DVM Pro Sales
(Version 1.1.3.2)

Chiller Selection Guide

SAMSUNG
DVM Pro

Contents

Ⅰ. S/W Installation and Update

Software Installation and Update

- Existing User
  - Update DVM Pro software with a pop-up notice from DVM Pro.
  - This large sized update, more than 300M, may result in update failures.
    When your update is not conducted properly due to your internet environment,
    please download new installation file.
  - At the beginning, this update can not be conducted properly because of a number of users trying to connect DVM pro at the same time.
    Please try again after a while or download new installation file.

- New User
  - 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%20.Net).zip
  - 64bit user : http://dvm.inno-lab.co.kr/dvmsetup/setup_x64(Contain%20.Net).zip

Ⅱ. New Features

0. New features for Chiller selection

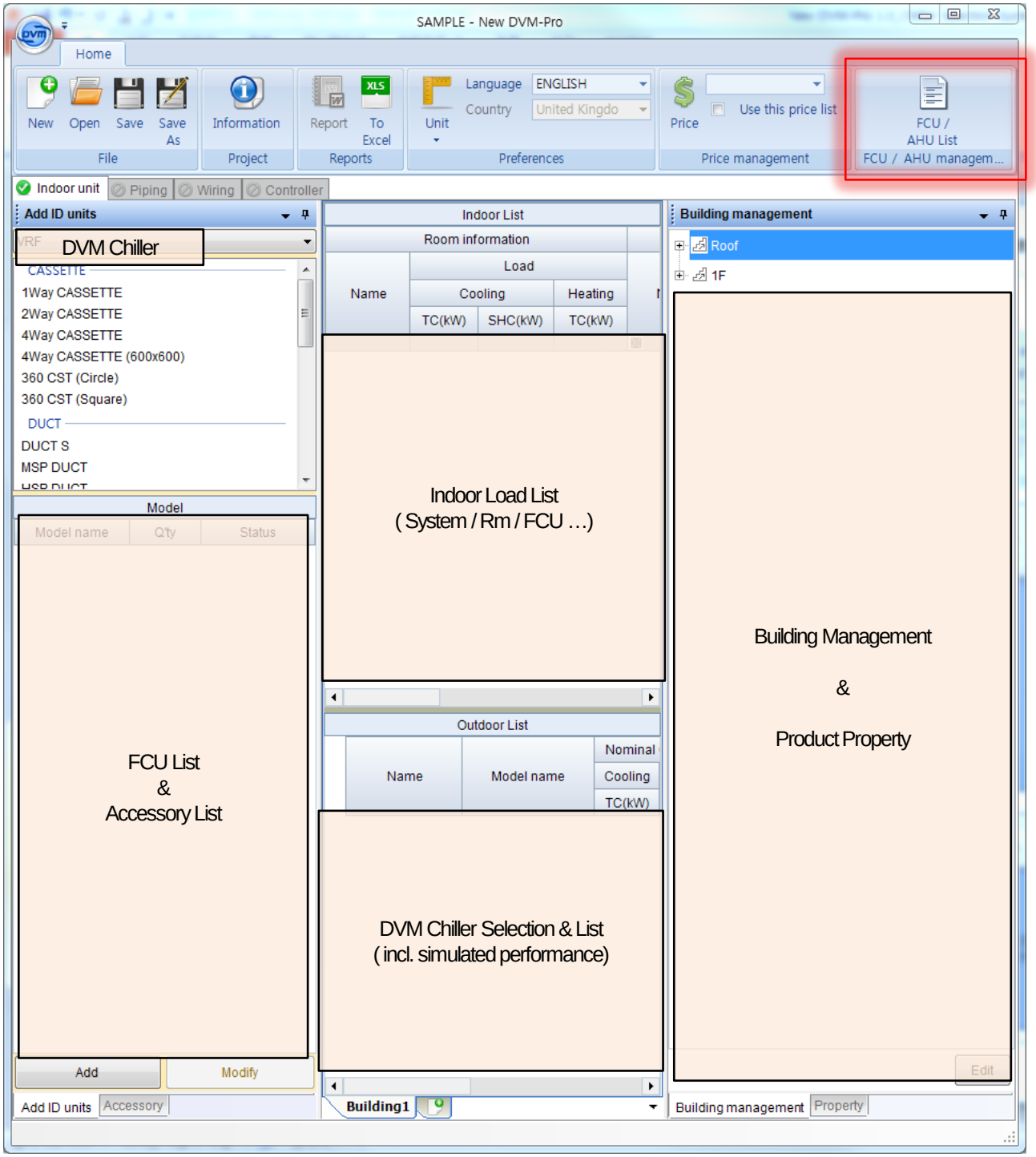
- User based FCU/AHU management
- Chiller Selection by capacity corrections
- Controller Selection for Chiller
- Chiller specialized Report (2 formats)

Ⅱ. New Features

1. GUI

With the same structure of previous DVM Pro,

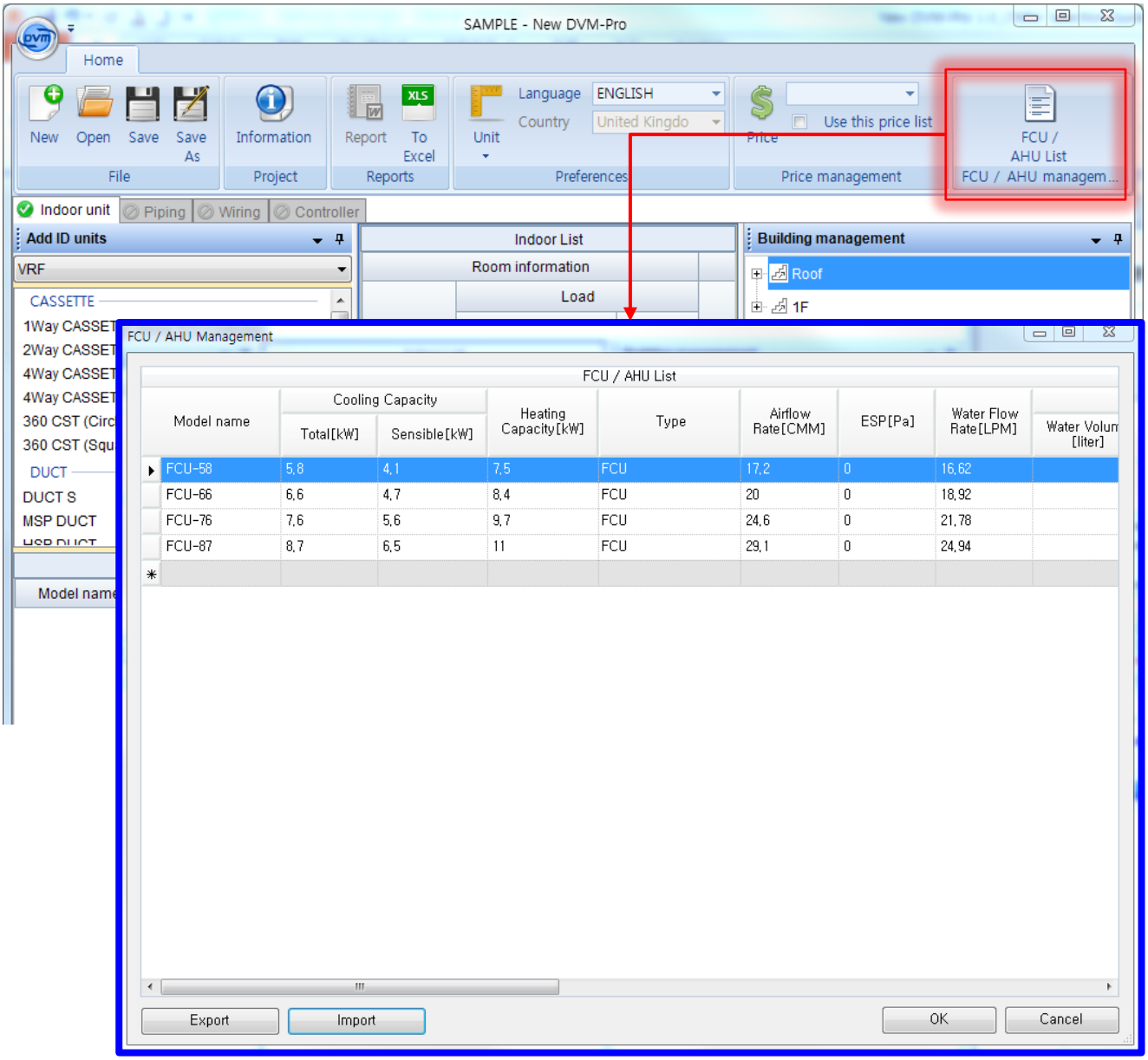
DVM Chiller Selection and FCU/AHU management features are added.



Ⅱ. New Features

2. FCU/AHU management

- Users can manage FCU/AHU products according to their regional usages.
- The generated FCU/AHU list can be utilized when entering the room's required load, also can be continuously used for other designs.
- The designed FCU/AHU list can be printed on the report



Ⅱ. New Features

3. Chiller Selection by the variety of capacity corrections.

- Select DVM Chiller by variety of design conditions
- Capacity corrections according to Brine ratio, Altitude, Defrosting operation
- Applicable chillers are recommended based on the simulated and corrected capacity.

① Input design conditions
- Chose the product type (Pump, w/o Pump)
- Variable design conditions
  (Ambient temp., Required load, Water flow rate, LWT/EWT)
- Capacity correction functions
  (Brine, Altitude, Defrosting)

② Click the button “Select Chiller”

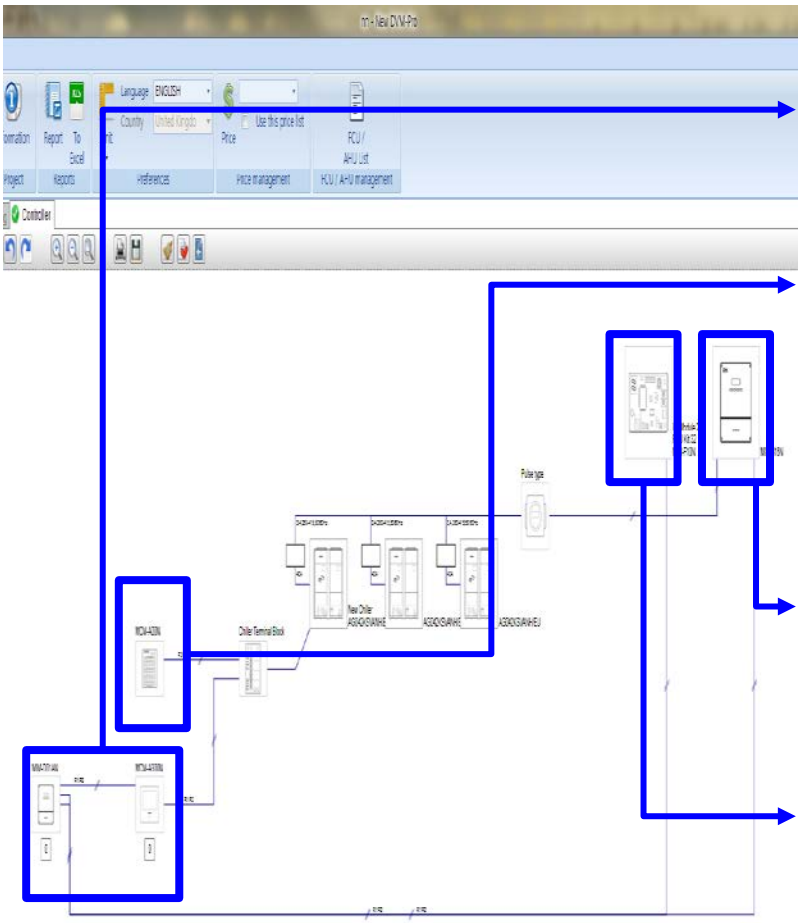
③ Select Chiller
- Applicable chillers are recommended.
- Key design factors are represented.
(Capacity, Water flow rate, Pressure drop)

④ Specification
- Check the selected chiller’s specification.

Ⅱ. New Features

4. Control Solution

- Select controllers for DVM Chiller
  (Module controller, Touch controller, DMS, BACnet, Lonworks, FCU I/F module, PIM, and so on)
- Product list and the image of control configuration are printed on the report.



① Select integrated controllers
- DMS, BACnet, Lonworks
- Touch Controller

② Select module controller

③ Select power distribution solution
- Power meter, PIM/SIM

④ Select I/F Module for FCU Kit

Ⅱ. New Features

5. Additional Report for Chiller

- Existing Report
  : VRF and Chiller can designed together and printed on one same report.
- Additional Chiller Report
  : Commonly used format in Chiller market. (only for Chiller)

Existing Report

Existing VRF Report **Added DVM Chiller**

VRF Section

- Total load profile
- Piping & Wiring
- Specification

Chiller Section

- Total load profile
- Piping & Wiring (Phase2)
- Specification

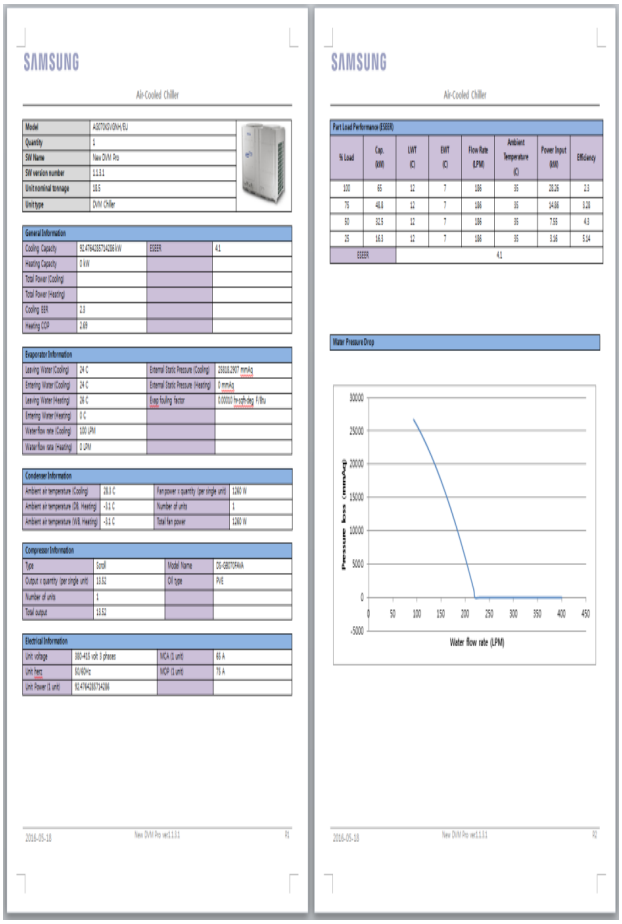
Common Section

Incl. data for chiller
- Controller
- Total equip. list

Attachment

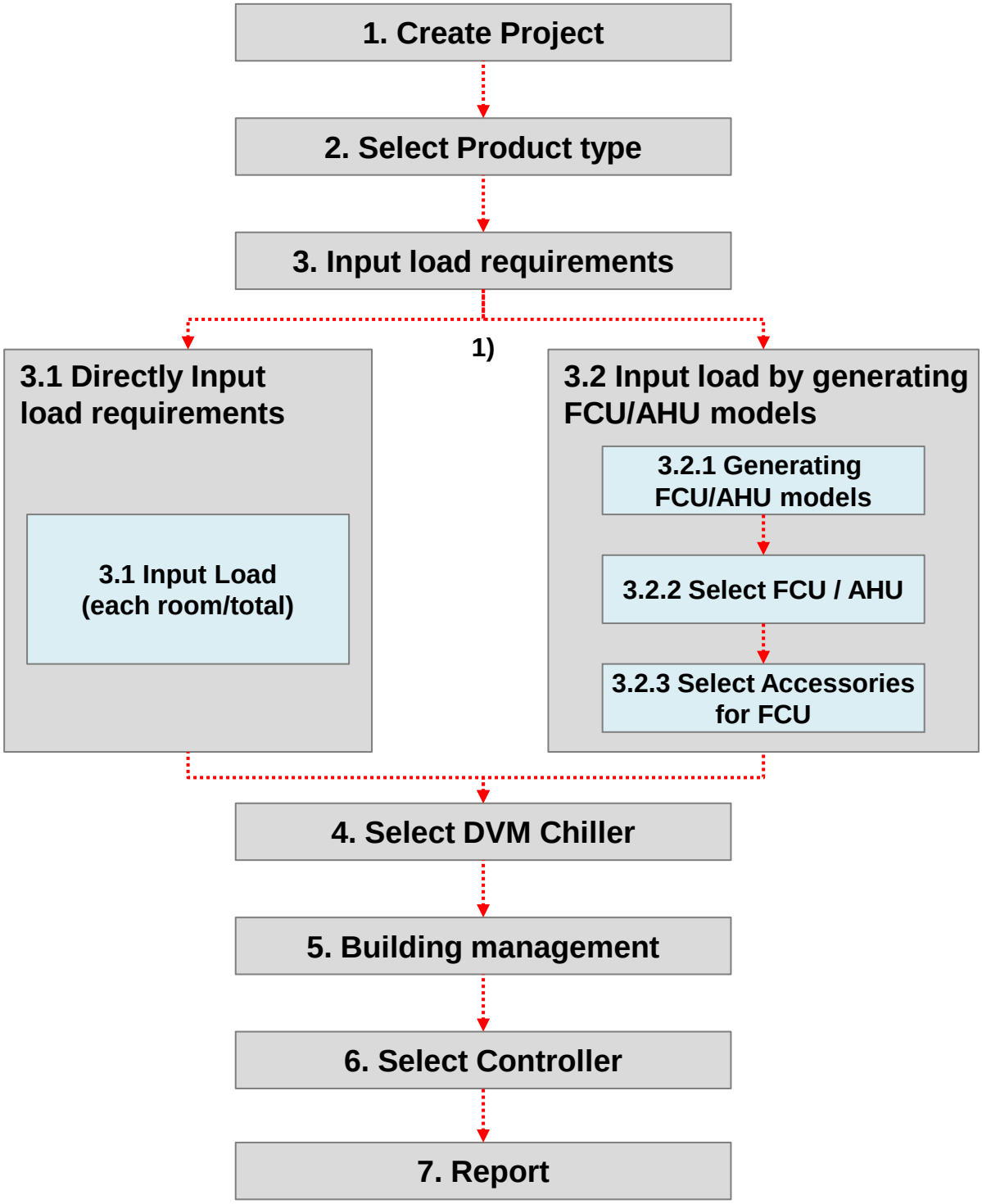
- AHRI Chiller report
  : AHRI certified model only
- Chiller report (excl. AHRI mark)
  : Other countries

Additional Chiller Report



Ⅲ. How to Select DVM Chiller

0. Selection Flow Chart



1) There are two methods to input load requirements.

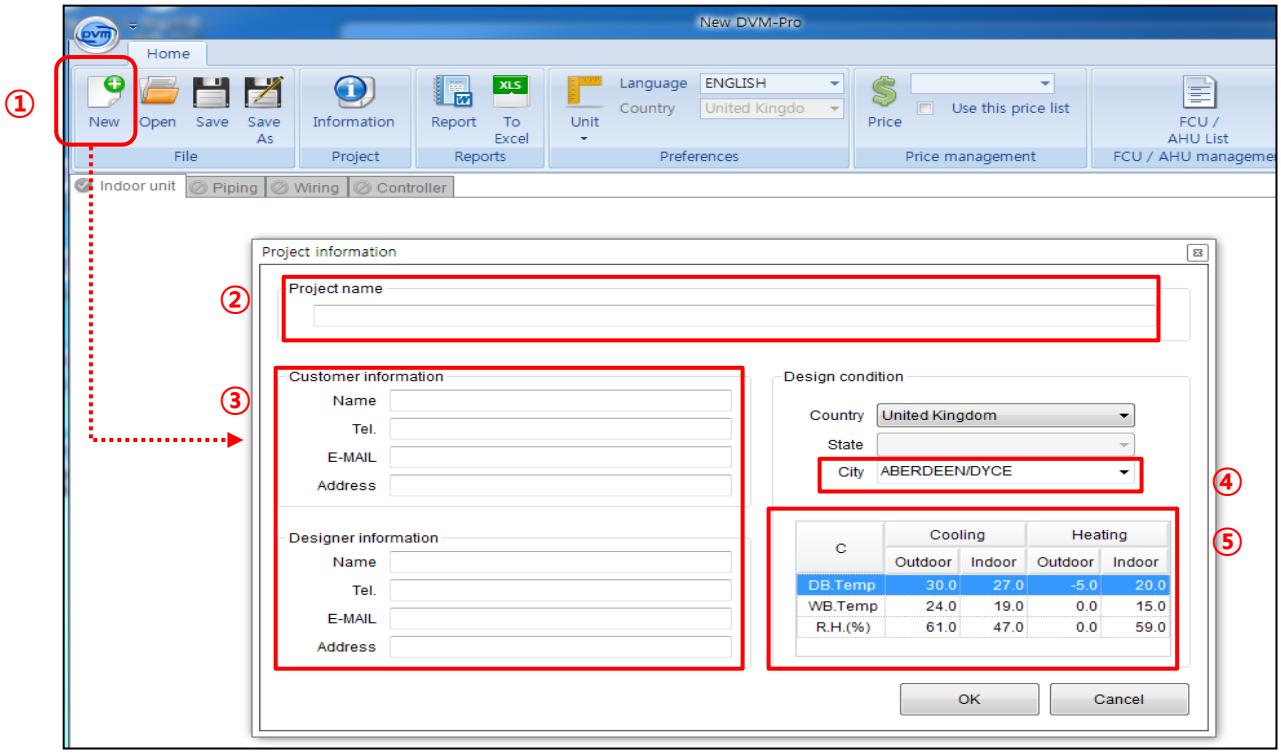
3.1 Directly Input load requirements

3.2 Input load by generating FCU/AHU models

Ⅲ. How to Select DVM Chiller

1. Create a project

- To create the project, click “New” button.
- Enter the project name, the project name will be saved as the file name.
- File extension is “.dvms”.
- Customer information and designer information are optional.
- Design conditions are represented based on your city. It also can be edited manually.

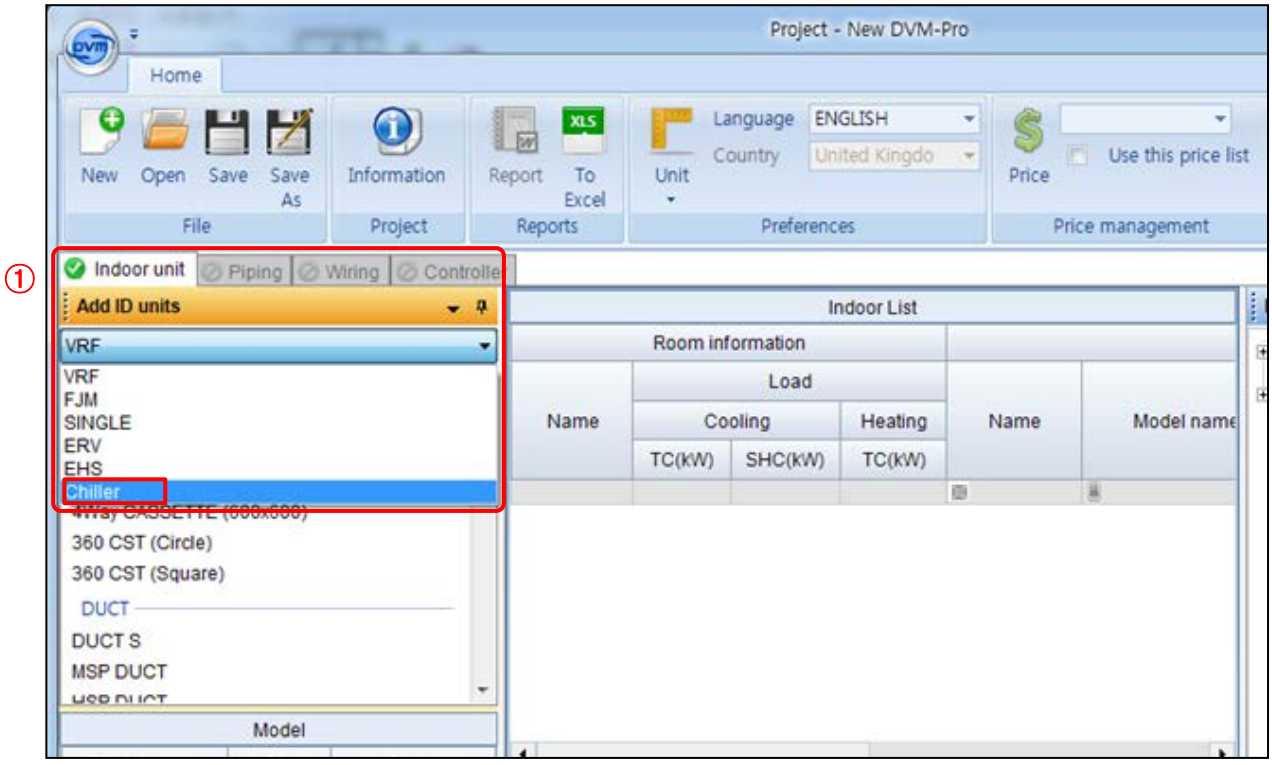


No.	Function	Description
①	New	Create new project
②	Project Name	Input project name ※ This project name is used as a file name when it is saved.
③	Customer information	Input detailed customer information(optional)
③	Designer information	Input detailed designer information(optional)
④	Design condition (Region)	Select the city or state(optional)
⑤	Design condition (Weather)	Input weather condition(Temp. Humidity) ※ This data is applied when entering outdoor information.

Ⅲ. How to Select DVM Chiller

2. Select a product type

- Select the product type on the indoor unit tap.



No.	Function	Description
①	Select the product type	Click VRF → Select “Chiller” type on drop & down menu

Ⅲ. How to Select DVM Chiller

3. Input load requirements

- To select DVM Chiller, users need to input load requirements on “FCU & Room List”.

- There are two methods to input load requirements.

3.1 Directly Input load requirements

- Users can enter the load requirements for each room, or the total load for one DVM Chiller system.
- Users can select DVM Chiller based on the entered load information.

3.2 Input load by generating FCU/AHU models

- When users want to design with their regional FCU/AHU, enter the information with the button “FCU/AHU List”. With this function, “FCU/AHU management”, users can design DVM Chiller same as VRF. Users also can save the FCU/AHU list on their PC.
- “FCU/AHU management” function can be utilized when you design other projects and also share to other users.

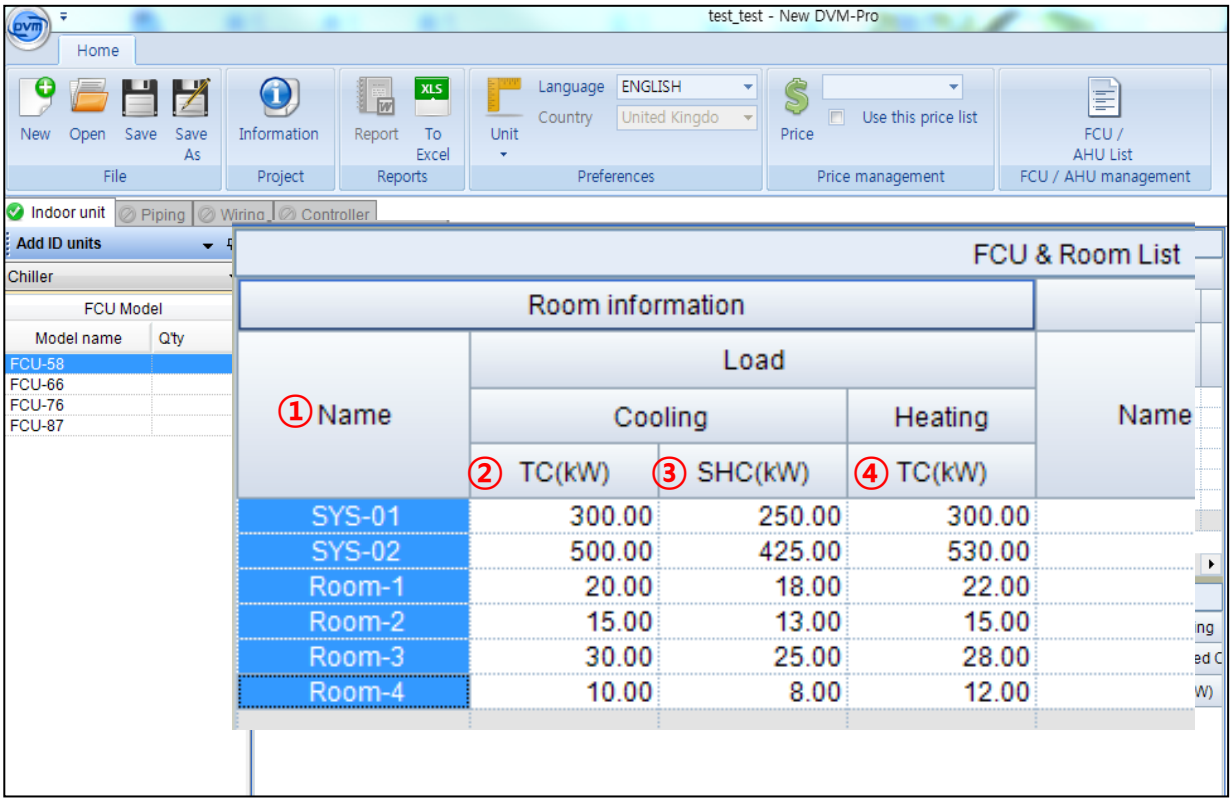
- After entering information on “FCU & Room List” and placing that rooms or FCUs/AHUs to “Chiller List”, then new window, “Chiller Selection” is popped up.

Ⅲ. How to Select DVM Chiller

3.1 Directly Input load requirements

3.1.1 Input load requirements(Each room / total)

- Input load requirements for each room or total 1 system on “FCU & Room List”.

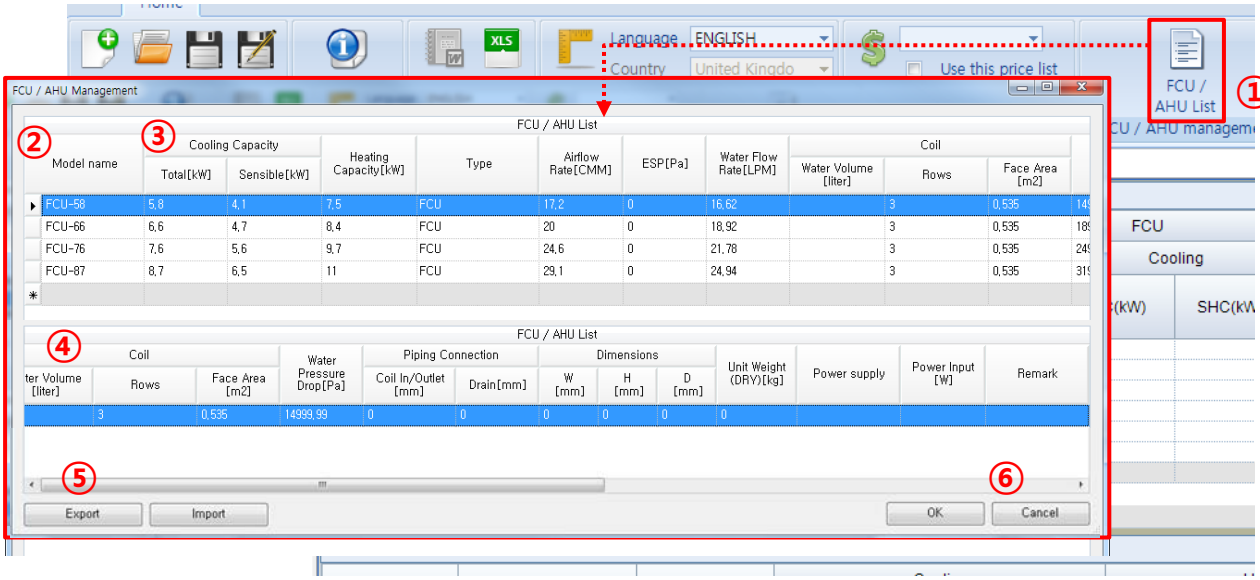


No.	Function	Description
①	Input Room Name	User can input room names, zone names or system names.
②	Cooling TC	Input the cooing TC load for each space. ※This is used for the chiller selection.
③	Cooling SHC	Input the cooling SHC load for each space. ※This is used for the chiller selection.
④	Heating TC	Input the heating TC load for each space. ※This is used for the chiller selection.

3.2 Input load by generating FCU/AHU models

3. 2. 1. Generating FCU/AHU models

- With the function “FCU/AHU management”, users can generate FCU/AHU by entering product information.
- Users can design DVM Chiller same as VRF.
- Users also can save the FCU/AHU list on their PC.
- “FCU/AHU management” function can be utilized when you design other projects and also share to other users.



No.	Function	Description
①	FCU/AHU Management	Manage the FCU/AHU Spec.
②	Model name	Input the model name of FCU&AHU. ※This is shown in the indoor model list.
③, ④	Input product spec.	Input the product Spec ※ If you want user defined model, you must fill in the capacity and flow rate data. Another is optional, This is used for selecting chiller capacity.
⑤	Import & Export	User can be make the FCU&AHU spec. file by excel, and share the data with other.
⑥	Ok & Cancel	Save the product specification or cancel.

Ⅲ. How to Select DVM Chiller

3.2 Input load by generating FCU/AHU models

3. 2. 2. Select FCU / AHU

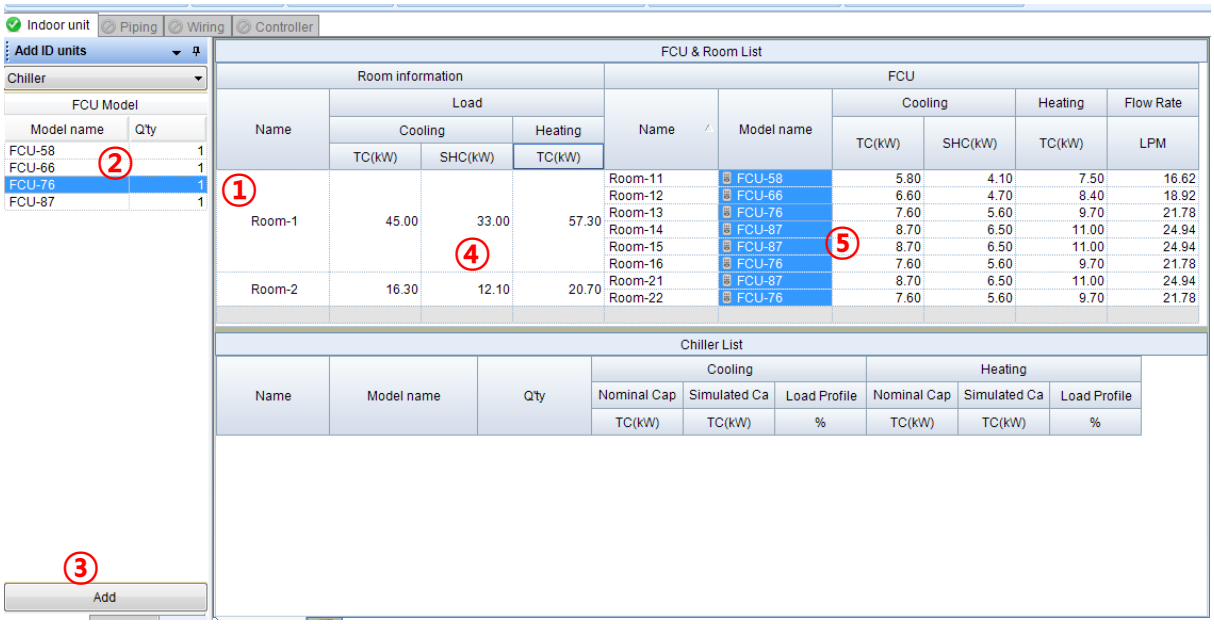
- Select FCU/AHU following below steps.

  1. Enter room names on “Room information”, and click the room you want to place FCU/AHU.
  2. Select the model on “FCU Model” list and enter the quantity.
  3. Click “Add” button.

- Sum of FCUs/AHUs is represented on “Room information”

  The capacity(load) of FCU/AHU takes priority though users already input load requirements on “Room information”.

- Selected FCUs/AHUs can be moved to other rooms by drag & drop.



No.	Function	Description
①	Room name	Input the room name.
②	Select the FCU model	After selecting a room, select the FCU model and input the quantity.
③	Click the Add	Click “Add” to select the FCU model for the selected room.
④	Move the FCU model	User can move the FCUs/AHUs to other rooms by drag & drop.

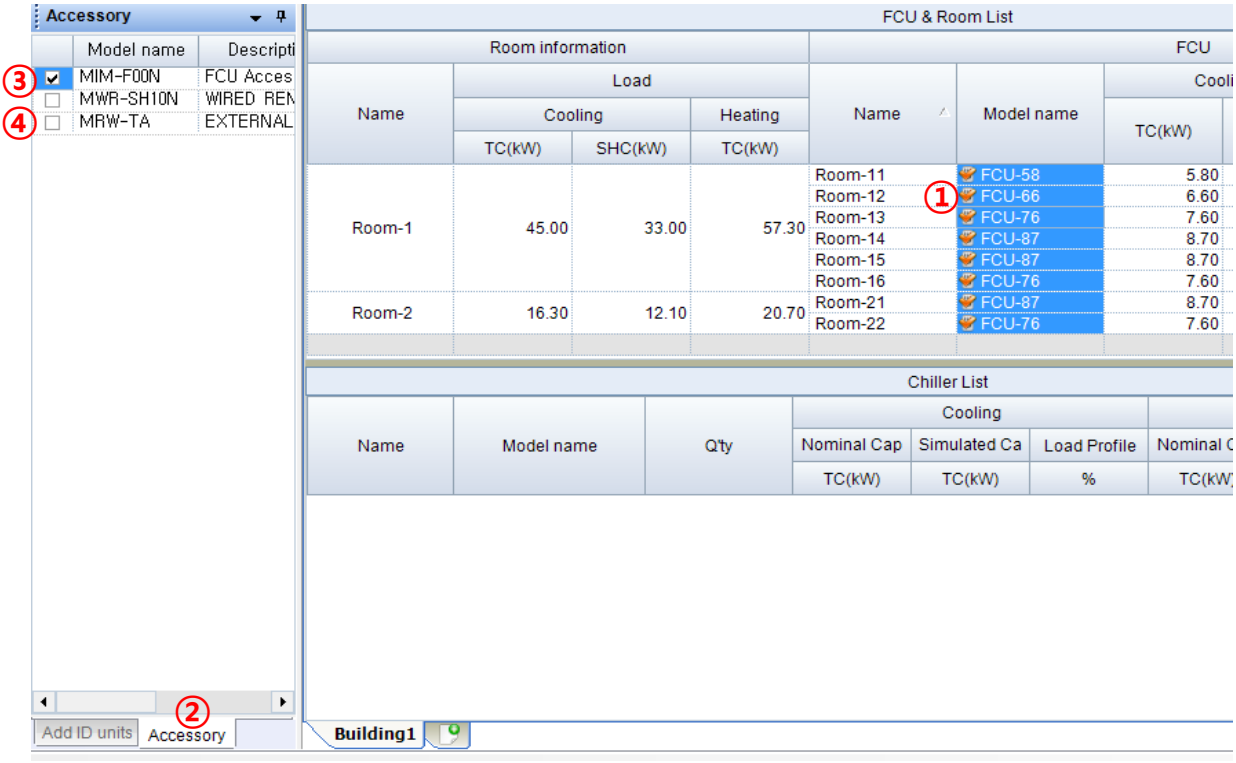
Ⅲ. How to Select DVM Chiller

3.2 Input load by generating FCU/AHU models

3. 2. 3. Select FCU Accessories (Optional)

- Select applicable accessories for FCUs following below steps.

  1. Select one FCU model or several models.
  2. Click “Accessory” tap.
  3. Firstly select FCU Kit(AIM-F00N/MIM-F00N), after then the selection of wired remote controller and external temperature sensor can be selected.



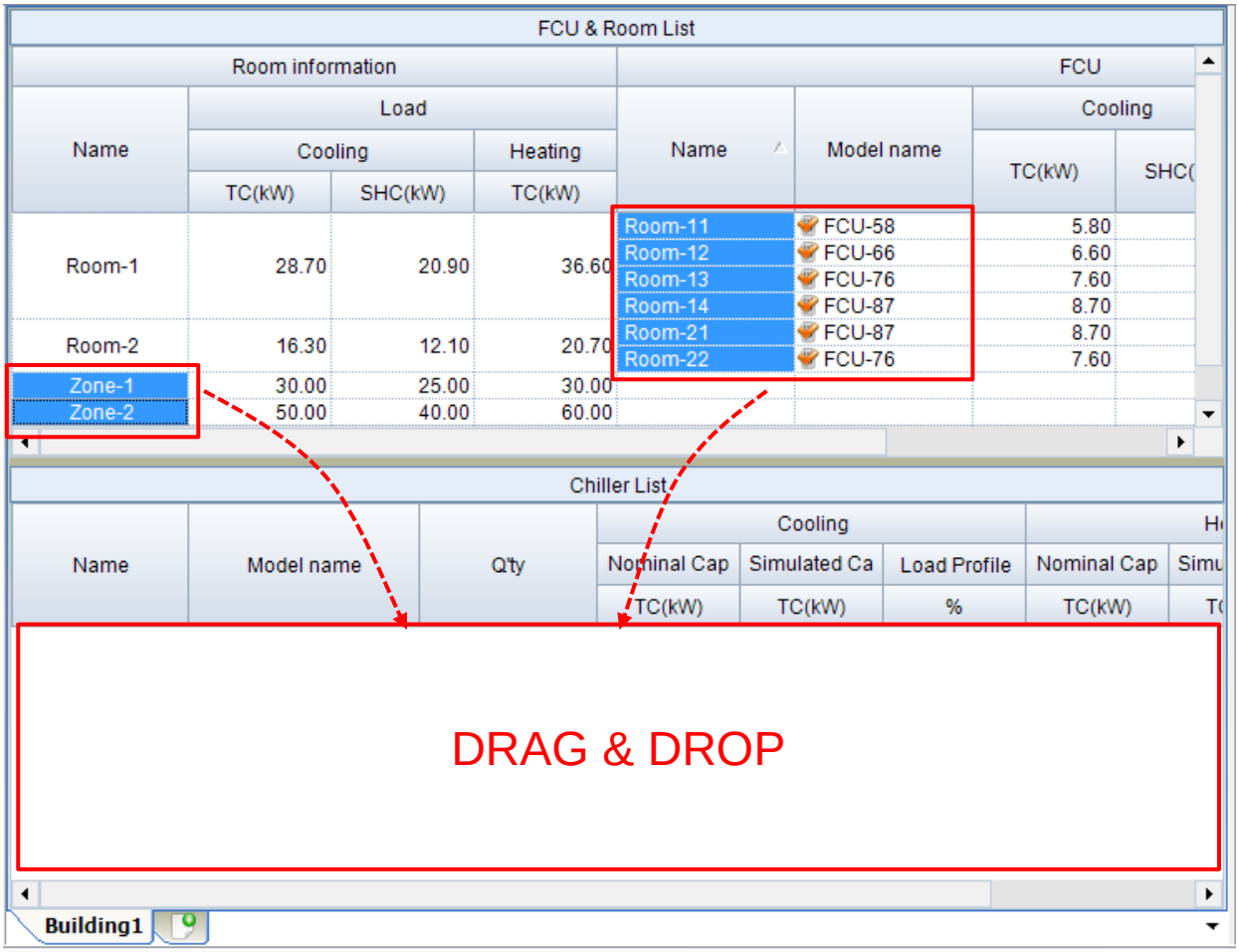
No.	Function	Description
①	Select FCU model	Select the FCU model to chose accessories.
②	Click the “Accessory” tab	Applicable accessory items are represented according to the selected FCU & AHU.
③	Select the FCU Kit	After clicking a check box, “Model name” on “FCU & Room list” is marked.
④	Select another accessory	Users have to select the “FCU Kit” first and then can select other accessories.

Ⅲ. How to Select DVM Chiller

4. Select DVM Chiller

a. Connect FCU/AHU to DVM Chiller

- Select rooms or FCUs/AHUs together which connect to one chiller system.
- After placing that rooms or FCUs/AHUs to “Chiller List” by drag & drop, new window “Chiller Selection” is popped up.



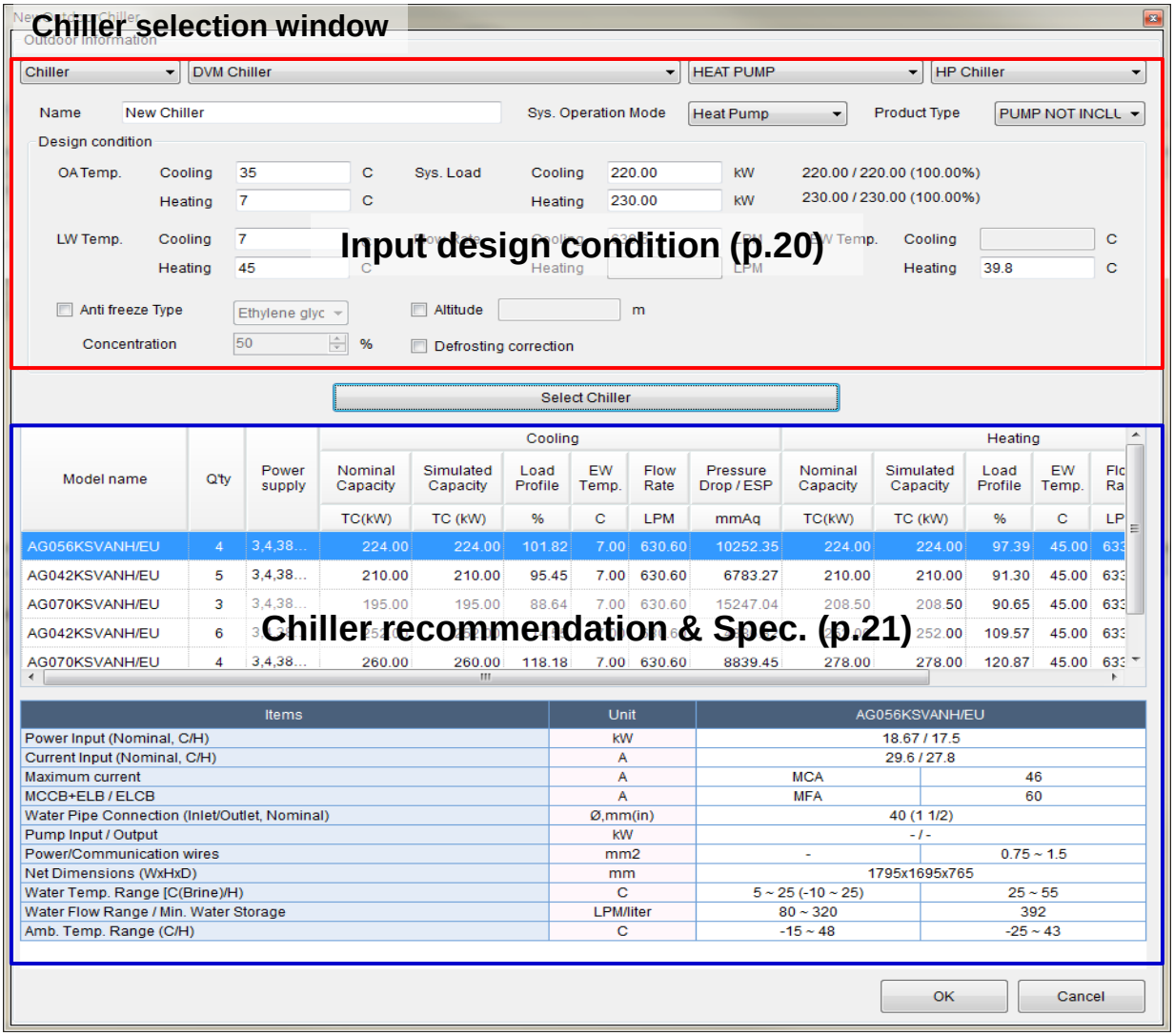
Ⅲ. How to Select DVM Chiller

4. Select DVM Chiller

b. Input design conditions and check capacity correction functions

- Input design data with the following steps.
  1. After entering design conditions, click the button “Select Chiller”.
  2. Select DVM Chiller among the recommended chiller list.
  3. Click “OK” button to complete the selection of DVM Chiller.
- If there is no recommended chiller on the list, please check operation limits with TDB and an installation manual.

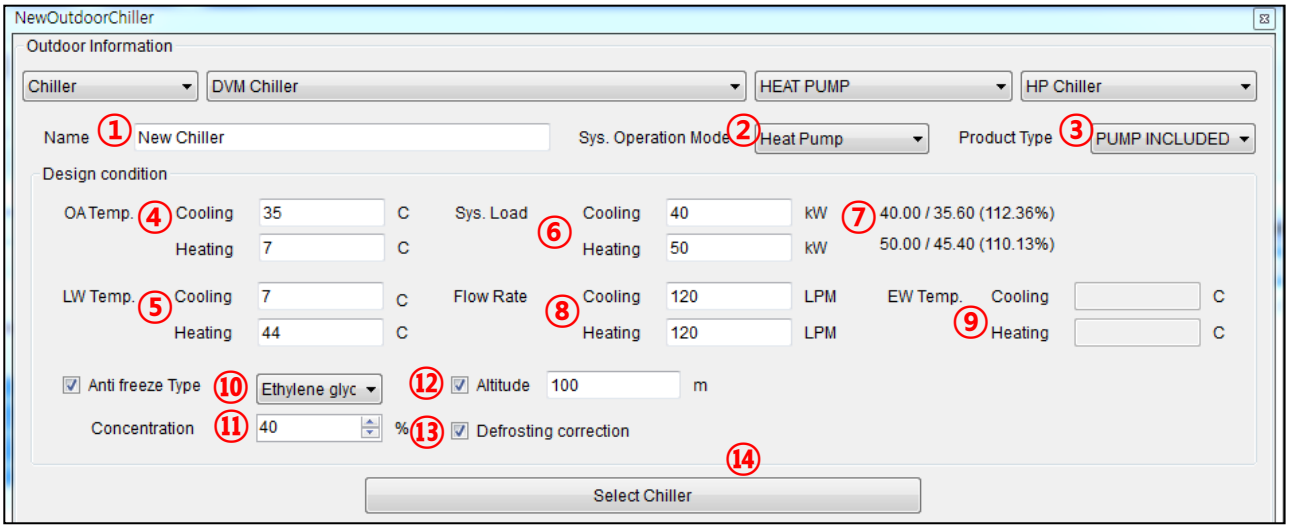
  ※ Users need to check design conditions such as ambient temperature, LWT, EWT, water flow rate, brine ratio, and so on.



Ⅲ. How to Select DVM Chiller

4. Select DVM Chiller

c. Descriptions for design condition factors

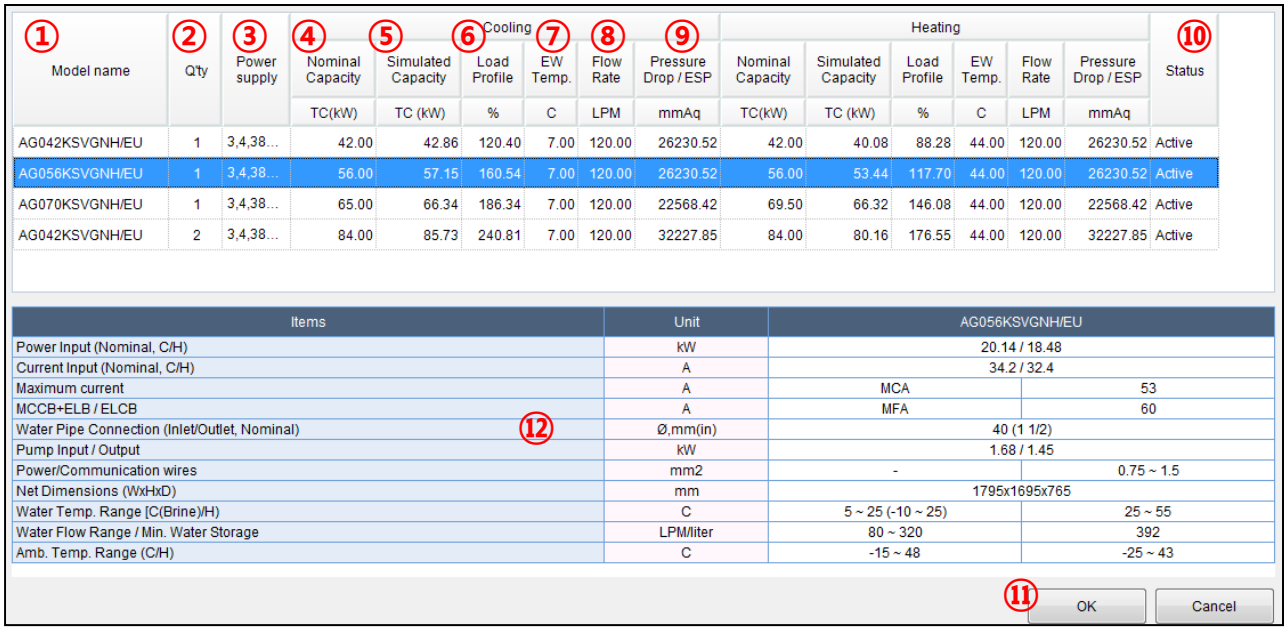


No.	Function	Description
①	Name	Input the system name. This name is used at the report.
②	Sys. Operation Mode	Select the operation mode(Heat Pump / Cooling / Heating).
③	Product Type	Select “PUMP INCLUDED” or “PUMP NOT INCLUDED”.
④	OA Temp.	Input ambient temperature.(Consider operation range).
⑤	LW Temp.	Input leaving water temperature.(Consider operation range).
⑥	Sys. Load	Input system load. (Firstly shows the load from previous steps).
⑦	Guide for load	Input load / Sum of FCUs capacity (Ratio).
⑧	Flow Rate	Input the water flow rate, when users don’t use entering water temperature.
⑨	EW Temp.	Input the entering water temperature, when users don’t use water flow rate.
⑩	Anti freeze Type	When user consider anti freezing fluid, click the check box and select the anti freezing type. If leaving temperature is lower than 5℃, user have to click check box.
⑪	Concentration	Input the concentration. (please refer to the installation manual and TDB)
⑫	Altitude	Capacity correction function by altitude of installation region.
⑬	Defrosting correction	Capacity correction function by the defrosting operation only for heating.
⑭	Select Chiller	After review input data, click “Select Chiller”

Ⅲ. How to Select DVM Chiller

4. Select DVM Chiller

d. Descriptions for recommended chillers



① Model name	② Q'ty	③ Power supply	Cooling ④ Nominal Capacity	⑤ Simulated Capacity	⑥ Load Profile	⑦ EW Temp.	⑧ Flow Rate	⑨ Pressure Drop / ESP	Heating Nominal Capacity	Simulated Capacity	Load Profile	EW Temp.	Flow Rate	Pressure Drop / ESP	⑩ Status
			TC(kW)	TC (kW)	%	C	LPM	mmAq	TC(kW)	TC (kW)	%	C	LPM	mmAq	
AG042KSVGNH/EU	1	3,4,38...	42.00	42.86	120.40	7.00	120.00	26230.52	42.00	40.08	88.28	44.00	120.00	26230.52	Active
AG056KSVGNH/EU	1	3,4,38...	56.00	57.15	160.54	7.00	120.00	26230.52	56.00	53.44	117.70	44.00	120.00	26230.52	Active
AG070KSVGNH/EU	1	3,4,38...	65.00	66.34	186.34	7.00	120.00	22568.42	69.50	66.32	146.08	44.00	120.00	22568.42	Active
AG042KSVGNH/EU	2	3,4,38...	84.00	85.73	240.81	7.00	120.00	32227.85	84.00	80.16	176.55	44.00	120.00	32227.85	Active

Items	Unit	AG056KSVGNH/EU	
Power Input (Nominal, C/H)	kW	20.14 / 18.48	
Current Input (Nominal, C/H)	A	34.2 / 32.4	
Maximum current	A	MCA	53
MCCB+ELB / ELCB	A	MFA	60
Water Pipe Connection (Inlet/Outlet, Nominal) ⑫	Ø,mm(in)	40 (1 1/2)	
Pump Input / Output	kW	1.68 / 1.45	
Power/Communication wires	mm2	-	0.75 ~ 1.5
Net Dimensions (WxHxD)	mm	1795x1695x765	
Water Temp. Range [C(Brine)/H]	C	5 ~ 25 (-10 ~ 25)	25 ~ 55
Water Flow Range / Min. Water Storage	LPM/liter	80 ~ 320	392
Amb. Temp. Range (C/H)	C	-15 ~ 48	-25 ~ 43

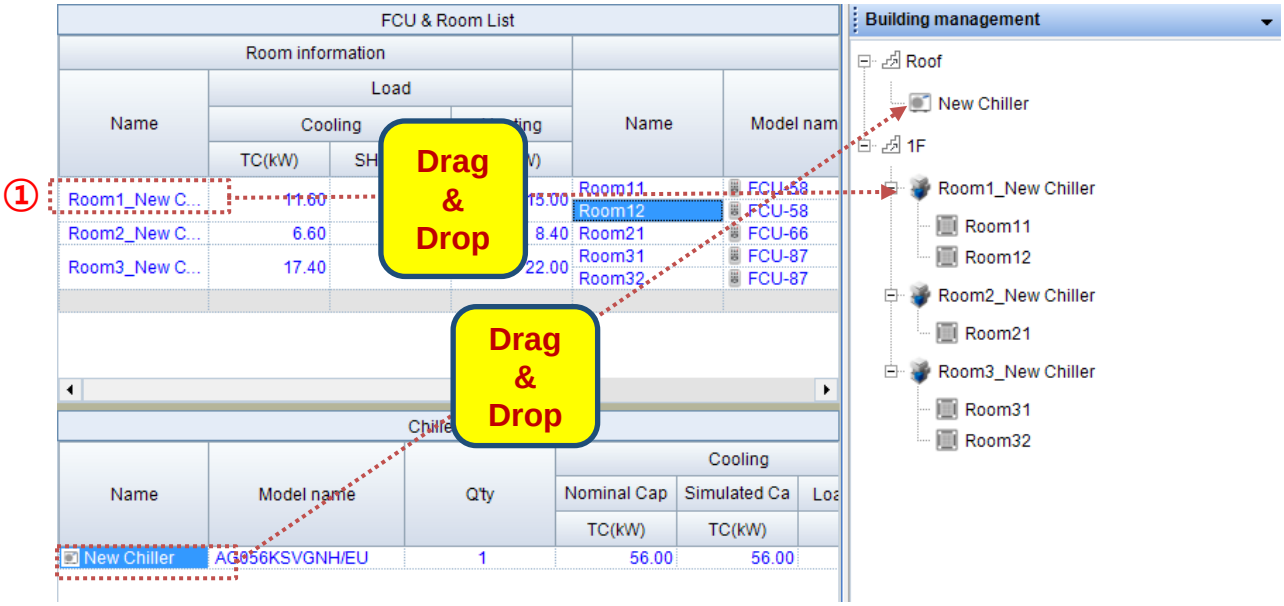
⑪ OK Cancel

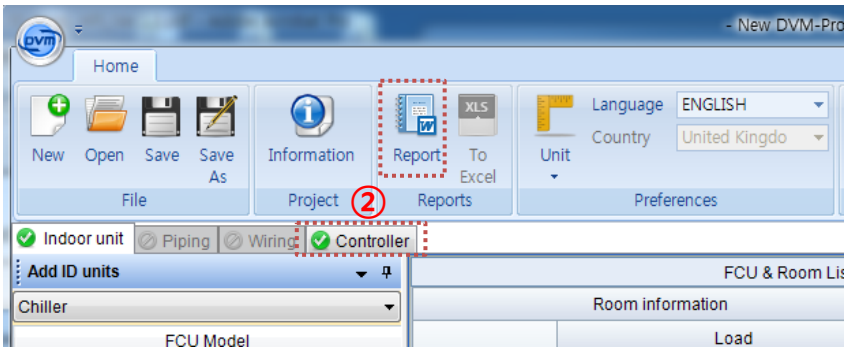
No.	Function	Description
①	Model name	Product model name
②	Q'ty	Quantity of chillers
③	Power supply	Power supply
④	Nominal Capacity	Cooling Nominal Capacity
⑤	Simulated Capacity	Cooling Simulated Capacity
⑥	Load Profile	Load profile(⑤/Total load)
⑦	EW Temp.	Entering water temperature
⑧	Flow Rate	Water flow rate
⑨	Pressure Drop/ESP	Pressure drop of chiller according to water flow rate
⑩	Status	Running
⑪	OK / Cancel	-
⑫	Product Spec.	Selected product spec.

Ⅲ. How to Select DVM Chiller

5. Building management

- Place the selected chiller and rooms to each installation floor on “Building management” by drag & drop.
- After placing all of products to spaces on “Building management” , Controller tap and Report button is activated.

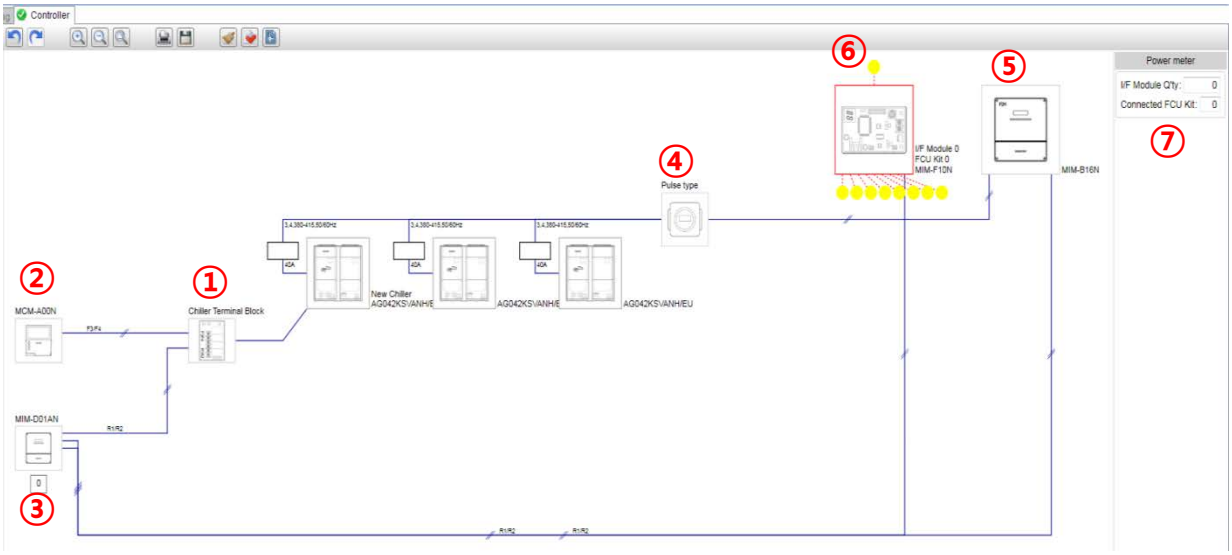




Ⅲ. How to Select DVM Chiller

6. Select Controller

- Select controller for DVM Chiller.
- When clicking boxes, available controllers are expressed on the controller list.

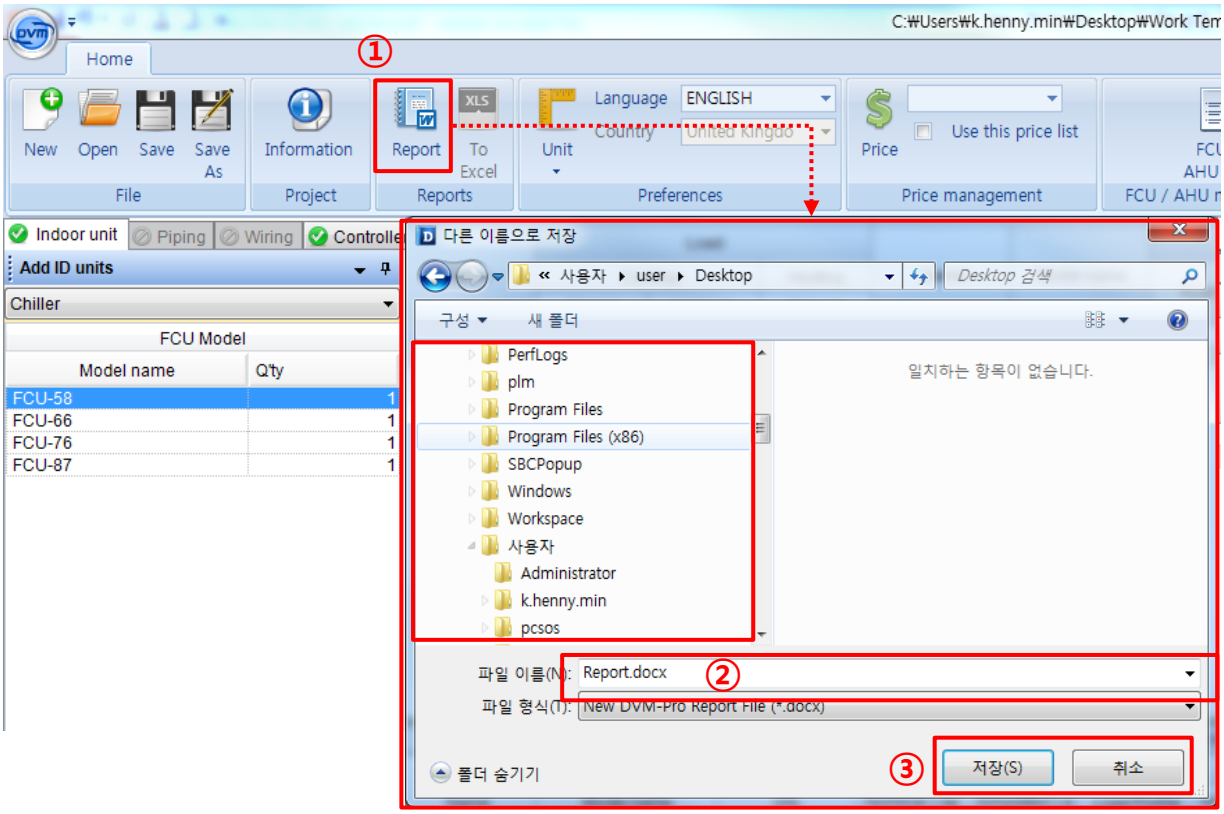


No.	Function	Description
①	Chiller Terminal Block	In order to connect a controller to DVM Chiller, you must select the Chiller Terminal Block first. DVM Chiller is recognized as 1 ODU + 1 IDU on the controller.
②	Module Controller	For setting functions of DVM Chillers, connect a Module controller and the Chiller Terminal Block using a F3/F4 line. Maximum number of DVM Chillers that can be connected to a Module controller is 16.
③	Control Solution	For control the DVM Chillers, connect DMS 2.5/Touch Controller/Lonworks Gateway/BACnet Gateway and the Chiller Terminal Block using a R1/R2 line. For maximum quantity of ODUs and IDUs that can be connected to each controller, please refer to the controller TDB and the installation manuals.
④	Watt-hour meter	For power monitoring of DVM Chillers, select Watt-hour meter. Watt-hour meter is connected with PIM/SIM.
⑤	PIM/SIM	For power monitoring of DVM Chillers, select PIM/SIM. PIM/SIM is connected with DMS2.5, Lonworks Gateway or BACnet Gateway using a R1/R2 line. For maximum quantity of Watt-hour meters that can be connected to PIM/SIM, please refer to the controller TDB and the installation manual.
⑥	FCU interface module	In order to connect a FCU KITs to DMS 2.5, you must select the FCU interface modules. FCU KIT and FCU interface module is for integrated control of FCU with DVM CHILLER by DMS 2.5 Maximum number of FCU interface modules that can be connected to a DMS 2.5 is 80, maximum number of FCU KITs that can be connected to a FCU interface module is 16, and maximum number of FCU KITs that can be connected to a DMS 2.5 is 256. Maximum number of FCU interface modules that can be installed to a channel of DMS2.5 is 16 (Max. 128 FCU KITs).
⑦	Quantity input field for FCU interface modules and FCU KITs	According to the connection guide for quantity, input quantities of connected FCU interface modules and FCU KITs.

Ⅲ. How to Select DVM Chiller

7. Report

- Generate the report with clicking “Report” button and save on PC.
- Support 2 types of reports, an existing basic report and a chiller report.



No.	Function	Description
①	Report	Generate and save the project file which includes all of designed information. 2 types of reports are generated and saved. - Existing VRF/Chiller report - Additional report which commonly used in chiller market
②	File name	Users can change the file name.
③	Save / Cancel	-