**This file is available at
ftp://ftp.zwaveeurope.com/pub/doc/DanfossplusVERA.pdf**

How to include and use the Danfoss Living Connect with VERA

Inclusion

Its best practice to make sure the Danfoss living connect is in reset state. Push the M button when inserting the batteries and keep the button pushed for 5 seconds. After this procedure the Danfoss device will be in reset state and the M symbol appears on the LCD screen.

Now turn the VERA into inclusion mode and press the M button shortly. VERA should start including the device.

a) Stop the Inclusion mode on VERA by short pressing the Z-Wave button. You will now see the message „Server Busy" on VERAs console
b) After the VERA has done the initial configuration, you will see the new thermostat widget on the dashboard. It is marked with the message „Wakeup to Configure".

Press the M button again to manually wakeup the Danfoss device for final configuration.

Now the device is ready to be used.

Usage

Vera shows all Thermostats with a generic widget that allows to control cooling set-point, heating mode (heating is on of off) and the heating set point.
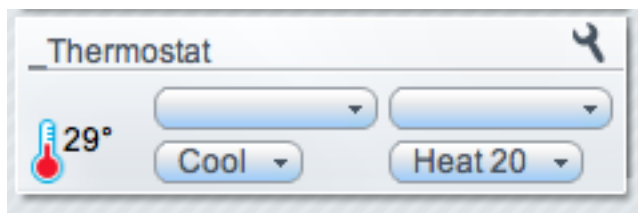
For the Danfoss living connect only the heating set-point is relevant and the other control functions shall be ignored.

The Danfoss living connects control is based on the concept of Basis set-point and local overwrite.

The basis set-point is the temperature the device will try to establish in the room by moving the valve and measuring the ambient temperature. This temperature can and must be set using VERAs heating set-point function on the right hand side of the widget. (Reminder: The set-point will only become active AFTER the next wakeup. For test purposes you can manuals wake up the device by just pushing the M button.)
After the set-point is written into the Danfoss device it will be active and shown on the local LCD.

The device also has two buttons for local control of the heat. Using this button will overwrite the set-point temperature on the device. The overwritten temperature is shown on the local device but is NOT reported back to VERA. This means that the temperature sown in VERA – the original set-point – is not identical to the overwrite temperature on the device. The next temperature set-point command from VERA will terminate this local and temporary overwrite and the temperature on the LCD screen is again.

The controlling scenario is to define basic desired ambient temperatures by VERA either using scenes or by directly defining manually using the Hearting set-point command. In case the person in the room is not happy with this setting he/she can always overwrite this temperature but the heating control will turn back to the predefined schedule and temperature with the next set-point change.

The Danfoss Thermostat will control the valve according to the set-point and possible overrides. Depending on the temperature difference between actual ambient temperature and desired room temperature and some historical data an algorithms in the device decides when, how often and how far the value will be turned. It's possible that the device moves the valve completely immediately after setting the new temperature – in this case the move can be heard. It's also possible that the algorithm decides to move the valve in a series of micro steps that will not generate any sound.
If the user pushed the middle button, the thermostat will conclude that the user is concerned about the temperature and will speed up the valve setting.