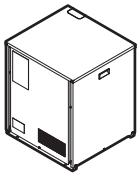
# Installation and operation manual

## VRV IV compressor unit for indoor installation



**RKXYQ5TAY1B**

Installation and operation manual
VRV IV compressor unit for indoor installation

**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 Europe N.V.

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) ίζιαvljuje 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:

## RDXYQ5TAV1B*,
## RKXYQ5TAY1B*,

* = , , 1, 2, 3, ..., 9

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 der/den 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 forutsetning 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 skladni 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 održiavajúc ustanovenia:
25 bunun koşullarına uygun olarak:

Machinery 2006/42/EC ***
Electromagnetic Compatibility 2014/30/EU *
Pressure Equipment 2014/68/EU **

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 * as set out in <A> and judged positively by <B> 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.
02 * wie in **<A>** aufgeführt und von **<B>** positiv beurteilt gemäß **Zertifikat <C>**.
** wie in der Technischen Konstruktionsakte **<D>** aufgeführt und von **<E>** (Angewandtes Modul **<F>**) positiv ausgezeichnet. **<G>**. Risikoart **<H>**. Siehe auch nächste Seite.
03 * tel que défini dans **<A>** et évalué positivement par **<B>** conformément au **Certificat <C>**.
** tel que stipulé dans le Fichier de Construction Technique **<D>** et jugé positivement par **<E>** (Module appliqué **<F>**). **<G>**. Catégorie de risque **<H>**. Se reporter également à la page suivante.
04 * zoals vermeld in **<A>** en positief beoordeeld door **<B>** overeenkomstig **Certificaat <C>**.
** zoals vermeld in het Technisch Constructiedossier **<D>** en in orde bevonden door **<E>** (Toegepaste module **<F>**). **<G>**. Risicocategorie **<H>**. Zie ook de volgende pagina.
05 * como se establece en **<A>** y es valorado positivamente por **<B>** de acuerdo con el **Certificado <C>**.
** tal como se expone en el Archivo de Construcción Técnica **<D>** y juzgado positivamente por **<E>** (Modulo aplicado **<F>**). **<G>**. Categoría de riesgo **<H>**. Consulte también la siguiente página.
06 * delineato nel **<A>** e giudicato positivamente da **<B>** secondo il **Certificato <C>**.
** delineato nel File Tecnico di Costruzione **<D>** e giudicato positivamente da **<E>** (Modulo **<F>** applicato). **<G>**. Categoria di rischio **<H>**. Fare riferimento anche alla pagina successiva.
07 * όπως καθορίζεται στο **<A>** και κρίνεται θετικά από το **<B>** σύμφωνα με το **Πιστοποιητικό <C>**.
** όπως προσδιορίζεται στο Αρχείο Τεχνικής Κατασκευής **<D>** και κρίνεται θετικά από το **<E>** (Χρησιμοποιούμενη υπομονάδα **<F>**). **<G>**. Κατηγορία επικινδυνότητας **<H>**. Ανατρέξτε επίσης στην επόμενη σελίδα.
08 * tal como estabelecido em **<A>** e com o parecer positivo de **<B>** de acordo com o **Certificado <C>**.
** tal como estabelecido no Ficheiro Técnico de Construção **<D>** e com o parecer positivo de **<E>** (Módulo aplicado **<F>**). **<G>**. Categoria de risco **<H>**. Consultar também a página seguinte.
09 * как указано в **<A>** и в соответствии с положительным решением **<B>** согласно **Свидетельству <C>**.
** как указано в Досье технического толкования **<D>** и в соответствии с положительным решением **<E>** (Прикладной модуль **<F>**). **<G>**. Категория риска **<H>**. Также смотрите следующую страницу.
10 * som anført i **<A>** og positivt vurderet af **<B>** i henhold til **Certifikat <C>**.
** som anført i den Tekniske Konstruktionsfil **<D>** og positivt vurderet af **<E>** (Anvendt modul **<F>**). **<G>**. Risikoklasse **<H>**. Se også næste side.
11 * enligt **<A>** och godkänts av **<B>** enligt **Certifikatet <C>**.
** i enlighet med den Tekniska Konstruktionsfilen **<D>** som positivt intygats av **<E>** (Fastsatt modul **<F>**). **<G>**. Riskkategori **<H>**. Se även nästa sida.
12 * som det fremkommer i **<A>** og gjennom positiv bedømmelse av **<B>** ifølge **Sertifikat <C>**.
** som det fremkommer i den Tekniske Konstruksjonsfilen **<D>** og gjennom positiv bedømmelse av **<E>** (Anvendt modul **<F>**). **<G>**. Risikokategori **<H>**. Se også neste side.
13 * jotka on esitetty asiakirjassa **<A>** ja jotka **<B>** on hyväksynyt **Sertifikaatin <C>** mukaisesti.
** jotka on esitetty Teknisessä Asiakirjassa **<D>** ja jotka **<E>** on hyväksynyt (Sovellettu moduli **<F>**). **<G>**. Vaaraluokka **<H>**. Katso myös seuraava sivu.
14 * jak bylo uvedeno v **<A>** a pozitivně zjištěno **<B>** v souladu s **osvědčením <C>**.
** jak bylo uvedeno v souboru technické konstrukce **<D>** a pozitivně zjištěno **<E>** (použitý modul **<F>**). **<G>**. Kategorie rizik **<H>**. Viz také následující strana.
15 * kako je izloženo u **<A>** i pozitivno ocijenjeno od strane **<B>** prema **Certifikatu <C>**.
** kako je izloženo u Datoteci o tehničkoj konstrukciji **<D>** i pozitivno ocijenjeno od strane **<E>** (Primijenjen modul **<F>**). **<G>**. Kategorija opasnosti **<H>**. Također pogledajte na slijedećoj stranici.
16 * a(z) **<A>** alapján, a(z) **<B>** igazolta a megfelelést, a(z) **<C>** **tanúsítvány** szerint.
** a(z) **<D>** műszaki konstrukciós dokumentáció alapján, a(z) **<E>** igazolta a megfelelést (alkalmazott modul: **<F>**). **<G>**. Veszélyességi kategória **<H>**. Lásd még a következő oldalon.
17 * zgodnie z dokumentacją **<A>**, pozytywną opinią **<B>** i **Świadectwem <C>**.
** zgodnie z archiwalną dokumentacją konstrukcyjną **<D>** i pozytywną opinią **<E>** (Zastosowany moduł **<F>**). **<G>**. Kategoria zagrożenia **<H>**. Patrz także następna strona.
18 * aşa cum este stabilit în **<A>** şi apreciat pozitiv de **<B>** în conformitate cu **Certificatul <C>**.
** conform celor stabilite în Dosarul tehnic de construcţie **<D>** şi apreciate pozitiv de **<E>** (Modul aplicat **<F>**). **<G>**. Categorie de risc **<H>**. Consultaţi de asemenea pagina următoare.
19 * kot je določeno v **<A>** in odobreno s strani **<B>** v skladu s **certifikatom <C>**.
** kot je določeno v tehnični mapi **<D>** in odobreno s strani **<E>** (Uporabljen modul **<F>**). **<G>**. Kategorija tveganja **<H>**. Glejte tudi na naslednji strani.
20 * nagu on näidatud dokumendis **<A>** ja heaks kiidetud **<B>** järgi vastavalt **sertifikaadile <C>**.
** nagu on näidatud tehnilises dokumentatsioonis **<D>** ja heaks kiidetud **<E>** järgi (lisamoodul **<F>**). **<G>**. Riskikategooria **<H>**. Vaadake ka järgmist lehekülge.
21 * както е изложено в **<A>** и оценено положително от **<B>** съгласно **Сертификата <C>**.
** както е заложено в Акта за техническа конструкция **<D>** и оценено положително от **<E>** (Приложен модул **<F>**). **<G>**. Категория риск **<H>**. Вижте също на следващата страница.
22 * kaip nustatyta **<A>** ir kaip teigiamai nuspręsta **<B>** pagal **Sertifikatą <C>**.
** kaip nurodyta Techninėje konstrukcijos byloje **<D>** ir patvirtinta **<E>** (taikomas modulis **<F>**). **<G>**. Rizikos kategorija **<H>**. Taip pat žiūrėkite ir kitą puslapį.
23 * kā norādīts **<A>** un atbilstoši **<B>** pozitīvajam vērtējumam saskaņā ar **sertifikātu <C>**.
** kā noteikts tehniskajā dokumentācijā **<D>**, atbilstoši **<E>** pozitīvajam lēmumam (piekritīgā sadaļa: **<F>**). **<G>**. Riska kategorija **<H>**. Skat. arī nākošo lappusi.
24 * ako bolo uvedené v **<A>** a pozitívne zistené **<B>** v súlade s **osvedčením <C>**.
** ako je to stanovené v Súbore technickej konštrukcie **<D>** a kladne posúdené **<E>** (Aplikovaný modul **<F>**). **<G>**. Kategória nebezpečia **<H>**. Viď tiež nasledovnú stranu.
25 * **<A>**'da belirtildiği gibi ve **<C>** **Sertifikasına** göre **<B>** tarafından olumlu olarak değerlendirildiği gibi.
** **<D>** Teknik Yapı Dosyasında belirtildiği gibi ve **<E>** tarafından olumlu olarak (Uygulanan modül **<F>**) değerlendirilmiştir. **<G>**. Risk kategorisi **<H>**. Ayrıca bir sonraki sayfaya bakın.

| | |
|---|---|
| **<A>** | **DAIKIN.TCF.030A28/03-2017** |
| **<B>** | **TÜV (NB1856)** |
| **<C>** | **12080901.T30** |
| **<D>** | **Daikin.TCFP.001** |
| **<E>** | **VINÇOTTE nv (NB0026)** |
| **<F>** | **D1** |
| **<H>** | II |

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**01 Design Specifications of the models to which this declaration relates:**
**02 Konstruktionsdaten der Modelle auf die sich diese Erklärung bezieht:**
**03 Spécifications de conception des modèles auxquels se rapporte cette déclaration:**
**04 Ontwerpspecificaties van de modellen waarop deze verklaring betrekking heeft:**
**05 Especificaciones de diseño de los modelos a los cuales hace referencia esta declaración:**
**06 Specifiche di progetto dei modelli cui fa riferimento la presente dichiarazione:**

**07 Προδιαγραφές Σχεδιασμού των μοντέλων με τα οποία σχετίζεται η δήλωση:**
**08 Especificações de projecto dos modelos a que se aplica esta declaração:**
**09 Проектные характеристики моделей, к которым относится настоящее заявление:**
**10 Typespecifikationer for de modeller, som denne erklæring vedrører:**
**11 Designspecifikationer för de modeller som denna deklaration gäller:**
**12 Konstruksjonsspesifikasjoner for de modeller som berøres av denne deklarasjonen:**

**13 Tätä ilmoitusta koskevien mallien rakennemäärittely:**
**14 Specifikace designu modelů, ke kterým se vztahuje toto prohlášení:**
**15 Specifikacije dizajna za modele na koje se ova izjava odnosi:**
**16 A jelen nyilatkozat tárgyát képező modellek tervezési jellemzői:**
**17 Specyfikacje konstrukcyjne modeli, których dotyczy deklaracja:**
**18 Specificaţiile de proiectare ale modelelor la care se referă această declaraţie:**
**19 Specifikacije tehničnega načrta za modele, na katere se nanaša ta deklaracija:**

**20 Deklaratsiooni alla kuuluvate mudelite disainispetsifikatsioonid:**
**21 Проектни спецификации на моделите, за които се отнася декларацията:**
**22 Konstrukcinės specifikacijos modelių, kurie susiję su šia deklaracija:**
**23 To modeļu dizaina specifikācijas, uz kurām attiecas šī deklarācija:**
**24 Konštrukčné špecifikácie modelu, ktorého sa týka toto vyhlásenie:**
**25 Bu bildirinin ilgili olduğu modellerin Tasarım Özellikleri:**

---

**01** · 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

**02** · Maximal zulässiger Druck (PS): **<K>** (Bar)
· Minimal/maximal zulässige Temperatur (TS*):
* TSmin: Mindesttemperatur auf der Niederdruckseite: **<L>** (°C)
* TSmax: Sättigungstemperatur die dem maximal zulässigen Druck (PS) entspricht: **<M>** (°C)
· Kältemittel: **<N>**
· Einstellung der Druck-Schutzvorrichtung: **<P>** (Bar)
· Herstellungsnummer und Herstellungsjahr: siehe Typenschild des Modells

**03** · Pression maximale admise (PS): **<K>** (bar)
· Température minimum/maximum admise (TS*):
* TSmin: température minimum côté basse pression: **<L>** (°C)
* TSmax: température saturée correspondant à la pression maximale admise (PS): **<M>** (°C)
· Réfrigérant: **<N>**
· Réglage du dispositif de sécurité de pression: **<P>** (bar)
· Numéro de fabrication et année de fabrication: se reporter à la plaquette signalétique du modèle

**04** · Maximaal toelaatbare druk (PS): **<K>** (bar)
· Minimaal/maximaal toelaatbare temperatuur (TS*):
* TSmin: Minimumtemperatuur aan lagedrukzijde: **<L>** (°C)
* TSmax: Verzadigde temperatuur die overeenstemt met de maximaal toelaatbare druk (PS): **<M>** (°C)
· Koelmiddel: **<N>**
· Instelling van drukbeveiliging: **<P>** (bar)
· Fabricagenummer en fabricagejaar: zie naamplaat model

**05** · Presión máxima admisible (PS): **<K>** (bar)
· Temperatura mínima/máxima admisible (TS*):
* TSmin: Temperatura mínima en el lado de baja presión: **<L>** (°C)
* TSmax: Temperatura saturada correspondiente a la presión máxima admisible (PS): **<M>** (°C)
· Refrigerante: **<N>**
· Ajuste del presostato de seguridad: **<P>** (bar)
· Número de fabricación y año de fabricación: consulte la placa de especificaciones técnicas del modelo

**06** · Pressione massima consentita (PS): **<K>** (bar)
· Temperatura minima/massima consentita (TS*):
* TSmin: temperatura minima nel lato di bassa pressione: **<L>** (°C)
* TSmax: temperatura satura corrispondente alla pressione massima consentita (PS): **<M>** (°C)
· Refrigerante: **<N>**
· Impostazione del dispositivo di controllo della pressione: **<P>** (bar)
· Numero di serie e anno di produzione: fare riferimento alla targhetta del modello

**07** · Μέγιστη επιτρεπόμενη πίεση (PS): **<K>** (bar)
· Ελάχιστη/μέγιστη επιτρεπόμενη θερμοκρασία (TS*):
* TSmin: Ελάχιστη θερμοκρασία για την πλευρά χαμηλής πίεσης: **<L>** (°C)
* TSmax: Κορεσμένη θερμοκρασία που αντιστοιχεί με τη μέγιστη επιτρεπόμενη πίεση (PS): **<M>** (°C)
· Ψυκτικό: **<N>**
· Ρύθμιση της διάταξης ασφάλειας πίεσης: **<P>** (bar)
· Αριθμός κατασκευής και έτος κατασκευής: ανατρέξτε στην πινακίδα αναγνώρισης του μοντέλου

**08** · Pressão máxima permitida (PS): **<K>** (bar)
· Temperaturas mínima e máxima permitidas (TS*):
* TSmin: Temperatura mínima em baixa pressão: **<L>** (°C)
* TSmax: Temperatura de saturação correspondente à pressão máxima permitida (PS): **<M>** (°C)
· Refrigerante: **<N>**
· Regulação do dispositivo de segurança da pressão: **<P>** (bar)
· Número e ano de fabrico: consultar a placa de especificações da unidade

**09** · Максимально допустимое давление (PS): **<K>** (бар)
· Минимально/Максимально допустимая температура (TS*):
* TSmin: Минимальная температура на стороне низкого давления: **<L>** (°C)
* TSmax: Температура кипения, соответствующая максимально допустимому давлению (PS): **<M>** (°C)
· Хладагент: **<N>**
· Настройка устройства защиты по давлению: **<P>** (бар)
· Заводской номер и год изготовления: смотрите паспортную табличку модели

**10** · Maks. tilladt tryk (PS): **<K>** (bar)
· Min./maks. tilladte temperatur (TS*):
* TSmin: Min. temperatur på lavtrykssiden: **<L>** (°C)
* TSmax: Mættet temperatur svarende til maks. tilladte tryk (PS): **<M>** (°C)
· Kølemiddel: **<N>**
· Indstilling af tryksikringsudstyr: **<P>** (bar)
· Produktionsnummer og fremstillingsår: se modellens fabriksskilt

**11** · Maximalt tillåtet tryck (PS): **<K>** (bar)
· Min/max tillåten temperatur (TS*):
* TSmin: Minimumtemperatur på lågtrycksidan: **<L>** (°C)
* TSmax: Mättnadstemperatur som motsvarar maximalt tillåtet tryck (PS): **<M>** (°C)
· Köldmedel: **<N>**
· Inställning för trycksäkerhetsenhet: **<P>** (bar)
· Tillverkningsnummer och tillverkningsår: se modellens namnplåt

**12** · Maksimalt tillatt trykk (PS): **<K>** (bar)
· Minimalt/maksimalt tillatt temperatur (TS*):
* TSmin: Minimumstemperatur på lavtrykksiden: **<L>** (°C)
* TSmax: Metningstemperatur i samsvar med maksimalt tillatt trykk (PS): **<M>** (°C)
· Kjølemedium: **<N>**
· Innstilling av sikkerhetsanordning for trykk: **<P>** (bar)
· Produksjonsnummer og produksjonsår: se modellens merkeplate

**13** · Suurin sallittu paine (PS): **<K>** (bar)
· Pienin/suurin sallittu lämpötila (TS*):
* TSmin: Alhaisin matalapainepuolen lämpötila: **<L>** (°C)
* TSmax: Suurinta sallittua painetta (PS) vastaava kyllästyslämpötila: **<M>** (°C)
· Kylmäaine: **<N>**
· Varmuuspainelaitteen asetus: **<P>** (bar)
· Valmistusnumero ja valmistusvuosi: katso mallin nimikilpi

**14** · Maximální přípustný tlak (PS): **<K>** (bar)
· Minimální/maximální přípustná teplota (TS*):
* TSmin: Minimální teplota na nízkotlaké straně: **<L>** (°C)
* TSmax: Saturovaná teplota odpovídající maximálnímu přípustnému tlaku (PS): **<M>** (°C)
· Chladivo: **<N>**
· Nastavení bezpečnostního tlakového zařízení: **<P>** (bar)
· Výrobní číslo a rok výroby: viz typový štítek modelu

**15** · Najveći dopušten tlak (PS): **<K>** (bar)
· Najniža/najviša dopuštena temperatura (TS*):
* TSmin: Najniža temperatura u području niskog tlaka: **<L>** (°C)
* TSmax: Standardna temperatura koja odgovara najvećem dopuštenom tlaku (PS): **<M>** (°C)
· Rashladno sredstvo: **<N>**
· Postavke sigurnosne naprave za tlak: **<P>** (bar)
· Proizvodni broj i godina proizvodnje: pogledajte natpisnu pločicu modela

**16** · Legnagyobb megengedhető nyomás (PS): **<K>** (bar)
· Legkisebb/legnagyobb megengedhető hőmérséklet (TS*):
* TSmin: Legkisebb megengedhető hőmérséklet a kis nyomású oldalon: **<L>** (°C)
* TSmax: A legnagyobb megengedhető nyomásnak (PS) megfelelő telítettségi hőmérséklet: **<M>** (°C)
· Hűtőközeg: **<N>**
· A túlnyomás-kapcsoló beállítása: **<P>** (bar)
· Gyártási szám és gyártási év: lásd a berendezés adattábláján

**17** · Maksymalne dopuszczalne ciśnienie (PS): **<K>** (bar)
· Minimalna/maksymalna dopuszczalna temperatura (TS*):
* TSmin: Minimalna temperatura po stronie niskociśnieniowej: **<L>** (°C)
* TSmax: Temperatura nasycenia odpowiadająca maksymalnemu dopuszczalnemu ciśnieniu (PS): **<M>** (°C)
· Czynnik chłodniczy: **<N>**
· Nastawa ciśnieniowego urządzenia bezpieczeństwa: **<P>** (bar)
· Numer fabryczny oraz rok produkcji: patrz tabliczka znamionowa modelu

**18** · Presiune maximă admisibilă (PS): **<K>** (bar)
· Temperatură minimă/maximă admisibilă (TS*):
* TSmin: Temperatură minimă pe partea de presiune joasă: **<L>** (°C)
* TSmax: Temperatură de saturaţie corespunzând presiunii maxime admisibile (PS): **<M>** (°C)
· Agent frigorific: **<N>**
· Reglarea dispozitivului de siguranţă pentru presiune: **<P>** (bar)
· Numărul de fabricaţie şi anul de fabricaţie: consultaţi placa de identificare a modelului

**19** · Maksimalni dovoljeni tlak (PS): **<K>** (bar)
· Minimalna/maksimalna dovoljena temperatura (TS*):
* TSmin: Minimalna temperatura na nizkotlačni strani: **<L>** (°C)
* TSmax: Nasičena temperatura, ki ustreza maksimalnemu dovoljenemu tlaku (PS): **<M>** (°C)
· Hladivo: **<N>**
· Nastavljanje varnostne naprave za tlak: **<P>** (bar)
· Tovarniška številka in leto proizvodnje: glejte napisno ploščico

**20** · Maksimaalne lubatud surve (PS): **<K>** (bar)
· Minimaalne/maksimaalne lubatud temperatuur (TS*):
* TSmin: Minimaalne temperatuur madalsurve küljel: **<L>** (°C)
* TSmax: Maksimaalsele lubatud survele (PS) vastav küllastunud temperatuur: **<M>** (°C)
· Jahutusaine: **<N>**
· Surve turvaseadme seadistus: **<P>** (bar)
· Tootmisnumber ja tootmisaasta: vaadake mudeli andmeplaati

**21** · Максимално допустимо налягане (PS): **<K>** (bar)
· Минимално/максимално допустима температура (TS*):
* TSmin: Минимална температура от страната на ниското налягане: **<L>** (°C)
* TSmax: Температура на насищане, съответстваща на максимално допустимото налягане (PS): **<M>** (°C)
· Охладител: **<N>**
· Настройка на предпазното устройство за налягане: **<P>** (bar)
· Фабричен номер и година на производство: вижте табелката на модела

**22** · Maksimalus leistinas slėgis (PS): **<K>** (bar)
· Minimali/maksimali leistina temperatūra (TS*):
* TSmin: Minimali temperatūra žemo slėgio pusėje: **<L>** (°C)
* TSmax: Prisotinta temperatūra, atitinkamti maksimalų leistiną slėgį (PS): **<M>** (°C)
· Šaldymo skystis: **<N>**
· Apsauginio slėgio prietaiso nustatymas: **<P>** (bar)
· Gaminio numeris ir pagaminimo metai: žiūrėkite modelio pavadinimo plokštelę

**23** · Maksimālais pieļaujamais spiediens (PS): **<K>** (bar)
· Minimālā/maksimālā pieļaujamā temperatūra (TS*):
* TSmin: Minimālā temperatūra zemā spiediena pusē: **<L>** (°C)
* TSmax: Piesātinātā temperatūra saskaņā ar maksimālo pieļaujamo spiedienu (PS): **<M>** (°C)
· Dzesinātājs: **<N>**
· Spiediena drošības ierīces iestatīšana: **<P>** (bar)
· Izgatavošanas numurs un izgatavošanas gads: skat. modeļa izgatavotājuzņēmuma plāksnītie

**24** · Maximálny povolený tlak (PS): **<K>** (bar)
· Minimálna/maximálna povolená teplota (TS*):
* TSmin: Minimálna teplota na nízkotlakovej strane: **<L>** (°C)
* TSmax: Nasýtená teplota korešpondujúca s maximálnym povoleným tlakom (PS): **<M>** (°C)
· Chladivo: **<N>**
· Nastavenie tlakového poistného zariadenia: **<P>** (bar)
· Výrobné číslo a rok výroby: nájdete na výrobnom štítku modelu

**25** · İzin verilen maksimum basınç (PS): **<K>** (bar)
· İzin verilen minimum/maksimum sıcaklık (TS*):
* TSmin: Düşük basınç tarafındaki minimum sıcaklık: **<L>** (°C)
* TSmax: İzin verilen maksimum basınca (PS) karşı gelen doyma sıcaklığı: **<M>** (°C)
· Soğutucu: **<N>**
· Basınç emniyet düzeninin ayarı: **<P>** (bar)
· İmalat numarası ve imalat yılı: modelin ünite plakasına bakın

| | | |
|---|---|---|
| **<K>** | PS | **40 bar** |
| **<L>** | TSmin | **–30 °C** |
| **<M>** | TSmax | **67 °C** |
| **<N>** | | **R410A** |
| **<P>** | | **40 bar** |

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01 Name and address of the Notified body that judged positively on compliance with the Pressure Equipment Directive: **<Q>**
02 Name und Adresse der benannten Stelle, die positiv unter Einhaltung der Druckanlagen-Richtlinie urteilte: **<Q>**
03 Nom et adresse de l'organisme notifié qui a évalué positivement la conformité à la directive sur l'équipement de pression: **<Q>**
04 Naam en adres van de aangemelde instantie die positief geoordeeld heeft over de conformiteit met de Richtlijn Drukapparatuur: **<Q>**
05 Nombre y dirección del Organismo Notificado que juzgó positivamente el cumplimiento con la Directiva en materia de Equipos de Presión: **<Q>**

06 Nome e indirizzo dell'Ente riconosciuto che ha riscontrato la conformità alla Direttiva sulle apparecchiature a pressione: **<Q>**
07 Όνομα και διεύθυνση του Κοινοποιημένου οργανισμού που απεφάνθη θετικά για τη συμμόρφωση προς την Οδηγία Εξοπλισμών υπό Πίεση: **<Q>**
08 Nome e morada do organismo notificado, que avaliou favoravelmente a conformidade com a directiva sobre equipamentos pressurizados: **<Q>**
09 Название и адрес органа технической экспертизы, принявшего положительное решение о соответствии Директиве об оборудовании под давлением: **<Q>**

10 Navn og adresse på bemyndiget organ, der har foretaget en positiv bedømmelse af, at udstyret lever op til kravene i PED (Direktiv for Trykbærende Udstyr): **<Q>**
11 Namn och adress för det anmälda organ som godkänt uppfyllandet av tryckutrustningsdirektivet: **<Q>**
12 Navn på og adresse til det autoriserte organet som positivt bedømte samsvar med direktivet for trykkutstyr (Pressure Equipment Directive): **<Q>**
13 Sen ilmoitetun elimen nimi ja osoite, joka teki myönteisen päätöksen painelaitedirektiivin noudattamisesta: **<Q>**

14 Název a adresa informovaného orgánu, který vydal pozitivní posouzení shody se směrnicí o tlakových zařízeních: **<Q>**
15 Naziv i adresa prijavljenog tijela koje je donijelo pozitivnu prosudbu o usklađenosti sa Smjernicom za tlačnu opremu: **<Q>**
16 A nyomástartó berendezésekre vonatkozó irányelvnek való megfelelőséget igazoló bejelentett szervezet neve és címe: **<Q>**
17 Nazwa i adres Jednostki notyfikowanej, która wydała pozytywną opinię dotyczącą spełnienia wymogów Dyrektywy dot. Urządzeń Ciśnieniowych: **<Q>**
18 Denumirea şi adresa organismului notificat care a apreciat pozitiv conformarea cu Directiva privind echipamentele sub presiune: **<Q>**

19 Ime in naslov organa za ugotavljanje skladnosti, ki je pozitivno ocenil združljivost z Direktivo o tlačni opremi: **<Q>**
20 Teavitatud organi, mis hindas Surveseadmete Direktiiviga ühilduvust positiivselt, nimi ja aadress: **<Q>**
21 Наименование и адрес на упълномощения орган, който се е произнесъл положително относно съвместимостта с Директивата за оборудване под налягане: **<Q>**
22 Atsakingos institucijos, kuri davė teigiamą sprendimą pagal slėginės įrangos direktyvą pavadinimas ir adresas: **<Q>**
23 Sertifikācijas institūcijas, kura ir devusi pozitīvu slēdzienu par atbilstību Spiediena iekārtu Direktīvai, nosaukums un adrese: **<Q>**
24 Názov a adresa certifikačného úradu, ktorý kladne posúdil zhodu so smernicou pre tlakové zariadenia: **<Q>**
25 Basınçlı Teçhizat Direktifine uygunluk hususunda olumlu olarak değerlendirilen Onaylanmış kuruluşun adı ve adresi: **<Q>**

**<Q> VINÇOTTE nv**
**Jan Olieslagerslaan 35**
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Director
Ostend, 1st of March 2017

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# Table of Contents

# 1 About the documentation

## 1.1 About this document

**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.

**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 accessory bag of the compressor unit)
- **Compressor unit installation and operation manual:**
  - Installation and operation instructions
  - Format: Paper (in the accessory bag of the compressor unit)
- **Heat exchanger unit installation manual:**
  - Installation instructions
  - Format: Paper (in the accessory bag of the heat exchanger unit)
- **Installer and user reference guide:**
  - Preparation of the installation, 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 extranet (authentication required).

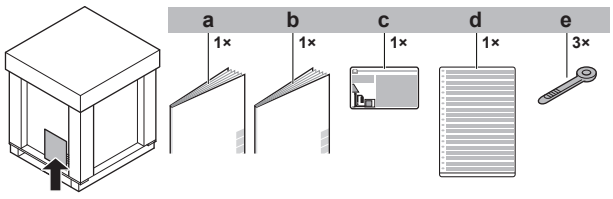
# For the installer

# 2 About the box

## 2.1 Compressor unit

### 2.1.1 To remove the accessories from the compressor unit

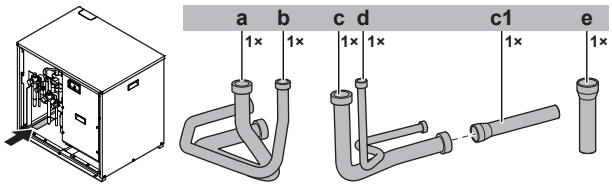
1 Remove the accessories (part 1).




**a** General safety precautions
**b** Compressor unit installation and operation manual
**c** Fluorinated greenhouse gases label
**d** Multilingual fluorinated greenhouse gases label
**e** Cable tie

2 Remove the service cover. See "5.1.1 To open the compressor unit" on page 9.

3 Remove the accessories (part 2).




**a+b** Piping accessories for circuit 1 (to the heat exchanger unit)

| | | |
|---|---|---|
| **a** | Gas | Ø22.2 mm |
| **b** | Liquid | Ø12.7 mm |

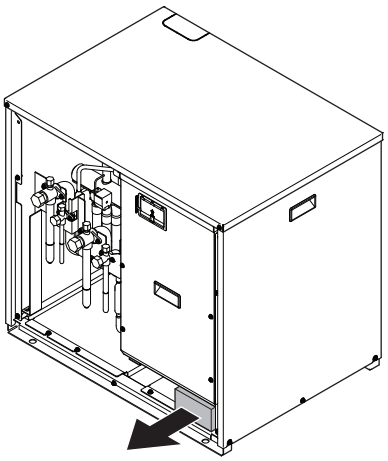
**c+d+e** Piping accessories for circuit 2 (to the indoor units)

| | | |
|---|---|---|
| **c+c1** | Gas + Gas piping adapter (Ø19.1→15.9 mm) | Ø15.9 mm |
| **d** | Liquid | Ø9.5 mm |

**e** Piping adapter (Ø19.1→22.2 mm) that you need when connecting piping to the heat exchanger unit

### 2.1.2 To remove the transportation EPS

Remove the EPS. The EPS protects the unit during transport.



# 3 About the units and options

## 3.1 About the compressor unit and heat exchanger unit

The compressor unit and heat exchanger unit are intended for indoor installation and aimed for air to air heat pump applications.

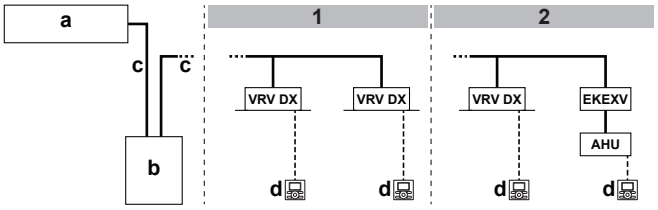
| Specification | | 5 HP |
|---|---|---|
| Maximum capacity | Heating | 16.0 kW |
| | Cooling | 14.0 kW |
| Outside ambient design temperature | Heating | –20~15.5°C WB |
| | Cooling | –5~46°C DB |
| Ambient design temperature of compressor unit and heat exchanger unit | | 5~35°C DB |
| Maximum relative humidity around the compressor unit and heat exchanger unit | Heating | 50%(a) |
| | Cooling | 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.

## 3.2 System layout

**NOTICE**

Design of the system must not be done at temperatures below –15°C.




**1** In case of VRV DX indoor units
**2** In case of VRV DX indoor units combined with an air handling unit
**a** Heat exchanger unit
**b** Compressor unit
**c** Refrigerant piping
**d** User interface (dedicated depending on indoor unit type)
**VRV DX** VRV direct expansion (DX) indoor unit
**EKEXV** Expansion valve kit
**AHU** Air handling unit

## 3.3 Combining units and options

### 3.3.1 Possible options for the compressor unit and heat exchanger unit

For more possible options, see the installer and user reference guide.

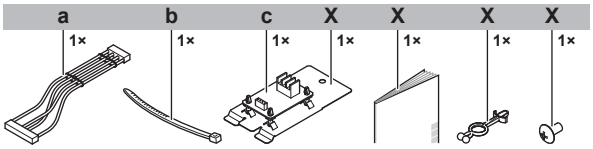
**Cool/heat selector**

In order to control the cooling or heating operation from a central location, the following option can be connected:

| Description | Model name |
|---|---|
| Cool/heat selector switch | KRC19-26A |
| Cool/heat selector PCB | BRP2A81(a) |
| With optional fixing box for the switch | KJB111A |

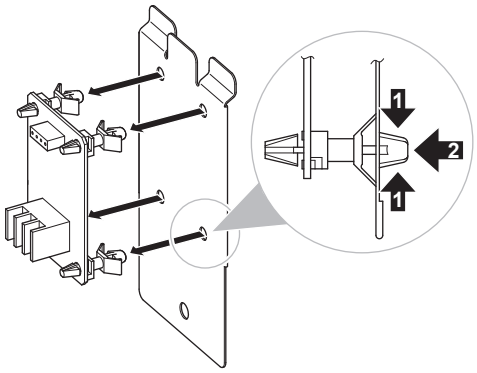
**(a)** To install BRP2A81, proceed as follows:

**1** Check the components of BRP2A81. You do NOT need all of them.

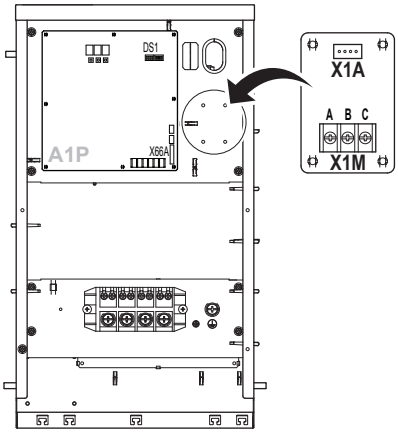



**a** Cable
**b** Cable tie
**c** PCB
**X** Not needed

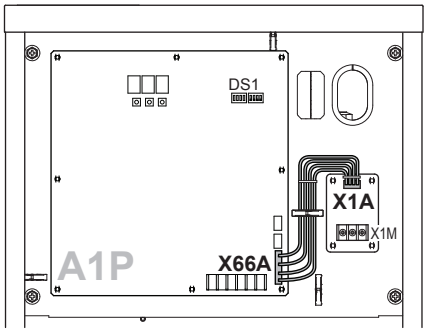
**2** Remove the mounting plate from the PCB.



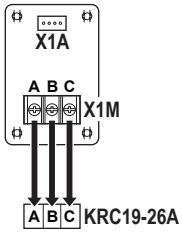

**3** Mount the PCB.




**4** Connect the cable.

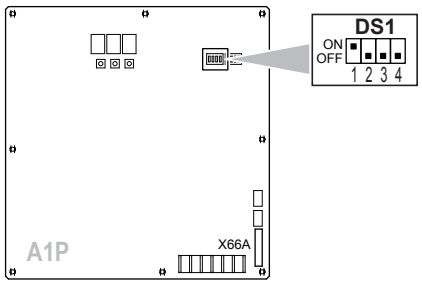



5 Connect the cool/heat selector switch. Tightening torque X1M (A/B/C): 0.53~0.63 N•m




6 Fix the cables with cable ties.

7 Turn ON the DIP switch (DS1-1).



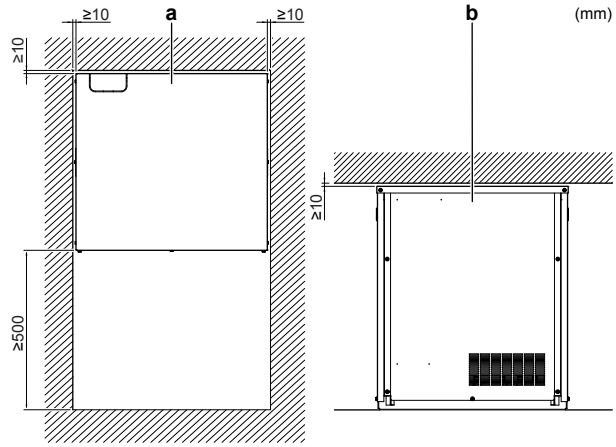

8 Perform a test run. See the "Commissioning" chapter.

# 4 Preparation

## 4.1 Preparing installation site

### 4.1.1 Installation site requirements of the compressor unit

- **Service space.** Mind the following requirements:




**a** Top view
**b** Front view

**CAUTION**

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

These units (compressor unit, heat exchanger unit and indoor units) are suitable for installation in a commercial and light industrial environment.

**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.

## 4.2 Preparing refrigerant piping

### 4.2.1 Refrigerant piping requirements

**NOTICE**

Refrigerant R410A 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 phosphoric acid deoxidised seamless copper for refrigerant.

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

### 4.2.2 Refrigerant piping material

- **Piping material:** Phosphoric acid deoxidised seamless copper.
- **Piping temper grade and thickness:**

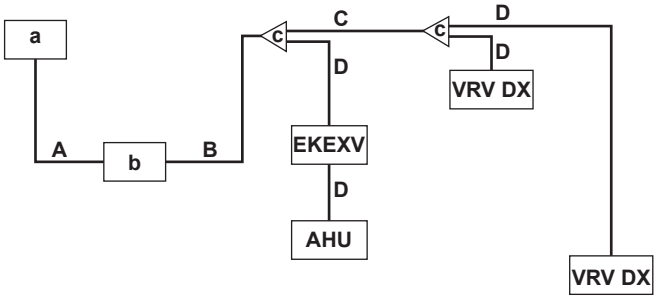
| Outer diameter (Ø) | Temper grade | Thickness (t)[a] | |
|---|---|---|---|
| 6.4 mm (1/4")<br>9.5 mm (3/8")<br>12.7 mm (1/2") | Annealed (O) | ≥0.80 mm |  |
| 15.9 mm (5/8") | Annealed (O) | ≥0.99 mm | |
| 19.1 mm (3/4") | Half hard (1/2H) | ≥0.80 mm | |



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

### 4.2.3 To select the piping size

Determine the proper size referring to following tables and reference figure (only for indication).




**a** Heat exchanger unit
**b** Compressor unit
**c** Refrigerant branch kit
**VRV DX** VRV DX indoor unit
**EKEXV** Expansion valve kit
**AHU** Air handling unit
**A** Piping between heat exchanger unit and compressor unit

**B** Piping between compressor unit and (first) refrigerant branch kit (= main pipe)
**C** Piping between refrigerant branch kits
**D** Piping between refrigerant branch kit and indoor unit

In case the required pipe sizes (inch sizes) are not available, it is also allowed to use other diameters (mm sizes), taken the following into account:

- Select the pipe size nearest to the required size.
- Use the suitable adapters for the change-over from inch to mm pipes (field supply).
- The additional refrigerant calculation has to be adjusted as mentioned in "5.6.2 To determine the additional refrigerant amount" on page 14.

### A: Piping between heat exchanger unit and compressor unit

Use the following diameters:

| Piping outer diameter size (mm) | |
|---|---|
| Gas pipe | Liquid pipe |
| 22.2 | 12.7 |

### B: Piping between compressor unit and first refrigerant branch kit

Use the following diameters:

| Piping outer diameter size (mm) | | | |
|---|---|---|---|
| Gas pipe | | Liquid pipe | |
| Standard | Size-up | Standard | Size-up |
| 15.9 | 19.1 | 9.5 | — |

Standard ↔ Size-up:

| If | Then |
|---|---|
| The equivalent pipe length between the heat exchanger unit and the furthest indoor unit is 90 m or more | It is **recommended to increase** the size (size-up) of the **main gas pipe** (between compressor unit and first refrigerant branch kit). If the recommended gas pipe (size-up) is not available, you must use the standard size (which might result in a small capacity decrease). |

### C: Piping between refrigerant branch kits

Use the following diameters:

| Indoor unit capacity index | Piping outer diameter size (mm) | |
|---|---|---|
| | Gas pipe | Liquid pipe |
| <150 | 15.9 | 9.5 |
| 150≤x<200 | 19.1 | |

### D: Piping between refrigerant branch kit and indoor unit

Use the same diameters as the connections (liquid, gas) on the indoor units. The diameters of the indoor units are as follows:

| Indoor unit capacity index | Piping outer diameter size (mm) | |
|---|---|---|
| | Gas pipe | Liquid pipe |
| 15~50 | 12.7 | 6.4 |
| 63~140 | 15.9 | 9.5 |

## 4.2.4 To select refrigerant branch kits

For piping example, refer to "4.2.3 To select the piping size" on page 7.

**Refnet joint at first branch (counting from the compressor unit)**

When using refnet joints at the first branch counted from the compressor unit side, choose from the following table in accordance with the capacity of the compressor unit. **Example:** Refnet joint c (B→C/D).

| Compressor unit capacity type | Refrigerant branch kit |
|---|---|
| 5 HP | KHRQ22M20T |

**Refnet joints at other branches**

For refnet joints other than the first branch, select the proper branch kit model based on the total capacity index of all indoor units connected after the refrigerant branch. **Example:** Refnet joint c (C→D/D).

| Indoor unit capacity index | Refrigerant branch kit |
|---|---|
| <200 | KHRQ22M20T |

**Refnet headers**

Concerning refnet headers, choose from the following table in accordance with the total capacity of all the indoor units connected below the refnet header.

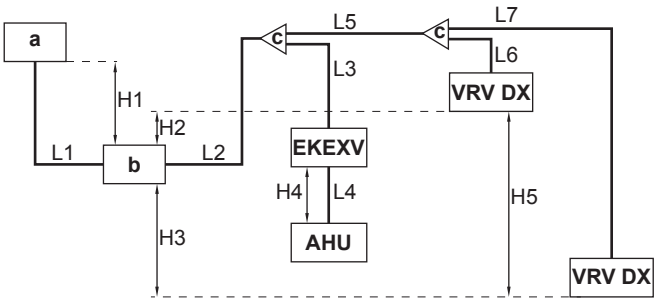
| Indoor unit capacity index | Refrigerant branch kit |
|---|---|
| <260 | KHRQ22M29H |

**INFORMATION**

Maximum 8 branches can be connected to a header.

## 4.2.5 Refrigerant piping length and height difference

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




**a** Heat exchanger unit
**b** Compressor unit
**c** Refrigerant branch kit
**VRV DX** VRV DX indoor unit
**EKEXV** Expansion valve kit
**AHU** Air handling unit
**H1~H5** Height differences
**L1~L7** Piping lengths

| Minimum and maximum piping lengths | | |
|---|---|---|
| 1 | Heat exchanger unit → Compressor unit | L1≤30 m |
| 2 | Actual piping length (equivalent piping length)[a] | L2+L3+L4≤70 m (90 m)<br>L2+L5+L6≤70 m (90 m)<br>L2+L5+L7≤70 m (90 m) |

| | | | | |
|---|---|---|---|---|
| 3 | Total piping length (x=L1+L2+L3+L4+L5+L6+L7) | | | |
| | | Minimum | 10 m≤x | |
| | | Maximum | **If** | **Then** |
| | | | L1≤30 m | x≤115 m |
| | | | L1≤25 m | x≤120 m |
| | | | L1≤20 m | x≤125 m |
| | | | L1≤15 m | x≤130 m |
| | | | L1≤10 m | x≤135 m |
| | | | L1≤5 m | x≤140 m |
| 4 | EKEXV → AHU | | L4≤5 m | |
| 5 | First branch kit → Indoor unit/ AHU | | L3+L4≤40 m<br>L5+L6≤40 m<br>L5+L7≤40 m | |
| **Maximum height differences**(b) | | | | |
| 1 | Heat exchanger unit ↔ Compressor unit | | H1≤10 m | |
| 2 | Compressor unit ↔ Indoor unit | | H2≤30 m<br>H3≤30 m | |
| 3 | EKEXV ↔ AHU | | H4≤5 m | |
| 4 | Indoor unit ↔ Indoor unit | | H5≤15 m | |

(a) Assume equivalent piping length of refnet joint=0.5 m and refnet header=1 m (for calculation purposes of equivalent piping length, not for refrigerant charge calculations).
(b) Either unit can be the highest unit.

## 4.3 Preparing electrical wiring

### 4.3.1 About electrical compliance

This equipment complies with:

- **EN/IEC 61000-3-12** provided that the short-circuit power $S_{sc}$ is greater than or equal to the minimum $S_{sc}$ value at the interface point between the user's supply and the public system.
  - EN/IEC 61000-3-12 = 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.
  - It is the responsibility of the installer or user of the equipment to ensure, by consultation with the distribution network operator if necessary, that the equipment is connected only to a supply with a short-circuit power $S_{sc}$ greater than or equal to the minimum $S_{sc}$ value.

| Model | Minimum $S_{sc}$ value |
|---|---|
| RKXYQ5 | 3329 kVA |

### 4.3.2 Safety device requirements

**NOTICE**

When using residual current operated circuit breakers, be sure to use a high-speed type 300 mA rated residual operating current.

**Power supply: Compressor unit**

The power supply must be protected with the required safety devices, i.e. a main switch, a slow blow fuse on each phase and an earth leakage protector in accordance with the applicable legislation.

Selection and sizing of the wiring should be done in accordance with the applicable legislation based on the information mentioned in the table below.

| Model | Minimum circuit ampacity | Recommended fuses |
|---|---|---|
| RKXYQ5 | 17.4 A | 20 A |

- Phase and frequency: 3N~ 50 Hz
- Voltage: 380-415 V

**Transmission wiring**

Transmission line section:

| | |
|---|---|
| Transmission wiring | Sheathed + shielded cable (2 wires)<br>Vinyl cords<br>0.75~1.25 mm²<br>(using shielded cable for the transmission wiring is optional) |
| Maximum wiring length<br>(= distance between compressor unit and furthest indoor unit) | 300 m |
| Total wiring length<br>(= distance between compressor unit and all indoor units, and between compressor unit and heat exchanger unit) | 600 m |

If the total transmission wiring exceeds these limits, it may result in communication error.

# 5 Installation

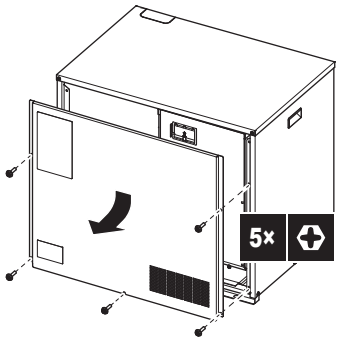
## 5.1 Opening the units

### 5.1.1 To open the compressor unit

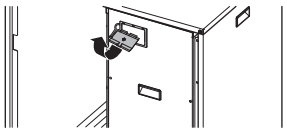
**DANGER: RISK OF BURNING**

**DANGER: RISK OF ELECTROCUTION**

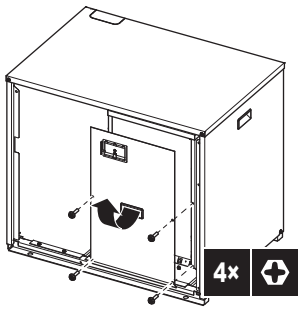
**1** Remove the service cover of the compressor unit.




**2** If you want to make **field settings**, remove the inspection cover.



**3** If you want to connect **electrical wiring**, remove the switch box cover.



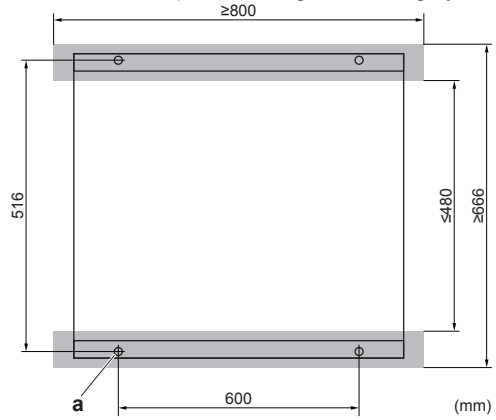

## 5.2 Mounting the compressor unit

### 5.2.1 Guidelines when installing the compressor unit

Check the strength and level of the installation ground so that the unit will not cause any operating vibration or noise. If the vibration might be transmitted to the building, use a vibration-proof rubber (field supply).

You can install the compressor unit directly on the floor or on a structure.

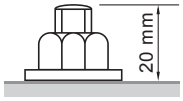
- **On the floor.** You do NOT have to fix the unit with anchor bolts.
- **On a structure.** Fix the unit securely with anchor bolts, nuts and washers (field supply) to the structure. The foundation (steel beam frame or concrete) must be larger than the grey marked area.




Minimum foundation
**a** Anchor point (4×)

**INFORMATION**

The recommended height of the upper protruding part of the bolts is 20 mm.




## 5.3 Connecting the refrigerant piping

**DANGER: RISK OF BURNING**

### 5.3.1 Using the stop valve and service port

#### To handle the stop valve

- Make sure to keep all stop valves open during operation.
- The stop valve is factory closed.

#### To open the stop valve

1 Remove the stop valve cover.

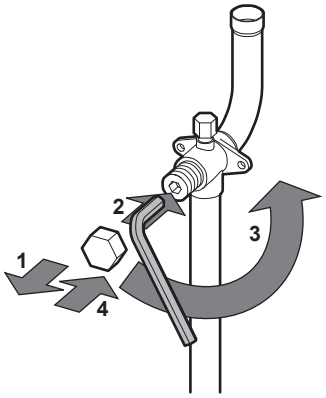
2 Insert a hexagon wrench into the stop valve and turn the stop valve counterclockwise.

3 When the stop valve cannot be turned any further, stop turning.

**Result:** The valve is now open.

To fully open the Ø19.1 mm stop valve, turn the hexagonal wrench until a torque between 27 and 33 N•m is achieved.

Inadequate torque may cause leakage of refrigerant and breakage of the stop valve cap.




**NOTICE**

Pay attention that mentioned torque range is applicable for opening Ø19.1 mm stop valves only.

#### To close the stop valve

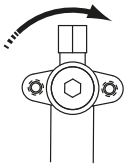
1 Remove the stop valve cover.

2 Insert a hexagon wrench into the stop valve and turn the stop valve clockwise.

3 When the stop valve cannot be turned any further, stop turning.

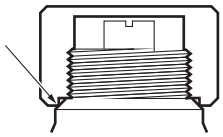
**Result:** The valve is now closed.

Closing direction:



#### To handle the stop valve cover

- The stop valve cover is sealed where indicated by the arrow. Take care not to damage it.
- After handling the stop valve, make sure to tighten the stop valve cover securely. For the tightening torque, refer to the table below.
- Check for refrigerant leaks after tightening the stop valve cover.



#### To handle the service port

- Always use a charge hose equipped with a valve depressor pin, since the service port is a Schrader type valve.
- After handling the service port, make sure to tighten the service port cover securely. For the tightening torque, refer to the table below.
- Check for refrigerant leaks after tightening the service port cover.

### Tightening torques

| Stop valve size (mm) | Tightening torque N•m (turn clockwise to close) | | | |
|---|---|---|---|---|
| | Shaft | | | |
| | Valve body | Hexagonal wrench | Cap (valve lid) | Service port |
| Ø9.5 | 5.4~6.6 | 4 mm | 13.5~16.5 | 11.5~13.9 |
| Ø12.7 | 8.1~9.9 | | 18.0~22.0 | |
| Ø19.1 | 27.0~33.0 | 8 mm | 22.5~27.5 | |

## 5.3.2 To remove the pinched pipes

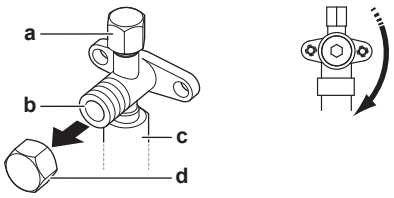
**WARNING**

Any gas or oil remaining inside the stop valve may blow off the pinched piping.

Failure to observe the instructions in procedure below properly may result in property damage or personal injury, which may be serious depending on the circumstances.

Use the following procedure to remove the pinched piping:

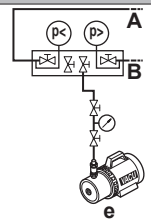
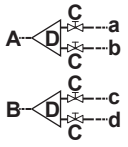
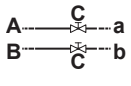
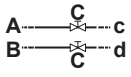
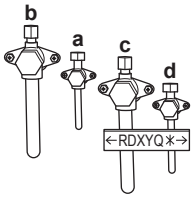
1 Remove the valve cover and make sure that the stop valves are fully closed.




**a** Service port and service port cover
**b** Stop valve
**c** Field piping connection
**d** Stop valve cover

2 Connect the vacuuming/recovery unit through a manifold to the service port of all stop valves.

You have to recover gas and oil from all 4 pinched pipes. Depending on your available tools, use method 1 (manifold with refrigerant line splitters required) or method 2.

| Manifold | Connections | Compressor unit |
|---|---|---|
|   | **Method 1:** Connect to all service ports at once.   **Method 2:** First connect to the first 2 service ports.   Then connect to the last 2 service ports.   |   |

**a, b, c, d** Service ports of stop valves
**e** Vacuuming/recovery unit
**A, B, C** Valves A, B and C
**D** Refrigerant line splitter

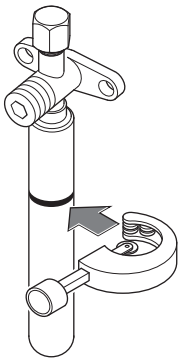
3 Recover gas and oil from the pinched piping by using a recovery unit.

**CAUTION**

Do not vent gases into the atmosphere.

4 When all gas and oil is recovered from the pinched piping, disconnect the charge hose and close the service ports.

5 Cut off the lower part of the gas and liquid stop valve pipes along the black line. Use an appropriate tool (e.g. a pipe cutter, a pair of nippers).



**WARNING**

Never remove the pinched piping by brazing.

Any gas or oil remaining inside the stop valve may blow off the pinched piping.

6 Wait until all oil is dripped out before continuing with the connection of the field piping in case the recovery was not complete.

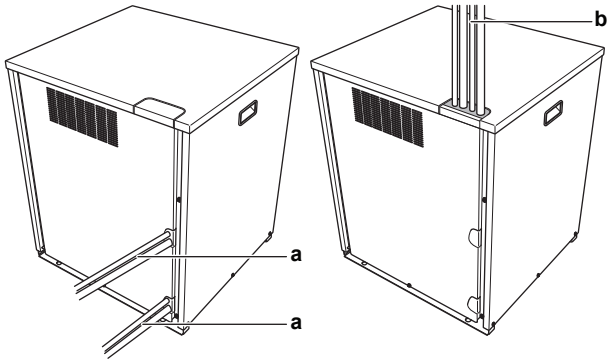
## 5.3.3 To connect the refrigerant piping to the compressor unit

**NOTICE**

- Be sure to use the supplied accessory pipes when carrying out piping work in the field.
- Be sure that the field installed piping does not touch other pipes, the bottom panel or side panel.

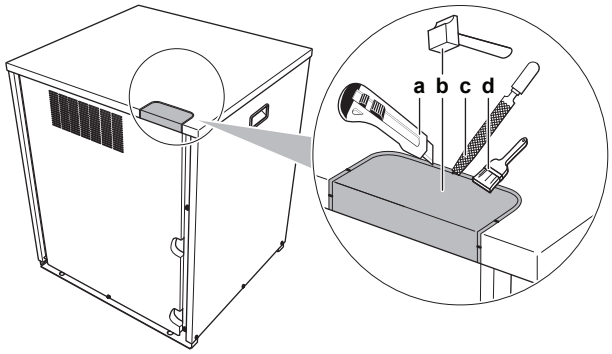
1 Remove the service cover. See "5.1.1 To open the compressor unit" on page 9.

2 Choose a piping route (a or b).




**a** To the back
**b** To the top

3 If you have chosen the piping route to the top:



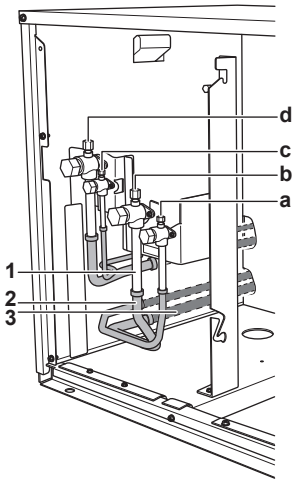

**a** Cut the insulation (under the knockout hole).
**b** Hit on the knockout hole, and remove it.
**c** Remove the burrs.
**d** Paint the edges and areas around the edges using repair paint to prevent rusting.

**NOTICE**

Precautions when making knockout holes:

- Avoid damaging the casing.
- After making the knockout holes, we recommend you remove the burrs and paint the edges and areas around the edges using repair paint to prevent rusting.
- When passing electrical wiring through the knockout holes, wrap the wiring with protective tape to prevent damage.

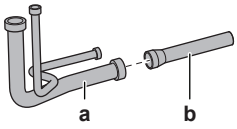
**4** Connect piping (by brazing) as follows:




**a** Liquid line (circuit 1: to heat exchanger unit)
**b** Gas line (circuit 1: to heat exchanger unit)
**c** Liquid line (circuit 2: to indoor units)
**d** Gas line (circuit 2: to indoor units)
**1** Pinched piping
**2** Piping accessory
**3** Field piping

**NOTICE**

**Piping adapter** (Ø19.1→15.9 mm) (delivered as accessory in the compressor unit). Use the piping adapter to connect the field piping (Ø15.9 mm) to the piping accessory of the gas line (circuit 2: to indoor units) (Ø19.1 mm).

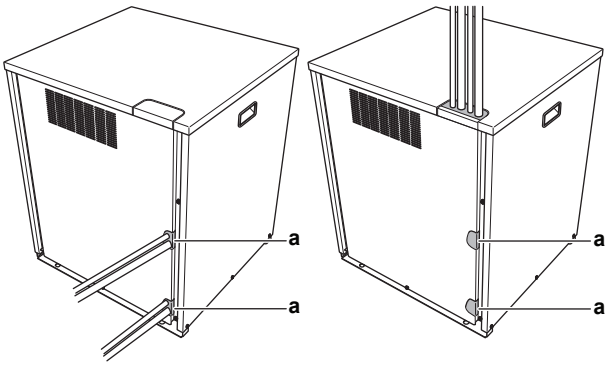



**a** Piping accessory of the gas line (circuit 2: to indoor units)

**b** Piping adapter

**5** Reattach the service cover.

**6** Seal all gaps (example: a) to prevent small animals from entering the system.

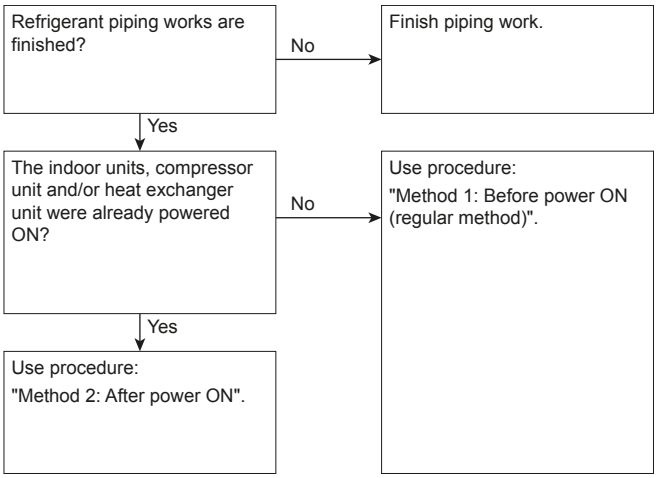



**WARNING**

Provide adequate measures to prevent that the unit can be used as a shelter by small animals. Small animals that make contact with electrical parts can cause malfunctions, smoke or fire.

## 5.4 Checking the refrigerant piping

### 5.4.1 About checking the refrigerant piping




It is very important that all refrigerant piping work is done before the units (compressor unit, heat exchanger unit or indoor units) are powered on.

When the units are powered on, the expansion valves will initialise. This means that they will close. Leak test and vacuum drying of field piping, heat exchanger unit and indoor units is impossible when this happens.

Therefore, there will be explained 2 methods for initial installation, leak test and vacuum drying.

**Method 1: Before power ON**

If the system has not yet been powered on, no special action is required to perform the leak test and the vacuum drying.

**Method 2: After power ON**

If the system has already been powered on, activate setting [2-21] (refer to "6.1.4 To access mode 1 or 2" on page 18). This setting will open field expansion valves to guarantee a R410A piping pathway and make it possible to perform the leak test and the vacuum drying.

**NOTICE**

Make sure that the heat exchanger unit and all indoor units connected to the compressor unit are powered on.

**NOTICE**

Wait until the compressor unit has finished the initialisation to apply setting [2-21].

**Leak test and vacuum drying**

Checking the refrigerant piping involves:

- Checking for any leakages in the refrigerant piping.
- Performing vacuum drying to remove all moisture, air or nitrogen in the refrigerant piping.

If there is a possibility of moisture being present in the refrigerant piping (for example, water may have entered the piping), first carry out the vacuum drying procedure below until all moisture has been removed.

All piping inside the unit has been factory tested for leaks.

Only field installed refrigerant piping needs to be checked. Therefore, make sure that all the compressor unit stop valves are firmly closed before performing leak test or vacuum drying.

**NOTICE**

Make sure that all (field supplied) field piping valves are OPEN (not compressor unit stop valves!) before you start leak test and vacuuming.

For more information on the state of the valves, refer to "5.4.3 Checking refrigerant piping: Setup" on page 13.

## 5.4.2 Checking refrigerant piping: General guidelines

Connect the vacuum pump through a manifold to the service port of all stop valves to increase efficiency (refer to "5.4.3 Checking refrigerant piping: Setup" on page 13).

**NOTICE**

Use a 2-stage vacuum pump with a non-return valve or a solenoid valve that can evacuate to a gauge pressure of –100.7 kPa (−1.007 bar)(5 Torr absolute).

**NOTICE**

Make sure the pump oil does not flow oppositely into the system while the pump is not working.

**NOTICE**

Do not purge the air with refrigerants. Use a vacuum pump to evacuate the installation.

## 5.4.3 Checking refrigerant piping: Setup

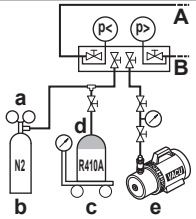
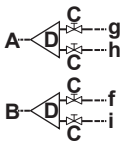
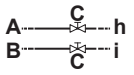
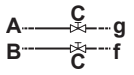
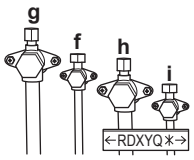
The system contains 2 refrigerant circuits:

- **Circuit 1:** Compressor unit → Heat exchanger unit
- **Circuit 2:** Compressor unit → Indoor units

You have to check both circuits (leak test, vacuuming drying). How to check depends on your available tools:

| If you have a manifold… | Then |
|---|---|
| With refrigerant line splitters | You can check both circuits at once. To do so, connect the manifold via the splitters to both circuits, and check. |
| Without refrigerant line splitters<br>(takes twice as long) | You have to check the circuits separately. To do so:<br>▪ First connect the manifold to **circuit 1**, and check.<br>▪ Then connect the manifold to **circuit 2**, and check. |

Possible connections:

| Manifold | Connections | Compressor unit |
|---|---|---|
|  | Circuit 1 and 2 together<br>  <br>Only circuit 1<br>  <br>Only circuit 2<br>  |  |

**a** Pressure reducing valve
**b** Nitrogen
**c** Weighing scales
**d** Refrigerant R410A tank (siphon system)
**e** Vacuum pump
**f** Liquid line stop valve (circuit 2: to indoor units)
**g** Gas line stop valve (circuit 2: to indoor units)
**h** Gas line stop valve (circuit 1: to heat exchanger unit)
**i** Liquid line stop valve (circuit 1: to heat exchanger unit)
**A, B, C** Valves A, B and C
**D** Refrigerant line splitter

| Valve | State of valve |
|---|---|
| Valves A, B and C | Open |
| Liquid line and gas line stop valves (f, g, h, i) | Close |

**NOTICE**

The connections to the indoor units and to the heat exchanger unit, and all indoor units and the heat exchanger unit itself should also be leak and vacuum tested. Keep any possible (field supplied) field piping valves open as well.

Refer to the indoor unit installation manual for more details. Leak test and vacuum drying should be done before the power supply is set to the unit. If not, see also the flow chart earlier described in this chapter (see "5.4.1 About checking the refrigerant piping" on page 12).

## 5.4.4 To perform a leak test

The leak test must satisfy the specifications of EN378-2.

### To check for leaks: Vacuum leak test

1. Evacuate the system from the liquid and gas piping to –100.7 kPa (–1.007 bar)(5 Torr absolute) for more than 2 hours.
2. Once reached, turn off the vacuum pump and check that the pressure does not rise for at least 1 minute.
3. Should the pressure rise, the system may either contain moisture (see vacuum drying below) or have leaks.

### To check for leaks: Pressure leak test

1. Break the vacuum by pressurising with nitrogen gas to a minimum gauge pressure of 0.2 MPa (2 bar). Never set the gauge pressure higher than the maximum operation pressure of the unit, i.e. 4.0 MPa (40 bar).
2. Test for leaks by applying a bubble test solution to all piping connections.
3. Discharge all nitrogen gas.

**NOTICE**

Make sure to use a recommended bubble test solution from your wholesaler. Do not use soap water, which may cause cracking of flare nuts (soap water may contain salt, which absorbs moisture that will freeze when the piping gets cold), and/or lead to corrosion of flared joints (soap water may contain ammonia which causes a corrosive effect between the brass flare nut and the copper flare).

### 5.4.5 To perform vacuum drying

To remove all moisture from the system, proceed as follows:

1. Evacuate the system for at least 2 hours to a target vacuum of –100.7 kPa (–1.007 bar)(5 Torr absolute).
2. Check that, with the vacuum pump turned off, the target vacuum is maintained for at least 1 hour.
3. Should you fail to reach the target vacuum within 2 hours or maintain the vacuum for 1 hour, the system may contain too much moisture. In that case, break the vacuum by pressurising with nitrogen gas to a gauge pressure of 0.05 MPa (0.5 bar) and repeat steps 1 to 3 until all moisture has been removed.
4. Depending on whether you want to immediately charge refrigerant through the refrigerant charge port or first pre-charge a portion of refrigerant through the liquid line, either open the compressor unit stop valves, or keep them closed. See "5.6.3 To charge refrigerant" on page 14 for more information.

## 5.5 To insulate the refrigerant piping

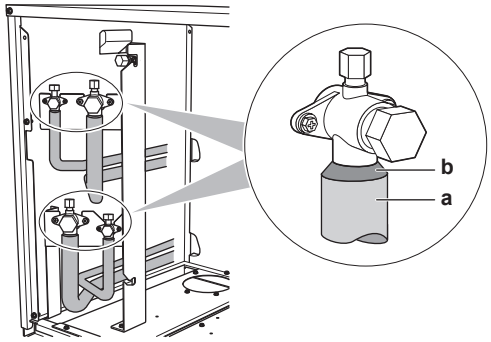
After finishing the leak test and vacuum drying, the piping must be insulated. Take into account the following points:

- Make sure to insulate the connection piping and refrigerant branch kits entirely.
- Be sure to insulate the liquid and gas piping (for all units).
- Use heat resistant polyethylene foam which can withstand a temperature of 70°C for liquid piping and polyethylene foam which can withstand a temperature of 120°C for gas piping.
- Reinforce the insulation on the refrigerant piping according to the installation environment.

| Ambient temperature | Humidity | Minimum thickness |
|---|---|---|
| ≤30°C | 75% to 80% RH | 15 mm |
| >30°C | ≥80% RH | 20 mm |

Condensation might form on the surface of the insulation.

- If there is a possibility that condensation on the stop valve might drip down into the indoor unit or into the heat exchanger unit through gaps in the insulation and piping because the compressor unit is located higher than the indoor unit or higher than the heat exchanger unit, this must be prevented by sealing up the connections. See below figure.




**a** Insulation material
**b** Caulking etc.

## 5.6 Charging refrigerant

### 5.6.1 Precautions when charging refrigerant

**WARNING**

- Only use R410A as refrigerant. Other substances may cause explosions and accidents.
- R410A contains fluorinated greenhouse gases. Its global warming potential (GWP) value is 2087.5. Do NOT vent these gases into the atmosphere.
- When charging refrigerant, always use protective gloves and safety glasses.

**NOTICE**

If the power of some units is turned off, the charging procedure cannot be finished properly.

**NOTICE**

Be sure to turn on the power 6 hours before operation in order to have power running to the crankcase heater and to protect the compressor.

**NOTICE**

If operation is performed within 12 minutes after the compressor unit, heat exchanger unit and indoor units are turned on, the compressor will not operate before the communication is established in a correct way between the compressor unit, heat exchanger unit and indoor units.

**NOTICE**

Before starting charging procedures, check if the 7-segment display indication of the compressor unit A1P PCB is as normal (see "6.1.4 To access mode 1 or 2" on page 18). If a malfunction code is present, see "8.1 Solving problems based on error codes" on page 24.

**NOTICE**

Make sure all connected units (heat exchanger unit + indoor units) are recognised (setting [1-5]).

### 5.6.2 To determine the additional refrigerant amount

**Formula:**

$R=[(X_1\times\mathbf{Ø12.7})\times0.12+(X_2\times\mathbf{Ø9.5})\times0.059+(X_3\times\mathbf{Ø6.4})\times0.022]\times A+B$

**R** Additional refrigerant to be charged [in kg and rounded off to 1 decimal place]
**$X_{1...3}$** Total length [m] of liquid piping size at **Øa**
**A+B** Parameters A and B

**Parameters A and B**:

| A | B |
|---|---|
| 1.0 kg | 2.6 kg |

**Metric piping.** When using metric piping, replace the weight factors in the formula by the ones from the following table:

| Inch piping | | Metric piping | |
|---|---|---|---|
| Piping | Weight factor | Piping | Weight factor |
| Ø6.4 mm | 0.022 | Ø6 mm | 0.018 |
| Ø9.5 mm | 0.059 | Ø10 mm | 0.065 |
| Ø12.7 mm | 0.12 | Ø12 mm | 0.097 |

### 5.6.3 To charge refrigerant

Charging refrigerant consists of 2 stages:

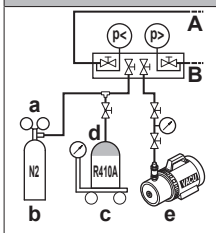
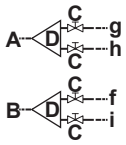
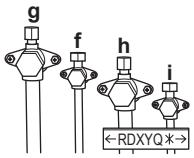
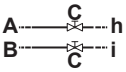
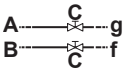
| Stage | Description |
|---|---|
| Stage 1: Pre-charging | Recommended in case of larger systems.<br>Can be skipped, but charging will take longer then. |
| Stage 2: Manual charging | Only necessary if the determined additional refrigerant amount is **not reached** yet by pre-charging. |

**Stage 1: Pre-charging**

| **Summary – Pre-charging**: | |
|---|---|
| **Refrigerant bottle** | Connected to the service ports of the stop valves. Which stop valves to use depends on the circuits you choose to pre-charge to:<br>▪ Circuits 1 and 2 together (manifold with refrigerant line splitters required).<br>▪ First circuit 1, then circuit 2 (or vice versa).<br>▪ Only circuit 1<br>▪ Only circuit 2 |
| **Stop valves** | Closed |
| **Compressor** | Does NOT operate |

1 Connect as shown (choose one of the possible connections). Make sure that all compressor unit stop valves, as well as valve A are closed.

Possible connections:

| Manifold | Connections | Compressor unit |
|---|---|---|
|  | Circuit 1 and 2 together<br>  |  |
| | Only circuit 1<br>  | |
| | Only circuit 2<br>  | |

**a** Pressure reducing valve
**b** Nitrogen
**c** Weighing scales
**d** Refrigerant R410A tank (siphon system)
**e** Vacuum pump
**f** Liquid line stop valve (circuit 2: to indoor units)
**g** Gas line stop valve (circuit 2: to indoor units)
**h** Gas line stop valve (circuit 1: to heat exchanger unit)
**i** Liquid line stop valve (circuit 1: to heat exchanger unit)
**A, B, C** Valves A, B and C
**D** Refrigerant line splitter

2 Open valves C (on line of B) and B.

3 Pre-charge refrigerant until the determined additional refrigerant amount is reached or pre-charging is not possible anymore, and then close valves C and B.

4 Do one of the following:

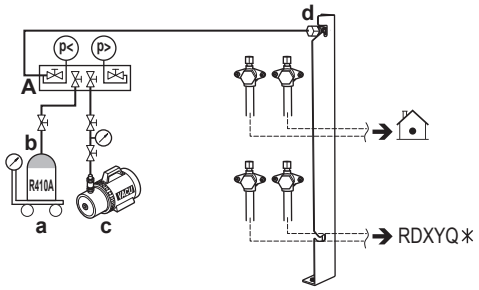
| If | Then |
|---|---|
| The determined additional refrigerant amount is **reached** | Disconnect the manifold from the liquid line(s).<br>You do not have to perform the "Stage 2" instructions. |
| **Too much** refrigerant is charged | Recover refrigerant until the determined additional refrigerant is reached.<br>Disconnect the manifold from the liquid line(s).<br>You do not have to perform the "Stage 2" instructions. |
| The determined additional refrigerant amount is **not reached** yet | Disconnect the manifold from the liquid line(s).<br>Continue with the "Stage 2" instructions. |

**Stage 2: Manual charging**

(= charging in the "Manual additional refrigerant charge" mode)

| **Summary – Manual charging**: | |
|---|---|
| **Refrigerant bottle** | Connected to the service port for refrigerant charge.<br>This charges to both circuits, and to the compressor unit's internal refrigerant piping. |
| **Stop valves** | Open |
| **Compressor** | Operates |

5 Connect as shown. Make sure valve A is closed.




**a** Weighing scales
**b** Refrigerant R410A tank (siphon system)
**c** Vacuum pump
**d** Refrigerant charge port
**A** Valve A

**NOTICE**

The refrigerant charging port is connected to the piping inside the unit. The unit's internal piping is already factory charged with refrigerant, so be careful when connecting the charge hose.

6 Open all compressor unit stop valves. At this point, valve A must remain closed!

7 Take all the precautions mentioned in "6 Configuration" on page 18 and "7 Commissioning" on page 22 into account.

8 Turn on the power of the indoor units, compressor unit and heat exchanger unit.

9 Activate setting [2-20] to start the manual additional refrigerant charge mode. For details, see "6.1.8 Mode 2: Field settings" on page 20.

**Result:** The unit will start operation.

**INFORMATION**

The manual refrigerant charge operation will automatically stop within 30 minutes. If charging is not completed after 30 minutes, perform the additional refrigerant charging operation again.

**INFORMATION**

- When a malfunction is detected during the procedure (e.g., in case of closed stop valve), a malfunction code will be displayed. In that case, refer to "5.6.4 Error codes when charging refrigerant" on page 16 and solve the malfunction accordingly. Resetting the malfunction can be done by pushing BS3. You can restart the "Charging" instructions.
- Aborting the manual refrigerant charge is possible by pushing BS3. The unit will stop and return to idle condition.

**10** Open valve A.

**11** Charge refrigerant until the remaining determined additional refrigerant amount is added, and then close valve A.

**12** Press BS3 to stop the manual additional refrigerant charge mode.

**NOTICE**

Make sure to open all stop valves after (pre-) charging the refrigerant.

Operating with the stop valves closed will damage the compressor.

**NOTICE**

After adding the refrigerant, do not forget to close the lid of the refrigerant charging port. The tightening torque for the lid is 11.5 to 13.9 N•m.

### 5.6.4 Error codes when charging refrigerant

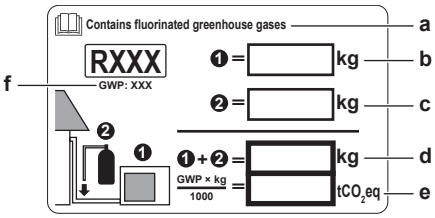
**INFORMATION**

If a malfunction occurs, the error code is displayed on the compressor unit's 7-segments display and on the user interface of the indoor unit.

If a malfunction occurs, close valve A immediately. Confirm the malfunction code and take corresponding action, "8.1 Solving problems based on error codes" on page 24.

### 5.6.5 To fix the fluorinated greenhouse gases label

**1** Fill in the label as follows:




**a** 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**.
**b** Factory refrigerant charge: see unit name plate
**c** Additional refrigerant amount charged
**d** Total refrigerant charge
**e** **Greenhouse gas emissions** of the total refrigerant charge expressed as tonnes $CO_2$-equivalent
**f** GWP = Global warming potential

**NOTICE**

In Europe, the **greenhouse gas emissions** of the total refrigerant charge in the system (expressed as tonnes $CO_2$-equivalent) is used to determine the maintenance intervals. Follow the applicable legislation.

**Formula to calculate the greenhouse gas emissions:** GWP value of the refrigerant × Total refrigerant charge [in kg] / 1000

**2** Fix the label on the inside of the compressor unit. There is a dedicated place for it on the wiring diagram label.

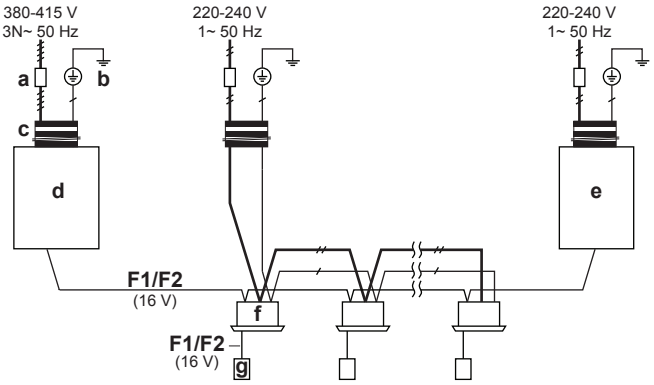
## 5.7 Connecting the electrical wiring

### 5.7.1 Field wiring: Overview

Field wiring consists of:

- Power supply (always including earth)
- Communication (= transmission) wiring between the compressor unit, the heat exchanger unit, and the indoor units.

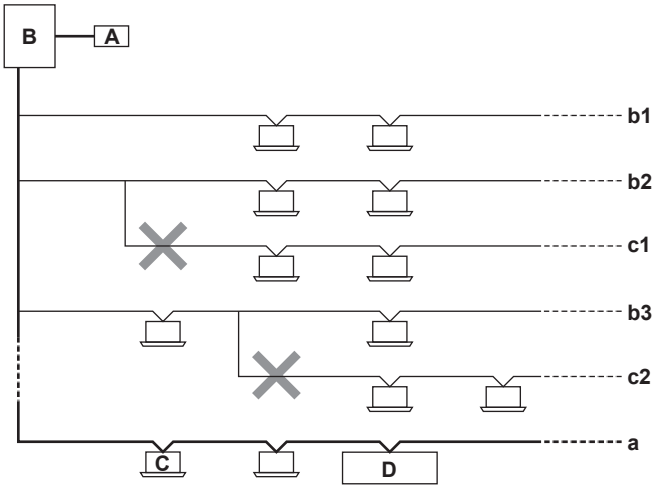
**Example:**




**a** Main switch
**b** Earth connection
**c** Power supply wiring (including earth) (sheathed cable)
**F1/F2** Transmission wiring (sheathed + shielded cable) (using shielded cable for the transmission wiring is optional)
**d** Compressor unit
**e** Heat exchanger unit
**f** Indoor unit
**g** User interface

**Branches**

No branching is allowed after branching.




**A** Central user interface (etc...)
**B** Compressor unit
**C** Indoor unit
**D** Heat exchanger unit
**a** Main line. The main line is the line to which the transmission wiring of the heat exchanger unit is connected.
**b1, b2, b3** Branch lines
**c1, c2** No branch is allowed after branch

### 5.7.2 Guidelines when connecting the electrical wiring

**Tightening torques**

| Wiring | Screw size | Tightening torque (N•m) |
|---|---|---|
| Power supply wiring (power supply + shielded ground) | M5 | 2.0~3.0 |
| Transmission wiring | M3.5 | 0.8~0.97 |

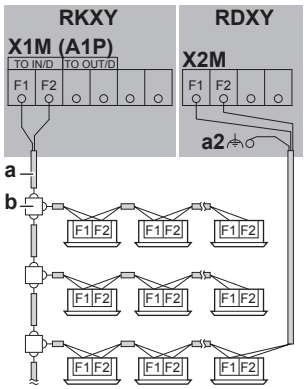
### 5.7.3 To connect the electrical wiring on the compressor unit

**NOTICE**

- Follow the wiring diagram (delivered with the unit, located on the switch box cover).
- Make sure the electrical wiring does NOT obstruct proper reattachment of the service cover.

1 Remove the service covers of the compressor unit and the switch box.

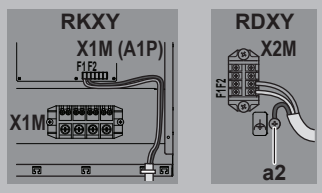
2 Connect the transmission wiring as follows:




**a** Sheathed + shielded cable (2 wires) (no polarity)
**a2** Connection of shield to earth
**b** Terminal board (field supply)

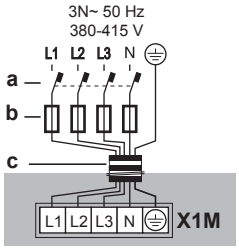
**WARNING**

**Shielded cable.** Using shielded cable for the transmission wiring is optional. When using shielded cable, connect the shield only to the earth of the heat exchanger unit (**a2**).




**a2** Earth (use the screw delivered as accessory)

3 Connect the power supply as follows:

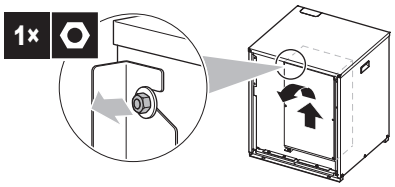


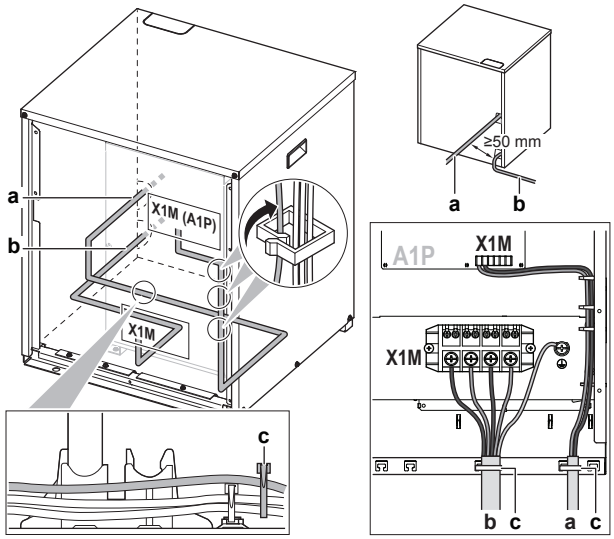

**a** Earth leakage circuit breaker
**b** Fuse
**c** Power supply cable

4 Route the wiring through the frame, and fix the cables (power supply and transmission wiring) with cable ties.

**INFORMATION**

To make routing the wiring easier, you can turn the switch box horizontally by loosening the screw on the left side of the switch box.




**a** Transmission wiring
**b** Power supply
**c** Cable tie

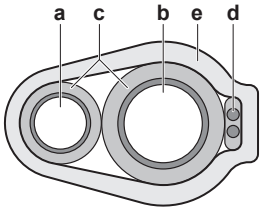
5 Reattach the service covers.

6 Connect an earth leakage circuit breaker and fuse to the power supply line.

## 5.8 Finishing the compressor unit installation

### 5.8.1 To finish the transmission wiring

After installing the transmission wires inside the unit, wrap them along with the on-site refrigerant pipes using finishing tape, as shown in figure below.




**a** Liquid pipe
**b** Gas pipe
**c** Insulator
**d** Transmission wiring (F1/F2)
**e** Finishing tape

# 6 Configuration

**INFORMATION**

It is important that all information in this chapter is read sequentially by the installer and that the system is configured as applicable.

**DANGER: RISK OF ELECTROCUTION**

## 6.1 Making field settings

### 6.1.1 About making field settings

To configure the heat pump system, you must give input to the compressor unit's main PCB (A1P). This involves the following field setting components:

- Push buttons to give input to the PCB
- A display to read feedback from the PCB
- DIP switches (only change the factory settings if you install a cool/heat selector switch).

Field settings are defined by their mode, setting and value. Example: [2-8]=4.

**Mode 1 and 2**

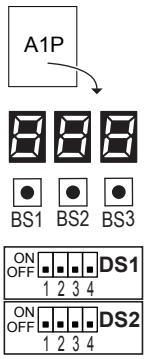
| Mode | Description |
|---|---|
| Mode 1<br>(monitoring settings) | Mode 1 can be used to monitor the current situation of the compressor unit. Some field setting contents can be monitored as well. |
| Mode 2<br>(field settings) | Mode 2 is used to change the field settings of the system. Consulting the current field setting value and changing the current field setting value is possible.<br>In general, normal operation can be resumed without special intervention after changing field settings.<br>Some field settings are used for special operation (e.g., 1 time operation, recovery/vacuuming setting, manual adding refrigerant setting, etc.). In such a case, it is required to abort the special operation before normal operation can restart. It will be indicated in below explanations. |

### 6.1.2 To access the field setting components

See "5.1.1 To open the compressor unit" on page 9.

### 6.1.3 Field setting components

- Push buttons (BS1~BS3)
- 7-segments display (888):ON (8) OFF ( ) Flashing (0)
- DIP switches (DS1 and DS2)




**DIP switches**

Only change the factory settings if you install a cool/heat selector switch.

- DS1-1: COOL/HEAT selector (see "3.3.1 Possible options for the compressor unit and heat exchanger unit" on page 6). OFF=not installed=factory setting
- DS1-2~4: NOT USED. DO NOT CHANGE THE FACTORY SETTING.
- DS2-1~4: NOT USED. DO NOT CHANGE THE FACTORY SETTING.

**Push buttons**

Use the push buttons to make the field settings. Operate the push buttons with an insulated stick (such as a closed ball-point pen) to avoid touching of live parts.

- BS1: MODE: For changing the set mode
- BS2: SET: For field setting
- BS3: RETURN: For field setting

**7-segments display**

The display gives feedback about the field settings, which are defined as [Mode-Setting]=Value.

**Example:**

| 888 | Description |
|---|---|
|  | Default situation |
|  | Mode 1 |
|  | Mode 2 |
|  | Setting 8<br>(in mode 2) |
|  | Value 4<br>(in mode 2) |

### 6.1.4 To access mode 1 or 2

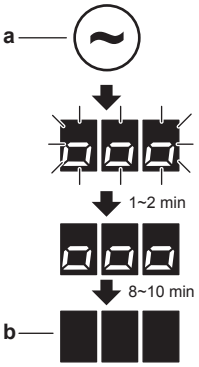
After the units are turned ON, the display goes to its default situation. From there, you can access mode 1 and mode 2.

**Initialisation: default situation**

**NOTICE**

Be sure to turn on the power 6 hours before operation in order to have power running to the crankcase heater and to protect the compressor.

Turn on the power supply of the compressor unit, heat exchanger unit, and all indoor units. When the communication between the compressor unit, heat exchanger unit, and indoor units is established and normal, the display indication state will be as below (default situation when shipped from factory).

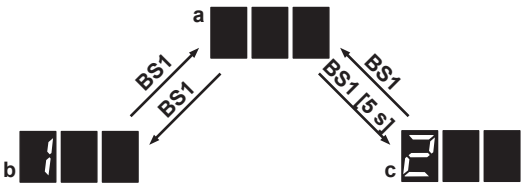



**a** Power ON
**b** Default situation

If the default situation is not displayed after 10~12 minutes, check the malfunction code on the indoor unit user interface and on the compressor unit 7-segment display. Solve the malfunction code accordingly. First, check the communication wiring.

**Switching between modes**

Use BS1 to switch between the default situation, mode 1 and mode 2.




**a** Default situation (H1P OFF)
**b** Mode 1 (H1P flashing)
**c** Mode 2 (H1P ON)
**BS1** Press BS1.
**BS1 [5 s]** Press BS1 for at least 5 s.

**INFORMATION**

If you get confused in the middle of the process, press BS1 to return to the default situation.

### 6.1.5 To use mode 1 (and default situation)

In mode 1 (and in default situation) you can read out some information.

**Example:** You can read out setting [1-10] (= the total number of connected units (heat exchanger unit + indoor units)) as follows:

| # | Action | Button/display |
|---|---|---|
| 1 | Start from the default situation. | |
| 2 | Select mode 1. | ↓BS1 [1×] |
| 3 | Select setting 10.<br>("X×" depends on the setting that you want to select.) | ↓BS2 [X×] |
| 4 | Display the value of setting 10.<br>(there are 8 units connected) | ↓BS3 [1×] |
| 5 | Quit mode 1. | ↓BS1 [1×] |

### 6.1.6 To use mode 2

In mode 2 you can make field settings to configure the system.

**Example:** You can change the value of setting [2-8] (= $T_e$ target temperature during cooling operation) to 4 (= 8°C) as follows:

| # | Action | Button/display |
|---|---|---|
| 1 | Start from the default situation. | |
| 2 | Select mode 2. | ↓BS1 [5 s] |
| 3 | Select setting 8.<br>("X×" depends on the setting that you want to select.) | ↓BS2 [X×] |
| 4 | Select value 4 (= 8°C).<br>**a**: Display the current value.<br>**b**: Change to 4. ("X×" depends on the current value, and the value that you want to select.)<br>**c**: Enter the value in the system.<br>**d**: Confirm. The system starts operating according to the setting. | **a** ↓BS3 [1×]<br>**b** ↓BS2 [X×]<br>**c** ↓BS3 [1×]<br>**d** ↓BS3 [1×] |
| 5 | Quit mode 2. | ↓BS1 [1×] |

### 6.1.7 Mode 1 (and default situation): Monitoring settings

In mode 1 you can read out the following information:

| Setting | Value / Description | |
|---|---|---|
| [1-1]<br>Shows the status of low noise operation. | 0 | Unit is currently not operating under low noise restrictions. |
| | 1 | Unit is currently operating under low noise restrictions. |
| | Low noise operation reduces the sound generated by the unit compared to nominal operating conditions.<br>Low noise operation can be set in mode 2. There are two methods to activate low noise operation of the compressor unit and heat exchanger unit.<br>▪ The first method is to enable an automatic low noise operation during night time by field setting. The unit will operate at the selected low noise level during the selected time frames.<br>▪ The second method is to enable low noise operation based on an external input. For this operation an optional accessory is required. | |

| Setting | Value / Description | |
|---|---|---|
| [1-2]<br>Shows the status of power consumption limitation operation. | 0 | Unit is currently not operating under power consumption limitations. |
| | 1 | Unit is currently operating under power consumption limitation. |
| | Power consumption limitation reduces the power consumption of the unit compared to nominal operating conditions.<br>Power consumption limitation can be set in mode 2. There are two methods to activate power consumption limitation of the compressor unit.<br>▪ The first method is to enable a forced power consumption limitation by field setting. The unit will always operate at the selected power consumption limitation.<br>▪ The second method is to enable power consumption limitation based on an external input. For this operation an optional accessory is required. | |
| [1-5]<br>Shows the current $T_e$ target parameter position. | For more information, see setting [2-8]. | |
| [1-6]<br>Shows the current $T_c$ target parameter position. | For more information, see setting [2-9]. | |

| Setting | Value / Description |
|---|---|
| [1-10]<br>Shows the total number of connected units (heat exchanger unit + indoor units). | It can be convenient to check if the total number of units which are installed (heat exchanger unit + indoor units) match the total number of units which are recognised by the system. In case there is a mismatch, it is advised to check the communication wiring path between compressor unit and heat exchanger unit, and between compressor unit and indoor units (F1/F2 communication line). |
| [1-17]<br>Shows the latest malfunction code. | When the latest malfunction codes were reset by accident on an indoor unit user interface, they can be checked again through this monitoring settings.<br>For the content or reason behind the malfunction code see "8.1 Solving problems based on error codes" on page 24, where most relevant malfunction codes are explained. Detailed information about malfunction codes can be consulted in the service manual of this unit. |
| [1-18]<br>Shows the 2nd last malfunction code. | |
| [1-19]<br>Shows the 3rd last malfunction code. | |
| [1-40]<br>Shows the current cooling comfort setting. | For more information, see setting [2-81]. |
| [1-41]<br>Shows the current heating comfort setting. | For more information, see setting [2-82]. |

### 6.1.8 Mode 2: Field settings

In mode 2 you can make field settings to configure the system. The three 7-segments (888) show the setting/value number.

| Setting | Value | |
|---|---|---|
| | 888 | Description |
| [2-8]<br>$T_e$ target temperature during cooling operation. | 0 (default) | Auto |
| | 2 | 6°C |
| | 3 | 7°C |
| | 4 | 8°C |
| | 5 | 9°C |
| | 6 | 10°C |
| | 7 | 11°C |
| [2-9]<br>$T_c$ target temperature during heating operation. | 0 (default) | Auto |
| | 1 | 41°C |
| | 3 | 43°C |
| | 6 | 46°C |
| [2-12]<br>Enable the low noise function and/or power consumption limitation via external control adaptor (DTA104A61/62).<br>If the system needs to be running under low noise operation or under power consumption limitation conditions when an external signal is sent to the unit, this setting should be changed. This setting will only be effective when the optional external control adaptor (DTA104A61/62) is installed in the indoor unit. | 0 (default) | Deactivated. |
| | 1 | Activated. |

| Setting | Value | | |
|---|---|---|---|
| | 888 | Description | |
| [2-15]<br>Fan static pressure setting (in heat exchanger unit).<br>You can set the external static pressure of the heat exchanger unit according to the ducting requirements. | 0 | 30 Pa | |
| | 1 (default) | 60 Pa | |
| | 2 | 90 Pa | |
| | 3 | 120 Pa | |
| | 4 | 150 Pa | |
| [2-16]<br>Test run heat exchanger unit.<br>When activated, the heat exchanger fans start running. This allows you to check the ducting with a running heat exchanger unit. | 0 (default) | Deactivated. | |
| | 1 | Activated. | |
| [2-20]<br>Manual additional refrigerant charge.<br>In order to add the additional refrigerant charge amount in a manual way (without automatic refrigerant charging functionality), following setting should be applied. | 0 (default) | Deactivated. | |
| | 1 | Activated.<br>To stop the manual additional refrigerant charge operation (when the required additional refrigerant amount is charged), push BS3. If this function was not aborted by pushing BS3, the unit will stop its operation after 30 minutes. If 30 minutes was not sufficient to add the needed refrigerant amount, the function can be reactivated by changing the field setting again. | |
| [2-21]<br>Refrigerant recovery/vacuuming mode.<br>In order to achieve a free pathway to reclaim refrigerant out of the system or to remove residual substances or to vacuum the system it is necessary to apply a setting which will open required valves in the refrigerant circuit so the reclaim of refrigerant or vacuuming process can be done properly. | 0 (default) | Deactivated. | |
| | 1 | Activated.<br>To stop the refrigerant recovery/vacuuming mode, push BS3. If it is not pushed, the system will remain in refrigerant recovery/vacuuming mode. | |
| [2-22]<br>Automatic low noise setting and level during night time.<br>By changing this setting, you activate the automatic low noise operation function of the unit and define the level of operation. Depending on the chosen level, the noise level will be lowered. The start and stop moments for this function are defined under setting [2-26] and [2-27]. | 0 (default) | Deactivated | |
| | 1 | Level 1 | Level 3<Level 2<Level 1 |
| | 2 | Level 2 | |
| | 3 | Level 3 | |
| [2-25]<br>Low noise operation level via the external control adaptor.<br>If the system needs to be running under low noise operation conditions when an external signal is sent to the unit, this setting defines the level of low noise that will be applied.<br>This setting will only be effective when the optional external control adaptor (DTA104A61/62) is installed and the setting [2-12] was activated. | 1 | Level 1 | Level 3<Level 2<Level 1 |
| | 2 (default) | Level 2 | |
| | 3 | Level 3 | |
| [2-26]<br>Low noise operation start time.<br>This setting is used in conjunction with setting [2-22]. | 1 | 20h00 | |
| | 2 (default) | 22h00 | |
| | 3 | 24h00 | |
| [2-27]<br>Low noise operation stop time.<br>This setting is used in conjunction with setting [2-22]. | 1 | 6h00 | |
| | 2 | 7h00 | |
| | 3 (default) | 8h00 | |
| [2-30]<br>Power consumption limitation level (step 1) via the external control adaptor (DTA104A61/62).<br>If the system needs to be running under power consumption limitation conditions when an external signal is sent to the unit, this setting defines the level power consumption limitation that will be applied for step 1. The level is according to the table. | 1 | 60% | |
| | 2 | 65% | |
| | 3 (default) | 70% | |
| | 4 | 75% | |
| | 5 | 80% | |
| | 6 | 85% | |
| | 7 | 90% | |
| | 8 | 95% | |

| Setting | Value | |
|---|---|---|
| | 888 | Description |
| [2-31]<br>Power consumption limitation level (step 2) via the external control adaptor (DTA104A61/62).<br>If the system needs to be running under power consumption limitation conditions when an external signal is sent to the unit, this setting defines the level power consumption limitation that will be applied for step 2. The level is according to the table. | — | 30% |
| | 1 (default) | 40% |
| | 2 | 50% |
| | 3 | 55% |
| [2-32]<br>Forced, all time, power consumption limitation operation (no external control adaptor is required to perform power consumption limitation).<br>If the system always needs to be running under power consumption limitation conditions, this setting activates and defines the level power consumption limitation that will be applied continuously. The level is according to the table. | 0 (default) | Function not active. |
| | 1 | Follows [2-30] setting. |
| | 2 | Follows [2-31] setting. |
| [2-81]<br>Cooling comfort setting.<br>This setting is used in conjunction with setting [2-8]. | 0 | Eco |
| | 1 (default) | Mild |
| | 2 | Quick |
| | 3 | Powerful |
| [2-82]<br>Heating comfort setting.<br>This setting is used in conjunction with setting [2-9]. | 0 | Eco |
| | 1 (default) | Mild |
| | 2 | Quick |
| | 3 | Powerful |

# 7 Commissioning

After installation and once the field settings are defined, the installer is obliged to verify correct operation. Therefore a test run must be performed according to the procedures described below.

## 7.1 Precautions when commissioning

**CAUTION**

**Do not perform the test operation while working on the indoor units or the heat exchanger unit.**

When performing the test operation, not only the compressor unit will operate, but the heat exchanger unit and the connected indoor units as well. Working on an indoor unit or the heat exchanger unit while performing a test operation is dangerous.

**NOTICE**

Be sure to turn on the power 6 hours before operation in order to have power running to the crankcase heater and to protect the compressor.

During test operation, the compressor unit, the heat exchanger unit and the indoor units will start up. Make sure that the preparations of the heat exchanger unit and all the indoor units are finished (field piping, electrical wiring, air purge, ...). See installation manual of the indoor units for details.

## 7.2 Checklist before commissioning

After the installation of the unit, first check the following items. Once all below checks are fulfilled, the unit must be closed, only then can the unit be powered up.

| | |
|---|---|
| ☐ | You read the complete installation and operation instructions, as described in the **installer and user reference guide**. |
| ☐ | **Installation**<br>Check that the unit is properly installed, to avoid abnormal noises and vibrations when starting up the unit. |
| ☐ | **Field wiring**<br>Be sure that the field wiring has been carried out according to the instructions described in the chapter "5.7 Connecting the electrical wiring" on page 16, according to the wiring diagrams and according to the applicable legislation. |
| ☐ | **Power supply voltage**<br>Check the power supply voltage on the local supply panel. The voltage must correspond to the voltage on the identification label of the unit. |
| ☐ | **Earth wiring**<br>Be sure that the earth wires have been connected properly and that the earth terminals are tightened. |
| ☐ | **Insulation test of the main power circuit**<br>Using a megatester for 500 V, check that the insulation resistance of 2 MΩ or more is attained by applying a voltage of 500 V DC between power terminals and earth. Never use the megatester for the transmission wiring. |
| ☐ | **Fuses, circuit breakers, or protection devices**<br>Check that the fuses, circuit breakers, or the locally installed protection devices are of the size and type specified in the chapter "4.3.2 Safety device requirements" on page 9. Be sure that neither a fuse nor a protection device has been bypassed. |
| ☐ | **Internal wiring**<br>Visually check the electrical component box and the inside of the unit on loose connections or damaged electrical components. |
| ☐ | **Pipe size and pipe insulation**<br>Be sure that correct pipe sizes are installed and that the insulation work is properly executed. |

| | |
|---|---|
| ☐ | **Stop valves**<br>Be sure that the stop valves are open on both liquid and gas side. |
| ☐ | **Damaged equipment**<br>Check the inside of the unit on damaged components or squeezed pipes. |
| ☐ | **Refrigerant leak**<br>Check the inside of the unit on refrigerant leakage. If there is a refrigerant leak, try to repair the leak. If the repair is unsuccessful, call your local dealer. Do not touch any refrigerant which has leaked out from refrigerant piping connections. This may result in frostbite. |
| ☐ | **Oil leak**<br>Check the compressor for oil leakage. If there is an oil leak, try to repair the leak. If the repairing is unsuccessful, call your local dealer. |
| ☐ | **Air inlet/outlet**<br>Check that the air inlet and outlet of the unit is not obstructed by paper sheets, cardboard, or any other material. |
| ☐ | **Additional refrigerant charge**<br>The amount of refrigerant to be added to the unit shall be written on the included "Added refrigerant" plate and attached to the rear side of the front cover. |
| ☐ | **Installation date and field setting**<br>Be sure to keep record of the installation date on the sticker on the rear of the front panel according to EN60335-2-40 and keep record of the contents of the field setting(s). |
| ☐ | **Insulation and air leaks**<br>Make sure the unit is fully insulated and checked for air leaks.<br>**Possible consequence:** Condensate water might drip. |
| ☐ | **Drainage**<br>Make sure drainage flows smoothly.<br>**Possible consequence:** Condensate water might drip. |
| ☐ | **External static pressure**<br>Make sure the external static pressure is set.<br>**Possible consequence:** Insufficient cooling or heating. |

## 7.3 Checklist during commissioning

| | |
|---|---|
| ☐ | To perform a **test run**. |

### 7.3.1 About test run

The procedure below describes the test operation of the complete system. This operation checks and judges following items:

- Check of wrong wiring (communication check with indoor units and heat exchanger unit).
- Check of the stop valves opening.
- Check of wrong piping. **Example:** Gas or liquid pipes switched.
- Judgement of piping length.

Make sure to carry out the system test operation after the first installation. Otherwise, the malfunction code U3 will be displayed on the user interface and normal operation or individual indoor unit test run cannot be carried out.

Abnormalities on indoor units cannot be checked for each unit separately. After the test operation is finished, check the indoor units one by one by performing a normal operation using the user interface. Refer to the indoor unit installation manual for more details concerning the individual test run.

**INFORMATION**

- It may take 10 minutes to achieve a uniform refrigerant state before the compressor starts.
- During the test operation, the refrigerant running sound or the magnetic sound of a solenoid valve may become loud and the display indication may change. These are not malfunctions.

### 7.3.2 To perform a test run (7-segments display)

1 Make sure all field settings you want are set; see "6.1 Making field settings" on page 18.

2 Turn ON the power to the compressor unit, heat exchanger unit, and the connected indoor units.

**NOTICE**

Be sure to turn on the power 6 hours before operation in order to have power running to the crankcase heater and to protect the compressor.

3 Make sure the default (idle) situation is existing; see "6.1.4 To access mode 1 or 2" on page 18. Push BS2 for 5 seconds or more. The unit will start test operation.

**Result:** The test operation is automatically carried out, the compressor unit display will indicate "t01" and the indication "Test operation" and "Under centralised control" will display on the user interface of indoor units.

Steps during the automatic system test run procedure:

| Step | Description |
|---|---|
| t01 | Control before start up (pressure equalisation) |
| t02 | Cooling start up control |
| t03 | Cooling stable condition |
| t04 | Communication check |
| t05 | Stop valve check |
| t06 | Pipe length check |
| t09 | Pump down operation |
| t10 | Unit stop |

**INFORMATION**

During the test operation, it is not possible to stop the unit operation from a user interface. To abort the operation, press BS3. The unit will stop after ±30 seconds.

4 Check the test operation results on the compressor unit 7-segment display.

| Completion | Description |
|---|---|
| Normal completion | No indication on the 7-segment display (idle). |
| Abnormal completion | Indication of malfunction code on the 7-segment display.<br>Refer to "7.3.3 Correcting after abnormal completion of the test run" on page 24 to take actions for correcting the abnormality. When the test operation is fully completed, normal operation will be possible after 5 minutes. |

### 7.3.3 Correcting after abnormal completion of the test run

The test operation is only completed if there is no malfunction code displayed. In case of a displayed malfunction code, perform correcting actions as explained in the malfunction code table. Carry out the test operation again and confirm that the abnormality is properly corrected.

**INFORMATION**

If a malfunction occurs, the error code is displayed on the compressor unit's 7-segments display and on the user interface of the indoor unit.

**INFORMATION**

Refer to the installation manual of the indoor unit for detailed malfunction codes related to indoor units.

### 7.3.4 Operating the unit

Once the units are installed and test operation of compressor unit, heat exchanger unit and indoor units is finished, the operation of the system can start.

For operating the indoor unit, the user interface of the indoor unit should be switched ON. Refer to the indoor unit operation manual for more details.

# 8 Troubleshooting

## 8.1 Solving problems based on error codes

In case of a displayed malfunction code, perform correcting actions as explained in the malfunction code table.

After correcting the abnormality, press BS3 to reset the malfunction code and retry operation.

**INFORMATION**

If a malfunction occurs, the error code is displayed on the compressor unit's 7-segments display and on the user interface of the indoor unit.

The error code on the compressor unit will indicate a main malfunction code and a sub code. The sub code indicates more detailed information about the malfunction code. The main code and sub code will be displayed intermittent (with an interval of 1 second).
**Example:**

- Main code: E3
- Sub code: -01

### 8.1.1 Error codes: Overview

| Main code | Sub code | Cause | Solution |
|---|---|---|---|
| E0 | -02 | ▪ Heat exchanger fan malfunction.<br>▪ Drain pump feedback contact is open. | In the heat exchanger unit:<br>▪ Check connection on PCB: A1P (X15A)<br>▪ Check connection on terminal block (X2M)<br>▪ Check the fan connectors. |
| E2 | -01 | Earth leakage detector activated<br>Compressor unit: (T1A) - A1P (X101A) | Restart the unit. If the problem reoccurs, contact your dealer. |
| | -06 | No earth leakage detector detected<br>Compressor unit: (T1A) - A1P (X101A) | Replace the earth leakage detector. |
| E3 | -01 | High pressure switch was activated<br>Compressor unit: (S1PH) - A1P (X4A) | Check stop valve situation or abnormalities in (field) piping or airflow over air cooled coil. |
| | -02 | ▪ Refrigerant overcharge<br>▪ Stop valve closed | ▪ Check refrigerant amount+recharge unit.<br>▪ Open stop valves |
| | -13 | Stop valve closed (liquid) | Open liquid stop valve. |
| | -18 | ▪ Refrigerant overcharge<br>▪ Stop valve closed | ▪ Check refrigerant amount+recharge unit.<br>▪ Open stop valves. |
| E4 | -01 | Low pressure malfunction:<br>▪ Stop valve closed<br>▪ Refrigerant shortage<br>▪ Indoor unit malfunction | ▪ Open stop valves.<br>▪ Check refrigerant amount+recharge unit.<br>▪ Check the user interface's display or transmission wiring between the outdoor unit and the indoor unit. |
| E9 | -01 | Electronic expansion valve malfunction (subcool)<br>Compressor unit: (Y1E) - A1P (X21A) | Check connection on PCB or actuator. |
| | -47 | Electronic expansion valve malfunction (main)<br>Heat exchanger unit: (Y1E) - A1P (X7A) | Check connection on PCB or actuator. |
| F3 | -01 | Discharge temperature too high:<br>▪ Stop valve closed<br>▪ Refrigerant shortage<br>Compressor unit: (R21T) - A1P (X29A) | ▪ Open stop valves.<br>▪ Check refrigerant amount+recharge unit. |
| F6 | -02 | ▪ Refrigerant overcharge<br>▪ Stop valve closed | ▪ Check refrigerant amount+recharge unit.<br>▪ Open stop valves. |

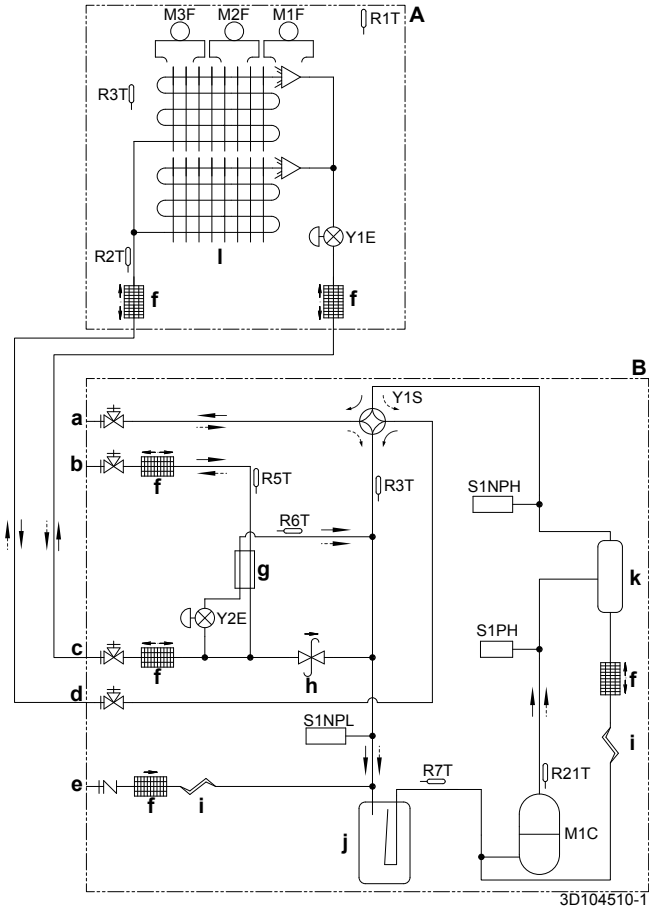
| Main code | Sub code | Cause | Solution |
|---|---|---|---|
| H9 | -01 | Ambient temperature sensor malfunction<br>Heat exchanger unit: (R1T) - A1P (X16A) | Check connection on PCB or actuator. |
| J3 | -16 | Discharge temperature sensor malfunction<br>Compressor unit: (R21T): open circuit - A1P (X29A) | Check connection on PCB or actuator. |
| | -17 | Discharge temperature sensor malfunction<br>Compressor unit: (R21T): short circuit - A1P (X29A) | Check connection on PCB or actuator. |
| J4 | -01 | Heat exchanger gas sensor malfunction<br>Heat exchanger unit: (R2T) - A1P (X18A) | Check connection on PCB or actuator. |
| J5 | -01 | Suction temperature sensor malfunction<br>Compressor unit: (R3T) - A1P (X30A) | Check connection on PCB or actuator. |
| | -02 | Suction temperature sensor malfunction<br>Compressor unit: (R7T) - A1P (X30A) | Check connection on PCB or actuator. |
| J6 | -01 | De-icing temperature sensor malfunction<br>Heat exchanger unit: (R3T) - A1P (X17A) | Check connection on PCB or actuator |
| J7 | -06 | Liquid temperature sensor (after subcool HE) malfunction<br>Compressor unit: (R5T) - A1P (X30A) | Check connection on PCB or actuator. |
| J9 | -01 | Gas temperature sensor (after subcool HE) malfunction<br>Compressor unit: (R6T) - A1P (X30A) | Check connection on PCB or actuator. |
| JA | -06 | High pressure sensor malfunction<br>Compressor unit: (S1NPH): open circuit - A1P (X32A) | Check connection on PCB or actuator. |
| | -07 | High pressure sensor malfunction<br>Compressor unit: (S1NPH): short circuit - A1P (X32A) | Check connection on PCB or actuator. |
| JC | -06 | Low pressure sensor malfunction<br>Compressor unit: (S1NPL): open circuit - A1P (X31A) | Check connection on PCB or actuator. |
| | -07 | Low pressure sensor malfunction<br>Compressor unit: (S1NPL): short circuit - A1P (X31A) | Check connection on PCB or actuator. |
| LC | -14 | Transmission outdoor unit - inverter: INV1 transmission trouble<br>Compressor unit: A1P (X20A, X28A, X42A) | Check connection. |
| P1 | -01 | INV1 unbalanced power supply voltage | Check if power supply is within range. |
| PJ | -01 | Heat exchanger unit capacity setting malfunction. | Check the type of heat exchanger unit. If necessary, replace the heat exchanger unit. |
| U1 | -01 | Reversed power supply phase malfunction | Correct phase order. |
| | -04 | Reversed power supply phase malfunction | Correct phase order. |
| U2 | -01 | INV1 voltage power shortage | Check if power supply is within range. |
| | -02 | INV1 power phase loss | Check if power supply is within range. |
| U3 | -03 | Malfunction code: System test run not yet executed (system operation not possible) | Execute system test run. |
| U4 | -01 | Faulty wiring to Q1/Q2 or indoor - outdoor | Check (Q1/Q2) wiring. Do NOT use Q1/Q2. |
| | -03 | Faulty wiring to Q1/Q2 or indoor - outdoor | Check (Q1/Q2) wiring. Do NOT use Q1/Q2. |
| | -04 | System test run abnormal ending | Execute test run again. |
| U7 | -01 | Warning: faulty wiring to Q1/Q2 | Check Q1/Q2 wiring. Do NOT use Q1/Q2. |
| | -02 | Malfunction code: faulty wiring to Q1/Q2 | Check Q1/Q2 wiring. Do NOT use Q1/Q2. |
| | -11 | ▪ Too many indoor units are connected to F1/F2 line<br>▪ Bad wiring between outdoor and indoor units | Check indoor unit amount and total capacity connected. |

| Main code | Sub code | Cause | Solution |
|---|---|---|---|
| U9 | -01 | ▪ System mismatch. Wrong type of indoor units combined (R410A, R407C, RA, etc). Indoor unit malfunction<br>▪ Heat exchanger unit malfunction | ▪ Check if other indoor units have malfunction and confirm indoor unit mix is allowed.<br>▪ Check the transmission wiring to the heat exchanger unit. |
| UA | -03 | More than 1 heat exchanger unit connected. | Check installation. Only 1 heat exchanger unit can be installed. |
| | -18 | ▪ Improper type of indoor units are connected.<br>▪ Mismatch of compressor unit and heat exchanger unit. | ▪ Check the type of indoor units that are currently connected. If they are not proper, replace them with proper ones.<br>▪ Check if the compressor unit and heat exchanger unit are compatible. |
| | -21 | Wrong heat exchanger unit connected. | Check installation. Connect correct heat exchanger unit. |
| UH | -01 | ▪ Auto address malfunction (inconsistency)<br>▪ Mismatch of compressor unit and heat exchanger unit. | ▪ Check if transmission wired unit amount matches with powered unit amount (by monitor mode) or wait till initialisation is finished.<br>▪ Check if the compressor unit and heat exchanger unit are compatible. |
| UF | -01 | ▪ Auto address malfunction (inconsistency)<br>▪ Mismatch of compressor unit and heat exchanger unit. | ▪ Check if transmission wired unit amount matches with powered unit amount (by monitor mode) or wait till initialisation is finished.<br>▪ Check if the compressor unit and heat exchanger unit are compatible. |
| | -05 | ▪ The stop valves of the compressor unit are left closed.<br>▪ The piping and wiring of the specified indoor unit or heat exchanger unit are not connected correctly to the compressor unit. | ▪ Open the stop valves on both the gas and liquid side.<br>▪ Confirm that the piping and wiring of the specified indoor unit or heat exchanger unit are connected correctly to the compressor unit. |

# 9 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 extranet (authentication required).

## 9.1 Piping diagram: Compressor unit and heat exchanger unit




**A** Heat exchanger unit
**B** Compressor unit
**a** Stop valve (gas) (circuit 2: to indoor units)
**b** Stop valve (liquid) (circuit 2: to indoor units)
**c** Stop valve (liquid) (circuit 1: to heat exchanger unit)
**d** Stop valve (gas) (circuit 1: to heat exchanger unit)
**e** Service port (refrigerant charge)
**f** Filter
**g** Subcool heat exchanger
**h** Pressure regulating valve
**i** Capillary tube
**j** Accumulator
**k** Oil separator
**l** Heat exchanger
**M1C** Compressor
**M1F~M3F** Fan motor
**R1T (A)** Thermistor (air)
**R2T (A)** Thermistor (gas)
**R3T (A)** Thermistor (coil)
**R21T (B)** Thermistor (discharge)
**R3T (B)** Thermistor (suction accumulator)
**R5T (B)** Thermistor (liquid)
**R6T (B)** Thermistor (subcool heat exchanger gas)
**R7T (B)** Thermistor (suction compressor)
**S1NPH** High pressure sensor
**S1NPL** Low pressure sensor
**S1PH** High pressure switch
**Y1E, Y2E** Electronic expansion valve
**Y1S** Solenoid valve (4-way valve)
Heating
Cooling

## 9.2 Wiring diagram: Compressor unit

The wiring diagram is delivered with the unit, located on the switch box cover.

**Symbols:**

| | |
|---|---|
| X1M | Main terminal |
| —·—·—·— | Earth wiring |
| 15 | Wire number 15 |
| - - - - - - - | Field wire |
| | Field cable |
| → **/12.2 | Connection ** continues on page 12 column 2 |
| ① | Several wiring possibilities |
| | Option |
| | Not mounted in switch box |
| | Wiring depending on model |
| | PCB |

**Notes:**

1 When using the optional adapter, refer to the installation manual of the optional adapter.
2 Refer to the installation or service manual on how to use BS1~BS3 push buttons, and DS1+DS2 DIP switches.
3 Do not operate the unit by short-circuiting protection device S1PH.
4 For connection of INDOOR-OUTDOOR F1-F2 transmission wiring, and OUTDOOR-OUTDOOR F1-F2 transmission wiring, refer to the service manual.

**Legend:**

| | |
|---|---|
| A1P | Printed circuit board (main) |
| A2P | Printed circuit board (noise filter) |
| A3P | Printed circuit board (inverter) |
| A4P | Printed circuit board (cool/heat selector) |
| BS* | Push button (mode, set, return) (A1P) |
| C* | Capacitor (A3P) |
| DS* | DIP switch (A1P) |
| E1HC | Crankcase heater |
| F*U | Fuse (T 3.15 A / 250 V) (A1P) |
| F3U | Field fuse |
| F400U | Fuse (T 6.3 A / 250 V) (A2P) |
| F410U | Fuse (T 40 A / 500 V) (A2P) |
| F411U | Fuse (T 40 A / 500 V) (A2P) |
| F412U | Fuse (T 40 A / 500 V) (A2P) |
| HAP | Running LED (service monitor green) (A1P) |
| K1M | Magnetic contactor (A3P) |
| K*R | Magnetic relay (A*P) |
| L1R | Reactor |
| M1C | Motor (compressor) |
| M1F | Motor (fan) |
| PS | Power supply (A1P, A3P) |
| Q1DI | Earth leakage circuit breaker (field supply) |
| Q1RP | Phase reversal detect circuit (A1P) |
| R21T | Thermistor (M1C discharge) |
| R3T | Thermistor (accumulator) |
| R5T | Thermistor (subcool liquid pipe) |
| R6T | Thermistor (heat exchanger gas pipe) |
| R7T | Thermistor (suction) |
| R* | Resistor (A3P) |
| S1NPH | High pressure sensor |
| S1NPL | Low pressure sensor |
| S1PH | High pressure switch (discharge) |
| S1S | Air control switch (optional) |

| | |
|---|---|
| S2S | Cool/heat selector switch (optional) |
| SEG1~SEG3 | 7-segment display |
| T1A | Earth leakage detector |
| V1R | IGBT power module (A3P) |
| V2R | Diode module (A3P) |
| X37A | Connector (power supply for option PCB) (optional) |
| X66A | Connector (cool/heat selector switch) (optional) |
| X1M | Terminal strip (power supply) |
| X*A | PCB connector |
| X*M | Terminal strip on PCB (A*P) |
| X*Y | Connector |
| Y2E | Electronic expansion valve |
| Y1S | Solenoid valve (4-way valve) |
| Z*C | Noise filter (ferrite core) |
| Z*F | Noise filter |

# For the user

## 10 About the system

The VRV IV heat pump for indoor installation can be used for heating/cooling applications.

**NOTICE**

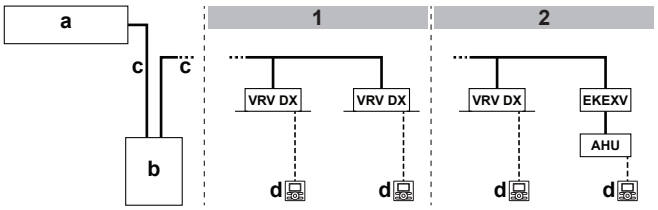
Do not use the system for other purposes. In order to avoid any quality deterioration, do not use the unit for cooling precision instruments, food, plants, animals or works of art.

**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.

### 10.1 System layout




**1** In case of VRV DX indoor units
**2** In case of VRV DX indoor units combined with an air handling unit
**a** Heat exchanger unit
**b** Compressor unit
**c** Refrigerant piping
**d** User interface (dedicated depending on indoor unit type)
**VRV DX** VRV direct expansion (DX) indoor unit
**EKEXV** Expansion valve kit
**AHU** Air handling unit

## 11 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 will give a non-exhaustive overview of the main functions of the system.

Detailed information on required actions to achieve certain functions can be found in the dedicated installation and operation manual of the indoor unit.

Refer to the operation manual of the installed user interface.

## 12 Operation

### 12.1 Operation range

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

| Specification | | 5 HP |
|---|---|---|
| Maximum capacity | Heating | 16.0 kW |
| | Cooling | 14.0 kW |
| Outside ambient design temperature | Heating | –20~15.5°C WB |
| | Cooling | –5~46°C DB |
| Ambient design temperature of compressor unit and heat exchanger unit | | 5~35°C DB |
| Maximum relative humidity around the compressor unit and heat exchanger unit | Heating | 50%(a) |
| | Cooling | 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.

Special operation ranges are valid in case of using AHU. They can be found in the installation/operation manual of the dedicated unit. Latest information can be found in the technical engineering data.

### 12.2 Operating the system

#### 12.2.1 About operating the system

- Operation procedure varies according to the combination of compressor unit, heat exchanger unit, and user interface.
- To protect the unit, turn on the main power switch 6 hours before operation.
- If the main power supply is turned off during operation, operation will restart automatically after the power turns back on again.
- When stopping the unit, the unit might still operate for a few minutes. This is not a malfunction.

#### 12.2.2 About cooling, heating, fan only, and automatic operation

- Changeover cannot be made with a user interface whose display shows "change-over under centralised control" (refer to installation and operation manual of the user interface).

- When the display "change-over under centralised control" flashes, refer to "12.5.1 About setting the master user interface" on page 30.
- The fan may keep on running for about 1 minute after the heating operation stops.
- The air flow rate may adjust itself depending on the room temperature or the fan may stop immediately. This is not a malfunction.

### 12.2.3 About the heating operation

It may take longer to reach the set temperature for general heating operation than for cooling operation.

The following operation is performed in order to prevent the heating capacity from dropping or cold air from blowing.

**Defrost operation**

In heating operation, freezing of the heat exchanger unit's air cooled coil increases over time, restricting the energy transfer to the heat exchanger unit's coil. Heating capability decreases and the system needs to go into defrost operation to be able to deliver enough heat to the indoor units.

The indoor unit will stop fan operation, the refrigerant cycle will reverse and energy from inside the building will be used to defrost the heat exchanger unit coil.

The indoor unit will indicate defrost operation on the displays .

During defrost operation, ice melts and possibly evaporates. **Possible consequence:** Mist might be visible during or directly after defrost operation. This is not a malfunction.

**Hot start**

In order to prevent cold air from blowing out of an indoor unit at the start of heating operation, the indoor fan is automatically stopped. The display of the user interface shows . It may take some time before the fan starts. This is not a malfunction.

### 12.2.4 To operate the system (WITHOUT cool/heat changeover remote control switch)

1 Press the operation mode selector button on the user interface several times and select the operation mode of your choice.

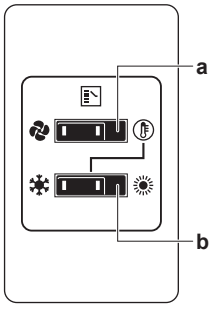
- Cooling operation
- Heating operation
- Fan only operation

2 Press the ON/OFF button on the user interface.

**Result:** The operation lamp lights up and the system starts operating.

### 12.2.5 To operate the system (WITH cool/heat changeover remote control switch)

**Overview of the changeover remote control switch**




**a** FAN ONLY/AIR CONDITIONING SELECTOR SWITCH

Set the switch to for fan only operation or to for heating or cooling operation.

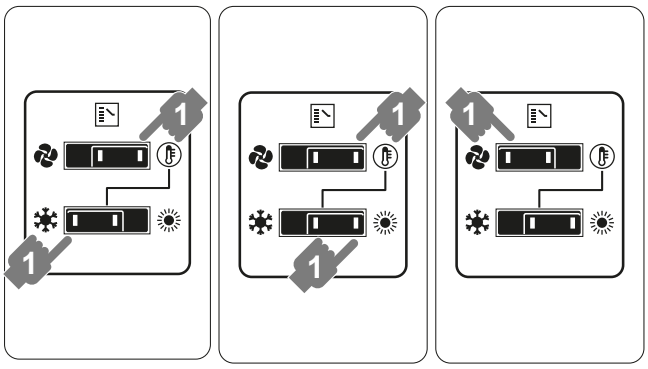
**b** COOL/HEAT CHANGEOVER SWITCH

Set the switch to for cooling or to for heating

**To start**

1 Select operation mode with the cool/heat changeover switch as follows:

Cooling operation | Heating operation | Fan only operation




2 Press the ON/OFF button on the user interface.

**Result:** The operation lamp lights up and the system starts operating.

**To stop**

3 Press the ON/OFF button on the user interface once again.

**Result:** The operation lamp goes out and the system stops operating.

**NOTICE**

Do not turn off power immediately after the unit stops, but wait for at least 5 minutes.

**To adjust**

For programming temperature, fan speed and air flow direction refer to the operation manual of the user interface.

## 12.3 Using the dry program

### 12.3.1 About the dry program

- The function of this program is to decrease the humidity in your room with minimal temperature decrease (minimal room cooling).
- The micro computer automatically determines temperature and fan speed (cannot be set by the user interface).
- The system does not go into operation if the room temperature is low (<20°C).

### 12.3.2 To use the dry program (WITHOUT cool/heat changeover remote control switch)

**To start**

1 Press the operation mode selector button on the user interface several times and select (program dry operation).

2 Press the ON/OFF button of the user interface.

**Result:** The operation lamp lights up and the system starts operating.

3 Press the air flow direction adjust button (only for double-flow, multi-flow, corner, ceiling-suspended and wall-mounted). Refer to "12.4 Adjusting the air flow direction" on page 30 for details.

**To stop**

4 Press the ON/OFF button on the user interface once again.

**Result:** The operation lamp goes out and the system stops operating.

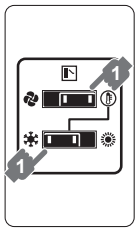
**NOTICE**

Do not turn off power immediately after the unit stops, but wait for at least 5 minutes.

### 12.3.3 To use the dry program (WITH cool/heat changeover remote control switch)

**To start**

1 Select cooling operation mode with the cool/heat changeover remote control switch.




2 Press the operation mode selector button on the user interface several times and select (program dry operation).

3 Press the ON/OFF button of the user interface.

**Result:** The operation lamp lights up and the system starts operating.

4 Press the air flow direction adjust button (only for double-flow, multi-flow, corner, ceiling-suspended and wall-mounted). Refer to "12.4 Adjusting the air flow direction" on page 30 for details.

**To stop**

5 Press the ON/OFF button on the user interface once again.

**Result:** The operation lamp goes out and the system stops operating.

**NOTICE**

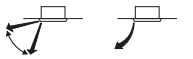
Do not turn off power immediately after the unit stops, but wait for at least 5 minutes.

## 12.4 Adjusting the air flow direction

Refer to the operation manual of the user interface.

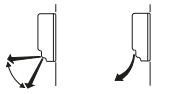
### 12.4.1 About the air flow flap

Double flow+multi-flow units



Corner units

Ceiling suspended units



Wall-mounted units

For the following conditions, a micro computer controls the air flow direction which may be different from the display.

| Cooling | Heating |
|---|---|
| ▪ When the room temperature is lower than the set temperature. | ▪ When starting operation.<br>▪ When the room temperature is higher than the set temperature.<br>▪ At defrost operation. |
| ▪ When operating continuously at horizontal air flow direction.<br>▪ When continuous operation with downward air flow is performed at the time of cooling with a ceiling-suspended or a wall-mounted unit, the micro computer may control the flow direction, and then the user interface indication will also change. | |

The air flow direction can be adjusted in one of the following ways:

- The air flow flap itself adjusts its position.
- The air flow direction can be fixed by the user.
- Automatic and desired position .

**WARNING**

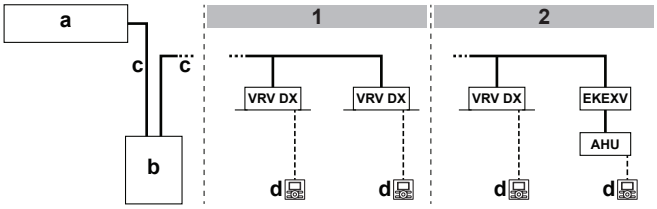
Never touch the air outlet or the horizontal blades while the swing flap is in operation. Fingers may become caught or the unit may break down.

**NOTICE**

- The movable limit of the flap is changeable. Contact your dealer for details. (only for double-flow, multi-flow, corner, ceiling-suspended and wall-mounted).
- Avoid operating in the horizontal direction . It may cause dew or dust to settle on the ceiling or flap.

## 12.5 Setting the master user interface

### 12.5.1 About setting the master user interface




**1** In case of VRV DX indoor units
**2** In case of VRV DX indoor units combined with an air handling unit
**a** Heat exchanger unit
**b** Compressor unit
**c** Refrigerant piping
**d** User interface (dedicated depending on indoor unit type)
**VRV DX** VRV direct expansion (DX) indoor unit
**EKEXV** Expansion valve kit
**AHU** Air handling unit

When the system is installed as shown in the figure above, it is necessary to designate one of the user interfaces as the master user interface.

The displays of slave user interfaces show (change-over under centralised control) and slave user interfaces automatically follow the operation mode directed by the master user interface.

Only the master user interface can select heating or cooling mode.

### 12.5.2 To designate the master user interface (VRV DX)

1 Press the operation mode selector button of the current master user interface for 4 seconds. In case this procedure was not yet performed, the procedure can be executed on the first user interface operated.

**Result:** The display showing (change-over under centralised control) of all slave user interfaces connected to the same compressor unit flashes.

2 Press the operation mode selector button of the controller that you wish to designate as the master user interface.

**Result:** Designation is completed. This user interface is designated as the master user interface and the display showing [icon] (change-over under centralised control) vanishes. The displays of other user interfaces show [icon] (change-over under centralised control).

# 13 Maintenance and service

**NOTICE**

Never inspect or service the unit by yourself. Ask a qualified service person to perform this work.

**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**

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.

**CAUTION**

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

**NOTICE**

Do not wipe the controller operation panel with benzine, thinner, chemical dust cloth, etc. The panel may get discoloured or the coating peeled off. If it is heavily dirty, soak a cloth in water-diluted neutral detergent, squeeze it well and wipe the panel clean. Wipe it with another dry cloth.

## 13.1 About the refrigerant

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

Refrigerant type: R410A

Global warming potential (GWP) value: 2087.5

**NOTICE**

In Europe, the **greenhouse gas emissions** of the total refrigerant charge in the system (expressed as tonnes $CO_2$-equivalent) is used to determine the maintenance intervals. Follow the applicable legislation.

**Formula to calculate the greenhouse gas emissions:** GWP value of the refrigerant × Total refrigerant charge [in kg] / 1000

Please contact your installer for more information.

**WARNING**

The refrigerant in the system is safe and normally does not leak. If the refrigerant leaks in the room, contact with a fire of a burner, a heater or a cooker may result in 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 system until a service person confirms that the portion where the refrigerant leaks is repaired.

## 13.2 After-sales service and warranty

### 13.2.1 Warranty period

- This product includes a warranty card that was filled in by the dealer at the time of installation. The completed card has to be checked by the customer and stored carefully.
- If repairs to the product are necessary within the warranty period, contact your dealer and keep the warranty card at hand.

### 13.2.2 Recommended maintenance and inspection

Since dust collects when using the unit for several years, performance of the unit will deteriorate to some extent. As taking apart and cleaning interiors of units requires technical expertise and in order to ensure the best possible maintenance of your units, we recommend to enter into a maintenance and inspection contract on top of normal maintenance activities. Our network of dealers has access to a permanent stock of essential components in order to keep your unit in operation as long as possible. Contact your dealer for more information.

**When asking your dealer for an intervention, always state:**

- The complete model name of the unit.
- The manufacturing number (stated on the nameplate of the unit).
- The installation date.
- The symptoms or malfunction, and details of the defect.

**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.
- In case of accidental refrigerant leaks, make sure there are no naked flames. The refrigerant itself is entirely safe, non-toxic and non-combustible, but it will generate toxic gas when it accidentally leaks into a room where combustible air from fan heaters, gas cookers, etc. is present. Always have qualified service personnel confirm that the point of leakage has been repaired or corrected before resuming operation.

# 14 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 properly work. | Turn off the main power switch. |
| If water leaks from the unit. | Stop the operation. |
| The operation switch does not work well. | Turn off the power. |

| Malfunction | Measure |
|---|---|
| If the user interface display indicates the unit number, the operation lamp flashes and the malfunction code appears. | Notify your installer and report the malfunction code. |

If the system does not properly operate except for the above mentioned cases and none of the above mentioned malfunctions is evident, investigate the system according to the following procedures.

| Malfunction | Measure |
|---|---|
| If the system does not operate at all. | ▪ Check if there is no power failure. Wait until power is restored. If power failure occurs during operation, the system automatically restarts immediately after the power supply is recovered.<br>▪ Check if no fuse has blown or breaker has worked. Change the fuse or reset the breaker if necessary. |
| If the system goes into fan only operation, but as soon as it goes into heating or cooling operation, the system stops. | ▪ Check if air inlet or outlet of heat exchanger unit or indoor unit is not blocked by obstacles. Remove any obstacle and make it well-ventilated.<br>▪ Check if the user interface display shows  (time to clean the air filter). (Refer to "13 Maintenance and service" on page 31 and "Maintenance" in the indoor unit manual.) |
| The system operates but cooling or heating is insufficient. | ▪ Check if air inlet or outlet of heat exchanger unit or indoor unit is not blocked by obstacles. Remove any obstacle and make it well-ventilated.<br>▪ Check if the air filter is not clogged (refer to "Maintenance" in the indoor unit manual).<br>▪ Check the temperature setting.<br>▪ Check the fan speed setting on your user interface.<br>▪ Check for open doors or windows. Shut doors and windows to prevent wind from coming in.<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>▪ Check if direct sunlight enters the room. Use curtains or blinds.<br>▪ Check if the air flow angle is proper. |

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).

## 14.1 Error codes: Overview

In case a malfunction code appears on the indoor unit user interface display, contact your installer and inform the malfunction code, the unit type, and serial number (you can find this information on the nameplate of the unit).

For your reference, a list with malfunction codes is provided. You can, depending on the level of the malfunction code, reset the code by pushing the ON/OFF button. If not, ask your installer for advice.

| Main code | Contents |
|---|---|
| A0 | External protection device was activated |
| A1 | EEPROM failure (indoor) |
| A3 | Drain system malfunction (indoor) |
| A6 | Fan motor malfunction (indoor) |
| A7 | Swing flap motor malfunction (indoor) |
| A9 | Expansion valve malfunction (indoor) |
| AF | Drain malfunction (indoor unit) |
| AH | Filter dust chamber malfunction (indoor) |
| AJ | Capacity setting malfunction (indoor) |
| C1 | Transmission malfunction between main PCB and sub PCB (indoor) |
| C4 | Heat exchanger thermistor malfunction (indoor; liquid) |
| C5 | Heat exchanger thermistor malfunction (indoor; gas) |
| C9 | Suction air thermistor malfunction (indoor) |
| CA | Discharge air thermistor malfunction (indoor) |
| CE | Movement detector or floor temperature sensor malfunction (indoor) |
| CJ | User interface thermistor malfunction (indoor) |
| E0 | Fan or drain pump malfunction (heat exchanger unit) |
| E1 | PCB malfunction (compressor unit) |
| E2 | Current leakage detector was activated (compressor unit) |
| E3 | High pressure switch was activated |
| E4 | Low pressure malfunction (compressor unit) |
| E5 | Compressor lock detection (compressor unit) |
| E9 | Electronic expansion valve malfunction (compressor unit or heat exchanger unit) |
| F3 | Discharge temperature malfunction (compressor unit) |
| F4 | Abnormal suction temperature (compressor unit) |
| F6 | Refrigerant overcharge detection |
| H3 | High pressure switch malfunction |
| H4 | Low pressure switch malfunction |
| H9 | Ambient temperature sensor malfunction (heat exchanger unit) |
| J1 | Pressure sensor malfunction |
| J2 | Current sensor malfunction |
| J3 | Discharge temperature sensor malfunction (compressor unit) |
| J4 | Heat exchanger gas temperature sensor malfunction (heat exchanger unit) |
| J5 | Suction temperature sensor malfunction (compressor unit) |
| J6 | De-icing temperature sensor malfunction (heat exchanger unit) |
| J7 | Liquid temperature sensor (after subcool HE) malfunction (compressor unit) |
| J9 | Gas temperature sensor (after subcool HE) malfunction (compressor unit) |
| JA | High pressure sensor malfunction (BIPH) |
| JC | Low pressure sensor malfunction (BIPL) |
| L1 | INV PCB abnormal |
| L4 | Fin temperature abnormal |
| L5 | Inverter PCB faulty |
| L8 | Compressor over current detected |
| L9 | Compressor lock (startup) |
| LC | Transmission compressor unit - inverter: INV transmission trouble |
| P1 | INV unbalanced power supply voltage |

| Main code | Contents |
|---|---|
| P4 | Fin thermistor malfunction |
| PJ | Heat exchanger unit capacity setting malfunction. |
| U0 | Abnormal low pressure drop, faulty expansion valve |
| U1 | Reversed power supply phase malfunction |
| U2 | INV voltage power shortage |
| U3 | System test run not yet executed |
| U4 | Faulty wiring indoor/heat exchanger unit/compressor unit |
| U5 | Abnormal user interface - indoor communication |
| U8 | Abnormal main-sub user interface communication |
| U9 | System mismatch. Wrong type of indoor units combined. Indoor unit malfunction. Heat exchanger unit malfunction. |
| UA | Connection malfunction over indoor units or type mismatch (wrong type of indoor units or heat exchanger unit) |
| UC | Centralised address duplication |
| UE | Malfunction in communication centralised control device - indoor unit |
| UF | Auto address malfunction (inconsistency) |
| UH | Auto address malfunction (inconsistency) |

## 14.2 Symptoms that are NOT system malfunctions

The following symptoms are NOT system malfunctions:

### 14.2.1 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 system is in normal condition. To prevent overloading of the compressor motor, the air conditioner starts 5 minutes after it is turned ON again in case it was turned OFF just before. The same starting delay occurs after the operation mode selector button was used.
- If "Under Centralized Control" is displayed on the user interface, pressing the operation button causes the display to blink for a few seconds. The blinking display indicates that the user interface cannot be used.
- The system does not start immediately after the power supply is turned on. Wait one minute until the micro computer is prepared for operation.

### 14.2.2 Symptom: Cool/Heat cannot be changed over

- When the display shows  (change-over under centralized control), it shows that this is a slave user interface.
- When the cool/heat changeover remote control switch is installed and the display shows  (change-over under centralized control), this is because cool/heat changeover is controlled by the cool/ heat changeover remote control switch. Ask your dealer where the remote control switch is installed.

### 14.2.3 Symptom: Fan operation is possible, but cooling and heating do not work

Immediately after the power is turned on. The micro computer is getting ready to operate and is performing a communication check with all indoor units. Please wait 12 minutes maximally until this process is finished.

### 14.2.4 Symptom: The fan strength does not correspond to the setting

The fan speed does not change even if the fan speed adjustment button in pressed. During heating operation, when the room temperature reaches the set temperature, the compressor unit goes off and the indoor unit changes to whisper fan speed. This is to prevent cold air blowing directly on occupants of the room. The fan speed will not change even when another indoor unit is in heating operation, if the button is pressed.

### 14.2.5 Symptom: The fan direction does not correspond to the setting

The fan direction does not correspond with the user interface display. The fan direction does not swing. This is because the unit is being controlled by the micro computer.

### 14.2.6 Symptom: White mist comes out of a unit (Indoor unit)

- When humidity is high during cooling operation. If the interior of an indoor unit is extremely contaminated, the temperature distribution inside a room becomes uneven. It is necessary to clean the interior of the indoor unit. Ask your dealer for details on cleaning the unit. This operation requires a qualified service person.
- Immediately after the cooling operation stops and if the room temperature and humidity are low. This is because warm refrigerant gas flows back into the indoor unit and generates steam.

### 14.2.7 Symptom: White mist comes out of a unit (Indoor unit, heat exchanger unit)

When the system is changed over to heating operation after defrost operation. Moisture generated by defrost becomes steam and is exhausted.

### 14.2.8 Symptom: The user interface display reads "U4" or "U5" and stops, but then restarts after a few minutes

This is because the user interface is intercepting noise from electric appliances other than the air conditioner. The noise prevents communication between the units, causing them to stop. Operation automatically restarts when the noise ceases.

### 14.2.9 Symptom: Noise of air conditioners (Indoor unit, heat exchanger unit)

- A "zeen" sound is heard immediately after the power supply is turned on. The electronic expansion valve inside an indoor unit starts working and makes the noise. Its volume will reduce in about one minute.
- A continuous low "shah" sound is heard when the system is in cooling operation or at a stop. When the drain pump (optional accessories) is in operation, this noise is heard.
- A "pishi-pishi" squeaking sound is heard when the system stops after heating operation. Expansion and contraction of plastic parts caused by temperature change make this noise.
- A low "sah", "choro-choro" sound is heard while the indoor unit is stopped. When another indoor unit is in operation, this noise is heard. In order to prevent oil and refrigerant from remaining in the system, a small amount of refrigerant is kept flowing.

### 14.2.10 Symptom: Noise of air conditioners (Indoor unit, compressor unit, heat exchanger unit)

- A continuous low hissing sound is heard when the system is in cooling or defrost operation. This is the sound of refrigerant gas flowing through the compressor unit, heat exchanger unit and indoor units.
- A hissing sound which is heard at the start or immediately after stopping operation or defrost operation. This is the noise of refrigerant caused by flow stop or flow change.

### 14.2.11 Symptom: Noise of air conditioners (compressor unit, heat exchanger unit)

When the tone of operating noise changes. This noise is caused by the change of frequency from the compressor or the fans.

### 14.2.12 Symptom: Dust comes out of the heat exchanger unit

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

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

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

### 14.2.14 Symptom: The heat exchanger unit fan does not spin

During operation. The speed of the fan is controlled in order to optimise product operation.

### 14.2.15 Symptom: The display shows "88"

This is the case immediately after the main power supply switch is turned on and means that the user interface is in normal condition. This continues for 1 minute.

### 14.2.16 Symptom: The compressor in the compressor unit does not stop after a short heating operation

This is to prevent refrigerant from remaining in the compressor. The unit will stop after 5 to 10 minutes.

### 14.2.17 Symptom: The inside of an compressor unit is warm even when the unit has stopped

This is because the crankcase heater is warming the compressor so that the compressor can start smoothly.

### 14.2.18 Symptom: Hot air can be felt when the indoor unit is stopped

Several different indoor units are being run on the same system. When another unit is running, some refrigerant will still flow through the unit.

# 15 Relocation

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

# 16 Disposal

This unit uses hydrofluorocarbon. Contact your dealer when discarding this unit.

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

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