

**TOSHIBA**

# FAN OF VRF

**VERSION 2.0**



**Guideline for Startup  
of VRF systems**

# **Guideline for Startup of VRF systems**

Version 2.0

Summary of key data from the original Toshiba manuals.

Publisher:

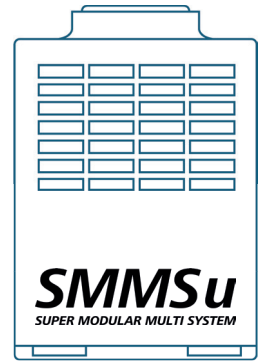
AIR-COND International GmbH

Haushamer Straße 2, 8054 Graz-Seiersberg © March 2023

No liability is accepted for printing errors.

The reprinting is only permitted with the express approval of the publisher!

This manual doesn't replace the original manuals from TOSHIBA.



# CONTENTS

INTRODUCTION FOR THE COMMISSIONING OF TOSHIBA VRF SYSTEMS.....	4
THE STARTUP .....	5
OPEN THE INJECTION VALVES .....	10
<b>DIP SWITCH .....</b>	<b>11</b>
READDRESSING .....	15
DN CODE .....	17
ERROR CODES .....	25
U-SERIES INDOOR UNITS WITHOUT LOCAL REMOTE CONTROLS.....	30
CALCULATION OF THE ADDITIONAL REFRIGERANT CHARGE.....	31
WIRING .....	34
ROTARY SWITCH .....	36
FAN TEST RUN .....	42

## Introduction for the commissioning of TOSHIBA VRF systems

Read this guide, the installation instructions and the operating instructions of all components and equipment carefully before starting work.

The TOSHIBA Mini-SMMS, SMMSi and SHRMi systems are sophisticated systems whose components are matched and designed to work together. Therefore, never use components from other manufacturers in these systems.

Installation, commissioning and maintenance work should only be carried out by trained and skilled persons.

### Before beginning of Startup

1. Check that you can work on all units safely and without danger.
2. Check that all units are installed in accordance with the installation instructions and that any fan transport fuses have been removed. fuses on the fans have been removed.
3. Check that future maintenance and repairs can be carried out on all units (e.g. inspection openings in ceilings).
4. Check that the installation is in accordance with the design (pipework dimensioning, manifolds...).
5. Check the installation position of the distributors and the insulation of the entire piping network.
6. Check all electrical lines and the wiring of the various BUS lines. (See appendix)
7. Check that all appliances are earthed and that your electrical connection complies with current standards and regulations.
8. Check that the oil heaters have been switched on in good time (2-5 hours depending on the outside temperature) before the compressors are operated for the first time.  
(After switching on the voltage supply for the outdoor units, the heaters switch on automatically).

## THE STARTUP

### 1) Leak test

After installing the piping, carry out a leak test in accordance with the applicable rules of technology.

Recommendation:

1. at least 24 hours between 30 and 37 bar with nitrogen 5.0
2. to prevent nitrogen from overflowing into the outdoor unit, we recommend that you do not connect the pipes to the outdoor unit until after the leak test. on the outdoor unit only after the pipes and indoor units have been leak-tested.  
The connection between the piping and the outdoor unit should be pressurised with max. 20 bar.

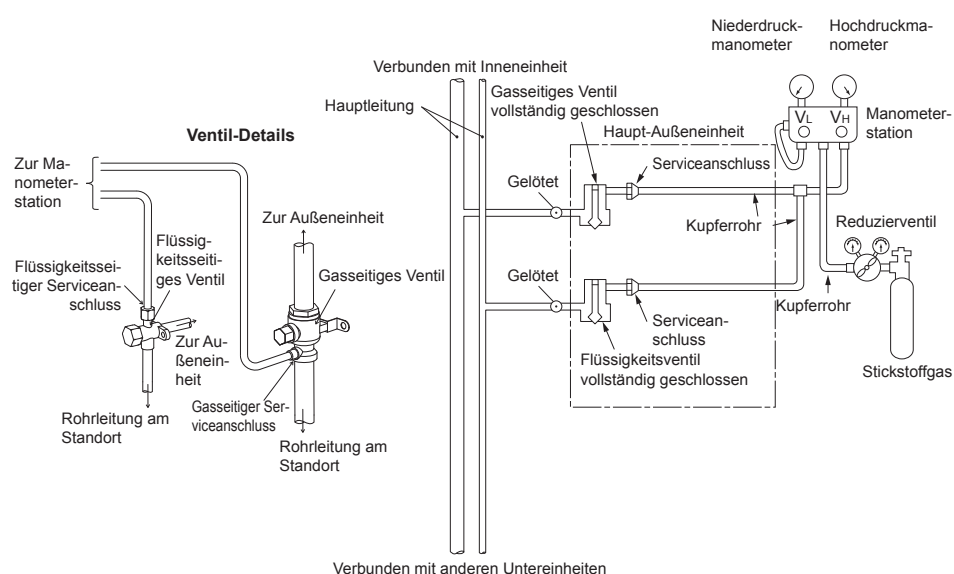
### 2) Evacuate:

Evacuate the system with a two-stage vacuum pump according to the applicable rules of technology.

To remove moisture or residual gases in the circuit of an air conditioner or heat pump, evacuate it before commissioning.

## WARNING

Never use oxygen, flammable or toxic gases for the leak test.



### 3) Fill refrigerant

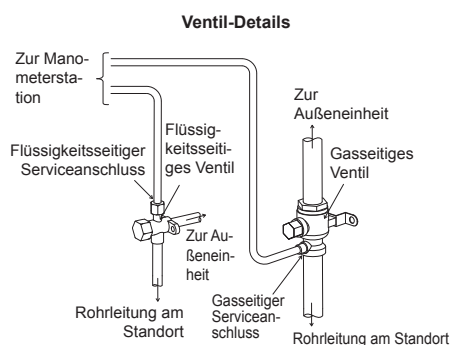
Fill the calculated refrigerant quantity (refrigerant R410A) liquid into the piping system.

If it is not possible to fill the entire quantity immediately, the rest can be slowly filled into the suction line in liquid form during operation.

(The refrigerant quantity can be calculated using the design software, the Dyna Doc software, the tables in the installation instructions and the table in the appendix „Calculating the refrigerant quantity“).

The calculated quantity should be recorded on the master outdoor unit in a clearly and permanently legible manner.

### 4) Open the valves of the outdoor units.



### 5) Basic setting

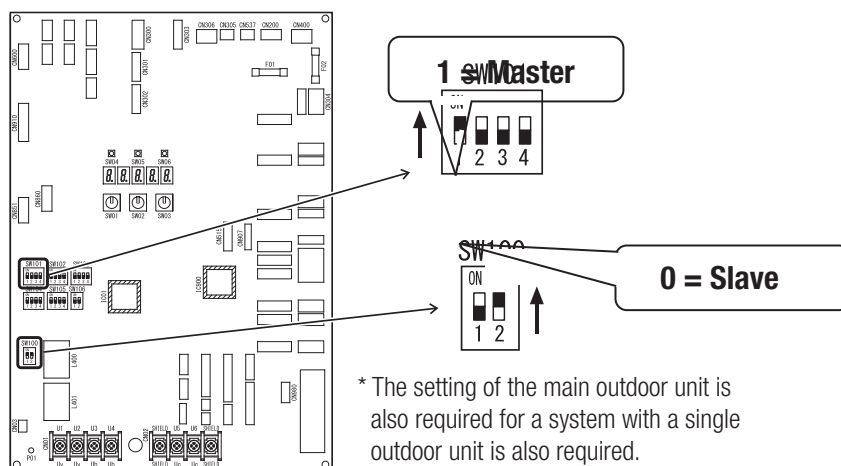
Follow the steps below to set the DIP switch on the outdoor unit interface board.

#### Setting the main outdoor unit

Turn on DIP switch 1 of SW101 on the outdoor unit interface boards.

Then turn on DIP switch 2 of SW100.

Main outdoor unit interface board

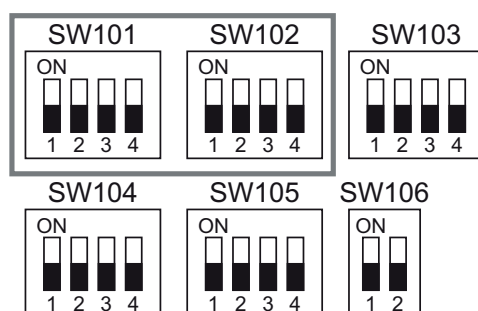




## 6) System address for several outdoor unit groups

### Interface board on the master outdoor unit

Line address switch on the external interface board (0: switch on, x: switch off)



System address	SW101				SW102			
	1	2	3	4	1	2	3	4
1				X	X	X	X	X
2				X	X	X	X	0
3				X	X	X	0	X
4				X	X	X	0	0
5				X	X	0	X	X
6				X	X	0	X	0
7				X	X	0	0	X
8				X	X	0	0	0
9				X	0	X	X	X
10				X	0	X	X	0
11				X	0	X	0	X
12				X	0	X	0	0
13				X	0	0	X	X
14				X	0	0	X	0

System address	SW101				SW102			
	1	2	3	4	1	2	3	4
15				X	0	0	0	X
16				X	0	0	0	0
17				0	X	X	X	X
18				0	X	X	X	0
19				0	X	X	0	X
20				0	X	X	0	0
21				0	X	0	X	X
22				0	X	0	X	0
23				0	X	0	0	X
24				0	X	0	0	0
25				0	0	X	X	X
26				0	0	X	X	0
27				0	0	X	0	X
28				0	0	X	0	0

: DIP switches not used (do not change setting)

After the address setting of all systems is completed, turn on DIP switch 1 of SW100 on the interface board of the outdoor unit with the lowest system address number.

### 7) Power supply for indoor units

Switch on the power supply of the indoor units.

(The injection valves of the indoor units are open when delivered and close when the power supply is switched on. If you are not sure whether the valves are open, evacuate at the suction and liquid lines simultaneously and observe the appendix „Opening the injection valves“).

(As long as the indoor units are not addressed, they cannot be switched on via the remote control).

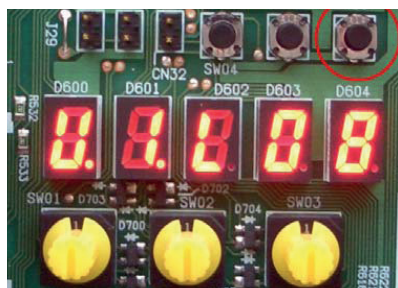
### 8) Power supply for outdoor units

Switch on the power supply to the outdoor units.

Check that L1, L2, L3 and N are properly present. Displays [U.1.L08] after some time. Fault L08 is displayed because the indoor units are not yet addressed.

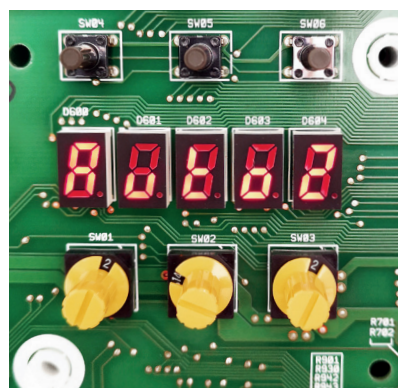
### 9) Automatic addressing

Start the automatic addressing of the indoor units. The rotary switches SW1, SW2, SW3 are set to 1/1/1, Press switch SW06 on the master outdoor unit for approx. 5 seconds.



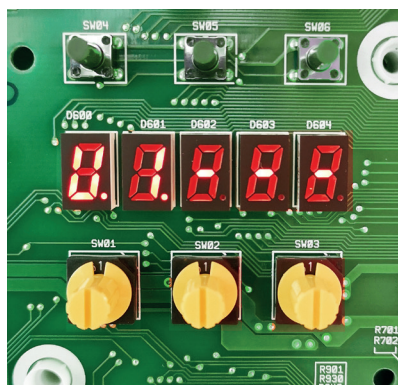
The display shows in sequence AUTO1, AUTO2, AUTO3.... to AUTO9.

(Addressing can take up to 15 minutes depending on the size of the system).



(This display is independent of the number of connected indoor units. Only the different steps of addressing are indicated by this display).

After the last step, the outdoor unit restarts the electronics. When the outdoor unit displays [U.1.---], addressing is completed.





#### 10) Check the number of indoor units

After addressing, it must be checked via these settings on the SW1, SW2 and SW3 rotary switches, how many indoor units were found by the addressing:

SW1, SW2, SW3 = 1/4/3.

#### 11) Test run cooling or heating

Set the rotary switches to the desired trial run mode:

Cooling: SW1, SW2, SW3 => 2/5/1

Heating: SW1, SW2, SW3 => 2/6/1

Start the test run by pressing SW04 for 5 seconds.

To end the test run, turn switches SW1, SW2, SW3 to 1/1/1.

#### 12) Follow-up systems

Carry out steps 1-12 on the master outdoor units of all other refrigeration circuits.

If no central controller units (central controller, on-off controller, LON gateway...) are used, addressing is complete.



Addressing completed

#### 13) Central controller

To be able to use central controller units, it is necessary to set DIP switches.

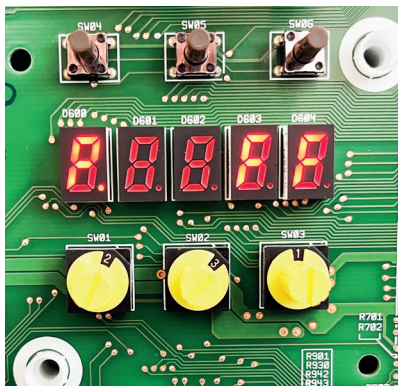
(see appendix „DIP switches“)

For commissioning the central controller, please use the corresponding manuals.

## Open the injection valves

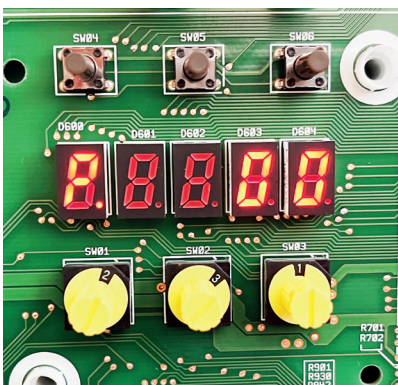
### [Open completely]

Set switches SW01/SW02/SW03 on the master unit interface board to [2/3/1] and press SW04 for 2 seconds or more. (The display appears on the 7-segment display for 2 minutes as follows.) [P ] [ FF].



### [Close completely]

Set switches SW01/SW02/SW03 on the master unit interface board to [2/3/1] and press SW05 for 2 seconds or more. (The display appears on the 7-segment display for one minute as follows.) [P ] [ 00].



### [Delete]

After 2 minutes (1 minute for „Close completely“) after setting up, the opening automatically returns to normal opening.

### **ATTENTION:**

The valves only stay open for 2 minutes.

To keep the valves open longer, e.g. to evacuate the system, simply switch off the power supply to the indoor units when the valves are in the „open“ position.

(In the event of a power failure, the valves remain in the current position).

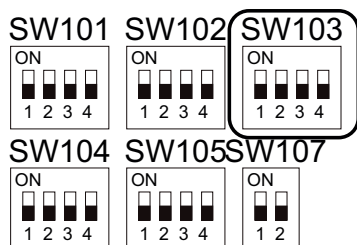
## DIP switch

### 1) Indoor unit capacity too high

Setup of the master unit

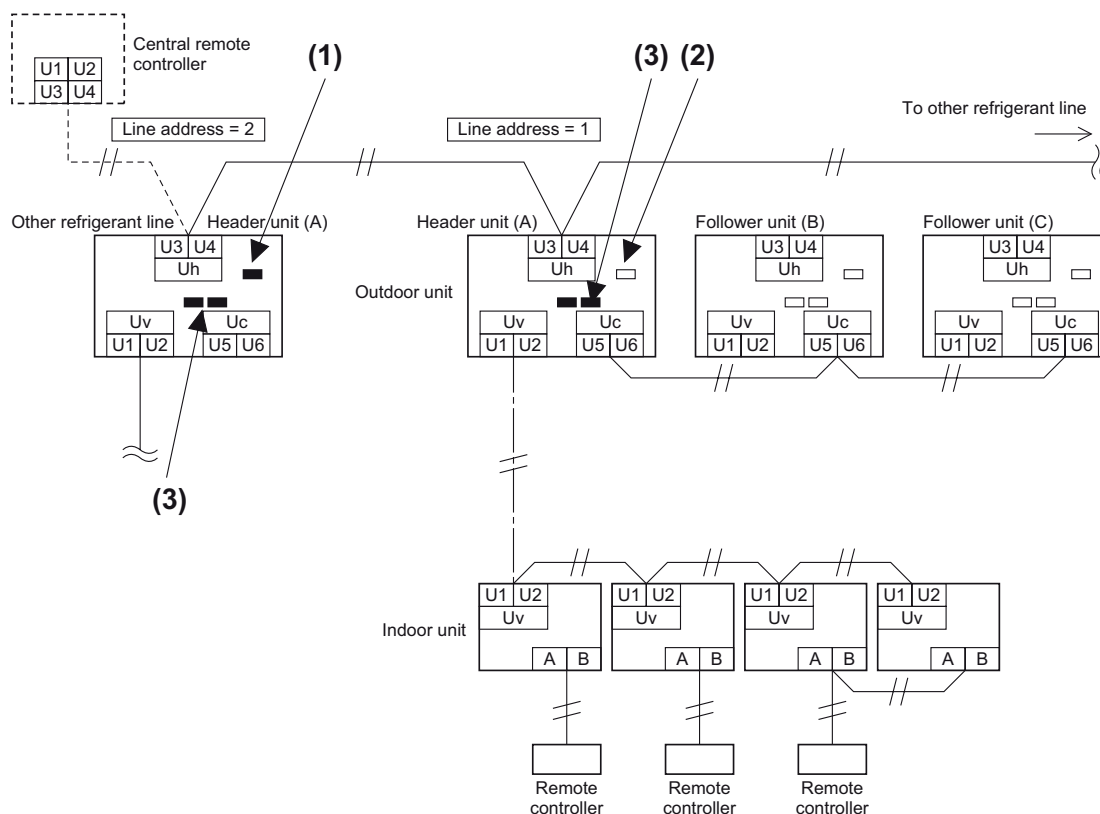
Turn on bit 3 of SW103 on the P.C. Board interface of the master unit.

(Setting to avoid error (E16) indoor unit capacity too high).



### 2) Set only for commissioning the central controller

When the central control system is connected, check that the following settings are completed after setting the address.



	Most important check points	Check
Terminal resistor	(1) Is the terminating resistor (SW100-Bit1) of the master unit with the smallest line address number in the central control switched on? (The setting is not required for not necessary for slave units. (Factory setting: OFF))	
	(2) Is the terminating resistor (SW100-Bit1) of the master units, with the exception of the line with the smallest central control line address, switched off? (The setting is not required for slave units. required for slave units. (Factory setting: OFF))	
Line address	(3) Are the addresses in the line address (SW101, SW102) not duplicated in each refrigerant line?	



### 3) Setting the compressor backup operation

#### Overview

If one of the compressors installed in the outdoor unit fails, follow the procedure described below, to replace the failed compressor with the remaining normal compressor.

Note: Permitted for 10 days

Backup operation of the compressor cannot be used for

MMY-MUP0801\*, MMY-MUP1001\*, MMY-MUP1201\*,

MMY-MUP1401\*, MMY-MUP1601\*, MMY-MUP1801\*

and MMY-MUP2001\*, as only one compressor is installed in these models.

#### Procedure

(1) Switch off the power supply to all outdoor units connected to the system.

(2) Set the DIP switches of SW103 on the interface board of the outdoor unit with the failed compressor as shown in the table below.

	SW103			
	Bit1	Bit2	Bit3	Bit4
Factory setting	OFF	OFF	OFF	OFF
If compressor no. 1 (front left) has failed	ON	OFF	OFF	OFF
If compressor no. 2 (front right) has failed	OFF	ON	OFF	OFF



## Open valves

### Pulse motor valve (PMV) with forced opening/closing function and solenoid valve with forced closing function in the outdoor unit

The solenoid valves of the outdoor units can be forcibly switched on (opened) by switching operations on the interface board of the outdoor unit.

In addition, the outdoor unit's pulse motor valves (PMV1, PMV2, PMV3, PMV4) can be switched fully open, half open and fully closed for two minutes.

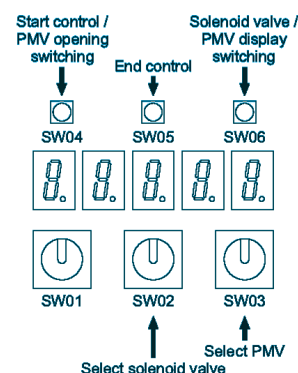
Use this function to check if the valve or PMV is not working, is clogged, etc.

#### [Control start method]

1. Set the rotary switches [SW01/SW02/SW03] on the interface board of the outdoor unit to [2/1/3]. When [H.r ] is displayed, press the push switch [SW04] for one second or more, which changes the display to [H.r ---] and starts this control.

#### [Procedure for switching the solenoid valve/PMV display]

1. The solenoid valve is displayed immediately after starting the of the control. The 7-segment display is [H.r ---].
2. Pressing the pressure switch [SW06] switches the display to [P.\* ]. i.e. the PMV display. Each time the pressure switch [SW06] is pressed, the display switches between the display of the solenoid valve and the display of the pulse motor. solenoid valve and the pulse motor valve (PMV) display.



3. Follow the method below for operating solenoid valves and PMVs.\* Make sure that the solenoid valve and PMV functions are each activated, regardless of what is displayed.

#### [Mode of operation of the solenoid valve (forced switching on)]

1. Set the rotary switch [SW02] to 2 and five seconds later the SV41 is switched on. The 7-segment display in the solenoid valve screen shows [H.r 41].
2. By changing the setting number of the rotary switch [SW02], any solenoid valve can be forced on. The following table shows the forced switch-on/normal control patterns for each solenoid valve.

Dreheschalter			7-Segment-Anzeige (Magnetventil-Anzeige)	Betriebsverhalten von Magnetventil/Heizung (✓: Zwangsweise EIN, - : normale Regelung)				
SW01	SW02	SW03		SV41	SV42	SV3D	SV3F	Kompressor 1, 2 Standheizung
2	1	# Bei PMV- Einsätzen verwendet	[H.r ---]	-	-	-	-	✓
	2		[H.r 4 1]	✓	-	-	-	✓
	3		[H.r 4 2]	-	✓	-	-	✓
	4		[H.r 3 D]	-	-	-	✓	✓
	5		[H.r 3 F]	-	-	-	✓	✓
	6		[H.r 3 -]	-	-	✓	✓	✓
	7 ~ 15		[H.r ---]	-	-	-	-	✓
	16		[H.r ALL]	✓	✓	✓	✓	✓

\*The 7-segment display shows [H.r ] for outdoor unit models without solenoid valves.

## Method of operating pulse motor valve (PMV) (forced open/close)

1. Use the rotary switch [SW03] to select the PMV to operate.

When [P#. ] is displayed in the PMV display, PMV# is operating according to normal control.

(#: selected PMV No.)

Pressing the push switch [SW04] for one second sets the selected PMV# to full-open.

The PMV display will be [P# . F o ].

Each time the push switch [SW04] is pressed again for one second, the opening changes in the order full-open [P# . F o ] → half-open [P# . C o ] → full-closed [P# . F c ] → normal control [P# . ] → full-open [P# . F o ] → ..., and so on.

2. The PMV opening returns to normal control after two minutes have elapsed from changing the opening.

(Operation method example) Operation of PMV 1

Rotary switch			Push switch	7-segment display (pulse motor valve (PMV) display)	Opening	
SW01	SW02	SW03	SW04 (Change PMV opening)			
2	* Used in solenoid valve selection	3	Long-press 1 second	[P1. ]	PMV1 Normal control	
			Long-press 1 second	[P1.F o ]	PMV1 Full-open	
			Long-press 1 second	[P1.C o ]	PMV1 Half-open	
			Long-press 1 second	[P1.F c ]	PMV1 Full-closed	

3. To operate a different PMV, select with the rotary switch [SW03], and operate the opening with the push switch [SW04].

Even when [SW03] is switched, the PMV opening operated immediately before remains effective, so up to four PMV openings can be operated in parallel.

Rotary switch			Push switch	7-segment display (pulse motor valve (PMV) display)	Opening
SW01	SW02	SW04	SW04		
2	* Used in solenoid valve selection	3	Long-press 1 second to change opening	[P1. ]	PMV1 Normal control
				[P1.F o ]	PMV1 Full-open
				[P1.C o ]	PMV1 Half-open
				[P1.F c ]	PMV1 Full-closed
		4	Long-press 1 second to change opening	[P2. ]	PMV2 Normal control
				[P2.F o ]	PMV2 Full-open
				[P2.C o ]	PMV2 Half-open
				[P2.F c ]	PMV2 Full-closed
		5	Long-press 1 second to change opening	[P3. ]	PMV3 Normal control
				[P3.F o ]	PMV3 Full-open
				[P3.C o ]	PMV3 Half-open
				[P3.F c ]	PMV3 Full-closed
		6	Long-press 1 second to change opening	[P4. ]	PMV4 Normal control
				[P4.F o ]	PMV4 Full-open
				[P4.C o ]	PMV4 Half-open
				[P4.F c ]	PMV4 Full-closed

## Cancellation method

To cancel (end) control of this function, perform one of the following methods. The solenoid valve and pulse motor valve (PMV) will return to normal control.

- Press the push switch [SW05] for one second or longer.
- Set the rotary switch [SW01] to other than [2].



# Readdressing

## Method 1:

Set an individual address via a wired remote control.  
(Line address, indoor address, group address, central address).  
For the set-up method, see „Manual address setting via remote control“ above.

## Method 2:

Set an address from the outdoor unit.  
\* Leave the addresses of the units for which addresses have already been set as they are.  
Set an address only for the unit whose address is not defined.  
Addresses are assigned from lower numbers.

## Setup procedure

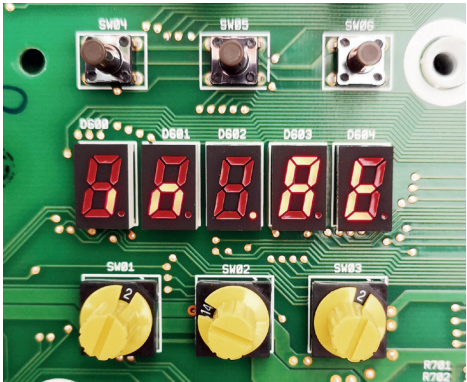
- (1) Switch on the indoor/outdoor power supply for the refrigerant line for which an address is to be set.  
After about 1 minute, check that „U.1.---“ appears on the 7-segment display.
- (2) Carry out the following steps on the interface PC board of the master unit.

SW01	SW02	SW03	SW04
2	14	2	After making sure that *In.At* is shown on the 7-segment display, press SW04 for at least 5 seconds.

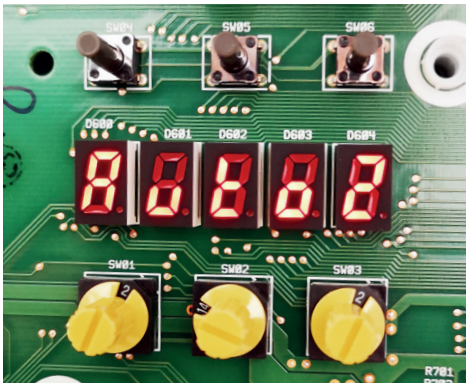
„AUTO1“ → „AUTO2“ → „AUTO3“ → ... → „AUTO9“ ... is counted and shown on the 7-segment display.

- (3) When the 7-segment display shows „U.1.---“, the set-up process is complete.  
Switch off the indoor/outdoor power.

The display shows [in. At].



Press SW04 for at least 5 seconds.  
The display shows in sequence AUTO1, AUTO2, AUTO3.... to AUTO9.



## Method 2

Delete all addresses of the indoor unit in a refrigerant line at once from the outdoor unit.

- 1 Switch off the refrigerant line to reset it to the factory settings.
- 2 Turn on the indoor and outdoor refrigerant piping units for which you want to initialise the addresses. About one minute after turning on the power, make sure that the 7-segment on the 7-segment display of the outdoor unit shows „U.1. - -“, and operate the interface board on the outdoor unit of the refrigerant piping as follows.

SW01	SW02	SW03	SW04	Free addresses
2	1	2	Make sure that the 7-segment display shows „A.d.buS“ and switch on SW04 for more than five seconds.	Address of the system/indoor unit/group
2	2	2	Make sure that the 7-segment display shows „A.d.nEt“ and switch on SW04 for more than five seconds.	Address of the central control

- 3 Make sure that the 7-segment display shows „A.d. c.L.“ and set SW01, SW02 and SW03 to 1, 1, 1.
- 4 After successful deletion of the address, „U.1.Err“ and „L08 „ appear alternately at intervals of 1 second on the 7-segment display.
- 5 Set the addresses again after completing the deletion process.

### Deleting the central addresses:

To delete the central addresses (DN 03), set the rotary switches SW01/SW02/SW03 on the guide outdoor unit to positions 2/2/2.

The display shows [A.d.nET.].

Press SW04 for at least 5 seconds.

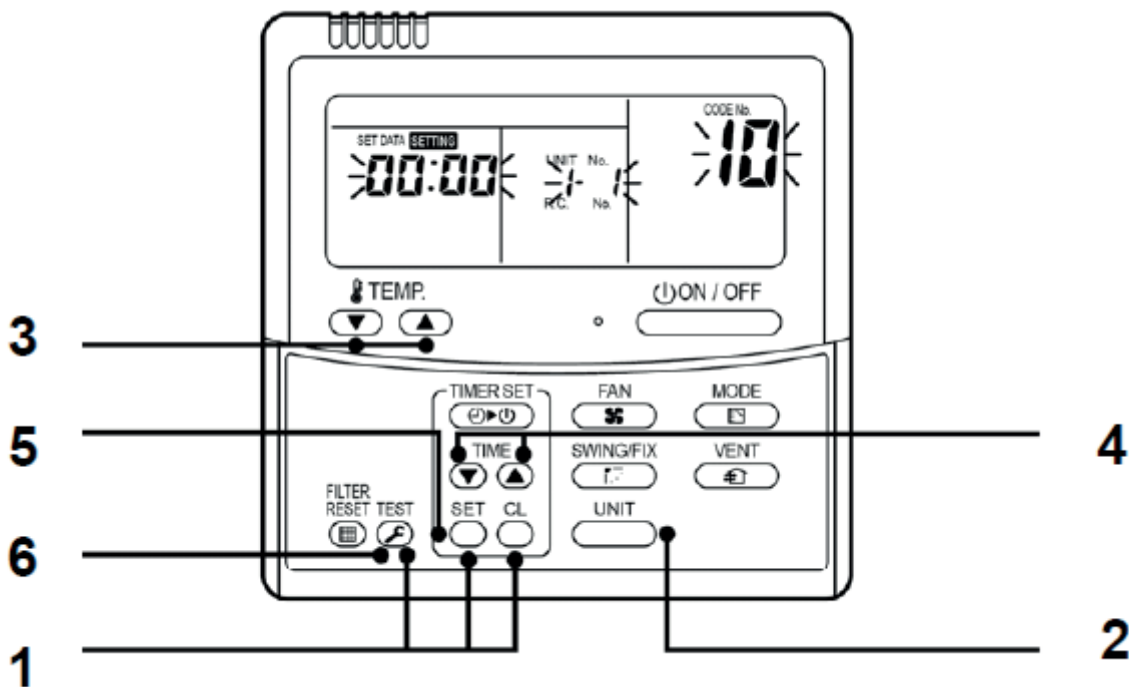
The display shows [A.d. .C.L.]. This deletes the central addresses. Central addresses cannot be assigned from the outdoor unit, but only automatically with a central remote controller, or each indoor unit individually with a wired remote control.

## DN code

Before making any changes in the DN menu, always make sure that you are at the correct unit and the correct DN code.  
Incorrect use irreparable damage can occur.

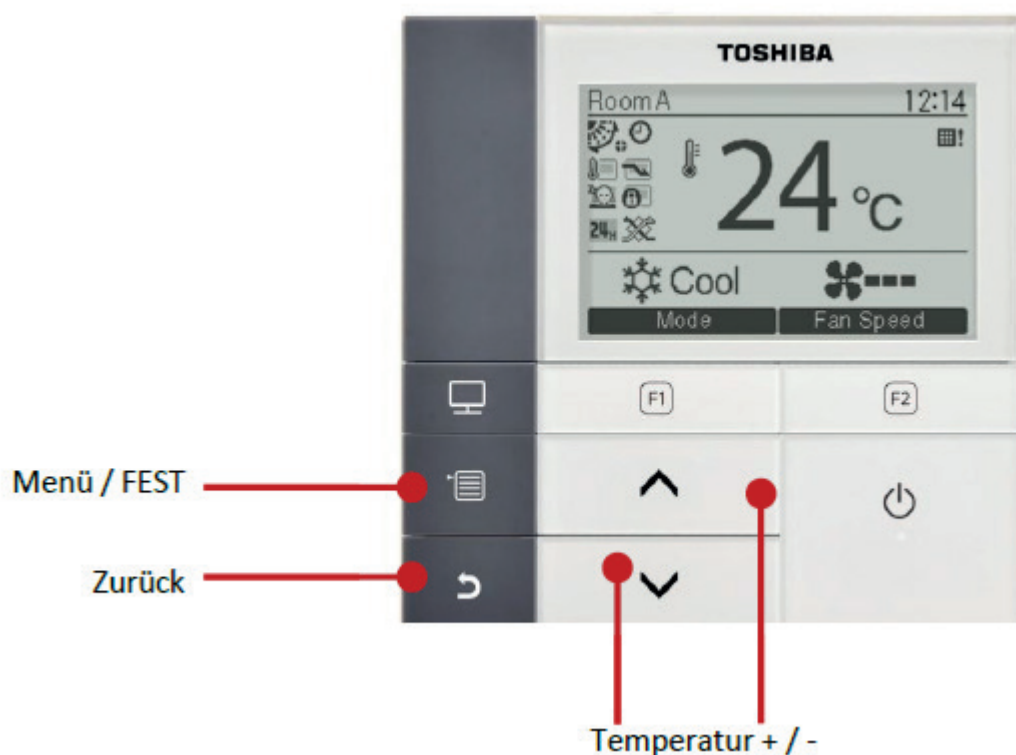
Instructions for changing DN codes with the RBC-AMT32E / RBC-AMTU31-E wired remote control.

1. Press SET + CL + TEST simultaneously for 4 seconds or longer.  
(In a group control, the first digit displayed is the address of the master unit).
2. For group control, use the UNIT button to select the indoor unit for which the values are to be changed.  
(The fan of the selected indoor unit switches on).
3. Select the desired DN code using the temperature setting buttons.
4. Use the time setting buttons to change the value of the DN code.
5. Press SET to confirm.
6. To save and exit the menu, press TEST.



## Instructions for changing DN codes with the cable remote control RBC-AMS51E-ES / RBC-AMSU51-ES

1. Press the menu button to enter the menu.
2. Press the menu key and the temperature down key at the same time for at least 5 seconds to enter the next submenu.
3. Then use the arrow keys to go to the item „DN settings“ and confirm with „F2“.
4. Then select the code to be changed using the arrow keys and switch between the two fields using the „F1“ and „F2“ keys.
5. After changing the code, press „FEST“ to save.
6. Press the „Back“ key to exit.



The most important DN codes

Code	Function
03	Central address
10	Indoor unit type
11	Indoor unit capacity
12	Refrigeration circuit address
13	Indoor unit address
14	Individual or group control
28	Activate automatic restart after power failure
0F	Heat pump or cooling only function
32	Temperature sensor selection (unit or remote control)

## Indoor unit DN-CODE table

(includes functions required to carry out the applied on-site control)

DN code	Name	Description	Factory default
<b>01</b>	Filter display delay timer	0000: inactive 0001: 150 h 0002: 2500 h 0003: 5000 h 0004: 10000 h	Depending on unit type
<b>02</b>	Soiled condition of the filter	0000: Standard 0001: Heavy pollution (half of the standard time)	0000: Standard
<b>03</b>	Central control address	0001: unit no. 1 to 0064: unit no. 64 ...TCC-LINK 0001: unit no. 1 to 0128: unit no. 128 ...TU2C-LINK 00Un: Not set (when using the U-Series remote control) 0099: Not set (Other than U-series remote control)	00Un/0099: Not set
<b>04</b>	Priority for specific indoor unit	0000: No priority 0001: Priority	0000: No priority
<b>06</b>	Shifting the heating temperature	0000: 0 °C 0001: +1 °C 0002: +2 °C to 0010: +10 °C (up to +6 recommended)	Depending on unit type
<b>0b</b>	Demand control (CN73/CN4)	0000: Demand input 0001: 02 Sensor input 0002: Setting up the card input 1 0003: Fire alarm input (normally open) 0004: Setting up the card input 2 0005: Fire alarm input (normally closed)	0000: Demand input
<b>0d</b>	Existence of the [AUTO] mode	0000: Provided 0001: Not provided (Automatic selection from the connected outdoor unit)	0001: Not provided
<b>0F</b>	Cooling only	0000: Heat pump 0001: Cooling only (No display of [AUTO] [Heating])	0000: Heat pump
<b>10</b>	Type	See <b>Type DN code „10“ list</b>	Depending on unit type
<b>11</b>	Indoor unit capacity	0000: not specified 0001 to 0034 See list of indoor unit capacity DN code „11“.	Depending on unit type
<b>12</b>	Line address	0001: unit no. 1 to 0064: unit no. 30 ... TCC-LINK 0001: unit no. 1 to 0128: unit no. 128 ... TU2C-LINK 00Un: Not set (when using the U-Series remote control) 0099: Not set (Other than U-series remote control)	00Un/0099: Not set
<b>13</b>	Indoor unit address	0001: unit no. 1 to 0064: unit no. 64 ...TCC-LINK 0001: unit no. 1 to 0128: unit no. 128 ...TU2C-LINK 00Un: Not set (when using the U-Series remote control) 0099: Not set (Other than U-series remote control)	00Un/0099: Not set
<b>14</b>	Group address	0000: Individual 0001: Master unit of the group 0002: Group slave unit 00Un: Not set (when using the U-Series remote control) 0099: Not set (Other than U-series remote control)	00Un/0099: Not set
<b>19</b>	Louver (setting the air direction)	0000: Off 0001: Swing only 0004: (4-way air outlet cassette type. etc.)	Depending on unit type

DN- Code	Name	Description	Factory default
<b>1E</b>	Temperature difference when selecting [AUTO] mode COOLING -> HEATING, HEATING -> COOLING	0000: 0 °C to 0010: 10 °C (Ts ± 5 °C)  Ts: Remote control set temperature	0003: 3 °C (Ts ± 1,5 °C)
<b>28</b>	Automatic restart in case of power failure	0000: No restart 0001: Restart	0000: No restart
<b>2A</b>	Selecting the option/disturbance input (TCB-PCUC2E: CN3)	0000: Filter input 0001: Alarm input 0002: No input	0002: No input
<b>2E</b>	Select HA connection (CN61)	0000: Standard 0001: Card input Setup 1 0002: Fire alarm input 0003: Card input Setup 2	0000: Standard (HA connection)
<b>31</b>	Fan control	0000: Not available 0001: Available	0000: Not available
<b>32</b>	TA sensor selection	0000: Indoor units TA sensor 0001: Remote control sensor	0000: Indoor units TA sensor
<b>33</b>	Select temperature unit	0000: °C 0001: °F	0000: °C
<b>5d</b>	External static pressure Adjustment to the height of the ceiling (airflow selection)	See Service Manual page 81	0000: Standard
<b>60</b>	Timer setting (wired remote control)	0000: Available (can be performed) 0001: Not available (cannot be performed)	0000: Available
<b>77</b>	Dual set point	0000: Not available 0002: Available	0002: Available
<b>79</b>	Setting the alarm output of the master unit	0000: Excluding the status of the follower 0001: Including the status of the follower	0000: Excluding the status of the follower
<b>b3</b>	Light cooling	0000: Not available 0001: Available	0001: Available
<b>b5</b>	Presence sensor/ Wireless A-B selection Present / Not present	0000: Not available 0001: Presence sensor available 0002: Wireless remote control available	0000: Not available
<b>b6</b>	Presence sensor Enable / Invalid (Absence time Assessment time)	0000: Invalid 0002: 60 min. 0005: 150 min. 0001: 30 min. 0004: 120 min.	0002: Activate (60 min.)
<b>b7</b>	Operation of the presence sensor in case of absence	0000: Standby 0001: Operation interruption	0000: Standby
<b>CF</b>	Chassis of indoor unit	0000: Standard model 0001: Larger chassis	Depending on model type
<b>d0</b>	Whether the energy-saving mode can be set via the remote control	0000: Not possible 0001: Possible	0001: Possible
<b>E6</b>	Wireless remote control selection A-B	0000: A 0001: B	0000: A
<b>F0</b>	Swing mode	0001: Standard 0002: Double swing 0003: Pendulum	0001: Standard
<b>F1</b>	Louvre blades in fixed position (louvre blade no. 1)	0000: Not fixed 0001: Horizontal position 0005: Position downwards	0000: Not fixed
<b>F2</b>	Louvre blades in fixed position (louvre blade no. 2)	0000: Not fixed 0001: Horizontal position 0005: Position downward	0000: Not fixed



DN- Code	Name	Description	Factory default
<b>F3</b>	Louvre blades in fixed position (louvre blade no. 3)	0000: Not fixed 0001: Horizontal position 0005: Position downward	0000: Not fixed
<b>F4</b>	Louvre blades in fixed position (louvre blade no. 4)	0000: Not fixed 0001: Horizontal position 0005: Position downward	0000: Not fixed
<b>F6</b>	Existence of an application control kit (TCB-PCUC2E)	0000: Not available 0001: Available	0000: Not available
<b>FC</b>	Communication BUS	0000: TCC-LINK 0003: TU2C-LINK	0000: TCC-LINK
<b>Fd</b>	Priority operating mode (Flow Boxes)	0000: Heating 0001: Cooling	0000: Heating
<b>FE</b>	Flow Box Address	0001: unit no. 1 to 0064: unit no. 64 ...TCC-LINK 0001: unit no. 1 to 0064: unit no. 128 ...TU2C-LINK 00Un: Not set (when using the U-series remote control) 0099: Not set (Other than U-series remote control)	00Un/0099: Not set
<b>103</b>	Remote control	0000: Used 0001: Not used	0000: Used
<b>180</b>	Note Code number 01	Legal notification code is set.	0000: Not available
<b>181</b>	Note Code number 02		0000: Not available
<b>182</b>	Note Code number 03		0000: Not available
<b>183</b>	Note Code number 04		0000: Not available
<b>184</b>	Note Code number 05		0000: Not available
<b>185</b>	Note Code number 06		0000: Not available
<b>186</b>	Note Code number 07		0000: Not available
<b>187</b>	Note Code number 08		0000: Not available
<b>188</b>	Note Code number 09		0000: Not available
<b>189</b>	Note Code number 10		0000: Not available
<b>1FC</b>	Connection resistance of the indoor unit	0000: OFF 0001: ON	0000: OFF

\*1 The order of display of „00Un“ and „0099“ varies depending on the remote control model or communication type.

## Procedure for setting the outdoor unit function code no. (DN)

The settings can be changed by operating the switches on the interface board.

In the TU2C-Link communication system, this can also be done by operating the cable remote control.

### Set up applicable controls (Settings on site)

Basic procedure

Make sure the air conditioner is switched off before making any settings.

(Change the settings while the air conditioner is networked).

#### When switching settings via the interface board of the outdoor unit

1. Set the rotary switch of the interface board on the outdoor unit to SW01= [9], SW02= [1] and SW03= [1].
2. The 7-segment display shows „d n.S E t“.
3. When SW04 is pressed, the 7-segment display changes to „d n.0 0 1“ and the outdoor unit code NO. [001] is displayed.
4. Change the outdoor unit code NO. [\*\*\*] with SW05 or SW06.  
Press SW05 to change the code. Press and hold SW05 to advance in 5 steps.  
Press SW06 to reset the code. Press and hold SW05 to go back in 5 steps.
5. When SW04 is pressed, the 7-segment display „d.\* \* \*“ flashes and the set data [ ] is displayed.
6. Change the setting data [\*\*\*\*] with SW05 or SW06.  
Press SW05 to advance to the data. Press SW06 to return to the setting data.
7. Press and hold SW04 for more than 2 seconds.  
When the flashing stops and the indicator remains lit, the setting is completed.  
(To return to the item code setting after completing the setting or to return to the item code setting without setting, press Return setting once, press SW04 once).
8. Set the rotary switch on the outdoor unit interface board back to SW01= [1], SW02= [1], SW03= [1].
9. Reset the power supply to the outdoor unit (turn it off for at least one minute).

### Purpose/Features

This function enables switching between cooling priority and heating priority.

Setting

#### ATTENTION!

In case of priority indoor unit mode, it is necessary to set up the indoor unit selected for priority operation (single unit only).

Setting method for outdoor units (master unit)

Outdoor DN code (O.DN) Setting	Operation
O.DN [18] = 0000	Heating priority (factory setting)
O.DN [18] = 001	Cooling priority
O.DN [18] = 002	Priority operation based on the number of units in operation. (Priority for the operating mode with the largest proportion of units in operation)
O.DN [18] = 003	Priority indoor unit (priority for the operation mode of the specific indoor unit set up for priority operation)

## Outdoor units DN-CODE table

DN- Code	Name	Description	Factory default																																												
003	Type setting	<div>Code range: 0000 to 0255</div> <table><tr><td>Type-setting</td><td>DN Code [03]</td></tr><tr><td>0</td><td>0000</td></tr><tr><td>1</td><td>0001</td></tr><tr><td>2</td><td>0002</td></tr><tr><td>-</td><td>-</td></tr><tr><td>-</td><td>-</td></tr><tr><td>-</td><td>-</td></tr></table> <div>* DN Code [003] _ 0000: not defined</div>	Type-setting	DN Code [03]	0	0000	1	0001	2	0002	-	-	-	-	-	-	Depending on model type																														
Type-setting	DN Code [03]																																														
0	0000																																														
1	0001																																														
2	0002																																														
-	-																																														
-	-																																														
-	-																																														
004	7-segment display Control content	0000: Outdoor unit number 0001: Start priority number	0000: Outdoor unit number																																												
005	No authorisation/authorisation of the NFC setting	0000: Initial state 0001: No authorisation 0002: Authorisation	0000: Initial state																																												
007	Compressor maintenance time	0000: 0 h 0001 to 0063 (1000 h to 63000 h)	0000: 0 h																																												
008	Operating mode selection control	0000: Unselected indoor units remain in standby mode (thermostat OFF). 0001: Change unselected indoor units t the selected mode	0000: No priority																																												
009	Capacity/current demand control	0000: Capacity requirement 0001: Power demand	0000: Capacity requirement																																												
00A	Setting the upper limit value of the power consumption as the default value Heating (for power demand) _High	<div>Code range [0A] [0C] : 0000 to 0255 (1 kW to 255 kW) [0B] [0D] : 0000 to 00998 (0,00 kW to 0,99 kW)</div> <table><tr><td colspan="2">Power consumption upper limit default value</td><td colspan="2">DN-Code</td></tr><tr><td></td><td>Heating</td><td>[00A]</td><td>[00B]</td></tr><tr><td></td><td>Cooling</td><td>[00C]</td><td>[00D]</td></tr><tr><td colspan="2">No power demand function</td><td>0000</td><td>0000</td></tr><tr><td colspan="2">0,01 kW</td><td>0000</td><td>0001</td></tr><tr><td colspan="2">0,02 kW</td><td>0000</td><td>0002</td></tr><tr><td colspan="2">-</td><td>-</td><td>-</td></tr><tr><td colspan="2">-</td><td>-</td><td>-</td></tr><tr><td colspan="2">10,00 kW</td><td>0010</td><td>0000</td></tr><tr><td colspan="2">-</td><td>-</td><td>-</td></tr><tr><td colspan="2">-</td><td>-</td><td>-</td></tr></table>	Power consumption upper limit default value		DN-Code			Heating	[00A]	[00B]		Cooling	[00C]	[00D]	No power demand function		0000	0000	0,01 kW		0000	0001	0,02 kW		0000	0002	-		-	-	-		-	-	10,00 kW		0010	0000	-		-	-	-		-	-	0000: 0 kW
Power consumption upper limit default value		DN-Code																																													
	Heating	[00A]	[00B]																																												
	Cooling	[00C]	[00D]																																												
No power demand function		0000	0000																																												
0,01 kW		0000	0001																																												
0,02 kW		0000	0002																																												
-		-	-																																												
-		-	-																																												
10,00 kW		0010	0000																																												
-		-	-																																												
-		-	-																																												
00b	Setting the upper limit value of the power consumption as the default value Heating (for power demand) _Low	<table><tr><td></td><td>Heating</td><td>[00A]</td><td>[00B]</td></tr><tr><td></td><td>Cooling</td><td>[00C]</td><td>[00D]</td></tr><tr><td colspan="2">No power demand function</td><td>0000</td><td>0000</td></tr><tr><td colspan="2">0,01 kW</td><td>0000</td><td>0001</td></tr><tr><td colspan="2">0,02 kW</td><td>0000</td><td>0002</td></tr><tr><td colspan="2">-</td><td>-</td><td>-</td></tr><tr><td colspan="2">-</td><td>-</td><td>-</td></tr><tr><td colspan="2">10,00 kW</td><td>0010</td><td>0000</td></tr><tr><td colspan="2">-</td><td>-</td><td>-</td></tr><tr><td colspan="2">-</td><td>-</td><td>-</td></tr></table>		Heating	[00A]	[00B]		Cooling	[00C]	[00D]	No power demand function		0000	0000	0,01 kW		0000	0001	0,02 kW		0000	0002	-		-	-	-		-	-	10,00 kW		0010	0000	-		-	-	-		-	-	0000: 0 kW				
	Heating	[00A]	[00B]																																												
	Cooling	[00C]	[00D]																																												
No power demand function		0000	0000																																												
0,01 kW		0000	0001																																												
0,02 kW		0000	0002																																												
-		-	-																																												
-		-	-																																												
10,00 kW		0010	0000																																												
-		-	-																																												
-		-	-																																												
00C	Setting the upper limit of the power consumption as the default value Cooling (for power demand)_High	<table><tr><td></td><td>Heating</td><td>[00A]</td><td>[00B]</td></tr><tr><td></td><td>Cooling</td><td>[00C]</td><td>[00D]</td></tr><tr><td colspan="2">No power demand function</td><td>0000</td><td>0000</td></tr><tr><td colspan="2">0,01 kW</td><td>0000</td><td>0001</td></tr><tr><td colspan="2">0,02 kW</td><td>0000</td><td>0002</td></tr><tr><td colspan="2">-</td><td>-</td><td>-</td></tr><tr><td colspan="2">-</td><td>-</td><td>-</td></tr><tr><td colspan="2">10,00 kW</td><td>0010</td><td>0000</td></tr><tr><td colspan="2">-</td><td>-</td><td>-</td></tr><tr><td colspan="2">-</td><td>-</td><td>-</td></tr></table>		Heating	[00A]	[00B]		Cooling	[00C]	[00D]	No power demand function		0000	0000	0,01 kW		0000	0001	0,02 kW		0000	0002	-		-	-	-		-	-	10,00 kW		0010	0000	-		-	-	-		-	-	0000: 0 kW				
	Heating	[00A]	[00B]																																												
	Cooling	[00C]	[00D]																																												
No power demand function		0000	0000																																												
0,01 kW		0000	0001																																												
0,02 kW		0000	0002																																												
-		-	-																																												
-		-	-																																												
10,00 kW		0010	0000																																												
-		-	-																																												
-		-	-																																												
00d	Setting the upper limit value of the power consumption as the default value Cooling (for power demand)_Low	<table><tr><td></td><td>Heating</td><td>[00A]</td><td>[00B]</td></tr><tr><td></td><td>Cooling</td><td>[00C]</td><td>[00D]</td></tr><tr><td colspan="2">No power demand function</td><td>0000</td><td>0000</td></tr><tr><td colspan="2">0,01 kW</td><td>0000</td><td>0001</td></tr><tr><td colspan="2">0,02 kW</td><td>0000</td><td>0002</td></tr><tr><td colspan="2">-</td><td>-</td><td>-</td></tr><tr><td colspan="2">-</td><td>-</td><td>-</td></tr><tr><td colspan="2">10,00 kW</td><td>0010</td><td>0000</td></tr><tr><td colspan="2">-</td><td>-</td><td>-</td></tr><tr><td colspan="2">-</td><td>-</td><td>-</td></tr></table>		Heating	[00A]	[00B]		Cooling	[00C]	[00D]	No power demand function		0000	0000	0,01 kW		0000	0001	0,02 kW		0000	0002	-		-	-	-		-	-	10,00 kW		0010	0000	-		-	-	-		-	-	0000: 0 kW				
	Heating	[00A]	[00B]																																												
	Cooling	[00C]	[00D]																																												
No power demand function		0000	0000																																												
0,01 kW		0000	0001																																												
0,02 kW		0000	0002																																												
-		-	-																																												
-		-	-																																												
10,00 kW		0010	0000																																												
-		-	-																																												
-		-	-																																												

DN- Code	Name	Description	Factory default			
00E	Setting Value for demand control	Its setting value during demand control for standard specifications can be set with DN code [00E]. Its value for extension specifications can be set in two steps (DN codes [00F], [010]) during normal operation and demand control (setting value DN code [00E]).	0015: 0% (necessarily stop)			
				DN Code		
		Demand regulation		[00E]	[00F]	[010]
		100%		0	0	0
00F	Setting Value for demand control (extension 1)	95%	1	1	1	
		90%	2	2	2	
		85%	3	3	3	
		80%	4	4	4 (Factory default)	
		75%	5	5	5	
		70%	6	6	6	
		65%	7	7	7	
		60%	8	8 (Factory default)	8	
010	Setting Value for demand control (extension 2)	55%	9	9	9	
		50%	10	10	10	
		-	11 to 14	11 to 14	11 to 14	
		0%	15 (Factory default)	15	15	
012	Optional output setting control 1 (CN514)	0000: Output for compressor operation 0001: Speed	0000: Output for compressor operation			
018	Setting the priority operating mode	0000: Priority heating 0001: Priority cooling 0002: Priority operation unit no. 0004: Priority indoor unit	0000: Priority heating			
019	External fan high static pressure shift	0000: Normal 0001: Operation with high static pressure	0000: Normal			
01A	Standby mode Heating standby	0000: No function 0001: Standby	0000: No function			
01d	System Cooperation Defrost Setup 1 (the number of cooperation)	0000: No function (Follower) 0001: Prohibition 0002: 2 Cooperation system (Master) 0003: 3 Cooperation system (master) * Set [0002] or [0003] to 0.DN [01D] for the outdoor unit that is set to the master unit to in 0. DN [01F].	0000: No function			
01E	System Cooperation Defrost Setup 2 (Zone Address)	0000: No function 0001 ~ 0128: Address 0001 in case no central control is used to control the system defrost cooperation. If used, set 0001 to 0128 according to the instructions for the central remote control.	0000: No function			
01F	System Cooperation Defrost Setup 3 (Cooperation Address)	0000: Inactive 0001: Master 0002 ~ 0003: Follower 2 ~ 3	0000: No function			
03d	Existence of an automatic backup	0000: Available 0001: Not available	0000: Available			
03F	Operation control in case of overflow Indoor unit detection	0000: Abnormal system stop 0001: System in continuous operation	0000: Abnormal system stop			
040	Outdoor operation control Abnormal input switching control when receiving [L30] [L02] from indoors	0000: System in continuous operation 0001: Abnormal system stop	0000: System in continuous operation			
082	Setting for communication	0000: TTC-Link 0003: TU2C-Link	0000: TTC-Link			

## List of error codes (outdoor unit)

(Check code detected by the external interface - typical examples)

If „HELLO“ is displayed on the outdoor 7-segment for 1 minute or longer, turn off the power once and turn on the power again after 30 seconds or longer.

If the same symptom occurs, there is a possibility that there is a problem with the I/F card.

○ : on ● : off ◎ : flash

ALT.: The flashing occurs alternately when two LEDs are flashing

SIM: Simultaneous flashing with two flashing LEDs

Error code			Receiving unit display				Typical problem	Description of the problem
7-segment display for outdoor use		Display of central control or main remote control	Flashing light block					
	Sub-Code		Operation ⏻	Timer ⌚	Ready Ⓢ	Flash		
E06	Number of indoor units from which the signal is normally received	E06	●	●	⊗		Missing signal from indoor unit	<ul style="list-style-type: none"><li>The indoor unit that initially communicates normally does not send back a signal (reducing the number of connected indoor units).</li><li>When the terminating resistor is not set in any of the indoor units in the TU2C-LINK communication system</li></ul>
E07	-	(E04)	●	●	⊗		Disturbance of the communication circuit Inside/Outside	The signal cannot be transmitted to the indoor units (→ indoor units remain without communication with the outdoor unit)
E08	Double indoor unit address	(E08)	⊗	●	●		Double indoor unit address	The same address is assigned to more than one indoor unit (also indicated at the end of the indoor unit).
E12	01: Indoor-outdoor unit communication 02: Outdoor-outdoor unit communication	E12	⊗	●	●		Problems with automatic address start	<ul style="list-style-type: none"><li>The indoor automatic address setting is started while the automatic address setting for units in another refrigerant line is running.</li><li>The automatic address setting for the outdoor area is started while the automatic address setting for the indoor units is running.</li></ul>
E15	-	E15	●	●	⊗		Indoor unit not found with automatic address setting	The indoor unit cannot communicate while the automatic address setting for indoor units is running
E16	00: Total capacity 01: Number of connected units	E16	●	●	⊗		Too many indoor units connected/capacity exceeded	The combined capacity of the indoor units is too large. The maximum combination of indoor units specified in the technical data table.
E19	00: No master unit 02: Two or more master units	E19	●	●	⊗		Disturbance of the number of outdoor master units	There is no or more than one outdoor master unit in a refrigerant circuit
E20	01: Connecting the outdoor unit to another refrigerant line 02: Connection of the indoor unit to another refrigerant pipe	E20	●	●	⊗		Connection to other refrigerant line found with automatic address setting	Indoor unit from another refrigerant pipe is detected while the indoor unit's automatic address setting is running
E23	-	E23	●	●	⊗		Problems with communication between outdoor units	The signal cannot be transmitted to other outdoor units
E25	-	E25	●	●	⊗		Double Follower external address	With manually set outer addresses, overlaps occur
E26	Address of the outdoor unit from which the signal is not normally received	E26	●	●	⊗		Lack of signal from the outdoor unit	The Follower outdoor unit that was originally communicating normally is no longer communicating (reducing the number of connected Follower outdoor units).
E28	Removed outdoor unit no.	E28	●	●	⊗		Fault of the Follower outdoor unit	The outdoor unit detects a fault related to the Follower outdoor unit. (Details are displayed on the Follower outdoor unit)

Error code					Receiving unit display				Typical problem	Description of the problem																																																																																																																		
7-segment display for outdoor use					Display of central control or main remote control	Flashing light block																																																																																																																						
Sub-Code						Operation ⏻	Timer ⌚	Ready ⊗			Flash																																																																																																																	
E31	<table><tr><th colspan="4">PCB</th><th colspan="4">PCB</th></tr><tr><th colspan="2">Compressor</th><th colspan="2">Fan motor</th><th colspan="2">Compressor</th><th colspan="2">Fan motor</th></tr><tr><th>1</th><th>2</th><th>1</th><th>2</th><th>1</th><th>2</th><th>1</th><th>2</th></tr><tr><td>01</td><td>○</td><td></td><td></td><td></td><td></td><td>11</td><td>○</td><td></td><td></td><td>○</td></tr><tr><td>02</td><td></td><td>○</td><td></td><td></td><td></td><td>12</td><td></td><td>○</td><td></td><td></td></tr><tr><td>03</td><td>○</td><td>○</td><td></td><td></td><td></td><td>13</td><td>○</td><td>○</td><td></td><td>○</td></tr><tr><td>08</td><td></td><td></td><td>○</td><td></td><td></td><td>18</td><td></td><td></td><td>○</td><td>○</td></tr><tr><td>09</td><td></td><td></td><td>○</td><td></td><td></td><td>19</td><td>○</td><td></td><td>○</td><td>○</td></tr><tr><td>0A</td><td></td><td>○</td><td>○</td><td></td><td></td><td>1A</td><td></td><td>○</td><td>○</td><td>○</td></tr><tr><td>0B</td><td>○</td><td>○</td><td>○</td><td></td><td></td><td>1B</td><td>○</td><td>○</td><td>○</td><td>○</td></tr><tr><td>10</td><td></td><td></td><td></td><td>○</td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table> <div>Circle (○): Fault PCB</div> <div>80: Communication failure between MCU and Sub MCU</div>					PCB				PCB				Compressor		Fan motor		Compressor		Fan motor		1	2	1	2	1	2	1	2	01	○					11	○			○	02		○				12		○			03	○	○				13	○	○		○	08			○			18			○	○	09			○			19	○		○	○	0A		○	○			1A		○	○	○	0B	○	○	○			1B	○	○	○	○	10				○							E31	●	●	⊗		Fault PCB-Communication fault  Sub-MCU communication fault	There is no communication between the circuit boards in the inverter housing
	PCB				PCB																																																																																																																							
	Compressor		Fan motor		Compressor		Fan motor																																																																																																																					
	1	2	1	2	1	2	1	2																																																																																																																				
	01	○					11	○			○																																																																																																																	
	02		○				12		○																																																																																																																			
	03	○	○				13	○	○		○																																																																																																																	
	08			○			18			○	○																																																																																																																	
	09			○			19	○		○	○																																																																																																																	
	0A		○	○			1A		○	○	○																																																																																																																	
0B	○	○	○			1B	○	○	○	○																																																																																																																		
10				○																																																																																																																								
F04	-	F04	⊗	⊗	○	ALT	Fault of the outdoor temperature sensor (TD1)	The outdoor temperature sensor (TD1) is open/bridged																																																																																																																				
F05	-	F05	⊗	⊗	○	ALT	Fault of the outdoor temperature sensor (TD2)	The outdoor temperature sensor (TD2) is open/bridged																																																																																																																				
F06	01: TE1 Sensor 02: TE2 Sensor 03: TE3 Sensor	F06	⊗	⊗	○	ALT	Fault in the outdoor temperature sensor on the liquid side of the heat exchanger (TE1, TE2, TE3)	The outdoor temperature sensor of the heat exchanger on the liquid side (TE1, TE2, TE3) is open/bridged																																																																																																																				
F07	01: TL1 Sensor 02: TL2 Sensor 03: TL3 Sensor	F07	⊗	⊗	○	ALT	Fault of the external fluid temperature sensor (TL1, TL2, TL3)	The outdoor temperature sensor for liquids (TL1, TL2, TL3) is open/bridged																																																																																																																				
F08	-	F08	⊗	⊗	○	ALT	Outdoor air temperature sensor failure (TO)	Outdoor air temperature sensor (TO) is open/bridged																																																																																																																				
F09	01: TG1 Sensor 02: TG2 Sensor 03: TG3 Sensor	F09	⊗	⊗	○	ALT	Failure of the gas Temperature sensor on the gas side of the external heat exchanger (TG1, TG2, TG3)	Outdoor temperature sensor of the heat exchanger on the gas side (TG1, TG2, TG3) is open/bridged																																																																																																																				
F12	01: TS1 Sensor 03: TS3 Sensor 04: TS3 Sensor getrennt	F12	⊗	⊗	○	ALT	<div>● Outdoor suction temperature sensor failure (TS1, TS3)</div> <div>● If TS3 detects an unusual temperature during compressor operation and PMV4 operation in cooling mode</div>	<div>● The outside suction temperature sensor (TS1, TS3) is open/bridged</div> <div>● When the interruption of the outdoor temperature sensor (TS3) is detected</div>																																																																																																																				
F15	-	F15	⊗	⊗	○	ALT	Wiring error of the outdoor sensor (TE1, TL1)	A wiring error was detected in the outdoor temperature sensors (TE1, TL1)																																																																																																																				
F16	-	F16	⊗	⊗	○	ALT	Wiring error on the external pressure sensor (Pd, Ps)	A wiring error was detected in the external pressure sensors (Pd, Ps)																																																																																																																				
F23	-	F23	⊗	⊗	○	ALT	Low pressure sensor fault (Ps)	The output voltage of the low pressure sensors (Pd, Ps) is zero																																																																																																																				
F24	-	F24	⊗	⊗	○	ALT	High pressure sensor (Pd) Fault	The output voltage of the high pressure sensor (Pd) is zero or gives abnormal values when the compressors have been switched off																																																																																																																				
F31	-	F31	⊗	⊗	○	SIM	EEPROM malfunction in the outdoor area	EEPROM in the outdoor area is defective (alarm and shutdown for the Master unit and continued operation for the Follower unit)																																																																																																																				



○ : on ● : off ⊙ : flash

ALT.: The flashing occurs alternately when two LEDs are flashing

SIM: Simultaneous flashing with two flashing LEDs

Error code			Receiving unit display				Typical problem	Description of the problem																																																																																					
7-segment display for outdoor use		Display of central control or main remote control	Flashing light block																																																																																										
	Sub-Code		Operation ⏻	Timer ⌚	Ready ⊗	Flash																																																																																							
H05	-	H05	●	⊗	●		Wiring error of the outdoor temperature sensor (TD1)	A wiring/installation error or detachment of the outdoor temperature sensor (TD1) has been detected																																																																																					
H06	-	H06	●	⊗	●		Activation of the low pressure protection	The low pressure sensor (Ps) detects an unusually low operating pressure																																																																																					
H07	-	H07	●	⊗	●		Low oil protection	The temperature sensor for oil level detection (TK1, TK2) detects an unusually low oil level																																																																																					
H08	01: Error from TK1 sensor 02: Error of TK2 sensor	H08	●	⊗	●		Fault in the temperature sensor for oil level detection (TK1, TK2)	The temperature sensor for oil level detection (TK1, TK2) is open/bridged																																																																																					
H15	-	H15	●	⊗	●		Wiring error of the outdoor temperature sensor (TD2)	A wiring/installation fault or detachment of the outdoor temperature sensor (TD2) has been detected																																																																																					
H16	01: TK1 Oil circuit failure 02: TK2 Oil circuit failure	H16	●	⊗	●		Fault of the oil level detection circuit	The temperature sensor for oil level detection (TK1, TK2) does not detect a temperature change although the compressor was started																																																																																					
L04	-	L04	⊗	○	⊗	SIM	Double address of the refrigerant line in the outdoor area	Outdoor units belonging to different refrigerant piping systems have been assigned the same refrigerant piping address																																																																																					
L06	Number of priority indoor units (check code L05 or L06 depending on the unit)	L05	⊗	●	⊗	SIM	Double priority indoor unit (as indicated on the priority indoor unit)	More than one indoor unit has been set up as the priority indoor unit																																																																																					
		L06	⊗	●	⊗	SIM	Double priority indoor unit (as displayed on an indoor unit other than the priority indoor unit)	More than one indoor unit has been set up as the priority indoor unit																																																																																					
L08	-	(L08)	⊗	●	⊗	SIM	Indoor unit group address was not set	Address setting was not performed for one or more indoor units (also detected at the end of the indoor unit)																																																																																					
L10	-	L10	⊗	○	⊗	SIM	Outdoor unit capacity not set	The power of the outdoor unit was not set (after replacing PCB)																																																																																					
L17	-	L17	⊗	○	⊗	SIM	Problems with the incompatibility of outdoor models	The old model of the outdoor unit was connected																																																																																					
L23	02: Error in the outdoor unit switch setting	L23	⊗	○	⊗	SIM	Switch setting error	Setting error of the outdoor units when the HWM (hot water module) is connected																																																																																					
L28	-	L28	⊗	○	⊗	SIM	Too many outdoor units connected	More than six outdoor units were connected																																																																																					
L29	<table><tr><th colspan="4">PCB</th></tr><tr><th colspan="2">Compressor</th><th colspan="2">Fan motor</th></tr><tr><th>1</th><th>2</th><th>1</th><th>2</th></tr><tr><td>01</td><td>○</td><td></td><td></td></tr><tr><td>02</td><td></td><td>○</td><td></td></tr><tr><td>03</td><td>○</td><td>○</td><td></td></tr><tr><td>08</td><td></td><td></td><td>○</td></tr><tr><td>09</td><td></td><td></td><td>○</td></tr><tr><td>0A</td><td></td><td>○</td><td>○</td></tr><tr><td>0B</td><td>○</td><td>○</td><td>○</td></tr><tr><td>10</td><td></td><td></td><td>○</td></tr></table>	PCB				Compressor		Fan motor		1	2	1	2	01	○			02		○		03	○	○		08			○	09			○	0A		○	○	0B	○	○	○	10			○	<table><tr><th colspan="4">PCB</th></tr><tr><th colspan="2">Compressor</th><th colspan="2">Fan motor</th></tr><tr><th>1</th><th>2</th><th>1</th><th>2</th></tr><tr><td>11</td><td>○</td><td></td><td></td></tr><tr><td>12</td><td></td><td>○</td><td></td></tr><tr><td>13</td><td>○</td><td>○</td><td></td></tr><tr><td>18</td><td></td><td></td><td>○</td></tr><tr><td>19</td><td>○</td><td></td><td>○</td></tr><tr><td>1A</td><td></td><td>○</td><td>○</td></tr><tr><td>1B</td><td>○</td><td>○</td><td>○</td></tr></table> <div>Circle (○): Failure PCB</div>	PCB				Compressor		Fan motor		1	2	1	2	11	○			12		○		13	○	○		18			○	19	○		○	1A		○	○	1B	○	○	○	L29	⊗	○	⊗	SIM	Problems with the number of PCBs	The number of PCBs in the inverter enclosure is insufficient
	PCB																																																																																												
Compressor		Fan motor																																																																																											
1	2	1	2																																																																																										
01	○																																																																																												
02		○																																																																																											
03	○	○																																																																																											
08			○																																																																																										
09			○																																																																																										
0A		○	○																																																																																										
0B	○	○	○																																																																																										
10			○																																																																																										
PCB																																																																																													
Compressor		Fan motor																																																																																											
1	2	1	2																																																																																										
11	○																																																																																												
12		○																																																																																											
13	○	○																																																																																											
18			○																																																																																										
19	○		○																																																																																										
1A		○	○																																																																																										
1B	○	○	○																																																																																										
	00	L29	⊗	○	⊗	SIM	Problems with the number of PCBs	If there is a large number of inverter boards to model an interface board.																																																																																					

Error code			Receiving unit display				Typical problem	Description of the problem
7-segment display for outdoor use		Display of central control or main remote control	Flashing light block					
	Sub-Code		Operation ⏻	Timer ⌚	Ready ⊗	Flash		
L30	Detected indoor unit no.	(L30)	⊗	○	⊗	SIM	External fault input for indoor use (interlocking)	Indoor unit was switched off due to external fault message in a refrigerant pipe (detected by the indoor unit)
P03	-	P03	⊗	●	⊗	ALT	Outdoor temperature fault (TD1)	The outdoor temperature sensor (TD1) has detected an unusually high temperature
P05	00: Current detection fault 01: Open phase 02: Power supply miswiring	P05	⊗	●	⊗	ALT	Power supply fault detection/open phase/ miswiring of power supply	The open phase is detected when the power supply is switched on. The DC voltage of the inverter is too high (overvoltage) or too low (undervoltage).
P07	01: Compressor 1 heat sink problem 02: Compressor 2 heat sink problem	P07	⊗	●	⊗	ALT	Problems with the heat sink overheating	Temperature sensor (TH) built into the IPM to detect overheating
	04: Heat sink drainage						Problems with condensation on heat sinks	The outdoor temperature sensor for liquids (TL2) has detected an unusually low temperature
P10	Indoor unit no. recognised	(P10)	●	⊗	⊗	ALT	Indoor unit overflow	The indoor unit was switched off in a refrigerant pipe because an overflow was detected (detected by the indoor unit).
P11	-	P11	●	⊗	⊗	ALT	Problems with freezing of the outdoor heat exchanger	Residual frost was repeatedly detected on the outdoor heat exchanger
P13	-	P13	●	⊗	⊗	ALT	Outdoor liquid backflow detection problems	The state of the refrigerant circuit indicates operation with liquid reflux
P15	01: TS Condition 02: TD condition	P15	⊗	●	⊗	ALT	Gas leak detection	The outdoor suction temperature sensor (TS1) permanently and repeatedly detects high temperatures that exceed the standard value
P17	-	P17	⊗	●	⊗	ALT	Outdoor temperature failure (TD2)	The outdoor temperature sensor (TD2) detects an unusually high temperature
P19	Outdoor unit no. detected	P19	⊗	●	⊗	ALT	4-way valve Reversal fault	An abnormal cooling cycle is detected during heating operation
P20	-	P20	⊗	●	⊗	ALT	Activation of the high pressure protection	High pressure (Pd) sensor detects high pressure exceeding the standard value

Vom Inverter erkannter Prüfcode des Verdichters im Außengerät - typische Beispiele

○ : on ● : off ◎ : flash

ALT.: The flashing occurs alternately when two LEDs are flashing

SIM: Simultaneous flashing with two flashing LEDs

Error code			Receiving unit display				Typical problem	Description of the problem
7-segment display for outdoor use		Display of central control or main remote control	Flashing light block					
	Sub-Code		Operation ⏻	Timer ⌚	Ready ⊗	Flash		
F13	1*: Compressor 1 2*: Compressor 2	F13	⊗	⊗	○	ALT	Failure of the temperature sensor in the indoor IPM (TH)	The temperature sensor in the indoor IPM (TH) is open/short-circuited
H01	1*: Compressor 1 2*: Compressor 2	H01	●	⊗	●		Compressor failure	Inverter current detection circuit (Idc) detects overcurrent
H02	1*: Compressor 1 2*: Compressor 2	H02	●	⊗	●		Compressor fault (blockage)	Compressor blockage is detected
H03	1*: Compressor 1 2*: Compressor 2	H03	●	⊗	●		Error in the current detection circuit	Abnormal current is detected while the inverter compressor is off
H17	1*: Compressor 1 2*: Compressor 2	H17	●	⊗	●		Compressor fault (lockout)	It was found that the synchronisation could not be carried out
P04	1*: Compressor 1 2*: Compressor 2	P04	⊗	●	⊗	ALT	Activation of high pressure SW	High pressure SW is activated
P05	1*: Compressor 1 side 2*: Compressor 2 side	P05	⊗	●	⊗	ALT	Compressor failure Vdc	DC voltage of the inverter is too high (overvoltage) or too low (undervoltage)
P07	1*: Compressor 1 side 2*: Compressor 2 side	P07	⊗	●	⊗	ALT	Problems with overheating of the heat sink	Built-in temperature sensor (TH) in the IPM detects overheating
P11	-	P11	●	⊗	⊗	ALT	Problems with freezing of the outdoor heat exchanger	Residual frost was repeatedly detected on the outdoor heat exchanger
P22	1*: Fan circuit board 1 2*: Fan circuit board 2	P22	⊗	●	⊗	ALT	Failure of the external fan board	Outdoor fan circuit board detects a failure
P26	1*: Compressor 1 2*: Compressor 2	P26	⊗	●	⊗	ALT	Activation of IPM, compressor short-circuit protection	The short-circuit protection for the control circuit components of the compressor motor is activated (short-term overcurrent)
P29	1*: Compressor 1 2*: Compressor 2	P29	⊗	●	⊗	ALT	Failure of the compressor position detection circuit	Compressor motor position detection error is detected

Note: The above check codes are only examples and other check codes may be displayed depending on the configuration of the outdoor unit.

# TOSHIBA VRF systems

u-Series indoor units without local remote controls

- Systems affected:

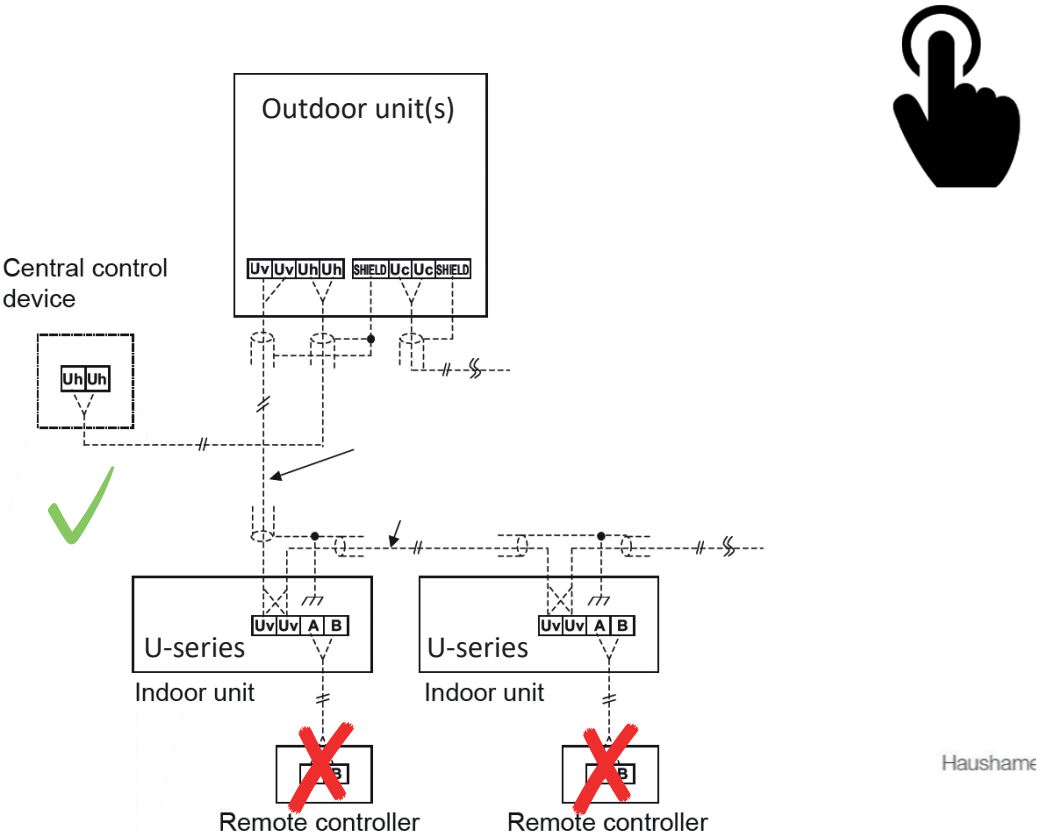
SMMSu or SMMSe systems with TU2C-Link indoor units (u series); also with mixed TCC/TU2C-Link indoor units.
- Description:

When these systems are operated without local remote controllers using only a central controller, the U series indoor units (TU2C link) require an updated setting.
- Solution:

To operate these systems without local remote controls connected, please change the DN code 103 of the affected indoor units from the factory setting 0000 to 0001.
- Please note:

A U-series remote control is required for setting 3-digit DN codes!

DN	Item	Description	Factory default
103	Remote control	0000: Use 0001: Do not use	0000: Use



Hausshame

## Calculation of the additional refrigerant charge

The refrigerant charge quantity when shipped from the factory does not include refrigerant for piping at the local site. For refrigerant to be charged into piping at the local site, calculate the quantity and charge it in addition.

### NOTE

If the additional refrigerant quantity results in a minus as a result of the calculation, use the air conditioner without additional refrigerant.

Outdoor unit type	MUP0801	MUP1001	MUP1201	MUP1401	MUP1601	MUP1801	MUP2001	MUP2201	MUP2401
Filling volume (kg)	6,0				9,0				

### Additional refrigerant charge at the site = [1] + [2] + [3] + [4]

- [1] Compensation according to HP system (Table 1)\*
- [2] Actual length of liquid line X Additional refrigerant charge per 1 m of liquid line. (Table 2)
- [3] Refrigerant correction amount depending on the indoor units (Table 3-1, 3-2 and 3-3)
- [4] Correction amount of refrigerant depending on the diversity of outdoor units (connection ratio of indoor units to outdoor units). (Table 4)

\* If the combination of outdoor units does not match the combination listed in Table 1, calculate the correction amount of refrigerant of the combination outdoor units in relation to the additional refrigerant of the individual outdoor units

**Table 1**  
Standard

HP-System	HP-combination					Compensation through HP system (kg)
8	8	-	-	-	-	1,5
10	10	-	-	-	-	1,7
12	12	-	-	-	-	2,3
14	14	-	-	-	-	2,3
16	16	-	-	-	-	1,0
18	18	-	-	-	-	2,0
20	20	-	-	-	-	4,0
22	22	-	-	-	-	5,0
24	24	-	-	-	-	5,5
26	14	12	-	-	-	4,6
28	14	14	-	-	-	4,6
30	18	12	-	-	-	4,3
32	20	12	-	-	-	6,3
34	20	14	-	-	-	6,3
36	24	12	-	-	-	7,8
38	24	14	-	-	-	7,8
40	20	20	-	-	-	8,0
42	24	18	-	-	-	7,5
44	24	20	-	-	-	9,5
46	24	22	-	-	-	10,5

HP-System	HP-combination					Compensation through HP system (kg)
48	24	24	-	-	-	11,0
50	24	14	12	-	-	10,1
52	24	14	14	-	-	10,1
54	20	20	14	-	-	10,3
56	24	20	12	-	-	11,8
58	24	20	14	-	-	11,8
60	24	24	12	-	-	13,3
62	24	24	14	-	-	13,3
64	24	20	20	-	-	13,5
66	24	22	20	-	-	14,5
68	24	24	20	-	-	15,0
70	24	24	22	-	-	16,0
72	24	24	24	-	-	16,5
74	24	24	14	12	-	15,6
76	24	24	14	14	-	15,6
78	24	20	20	14	-	15,8
80	24	24	20	12	-	17,3
82	24	24	20	14	-	17,3
84	24	24	20	12	-	18,8
86	24	24	24	14	-	18,8
88	24	24	24	20	-	19,0
90	24	24	20	20	-	20,0
92	24	24	22	20	-	20,5
94	24	24	24	22	-	21,5
96	24	24	24	24	-	22,0
98	24	24	24	14	12	21,1
100	24	24	24	14	14	21,1
102	24	24	24	20	14	21,3
104	24	24	24	20	12	22,8
106	24	24	24	20	14	22,8
108	24	24	24	24	12	24,3
110	24	24	24	24	14	24,3
112	24	24	24	20	20	24,5
114	24	24	24	22	20	25,5
116	24	24	24	24	20	26,0
118	24	24	24	24	22	27,0
120	24	24	24	24	24	27,5

Table 2

Diameter liquid line (mm)	6,4	9,5	12,7	15,9	19,1	22,2	25,4
Additional refrigerant quantity per 1 m liquid line (kg/m)	0,025	0,055	0,105	0,160	0,250	0,350	0,470



**Table 3.1**

Power rank of the indoor unit	003	005	007	008	009	010	012	014	015	018	020	024	027	030	036	048	056	072	096
Key performance indicator (equivalent to HP)	0,3	0,6	0,8	0,9	1	1,1	1,25	1,5	1,7	2	2,25	2,5	3	3,2	4	5	6	8	10
Correction quantity of refrigerant (kg)	0,2					0,4					0,6					1,0			

If the fresh air supply indoor unit (MMD-UP xxxx HFP x) is connected, the correction quantity of refrigerant for the fresh air supply indoor unit is 0 Kg.

**Table 3.2**

The correction amount of refrigerant varies for the DX-Kit

Key performance indicator (equivalent to HP)	8	10	16	18	20	32	36	40	48	54	60
Correction quantity of refrigerant (kg)	1,4	1,8	2,9	3,2	3,6	5,8	6,5	7,2	8,6	9,7	10,8

**Table 3.3**

The correction quantity of the refrigerant varies for the hot water module

Indoor unit power rank	024	048
Performance indicator (equivalent to HP)	2,5	5
Correction quantity of refrigerant (kg)	0,2	

**Table 3.4**

The correction amount of refrigerant varies for the high-efficiency 4-way cassette (MMU-UP xxx H-E)

Indoor unit power rank	00	012	015	018	024	027	030	036	048	056
Performance indicator (equivalent to HP)	1	1,25	1,7	2	2,5	3	3,2	4	5	6
Correction quantity of refrigerant (kg)	0,2		0,6							

### Refrigerant charging

- Keep the valve of the outdoor unit closed and make sure that the liquid refrigerant is filled into the service port on the liquid side.
- If the specified amount of refrigerant cannot be charged, open the valves of the outdoor unit on the liquid and gas sides completely, operate the air conditioner in COOL mode, and then charge refrigerant into the service port on the gas side. When doing so, use the valve on the bottle to slightly throttle the refrigerant when charging the liquid refrigerant.
- The liquid refrigerant can be filled suddenly, so make sure to refill the refrigerant gradually.

**Table 4**

Refrigerant correction amount according to the diversity of outdoor units

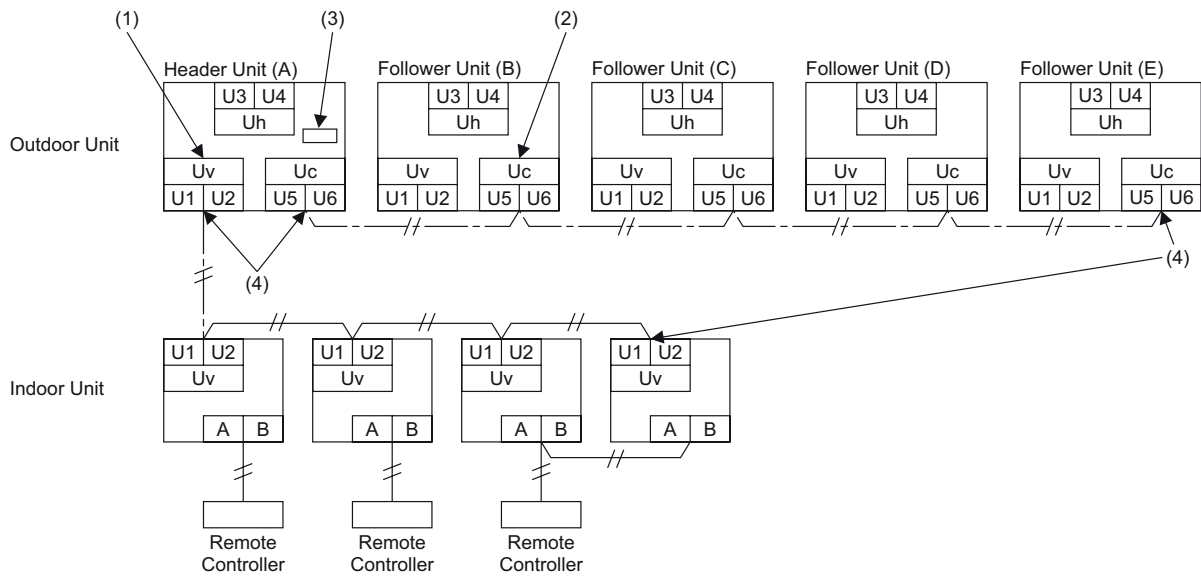
Diversity D (%)	Refrigerant correction quantity (kg)
$50\% \leq D < 60\%$	-2,5
$60\% \leq D < 70\%$	-2,0
$70\% \leq D < 80\%$	-1,5
$80\% \leq D < 90\%$	-1,0
$90\% \leq D < 95\%$	-0,5
$95\% \leq D$	0

# Wiring

## Main test points for electrical wiring

The communication system is different from that of previous air conditioners.  
Check the wiring points again carefully.

(1) If no central control system is connected:

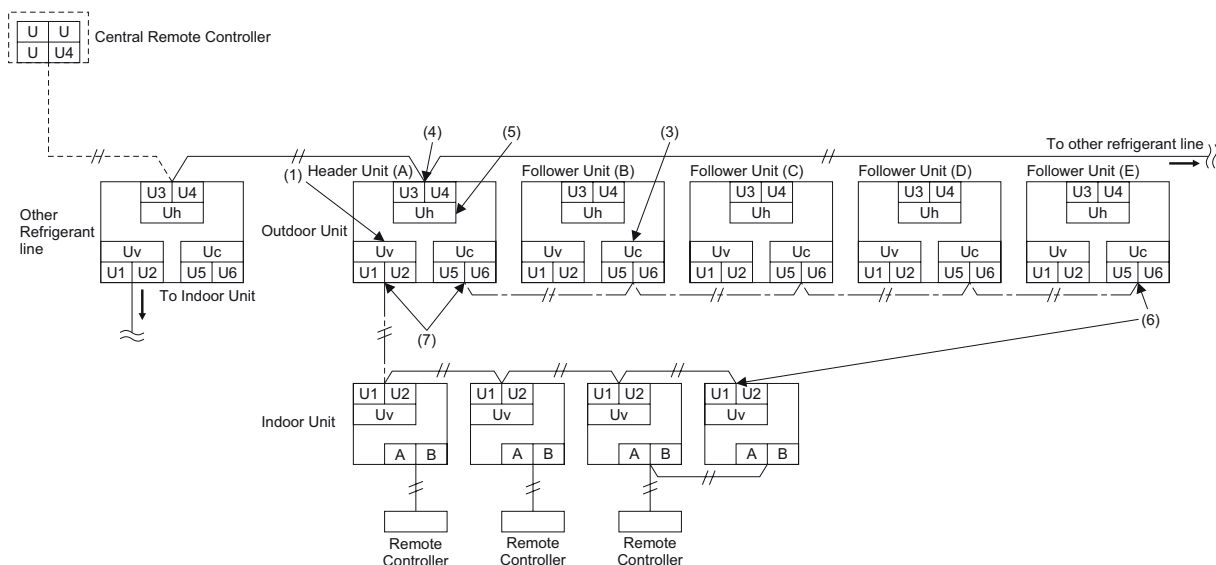


Main test points	Check
(1) Are the internal and external communication lines of the master unit connected to terminals U1/U2 (Uv)?	
(2) Is the communication line between outdoor units connected to terminal U5/U6 (Uc)?	
(3) Is the terminating resistor (SW100 bit 2) on the interface PC board of the head unit switched on? (Set at delivery from the factory)	
(4) Is the end terminal of the screening line earthed?	

### NOTE:

Not all electrical wires are shown in the above illustration.  
Refer to the installation manuals for the outdoor unit, indoor unit, remote control or optional units for details.

(2) If a central control system is connected (before setting up the address)



Main test points	Check
(1) Are the internal and external communication lines of the master unit connected to terminals U1/U2 (Uv)?	
(2) Is the communication line between outdoor units connected to terminal U5/U6 (Uc)?	
(3) Is the communication line of the central control system connected to the terminals of the master unit U3/U4 (Uh)? of the individual refrigerant lines? (The communication line of the central control system can be connected to the communication lines of the indoor/outdoor communication lines).	
(4) Is the terminating resistor (SW100 bit 2 (terminating resistor of the Uv line) on the interface PC board of the master unit switched on? (Set at delivery from the factory) * Does the smallest head unit of a system address switch SW100 bit 1 (terminating resistor of Uh line)? Does the head unit of other refrigerant systems switch off SW100 bit 1?	
(5) Is the end terminal of the shield cable open?	
(6) Is the end terminal of the shield wire on the master unit side earthed?	
(7) When the refrigerant line and the DI-SDI series central control system are connected: → Are the network adapters (TCB-PCNT30TLE2) connected correctly? → When the DI-SDI series operates in group, twin or triple mode, are the adapters connected to the master unit of the indoor unit?	

#### NOTE:

Not all electrical wires are shown in the above illustration.

Refer to the installation manuals for the outdoor unit, indoor unit, remote control or optional units for details.



## Rotary switch

SW01	SW02	SW03	Display detail	
1	1	3	-	-
	2		System capacity	A [...8]~[120]:8 to 120 HP B [HP]
	3		Number of outdoor units	A [...1]~[...5]:1 to 5 B [...P]
	4		Number of connected indoor units / Number of units with cooling thermostat ON	(1) [ ... .. 0 ] ~ [ ... .. 128 ] : 0 ~ 128 (Number of connected units) (2) [ C ... .. 0 ] ~ [ C ... 128 ] : 0 ~ 128 (Number of units with cooling thermostat ON) *Switch the display (1) and (2) with SW04
	5		Number of connected indoor units / Number of units with heating thermostat ON	(1) [ ... .. 0 ] ~ [ ... .. 128 ] : 0 ~ 128 (Number of connected units) (2) [ C ... .. 0 ] ~ [ C ... 128 ] : 0 ~ 128 (Number of units with heating thermostat ON) *Switch the display (1) and (2) with SW04
	6		Amount of correction of the compressor command	A The value is displayed in hexadecimal format B
	7		Release control	A Normal: [r. ...], during release control: [r.1] B -
	8		Oil equalisation control	Normal: [oiL-0] While controlling the oil balance: [oiL-1]
	9		Demand for oil equalisation	A Indication by LED segment lighting pattern B <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <p>Display range A      Display range B</p> </div> <div> <p>„A“ Light on: Master . Oil compensation requirement „F“ Light on: Master . Oil compensation demand „C“ Light on: Slave . Oil compensation demand</p> <p>U1    U2    U3    U4    U5    Outdoor unit number</p> </div> </div>
	10		Refrigerant-/oil recovery	A Oil recovery during cooling: [C1], Normal: [C ...] B Refrigerant recovery in the heating system: [H1], Normal: [H ...]
	11		Automatic addressing	A [Ad] B During automatic addressing: [... FF], Normal: [... ..]
	12		Peak power cut-off	A [dU] Normal: [... ..], During operation at 50-90% capacity: [_50-_90] The control is based on the input of the BUS line: E50-E90]

SW01	SW02	SW03	Display detail					
1	13	3	Optional control (P.C. board input)	Displays the status of the optional control		A	B	
				Selecting the operating mode: With priority heating (normal)		h.*.	*.*.	
				Cooling priority		c.*.	*.*.	
				Heating only		H.*.	*.*.	
				Cooling only		C.*.	*.*.	
				Priority for the number of indoor units in operation		n.*.	*.*.	
				Priority for a specific indoor unit		U.*.	*.*.	
				External Master ON/OFF: Normal		* .....	*.*.	
				Start input		*.1.	*.*.	
				Stop input		*.0.	*.*.	
				Night operation: Normal		*.*.	.....*	
				Start input		*.*.	1.*.*.	
				Snowfall operation		*.*.	*.*.*.	
				Start input		*.*.	*.1.*.	
	14	Optional control (BUS line input)	Same as above					
	15	-		-				
	16	15	No. of the HWM (hot water module) recorded on the I/F board	A	[ ho ]			
				B	[...0] bis [...2] = 0 to 2			

## Display of outdoor unit information (displayed on each outdoor unit)

SW01	SW02	SW03	Display detail		
1	1	1	Check code data	A	Outdoor unit no.: [U1] to [U5]
				B	If there is no check code, [U.*.---] is displayed. If a check code is present, [U.*.err] ⇔ [000].[△△] ([000]: Check code, [△△]: Sub code) . . . (The display switches alternately) (*: Outdoor unit no.)
			<SW02> Press SW function: Fan operation on outdoor unit with fault. 7-segment display Section A: [E.1] <SW04 + SW05> Press SW function: Fan operation on outdoor unit without failure. 7 segment display section A: [E.0] <SW05> Press SW function: The test mode for the fan operation function is cancelled.		
	2		-	A	-
				B	-
	3		Operation mode	A	Stop [... ...] Normal cooling: [... C], Normal heating: [... H], Normal defrosting: [... J]
				B	-
	4		Outdoor unit power in HP	A	8 HP: [... 8], 10 HP: [... 10], 12 HP: [... 12], 14 HP: [14], 16 HP: [16], 18 HP: [18], 20 HP: [20], 22 HP: [22], 24 HP: [24]
				B	[... HP]
	5		Compressor operation command*The operating data of each compressor is displayed alternately at 2-second intervals.		
			Normal: The compressor speed (rpm) is displayed in decimal format. 7 segment display (A/B): [C1. ... ...] ⇨ [... * * *, *] ⇨ [C2. ... ...] ⇨ [... * * *, *]		
			<SW04> Press SW function: Switches to the display of the operating current (decimal value). 7 segment display (A/B): [i1. ... ...] ⇨ [... ****] ⇨ [i2. ... ...] ⇨ [... ****] Pressing <SW05> restores the normal display.		
	6		Outdoor fan mode	A	[FP]
				B	Mode 0 to 63: [... 0] to [63]
	7		Compressor backup	A	[C.b.]
				B	Display of the status of the compressor backup setting Normal: [... ... ...] Compressor No. 1 Backup: [1 ... ...] Compressor No. 2 Backup: [... 1 ...]
	8		-	A	-
				B	-

SW01	SW02	SW03	Display detail					
1	9	1	Output data of the control valve	Displays the status of the control output of the sole-noid valve		A	B	
				4-way valve: ON		H. 1	... ..	
				4-way valve: OFF		H. 0	... ..	
	-							
				SV3D: OFF		3. 1	0 0 0	
	SV3D: OFF			3. 0	1 0 0			
	SV3D: OFF			3. 0	0 1 0			
	SV3D: ON			3. 0	0 0 1			
	SV41: ON / SV42: OFF			4. ...	1 0 0			
	SV41: OFF / SV42: ON			4. ...	0 1 0			
	14		PMV1/PMV2/PMV3 Opening	Displays the opening data in decimal format. „Switching the display of PMV1, PMV2 and PMV3 by pressing <SW04>“.	PMV1	* *	** .P	
					PMV2	... *	** .P	
					PMV3	... *	** .P	
	15		PMV4 Opening	Displays the opening data in decimal format.	PMV4	... *	** .P	
	16		Oil level measurement status					
			Normal	A	[o L.]			
				B	First display: [... ..], Result of the oil level measurement: [#.*.\$] The displayed letters #, * and \$ stand for the measurement results of compressor no. 1 and 2 respectively („0“ for normal and „1“ or „2“ for low oil level).			
			<SW04> Press SW function: Displays the result of the confirmed low level measurement for each compres-sor.					
			*Pressing <SW05> restores the normal display.	A	[L d.]			
				B	Low level of compressor no. 1 is confirmed: [L ... ..] Low level of compressor no. 2 is confirmed: [... L ...]			
			<SW15> Press SW function: for 2 seconds, change display to low level measurement timer					
			*Pressing <SW05> restores the normal display.	A	[T ..., ]			
				B	Low level assessment timer: [120] (i.e.: 120 minutes)			



## Outdoor cycle data display (displayed on each outdoor unit)

SW01	SW02	SW03	Display detail				
1	1	2	Pd Pressure data	Pd pressure (MPaG) is displayed in decimal format. (MPaG: approx. 10 times the size of kg/cm2G)	A		B
					P d.	*. **	
	2		Ps Pressure data	Ps pressure (MPaG) is displayed in decimal format.	P s.	*. **	
	3		PL pressure conversion data	The converted PL pressure (MPaG) is displayed in decimal format.	P L.	*. **	
	4		TD1 Sensor data	The measured value of the temperature sensor (°C) is displayed in decimal format. The letter symbol and the data are displayed alternately for 1 second and for 3 seconds respectively. The data is displayed in [ * ]. Data with a negative value is displayed as [- *].	Character	t d	1 ... ..
					Data	*	*. **
	5		TD2 Sensor data	Character	t d	2 ... ..	
				Data	*	*. **	
	7		TS1 Sensor data	Character	t S	1 ... ..	
				Data	*	*. **	
	9		TS3 Sensor data	Character	t S	3 ... ..	
				Data	*	*. **	
	10		TE1 Sensor data	Character	t E	1 ... ..	
				Data	*	*. **	
	11		TE2 Sensor data	Character	t E	2 ... ..	
				Data	*	*. **	
	12		TE3 Sensor data	Character	t E	3 ... ..	
				Data	*	*. **	
	13		TL1 Sensor data	Character	t L	1 ... ..	
				Data	*	*. **	
	14		TL2 Sensor data	Character	t L	2 ... ..	
				Data	*	*. **	
	15		TL3 Sensor data	Character	t L	3 ... ..	
				Data	*	*. **	
	16		TO Sensor data	Character	t o	... ..	
Data		*		*. **			

SW01	SW02	SW03	Display detail				
1	1	5	TK1 Sensor data	Der Messwert des Temperatursensors (°C) wird im Dezimalformat angezeigt.	Character	F 1	... ..
					Data	*	*. **
	2		TK2 Sensor data		Character	F 2	... ..
					Data	*	*. **
	6		TG1 Sensor data		Character	t G	1 ... ..
					Data	*	*. **
	7		TG2 Sensor data		Character	t G	2 ... ..
					Data	*	*. **
	8		TG3 Sensor data		Character	t G	3 ... ..
					Data	*	*. **
	9		TK1_ Preliminary data		Character	F 1	PrE
					Data	*	*. **
	10		TK2_ Preliminary data		Character	F 2	PrE
					Data	*	*. **

## Display of outdoor cycle data (displayed on the master unit)

\*This method is used when the information of the slave unit is displayed on the 7-segment display of the master unit.

SW01	SW02	SW03	Display detail				
3	1	1~4	Fault reports	A	[U.*], *SW03 Setting no. + 1 (Outdoor no. U2 to U5)		
				B	The check code is displayed (only the last one). If there is no check code: [---].		
	2		-	A	-		
				B	-		
	3		Outdoor unit power in HP	A	[U.*], *SW03 Setting no. + 1 (Outdoor unit no. U2 to U5)		
				B	8 HP: [... 8], 10 HP: [... 10], 12 HP: [... 12], 14 HP: [14], 16 HP: [16], 18 HP: [18], 20 HP: [20], 22 HP: [22], 24 HP: [24]		
	4		Command for compressor operation	A	[U.*], *SW03 Setting no. + 1 (Outdoor unit no. U2 to U5)		
				B	Indicates which compressor is switched on.		
					*A compressor that is not connected is represented by a „-“.		B
					When compressor no. 1 is switched on		1 0
		When compressor no. 2 is switched on			0 1		
	5	Fan operation mode	A	[U.*], *SW03 Setting no. + 1 (Outdoor unit no. U2 to U5)			
			B	In idle state: [F ... 0], In mode 63: [F 6 3]			
	6	Release signal	A	[U.*], *SW03 Setting no. + 1 (Outdoor unit no. U2 bis U5)			
			B	Normal: [r ... ...], on receipt of the release signal: [r ... 1]			
	7	Oil level measurement	A	[U.*], *SW03 Setting no. + 1 (Outdoor unit no. U2 bis U5)			
			B	Normal: [... ... ...], Low level: [... ... L]			
	8	Operating current of the Compressor 1	A	[U.*], *SW03 Setting no. + 1 (Outdoor unit no. U2 bis U5)			
B			[**.*], **. * is the value of the operating current in decimal format.				
9	Operating current of the Compressor 2	A	[U.*], *SW03 Setting no. + 1 (Outdoor unit no. U2 bis U5)				
		B	[**.*], **. * is the value of the operating current in decimal format.				

**Attention:** The Follower unit is selected by setting SW03.

SW03	7 segment display Section A
1	U2
2	U3
3	U4
4	U5

## Fan test run

First check that the fan is working properly.

To do this, set SW1, SW2 and SW3 to 2/1/4 and press SW04 for 2 seconds. The speed of the fan is shown in the display. The speed can be set and tested according to the table below.

End the test by pressing SW05 once.

SW02	SW03	7 segment display [B]	Fan mode
1	4	[ 63 ]	63
2		[ 62 ]	62
3		[ 61 ]	61
4		[ 60 ]	60
5		[ 59 ]	59
6		[ 58 ]	58
7		[ 57 ]	57
8		[ 56 ]	56
9		[ 55 ]	55
10		[ 54 ]	54
11		[ 53 ]	53
12		[ 52 ]	52
13		[ 51 ]	51
14		[ 50 ]	50
15		[ 49 ]	49
16		[ 48 ]	48
1	5	[ 47 ]	47
2		[ 46 ]	46
3		[ 45 ]	45
4		[ 44 ]	44
5		[ 43 ]	43
6		[ 42 ]	42
7		[ 41 ]	41
8		[ 40 ]	40
9		[ 39 ]	39
10		[ 38 ]	38
11		[ 37 ]	37
12		[ 36 ]	36
13		[ 35 ]	35
14		[ 34 ]	34
15		[ 33 ]	33
16		[ 32 ]	32

SW02	SW03	7 segment display [B]	Fan mode
1	6	[ 31 ]	31
2		[ 30 ]	30
3		[ 29 ]	29
4		[ 28 ]	28
5		[ 27 ]	27
6		[ 26 ]	26
7		[ 25 ]	25
8		[ 24 ]	24
9		[ 23 ]	23
10		[ 22 ]	22
11		[ 21 ]	21
12		[ 20 ]	20
13		[ 19 ]	19
14		[ 18 ]	18
15		[ 17 ]	17
16		[ 16 ]	16
1	7	[ 15 ]	15
2		[ 14 ]	14
3		[ 13 ]	13
4		[ 12 ]	12
5		[ 11 ]	11
6		[ 10 ]	10
7		[ 9 ]	9
8		[ 8 ]	8
9		[ 7 ]	7
10		[ 6 ]	6
11		[ 5 ]	5
12		[ 4 ]	4
13		[ 3 ]	3
14		[ 2 ]	2
15		[ 1 ]	1
16		[ 0 ]	0





## FAN OF VRF

**Guideline for Startup of VRF systems**

Version 2.0



Subject to typographical and printing errors. EN / FAN OF VRF / 03.2023

Responsible for the content: AIR-COND International GmbH, Haushamer Straße 2, A-8054 Graz-Seiersberg, Austria, Tel.: +43 316 80 89, office@air-cond.com.