

MSSP Report

1. Project Information

Date	2023-11-7
Project name	Centrum Medyczne Dobrzyńska Wrocław
Project address	
Country	Poland
State	
City	Wrocław
Client name	
Client address	
Designed by	
Reference	New Project
Revision	
Altitude(m)	0
Indoor DB temperature in cooling(°C)	26
Indoor WB temperature in cooling(°C)	19
Outdoor DB temperature in cooling(°C)	32
Outdoor WB temperature in cooling(°C)	28.1
Indoor DB temperature in heating(°C)	21
Indoor WB temperature in heating(°C)	14
Outdoor DB temperature in heating(°C)	-18
Outdoor WB temperature in heating(°C)	-18.3

2. Overall Material List

2.1 Equipment List

Model	Quantity	Description
MVi-335WV2RN1(B)	1	EasyFit VRF (380-415V EU series)
MVi-224WV2RN1(A)	1	V6-i Side Discharge(380-415V EU series)
MVi-200WV2RN1(A)	1	V6-i Side Discharge(380-415V EU series)
MIH36Q4CN18	5	Compact Four-way Cassette (EU series)
MIH28GN18	1	Wall mounted (EU series)
MIH28Q4CN18	10	Compact Four-way Cassette (EU series)
MIH22GN18	4	Wall mounted (EU series)
MIH22Q4CN18	1	Compact Four-way Cassette (EU series)
MIH15GN18	12	Wall mounted (EU series)
FQZHN-02D	2	Branch joint
FQZHN-01D	26	Branch joint
FQZHN-03D	2	Branch joint
Φ25.4<->Φ28.6	1	Reducer
Φ15.9<->Φ19.1	1	Reducer
Φ22.2<->Φ25.4	2	Reducer
WDC3-86S	33	3rd generation group controller

2.2 Field Providing List

2.2.1 Refrigerant Piping Materials

Model	Quantity	Unit	Description
Φ6.35	91	m	Copper pipe
Φ9.52	85.5	m	Copper pipe
Φ12.7	169	m	Copper pipe
Φ15.9	77	m	Copper pipe
Φ19.1	3	m	Copper pipe
Φ22.2	52.5	m	Copper pipe
Φ28.6	31	m	Copper pipe
Insulation casing for piping			All refrigerant piping and branch joints should be completely insulated.

Recommended insulation casing thickness:

Piping size	Thickness	
	Humidity<80%RH	Humidity≥80%RH
Φ6.35~Φ38.1mm	≥15mm	≥20mm
Φ41.3~Φ38.1mm	≥20mm	≥25mm

2.2.2 Refrigerant charge

System name	Model	Quantity	Unit	Description
System1	R410A	4.83	kg	Extra Refrigerant Added
System2	R410A	4.97	kg	Extra Refrigerant Added
System3	R410A	6.59	kg	Extra Refrigerant Added
Total(R410A)	R410A	16.39	kg	Extra Refrigerant Added

2.2.3 Electrical cables

Type	Size	Length
Power supply cable	Select based on MCA of each unit	According to the actual system design
Communication cable	0.75mm ² 3-core shielded	According to the actual system design

3. Overall Electrical Characteristics

Model	Quantity	Power supply	MCA(A)	MFA(A)
MVi-335WV2RN1(B)	1	380-415V-3ph-50Hz	23,00	32
MVi-224WV2RN1(A)	1	380-415V-3ph-50Hz	19,00	25
MVi-200WV2RN1(A)	1	380-415V-3ph-50Hz	19,00	25
MIH36Q4CN18	5	220-240V-50Hz	0,54	15
MIH28GN18	1	220-240V-50Hz	0,36	15
MIH28Q4CN18	10	220-240V-50Hz	0,54	15
MIH22GN18	4	220-240V-50Hz	0,29	15
MIH22Q4CN18	1	220-240V-50Hz	0,46	15
MIH15GN18	12	220-240V-50Hz	0,28	15

Notes:

1. MCA: Minimum Circuit Amps. MCA is used to select wire size. The value in above table is for one unit.
2. MFA: Maximum Fuse Amps. MFA is used to select overcurrent circuit breakers and residual-current circuit breakers. The value in above table is for one unit.

4. System1

4.1 BOM List (System1)

Model	Quantity	Unit	Description
MVi-200WV2RN1(A)	1		V6-i Side Discharge(380-415V EU series)
MIH28GN18	1		Wall mounted (EU series)
MIH28Q4CN18	4		Compact Four-way Cassette (EU series)
MIH15GN18	4		Wall mounted (EU series)
FQZHN-01D	7		Branch joint
FQZHN-03D	1		Branch joint
WDC3-86S	9		3rd generation group controller
Φ15.9<->Φ19.1	1		Reducer
Φ22.2<->Φ25.4	1		Reducer
R410A	4.83	kg	Extra Refrigerant Added
Φ6.35	30	m	Copper pipe
Φ9.52	20.5	m	Copper pipe
Φ12.7	55	m	Copper pipe
Φ15.9	20.5	m	Copper pipe
Φ22.2	25	m	Copper pipe

4.2 Indoor Unit Details (System1)

4.2.1 Indoor Unit Details Table

IDU Name	Model	Weight(kg)	Dimension(WxHxD)(mm)	Power supply	MCA(A)	MFA(A)
1.6	MIH15GN18	9	750*295*265	220-240V-50Hz	0,28	15
1.5	MIH15GN18	9	750*295*265	220-240V-50Hz	0,28	15
1.1	MIH28GN18	10	750*295*265	220-240V-50Hz	0,36	15
1.7	MIH15GN18	9	750*295*265	220-240V-50Hz	0,28	15
1.8	MIH15GN18	9	750*295*265	220-240V-50Hz	0,28	15
1.9	MIH28Q4CN18	13	575*235*638	220-240V-50Hz	0,54	15
1.9	MIH28Q4CN18	13	575*235*638	220-240V-50Hz	0,54	15
1.10	MIH28Q4CN18	13	575*235*638	220-240V-50Hz	0,54	15
1.10	MIH28Q4CN18	13	575*235*638	220-240V-50Hz	0,54	15

IDU Name	Model	Tmp-C(°C)	RTC(kW)	ATC(kW)	RSC(kW)	ASC(kW)	PI-C(W)	Tmp-H(°C)	RHC(kW)	AHC(kW)	PI-H(W)
1.6	MIH15GN18	26,0/19,0		1,44		1,22	18	21		1,36	18
1.5	MIH15GN18	26,0/19,0		1,44		1,22	18	21		1,36	18
1.1	MIH28GN18	26,0/19,0		2,67		2,25	24	21		2,59	24
1.7	MIH15GN18	26,0/19,0		1,44		1,22	18	21		1,36	18
1.8	MIH15GN18	26,0/19,0		1,44		1,22	18	21		1,36	18
1.9	MIH28Q4CN18	26,0/19,0		2,68		2,16	16	21		2,59	16
1.9	MIH28Q4CN18	26,0/19,0		2,66		2,14	16	21		2,59	16
1.10	MIH28Q4CN18	26,0/19,0		2,64		2,13	16	21		2,59	16
1.10	MIH28Q4CN18	26,0/19,0		2,61		2,11	16	21		2,59	16

IDU Name	Model	Airflow(m ³ /h)	Sound-Pr dB(A)	ESP(Pa)
1.6	MIH15GN18	460[SSH]	32[SSH]	
1.5	MIH15GN18	460[SSH]	32[SSH]	
1.1	MIH28GN18	540[SSH]	35[SSH]	
1.7	MIH15GN18	460[SSH]	32[SSH]	
1.8	MIH15GN18	460[SSH]	32[SSH]	
1.9	MIH28Q4CN18	510[SSH]	30[SSH]	
1.9	MIH28Q4CN18	510[SSH]	30[SSH]	
1.10	MIH28Q4CN18	510[SSH]	30[SSH]	
1.10	MIH28Q4CN18	510[SSH]	30[SSH]	

IDU Name	Model	Piping Length to 1st Y Joint(m)
1.6	MIH15GN18	1,50
1.5	MIH15GN18	4,00
1.1	MIH28GN18	14,00
1.7	MIH15GN18	2,50
1.8	MIH15GN18	5,50
1.9	MIH28Q4CN18	13,00
1.9	MIH28Q4CN18	18,00
1.10	MIH28Q4CN18	23,50
1.10	MIH28Q4CN18	29,00

4.2.2 Table of Abbreviations

Abbreviation code	Description
Tmp-C	Indoor temperature in cooling (Dry bulb temp. / Wet bulb temp. / RH)
RTC	Required total cooling capacity
ATC	Available total cooling capacity
RSC	Required sensible cooling capacity
ASC	Available sensible cooling capacity
Tmp-H	Indoor temperature in heating (Dry bulb temp.)
RHC	Required heating capacity
AHC	Available heating capacity
Tdis-H	Indoor unit discharge air temperature in heating
Airflow	Indoor unit airflow (High/Medium/Low)
ESP	External static pressure
Sound-Pr	Sound pressure level (High/Medium/Low)
Sound-Po	Sound power level (High/Medium/Low)
MCA	Minimum Circuit Amps
MFA	Maximum Fuse Amps
PI-C	Power input in cooling
PI-H	Power input in heating
Power supply	Power supply
Dimension(WxHxD)	Net Dimension (WxHxD) mm
Weight	Weight

4.3 Outdoor Unit Details (System1)

4.3.1 Outdoor Unit Details Table

Model		MVi-200WV2RN1(A)
Module		MVi-200WV2RN1(A)
Tmp-C	°C	32
RTC	kW	
ATC	kW	19,19
PI-C	kW	4,69
EER		4,09
Tmp-H	°C/°C	-18/-18,3
RHC	kW	
AHC	kW	18,4
PI-H	kW	7,17
COP		2,56
CR		100,0
Airflow	m ³ /h	9000
Sound-Pr		58
Sound-Po		78
Bas-Refr	kg	6,50
Ex-Refr	kg	4,83
TCO2 eq.		23,66
MCA	A	19
MFA	A	25
Power supply	V/ph/Hz	380-415V-3ph-50Hz
Dimension (WxHxD)	mm	1120*1558*528
Weight	kg	143

4.3.2 Table of Abbreviations

Abbreviation code	Description
Tmp-C	Outdoor conditions in cooling (Dry bulb temp.)
RTC	Required cooling capacity
ATC	Available cooling capacity
PI-C	Power input in cooling
EER	EER
Tmp-H	Indoor conditions in heating (Dry bulb temp. / Wet bulb temp. / RH)
RHC	Required heating capacity
AHC	Available heating capacity
PI-H	Power input in heating
COP	COP
CR	Combination ratio
Airflow	Outdoor unit airflow
Sound-Pr	Sound pressure level
Sound-Po	Sound power level
Bas-Refr	Standard factory refrigerant charge
Ex-Refr	Extra refrigerant charge
TCO2 eq.	Tonnes of CO2 equivalent
MCA	Minimum Circuit Amps
MFA	Maximum Fuse Amps

Power supply	Power supply
Dimension (WxHxD)	Net Dimension (WxHxD) mm
Weight	Weight

4.4 Piping Limitations (System1)

4.4.1 Piping Limitations

Item	Capability	Actual Value
Total piping length	150,00(m)	79,50(m)
Longest actual length	100,00(m)	51,50(m)
Longest equivalent length	110,00(m)	54,50(m)
Longest equivalent length after first branch	40,00(m)	29,00(m)
Indoor unit to nearest branch length	15,00(m)	10,50(m)
Length difference between longest and shortest distance to indoor units	40,00(m)	16,50(m)
Height difference between indoor and outdoor unit(ODU up)	50,00(m)	0,00(m)
Height difference between indoor and outdoor unit(ODU down)	40,00(m)	0,00(m)
Height difference between indoor units	15,00(m)	0,00(m)
Combination ratio	50-130%	100,00%
IDU quantity	11	9

4.4.2 Correction Factors

Item	Correction factor
Altitude (indoor unit)	1,000
Altitude (outdoor unit)	1,000
Piping (cooling)	0,962
Piping (heating)	0,986
Defrost (heating)	1,000

4.4.3 Piping Details Table

No.	Length(m)	Piping diameter
(1)	25,00	Φ22.2/Φ12.7
(2)	0,50	Φ15.9/Φ9.52
(3)	1,50	Φ15.9/Φ9.52
(4)	0,50	Φ12.7/Φ6.35
(5)	2,00	Φ15.9/Φ9.52
(6)	0,50	Φ12.7/Φ6.35
(7)	10,50	Φ12.7/Φ6.35
(8)	0,50	Φ12.7/Φ6.35
(9)	2,50	Φ15.9/Φ9.52
(10)	0,50	Φ12.7/Φ6.35
(11)	4,50	Φ15.9/Φ9.52
(12)	3,00	Φ12.7/Φ6.35
(13)	4,50	Φ15.9/Φ9.52
(14)	3,00	Φ12.7/Φ6.35
(15)	5,00	Φ15.9/Φ9.52
(16)	3,00	Φ12.7/Φ6.35
(17)	8,50	Φ12.7/Φ6.35

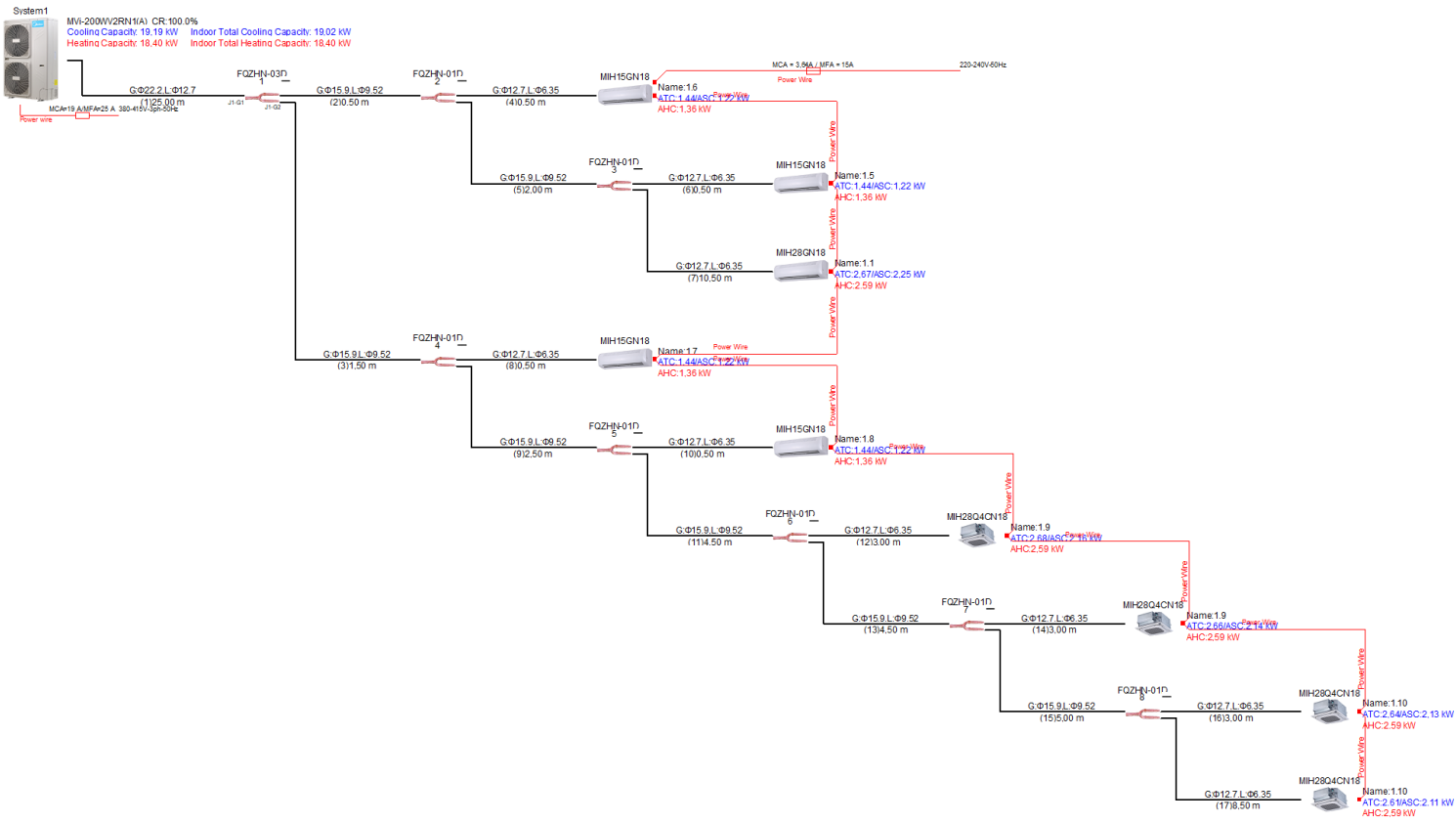
4.4.4 Branch Joints Details Table

No.	Load(kW)	Model
(1)	20	FQZHN-03D
(2)	5,8	FQZHN-01D
(3)	4,3	FQZHN-01D
(4)	14,2	FQZHN-01D
(5)	12,7	FQZHN-01D
(6)	11,2	FQZHN-01D
(7)	8,4	FQZHN-01D
(8)	5,6	FQZHN-01D

4.4.5 Reducer Details Table

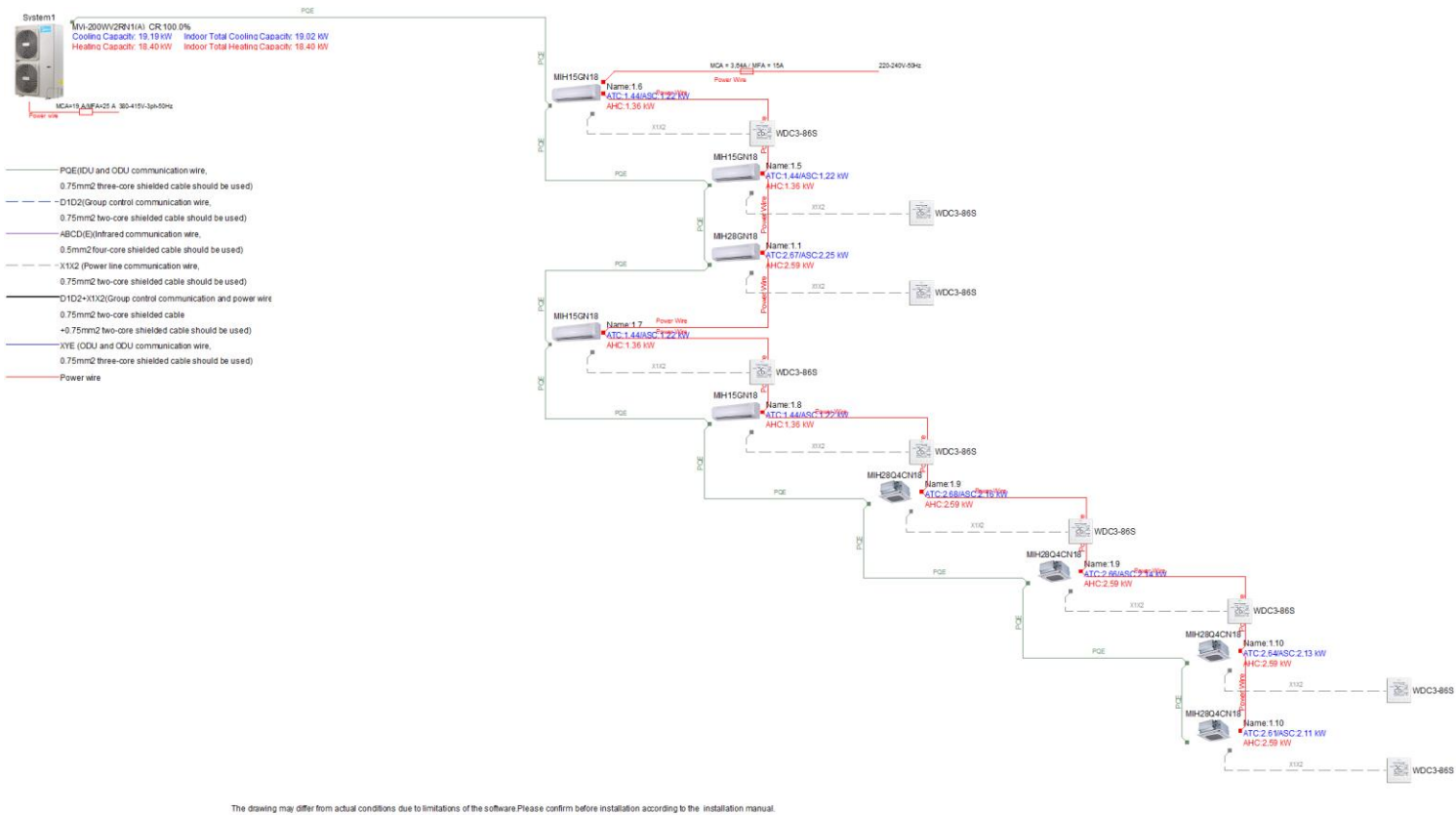
Reducer Name	Description
J1-G1	Ø22.2<->Ø25.4
J1-G2	Ø15.9<->Ø19.1

4.5 Piping Diagrams (System1)



The drawing may differ from actual conditions due to limitations of the software. Please confirm before installation according to the installation manual.

4.6 Wiring Diagrams (System1)



5. System2

5.1 BOM List (System2)

Model	Quantity	Unit	Description
MVi-224WV2RN1(A)	1		V6-i Side Discharge(380-415V EU series)
MIH28Q4CN18	5		Compact Four-way Cassette (EU series)
MIH22GN18	3		Wall mounted (EU series)
MIH15GN18	2		Wall mounted (EU series)
FQZHN-01D	8		Branch joint
FQZHN-03D	1		Branch joint
WDC3-86S	10		3rd generation group controller
Φ22.2<->Φ25.4	1		Reducer
R410A	4.97	kg	Extra Refrigerant Added
Φ6.35	30.5	m	Copper pipe
Φ9.52	28	m	Copper pipe
Φ12.7	52.5	m	Copper pipe
Φ15.9	26.5	m	Copper pipe
Φ19.1	1.5	m	Copper pipe
Φ22.2	22	m	Copper pipe

5.2 Indoor Unit Details (System2)

5.2.1 Indoor Unit Details Table

IDU Name	Model	Weight(kg)	Dimension(WxHxD)(mm)	Power supply	MCA(A)	MFA(A)
1.28	MIH28Q4CN18	13	575*235*638	220-240V-50Hz	0,54	15

1.27	MIH22GN18	9	750*295*265	220-240V-50Hz	0,29	15
1.29	MIH28Q4CN18	13	575*235*638	220-240V-50Hz	0,54	15
1.30	MIH22GN18	9	750*295*265	220-240V-50Hz	0,29	15
1.31	MIH22GN18	9	750*295*265	220-240V-50Hz	0,29	15
1.32	MIH28Q4CN18	13	575*235*638	220-240V-50Hz	0,54	15
1.33	MIH28Q4CN18	13	575*235*638	220-240V-50Hz	0,54	15
1.36	MIH28Q4CN18	13	575*235*638	220-240V-50Hz	0,54	15
1.34	MIH15GN18	9	750*295*265	220-240V-50Hz	0,28	15
1.35	MIH15GN18	9	750*295*265	220-240V-50Hz	0,28	15

IDU Name	Model	Tmp-C(°C)	RTC(kW)	ATC(kW)	RSC(kW)	ASC(kW)	PI-C(W)	Tmp-H(°C)	RHC(kW)	AHC(kW)	PI-H(W)
1.28	MIH28Q4CN18	26,0/19,0		2,64		2,13	16	21		2,45	16
1.27	MIH22GN18	26,0/19,0		2,08		1,76	21	21		1,82	21
1.29	MIH28Q4CN18	26,0/19,0		2,64		2,13	16	21		2,45	16
1.30	MIH22GN18	26,0/19,0		2,08		1,76	21	21		1,82	21
1.31	MIH22GN18	26,0/19,0		2,08		1,76	21	21		1,82	21
1.32	MIH28Q4CN18	26,0/19,0		2,63		2,12	16	21		2,45	16
1.33	MIH28Q4CN18	26,0/19,0		2,6		2,1	16	21		2,45	16
1.36	MIH28Q4CN18	26,0/19,0		2,56		2,06	16	21		2,45	16
1.34	MIH15GN18	26,0/19,0		1,38		1,17	18	21		1,29	18
1.35	MIH15GN18	26,0/19,0		1,37		1,17	18	21		1,29	18

IDU Name	Model	Airflow(m³/h)	Sound-Pr dB(A)	ESP(Pa)
1.28	MIH28Q4CN18	510[SSH]	30[SSH]	
1.27	MIH22GN18	500[SSH]	33[SSH]	
1.29	MIH28Q4CN18	510[SSH]	30[SSH]	
1.30	MIH22GN18	500[SSH]	33[SSH]	
1.31	MIH22GN18	500[SSH]	33[SSH]	

1.32	MIH28Q4CN18	510[SSH]	30[SSH]	
1.33	MIH28Q4CN18	510[SSH]	30[SSH]	
1.36	MIH28Q4CN18	510[SSH]	30[SSH]	
1.34	MIH15GN18	460[SSH]	32[SSH]	
1.35	MIH15GN18	460[SSH]	32[SSH]	

IDU Name	Model	Piping Length to 1st Y Joint(m)
1.28	MIH28Q4CN18	6,50
1.27	MIH22GN18	8,50
1.29	MIH28Q4CN18	5,00
1.30	MIH22GN18	7,00
1.31	MIH22GN18	10,00
1.32	MIH28Q4CN18	16,00
1.33	MIH28Q4CN18	21,50
1.36	MIH28Q4CN18	32,00
1.34	MIH15GN18	29,00
1.35	MIH15GN18	32,50

5.2.2 Table of Abbreviations

Abbreviation code	Description
Tmp-C	Indoor temperature in cooling (Dry bulb temp. / Wet bulb temp. / RH)
RTC	Required total cooling capacity
ATC	Available total cooling capacity
RSC	Required sensible cooling capacity
ASC	Available sensible cooling capacity
Tmp-H	Indoor temperature in heating (Dry bulb temp.)

RHC	Required heating capacity
AHC	Available heating capacity
Tdis-H	Indoor unit discharge air temperature in heating
Airflow	Indoor unit airflow (High/Medium/Low)
ESP	External static pressure
Sound-Pr	Sound pressure level (High/Medium/Low)
Sound-Po	Sound power level (High/Medium/Low)
MCA	Minimum Circuit Amps
MFA	Maximum Fuse Amps
PI-C	Power input in cooling
PI-H	Power input in heating
Power supply	Power supply
Dimension(WxHxD)	Net Dimension (WxHxD) mm
Weight	Weight

5.3 Outdoor Unit Details (System2)

5.3.1 Outdoor Unit Details Table

Model		MVi-224WV2RN1(A)
Module		MVi-224WV2RN1(A)
Tmp-C	°C	32
RTC	kW	
ATC	kW	22,28
PI-C	kW	6,22
EER		3,58
Tmp-H	°C/°C	-18/-18,3
RHC	kW	
AHC	kW	20,31
PI-H	kW	7,97

COP		2,55
CR		105,4
Airflow	m ³ /h	9000
Sound-Pr		58
Sound-Po		78
Bas-Refr	kg	6,50
Ex-Refr	kg	4,97
TCO2 eq.		23,95
MCA	A	19
MFA	A	25
Power supply	V/ph/Hz	380-415V-3ph-50Hz
Dimension (WxHxD)	mm	1120*1558*528
Weight	kg	143

5.3.2 Table of Abbreviations

Abbreviation code	Description
Tmp-C	Outdoor conditions in cooling (Dry bulb temp.)
RTC	Required cooling capacity
ATC	Available cooling capacity
PI-C	Power input in cooling
EER	EER
Tmp-H	Indoor conditions in heating (Dry bulb temp. / Wet bulb temp. / RH)
RHC	Required heating capacity
AHC	Available heating capacity
PI-H	Power input in heating
COP	COP
CR	Combination ratio
Airflow	Outdoor unit airflow
Sound-Pr	Sound pressure level

Sound-Po	Sound power level
Bas-Refr	Standard factory refrigerant charge
Ex-Refr	Extra refrigerant charge
TCO2 eq.	Tonnes of CO2 equivalent
MCA	Minimum Circuit Amps
MFA	Maximum Fuse Amps
Power supply	Power supply
Dimension (WxHxD)	Net Dimension (WxHxD) mm
Weight	Weight

5.4 Piping Limitations (System2)

5.4.1 Piping Limitations

Item	Capability	Actual Value
Total piping length	150,00(m)	85,00(m)
Longest actual length	100,00(m)	51,00(m)
Longest equivalent length	110,00(m)	55,00(m)
Longest equivalent length after first branch	40,00(m)	32,50(m)
Indoor unit to nearest branch length	15,00(m)	7,00(m)
Height difference between indoor and outdoor unit(ODU up)	50,00(m)	0,00(m)
Height difference between indoor and outdoor unit(ODU down)	40,00(m)	0,00(m)
Height difference between indoor units	15,00(m)	0,00(m)
Combination ratio	50-130%	105,36%
IDU quantity	13	10

5.4.2 Correction Factors

Item	Correction factor
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Altitude (indoor unit)	1,000
Altitude (outdoor unit)	1,000
Piping (cooling)	0,963
Piping (heating)	0,986
Defrost (heating)	1,000

5.4.3 Piping Details Table

No.	Length(m)	Piping diameter
(1)	22,00	Φ22.2/Φ12.7
(2)	3,00	Φ15.9/Φ9.52
(3)	1,50	Φ19.1/Φ9.52
(4)	3,00	Φ12.7/Φ6.35
(5)	5,00	Φ12.7/Φ6.35
(6)	3,00	Φ12.7/Φ6.35
(7)	3,50	Φ15.9/Φ9.52
(8)	1,00	Φ12.7/Φ6.35
(9)	2,50	Φ15.9/Φ9.52
(10)	1,00	Φ12.7/Φ6.35
(11)	3,50	Φ15.9/Φ9.52
(12)	3,00	Φ12.7/Φ6.35
(13)	5,00	Φ15.9/Φ9.52
(14)	3,00	Φ12.7/Φ6.35
(15)	6,00	Φ15.9/Φ9.52
(16)	7,00	Φ12.7/Φ6.35
(17)	3,00	Φ15.9/Φ9.52
(18)	0,50	Φ12.7/Φ6.35
(19)	4,00	Φ12.7/Φ6.35

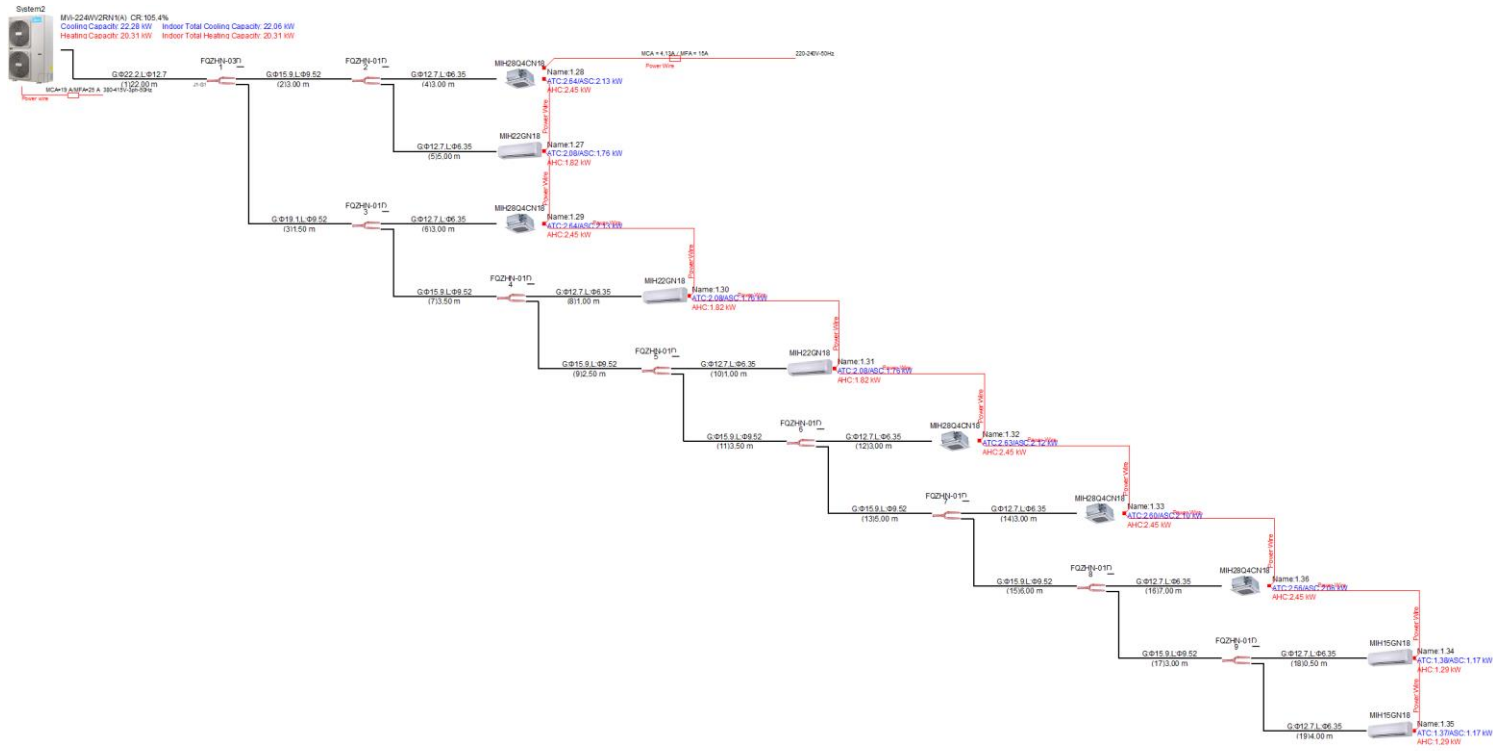
5.4.4 Branch Joints Details Table

No.	Load(kW)	Model
(1)	23,6	FQZHN-03D
(2)	5	FQZHN-01D
(3)	18,6	FQZHN-01D
(4)	15,8	FQZHN-01D
(5)	13,6	FQZHN-01D
(6)	11,4	FQZHN-01D
(7)	8,6	FQZHN-01D
(8)	5,8	FQZHN-01D
(9)	3	FQZHN-01D

5.4.5 Reducer Details Table

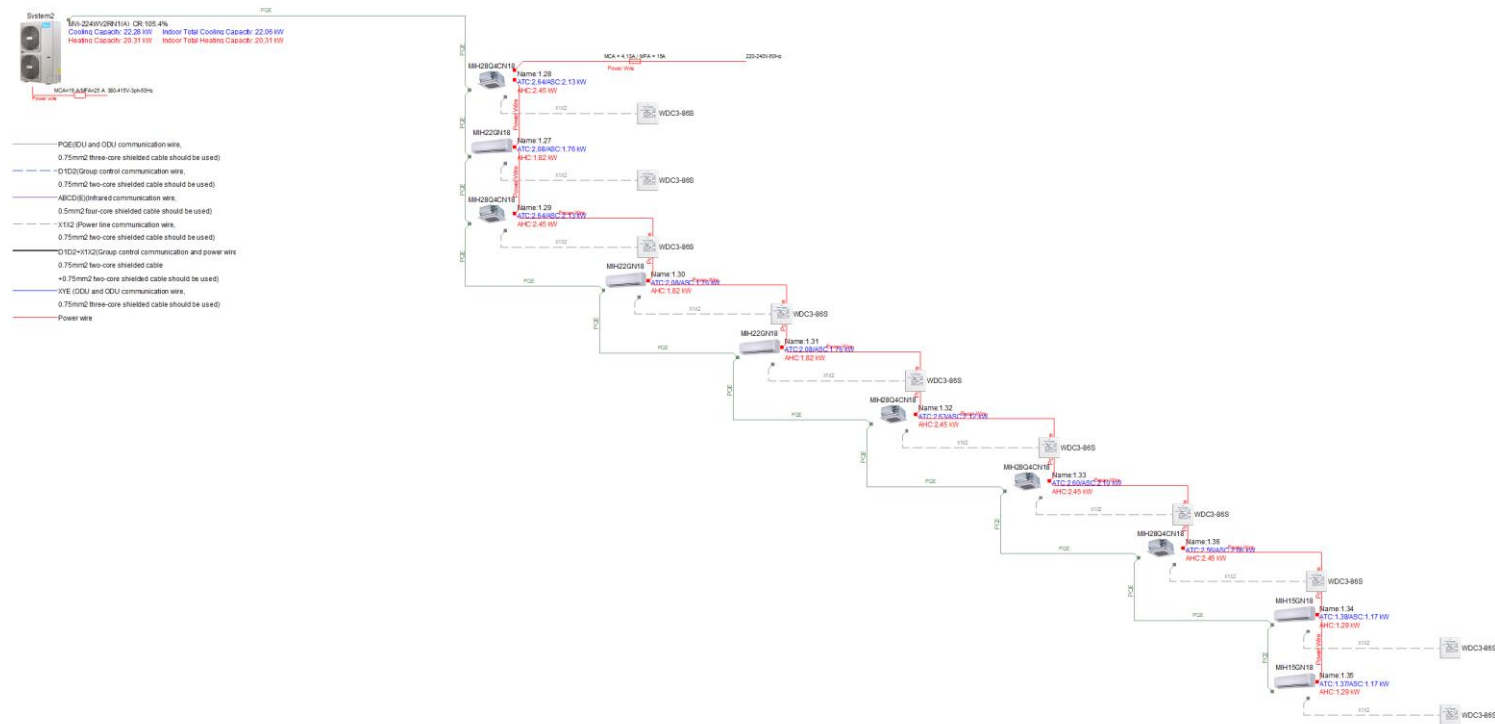
Reducer Name	Description
J1-G1	Φ22.2<->Φ25.4

5.5 Piping Diagrams (System2)



The drawing may differ from actual conditions due to limitations of the software. Please confirm before installation according to the installation manual.

5.6 Wiring Diagrams (System2)



The drawing may differ from actual conditions due to limitations of the software. Please confirm before installation according to the installation manual.

6. System3

6.1 BOM List (System3)

Model	Quantity	Unit	Description
MVi-335WV2RN1(B)	1		EasyFit VRF (380-415V EU series)
MIH36Q4CN18	5		Compact Four-way Cassette (EU series)
MIH28Q4CN18	1		Compact Four-way Cassette (EU series)
MIH22Q4CN18	1		Compact Four-way Cassette (EU series)
MIH22GN18	1		Wall mounted (EU series)
MIH15GN18	6		Wall mounted (EU series)
FQZHN-01D	11		Branch joint
FQZHN-02D	2		Branch joint
WDC3-86S	14		3rd generation group controller
Φ25.4<->Φ28.6	1		Reducer
R410A	6.59	kg	Extra Refrigerant Added
Φ6.35	30.5	m	Copper pipe
Φ9.52	37	m	Copper pipe
Φ12.7	61.5	m	Copper pipe
Φ15.9	30	m	Copper pipe
Φ19.1	1.5	m	Copper pipe
Φ22.2	5.5	m	Copper pipe
Φ28.6	31	m	Copper pipe

6.2 Indoor Unit Details (System3)

6.2.1 Indoor Unit Details Table

IDU Name	Model	Weight(kg)	Dimension(WxHxD)(mm)	Power supply	MCA(A)	MFA(A)
1.21	MIH15GN18	9	750*295*265	220-240V-50Hz	0,28	15
1.12	MIH36Q4CN18	14	575*235*638	220-240V-50Hz	0,54	15
1.12	MIH36Q4CN18	14	575*235*638	220-240V-50Hz	0,54	15
1.12	MIH36Q4CN18	14	575*235*638	220-240V-50Hz	0,54	15
1.11	MIH28Q4CN18	13	575*235*638	220-240V-50Hz	0,54	15
1.12	MIH36Q4CN18	14	575*235*638	220-240V-50Hz	0,54	15
1.22	MIH22Q4CN18	13	575*235*638	220-240V-50Hz	0,46	15
1.12	MIH36Q4CN18	14	575*235*638	220-240V-50Hz	0,54	15
1.23	MIH15GN18	9	750*295*265	220-240V-50Hz	0,28	15
1.13	MIH15GN18	9	750*295*265	220-240V-50Hz	0,28	15
1.14	MIH15GN18	9	750*295*265	220-240V-50Hz	0,28	15
1.15	MIH15GN18	9	750*295*265	220-240V-50Hz	0,28	15
1.16	MIH22GN18	9	750*295*265	220-240V-50Hz	0,29	15
1.17	MIH15GN18	9	750*295*265	220-240V-50Hz	0,28	15

IDU Name	Model	Tmp-C(°C)	RTC(kW)	ATC(kW)	RSC(kW)	ASC(kW)	PI-C(W)	Tmp-H(°C)	RHC(kW)	AHC(kW)	PI-H(W)
1.21	MIH15GN18	26,0/19,0		1,49		1,27	18	21		1,1	18
1.12	MIH36Q4CN18	26,0/19,0		3,56		2,82	18	21		2,57	18
1.12	MIH36Q4CN18	26,0/19,0		3,54		2,8	18	21		2,57	18
1.12	MIH36Q4CN18	26,0/19,0		3,51		2,78	18	21		2,57	18
1.11	MIH28Q4CN18	26,0/19,0		2,72		2,19	16	21		2,1	16
1.12	MIH36Q4CN18	26,0/19,0		3,57		2,82	18	21		2,57	18
1.22	MIH22Q4CN18	26,0/19,0		2,17		1,74	14	21		1,56	14
1.12	MIH36Q4CN18	26,0/19,0		3,55		2,81	18	21		2,57	18
1.23	MIH15GN18	26,0/19,0		1,47		1,25	18	21		1,1	18
1.13	MIH15GN18	26,0/19,0		1,46		1,24	18	21		1,1	18
1.14	MIH15GN18	26,0/19,0		1,46		1,24	18	21		1,1	18
1.15	MIH15GN18	26,0/19,0		1,45		1,24	18	21		1,1	18

1.16	MIH22GN18	26,0/19,0		2,12		1,8	21	21		1,56	21
1.17	MIH15GN18	26,0/19,0		1,45		1,23	18	21		1,1	18

IDU Name	Model	Airflow(m ³ /h)	Sound-Pr dB(A)	ESP(Pa)
1.21	MIH15GN18	460[SSH]	32[SSH]	
1.12	MIH36Q4CN18	530[SSH]	31[SSH]	
1.12	MIH36Q4CN18	530[SSH]	31[SSH]	
1.12	MIH36Q4CN18	530[SSH]	31[SSH]	
1.11	MIH28Q4CN18	510[SSH]	30[SSH]	
1.12	MIH36Q4CN18	530[SSH]	31[SSH]	
1.22	MIH22Q4CN18	450[SSH]	29[SSH]	
1.12	MIH36Q4CN18	530[SSH]	31[SSH]	
1.23	MIH15GN18	460[SSH]	32[SSH]	
1.13	MIH15GN18	460[SSH]	32[SSH]	
1.14	MIH15GN18	460[SSH]	32[SSH]	
1.15	MIH15GN18	460[SSH]	32[SSH]	
1.16	MIH22GN18	500[SSH]	33[SSH]	
1.17	MIH15GN18	460[SSH]	32[SSH]	

IDU Name	Model	Piping Length to 1st Y Joint(m)
1.21	MIH15GN18	0,50
1.12	MIH36Q4CN18	12,50
1.12	MIH36Q4CN18	17,00
1.12	MIH36Q4CN18	21,50
1.11	MIH28Q4CN18	23,50
1.12	MIH36Q4CN18	11,00
1.22	MIH22Q4CN18	14,00
1.12	MIH36Q4CN18	15,50

1.23	MIH15GN18	21,00
1.13	MIH15GN18	23,00
1.14	MIH15GN18	24,50
1.15	MIH15GN18	27,50
1.16	MIH22GN18	31,00
1.17	MIH15GN18	31,00

6.2.2 Table of Abbreviations

Abbreviation code	Description
Tmp-C	Indoor temperature in cooling (Dry bulb temp. / Wet bulb temp. / RH)
RTC	Required total cooling capacity
ATC	Available total cooling capacity
RSC	Required sensible cooling capacity
ASC	Available sensible cooling capacity
Tmp-H	Indoor temperature in heating (Dry bulb temp.)
RHC	Required heating capacity
AHC	Available heating capacity
Tdis-H	Indoor unit discharge air temperature in heating
Airflow	Indoor unit airflow (High/Medium/Low)
ESP	External static pressure
Sound-Pr	Sound pressure level (High/Medium/Low)
Sound-Po	Sound power level (High/Medium/Low)
MCA	Minimum Circuit Amps
MFA	Maximum Fuse Amps
PI-C	Power input in cooling
PI-H	Power input in heating
Power supply	Power supply
Dimension(WxHxD)	Net Dimension (WxHxD) mm

Weight	Weight
--------	--------

6.3 Outdoor Unit Details (System3)

6.3.1 Outdoor Unit Details Table

Model		MVi-335WV2RN1(B)
Module		MVi-335WV2RN1(B)
Tmp-C	°C	32
RTC	kW	
ATC	kW	33,91
PI-C	kW	11,32
EER		3,00
Tmp-H	°C/°C	-18/-18,3
RHC	kW	
AHC	kW	24,68
PI-H	kW	10,08
COP		2,45
CR		102,1
Airflow	m ³ /h	12500
Sound-Pr		58
Sound-Po		81
Bas-Refr	kg	6,40
Ex-Refr	kg	6,59
TCO2 eq.		27,12
MCA	A	23
MFA	A	32
Power supply	V/ph/Hz	380-415V-3ph-50Hz
Dimension (WxHxD)	mm	1130*1760*580
Weight	kg	185

6.3.2 Table of Abbreviations

Abbreviation code	Description
Tmp-C	Outdoor conditions in cooling (Dry bulb temp.)
RTC	Required cooling capacity
ATC	Available cooling capacity
PI-C	Power input in cooling
EER	EER
Tmp-H	Indoor conditions in heating (Dry bulb temp. / Wet bulb temp. / RH)
RHC	Required heating capacity
AHC	Available heating capacity
PI-H	Power input in heating
COP	COP
CR	Combination ratio
Airflow	Outdoor unit airflow
Sound-Pr	Sound pressure level
Sound-Po	Sound power level
Bas-Refr	Standard factory refrigerant charge
Ex-Refr	Extra refrigerant charge
TCO2 eq.	Tonnes of CO2 equivalent
MCA	Minimum Circuit Amps
MFA	Maximum Fuse Amps
Power supply	Power supply
Dimension (WxHxD)	Net Dimension (WxHxD) mm
Weight	Weight

6.4 Piping Limitations (System3)

6.4.1 Piping Limitations

Item	Capability	Actual Value
Total piping length	560,00(m)	105,00(m)
Longest actual length	150,00(m)	57,50(m)
Longest equivalent length	175,00(m)	62,50(m)
Longest equivalent length after first branch	90,00(m)	31,00(m)
Indoor unit to nearest branch length	40,00(m)	5,00(m)
Length difference between longest and shortest distance to indoor units	40,00(m)	30,50(m)
Height difference between indoor and outdoor unit(ODU up)	50,00(m)	0,00(m)
Height difference between indoor and outdoor unit(ODU down)	40,00(m)	0,00(m)
Height difference between indoor units	30,00(m)	0,00(m)
Combination ratio	50-200%	102,09%
IDU quantity	19	14

6.4.2 Correction Factors

Item	Correction factor
Altitude (indoor unit)	1,000
Altitude (outdoor unit)	1,000
Piping (cooling)	1,000
Piping (heating)	1,000
Defrost (heating)	1,000

6.4.3 Piping Details Table

No.	Length(m)	Piping diameter
(1)	31,00	Φ28.6/Φ12.7
(2)	0,50	Φ12.7/Φ6.35
(3)	5,50	Φ22.2/Φ9.52
(4)	3,00	Φ15.9/Φ9.52

(5)	1,50	Ø19.1/Ø9.52
(6)	3,00	Ø12.7/Ø6.35
(7)	4,00	Ø15.9/Ø9.52
(8)	3,00	Ø12.7/Ø6.35
(9)	4,00	Ø15.9/Ø9.52
(10)	3,00	Ø12.7/Ø6.35
(11)	5,00	Ø12.7/Ø6.35
(12)	3,00	Ø12.7/Ø6.35
(13)	3,00	Ø15.9/Ø9.52
(14)	2,50	Ø12.7/Ø6.35
(15)	0,50	Ø15.9/Ø9.52
(16)	3,00	Ø12.7/Ø6.35
(17)	3,00	Ø15.9/Ø9.52
(18)	5,00	Ø12.7/Ø6.35
(19)	6,00	Ø15.9/Ø9.52
(20)	0,50	Ø12.7/Ø6.35
(21)	1,00	Ø15.9/Ø9.52
(22)	0,50	Ø12.7/Ø6.35
(23)	2,50	Ø15.9/Ø9.52
(24)	0,50	Ø12.7/Ø6.35
(25)	3,00	Ø15.9/Ø9.52
(26)	0,50	Ø12.7/Ø6.35
(27)	0,50	Ø12.7/Ø6.35

6.4.4 Branch Joints Details Table

No.	Load(kW)	Model
(1)	34,2	FQZHN-02D
(2)	32,7	FQZHN-02D
(3)	13,6	FQZHN-01D

(4)	10	FQZHN-01D
(5)	6,4	FQZHN-01D
(6)	19,1	FQZHN-01D
(7)	15,5	FQZHN-01D
(8)	13,3	FQZHN-01D
(9)	9,7	FQZHN-01D
(10)	8,2	FQZHN-01D
(11)	6,7	FQZHN-01D
(12)	5,2	FQZHN-01D
(13)	3,7	FQZHN-01D

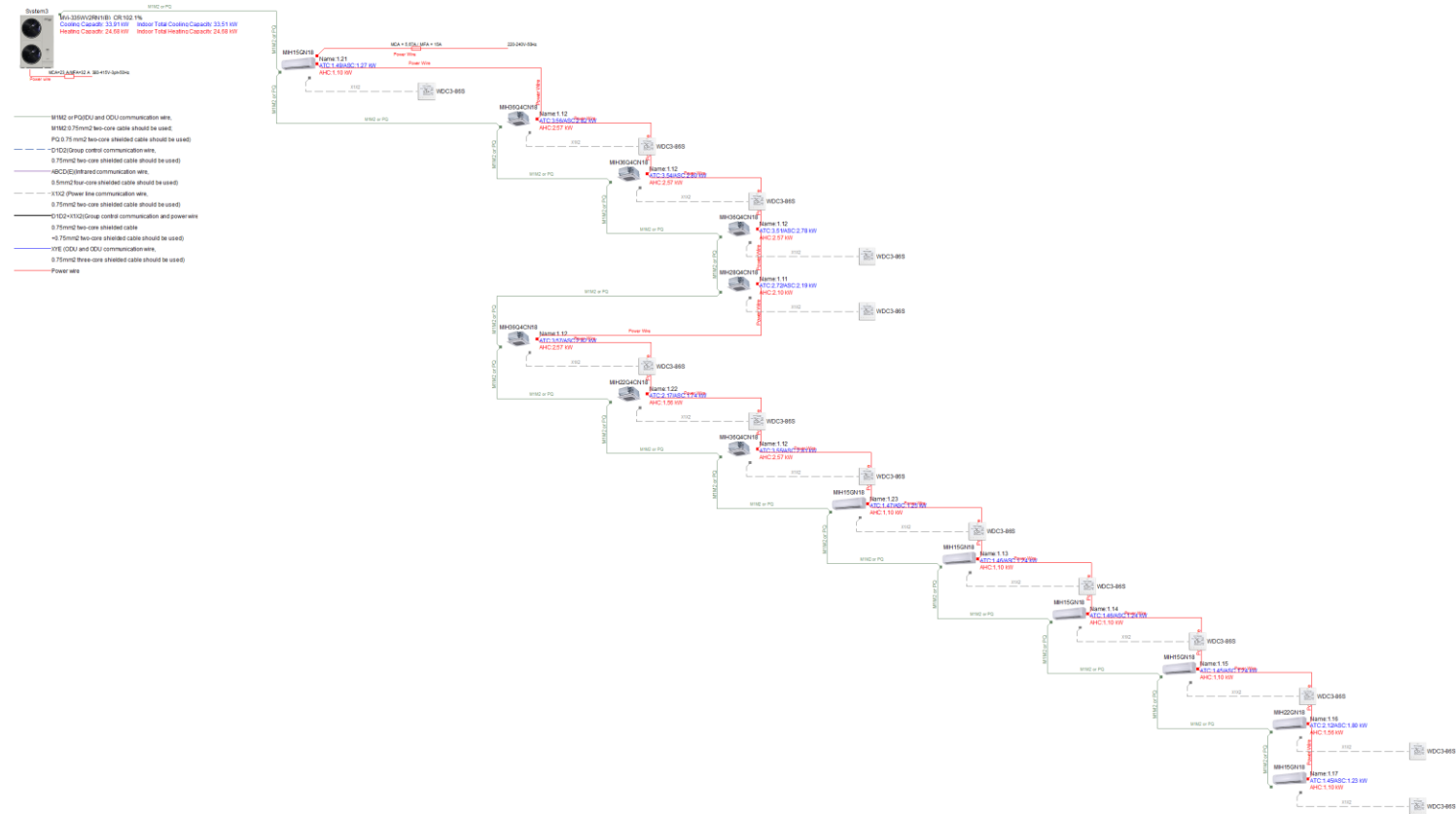
6.4.5 Reducer Details Table

Reducer Name	Description
J1-G1	Φ25.4<->Φ28.6

6.5 Piping Diagrams (System3)



6.6 Wiring Diagrams (System3)



The drawing may differ from actual conditions due to limitations of the software. Please confirm before installation according to the installation manual.

7. Centralized Control Solution

7.1 Centralized Controller List

The centralized control system of this project is full output regardless of whether the system is selected.