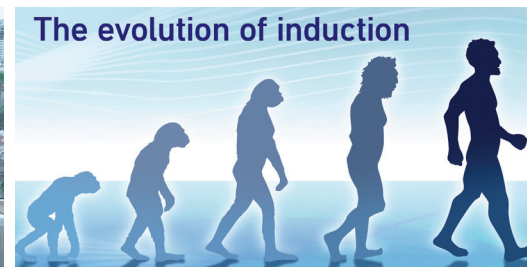
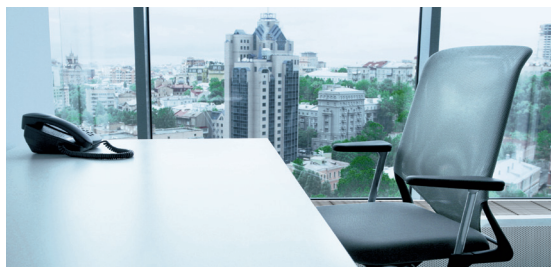


Minimum Energy Costs – Highest Comfort

Induction Unit HFVsf System SmartFlow



HFV^{sf} for demand-controlled air conditioning – now available with NFC technology.

NEW



- Maximum energy efficiency due to low primary pressures
- Demand-controlled ventilation for all kinds of use; easy adjustment to changed conditions
- Profitable also in case of refurbishment
- High user response: supply air and cooling variable
- Variable integration in existing or new parapet
- Power-off and easy parametrisation and set-up with LTG NFC app





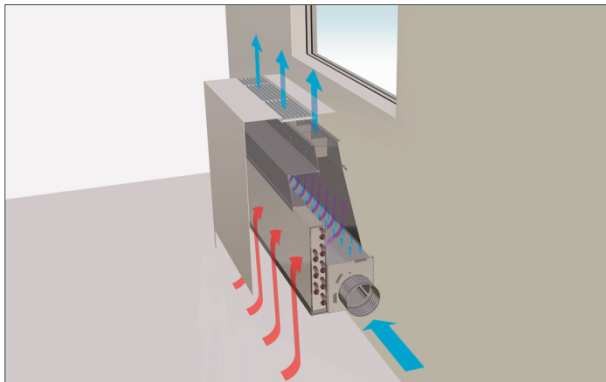
Air-water systems Induction units HFV and HFVsf System SmartFlow

Induction technology - comfortable and efficient

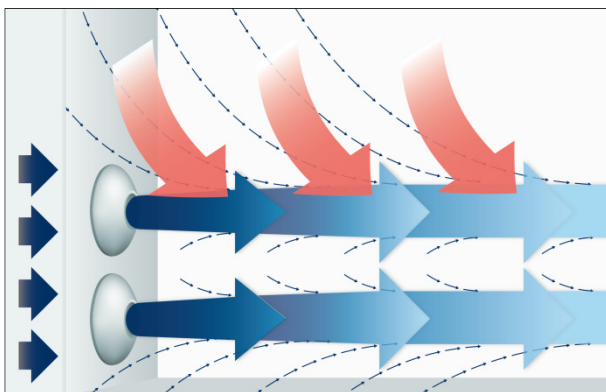
LTG induction units have been developed further continually since the first patent was registered by founder Dr. Albert Klein for an induction plant in 1915.

The induction principle

Air flowing through a nozzle forms a free jet. It pulls the surrounding air layer along at its edges and thus enlarges the flowing air volume. This "induction" takes place within the induction device. A special construction takes along room air (secondary air) through a heat exchanger, where it is cooled or heated. Together with the fresh air (primary air) the supply air then returns to the room for a comfortable climate.



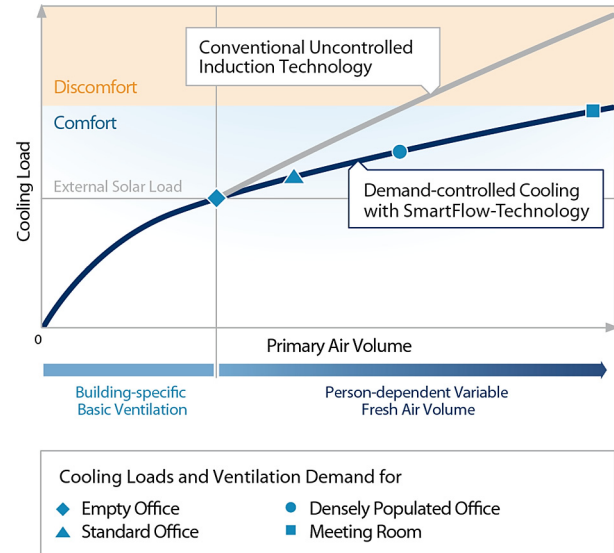
Induction unit chart



Induction principle

The System SmartFlow

Induction technology redefined - Demand-oriented air conditioning



Comparison of conventional induction technology
and SmartFlow technology

The LTG System SmartFlow offers best comfort and energy consumption even under changing load stations. The ideal flow form is selected depending on required cooling output and fresh air volume. For this, the air nozzles are opened and the cold water valves are controlled. This permits achieving best comfort, acoustics and energy efficiency for any load case with a single device.

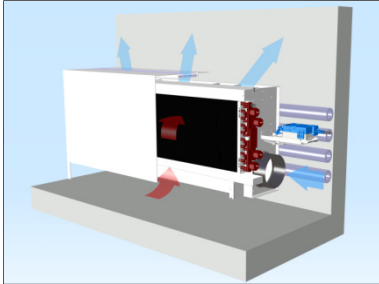
Manual (different room use) or automatic (presence or CO₂-controlled) regulation is possible. In contrast to conventional induction technology, this permits adjustment of cooling output and fresh air supply to the specific requirements.

LTG induction units of the latest generation are energy-efficient and can be operated demand-controlled with LTG SmartFlow technology.

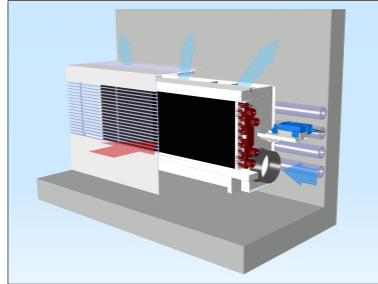


Air-water systems Induction units HFV and HFVsf/System SmartFlow

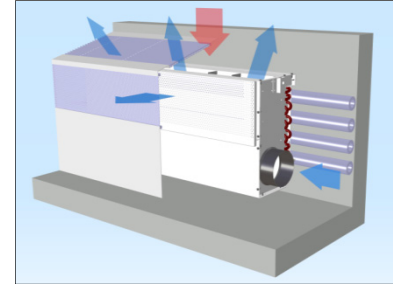
Installation examples and flow patterns



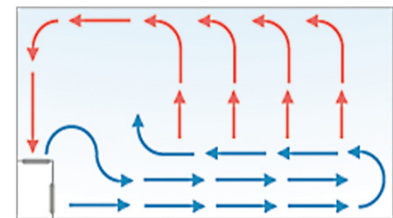
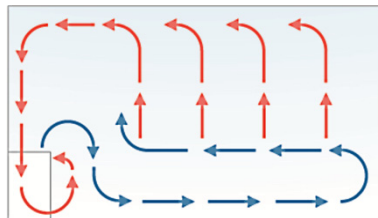
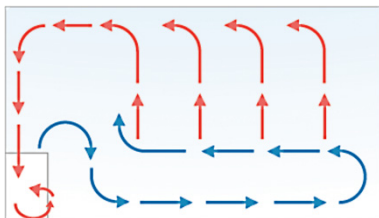
Mixed/displacement air
Closed casing
Intake from below/front
Discharge to above



Mixed/displacement air
Casing with grille
Intake from front
Discharge to above



Mixed/displacement and displacem. air
Casing with perforated sheet
Intake from above
Discharge to front and above



Product data

LTG induction unit	Type HFV-F	Type HFVsf-M2	Type HFVsf-MS
Primary airflow rate	constant	variable	
	fixed	adjustable in 2 stages	adjustable continuously
Features			
High <u>thermal comfort</u> thanks to overriding mixed/displacement air ventilation	■	■■	■■■
Automatic adaptation of the <u>optimum room flow</u> using actuating drive	-	■	■■
<u>Energy saving</u> thanks to low primary pressure and DCV regulation (Demand Controlled Ventilation)	■	■■	■■■
<u>Adaptation to changes</u> in room size and use	■	■■	■■
<u>Air quality regulation</u> by CO ₂ sensor, presence detector	-	■	■
Functions			
Cooling/heating/fresh air supply	■	■	■
On-demand ventilation	-	■	■
Technical data with L_{pA}=35 dB(A)³⁾			
Max. cooling capacity ¹⁾		1200 W	
Max. heating capacity ²⁾		1900 W	
Primary airflow rate ⁴⁾		up to 160 m ³ /h	
Sound power level at 100 Pa		<28...35 dB(A)	
Dimensions	Length x width x height in mm	900...1330 x 232 x 400	

■ Standard

¹⁾ At for 16 °C cold water inlet temperature / 27 °C intake temperature / 16 °C primary air temperature

²⁾ At 70 °C warm water inlet temperature / 20 °C intake temperature / 20 °C primary air temperature

³⁾ At 6 dB room absorption

⁴⁾ Boost function



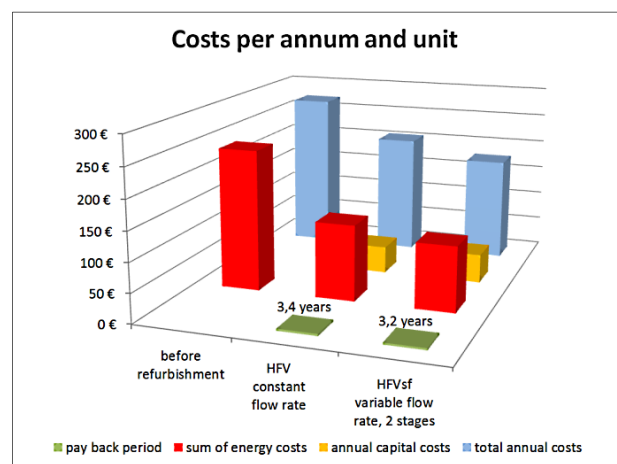
Air-water systems Induction units HFV and HFVsf System SmartFlow

More features

- **Easy refurbishment of induction systems**
 - 1:1 replacement during operation
 - General retention of media pipes and sill panels is possible
- **Sustainable thanks to flexibility**
 - Can be subsequently adapted to changes in use (individual office/open plan office, conference room)
 - Various room flow forms are possible
 - Height of 350 mm allows for installation in a wide variety of sill arrangements
 - Complete system including ICA technology
 - Looping through of a second unit is possible
- **High user response**
 - Good user response to variations of ON/OFF, room temperature, primary air flow rate
 - Easy maintenance - through use of hygienic equipment and operation
 - Appreciable comfort improvement

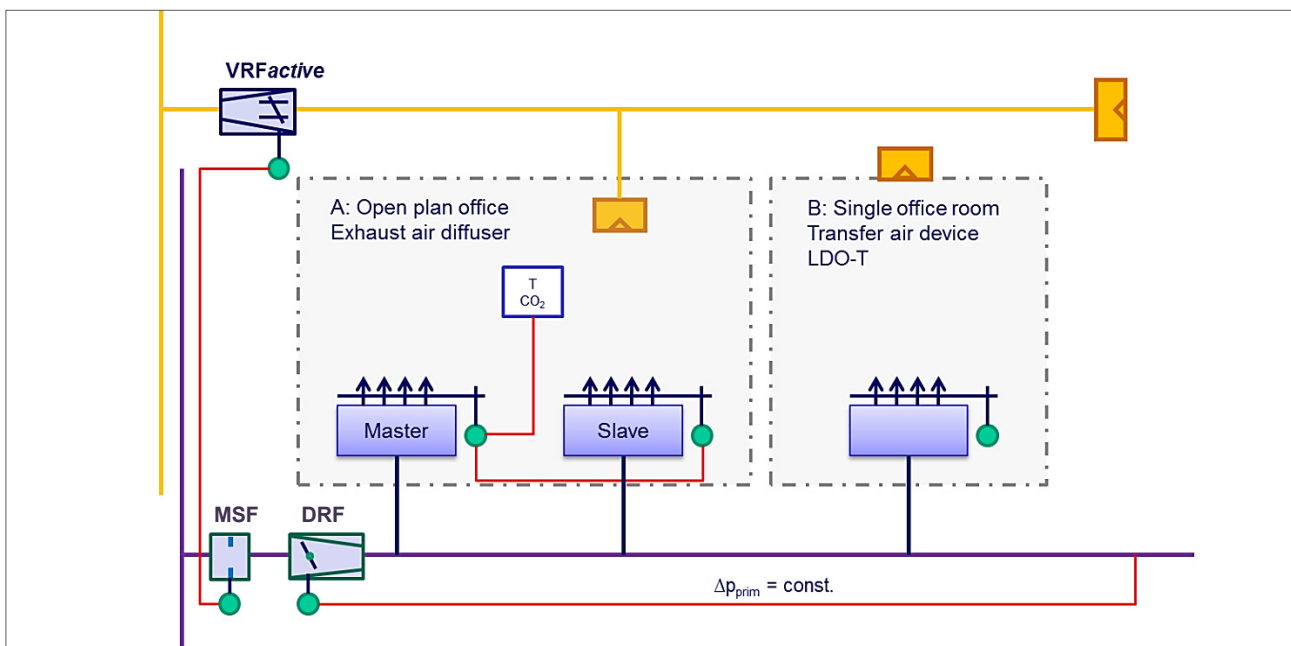
Profitability of a refurbishment solution

The energy savings from refurbishment of an old high-pressure system can cover a major part of the investment costs. At the central RLT units, in the first step the primary pressures and supply air flow rates are reduced and heat recovery is improved or retrofitted. Further savings are then possible by a requirement-dependent ventilation system, the option of switching off the equipment, lower regulated water flows and highly efficient equipment technology.



Representation of cost comparison

Example: control for supply and exhaust air



Equal balance of supply air and return air of a use zone due to pressure regulation in the supply air and adjusted return air flow rate control using set value for supply air.