

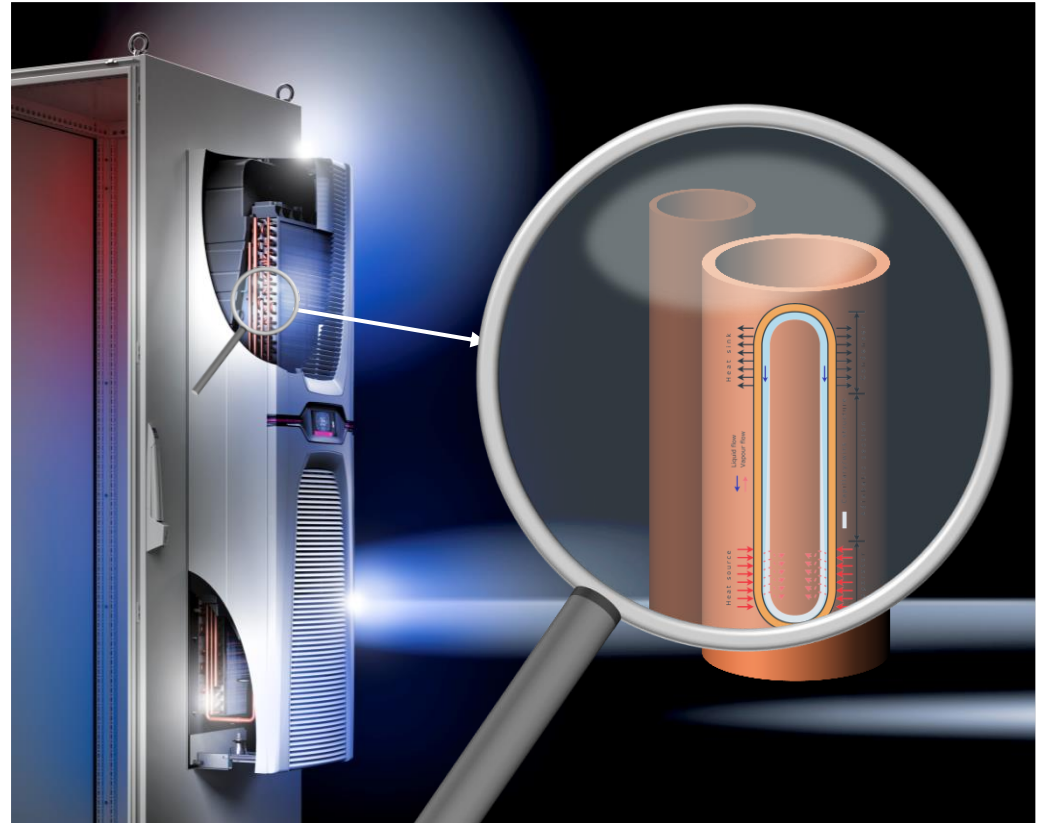
# Energy Efficiency

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

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

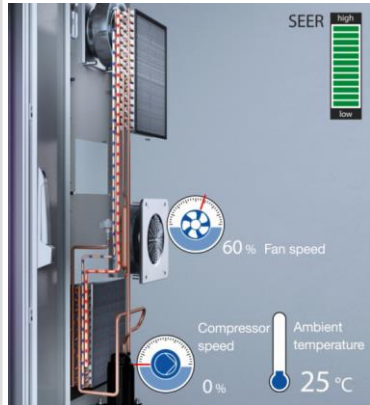


**1** Enclosure internal temperature set at 35°C

**2**

**Heat Pipe operation**

Ambient Temperature  
**lower** than Internal  
Temperature



**Hybrid operation**

Ambient Temperature  
**similar** to Internal  
Temperature



**Compressor operation**

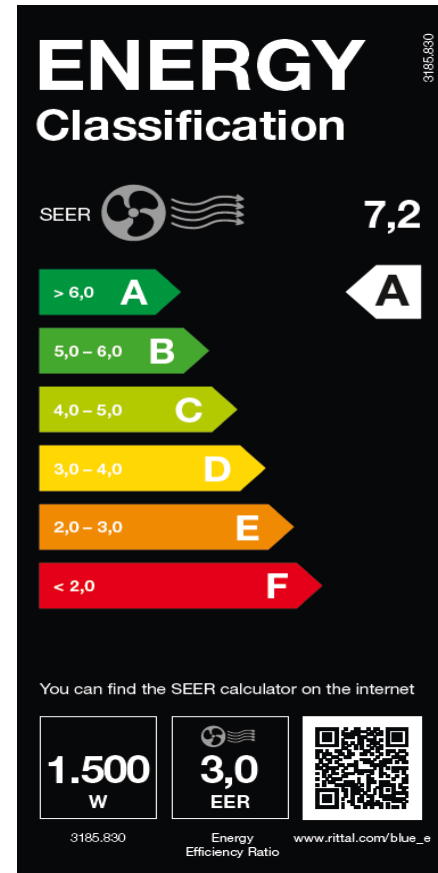
Ambient Temperature  
**higher** than Internal  
Temperature



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

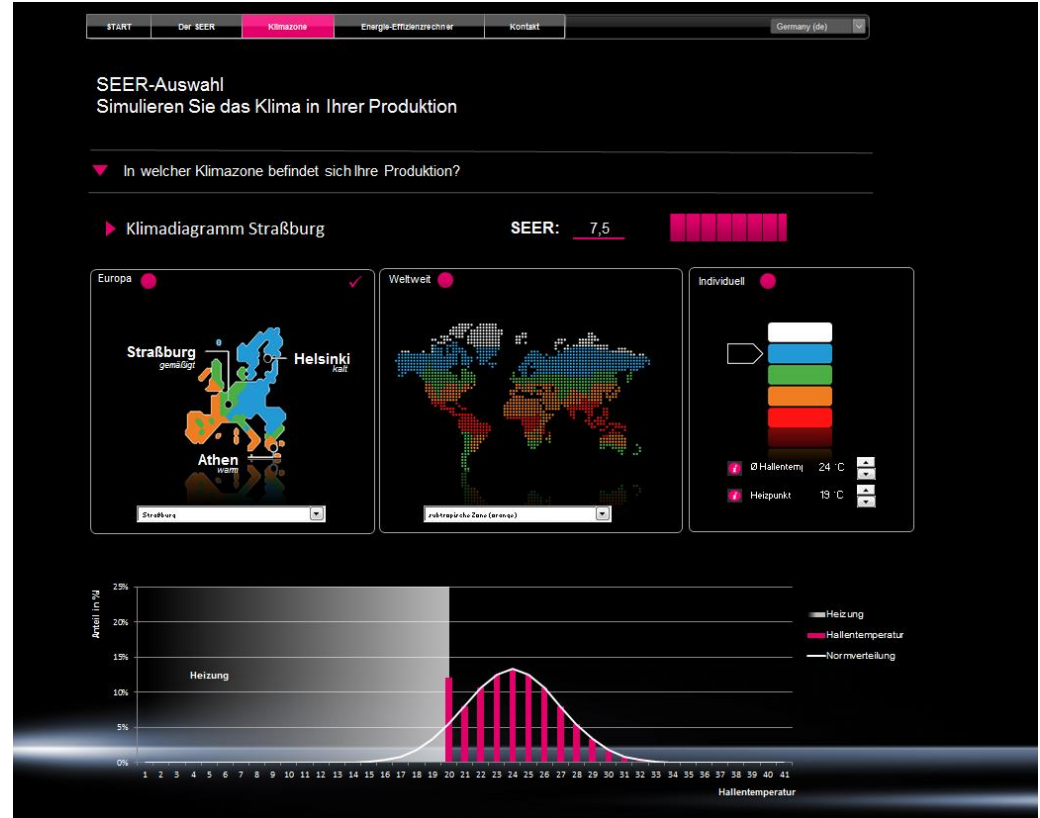
*Efficiency ratings were based solely on the EER ratio.  
However, this is always given at an exact hall  
temperature of 35° C, which does not necessary reflect  
the reality.*

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





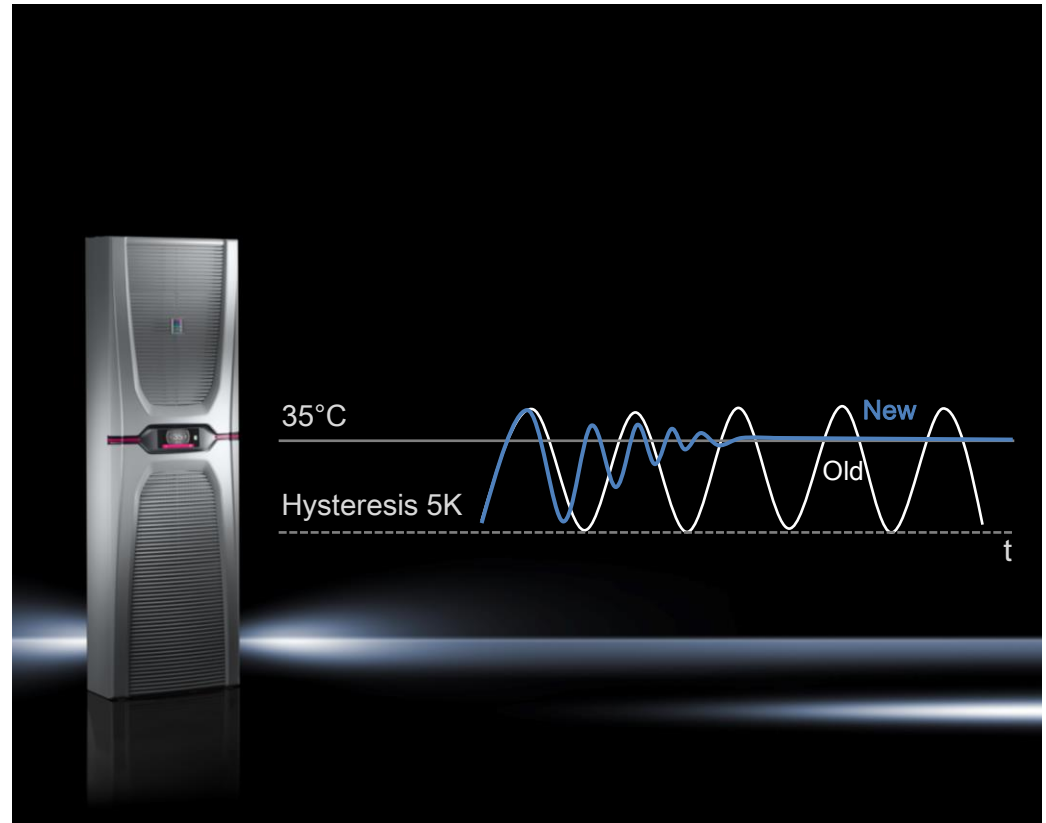
- Calculate your energy saving with the new Efficiency Calculator on-line





## 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.



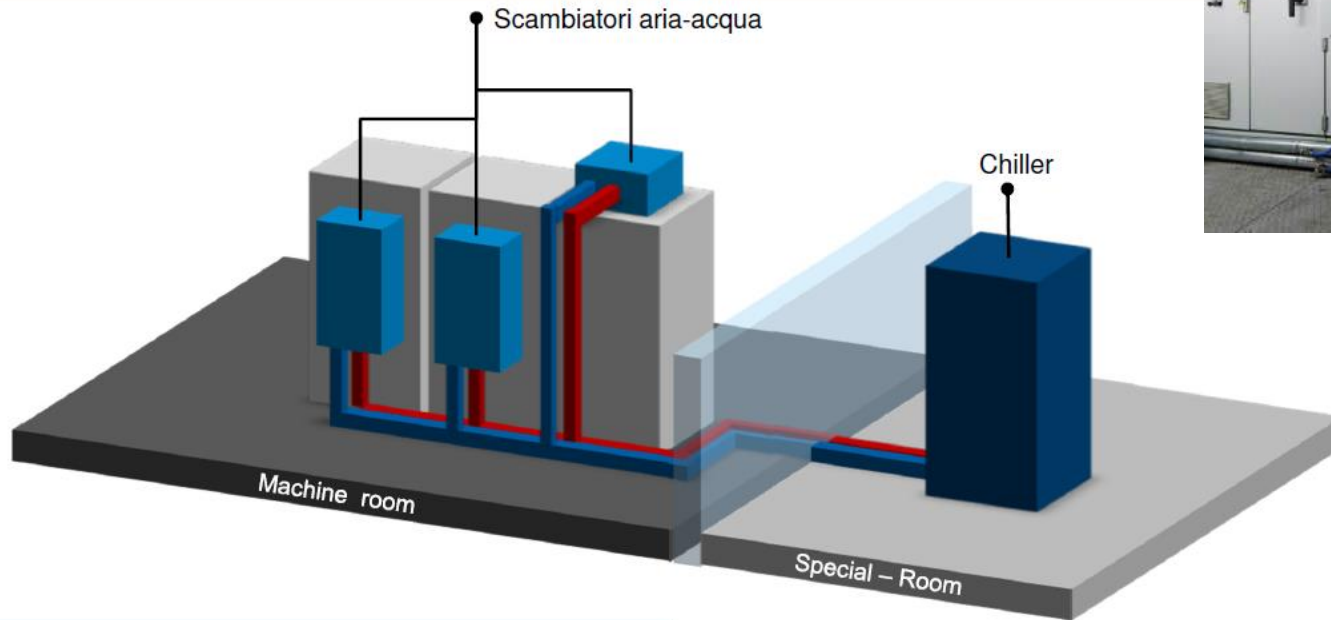
## The **e+** factor:

- 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

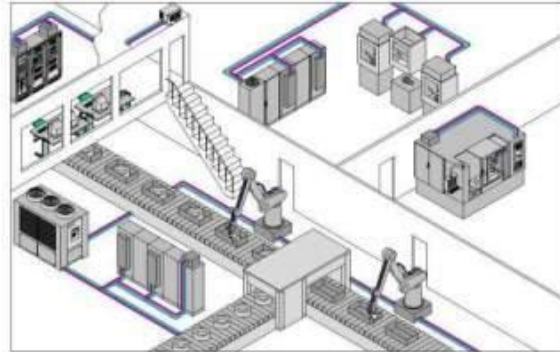


## Efficiency by using chilled water:

### Water chiller + Air/Water heat exchanger







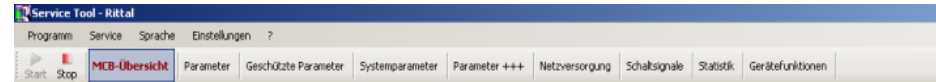
## Advantages using water:

- 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

