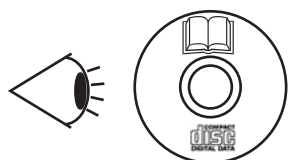


EN INSTALLATION AND OPERATION MANUAL
ES MANUAL DE INSTALACIÓN Y FUNCIONAMIENTO
DE INSTALLATIONS- UND BETRIEBSHANDBUCH
FR MANUEL D'INSTALLATION ET DE FONCTIONNEMENT
IT MANUALE D'INSTALLAZIONE E D'USO

PT MANUAL DE INSTALAÇÃO E DE FUNCIONAMENTO
DA INSTALLATIONS- OG BETJENINGSVEJLEDNING
NL INSTALLATIE- EN BEDIENINGSHANDLEIDING
SV INSTALLATION- OCH DRIFTHANDBOK
EL ΕΓΧΕΙΡΙΔΙΟ ΕΓΚΑΤΑΣΤΑΣΗΣ ΚΑΙ ΛΕΙΤΟΥΡΓΙΑΣ

YUTAKI M - Remote Control Box ATW-YMM-01



English

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

Whilst every effort is made to ensure that all specifications are correct, printing errors are beyond HITACHI's control; HITACHI cannot be held responsible for these errors.

Español

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

A pesar de que se hacen todos los esfuerzos posibles para asegurarse de que las especificaciones sean correctas, los errores de impresión están fuera del control de HITACHI, a quien no se hará responsable de ellos.

Deutsch

Bei den technischen Angaben in diesem Handbuch sind Änderungen vorbehalten, damit HITACHI seinen Kunden die jeweils neuesten Innovationen präsentieren kann.

Sämtliche Anstrengungen wurden unternommen, um sicherzustellen, dass alle technischen Informationen ohne Fehler veröffentlicht worden sind. Für Druckfehler kann HITACHI jedoch keine Verantwortung übernehmen, da sie außerhalb ihrer Kontrolle liegen.

Français

Les caractéristiques publiées dans ce manuel peuvent être modifiées sans préavis, HITACHI souhaitant pouvoir toujours offrir à ses clients les dernières innovations.

Bien que tous les efforts sont faits pour assurer l'exactitude des caractéristiques, les erreurs d'impression sont hors du contrôle de HITACHI qui ne pourrait en être tenu responsable.

Italiano

Le specifiche di questo manuale sono soggette a modifica senza preavviso affinché HITACHI possa offrire ai propri clienti le ultime novità.

Sebbene sia stata posta la massima cura nel garantire la correttezza dei dati, HITACHI non è responsabile per eventuali errori di stampa che esulano dal proprio controllo.

Português

As especificações apresentadas neste manual estão sujeitas a alterações sem aviso prévio, de modo a que a HITACHI possa oferecer aos seus clientes, da forma mais expedita possível, as inovações mais recentes.

Apesar de serem feitos todos os esforços para assegurar que todas as especificações apresentadas são correctas, quaisquer erros de impressão estão fora do controlo da HITACHI, que não pode ser responsabilizada por estes erros eventuais.

Dansk

Specifikationerne i denne vejledning kan ændres uden varsel, for at HITACHI kan bringe de nyeste innovationer ud til kunderne.

På trods af alle anstrengelser for at sikre at alle specifikationer er korrekte, har HITACHI ikke kontrol over trykfejl, og HITACHI kan ikke holdes ansvarlig herfor.

Nederlands

De specificaties in deze handleiding kunnen worden gewijzigd zonder verdere kennisgeving zodat HITACHI zijn klanten kan voorzien van de nieuwste innovaties.

Iedere poging wordt ondernomen om te zorgen dat alle specificaties juist zijn. Voorkomende drukfouten kunnen echter niet door HITACHI worden gecontroleerd, waardoor HITACHI niet aansprakelijk kan worden gesteld voor deze fouten.

Svenska

Specifikationerna i den här handboken kan ändras utan föregående meddelande för att HITACHI ska kunna leverera de senaste innovationerna till kunderna.

Vi på HITACHI gör allt vi kan för att se till att alla specifikationer stämmer, men vi har ingen kontroll över tryckfel och kan därför inte hållas ansvariga för den typen av fel.

Ελληνικά

Οι προδιαγραφές του εγχειριδίου μπορούν να αλλάξουν χωρίς προειδοποίηση, προκειμένου η HITACHI να παρέχει τις τελευταίες καινοτομίες στους πελάτες της.

Αν και έχει γίνει κάθε προσπάθεια προκειμένου να εξασφαλιστεί ότι οι προδιαγραφές είναι σωστές, η HITACHI δεν μπορεί να ελέγξει τα τυπογραφικά λάθη και, ως εκ τούτου, δεν φέρει καμία ευθύνη για αυτά τα λάθη.



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 a environmentally correct way.
- Contact to the corresponding authorities for more information.

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 el medio ambiente de acuerdo con los reglamentos locales o nacionales aplicables.
- Para obtener más información, póngase en contacto con las autoridades competentes.

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.
- Für weitere Informationen setzen Sie sich bitte mit den entsprechenden Behörden in Verbindung.

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 la réglementation locale ou nationale, dans le plus strict respect de l'environnement.
- Contactez les autorités correspondantes pour plus d'information..

AVVERTENZE

- Indicazioni per il corretto smaltimento del prodotto ai sensi della Direttiva Europea 2002/96/EC e Dlgs 25 luglio 2005 n.151
- Il simbolo del cassonetto barrato riportato sull'apparecchiatura indica che il prodotto alla fine della propria vita utile deve essere raccolto separatamente dagli altri rifiuti.
- L'utente dovrà, pertanto, conferire l'apparecchiatura giunta a fine vita agli idonei centri di raccolta differenziata 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.

CUIDADO

- O seu produto não deve ser misturado com os desperdícios domésticos de carácter geral no final da sua duração e que deve ser eliminado de acordo com os regulamentos locais ou nacionais adequados de uma forma correcta para o meio ambiente.
- Contacte as autoridades correspondentes para obter mais informações.

ADVASEL!

- At produktet ikke må smides ud sammen med almindeligt husholdningsaffald, men skal bortskaffes i overensstemmelse med de gældende lokale eller nationale regler på en miljømæssig korrekt måde.
- Kontakt de pågældende myndigheder for at få yderligere oplysninger.

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.
- Neem contact op met de betreffende overheidssdienst voor meer informatie.

FÖRSIKTIGHET

- Det innebär att produkten inte ska slängas tillsammans med vanligt hushållsavfall utan kasseras på ett miljövänligt sätt i enlighet med gällande lokal eller nationell lagstiftning.
- Ta kontakt med ansvarig myndighet om du vill ha mer information.

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.
- Για περισσότερες λεπτομέρειες, επικοινωνήστε με τις αντίστοιχες αρχές.

MODELS CODIFICATION	Important note: Please, check your product, according to the model name, how it is abbreviated and referred to in this Instruction Manual. This Instruction Manual is only related to the YUTAKI M Remote Control Box accessory (ATW-YMM-01).
CODIFICACIÓN DE MODELOS	Nota importante: Compruebe su dispositivo, de acuerdo con el nombre del modelo, su abreviatura y su referencia en este Manual de Instrucciones. Este Manual de Instrucciones hace referencia unicamente a la caja del mando a distancia de la unidad YUTAKI M (accesorio ATW-YMM-01).
MODELLCODES	Wichtiger Hinweis: Bitte überprüfen Sie anhand der Modellbezeichnung Ihr Produkt, wie es in diesem Bedienungshandbuch verwendet und abgekürzt wird. Dieses Bedienungshandbuch bezieht sich nur auf das Zubehör des YUTAKI M-Fernsteuerungskastens (ATW-YMM-01).
CODIFICATION DES MODÈLES	Remarque importante : Veuillez déterminer votre produit, d'après le nom du modèle et quelle est son abréviation et référence dans ce manuel d'instruction. Le présent manuel d'instructions ne concerne que le boîtier de la télécommande de la YUTAKI M (accessoire ATW-YMM-01).
CODIFICAZIONE DEI MODELLI	Nota importante: in base al nome del modello, verificare il prodotto in base a la descrizione e il tipo di abbreviazione utilizzati nel manuale di istruzioni. Il presente Manuale di istruzioni si riferisce solo all'accessorio quadro del controllo remoto YUTAKI M (ATW-YMM-01).
CODIFICAÇÃO DE MODELOS	Nota Importante: Verifique o seu produto, de acordo com o nome do modelo, a abreviatura e a correspondente referência neste manual de instruções. Este manual refere-se unicamente ao acessório da caixa do controlo remoto YUTAKI M (ATW-YMM-01).
MODELKODIFICERING	Vigtig information: Tjek venligst dit produkts type i henhold til modelnavnet, hvordan det er forkortet, og hvilken reference det har i denne vejledning. Denne vejledning er kun til YUTAKI M fjernbetjeningsboks tilbehør (ATW-YMM-01).
CODERING VAN DE MODELLEN	Belangrijke opmerking: Controleer aan de hand van de modelnaam hoe de naam wordt afgekort en hoe ernaar wordt verwezen in deze installatiehandleiding. Deze installatiehandleiding is alleen van toepassing op de YUTAKI M Afstandsbedieningsbox accessoire (ATW-YMM-01).
MODELLER	Viktigt! Kontrollera hur din produkts modellnamn förkortas och hur den anges i den här handboken. Denna hanbok gäller endast för YUTAKI M fjärrkontrollboxens tillbehör (ATW-YMM-01).
ΚΩΔΙΚΟΠΟΙΗΣΗ ΜΟΝΤΕΛΩΝ	Σημαντική σημείωση: Ελέγξτε, σύμφωνα με το όνομα μοντέλου, το προϊόν σας και με ποια σύντμηση δηλώνεται και αναφέρεται σε αυτό το εγχειρίδιο οδηγιών. Το εγχειρίδιο αυτό είναι μόνο για το εξάρτημα του κουτιού του τηλεχειριστήριου του YUTAKI M (ATW-YMM-01)

YUTAKI M - Remote Control Box - Caja del mando a distancia - Fernsteuerungskasten - Boîtier de la télécommande - Quadro del controllo remoto - Caixa do controlo remoto - Fjernbetjeningsboks - Afstandsbedieningsbox - Fjärrkontrollbox - Κουτί του τηλεχειριστήριου
1~ 230V 50Hz
Description - Descripción - Beschreibung - Description - Descrizione - Descrição - Beskrivelse - Beschrijving - Beskrivning - Περιγραφή
ATW-YMM-01


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EN	English	Original version
ES	Español	Versión traducida
DE	Deutsch	Übersetzte Version
FR	Français	Version traduite
IT	Italiano	Versione tradotta
PT	Português	Versão traduzida
DA	Dansk	Oversat version
NL	Nederlands	Vertaalde versie
SV	Svenska	Översatt version
EL	Ελληνικά	Μεταφρασμένη έκδοση

1 GENERAL INFORMATION

No part of this publication may be reproduced, copied, filed or transmitted in any shape or form without the permission of Johnson Controls-Hitachi Air Conditioning Spain, S.A.U.

Within the policy of continuous improvement of its products, Johnson Controls-Hitachi Air Conditioning Spain, S.A.U. reserves the right to make changes at any time without prior notification and without being compelled to introducing them into products subsequently sold. This document may therefore have been subject to amendments during the life of the product.

HITACHI makes every effort to offer correct, up-to-date documentation. Despite this, printing errors cannot be controlled by HITACHI and are not its responsibility.

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.

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 injuries an damage to the unit, the installation or the building or property.

Situations that jeopardise the safety of those in the surrounding area or that put the unit itself a risk will be clearly indicated in this manual.

To indicate these situations, a series of special symbols will be 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 and physical well-being.*
- *Not taking these instructions into account could lead to serious, very serious or even fatal injuries to you and others in the proximities of the unit.*

In the text following the danger symbol you can also find information on safe procedures during unit installation.

CAUTION

- *The text following this symbol contains information and instructions relating directly to your safety and physical well-being.*
- *Not taking these instructions into account could lead to minor injuries to you and others in the proximities of the unit.*
- *Not taking these instructions into account could lead to unit damage.*

In the text following the caution symbol you can also find information on safe procedures during unit installation.

NOTE

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

2.2 ADDITIONAL INFORMATION ABOUT SAFETY

DANGER

- *Do not pour water over the unit electrical parts. If the electrical components are in contact with water a serious electrical shock will take place.*
- *Do not open the service cover or access inside the Remote control box 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.*

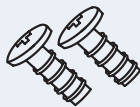
CAUTION

- *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 yourself. 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.*

3 IMPORTANT NOTICE

- The supplementary information about the purchased product is supplied in a CD-ROM, which can be found bundled with the YUTAKI M unit. In case that the CD-ROM is missing or it is not readable, please contact your HITACHI dealer or distributor.
- PLEASE READ THE MANUAL AND THE FILES ON THE CD-ROM CAREFULLY BEFORE STARTING TO WORK ON THE INSTALLATION OF THE REMOTE CONTROL BOX.** 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.
- Commissioning, Servicing and Main safety devices are explained in YUTAKI M technical documentation.
- Verify, in accordance with the manuals which appear in the unit, that all the information required for the correct installation of the system is included. If this is not the case, contact your distributor.
- HITACHI pursues a policy of continuous improvement in product design and performance. The right is therefore reserved to vary specifications without notice.
- HITACHI cannot anticipate every possible circumstance that might involve a potential hazard.
- No part of this manual may be reproduced without written permission.
- If you have any questions, contact your service contractor of HITACHI.
- 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 unit controller.
- This manual should be considered as a permanent part of the purchased product. It gives a common description and information of the product which you operate as well as for other equipment.

4 FACTORY-SUPPLIED UNIT COMPONENTS

Accessory	Image	Qty.	Purpose
Unit controller wire		1	Wire for the connection between YUTAKI M Remote control box with the Unit controller (PC-ARFHE).
Screws		2	These two screws are to assembly the Unit controller to the Remote control box front cover.
Caps		2 + 1	To be placed at the front cover to fill the holes when unit controller not attached to the Remote control box

Accessory	Image	Qty.	Purpose
Installation Manual		1	The latest revision of the Remote control box technical documentation

NOTE

- The previous accessories are supplied inside the unit.
- If some of these accessories are not packed with the unit or any damage to the unit is detected, please contact your dealer.

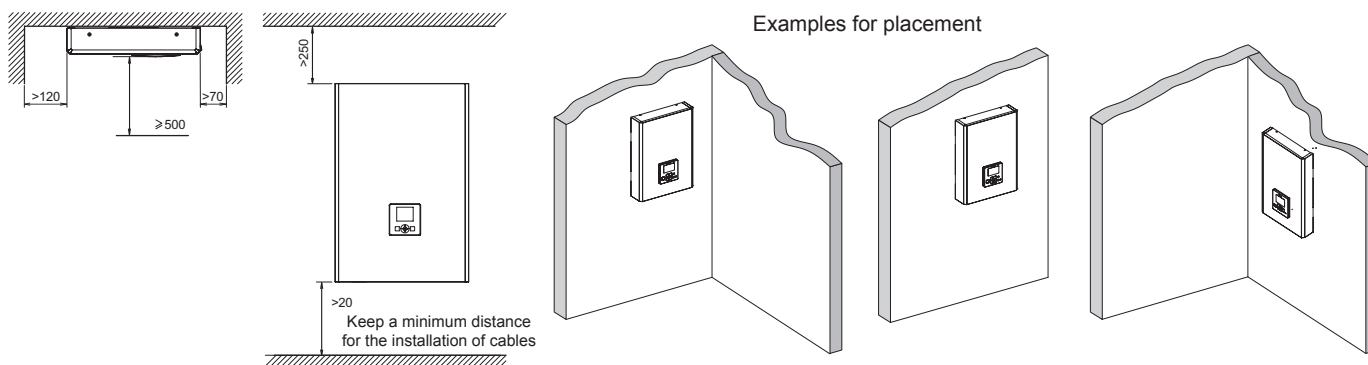
5 GENERAL DATA

Item	Units	Description
Power supply	V	1~230V / 50Hz
Max Input	kW	3.2
Dimensions (HxWxD)	mm	490 x 360 x 100
Weight (Gross/Net)	Kg	6.15/5.45
Mounting conditions	-	Indoor

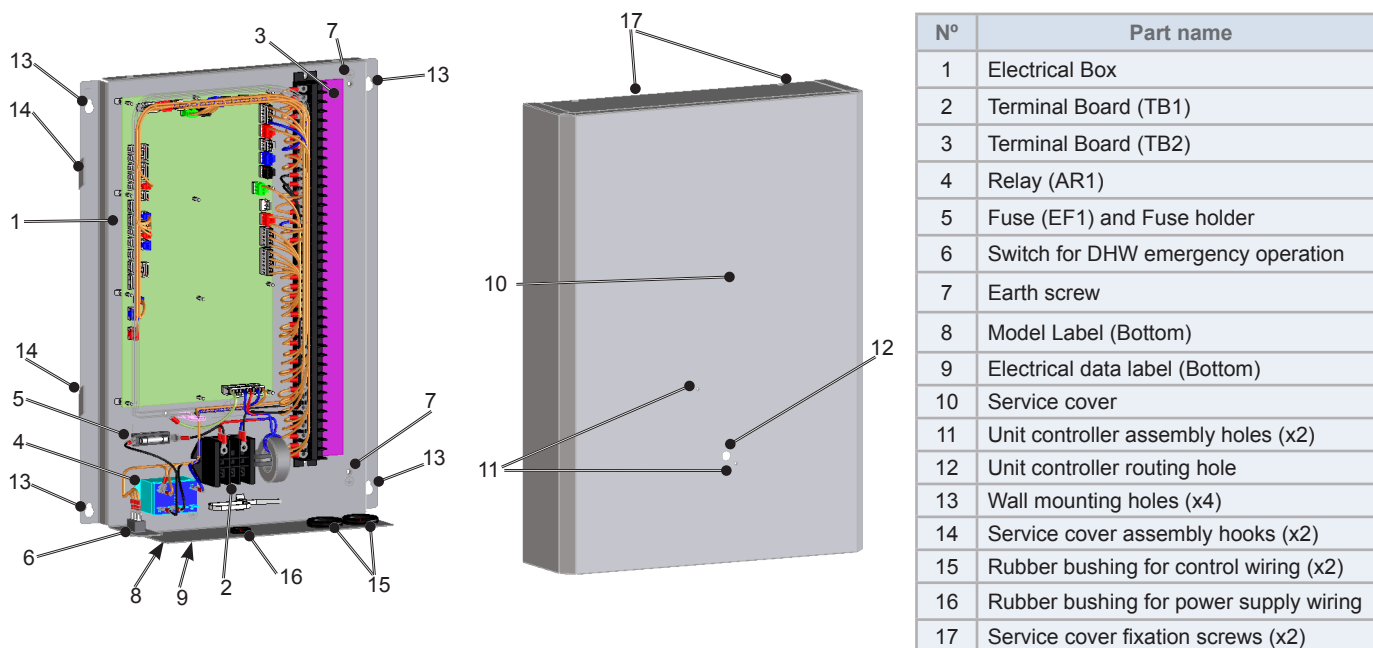
6 GENERAL DIMENSIONS

6.1 SERVICE SPACE

Place the Remote control box to an accessible place, accordingly to main users. Taking into account that the unit should be easily disassembled for maintenance or servicing.

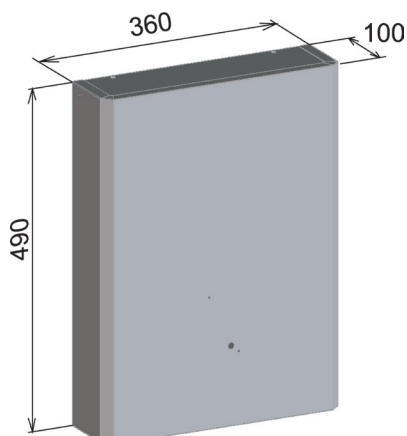


6.2 NAME OF PARTS

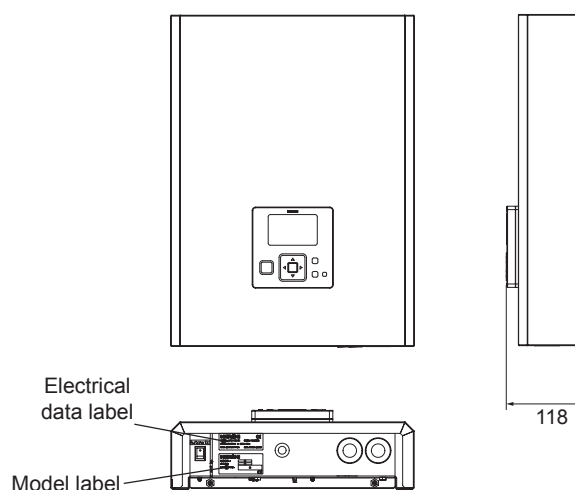


6.3 DIMENSIONAL DATA

Remote control box



Remote Control box with PC-ARFHE unit controller



7 INSTALLATION

⚠ CAUTION

- Transport the products as close as possible to the place to be installed before unpacking.
- Do not put any material on the product.

⚠ DANGER

- Install the device with enough clearance and space around it for operation and maintenance.
Install the Remote control box where good ventilation is available
- Do not install the Remote control box where there is a high level of oil mist, salty air or sulphurous atmosphere.
- Install the unit as far as practical (being at least 3 meters) from electromagnetic wave radiator (such as medical equipment).
- For cleaning, use nonflammable and nontoxic cleaning liquid. Use of inflammable agent should cause explosion or fire.

- Work with sufficient ventilation. Working in an enclosed space should cause oxygen deficiency. Toxic gas should be produced when cleaning agent is heated to high temperature by, e.g., being exposed to fire.
- Cleaning liquid shall be collected after cleaning.
- Pay attention not to clamp cables when attaching the service cover to avoid electric shock or fire.

⚠ CAUTION

- Install the device in the shade or not exposed to direct sunshine or direct radiation from high temperature heat source.
- The device installation and connections must be performed by qualified professionals and following the local directives.
- Check to ensure that the field supplied electrical components (mains power switches, circuit breakers, wires, connectors and wire terminals) have been properly selected according to the electrical data indicated on this document and they comply with national and local codes. If it is necessary, contact with your local authority in regards to standards, rules, regulations, etc.

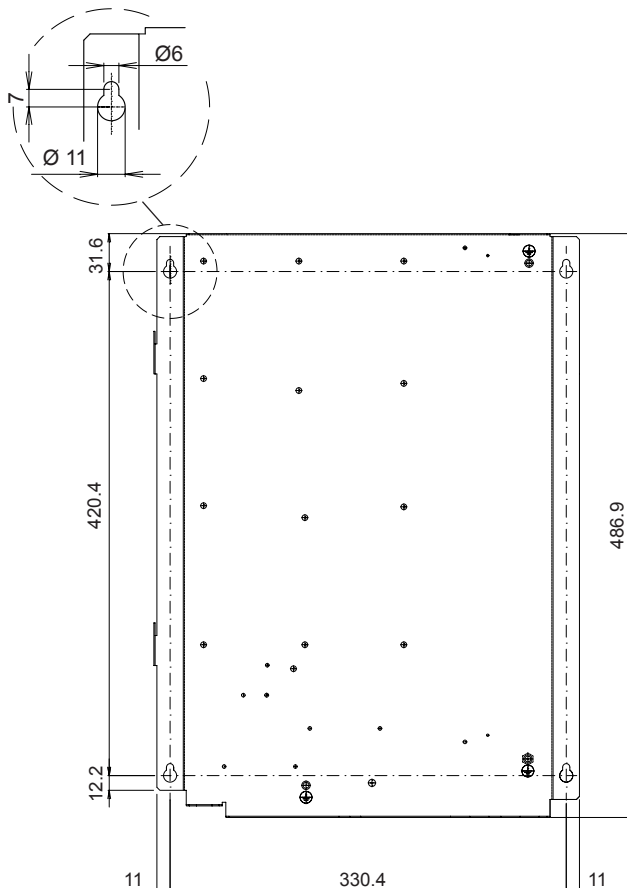
7.1 FIX THE UNIT TO THE WALL

The YUTAKI M Remote control box is a simple-to-install device. To make this operation even simpler, the YUTAKI Remote control box disposes of 4 key slots to ease the operation of fixing of the Remote control box to a wall.

⚠ CAUTION

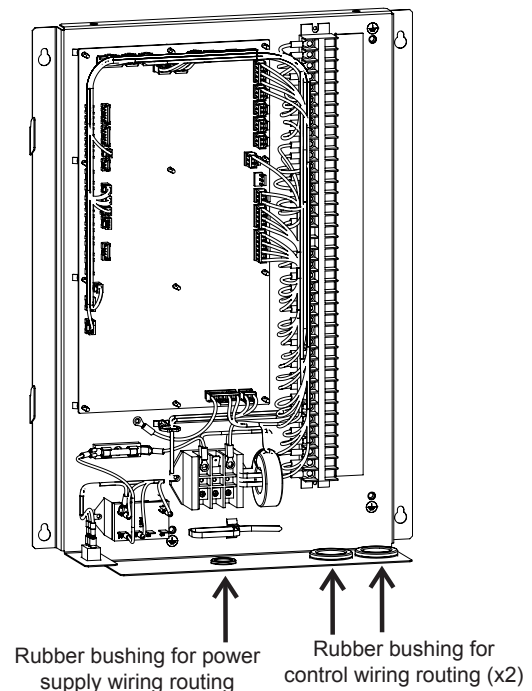
Place the unit on a resistant wall

7.1.1 Dimensional for the installation to a wall



7.1.2 Notes for installation

The Remote control box is designed in a way that wiring must be route through the bottom side of the unit. Rubber bushing have been placed for such purpose. After routing the cables through the rubber bushing, the cables should be placed in a simple manner inside the Electrical box, so the identification should be easy and at first sight. Additionally, cables should be fixed to the plastic cord located inside the Electrical box, before the TB1



8 ELECTRICAL AND CONTROL SETTINGS

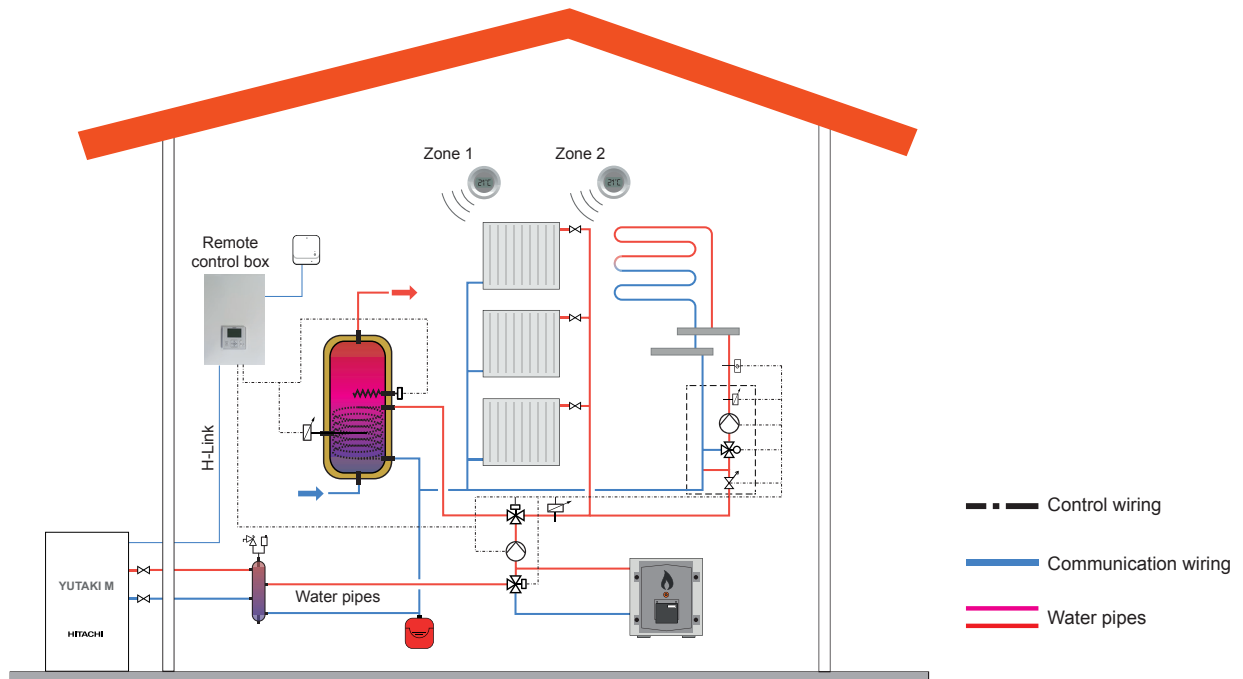
8.1 INTRODUCTION

The YUTAKI M Remote control box is an extension of the hydraulic control box of the YUTAKI M.

With the Remote control box activated, the system separates the water generation control (hot or cold) from the water distribution and consumption control. Water generation control is performed on YUTAKI M unit PCB, while the water distribution and consumption control is done through the Remote control box.

The system comprised of a YUTAKI M and the Remote control box operates as a single YUTAKI M for all function unless it is specifically indicated that the function is not enabled.

Example:



8.2 MIRROR FUNCTION

8.2.1 Function activation

To activate the Mirror function the following settings of the DSW and SSW are required

◆ Required DSW & SSW settings to enable the mirror function

Dip switch	YUTAKI M PCB2	Remote control box PCB3 (ATW-YMM-01)
DSW4	 (New setting is required)	 (Factory setting)
SSW1	 (New setting is required)	 (Factory setting)

When DSW4 pin 1 and SSW1 are set accordingly to this table, *RUOP* is shown in the 7-segment display of YUTAKI M PCB2.

⚠ CAUTION

Model capacity setting through DSW2 in the Remote control box PCB3 is required according to the YUTAKI M model.

8.3 MIRROR OPERATION

When the mirror function is active YUTAKI M operates in slave mode and works with the input/output processor from the Remote control box and defines how the system operates when a Remote control box is connected to a YUTAKI M

The Remote control box constantly sends “Data orders” to the YUTAKI M according to the settings.

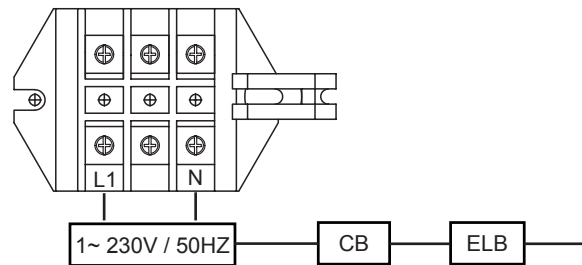
YUTAKI M receives the “Data orders” and replies with “Data status”.

The transmission of data between YUTAKI M and the Remote control box is done through H-LINK.

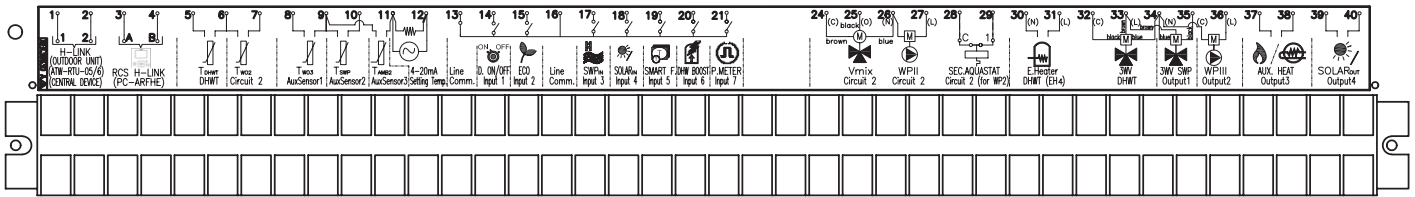
8.4 ELECTRICAL WIRING

8.4.1 Connections on the Terminal board 1 (TB1)

The followings connections on the Terminal board 1 of the Remote control box are required:



8.4.2 Connections on the Terminal board 2 (TB2)

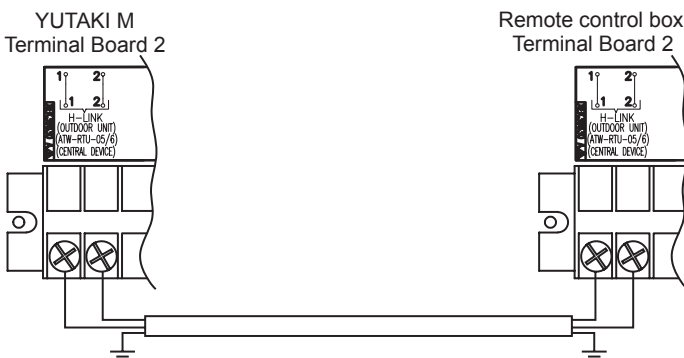


⚠ CAUTION

When installing the Remote control box (ATW-YMM-01) electrical connections for the control of the system must be done on the Terminal board 2 of the PCB 3 of the Remote control box rather than perform those connections on the PCB2 of the YUTAKI M.

◆ H-Link connection

Specific connection for the H-Link transmission must be done in both PCB, as it is shown in the figure below:



- Use shielded wires for intermediate 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.

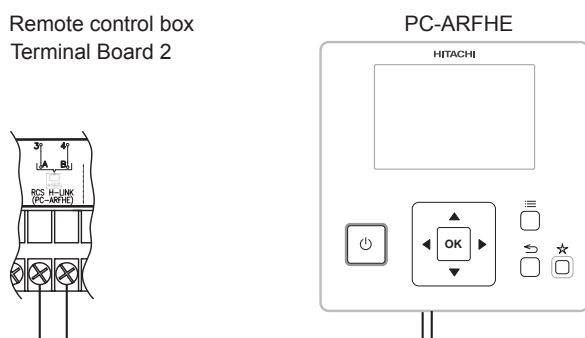
⚠ CAUTION

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

- The H-LINK wiring system requires only two transmission cables that connect the indoor unit and the outdoor unit.
- Use twist pair wires (0.75 mm²) for operation wiring between outdoor unit and indoor unit. The wiring must consist of 2-core wires (Do not use wire with more than 3 cores).

◆ Unit controller (PC-ARFHE) connection

Connection for the Unit controller PC-ARFHE should be done on the PCB3 of the Remote control box as shown in the next figure:



For this purpose, a cable is supplied with the Remote control box, as previously detailed in “Factory-supplied unit components”.

The torque for the tightening of the screws of each Terminal board is explained in the table below

Terminal board	Tightening Torque (Nm/cm ²)
TB1	2.0~2.5
TB2	1.0~1.3

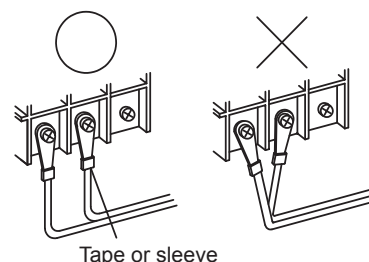
◆ Safety instructions

⚠ DANGER

- Do not connect the power supply to the unit before all connections have been previously done.
- 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 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

- Use a dedicated power circuit for the 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 electrical shock.
- Protect the unit against the entry of small animals (like rodents) which could damage 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.



8.4.3 Wiring size and minimum requirements of protection device

⚠ CAUTION

- Check to ensure that the field supplied electrical components (main power switches, circuit breakers, wires, connectors and wire terminals) have been properly selected according to the electrical data indicated in this chapter and they comply with National and local codes. If it is necessary, contact with your local authority in regards to standards, rules, regulations, etc.
- Use a dedicated power circuit for the unit. Do not use a power circuit shared with the outdoor unit or any other appliance.

Use wires which are not lighter than the polychloroprene sheathed flexible cord (60245 IEC 57 code designation)

Model	Power supply	Operation mode	Max. Current (A)	Power supply cables	Transmitting cables	CB (A)	ELB (n° of poles/A/mA)
				EN60335-1	EN60335-1		
ATW-YMM-01	1~230V 50Hz	-	5	2 x 0.75 mm ²	2 x 0.75 mm ²	5	2/40/30
		With DHW Tank	19	2 x 4 mm ²		20	

⚠ CAUTION

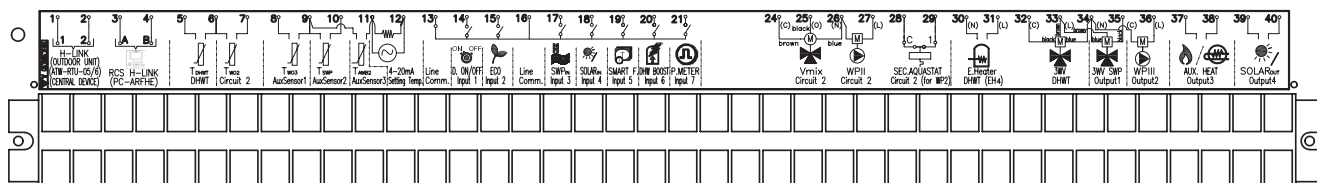
- Ensure that there is an Earth Leakage Breaker (ELB) and a Circuit Breaker (CB) installed in the power supply line.
- If the installation is already equipped with an ELB, ensure that its rated current is large enough to hold the current of the units (Outdoor unit)

i NOTE

- Electric fuses can be used instead of magnetic Circuit Breakers (CB). In that case, select fuses with similar rated values as the CB.
- The Earth leakage breaker (ELB) mentioned on this manual is also commonly known as Residual Current Device (RCD) or Residual Current Circuit Breaker (RCCB).
- The circuit breakers (CB) are also known as Thermal-Magnetic Circuit Breaker or just Magnetic circuit breaker (MCB).

8.5 OPTIONAL UNIT WIRING (ACCESSORIES)

◆ Summary of the terminal board connections



Mark	Part name	Description
TERMINAL BOARD 2 (TB2)		
1	H-LINK commutation	The H-LINK transmission has to be done between the unit and the terminals 1-2 of either outdoor unit, ATW-RTU-05 or any other central device.
2		
3	H-LINK communication for Remote control switch	Terminals for the connection of the YUTAKI Unit controller (PC-ARFHE).
4		
5	DHW tank's thermistor	The DHW sensor is used to control the temperature of the domestic hot water tank.
6	Common thermistor	Common terminal for thermistor.
7	Thermistor for water outlet temperature of second cycle	The sensor is used for the second temperature control and should be positioned after the mixing valve and the circulation pump.
8	Thermistor for water outlet temperature after hydraulic separator (THM _{AUX1})	Water sensor for hydraulic separator, buffer tank or boiler combination.
9	Common thermistor	Common terminal for thermistors.
10	Thermistor for swimming pool water temperature (THM _{AUX2})	The sensor is used for the swimming pool temperature control and should be positioned inside plate heat exchanger of the swimming pool.
11	Thermistor for second ambient temperature (THM _{AUX3})	The sensor is used for the second ambient temperature control and it should be positioned outdoors.
11	4-20 mA application	Not used for Remote Control application.
12		
13	Common line	Terminal Line common for input 1 and input 2.
14	Input 1 (Demand ON/OFF) (*)	The air to water heat pump system has been designed to allow the connection of a remote thermostat to effectively control your home's temperature. Depending on the room temperature, the thermostat will turn the split air to water heat pump system ON and OFF.
15	Input 2 (ECO mode) (*)	Available signal which allows to reduce the water setting temperature of circuit 1, circuit 2 or both.
16	Common line	Terminal Line common for inputs 3, 4, 5, 6, 7.
17	Input 3 (Swimming pool) (*)	Only for swimming pool installations: It is necessary to connect an external input to the air to water heat pump to provide signal when the water pump of swimming pool is ON.
18	Input 4 (Solar) (*)	Available input for Solar combination with Domestic Hot Water Tank.
19	Input 5 (Smart function) (*)	For the connection of an external tariff switch device to switch OFF the heat pump during peak electricity demand period. Depending on the setting, the heat pump or DHWT will be blocked when signal is open/closed.
20	Input 6 (DHW boost) (*)	Available input for an instantaneous heating of the domestic hot water of the tank.
21	Input 7 (Power meter)	The measuring of the real power consumption can be done connecting an external power meter. The number of pulses of the power meter is a variable which must be set. By this, every pulse input is added into corresponding operation mode (Heating, Cooling, DHW Operation). Two possible options: - One power meter for all installation (IU+OU). - Two separated power meters (one for IU and one for OU).
24(C)	Mixing valve close	When a mixing system is required for a second temperature control, these outputs are necessary to control the mixing valve.
25(O)	Mixing valve open	
26(N)	N Common	
27(L)	Water Pump 2 (WP2)	When there is a second temperature application, a secondary pump is the circulating pump for the secondary heating circuit.

Mark	Part name	Description
28	Aquastat security for circuit 2 (WP2)	Terminals intended for the connection of the Aquastat security accessory (ATW-AQT-01) for controlling water temperature of the circuit 2.
29		
30(N) 31(L)	Electrical Heater DHW Output	If DHW tank contains an electric heater, the air to water heat pump can activate it if the heat pump cannot achieve the required DHW temperature by itself.
32(C)	Common line	Common terminal for the 3-way valve for DHW tank.
33(L)	3-way valve for DHW tank	The air to water heat pump can be used to heat DHW. This output will be on when DHW is activated.
34(N)	N common	Neutral terminal common for 3-way valve of DHW tank and outputs 1 and 2.
35(L)	Output 1 (3-way valve for swimming pool) (*)	The air to water heat pump can be use to heat swimming pool. This output will be ON when swimming pool is activated.
36(L)	Output 2 (Water pump 3 (WP3)) (*)	When there is a hydraulic separator or buffer tank, additional water pump (WP3) is needed.
37	Output 3 (Auxiliary boiler or electric heater) (*)	The boiler can be used to alternate with the heat pump when the heat pump cannot achieve the required temperature by itself.
38		A water electric heater (as accessory) can be used to provide the additional heating required on the coldest days of the year.
39 40	Output 4 (Solar) (*)	Output for solar combination with Domestic Hot Water Tank.

NOTE

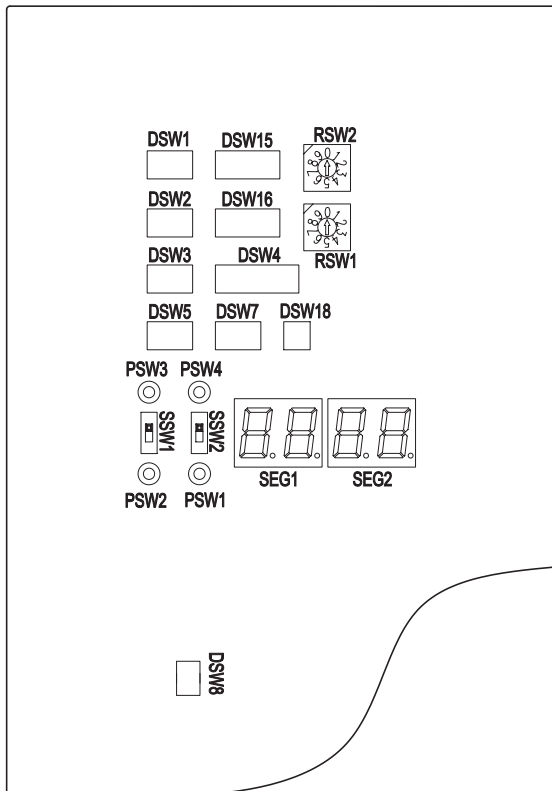
(*): Inputs and outputs explained in the table are the factory-set options. By means of the unit controller, some other inputs and outputs functions can be configured and used. Refer to the YUTAKI M and the PC-ARFHE Installation and operation manual for detailed information.

◆ Connection on PCB2 of YUTAKI M unit

The following connections should remain in the PCB2 of the YUTAKI M unit

Mark	Part name	Description
22	Aquastat security for circuit 1 (WP1)	Terminals intended for the connection of the Aquastat security accessory (ATW-AQT-01) for controlling water temperature of the circuit 1.
23		

8.5.1 Location of DIP switches and rotary switches in PCB3



8.5.2 Function of DIP switches and rotary switches

i 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.

◆ DSW1: Additional setting 0

Factory setting. No setting is required.

Factory setting	
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i NOTE

In case of installing the “Cooling kit” accessory, set the pin 4 of DSW1 to ON in order to enable the cooling operation.

◆ DSW2: Model capacity setting

DSW2 setting is required in order to match the model of the YUTAKI M of the installation. All pins of DSW2 are ON factory set.

Factory setting	
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RASM-3.0 VNE	RASM-4.0 (V)NE	RASM-5.0 (V)NE	RASM-6.0 (V)NE

◆ DSW3: Additional setting 1

Factory setting	
1-step heater for 3-phase unit	

◆ DSW4: Additional setting 2

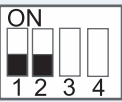
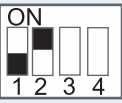
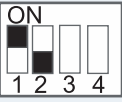
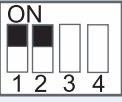
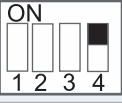
Factory setting (Remote control box-Mirror function)	
DHW defrost	
Heater forced OFF	
Unit and installation pipes antifreeze protection	
Standard / ECO water pump operation	
Electric heater or boiler emergency mode	
DHW tank's heater operation	
DHW 3-way valve forced ON	

! CAUTION

- Never turn all DSW4 dip switch pins ON. If this happens, the software of the unit will be deleted.
- Never activate “Heater Forced OFF” and “Electric heater or boiler emergency mode” at the same time.

◆ **DSW5: Additional setting 3**

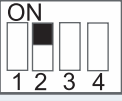
In the cases where the outdoor unit is installed into a location where its own outdoor ambient temperature sensor can not give a suitable temperature measurement to the system, it is available the 2nd outdoor ambient temperature sensor as accessory. By means of DSW1&2 setting, the preferable sensor for each circuit can be selected.

Factory setting	
Outdoor unit sensor for circuits 1 and 2.	
Outdoor unit sensor for circuit 1; Auxiliary sensor for circuit 2.	
Auxiliary sensor for circuit 1; Outdoor unit sensor for circuit 2.	
Auxiliary sensor instead of outdoor unit sensor for both circuits.	
Use the maximum temperature value between Two3 (boiler / heater thermistor) and Two (water outlet thermistor) for water control	

◆ **DSW6: Not used**

Factory setting (Do not change)	
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◆ **DSW7: Additional setting 4. Not used**

Factory setting	
Defrost for the water electric heater (Do not change)	

◆ **DSW8/DSW18: Not used**

Factory setting (Do not change)	
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◆ **DSW15 & RSW2/ DSW16 & RSW1: Not used**

Factory setting (Do not change)		
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◆ **SSW1: Remote/Local**

Factory setting (Do not change)	Remote	
	Local	

◆ **SSW2: Heat/Cool**

Factory setting (Do not change)	Heat	
	Cool	

8.5.3 LED indication

Name	Colour	Indication
LED1	Green	Power indication
LED2	Red	Power indication
LED3	Red	Heat pump operation (thermo ON/OFF)
LED4	Yellow	Alarm (flickering with 1 sec interval)
LED5	Green	Not used
LED6	Yellow	H-Link transmission
LED7	Yellow	H-Link transmission for unit controller

