



VRF System Selection Report

Project Name :CRM-MG

Region :LA_BR

Selection Mode :Cooling

Sales Engineer :

Company:

Address:

Phone No:

Order Date : 29/07/2021

Delivery required date : 29/07/2021

Client Name :

Post Code :

Tel :

Mail :

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LIMITS OF LIABILITY

License Contract

By using the Global VRF Selection Software, you agree to abide by the terms of this End User License Agreement.

This software is not intended to provide highly accurate or certifiable results taking into account all the factors involved in complex or sophisticated installations.

Hitachi makes no warranties regarding the accuracy of the results obtained from the use of this software.

In fact, this software is not able to take into account all the site-specific factors that may influence the proper functioning of the selected device (e.g. piping or wiring lengths on site, third party AHU, geometry of the piping network, operating temperatures...).

It may also contain technical inaccuracies or errors, and improvements or modifications may be made to the software by Hitachi at any time without prior notice.

This software is not intended to replace a thorough evaluation by a professional of the HVAC field.

Accordingly, you are advised not to rely solely on the reports produced by the software to select the appropriate equipment.

Reports

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3. The failure to include any legal aspects that may correspond or be required according to current laws.

The Software and the issuing of this report are merely informative tools to assist the User in the planning and implementation of a project.

SYSTEM SELECTION





Outdoor Units

Pictures	Model Identification	Description	Quantity	Components
	FSNC5B-36HP	Comm. 220V VRF CO, FSNC5B	1	RAS-18FSNC5B RAS-18FSNC5B - -


FSNC5B-36HP Specifications		
Power supply		220V/3Ph/60Hz
Nominal capacity	Cooling	341,296.9BTU/h
	Heating	0.0BTU/h
EER		
COP		
SEER		
SCOP		
Sound power		dB(A)
Dimensions	Height	1,675mm
	Width	2,440mm
	Depth	765mm
Net Weight		612kg

Indoor Units



1ºPav.-RegistroPessoaJurídica

Indoor Unit			Nominal Cap. (BTU/h)		Accessories	Control		
Picture	Ident.	Description - Model	Cool	Heat		Picture	Model	Gp
	UE-001*	Four Way Cassette RCI-3.0FSKDNQ	27,303.8	30,716.7	D50324A			
	UE-002*	Four Way Cassette RCI-3.0FSKDNQ	27,303.8	30,716.7	D50324A			
	UE-003*	Four Way Cassette RCI-3.0FSKDNQ	27,303.8	30,716.7	D50324A			
	UE-004*	Four Way Cassette RCI-4.0FSKDNQ	38,225.3	42,662.1	D50324A			


1ºPav.-CabineFotografia

Indoor Unit			Nominal Cap. (BTU/h)		Accessories	Control		
Picture	Ident.	Description - Model	Cool	Heat		Picture	Model	Gp
	UE-005*	High Wall RPK-1.0FSN4M	9,556.3	10,921.5				




1ºPav.-RegistroPessoaFísica

Indoor Unit			Nominal Cap. (BTU/h)		Accessories	Control		
Picture	Ident.	Description - Model	Cool	Heat		Picture	Model	Gp
	UE-007*	Four Way Cassette RCI-2.5FSKDNQ	24,232.1	29,010.2	D50324A			
	UE-006*	Four Way Cassette RCI-2.5FSKDNQ	24,232.1	29,010.2	D50324A			



1ºPav.-Atendimento

Indoor Unit			Nominal Cap. (BTU/h)		Accessories	Control		
Picture	Ident.	Description - Model	Cool	Heat		Picture	Model	Gp
	UE-008*	Four Way Cassette RCI-2.5FSKDNQ	24,232.1	29,010.2	D50324A			


1ºPav.-EsperaPúblico

Indoor Unit			Nominal Cap. (BTU/h)		Accessories	Control		
Picture	Ident.	Description - Model	Cool	Heat		Picture	Model	Gp
	UE-009**	Four Way Cassette RCI-3.0FSKDNQ	27,303.8	30,716.7	D50324A			
	UE-010**	Four Way Cassette RCI-4.0FSKDNQ	38,225.3	42,662.1	D50324A			
	UE-011**	Four Way Cassette RCI-4.0FSKDNQ	38,225.3	42,662.1	D50324A			

1ºPav.-AreaDoPergolado


Indoor Unit			Nominal Cap. (BTU/h)		Accessories	Control		
Picture	Ident.	Description - Model	Cool	Heat		Picture	Model	Gp
	UE-013*	High Wall RPK-2.0FSN4M	19,112.6	21,501.7				
	UE-014*	High Wall RPK-2.5FSN4M	24,232.1	29,010.2				

1ºPav.-CirculaçãoInterior

Indoor Unit			Nominal Cap. (BTU/h)		Accessories	Control		
Picture	Ident.	Description - Model	Cool	Heat		Picture	Model	Gp
	UE-015*	Four Way Cassette RCI-3.0FSKDNQ	27,303.8	30,716.7	D50324A			

Mezanino-Copa

Indoor Unit			Nominal Cap. (BTU/h)		Accessories	Control		
Picture	Ident.	Description - Model	Cool	Heat		Picture	Model	Gp

Indoor Unit			Nominal Cap. (BTU/h)		Accessories	Control		
Picture	Ident.	Description - Model	Cool	Heat		Picture	Model	Gp
	UE-012*	Four Way Cassette RCI-3.0FSKDNQ	27,303.8	30,716.7	D50324A			

SYSTEM DESIGN

UC-001

Working Condition	Outdoor (Air)	Indoor (Air)
Cooling	35.0 °C DB	27.0 °C DB 19.6 °C WB (50% RH)
Heating	7.0 °C DB 3.1 °C WB (51% RH)	20.0 °C DB

Note:

- Actual capacity takes into account all correction factors, including defrosting in heating mode.
- Each Indoor unit's temperature condition might be different. Software uses minimum wet bulb temperature of indoor for system cooling process and uses maximum dry bulb temperature of indoor for system heating process.

Room Information

Floor Name	Room Name	Room Area (m²)	Cool (°C)		Heat (°C)		Cool (BTU/h)			Heat (BTU/h)	
			DB	WB	DB		Actual	Sensible	Required	Actual	Required
1ºPav.	RegistroPessoaJurídica	30.0	27.0	19.6	20.0		102026.3	80796.5	0	0	0
1ºPav.	CabineFotografia	30.0	27.0	19.6	20.0		7848.2	6079.2	0	0	0
1ºPav.	RegistroPessoaFísica	30.0	27.0	19.6	20.0		39240.9	33906.4	0	0	0
1ºPav.	Atendimento	30.0	27.0	19.6	20.0		19620.4	16953.2	0	0	0
1ºPav.	EsperaPúblico	30.0	27.0	19.6	20.0		86330	66891.4	0	0	0
1ºPav.	AreaDoPergolado	30.0	27.0	19.6	20.0		35316.8	25262.7	0	0	0
1ºPav.	CirculaçãoInterior	30.0	27.0	19.6	20.0		23544.5	18940.3	0	0	0
Mezanino	Copa	30.0	27.0	19.6	20.0		23544.5	18940.3	0	0	0
Total							337,47	267,77	0.0	0.0	0.0
							1.7	0.1			

Outdoor Units of the system

Outdoor Unit (UC-001)		Connect. Rate (%)		Cooling Capacity (BTU/h)			Heating Capacity (BTU/h)		
Ref + Description	Ident.	Actual	Max	Nominal	Actual	Required	Nominal	Actual	Required
Comm. 220V VRF CO, FSNC5B FSNC5B-36HP		119	120	-	337,471.7	-	-	0.0	-
Total				-	337471.7	-	-	0	-
					7				

Indoor Units of the system

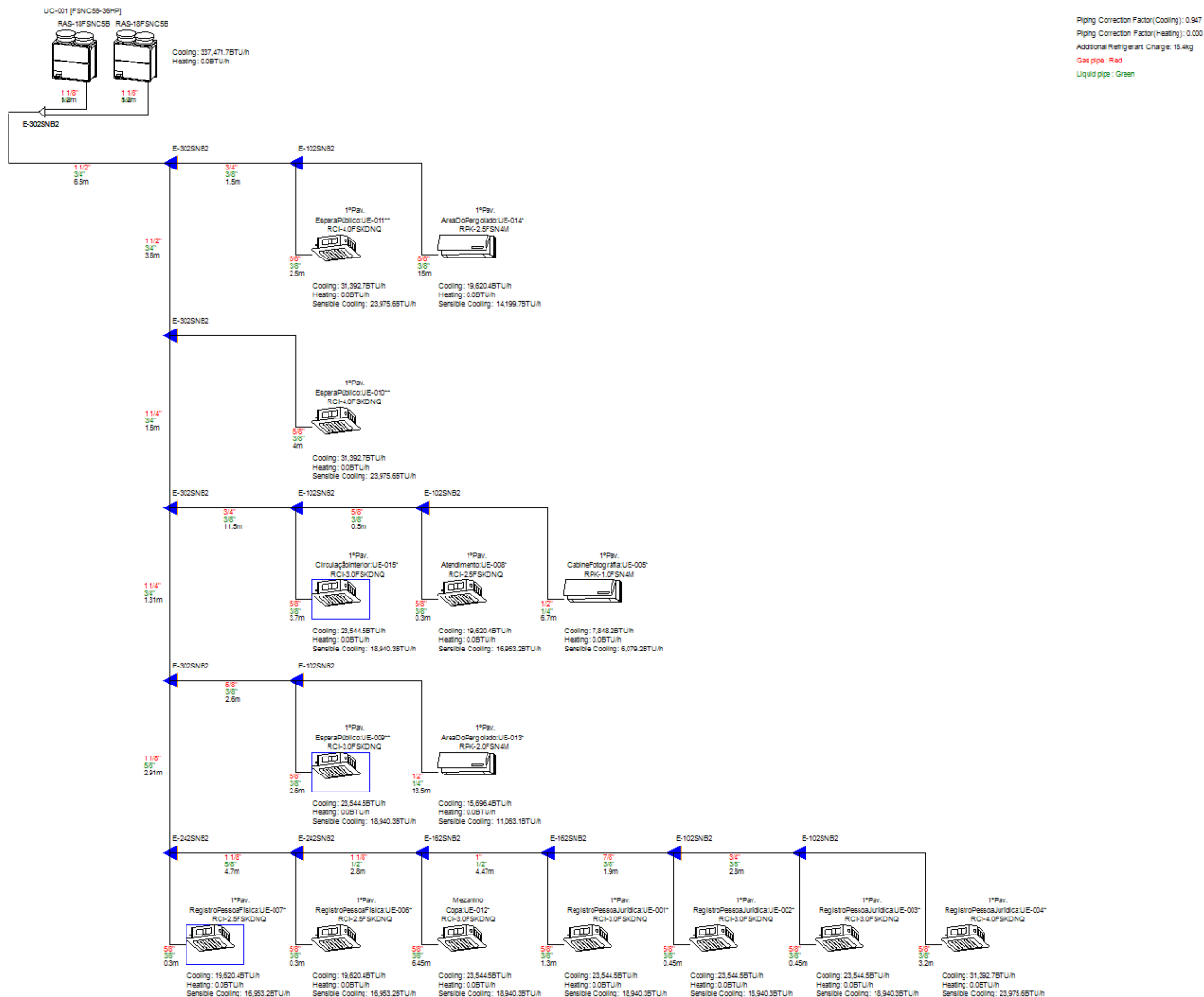
Indoor Unit (UC-001)		Sound Pressure dB(A)	Air Flow		Cooling Capacity (BTU/h)			Heating Capacity (RTU/h/RTU/h)	
Ref + Description	Ident.		Speed	m³/h	Actual	Sensible	Required	Actual	Required
1ºPav.-RegistroPessoaJuridica					102,026.3	80,796.5	0.0	0.0	0.0
Four Way Cassette RCI-3.0FSKDNQ	UE-001*	36	High2	1,620.0	23,544.5	18,940.3		0.0	
Four Way Cassette RCI-3.0FSKDNQ	UE-002*	36	High2	1,620.0	23,544.5	18,940.3		0.0	
Four Way Cassette RCI-3.0FSKDNQ	UE-003*	36	High2	1,620.0	23,544.5	18,940.3		0.0	
Four Way Cassette RCI-4.0FSKDNQ	UE-004*	43	High2	2,220.0	31,392.7	23,975.6		0.0	

Indoor Unit (UC-001)		Sound Pressure dB(A)	Air Flow		Cooling Capacity (BTU/h)			Heating Capacity (RTU/h/RTU/h)	
Ref + Description	Ident.		Speed	m³/h	Actual	Sensible	Required	Actual	Required
1ºPav.-CabineFotografia					7,848.2	6,079.2	0.0	0.0	0.0
High Wall RPK-1.0FSN4M	UE-005*	35	High2	600.0	7,848.2	6,079.2		0.0	
1ºPav.-RegistroPessoaFisica					39,240.9	33,906.4	0.0	0.0	0.0
Four Way Cassette RCI-2.5FSKDNQ	UE-007*	36	High2	1,620.0	19,620.4	16,953.2		0.0	
Four Way Cassette RCI-2.5FSKDNQ	UE-006*	36	High2	1,620.0	19,620.4	16,953.2		0.0	
1ºPav.-Atendimento					19,620.4	16,953.2	0.0	0.0	0.0
Four Way Cassette RCI-2.5FSKDNQ	UE-008*	36	High2	1,620.0	19,620.4	16,953.2		0.0	
1ºPav.-EsperaPúblico					86,330.0	66,891.4	0.0	0.0	0.0
Four Way Cassette RCI-3.0FSKDNQ	UE-009**	36	High2	1,620.0	23,544.5	18,940.3		0.0	
Four Way Cassette RCI-4.0FSKDNQ	UE-010**	43	High2	2,220.0	31,392.7	23,975.6		0.0	
Four Way Cassette RCI-4.0FSKDNQ	UE-011**	43	High2	2,220.0	31,392.7	23,975.6		0.0	
1ºPav.-AreaDoPergolado					35,316.8	25,262.7	0.0	0.0	0.0
High Wall RPK-2.0FSN4M	UE-013*	37	High2	870.0	15,696.4	11,063.1		0.0	
High Wall RPK-2.5FSN4M	UE-014*	42	High2	1,110.0	19,620.4	14,199.7		0.0	
1ºPav.-CirculaçãoInterior					23,544.5	18,940.3	0.0	0.0	0.0
Four Way Cassette RCI-3.0FSKDNQ	UE-015*	36	High2	1,620.0	23,544.5	18,940.3		0.0	
Mezanino-Copa					23,544.5	18,940.3	0.0	0.0	0.0
Four Way Cassette RCI-3.0FSKDNQ	UE-012*	36	High2	1,620.0	23,544.5	18,940.3		0.0	

PIPING DESIGN

UC-001

Piping Diagram



UC-001

Piping Rules

Comm. 220V VRF CO, FSNC5B FSNC5B-36HP		Project m	Max m	OK
Length	Total pipe length	112	1,000	✓
	Maximum piping length (Actual length)	36	165	✓
	Maximum piping length (Equivalent length)	41	190	✓
	Maximum Piping Length between Multi-kit of 1st Branch and Each Indoor Unit	29	90	✓
	Maximum Piping Length between Each Multi-kit and Each Indoor Unit	15	40	✓
	Piping Length between Piping Connection Kit 1 and Each Outdoor Unit	1	10	✓
Height	Height Difference between (O.U. is Upper)	0	110	✓
	Height Difference between (O.U. is Lower)	0	40	✓
	Height Difference between Indoor Units	0	30	✓
IU connectable (Min / recommended / Max)		15	1 / 32 / 59	✓
Connected Cap. (Min-Max)		119%	50%-150%	✓

Refrigerant Load & Pipe size

Comm. 220V VRF CO, FSNC5B FSNC5B-36HP	Refrigerant Type: R410A kg
OU refrigerant load (Charge before shipment)	21.4
Installation Additional refrigerant load (OU + Piping)	16.4
Total	37.8

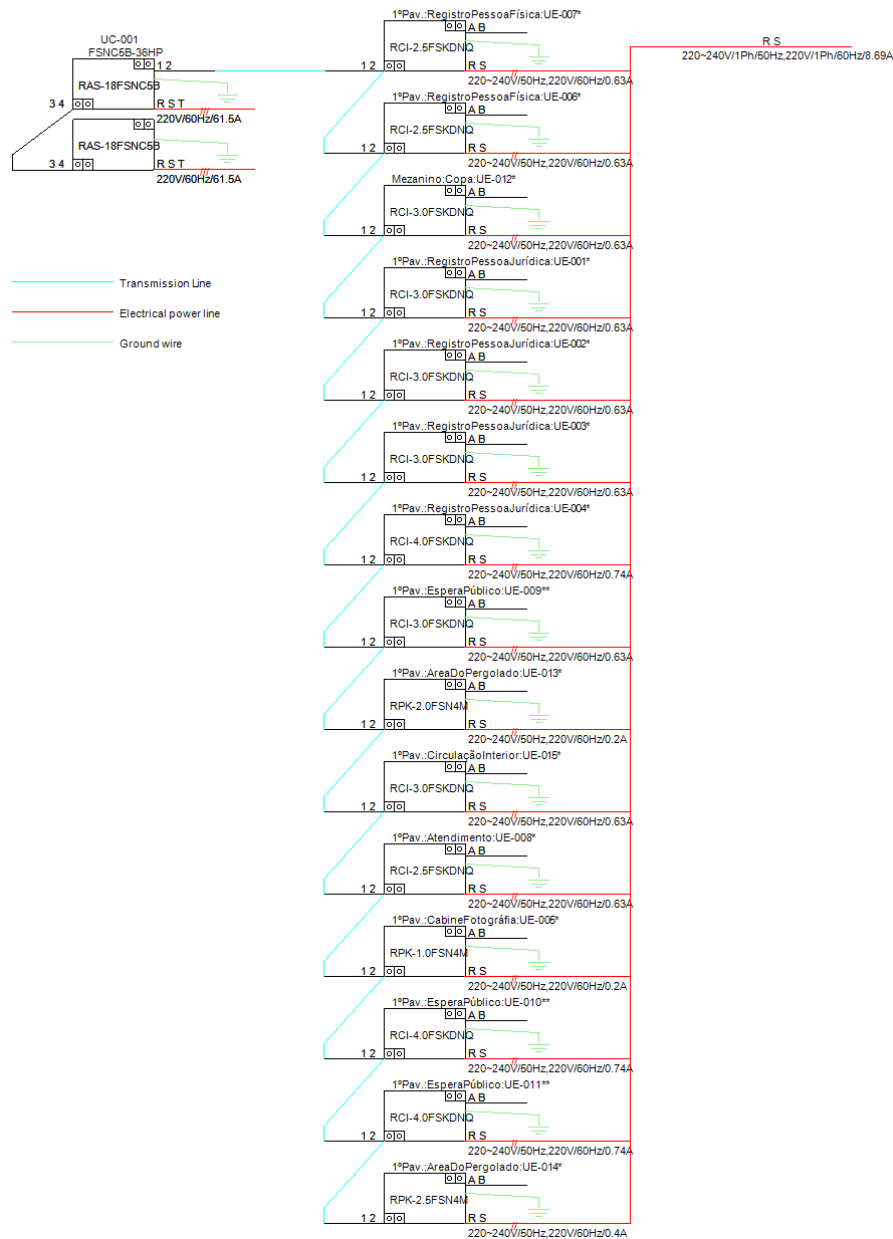
Recommendation

- If pipe size 1" is not available in your country, please use 1"1/8 as replacement.

WIRING DESIGN








UC-001

Wiring Diagram



UC-001

Power Supply

	Model	Power supply	Input power kW	Max current A
	FSNC5B-36HP (RAS-18FSNC5B + RAS-18FSNC5B)	220V/3Ph/60Hz	11.89+11.89	61.5+61.5
	RCI-2.5FSKDNQ	220~240V/1Ph/50Hz,2 20V/1Ph/60Hz	0.15	0.63
	RCI-3.0FSKDNQ	220~240V/1Ph/50Hz,2 20V/1Ph/60Hz	0.15	0.63
	RCI-4.0FSKDNQ	220~240V/1Ph/50Hz,2 20V/1Ph/60Hz	0.18	0.74
	RPK-2.0FSN4M	220~240V/1Ph/50Hz,2 20V/1Ph/60Hz	0.06	0.2
	RPK-1.0FSN4M	220~240V/1Ph/50Hz,2 20V/1Ph/60Hz	0.03	0.2
	RPK-2.5FSN4M	220~240V/1Ph/50Hz,2 20V/1Ph/60Hz	0.08	0.4

RCS link description

- Minimum recommended section (up to 500 m): 2 x 0.75 mm² connected to earth at one point.
- Cable characteristics: non polar, twisted shielded pair of cable.
- One Remote Control Switch can control up to 16 Indoor Units as a maximum.
- Two Remote Control Switch can be connected in the same unit or unit group.
- The second one is a subsidiary remote control switch.

Central Controller

H-Link2 communication line description

- Minimum recommended section: 2 x 0.75 mm² connected to earth at one point. Shielding must be renewed every 300m.
- Transmitting wires: non polar, twisted shielded pair of cable.
- Maximum H-Link2 communication line length is 1000 m but can be increased until 5.000m using optional relay PSC-5HR.
- Several refrigerant systems can be connected together on a bus with H-LINK2 wiring using an open loop
- Maximum number of Outdoor Units is 64.
- Maximum number of Indoor Units is 160.
- Number of central controller: 0

EQUIPMENT LIST AND INFORMATION

Outdoor Units

Model & Components	System Name	Description	Quantity
FSNC5B-36HP	UC-001	Comm. 220V VRF CO, FSNC5B	1
RAS-18FSNC5B	-	Components	2

Indoor Units

Model	Description	Quantity
RCI-2.5FSKDNQ	Four Way Cassette	3
RCI-3.0FSKDNQ	Four Way Cassette	6
RCI-4.0FSKDNQ	Four Way Cassette	3
RPK-1.0FSN4M	High Wall	1
RPK-2.0FSN4M	High Wall	1
RPK-2.5FSN4M	High Wall	1

Accessories

Model	Description	Quantity
D50324A		12

Branch Kit

Pipe connection kit

Model	Description	Quantity
E-302SNB2	Outdoor units piping connection kit	1

Multikit

Model	Description	Quantity
E-302SNB2	Line branch kit	4
E-242SNB2	Line branch kit	2
E-162SNB2	Line branch kit	2
E-102SNB2	Line branch kit	6

CH Box

Field Providing

Piping Materials

Pipe size(mm)	Length m
1/2	27.5
5/8	53.8
3/4	29
1/4	20.2
3/8	61.5
7/8	1.9
1	4.5
1 1/8	12.8
1 1/4	2.9
1 1/2	10.3

Refrigerant

Refrigerant Type	Quantity to be provided kg
R410A	16.4

Appendix –Equipment list for UC-001

Category	Model	Description	Quantity
Outdoor Units	FSNC5B-36HP	Comm. 220V VRF CO, FSNC5B	1
	<i>RAS-18FSNC5B</i>	component	2
Indoor Units	RCI-2.5FSKDNQ	Four Way Cassette	3
	RCI-3.0FSKDNQ	Four Way Cassette	6
	RCI-4.0FSKDNQ	Four Way Cassette	3
	RPK-1.0FSN4M	High Wall	1
	RPK-2.0FSN4M	High Wall	1
	RPK-2.5FSN4M	High Wall	1
Accessory	D50324A		12
Piping Connection Kit	E-302SNB2	Outdoor units piping connection kit	1
MultiKit	E-302SNB2	Line branch kit	4
	E-242SNB2	Line branch kit	2
	E-162SNB2	Line branch kit	2
	E-102SNB2	Line branch kit	6

Field Providing

Pipe size(mm)	Length
1/2	27.5
5/8	53.8
3/4	29
1/4	20.2
3/8	61.5
7/8	1.9
1	4.5
1 1/8	12.8
1 1/4	2.9
1 1/2	10.3

Refrigerant Type	Quantity to be provided
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	kg
R410A	16.4