



R32 Refrigerant Properties

R32 Tools & Basic Rules of piping

R32 Installation Precautions

Installation Work Flow

Installation with existing piping

Electrical & refrigerant diagram

Error code checklist

(Frequent ask questions) FAQ

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R32 Refrigerant Properties

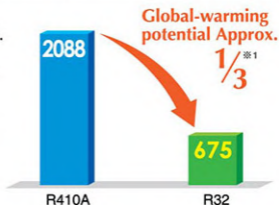
	R32	R410A	R22
Chemical formula	CH2F2	CH2F2/C HF2CF3	CHCLF2
Composition (blend ratio wt. %)	Single	R32 / R125 (50/50wt%)	Single
Boiling point (°C)	-51.7	-51.5	-40.8
Pressure (blend ratio wt. %)	3.14	3.07	1.94
Ozone depletion potential (ODP)	0	0	0.055
Global warming potential (GWP)*2	675	2088	1810
Combustibility*3	Slightly flammable (A2L)	Non- flammable (A1)	Non- flammable (A1)
Toxicity	None	None	None

A

*1 Temperature condition
Characteristic value at 50 ° C.

*2 Values based on IPCC 4th
assessment report.

*3 Data from ANSI/ASHRAE
Std. 34-2010.



R32 Pressure Properties

< Saturation steam pressure comparison >

Unit: MPa

Refrigerant Temperature(°C)	R32	R410A	R22
-20	0.30	0.30	0.14
0	0.71	0.70	0.40
20	1.37	1.35	0.81
40	2.38	2.32	1.43
60	3.84	3.73	2.33
65	4.29	4.17	2.60

-The saturated vapor pressure of R32 is almost the same as that of R410A

-Pressure of R32 is 1.6 times higher than that of R22.

**R32 Similar Operating
Pressure As PER –R410A
Refrigerant!!!**



R32 Refrigerant Properties

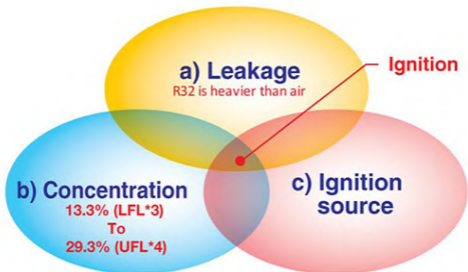
Refrigerant name	HFC units	HFC units	HCFC units
Composing substances	R32 Single-component refrigerant	R410A Quasi-azeotropic Mixture (R32:R125 = 50:50 wt%)	R22 Single-component refrigerant
Standard design pressure	RA: 4.17 MPa G PA: 4.0 MPa G or 3.6MPa	RA: 4.17 MPa G PA: 4.0 MPa G or 3.8 MPa G	2.75 MPa G
Refrigerant oil	Synthetic oil (ether)	Synthetic oil (ether)	Mineral oil (suniso)

**No major difference between R410a & R32
Same piping as per R410a can
be used!!!**

A

R32 Flammability Properties

Under condition below, there is a possibility that R32 would burn.



A

	R32	R290 (propane)
Minimum ignition energy (mJ) *1	15	0.246
Combustion speed (cm/s) *2	6.7	38.7

*1 Large energy need to ignite R32, It will not ignite as a result of static electricity caused by humans or even an electronic lighter (energy: several mJ)

*2 R32 burns slowly and will not explode

*3 LFL = Lower flammable limit

*4 UFL = Upper flammable limit

*5 ISO 817:2014










<Reference: Static electricity energy>



**R32 Will Not
Explode!!!**

Static electricity energy (mJ)	Symptom of electric shock
0.05	No sensation
0.45	Prickling sensation
1.25	Pain extending from palm to forearm

Tools for R32 vs R410a & R22

Tools	R32	R410A	R22
Gauge manifold 	Shareable		Exclusive
Charge hose 	Shareable		Exclusive
Electronic weight scales 	Shareable		
Charge valve 	Shareable		Exclusive
Electric leak tester (gas leak detector) 	Shareable		Some Exclusive
Vacuum pump 	Shareable		
Vacuum pump adapter 	Shareable		
Refrigerant recovery equipment 	Shareable		
Refrigerant recovery cylinder 	Exclusive	Exclusive	Exclusive

*1 Be sure to confirm with manufacturer equipment are compliant with R32

Most R32 tools common with R410A

B

Basics Rules of Refrigerant Piping

DRY



Make sure there is **no moisture** inside the pipes

CLEAN



Make sure there is **no dirt** inside the pipes

TIGHT



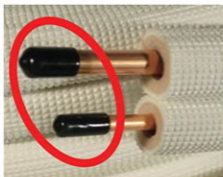
Make sure there is **no leakage** in refrigerant

B

1. Storage



Cover cap is Needed to Prevent moisture & dust!



Without cover will expose to moisture and dirt!!



Basic Rules of Refrigerant Piping

2. Flaring

GOOD



BAD



**Always use
proper flaring &
Bending Tools !!!**

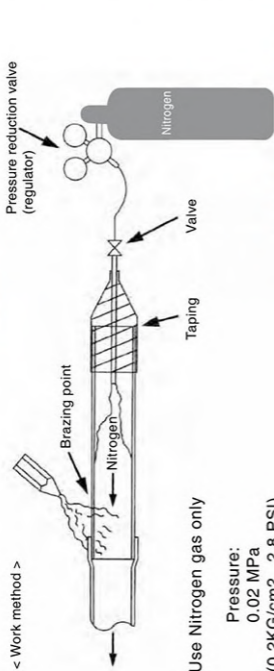
B

2. Bending



Basics Rules of Refrigerant Piping

4. Nitrogen purging

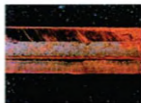


GOOD

BAD



With
N² displacement



Without
N² displacement

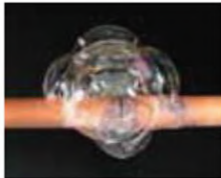
**Do not use R32 unit
refrigerant for
purging!!!**



B

Basic Rules of Refrigerant Piping

5. Leak Test via Soap / Leak detector



Make sure to use leak detector which suitable for HFC refrigerant

Caution

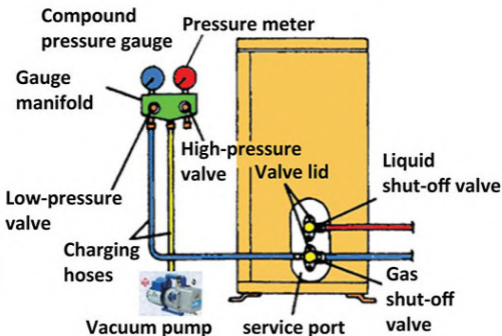
In case of leak do not operate unit, ventilate room well and fan above floor as R32 is heavier than air

To check ALL brazing and flaring joint for any leakage!!

B

Basics Rules of Refrigerant Piping

6. Dry Vacuuming of system

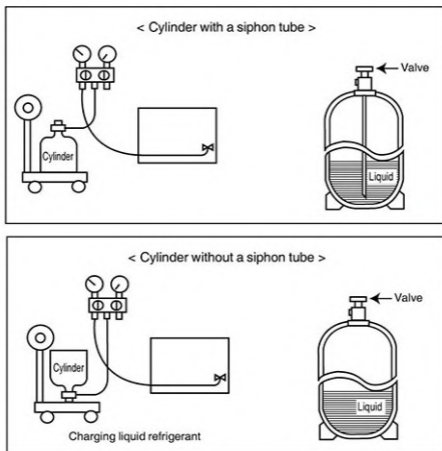


Vacuumize for > 15mins,
actual time needed depends
on piping length of system
Make sure that a vacuum level
of **-760mmHg / -0.101 Mpa** or
lower is attained. R32 system
Reverse Flow Adapter is needed!!

Basic Rules of Refrigerant Piping

7. R32 Refrigerant Top up

R32 is single refrigerant and its composition does not change. Thus both liquid charging and gas charging is possible.



Caution

Liquid charging of R32 all at once from the low-pressure side may cause the compressor to malfunction. Make sure **charging is gradually**.

< notes for locally adding refrigerant >

1. Additional via stop valve after vacuuming while the air conditioner is stop
2. If refrigerant added via suction side, use a safety charger be careful not direct liquid while air conditioner is running.

B

R32 Installation Precautions

- R32-related Regulations**
<As of March, 2015>

ISO5419, ISO817 & EN378

Field	International	Europe	US
Refrigerant Classification	ISO817	-NA- (based on ISO)	ASHRAE 34 UL 2182
Usage Restriction for Safety	ISO5149	EN378 Under revision	ASHRAE 15
	IEC60335-2-40 Under revision	EN60335-2-40 Based on IEC	UL 207 UL 250 UL 471 UL 474 UL 484 UL 984 UL 1995 UL 60335-2-40

a) Do not leak refrigerant.

< Installation > Vacuum drying should be done. Air Purge is prohibited.

< Repair/Relocation/Removal > Pump down / Recovering refrigerant should be done.

b) Prevent Concentration

Ventilate during installation and servicing, such as open the door or window and use a fan.

c) Keep ignition source away from the unit

Do not braze pipe and unit which contain refrigerant.

Before brazing, refrigerant should be recovered.

Do not install unit during turning on electricity. Turning off electricity and checking by tester.

Note: Both R32 / R410a emit a toxic gas when naked flame is contacted.

R32 Installation Precautions

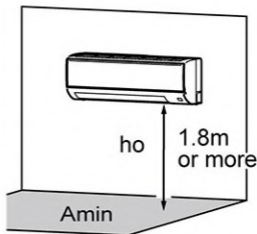
1. Indoor Unit Installation Precautions

table.1

M [kg]	Amin [m ²]
1.2 < M ≤ 1.3	2.4
≤ 1.4	2.6
≤ 1.5	2.8
≤ 1.6	3.0
≤ 1.7	3.1
≤ 1.8	3.3
≤ 1.9	3.5
≤ 2.0	3.9
≤ 2.1	4.3
≤ 2.2	4.7
≤ 2.3	5.1
≤ 2.4	5.5
≤ 2.5	6.0
≤ 2.6	6.5
≤ 2.7	7.0
≤ 2.8	7.5
≤ 2.9	8.1
≤ 3.0	8.6

To avoid risk of fire, the **mounting height (ho) must be > 1.8meter.**

The required **min room area (Amin)** are determined according to **total refrigerant amount M** (Factory charged + local added refrigerant) refer table 1



For Factory charged Refrigerant please refer outdoor name plate or installation manual.

ME equipment is pre-charged up to 7.5m piping.

C

R32 Installation Precautions

2. Prevent Concentration - Good Ventilation



open Door



open Windows



on Fan
(if available)



on Fan
(if available)



Good ventilation for
outdoor location

Good ventilation to prevent concentration of R32 build up during leakage!!

R32 Installation Workflow

Work procedure changes and precautions for new refrigerant

Before Work

Confirmation of model names and actual products

Confirmation of refrigerant to be used

Confirmation of work location, etc.

Pre-work preparations

- Make sure you are charging the specified refrigerant for air conditioner.
- Confirm the air conditioner's design pressure

For refrigerant piping, use new piping with specifications matching specification in Installation Manual

Prepare the following design tools for use with R32 in advance:

- Manifold Gauge
- Charge hose
- Charge valve
- leak tester
- flare coating oil
- Refrigerant cylinder
- Charge port
- Reverse-flow prevention adapter
(For vacuum pump)

D

R32 Installation Workflow

Work procedure changes and precautions for new refrigerant

Sleeve insert work

Indoor unit installation
Refer pg13-14

Refrigerant piping work (dry/ clean/ tight)
Refer pg6-8

Flushing / Purging
Refer pg8

The height of bottom of indoor unit at **> 1.8meter**.
When total system refrigerant amount < 1.2kg please install unit in room > 2.4m when refrigerant is more than 1.2kg, please refer to **Indoor Unit Installation precaution table 1**

Use pipes that are clean inside.
Keep clean insides of pipes
Ensure proper finishing of flare processing.
Confirm the shape and width-across-flat distance flare nuts.
Use a torque wrench and properly tighten connection

To use nitrogen only.
Be sure to **perform nitrogen purging at time of brazing**.
Be sure to perform flushing before connecting pipe to air conditioner
Air purging using refrigerant is strictly prohibited.

Work - Part 1

D

R32 Installation Workflow

Work procedure changes and precautions for new refrigerant

Work – Part 2

Drain piping work

Insulation work

Electrical work

Confirmation of outdoor unit installation position
Refer pg14

Make sure outdoor location is well ventilated prevent concentration of refrigerant when leakage

Outdoor unit installation

Follow the installation manual supplied with the product

Refrigerant piping connection work

Be sure to use torque wrench when connecting flares

D

R32 Installation Workflow

Work procedure changes and precautions for new refrigerant

Vacuumping Refer pg10

To use a **reverse-flow prevention adapter** for vacuum pump.
Replace vacuum pump oil regularly.

Additional refrigerant charging Refer Pg11

R32 is a single refrigerant, so **both liquid and gas charging are possible**.
Gauge manifold and charge hose same as R410a.

Gas leak inspection Refer pg9

Leak test via soap or leak tester for HFC refrigerants.
To check all brazing and flaring points.

Test operation and adjustments

Test operation via remote controller or E.O.S switch from indoor

Handover and operating instructions

Set temperature : 24°C
Fan speed : Medium
Horizontal vane : Auto

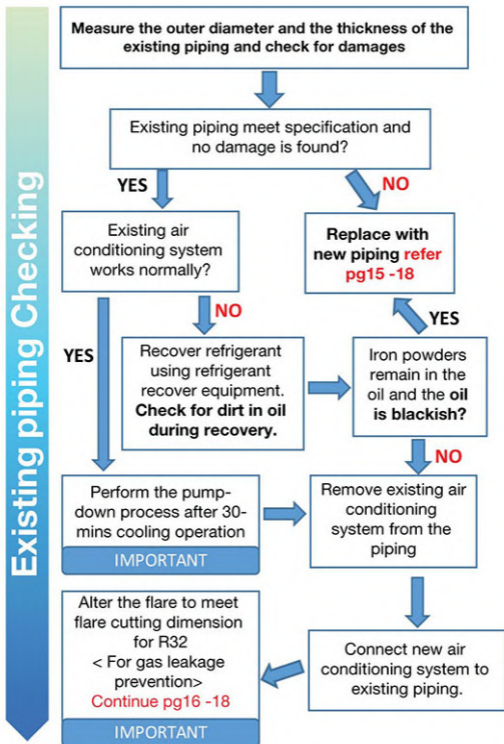


Emergency operation switch (E.O. SW)

Work - Part 3

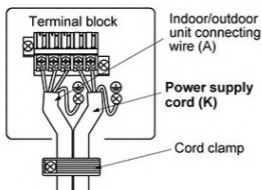
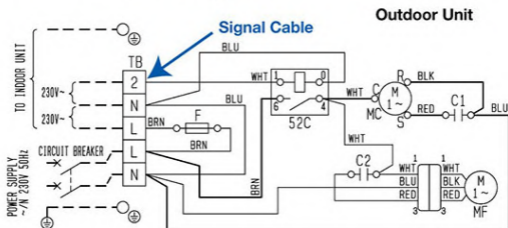
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R32 Installation Workflow

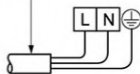


Electrical and refrigerant Diagram

1. Electrical Diagram



Power supply cord (K)

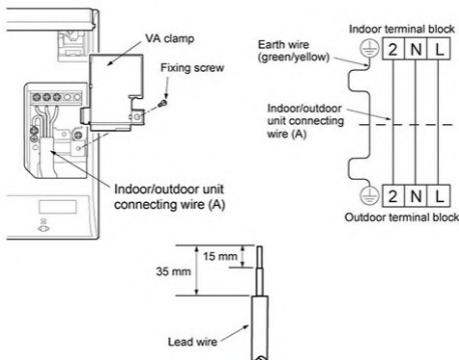
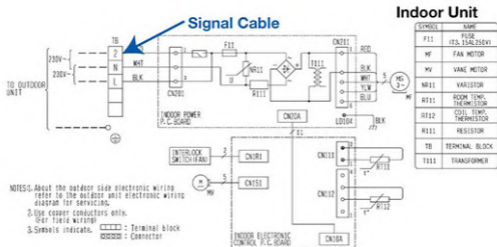


MODEL	INDOOR	MS-HN10VF	MS-HN13VF	MS-HN18VF	MS-HN24VF
	OUTDOOR	MU-HN10VF	MU-HN13VF	MU-HN18VF	MU-HN24VF
Cooling Capacity	(Btu/hr)	8,871	12,283	17,401	21,837
STAR RATING		4	4	4	5
Power Input	kW	0.82	1.14	1.67	2.03
Running current	A	3.6	5.1	7.7	9.1
Power Supply	V/Hz/Ph	230V/50Hz/1Ph			

Note: Use only SIRIM certified copper cable, size to comply local government authority.

Electrical and refrigerant Diagram

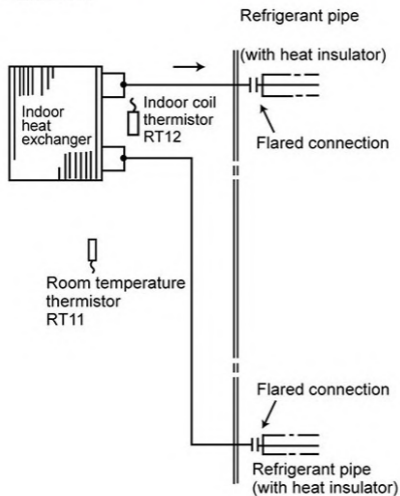
1. Electrical Diagram



Note: Use only SIRIM certified copper cable, size to comply local government authority.

2. Refrigerant Diagram

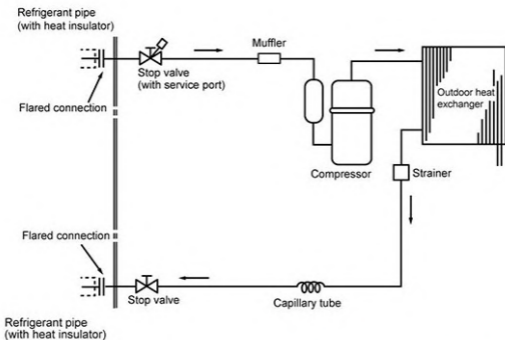
Indoor Unit



Electrical and refrigerant Diagram

2. Refrigerant Diagram

Outdoor Unit



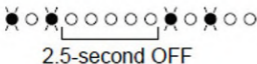
MODEL	NON-INVERTER STANDARD				
	INDOOR	MS-HN10VF	MS-HN13VF	MS-HN18VF	MS-HN24VF
	OUTDOOR	MU-HN10VF	MU-HN13VF	MU-HN18VF	MU-HN24VF
Cooling Capacity	(Btu/hr)	8,871	12,283	17,401	21,837
STAR RATING		4	4	4	5
Connection method		Flared			
Pipe size	Gas mm	9.52	12.7	15.88	
Outer diameter	Liquid mm	6.35			
Max. piping length	m	20		30	
Max. height difference	m	10			
Max. No of Bends		10			
Refrigerant Top Up	g/m	20g/m			
Pre Charged Refrigerant	gram	430	550	1,230	1,340
Max Refrigerant Charge	gram	680	800	1,480	1,590
Min Required Room Size	m ²	2.4m ²		2.8m ²	3.0m ²

Note: Unit is pre-charged up to 7.5 meter length

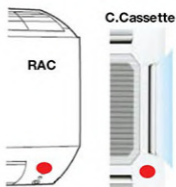


Error Code Checklist

When there is Error Indoor Unit LED will blink No of times and duration!!!



Example:
2-time flash every 2.5s



Where to find Error code checklist??



C.Cassette/
Suspended / Ducted
-PCB Cover



Inverter series Outdoor
-Top Cover

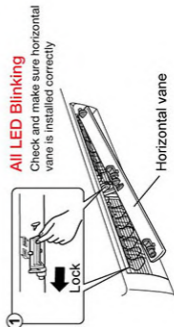
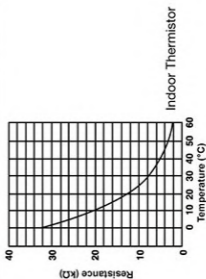


Wall Mounted
-Indoor Cover

Error Code Checklist

Wall Mounted - Error Code

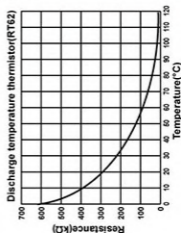
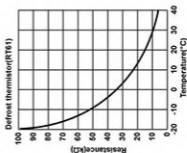
Upper Operation Indicator Lamp	Abnormal Point	Condition	Remedy
1-time flash every 0.5s	Room Temperature thermistor	Room coil temperature thermistor is short / open circuit	Check resistance against graph below
2-time flash every 2.5s	Indoor coil thermistor	Indoor coil temperature thermistor is short / open circuit	
3-time flash every 2.5s	Serial Signal	Rotation frequency feedback signal is not emitted during the indoor fan operation	Check miswiring and serial signal error
4-time flash every 2.5s (Inverter only)	Indoor control system	Indoor PCB failure	Replace indoor PCB
5-time flash every 2.5s (Inverter only)	Outdoor Power system	Compressor stops after 3 times of over-current / start-up failure protection within 1 min after start-up	Check stop valve Check inverter board / Compressor failure



Error Code Checklist

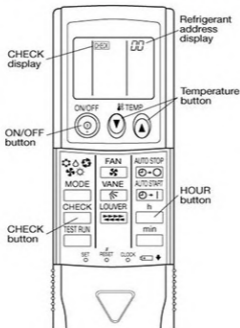
Wall Mounted - Error Code

Upper Operation Indicator Lamp	Abnormal Point	Condition	Remedy
6-time flash every 2.5s (Inverter only)	Outdoor Thermistors	Outdoor thermistor is short / open circuit	Check resistance against graph below
7-time flash every 2.5s (Inverter only)	Outdoor Control system	Indoor / outdoor PCB failure	Replace indoor / outdoor PCB
11-time flash every 2.5s	Indoor fan motor	Rotation frequency feedback signal is not emitted during 12secs the indoor fan operation	Check indoor fan motor
14-time flash every 2.5s	Refrigerant Circuit	Unit has been pump down for a long time	Check the stop valve
		Refrigerant amount is low	Check connection and refrigerant amount and leakage
		Unit is short cycling	Check space for air path around unit
		Outdoor fan motor locks up	Check resistance value of outdoor fan motor




Error Code Checklist

Malfunction Diagnosis via **Wireless controller** (Only for model controller c/w check button)



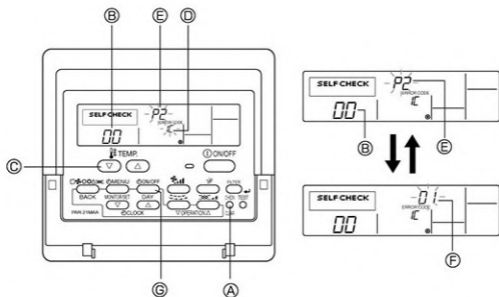
[Procedure]

1. Press the CHECK button twice.
 - "CHECK" lights, and refrigerant address "00" flashes.
 - Check that the remote controller's display has stopped before continuing.
2. Press the temperature  buttons.
 - Select the refrigerant address of the indoor unit for the self-diagnosis.
 - Note: Set refrigerant address using the outdoor unit's DIP switch (SW1). (For more information, see the outdoor unit installation manual.)
3. Point the remote controller at the sensor on the indoor unit and press the HOUR button.
 - If an air conditioner error occurs, the indoor unit's sensor emits an intermittent buzzer sound, the operation light flashes, and the Check code is output. (It takes 3 seconds at most for Check code to appear.)
4. Point the remote controller at the sensor on the indoor unit and press the ON/OFF button.
 - The check mode is cancelled.



Error Code Checklist

Malfunction Diagnosis via Wired Controller



- 1 Turn on the power.
- 2 Press the [CHECK] button twice.
- 3 Set address with [TEMP.] button if system control is used.
- 4 Press the [ON/OFF] button to stop the self-check.

A CHECK button

B Address

C TEMP. button

D IC : Indoor unit

OC: Outdoor unit

E Check code (---- : No trouble generated in the past
FFFF : No corresponding unit)

F Unit No.

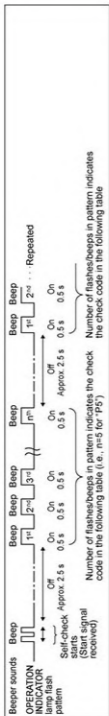
G Timer ON/OFF button

<To cancel check code>

- 1 Display the check code at the self-check result display screen.
- 2 The address for self-check will blink when the G ⊖ ON/OFF button is pressed twice within 3 seconds.

Error Code Checklist

SPAC / CPAC Error Code - Indoor



[Output pattern A] Errors detected by indoor unit

Beeper sounds/OPERATION INDICATOR lamp flashes (Number of times)	Wireless remote controller / Wired remote controller		Symptom
	1	Check code	
1	P1		Intake sensor error
2	P2		Pipe (TH2) sensor error
	P9		Pipe (TH5) sensor error
3	E6,E7		Indoor/outdoor unit communication error
4	P4		Float switch connector (CN4F) open
5	P5		Drain pump error(due to water leakage abnormality)
	PA		Forced compressor stop
6	P6		Freezing protection operation
7	EE		Communication error between indoor and outdoor units
8	P8		Pipe temperature error
9	E4, E5		Remote controller signal receiving error
12	Fb (FB)*		Indoor unit control system error (memory error, etc.)
13	PL		Refrigerant circuit abnormal
-	E0, E3		Remote controller transmission error
-	E1, E2		Remote controller control board error

Service Hotline : 603 - 7955 3997



Error Code Checklist

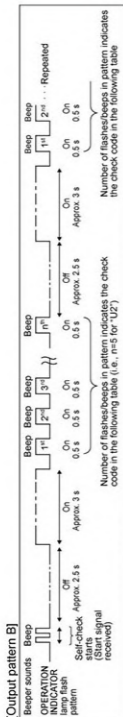
SPAC / CPAC Error Code - Indoor

- If the unit cannot be operated properly after the test run, refer to the following table to find out the cause.

Wired remote controller		Symptom	Cause
PLEASE WAIT	For about 2 minutes after power-on	LED 1, 2 (PCB in outdoor unit) After LED 1, 2 are lighted, LED 2 is turned off, then only LED 1 is lighted. (Correct operation)	• For about 2 minutes following power-on, operation of the remote controller is not possible due to system startup. (Correct operation)
PLEASE WAIT → Check code	Subsequent to about 2 minutes after power-on	Only LED 1 is lighted. → LED 1, 2 blink.	• Connector for the outdoor unit's protection device is not connected. • Reverse or open phase wiring for the outdoor unit's power terminal block (L1, L2, L3)
Display messages do not appear even when operation switch is turned ON (operation lamp does not light up).		Only LED 1 is lighted. → LED 1 blinks twice, LED 2 blinks once.	• Incorrect wiring between indoor and outdoor units (Incorrect polarity of S1, S2, S3) • Remote controller wire short

Service Hotline : 603 -7955 3997

Error Code Checklist



[Output pattern B] Errors detected by unit other than indoor unit (outdoor unit, etc.)

Wired remote controller	Wireless remote controller	Symptom
Beeper sounds/OPERATION INDICATOR lamp flashes (Number of times)	1 Check code	
1	E9	Indoor/outdoor unit communication error (Transmitting error) (Outdoor unit)
2	UP	Compressor overcurrent interruption
3	U3,U4	Open/short of outdoor unit thermistors
4	UF	Compressor overcurrent interruption (When compressor locked)
5	U2	Abnormal high discharging temperature/49C operated/insufficient refrigerant
6	U1,Ud (UD) *3	Abnormal high pressure (63H operated)/Overheating protection operation
7	U5	Abnormal temperature of heat sink
8	U8	Outdoor unit fan protection stop
9	U6	Compressor overcurrent interruption/Abnormal of power module
10	U7	Abnormality of superheat due to low discharge temperature
11	U9,UH	Abnormality such as overvoltage or voltage shortage and abnormal synchronous signal to main circuit/Current sensor error
14	Others	Other errors (Refer to the technical manual for the outdoor unit.)

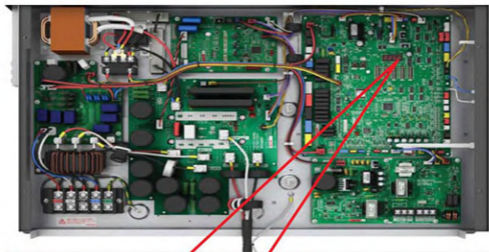
Service Hotline : 603 -7955 3997



Error Code Checklist

City Multi (VRF) Error Code

Outdoor Unit



Location

(---)



Error Code

(----)

2 Digits is for address no:

01 ~ 50 for indoor address

51 ~ 99 for outdoor address

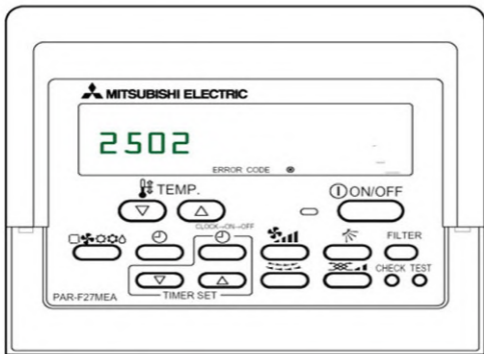
4 Digits is for error code

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Error Code Checklist

City Multi (VRF) Error Code

Indoor Unit - Wired Controller



Location

(---)



Error Code

(----)

2 Digits is for address no:

01 ~ 50 for indoor address
51 ~ 99 for outdoor address

4 Digits is for error code

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Error Code Checklist

City Multi (VRF) Error Code

Error Code	Cause
1***	Refrigerant / System error
2***	Water system error
4***	Power & Electronic related error
5***	Sensor error
6***	Transmission / Communication error
7***	Communication Setting error

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Error Code Checklist

City Multi (VRF) Error Code

Error Code	Preliminary error code	Error code definition	Search unit			
			CU	FCU	LOSSNAY	Controller
0403	4300	Serial communication error / Panel communication error	•			
	4305					
	4306					
0900	-	Test run			•	
1102	1202	Discharge temperature fault	•			
1301	-	Low pressure fault	•			
1302	1402	High pressure fault	•			
1500	1600	Refrigerant overcharge	•			
-	1605	Preliminary suction pressure fault	•			
2500	-	Drain sensor submergence		•		
2502	-	Drain pump fault		•		
2503	-	Drain sensor (Thd) fault		•		•
2600	-	Water leakage				•
2601	-	Water supply cutoff				•

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Error Code Checklist

City Multi (VRF) Error Code

Error Code	Preliminary error code	Error code definition	Search unit			
			CU	FCU	LOSSNAY	Controller
4102	4152	Open phase	•			
4106	-	Transmission power supply fault	•			
4109	-	Fan operation status detection error		•		
4115	-	Power supply signal sync error	•			
4116	-	RPM error / Motor error		•	•	
		Function setting error	•			
		Backup operation	•			
4121	4171	Abnormal bus voltage drop	•			
4220	4320	Abnormal bus voltage rise	•			
4225	4325	Logic error	•			
4226	4326	Low bus voltage at startup	•			

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Error Code Checklist

City Multi (VRF) Error Code

Error Code	Preliminary error code	Error code definition	Search unit			
			CU	FCU	LOSSNAY	Controller
4230	4330	Heatsink overheat protection	•			
4240	4340	Overload protection	•			
		Backup operation	•			
		IPM error	•			
		Short-circuited IPM/Ground fault	•			
4250	4350	Overcurrent error due to short-circuit motor	•			
4255	4355	Instantaneous overcurrent (S/W detection)	•			
4256	4356	Overcurrent (effective value) (S/W detection)	•			
4260	-	Heatsink overheat protection at startup	•			

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Error Code Checklist

City Multi (VRF) Error Code

Error Code	Preliminary error code	Error code definition		Search unit			
				CU	FCU	LOSSNAY	Controller
5101	1202	Temp sensor fault	Return air temp (TH21)		•		
			OA processing unit inlet temp (TH4)			•	
5102	1217	Temp sensor fault	FCU pipe temperature (TH22)		•		
			OA processing unit pipe temp (TH2)			•	
			HIC bypass circuit outlet temp (TH2)	•			
5103	1205	Temp sensor fault	FCU gas-side pipe temp (TH23)		•		
			OA processing unit gas-side pipe temp (TH3)			•	
			Pipe temp at heat exchanger outlet (TH3)	•			
5104	1202	Temp sensor fault	OA processing unit intake air temp (TH1)			•	
			Outside temp (TH24)	•			
			CU discharge temp (TH4)	•			

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Error Code Checklist

City Multi (VRF) Error Code

Error Code	Preliminary error code	Error code definition		Search unit			
				CU	FCU	LOSSNAY	Controller
5106	1216	Temp sensor fault	HIC Circuit outlet temp (TH6)	•			
5107	1221	Temp sensor fault	Outside temp (TH7)	•			
5110	1214	Backup operation		•			
		Temp sensor fault	Heatsink temp (THHS)	•			
5201	-	High-pressure sensor fault (63HS1)		•			
5301	4300	Backup operation		•			
		ACCT sensor fault		•			
		ACCT sensor circuit fault		•			
		Open-circuited IPM/Loose ACCT connector		•			
		Faulty ACCT wiring		•			
5305 5306	4305	Backup operation		•			
	4306	Position detection error at startup		•			
5306	4306	Position detection error during operation		•			
		RPM error before startup		•			
5701	-	Loose float switch connector			•		

Error Code Checklist

City Multi (VRF) Error Code

Error Code	Preliminary error code	Error code definition	Search unit			
			CU	FCU	LOSSNAY	Controller
6201	-	Remote controller board faulty (nonvolatile memory error)				•
6202	-	Remote controller board faulty (clock IC error)				•
6600	-	Address overlap	•	•	•	•
6601	-	Polarity setting error				•
6602	-	Transmission processor hardware error	•	•	•	•
6603	-	Transmission line bus busy error	•	•	•	•
6606	-	Communication error between device and transmission processors	•	•	•	•
6607	-	No ACK error	•	•	•	•
6608	-	No response error	•	•	•	•
6831	-	MA controller signal reception error (No signal reception)		•		•
6832	-	MA remote controller signal transmission error (Synchronization)		•		•
6833	-	MA remote controller signal transmission error (Hardware error)		•		•
6834	-	MA controller signal reception error (Start bit detection error)		•		•

Error Code Checklist

City Multi (VRF) Error Code

Error Code	Preliminary error code	Error code definition	Search unit			
			CU	FCU	LOSSNAY	Controller
7100	-	Total capacity error	•			
7101	-	Capacity code setting error	•	•	•	
7102	-	Wrong number of connected units	•			
7105	-	Address setting error	•			
7106	-	Attribute setting error			•	
7110	-	Connection information signal transmission / reception error	•			
7111	-	Remote controller sensor fault		•	•	
7113	-	Function setting error (improper connection of CNTYP)	•			
7117	-	Model setting error	•			
7130	-	Incompatible unit combination	•			

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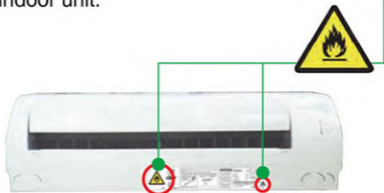


Frequently Ask Question (FAQ)

Q: How to identify R32 products

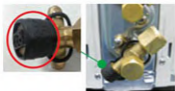
Displayed on indoor unit

It is clearly marked on the bottom of the indoor unit.



Affixed cap

A rubber cap is placed on the service port to specify that R32 refrigerant is being used.



Displayed on outdoor unit

It is clearly marked on the side of the outdoor unit .

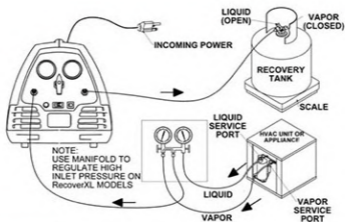


Frequently Ask Question (FAQ)

Q: How to Replace R32 Compressor?

A: Need to recover all refrigerant in system by discharging to recovery unit.

After change of parts or the compressor, check for leaks and perform vacuuming then charge the unit to specified refrigerant amount.



Caution

- 1) After disconnecting parts, attach replacement parts to the piping immediately. While the pipes are cooling, ensure that water/moisture does not enter the pipes.
- 2) Please do not put anything but the specified refrigerant into the refrigerant cycle; even air.

Do Not Discharge R32 refrigerant Directly!!

Frequently Ask Question (FAQ)

Q: Why change to R32 Refrigerant?

A: It reduces global-warming potential, improve air-conditioning performance and realizes energy savings.

Q: Is special installation necessary?

A: No. Specially installation requirements are not necessary for R32 (Same as R410a) refer pg5

Q: What happens if wrong refrigerant is used?

A: The result could be mechanical failure, abnormal operation or malfunction. It could also cause serious issues for ensuring safety, so please replace to the correct refrigerant immediately.

Q: What happens if R410A indoor unit is connected to an R32 outdoor unit?

A: Proper performance cannot be guaranteed. Void of manufacturer warranty. Please replace with the correct indoor unit.

Q: Is R32 refrigerant flammable?

A: It is not flammable in a normal work environment, but satisfying the conditions refer pg4

This book produced under MoU Program between



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