

DVM Pro : Sales mode

Tutorial (Ver.1.2)

Contents

Part1. Introduction

1.1 DVM pro Introduction.....	6
1.2 Installation.....	7
1.3 SAC Design Process	8

Part2. Basic Design (DVM S HP)

2.1 Modeling Scenario.....	10
2.2 Start with DVM Pro	11
2.3 Create Project	12
2.4 Load Design	13
2.5 Select Product type.....	14
2.6 Select Indoor units	15
2.7 Select Outdoor unit	17
2.8 Select Accessory	19
2.9 Building management	24
2.10 Piping	26
2.11 System Check	29
2.12 Simulation	30
2.13 Wiring	31
2.14 Controller	32
2.15 Report	35

Contents

Part3. Advanced Design1 (DVM S HR)

3.1 Modeling Scenario.....	37
3.2 Start with DVM Pro	38
3.3 Create Project	39
3.4 Load Design	40
3.5 Select Product type.....	41
3.6 Select Indoor units	42
3.7 Select Outdoor unit	43
3.8 Select Accessory	45
3.9 Building management	50
3.10 Piping	52
3.11 System Check	54
3.12 Controller	55
3.13 Report	57

Contents

Part4. Advanced Design2 (Hydro Unit)

4.1 Modeling Scenario.....	59
4.2 Start with DVM Pro	60
4.3 Create Project	61
4.4 Load Design	62
4.5 Select Product type.....	63
4.6 Select Indoor units	64
4.7 Select Outdoor unit	66
4.8 Select Accessory	69
4.9 Building management	74
4.10 Piping	76
4.11 System Check	77
4.12 Report	78

Part5. Additional Function

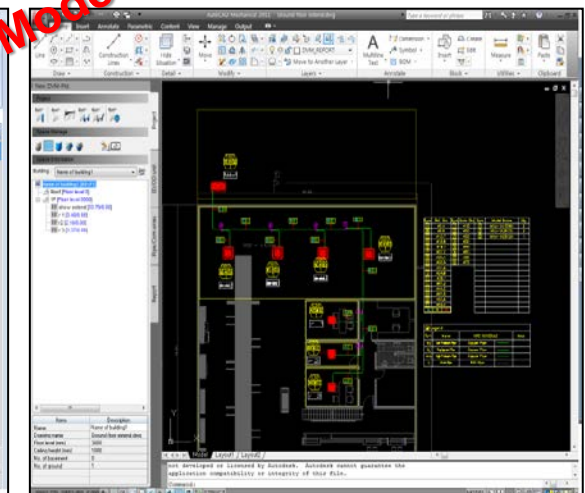
5.1 Pricing Function.....	80
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Part 1. Introduction

Part1. Introduction

- To help users design SAC very quickly and accurately
- DVM Pro is composed of ‘Sales mode” and “CAD mode”.
 1. Sales mode : Simple design with generating model list
 2. Cad mode : Design SAC on AutoCAD drawing.

※ Auto CAD program must be installed.



Software Installation (Down load)

Connect the below address and download new file to install DVM Pro software.

- 32bit user : [http://dvm.inno-lab.co.kr/dvmsetup/setup_x86\(Contain%20Net\).zip](http://dvm.inno-lab.co.kr/dvmsetup/setup_x86(Contain%20Net).zip)
- 64bit user : [http://dvm.inno-lab.co.kr/dvmsetup/setup_x64\(Contain%20Net\).zip](http://dvm.inno-lab.co.kr/dvmsetup/setup_x64(Contain%20Net).zip)

Compatible OS and CAD version

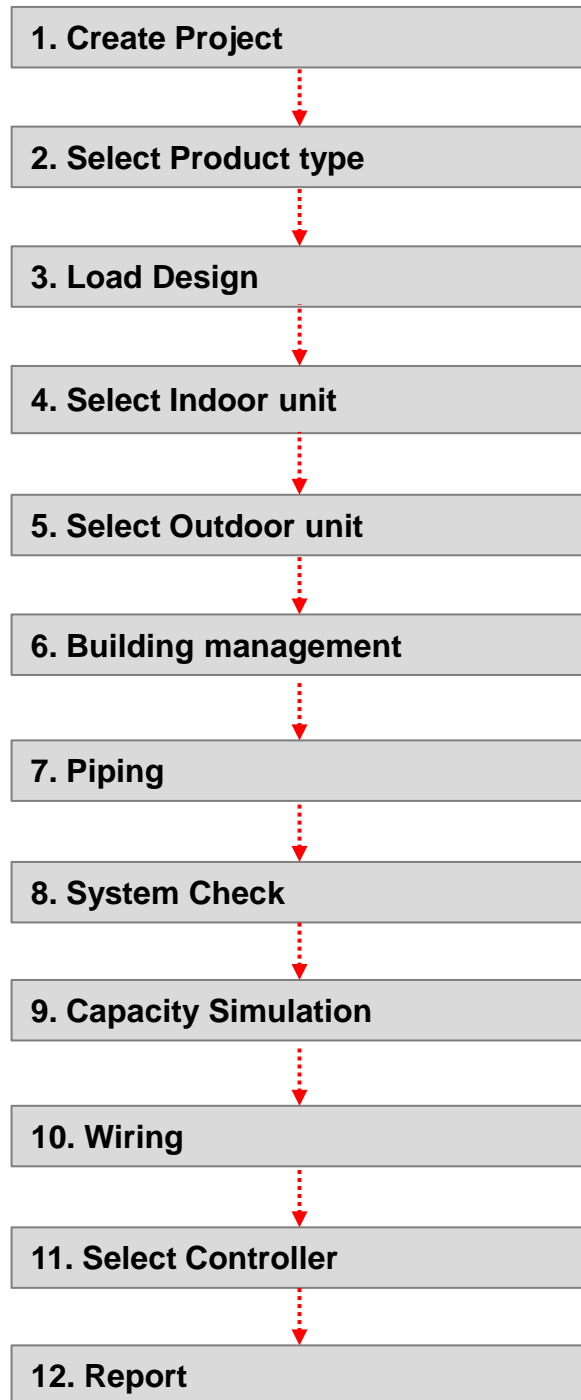
- OS(Operating System) : "Win 7 / 8 / 10"
- CAD : "AutoCAD & AutoCAD Mechanical Version(2010~2018)"
 - ※ Make sure **Auto CAD "light version" is not allowable.**

How to contact DVM Pro team?

When you have any question or find some errors, please contact DVM Pro team.

- **Email : dvm.pro@samsung.com**

Flow Chart



Part 2 : Basic Design

Market with DVM S HP

(Tutorial with 1st Scenario)

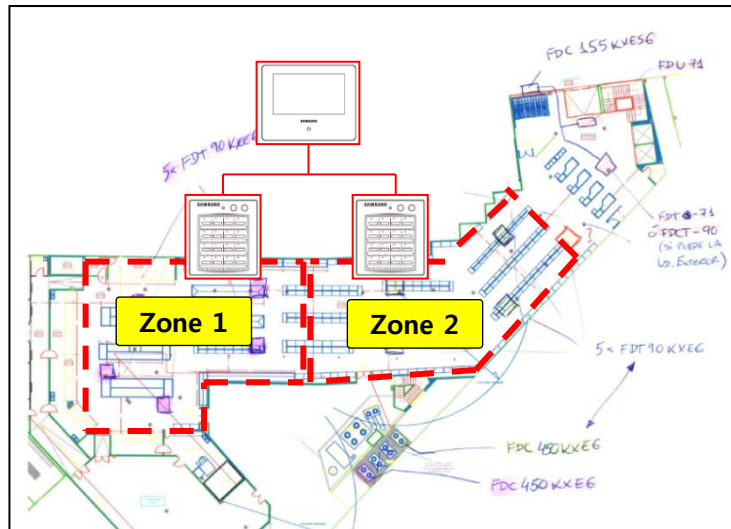
Purpose :

1. Understand the design process for SAC.
 2. Learn how to use DVM Pro S/W.
 3. Part 2 is focused on the basic design.
 - DVM S HP with 360 CST
 - On-Off Controller, Touch Controller
-

2.1 Modeling Scenario

Approach

- Building type : Supermarket
- Area : 400m²
- Indoor unit : 360 CST
- Controller : On-Off controller for Each zone and Touch controller
- Longest pipe : 180m



- Load Requirements

1. (Example of Zone1) $TC = 0.21 \text{ kW/m}^2 (\text{*Unit load}) \times 180 \text{ m}^2 (\text{Area}) = 38 \text{ kW}$
2. (Example of Zone1) $SHC = TC \times 0.71 (\text{*Sensible heat ratio})$

System (Outdoor unit)	Room/Zone	Area (m ²)	Load Requirements (KW)		
			Cooling		Heating
			TC	SHC	TC
System 1	Zone1	180	38	27	32
System 2	Zone2	220	46	33	40

* Unit load (kW/m²) : 0.21 / 0.18 (Cooling TC / Heating TC)

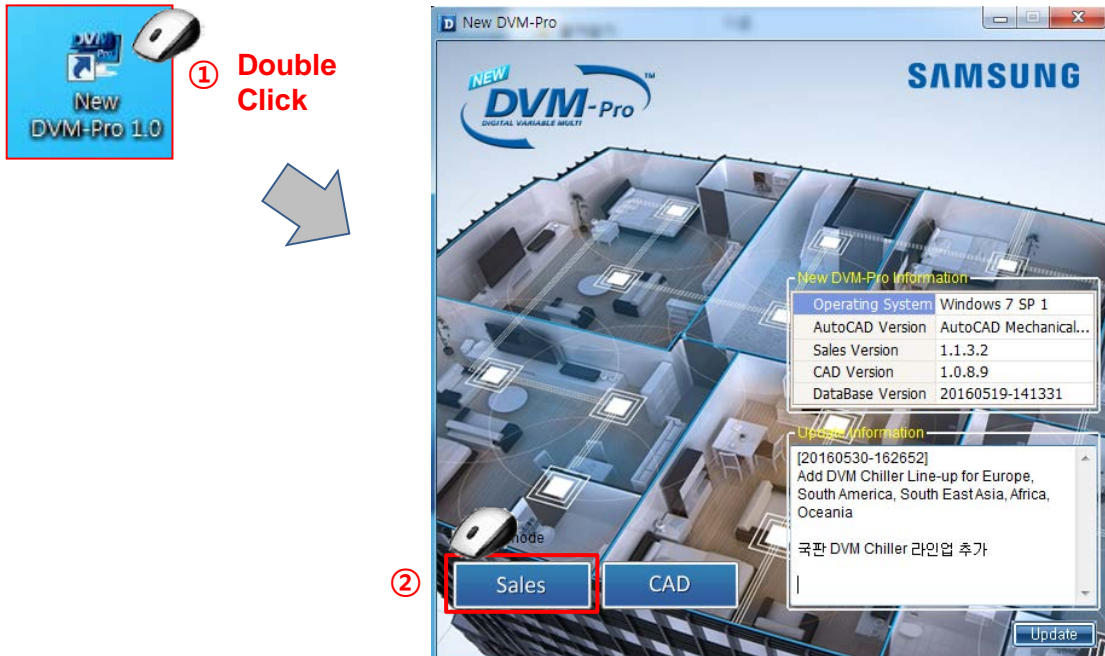
Design Tip

- $TC(\text{Total Capacity}) = SHC(\text{Sensible Heat Capacity}) + LHC(\text{Latent Heat Capacity})$
- SHC: Capacity that changes temperature
- LC: Capacity that changes a phase such as the dehumidification.
- Designers need to consider SHC in high humidity places especially near the beach and lake.
Normally, when humidity is higher, air-conditioner more work for LHC(dehumidification).
On the other hand, SHC is smaller so that adjusting temperature may not be enough.

Start with DVM Pro

Design steps

1. To start DVM Pro, **double click a icon “New DVM Pro 1.0”** on desktop..
2. **Click “Sales”** button to start Sales mode of DVM Pro.
3. New window popped up.



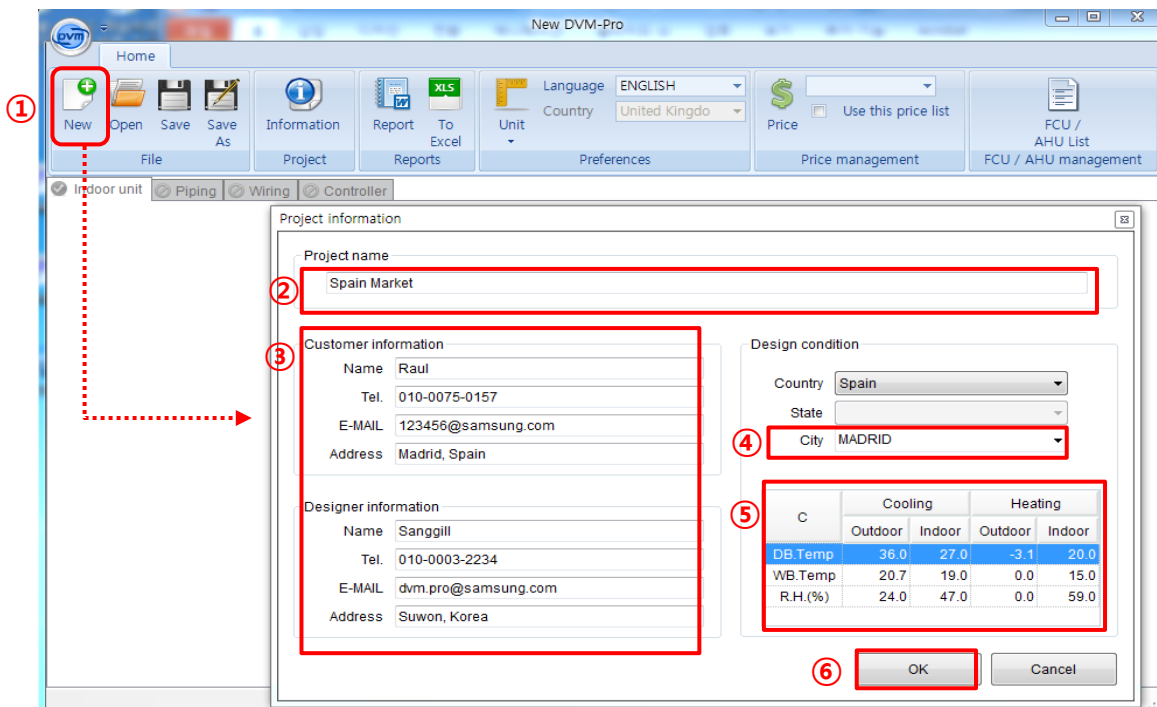
Usage Tip

Version Information

Create Project

Design steps

1. To create the project, **click “New”** button, then new window is popped up.
2. **Enter the project name**: the project name will be saved as a file name.
3. Enter the customer information and designer information (Optional)
: This will be represented on the report.
4. Enter Design condition : **Select city “Madrid”**
5. Design condition (Weather)
: Firstly weather condition is represented based on your city,
and then user can edit the data manually.
6. **Click “OK”** button to complete to create a project.



Usage Tip

Saving File extension is “.dvms”.

If user wants to select models from other countries, please request the authorization for the country to DVM Pro team by email, dvm.pro@samsung.com.

Load design

Design steps

1. To generate room information,
enter room names by double clicking (or click+enter) a vacant space.
2. Input load requirements for each room or zone according to the below load calculation.
- Load Calculation

System (Outdoor unit)	Room/Zone	Area (m2)	Load Requirements (KW)		
			Cooling		Heating
			TC	SHC	TC
System 1	Zone1	180	38	27	32
System 2	Zone2	220	46	33	40

The screenshot shows the DVM-Pro software interface. On the left, there is a list of indoor units under the 'Add ID units' section. The list includes 'VRF', 'CASSETTE', '1Way CASSETTE', '2Way CASSETTE', '4Way CASSETTE', '4Way CASSETTE (600x600)', '360 CST (Circle)', '360 CST (Square)', 'DUCT', and 'DUCT S'. A red box with a circled '1' highlights the '4Way CASSETTE (600x600)' unit. On the right, there is a table titled 'Indoor List' with columns for 'Room information' and 'Indoor List'. The 'Room information' section has a 'Load' sub-section with columns for 'Cooling' (TC(kW), SHC(kW)) and 'Heating' (TC(kW)). A red box with a circled '2' highlights the 'SHC(kW)' input field.

Usage Tip

According to this input load, the quantity of indoor units is automatically calculated for each room. Without entering load, user can also select indoor units and quantity.

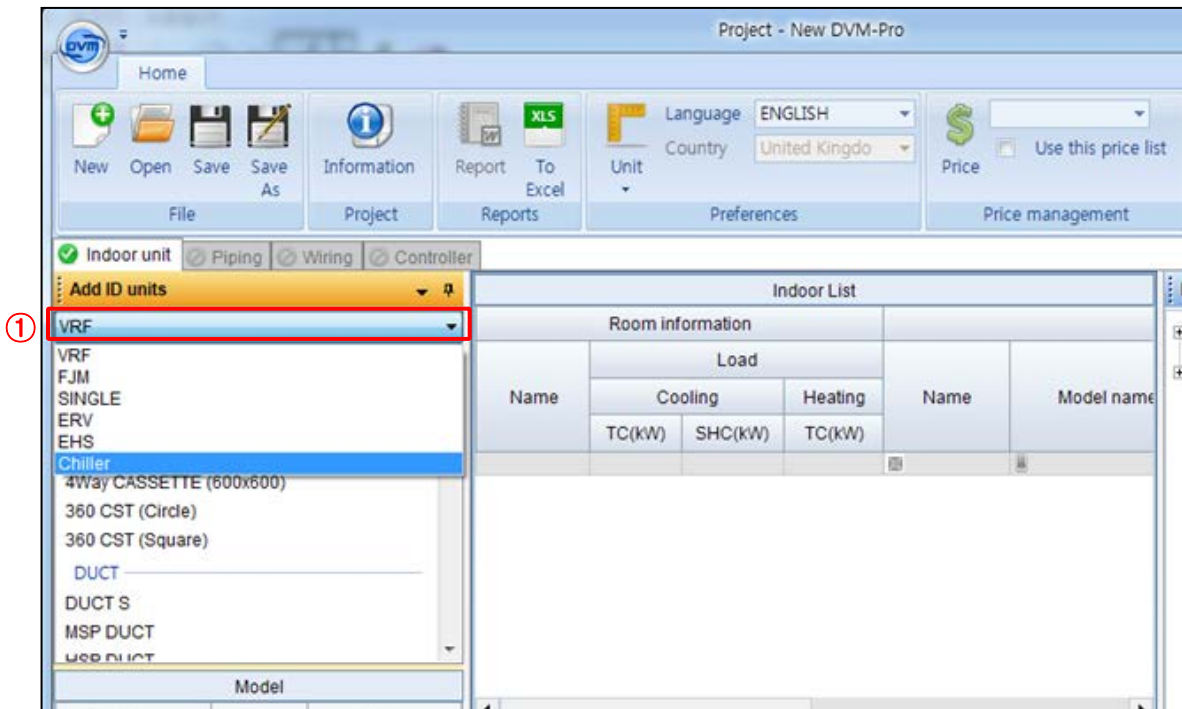
Design Tip

To meet customer's requirements, cooling(TC, SHC) and heating load need to be entered.

Select product type

Design steps

1. Click the below tap and select a product type on drop/down menu. (**Select VRF**)



Design Tip

For the proper SAC selection, many design factors should be considered such as the system capacity, pipe length, installation space, the number of indoor units, and so on.

※ To check those design and installation factors, please refer to TDB or installation manual.

2.6 Select Indoor units

1) Select indoor units

Design steps

1. Click each room to select indoor units.
2. Select indoor unit type : **360 CST**
3. Select a model (**AM090KN4DEH/EU**) and check the quantity. (User can change the quantity manually.)
4. Click “Add” button to complete the selection of indoor units

Indoor unit | Piping | Wiring | Controller

Add ID units

VRF

CASSETTE

1Way CASSETTE

2Way CASSETTE

4Way CASSETTE

4Way CASSETTE (600x600)

360 CST (Circle)

360 CST (Square)

DUCT

DUCT S

MSP DUCT

USB DUCT

Model

Model name	Qty	Status
AM045KN4DEH/EU	10	Planned
AM056KN4DEH/EU	9	Planned
AM071KN4DEH/EU	7	Planned
AM090KN4DEH/EU	5	Planned
AM112KN4DEH/EU	5	Planned
AM128KN4DEH/EU	4	Planned
AM140KN4DEH/EU	4	Planned

Add

Modify

Add ID units | Accessory

Building1

Indoor List

Room information				Indoor List	
Name	Load		Name	Model name	TC(kW)
	Cooling	Heating			
	TC(kW)	SHC(kW)			
Zone1	38.00	27.00			
Zone2	46.00	33.00			

Outdoor List

Name	Model name	Nominal Capacity		Simulated Capacity	
		Cooling	Heating	Cooling	Heating
		TC(kW)	TC(kW)	TC(kW)	TC(kW)

Indoor List

Room information				Indoor List			
Name	Load		Name	Model name	Nominal Capacity		TC(kW)
	Cooling	Heating			Cooling	Heating	
	TC(kW)	SHC(kW)			TC(kW)	TC(kW)	
Zone1	38.00	27.00	Zone11	AM090KN4DEH/EU	9.00	6.30	10.00
			Zone12	AM090KN4DEH/EU	9.00	6.30	10.00
			Zone13	AM090KN4DEH/EU	9.00	6.30	10.00
			Zone14	AM090KN4DEH/EU	9.00	6.30	10.00
			Zone15	AM090KN4DEH/EU	9.00	6.30	10.00
Zone2	54.00	40.00					
Zone3	12.00	8.00					

2.6 Select Indoor units

2) Modification / delete

Design steps (Change to other indoor units)

1. Click the designed indoor units. (two **AM112FN4DEH/EU**)
2. Select indoor units you want to replace (**AM090FN4DEH/EU**)
3. Click "Add" button to complete the selection of indoor units

Indoor unit | Piping | Wiring | Controller

Add ID units

VRF

CASSETTE

1Way CASSETTE

2Way CASSETTE

4Way CASSETTE

4Way CASSETTE (600x600)

360 CST (Circle)

360 CST (Square)

DUCT

DUCT S

MSP DUCT

MSP DUCT

Model

Model name	Q'ty	Status
AM045FN4DEH/EU	10	Active
AM056FN4DEH/EU	8	Active
AM071FN4DEH/EU	6	Active
AM090FN4DEH/EU	5	Active
AM112FN4DEH/EU	4	Active
AM128FN4DEH/EU	4	Active
AM140FN4DEH/EU	4	Active

Add Modify

Indoor List

Name	Load		Name	Model name	
	Cooling				Heating
	TC(kW)	SHC(kW)			TC(kW)
Zone1	40.00	30.00	40.00	Zone11	
				Zone12	
				Zone13	
				Zone14	
				Zone15	
Zone2	50.00	35.00	50.00	Zone21	
				Zone22	
				Zone23	

Outdoor List

Name	Model name	Nominal Capacity		Simulated Capacity	
		Cooling	Heating	Cooling	Heating
		TC(kW)	TC(kW)	TC(kW)	TC(kW)

Design steps (Delete indoor units)

1. Click the designed indoor units or room name. (two **AM112FN4DEH/EU**)
2. Enter "Delete" key on your keyboard.
3. Click "Yes" button.

Indoor List

Name	Load		Name	Model name	
	Cooling				Heating
	TC(kW)	SHC(kW)			TC(kW)
Zone1	40.00	30.00	40.00	Zone11	
				Zone12	
				Zone13	
				Zone14	
				Zone15	
Zone2	50.00	35.00	50.00	Zone21	
				Zone22	
				Zone23	

Do you want to delete?

예 (Y) 아니오 (N)

2.7 Select Outdoor units

Select outdoor unit 1

Design steps

1. Click rooms or indoor units together using “Ctrl” key which connect to one outdoor unit system.
Here, **click “Zone1”** to select System1(outdoor unit).
2. **Drag & drop “Zone1” box** to the outdoor units list below.
3. New window, “Create Outdoor” is popped up.

Indoor List						
Room information				Indoor List		
Name	Load		Name	Model name	Nominal Capacity	
	Cooling	Heating			Cooling	Heating
	TC(kW)	SHC(kW)			TC(kW)	SHC(kW)
Zone1	40.00	30.00	Zone11	AM090KN4DEH/EU	9.00	6.30
			Zone12	AM090KN4DEH/EU	9.00	6.30
			Zone13	AM090KN4DEH/EU	9.00	6.30
			Zone14	AM090KN4DEH/EU	9.00	6.30
			Zone15	AM090KN4DEH/EU	9.00	6.30
			Zone21	AM090KN4DEH/EU	9.00	6.30
			Zone22	AM090KN4DEH/EU	9.00	6.30
			Zone23	AM090KN4DEH/EU	9.00	6.30
			Zone24	AM090KN4DEH/EU	9.00	6.30
			Zone25	AM090KN4DEH/EU	9.00	6.30
			Zone26	AM090KN4DEH/EU	9.00	6.30
Zone2	50.00	35.00				
Zone3		10.00				

Outdoor List							
Name	Model name	Nominal Capacity		Simulated Capacity		Combination Ratio	
		Cooling	Heating	Cooling	Heating	Cooling	Heating
Zone11	AM090KN	9	10				
Zone12	AM090KN	9	10				
Zone13	AM090KN	9	10				
Zone14	AM090KN	9	10				
Zone15	AM090KN	9	10				

Create Outdoor

VRV: HEAT PUMP:

Name: ☒ Simultaneously operate Hy ☐ 40°C

Id Comb. Ratio(%) Hy Comb. Ratio(%)

Model name	Nominal Capacity		Power supply	Combination Ratio		Status
	Cooling	Heating		Cooling	Heating	
AM160KXVGH/EU	45	50.4	3.4.380-415	100.00	99.21	Planned
AM180KXVGH/EU	50.4	56.7	3.4.380-415	89.29	88.18	Planned
AM200KXVGH/EU	56	62	3.4.380-415	80.26	79.27	Planned
AM220KXVGH/EU	61.6	69.3	3.4.380-415	73.05	72.15	Planned

Items	Unit	AM160KXVGH/EU
Nominal power input	kW	10.92/10.75
Nominal current input	A	17.5/17.2
Maximum current	A	MCA 32
MCCB		40
Power/Communication wires		0.75 - 1.5
Liquid Pipe	mm	12.70
Gas pipe	mm	28.58
Discharge Gas Pipe	mm	
Oil balancing pipe	mm	
Additional refrigerant amount	kg	8.400
Size (mmxHxL)	mm	1255x1895x765
Temp. range (C/H)	°C	-5 ~ 48 / -25 ~ 24

Indoor information

Name	Model name	Nominal Capacity	
		Cooling	Heating
Zone11	AM090KN	9	10
Zone12	AM090KN	9	10
Zone13	AM090KN	9	10
Zone14	AM090KN	9	10
Zone15	AM090KN	9	10

TC totals

	Indoor TC	Hydro TC
	45.00	50.00
	0.00	0.00

OK Cancel

Select outdoor unit 2

Design steps

1. Select the type of outdoor unit.

Here, select a outdoor type : **VRF → DVM S → HEAT PUMP → 2016 HP High EER**

2. Enter the combination ratio, **130%**.

3. Select the model among the recommendation models. : **Select AM140KXVGGH/EU**

4. Click “OK” button to complete the selection of outdoor unit.

Create Outdoor

Outdoor Information

① VRF | DVM S(NEW) | HEAT PUMP | 2016 HP High-EER

Name: New Outdoor

② Id Comb. Ratio(%) : 100

③

Model name	Nominal Capacity		Power supply	Combination Ratio		Status
	Cooling TC(kW)	Heating TC(kW)		Cooling	Heating	
AM160KXVGGH/EU	45	50.4	3,4,380-415	100.00	99.21	Planned
AM180KXVGGH/EU	50.4	56.7	3,4,380-415	89.29	88.18	Planned
AM200KXVGGH/EU	56	63	3,4,380-415	80.36	79.37	Planned
AM220KXVGGH1EU	61.6	69.3	3,4,380-415	73.05	72.15	Planned

④ OK

Indoor Information

Name	Model name	Nominal Capacity	
		Cooling TC (kW)	Heating TC (kW)
Zone11	AM090KN...	9	10
Zone12	AM090KN...	9	10
Zone13	AM090KN...	9	10
Zone14	AM090KN...	9	10
Zone15	AM090KN...	9	10

TC totals

	Indoor TC	Hydro TC
Indoor TC	45.00	50.00
Hydro TC	0.00	0.00

5. Select the other outdoor unit for “System 2” with same way from previous page (Select ODU2).

Design Tip

User can enter combination ratio manually under the limitation of it, and models are recommended based on combination ratio.

※ Combination ratio = Total capacity of indoor units / Capacity of outdoor unit.

※ Limitation of VRF's combination ratio : 50% ~ 130%

2.8 Select Accessory

Select accessories

Design steps

1. Click indoor unit models to select accessories.
2. Click “Accessory” tap
3. Select accessories : **360 Circle panel and Wired remote controller**
4. When accessories are selected, the related indoor units are marked with the orange color.

The screenshot displays the SAC Design software interface. On the left, the 'Accessory' list is visible, showing two selected items: 'PC4NUNMAN 360 CASSETT...' and 'MWR-WE10N WIRED REMO...'. These items are marked with red circles 3 and 4. The 'Indoor List' table on the right shows various indoor units, with 'AM090KN4DEH/EU' units highlighted in orange, marked with a red circle 1. A red arrow points from the selected accessories to the highlighted units. At the bottom, a red dashed box highlights the 'AM090KN4DEH/EU' units in the 'Building1' section, marked with a red circle 4.

Room information				Indoor List	
Name	Load		Name	Model name	Cooling Capacity (kW)
	Cooling	Heating			
	TC(kW)	SHC(kW)			
Zone1	38.00	27.00	Zone11	AM090KN4DEH/EU	9.00
			Zone12	AM090KN4DEH/EU	9.00
			Zone13	AM090KN4DEH/EU	9.00
			Zone14	AM090KN4DEH/EU	9.00
			Zone15	AM090KN4DEH/EU	9.00
			Zone21	AM090KN4DEH/EU	9.00
			Zone22	AM090KN4DEH/EU	9.00

Name	Model name	Nominal Capacity	Simulated Capacity	Cor
	AM090KN4DEH/EU			
	AM090KN4DEH/EU			
	AM090KN4DEH/EU			
	AM090KN4DEH/EU			
	AM090KN4DEH/EU			












Design Tip

When you select cassette type indoor units, you should select compatible “Panel”, otherwise accessory list are not represented on the report.

2.8 Select Accessory

※ Accessory list (Indoor unit)















Panel

Product	Image	Model	Remark
Panel		PC1NUSMAN	Slim 1Way Cassette
		PC1NUPMAN	Slim 1Way Cassette (Z-sliding)
		PC1MWSKAN	1Way Cassette (1.7 kW, 2.2 kW)
		PC2NUSMEN	2Way cassette
		PC4SUSMAN	4Way Cassette S(600x600) (Waffle)
		PC4SUSMEN	4Way Cassette S(600x600) (Classic)
		PC4NUSKAN	4 Way cassette S (Waffle)
		PC4NUSKEN	4 Way cassette S (Classic)
		PC4NBSKAN	4 Way cassette S (Waffle, Black)
		PC4NUDMAN	360 CST Square (White)
		PC4NUNMAN	360 CST Circular (White)
		PC4NBDMAN	360 CST Square (Black)
		PC4NBNMAN	360 CST Circular (Black)

2.8 Select Accessory

※ Accessory list (Indoor unit)











Controller

Classification	Product	Image	Model	Remark
Individual Control System	Wireless remote controller		MR-EH00	-
	Wired remote controller		MWR-WE10N (Multi function)	
			MWR-WW00N	DVM S Hydro Unit
	Simplified wired remote controller		MWR-SH00N	-
			MWR-VH02	ERV
Others	Operation mode selection switch		MCM-C200	DVM S Series (Except HR Models)
	External room sensor		MRW-TA	Cassette, Wall-mount, Ceiling, Duct, Console
	Compatible interface module		MIM-N01	Nasa-No Nasa
	ERV interface module		MIM-N10	ERV (Nasa)
	External contact interface module		MIM-B14	-
	S-Converter		MIM-C02N	-
	MTFC (Multi tenant function controller)		MCM-C210N	-
	Wireless signal receiver		MRK-A10N	-
	External room sensor		MRW-TA	Cassette, Wall-mount, Ceiling, Duct, Console
			MRW-TS	Zone Controller (SINGLE)

2.8 Select Accessory

※ Accessory list (Indoor unit)



Others

Product	Image	Model	Remark
S-Plasma Ion KIT		MSD-CAN1	4Way Cassette S 4Way Cassette S(600x600)
		MSD-EAN1	ERV-Plus
Motion detect Sensor		MCR-SMA	4Way Cassette S (600x600)
ERV CO2 Sensor		MOS-C1	ERV, ERV PLUS
External room sensor		MRW-TA	Cassette, Wall-mount, Ceiling, Duct, Console
Drain Pump		MDP-N047SNC0D	OAP Duct (14.0 kW)
		MDP-N047SNC1D	HSP Duct (22.0 / 28.0 kW) OAP Duct (22.4 / 28.0 kW)
		MDP-M075SGU1D	MSP Duct (9.0 / 11.2 kW)
		MDP-M075SGU2D	MSP Duct (12.8 / 14.0 kW) HSP Duct (11.2 / 12.8 / 14.0 kW)
		MDP-M075SGU3D	MSP Duct (5.6 / 7.1 kW)
		MDP-E075SEE3D	Slim Duct (2.0~14.0 kW)
		MDP-G075SP	Duct S (External, All Capacities)
		MDP-G075SQ	Duct S (Internal, 3.5 kW~14 kW)
AHU KIT		MXD-K025AN	7.0kW~8.75kW
		MXD-K050AN	14.0kW~17.5kW
		MXD-K075AN	21.0kW~26.25kW
		MXD-K100AN	28.0kW~35.0kW
		MCM-D201N	28kW~35kW / 56kW~70kW / 84kW~105kW / 112kW~140kW

2.8 Select Accessory

※ Accessory list (Outdoor unit)

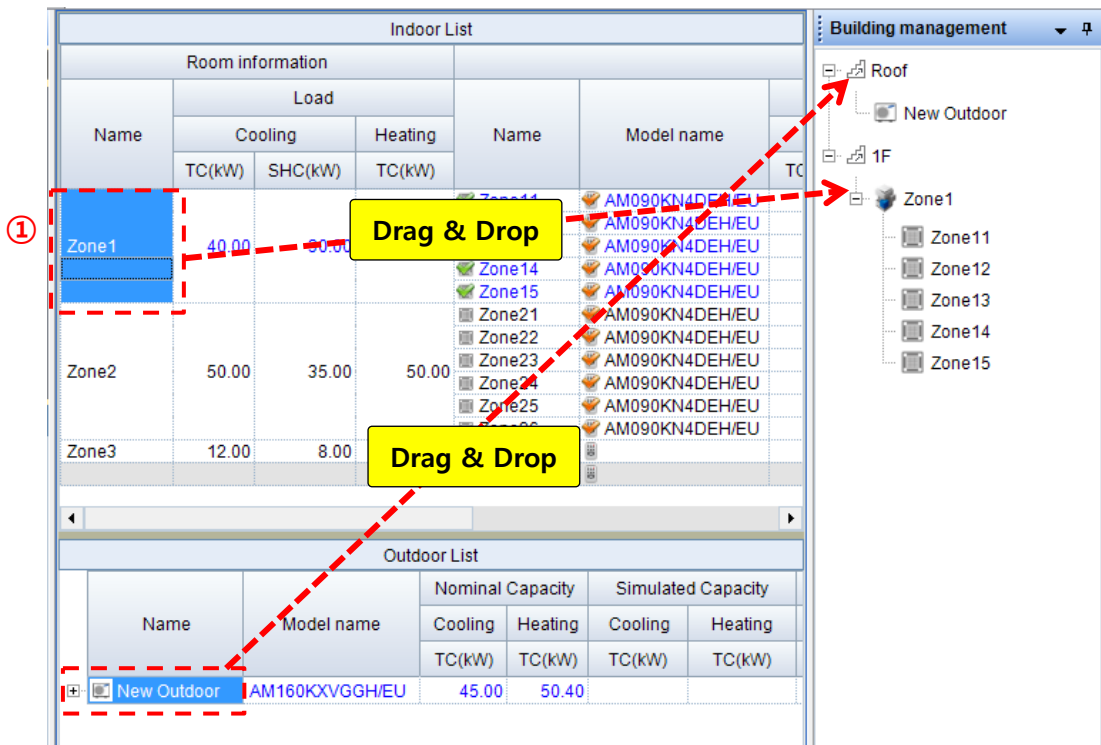
Others

Product	Image	Model	Remark
Operation mode selection switch		MCM-C200	DVM S Series (Except HR Models)
PDM KIT		MXD-A38K2A	8~12HP
		MXD-A12K2A	14~16HP
		MXD-A58K2A	18~26HP

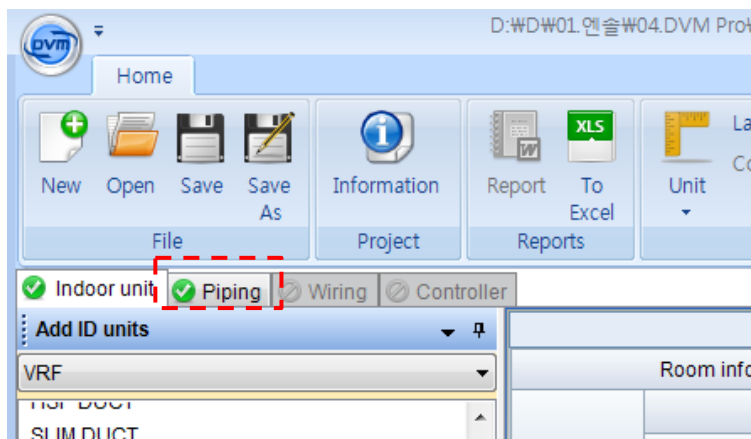
Building management

Design steps

1. Click rooms or indoor units to the installation floor on “Building management” by drag & drop.
2. Every indoor units and outdoor units should be placed to the floors on “Building management”.



3. After placing all of products to spaces on “Building management”, “Piping” tap is activated.

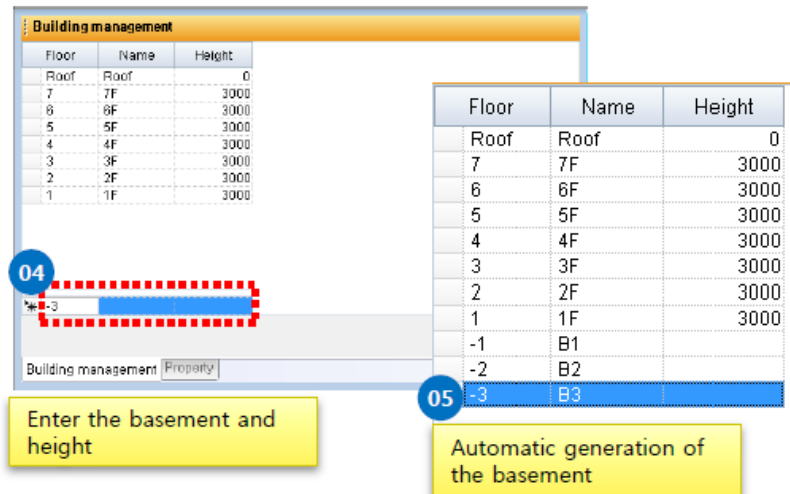
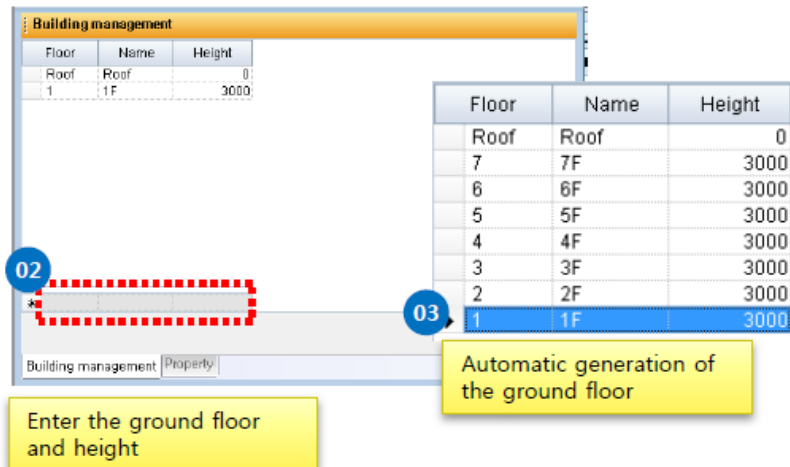
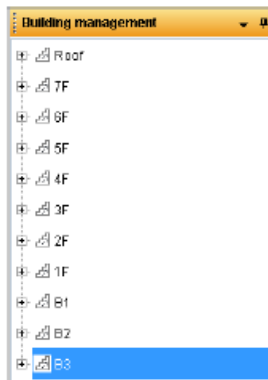


2.9 Building Management

※ Generate floors

Design steps

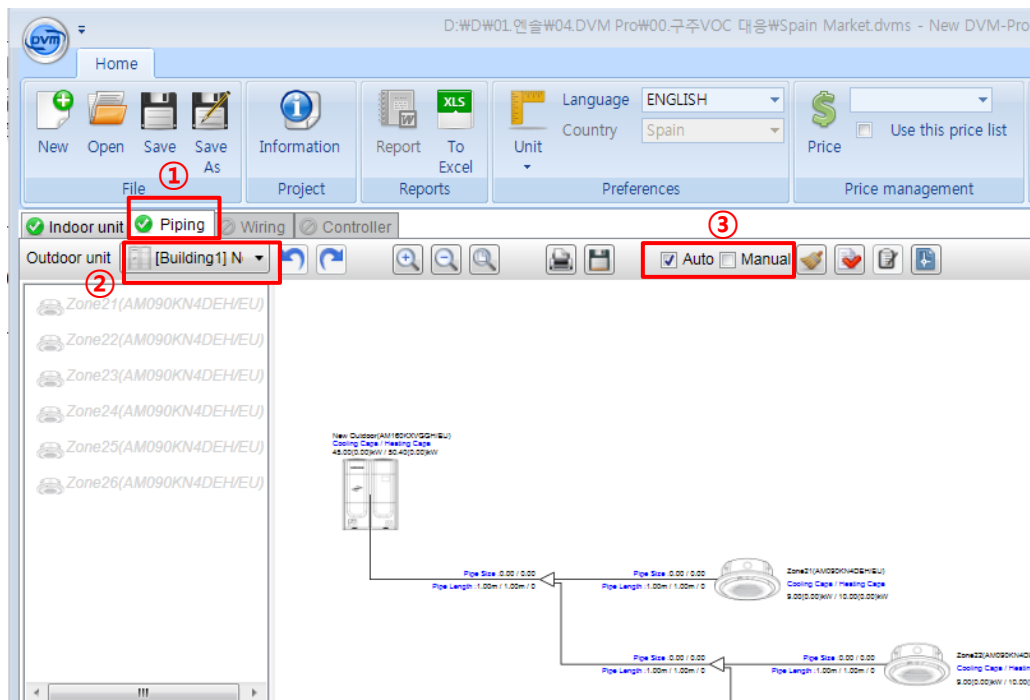
1. Click “Edit” button.



1) Piping placement : Auto

Design steps

1. Click “Piping” tap to start the piping design.
2. Select each system of outdoor units.
3. Click “Auto” to complete the piping placement.
4. (When selecting “Manual”) Refer to next page.



Design Tip

When a designer want to make **a quick report**, and already know that there is no problem regarding the pipe distance, skip other steps such as entering pipe information. Just **click “Auto” and “System check”**. Then he/she can generate the report.

2) Piping placement : Manual

Design steps

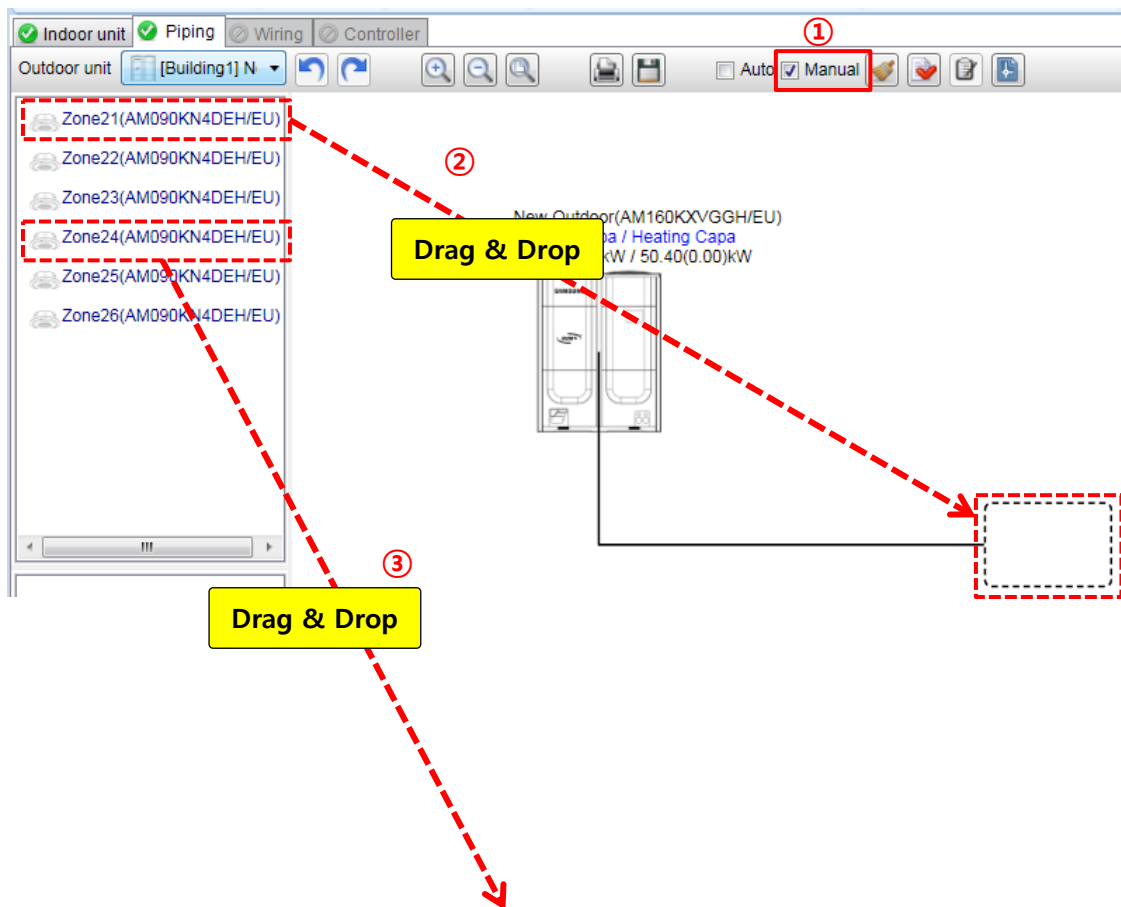
1. Click “Manual” to start the piping placement.

2. Drag & drop indoor units.

User can select several indoor units and place them together by “Ctrl” key.

3. After placing one indoor unit, place the other indoor units to the piping line.

4. Move all indoor units with same way.

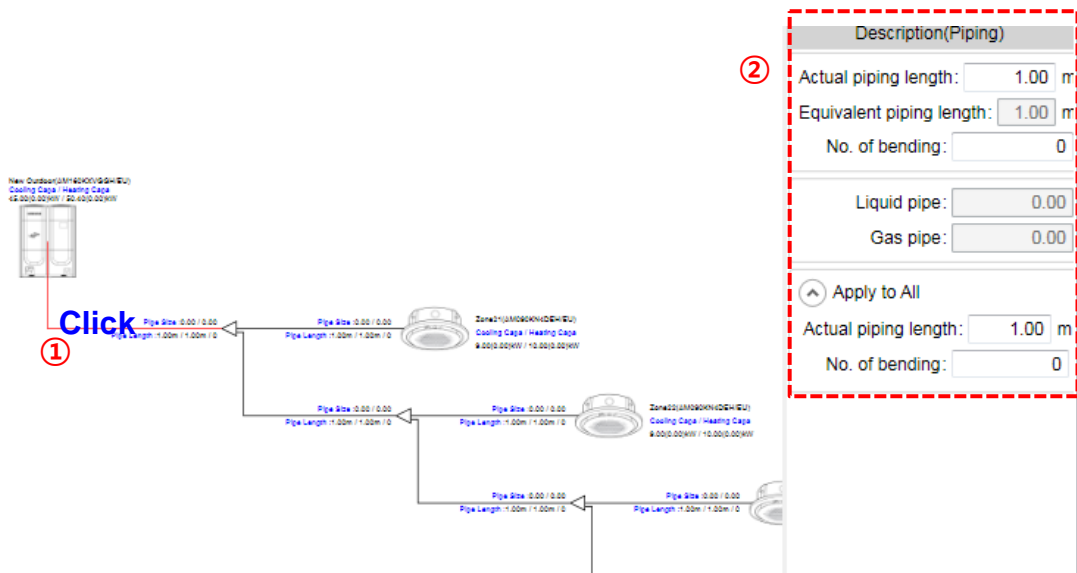


3) Input piping size

Design steps

1. Click each pipe line, then input space appears to the right side.
(Input piping data)
2. Enter actual piping length and number of bending.

- Main pipe: 220m, the other pipes: 1m.



Design Tip

Input this piping data as accurate as possible because the result of “System check” and “Capacity simulation” can differ based on the piping length.
Without entering data, every pipe line has the length of 1m.

System Check

Design steps

1. Click "System check" button.
2. "ERROR" appears.
3. Solve the problem with below RED messages.
Here, **Max. piping length exceeds product's limitation.**
→ **Change main pipe from 220m to 180m.**
4. Click "System check" again.
5. Without any red comments, system check is completed.

The screenshot shows the 'System Check' interface. At the top, a toolbar contains a red heart icon labeled with a circled '1'. Below it, a red box labeled with a circled '2' contains an error message: '[ERROR] System check failure.' with a '확인' (Confirm) button. Below the error message is a table titled 'System Check Result' labeled with a circled '3'.

Checklist	Restriction	Result value	Result	Description
Maximum piping length	200.00m	246.50m	ERROR	Fail : Maximum piping length (246.50m) exceeds the
Total piping length	1000.00m	271.50m	OK	
Distance of the first branch joint to	45.00m	26.50m	OK	
Distance of the nearest ID unit to	45.00m	21.20m	OK	
Level difference (OD locates upper)	110.00m	1.00m	OK	
Level difference (OD locates lower)	40.00m	0.00m	OK	
Level difference between ID units	50.00m	0.00m	OK	
Maximum equivalent piping length	220.00m	248.50m	ERROR	Fail : Maximum equivalent piping length (248.50m) exceeds the
Additional refrigerant amount		33.999kg	INFO	Additional refrigerant amount = 33.999kg (To check)

Design Tip

This function shows what user make wrong design or mistakes so that help users design SAC properly.

This S/W includes the variable limitation logics according to an installation manual.

User also can check the amount of additional refrigerant.

Capacity correction

Design steps

1. Click the button "Capacity correction", then new window is appeared.
2. Check "design condition and change the data if needed.
3. Click "Capacity correction" button.

ing ☒ Controller

Auto ☐ Manual

①

Capacity correction

②

Design condition : Indoor

Cooling WB.Temp 19 C Heating DB.Temp 20 C

Design condition : Outdoor

Cooling DB.Temp 36 C Heating DB.Temp -3.1 C

Maximum piping 7.00 m Maximum level 1.00 m

Outdoor unit

Type	DVM S(NEW)		Cooling	Heating
Mode	HEAT PUMP	Combination Ratio	112.50	111.11
Name	New Outdoor	Nominal Capacity	40.00	45.00
Model name	AM140KXVGGH/EU	Simulated Capacity	0.00	0.00

Indoor unit

Name	Model name	Nominal Capacity			Simulated Capacity		
		Cooling		Heating	Cooling		Heati
		TC(kW)	SHC(k	TC(kW)	TC(kW)	SHC(k	TC(k
Zone11	AM090KN4DEH...	9.00	6.30	10.00			
Zone12	AM090KN4DEH...	9.00	6.30	10.00			
Zone13	AM090KN4DEH...	9.00	6.30	10.00			
Zone14	AM090KN4DEH...	9.00	6.30	10.00			
Zone15	AM090KN4DEH...	9.00	6.30	10.00			
Totals		45.00	31.50	50.00	0.00	0.00	0.00

③

Capacity correction

OK

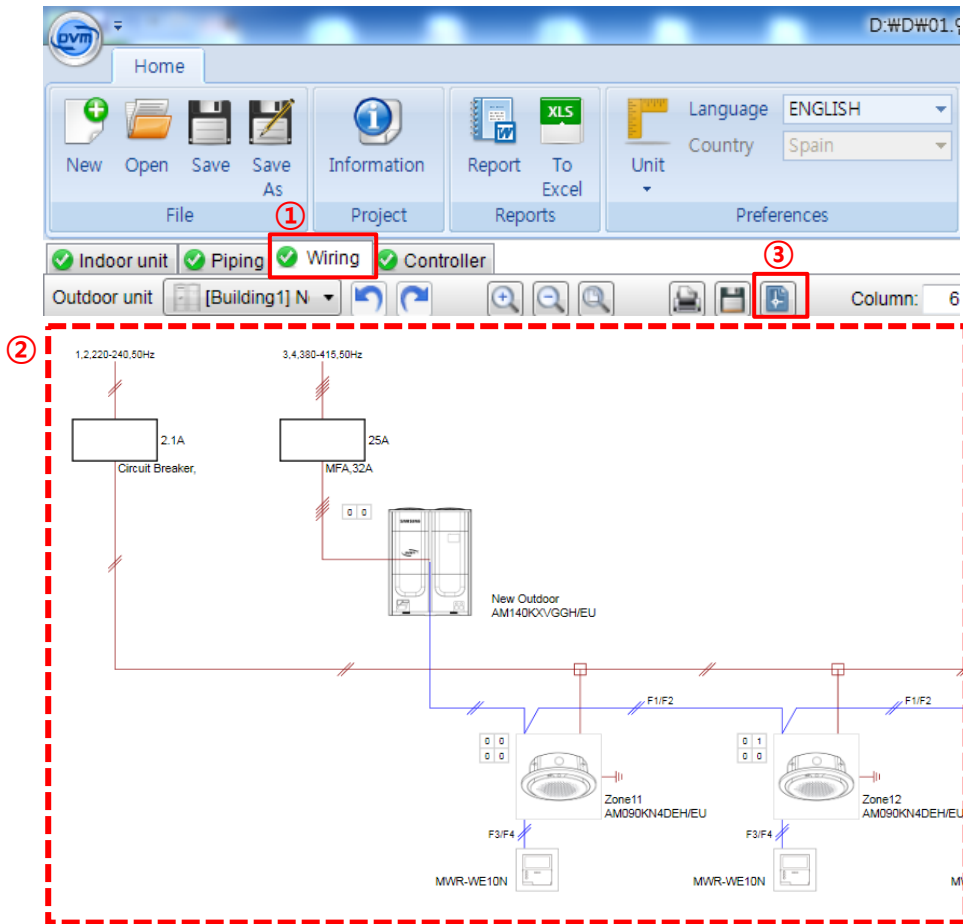
Cancel

2.13 Wiring

Wiring

Design steps

1. Click “Wiring tab”
2. Wiring information such as the power supply, MCA, MFA is represented automatically.
3. This wiring configuration can be saved as CAD drawing file.

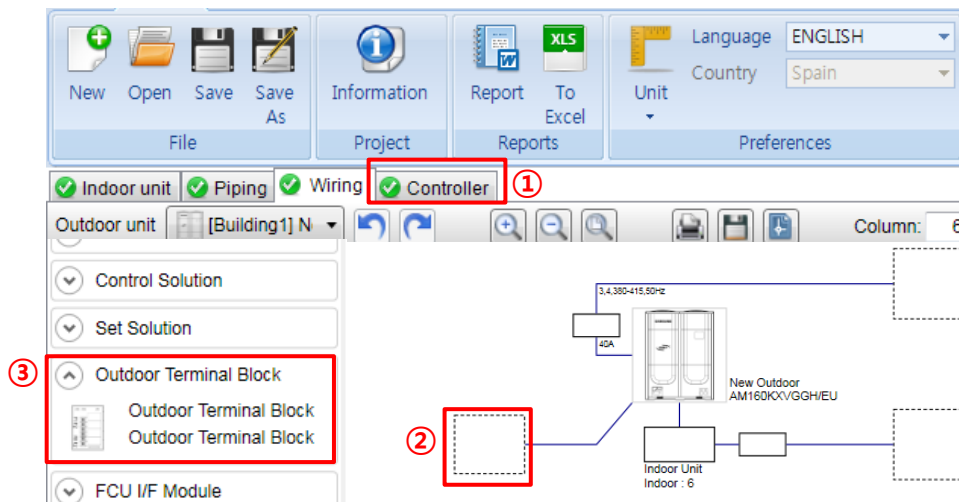


Controller 1

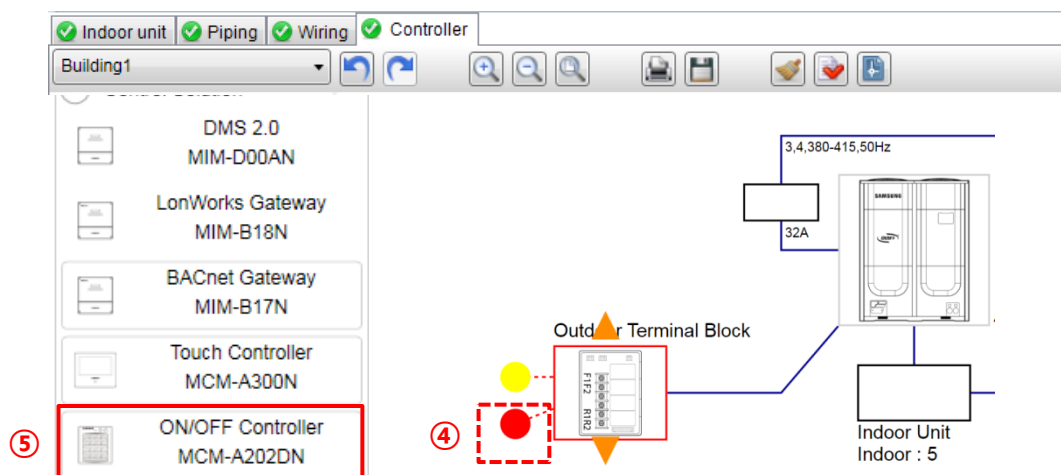
- Select On-Off controller and Touch controller for 2 systems.

Design steps

1. Click "Controller" tab
(To Select for System 1)
2. **Click a vacant box.**
3. Select compatible controller. (First, **select outdoor terminal block** for DVM S)



4. Click yellow circle to select controller.
Here **click the below circle** to select "On-Off controller".
(There are 2 types of circles. Upper one is to connect to F1, F2, the below one is to connect to R1, R2.)
5. **Click "On-Off controller"**



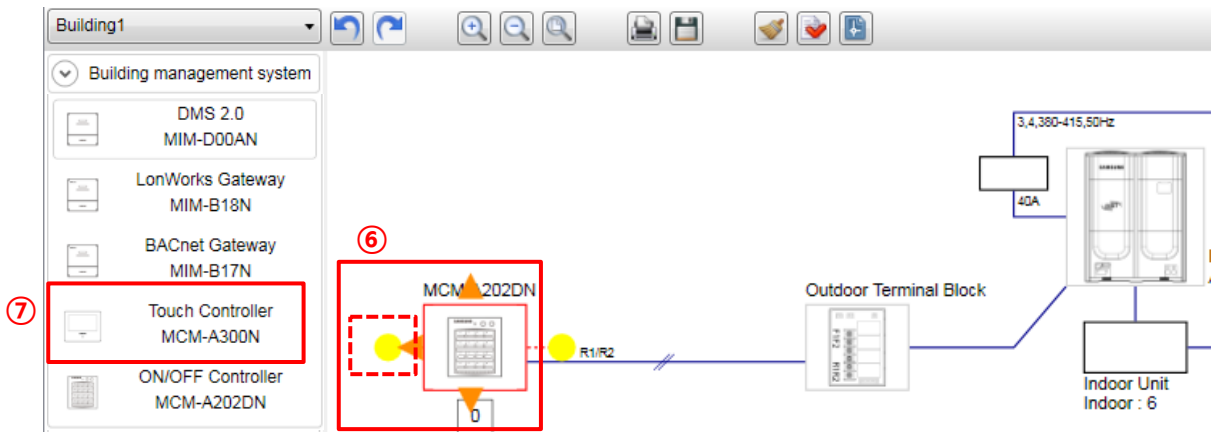
Controller 2

- Select On-Off controller and Touch controller for 2 systems.

Design steps

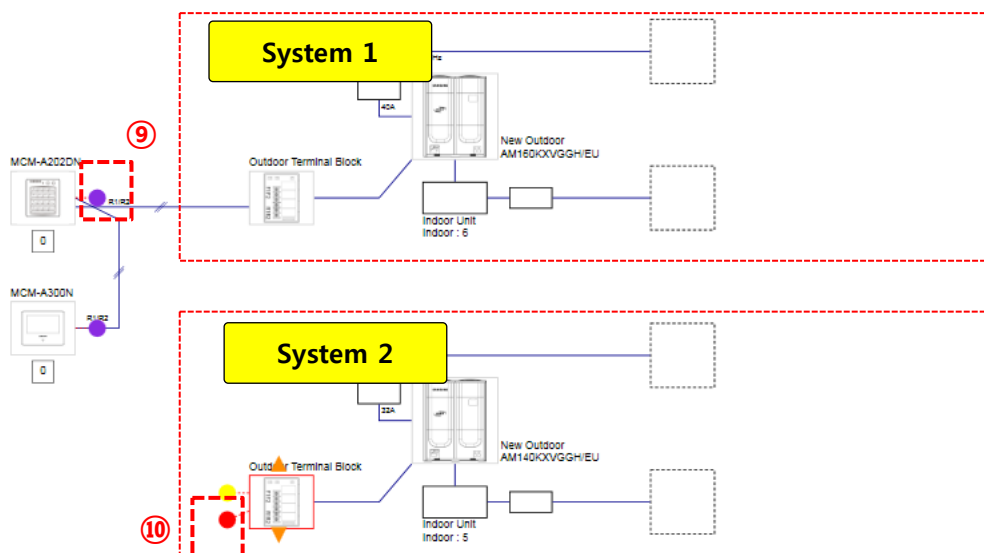
6. Click “On-Off controller” box, and the yellow circle.

7. **Click “ Touch Controller”**



(Select controller for System 2)

8. Select outdoor terminal box.(Refer to step 2~3)
9. Click a terminal box and a below yellow circle(R1/R2).
10. Click a purple circle to complete the connection of controllers.










Design Tip

When connecting Outdoor unit and controller, there are 2 ways.

- Using F1/F2 : Control one outdoor unit system and connected indoor units.
(On-Off controller, Touch controller, Wi-fi kit)
- Using R1/R2 : Control several outdoor unit system and connected indoor units.
(On-Off controller, Touch controller, DMS, BACnet, Lonworks)

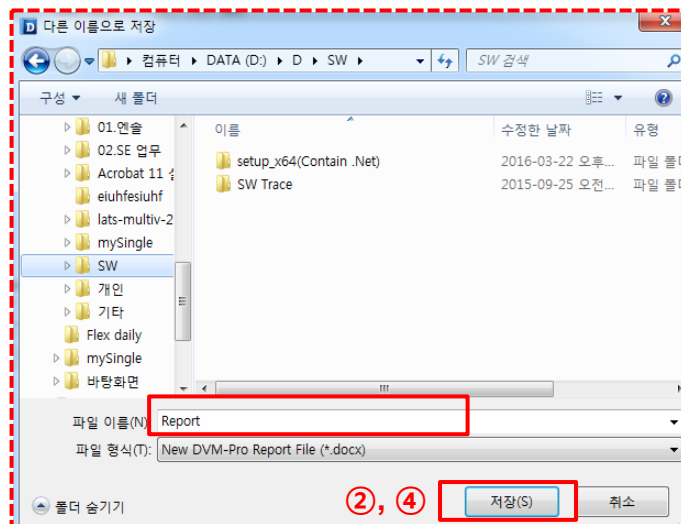
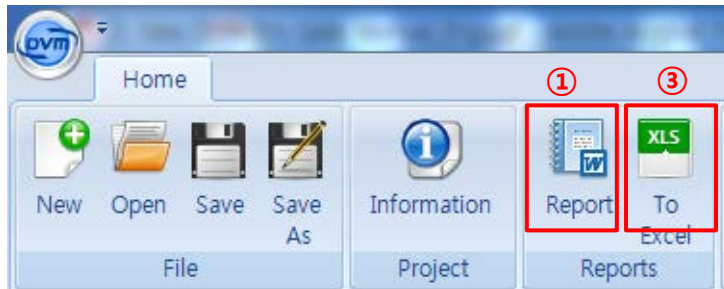
※ Controller

Classification	Product	Image	Model	Remark
Integrated Management System	DMS 2.0		MIM-D00AN	-
	S-NET 3		MST-P3P	-
	PIM		MIM-B16N	-
Building Management System	BACnet Gateway		MIM-B17N	-
	LonWorks Gateway		MIM-B18N	-
Centralized Control System	On/Off controller		MCM-A202DN	-
	Touch controller		MCM-A300N	-

Generate Report

Design steps

1. Click “Report” button.
2. Enter a file name and click “Save” button.
3. Click “ To Excel” button to generate the designed Product list.
4. Enter a file name and click “Save” button.



Usage Tip

There are 2 types of report.

- “Report” button: Includes all of designed information
- “To Excel” button: Includes only designed product list

Part 3 : Advanced Design1

Small Hotel with DVM S HR

(Tutorial with 2st Scenario)

Purpose :

1. Understand the design process for SAC.
 2. Learn how to design DVM S HR
 3. Part 2 is focused on the advanced design.
 - DVM S HR with 1Way CST
 - MCU(Mode Control Unit) design
 - Control : Key-Tag with DMS2.5
 4. Most of design steps are same as Part2: Basic design.
Only big difference is how to design MCU in **Piping step**.
-

Approach

- Building type : Small Hotel
- Area : 100m² x 3floors
- Owner's requirement : **Simultaneous Cooling and Heating with SLIM DUCT**
- Controller : **Key Tag with DMS2.5**
- Longest pipe : 70m



- Load Requirements

1. (Example of Zone1) $TC = 0.20\text{kW/m}^2 \times 100\text{m}^2 (\text{Area}) = 20\text{kW}$
2. (Example of Zone1) $SHC = TC \times 0.71$ (*Sensible heat ratio)

System (Outdoor unit)	Room/Zone	Area (m ²)	Load Requirements (KW)		
			Cooling		Heating
			TC	SHC	TC
System 1	Floor1	100	20	14	15
	Floor2	100	20	14	15
	Floor3	100	20	14	15

* Unit load (kW/m²) : 0.20 / 0.15 (Cooling TC / Heating TC)

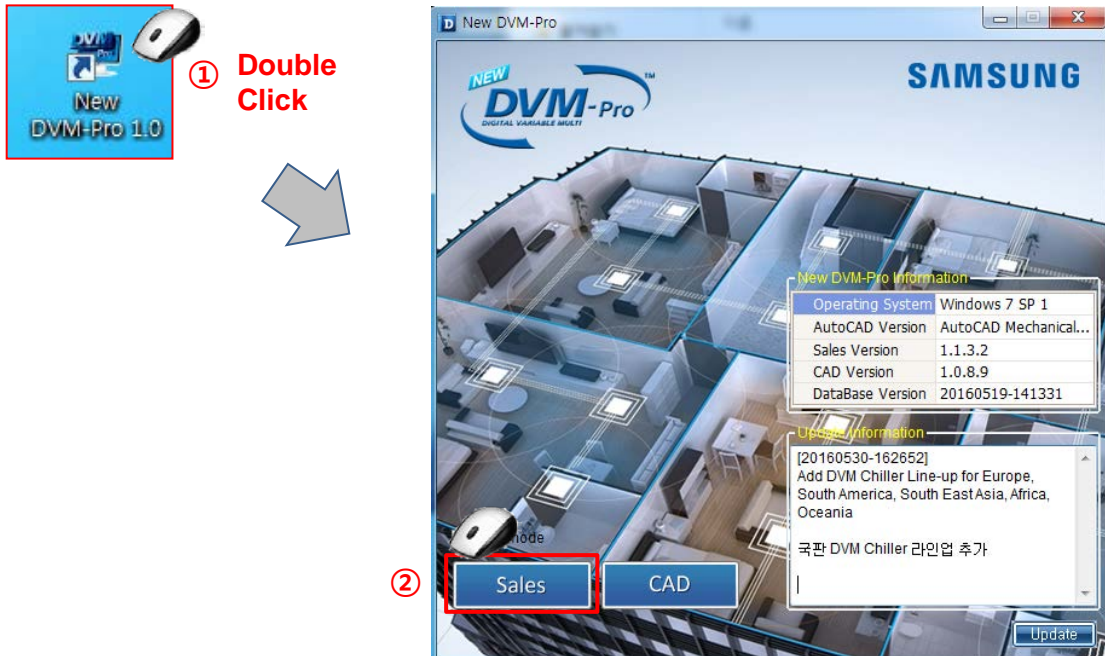
Design Tip

- TC(Total Capacity) = SHC(Sensible Heat Capacity) + LHC(Latent Heat Capacity)
- SHC: Capacity that changes temperature
- LC: Capacity that changes a phase such as the dehumidification.
- Designers need to consider SHC in high humidity places especially near the beach and lake.
Normally, when humidity is higher, air-conditioner more work for LHC(dehumidification).
On the other hand, SHC is smaller so that adjusting temperature may not be enough.

Start with DVM Pro

Design steps

1. To start DVM Pro, **double click a icon “New DVM Pro 1.0”** on desktop..
2. **Click “Sales”** button to start Sales mode of DVM Pro.
3. New window popped up.



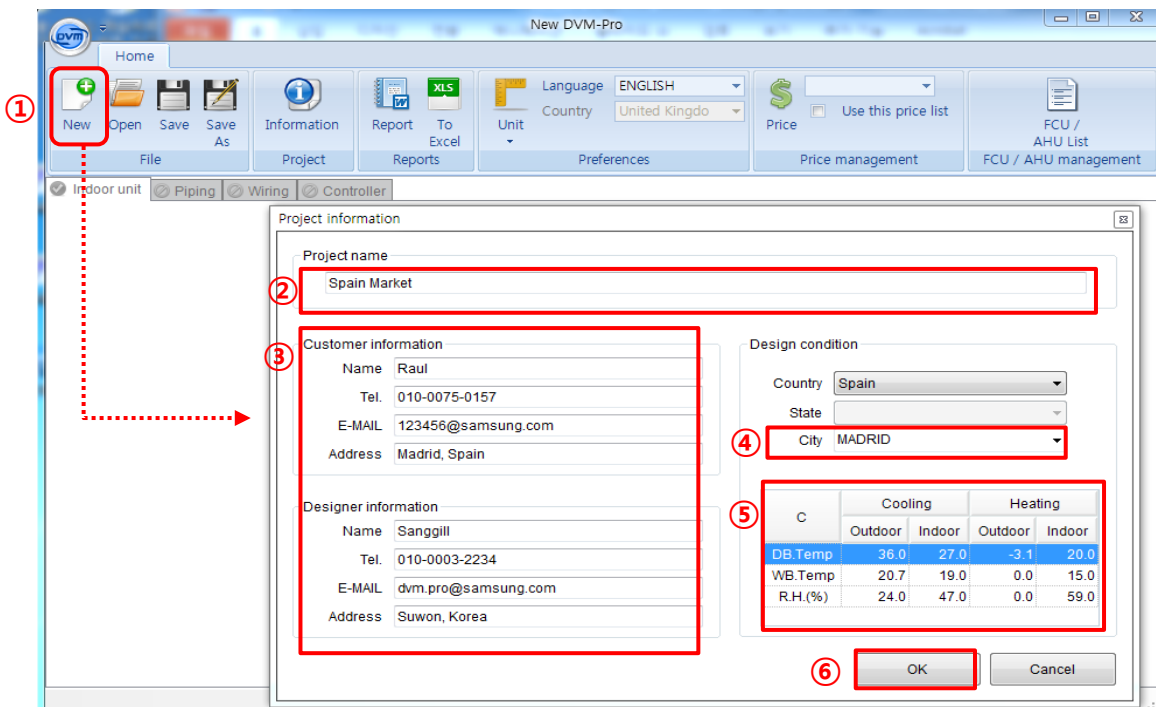
Usage Tip

Version Information

Create Project

Design steps

1. To create the project, **click “New”** button, then new window is popped up.
2. **Enter the project name**: the project name will be saved as a file name.
3. Enter the customer information and designer information (Optional)
: This will be represented on the report.
4. Enter Design condition : **Select city “Madrid”**
5. Design condition (Weather)
: Firstly weather condition is represented based on your city,
and then user can edit the data manually.
6. **Click “OK”** button to complete to create a project.



Usage Tip

Saving File extension is “.dvms”.

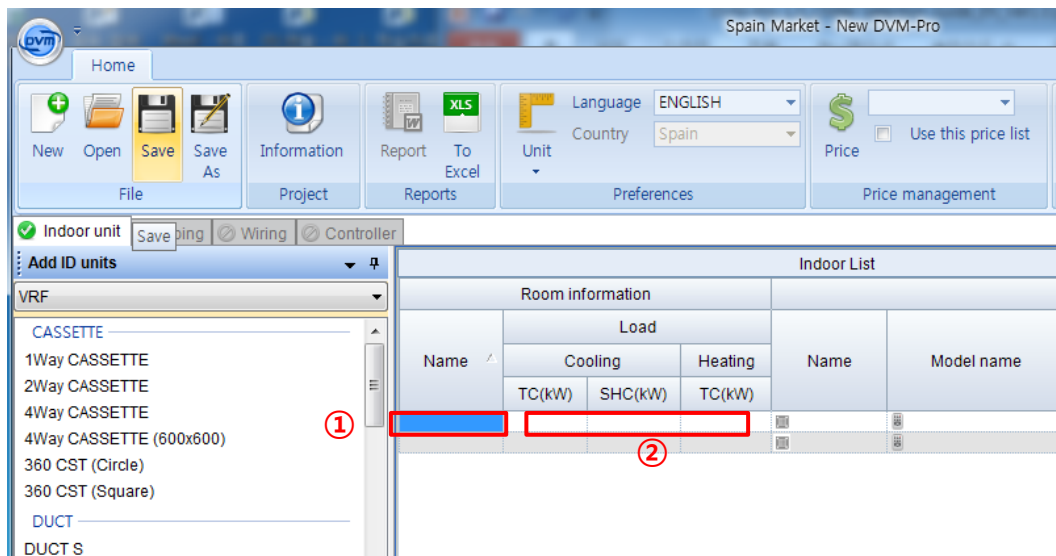
If user wants to select models from other countries, please request the authorization for the country to DVM Pro team by email, dvm.pro@samsung.com.

Load design

Design steps

1. To generate room information,
enter room names by double clicking (or click+enter) a vacant space.
2. Input load requirements for each room or zone according to the below load calculation.
- Load Calculation

System (Outdoor unit)	Room/Zone	Area (m2)	Load Requirements (KW)		
			Cooling		Heating
			TC	SHC	TC
System 1	Floor1	100	20	14	15
	Floor2	100	20	14	15
	Floor3	100	20	14	15



Usage Tip

According to this input load, the quantity of indoor units is automatically calculated for each room. Without entering load, user can also select indoor units and quantity.

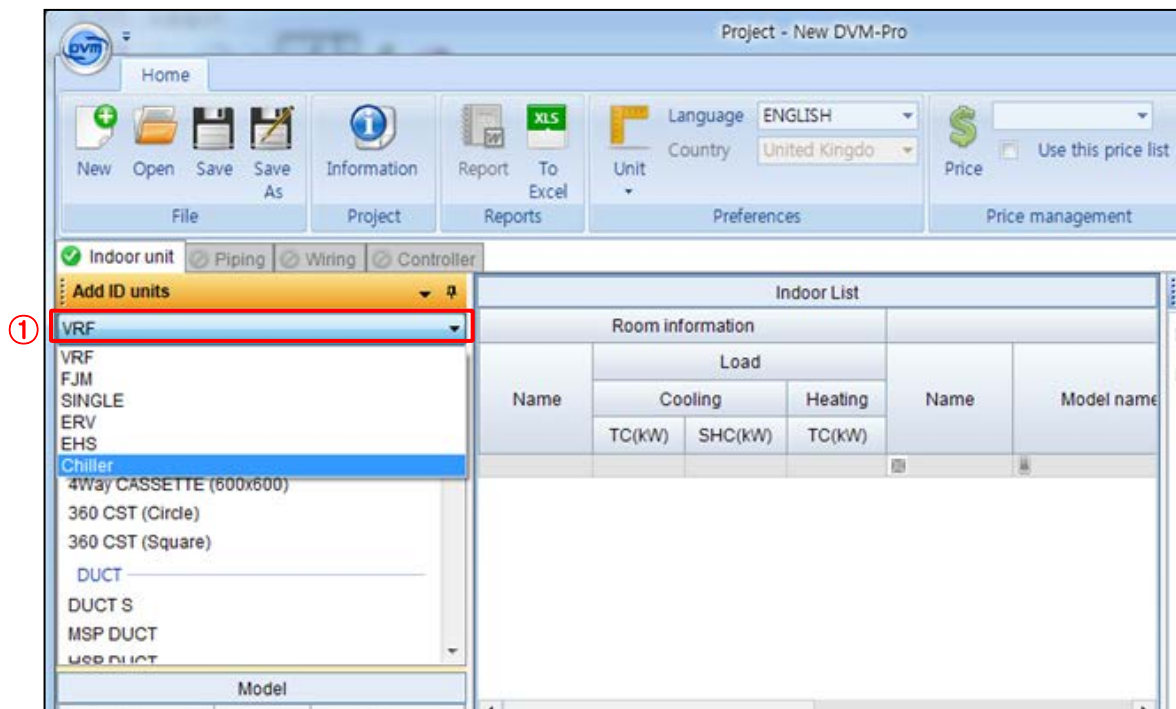
Design Tip

To meet customer's requirements, cooling(TC, SHC) and heating load need to be entered.

Select product type

Design steps

1. Click the below tap and select a product type on drop/down menu. (**Select VRF**)



Design Tip

For the proper SAC selection, many design factors should be considered such as the system capacity, pipe length, installation space, the number of indoor units, and so on.

※ To check those design and installation factors, please refer to TDB or installation manual.

3.6 Select Indoor units

Select indoor units

Design steps

1. Click each room to select indoor units.
2. Select indoor unit type : **SLIM DUCT**
3. Select a model (**AM071FNLDEH/EU**) and check the quantity. (User can change the quantity manually.)
4. Click “Add” button to complete the selection of indoor units

The screenshot shows the software interface for selecting indoor units. The 'Indoor unit' tab is selected. On the left, there is a list of unit types: CASSETTE, DUCT, and MSP DUCT. Under CASSETTE, '1Way CASSETTE' is highlighted. Below this, a list of models is shown, with 'AM071JN1DE...' selected. The 'Add' button is highlighted. The 'Indoor List' table on the right shows room information and load data.

Room information				Indoor List		
Name	Load		Name	Model name		
	Cooling					Heating
	TC(kW)	SHC(kW)				TC(kW)
Floor1	20.00	14.00	15.00			
Floor2	20.00	14.00	15.00			
Floor3	20.00	14.00	15.00			



Indoor List							
Room information				Indoor List			
Name	Load			Name	Model name	Nominal Capacity	
	Cooling		Heating			Cooling	Heating
	TC(kW)	SHC(kW)	TC(kW)			TC(kW)	TC(kW)
Floor1	20.00	14.00	15.00	Floor11	AM071FNLDEH/EU	7.10	5.40
Floor2	20.00	14.00	15.00	Floor12	AM071FNLDEH/EU	7.10	5.40
Floor3	20.00	14.00	15.00	Floor13	AM071FNLDEH/EU	7.10	5.40

3.7 Select Outdoor units

Select outdoor unit 1

Design steps

1. Click rooms or indoor units together using “Ctrl” key which connect to one outdoor unit system.
Here, **click “Floor1, 2, 3” together** to select System1(outdoor unit).
2. **Drag & drop the selected boxes** to the outdoor units list below.
3. New window, “Create Outdoor” is popped up.

Indoor List

Room information				Indoor List			
Name	Load		Name	Model name	Nominal Capacity		
	Cooling	Heating			Cooling	Heating	
	TC(kW)	SHC(kW)			TC(kW)	TC(kW)	
Floor1	20.00	14.00	Floor11	AM071FNLDEH/EU	7.10	5.40	
Floor2	20.00	14.00	Floor12	AM071FNLDEH/EU	7.10	5.40	
Floor3	20.00	14.00	Floor13	AM071FNLDEH/EU	7.10	5.40	
			Floor21	AM071FNLDEH/EU	7.10	5.40	
			Floor22	AM071FNLDEH/EU	7.10	5.40	
			Floor23	AM071FNLDEH/EU	7.10	5.40	
			Floor31	AM071FNLDEH/EU	7.10	5.40	
			Floor32	AM071FNLDEH/EU	7.10	5.40	
			Floor33	AM071FNLDEH/EU	7.10	5.40	

Outdoor List

Name	Model name	Nominal Capacity		Simulated Capacity		Combination Ratio	
		Cooling	Heating	Cooling	Heating	Cooling	Heating
		TC(kW)	TC(kW)	TC(kW)	TC(kW)	%	%

Create Outdoor

Outdoor Information

VRF: CVM S(N/E/W) HEAT PUMP: 2015 HP High-EER

Name: New Outdoor

Id Comb. Ratio(%) 100.0

Hy Comb. Ratio(%) 0.0

Simultaneously operate H/F ☐ 40°C

Model name	Nominal Capacity		Combination Ratio		Status
	Cooling	Heating	Cooling	Heating	
AM160KXVGH/EU	45	50.4	3.4380-415	100.00	99.21 Planned
AM180KXVGH/EU	50.4	56.7	3.4380-415	89.29	88.18 Planned
AM200KXVGH/EU	56	62	3.4380-415	80.36	79.27 Planned
AM220KXVGH/EU	61.6	69.3	3.4380-415	73.05	72.15 Planned

Items Unit AM160KXVGH/EU

Nominal power input	kW	10.92/10.75
Nominal current input	A	17.51/17.2
Maximum current	A	MCA 32
MCCB		40
Power/Communication wires		0.75 - 1.5
Liquid Pipe	mm	12.70
Gas pipe	mm	28.58
Discharge Gas Pipe	mm	
Oil balancing pipe	mm	
Additional refrigerant amount	kg	8.400
Size (WxHxD)	mm	1255x1895x765
Temp. range (C/H)	°C	-5 ~ 48 / -25 ~ 24

Indoor Information

Name	Model name	Nominal Capacity	
		Cooling	Heating
Zone11	AM090KN	9	10
Zone12	AM090KN	9	10
Zone13	AM090KN	9	10
Zone14	AM090KN	9	10
Zone15	AM090KN	9	10

TC totals

Indoor TC	45.00	50.00
Hydro TC	0.00	0.00

OK Cancel

Select outdoor unit 2

Design steps

1. Select the type of outdoor unit.

Here, select a outdoor type : **VRF** → **DVM S** → **Heat Recovery** → **2015 High EER**

2. Enter the combination ratio, **130%**.

3. Select the model among the recommendation models. : **Select AM180JXVHGR/EU**

4. Click “OK” button to complete the selection of outdoor unit.

Outdoor Information

VRF DVM S(NEW) HEAT PUMP 2016 HP Standard

☒ Simultaneously operate Hy ☐ 46°C

Id Comb. Ratio(%) 130 Hy Comb. Ratio(%) 0

Model name	Nominal Capacity		Power supply	Combination Ratio		Status
	Cooling TC(kW)	Heating TC(kW)		Cooling	Heating	
AM180KXVAGH/EU	50.4	56.7	3,4,380-415	126.79	126.98	Active
AM200KXVAGH/EU	56	63	3,4,380-415	114.11	114.29	Active
AM220KXVAGH/EU	61.6	69.3	3,4,380-415	103.73	103.90	Active
AM240KXVAGH/EU	67.2	75.6	3,4,380-415	95.09	95.24	Active

Items		Unit	AM180KXVAGH/EU	
Nominal power input		kW	12.6/11.91	
Nominal current input		A	20.2/19.1	
Maximum current		A	MCA	39.2
MCCB			50	
Power/Communication wires			-	
Liquid Pipe		mm	15.88	
Gas pipe		mm	28.58	
Discharge Gas Pipe		mm	-	
Oil balancing pipe		mm	-	
Additional refrigerant amount		kg	8.400	
Size (WxHxD)		mm	1295x1695x765	
Temp. range (C/H)		C	-5 ~ 48 -25 ~ 24	

Indoor Information

Name	Model name	Nominal Capacity	
		Cooling TC (kW)	Heating TC (kW)
Floor11	AM071FN ...	7.1	8
Floor12	AM071FN ...	7.1	8
Floor13	AM071FN ...	7.1	8
Floor21	AM071FN ...	7.1	8
Floor22	AM071FN ...	7.1	8
Floor23	AM071FN ...	7.1	8
Floor31	AM071FN ...	7.1	8
Floor32	AM071FN ...	7.1	8
Floor33	AM071FN ...	7.1	8

TC totals

	Indoor TC	Hydro TC
	63.90	72.00
	0.00	0.00

OK Cancel

Design Tip

User can enter combination ratio manually under the limitation of it, and models are recommended based on combination ratio.

※ Combination ratio = Total capacity of indoor units / Capacity of outdoor unit.

※ Limitation of VRF's combination ratio : 50% ~ 130%

Select accessories

Design steps

1. Click indoor unit models to select accessories.
2. Click “Accessory” tap
3. Select accessories : **MIM-B14(External Contact Controller)**
4. When accessories are selected, the related indoor units are marked with the orange color.

The screenshot displays the software interface for selecting accessories. The 'Indoor unit' tab is active. The 'Accessory' list on the left includes various components, with 'MIM-B14 EXTERNAL CONTACT CONTROLLER' selected and highlighted by a red box and a circled '3'. The 'Indoor List' table on the right shows a list of indoor units across three floors. The units are marked with orange icons, indicating they are related to the selected accessory. A red box and a circled '4' highlight the 'Indoor List' table. A red arrow points from the 'Indoor List' table to a detailed view of the indoor units, showing their model names and capacities.

Room information				Indoor List	
Name	Load		Name	Model name	Non
	Cooling	Heating			
	TC(kW)	SHC(kW)			
Floor1	20.00	14.00	Floor11	AM071FNLDEH/EU	7.10
			Floor12	AM071FNLDEH/EU	7.10
			Floor13	AM071FNLDEH/EU	7.10
Floor2	20.00	14.00	Floor21	AM071FNLDEH/EU	7.10
			Floor22	AM071FNLDEH/EU	7.10
			Floor23	AM071FNLDEH/EU	7.10
Floor3	20.00	14.00	Floor31	AM071FNLDEH/EU	7.10
			Floor32	AM071FNLDEH/EU	7.10
			Floor33	AM071FNLDEH/EU	7.10

Name	Model name	Nominal Capacity		Simulated Capacity		Cooling
		Cooling TC(kW)	Heating TC(kW)	Cooling TC(kW)	Heating TC(kW)	
						%

Design Tip

When designing Duct type IDU, you need to choose drain type and control method considering customer's desire.

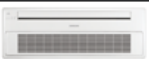










- Drain type : Drain pump or Drain hose
- Control : Wired-remote controller or Receiver with Wireless remote controller
- External temperature sensor for more accurate temperature control.

To use Key-tag function, MIM-B14(External Contact Controller) is mandatory to be selected.

3.8 Select Accessory

※ Accessory list (Indoor unit)















Panel

Product	Image	Model	Remark
Panel		PC1NUSMAN	Slim 1Way Cassette
		PC1NUPMAN	Slim 1Way Cassette (Z-sliding)
		PC1MWSKAN	1Way Cassette (1.7 kW, 2.2 kW)
		PC2NUSMEN	2Way cassette
		PC4SUSMAN	4Way Cassette S(600x600) (Waffle)
		PC4SUSMEN	4Way Cassette S(600x600) (Classic)
		PC4NUSKAN	4 Way cassette S (Waffle)
		PC4NUSKEN	4 Way cassette S (Classic)
		PC4NBSKAN	4 Way cassette S (Waffle, Black)
		PC4NUDMAN	360 CST Square (White)
		PC4NUNMAN	360 CST Circular (White)
		PC4NBDMAN	360 CST Square (Black)
		PC4NBNMAN	360 CST Circular (Black)

3.8 Select Accessory

※ Accessory list (Indoor unit)











Controller

Classification	Product	Image	Model	Remark
Individual Control System	Wireless remote controller		MR-EH00	-
	Wired remote controller		MWR-WE10N (Multi function)	
			MWR-WW00N	DVM S Hydro Unit
	Simplified wired remote controller		MWR-SH00N	-
			MWR-VH02	ERV
Others	Operation mode selection switch		MCM-C200	DVM S Series (Except HR Models)
	External room sensor		MRW-TA	Cassette, Wall-mount, Ceiling, Duct, Console
	Compatible interface module		MIM-N01	Nasa-No Nasa
	ERV interface module		MIM-N10	ERV (Nasa)
	External contact interface module		MIM-B14	-
	S-Converter		MIM-C02N	-
	MTFC (Multi tenant function controller)		MCM-C210N	-
	Wireless signal receiver		MRK-A10N	-
	External room sensor		MRW-TA	Cassette, Wall-mount, Ceiling, Duct, Console
			MRW-TS	Zone Controller (SINGLE)

3.8 Select Accessory

※ Accessory list (Indoor unit)



Others

Product	Image	Model	Remark
S-Plasma Ion KIT		MSD-CAN1	4Way Cassette S 4Way Cassette S(600x600)
		MSD-EAN1	ERV-Plus
Motion detect Sensor		MCR-SMA	4Way Cassette S (600x600)
ERV CO2 Sensor		MOS-C1	ERV, ERV PLUS
External room sensor		MRW-TA	Cassette, Wall-mount, Ceiling, Duct, Console
Drain Pump		MDP-N047SNC0D	OAP Duct (14.0 kW)
		MDP-N047SNC1D	HSP Duct (22.0 / 28.0 kW) OAP Duct (22.4 / 28.0 kW)
		MDP-M075SGU1D	MSP Duct (9.0 / 11.2 kW)
		MDP-M075SGU2D	MSP Duct (12.8 / 14.0 kW) HSP Duct (11.2 / 12.8 / 14.0 kW)
		MDP-M075SGU3D	MSP Duct (5.6 / 7.1 kW)
		MDP-E075SEE3D	Slim Duct (2.0~14.0 kW)
		MDP-G075SP	Duct S (External, All Capacities)
		MDP-G075SQ	Duct S (Internal, 3.5 kW~14 kW)
AHU KIT		MXD-K025AN	7.0kW~8.75kW
		MXD-K050AN	14.0kW~17.5kW
		MXD-K075AN	21.0kW~26.25kW
		MXD-K100AN	28.0kW~35.0kW
		MCM-D201N	28kW~35kW / 56kW~70kW / 84kW~105kW / 112kW~140kW

3.8 Select Accessory

※ Accessory list (Outdoor unit)

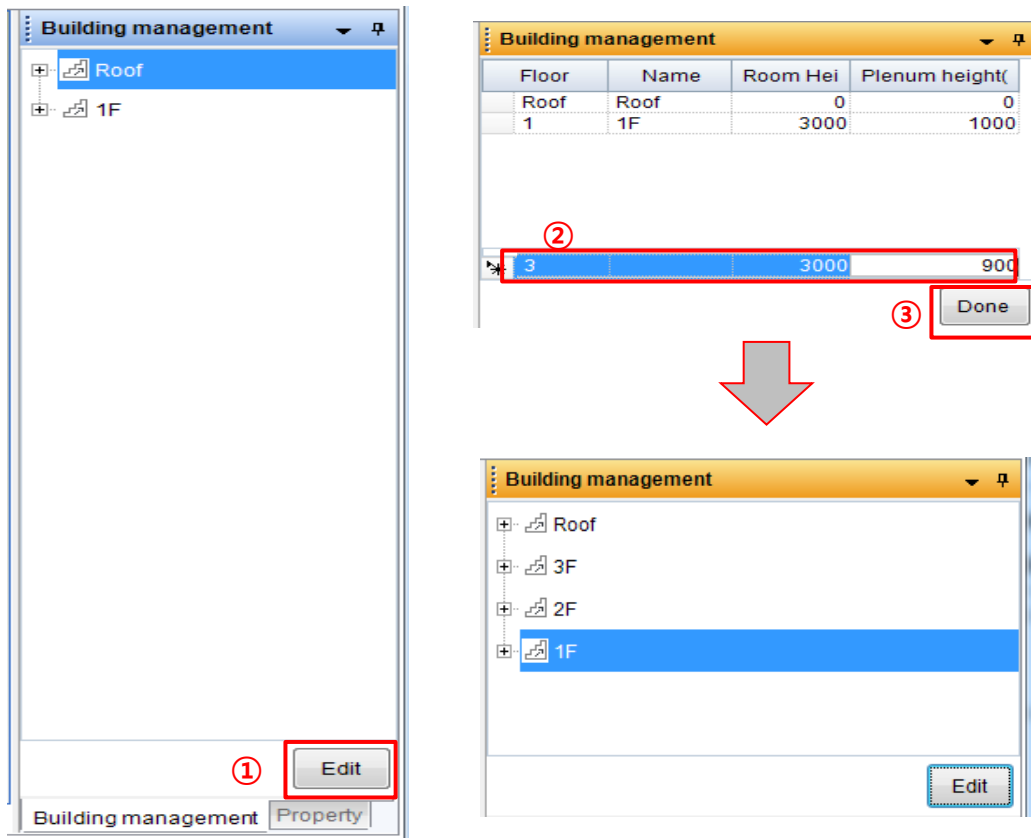
Others

Product	Image	Model	Remark
Operation mode selection switch		MCM-C200	DVM S Series (Except HR Models)
PDM KIT		MXD-A38K2A	8~12HP
		MXD-A12K2A	14~16HP
		MXD-A58K2A	18~26HP

1) Generate floors

Design steps

1. Click “Edit” button.
2. Input floor information
 - 1st box : Floor number. **Here, enter “3” in the first box.**
 - 3rd box (Room height) : Enter 3000 (mm)
 - 4th box (Plenum height) : Enter 900 (mm)
3. Click “Done” button



Design Tip

- Room Height : From a bottom of a floor to a bottom of a next floor
- Plenum Height : From a ceiling of a floor to a bottom of a next floor

2) Building management

Design steps

1. Click each room or indoor units to the installation floor on “Building management” by drag & drop.
2. Every indoor units and outdoor units should be placed to the floors on “Building management”.

Indoor List

Room information					Name	Model name	C
Name	Load		TC(kW)	Heating			
	TC(kW)	SHC(kW)					
Floor1	20.00	14.00	15.00	✓	Floor11	AM071FNLDEH/EU	7.7
Floor2	20.00	14.00	15.00	✓	Floor12	AM071FNLDEH/EU	7.7
Floor3	20.00	14.00	15.00	✓	Floor13	AM071FNLDEH/EU	7.7
				✓	Floor21	AM071FNLDEH/EU	7.7
				✓	Floor22	AM071FNLDEH/EU	7.7
				✓	Floor23	AM071FNLDEH/EU	7.7
				✓	Floor31	AM071FNLDEH/EU	7.7
				✓	Floor32	AM071FNLDEH/EU	7.7
				✓	Floor33	AM071FNLDEH/EU	7.7

Building management

- Roof
- New Outdoor
- 3F
 - Floor31
 - Floor32
 - Floor33
- 2F
 - Floor21
 - Floor22
 - Floor23
- 1F
 - Floor11
 - Floor12
 - Floor13

3. After placing all of products to spaces on “Building management”, “Piping” tap is activated.

Home

New Open Save Save As Information Report To Excel Unit

File Project Reports

✓ Indoor unit **✓ Piping** Wiring Controller

Add ID units

VRF

SLIM DUCT

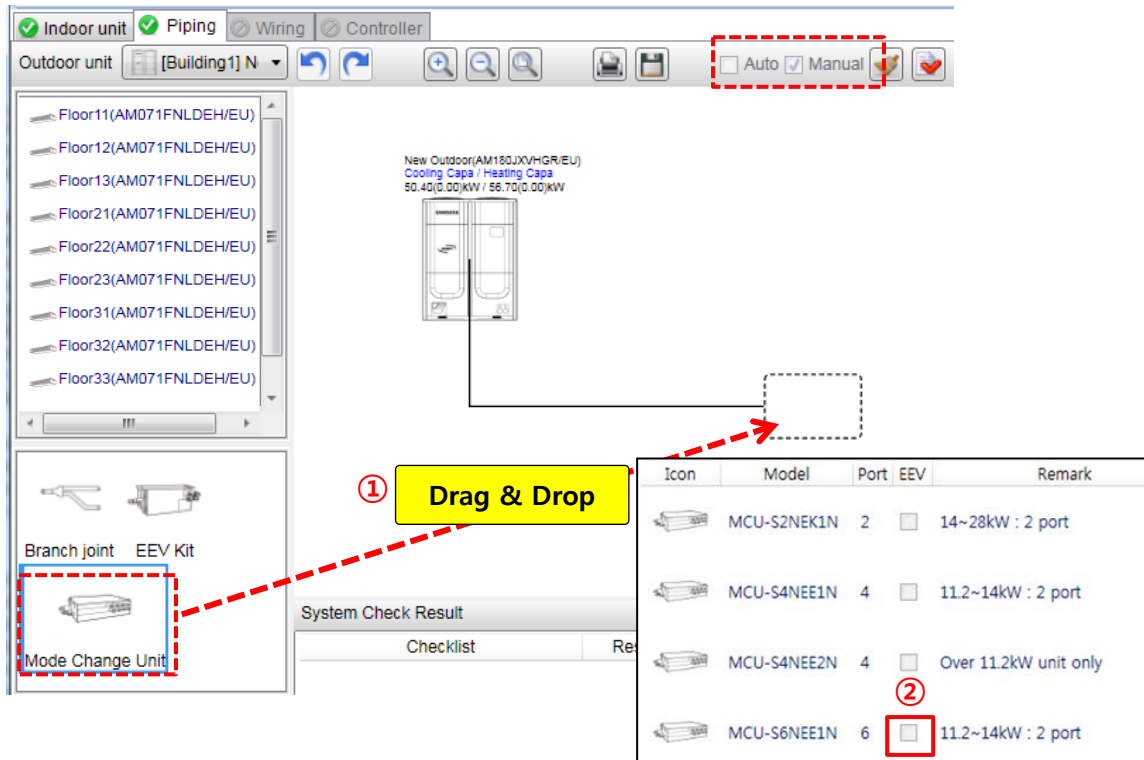
Room info

Piping placement : Manual

Design steps

0. "Manual" is activated

1. Drag & drop MCU (Mode Change Unit)
2. Select the type of MCU among 4 types. : [Here select 6 port MCU\(MCU-S6NEE1N\).](#)



① Drag & Drop

Icon	Model	Port	EEV	Remark
	MCU-S2NEK1N	2	<input type="checkbox"/>	14~28kW : 2 port
	MCU-S4NEE1N	4	<input type="checkbox"/>	11.2~14kW : 2 port
	MCU-S4NEE2N	4	<input type="checkbox"/>	Over 11.2kW unit only
	MCU-S6NEE1N	6	<input checked="" type="checkbox"/>	11.2~14kW : 2 port

②

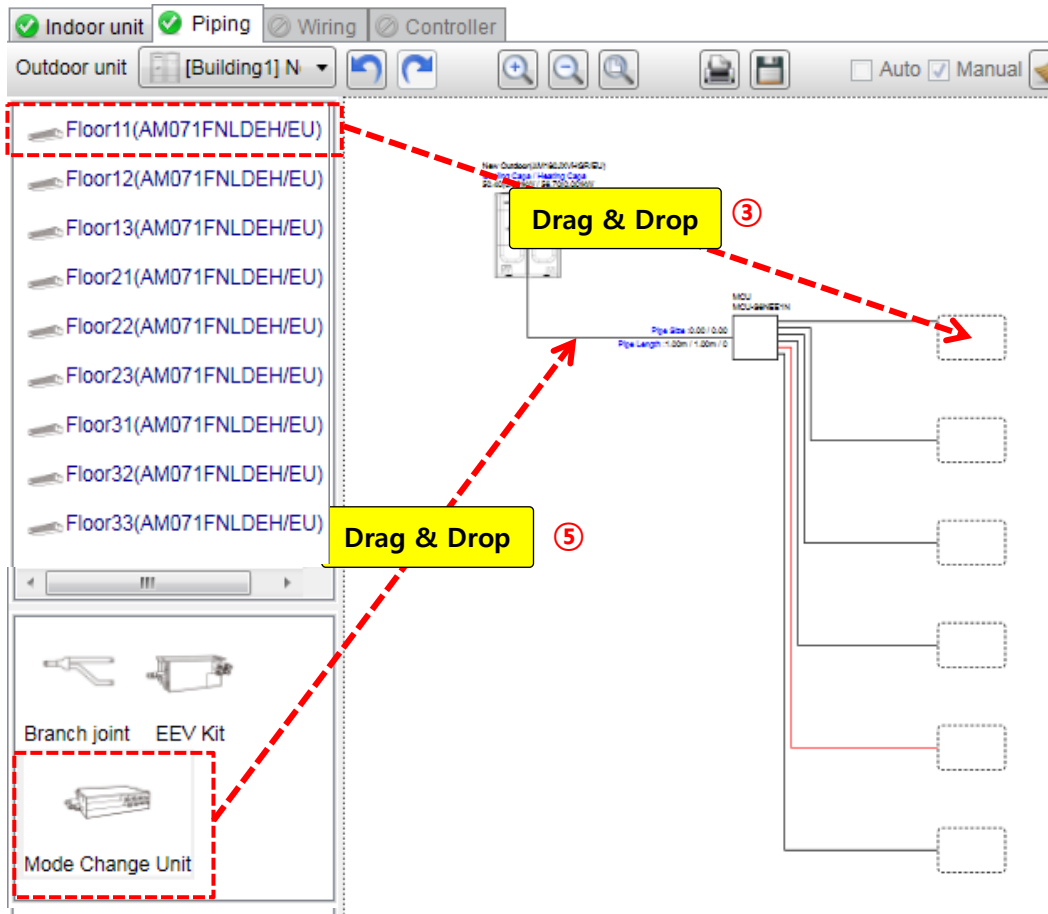
Design Tip

When you select DVM S HR(Heat Recovery), "Auto" pipe function is not available.
DVM S HR must be connected to all of indoor units via MCU(Mode Control Unit).

Piping placement : Manual

Design steps

3. Drag & drop indoor units.
4. After placing one indoor unit, place the other indoor units to the vacant boxes
5. If you need more MCU, Drag & drop MCU to a pipe line



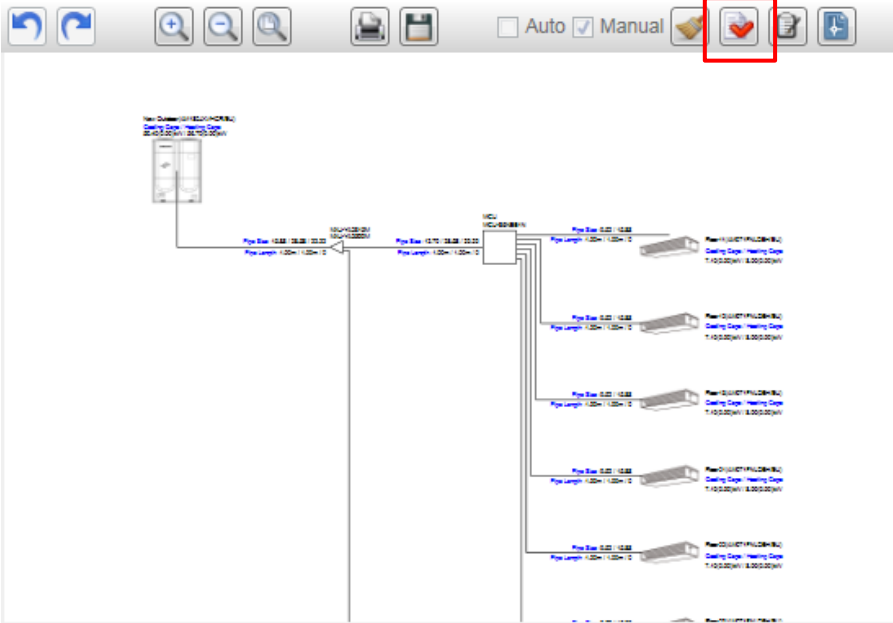
Design Tip

When you select DVM S HR(Heat Recovery), "Auto" pipe function is not available.
DVM S HR must be connected to all of indoor units via MCU(Mode Control Unit).

System Check

Design steps

1. Click “System check” button.
2. Without any red comments, system check is completed.



System Check Result

Checklist	Restriction	Result value	Result
Distance of the nearest ID unit to	45.00m	0.00m	OK
Level difference (OD locates upper)	110.00m	7.00m	OK
Level difference (OD locates lower)	40.00m	0.00m	OK
Level difference between ID units	15.00m	6.10m	OK
Level difference between MCUs	15.00m	6.10m	OK
Maximum equivalent piping length	220.00m	3.80m	OK
Additional refrigerant amount		6.009kg	INFO

Design Tip

This function shows what user make wrong design or mistakes so that help users design SAC properly.

This S/W includes the variable limitation logics according to an installation manual.

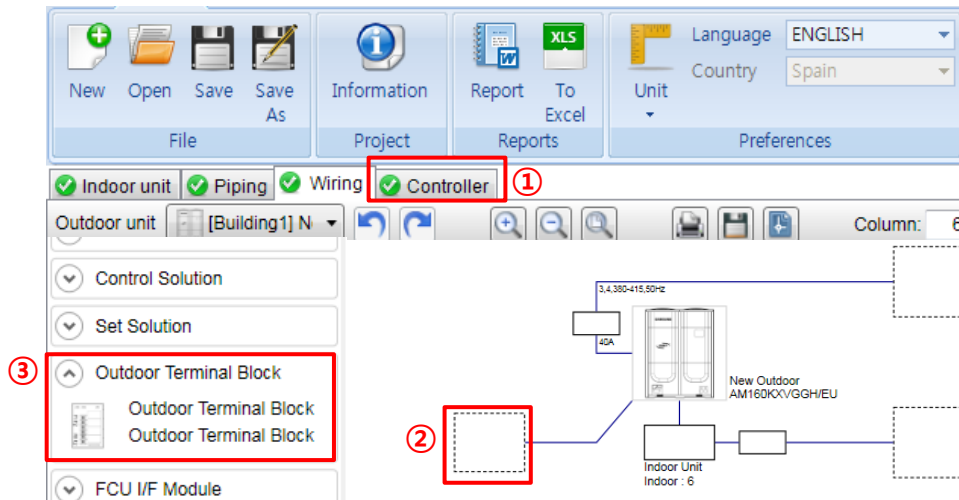
User also can check the amount of additional refrigerant.

Controller 1

- Select DMS2.5 to use Key-tag

Design steps

1. Click "Controller" tab
(To Select for System 1)
2. **Click a vacant box.**
3. Select compatible controller. (First, **select outdoor terminal block** for DVM S)

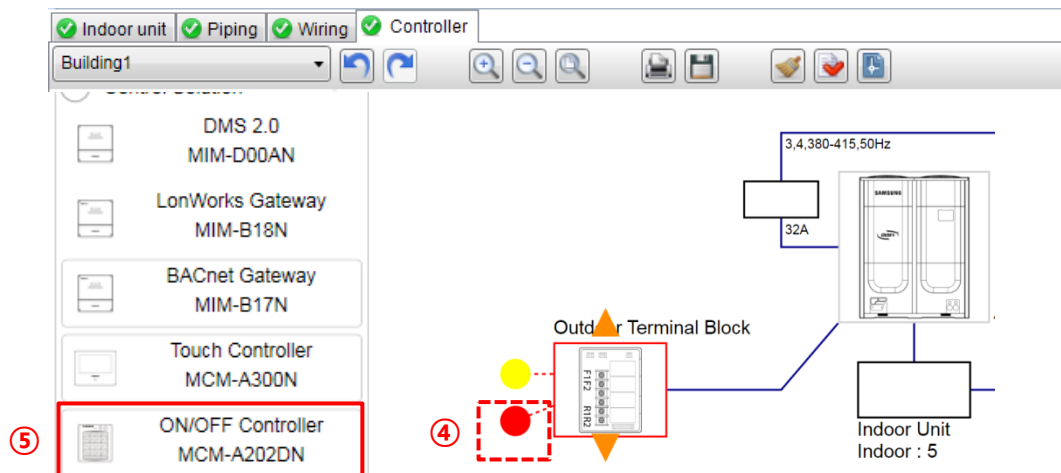


4. Click yellow circle to select controller.

Here **click the below circle** to select "On-Off controller".

(There are 2 types of circles. Upper one is to connect to F1, F2, the below one is to connect to R1, R2.)

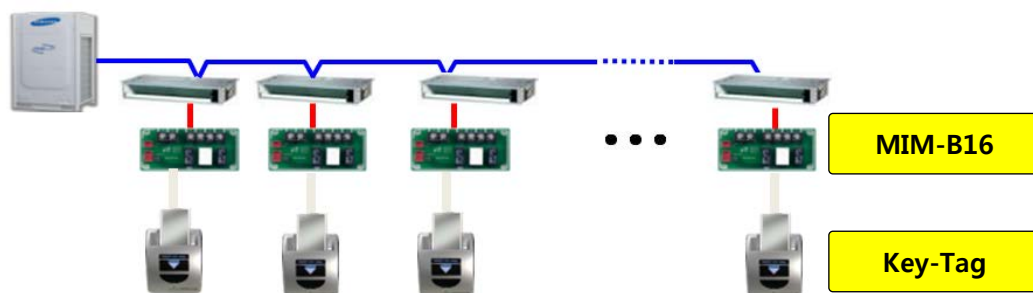
5. **Click "DMS 2.5"**



Design Tip

When connecting Outdoor unit and controller, there are 2 ways.

- Using F1/F2 : Control one outdoor unit system and connected indoor units.
(On-Off controller, Touch controller, Wi-fi kit)
- Using R1/R2 : Control several outdoor unit system and connected indoor units.
(On-Off controller, Touch controller, DMS, BACnet, Lonworks)
- To use Key-tag, every indoor unit need MIM-B16(selected in Accessary tap)



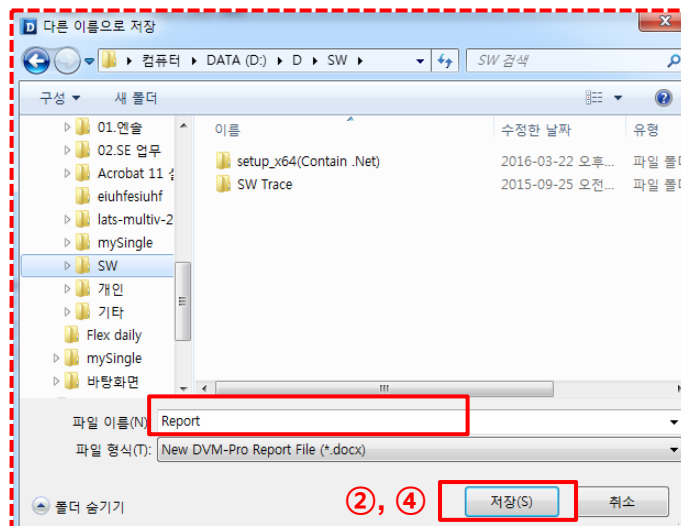
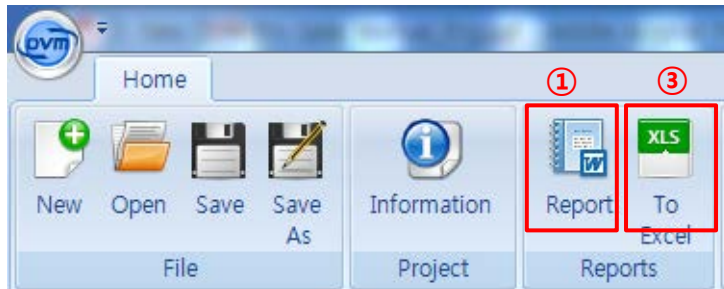
※ Controller

Classification	Product	Image	Model	Remark
Integrated Management System	DMS 2.0		MIM-D00AN	-
	S-NET 3		MST-P3P	-
	PIM		MIM-B16N	-
Building Management System	BACnet Gateway		MIM-B17N	-
	LonWorks Gateway		MIM-B18N	-
Centralized Control System	On/Off controller		MCM-A202DN	-
	Touch controller		MCM-A300N	-

Generate Report

Design steps

1. Click “Report” button.
2. Enter a file name and click “Save” button.
3. Click “ To Excel” button to generate the designed Product list.
4. Enter a file name and click “Save” button.



Usage Tip

There are 2 types of report.

- “Report” button: Includes all of designed information
- “To Excel” button: Includes only designed product list

Part 4 : Advanced Design2

Luxury House with Hydro Unit (Tutorial with 3st Scenario)

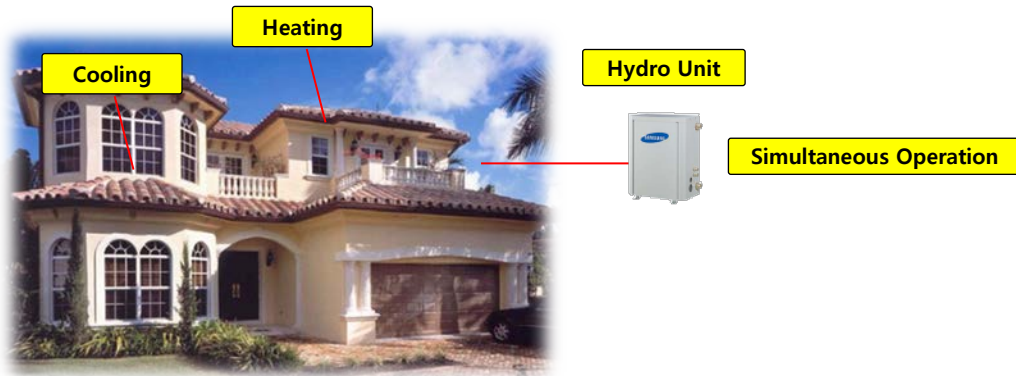
Purpose :

1. Understand the design process for SAC.
 2. Learn how to design DVM Hydro unit
 3. Part 4 is focused on the advanced design.
 - [DVM Hydro Unit HE](#)
 4. Most of design steps are same as Part2: Basic design.
 - Big difference is how to design [Hydro Unit HE/HT](#).
-

4.1 Modeling Scenario

Approach

- Building type : Luxury House
- Area : 200m² x 2floors
- Owner's requirement : **Using Hydro Unit HE and Duct type IDU**
- Longest pipe : 70m



- Load Requirements

1. (Example of Floor1) $TC = 0.20\text{kW/m}^2 \times 200\text{m}^2 (\text{Area}) = 40\text{kW}$
2. (Example of Floor1) $SHC = TC \times 0.71$ (*Sensible heat ratio)

System (Outdoor unit)	Room/Zone	Area (m ²)	Load Requirements (KW)		
			Cooling		Heating
			TC	SHC	TC
System 1	Floor1	200	40	28	30
	Floor2	200	40	28	30
	Hydro Unit HE		20	-	30

* Unit load (kW/m²) : 0.20 / 0.15 (Cooling TC / Heating TC)

Design Tip

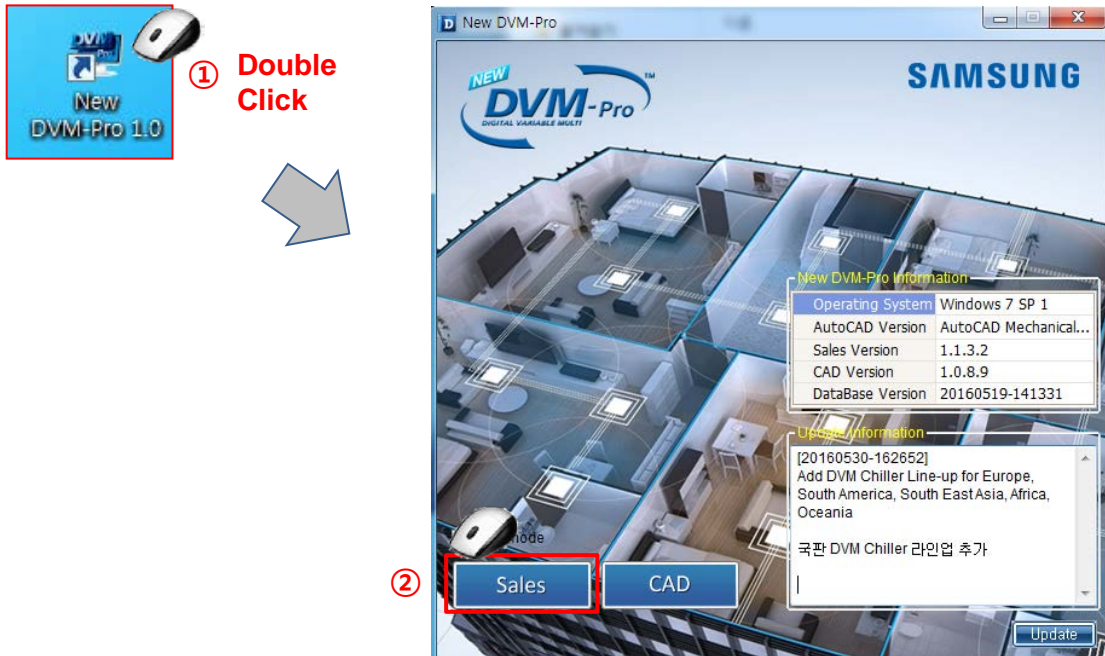
- TC(Total Capacity) = SHC(Sensible Heat Capacity) + LHC(Latent Heat Capacity)
- SHC: Capacity that changes temperature
- LC: Capacity that changes a phase such as the dehumidification.
- Designers need to consider SHC in high humidity places especially near the beach and lake.
Normally, when humidity is higher, air-conditioner more work for LHC(dehumidification).
On the other hand, SHC is smaller so that adjusting temperature may not be enough.

4.2 Start with DVM Pro

Start with DVM Pro

Design steps

1. To start DVM Pro, **double click a icon “New DVM Pro 1.0”** on desktop..
2. **Click “Sales”** button to start Sales mode of DVM Pro.
3. New window popped up.



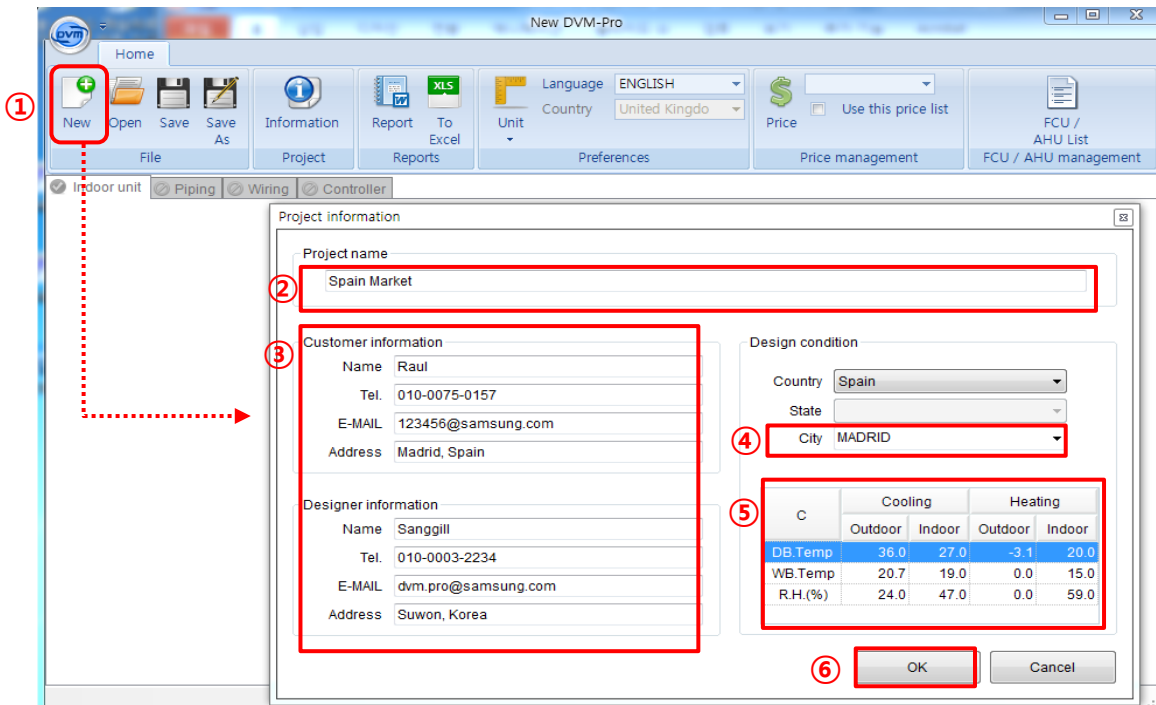
Usage Tip

Version Information

Create Project

Design steps

1. To create the project, **click “New”** button, then new window is popped up.
2. **Enter the project name**: the project name will be saved as a file name.
3. Enter the customer information and designer information (Optional)
: This will be represented on the report.
4. Enter Design condition : **Select city “Madrid”**
5. Design condition (Weather)
: Firstly weather condition is represented based on your city,
and then user can edit the data manually.
6. **Click “OK”** button to complete to create a project.



Usage Tip

Saving File extension is “.dvms”.

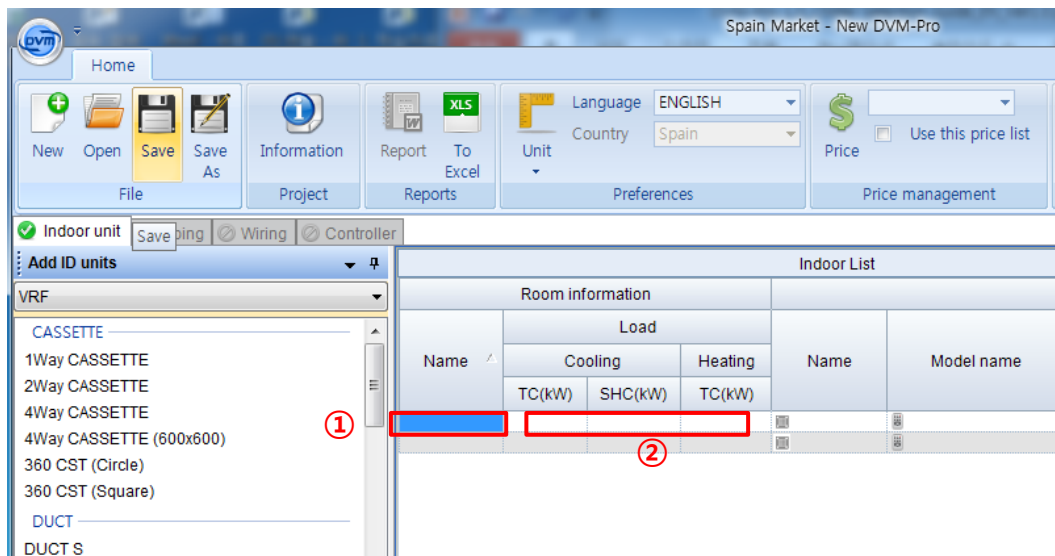
If user wants to select models from other countries, please request the authorization for the country to DVM Pro team by email, dvm.pro@samsung.com.

Load design

Design steps

1. To generate room information,
enter room names by double clicking (or click+enter) a vacant space.
2. Input load requirements for each room or zone according to the below load calculation.
- Load Calculation

System (Outdoor unit)	Room/Zone	Area (m2)	Load Requirements (KW)		
			Cooling		Heating
			TC	SHC	TC
System 1	Floor1	200	40	28	30
	Floor2	200	40	28	30
	Hydro Unit HE		20	-	30



Usage Tip

According to this input load, the quantity of indoor units is automatically calculated for each room. Without entering load, user can also select indoor units and quantity.

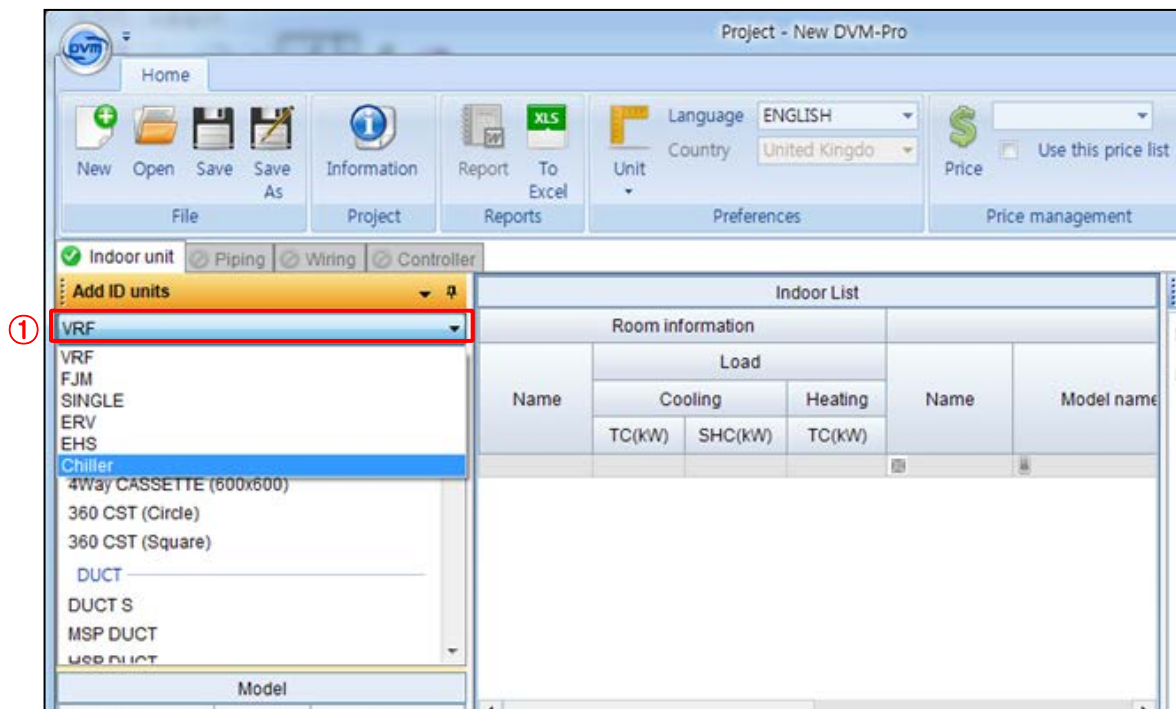
Design Tip

To meet customer's requirements, cooling(TC, SHC) and heating load need to be entered.

Select product type

Design steps

1. Click the below tap and select a product type on drop/down menu. (**Select VRF**)



Design Tip

For the proper SAC selection, many design factors should be considered such as the system capacity, pipe length, installation space, the number of indoor units, and so on.

※ To check those design and installation factors, please refer to TDB or installation manual.

4.6 Select Indoor units

Select indoor units (MSP Duct)

Design steps

1. Click each room to select indoor units.
2. Select indoor unit type : **MSP duct**
3. Select a model (**AM140FNMD**/EU) and check the quantity. (User can change the quantity manually.)
4. Click “Add” button to complete the selection of indoor units.

The screenshot shows the 'Indoor unit' selection interface. The left sidebar has a tree view under 'Add ID units' with 'MSP DUCT' selected (circled 2). Below it is a list of models, with 'AM140FNMD' selected (circled 3). At the bottom of the sidebar are 'Add' and 'Modify' buttons, with 'Add' circled 4. The main area shows a table of room information and indoor unit lists. The 'Indoor List' table has columns for Name, Load (Cooling TC(kW), Heating SHC(kW), Heating TC(kW)), and Model name. It lists 'Floor1_IDU', 'Floor2_IDU', and 'Hydro Unit'. The 'Hydro Unit' row is circled 1. The 'Outdoor List' table is also visible at the bottom.

Room information				Indoor List	
Name	Load		Name	Model name	
	Cooling	Heating			
	TC(kW)	SHC(kW)			TC(kW)
Floor1_IDU	40.00	28.00			
Floor2_IDU	40.00	28.00			
Hydro Unit	20.00				

Outdoor List					
Name	Model name	Nominal Capacity		Simulated Capacity	
		Cooling	Heating	Cooling	Heating
		TC(kW)	TC(kW)	TC(kW)	TC(kW)

Model		
Model name	Qty	Status
AM071FNMD...	6	Active
AM090FNMD...	5	Active
AM112FNMD...	4	Active
AM128FNMD...	4	Active
AM140FNMD...	3	Active
AM160KNMD...	3	Planned

4.6 Select Indoor units

Select indoor units (Hydro Unit HE)

Design steps

1. Click each room to select indoor units.
2. Select indoor unit type : **Hydro Unit(HE)**
3. Select a model (**AM320FNBDEH/EU**) and check the quantity. (User can change the quantity manually.)
4. Click “Add” button to complete the selection of indoor units

The screenshot shows the software interface for selecting indoor units. The 'Indoor unit' tab is active. On the left, the 'Add ID units' panel shows 'Hydro Unit(HE)' selected (step 2) and 'AM320FNBDEH/EU' selected in the 'Model' list (step 3). The 'Add' button is highlighted (step 4). The 'Indoor List' table on the right shows 'Floor2_IDU' and 'Hydro Unit' with their respective loads. The 'Outdoor List' table is also visible.

Room information				Indoor List		
Name	Load		Name	Model name		
	Cooling					Heating
	TC(kW)	SHC(kW)				TC(kW)
Floor2_IDU	40.00	28.00				
Hydro Unit	20.00					

Outdoor List					
Name	Model name	Nominal Capacity		Simulated Capacity	
		Cooling	Heating	Cooling	Heating
		TC(kW)	TC(kW)	TC(kW)	TC(kW)



Indoor List								
Room information				Indoor List				
Name	Load			Name	Model name	Nominal Capacity		
	Cooling		Heating			Cooling		Heating
	TC(kW)	SHC(kW)	TC(kW)			TC(kW)	SHC(kW)	TC(kW)
Floor1_IDU	40.00	28.00	30.00	Floor1_ID...	AM140FNMDEH/EU	14.00	10.80	16.00
				Floor1_ID...	AM140FNMDEH/EU	14.00	10.80	16.00
				Floor1_ID...	AM140FNMDEH/EU	14.00	10.80	16.00
Floor2_IDU	40.00	28.00	30.00	Floor2_ID...	AM140FNMDEH/EU	14.00	10.80	16.00
				Floor2_ID...	AM140FNMDEH/EU	14.00	10.80	16.00
				Floor2_ID...	AM140FNMDEH/EU	14.00	10.80	16.00
Hydro Unit	20.00	0.00	30.00	Hydro Unit1	AM320FNBDEH/EU	28.00		31.50

4.7 Select Outdoor units

Select outdoor unit 1

Design steps

1. Click rooms or indoor units together using “Ctrl” key which connect to one outdoor unit system.
Here, **click “Floor1, Floor2, and Hydro unit” together** to select System1(outdoor unit).
2. **Drag & drop the selected boxes** to the outdoor units list below.
3. New window, “Create Outdoor” is popped up.

Room information				Indoor List				
Name	Load			Name	Model name	Nominal Capacity		
	Cooling		Heating			Cooling		Heating
	TC(KW)	SHC(KW)	TC(KW)			TC(KW)	SHC(KW)	TC(KW)
① Floor1_IDU	40.00	28.00	30.00	Floor1_ID...	AM140FNMDEH/EU	14.00	10.80	16.00
Floor2_IDU	40.00	28.00	30.00	Floor1_ID...	AM140FNMDEH/EU	14.00	10.80	16.00
				Floor2_ID...	AM140FNMDEH/EU	14.00	10.80	16.00
				Floor2_ID...	AM140FNMDEH/EU	14.00	10.80	16.00
Hydro Unit	20.00	0.00	30.00	Hydro Unit1	AM320FNBDEH/EU	28.00		31.50

Drag & Drop

Create Outdoor

Outdoor information

Name: New Outdoor

Is Comb. Ratio(%): 100

Simultaneously operate Hy: ☐ 45°C

Hy Comb. Ratio(%): 80

Indoor information

Name	Model name	Nominal Capacity	
		Cooling	Heating
Floor1/IDU/1	AM140KN	14	16
Floor1/IDU/2	AM140KN	14	16
Floor1/IDU/3	AM140KN	14	16
Floor 1/Hyd...	AM320FN	28	31.5

Model name	Nominal Capacity		Power supply	Combination Ratio		Status
	Cooling	Heating		Cooling	Heating	
AM260KXVAGHEU	72.8	81.9	3.4.380-415	96.15	97.07	Active
AM280KXVAGHEU	78.6	88.2	3.4.380-415	89.06	90.14	Active
AM300KXVAGHEU	84	94.5	3.4.380-415	83.33	84.13	Active
AM320KXVAGHEU	89.6	100.8	3.4.380-415	78.13	78.87	Active

Items	Unit	AM260KXVAGHEU
Nominal power input	kW	18.9/119
Nominal current input	A	30.3/28.9
Maximum current	A	MCA 60
MCCB		75
Power/Communication wires		-
Liquid Pipe	mm	19.05
Gas pipe	mm	34.92
Discharge Gas Pipe	mm	-
Oil balancing pipe	mm	-
Additional refrigerant amount	kg	12.500
Size (WxHxD)	mm	1285x1795x765
Temp. range (CH)	°C	-5 ~ 48

TC totals

	Indoor TC	Hydro TC
	42.00	48.00
	28.00	31.50

OK Cancel

4.7 Select Outdoor units

Select outdoor unit 2 - Simultaneous operation

Design steps

1. Select the type of outdoor unit.

Here, select a outdoor type : **VRF → DVM S → Heat Pump → 2016 HP Standard**

2. Click “Simultaneously operate Hy”

3. Enter the combination ratio, **130%**.

4. Select the model among the recommendation models. : **Select AM320JXVAGH/EU**

5. Click “OK” button to complete the selection of outdoor unit.

Outdoor Information

VRF DVM S(NEW) HEAT PUMP 2016 HP Standard

Name New Outdoor

☒ Simultaneously operate Hy ☐ 46°C

Id Comb. Ratio(%) 130 Hy Comb. Ratio(%) 80

Model name	Nominal Capacity		Power supply	Combination Ratio		Status
	Cooling TC(kW)	Heating TC(kW)		Cooling	Heating	
AM320KXVAGH/EU	89.6	100.8	3,4,380-415	125.00	126.49	Active
AM340KXVAGH/EU	95.2	107.1	3,4,380-415	117.65	119.05	Active
AM360KXVAGH/EU	101.6	114.3	3,4,380-415	110.24	111.55	Active
AM380KXVAGH/EU	106.6	119.7	3,4,380-415	105.07	106.52	Active

Items Unit AM320KXVAGH/EU

Nominal power input	kW	23.57/22.59
Nominal current input	A	37.8/36.2
Maximum current	A	MCA 65.7
MCCB		80
Power/Communication wires		0.75 ~ 1.5
Liquid Pipe	mm	19.05
Gas pipe	mm	34.92
Discharge Gas Pipe	mm	-
Oil balancing pipe	mm	-
Additional refrigerant amount	kg	8.400+6.500
Size (WxHxD)	mm	880x1695x765+1295x1695x765
Temp. range (C/H)	C	-5 ~ 48 -25 ~ 24

Indoor Information

Name	Model name	Nominal Capacity	
		Cooling TC (kW)	Heating TC (kW)
Floor1_IDU1	AM140FN...	14	16
Floor1_IDU2	AM140FN...	14	16
Floor1_IDU3	AM140FN...	14	16
Floor2_IDU1	AM140FN...	14	16
Floor2_IDU2	AM140FN...	14	16
Floor2_IDU3	AM140FN...	14	16
Hydro Unit1	AM320FN...	28	31.5

TC totals

Indoor TC	84.00	96.00
Hydro TC	28.00	31.50

OK Cancel

Design Tip

When designing Hydro Unit HE, there are 2 ways to select outdoor unit.

Operation Type	Combination ratio	DVM Pro
Hydro unit & indoor unit	50% ~ 130%	Click “Simultaneously operation”
Indoor unit : Cooling only Hydro unit : Heating only	50% ~ 180% Indoor unit's ratio : under 100% Hydro unit's ratio : under 80%	Do not Click “Simultaneously operation”

4.7 Select Outdoor units

※ Separate operation

Design steps

1. Select the type of outdoor unit.

Here, select a outdoor type : **VRF → DVM S → Heat Pump → 2016 HP Standard**

2. **Do not Click** “Simultaneously operate Hy”

3. Enter **100%** of combination ratio and **80%** of Hydro combination ratio.

4. Select the model among the recommendation models. : **Select AM300KXVAGH/EU**

5. Click “OK” button to complete the selection of outdoor unit.

Create Outdoor

Outdoor Information

① VRF DVM S(NEW) HEAT PUMP 2016 HP Standard

Name New Outdoor

② ☐ Simultaneously operate Hy ☐ 46°C

③ Id Comb. Ratio(%) 100 Hy Comb. Ratio(%) 80

Model name	Nominal Capacity		Power supply	Combination Ratio		Status
	Cooling TC(kW)	Heating TC(kW)		Indoor	Hydro	
AM300KXVAGH/EU	84	94.5	3,4,380-415	100.00	33.33	Active
AM320KXVAGH/EU	89.6	100.8	3,4,380-415	93.75	31.25	Active
AM340KXVAGH/EU	95.2	107.1	3,4,380-415	88.24	29.41	Active
AM360KXVAGH/EU	101.6	114.3	3,4,380-415	82.68	27.56	Active

④

Items	Unit	AM300KXVAGH/EU	
Nominal power input	kW	22.7/20.59	
Nominal current input	A	36.4/33	
Maximum current	A	MCA	64.2
MCCB		75	
Power/Communication wires		-	-
Liquid Pipe	mm	19.05	
Gas pipe	mm	34.92	
Discharge Gas Pipe	mm	-	
Oil balancing pipe	mm	-	
Additional refrigerant amount	kg	14.000	
Size (WxHxD)	mm	1295x1795x765	
Temp. range (C/H)	C	-5 ~ 48	-25 ~ 24

Indoor Information

Name	Model name	Nominal Capacity	
		Cooling TC (kW)	Heating TC (kW)
Floor1_IDU1	AM140KN...	14	16
Floor1_IDU2	AM140KN...	14	16
Floor1_IDU3	AM140KN...	14	16
Floor2_IDU1	AM140KN...	14	16
Floor2_IDU2	AM140KN...	14	16
Floor2_IDU3	AM140KN...	14	16
Hydro Unit1	AM320FN...	28	31.5

TC totals

Indoor TC	84.00	96.00
Hydro TC	28.00	31.50

⑤

Design Tip

When designing Hydro Unit HE, there are 2 ways to select outdoor unit.

Operation Type	Combination ratio	DVM Pro
Hydro unit & indoor unit	50% ~ 130%	Click “Simultaneously operation”
Indoor unit : Cooling only Hydro unit : Heating only	50% ~ 180% Indoor unit's ratio : under 100% Hydro unit's ratio : under 80%	Do not Click “Simultaneously operation”

Select accessories

Design steps

1. Click Hydro Unit model
2. Click "Accessory" tab
3. Select accessories : **MRW-WW00N (Wired Remote Controller only for Hydro unit)**
4. When accessories are selected, the related indoor units are marked with the orange color.

Accessory Selection Table:

Model name	Description	Q'ty
<input type="checkbox"/> PC4NUNMAN	360 CASSETT...	1 G
<input type="checkbox"/> MSD-CAN1	Virus Doctor	1 G
<input type="checkbox"/> MRW-TA	EXTERNAL TE...	1 G
<input type="checkbox"/> MIM-B14	EXTERNAL CO...	1 G
<input type="checkbox"/> MR-DH00	WIRELESS RE...	1 F
<input type="checkbox"/> MR-EH00	WIRELESS RE...	1 N
<input checked="" type="checkbox"/> MRW-WW00N	WIRELESS REMOTE CONTROLLER	

Indoor List Table:

Name	Load			Name	Model name
	Cooling		Heating		
	TC(kW)	SHC(kW)	TC(kW)		
Floor1_IDU	40.00	28.00	30.00	Floor1_IDU...	AM140FNMDEH/EU
Floor2_IDU	40.00	28.00	30.00	Floor2_IDU...	AM140FNMDEH/EU
Hydro Unit	20.00	0.00	30.00	Hydro Unit1	AM320FNBDEH/EU

Outdoor List Table:

Name	Model name	Nominal Capacity		Insulated Capacity	
		Cooling	Heating	Cooling	Heating
AM140FNMDEH/EU		14.00	10.80	16.00	
AM140FNMDEH/EU		14.00	10.80	16.00	
AM140FNMDEH/EU		14.00	10.80	16.00	
AM140FNMDEH/EU		14.00	10.80	16.00	
AM140FNMDEH/EU		14.00	10.80	16.00	
AM140FNMDEH/EU		14.00	10.80	16.00	
AM320FNBDEH/EU		28.00		31.50	

Design Tip

When designing Duct type IDU, you need to choose drain type and control method considering customer's desire.

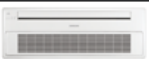










- Drain type : Drain pump or Drain hose
- Control : Wired-remote controller or Receiver with Wireless remote controller
- External temperature sensor for more accurate temperature control.

To control Hydro unit, MRW-WW00N is required. (Wired Remote Controller only for Hydro unit)

4.8 Select Accessory

※ Accessory list (Indoor unit)















Panel

Product	Image	Model	Remark
Panel		PC1NUSMAN	Slim 1Way Cassette
		PC1NUPMAN	Slim 1Way Cassette (Z-sliding)
		PC1MWSKAN	1Way Cassette (1.7 kW, 2.2 kW)
		PC2NUSMEN	2Way cassette
		PC4SUSMAN	4Way Cassette S(600x600) (Waffle)
		PC4SUSMEN	4Way Cassette S(600x600) (Classic)
		PC4NUSKAN	4 Way cassette S (Waffle)
		PC4NUSKEN	4 Way cassette S (Classic)
		PC4NBSKAN	4 Way cassette S (Waffle, Black)
		PC4NUDMAN	360 CST Square (White)
		PC4NUNMAN	360 CST Circular (White)
		PC4NBDMAN	360 CST Square (Black)
		PC4NBNMAN	360 CST Circular (Black)

4.8 Select Accessory

※ Accessory list (Indoor unit)











Controller

Classification	Product	Image	Model	Remark
Individual Control System	Wireless remote controller		MR-EH00	-
	Wired remote controller		MWR-WE10N (Multi function)	
			MWR-WW00N	DVM S Hydro Unit
	Simplified wired remote controller		MWR-SH00N	-
			MWR-VH02	ERV
Others	Operation mode selection switch		MCM-C200	DVM S Series (Except HR Models)
	External room sensor		MRW-TA	Cassette, Wall-mount, Ceiling, Duct, Console
	Compatible interface module		MIM-N01	Nasa-No Nasa
	ERV interface module		MIM-N10	ERV (Nasa)
	External contact interface module		MIM-B14	-
	S-Converter		MIM-C02N	-
	MTFC (Multi tenant function controller)		MCM-C210N	-
	Wireless signal receiver		MRK-A10N	-
	External room sensor		MRW-TA	Cassette, Wall-mount, Ceiling, Duct, Console
			MRW-TS	Zone Controller (SINGLE)

4.8 Select Accessory

※ Accessory list (Indoor unit)



Others

Product	Image	Model	Remark
S-Plasma Ion KIT		MSD-CAN1	4Way Cassette S 4Way Cassette S(600x600)
		MSD-EAN1	ERV-Plus
Motion detect Sensor		MCR-SMA	4Way Cassette S (600x600)
ERV CO2 Sensor		MOS-C1	ERV, ERV PLUS
External room sensor		MRW-TA	Cassette, Wall-mount, Ceiling, Duct, Console
Drain Pump		MDP-N047SNC0D	OAP Duct (14.0 kW)
		MDP-N047SNC1D	HSP Duct (22.0 / 28.0 kW) OAP Duct (22.4 / 28.0 kW)
		MDP-M075SGU1D	MSP Duct (9.0 / 11.2 kW)
		MDP-M075SGU2D	MSP Duct (12.8 / 14.0 kW) HSP Duct (11.2 / 12.8 / 14.0 kW)
		MDP-M075SGU3D	MSP Duct (5.6 / 7.1 kW)
		MDP-E075SEE3D	Slim Duct (2.0~14.0 kW)
		MDP-G075SP	Duct S (External, All Capacities)
		MDP-G075SQ	Duct S (Internal, 3.5 kW~14 kW)
AHU KIT		MXD-K025AN	7.0kW~8.75kW
		MXD-K050AN	14.0kW~17.5kW
		MXD-K075AN	21.0kW~26.25kW
		MXD-K100AN	28.0kW~35.0kW
		MCM-D201N	28kW~35kW / 56kW~70kW / 84kW~105kW / 112kW~140kW

4.8 Select Accessory

※ Accessory list (Outdoor unit)

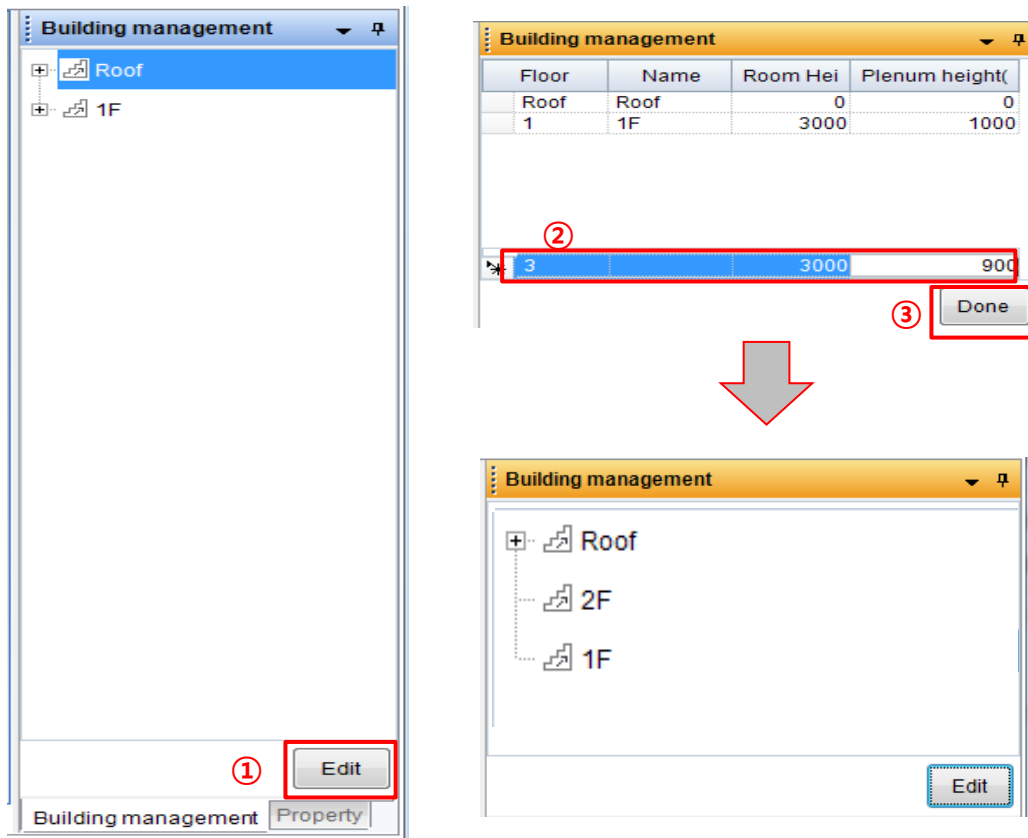
Others

Product	Image	Model	Remark
Operation mode selection switch		MCM-C200	DVM S Series (Except HR Models)
PDM KIT		MXD-A38K2A	8~12HP
		MXD-A12K2A	14~16HP
		MXD-A58K2A	18~26HP

1) Generate floors

Design steps

1. Click "Edit" button.
2. Input floor information
 - 1st box : Floor number. **Here, enter "2" in the first box.**
 - 3rd box (Room height) : Enter 3000 (mm)
 - 4th box (Plenum height) : Enter 900 (mm)
3. Click "Done" button



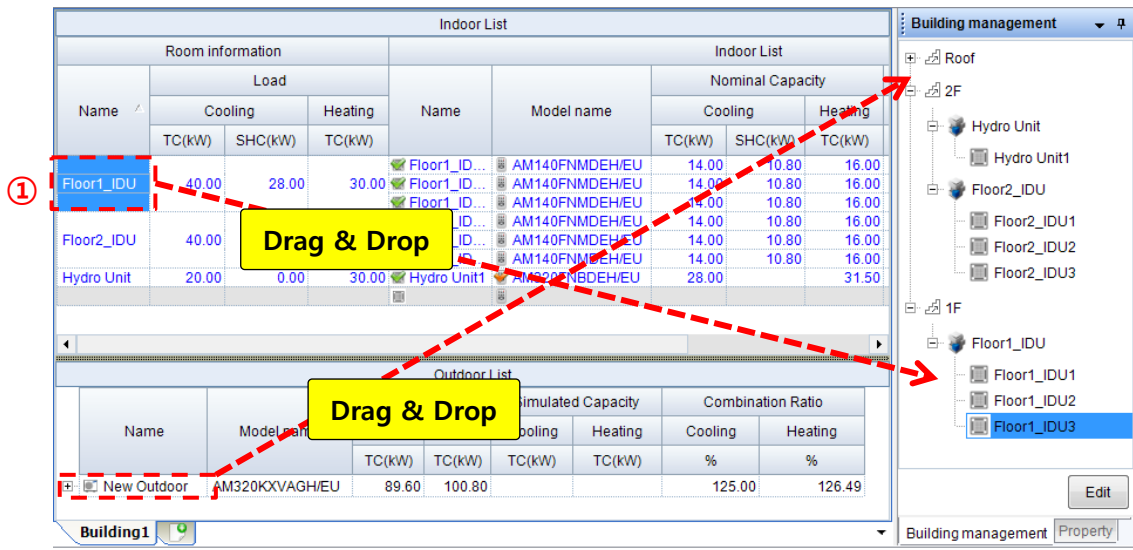
Design Tip

- Room Height : From a bottom of a floor to a bottom of a next floor
- Plenum Height : From a ceiling of a floor to a bottom of a next floor

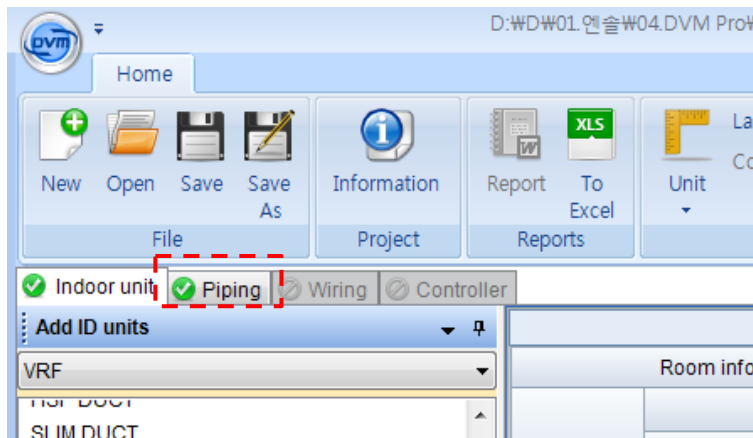
2) Building management

Design steps

1. Click each room or indoor units to the installation floor on “Building management” by drag & drop.
2. Every indoor units and outdoor units should be placed to the floors on “Building management”.



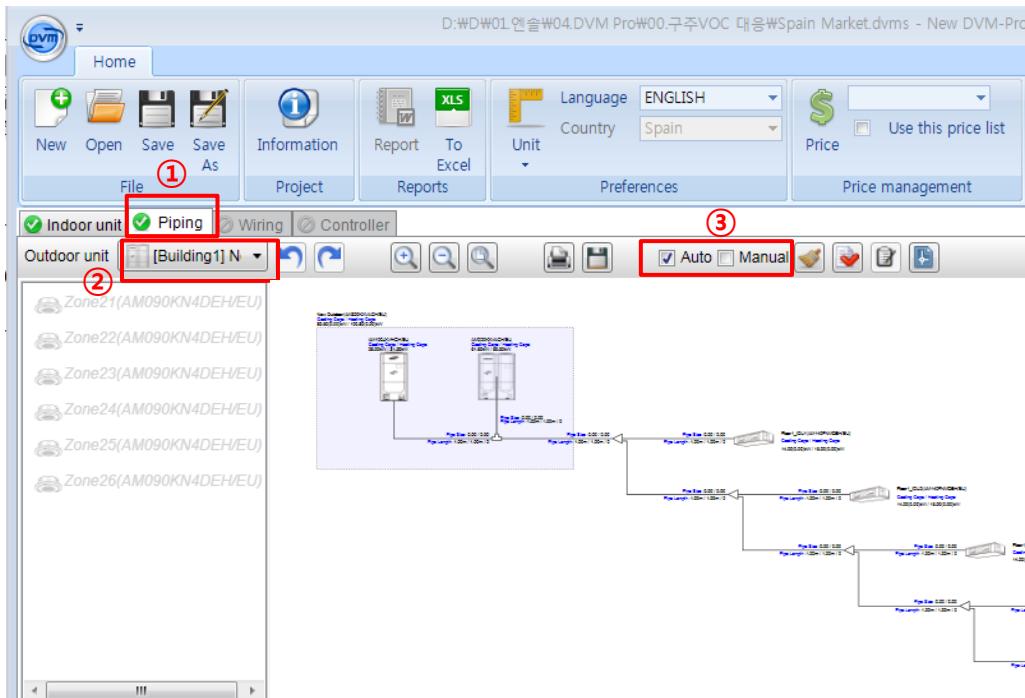
3. After placing all of products to spaces on “Building management”, “Piping” tap is activated.



Piping placement : Auto

Design steps

1. Click “Piping” tap to start the piping design.
2. Select each system of outdoor units.
3. Click “Auto” to complete the piping placement.
4. (When selecting “Manual”) Refer to 2.10.(Piping placement : Manual)



Design Tip

When a designer wants to make a **quick report**, and already know that there is no problem regarding the pipe distance, skip other steps such as entering pipe information.

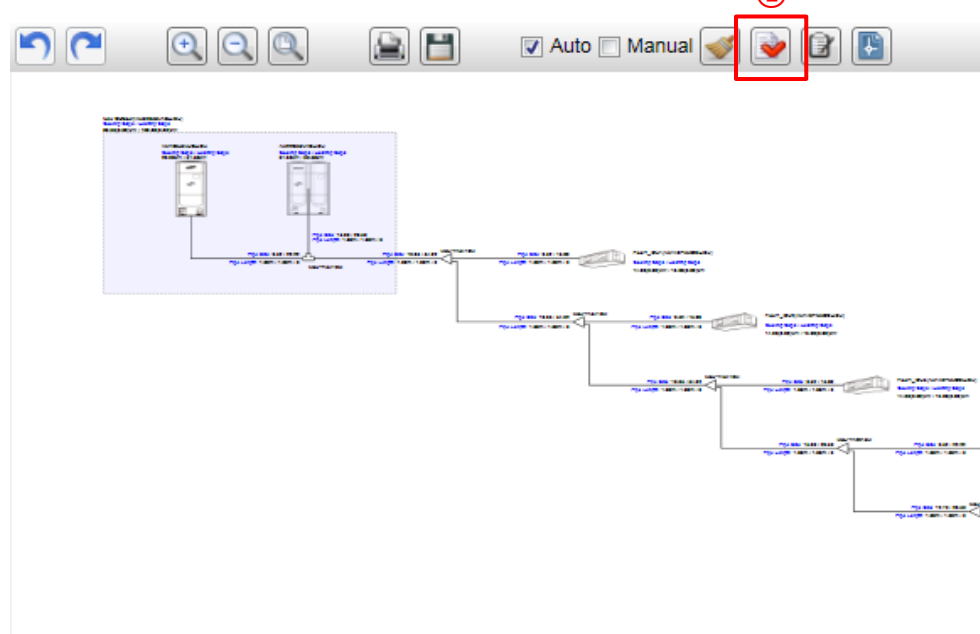
Just **click “Auto” and “System check”**. Then he/she can generate the report.

System Check

Design steps

1. Click “System check” button.
2. Without any red comments, system check is completed.

①



System Check Result

Checklist	Restriction	Result value	Result
Distance of the first branch joint to	45.00m	7.80m	OK
Distance of the nearest ID unit to	45.00m	6.50m	OK
Level difference (OD locates upper)	110.00m	4.00m	OK
Level difference (OD locates lower)	40.00m	0.00m	OK
Level difference between ID units	50.00m	4.00m	OK
Maximum equivalent piping length	220.00m	11.50m	OK
Additional refrigerant amount		6.968kg	INFO

②

Design Tip

This function shows what user make wrong design or mistakes so that help users design SAC properly.

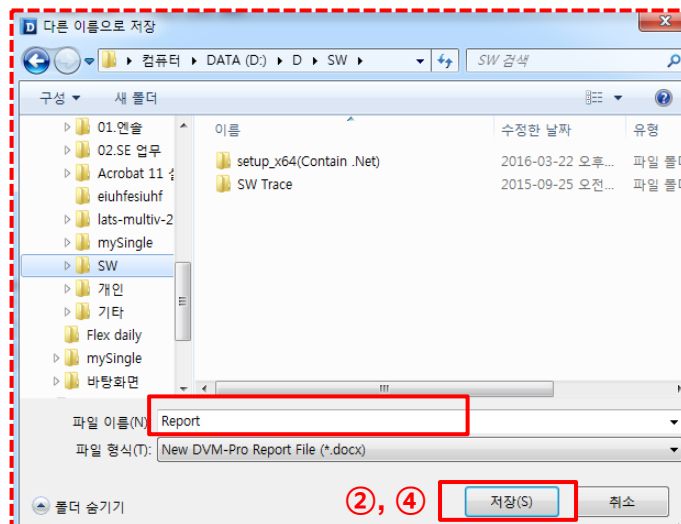
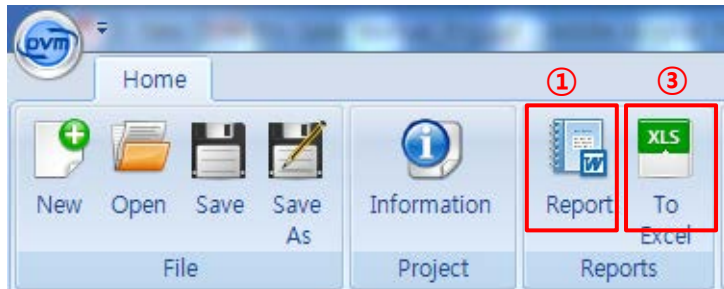
This S/W includes the variable limitation logics according to an installation manual.

User also can check the amount of additional refrigerant.

Generate Report

Design steps

1. Click "Report" button.
2. Enter a file name and click "Save" button.
3. Click " To Excel" button to generate the designed Product list.
4. Enter a file name and click "Save" button.



Usage Tip

There are 2 types of report.

- "Report" button: Includes all of designed information
- "To Excel" button: Includes only designed product list

Part 5 : Additional Function

Pricing function

: Using this function, Pricing information can be represented on the report.

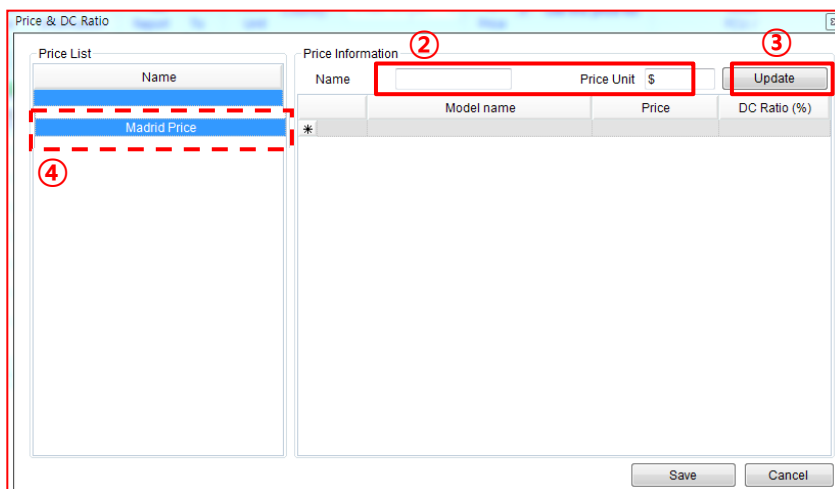
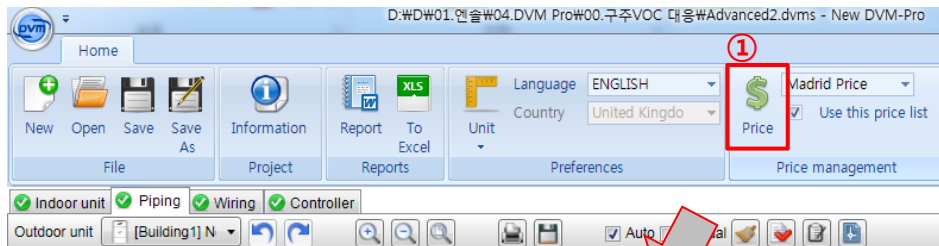
Report Sample

5. Total Equipment List					
Index	Model	Qty	Remark(Categories)	Unit Price (\$)	Amount
Outdoor unit	AM100JXVHGH/EU	1	DVM S(NEW)	2000	2000
	AM220KXVAGH/EU	1	DVM S(NEW)	1000	1000
Indoor unit	AM140FNMDEH/EU	6	MSP DUCT	3000	18000
	AM320FNBDEH/EU	1	Hydro Unit(HE)	4000	4000
	MXJ-TA3419M	1	Y-Joint	0	0
	MXJ-YA3419M	3	Y-Joint	0	0

Design steps

(Generate Price List)

1. Click "Price" button.
2. To generate Price List, Enter a Name and Price unit : **"Madrid Price"** and **"\$"**
3. Click "Update" button.
4. A price list is generated.



Pricing function

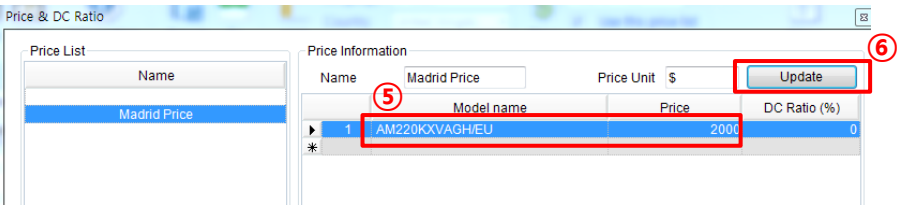
: Using this function, Pricing information can be represented on the report.

Design steps

(Input Price information – Method1)

5. To enter price information : [Here input AM220KXVAGH/EU, 2000](#)

6. Click “Update” button.



(Input Price information – Method2: **Recommended**)

6. At first, make a excel list using the Report excel file.

7. Copy(Ctrl + C) the excel list.



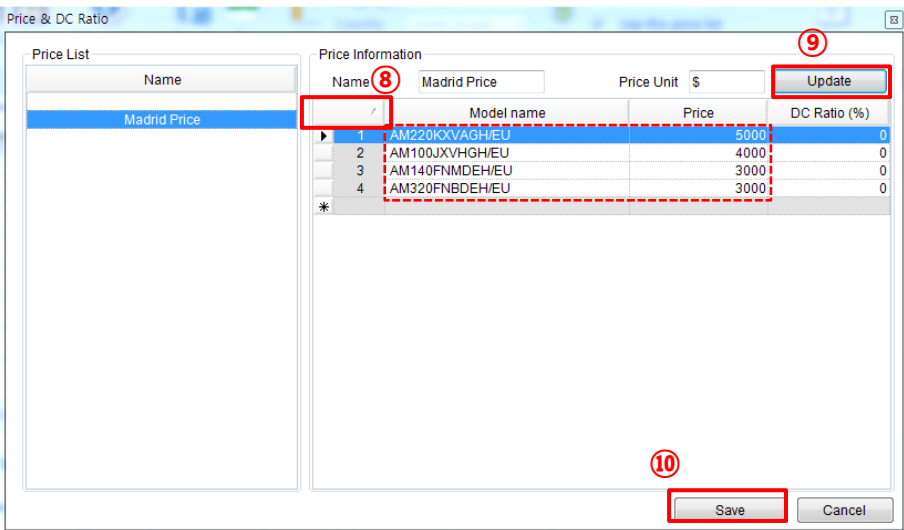
8. Click the below box and Paste(Ctrl + V) it.

9. Click “Update” button.

10. Click “Save” button.

⑥	1	AM220KXVAGH/EU	5000
⑦	2	AM100JXVHGH/EU	4000
	3	AM140FNMDEH/EU	3000
	4	AM320FNBDEH/EU	3000
	5	MWR-WW00N	1000

⑤ ④





2016.07
Ver.1.1

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