HDL-BUS HVAC modules

Product name	Descriptions	
SB-DN-HVAC	Old hardware and old naming	5 relays(2 for mode selection and 3 for fan speed selection, or 2 for fan selection and 3 for mode selection)
HDL-MAC01.331	New hardware and new naming	6 relays(3 for mode selection, 3 for fan speed selection)

HVACFAQ001_HDL-BUS

Q: I got one SB-DN-HAVC, it has 5 relays in total, 3 for mode selection, Heating, Cooling and Dry, 2 for fan speed selection, High wind, Low wind, but in my case, I need three fan speeds, High wind, Medium wind and Low wind.

A: We have another firmware, you can upgrade it with the firmware, then the 3 previous mode relays will be fan relays, and the 2 previous fan relays will be mode relays, Heating and Cooling. As a matter of fact, we have one more special version which we built as a response to a customer's special requirement(tight budget), i.e., one relay for mode(Cooling), two relays for fan speed(High wind and Low wind) and save the two remaining relays as general purpose relay channels.

HVACFAQ002_HDL-BUS

Q: In HDL-BUS Pro Setup Tool, I found a selection, Old or New, in DLP AC page.

A: For 3-fan-speed-2-mode version, select "Old", for 3-mode-2-fan-speed version or MAC01.331, select "New".

HVACFAQ003_HDL-BUS

Q: Apart from the relay totality is different from that of SB-DN-HVAC, I can see the MAC01.331 has terminal for digital temperature sensor.

A: Yes, the MAC01.331 has terminal for digital temperature sensor DS18B20, and has built-in control logic, which means once a desired temperature is set (via user panel, e.g., a DLP panel) to it, it can regulate itself and control the room temperature. This is not true for SB-DN-HAVC, the SB-DN-HAVC requires a DLP panel to be online always, because the SB-DN-HVAC has no built-in the control logic, the control logic is in DLP panel.

HVACFAQ004_HDL-BUS

Q: To control the FCU, I can use the SB-DN-HVAC or HDL-MAC01.331, but I can also use IR (Infrared) to control it, which one is better?

A: When IR control is possible, we always recommend customers to use IR (SB-IR-EM, SB-CMS-12in1 or SB-CMS-8in1) to control the FCU, because to wire the proprietary HAVC system with 3rd party controller (SB-DN-HVAC/HDL-MAC01.331), first, you may lose FCU warranty, even if you have consulted and know that you won't lose FCU warranty, you are likely to lose some features, like, Defrost, maybe. And second, to wire the two systems (HDL-BUS system and HVAC system) together, you will have to spend some time to check the FCU manual carefully and are required some knowledge about electrical diagram. More info, HDL has a

module called SB-DN-RS232N, this module can communicate

HAVCFAQ005_HDL-BUS
Q: There are fan speed relays and there is 0-10V output for fan speeds, which one to use?
A: It depends on the FCU, you can refer to your FCU manual, some FCU fan speed is controlled by relays, while other FCU fan speed is controlled by 0-10V.

HVACFAQ006_HDL-BUS
Q: What is Dry mode? How does it work?
A: Dry mode can be used to absorb excessive vapor from indoor air in rainy season, so that furniture, walls would not get too moist, and people can feel more comfortable. When the SB-DN-HVAC/HDL-MAC01.331 is executing Dry mode, the Cooling relay is on(to absorb vapor), and the Low wind is on(to avoid the indoor temperature drop too much).

HVACFAQ007_HDL-BUS
Q: There are many time settings and 3 voltage values to be set, how to set them?
A: You shall be able to find all of them in the manual of FCU manufacturer.

HVACFAQ008_HDL-BUS
Q: There are many time settings for Cooling, Heating and Dry mode, like 1^{st} step, 2^{nd} step, 3^{rd} step, 4^{th} step, what are they?
A: When the mode starts to execute, the mode relay works in this way: 1^{st} step (ON) -> 2^{nd} step (OFF) -> 3^{rd} step (ON) -> 4^{th} step (OFF) -> 3^{rd} step (ON) -> 4^{th} step (OFF) -> 3^{rd} step (ON) -> 4^{th} step (OFF) ->…, It is a requirement from FCU manufacturer, so need to look up the FCU manual and find the suitable values, if you cannot find them in their manual, generally you can set 0 min for step 1,2, and 4, and set a non-zero time for the step 3, but it is better to set a non-zero time to step 4 for heating mode, to compensate the lost original Defrost feature. (Defrost: When heating mode is used in cold winter, there may be frost on the surface of the outdoor coil, and this will lead to poor efficiency. To avoid or remove the frost and improve the efficiency, the heating is designed to stop periodically or stop when frost is detected.)

HVACFAQ009_HDL-BUS
Q: I find that when a desired temperature is reached, the fan is still running.
A: If the fan speed had been set as “Low”, “Medium” or “High” but not “Auto”, the fan would run all the time even the desired temperature is reached, but no problem it is pure wind, not cold wind or hot wind. If the fan speed had been set as “Auto”, you probably forgot to enable the option “Power-saving” in HDL-BUS Pro Setup Tool.