

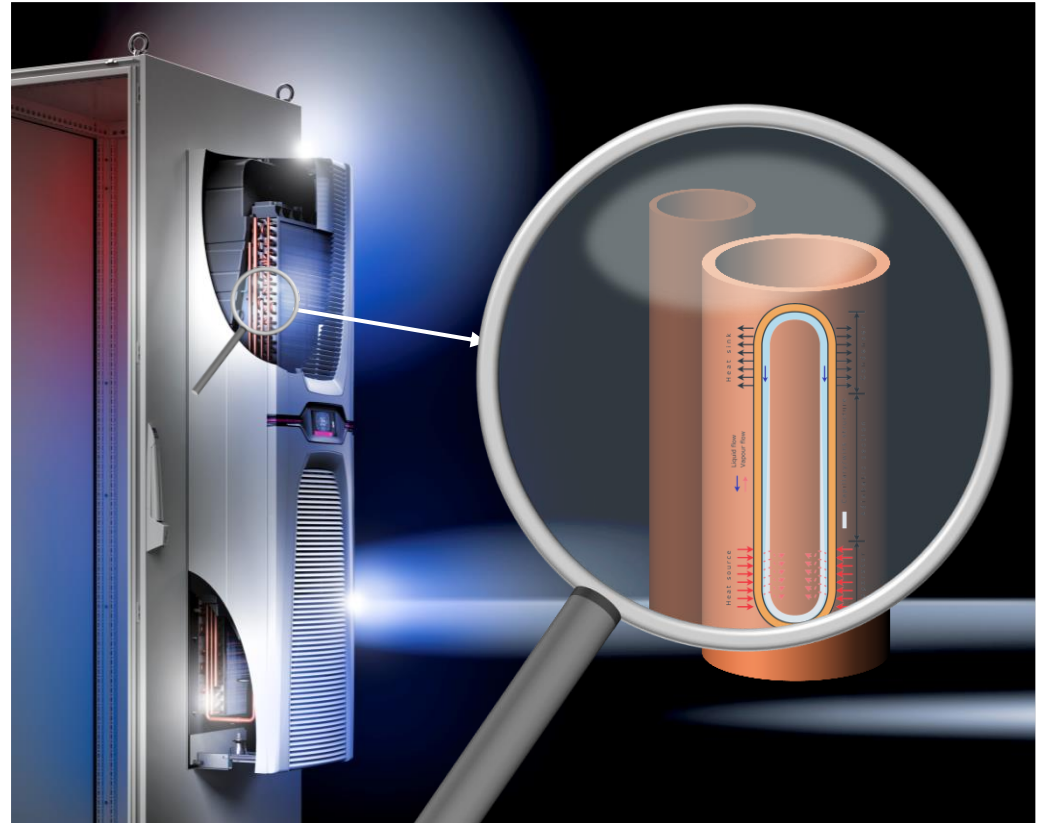
Energy Efficiency

Alberto Mantovani



The **e+** factor on air-conditioning systems for control cabinets:

- Cooling-system motors regulated by inverter technology
- Integrate Heat pipe integrate for passive cooling

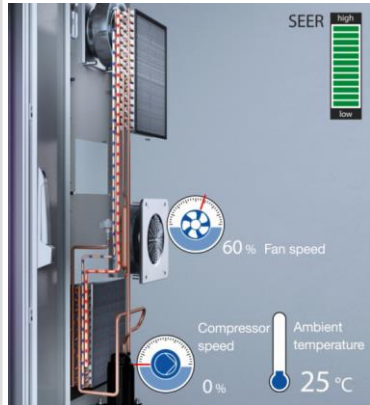


1 Enclosure internal temperature set at 35°C

2

Heat Pipe operation

Ambient Temperature
lower than Internal
Temperature



Hybrid operation

Ambient Temperature
similar to Internal
Temperature



Compressor operation

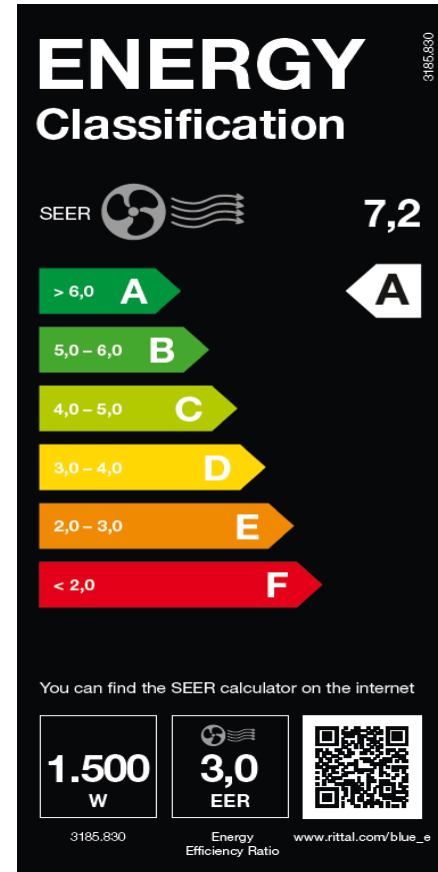
Ambient Temperature
higher than Internal
Temperature



- Energy saving till to 75 %
- Seasonal Energy Efficiency Ratio (SEER):
reflects the annual temperature variation

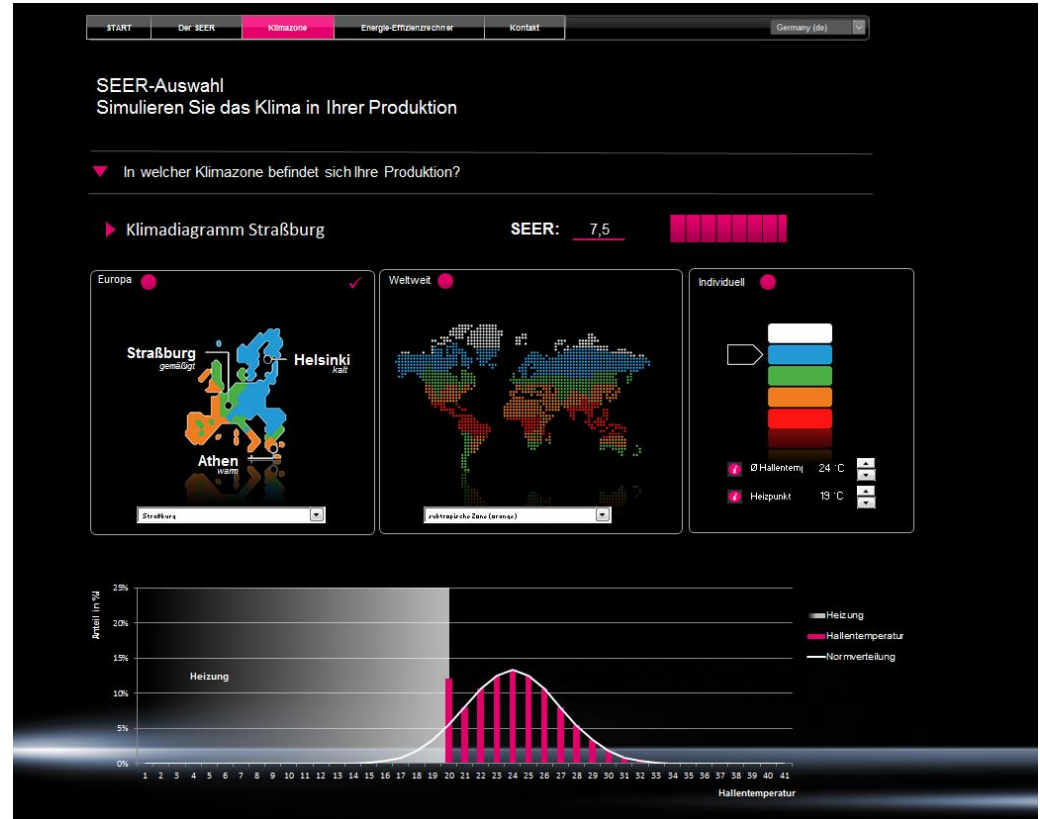
*Efficiency ratings were based solely on the EER ratio.
However, this is always given at an exact hall
temperature of 35° C, which does not necessary reflect
the reality.*

*SEER is calculated from the sum total of the individual
static EER at the percentile frequency over the year*



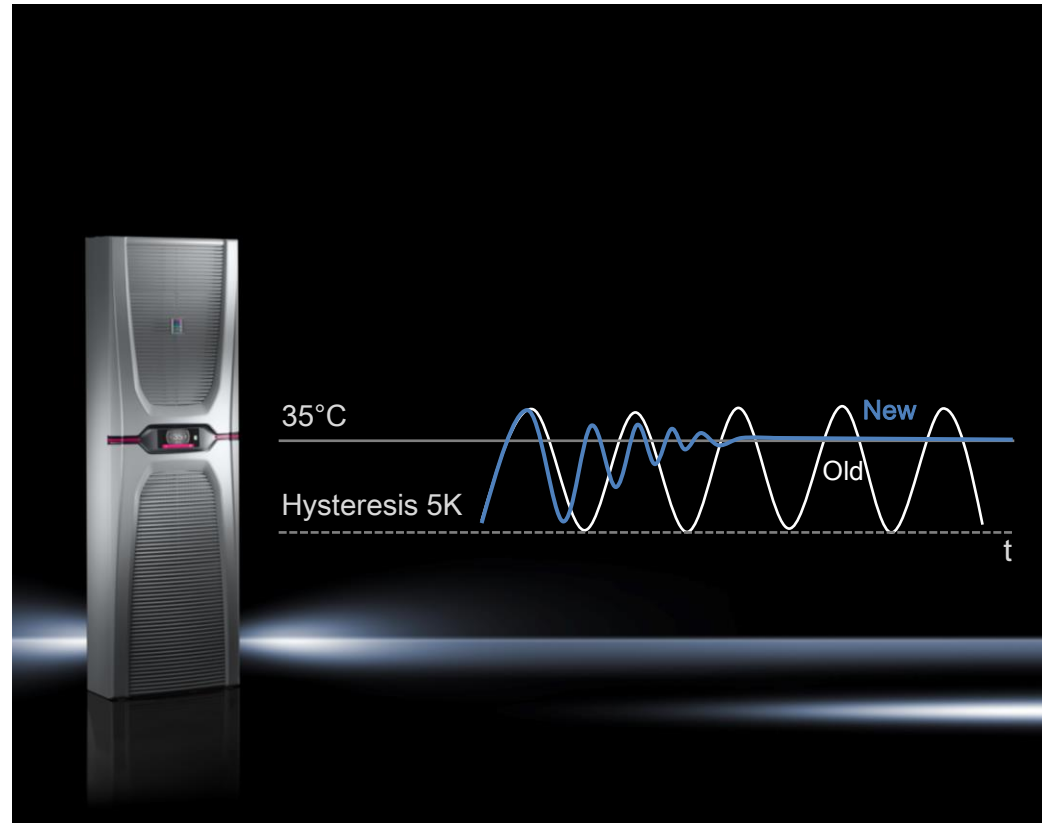


- Calculate your energy saving with the new Efficiency Calculator on-line



The **e+** factor:

- PID control for more accuracy.
- Three control modes (three temperature sensors).
- Efficiency on control management with cooling-drive thermal management for longer life cycle of the units.



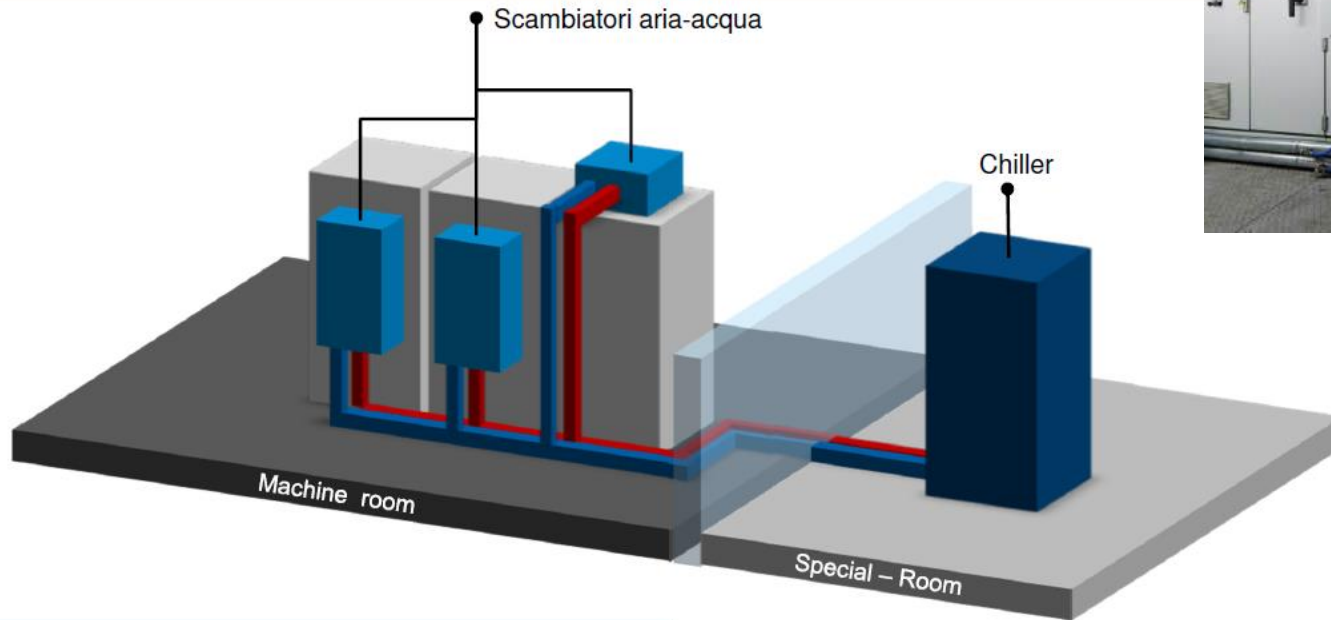
The **e+** factor:

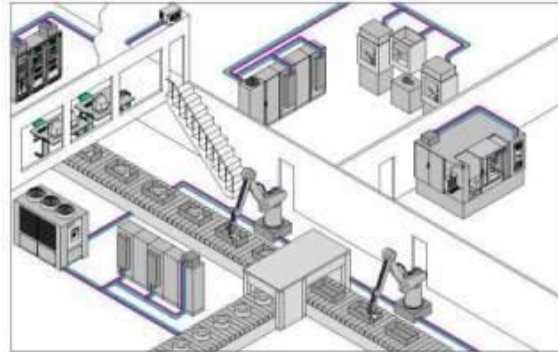
- Efficiency on control management with a touch display or other connetions
- Quick parametrization, data reading and messaging of the system (multilingual display)
- Smartphone App for a fast exchange of informations with NFC technology



Efficiency by using chilled water:

Water chiller + Air/Water heat exchanger





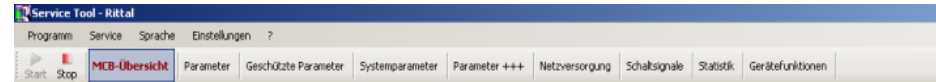
Advantages using water:

- Unique cooling medium to cool more utilities
- Easy distribution of energy
- Optimum energetic storage (in order to face pick loads)
- Easy upgrade of the cooling power: modularity of open systems
- Inverter systems or free-cooling to manage high levels of heat power

How better control can improve efficiency:

- Monitoring and parametrization system for chiller – service tool: compressor, pump and fans
- Phases Check
- Temperature control
- Remote management of maintenance

→ Better chiller efficiency



Micro-Controller-Box Übersichtsseite

