

VRV IV from Daikin - pioneering total solution

In developing its new VRV IV, Daikin's European Development Center has provided an overall answer to Europe's varying geographical and climate conditions, while setting the standard for cooling and heating comfort. Icing on the cake: the VRV Configurator, which allows simplified configuration and commissioning. Product Development Engineers **David Steen** and **Kevin Ampe** of Daikin's European Development Center and Mentor **Alain De Lille** of Daikin's Service department comment on this revolutionary and pioneering total solution called VRV IV.

Q: What makes Daikin's VRV IV system so revolutionary with regard to energy efficiency?

David Steen: "Increased environmental awareness in combination with the 20/20/20 legislation inspired us to think more out of the box in order to enhance the energy efficiency of our VRV units. One of the methods we used in the new VRV IV is Variable Refrigerant Temperature. The system automatically adjusts the refrigerant temperature according to the ambient air temperature to achieve the highest efficiency, preserving optimal comfort at all times. All this is possible because of our full inverter-driven system ensuring optimal seasonal efficiency, up to an ESEER of 7.53."

Q: How did Daikin solve the problem of temperature drop in heating mode during defrost?

Kevin Ampe: "As is well known, during defrost operation, heating capacity is no longer delivered to the indoor units. On top of that, heat is absorbed from the indoor units – and as a consequence also from the room – since they act as an evaporator. To solve this problem, we developed a heat storage vessel, an entirely new feature for the European market, using a unique PCM (phase change material) that stores or releases energy when it changes its phase from solid to liquid and vice versa. By integrating this heat storage vessel into our sys-



VRV IV

- » Variable refrigerant temperature
- » Continuous heating via heat pump
- » VRV configurator
- » seasonal efficiency up to 7,53

tem, VRV IV continues to provide heating, even during defrost, and prevents temperature drops and cold draughts inside."

Q: How does the VRV Configurator shorten the time needed for servicing and commissioning?

Alain De Lille: "Until now, commissioning was always done based on the skills and judgement of the technician. With the revolutionary new VRV Configurator, settings are done step by step using software programme. Thus, low noise or demand operation settings, ESP settings, and cooling and heating comfort settings are made easy. What's more, technicians need less time than before for commissioning!"

With the new VRV IV, Daikin not only improved the core of the VRV system, it reengineered the entire total solution. To this end, it integrated new intelligent sensors on the round flow cassette indoor unit and enabled easy energy management via the new intelligent touch manager. Finally a low temperature hydrobox was launched for highly efficient under floor heating and cooling.

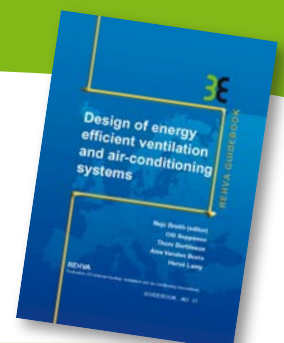
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Editor: Nejc Brelih. **Contributing Authors:** Olli Seppänen, Thore Bertilsson, Alex Vanden Borre and Hervé Lamy

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