakage is detected, the unit will send a signal at regular intervals to confirm if the $CO_2$ concentration is at a safe level. Even when the $CO_2$ concentration is at a safe level, do NOT resume operation before the fault is fixed and the refrigerant is refilled.

# 8 Troubleshooting

If one of the following malfunctions occur, take the measures shown below and contact your dealer.

**WARNING**

**Stop operation and shut off the power if anything unusual occurs (burning smells etc.).**

Leaving the unit running under such circumstances may cause breakage, electric shock or fire. Contact your dealer.

The system MUST be repaired by a qualified service person.

| Malfunction | Measure |
|---|---|
| If a safety device such as a fuse, a breaker or an earth leakage breaker frequently actuates or the ON/OFF switch does NOT function properly. | Turn OFF all main power supply switches to the unit. |
| If water leaks from the unit. | Stop operation. |
| The operation switch does NOT function properly. | Turn OFF the power supply. |
| If the user interface displays ⚠ or an error code. | Notify your installer and report the error code. To display error codes, see the reference guide of the user interface. |
| The user interface displays error code A0 or U9 (or ⚠), the fan stops and you can hear a warning sound from the user interface (in case of Madoka) or from another safety alarm in combination with a gas detection device (if installed). | A refrigerant leak may be detected (see "7.3.1 About refrigerant leak detection" [▸ 10]). |

If the system does NOT operate properly except for the above mentioned cases and none of the above mentioned malfunctions is evident, investigate the system in accordance with the following procedures.

If after checking all above items, it is impossible to fix the problem yourself, contact your installer and state the symptoms, the complete model name of the unit (with manufacturing number if possible) and the installation date (possibly listed on the warranty card).

| Malfunction | Measure |
|---|---|
| If the system does not operate at all. | ▪ Check if there is no power failure. Wait until power is restored. If a power failure occurs during operation, the system automatically restarts immediately after power is restored.<br>▪ Check if no fuse has blown or breaker is activated. Change the fuse or reset the breaker if necessary. |
| The system stops immediately after starting operation. | ▪ Check if air inlet or outlet of outdoor or indoor unit is not blocked by obstacles. Remove any obstacles and make sure the air can flow freely.<br>▪ Check if the air filter is clogged (see "7.2.2 To clean the air filter" [▸ 9]). |

| Malfunction | Measure |
|---|---|
| The system operates but cooling or heating is insufficient. | ▪ Check if air inlet or outlet of outdoor or indoor unit is not blocked by obstacles. Remove any obstacles and make sure the air can flow freely.<br>▪ Check if the air filter is clogged (see "7.2.2 To clean the air filter" [▶ 9]).<br>▪ Check the temperature setting. Refer to the manual of the user interface.<br>▪ Check if the fan speed setting is set to low speed. Refer to the manual of the user interface.<br>▪ Check if the air flow angle is proper. Refer to the manual of the user interface.<br>▪ Check for open doors or windows. Close doors and windows to prevent wind from coming in.<br>▪ Check if direct sunlight enters the room. Use curtains or blinds.<br>▪ Check if there are too many occupants in the room during cooling operation. Check if the heat source of the room is excessive.<br>▪ If the heat source of the room is excessive (when cooling). Cooling effect decreases if heat gain of the room is too large. |
| Operation stops suddenly.<br>(user interface operation lamp or display blinks) | ▪ Check if the air filter is clogged (see "7.2.2 To clean the air filter" [▶ 9]).<br>▪ Check if air inlet or outlet of outdoor or indoor unit is not blocked by obstacles. Remove any obstacles, turn the breaker OFF and back ON. If the lamp or display still blinks, contact your dealer. |
| An abnormal function happens during operation. | ▪ The air conditioner may malfunction because of lightning or radio waves. Turn the breaker OFF and back ON. |

## 8.1 Symptoms that are NOT system malfunctions

The following symptoms are NOT system malfunctions:

### 8.1.1 Symptom: The system does not operate

- The air conditioner does not start immediately after the ON/OFF button on the user interface is pressed. If the operation lamp lights, the air conditioner is in normal condition. It does not restart immediately because one of its safety devices actuates to prevent the air conditioner from being overloaded. The air conditioner will turn on again automatically after 3 minutes.
- The air conditioner does not start immediately after the power supply is turned on. Wait 1 minute until the microcomputer is prepared for operation.
- The air conditioner does not restart immediately when the temperature setting button is returned to its former position after pushing. It does not restart immediately because one of its safety devices actuates to prevent the air conditioner from being overloaded. The air conditioner will turn on again automatically after 3 minutes.
- The outdoor unit has stopped air conditioning (refrigeration continues). This is because the room temperature has reached the set temperature. The unit switches to fan operation. The actual operation is different from the user interface setting.
- The fan speed is different from the setting. Pressing the fan speed control button does not change the fan speed. When the room temperature reaches the set temperature in heating mode or the unit's maximum capacity is reached, the outdoor unit will stop air conditioning (refrigeration continues) and the indoor unit will operate in fan only mode (low fan speed). This is to prevent cool air from being blown directly onto anyone present in the room.

### 8.1.2 Symptom: Dust comes out of the unit

When the unit is used for the first time in a long time. This is because dust has gotten into the unit.

### 8.1.3 Symptom: The units can give off odours

The unit can absorb the smell of rooms, furniture, cigarettes, etc., and then emit it again.

# 9 Disposal

**NOTICE**

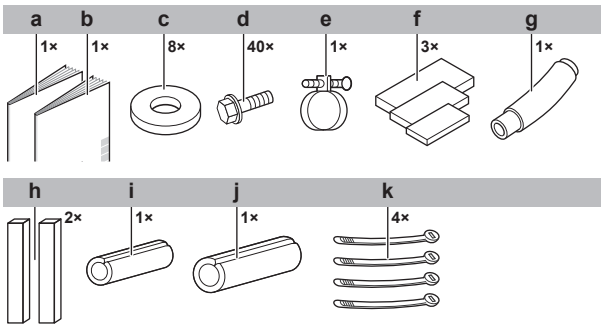
Do NOT try to dismantle the system yourself: dismantling of the system, treatment of the refrigerant, oil and other parts MUST comply with applicable legislation. Units MUST be treated at a specialised treatment facility for reuse, recycling and recovery.

# For the installer

## 10 About the box

### 10.1 Indoor unit

#### 10.1.1 To remove the accessories from the indoor unit




**a** Installation and operation manual
**b** General safety precautions
**c** Washers for hanger bracket
**d** Screws for duct flanges
**e** Metal clamp
**f** Sealing pads: Large (drain pipe), medium 1 (gas pipe), medium 2 (liquid pipe)
**g** Drain hose
**h** Long sealing
**i** Insulation piece: Small (liquid pipe)
**j** Insulation piece: Large (gas pipe)
**k** Tie wraps

## 11 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.

**WARNING**

- Make sure to install all necessary countermeasures in case of refrigerant leakage according to standard EN378 (see "11.1.2 Additional installation site requirements for $CO_2$ refrigerant" [▶ 13]).
- Make sure to install a $CO_2$ leak detector (field supply) and enable the function for refrigerant leak detection (see "15.1 Field setting" [▶ 21]).

### 11.1 Preparing the installation site

#### 11.1.1 Installation site requirements of the indoor unit

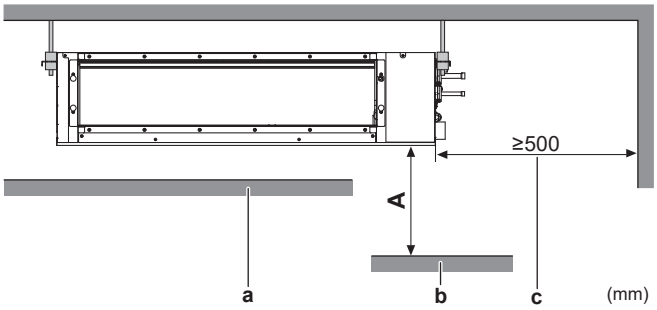
**INFORMATION**

The sound pressure level is less than 70 dBA.

**NOTICE**

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

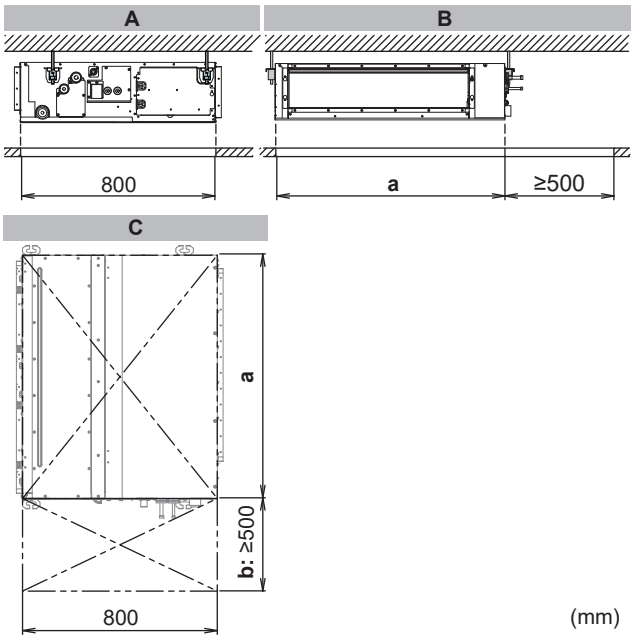
- **Spacing**. Mind the following requirements:




**A** **Minimum distance to the floor**
**2.7 m** to avoid accidental touching
**2.5 m** in case the fan is covered (e.g. false ceiling, grille, …)
**a** Ceiling
**b** Floor surface
**c** Maintenance space

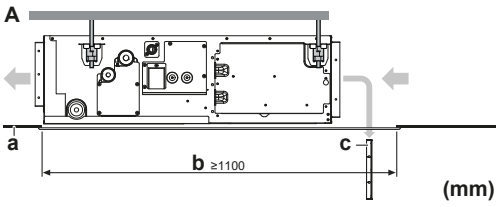
**Service space and ceiling opening size**

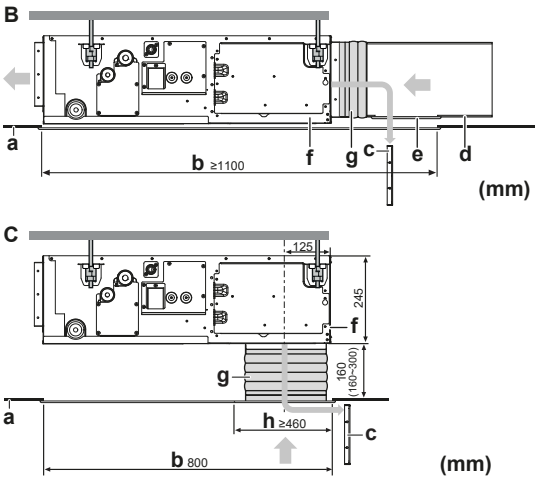
Make sure ceiling opening is big enough to ensure a sufficient clearance for maintenance and service.




**A** Side view: refrigerant piping, drain piping, control box
**B** Side view: air inlet
**C** Top view
**a** Ceiling opening
**Class 50:** 700 mm
**Class 71:** 1000 mm
**Class 112:** 1400 mm
**b** Service space

**Installation options**






**A** Standard rear suction
**B** Installation with rear canvas duct and duct service opening
**C** Installation with bottom canvas duct and air inlet grill
**a** Ceiling surface
**b** Ceiling opening
**c** Air filter removal route for air filter maintenance
**d** Air inlet filter
**e** Duct service opening
**f** Interchangeable plate
**g** Canvas connection for air inlet panel (field supply)
**h** Air inlet panel (field supply) opening

**INFORMATION**

Some options may require additional service space. Refer to the installation manual of the used option before installation.

### 11.1.2 Additional installation site requirements for $CO_2$ refrigerant

| Refrigerant basic characteristics | |
|---|---|
| Refrigerant | R744 |
| RCL (refrigerant concentration limit) | 0.072 kg/m$^3$ |
| QLMV (quantity limit with minimum ventilation) | 0.074 kg/m$^3$ |
| QLAV (quantity limit with additional ventilation) | 0.18 kg/m$^3$ |
| Toxicity limit | 0.1 kg/m$^3$ |
| Safety class | A1 |

**INFORMATION**

For more information regarding allowable refrigerant charge and space volume calculations see the reference guide of the indoor unit.

## Appropriate measures

**INFORMATION**

Appropriate measures are field supply. Choose and install all required appropriate measures in accordance with EN 378-3:2016.

- (natural or mechanical) ventilation
- safety shut-off valves
- safety alarm, in combination with a $CO_2$ refrigerant leak detector (a safety alarm alone is NOT considered an appropriate measure where occupants are restricted in their movements)
- $CO_2$ refrigerant leak detector

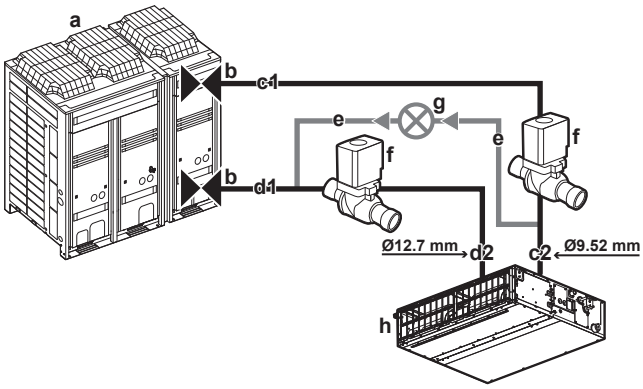
**WARNING**

Install the unit only in locations where the doors of the occupied space are not tight fitting.

**WARNING**

When using safety shut-off valves, make sure to install measures such as a bypassing piping with a pressure relief valve (from liquid pipe to gas pipe). When the safety shut-off valves close and no measures are installed, increased pressure may damage the liquid piping.

**Example:** Install the bypass piping (**e**) with a pressure relief valve (**g**) leading from the liquid piping between indoor unit and the shut off valve (**c2**) to the gas piping between outdoor unit and the shut off valve (**d1**).




11–1 Installation layout example

**a** Outdoor unit
**b** Stop valve on the outdoor unit
**c1** Liquid piping between outdoor unit and the shut off valve
**c2** Liquid piping between indoor unit and the shut off valve
**d1** Gas piping between outdoor unit and the shut off valve
**d2** Gas piping between indoor unit and the shut off valve
**e** Bypassing piping
**f** Safety shut off valve
**g** Pressure relief valve
**h** Indoor unit

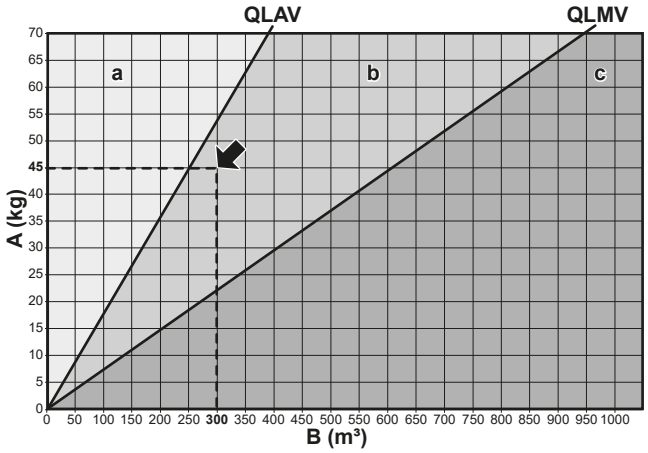
**To determine the minimum number of appropriate measures**

**For occupancies other than on the lowest underground floor of the building**

| If the total refrigerant charge (kg) divided by the room volume[(a)] (m$^3$) is… | …the number of appropriate measures must be at least… |
|---|---|
| <QLMV | 0 |
| >QLMV and <QLAV | 1 |
| >QLAV | 2 |

[(a)] For occupied spaces with a floor area exceeding 250 m$^2$, use 250 m$^2$ as the floor area for determination of the room volume (**Example:** even if the room area is 300 m$^2$ and the room height is 2.5 m, calculate the room volume as 250 m$^2$ × 2.5 m = 625 m$^3$)

**Example:** Total refrigerant charge in the system is 45 kg and room volume is 300 m$^3$. 45/300 = 0.15, which is >QLMV(0.074) and <QLAV(0.18), therefore install at least 1 appropriate measure in the room.




11–2 Example graph for calculation

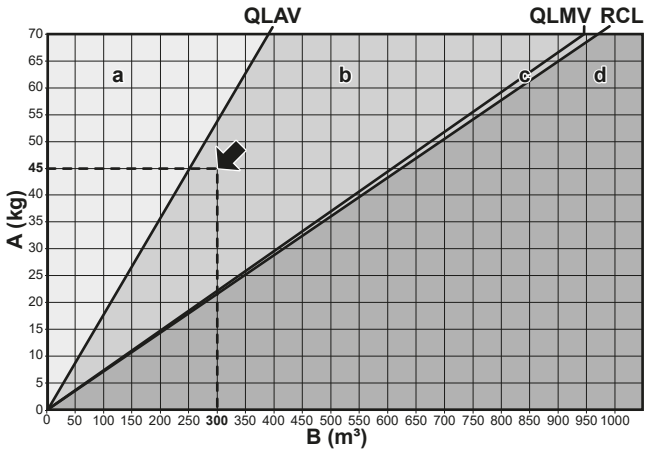
**A** Refrigerant charge
**B** Room volume
**a** 2 appropriate measures required
**b** 1 appropriate measure required
**c** No measure required

**For occupancies on the lowest underground floor of the building**

| If the total refrigerant charge (kg) divided by the room volume[(a)] ($m^3$) is… | …the number of appropriate measures must be at least… |
|---|---|
| <RCL | 0 |
| >RCL and ≤QLMV | 1 |
| >QLMV and <QLAV | 2 |
| >QLAV | Value CANNOT be exceeded! |

[(a)] For occupied spaces with a floor area exceeding 250 $m^2$, use 250 $m^2$ as the floor area for determination of the room volume (**Example:** even if the room area is 300 $m^2$ and the room height is 2.5 m, calculate the room volume as 250 $m^2$ × 2.5 m = 625 $m^3$)

**Example:** Total refrigerant change in the system is 45 kg and room volume is 300 $m^3$. 45/300 = 0.15, which is >RCL(0.072) and <QLAV(0.18), therefore install at least 2 appropriate measures in the room.




11–3 Example graph for calculation

**A** Refrigerant charge limit
**B** Room volume
**a** Installation is not allowed
**b** 2 appropriate measures required
**c** 1 appropriate measures required
**d** No measure required

**INFORMATION**

Even if there is no refrigerating system on the lowest floor, where the largest system charge (kg) in the building divided by total volume of the lowest floor ($m^3$) exceed the value for QLMV, provide a mechanical ventilation in accordance with EN 378-3:2016.

## 11.2 Mounting the indoor unit

### 11.2.1 Guidelines when installing the indoor unit

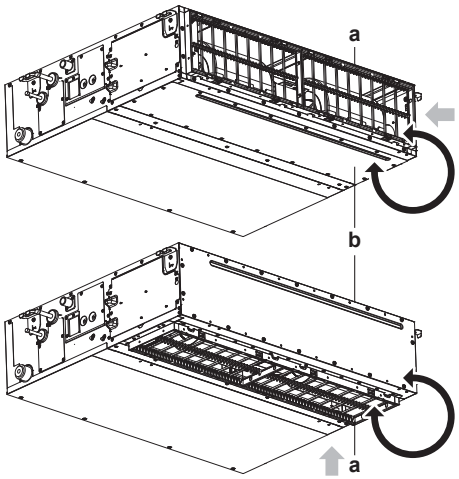
**INFORMATION**

**Optional equipment.** When installing optional equipment, also read the installation manual of the optional equipment. Depending on the field conditions, it might be easier to install the optional equipment first.

**Installation options**

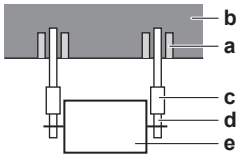
**INFORMATION**

The unit can be used with bottom suction by replacing the interchangeable plate by the air filter holding plate.



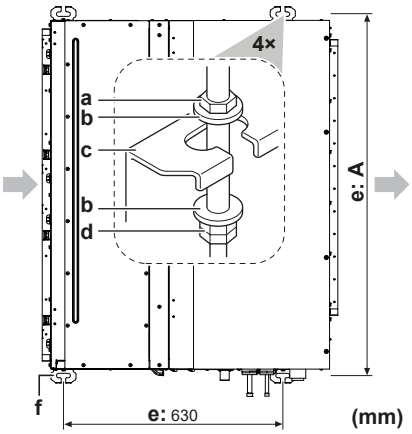

**a** Air filter holding plate with air filter(s)
**b** Interchangeable plate

- **Ceiling strength.** Check whether the ceiling is strong enough to support the weight of the unit. If there is a risk, reinforce the ceiling before installing the unit.
  - For existing ceilings, use anchors.
  - For new ceilings, use sunken inserts, sunken anchors or other field supplied parts.




**a** Anchor
**b** Ceiling slab
**c** Long nut or turn-buckle
**d** Suspension bolt
**e** Indoor unit

- **Suspension bolts.** Use M10 suspension bolts for installation. Attach the hanger bracket to the suspension bolt. Fix it securely using a nut and washer from the upper and lower sides of the hanger bracket.

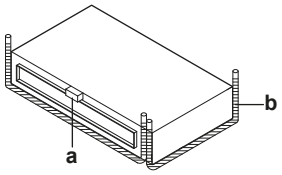



**a** Nut (field supply)
**b** Washer (accessories)
**c** Hanger bracket
**d** Double nut (field supply)
**e** Suspension bolt spacing
**f** Suspension bolt

11–1 Suspension bolt spacing (A)

| Class | A (mm) |
|---|---|
| 50 | 738 |
| 71 | 1038 |
| 112 | 1438 |

- **Level.** Make sure the unit is level at all four corners using a level or a water-filled vinyl tube.




**a** Water level
**b** Vinyl tube

**NOTICE**

Do NOT install the unit tilted. **Possible consequence:** If the unit is tilted against the direction of the condensate flow (the drain piping side is raised), the float switch might malfunction and cause water to drip.

### 11.2.2 Guidelines when installing the ducting

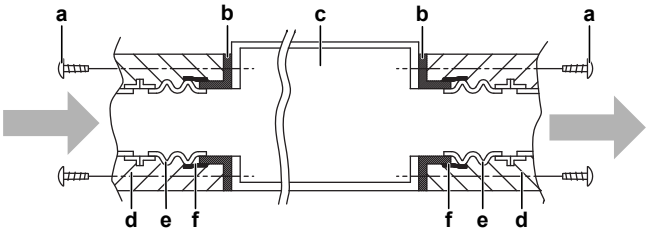
**CAUTION**

- Make sure the installation of the duct does NOT exceed the setting range of the external static pressure for the unit. Refer to the technical datasheet of your model for the setting range.
- Make sure to install the canvas duct so vibrations are NOT transmitted to the duct or ceiling. Use a sound-absorbing material (insulation material) for the lining of the duct and apply vibration insulation rubber to the hanging bolts.
- When welding, make sure NOT to spatter onto the drain pan or the air filter.
- If the metal duct passes through a metal lath, wire lath or metal plate of the wooden structure, separate the duct and wall electrically.
- Install the outlet grille in a position where the airflow will not come into direct contact with people.
- Do NOT use booster fans in the duct. Use the function to adjust the fan rate setting automatically (see "15.1 Field setting" [▸ 21]).

The ducting is to be field supplied.

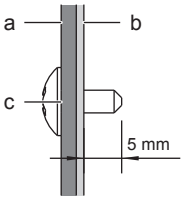
1 Connect the canvas duct to the inside of the flange on both inlet and outlet sides. Connect the canvas duct using the accessory screws.

2 Connect the duct to the canvas duct.




**a** Screws for duct flanges (accessory)
**b** Flange (located on the unit)
**c** Main unit
**d** Insulation (field supply)
**e** Canvas duct (field supply)
**f** Aluminium tape (field supply)

- **Fixing screws**. When installing an air inlet duct, select fixing screws that stick out 5 mm on the inside of the flange to protect the air filter from damage during maintenance of the filter.




**a** Air inlet duct
**b** Inside of the flange
**c** Fixing screw

3 Wind aluminium tape around the flange and duct connection. Make sure there are no air leaks at any other connection.

4 Insulate the duct to prevent condensation from forming. Use glass wool or polyethylene foam 25 mm thick.

### 11.2.3 Guidelines when installing the drain piping

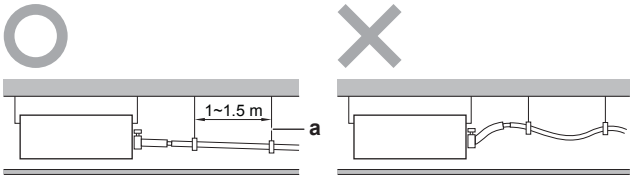
Make sure condensation water can be evacuated properly. This involves:

# 11 Unit installation

- General guidelines
- Connecting the drain piping to the indoor unit
- Checking for water leaks

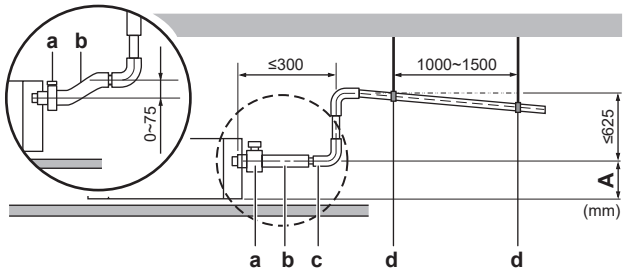
## General guidelines

- **Pipe length.** Keep drain piping as short as possible.
- **Pipe size.** Keep the pipe size equal to or greater than that of the connecting pipe (vinyl pipe of 25 mm nominal diameter and 32 mm outer diameter).
- **Slope.** Make sure the drain piping slopes down (at least 1/100) to prevent air from being trapped in the piping. Use hanging bars as shown.



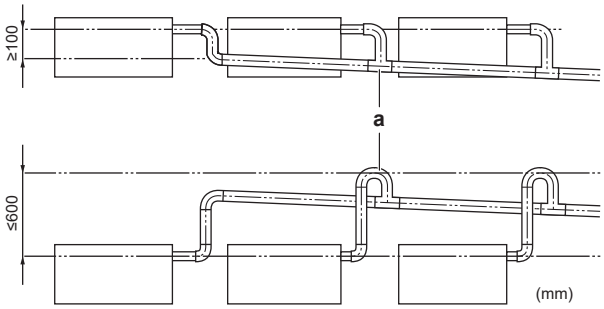

**a** Hanging bar
**O** Allowed
**X** Not allowed

- **Rising piping**. If necessary to make the slope possible, you can install rising piping.
  - Drain hose inclination: 0~75 mm to avoid stress on the piping and to avoid air bubbles.
  - Rising piping: ≤300 mm from the unit, ≤625 mm perpendicular to the unit.




**A** In case of rear suction installation 231 mm
In case of installation with canvas duct (field supply) 350~530 mm
**a** Metal clamp (accessory)
**b** Drain hose (accessory)
**c** Rising drain piping (vinyl pipe of 25 mm nominal diameter and 32 mm outer diameter) (field supply)
**d** Hanging bars (field supply)

- **Condensation.** Take measures against condensation. Insulate the complete drain piping in the building.
- **Combining drain pipes.** You can combine drain pipes. Make sure to use drain pipes and T-joints with the correct gauge for the operating capacity of the units.

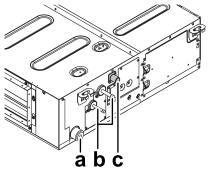



**a** T-joint

## To connect the drain piping to the indoor unit

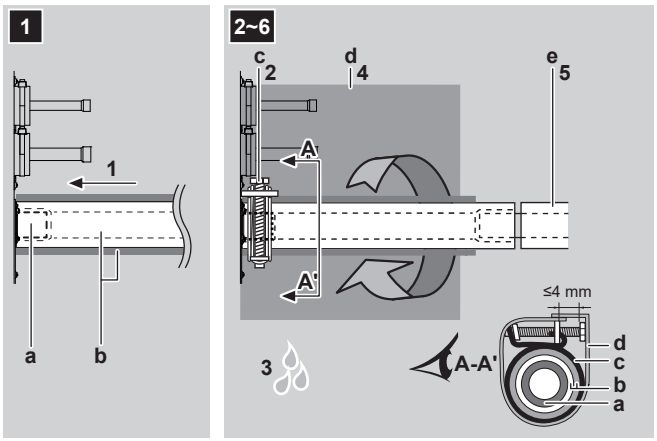
**NOTICE**

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




**a** Drain outlet for maintenance
**b** Refrigerant pipes
**c** Drain pipe connection

1. Push the drain hose as far as possible over the drain pipe connection.
2. Tighten the metal clamp until the screw head is less than 4 mm from the metal clamp part.
3. Check for water leaks (see "To check for water leaks" [▶ 17]).
4. Wind the large sealing pad (= insulation) around the metal clamp and drain hose, and fix it with tie wraps (accessory).
5. Connect the drain piping to the drain hose.



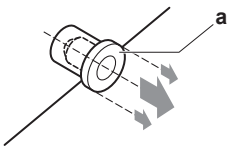

**a** Drain pipe connection (attached to the unit)
**b** Drain hose (accessory)
**c** Metal clamp (accessory)
**d** Large sealing pad (accessory)
**e** Drain piping (field supply)

**NOTICE**

- Do NOT remove the drain pipe plug. Water might leak out.
- Use the drain outlet only to discharge the water before maintenance.
- Insert and remove the drain plug gently. Excessive force may deform the drain socket of the drain pan.

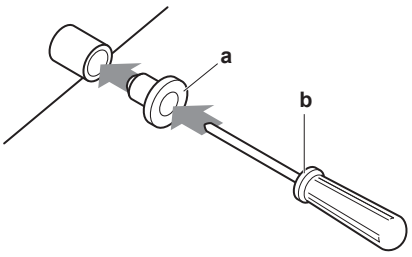
**Pull out the plug.**

- Do NOT wiggle the plug up and down.




**Push in the plug.**

- Set the plug and push it in using a Phillips screwdriver.



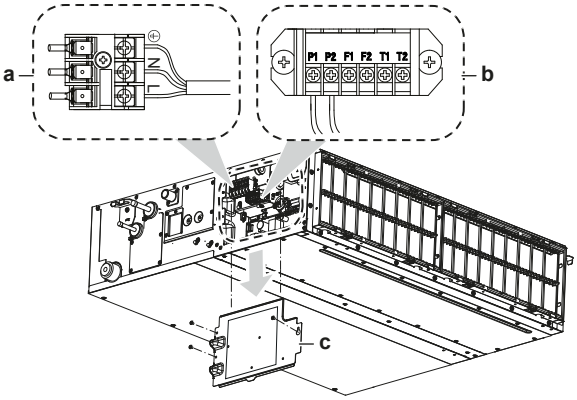

**a** Drain plug
**b** Phillips screwdriver

### To check for water leaks

The procedure differs depending on whether installation of the system is already completed. When installation of the system is not yet completed, temporarily connect the user interface and power supply to the unit.

**When installation of the system is not yet completed**

1 Temporarily connect electrical wiring.
   - Remove the service cover (c).
   - Connect the power supply (a).
   - Connect the user interface (b).
   - Reattach the service cover.



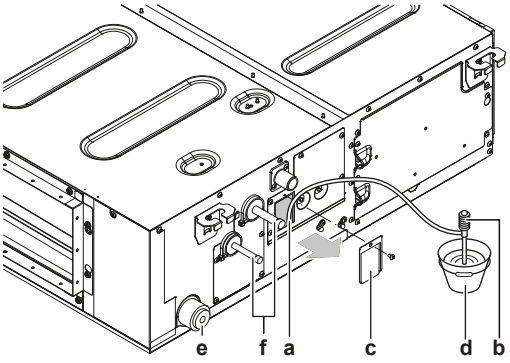

**a** Power supply terminal block
**b** User interface terminal block
**c** Service cover with wiring diagram

2 Turn ON the power supply.

3 Start fan only operation (see the reference guide or the service manual of the user interface).

4 Remove the water inlet cover (1 screw).

5 Gradually pour approximately 1 l of water through the water inlet, and check for leaks.




**a** Water inlet
**b** Portable pump
**c** Water inlet cover
**d** Bucket (adding water through water inlet)
**e** Drain outlet for maintenance
**f** Refrigerant pipes

6 Turn OFF the power.

7 Disconnect the electrical wiring.
   - Remove the service cover.
   - Disconnect the power supply and user interface.
   - Reattach the service cover.

**When installation of the system is already completed**

1 Start cooling operation (see the reference guide or the service manual of the user interface).

2 Gradually pour approximately 1 l of water through the water inlet, and check for leaks (see "When installation of the system is not yet completed" [▸ 17]).

## 11.3 Relocation

Contact your dealer for removing and reinstalling the total unit. Moving units requires technical expertise.

# 12 Piping installation

## 12.1 Preparing refrigerant piping

### 12.1.1 Refrigerant piping requirements

**NOTICE**

Refrigerant R744 requires strict cautions for keeping the system clean and dry. Foreign materials (including mineral oils or moisture) should be prevented from getting mixed into the system.

**NOTICE**

The piping and other pressure-containing parts shall be suitable for refrigerant. Use K65 copper-iron alloy tube system for high-pressure applications with a working pressure of 120 bar.

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

### Refrigerant piping diameter

| Liquid piping | Gas piping |
|---|---|
| Ø9.5 mm | Ø12.7 mm |

### Refrigerant piping material

- **Piping material:** K65 copper-iron alloy (CuFe2P), maximum operating pressure = 120 bar
- **Piping temper grade and thickness:**

| Outer diameter (Ø) | Temper grade | Thickness (t)[a] | |
|---|---|---|---|
| 9.5 mm (3/8") | R420 (drawn) | ≥0.65 mm |  |
| 12.7 mm (1/2") | | ≥0.85 mm | |

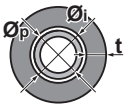


[a] Depending on the applicable legislation and the maximum working pressure of the unit (see "PS High" on the unit name plate), larger piping thickness might be required.

### 12.1.2 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) |
|---|---|---|
| 9.5 mm (3/8") | 10~14 mm | ≥10 mm |
| 12.7 mm (1/2") | 14~16 mm | ≥10 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.

## 12.2 Connecting the refrigerant piping

**DANGER: RISK OF BURNING/SCALDING**

### 12.2.1 To connect the refrigerant piping to the indoor unit

**CAUTION**

Install the refrigerant piping or components in a position where they are unlikely to be exposed to any substance which may corrode components containing refrigerant, unless the components are constructed of materials that are inherently resistant to corrosion or are suitably protected against corrosion.

- **Pipe length**. Keep refrigerant piping as short as possible.

**WARNING**

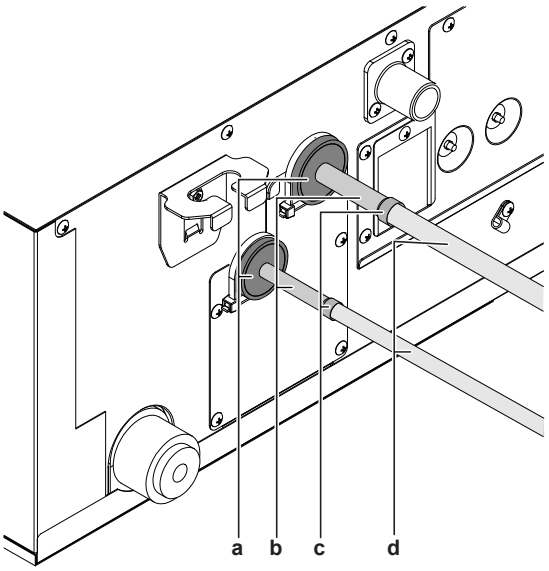
- Use K65 piping for high-pressure applications with a working pressure of 120 bar or 90 bar, depending on its location in the system.
- Use K65 unions and fittings approved for a working pressure of 120 bar or 90 bar, depending on its location in the system.
- Only brazing is allowed for connection of pipes. No other types of connections are allowed.
- Expanding of pipes is not allowed.

1 Insert the field pipe into the piping on the indoor unit side.

2 Connect refrigerant piping to the unit using only **brazed connections**.

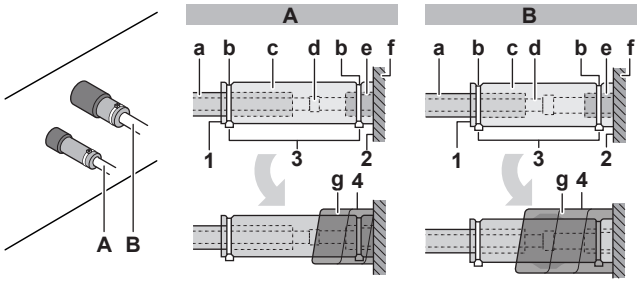
**NOTICE**

When brazing, place a wet cloth on the insulation attached on the unit (**a**) and make sure the temperature does not exceed 200°C.




**a** Insulation attached on the unit
**b** Piping on the indoor unit side
**c** Brazed connection
**d** Field piping

3 **Insulate** the refrigerant piping on the indoor unit as follows:




**A** Gas piping
**B** Liquid piping

**a** Insulation material (field supply)
**b** Tie wraps (accessory)
**c** Insulation pieces: Large (gas pipe), small (liquid pipe) (accessory)
**d** Brazed connection
**e** Refrigerant pipe connection (attached to the unit)
**f** Unit
**g** Sealing pads: Medium 1 (gas pipe), medium 2 (liquid pipe) (accessories)

**1** Turn up the seams of the insulation pieces.
**2** Attach to the base of the unit.
**3** Tighten the tie wrap on the insulation pieces.
**4** Wrap the sealing pad from the base of the unit to the top of the brazed connection.

**NOTICE**

Make sure to insulate all refrigerant piping. Any exposed piping might cause condensation.

# 13 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 provide 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.

## 13.1 Specifications of standard wiring components

| Component | | Class | | |
|---|---|---|---|---|
| | | 50 | 71 | 112 |
| Power supply cable | MCA[a] | 1.4 A | 2.0 A | 2.9 A |
| | Voltage | 220~240 V | | |
| | Phase | 1~ | | |
| | Frequency | 50/60 Hz | | |
| | Wire sizes | 2.5 mm² (3-core wire)<br>H07RN-F (60245 IEC 66) | | |
| Transmission wiring | | 0.75 to 1.25 mm² (2-core wire)<br>H05RN-F (60245 IEC 57)<br>indoor↔outdoor - maximum 1000 m (total wiring length 2000 m)<br>indoor↔user interface - maximum 500 m | | |
| User interface cable | | | | |
| Recommended field fuse | | 16 A | | |
| Residual current circuit breaker | | Must comply with applicable legislation | | |

[a] MCA=Minimum circuit ampacity. Stated values are maximum values (see electrical data of combination with indoor units for exact values).

## 13.2 To connect the electrical wiring to the indoor unit

**NOTICE**

- Follow the wiring diagram (delivered with the unit, located at the inside of the service cover).
- For instructions on how to connect the optional equipment, see the installation manual delivered with the optional equipment.
- Make sure the electrical wiring does NOT obstruct proper reattachment of the service cover.

It is important to keep the power supply and the transmission wiring separated from each other. In order to avoid any electrical interference the distance between both wirings should ALWAYS be at least 50 mm.

**NOTICE**

Be sure to keep the power line and transmission line apart from each other. Transmission wiring and power supply wiring may cross, but may NOT run parallel.

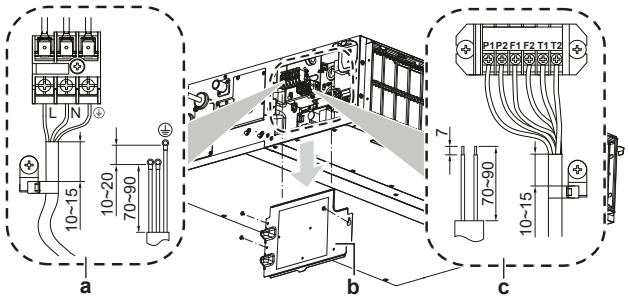
1 Remove the service cover.

2 **User interface cable**: Route the cable through the frame, connect the cable to the terminal block (symbols P1, P2) and fix the cable with a tie wrap.

3 **Transmission cable**: Route the cable through the frame, connect the cable to the terminal block (make sure the symbols F1, F2 match with the symbols on the outdoor unit), and fix the cable with a tie wrap.

4 **Appropriate measures (field supply):** If installation is required in accordance with "11.1.2 Additional installation site requirements for $CO_2$ refrigerant" [▶ 13], connect them to the terminal block (symbols T1, T2). See "13.3 To connect appropriate measures for appliances filled with $CO_2$" [▶ 20].

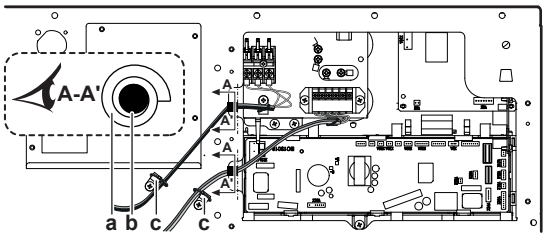
5 **Power supply cable**: Route the cable through the frame and connect the cable to the terminal block (L, N, earth).




**a** Power supply and earth wiring
**b** Service cover with wiring diagram
**c** Transmission and user interface wiring

6 Fix the cables with a tie wrap.

7 **Plastic clamp for tie wrap:** Pass tie wraps through the plastic clamps and fasten to fix the cables.



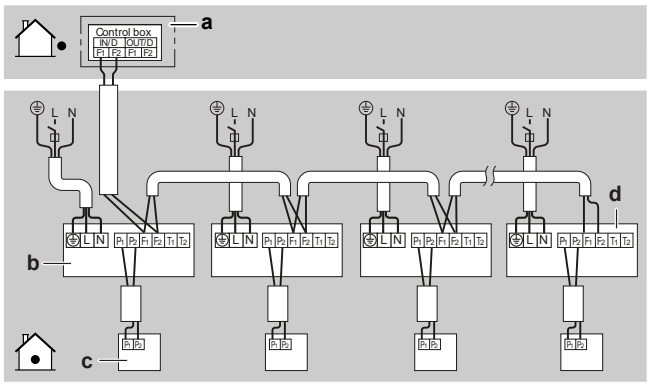

**a** Small sealing (accessory)
**b** Wiring
**c** Plastic clamp for tie wrap

8 Divide the small sealing (accessory) and wrap it around the cables to prevent water from entering the unit. Seal all gaps to prevent small animals from entering the system.

9 Reattach the service cover.

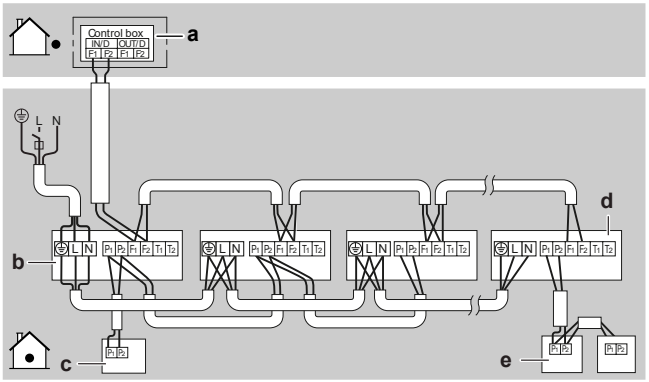
**Complete system example**

- **Example:** 1 user interface controls 1 indoor unit.




**a** Outdoor unit
**b** Indoor unit
**c** User interface
**d** Most downstream indoor unit

- **Example:** Group control or use with 2 user interfaces.




**a** Outdoor unit
**b** Indoor unit
**c** User interface (controls 3 indoor units)
**d** Most downstream indoor unit
**e** For use with 2 user interfaces

- **Setting master unit (Cooling/Heating masterhood).** In case of group control, connect the user interface wiring directly to the master unit. Do not connect user interfaces directly to slave units. Slave units are restricted in their operation by the master unit (e.g. 1 outdoor unit does not allow for 1 indoor unit to run in cooling operation while another runs in heating operation). For setting using the user interface, refer to the manual or reference guide of the user interface.

**INFORMATION**

In case of group control, it is not necessary to assign a group address to the indoor unit. The group address is automatically set when the power is turned on.

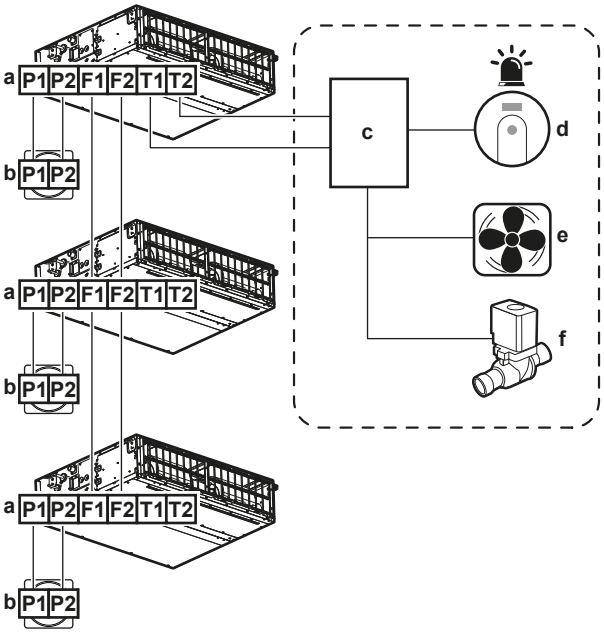
## 13.3 To connect appropriate measures for appliances filled with $CO_2$

Appropriate measures are field supplied. For details on how to connect wiring to the appropriate measures, refer to the documentation of the used appropriate measures.

1 Determine the minimum number of appropriate measures for the room in accordance with "11.1.2 Additional installation site requirements for $CO_2$ refrigerant" [▸ 13].

2 Connect the appropriate measures to the indoor unit terminal block, symbols T1, T2.

3 If the $CO_2$ refrigerant leak detector is installed, **enable the function for refrigerant leak detection** as described in "15.1 Field setting" [▸ 21].




13–1 Example of appropriate measures connection layout for one room

**a** Terminal strip on the indoor unit
**b** Terminal P1/P2 on the user interface
**c** Control panel (field supply)
**d** $CO_2$ refrigerant leak detector (field supply) in combination with a safety alarm (field supply)
**e** Ventilation (natural or mechanical) (field supply)
**f** Shut-off valves (field supply)

# 14 Commissioning

**NOTICE**

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

## 14.1 Checklist before commissioning

After the installation of the unit, first check the items listed below. Once all checks are fulfilled, the unit must be closed. Power-up the unit after it is closed.

| | |
|---|---|
| ☐ | You read the complete installation and operation instructions, as described in the **installer and user reference guide**. |
| ☐ | The **indoor unit** is properly mounted. |
| ☐ | The **outdoor unit** is properly mounted. |
| ☐ | Make sure **drain piping** is properly installed, insulated and drainage flows smoothly. Check for water leaks. |
| ☐ | The **ducting** is properly installed and insulated. |
| ☐ | The **refrigerant pipes** (gas and liquid) are installed correctly and thermally insulated. |
| ☐ | There are NO **refrigerant leaks**. |
| ☐ | There are NO **missing phases** or **reversed phases**. |
| ☐ | The system is properly **earthed** and the earth terminals are tightened. |
| ☐ | The **fuses** or locally installed protection devices are installed according to this document, and have NOT been bypassed. |

| | |
|---|---|
| ☐ | 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. |
| ☐ | The **stop valves** (gas and liquid) on the outdoor unit are fully open. |

## 14.2 To perform a test run

**INFORMATION**

Test run is carried out on the outdoor unit side. For the test run procedure, see the reference guide of the outdoor unit. If necessary, also see the reference guide of the user interface.

**NOTICE**

Do NOT interrupt the test run.

## 14.3 Error codes when performing a test run

If the installation of the outdoor unit has NOT been done correctly, the following error codes may be displayed on the user interface:

**INFORMATION**

To display error codes, refer to the reference guide of the user interface.

| Error code | Possible cause |
|---|---|
| Nothing displayed<br>(the currently set temperature is not displayed) | ▪ The wiring is disconnected or there is a wiring error (between power supply and outdoor unit, between outdoor unit and indoor units, between indoor unit and user interface).<br>▪ The fuse on the outdoor or indoor unit PCB has blown. |
| E3, E4 | ▪ The stop valves are closed.<br>▪ The air inlet or air outlet is blocked. |
| EF | Abnormality of the refrigeration capacity booster (Qup) unit. |
| F4 | Defective expansion valve control refrigerator |
| L4 | The air inlet or air outlet is blocked. |
| U4 or UF | The inter-unit branch wiring is not correct. |
| UA | The outdoor and indoor unit are incompatible. |

# 15 Configuration

## 15.1 Field setting

Make the following field settings so that they correspond with the actual installation setup and with the needs of the user:

- Bottom suction or rear suction installation setting
- External static pressure setting using:
  - Automatic airflow adjustment setting
  - User interface
- Time to clean air filter
- Function for refrigerant leak detection

**To set bottom suction or rear suction installation**

| If you have an installation with… | Then[1] | | |
|---|---|---|---|
| | M | SW/C1 | —/C2 |
| Rear suction | 13(23) | 11 | 01 |
| Bottom suction | | | 02 |

**To set automatic airflow adjustment**

The automatic airflow adjustment function measures the air volume and static pressure and adjusts it towards the nominal air flow, whatever the length of duct.

- When the air conditioning unit is running in fan operation mode:

**1** Stop the air conditioning unit.

**2** Set —/C2 to 03.

| Setting content: | Then[1] | | |
|---|---|---|---|
| | M | SW/C1 | —/C2 |
| Airflow adjustment is OFF | 11(21) | 7 | 01 |
| Press ON/OFF to return to normal operating mode.<br>**Possible consequence:** The user interface operation lamp will light up and the unit will start the fan operation for automatic airflow adjustment. | | | 03 |
| Operation stops after 1 to 8 minutes.<br>**Possible consequence:** Setting is finished and the user interface operation lamp will be off. | | | 02 |

If there is no change after airflow adjustment, perform the setting again.

**INFORMATION**

- The fan speed of the indoor unit is preset to ensure the standard external static pressure.
- To set a higher or lower external static pressure, reset the initial setting with the user interface.

**User interface**

Check the indoor unit setting:—/C2 of mode 11(21) must be set to 01.

Change—/C2 according to the external static pressure of the duct to be connected as in the table below.

[1] Field settings are defined as follows:
- **M**: Mode number – **First number**: for group of units – **Number between brackets**: for individual unit
- **SW**: Setting number / **C1**: First code number
- —: Value number / **C2**: Second code number
- ▭: Default

| External static pressure[1] | | | | | |
|---|---|---|---|---|---|
| M | SW/C1 | —/C2 | Class | | |
| | | | 50 | 71 | 112 |
| 13(23) | 6 | 01 | 30 | 40 | 50 |
| | | 02 | — | — | — |
| | | 03 | 30 | — | — |
| | | 04 | 40 | 40 | — |
| | | 05 | 50 | 50 | 50 |
| | | 06 | 60 | 60 | 60 |
| | | 07 | 70 | 70 | 70 |
| | | 08 | 80 | 80 | 80 |
| | | 09 | 90 | 90 | 90 |
| | | 10 | 100 | 100 | 100 |
| | | 11 | 110 | 110 | 110 |
| | | 12 | 120 | 120 | 120 |
| | | 13 | 130 | 130 | 130 |
| | | 14 | 140 | 140 | 140 |
| | | 15 | 150 | 150 | 150 |

**Time to clean air filter**

This setting must correspond with the air contamination in the room. It determines the interval at which the **TIME TO CLEAN AIR FILTER** notification is displayed on the user interface. When using a wireless user interface, you must also set the address (see the installation manual of the user interface).

| If you want an interval of… (air contamination) | Then[1] | | |
|---|---|---|---|
| | M | SW/C1 | —/C2 |
| ±2500 h (light) | 10(20) | 0 | 01 |
| ±1250 h (heavy) | | | 02 |
| No notification | | 3 | 02 |

**Function for refrigerant leak detection**

If the $CO_2$ refrigerant leak detector (field supply) is connected to the indoor unit (symbols T1, T2), setting —/C2 of mode 12(22) must be changed to 08. See "7.3.1 About refrigerant leak detection" [▸ 10].

| If the $CO_2$ refrigerant leak detector (field supply) is… | Then[1] | | |
|---|---|---|---|
| | M | SW/C1 | —/C2 |
| NOT installed | 12(22) | 1 | 01 |
| Installed | | | 08 |

- **2 or more user interfaces:** When using 2 or more user interfaces, one must be set to "MAIN" and the other to "SUB". For setting procedure see the installation and operation manual of the used user interface.

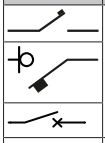
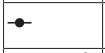
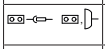
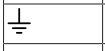
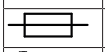
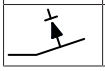
# 16 Technical data

- 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).

## 16.1 Wiring diagram

### 16.1.1 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 |
| | | 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 |
| HAP | Light emitting diode (service monitor green) |
| HIGH VOLTAGE | High voltage |

[1] Field settings are defined as follows:
- **M**: Mode number – **First number**: for group of units – **Number between brackets**: for individual unit
- **SW**: Setting number / **C1**: First code number
- —: Value number / **C2**: Second code number
- ▒: Default

| Symbol | Meaning |
|---|---|
| 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 |
| X*M | Terminal strip (block) |
| Y*E | Electronic expansion valve coil |
| Y*R, Y*S | Reversing solenoid valve coil |

| Symbol | Meaning |
|---|---|
| Z*C | Ferrite core |
| ZF, Z*F | Noise filter |

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