

VRF Outdoor Units - SMMSe

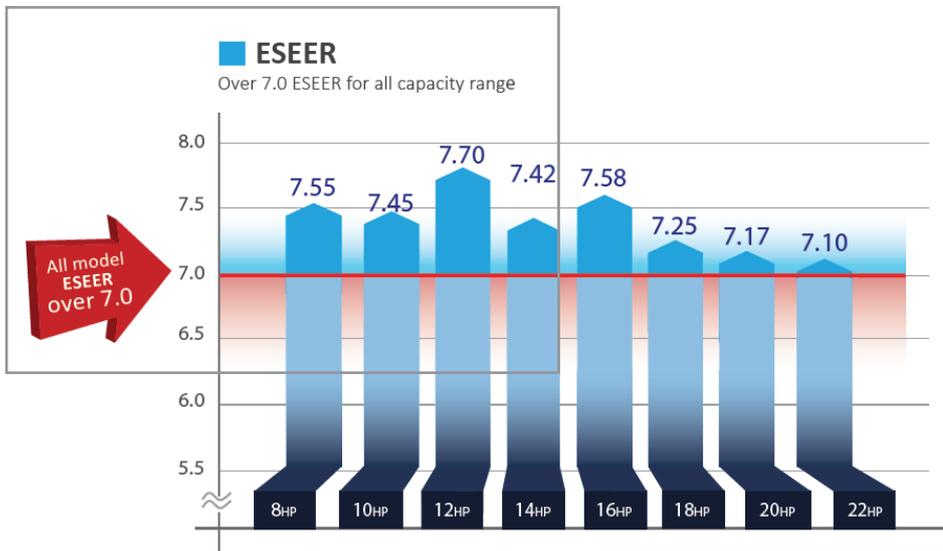


Air Conditioning For Large Buildings

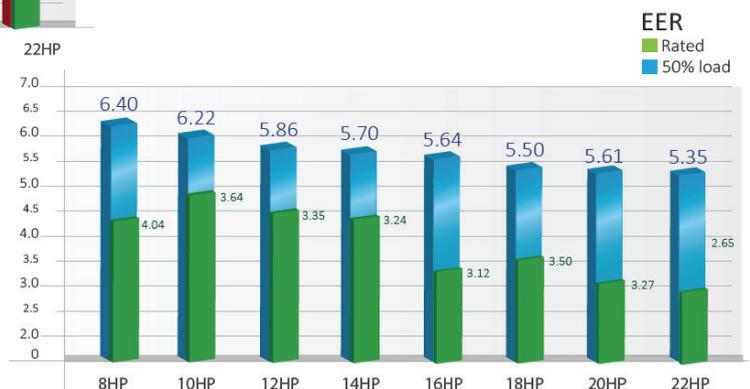
Toshiba's SMMSe is designed for large buildings. Developed under the concept of three "Es" - Excellence, Expansion and Enhancement - it offers a large capacity of up to 22 hp on a single module and up to 60 hp in a single interconnected system, with up to 64 connected indoor units. SMMSe incorporates revolutionary hands-free Wave Tool technology that allows contactless commissioning and diagnostics to be carried out using a smartphone application, without ever having to open the cover of the outdoor unit.

Greater energy-efficiency performance

Thanks to the adoption of the new high energy-efficient DC twin-rotary compressor and other cutting-edge technologies, these units have achieved an ESEER of over 7.00 across the entire capacity range. The overall capacity range and the highest COP and EER of 6.44 and 6.40, the SMMSe truly excels as the industry's top class in energy saving.



Utilising the new highly-efficient core technologies has resulted in greater energy efficiency and performance.

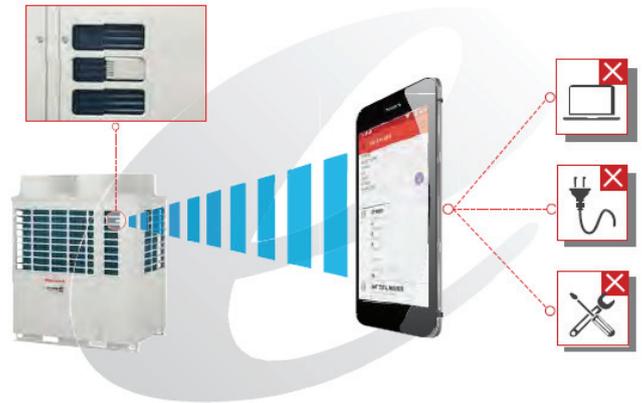


New Wireless Commissioning And Operating Data Checking System

With SMMS Wave Tool, data from the outdoor unit can be read and accessed directly on your smart phone without the need for connecting a PC or even opening the service cabinet.

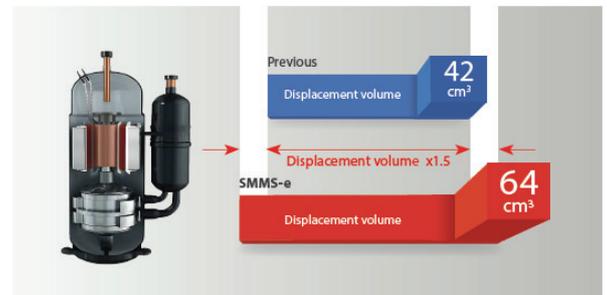
Available data

Whether it is product data, system data, fault history or results of testing and commissioning, all can now be obtained easily when undertaking service maintenance or even after power failure. The data can all be sent to the remote office via email allowing operating conditions to be checked remotely in the office without having to be on-site.



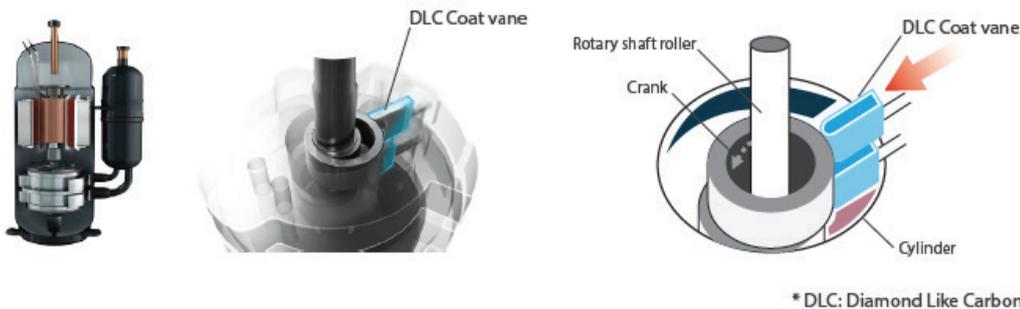
DC twin-rotary compressor

More powerful and efficient using cutting-edge technology the DC twin-rotary compressor is able to operate with greater rotation speeds.



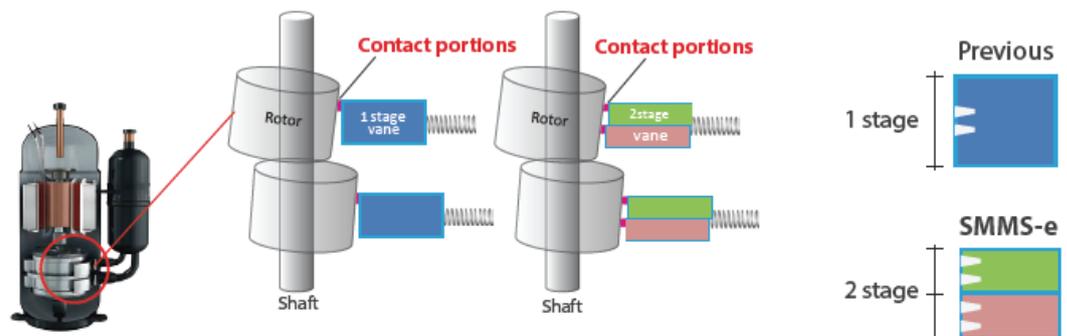
DLC-coated vane

Increased hardness of the DLC-coated vanes reduces friction and increases both reliability and performance.



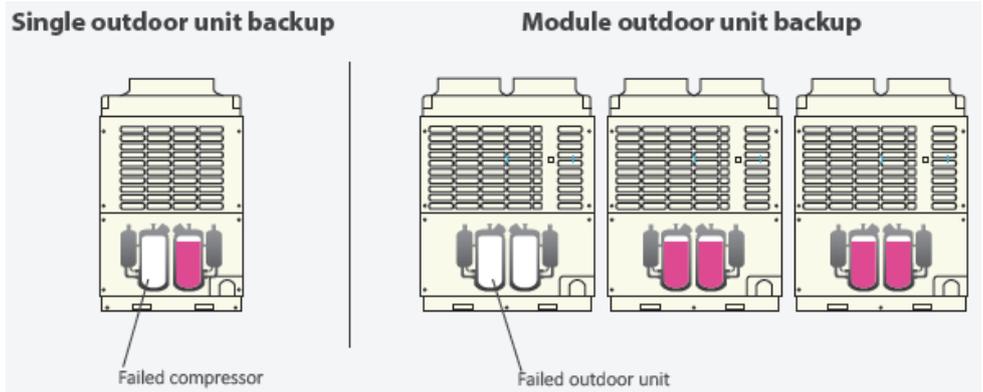
2-stage vane

The innovative 2-stage vane design also reduces friction while at the same time increasing hardness leading to enhanced performance.



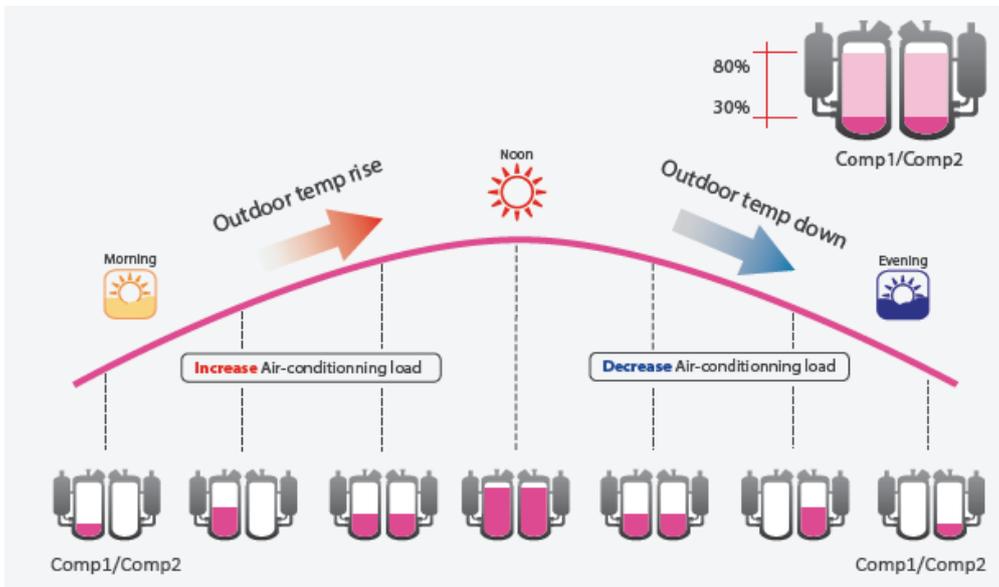
Reliability - back-up operation

In case of a compressor failure, SMMS-e units can keep working with the back-up operation under All Inverter Control to compensate a failed compressor or header unit. This back-up operation is available in both a single system or as a module.



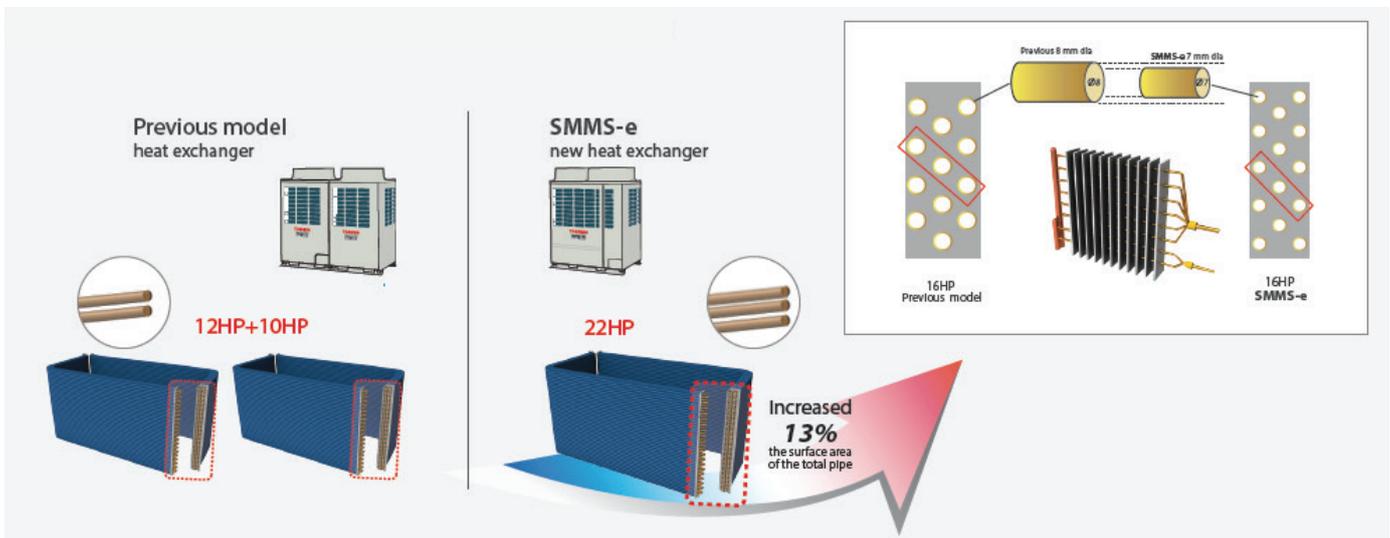
Reliability-rotational control

The rotational control in SMMS-e units is designed to improve system reliability by controlling the operation of each compressor to work equally under variable conditions.



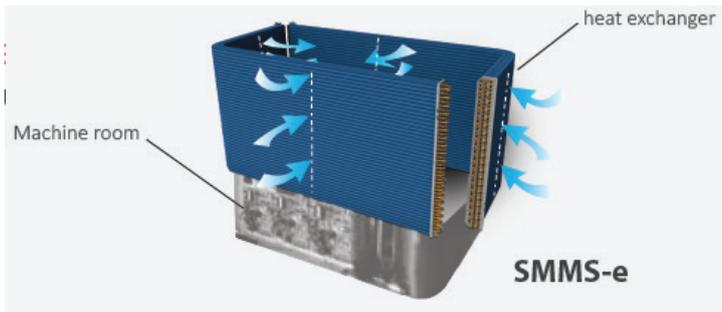
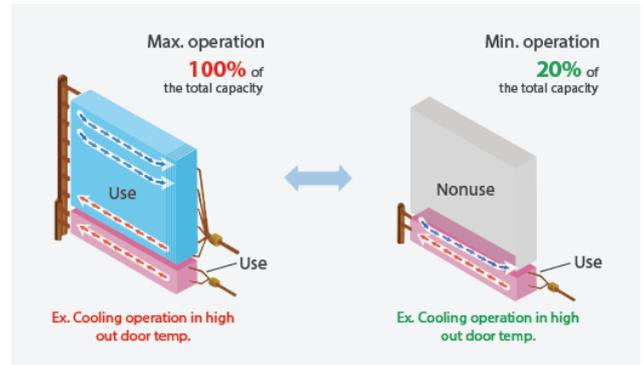
New heat exchanger

The new heat exchanger used in the SMMS-e outdoor units increases from 2 to 3 rows, providing 13% more total pipe surface area.



Variable heat exchanger

New system controls allow the SMMSe outdoor unit to select the most efficient heat exchanger size according to the capacity load and so provide higher energy savings.

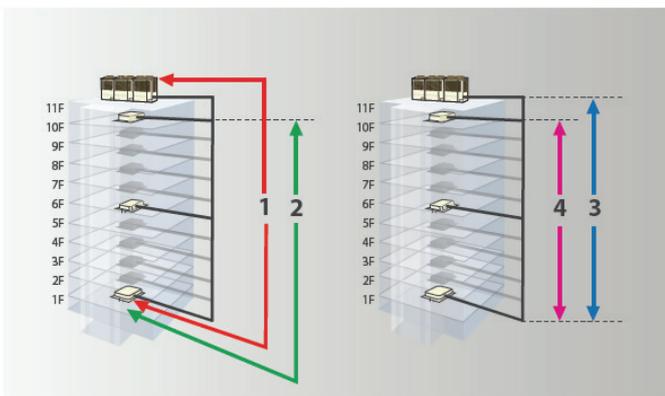


4-way heat exchanger for balanced air flow

Heat exchangers are located on all four sides of the outdoor unit, ensuring air flow is equal in all directions.

Larger Single Unit Capacity And Piping Design Flexibility

SMMSe units are now available with 3 new larger capacity models, producing up to 22 hp on a single module platform. Piping capability can provide more benefits for system design, installation flexibility and reduction in installation costs.

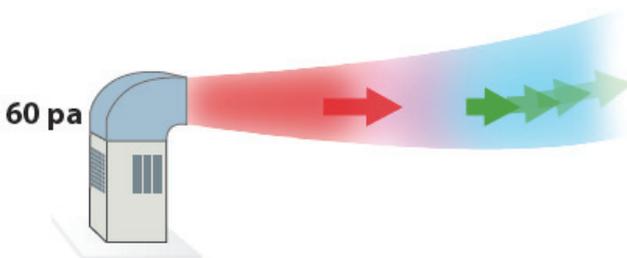


| Total length | 1,000m* |
|--|--------------|
| 1. Farthest equivalent length | 235m |
| 2. Farthest pipe from 1 st branch | 90m** |
| 3. Height between outdoor unit - indoor unit (outdoor unit above/below) | 90m*** / 40m |
| 4. Height between indoor unit - indoor unit | 40m |

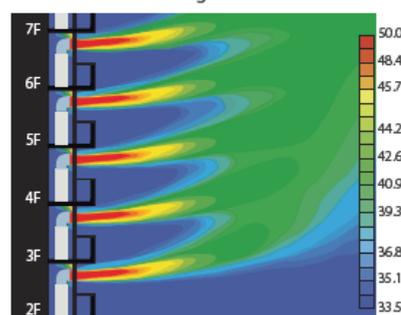
* : 34HP combination or more
 ** : 65m if the height piping length between outdoor unit and indoor unit is more than 3m
 *** : Be sure to refer to the Engineering Data Book for details of these conditions and requirements.

External static pressure

The SMMSe units are suitable for challenging installations where high external static pressure performance is required.



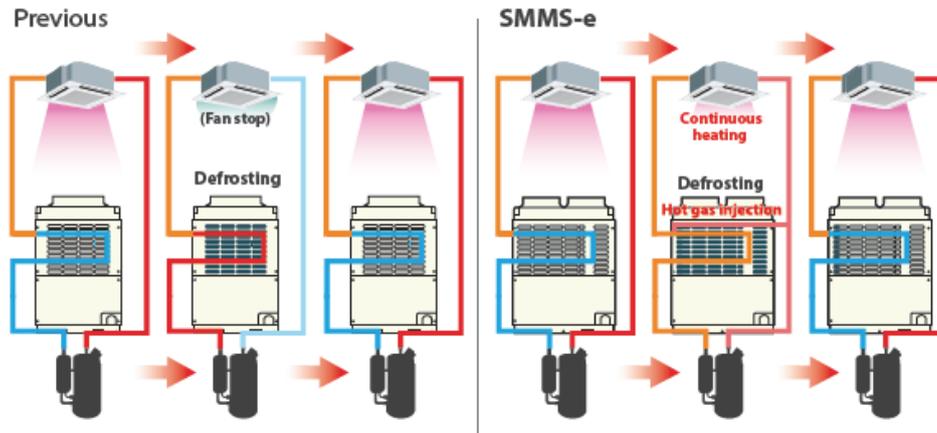
Air flow simulation diagram



Note : This result is analytical simulation, that does not guarantee actual temperatures.

Continuous heating

New design and control logic enables continuous heating during defrost operation.



Hot gas bypass into the outdoor unit heat exchanger enables the indoor units to operate in heating mode for longer periods of time when compared to the previous model. Hot gas injection can be used also to identify the amount of frosting on the outdoor coil, so that outdoor unit defrosts occur only when absolutely required.

