Guidelines on how to model ventilation systems with "active heat recovery" in PHPP version 9



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PHPP workaround

for ventilation systems without a passive core and a heat pump using exhaust air as a heat source

<u>Step 1</u>:

Enter the product specifications in the section for Compact Unit in the "Components" worksheet.

- Enter 0% for the efficiency of the heat recovery, as the unit has no passive heat recovery core.
- Insert values for fan power and electrical efficiency of the heat pump as per the product's datasheet.

 All values shown in red color in the screenshot below need to be entered.
- PHPP modelling of compact units assumes that the system will also provide DWH. Without entering the data for DHW, the algorithm does not work. As workaround, simply enter data (where red arrow is pointing in figure below) for DHW of any certified unit listed in the components worksheet.

10	e House compact units with exhaust air heat pump																	
11		Ventilation					Heating								4			
	Recommended specifications to start planning: Frost protection: Yes; Humidity recovery: Yes	75 %	0.45	Test point 1	Test point 2	Test point 3	Test point 4	Test point 1	1 Test point 2	Test point 3	Test point 4	Test point 1	Test point 7	Test point	Test point 4	Test point 1	Test	
13	Description	Effective heat recovery efficiency (η _{αff})	Electric- efficiency		Exterior air temperature (T _{amb})			Measured thermal power heat pump heating (P _{HP,Heat})				Me	Measured COP heating (COP _{Heat})				Exterio	
14			Wh/m³	°C	°C	°C	°C	kW	kW	kW	kW	- 7	-	-	- 7	°C		
15	Active system	0%	0.45	-3.0	4.0	10.0		3.00	2.80	2.50		3.50	3.30	3.00		-4.0		
16				/			/	/			1					_~		
17				/			/	/			4							
40	,	4	4		4	4	4	4	4	·	4	4/		4	4/	4 /		

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Step 2:

Select "HP compact unit" as heat supply in the "PER" worksheet.

• As the ventilation system does not cover the DHW heating demand, this must be deactivated in the PER worksheet. Entering 0% in PER worksheet causes an error. Instead insert very small number (e.g. 0.00001%, see screenshot below) which allows the algorithm to work without influencing the results.

Selection of heat generation system(s)

Primary heat generation type

1-HP compact unit

Secondary heat generation type (optional & different)

5-Direct electricity

Contribution margin (useful energy						
Heating	DHW					
100%	0.00001%					
0%	100%					