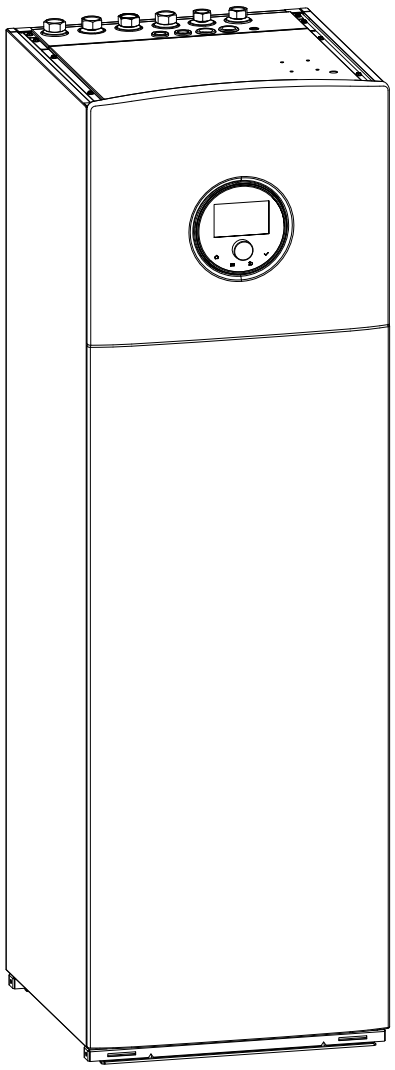
Hisense

Installation & Maintenance Manual

- HEAT PUMP INDOOR UNIT -

Hi Therma	MODEL
220-240V ~ 50Hz	AHS-100HCWBAA-23



IMPORTANT:

READ AND UNDERSTAND THIS MANUAL BEFORE USING THIS HEAT-PUMP AIR CONDITIONER. KEEP THIS MANUAL FOR FUTURE REFERENCE.

M01791Q

ORIGINAL INSTRUCTIONS

EN	FR	ES	IT	DE
Declaration of Conformity (Manufacturer's Declaration)	Déclaration de conformité (Déclaration du fabricant)	Declaración De Conformidad (Declaración del Fabricante)	Dichiarazione di Conformità (Chiarazione del produttore)	Konformitätserklärung (Erklärung des Herstellers)

PT	NL	PL	TR	RO
Declaração de conformidade (declaração do fabricante)	Verklaring van Overeenstemming (Verklaring van de fabrikant)	Deklaracja Zgodności（Deklaracj a wytwórcy）	Uygunluk Beyanı (Üretici Beyanı)	Declarație de conformitate (Declarația producătorului)

GR

ΔΗΛΩΣΗ ΣΥΜΜΟΡΦΩΣΗΣ (Δήλωση του κατασκευαστή)

Qingdao Hisense Hitachi Air-conditioning Systems Co., Ltd. ,

01 EN declares under its sole responsibility that the equipment to which this declaration relates:
02 FR déclare sous sa seule responsabilité que l'équipement visé par la présente déclaration:
03 ES declara bajo su única responsabilidad que el equipo al que hace referencia la declaración:
04 IT dichiara sotto la propria responsabilità che gli apparecchi a cui è riferita questa dichiarazione:
05 DE erklärt auf seine alleinige Verantwortung daß die Ausrüstung für die diese Erklärung bestimmt ist:
06 PT declara sob sua exclusiva responsabilidade que os equipamentos a que esta declaração se refere:
07 NL verklaart hierbij op eigen exclusieve verantwoordelijkheid dat de apparatuur waarop deze verklaring betrekking heeft:
08 PL deklaruje na własną i wyłączną odpowiedzialność, że urządzenia, których ta deklaracja dotyczy:
09 TR tamamen kendi sorumluluğunda olmak üzere bu bildirinin ilgili olduğu donanımının aşağıdaki gibi olduğunu beyan eder:
10 RO declară pe proprie răspundere că echipamentele la care se referă această declarație:
11 GR δηλώνει με αποκλειστική της ευθύνη ότι ο εξοπλισμός στον οποίο αναφέρεται η παρούσα δήλωση:

AHS-100HCWBAA-23

01 EN are in conformity with the following standard(s) or other normative document(s), provided that these are used in accordance with our instructions:
02 FR sont conformes à la/aux norme(s) ou autre(s) document(s) normatif(s), pour autant qu'ils soient utilisés conformément à nos instructions:
03 ES 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:
04 IT 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:
05 DE der/den folgenden Norm(en) oder einem anderen Normdokument oder -dokumenten entspricht/entsprechen, unter der Voraussetzung, daß sie gemäß unseren Anweisungen eingesetzt werden:
06 PT 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:
07 NL conform de volgende norm(en) of één of meer andere bindende documenten zijn, op voorwaarde dat ze worden gebruikt overeenkomstig onze instructies:
08 PL spełniają wymogi następujących norm i innych dokumentów normalizacyjnych, pod warunkiem że używane są zgodnie z naszymi instrukcjami:
09 TR ürünün, talimatlarımıza göre kullanılması koşuluyla aşağıdaki standartlar ve norm belirten belgelerle uyumludur:
10 RO 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:
11 GR είναι σύμφωνα με το(α) ακόλουθο(α) πρότυπο(α) ή άλλο έγγραφο(α) κανονισμών, υπό την προϋπόθεση ότι χρησιμοποιούνται σύμφωνα με τις οδηγίες μας:

EN 300328 V2.2.2:2019
EN IEC 62311:2020
EN 62311:2020
EN 50665:2017
EN 62479:2010
EN 50663:2017
EN 301489-1 V2.2.3:2019
EN 301489-17 V3.3.1:2024
EN IEC 55014-1:2021
EN IEC 55014-2:2021
EN IEC 61000-3-2:2019/A1:2021
EN 61000-3-3:2013/A2:2021
EN IEC 61000-3-11:2019
EN 61000-3-12:2011
EN IEC 60335-2-40:2023/A11:2023
EN 60335-1:2012/A16:2023
EN 62233:2008

01 EN following the provisions of:
02 FR conformément aux stipulations des:
03 ES siguiendo las disposiciones de:
04 IT secondo le prescrizioni per:
05 DE gemäß den Vorschriften der:
06 PT de acordo com o previsto em:
07 NL overeenkomstig de bepalingen van:
08 PL zgodnie z postanowieniami Dyrektyw:
09 TR bunun koşullarına uygun olarak:
10 RO în urma prevederilor:
11 GR με τήρηση των διατάξεων των:

2012/19/EU
2011/65/EU
2014/53/EU
(EU)2024/573
(EC) No 1907/2006
2009/125/EC
(EU)2017/1369
(EU) No 813/2013
(EU) No 811/2013

01 EN **Directives, as amended.**
02 FR **Directives, telles que modifiées. Directivas,**
03 ES **según lo enmendado. Direttive, come da**
04 IT **modifica.**
05 DE **Direktiven, gemäß Änderung.**
06 PT **Directivas, conforme alteração em.**
07 NL **Richtlijnen, zoals geamendeerd.**
08 PL **z późniejszymi poprawkami.**
09 TR **Değiştirilmiş halleriyle Yönetmelikler.**
10 RO **Directivelor, cu amendamentele respective.**
11 GR **Οδηγιών, όπως έχουν τροποποιηθεί.**

01 (EN) * Manufacturing number and manufacturing year: refer to model Nameplate.
Note:This declaration becomes invalid, if technical or operational modifications are introduced without the manufacturer's consent.

02 (FR) * Numéro de fabrication et année de fabrication : se référer à la plaque signalétique du modèle.
Remarque : Cette déclaration devient invalide si des modifications techniques ou opérationnelles sont introduites sans le consentement du fabricant.

03 (ES) * Número de fabricación y año de fabricación: consulte la placa de identificación del modelo.
Nota: esta declaración deja de tener validez si se introducen modificaciones técnicas u operativas sin el consentimiento del fabricante.

04 (IT) * Numero di fabbricazione e anno di fabbricazione: fare riferimento alla targhetta del modello.
Nota: questa dichiarazione non è valida se vengono introdotte modifiche tecniche o operative senza il consenso del produttore.

05 (DE) * Herstellungsnummer und Herstellungsjahr: siehe Typenschild des Modells.
Hinweis: Diese Erklärung verliert ihre Gültigkeit, wenn ohne Zustimmung des Herstellers technische oder betriebliche Änderungen vorgenommen werden.

06 (PT) * Número de fabricação e ano de fabricação: consulte a placa de identificação do modelo.
Nota: Esta declaração torna-se inválida se modificações técnicas ou operacionais forem introduzidas sem o consentimento do fabricante.

07 (NL) * Fabricagenummer en fabricagejaar: zie het typeplaatje van het model.
Opmerking: Deze verklaring wordt ongeldig als technische of operationele wijzigingen worden aangebracht zonder toestemming van de fabrikant.

08 (PL) * Numer produkcyjny i rok produkcji: patrz tabliczka znamionowa modelu.
Uwaga: Niniejsza deklaracja traci ważność w przypadku wprowadzenia zmian technicznych lub eksploatacyjnych bez zgody producenta.

09 (TR) * Üretim numarası ve üretim yılı: model Etiketine bakın.
Not: Üreticinin izni olmadan teknik veya operasyonel değişiklikler yapılırsa bu beyan geçersiz olur.

10 (RO) * Numărul de fabricație și anul de fabricație: consultați plăcuța de identificare a modelului.
Notă: Această declarație devine nulă dacă sunt introduse modificări tehnice sau operaționale fără acordul producătorului.

11 (GR) * Αριθμός και έτος κατασκευής: δείτε στον πινακα χαρακτηριτικών μοντέλου.
Σημείωση: Η παρούσα δήλωση ακυρώνεται, αν πραγματοποιηθούν τεχνικές ή λειτουργικές τροποποιήσεις χωρίς τη συγκατάθεση του κατασκευαστή.

Hisense Italia S.r.l. (Ad. : Via Montefeltro 6A, 20156 Milano.)

01 (EN) is authorised to Compile the Technical Construction File.
02 (FR) est autorisé à constituer le dossier technique de constructions.
03 (ES) está autorizado a compilar el expediente técnico de construcción.
04 (IT) è autorizzato a compilare il fascicolo tecnico della costruzione.
05 (DE) ist berechtigt die Technische Dokumentation zu erstellen.
06 (PT) está autorizada a compilar o arquivo técnico de construção.
07 (NL) is bevoegd om het Technisch Constructie Dossier samen te stellen.
08 (PL) jest upoważniona do opracowania Dokumentacja techniczno-konstrukcyjna.
09 (TR) Teknik Yapı Dosyasını Derlemeye yetkilidir.
10 (RO) este autorizat să întocmească Dosarul Tehnic de Construcție.
11 (GR) έχει την άδεια να συντάσσει τον Τεχνικό Φάκελο Κατασκευής.

Hisense

Name, Surname : Song Zhenxing

Position/Title: Director

Date: Jan 02, 2025

Add.: No. 218, Qianwangang Road, Economic and Technological Development Zone, Qingdao, China

English

Specifications in this manual are subject to change without notice in order that Hisense may bring the latest innovations to their customers.

The English version is the original one; other languages are translated from English. Should any discrepancy occur between the English and the translated versions, the English version shall prevail.

Français

Les caractéristiques publiées dans ce manuel peuvent être modifiées sans préavis, Hisense souhaitant pouvoir toujours offrir à ses clients les dernières innovations.
La version anglaise est la version originale; les autres langues sont traduites de l'anglais. En cas de divergence entre les versions anglaise et traduite, la version anglaise prévaudra.

Español

Las especificaciones de este manual están sujetas a cambios sin previo aviso a fin de que Hisense pueda ofrecer las últimas innovaciones a sus clientes.

La versión en inglés es la original, y las versiones en otros idiomas son traducciones de la inglesa. En caso de discrepancias entre la versión inglesa y las versiones traducidas, prevalecerá la versión inglesa.

Italiano

Le specifiche di questo manuale sono soggette a modifica senza preavviso affinché Hisense possa offrire ai propri clienti le ultime novità.
La versione inglese è l'originale e le versioni in altre lingue sono traduzioni dall'inglese. In caso di divergenze tra la versione inglese e quelle tradotte, fa fede la versione inglese.

Deutsch

Bei den technischen Angaben in diesem Handbuch sind Änderungen vorbehalten, damit Hisense seinen Kunden die jeweils neuesten Innovationen präsentieren kann.
Die englische Fassung ist das Original, und die Fassungen in anderen Sprachen werden aus dem Englischen über-setzt. Sollten die englische und die übersetzten Fassungen voneinander abweichen, so hat die englische Fassung Vorrang.

Português

As especificações apresentadas neste manual estão sujeitas a alterações sem aviso prévio, de modo a que a Hisense possa oferecer aos seus clientes, da forma mais expedita possível, as inovações mais recentes.
A versão inglesa é a original; as versões em outras línguas são traduzidas do inglês. Em caso de divergência entre a versão em língua inglesa e as versões traduzidas, faz fé a versão em língua inglesa.

Nederlands

De specificaties in deze handleiding kunnen worden gewijzigd zonder verdere kennisgeving zodat Hisense zijn klanten kan voorzien van de nieuwste innovaties.
De Engelse versie is de originele; andere talen zijn vertaald uit het Engels. In geval van verschillen tussen de En-gelse versie en de vertaalde versies, heeft de Engelse versie voorrang.

Polski

Zamieszczone w niniejszej instrukcji obsługi dane techniczne mogą ulec zmianie bez uprzedniego powiadomienia ze względu na innowacyjne rozwiązania, jakie firma Hisense nieustannie wprowadza z myślą o swoich klientach.
Wersja angielska jest wersją oryginalną - wszystkie pozostałe stanowią jej tłumaczenie na odpowiednie języki. W przypadku stwierdzenia jakichkolwiek rozbieżności między oryginałem a jego tłumaczeniem, rozstrzygająca jest wersja w języku angielskim.

Türkçe

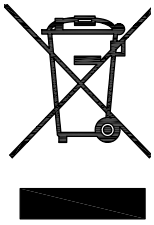
Bu kılavuzdaki teknik özellikler Hisense'nin müşterilerine en yeni inovasyonları sunabilmesi için önceden haber verilmeden değiştirilebilir.
İngilizce sürüm orijinal olanıdır ve diğer diller İngilizce'den çevrilmiştir. İngilizce ve çevrilmiş sürümler arasında farklılık olması durumunda İngilizce sürüm esas alınmalıdır.

Română

Specificațiile din acest manual pot fi modificate fără notificare prealabilă, pentru ca Hisense să poată pune la dispoziția clienților noștri ultimele inovații.
Versiunea originală este cea în limba engleză; versiunile în alte limbi sunt traduse din limba engleză. Dacă există vreo discrepanță între versiunile în limba engleză și versiunea tradusă, prevalează versiunea în limba engleză.

Ελληnika

Οι προδιαγραφές του εγχειριδίου μπορούν να αλλάξουν χωρίς προειδοποίηση, προκειμένου η Hisense να παρέχει τις τελευταίες καινοτομίες στους πελάτες της.
Οι πρωτότυπες οδηγίες είναι στα αγγλικά. Οι άλλες γλώσσες είναι μετάφραση από τα αγγλικά. Αν υπάρχει οποιαδήποτε ασυμφωνία ανάμεσα στην αγγλική και τις μεταφράσεις, αυτή που επικρατεί είναι η αγγλική έκδοση.



⚠ CAUTION

This product shall not be mixed with general house waste at the end of its life and it shall be retired according to the appropriated local or national regulations in an environmentally correct way.
Due to the refrigerant, oil and other components contained in heat pump, its dismantling must be done by a professional installer according to the applicable regulations. Contact to the corresponding authorities for more information.

⚠ ADVERTISSEMENT

Ne doit pas être mélangé aux ordures ménagères ordinaires à la fin de sa vie utile et qu'il doit être éliminé conformément à l réglementation locale ou nationale, dans le plus strict respect de l'environnement.
En raison du frigorigène, de l'huile et des autres composants que contient la pompe à chaleur, son démontage doit être effectué par un installateur professionnel conformément aux règlementations en vigueur.

⚠ PRECAUCIÓN

Éste producto no se debe eliminar con la basura doméstica al final de su vida útil y se debe desechar de manera respetuosa con e medio ambiente de acuerdo con los reglamentos locales o nacionales aplicables.
Debido al refrigerante, el aceite y otros componentes contenidos en la bomba de calor, su desmontaje debe realizarlo un instalador profesional de acuerdo con la normativa aplicable. Para obtener más información, póngase en contacto con las autoridades competentes.

⚠ AVVERTENZE

Indicazioni per il corretto smaltimento del prodotto ai sensi della Direttiva Europea 2011/65/EU e D.Lgs 4 marzo 2014 n.27
Il simbolo del cassonetto barrato riportato sull' apparecchiatura indica che il prodotto alla fine della propria vita utile deve essere raccolt separatamente dagli altri rifiuti
L'utente dovrà, pertanto, conferire l'apparecchiatura giunta a fine vita agli idonei centri di raccolta di ferenziata dei rifiuti elettronici ed elettrotecnici, oppure riconsegnarla al rivenditore al momento dell' acquisto di una nuova apparecchiatura di tipo equivalente.
L'adeguata raccolta differenziata delle apparecchiature dismesse, per il loro avvio al riciclaggio, al trattamento ed allo smaltimento ambientalmente compatibile, contribuisce ad evitare possibili effetti negativi sull' ambiente e sulla salute e favorisce il riciclo dei materiali di cui è composta l' apparecchiatura.
Non tentate di smontare il sistema o l'unità da soli poichè ciò potrebbe causare effetti dannosi sulla vostra salute o sull' ambiente.
Vogliate contattare l' installatore, il rivenditore, o le autorità locali per ulteriori informazioni.
Lo smaltimento abusivo del prodotto da parte dell'utente può comportare l'applicazione delle sanzioni amministrative di cui all'articolo 50 e seguenti del D.Lgs. n. 22/1997.

⚠ VORSICHT

Dass Ihr Produkt am Ende seiner Betriebsdauer nicht in den allgemeinen Hausmüll geworfen werden darf, sondern entsprechend den geltenden örtlichen und nationalen Bestimmungen auf umweltfreundliche Weise entsorgt werden muss.
Aufgrund des Kältemittels, Öls und anderer Komponenten in der Wärmepumpe muss ihr Ausbau von einem professionellen Installateur entsprechend der anwendbaren Vorschriften durchgeführt werden. Für weitere Informationen setzen Sie sich bitte mit den entsprechenden Behörden in Verbindung.

⚠ CUIDADO

O seu produto não deve ser misturado com os desperdícios domésticos de carácter geral no final da sua duração e que deve se eliminado de acordo com os regulamentos locais ou nacionais adequados de uma forma correcta para o meio ambiente.
Por causa do refrigerante, do óleo e de outros componentes na bomba de calor, o desmantelamento deve ser realizado por um instalador profissional em conformidade com os regulamentos aplicáveis. Co tacte as autoridades correspondentes para obter mais informações.

⚠ VOORZICHTIG

Dit houdt in dat uw product niet wordt gemengd met gewoon huisvuil wanneer u het weg doet en dat het wordt gescheiden op een milieuvriendelijke manier volgens de geldige plaatselijke en landelijke reguleringen.
Wegens de aanwezigheid van koelmiddel, olie en andere componenten in de warmtepomp moet het apparaat volgens de toepasselijke regelgeving door een professionele installateur worden gedemonteerd. Neem contact op met de betreffende overheidsdienst voor meer informatie.

⚠ OSTROŻNIE

Po zakończeniu okresu użytkowania produktu, nie należy go wyrzucać z odpadami komunalnymi, lecz dokonać jego usunięcia w sposób ekologiczny zgodnie z obowiązującymi w tym zakresie przepisami prawa lokalnego lub krajowego.
Ponieważ pompa ciepła zawiera czynniki chłodnicze i oleje oraz innego rodzaju elementy składowe, jej demontaż należy powierzyć wskazanemu w obowiązujących przepisach specjalistycznemu podmiotowi. Szczegółowe informacje na ten temat można uzyskać, kontaktując się z właściwymi organami władzy samorządowej.

⚠ DİKKAT

Bu ürün kullanım ömrü dolduğunda genel ev atıklarıyla karıştırılmamalı ve belirlenmiş yerel veya ulusal yönetmeliklere göre çevre dostu biçimde bertaraf edilmelidir.
Isı pompasında yer alan soğutucu madde, yağ ve diğer bileşenlerden dolayı sökme işlemi, uygulanır yönetmeliklere göre profesyonel bir tesisatçı tarafından yapılmalıdır. Daha fazla bilgi için ilgili merciye başvurun.

⚠ PRECAUȚIE

Acest produs nu trebuie aruncat la gunoiul menajer la sfârșitul duratei sale de viață, ci trebuie scos din uz în conformitate cu reglementările locale sau naționale adecvate și într-un mod corect din punct de vedere al protecției mediului.
Datorită agentului frigorific, a uleiului și a altor componente pompei de căldură, demontarea acestuia trebuie făcută de un instalator profesionist în conformitate cu reglementările aplicabile. Contactați autoritățile competente pentru mai multe informații.

⚠ ΠΡΟΣΟΧΗ

Σημαίνει ότι το προϊόν δεν θα πρέπει να αναμιχθεί με τα διάφορα οικιακά απορρίμματα στο τέλος του κύκλου ζωής του και θα πρέπει να αποσυρθεί σύμφωνα με τους κατάλληλους τοπικούς ή εθνικούς κανονισμούς και με τρόπο φιλικό προς το περιβάλλον.
Λόγω του ψυκτικού, του λαδιού και άλλων εξαρτημάτων που περιλαμβάνονται στην αντλία θέρμανσης, η αποσυναρμολόγησή του πρέπει να γίνει από εξουσιοδοτημένο επαγγελματία τεχνικό, σύμφωνα με τους ισχύοντες κανονισμούς. Για περισσότερες λεπτομέρειες, επικοινωνήστε με τις αντίστοιχες αρχές.

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1. GENERAL INFORMATION

This manual gives a common description and information for this heat pump air conditioner which you operate as well for other models.

This manual should be considered as a permanent part of the heat pump air conditioning equipment and should remain with the air conditioning equipment.

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Within the policy of continuous improvement of its products, Hisense reserves the right to make changes at any time without prior notification and without being compelled to introducing them into products previously sold. This document may therefore have been subject to amendments during the life of the product.

As a result, some of the images or data used to illustrate this document may not refer to specific models. No claims will be accepted based on the data, illustrations and descriptions included in this manual.

This heat pump air conditioner has been designed for the following temperatures. Please operate the air conditioner within the ranges.

Temperature

		Min.	Max.
Outdoor unit	Space heating	-25°C DB	35°C DB
	Domestic hot water (DHW)	-25°C DB	46°C DB
	Space cooling	5°C DB	48°C DB
Indoor unit	Space heating	15°C	75°C
	Domestic hot water (DHW)	30°C	75°C
	Space cooling	5°C	22°C
	Temperature around	5°C DB	30°C DB
	Water pressure	1 bar	3 bar
	Ps (DHW Tank Pressure)	---	6 bar

DB: Dry Bulb

- The following table shows the outdoor models of heat pump that can be connected to this indoor unit.

Outdoor Model
AHW-050HCPB1 AHW-080HCPB1 AHW-100HCPB1

- Upon receiving this product, inspect it for any shipping damage. Claims for damage, either apparent or concealed, in a written form, should be filed immediately with the shipping company
- Check the model number, electrical characteristics (power supply, voltage and frequency) and accessories to determine if they are correct.
- PThe standard utilization of the unit shall be explained in these instructions. Therefore, the utilization of the unit other than those indicated in these instructions is not recommended.
- lease contact your local agent, as the occasion arises.
- If you have any questions, please contact your dealer or designated service center of HISENSE

2. SAFETY

2.1 APPLIED SYMBOLS

During normal heat pump system design work or unit installation, greater attention must be paid in certain situations requiring particular care in order to avoid damage to the unit, the installation or the building or property.

Situations that pose a risk to the safety of those in the surrounding area or to the unit itself are clearly indicated in this manual.

A series of special symbols are used to clearly identify these situations.

Pay close attention to these symbols and to the messages following them, as your safety and that of others depends on it.

DANGER

- ***The text following this symbol contains information and instructions relating directly to your safety.***
- ***Not taking these instructions into account will lead to personal injury or death.***

CAUTION

- *The text following this symbol contains information and instructions relating directly to your safety.*
- *Not taking these instructions into account could lead to unit damage.*

NOTE

- *The text following this symbol contains information and instructions that may be use or that require a more thorough explanation.*
- *Instructions regarding inspections to be made on unit parts or systems may also be included.*

Symbol	Explanation
	Before installation, read the installation and operation manual, and the wiring instruction sheet.
	Before performing maintenance and service tasks, read the service manual.
	For more information, see the Technical, Installation and Service Handbook.

2.2 ADDITIONAL INFORMATION ABOUT SAFETY

⚠ DANGER

- ***DO NOT CONNECT THE POWER SUPPLY TO THE INDOOR UNIT PRIOR TO FILLING THE SPACE HEATING CIRCUIT (AND DHW CIRCUIT IF IT WERE THE CASE) WITH WATER AND CHECKING WATER PRESSURE AND THE TOTAL ABSENCE OF ANY WATER LEAKAGE.***
- *Do not pour water over the indoor unit electrical parts. If the electrical components are in contact with water a serious electric shock will take place.*
- *Do not touch or adjust the safety devices inside the heat pump indoor unit. If these devices are touched or adjusted, a serious accident can take place.*
- *Do not open the service cover or access inside the indoor unit without disconnecting the main power supply.*
- *In case of fire Turn OFF the main switch, put out the fire at once and contact your service contractor.*
- *It must ensure that the heat pump cannot operate accidentally without water neither with air inside hydraulic system.*

⚠ CAUTION

- *Do not use any sprays such as insecticide, lacquer, hair spray or other flammable gases within approximately one meter from the system.*
- *If installation circuit breaker or the unit fuse is often activated, stop the system and contact your service contractor.*
- *Do not make service or inspections tasks by your-self. This work must be performed by a qualified service person.*
- *This appliance must be used only by adult and capable people, having received the technical information or instructions to handle this appliance properly and safely.*
- *Children should be supervised to ensure that they do not play with the appliance.*
- *Do not let any foreign body into the water inlet and outlet piping of the air to water heat pump.*

⚠ DANGER

- *Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.*
- *The appliance shall be stored in a room without continuously operating ignition sources (for example: open flames, an operating gas appliance or an operating electric heater).*
- *Do not pierce or burn.*
- *Use an ELB(earth leakage breaker,with an actuation time of 0.1s or less) above medium speed.In the event of a fault,there is danger of an electric shock or a fire if it is not used.*
- *Due to the risk of electric shock.Do not touch electrical elements with hands directly.*

⚠ CAUTION

- *Without reading the installation manual, do not carry out refrigerant piping connection, water piping connection and wiring connection.*
- *Check whether the earth wire connection is correct and firm.*
- *Connect to the fuse of specified capacity.*
  The user should not replace the power cord and this must be conducted by professional repair personnel.
- *If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.*
- *This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.*
- *Children aged from 3 to 8 years are only allowed to operate the tap connected to the water heater.*
- *Means for disconnection from the supply mains, which have a contact separation in all poles that provide full disconnection under overvoltage category III conditions, must be incorporated in the fixed wiring in accordance with the wiring rules.*
- *The appliance shall be installed in accordance with national wiring regulations.*
- *The installation and service of this product shall be carried out by professional personnel, who have been trained and certified by national training organizations that are accredited to teach the relevant national competency standards that may be set in legislation.*
- *Mechanical connectors used indoors shall comply with ISO 14903.*
  When mechanical connectors are reused indoors, sealing parts shall be renewed. When flared joints are reused indoors, the flare part shall be re-fabricated.
- *Reusable mechanical connectors and flared joints are not allowed indoors.*
- *Disconnect the appliance from its power source during service and when replacing parts.*
- *Heat pump indoor unit, controller and wires should not be installed 3m from the strong electromagnetic wave radiation source, such as medical appliances.*

3. IMPORTANT NOTICE

3.1 INFORMATION

- **PLEASE READ THE MANUAL CAREFULLY BEFORE STARTING TO WORK ON THE INSTALLATION OF THE AIR TO WATER HEAT PUMP SYSTEM**.
- Failure to observe the instructions for installation, use and operation described in this documentation may result in operating failure including potentially serious faults, or even the destruction of the air to water heat pump system.

- Verify, in accordance with the manuals which appear in the outdoor and indoor units, that all the information required for the correct installation of the system is included. If this is not the case, contact with your dealer.
- Hisense pursues a policy of continuous improvement in product design and performance. The right is therefore reserved to vary specifications without notice.
- Hisense cannot anticipate every possible circumstance that might involve a potential hazard.
- This air to water heat pump has been designed for standard water heating for human beings only. Do not use this for other functions that are not included in the master controller.
- No part of this manual may be reproduced without written permission.
- If you have any questions, contact with your dealer.
- Check and make sure that the explanations of each part of this manual correspond to your air to water heat pump model.
- Refer to the models codification to confirm the main characteristics of your system.
- Signal words (NOTE, DANGER and CAUTION) are used to identify levels of hazard seriousness. Definitions for identifying hazard levels are provided in initial pages of this document.
- The operation modes of these units are controlled by the master controller.
- This manual should be considered as a permanent part of the air to water heat pump. It gives a common description of and information for this heat pump indoor unit.
- Keep the water temperature of the system above the freezing temperature.

4. BEFORE OPERATION

4.1 GENERAL NOTES

4.1.1 Selection of the installation location

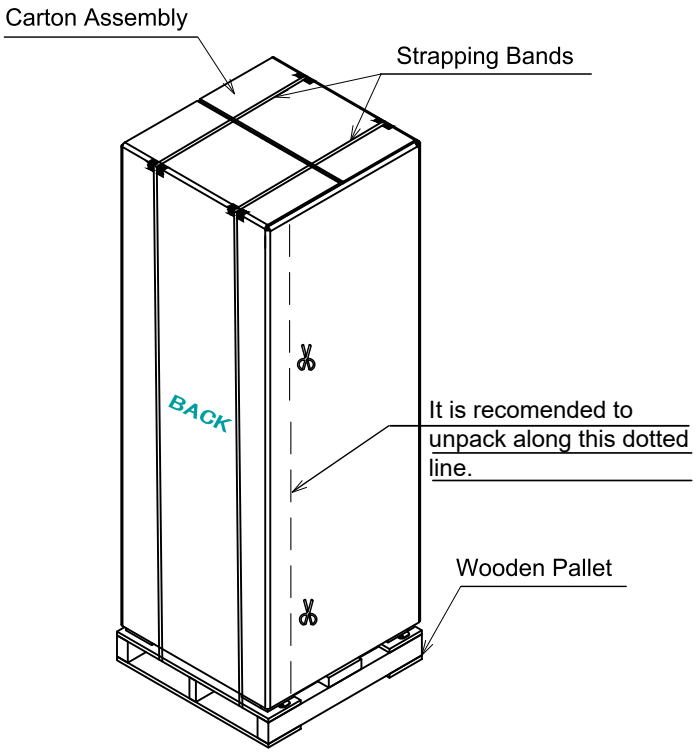
The indoor unit must be installed following these basic requirements:

- The indoor unit is intended to be installed in an indoor place and for ambient temperatures ranging 5~30°C. The ambient temperature around the indoor unit must be higher than 5°C to prevent water from freezing.
- Make sure that selected floor is flat, strong enough for supporting the indoor unit weight.
- Be sure to maintain the recommended servicing space for future unit servicing and guarantee enough air circulation around the unit (See section “5.1 SERVICE SPACE”).
- Take into account that shut-off valve with filter (factory supplied) must be installed at the indoor unit inlet connections.
- Keep water draining provisions. The safety valve is provided with a drain pipe which are located at the drain pan of the unit.
- Protect the indoor unit against the entry of small animals (like rats) which could making contact with the wires, the drain pipe, electrical parts and may damage unprotected parts, and at the worst, a fire will occur.
- Install it in a no-frost environment.
- Do not install the indoor unit in a location with very high humidity.
- Do not install the indoor unit where electromagnetic waves are directly radiated to the electrical box.Install the unit in a place where in case of water leakage, any damage to the installation space cannot be produced.
- Install noise filter when the power supply emits harmful noises.
- To avoid fire or explosion, do not install the unit in flammable environment.
- The air to water heat pump must be installed by a service technician. The installation must comply with local and European regulations.
- Try to avoid to put any objects or tools above the indoor unit.

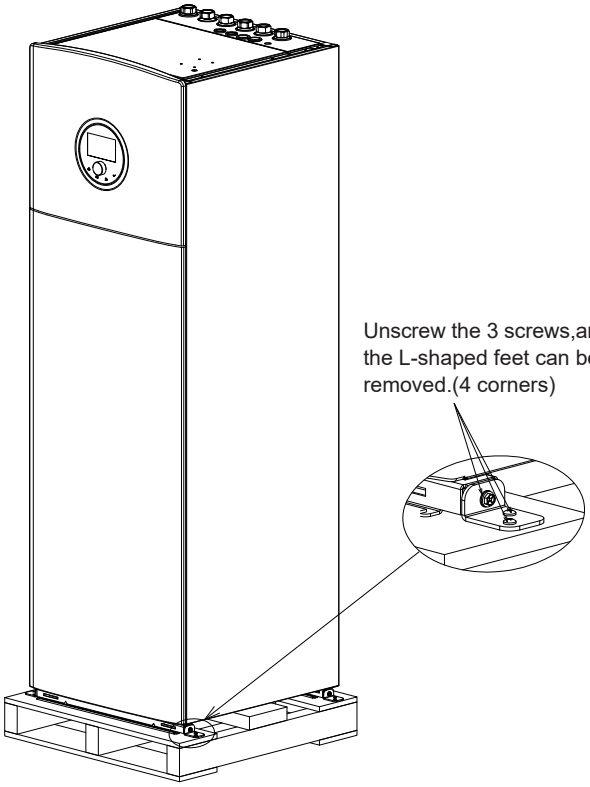
4.1.2 Unpacking

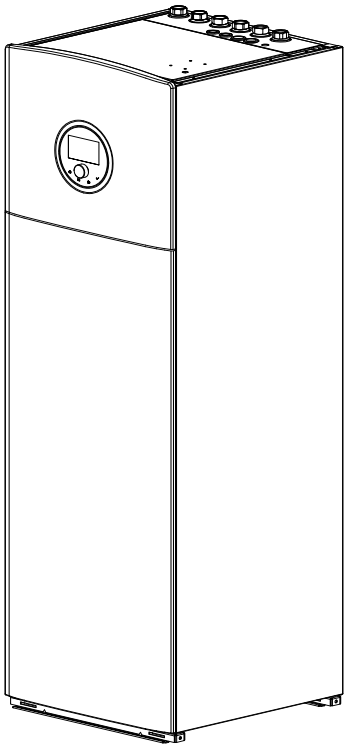
All units are packed by a wooden pallet and carton assembly. Firstly to unpack it, place the unit on the assembly area as close as possible to its final installation location, to avoid damages in transport. Two persons are required.

1 Cut the strapping bands and remove the adhesive tapes.
2 Remove the carton assembly and then the plastic bag around the unit.



3 Remove the 4 L-shaped feet at 4 corners,and then remove the indoor unit from wooden pallets, and place it carefully on the floor, as near as possible to its final location.





CAUTION

- *Be careful with the Installation and Operation manual and with the factory-supplied accessories located on the top of the unit.*
- *Two people are required when handling because of the weight of the unit.*

4.2 FACTORY-SUPPLIED INDOOR UNIT COMPONENTS

Accessory	Image	Qty.	Remarks
Gasket		12	12 gaskets for each connections between the indoor unit and shut-off valves (inlet/outlet) . (6 of G1” and 6 of G3/4”)
Shut-off valve with filter (G1”)		1	Connect at the water inlet of indoor unit, used to shut off the water flow and filter impurities in water.
Cable tie		3	Used for wiring binding.
Drain pipe clamp		1	Used for fastening drain hose and drain pipe.
Instruction manual		1	Basic instructions for the installation of the device.
Energy efficiency label		3	Energy efficiency label
Magnetic filter Wrench		1	Used for magnetic filter maintenance
O-ring		4	used for quick connections (spare parts)

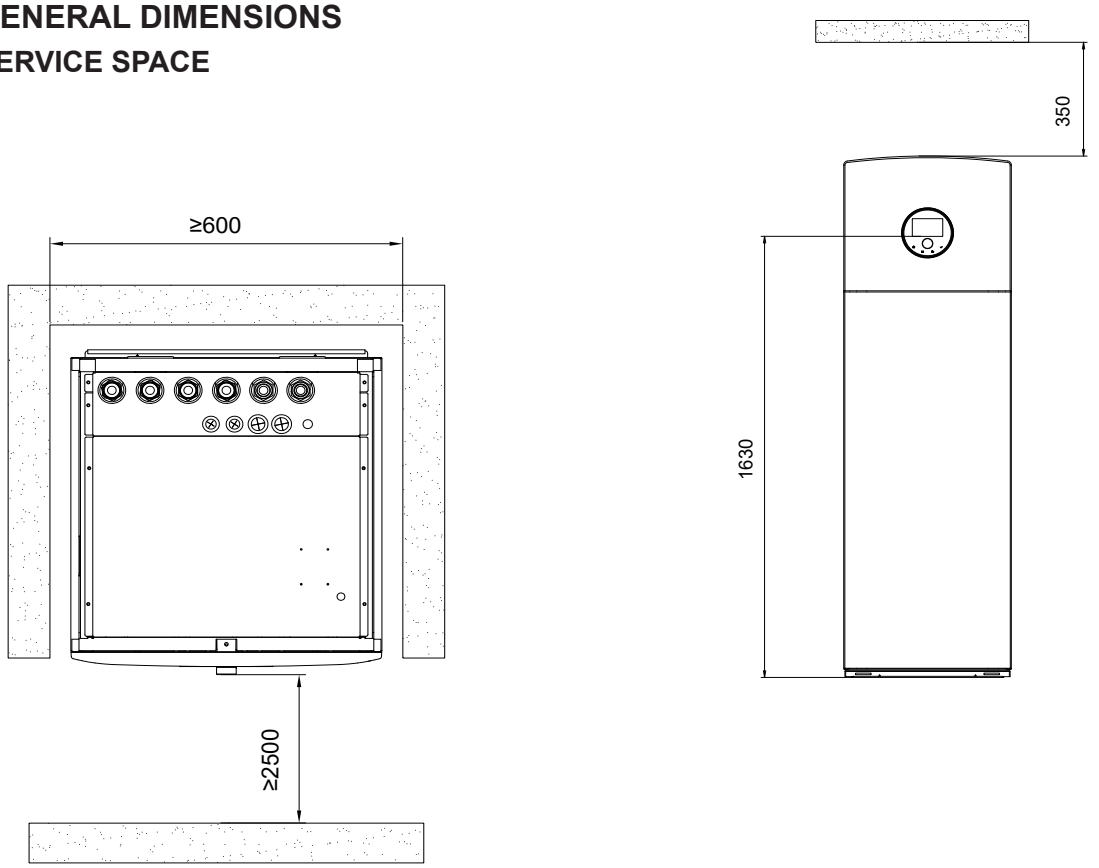
NOTE

- *The previous accessories are supplied inside the packing assembly (on the top of the indoor unit).*
- *Additional refrigerant piping (field supplied) for connections to outdoor unit needs to be available.*
- *If some of these accessories are not packed with the unit or any damage to the unit is detected, please contact your dealer.*

5. GENERAL DIMENSIONS

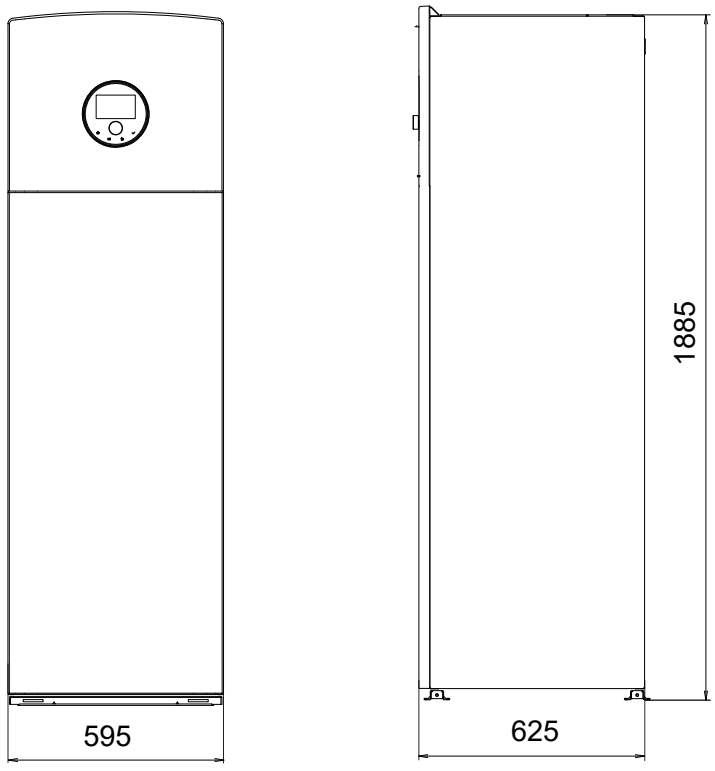
5.1 SERVICE SPACE

Unit: mm



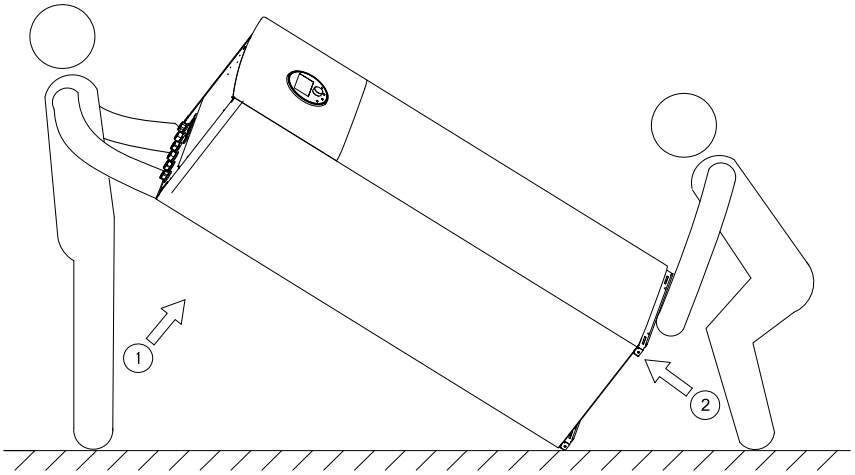
5.2 DIMENSIONAL DATA

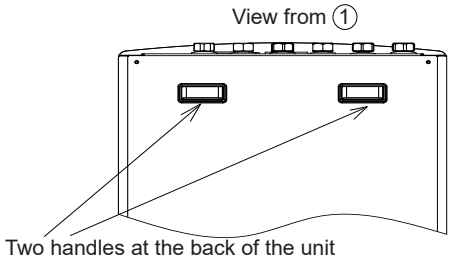
Unit: mm

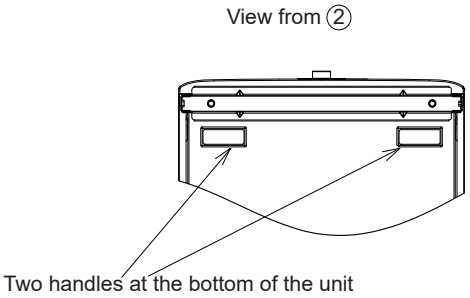


6. TO HANDLE THE UNIT

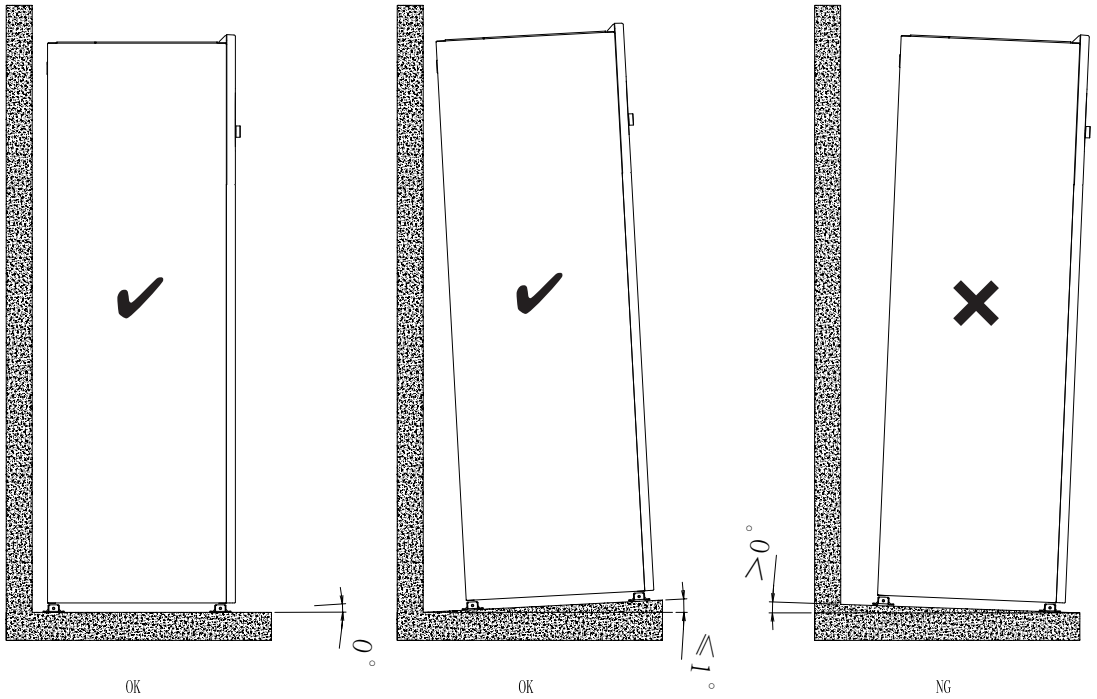
- Carefully tilt the unit to the back so that the handles become visible.
- Use the handles at the back and at the bottom to carry the unit.
- Two people are required when handling because of the weight of the unit.







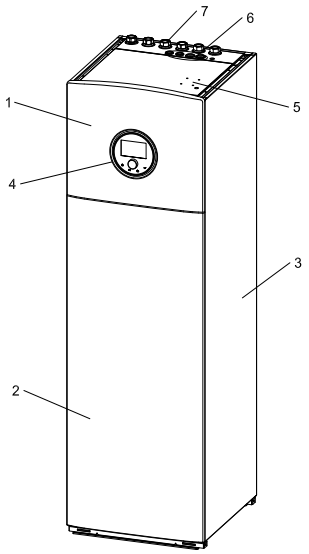
- Keep the unit vertically, tilt backward (tilt angle less than 1°) is allowed, while tilt forward is forbidden.



7. UNIT INSTALLATION

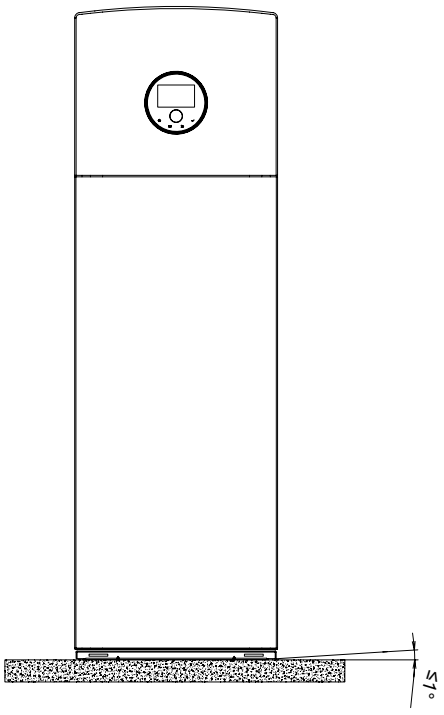
7.1 MAIN PARTS (DESCRIPTIONS)

No.	Part
1	Upper front panel
2	Lower front panel
3	Side panel
4	Master controller
5	Upper cover panel
6	Hole for wiring
7	Piping connections

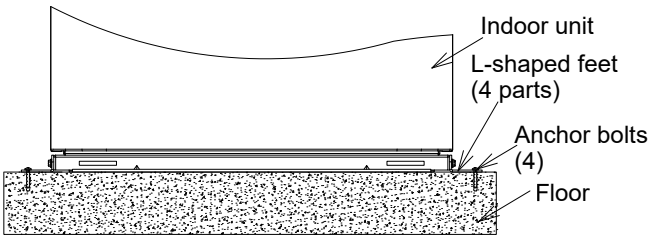


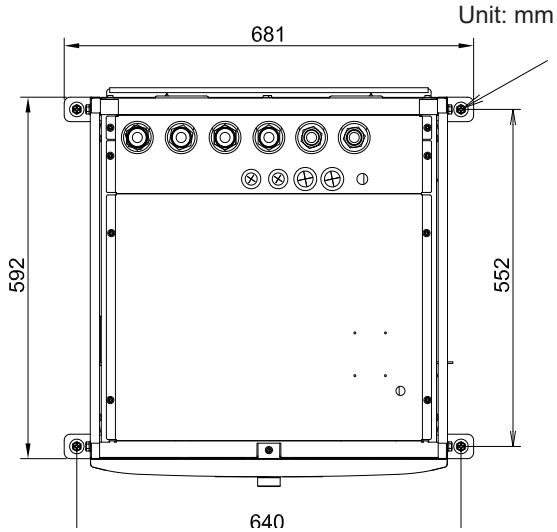
7.2 UNIT INSTALLATION

• Adjust the installation to compensate for floor irregularities. The maximum allowed deviation is 1°.



- To prevent the indoor unit from tipping, it is recommended to fix the unit on the ground by four L-shaped feet with 8 anchor bolts (M6).





7.3 REMOVING THE PANELS

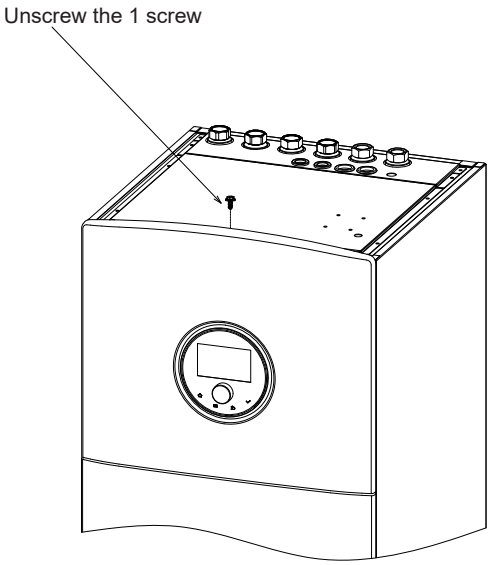
If it is necessary to access to the indoor unit components, please follow these operations.

7.3.1 Removing the upper front panel

NOTE

The indoor unit front panel needs to be removed for any task inside the indoor unit.

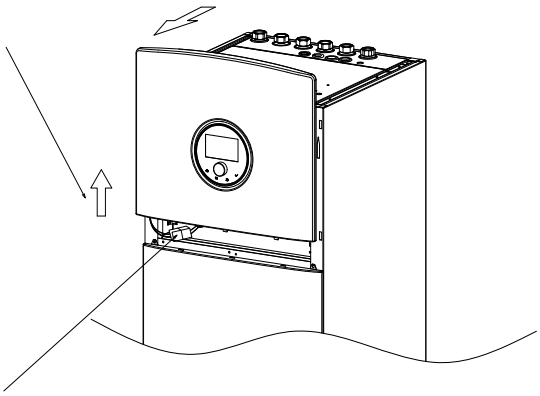
1. Unscrew 1 screw on the top of unit.



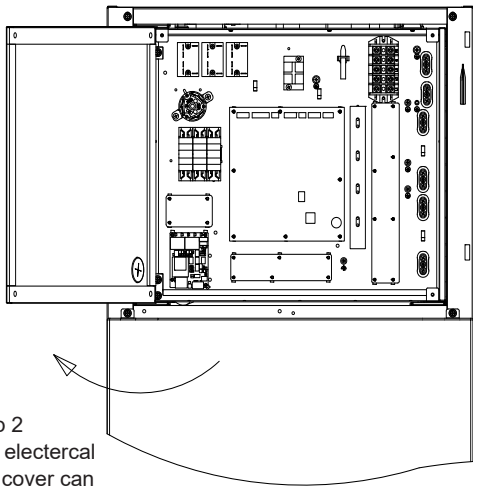
2. Remove the upper front panel.

Step 2 Push the front panel forward, disengage the snap, and upper front panel can be removed.

Step 1 Push the front panel upward.



Step 3 Pay attention to the wire connection master controller and electrical box. Do not pull the wire, otherwise may cause the breakage. Unplug the terminal to release the upper front panel.

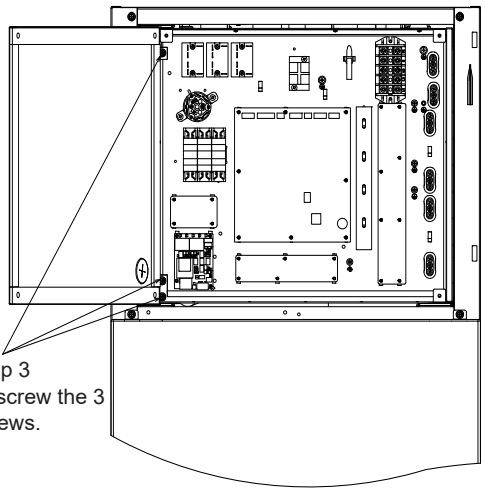


Step 2
The electercal box cover can be opened about 120°.

7.3.2 Opening the electrical box

DANGER

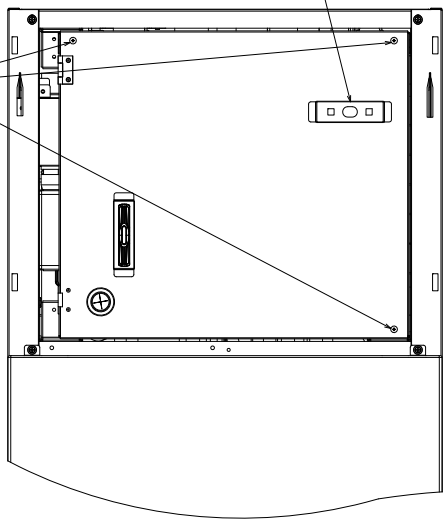
- ***Disconnect the unit from the power supply before touching any of the parts in order to avoid an electric shock.***

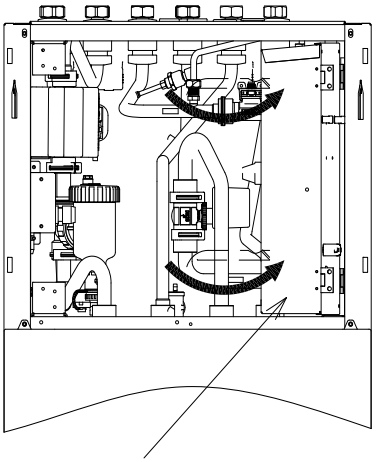


Step 3
Unscrew the 3 screws.

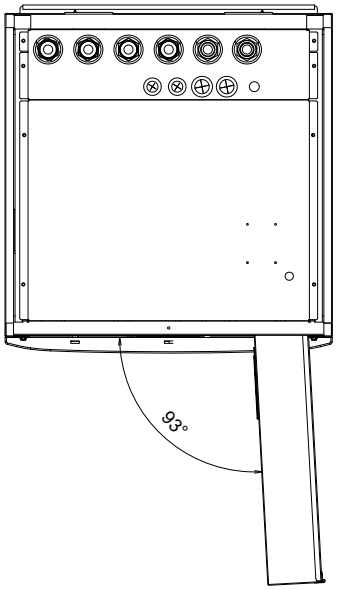
*Handle on electercal box cover can be used to hang the master controller.

Step 1
Unscrew the 3 screws.





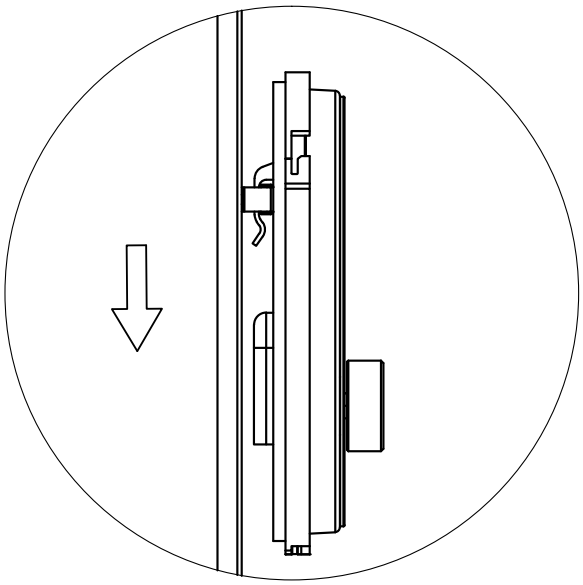
Step 4 The electercal box cover can be turned about 93°.



CAUTION

Take care with the electrical box components in order to avoid damaging.

Step 3 Insert the hook into the handle.

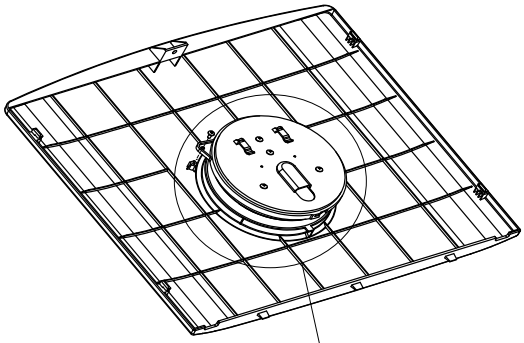


Step 4 Complete hanging.

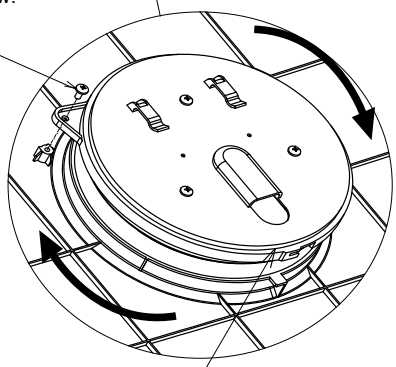
7.3.3 Hanging the master controller

NOTE

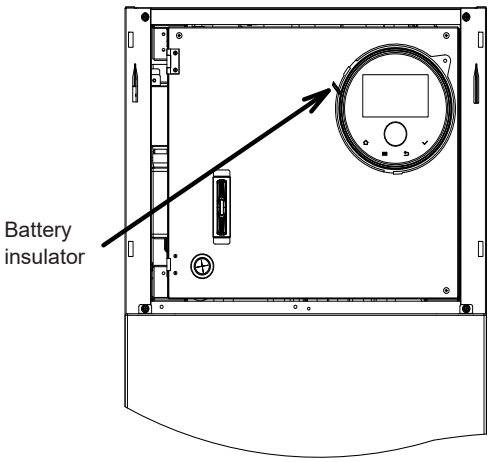
The master controller can be hung on the handle of the electrical box cover.



Step 1 Unscrew the 1 screw.

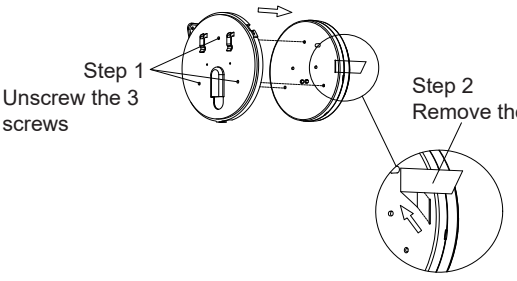


Step 2 Rotate the controller frame clockwise to separate controller frame and front panel.



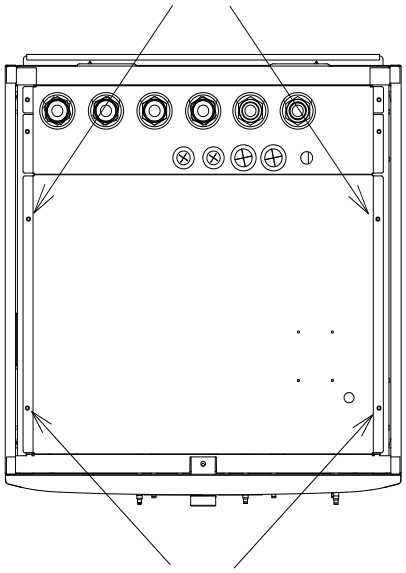
CAUTION

Be sure to remove the battery insulator of the main controller before turning on the unit.



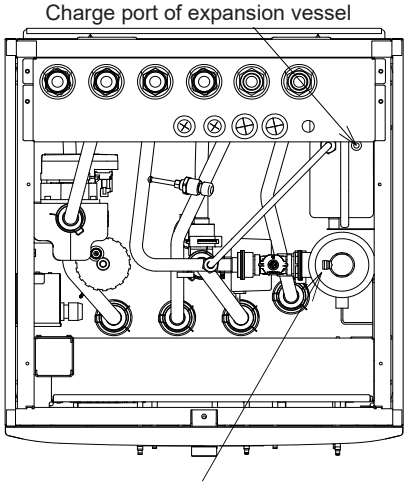
7.3.4 Position of the service windows

Step 1 Unscrew the screw.



Step 2 Unscrew the 2 screws.

Charge port of expansion vessel



Air purge valve

8. PIPING WORK

Make sure that refrigerant piping installation complies with the legislation EN378 and local legislation.

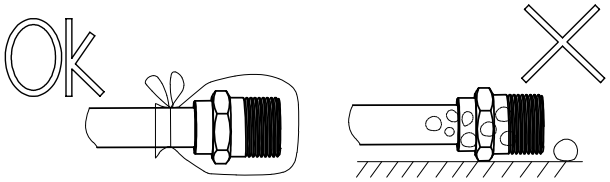
8.1 GENERAL NOTES BEFORE PERFORMING PIPING WORK

- Prepare locally-supplied copper pipes.
- Select the piping size with the correct thickness and correct material able to withstand sufficient pressure.
- Select clean copper pipes. Make sure that there is no dust or moisture inside the pipes. Blow the inside of the pipes with oxygen free nitrogen to remove any dust and foreign materials before connecting them.

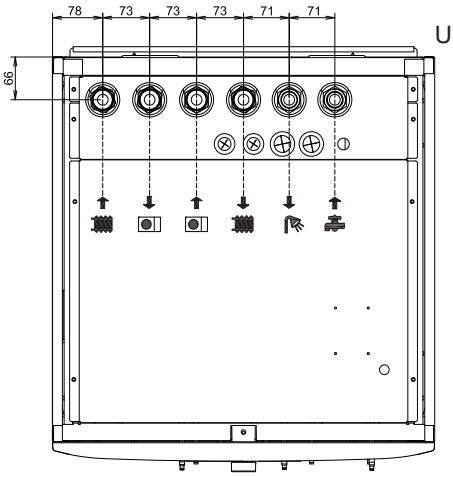
NOTE

A system with no moisture or oil contamination will give maximum performance and life cycle compared to that of a poorly prepared system. Take particular care to ensure that all copper piping is clean and dry internally.

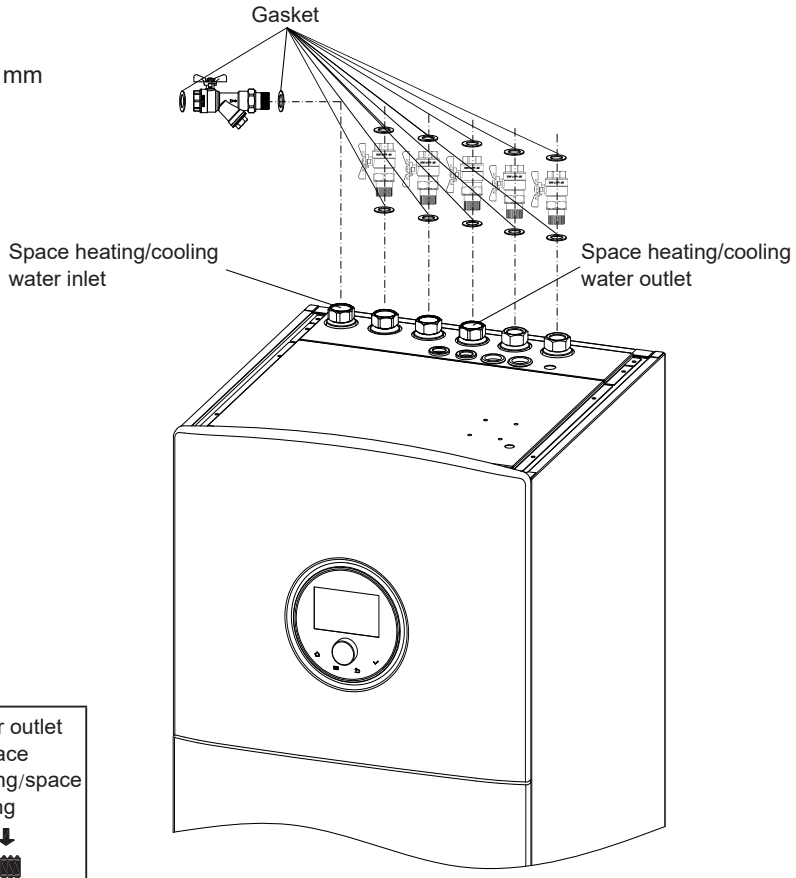
- Cap the end of the pipe when pipe is to be inserted through a wall hole.
- Do not put pipes on the ground directly without a cap or vinyl tape at the end of the pipe.



- If piping installation is not completed until next day or over a longer period of time, braze off the ends of the piping and charge with oxygen free nitrogen through a Schrader valve type access fitting to prevent moisture and particle contamination.
- It is advisable to insulate the water pipes, joints and connections in order to avoid heat loss and dew condensation on the surface of the pipes or accidental injures due to excessive heat on piping surfaces.
- Do not use insulation material that contains NH_3, as it can damage copper pipe material and become a source of future leakage.
- It is recommended to use flexible joints for the water piping inlet and outlet in order to avoid vibration transmission.
- Refrigerant circuit and water circuit must be performed and inspected by a licensed technician and must comply with all relevant European and national regulations.
- Proper water pipe inspection should be performed after piping work to assure there is no water leakage in the water circuit.
- Location of Refrigerant and Water Pipeline are shown below.



Unit: mm



8.2 WATER PIPING CONNECTION

- Piping connection size of indoor unit.

Connection	Water inlet from space heating/space cooling	DHW Outlet (Hot Water)	DHW Inlet (Cold Water)	Water outlet to space heating/space cooling
Piping size	G1" (female)	G3/4" (female)	G3/4" (female)	G1" (female)
Torque Required	40~50(N•m)			

Connection	Water outlet to outdoor unit	Water intlet from outdoor unit
Piping size	G1" (female)	G1" (female)
Torque Required	40~50(N•m)	

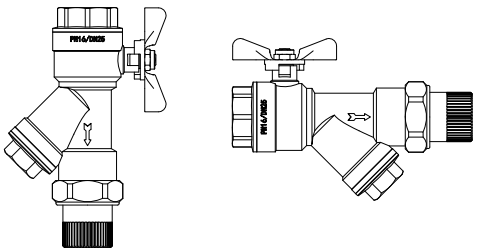
8.2.1 Space heating cooling pipes connectiong

(1) Install shut-off valves

A shut-off valve with filter is provided with the unit. For convenience of repair and maintenance, install the shut-off valve with filter on water inlet pipe from space heating/space cooling/DHW of indoor unit as follow.. The shut-off valves are provided on-site and installed separately in other pipelines. The space heating/cooling installation can be carried out referring to section 9.1.

NOTE

The shut-off valve with filter must be installed at water inlet from space heating/space cooling/DHW, and water flow direction and installation direction must be confirmed as shown below. The gasket in accessories can be installed at the two connections of shut-off valves and shut-off valve with filter.



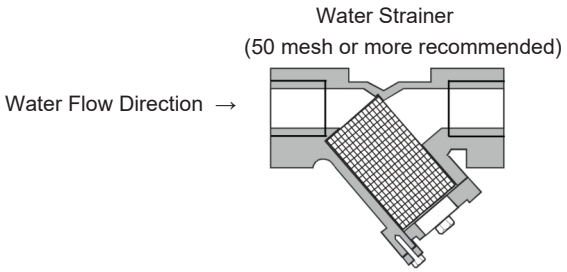
CAUTION

- *Rubber gasket must be mounted (factory supplied), otherwise water leakage may be caused.*
- *Note the location of shut-off valves, and the direction of shut-off valves and drain valve, which are essential to maintenance.*
- *Screw up shut-off valves by using two wrenches.*

（2）Additional water strainer

CAUTION

- *Provide a 50 mesh or more water strainer at the water inlet side of water piping.*



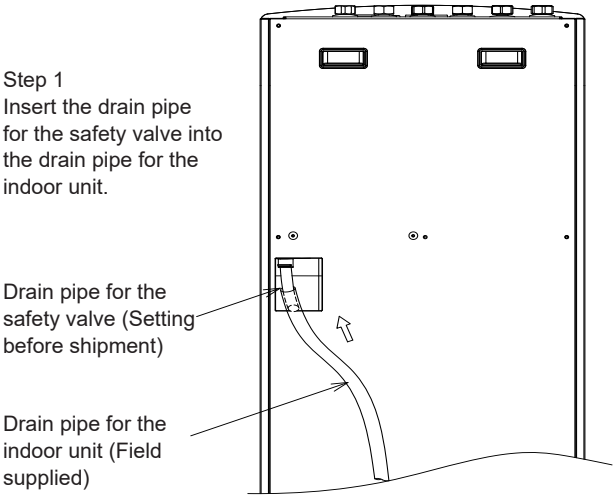
For a correct drainage, connect the drain pipe for the unit to the general draining system.

CAUTION

- **Maintenance:** *Check the water pressure at least once every 2 weeks. If the pressure is lower than the minimum allowable pressure, stop the system and inform the dealer to clean the water strainer.*

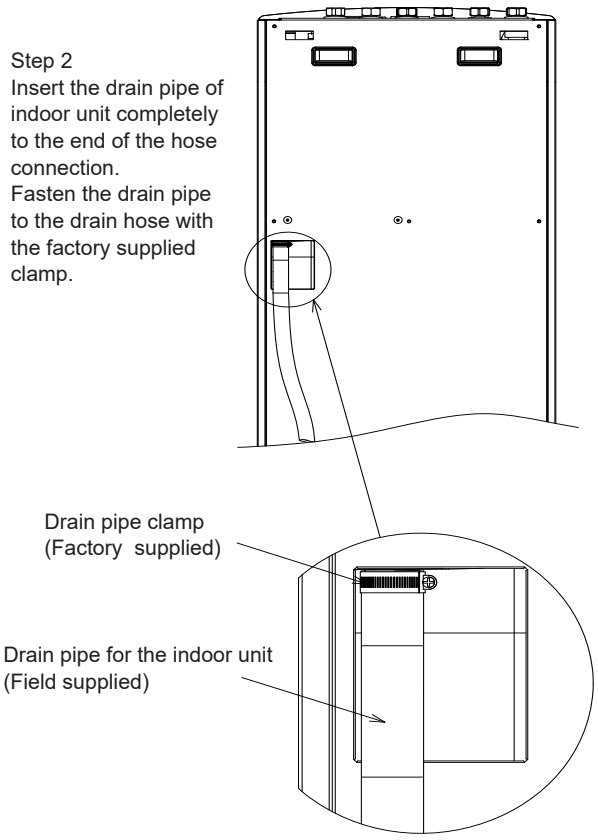
8.2.2 Drain pipes connection

For a correct drainage, connect the drain pipe for the unit to the general draining system.



NOTE

- *The safety valve is activated when water pressure reaches 3 bar.*



NOTE

- *Check if water flows without obstruction.*
- *Drain pipe is not needed if cooling operation is not used.*
- *The recommended drain pipe of the indoor unit is polyvinyl chloride pipe with a 1 inch inner diameter.*
- *Ensure that the drain pipe is firmly fixed through the clamp, otherwise it may cause water leakage.*
- *The drain pipe should always be open to the atmosphere, free of frost and in continuous slope to the down side in case that water leakage exists.*

8.2.3 DHW pipes connection

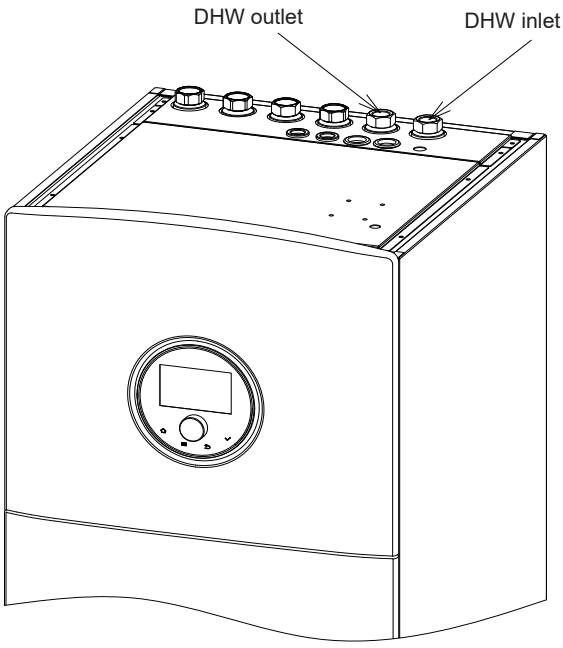
- The connection between the DHW installation and the DHW connections of the indoor unit must be done taking into account the following considerations:

(1) Install a pressure relief valve (factory supplied) at the DHW inlet connection (as close as possible to the DHW tank) to provide the following functions.

- Pressure protection
- Non-return function
- Shut-down valve
- Filling
- Draining

If not, a specific device for each function should be installed.

(2) Install also a shut-off valve (field supplied) in the DHW outlet connection, in order to make easier any maintenance work.



NOTE

For more details, refer to the section "9.1 ADDITIONAL HYDRAULIC NECESSARY ELEMENTS".

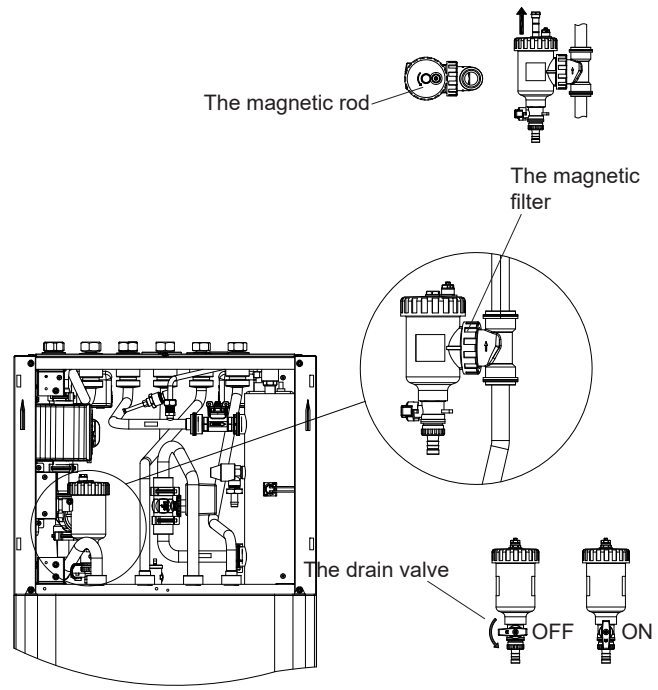
8.2.4 DHW To insulate the water piping.

- The piping in the complete water circuit MUST be insulated to prevent condensation during cooling operation and reduction of the heating and cooling capacity.
- If the temperature is higher than 30°C and the humidity is higher than RH 80%, the thickness of the insulation materials should be at least 20 mm to prevent condensation on the surface of the insulation.

8.3 MAGNETIC FILTER MAINTENANCE

CAUTION

- **Maintenance:** *Check the water pressure at least once every 2 weeks. If the pressure is lower than the minimum allowable pressure, stop the system and inform the dealer to clean the water strainer and magnetic filter.*
- *The impurity cleaning of the magnetic filter is performed as follows:*
  a. *Ensure that the unit is shut down and cut off the power supply.*
  b. *Close the shut-off valve and shut-off valve with filter, see connection in figure of section 8.2.*
  c. *Unscrew and remove the magnetic rod from the top.*
  d. *Open the drain valve.*
  e. *Close the drain valve after the water is drained, and reset the magnetic rod.*
  f. *Open the manual air purge valve of the unit (2 turns) and open the valves in Step b above.*
  g. *When the water drains out, close the manual air purge valve.*
  h. *Observe the water pressure changes. When the pressure displayed on the controller is less than 2.0 bar, additional water should be filled by booster pump until water pressure returns to approximate 2.0 bar.*



NOTE

The internal mesh inside the magnetic filter needs to be maintained every three months, please contact local dealer. The maintenance steps are as follows:

(1) Ensure that the unit is shut down and cut off the power supply.

(2) Close the shut-off valve and shut-off valve with filter, see connection in figure of section 8.2.

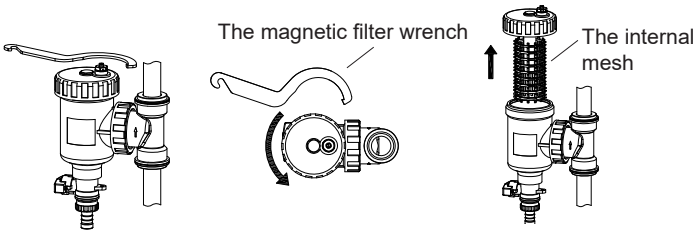
(3) Use the wrench in the accessory pouch to open the magnetic filter, remove the internal mesh, and clean it with water.

(4) Reassemble the magnetic filter.

(5) Perform the steps f-h of the impurity cleaning procedure above.

CAUTION

The magnetic filter is not allowed to be removed from the pipeline during the maintenance process.



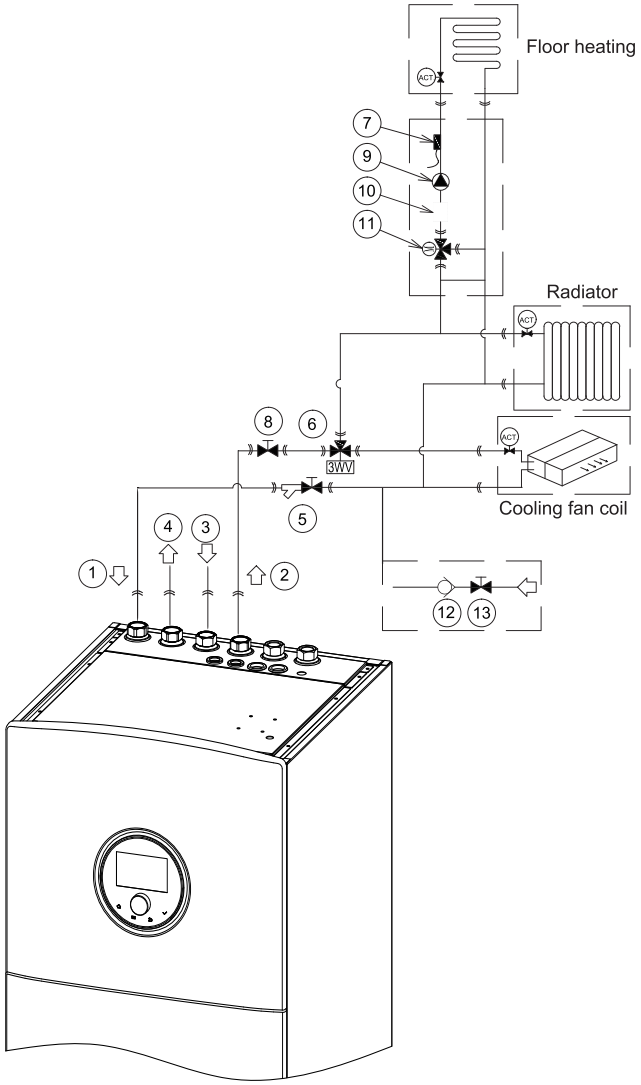
9. SPACE HEATING/COOLING AND DHW

9.1 ADDITIONAL HYDRAULIC NECESSARY ELEMENTS

DANGER

Do not connect the power supply to the unit prior to filling the space heating circuit with water and checking water pressure and the total absence of any water leakage.

9.1.1 Elements for space heating/cooling



Nature	No.	Part name
Piping connections	1	Space heating/cooling water inlet
	2	Space heating/cooling water outlet
	3	Water inlet from outdoor unit
	4	Water outlet to outdoor unit
Factory supplied	5	Shut-off valve with filter
Optional accessories	6	3WV (Cooling)
	7	Thermistor (for Space heating))
Field supplied	8	Shut-off valve
	9	Water pump
	10	Filter
	11	Mixing valve
	12	Check valve
	13	Shut-off valve

As an installation example of space heating / cooling, the following hydraulic elements are necessary to correctly perform the space heating / cooling water circuit:

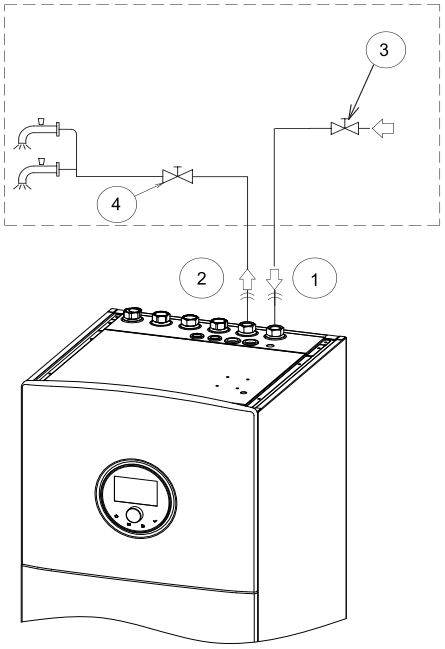
- The field supplied shut-off valve (8) need to be installed at water outlet of the unit, and shut-off valve with filter (5) need to be installed horizontally at water inlet of the unit.
- A water check valve (12) with a shut-off valve (13) must be connected to the water filling point when filling the water circuit. The check valve acts as a safety device to protect the installation.
- 3-way valves (6) must be connected at one point of the water outlet pipe of the installation, used to divert the water circulation for specific functions.
- Space heating thermistor (7) must be installed on the metal tube close to space heating, and keep in good contact with it.
- Mixing valve (11) is recommended to use ESBE ARA661, whose operation mode is 3-point SPDT. If mixing valve of other brands or models are used, the operation mode must be 3-point SPDT, and power supply must be 220-240V ~ 50Hz. The rotation time can be set in the master controller.

9.1.2 Elements for DHW

As an installation example of Domestic hot water (DHW), the following hydraulic elements are necessary to correctly perform the DHW water circuit:

(1) Elements required for the DHW water circuit

Nature	No.	Part name
Piping connections	1	DHW inlet (Cold water)
	2	DHW outlet (Hot water)
Field supplied	3	Shut-off valve
	4	Shut-off valve



- **A Shut-off valve (field supplied):**
  The shut-off valve (4) must be connected after the DHW outlet (2) in order to make easier any maintenance work.

⚠ CAUTION

- *DHW tank supplies hot water from tap water. Domestic hot water is only used when tap water is connected.*
- *For safety, do not add ethylene glycol into water circulation. If added, water will be contaminated when heat exchanger coil leaks.*
- *When water hardness is more than 250-300 ppm, recommend using softened water to reduce DHW tank scale.*
- *Immediately flush DHW tank with fresh water after installation. Flush once every day in first five days of installation.*
- *Try to avoid long runs of water piping between the tank and the DHW installation in order to decrease possible temperature losses.*
  If the domestic cold water entry pressure is higher than the DHW tank's design pressure, a pressure reducer must be fitted.
- *After used for a while (depend on local water quality and use frequency), clean DHW tank and remove scales.*
  a. *Power off and close water inlet valve.*
  b. *Open water outlet valve and drainage valve to empty DHW tank.*

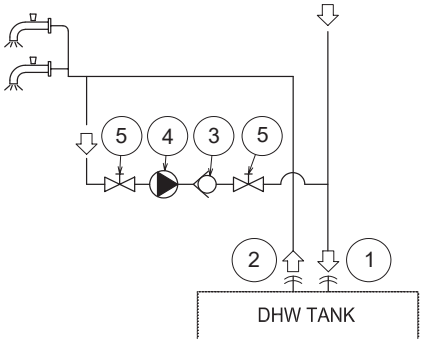
⚠ CAUTION

When scales are removed, temperature in DHW tank may be a little high, it should prevent burns or drainage equipment damaged.

c. *Close drainage valve after cleaning several minutes with water inlet valve opened. Ensure effluent water is closed after DHW tank is full of water. Power on and get back to work.*

- *Always check DHW tank and its surroundings has accumulated water or not. In case of leaking, contact local dealer.*

(2) Elements required for the DHW recirculation circuit



Nature	No.	Part name
Piping connections	1	DHW inlet(Cold water)
	2	DHW outlet (Hot water)
Field supplied	3	Water check valve
	4	DHW pump
	5	Shut-off valve

- **A DHW pump (field supplied):** This DHW pump (4) will help to correctly recirculate the hot water to the DHW inlet. The optional output function of DHW pump (code o-13) can be set to drive relay of a DHW pump in case of DHW pump is available, referring to 10.5.
- **A Water check valve (field supplied):** This accessory (3) is connected after the DHW pump (4) in order to ensure the non-return of water.
- **Two Shut-off valves (field supplied) (5):** One before the DHW pump (4) and other after the water check valve accessory (3).

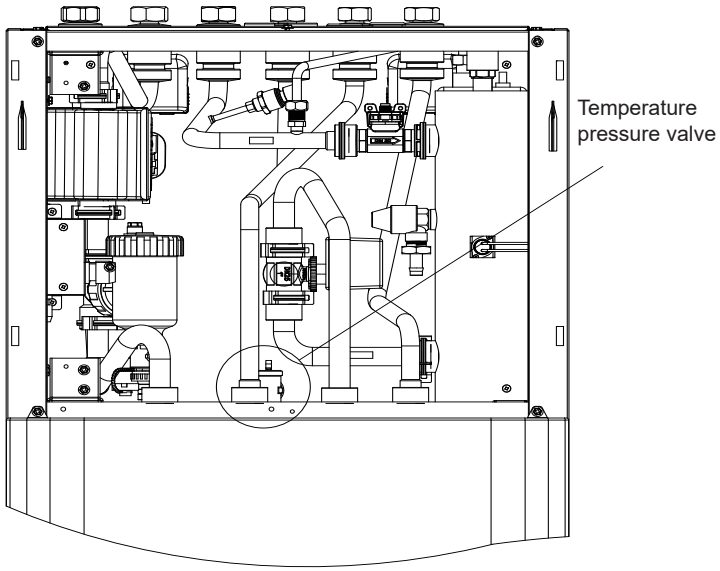
⚠ CAUTION

The DHW tank is equipped with a safety thermostat and operating temperature of the safety thermostat will be affected by the altitude (atmospheric pressure). Make sure max. DHW temperature NOT higher than the following value.

Altitude (m)	Atmospheric pressure (mmHg)	Max. DHW temperature (°C)
4000	424	75
5000	340	70
6000	256	63

9.1.3 Temperature pressure valve

A temperature pressure valve has been installed in the unit together with DHW tank to avoid the excessive higher temperature and pressure. Refer to the figure below for the specific location of this valve.



⚠ CAUTION

- *If DHW tank is not used for more than 2 weeks, a certain amount of hydrogen will gather in DHW tank. It is recommended to open temperature pressure valve handle or water outlet faucet for several minutes to release hydrogen. When hydrogen is released, do not make open flame or operate other electrical appliances. When gas is released, releasing sound will be heard.*
- *Temperature pressure valve is used to prevent too high temperature in DHW tank (> 90°C) and water pressure (> 0.6MPa).*
- *Check temperature pressure valve once half a year. When checking, open temperature pressure valve handle (see below), temperature pressure valve will smoothly drain water out. The water temperature may be high, note burns. Reset after it is errorless. If drainage fails, contact local dealer for repair.*
- *Temperature pressure valve and its drainage pipe must keep smooth and not blocked.*

9.2 REQUIREMENTS AND RECOMMENDATIONS FOR HYDRAULIC CIRCUIT

9.2.1 Requirements for anti-freezing

- When the unit is stopped during shut-off periods and the ambient temperature is very low, the water inside the pipes and the circulating pump may freeze, thus damaging the pipes and the water pump. In these cases, the installer shall ensure that the water temperature inside the pipes does not fall below the freezing point. In order to prevent this, the unit has a self-protection mechanism which should be activated (refer to “10.6 SETTING OF DIP SWITCHES ON PCB1”).
- Even if the unit is stopped, the water pump may run under some circumstances, i.e, when the anti-freezing function is triggered.
- Keep the unit power on and water system unblocked to prevent water freezing, otherwise an alarm may occur.
- If the water system is blocked, an alarm of water flow will occur to stop the whole system.
- If machine is stopped for a long period of time in winter, drain out water in circuit and water pipes to prevent freezing.
- The anti-freezing protection is effective better with Auxiliary electric heater connected. It is advisable to install the Auxiliary electric heater for those models in which these are not supplied but optional.
- However, in case of a power failure or unit failure, these functions cannot guarantee protection.

9.2.2 Additional information about hydraulic circuit

- An additional special water filter is highly recommended to be installed on the space heating (field installation), in order to remove possible particles remaining from brazing which cannot be removed by the field supplied shut-off valve with filter.
- Put insulation on the pipes in order to avoid heat losses.
- Whenever possible, sluice valves should be installed for water piping, in order to minimize flow resistance and to maintain sufficient water flow.
- Ensure that the installation complies with applicable legislation in terms of piping connection and materials, hygienic measures, testing and the possible required use of some specific components like thermostatic mixing valves.
- The maximum water pressure is 3 bar (nominal opening pressure of the safety valve). Provide adequate reduction pressure device in the water circuit to ensure that the maximum pressure is NOT exceeded.
- The water pressure can be read on master controller, detected by the water pressure sensor located at inlet of plate heat exchanger. If water pressure exceeded 3 bar, the water pressure displayed on master controller would
- Ensure that the drain pipes connected to the safety valve and to the air purge valve are properly driven to avoid water being in contact with unit components.
- Make sure that all field supplied components installed in the piping circuit can withstand the water pressure and the water temperature range in which the unit can operate. The units are conceived for exclusive use in a closed water circulation.
- The internal air pressure of the expansion vessel will be adapted to the water volume of the final installation (factory supplied with 1 bar of internal air pressure).
- Drain taps must be provided at all low points of the installation to permit complete drainage of the circuit during servicing.
- The maximum piping length depends on the maximum pressure availability in the water outlet pipe. Please check the pump curves.
- The unit is equipped with an air purge valve (factory supplied) at the highest location of the unit. If this location is not the highest of the water installation, air might be trapped inside the water pipes, which could cause system malfunction. In that case additional air purge valves (field supplied) should be installed to ensure no air enters the water circuit.
- For heating floor system, the air should be purged by mean of an external pump and an open circuit to avoid air bags.

9.3 WATER FILLING

9.3.1 To fill the water circuit

(1) Check that a water check valve (field supplied) with a shut-off valve (field supplied) is connected to the water filling point (water inlet connection) for filling the hydraulic circuit (see “9.1 ADDITIONAL HYDRAULIC NECESSARY ELEMENTS).

(2) Make sure all the valves are open (water inlet/outlet shut-off valves and the rest of valves of the water circuit installation components).

(3) Ensure that the air purge valve of the unit is open when installation (Loosen the screw cap of air purge valve properly to completely discharge the air inside and ensure the air purge valve is open.See “7.3.4 Position of the service windows).

(4) Check that the drain pipes connected to the safety valve (keep the outlet of drain pipes located in the drain pan) are correctly connected to the general draining system. The safety valve is later used as an air purging device during the water filling procedure.

(5) Fill the water circuit with water until the pressure displayed on the controller reaches 2.0 ± 0.2 bar. During all the operation conditions, the normal pressure range of water circuit is 1 ~ 2.5 bar.

NOTE

While the system is being filled with water, it is highly recommended to operate the safety valve manually so as to help with the air purging procedure.

(6) Remove as much air from inside the water circuit as possible through the air purge valve and other air vents in the installation (fan coils, radiators...).

(7) There are two methods to start the air purge procedure:

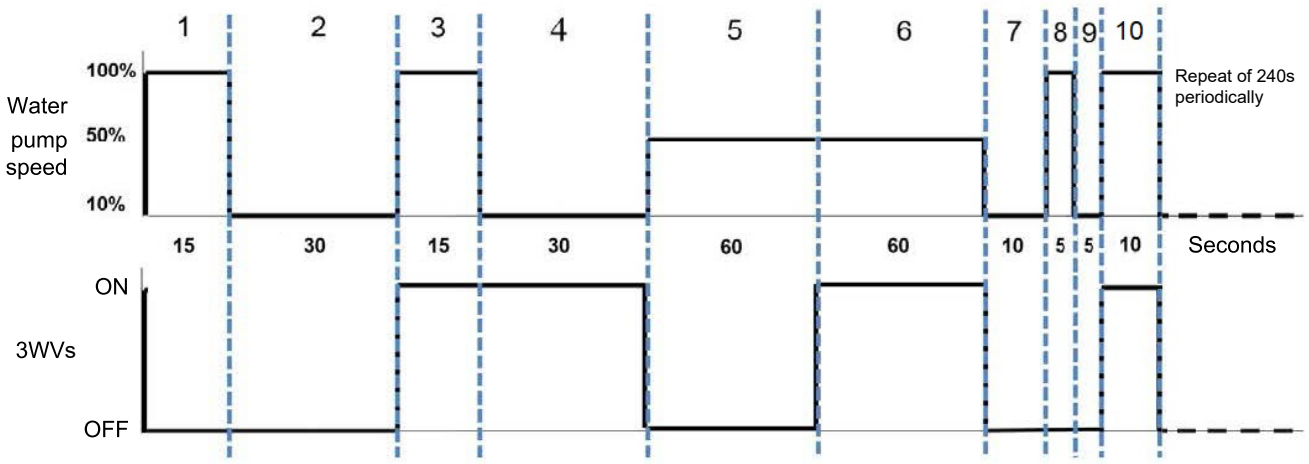
a. Using the master controller to start air purge. (Refer to the master controller manual)

b. Using DSW4-1 of the PCB1:
DSW4-1 ON: Start air purge
DSW4-1 OFF: Stop air purge

(8) If a little quantity of air is still remaining in the water circuit, it will be removed by the automatic air purge valve of the unit during the first hours of operation. Once the air in the installation has been removed, a reduction of water pressure in the circuit is very likely to occur. Therefore, additional water should be filled by booster pump until water pressure returns to approximate 2.0 bar.

NOTE

- *The unit is equipped with an automatic air purge valve (factory supplied) at the highest location of the unit. Anyway, if there are higher points in the water installation, air might be trapped inside water pipes, which could cause system malfunction. In that case, additional air purge valves (field supplied) should be installed to ensure no air enters into the water circuit. The air purge valve should be located at points which are easily accessible for servicing.*
- *The water pressure indicated on the master controller may vary depending on the water temperature (the higher temperature, the higher pressure). Nevertheless, it must remain above 1 bar in order to prevent air from entering the circuit.*
- *Fill in the circuit with tap water. The water in the heating installation must comply with EN directive 98/83 EC. Non-sanitary controlled water is not recommended (for example, water from wells, rivers, lakes, etc.) .*
- *The maximum water pressure is 3 bar (nominal opening pressure of the safety valve). Provide adequate reduction pressure device in the water circuit to ensure that the maximum pressure is NOT exceeded.*
- *For heating floor system, air should be purged by means of an external pump and an open circuit to prevent the formation of air pockets.*
- *Check carefully for leaks in the water circuit, connections and circuit elements.*
- *During water filling, it is necessary to ensure that water enters the unit from the water inlet to ensure that all water passes through the shut-off valve with filter to filter impurities, otherwise it may block the components inside the unit.*



NOTE

- *The unit will stop for at least 6 min before starting next air purge cycle.*

(9) Check Water Volume:
The unit has a built-in 8L expansion vessel, and default initial pressure is 1 bar. To ensure the unit works normally, the initial pressure of expansion vessel should be adjusted according to the circulated water volume.

- Use water volume checklist below to decide whether initial pressure of expansion vessel needs to be adjusted.
- Use water volume checklist to confirm the total volume of water in installation system is below the allowed maximum water volume.
- Installation height difference: height difference between highest point of water circulation and the unit. If the unit is mounted at the highest point, above all water pipes, the installation height is deemed to be 0 m.
- Calculate initial pressure of expansion vessel. Decide initial pressure (Pg) according to the maximum installation height difference (H), seen below:

  Pg=H/10+0.3

  Unit: H (m), Pg (bar)

- The process of calculating allowed maximum water volume in whole circulation is:
  - Calculate maximum water volume corresponding to initial pressure Pg by using maximum water volume curve as shown below.
  - Confirm the total maximum water volume in water circulation is smaller than above value. Otherwise, the expansion vessel in the unit is smaller for system.

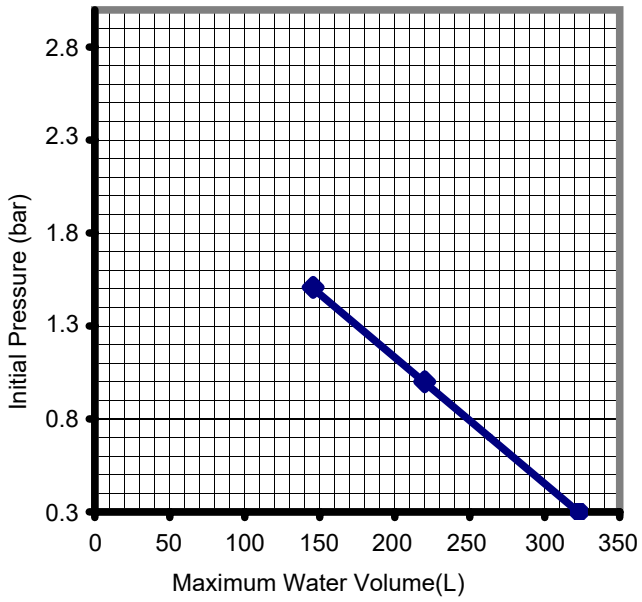
NOTE

- *0.3 bar is the minimum initial pressure and 1.5 bar is the maximum initial pressure of expansion vessel set outside the factory.*
- *When initial pressure in expansion vessel is set as 0.3 bar at minimum, the water quantity required by system is higher than the limit value, it may be considered replacing expansion vessel with bigger volume.*

Water Volume Checklist

	Installation height difference (a)	Water Volume	
		≤220L	>220L
Safety Valve (3 bar)	≤7m	No need to adjust initial pressure of expansion vessel	Things need to do : Must reduce initial pressure. Calculate it based on the section “Check water volume”. Ensure water volume is lower than allowed maximum water volume (using the figures below).
	>7m	Things need to do : Must increase initial pressure. Calculate it based on the section “Check water volume”. Ensure water volume is lower than allowed maximum water volume (using the figures below).	The expansion vessel is too small to install. (It needs proper expansion vessel or use safety valve with high activated pressure that is supplied from local place)

Maximum Water Volume Curve Graph



9.3.2 To fill and drain the domestic hot water tank

(1) To fill the domestic hot water tank

- Open every hot water tap in turn to purge air from the system pipe work.
- Open the cold water supply valve.
- Close all water taps after all air is purged.
- Check for water leaks.
- Manually operate the field-installed pressure relief valve to ensure a free water flow through the drain pipe.

(2) To drain the domestic hot water tank

DANGER

The water in the tank can be very hot.

CAUTION

Turn OFF the unit via the master controller.

Turn OFF the respective circuit breaker.

Close the cold water supply.

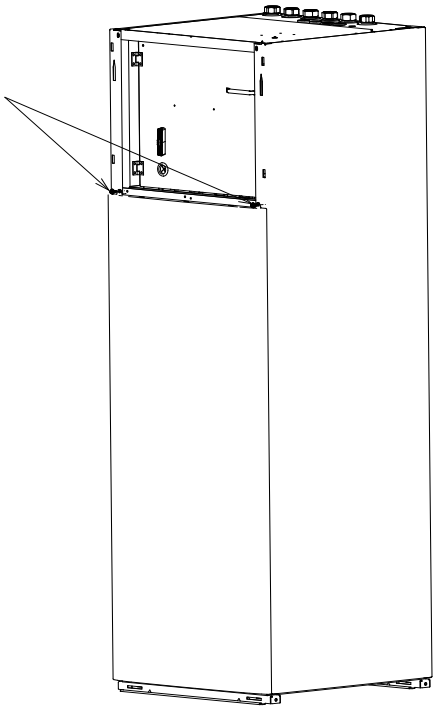
1) Remove the upper front panel and the lower front panel.
2) Hanging the master controller.
3) Remove the stop from the tank.
4) Use a drain hose and a pump to drain the tank via the drainage outlet.
5) Open all the hot water tapping points to allow air to enter the system.

CAUTION

- *During the use of the water tank, there may be dirty sediments accumulated at the bottom of the water tank. In order to avoid the presence of dirty sediment affecting the heat exchange efficiency, resulting in increased energy consumption, it is necessary to carry out regular maintenance of the water tank.*

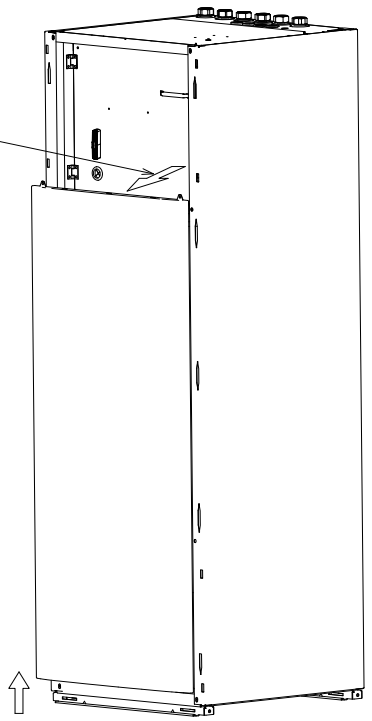
Remove the upper front panel, referring to 7.3.1, then remove the lower front panel as follows.

Step 1
Unscrew the 2 screws.



Step 3
Push the front panel forward, disengage the snap, and lower front panel can be removed.

Step 2
Push the front panel upward.

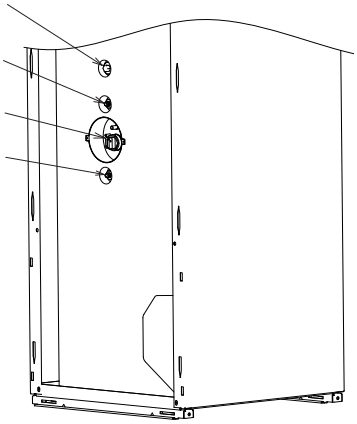


Stop (G3/4") for electronic anode (Optional Accessory)

DHW temperature sensor

DHW electric heater

DHW1 Temperature sensor



⚠ CAUTION

- *Some water may be spilled when removing the stop for drainage outlet from the DHW.*
- *ALWAYS clean spilled water.*

- The detail wiring diagram of DHW tank is shown in section “10.2 Wiring ”.

⚠ CAUTION

- *Do not install DHW electric heater without temperature protection device.*
- *Electrical box cover must be opened by qualified electrician. Power off before open electrical box cover.*

9.4 WATER CONTROL

9.4.1 Water quality requirement

It is necessary to analyze the quality of water by checking pH, electrical conductivity, ammonia ion content, sulphur content, and others. The following is the recommended standard water quality.

Item	Chilled water system		Tendency (1)	
	Circulating water (20°C less than)	Supply water	Corro-sion	Depos-its of scales
Standard Quality pH (25 °C)	6.8 ~ 8.0	6.8 ~ 8.0	●	●
Electrical Conductivity (mS/m) (25 °C) {μS/cm} (25 °C) (2)	Less than 40 Less than 400	Less than 30 Less than 300	●	●
Chlorine Ion (mg Cl^-/L)	Less than 50	Less than 50	●	
Sulphur Acid Ion (mg H_4SO^-/L)	Less than 50	Less than 50	●	
The amount of Acid consumption (pH 4.8) (mg $CaCO_3$/L)	Less than 50	Less than 50		●
Total Hardness (mg $CaCO_3$/L)	Less than 70	Less than 70		●
Calcium Hardness (mg $CaCO_3$/L)	Less than 50	Less than 50		●
Silica L (mg SIO_2/L)	Less than 30	Less than 30		●
Reference Quality Total Iron (mg Fe/L)	Less than 1.0	Less than 0.3	●	●
Total Copper (mg Cu/L)	Less than 1.0	Less than 0.1	●	
Sulphur Ion (mg S^{2-}/L)	It shall not be detected		●	
Ammonium Ion (mg NH_4^+/L)	Less than 1.0	Less than 0.1	●	
Remaining Chlorine (mg Cl/L)	Less than 0.3	Less than 0.3	●	
Floating Carbonic Acid (mg CO_2/L)	Less than 4.0	Less than 4.0	●	
Index of Stability	6.8 ~ 8.0	-	●	●

Item	DHW space	Tendency (1)	
	Water supplied	Corrosion	Deposits of scales
Electrical Conductivity (mS/m) (25°C) {μS/cm} (25 °C) (2)	100~2000	●	●
Chlorine Ion (mg Cl^-/L)	Max 250	●	
Sulphate (mg/L)	Max 250	●	
Combination of chloride and sulphate (mg/L)	Max 300	●	●
Total Hardness (mg $CaCO_3$ /L)	60~150		●

NOTE

- *(1) The mark "●" in the table means the factor concerned with the tendency of corrosion or deposits of scales.*
- *(2) The value showed in "{}" are for reference only according to the former unit.*

CAUTION

- *Water should be subjected to filtration or to a softening treatment with chemicals before application as treated water.*
- *To avoid deposits of scale on the heat exchangers surface it is mandatory to ensure a high water quality with low levels of $CaCO_3$.*
- ***To prevent the storage tank from corrosion, the electronic anode(optional accessory) can be installed.***

10. ELECTRICAL AND CONTROL SETTINGS

10.1 GENERAL CHECK

(1) Ensure all electrical apparatus used on site (power switch, circuit breaker, lead, conduit and terminal board) are selected according to technical manual and national and local codes. Wiring must be made according to national and local codes.

(2) Check voltage is within rated voltage ± 10%. In case of low voltage, system will not start. In case of high voltage, electrical parts will be burnt out.

(3) Confirm earth wire is connected.
Use wires which are not lighter than the polychloroprene sheathed flexible cord (code designation 60245 IEC 57).

Model	Power supply	Operation mode	Max. current (A)	Power supply cables	Transmitting cables	CB (A)	ELB (No. of poles/A/mA)	Terminal Board
				EN60335-1	EN60335-1			
AHS-100HCWBAA-23	220-240V ~ 50Hz	Without DHW electric heater(1.5kW)	0.99	3 x 2.5mm²	2 x 0.75 mm²	16	2/16/30	TB1(L,N)
		With DHW electric heater(1.5kW)	8.16			16	2/16/30	TB1(L,N)
		Auxiliary electric heater	14.34	3 x 2.5 mm²	-	20	2/20/30	TB6(L,N)

CB: Air circuit breaker.
ELB: Earth leakage breaker.

⚠ CAUTION

- ***Turn OFF the main power switch of the indoor unit and the outdoor unit and wait for more than 10 minutes before electrical wiring work or a periodical check is performed.***
- ***It is strictly forbidden to connect the power supply caple from the teminal board to other units.***

NOTE

(1) *Field wiring shall be in conformity to local laws and regulations, and all wiring operations must be performed by qualified professionals.*

(2) *Refer to relevant standards for Above-noted power supply cables size.*

(3) *Where power supply cable is connected through junction box in series, be sure to determine the total current and choose wires based on the table below.*

Current i (A)	Wire size (mm^2)
i ≤ 6	2.5
6 < i ≤ 10	2.5
10 < i ≤ 16	2.5
16 < i ≤ 25	4
25 < i ≤ 32	6
32 < i ≤ 40	10
40 < i ≤ 63	16
63 < i	※1

※ *1: In the case that current exceeds 63A, do not connect cables in series.*

(4) *As a minimum, the chosen wires shall not be lighter than the polychloroprene sheathed flexible cord (code designation 60245 IEC 57).*

(5) *The wiring specifications for weak current transmission circuit shall not be lower than that for RVV(S)P shielded wires or equivalent, and the shielding layer shall be grounded.*

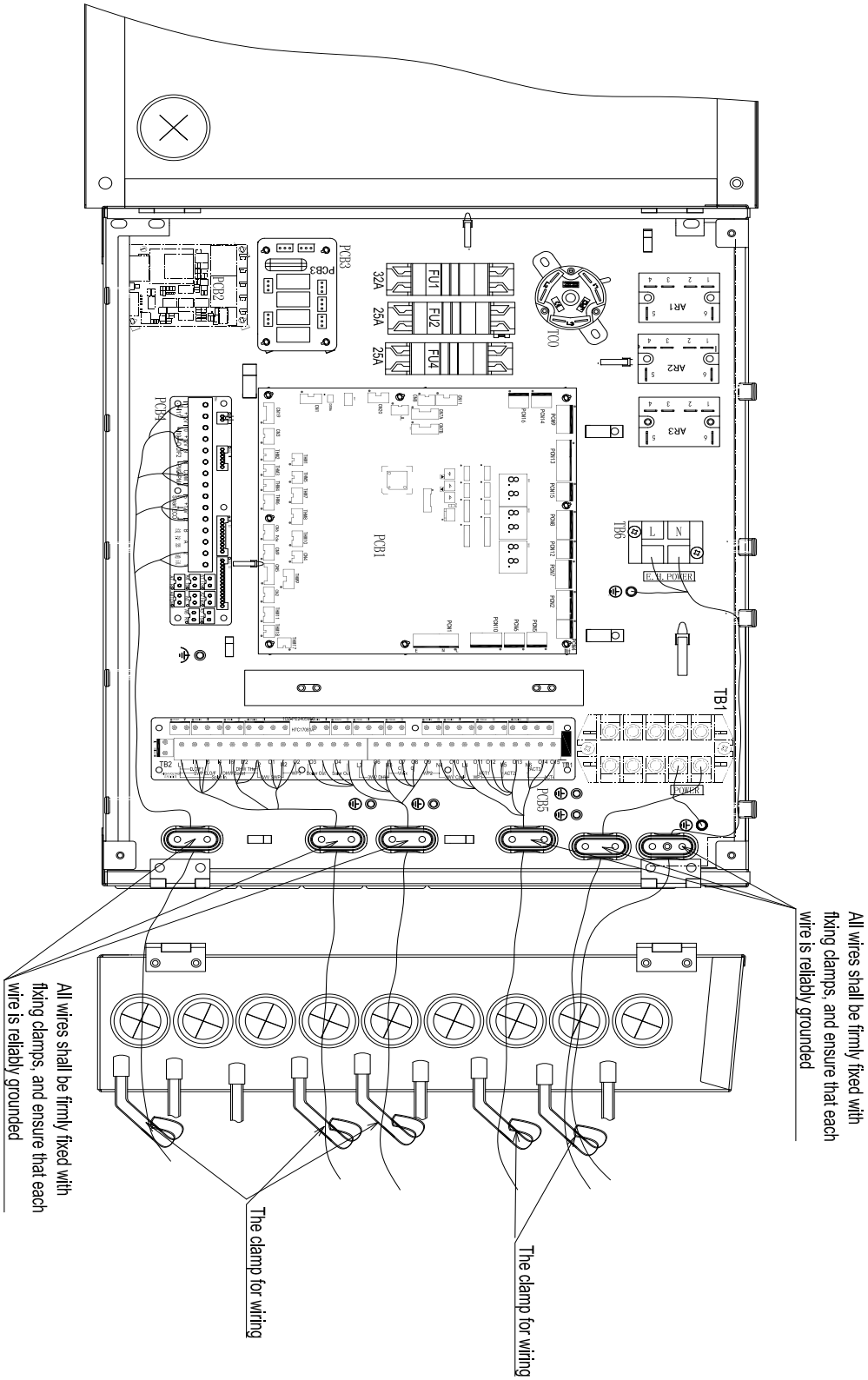
(6) *A switch that can ensure all-pole disconnection shall be installed between power supply and air conditioning unit in such a manner that the contact spacing shall not be less than 3 mm.*

(7) *Once the power cord is damaged, the dealer or the professionals from designated maintenance department must be contacted in a timely manner for repair and replacement.*

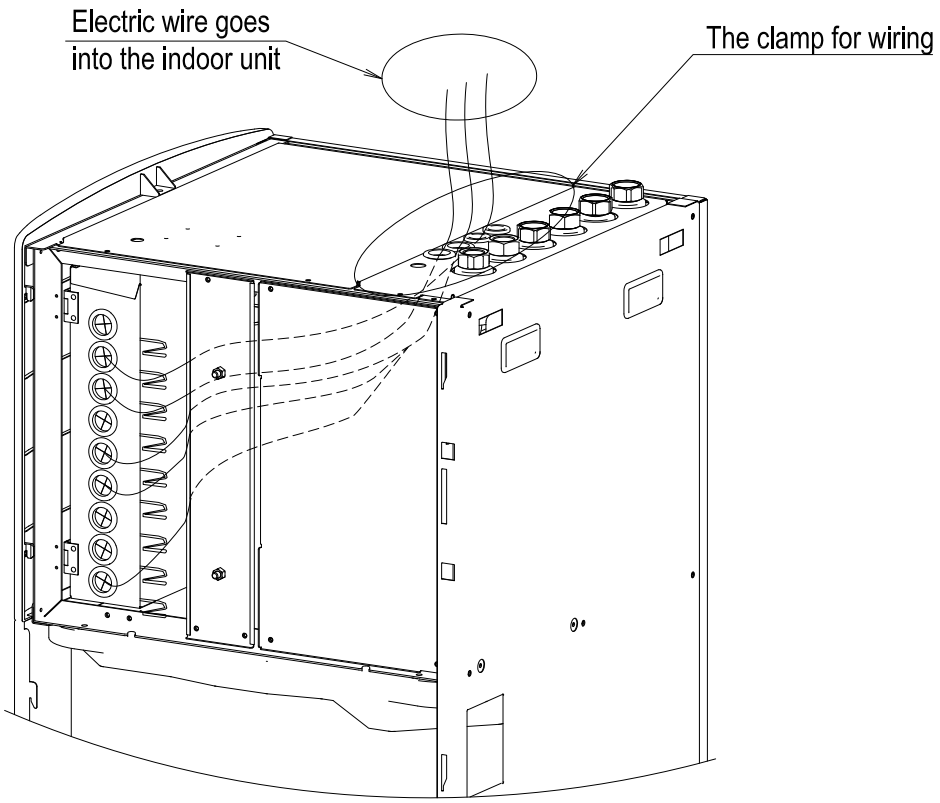
(8) *For the installation of power cord, the earth wire must be longer than the current-carrying conductor.*

10.2 WIRING

1. The electrical box inner wiring and wire fixing shall be operated as shown below.



2. The wiring route outside electrical box, as below.

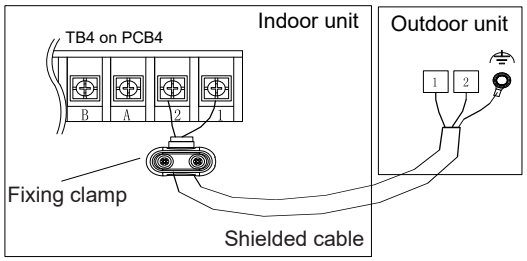


All wires shall be firmly fixed with fixing clamps, and ensure that each wire is reliably grounded.

10.3 TERMINAL BOARD CONNECTIONS

10.3.1 Indoor / outdoor transmission wiring

- The transmission is wired to terminals 1-2.
- The shielding layer shall be grounded.



- Use twist pair wires (0.75 mm²) for transmission wiring between outdoor unit and indoor unit. The wiring must consist of 2-core wires (Do not use wire with more than 3 cores).
- Use shielded wires for transmission wiring to protect the units from noise interference, with a length of less than 300 m and a size in compliance with local codes.
- In the event that a conduit tube for field-wiring is not used, fix rubber bushes to the panel with adhesive.

⚠ CAUTION

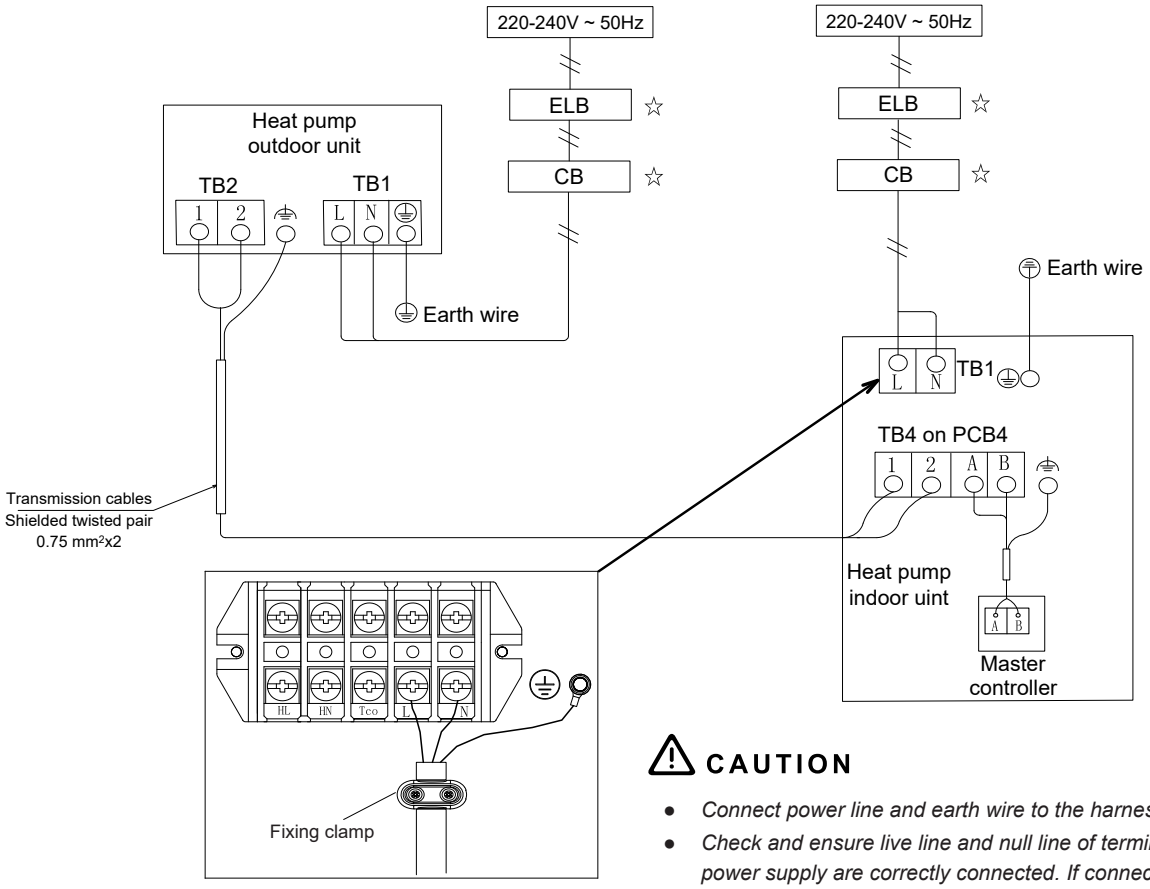
Ensure that the transmission wiring is not wrongly connected to any live part that could damage the PCB.

10.3.2 Terminal board 1 (Main power supply)

The main power supply connection is wired to the Terminal board (TB1) as follows:

TB: Terminal board
CB: Air circuit breaker
ELB: Earth leakage breaker

: Power supply cables
: Transmission cables
☆ : Field supplied, not contained in the indoor unit



⚠ CAUTION

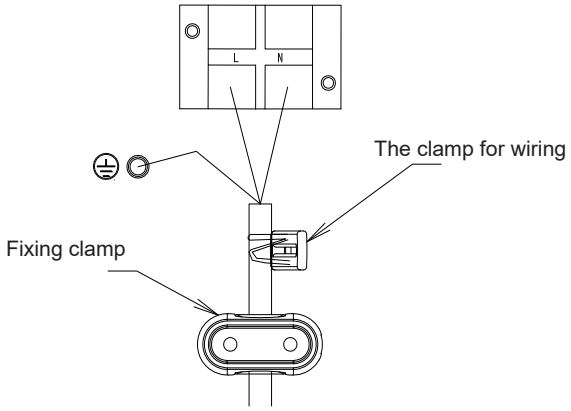
- *Connect power line and earth wire to the harness.*
- *Check and ensure live line and null line of terminal boards in power supply are correctly connected. If connected incorrectly, some parts may be damaged.*

10.3.3 Terminal board 6 (Auxiliary electric heater)

The power supply for the auxiliary heater should be provided separately.

The power supply connection for auxiliary electric heater is wired to the Terminal board 6 (TB6) as follows:

Single-Phase:



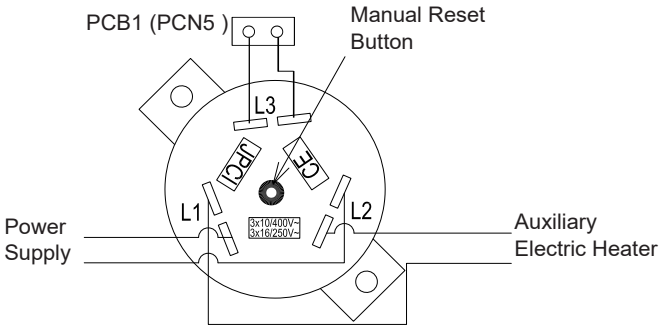
CAUTION

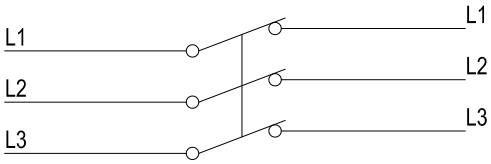
- *Connect power line and earth wire to the harness.*
- *Check and ensure live line and null line of terminal boards in power supply are correctly connected. If connected incorrectly, some parts may be damaged.*

10.4 SAFETY THERMOSTAT

The safety thermostat is shown as below :

Single-Phase:

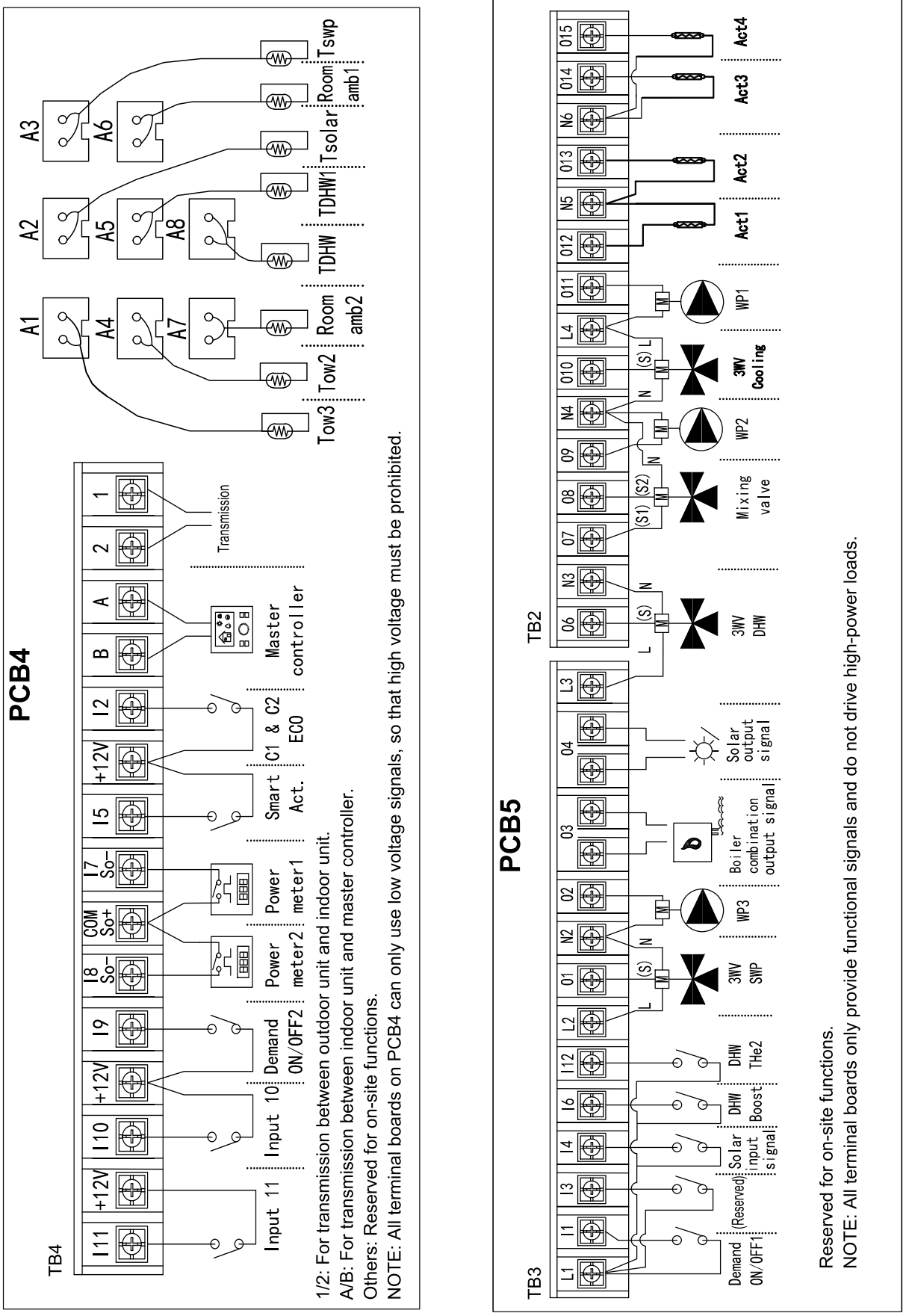




NOTE

- The safety thermostat directly cuts off the power supply of auxiliary electric heater when the temperature exceeds the cut-off value,and the unit will alarm.
- Cut-off temperature: 85 ± 5°C.
- When the temperature is below 40°C, press the manual reset button to reset.

10.5 OPTIONAL INDOOR UNIT WIRING (ACCESSORIES)



NOTE

Inputs and outputs printed on the board are the setting before shipment options. By means of the master controller, some other inputs and output functions can be configured and used.

Input - Setting before shipment

Mark	Description	Default settings	Available input codes	Terminals	Specification
I1	Input 1	i - 08 (Demand ON/OFF 1)	i - 00~17 (Except i - 07/12)	I1, L1 on TB3	Closed/Open 220-240V ~ 50Hz
I2	Input 2	i - 13 (Cycle 1 and 2 ECO mode)	i - 00~17 (Except i - 07/12)	I2, +12V on TB4	Closed/Open 12V DC
I3	Input 3	i - 00 (No function)	i - 00~17 (Except i - 07/12)	I3, L3 on TB3	Closed/Open 220-240V ~ 50Hz
I4	Input 4	i - 04 (Solar in)	i - 00~17 (Except i - 07/12)	I4, L3 on TB3	Closed/Open 220-240V ~ 50Hz
I5	Input 5	i - 02 (Smart Act.)	i - 00~17 (Except i - 07/12)	I5, +12V on TB4	Closed/Open 12V DC
I6	Input 6	i - 06 (DHW Boost)	i - 00~17 (Except i - 07/12)	I6, L3 on TB3	Closed/Open 220-240V ~ 50Hz
I7	Input 7	i - 07 (Power meter 1)	i - 00~17	I7, COM on TB4	Closed/Open 12V DC
I8	Input 8	i - 12 (Power meter 2)	i - 00~17	I8, COM on TB4	Closed/Open 12V DC
I9	Input 9	i - 09 (Demand ON/OFF 2)	i - 00~17 (Except i - 07/12)	I9, +12V on TB4	Closed/Open 12V DC
I10	Input 10	i - 00 (No function)	i - 00~17 (Except i - 07/12)	I10, +12V on TB4	Closed/Open 12V DC
I11	Input 11	i - 00 (No function)	i - 00~17 (Except i - 07/12)	I11, +12V on TB4	Closed/Open 12V DC

⚠ CAUTION

Functions i - 05(Forced Heating/Cooling) /Functions i - 10(Forced heating)/Functions i - 11(Forced cooling) cannot be used at the same time.

Input - All input codes descriptions:

Input codes	Mark	Description
i - 00	No Function	-
i - 02	Smart Act./ SG Ready Input 1	This function must be used to stop or limit the heat pump and Auxiliary electric heater when restricted by Electric company. It allows an external Smart switch device to switch off or reduce consumption of the heat pump and Auxiliary electric heater during time of peak electricity demand. In case of using Smart Grid application, this input is used as a digital input 1 and allows four different operating modes.
i - 03	Swimming pool Demand ON/OFF	Optional input signal can be configured as function of “Swimming pool Demand ON/OFF” to operate SWP. Switch ON/OFF of SWP can also be controlled by master controller. Closed: Start SWP operation (Switch ON and Demand ON) Open: Stop SWP operation (Switch OFF and Demand OFF)
i - 04	Solar in	In case of combining Unit with solar panels, this input is used as a feedback for solar station ready operation. Closed: Solar in ON to trigger solar pump operation ON Open: Solar in OFF to trigger solar pump operation OFF
i - 05	Forced Heating/Cooling	Heating/cooling can be changed by an input of an external contact signal. Heating/cooling can also be changed over by master controller. Closed: Heating mode Open: Cooling mode
i - 06	DHW Boost	With this function enabled, it is possible to request a heating up of the DHW when user requires an instantaneous delivery of DHW. Triggering input signal can also Switch ON DHW.
i - 07	Power meter 1	Input used as kW/h pulse count for Energy data recording, used to count energy data or the total energy data.
i - 08	Demand ON/OFF 1	Optional input signal can be configured as function of “Demand ON/OFF 1” or “Demand ON/OFF 2” and selected as room thermostat. Closed: Corresponding room thermostat Switch ON and Thermo ON. Open: Corresponding room thermostat Switch OFF and Thermo OFF. Corresponding room thermostat can also be Switch ON/OFF by Rooms function on Master controller.
i - 09	Demand ON/OFF 2	
i - 10	Forced heating	Forced Heating mode by input of contact signal, Heating can also be changed over by master controller. Closed: Forced Heating mode Open: No action
i - 11	Forced cooling	Forced Cooling mode by input of contact signal, Cooling can also be changed over by master controller. Closed: Forced Cooling mode Open : No action
i - 12	Power meter 2	Input used as kW/h pulse count for Energy data recording, used to count energy data or the total energy data.
i - 13	Cycle 1 and 2 ECO mode	Cycle 1 and Cycle 2 Water ECO offset. Current water temperature setting is reduced or increased by the indicated parameter in space heating mode or space cooling mode. Closed: Cycle 1 and Cycle 2 Water ECO offset enabled Open: Cycle 1 and Cycle 2 Water ECO offset disabled
i - 14	Cycle 1 ECO mode	Cycle 1 Water ECO offset. Current water temperature setting is reduced or increased by the indicated parameter in space heating mode or space cooling mode. Closed: Cycle 1 Water ECO offset enabled Open: Cycle 1 Water ECO offset disabled
i - 15	Cycle 2 ECO mode	Cycle 2 Water ECO offset. Current water temperature setting is reduced or increased by the indicated parameter in space heating mode or space cooling mode. Closed: Cycle 2 Water ECO offset enabled Open: Cycle 2 Water ECO offset disabled
i - 16	Force OFF	Force OFF the unit include Water Cycle 1, Water Cycle 2, DHW and SWP. Switch ON/OFF of different function can also be controlled by master controller. Closed: Forced OFF the unit include Water Cycle 1, Water Cycle 2, DHW and SWP. Open: No action
i - 17	SG Ready Input 2	In case of using Smart Grid application, this input is used as a digital input 2 and allows four different operating modes.

Output - Setting before shipment

Mark	Description	Default settings	Available output codes	Terminals		Specification
O1	Output 1	o - 01 (3WV SWP)	o - 00 ~ 31 (Except o - 02/08/17/21)	Power supply	L2, N6 on TB3	ON/OFF 220-240V ~ 50Hz Max. 1A
				Signal line	O1 on TB3	
O2	Output 2	o - 02 (WP3)	o - 00 ~ 31 (Except o - 17)	O2, N2 on TB2		ON/OFF 220-240V ~ 50Hz Max. 1A
O3	Output 3	o - 03 (Boiler combination)	o - 00 ~ 31 (Except o - 02/08/17/21)	O3 on TB2		Free voltage
O4	Output 4	o - 04 (Solar out)	o - 00 ~ 31 (Except o - 02/08/17/21)	O4 on TB3		Free voltage
O5	Output 5	o - 17 (DHW Electric Heater)	o - 00 ~ 31	HL, HN on TB1		ON/OFF 220-240V ~ 50Hz Max. 15A
O6	Output 6	o - 18 (3WV DHW)	o - 00 ~ 31 (Except o - 02/08/17/21)	Power supply	L2, N6 on TB3	ON/OFF 220-240V ~ 50Hz Max. 1A
				Signal line	O6 on TB3	
O7	Output 7	o - 19 (Mixing valve Close)	o - 00 ~ 31 (Except o - 02/08/17/21)	O7, N4 on TB2		ON/OFF 220-240V ~ 50Hz Max. 1A
O8	Output 8	o - 20 (Mixing valve Open)	o - 00 ~ 31 (Except o - 02/08/17/21)	O8, N4 on TB2		ON/OFF 220-240V ~ 50Hz Max. 1A
O9	Output 9	o - 21 (WP2)	o - 00 ~ 31 (Except o - 17)	O9, N1 on TB2		ON/OFF 220-240V ~ 50Hz Max. 1A
O10	Output 10	o - 22 (3WV Cooling)	o - 00 ~ 31 (Except o - 02/08/17/21)	Power supply	L1, N5 on TB3	ON/OFF 220-240V ~ 50Hz Max. 1A
				Signal line	O10 on TB3	
O11	Output 11	o - 08 (WP1)	o - 00 ~ 31 (Except o - 17)	O11, N1 on TB2		ON/OFF 220-240V ~ 50Hz Max. 1A
O12	Output 12	o - 23 (Act1)	o - 00 ~ 31 (Except o - 02/08/17/21)	O12, N2 on TB2		ON/OFF 220-240V ~ 50Hz Max. 1A
O13	Output 13	o - 24 (Act2)	o - 00 ~ 31 (Except o - 02/08/17/21)	O13, N3 on TB2		ON/OFF 220-240V ~ 50Hz Max. 1A
O14	Output 14	o - 25 (Act3)	o - 00 ~ 31 (Except o - 02/08/17/21)	O14, N3 on TB2		ON/OFF 220-240V ~ 50Hz Max. 1A
O15	Output 15	o - 26 (Act4)	o - 00 ~ 31 (Except o - 02/08/17/21)	O15, N4 on TB2		ON/OFF 220-240V ~ 50Hz Max. 1A

Output - All output codes descriptions:

Output codes	Mark	Description
o - 00	No Function	-
o - 01	3WV SWP	In case of combining Unit with swimming pool, this output is used to drive 3-way valve diverting to the swimming pool heat exchanger. Output ON signal when swimming pool function is operating.
o - 02	WP3	In case of combining Unit with hydraulic separator, this output is used to drive relay of water pump 3.
o - 03	Boiler combination	In case of combining Unit with boiler, this output is used to Start/Stop it.
o - 04	Solar out	In case of combining Unit with solar panel, this output is used to drive relay of solar pump.
o - 05	Alarm signal	Output ON signal when an Alarm Code occurs.
o - 06	SWP signal	Output ON signal in case that Swimming pool function is demand ON.
o - 07	Cooling signal	Output ON signal in case that Space Cooling is Thermo-ON.
o - 08	WP1	In case of the pipeline connected to the unit is long leading to low water flow rate, this output is used to drive relay of an extra WP1 that can be cascaded with inside EC WP1 to offer additional hydraulic head. The extra WP1 works equally with inside EC WP1.
o - 09	Heating signal	Output ON signal in case that Space Heating is Thermo-ON.
o - 10	DHW signal	Output ON signal in case that DHW is demand ON or DHW Electric Heater is ON.
o - 11	Solar overheat	Output ON signal in case that solar panels overheat protection is activated.
o - 12	Defrost	Output ON signal in case that the outdoor unit is defrosting.
o - 13	DHW pump	Output ON signal to drive relay of a re-circulation pump in case of re-circulation pump is available for DHW tank.
o - 14	Heater relay 1	Copy ON/OFF signal of Auxiliary electric heater output terminal 1.
o - 15	Heater relay 2	Copy ON/OFF signal of Auxiliary electric heater output terminal 2.
o - 16	c1 water ON/OFF	Output ON signal in case that Water Cycle1 switch ON.
o - 17	DHW Electric Heater	Output ON signal in case the DHW Electric Heater is Enabled and meet the ON conditions.
o - 18	3WV DHW	In case of combining Unit with DHW, this output is used to drive 3-way valve diverting to the sanitary tank inner coil. Output ON signal when DHW function is operating.
o - 19	Mixing valve Close	Mixing valve has two operation terminals of closing valve and opening valve. Optional output signal need be configured as function of "Mixing valve Close" and "Mixing valve Open" to drive mixing valve.
o - 20	Mixing valve Open	
o - 21	WP2	When Water Cycle 2 is available Optional Output signal need be configured to drive relay of water pump 2.
o - 22	3WV Cooling	In case of combining Unit with cooling fan coil, this output is used to drive 3-way valve diverting to cooling fan coil. Output ON signal when space cooling is operating.
o - 23	Act1	Room actuators, output ON signal in case the corresponding Room Thermostat is Thermo ON (heating and cooling). When the following conditions are met, Room actuators also Output ON: ① Air purge ② Anti-freezing ③ Screed Drying ④ Retry operation due to anti freezing (alarm-8F) ⑤ Outdoor Unit defrost without Room Thermostat Thermo ON ⑥ Overrun after requiring OFF
o - 24	Act2	
o - 25	Act3	
o - 26	Act4	
o - 27	Act5	
o - 28	Act6	
o - 29	Act7	
o - 30	WPc1	When Water Cycle 1 is available Optional Output signal can be configured to drive relay of exclusive water pump of Water Cycle 1..
o - 31	3WV DHW2	Output opposite control signal compared to the output signal of o-18 (3WV DHW), used for controlling the SPDT 3WV of DHW function.

Auxiliary sensor - Setting before shipment

Mark	Description	Default settings	Available auxiliary sensor codes
A1	Auxsensor 1	a - 01 (Tow3)	a - 00 ~ 14
A2	Auxsensor 2	a - 03 (Tsolar)	a - 00 ~ 14
A3	Auxsensor 3	a - 02 (Tswp)	a - 00 ~ 14
A4	Auxsensor 4	a - 05 (Tow2)	a - 00 ~ 14
A5	Auxsensor 5	a - 14 (TDHW1)	a - 00 ~ 14
A6	Auxsensor 6	a - 07 (Room_amb1)	a - 00 ~ 14
A7	Auxsensor 7	a - 08 (Room_amb2)	a - 00 ~ 14

Auxiliary sensor codes - All Auxiliary sensor codes descriptions:

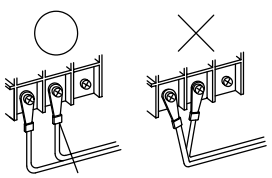
Auxiliary sensor codes	Mark	Description
a - 00	No Function	-
a - 01	Tow3	This sensor is used in case to combine Unit with hydraulic separator to detect Hot water temperature detection of hydraulic separator .
a - 02	Tswp	In case of combining Unit with swimming pool, this sensor is used to detect swimming pool water temperature.
a - 03	Tsolar	In case of combining Unit with solar panels, this sensor is used to Detect Hot water temperature of solar panels .
a - 04	Ta_ao	Optional Second Outdoor Ambient Temperature sensor accessory can be connected to the Auxiliary sensor in case that the heat pump is located in a non-suitable position for this measurement.
a - 05	Tow2	When Water Cycle 2 is available, auxiliary sensor need be configured as function of “Tow2” to detect outlet water temperature of Water Cycle 2.
a - 06	duty	Used to detect duty signal when duty signal control is Enabled, the duty signal type can be 0-10V, 0-5V or 10-20mA.
a - 07	Room_amb1	Rooms function on master controller is selected as room thermostat, and in this scenario, auxiliary sensor can be configured as function of “Room_amb1-7”, and can be selected as room temperature detection of specific room.
a - 08	Room_amb2	
a - 09	Room_amb3	
a - 10	Room_amb4	
a - 11	Room_amb5	
a - 12	Room_amb6	
a - 13	Room_amb7	
a - 14	TDHW1	The sensor of TDHW1 is auxiliary sensor to detect tank water temperature of lower side.

⚠ DANGER

- ***Do not connect or adjust any wiring or connections unless the main power switch is OFF.***
- ***When using more than one power source, check and ensure that all of them are turned OFF before operating the indoor unit.***
- ***Avoid wiring installation in contact with the refrigerant pipes, water pipes, edges of plates and electrical components inside the unit to prevent damage, which may cause electric shock or short circuit.***

⚠ CAUTION

- *After changing the input settings, output settings and auxiliary sensor settings on the master controller, it needs to be powered off and on again to take effect.*
- *Use a dedicated power circuit for the indoor unit. Do not use a power circuit shared with the outdoor unit or any other appliance.*
- *Make sure that all wiring and protection devices are properly selected, connected, identified and fixed to the corresponding terminals of the unit, specially the protection (earth) and power wiring, taking into account the applicable national and local regulations. Establish proper earthing. Incomplete earthing may cause electric shock.*
- *Protect the indoor unit against the entry of small animals (like rodents) which could damage the drain pipe and any internal wire or any other electrical part, leading to electric shock or short-circuit.*
- *Keep a distance between each wiring terminal and attach insulation tape or sleeve as shown in the figure.*



Tape or sleeve

10.6 SETTING OF DIP SWITCHES ON PCB1

NOTE

- *The mark "■" indicates the dip switches positions.*
- *No mark "■" indicates pin position is not affected.*
- *The figures show the settings before shipment or after selection.*
- *"Not used" means that the pin must not be changed. A malfunction might occur if changed.*

CAUTION

Before setting dip switches, first turn the power supply OFF and then set the position of dip switches. If the switches are set without turning the power supply OFF, the contents of the setting are invalid.

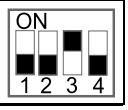
(1) DSW1: Unit model setting

No setting is required.

Integra


(2) DSW2: Unit capacity setting

Setting is required.

Setting before shipment	

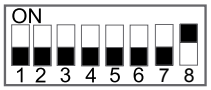
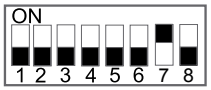
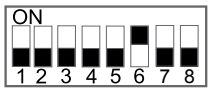
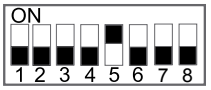
The DSW2 needs to be set according to the outdoor unit capacity as below.

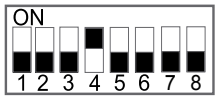
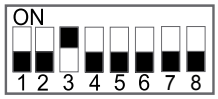
OUTDOOR UNIT CAPACITY	050	080	100
SETTING			

(3) DSW3: Additional setting

Setting before shipment	
ON: Cancel 9C alarm (Water pressure abnormality)	
Anti-freezing settings ON: Whole water cycle does anti-freezing. OFF: Only primary cycle does anti-freezing.	

(4) DSW4: Additional setting

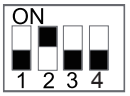
Setting before shipment	
Water pump forced ON	
Auxiliary electric heater forced OFF	
ON: Anti-freezing enabled OFF: Anti-freezing disabled	
Water pump mode when Thermo OFF ON: Operate periodically OFF: Operate constantly	

Manual emergency setting ON: Manual emergency enabled OFF: Manual emergency disabled	
DHW electric heater allowance setting ON: DHW electric heater cancel forced OFF OFF: DHW electric heater forced OFF	
DHW 3-way valve forced ON	
Start air purge	

(5) DSW5: Additional setting

Setting before shipment	
ON: Cancel 8D/51 alarm (Water pressure abnormality)	
ON: WP3 operates in cooling mode	
ON: Cancel alarm of thermistor Tow2	

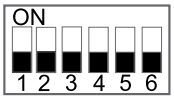
(6) DSW7: Additional setting

Setting before shipment	
ON: Default OFF: Cancel alarm of water flow sensor	
ON: Cancel alarm of thermistor Tow3	

(7) DSW8: Refrigeration system No. setting

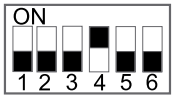
Setting is required.

Use binary encoding method. Before shipment are all OFF.



Max No.63 are available to set when all the equipment are connected to corresponding Central Control System.

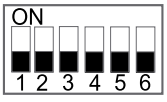
Ex: Set refrigeration system No. as 8.



Calculation in binary:$8=0\times2^{(1-1)}+0\times2^{(2-1)}+0\times2^{(3-1)}+1\times2^{(4-1)}+0\times2^{(5-1)}+0\times2^{(6-1)}$

(8) DSW9: Indoor unit No. setting.

No setting is required.

Setting before shipment	

11. TEST RUN

NOTE

NEVER operate the unit without careful inspection.

11.1 CHECKLIST BEFORE TEST RUN

Do NOT operate the system before the following checks are OK:

You have read the complete installation instructions of outdoor unit, indoor unit and master controller carefully.	☐
The **indoor unit** is properly mounted.	☐
The **outdoor unit** is properly mounted.	☐
The following field wiring has been carried out according to this document and the applicable legislation: ▪ Between the local power supply and the outdoor unit ▪ Between indoor unit and outdoor unit ▪ Between the local power supply and the indoor unit ▪ Between the indoor unit and the valves (if applicable) ▪ Between the indoor unit and the room thermostat (if applicable) ▪ Between the indoor unit and the DHW tank (if applicable)	☐ ☐ ☐ ☐ ☐ ☐ ☐
The system is properly **earthed** and the earth terminals are tightened.	☐
The **fuses** or locally installed protection devices are installed according to this document, and have NOT been bypassed.	☐
The **power supply voltage** matches the voltage on the **Nameplate** of the unit.	☐
There are NO **loose connections** or damaged electrical components in the electrical box.	☐
There are NO **damaged components** or **squeezed pipes** on the inside of the indoor and outdoor units.	☐
Only for DHW tank with **electric heater**: **Temperature protection switch (Auto restore)** has been already wired. **Temperature protection switch / Temperature fuse** has been already wired.	☐
The **water pipes** are thermally insulated.	☐
The correct pipe size of **refrigerant pipes** are installed and the **pipes** are properly insulated.	☐
There is NO **water leakage** inside the indoor unit.	☐
The **shut-off valves** are properly installed and fully open.	☐
The **air purge valve** is open.	☐
The **safety valve** purges water when open.	☐
The **minimum water volume** is guaranteed in all conditions. See “Check Water Volume” under section 9.3 “WATER FILLING”.	☐
The **DHW tank** is filled completely.	☐

CAUTION

- *The unit starts only when all check points are cleared up.*
- *Pay attention when system is running:*

  (A) Do not touch any parts of discharge pipelines, because the discharge temperature of compressor can be more than 90°C.

  (B) Do not press AC contactor button, otherwise serious accident may be caused.
- *Do not touch any electrical components in 10 minutes after main power supply is cut off.*

11.2 CHECKLIST DURING TEST RUN

The **minimum flow rate** during electric heater/defrost operation is guaranteed in all conditions. See section “9.2 REQUIREMENTS AND RECOMMENDATIONS FOR HYDRAULIC CIRCUIT” and “9.3 WATER FILLING”.	☐
To perform **an air purge**.	☐
To perform **a test run**.	☐
To perform **an actuator test run**.	☐
Underfloor screed drying function The underfloor screed drying function is started (if necessary).	☐

CAUTION

- *When performing test run of floor heating, higher temperature in indoor unit (up to 55 °C) will damage floors due to expansion and contraction. Recommend it is within 30 minutes.*
- *Use the controller to start test run (refer to the manual of master controller).*
- *It is normal that after indoor unit is energized, it may directly enter anti-freezing running mode, and water pump automatically runs if outdoor temperature is very low.*

11.3 CHECK THE MINIMUM FLOW RATE

1	Check the hydraulic configuration to find out which space heating loops can be closed by mechanical, electronic, or other valves.	—
2	Close all space heating loops that can be closed.	—
3	Start the pump test run . See setting of DSW4-8 in section “10.6 SETTING OF DIP SWITCHES ON PCB1” .	—
4	Read out the flow rate and modify the bypass valve setting to reach the minimum required flow rate + 2L/min.	—

12. HI-CUBE APPLICATION

12.1 STATEMENT

To ensure that you understand the product complies with information security standards and regulatory requirements, please scan the QR code below to download and view the statement of information security compliance for the heat pump.

12.2 MAIN FEATURES

- USB Plug-and-Play Configuration: Quickly import or export configuration files using a single USB to optimize the entire setup process during commissioning, enabling fast and accurate configuration and quick identification of issues during maintenance.
- Fault Diagnosis: Network connection or not, it can store up to 6 months of working logs locally, automatically latch all key data within 1 hour before the alarm, and support USB export for viewing, and can be used for running status assessment or accurate fault diagnosis.
- Energy Consumption Storage: When the network is successfully connected, it can store up to 10 years of energy consumption data locally, and can be exported via USB, which is convenient to view historical energy consumption.
- Connect to Third-party Systems: RS485 communication interface is reserved to support the interconnection of third-party systems through the Modbus-RTU protocol to meet the needs of remote control and status viewing of other systems.
- USB Update: Reserve the charging port of the power bank, and support the upgrade anytime and anywhere via USB in locations that are not immediately connected to the power supply, such as warehouses and others.
- Ethernet and WLAN connection: Different from the above local functions, Hi-Cube supports the use of Bluetooth for fast network configuration, supports 2.4G/5GHz dual-band wireless access routing, and when the signal is poor, it also supports wired connection.

12.3 QUICK GUIDE

12.3.1 App download

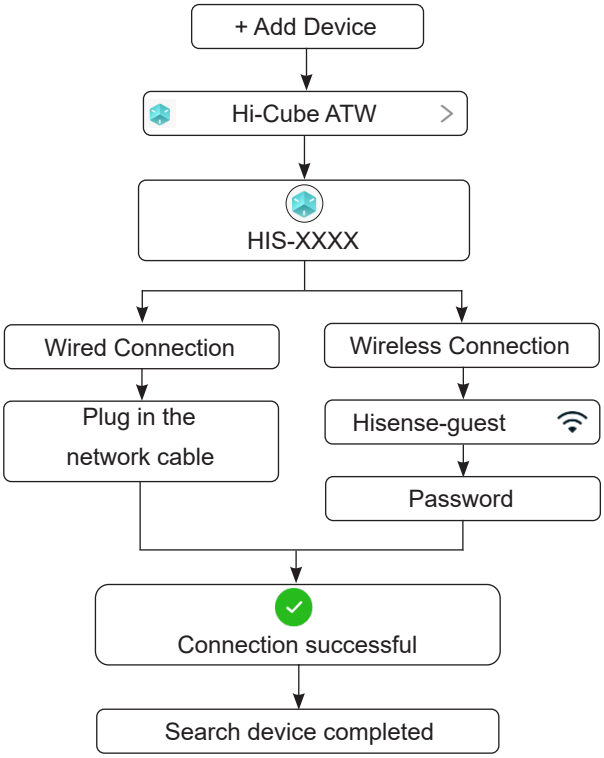
Search and install Hi-Mit II App from Google Play or Apple Store. For more detailed operation guide, please scan the QR code below to download the user manual.

12.3.2 Register an account and log in

Open the Hi-Mit II App, follow the prompts, fill in an email address and verification code, then enter the correct personal information, complete the registration and log in.

12.3.3 Configure the network and Add devices

Follow the steps or prompts below to operate in sequence:



NOTE

- *XXXX is the last four characters of WiFi ID.*
- *Taking the example of hisense guest, enter the router SSID and password to be connected.*

12.3.4 Precautions

1. Be sure to enter the correct country/region, otherwise may not be able to connect to the network or the time of the exported data will not be precise.

2. If the network cable is plugged in, it automatically switches to a wired connection, regardless of the current configuration.

3. If the refrigerant cycle No. or indoor unit address changes, the App needs to remove the device and add it again.

4. If the WiFi signal is poor, may lead to unstable control or untimely data reporting, please make on-site improvements, such as updating to a wired connection.

5. Be sure that the router has Internet access and is not restricted, otherwise debugging is not available.

13. MAIN SAFETY DEVICE

Unit				AHS-100HCWBAA-23
For auxiliary electric heaters	Manual reset safety thermostat		°C	Cut-out: 85°C±5°C
For water circulation	Fuse capacity		A	25
	Low water pressure protection		Condition 1	Pw<0.3Bar for 180 seconds
	High water pressure protection		Condition 2	Pw>4.0Bar for 180 seconds
For the control circuit	Fuse capacity		A	10 (Inside PCB1,EFR1)
For DHW Electric Heater	Fuse capacity		A	25
	Manual reset safety thermostat		°C	Cut-out: 85°C±5°C
DHW tank	Temperature Pressure valve	Max. water pressure	bar	6
		Max. water temperature	°C	90±5

14. TECHNICAL PARAMETERS

For space heating

Technical parameters

Model(s):	Outdoor unit:	AHW-050HCPB1
	Indoor unit:	AHS-100HCWBAA-23
Air-to-water heat pump:		yes
Water-to-water heat pump:		no
Brine-to-water heat pump:		no
Low-temperature heat pump:		no
Equipped with a supplementary heater:		no
Heat pump combination heater:		no
Parameters shall be declared for		Low temperature application.
Parameters shall be declared for		average climate conditions.

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	4.90	kW	Seasonal space heating energy efficiency	ηs	200	%
Declared capacity for heating for part load at indoor temperature 20°C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = – 7 °C	Pdh	4.39	kW	Tj = – 7 °C	COPd	3.07	-
Tj = +2 °C	Pdh	2.63	kW	Tj = +2 °C	COPd	5.03	-
Tj = +7 °C	Pdh	1.71	kW	Tj = +7 °C	COPd	6.53	-
Tj = +12 °C	Pdh	1.71	kW	Tj = +12 °C	COPd	8.78	-
Tj =bivalent temperature	Pdh	4.39	kW	Tj =bivalent temperature	COPd	3.07	-
Tj = operation limit temperature	Pdh	4.96	kW	Tj = operation limit temperature	COPd	2.93	-
Tj = – 15 °C (if TOL < – 20 °C)	Pdh	-	kW	Tj = – 15 °C (if TOL < – 20 °C)	COPd	-	-
Bivalent temperature	Tbiv	-7	°C	Operation limit temperature	TOL	-10	°C
Cycling interval capacity for heating	Pcych	-	kW	Cycling interval efficiency	COPcyc	-	-
Degradation co-efficient (**)	Cdh	0.9	-	Heating water operating limit temperature	WTOL	-	°C

Power consumption in modes other than active mode				Supplementary heater			
Off mode	P_{OFF}	0.009	kW	Rated heat output (*)	Psup	0.00	kW
Thermostat-off mode	P_{TO}	0.010	kW				
Standby mode	P_{SB}	0.009	kW	Type of energy input		Electric	
Crankcase heater mode	P_{CK}	0	kW				

Other items							
Capacity control		variable		Rated air flow rate, outdoors		2870	m^3/h
Sound power level, indoors/outdoors	L_{WA}	44/53	dB				
Annual energy consumption	Q_{HE}	2019	kWh				

Contact details

Qingdao Hisense Hitachi Air-conditioning Systems Co., Ltd.

No. 218, Qianwangang Road, Economic and Technological Development Zone, Qingdao, China

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).

(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

Technical parameters

Model(s):	Outdoor unit:	AHW-080HCPB1
	Indoor unit:	AHS-100HCWBAA-23
Air-to-water heat pump:		yes
Water-to-water heat pump:		no
Brine-to-water heat pump:		no
Low-temperature heat pump:		no
Equipped with a supplementary heater:		no
Heat pump combination heater:		no
Parameters shall be declared for		Low temperature application.
Parameters shall be declared for		average climate conditions.

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	7.80	kW	Seasonal space heating energy efficiency	ηs	197	%
Declared capacity for heating for part load at indoor temperature 20°C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = – 7 °C	Pdh	6.98	kW	Tj = – 7 °C	COPd	3.20	-
Tj = +2 °C	Pdh	4.34	kW	Tj = +2 °C	COPd	4.79	-
Tj = +7 °C	Pdh	2.75	kW	Tj = +7 °C	COPd	6.70	-
Tj = +12 °C	Pdh	2.47	kW	Tj = +12 °C	COPd	8.29	-
Tj =bivalent temperature	Pdh	6.98	kW	Tj =bivalent temperature	COPd	3.20	-
Tj = operation limit temperature	Pdh	7.89	kW	Tj = operation limit temperature	COPd	2.88	-
Tj = – 15 °C (if TOL < – 20 °C)	Pdh	-	kW	Tj = – 15 °C (if TOL < – 20 °C)	COPd	-	-
Bivalent temperature	Tbiv	-7	°C	Operation limit temperature	TOL	-10	°C
Cycling interval capacity for heating	Pcych	-	kW	Cycling interval efficiency	COPcyc	-	-
Degradation co-efficient (**)	Cdh	0.9	-	Heating water operating limit temperature	WTOL	-	°C

Power consumption in modes other than active mode				Supplementary heater			
Off mode	P_{OFF}	0.009	kW	Rated heat output (*)	Psup	0.0	kW
Thermostat-off mode	P_{TO}	0.010	kW				
Standby mode	P_{SB}	0.009	kW	Type of energy input		Electric	
Crankcase heater mode	P_{CK}	0	kW				

Other items							
Capacity control		variable		Rated air flow rate, outdoors		3780	m^3/h
Sound power level, indoors/outdoors	L_{WA}	44/55	dB				
Annual energy consumption	Q_{HE}	3255	kWh				

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(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

Technical parameters

Model(s):	Outdoor unit:	AHW-100HCPB1
	Indoor unit:	AHS-100HCWBAA-23
Air-to-water heat pump:		yes
Water-to-water heat pump:		no
Brine-to-water heat pump:		no
Low-temperature heat pump:		no
Equipped with a supplementary heater:		no
Heat pump combination heater:		no
Parameters shall be declared for		Low temperature application.
Parameters shall be declared for		average climate conditions.

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	8.70	kW	Seasonal space heating energy efficiency	ηs	192	%
Declared capacity for heating for part load at indoor temperature 20°C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = – 7 °C	Pdh	7.72	kW	Tj = – 7 °C	COPd	3.10	-
Tj = +2 °C	Pdh	4.47	kW	Tj = +2 °C	COPd	4.67	-
Tj = +7 °C	Pdh	2.98	kW	Tj = +7 °C	COPd	6.61	-
Tj = +12 °C	Pdh	2.28	kW	Tj = +12 °C	COPd	7.95	-
Tj =bivalent temperature	Pdh	7.72	kW	Tj =bivalent temperature	COPd	3.10	-
Tj = operation limit temperature	Pdh	8.30	kW	Tj = operation limit temperature	COPd	2.84	-
Tj = – 15 °C (if TOL < – 20 °C)	Pdh	-	kW	Tj = – 15 °C (if TOL < – 20 °C)	COPd	-	-
Bivalent temperature	Tbiv	-7	°C	Operation limit temperature	TOL	-10	°C
Cycling interval capacity for heating	Pcych	-	kW	Cycling interval efficiency	COPcyc	-	-
Degradation co-efficient (**)	Cdh	0.9	-	Heating water operating limit temperature	WTOL	-	°C

Power consumption in modes other than active mode				Supplementary heater			
Off mode	P_{OFF}	0.009	kW	Rated heat output (*)	Psup	0.4	kW
Thermostat-off mode	P_{TO}	0.010	kW				
Standby mode	P_{SB}	0.009	kW	Type of energy input		Electric	
Crankcase heater mode	P_{CK}	0	kW				

Other items							
Capacity control		variable		Rated air flow rate, outdoors		3780	m^3/h
Sound power level, indoors/outdoors	L_{WA}	44/56	dB				
Annual energy consumption	Q_{HE}	3690	kWh				

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(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

Technical parameters

Model(s):	Outdoor unit:	AHW-050HCPB1
	Indoor unit:	AHS-100HCWBAA-23
Air-to-water heat pump:		yes
Water-to-water heat pump:		no
Brine-to-water heat pump:		no
Low-temperature heat pump:		no
Equipped with a supplementary heater:		no
Heat pump combination heater:		no
Parameters shall be declared for		Medium temperature application.
Parameters shall be declared for		average climate conditions.

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	4.90	kW	Seasonal space heating energy efficiency	ηs	147	%
Declared capacity for heating for part load at indoor temperature 20°C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = – 7 °C	Pdh	4.34	kW	Tj = – 7 °C	COPd	2.40	-
Tj = +2 °C	Pdh	2.64	kW	Tj = +2 °C	COPd	3.70	-
Tj = +7 °C	Pdh	1.78	kW	Tj = +7 °C	COPd	4.68	-
Tj = +12 °C	Pdh	1.62	kW	Tj = +12 °C	COPd	6.34	-
Tj =bivalent temperature	Pdh	4.34	kW	Tj =bivalent temperature	COPd	2.40	-
Tj = operation limit temperature	Pdh	4.79	kW	Tj = operation limit temperature	COPd	2.19	-
Tj = – 15 °C (if TOL < – 20 °C)	Pdh	-	kW	Tj = – 15 °C (if TOL < – 20 °C)	COPd	-	-
Bivalent temperature	Tbiv	-7	°C	Operation limit temperature	TOL	-10	°C
Cycling interval capacity for heating	Pcych	-	kW	Cycling interval efficiency	COPcyc	-	-
Degradation co-efficient (**)	Cdh	0.9	-	Heating water operating limit temperature	WTOL	-	°C

Power consumption in modes other than active mode				Supplementary heater			
Off mode	P_{OFF}	0.009	kW	Rated heat output (*)	Psup	0.1	kW
Thermostat-off mode	P_{TO}	0.010	kW				
Standby mode	P_{SB}	0.009	kW	Type of energy input		Electric	
Crankcase heater mode	P_{CK}	0	kW				

Other items							
Capacity control		variable		Rated air flow rate, outdoors		2870	m^3/h
Sound power level, indoors/outdoors	L_{WA}	44/53	dB				
Annual energy consumption	Q_{HE}	2703	kWh				

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(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

Technical parameters

Model(s):	Outdoor unit:	AHW-080HCPB1
	Indoor unit:	AHS-100HCWBAA-23
Air-to-water heat pump:		yes
Water-to-water heat pump:		no
Brine-to-water heat pump:		no
Low-temperature heat pump:		no
Equipped with a supplementary heater:		no
Heat pump combination heater:		no
Parameters shall be declared for		Medium temperature application.
Parameters shall be declared for		average climate conditions.

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	7.70	kW	Seasonal space heating energy efficiency	ηs	146	%
Declared capacity for heating for part load at indoor temperature 20°C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = – 7 °C	Pdh	6.82	kW	Tj = – 7 °C	COPd	2.34	-
Tj = +2 °C	Pdh	4.23	kW	Tj = +2 °C	COPd	3.61	-
Tj = +7 °C	Pdh	2.79	kW	Tj = +7 °C	COPd	4.89	-
Tj = +12 °C	Pdh	2.32	kW	Tj = +12 °C	COPd	6.30	-
Tj =bivalent temperature	Pdh	6.82	kW	Tj =bivalent temperature	COPd	2.34	-
Tj = operation limit temperature	Pdh	7.69	kW	Tj = operation limit temperature	COPd	2.06	-
Tj = – 15 °C (if TOL < – 20 °C)	Pdh	-	kW	Tj = – 15 °C (if TOL < – 20 °C)	COPd	-	-
Bivalent temperature	Tbiv	-7	°C	Operation limit temperature	TOL	-10	°C
Cycling interval capacity for heating	Pcych	-	kW	Cycling interval efficiency	COPcyc	-	-
Degradation co-efficient (**)	Cdh	0.9	-	Heating water operating limit temperature	WTOL	-	°C

Power consumption in modes other than active mode				Supplementary heater			
Off mode	P_{OFF}	0.009	kW	Rated heat output (*)	Psup	0.0	kW
Thermostat-off mode	P_{TO}	0.010	kW				
Standby mode	P_{SB}	0.009	kW	Type of energy input		Electric	
Crankcase heater mode	P_{CK}	0	kW				

Other items							
Capacity control		variable		Rated air flow rate, outdoors		3780	m^3/h
Sound power level, indoors/outdoors	L_{WA}	44/54	dB				
Annual energy consumption	Q_{HE}	4274	kWh				

Contact details
Qingdao Hisense Hitachi Air-conditioning Systems Co., Ltd.
No. 218, Qianwangang Road, Economic and Technological Development Zone, Qingdao, China

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

Technical parameters

Model(s):	Outdoor unit:	AHW-100HCPB1
	Indoor unit:	AHS-100HCWBAA-23
Air-to-water heat pump:		yes
Water-to-water heat pump:		no
Brine-to-water heat pump:		no
Low-temperature heat pump:		no
Equipped with a supplementary heater:		no
Heat pump combination heater:		no
Parameters shall be declared for		Medium temperature application.
Parameters shall be declared for		average climate conditions.

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	8.70	kW	Seasonal space heating energy efficiency	ηs	142	%
Declared capacity for heating for part load at indoor temperature 20°C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = – 7 °C	Pdh	7.70	kW	Tj = – 7 °C	COPd	2.23	-
Tj = +2 °C	Pdh	4.62	kW	Tj = +2 °C	COPd	3.41	-
Tj = +7 °C	Pdh	3.27	kW	Tj = +7 °C	COPd	4.99	-
Tj = +12 °C	Pdh	2.39	kW	Tj = +12 °C	COPd	6.53	-
Tj =bivalent temperature	Pdh	7.70	kW	Tj =bivalent temperature	COPd	2.23	-
Tj = operation limit temperature	Pdh	8.58	kW	Tj = operation limit temperature	COPd	1.96	-
Tj = – 15 °C (if TOL < – 20 °C)	Pdh	-	kW	Tj = – 15 °C (if TOL < – 20 °C)	COPd	-	-
Bivalent temperature	Tbiv	-7	°C	Operation limit temperature	TOL	-10	°C
Cycling interval capacity for heating	Pcych	-	kW	Cycling interval efficiency	COPcyc	-	-
Degradation co-efficient (**)	Cdh	0.9	-	Heating water operating limit temperature	WTOL	-	°C

Power consumption in modes other than active mode				Supplementary heater			
Off mode	P_{OFF}	0.009	kW	Rated heat output (*)	Psup	0.1	kW
Thermostat-off mode	P_{TO}	0.010	kW				
Standby mode	P_{SB}	0.009	kW	Type of energy input		Electric	
Crankcase heater mode	P_{CK}	0	kW				

Other items							
Capacity control		variable		Rated air flow rate, outdoors		3780	m^3/h
Sound power level, indoors/outdoors	L_{WA}	44/55	dB				
Annual energy consumption	Q_{HE}	4976	kWh				

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(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

For Domestic Hot Water heating

Technical parameters					
Model	Outdoor unit		AHW-050HCPB1	AHW-080HCPB1	AHW-100HCPB1
	Indoor unit		AHS-100HCWBAA-23		
Declared profile			XL	XL	XL
Average climate conditions					
Water heating energy efficiency(ηwh)		%	124	126	126
Daily energy consumption		kWh	6.14	6.01	6.01

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Qingdao Hisense Hitachi Air-conditioning Systems Co., Ltd.
Add.: No. 218, Qianwangang Road, Economic and Technological Development Zone, Qingdao, China
http://www.hisensehvac.com E-mail: hhexport@hisense.com

The Company is committed to continuous product improvement. We reserve the right, therefore, to alter the product information at any time and without prior announcement.

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