

Movement by Perfection



The Royal League in ventilation, control and drive technology



## **Modular System solution for AHU systems**

# Smaller is clever

## More flexibility with more fans, more air handling capacity, more efficiency

The modular principle is a new approach to intelligent central air conditioning. In this modern technology, several (usually at least four) small fan units are connected in parallel in one housing instead of using one large fan. This arrangement has considerable advantages. On the one hand, the modular principle increases flexibility. Depending on the installation requirements, the number and size of fans can be selected optimally. On the other hand, it improves the air flow distribution: The result is a better heat transmission and filter utilisation in the central air conditioning unit.

### Operational reliability: No total failure in case of malfunction

Using several small fans in place of one large fan improves depending on the installation requirements: In the event of a malfunctioning fan there is no total system failure and not even a drop in performance because, with the appropriate design, the speed of the other fans can be increased to compensate the non-operational fan.

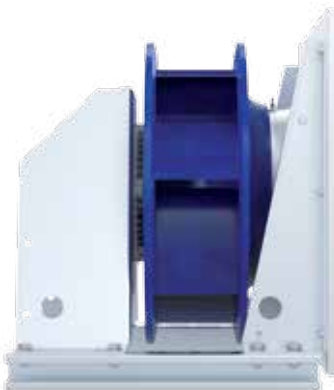
Cpro ZAmid<sup>®</sup>Technologie



GR module version  
**Cpro ZAmid<sup>®</sup>**  
and ECblue motors



Cpro ZAmid®Technologie



Cpro ZAmid®Technologie



Cpro ZAmid®Technologie



High performance **Cpro ZAmid®** \* centrifugal impeller, the flow technical marvel with three-dimensional blade geometry, available in different configurations, suitable for a modular layout.

\*Also with steel wheel in the appropriate models

## An unbeatable team

### Modular system solution for maximum air handling capacity

#### Handier, lighter, maintenance-free

Services such as installation, maintenance and replacement also benefit: The individual modules weigh less and are easier to handle. Small fans also take up less mounting space. With ECblue motors there is no risk of drive belt failure thanks to a maintenance-free drive.

#### Higher efficiency with lower noise level

Smaller fans using ECblue motor technology benefit from a higher efficiency and ensure a reduction in the sound power level in the low frequency range. This means that less noise insulation is required – which in turn has a positive effect on the length of the devices and the costs.

#### Alternatively in AC or ECblue technology

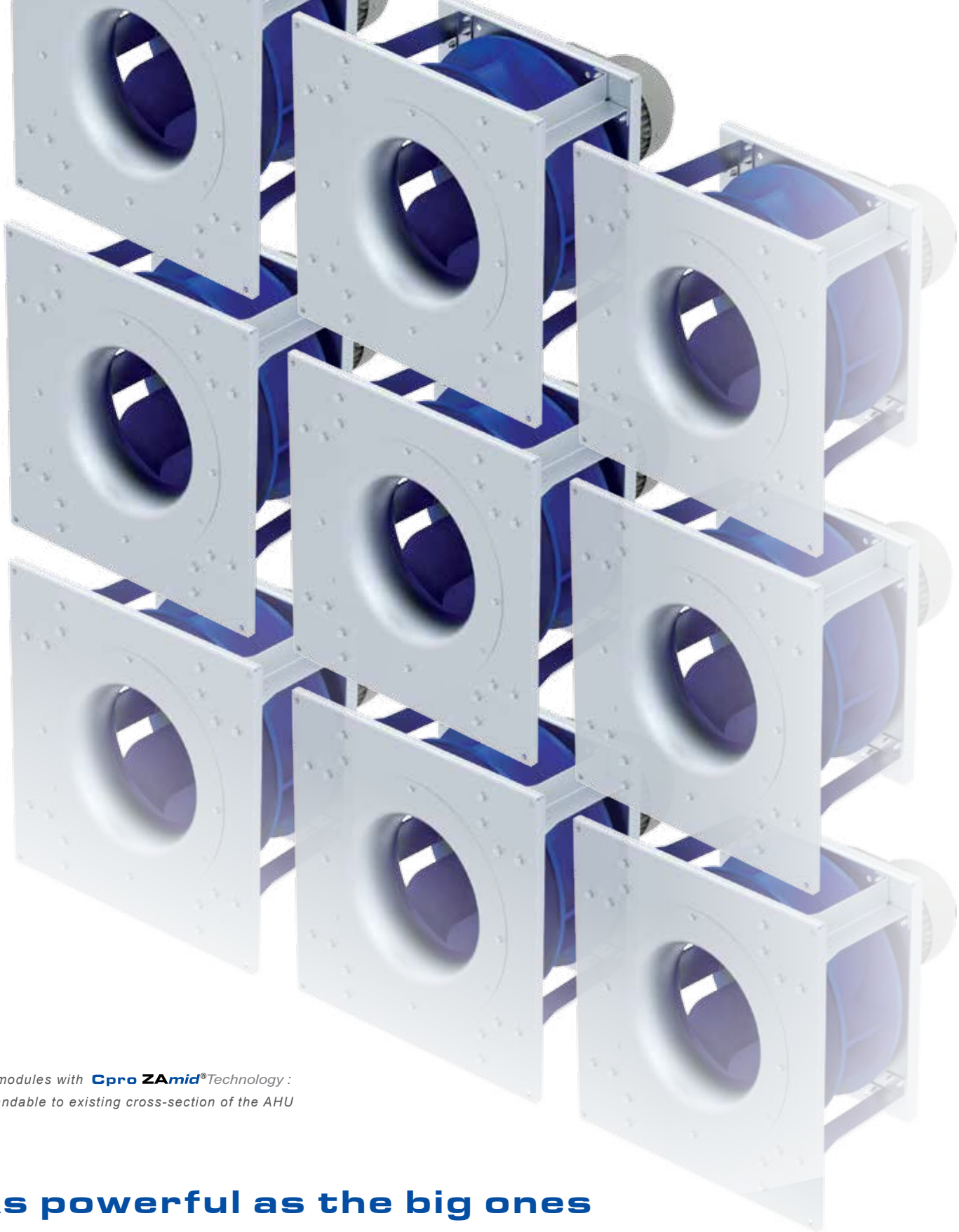
In addition, not only AC but also ECblue motors with their very high efficiencies can be used.

#### Advantages: That added plus

- More operational reliability
- More performance
- More costs saved
- More installation flexibility
- More energy saved
- More maintenance friendliness
- ... the only less: Weight and space requirement!

#### Product prange

- GR..Cpro 250 - 630 mm
- ER..Cpro 250 - 630 mm
- ECblue up to 6 kW
- AC up tu 15 kW



GR modules with **Cpro ZAMid**® Technology :  
expandable to existing cross-section of the AHU

## As powerful as the big ones

For air handling capacities way beyond 10,000 m<sup>3</sup>/h

The modular system solution from ZIEHL-ABEGG, is highly flexible and due to the intelligent parallel circuiting of several fans, it can now also easily achieve air handling connection of 40,000 m<sup>3</sup>/h at pressures of 1000 Pa. This works not only with AC motors but also with ECblue motors.



# The perfect combination, even greater power

Everything is just perfect – innovative fan system, intelligent control technology, high performance centrifugal fans and state of the art motor technology in AC and EC versions – all from a single source.

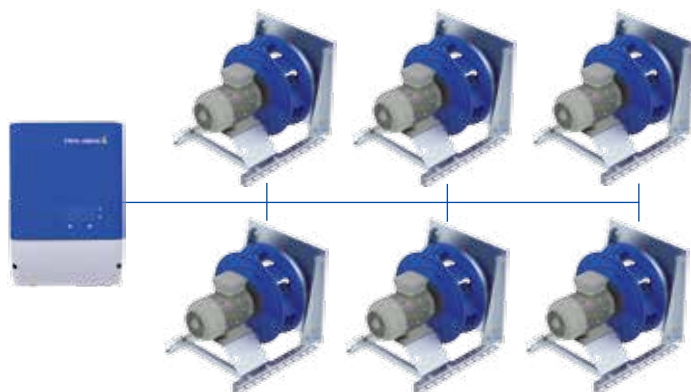
with integrated sine filter



## AC technology with Fcontrol frequency inverter

The **Fcontrol** frequency inverter is the perfect power controller for AC technology. With its integrated sine filter, **Fcontrol** guarantees a quieter and gentler motor operation – regardless of power cable length:

- Optimised frequency inverter for parallel operation of multiple motors even with long motor power cables
- Sinusoidal output voltage (by integrated sine filter), comparable with the mains voltage. Therefore no “stress” for connected motors
- Ideal for the use of standard motors
- No need for shielded cables
- Emergency operation of the motors directly on the mains possible
- No electromagnetic motor noises
- High energy saving
- Quiet motor operation – without the typical VSD motor whistle



## ECblue motors with UNIcon control

ECblue – the trendsetting EC motor from ZIEHL-ABEGG – is now also available with the innovative **UNIcon** control. This means:

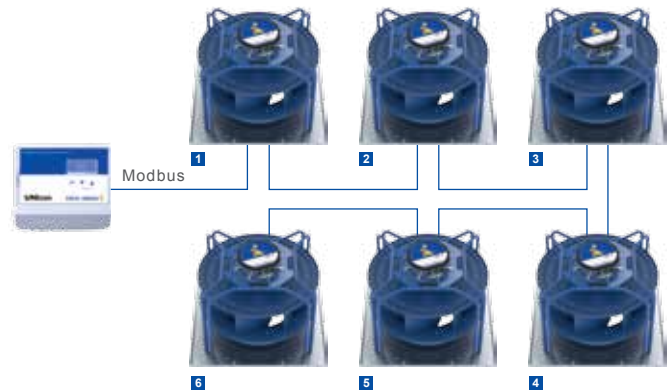
- Maximum efficiency
- Simple installation and commissioning by a bus cable
- Automatic addressing of the fans

## ECblue – sets the standard in terms of operation, efficiency and reliability:

- Ingeniously simple to operate
- Maximum efficiency
- Minimum electricity costs

## The innovative UNIcon control:

- External control signal, e.g. 0-10 V
- Differential pressure control
- Optional volume flow control and display



# Maximum efficiency – minimum consumption

## Save energy with the power of multiples

"Many can do what one cannot do alone." – That is the great idea behind, the modular system solution which can replace one big fan with many small fans. Because, for the first time, the very high efficiencies of EC motors can be used for transporting large volumes of air with this system concept. Benefit from the enormous energy savings and maximum efficiency of the ZIEHL-ABEGG ECblue technology or choose ZIEHL-ABEGG AC motor technology with indestructible power and efficient performance with the matching control technology.

The alternative: Eight small ones instead of one big one



GR modules with **Cpro ZAmid**®Technology and ECblue motors

## The agony of choice

No matter which system or which solution you choose, you can't go wrong with ZIEHL-ABEGG

### Energy example calculation

An air handling unit has an operating point of 80,000 m<sup>3</sup>/h at a static pressure of 700 Pa. Device cross-section WxH = 3050 x 2800 mm. This corresponds to a speed in the device of 2.4 m/s (class V6).

Options:

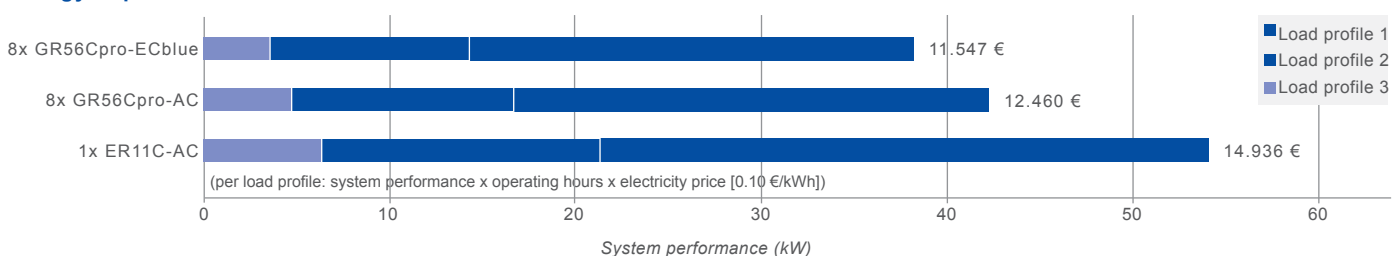
1. Single ER11C fan with 37 kW AC motor + frequency inverter
2. Eight GR56C fans and 3 kW AC motor + frequency inverter
3. Eight GR56C-ECblue fans + UNIcon control module

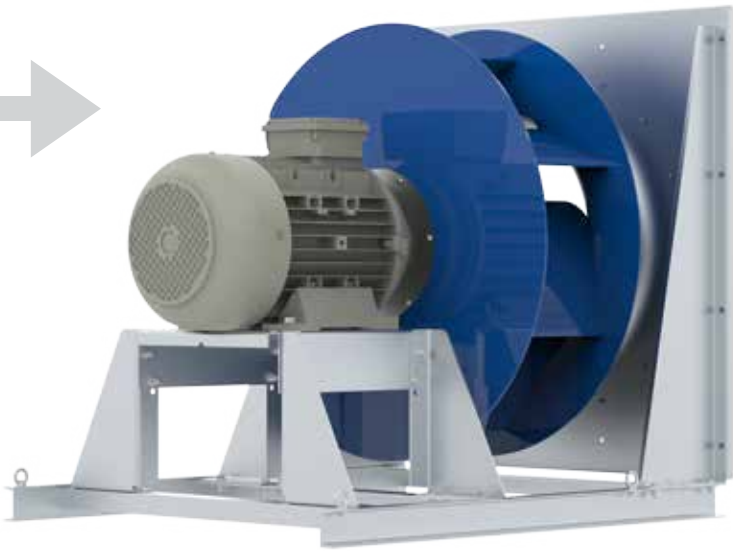
Option	Fan type	Number	System power in kW	Acoustic power in dB(A)	Mounting area		Investment costs incl. inverter
			Total	Total	Dimensions WxD in m	Area in m <sup>2</sup>	
1	ER11C	1	33,57	100	3,05 x 2,7	8,24	100 %
2	GR56Cpro	8	28,01	94	3,05 x 1,8	5,49	108 %
3	GR56Cpro-ECblue	8	25,96	95	3,05 x 1,2	3,66	107 %

Annual energy costs at an electricity price of 0.10 € per kWh	
ER11C	14.936 €
GR56Cpro	12.460 €
GR56Cpro-ECblue	11.547 €

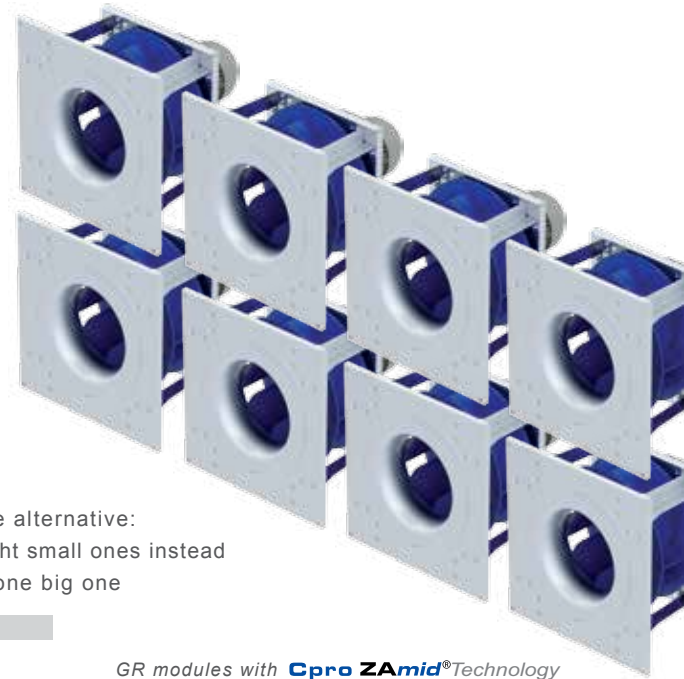
Load profile in continuous operation 8760 hours per year			
Operating time	Operating hours	Air handling capacity	Load profile
20 %	1752	100 %	1
70 %	6132	75 %	2
10 %	876	50 %	3
Total	8760		

### Energy expenses





Single fan ER11C with AC motor



The alternative:  
Eight small ones instead  
of one big one

GR modules with **Cpro ZAMid**® Technology  
and AC motors

## Innovative technology for your success

### InVent – a whole wall is on the test bench here

In the futuristic InVent Technology Centre – the world's biggest and most modern performance and acoustic fan test chambers – the fans are tested in every conceivable combinations. In gigantic air ducts, unbelievable air flows of up to 100,000 m<sup>3</sup>/h as well as pressures of more than 3000 Pa can be generated in a test chamber weighing 235 tons.



### FANselect – top class selection program

With FANselect, the new selection software on the ZIEHL-ABEGG website, the user can quickly and conveniently find suitable fans for a solution tailor-made for his requirements. The optimal product for the respective requirements can be found with a few clicks after entering the basic conditions. A special feature is the integrated LCC (Life-Cycle-Costs) module which enables you to calculate running costs.

[www.fanselect.info](http://www.fanselect.info)



# The Royal League



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