

## PIG HOUSE AUTOMATION for optimum results

Achieving the highest possible result against the lowest possible cost. That is only possible if you can rely on proven technology that ensures optimum conditions in pig houses day in, day out. Technology that lets you see exactly what is happening and lets you take action immediately, if necessary, wherever you are and at any time. This enables you to work efficiently and manage your employees properly. Ensuring you of the highest possible results for your farm. Stienen BE is the right partner to enable you to fully automate your pig houses.



## THE QUALITIES of a family company

Stienen BE is a leading family company (1977) which has its roots in livestock farming. It is in our nature to be very close to our end users. Stienen BE is a global supplier of innovative automation solutions for poultry and pig houses. Our climate solutions, automation systems, management software, and the accompanying peripheral equipment are all developed and produced in-house.

## CLIMATE SOLUTION

Farm management using the extended KL-6400 climate and management computer. Or with Stienen's Mitch climate concept. The KLC-100, KLD-100 and KL-6500 together form the very strong trio that makes up this climate concept. The overview below shows the most important advantages of both climate solutions.

### KL-6400 CLIMATE AND MANAGEMENT COMPUTER



An extended climate and management computer, the all-rounder among climate controllers for modern pig farming.

- Direct exhaust
- Eco-Vent
- Central exhaust, optionally with an air scrubber
- Ventilation based on temperature
- Minimum and maximum compensation of ventilation based on outside temperature
- Compensation based on CO2 or RV, adjusted bandwidth compensation or automatic temperature increase during the night.

KL-64, optional local station for readout at the room. This info station is installed at every room and enables you to read out the current room temperature, ventilation, heating status and alarm status at a glance.

### Mitch CLIMATE CONCEPT



With Mitch you consciously choose for:

- simplicity and central overview
- a language-independent system which every employee can use
- a commercial-technical solution which lets you save up to thousands of meters of cable

You can choose from operation and read-out at different levels: management, pig house and room level.

No matter which language you speak, everyone quickly learns how to use the icon-driven control computers from Mitch.

The KL-6500 control functions in combination with the KLD-100 room controller and the KLC-100 control for the central functions. Together they form the very strong trio that makes up Stienen's Mitch climate concept.

## PERSONAL ADVICE from our climate specialists and partners

Our climate specialists and local partners will be happy to help you find the best solution for your pig problem. If you would like more information, please contact our Sales Department:

E [sales@stienen.com](mailto:sales@stienen.com)  
T +31 (0)495 - 63 29 26



# VENTILATION TYPES

## How does the air enter the pig house?

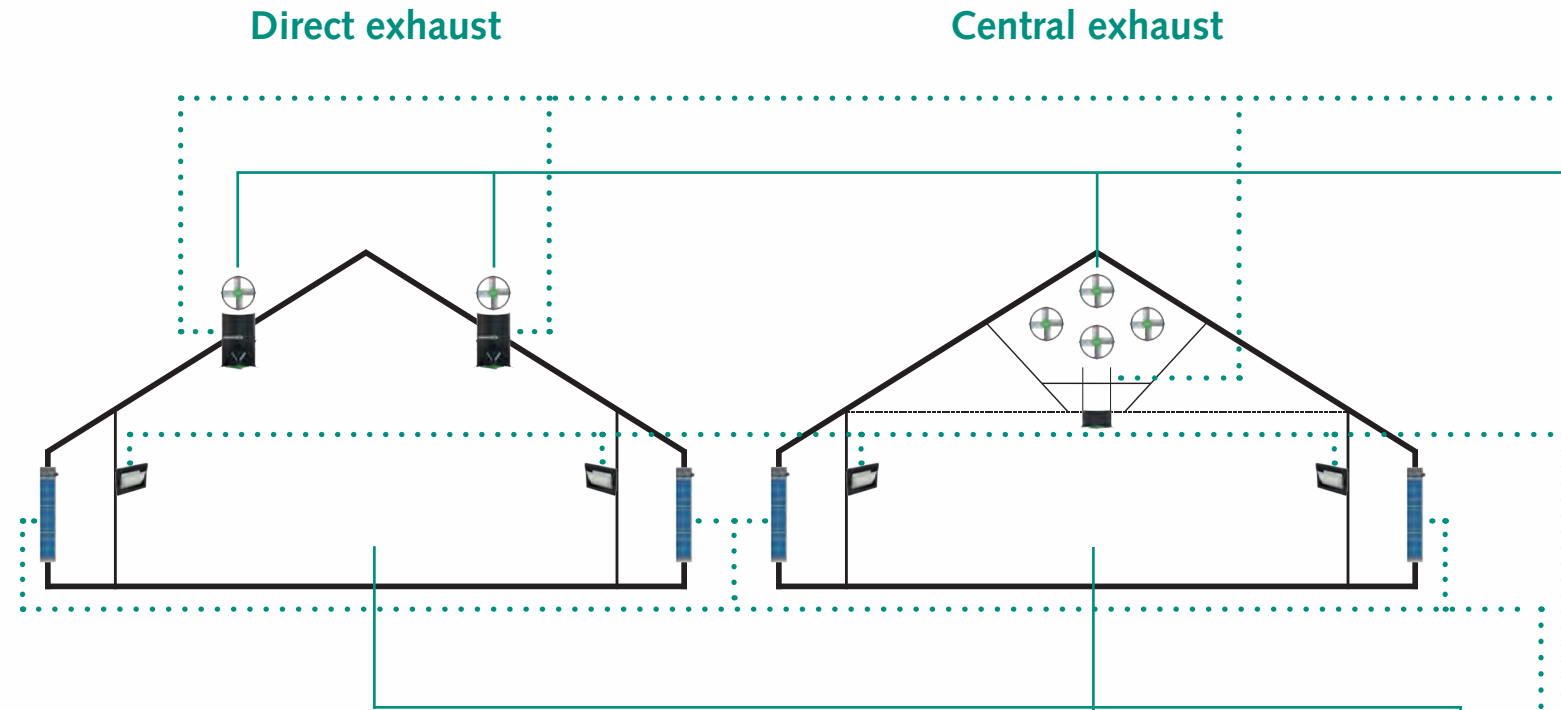
The climate control in a pig house is based on the type of ventilation. Depending on how the air enters the pig house, we distinguish the following types of ventilation:

1. Ground channel ventilation
2. Roof ventilation
  - a. Roof ventilation with AeroRoof inlet valves
  - b. Roof ventilation (Combi roof)
3. Combi and tube ventilation / Fresh nose system
4. Feed alley ventilation or door ventilation (Oolman)
5. Air inlet valves

Some ventilation types are eminently suitable for preconditioning the incoming air. This is referred to as a conditioned air inlet. Heat exchangers or cooling pads are used to heat up the inlet air in the winter and to cool down in the summer.

## How does the air leave the pig house?

The air can be extracted from the pig house in two different ways: via direct exhaust or central exhaust. With direct exhaust the air is extracted via an exhaust chimney in each room. We often see that the outgoing air is extracted centrally. The air from all sections is collected in a central air channel before it leaves the pig house. The major advantage of this system is that the emission point can be replaced and the air can be cleaned using air scrubbers before it leaves the building.



### Pig house management

The graphic display of parameters such as temperature, water, feed, weight, production, relative humidity (RH), carbon dioxide (CO2) and ammonia (NH3) shows you the main management information at a glance. This enables you to easily and transparently monitor, control and adjust all the vital processes in the pig house.



### Dry feed system

**KFM-6400:** a universal controller for the automatic filling of dispensers or feed troughs in single and/or multiple feed circuits. This dry feed system is suitable for single-phase and multi-phase feeding.

**KFV-6400:** an extended dry feed computer for highly accurate weighing, mixing and dosing out of pre-programmed feed rations per valve/animal group.



### Frequency controller

The FC-102 frequency controller pre-programmed by Stienen BE enables optimum climate control in the pig house. The FC-102 continuously adjusts the fan speed to the need of the animals. This is done via a stepless control. Large temperature fluctuations are prevented and operational reliability is increased.

### Energy efficient ventilation

Energy-efficient, low-noise and easily controllable high-pressure fans are a crucial factor in central exhaust systems. The energy-efficient SGS fans from Stienen BE distinguish themselves by performing even more favourably in the usual control range - up to 35% of the ventilation capacity. The SGS fans are ideally suited for use in central exhaust systems, optionally combined with an air scrubber or manure drying installation.



### Ventilation chimneys with click system

Stienen BE supplies smart, compact single- and double-walled ventilation chimneys for air intake and exhaust. The ventilation chimneys seamlessly fit the AQC measuring and control units and SGS fans. As one system they are solid and quick to assemble (click system).



### Controlled ventilation

A good minimum ventilation level is important in order to reduce humidity, CO2, NH3 and dust in your pig house. When the management computer has calculated the current climate requirements for your farm, the AQC measuring and control unit will ensure that the (controlled) fans will ventilate the correct amount of air, independently of weather influences and pressure differences.



### Air inlet

Providing your animals with the right volume of fresh air at the right speed in the right place. This is an important condition for a healthy climate. Controls that minimise any temperature differences in your pig house are a standard feature of our management computers. Together with our AeroWing inlet valves, controlled by our robust EGM winch motors, they give you the assurance of proper ventilation.



### AeroX, air-to-water heat exchanger

AeroX air-to-water heat exchangers are ideally suited for preconditioning air. In areas with suitable soil layers it is possible to make use of the heat storage in the soil. The air-to-water heat exchanger is mounted at the level of the air inlet in the pig house as close as possible to the animals. The water in the plastic hoses is warmer than the incoming air in winter, causing it to heat up. In the summer this is the other way around.



### FarmConnect

The FarmConnect farm software enables you to convert data from our management computers into management information. FarmConnect collects all the current and historical data of all the computers on your farm and presents it in clear overviews, graphs and tables. This professional software gives you central access to your farm data. Wherever you are, you are always connected to your company so that you can intervene immediately if necessary.



### FarmRemote

The remote control option enables you to safely connect to our management computers by smartphone, tablet or PC. This means that you can safely monitor your farm, even from a long distance, and intervene if necessary.

## Mitch

CLIMATE CONCEPT

Very strong trio  
for an optimal climate

- Highly reliable
- Suitable for 1 - 30 rooms
- Easy to use
- Operation at the room and centrally
- Central overview
- Modular construction
- **FarmRemote**
- Cost-saving



## Mitch : reliable and straightforward

**Highly reliable** | Decentralised control. No single point of failure: any failures are limited to one room. Overviews and changes are visible at the room.

**User-friendly** | Language-independent system with operating instructions based on icons.

**Cost-saving** | Substantial savings on installation and cabling costs.

**Easy to commission** | Up and running within 5 minutes. Standard configurations are available. Automatic assignment of inputs and outputs and graphical, full-colour touch screen. Graphic presentation of installation errors.

**Easy to update** | Centralised distribution of updates and settings. You can copy settings quickly and easily from one room to another.



## Importance of reliable climate control

The climate in the room is one of the most important production factors, especially with regard to animal welfare and health. Through this simple and reliable climate concept, Stienen BE makes an important contribution to improving animal welfare and thus the performance of your animals.

## Very strong trio

The KLC-100, KLD-100 and KL-6500 together form the very strong trio that makes up Stienen's **Mitch** climate concept.



**KL-6500**  
Management computer

The KL-6500 is placed in a central location, e.g. your office. Just touch the screen to see the current situation (e.g. via growth curves) in the various rooms and to intervene immediately in the event of any actual or imminent unsafe situations



**KLC-100**  
Animal house computer

One or two KLC-100s are required for your animal house. The KLC-100 measures and controls the central functions in your pig house such as: central air inlet, central exhaust, central heating and NH3. This unit has two integrated differential pressure sensors for the central duct and for a possible air scrubber.



**KLD-100**  
Room computer

The KLD-100 measures and controls the room temperature, ventilation, heating and cooling, based on the day number, number of animals and status. You can also adjust these parameters. This intelligent measuring and control unit is also suitable as a stand-alone unit.

## Summary of configurations

Possibilities of the KLD-100 + KLC-100	Device
Ventilation:	KLD-100
- AQC without measuring fan	
- AQC with measuring fan	
- AQC with measuring fan and fan	
Central air inlet control	KLC-100
Room air inlet control	KLD-100
Central heating control	KLC-100
Room heating control	KLD-100
Room floor heating	KLD-100
Room air inlet distribution	KLD-100
Central air inlet heating control	KLC-100
Room cooling	KLD-100
Central exhaust in combination with frequency controllers	KLC-100
NH3 measurement	KLC-100
Differential pressure measurement for central exhaust	KLC-100
Freely configurable differential pressure measurement	KLC-100
Danfoss frequency controllers with energy consumption recording	KLC-100
Possibilities of the KLD-100 (stand alone)	
Ventilation:	
- Room fan	
- Room air inlet flap control	
Room heating control	
Room floor heating	
Room air inlet control	
Room cooling	
Central readout and management (KL-6500)	
Summary of house data with values measured	✓
Data logging in combination with FarmConnect 3	✓
Mobile remote access via KL-6500 + WebSecure and/or FarmConnect*	✓
Max. number of KLD-100s	30
Max. number of KLC-100s	2

\*available end of 2020

## Service and user comfort

This climate concept lets you save up to thousands of meters of cable and thus a considerable amount of installation costs. The self-learning system has been designed for optimum service and user comfort. Commissioning the system and updating the software, if relevant, is centrally controlled and is very easy to do and manage.



## FarmConnect (optional)

The FarmConnect farm software collects all current and historical data of all control computers on your farm, combines this data, and then presents it in clear overviews, graphs and tables. FarmConnect gives you access to your farm data. Wherever you are, you are always connected to your company so that you can intervene immediately if necessary.

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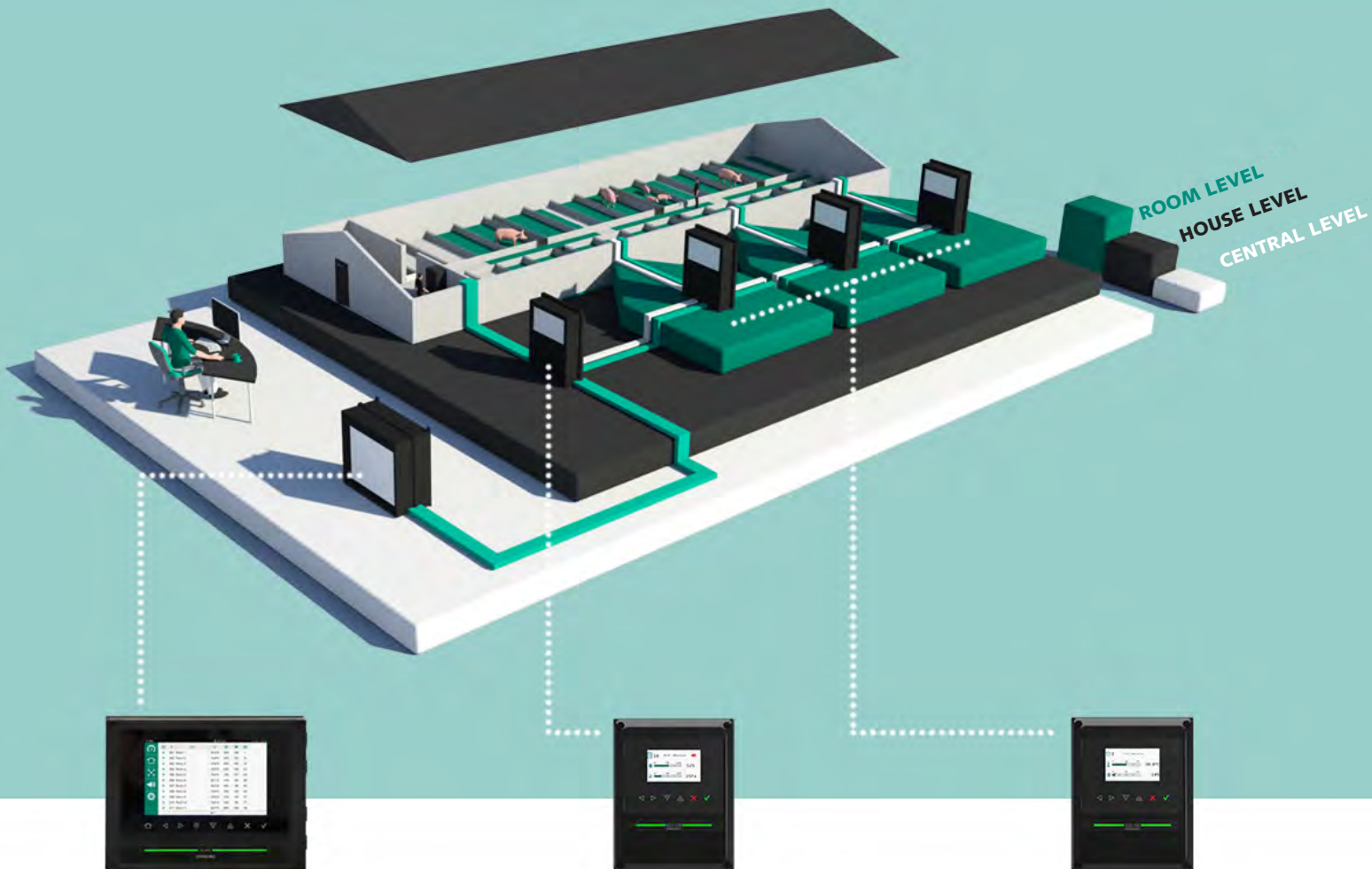
## FarmRemote (optional)

The remote control feature of the KL-6500 enables you to read the current data of your animal house remotely using your smartphone, tablet or PC. You can even operate the KL-6500 from the comfort of your armchair. The Stienen WEB-SEC interface guarantees a secure connection.



# Mitch

Very strong trio for an optimal climate



**KL-6500**  
Management computer

- Central house overview
- Remote control
- Different user levels



**KLC-100**  
Animal house computer

- Central exhaust
- Energy optimization
- Insight into the functioning of the air scrubber
- Pressure measurement channel and air scrubber



**KLD-100**  
Room computer

- Local service
  - \* Number of animals
  - \* Temperature
  - \* Room status
- Overview per room



## KL-6400

Climate and management  
computer for modern pig farming

- Suitable for complete automation of any type of pig farm
- Graphic display of all important management information
- Clearly arranged “dashboard” with recognizable symbols
- Can be programmed in various languages
- USB port for updating and logging
- Protected communication with FarmConnect en **FarmRemote**



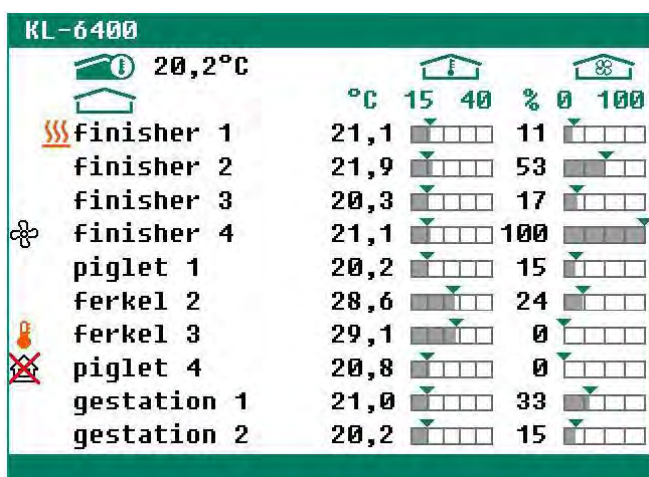
## The KL-6400 controls all vital processes on your farm

This user-friendly climate and management computer is designed to be the heart of your farm. The KL-6400 controls and manages the quality of life of your animals in order to achieve optimal performance results. The computer collects all data from Stienen systems for feed weighing, silo weighing and heat exchangers and processes this data into comprehensible tables and graphs. The graphical representation of parameters such as temperature, water, feed, weight, production, relative humidity (RH), carbon dioxide (CO2) and ammonia (NH3) provide you all the important management information at a glance. The KL-6400 is easy to operate using the function keys. Because unused functions are not displayed, the control system is kept easy and transparent. The KL-6400 series is developed in the daily farm practice, in conjunction with customers for customers.



### KL-64 for readout at the room (optional)

This local station perfectly matches the KL-6400 series climate computers. It is installed at every room which is a part of a central exhaust system and enables you to read the current room temperature and ventilation at a glance. Furthermore, the KL-64 informs you about heating and alarm statuses. To clean the room, you turn the control knob to the desired ventilation level. The KL-64 provides you with up-to-date insight into your separate rooms.



### Summary of configurations

	KL-6410	KL-6405	KL-6402
Number of rooms	10	5	2
Temperature sensor 10k	12	12	10
Input measuring fan	10	5	4
Input 0-10Vdc*	x	x	5
12Vdc/15mA for measuring fan*	10-x	5-x	4
24Vdc/85mA for AQC	10	5	4
Output 0-10Vdc	22	12	12
Relay 230Vac/2A	12	10	-
24Vac 'solid state' outputs	-	-	6
Error contact 24Vdc/2A	1	1	1
Connection communication module bus	2	2	1
<b>Extension options KL-6400</b>			
Communication via RS-485 PCB		✓	
<b>General</b>			
Power supply 230Vac - 50/60Hz			
Load 75 VA			
Protection class IP-54			
Dimensions 370 x 320 x 155mm			

\* Per room you have the choice between an 0-10Vdc input and 12Vdc output.  
\* Up to 10 (KL-6410) or rather 5 (KL-6405) inputs/outputs can be assigned.

### FarmRemote (optional)

The remote control feature of the KL-6400 enables you to read the current data of your animal house remotely using your smartphone, tablet or PC. You can even operate the KL-6400 from the comfort of your armchair. The Stienen WEB-SEC interface guarantees a secure connection.



### FarmConnect (optional)

The FarmConnect farm software collects all current and historical data of all control computers on your farm, combines this data, and then presents it in clear overviews, graphs and tables. FarmConnect gives you access to your farm data. Wherever you are, you are always connected to your company so that you can intervene immediately if necessary.

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## CBA-2000

Easy and efficient climate control

- Available with 0-10V, 6A or 12A fan control
- One cooling and two heating control functions
- Ventilation can be controlled in two groups
- Built-in alarm function
- Outside temperature measurement with alarm limit compensation
- Displays the current ventilation and temperature
- Can be combined with AQC air control units, Ecovent and central exhaust
- Secure communication with FarmConnect



## CBA-2000: Efficient climate control for an individual room with a direct air inlet control

A good climate is essential for the performance and health of your animals. The CBA-2000 features ventilation, heating, cooling and air inlet controls to create a good living environment for your animals. The two displays keep you up to date with the current ventilation and temperature in the room. The temperature compensation control function (optional) monitors the room temperature and activates cooling when necessary. If the temperature ever rises above the

set limits, an alarm message is generated. Various fans can be controlled in two groups. If the ventilation demand exceeds a certain level, the second group of fans will automatically be activated. To let the climate 'grow' along with your animals, you can use growth curves (four breakpoints) to program the climate control process. This lets you efficiently and economically control your animals' primary requirements.

### Technical specifications

	CBA-2000	CBA-2006	CBA-2012	Extension options CBA-2000 series
Relay outputs 230Vac/2A	2	2	2	Communication via RS-485 PCB
Outputs 0-10Vdc	2	2	2	<b>General</b>
Error relay 24Vac/2A	1	1	1	Supply voltage 230Vac - 50/60Hz
Supply voltage 24Vdc	1	1	1	Protection class: IP 54
Temperature sensors	2	2	2	ABS housing
Measuring fan input	1	1	1	Min. ambient temperature: -5°C
Fan output	0-10Vdc	230Vac/6A	230Vac/12A	Max. ambient temperature: 40°C
Load	25VA	1,4 kVA	2,8 kVA	Optional temperature compensation
Dimensions	215 x 225 x 120	300 x 230 x 120	300 x 245 x 150	

### CBA-2600 main station (optional)

This main station for CBA-2600 controls can only be combined with climate controls of the CBA series and can be used as part of a central exhaust system, Ecovent system or central heating. In the event of a central exhaust system, ventilation in the houses is controlled by means of AQC air control units. The local climate controls in the individual rooms communicate their ventilation demands to the CBA-2600 and this main station then centrally controls ventilation for this group of rooms.

### AQC (optional)

The Stienen AQC air control unit is characterized by the excellent aerodynamic properties of the measuring fan and the control flap (double or quadruple). In combination with the CBA-2000 control, the AQC can be used as a measuring and control unit in a central exhaust system and as a measure and control unit under ventilation ducts.

### FarmConnect (optional)

The FarmConnect farm software collects all current and historical data of all control computers on your farm, combines this data, and then presents it in clear overviews, graphs and tables. FarmConnect gives you access to your farm data. Wherever you are, you are always connected to your company so that you can intervene immediately, if necessary.



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## CB-3000

Climate control system for individual rooms with air inlet flaps in two zones

- Monitors the room temperature
- Includes several compensation control functions
- 2 Heating control functions
- 1 Cooling control function
- Built-in alarm function
- Ventilation can be controlled in 2 groups and activated in 6 steps
- Displays the current ventilation and temperature
- Can be combined with AQC air control units, Ecovent and central exhaust
- Protected communication with FarmConnect



## CB-3000

economic climate control for your pig farm

This climate computer simply and efficiently controls the climate in an individual room with two groups of air inlets. The CB-3000 features ventilation, heating and cooling control functions and includes two displays that keep you up to date with the current temperature and ventilation in the room. The temperature compensation control function monitors the room temperature and automatically activates cooling if the temperature in the room gets too high. To let the climate 'grow' along with your animals, you can use growth curves to program the climate control process. This lets you easily and economically control your animals' primary requirements.

## AQC

measuring and control unit



The excellent aerodynamic properties of the measuring fan and the control flap (double or quadruple) of the AQC enable highly reliable ventilation control. In combination with a Stienen climate computer, the AQC can be used as a measuring and control unit in a central exhaust system, and as a measuring and damper unit under ventilation sockets. This unit enables the ventilation capacity to be controlled starting from 0.4 m/s. As standard, the AQC is supplied with a unique connector, guaranteeing trouble-free installation.

## FarmConnect (optional)

The FarmConnect farm software collects all current and historical data of all control computers on your farm, combines this data, and then presents it in clear overviews, graphs and tables. FarmConnect gives you access to your farm data. Wherever you are, you are always connected to your company so that you can intervene immediately if necessary.

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## CB-2600

mainstation

This main station centrally controls and monitors all the functions of a group of climate controls. The CB-2600 is only combined with climate controls of the CB series and can be used as part of a central exhaust system or an Eco-vent system.

In the event of a central exhaust system, ventilation in the houses is controlled by means of AQC flaps. The local climate computer's in the individual rooms communicate their ventilation demands to the CB-2600 and this main station then centrally controls ventilation for this group of rooms.

Note: A KL series controller can also be used to centrally control and monitor the functions of a group of CB(A) controllers

## Technical specifications

General	
Supply voltage	230Vac - 50/60Hz
Load	30VA
Dimensions	300x230x120
ABS housing	✓
Protection category	IP 54
min. ambient temp.	-5°C
max. ambient temp.	40°C
Inputs	
Temperature sensors	4-6
Inputs, 0-10Vdc	0-2
Measuring fan input	1
Outputs	
Relay outputs, 230Vac/2A	3
Outputs, 0-10Vdc	5
Error relay, 24Vdc/2A	1
Supply voltage, 24Vdc	1
Supply voltage, 30Vdc	1
Supply voltage, 12Vdc	1
Options	
Inputs, 0-10Vdc, via an ECB PCB	2
Relay outputs, 230Vac/2A, via an ECB PCB	4
Communication via RS-485 PCB	✓

## KFV-6400

Highly accurate valve controlled dry feed computer

- Setting and registering of feeding cycles, feed composition and feed amounts per animal
- Animal management per valve
- Displaying of weighed silos
- Mixing of silo remainders
- USB port for updating
- Secured communication with FarmConnect and/or **FarmRemote**



## Accurate dosing out via valves

Feed costs are an important factor for any farm. Linking the KFV-6400 to your dry feed system enables you to efficiently and carefully control this cost item. The KFV-6400 enables different ingredients to be weighed, optionally mixed and then dosed out carefully via the valves. You can use it to manage stocks in the silos yourself. In this way, you always have a clear overview of the current situation of your feed system. The KFV-6400 computer enables to use very diverse dry feed concepts. As every pig farm is different, the installer can only activate those control functions that apply to your specific situation. This makes the operation of the KFV-6400 very easy and transparent.



## Technical specifications KFV-6400

Standard possibilities	
0-10V inputs	5
Digital inputs	10
External alarm inputs	10
Relais outputs	30
0-10Vdc outputs	5
Error relay	1
Extension options	
Communication via RS-485 PCB	
Module bus connection for external modules	
General	
Power supply:	230Vac - 50/60Hz
	2x 24Vdc/80mA
Load:	55VA
Protection class:	IP 54
Dimensions:	360 x 320 x 155mm
ABS housing	
Minimum ambient temperature:	-5 °C
Maximum ambient temperature:	40 °C

### Functionaliteiten

- Weighing and mixing of max. 8 ingredients from max. 16 silos
- 16 vibrators (against bridge building)
- 10 feed lines consisting of max. 16 segments
- 1 weigher/mixer
- Programmable filling sequence
- The feed system can be controlled in four ways
  - locally by means of a feed timer on a feed line
  - manually
  - by a central fill timer
  - via feed sensors
- Setting of up to 10 recipes
- Controls up to 250 valves in more rooms
- 12 universal timers and 1 fill timer
- Hammer mill control
- Compressor control
- Can be combined with a PFB-SV (switch valve) for simultaneously filling valves in several feeding lines

## FarmRemote (optional)

The remote control feature of the KFV-6400 enables you to read the current data of your animal house remotely using your smartphone, tablet or PC. You can even operate the KFV-6400 from the comfort of your armchair. The Stienen WEB-SEC interface guarantees a secure connection.



## FarmConnect (optional)

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## KFM-6400

Universal controller  
for the automatic filling  
of troughs

- For universal use
- The strength of simplicity
- Easy to use
- Secure communication with FarmConnect and **FarmRemote**





## KFM-6400 : Universal control of your feeding process

### When does the KFM-6400 come in handy?

In existing situations where feed systems are controlled by PLCs, and different control conditions apply to the different situations and animal houses. The KFM-6400 links all these different controls together in one universal control system. This service-friendly controller can also be linked to Farm-Connect and FarmRemote.

### Feed circuits for single-phase feeding

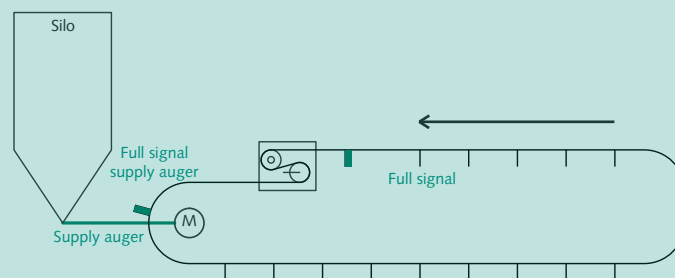
The feed from the silo is supplied to the circuit by means of a supply auger. This enables the feed to be dosed even more accurately, based on the speed, pitch and diameter of the feed auger. Optionally, the silo can also be connected to the circuit directly, through a drop pipe.

### What does the KFM-6400 do?

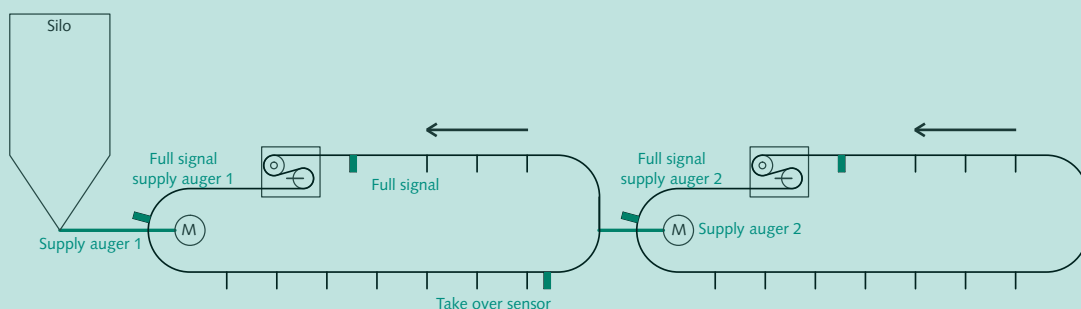
The KFM-6400 is a universal controller for the automatic filling of single and/or multiple feed circuits. Dispensers or feed troughs are filled, starting at times which you can set yourself, until the filling sensor is covered or – as an extra protection measure – the maximum running time has expired. The dispensers can also be opened manually. The KFM-6400 can be used in situations with single, circular feed circuits or straight feeding lines and/or multiple, circular feed circuits. If a circuit becomes too long, several circular circuits can be cascaded.

## Example situations

1 single, circular circuit

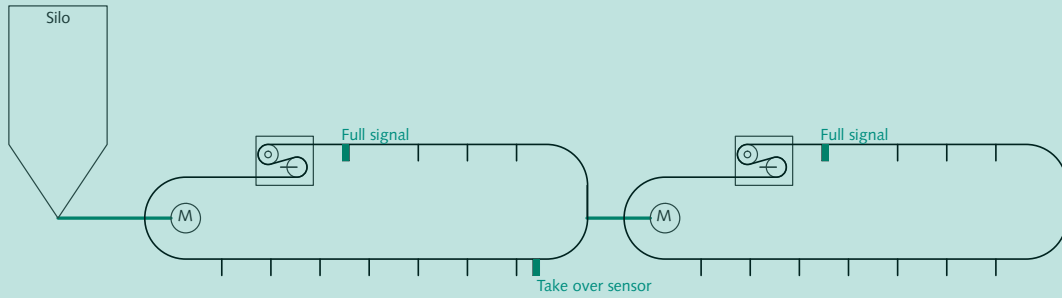
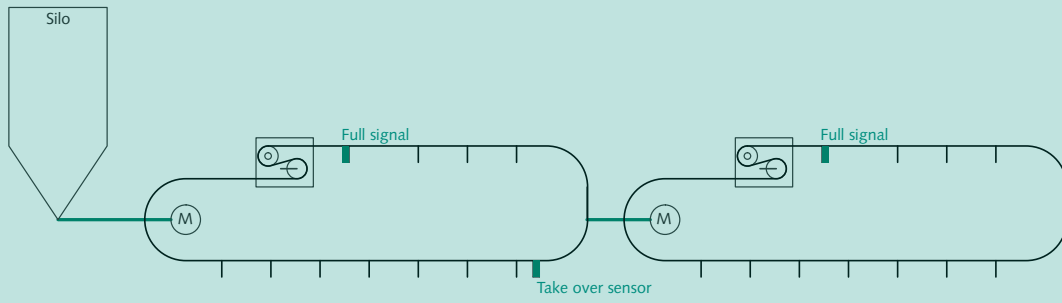


2 cascaded circuits

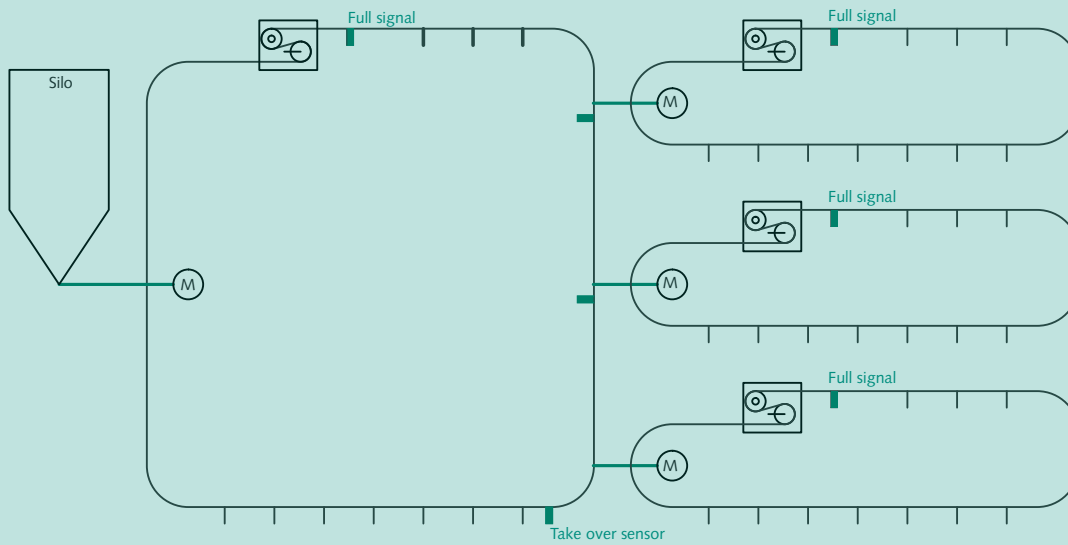




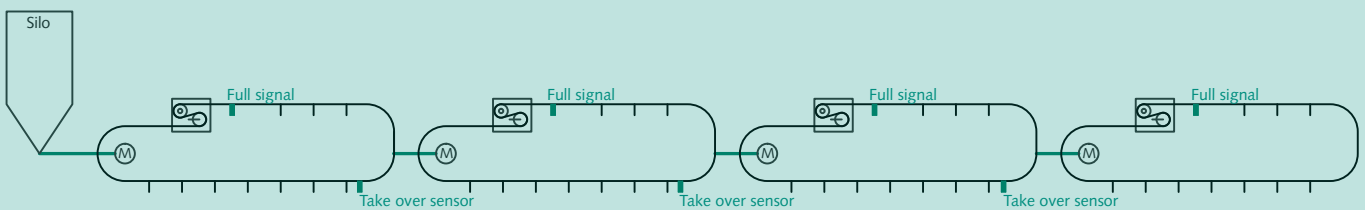
### 2 x 2 cascaded circuits



### 1 circuit with 3 parallel cascaded circuits



### 1 silo with 4 cascaded circuits



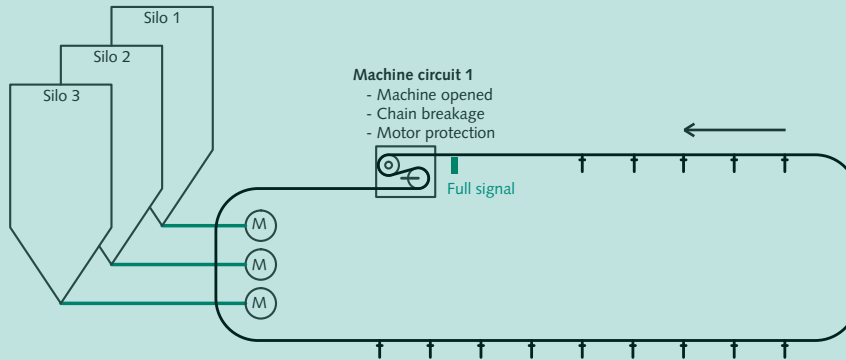
The maximum sum of the number of silos + circuits is six.

By default, a maximum of 16 dosing groups can be controlled by a single KFM-6400. Optional bus modules can be used to expand this.

## Feed circuits for multi-phase feeding

A multiple feed circuit enables several recipes to be transported to the outlet points through one and the same circuit. Different mixtures of ingredients can be filled from the different silos for the different animal groups, or recipes can be skipped. The silos are controlled sequentially (on/off) or in parallel. It is also possible to adjust the recipe to the animals' growth by pre-programming a recipe curve.

Multi-phase feeding with 3 silos and 1 circular circuit



## Manual control by means of an external pushbutton

The KMF-6400 features a special input which enables an external pushbutton (at the door) to be connected. This pushbutton can be used to easily start filling a circuit or opening a dispenser.

## Technical data

Standard possibilities of KFM-6400	
Silos	6
Circuits	6
Dosing groups	16
External alarms	6
Feeding time per 24 hours	6
Recipe curve	4
Expansion options KFM-6400	
FarmConnect	✓
FarmRemote (WEB-SEC)	✓
Communication via an RS-485 PCB for loop communication	✓
Functional expansion through a module/FN bus	✓

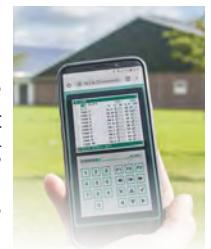


### FarmConnect (optional)

The FarmConnect farm software collects all current and historical data of all control computers on your farm, combines this data, and then presents it in clear overviews, graphs and tables. FarmConnect gives you access to your farm data. Wherever you are, you are always connected to your company so that you can intervene immediately if necessary.

### FarmRemote (optional)

The remote control feature of the KFM-6400 enables you to read the current data of your animal house remotely using your smartphone, tablet or PC. You can even operate the KFM-6400 from the comfort of your armchair. The Stienen WEB-SEC interface guarantees a secure connection.



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## FC-102

Pre-programmed  
frequency converter

- Pre-programmed for rapid and smooth commissioning
- Pre-programmed with the optimum user settings; no unwanted ventilation downtime
- Robust IP55 housing and high-quality 3C3 coating for optimum protection
- High overall and operational reliability
- Maintenance free
- Ensures enormous energy savings
- Worldwide 24/7 service



## FC-102 frequency converter

for optimum climate control in the house in order to improve business operations and business results

**Pre-programmed** | The FC-102 is pre-programmed by Stienen BE. All parameters have been pre-set for use with Stienen equipment. This means that it will only take a few minutes to commission this frequency converter. Furthermore, this frequency converter can directly communicate with the new generation of Stienen controls.

**Ideal climate** | FC-102's continuous control creates an optimum climate in all situations. Continual fan speed adjustment using the FC-102 prevents major temperature differences. This saves energy whilst also reducing noise, wear and maintenance, and thus improving operational reliability.

**Optimum protection** | The IP55 or IP66 versions provide the best protection possible against moisture and dirt. By default, the electronics of the FC-102 are class 3C3-coated. As a result, the FC-102 does not require any maintenance. This does away with the need to prematurely replace capacitors or the actual cooling fan: their lifetime is identical to that of the frequency converter. The integrated DC coils suppress any harmonics disturbances.

**Cost saving** | Reduced energy consumption means immediate cost savings: reducing the speed by 20% lowers the energy consumption by at least 50%. The FC-102 can drive several motors at a time. If a substantial number of fans is used, this enables the number of converters to be reduced and costs to be saved. The FC-102's continuous speed control is its main energy saving feature.

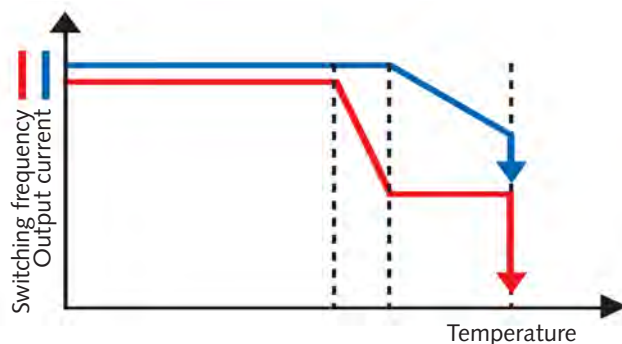
**High reliability** | The FC-102 is excellently suited to applications where ventilation failures might cause enormous material loss, especially in the livestock and greenhouse sectors. If any phases are down, this will be detected; likewise, if the maximum temperature in the actual converter is exceeded, this will be compensated for by an adjustment in the drive performance. In this way, problems will be signalled well in time to automatically adjust the fan speed and prevent the ventilation system from failing completely. The FC-102 offers optimum protection against peak voltages, e.g. if lightning strikes.

### Coating



Coated electronics for high operational reliability and a longer service life.

### Operational reliability



A VLT® converter compensates for over-temperature for a short period by changing the switching frequency and reducing the output current to thus keep the fan drive, i.e. ventilation, running.

### Technical specifications

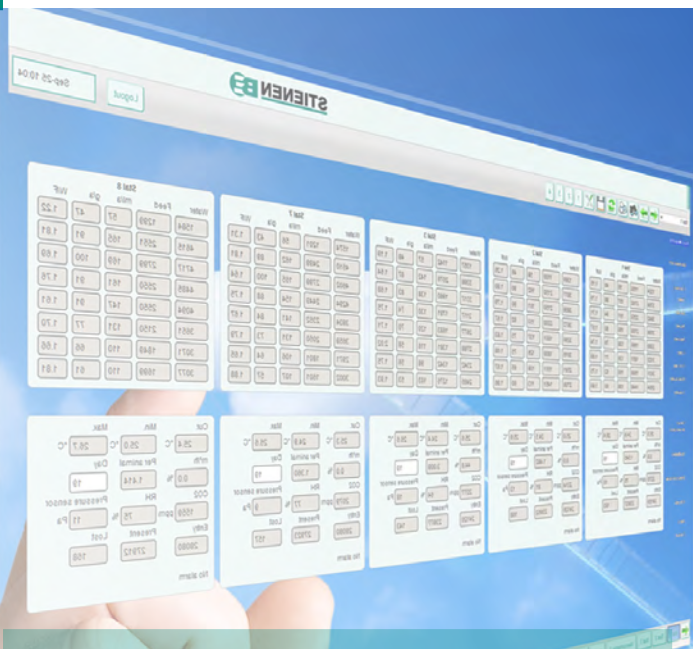
General	
Power range	1,1 kW - 1,2 MW
Supply voltage	3 x 200-240 V - 3 x 380-500 V 3 x 525-690 V
Output voltage	0-100% of the supply voltage
Analog inputs	2 x -10 to +10 V or 0/4 to 20 mA
Digital inputs	6, two of which can be used as dig. outputs
Analog outputs	1 x 0/4 to 20 mA
Relay outputs	2 X 240 Vac, 2A and 400 Vac, 2A
Communication	FC protocol, N2 Metasys, FLN Apogee, Modbus RTU
Motor cable length	Max. 150m
Standard provided with integrated RFI filters and DC coils	

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Official partner of





## FarmConnect

### CLOUD COMPUTING

Animal house management from your computer, tablet or smartphone

- Remote control and readout, 24/7 and anywhere in the world
- Clear overviews per animal house, farm and cycle
- Easy data exchange
- Optimum data security

Stat 2				Stat 3				Stat 7				Water			
Feed	g/a	W/F	W/F	Feed	g/a	W/F	W/F	Water	Feed	g/a	W/F	Water	Feed	g/a	W/F
1100	58	90	1.25	1367	57	48	1.19	1574	1291	58	43	1584	1299	58	47
2150	102	90	1.80	3390	2078	142	87	4510	2499	102	89	4815	2551	105	85
2150	161	90	1.78	3117	1781	130	83	4882	2788	185	100	4485	2788	185	100
2200	153	82	1.67	2817	1683	129	70	3934	2449	154	88	4894	2500	147	101
1871	1801	137	75	2788	1381	119	58	3859	2050	131	73	3851	2150	131	73
1890	1890	125	75	2342	1342	88	58	3859	2050	131	73	3071	1949	118	118
1890	198	65	1.67	2465	1278	103	63	3002	1801	107	57	3071	1949	118	118

# FarmConnect View, compare, analyse and manage

FarmConnect is Stienen BE's management program, connecting you to all the Stienen management computers in your company day and night. The program provides you with an up-to-date view of your animals' performance. You can study your animals' data at leisure via internet and compare it to the results of other houses or previous cycles.

You can look, compare, analyse and correct where necessary. These performance dashboards are default features of FarmConnect. However, they can be customised to suit your needs and give you a real-time view of your entire farm, anywhere and at any time, so that nothing is left to chance.



## Optimum data security

FarmConnect has been developed and set up according to the highest cybercrime security standards. This optimally protects your system and data against any malicious external influences.



## Climate management

The new generation of management computers controls the climate in animal houses and generates and records important data, including several climate variables, such as ventilation, temperature, relative humidity and CO2. FarmConnect collects all current and historical data from the management computers and presents them in easy to understand tables and graphs.

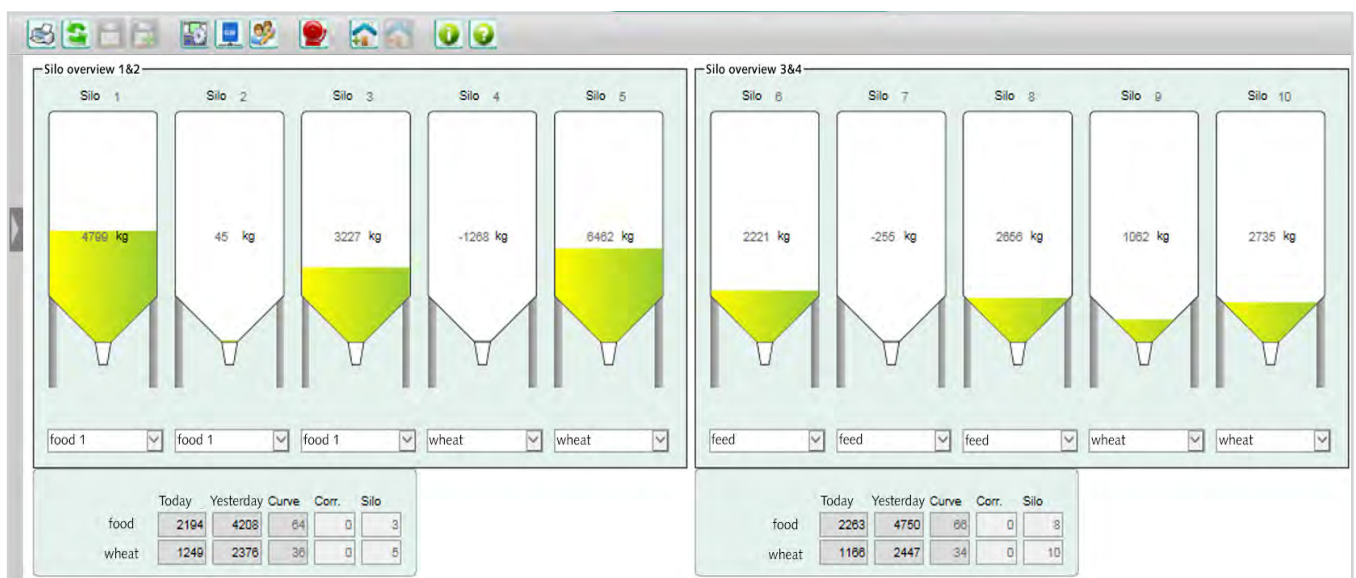
One screen will show you all the parameters that concern a specific control aspect. Since a good climate should lead to good technical results, our management computers record several different types of data, including the use of feed and water, weight increase, mortality and uniformity.



## Water and feed management

FarmConnect can assist you with your feed strategy and gives you information that can help you achieve improved results, such as lower feed costs and better animal performance. The water-to-feed ratio is an important indicator of your animals' health.

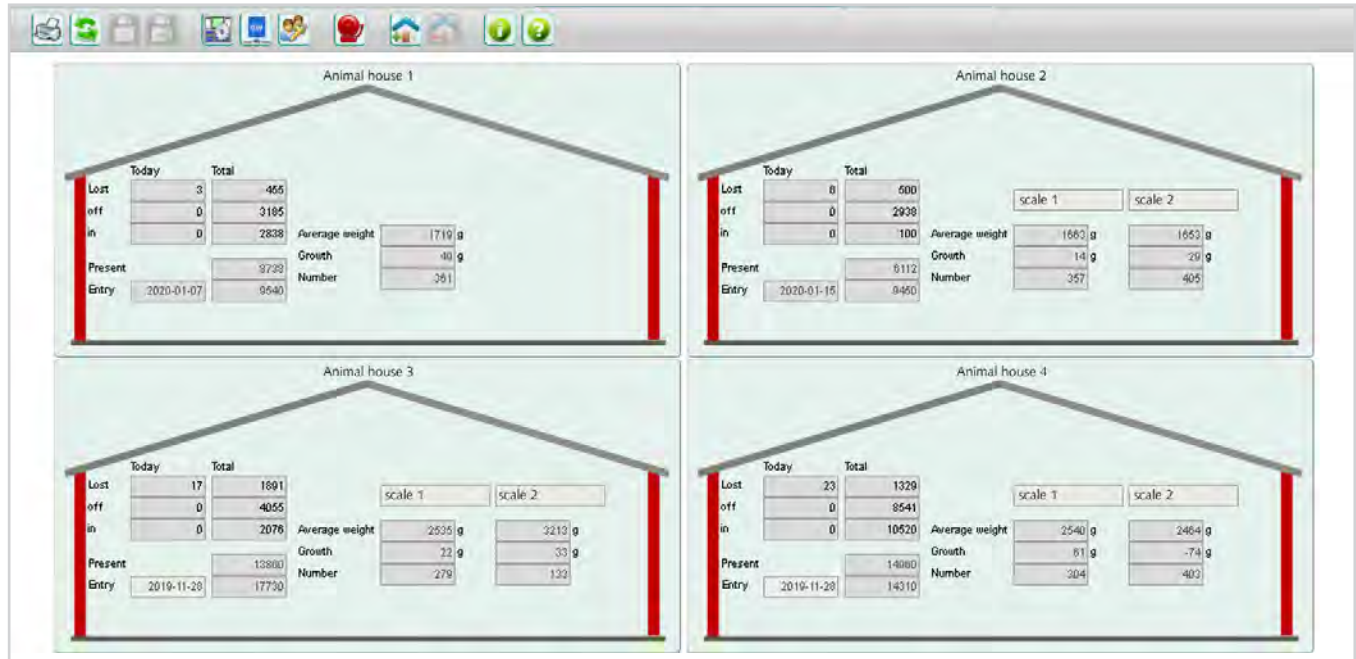
Here, any differences in water and feed consumption are immediately visible, enabling you take action in good time and before any defects or deficiencies can cause any negative consequences.



## Monitoring and managing animal weight

Monitoring your animals' weight, and thus their growth, is often very important. FarmConnect lets you determine the optimum delivery weight and enables you to take action immediately if any animals stop growing or lose weight. An animal's weight is also an indication of its health status. You can link animal weight to feed, water and climate data so that you always have a perfect view of how your animals are doing.

If you generate data from different animal houses, you can compare the results of the different houses after each cycle and learn from them. Animal health translates into good technical results. An animal's daily growth and its feed and water intake are important parameters enabling any user to take the necessary action in good time.



## Added value of data exchange

Monitoring your animals' weight, and thus their growth, is often very important. FarmConnect lets you determine the optimum delivery weight and enables you to take action immediately if any animals stop growing or lose weight. An animal's weight is also an indication of its health status. You can link animal weight to feed, water and climate data so that you always have a perfect view of how your animals are doing.

## About Stienen BE

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Stienen BE is dedicated to providing total solutions for all companies. We find it very important that our equipment should be easy to use. And we also attach great importance to having a customer focus and considering things from our customers' perspectives. That is why we will never cease to invest in the knowledge, skills and reliability of our organisation and of our partners in your area. We do this because we believe in the future of our company as a family business.



Stienen BE has its own youtube channel where you can find field reports and animated clips of automation solutions for poultry and pig farming.



## FarmRemote

Access to your farm controls  
at any time and place in the  
world

- Remotely monitor your farm
- Secure and fast connection with the WEB-SEC interface
- Easy to set on your PC, smartphone or tablet
- No subscription fee



## Secure connection with WEB-SEC

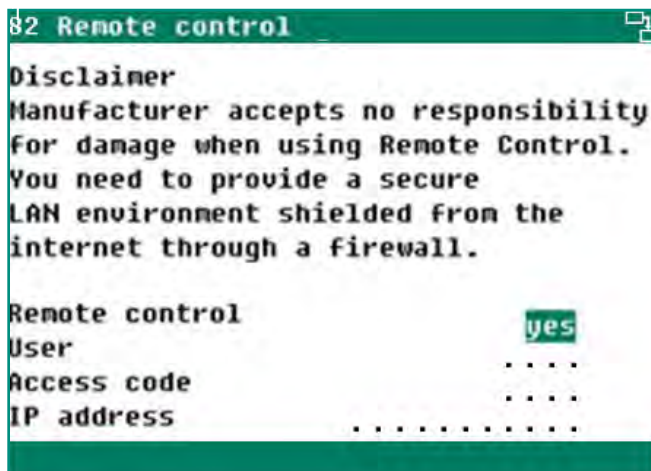
WEB-SEC creates a secured and encrypted VPN connection (Virtual Private Network) with a cloud server. Using a smartphone, tablet or PC you can make a secure connection with the cloud server and taking over the display and keyboard from the Stienen control concerned. In this way it is possible to safely monitor and necessarily intervene in your farm at any time and place in the world.

- \* Only the new generation of Stienen controls has the Remote Control function: PL-9500, PL-9400, PFA-9400, PFV-9400, KL-6400, KFM-6400, CLK-20, WEB-485 (CPU's without EPROM)
- ✓ First check if your installer has configured (and activated) the Remote Control function.



## Activating Remote Control

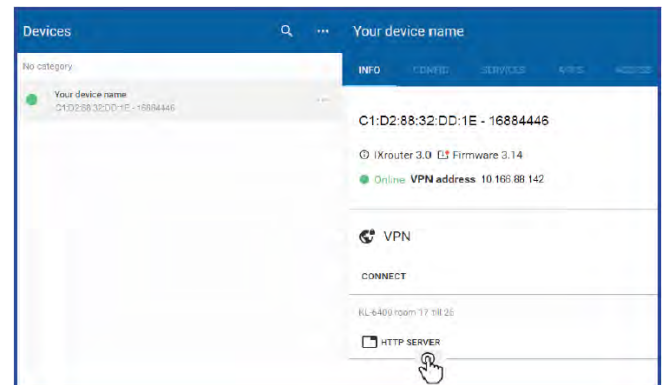
1. Go to the user settings of the control to be remotely operated and select successively:  
*System -> Remote control:*



2. Set *Remote control* to *yes*;
3. Set a *User name* and *Access code* (unequal 0000);

## Using Remote Control

1. Log in into the IXON platform: <https://connect.ixon.cloud/>.



2. Click on **HTTP SERVER** of the device into which you want to log in. A Login window appears.
3. Log in with your *User name* and *Access code* and confirm by clicking *Login*.

Each device has its own tab bearing the name of the control concerned.

Stienen BE does not take any responsibility for a malfunctioning of its controls caused by an unsecure remote control connection (without WEB-SEC).

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## PFB-35/70

Robust and intelligent  
feed weighers

- Stand-alone or combined with a Stienen feed management computer
- Accurate weight-based feed registration (max. 9-11 metric tons/hour)
- Controls one silo auger
- Three feed dosing drive options: sensor, pulse or computer
- Stainless steel weighing hopper
- Feed curve adjustable by means of 24 breakpoints
- Error codes can be read out from the display
- Displays feed and water data
- PFB-35 available with switch valve



## PFB-35 / PFB-70

autonomously working feed weighers

**Stand-alone** | The PFB feed weighers (weighing hopper capacity 35 or 70 litres) register the amount of feed supplied on the basis of highly accurate weight measurements. The display provides you with information about the amounts of feed and water intake. Both feed weighers have a memory chip in which all settings are stored to ensure that, even if the voltage is lost, these settings are saved. Both types of feed weighers independently control one silo auger.

## PFB-SV switch valve

The PFB-SV is a receiving hopper with an integrated switch valve to control two separated auger hoppers. This assembly is installed under a PFB-35 feed weigher and is controlled by a feed management computer, thus providing you with a 100% separated feed system. Several advantages, including feeding time reduction due to the buffer system and avoiding residual feed batches being wasted, make the system very interesting and enable poultry farmers to simultaneously feed parent stock, cocks and hens. In pig farming, the switch valve is used to simultaneously fill feed augers in multiple houses.

## Configuration overview

### Standard possibilities PFB

Contact input for external start command	1
Contact input for water counter	1
Load cell input 15mV	1
Open collector pulse output 35Vdc/20mA	1
Error relay 24Vdc/2A	1
Feed sensor 24Vdc/2Va	1
Discharge hatch 24Vdc/0.3A	1

### Expansion options PFB

Communication via RS-485 for FN bus for control units	✓
Connection module for supply augers	✓

### General

Supply voltage: 24Vac-50/60Hz ±10%
Maximum load: 25VA
Protection class: IP 54
Dimensions: 235 x 170 x 90mm
ABS housing
Min. ambient temperature: -5°C
Max. ambient temperature: 40°C

**As part of a feed system** | Feed costs are an important factor for any farm. Linking the Stienen BE feed weighers to a Stienen feed management computer enables you to control this cost item as efficiently and carefully as possible. Mixing several ingredients, dosing for different animal groups, managing the stocks in the silos and animal management are just some of the possible functions. And a clear overview of the current situation of your feed system is always within easy reach.



Weighing hopper	PFB-35	PFB-70
Dimensions (lxwxh)	555x590x545mm	75x750x750mm
Weight	42 kg	62 kg
Hopper capacity	64 dm <sup>3</sup>	115 dm <sup>3</sup>
Load cell type	LOC-50	LOC-100
Free space under weighing hopper	min. 150mm	min. 50mm

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## Ventilation chimneys

for modern livestock farming

- Made entirely of HDPE, both single walled and double walled
- UV-resistant
- Can be fitted on AQC measuring and control units and SGS fans without the use of coupling rings
- Complete product line
- 80% reduction of transport volume due to compact design
- Easy click-system assembly
- Easy to clean



## Compact ventilation chimneys

air intake and air exhaust chimneys  
in single- and double-walled designs

Stienen BE supplies smart, compact ventilation chimneys for air intake and exhaust. The ventilation chimneys seamlessly fit the AQC measuring and control units and SGS fans. When assembled together into one system, they are sturdy and they can be installed quickly.

To save on transport costs, the chimneys are supplied with a coupling strip. This enables them to be assembled at the project site.

To prevent condensation, this ventilation chimney is also suitable for double-walled application. The sturdy double-walled structure with an 8mm air cavity between the inner and outer walls ensures an insulation value of  $2W/m^2K$ .

## Air supply chimneys

with integrated recirculation section for equal pressure ventilation

If the use of air inlet valves is virtually impossible or if you want to ventilate on the basis of equal pressure, the air can be brought in by applying a partial vacuum or by using an intake fan. The air supply chimney features a unique air distribution unit made up of stainless steel fins. They can be positioned in the direction required in order to easily avoid any obstacles such as purlins. The built-in recirculation section ensures that hot air in the house is mixed with the incoming fresh outside air. The insulated upper section of the chimney and the stationary air layer of 8 mm between the inner and outer walls prevent the air from condensing in the chimney. The backdraught shutter determines the recirculation air-to-outside air ratio.

## Accurate air flow rate control

using a Stienen AQC measuring and control unit

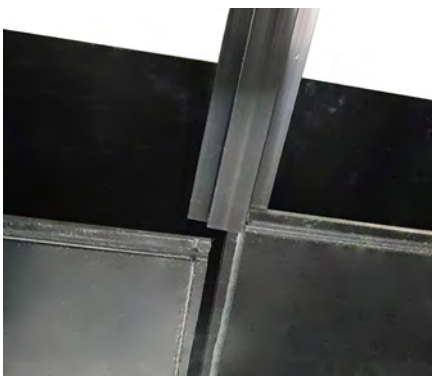


We recommend using an air entry cone to ensure the optimum functioning of the Stienen SGS fan and exhaust chimney. The air entry cone reduces air inflow resistance by 20% or more. This can be combined with the Stienen AQC measuring and control unit to regulate the air flow rate very accurately. This is because the diameter of the AQC exactly matches the diameter of the exhaust chimney.

## Transportation

The HDPE ventilation chimneys can be produced in compact versions, enabling up to 80% reduction in transport volume.

## Simple system



An aluminium connection profile is used to simply click the wall ends together.



The profile ensures a perfect alignment of both ends.

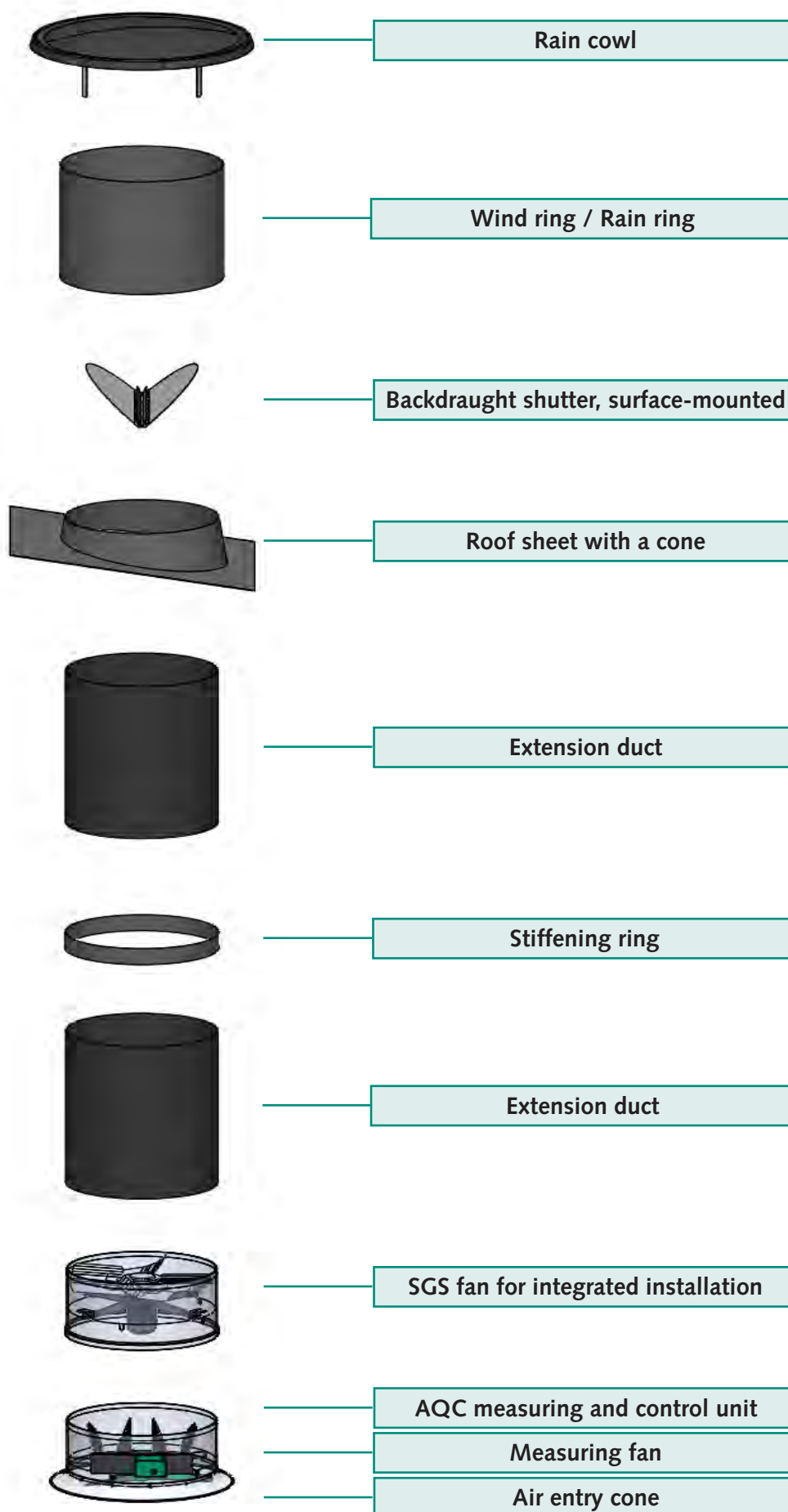


With double-walled chimneys the wall ends are attached to each other using a rubber profile.

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## Example of an HDPE exhaust chimney with accessories



## Technical specifications

Ø Chimney (mm)	Design*			
	Air intake chimney capacity (m <sup>3</sup> /h) measured at 20 Pa	Air supply chimney capacity (m <sup>3</sup> /h) combined with SGS fan measured at 50 Pa	Ø AQC (mm)	Air exhaust chimney capacity AQC (m <sup>3</sup> /h) compatible with exhaust chimney, measured at an air speed of approx. 7 m/s
320	1.400	x	300	1.700
370	2.000	x	350	2.400
420	2.600	x	400	3.100
470	3.200	x	450	4.000
520	3.900	x	500	5.000
580	4.900	x	560	6.200
645	6.100	10.000	630	7.600
730	7.800	13.000	710	10.000
820	9.800	22.400	820	12.800
920	12.400	25.500	920	16.500

\* Available as HDPE compact, HDPE welded, PUR 40mm with fibre glass coating and 25mm PUR Optimavent.

## Accessories (optional)

The following accessories are available for all chimney sizes listed:







## Specification

for compiling  
air outlet chimneys

- singel-walled and double-walled
- compact version (up to 80% reduction in transport volume) or assembled
- 10 chimney diameters:  
Ø30 Ø35 Ø40 Ø45 Ø50  
Ø56 Ø63 Ø71 Ø82 Ø92

Article numbers for chimney diameters:				Description
Ø30	Ø35			
	34.76.10-S	34.76.11-S		<b>Rain cowl + brackets</b> Reduces water penetration. Note, however, that the chimney output will also be reduced.
	34.76.00-S	34.76.01-S		<b>Rain ring, compact</b> High collar preventing ingress of rain.
	34.75.60-S	34.75.61-S		<b>Backdraught shutter, surface mounted</b> Shuts off the chimney when the fan is not active; no weather influences and unneeded heat loss from the house.
				Warning in case of power failure: lack of emergency ventilation capacity, risk of heat draining and lack of control of air volume.
	34.76.40-S	34.76.41-S		<b>Roof plate with cone</b> One-piece moulded roof sheet with cone for added strength.
	34.76.20-S	34.76.21-S		<b>Rubber roof cover + mounting kit</b> This roof cover can be used instead of a roof sheet with cone. Advantage: this roof flashing is much more flexible and adapts perfectly to chimney and roof plate.
	34.75.29-S	34.75.30-S	SW* 0.5m	<b>Extension ducts, compact</b> Advantage of double-walled chimneys: the 8mm of insulating stagnant air between the inner and outer walls prevents interior condensation caused by cold outside air.
	34.75.39-S	34.75.40-S	SW* 1.0m	
	34.75.49-S	34.75.50-S	SW* 1.5m	
	34.75.70-S	34.75.71-S	DW* 0.5m	
	34.75.80-S	34.75.81-S	DW* 1.0m	
	34.75.90-S	34.75.91-S	DW* 1.5m	
	34.76.30-S	34.76.31-S		<b>Stiffening ring</b> Firming inner ring for correct tip clearance of the fan and optimal air flow.
	34.72.00-S	34.72.10-S	SW*	<b>Coupling sock</b> Coupling piece and firming outer ring to firmly connect two chimney parts.
	34.72.19-S	34.72.20-S	DW*	
	-	34.01.00	VAR ring	<b>VAR ring</b> Universal fan ring, with attachment points and coupling kit.
	34.30.00	34.30.00	coupling set	
	36.70.41	36.70.43	230V, 1400rpm, 50Hz	<b>Built-in fan</b> For diameters Ø71, Ø82 and Ø92 fans can be delivered in ventilation assemblies. 60Hz on demand.
	36.70.61	36.70.63	400V, 1400rpm, 50Hz	
	30.31.00	30.32.00	AQC-ZM	<b>AQC air control / measure&amp;air control unit</b> Air control unit with air entry cone for accurately measuring and controlling room ventilation.
	30.21.50	30.22.50	AQC-G	
	34.74.01-S	34.74.02-S	VLI for AQC/VAR	<b>Air entry cone</b> Type VLI: cone for reducing the air entry resistance (by 20%). Type VAI: extended AQC air entry cone
	34.74.11-S	34.74.12-S	VAI for extended ACQ	



\* SW = single-walled  
DW = double-walled



Article numbers for chimney diameters:				Description
Ø40	Ø45			
	34.76.12-S	34.76.13-S		<b>Rain cowl + brackets</b> Reduces water penetration. Note, however, that the chimney output will also be reduced.
	34.76.02-S	34.76.03-S		<b>Rain ring, compact</b> High collar preventing ingress of rain.
	34.75.62-S	34.75.63-S		<b>Backdraught shutter, surface mounted</b> Shuts off the chimney when the fan is not active; no weather influences and unneeded heat loss from the house.
				Warning in case of power failure: lack of emergency ventilation capacity, risk of heat draining and lack of control of air volume.
	34.76.42-S	34.76.43-S		<b>Roof plate with cone</b> One-piece moulded roof sheet with cone for added strength.
	34.76.22-S	34.76.23-S		<b>Rubber roof cover + mounting kit</b> This roof cover can be used instead of a roof sheet with cone. Advantage: this roof flashing is much more flexible and adapts perfectly to chimney and roof plate.
	34.75.31-S	34.75.32-S	SW* 0.5m	<b>Extension ducts, compact</b> Advantage of double-walled chimneys: the 8mm of insulating stagnant air between the inner and outer walls prevents interior condensation caused by cold outside air.
	34.75.41-S	34.75.42-S	SW* 1.0m	
	34.75.51-S	34.75.52-S	SW* 1.5m	
	34.75.72-S	34.75.73-S	DW* 0.5m	
	34.75.82-S	34.75.83-S	DW* 1.0m	
	34.75.92-S	34.75.93-S	DW* 1.5m	
	34.76.32-S	34.76.33-S		<b>Stiffening ring</b> Firming inner ring for correct tip clearance of the fan and optimal air flow.
	34.72.11-S	34.72.12-S	SW*	<b>Coupling sock</b> Coupling piece and firming outer ring to firmly connect two chimney parts.
	34.72.21-S	34.72.22-S	DW*	
	34.02.00	34.03.00	VAR ring	<b>VAR ring</b> Universal fan ring, with attachment points and coupling kit.
	34.30.00	34.30.00	coupling set	
	36.70.45	36.70.47	230V, 1400rpm, 50Hz	<b>Built-in fan</b> For diameters Ø71, Ø82 and Ø92 fans can be delivered in ventilation assemblies. 60Hz on demand.
	36.70.65	36.70.67	400V, 1400rpm, 50Hz	
	30.33.00	30.34.00	AQC-ZM	<b>AQC air control / measure&amp;air control unit</b> Air control unit with air entry cone for accurately measuring and controlling room ventilation.
	30.23.50	30.24.50	AQC-G	
	34.74.03-S	34.74.04-S	VLI for AQC/VAR	<b>Air entry cone</b> Type VLI: cone for reducing the air entry resistance (by 20%). Type VAI: extended AQC air entry cone
	34.74.13-S	34.74.14-S	VAI for extended ACQ	

\* SW = single-walled  
DW = double-walled



Article numbers for chimney diameters:				Description
Ø50	Ø56			
	34.76.14-S	34.76.15-S		<b>Rain cowl + brackets</b> Reduces water penetration. Note, however, that the chimney output will also be reduced.
	34.76.04-S	34.76.05-S		<b>Rain ring, compact</b> High collar preventing ingress of rain.
	34.75.64-S	34.75.65-S		<b>Backdraught shutter, surface mounted</b> Shuts off the chimney when the fan is not active; no weather influences and unneeded heat loss from the house.
				 Warning in case of power failure: lack of emergency ventilation capacity, risk of heat draining and lack of control of air volume.
	34.76.44-S	34.76.45-S		<b>Roof plate with cone</b> One-piece moulded roof sheet with cone for added strength.
	34.76.24-S	34.76.25-S		<b>Rubber roof cover + mounting kit</b> This roof cover can be used instead of a roof sheet with cone. Advantage: this roof flashing is much more flexible and adapts perfectly to chimney and roof plate.
	34.75.33-S	34.75.34-S	SW* 0.5m	<b>Extension ducts, compact</b> Advantage of double-walled chimneys: the 8mm of insulating stagnant air between the inner and outer walls prevents interior condensation caused by cold outside air.
	34.75.43-S	34.75.44-S	SW* 1.0m	
	34.75.53-S	34.75.54-S	SW* 1.5m	
	34.75.74-S	34.75.75-S	DW* 0.5m	
	34.75.84-S	34.75.85-S	DW* 1.0m	
	34.75.94-S	34.75.95-S	DW* 1.5m	
	34.76.34-S	34.76.35-S		<b>Stiffening ring</b> Firming inner ring for correct tip clearance of the fan and optimal air flow.
	34.72.13-S	34.72.14-S	SW*	<b>Coupling sock</b> Coupling piece and firming outer ring to firmly connect two chimney parts.
	34.72.23-S	34.72.24-S	DW*	
	34.04.00	34.05.00	VAR ring	<b>Fan ring</b> Universal fan ring, with attachment points and coupling kit.
	34.30.00	34.30.00	coupling set	
	36.70.49	36.70.51	230V, 1400rpm, 50Hz	<b>Built-in fan</b> For diameters Ø71, Ø82 and Ø92 fans can be delivered in ventilation assemblies. 60Hz on demand.
	36.70.69	36.70.71	400V, 1400rpm, 50Hz	
	30.35.00	30.36.00	AQC-ZM	<b>AQC air control / measure&amp;air control unit</b> Air control unit with air entry cone for accurately measuring and controlling room ventilation.
	30.25.50	30.26.50	AQC-G	
	34.74.05-S	34.74.06-S	VLI for AQC/VAR	<b>Air entry cone</b> Type VLI: cone for reducing the air entry resistance (by 20%). Type VAI: extended AQC air entry cone
	34.74.15-S	34.74.16-S	VAI for extended ACQ	

\* SW = single-walled  
DW = double-walled



Article numbers for chimney diameters:  
Ø63                      Ø71

Description



34.76.16-S    34.76.17-S

**Rain cowl + brackets**

Reduces water penetration. Note, however, that the chimney output will also be reduced.



34.76.06-S    34.76.07-S

**Rain ring, compact**

High collar preventing ingress of rain.



34.75.66-S    34.75.67-S

**Backdraught shutter, surface mounted**

Shuts off the chimney when the fan is not active; no weather influences and unneeded heat loss from the house.



Warning in case of power failure: lack of emergency ventilation capacity, risk of heat draining and lack of control of air volume.



34.76.46-S    34.76.47-S

**Roof plate with cone**

One-piece moulded roof sheet with cone for added strength.

34.76.26-S    34.76.27-S

**Rubber roof cover + mounting kit**

This roof cover can be used instead of a roof sheet with cone. Advantage: this roof flashing is much more flexible and adapts perfectly to chimney and roof plate.



34.75.35-S    34.75.36-S    SW\* 0.5m  
34.75.45-S    34.75.46-S    SW\* 1.0m  
34.75.55-S    34.75.56-S    SW\* 1.5m  
34.75.76-S    34.75.77-S    DW\* 0.5m  
34.75.86-S    34.75.87-S    DW\* 1.0m  
34.75.96-S    34.75.97-S    DW\* 1.5m

**Extension ducts, compact**

Advantage of double-walled chimneys: the 8mm of insulating stagnant air between the inner and outer walls prevents interior condensation caused by cold outside air.



34.76.36-S    34.76.37-S

**Stiffening ring**

Firming inner ring for correct tip clearance of the fan and optimal air flow.



34.72.15-S    34.72.16-S    SW\*  
34.72.25-S    34.72.26-S    DW\*

**Coupling sock**

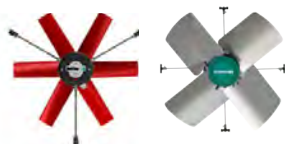
Coupling piece and firming outer ring to firmly connect two chimney parts.



34.06.00    34.06.50    VAR ring  
34.30.00    34.30.02    coupling set

**Fan ring**

Universal fan ring, with attachment points and coupling kit.



36.70.53    36.70.55    230V, 1400rpm, 50Hz  
36.70.73    36.70.75    400V, 1400rpm, 50Hz

**Built-in fan**

For diameters Ø71, Ø82 and Ø92 fans can be delivered in ventilation assemblies. 60Hz on demand.



30.37.00    30.38.00    AQC-ZM  
30.27.50    30.28.50    AQC-G

**AQC air control / measure&air control unit**

Air control unit with air entry cone for accurately measuring and controlling room ventilation.



34.74.07-S    34.74.08-S    VLI for AQC/VAR  
34.74.17-S    34.74.18-S    VAI for extended ACQ

**Air entry cone**

Type VLI: cone for reducing the air entry resistance (by 20%).  
Type VAI: extended AQC air entry cone

\* SW = single-walled  
DW = double-walled

Article numbers for chimney diameters:				Description
Ø82	Ø92			
	34.76.18-S	34.76.19-S		<b>Rain cowl + brackets</b> Reduces water penetration. Note, however, that the chimney output will also be reduced.
	34.76.08-S	34.76.09-S		<b>Rain ring, compact</b> High collar preventing ingress of rain.
	34.75.68-S	34.75.69-S		<b>Backdraught shutter, surface mounted</b> Shuts off the chimney when the fan is not active; no weather influences and unneeded heat loss from the house.
				Warning in case of power failure: lack of emergency ventilation capacity, risk of heat draining and lack of control of air volume.
	34.76.48-S	34.76.49-S		<b>Roof plate with cone</b> One-piece moulded roof sheet with cone for added strength.
	34.76.28-S	34.76.29-S		<b>Rubber roof cover + mounting kit</b> This roof cover can be used instead of a roof sheet with cone. Advantage: this roof flashing is much more flexible and adapts perfectly to chimney and roof plate.
	34.75.37-S	34.75.38-S	SW* 0.5m	<b>Extension ducts, compact</b> Advantage of double-walled chimneys: the 8mm of insulating stagnant air between the inner and outer walls prevents interior condensation caused by cold outside air.
	34.75.47-S	34.75.48-S	SW* 1.0m	
	34.75.57-S	34.75.58-S	SW* 1.5m	
	34.75.78-S	34.75.79-S	DW* 0.5m	
	34.75.88-S	34.75.89-S	DW* 1.0m	
	34.75.98-S	34.75.99-S	DW* 1.5m	
	34.76.38-S	34.76.39-S		<b>Stiffening ring</b> Firming inner ring for correct tip clearance of the fan and optimal air flow.
	34.72.17-S	34.72.18-S	SW*	<b>Coupling sock</b> Coupling piece and firming outer ring to firmly connect two chimney parts.
	34.72.27-S	34.72.28-S	DW*	
	34.07.00	34.08.00	VAR ring	<b>Fan ring</b> Universal fan ring, with attachment points and coupling kit.
	34.30.02	34.30.02	coupling set	
	36.70.57	36.70.59	230V, 1400rpm, 50Hz	<b>Built-in fan</b> For diameters Ø71, Ø82 and Ø92 fans can be delivered in ventilation assemblies. 60Hz on demand.
	36.70.77	36.70.79	400V, 1400rpm, 50Hz	
	30.39.00	30.40.00	AQC-ZM	<b>AQC air control / measure&amp;air control unit</b> Air control unit with air entry cone for accurately measuring and controlling room ventilation.
	30.29.50	30.30.50	AQC-G	
	34.74.09-S	34.74.10-S	VLi for AQC/VAR	<b>Air entry cone</b> Type VLI: cone for reducing the air entry resistance (by 20%). Type VAI: extended AQC air entry cone
	34.74.19-S	34.74.20-S	VAI for extended ACQ	

\* SW = single-walled  
DW = double-walled



## Composed parts of air outlet chimney

Stienen BE supplies smart, compact ventilation chimneys. The ventilation chimneys seamlessly fit the AQC measuring and control units and SGS fans. To save on costs, composed chimney parts can be ordered. The table below shows the possibilities and specifications per diameter:

Article numbers of assembled chimneys with diameters:					Description
Ø30	Ø35	Ø40	Ø45	Ø50	
32.01.50	32.02.50	32.03.50	32.04.50	32.05.50	<b>SMV-XX</b> Measuring fan 12V + mounting brackets.
31.01.50	31.02.50	31.03.50	31.04.50	31.05.50	<b>LMU-XX</b> Measuring fan with air entry cone + SMV + turbulence cross
					<b>AV-Assembly-XX</b> (without fan)
33.60.53	33.60.55	33.60.57	33.60.59	33.60.61	<b>ZM</b> AQC + VAR + SS couplings without measuring fan
33.70.03	33.70.05	33.70.07	33.70.09	33.70.11	<b>G</b> AQC + VAR + SS couplings with measuring fan
30.60.00	30.61.00	30.62.00	30.63.00	30.64.00	<b>RO-AQC-XX</b> Protection grid for AQC with mounting heights <2850mm
34.70.00-S	34.70.10-S	34.70.11-S	34.70.12-S	34.70.13-S	<b>KO-XX</b> Rain ring + ext. duct 1m + roof sheet, corrugated 178
34.75.00-S	34.75.10-S	34.75.11-S	34.75.12-S	34.75.13-S	<b>KO-XX-C</b> (compact version) Rain ring + extension duct 1m + roof sheet, flat 178

Article numbers of assembled chimneys with diameters:					Description
Ø56	Ø63	Ø71	Ø82	Ø92	
32.07.50	32.08.50	32.09.50	32.10.50	32.11.50	<b>SMV-XX</b> Measuring fan 12V + mounting brackets
31.06.50	31.07.50	31.08.50	31.09.50	31.10.50	<b>LMU-XX</b> Measuring fan with air entry cone + SMV + turbulence cross
					<b>AV-Assembly-XX</b> (without fan)
33.60.63	33.60.65	33.60.67	33.60.69	33.60.71	<b>ZM</b> AQC + VAR + SS couplings without measuring fan
33.70.13	33.70.15	33.70.17	33.70.19	33.70.21	<b>G</b> AQC + VAR + SS couplings with measuring fan
30.65.00	30.66.00	30.67.00	30.68.00	30.69.00	<b>RO-AQC-XX</b> Protection grid for AQC with mounting heights <2850mm
34.70.14-S	34.70.15-S	34.70.16-S	34.70.17-S	34.70.18-S	<b>KO-XX</b> Rain ring + ext. duct 1m + roof sheet, corrugated 178
34.75.14-S	34.75.15-S	34.75.16-S	34.75.17-S	34.75.18-S	<b>KO-XX-C</b> (compact version) Rain ring + extension duct 1m + roof sheet, flat 178

## Aerowing

Air inlet  
with constant and  
independent air throw

- Robust central operation
- Aerodynamic design
- Constant air throw over the entire ventilation range
- Minimal risk of freezing
- Very easy to assemble
- Easy to control using Stienen equipment







## Accurate and constant ventilation

**The secret of a healthy climate is to provide your animals with the right volume of fresh air at the right speed in the right place. Your animals don't care how the air leaves the house. What matters to them is how it comes in!**

The primary requirement for a healthy climate is a good air distribution, keeping it moving evenly all the time. The temperature in the house should remain constant and draughts should be avoided. Sufficient air exchange is necessary to remove CO<sub>2</sub>, ammonia and dust to keep your animals healthy.

Stienen BE has developed the AeroWing to optimise the distribution of the air throughout your poultry house under all conditions.



## Inlets for tunnel ventilation

Tunnel ventilation can be used as additional ventilation during extreme warm days. The inlets for tunnel ventilation can be used alongside the conventional AeroWing. This should provide an additional cooling effect by taking the air with a higher speed over the animals.

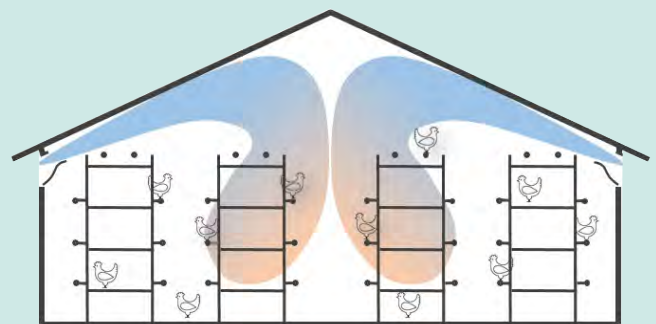


## AeroWing mounting position

The mounting position of the AeroWing depends on the type of housing. The example below shows two poultry houses with different housing systems: floor housing and aviary or cage housing.



For floor housing, the AeroWing can be installed at a low height, since the air throw is independent of the roof slope. An additional advantage of this is that obstacles at roof height, such as roof trusses, lighting or winch-suspended feed and water lines, do not affect the air distribution.

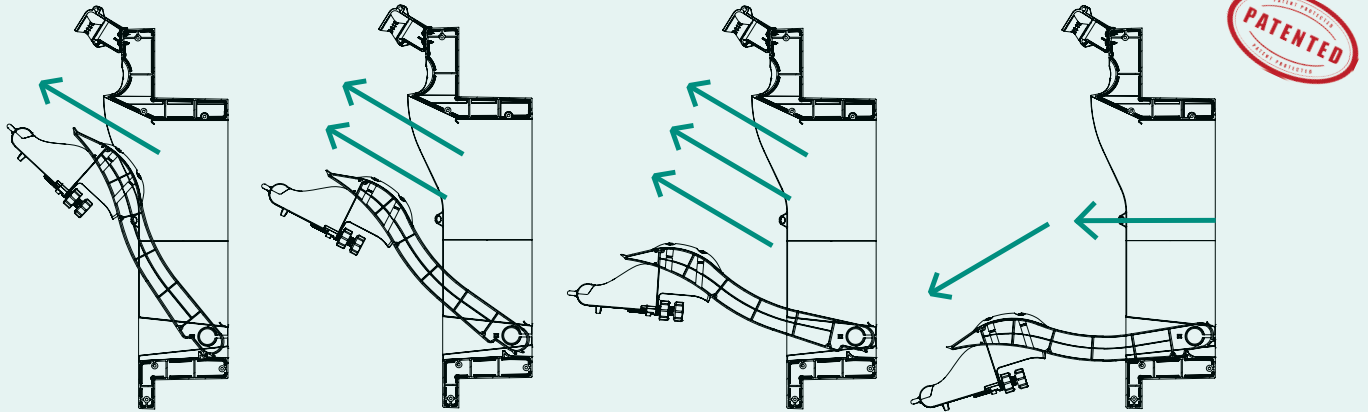


For aviary or cage housing systems, the AeroWing can be placed high up to ensure ventilation between the roof and the housing system.

# AeroWing unique benefits

## 1. Constant and independent air throw

The aerodynamic design of the AeroWing gives the incoming air a 22-degree angle, resulting in an air throw path which is always known and enables any kind of ventilation, regardless of the roof structure. A constant air throw is even guaranteed at minimum ventilation.



### LOWERING PRESSURE DROP

If the ventilation level is 70% or higher, the pressure can be lowered to apply displacement ventilation.

## 2. Minimal risk of freezing

Cold incoming air cools the hot and moist air in the house, causing condensation. This condensate may cause moving parts to freeze. The AeroWing avoids this problem in three ways:



The air inlet uses the venturi effect to draw in the air inside the house along with the incoming air. The round opening keeps the air in the house moving to prevent condensate from forming on the valve.

The blunt corner on the inside of the valve and the slanted edge of the lower corner sections cause the condensate to run off the moving parts.

Two rubber strips seal the lower side of the flap to prevent the condensate from dripping into the moving parts and the air from leaking away under the valve.

**YouTube** In our video channel you will find an animation video of the AeroWing.

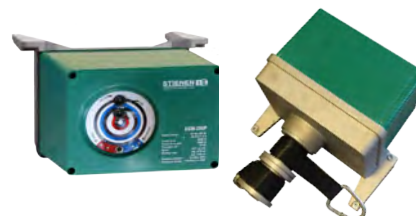
## LDA-200 and EGM winch motor

To control air inlet systems in intensive livestock buildings Stienen BE has developed the LDA-200 and the EGM winch motor

**LDA-200:** robust brushless 24V motor with a tensile force of twice 1000N. Thanks to the direct connection with pull cables, only a fine adjustment will be necessary. Any risk of expansion of the pull cables is minimized by pulling in two directions. The LDA-200 motor is equipped with a stainless steel rack and pinion drive system. Moreover, the LDA-200 motor can be set without any use of tools and without opening it.



**EGM winch motor:** robust brushless 24V motor with a tensile force of 100 resp. 250 kg. As standard, the EGM series is supplied with a cable drum and is available with a 0-10V control signal or potentiometer feedback.



## Technical specifications

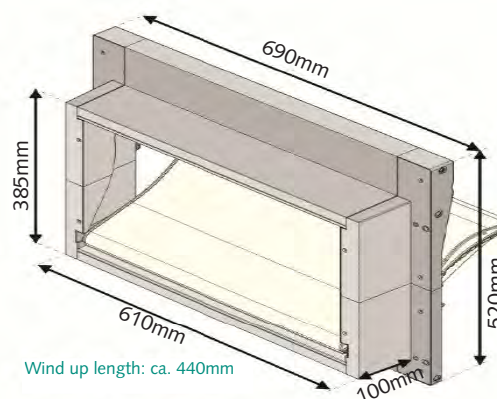
### General

- Constant and independent air throw
- Minimal risk of freezing
- Supplied as a self-assembly kit which saves 30% of transport volume
- Very easy to assemble
- Long service life due to the use of stainless steel and plastic materials
- Perfect in combination with other Stienen BE equipment

### Options

- Can be expanded vertically using 1 or more connecting piece(s)
- Spring opening
- Available with a plastic grille
- Available with a rod guide

## Dimensions AW1-16



## Matrix

Type	Layers	Cut-out (mm) *		Rear view (mm)		Front view (mm)		Air flow (m <sup>3</sup> /h)				Force Kg
		Width	Height	Width	Height	Width	Height	10 Pa	20 Pa	30 Pa	40 Pa	
AW1-16 C	1	617	390	610	385	690	520	1,600	2,200	2,700	3,100	5
AW1-24 C	1	902	390	895	385	975	520	2,400	3,400	4,100	4,800	6
AW1-32 C **	1	1187	390	1180	385	1260	520	3,200	4,500	5,500	6,400	7
TAW2-48	2	902	745	895	740	975	875	4,800	6,700	8,300	9,500	12
TAW2-64	2	1187	745	1180	740	1260	875	6,400	9,100	11,100	12,800	14
TAW3-72	3	902	1100	895	1095	975	1230	7,200	10,100	12,400	14,300	18
TAW3-96	3	1187	1100	1180	1095	1260	1230	9,600	13,600	16,600	19,200	21
TAW3-120	3	1472	1100	1465	1095	1545	1230	12,000	17,000	20,900	24,100	24
TAW4-95	4	902	1455	895	1450	975	1585	9,500	13,500	16,500	19,100	24
TAW4-128	4	1187	1455	1180	1450	1260	1585	12,800	18,100	22,200	25,600	28
TAW4-161	4	1472	1455	1465	1450	1545	1585	16,100	22,700	27,800	32,100	32
TAW5-119	5	902	1810	895	1805	975	1940	11,900	16,900	20,700	23,900	30
TAW5-160	5	1187	1810	1180	1805	1260	1940	16,000	22,600	27,700	32,000	35
TAW5-201	5	1472	1810	1465	1805	1545	1940	20,100	28,400	34,800	40,200	40

\* With the recess dimensions any tolerance variations in width or height have been taken into account.

\*\* As standard, the AW1-32 C has been equipped with 2 brackets.

## Stienen BE Agri Automation

Stienen BE is a leading family company (1977) which has strong roots in the livestock farming. By nature we are very close to the farmer. We are a global supplier of innovative automation solutions for poultry and pig farms. Climate solutions, automation systems, management software and peripheral equipment are developed and produced in-house.

## Eco-Prop

Recirculation fan for modern livestock farming

- High energy efficiency
- Provides sufficient air flow
- Reduces temperature differences in the animal house
- Provides a homogeneous composition of the climate in the animal house
- Can be integrated into a cage system
- High-speed and low-speed versions
- Enables accurate regulation
- Low noise level
- CE compliant



## ECO-Prop

recirculation fan for modern livestock farming

The main benefit of the ECO-Prop is its energy efficiency. Its large diameter enables this Stienen fan to displace the same amount of air as conventional, smaller fans, but at a much lower speed. This has three advantages:

1. considerable energy savings
2. low noise level
3. reduced draughts and/or dehydration symptoms

The ECO-Prop is covered in plastic sheeting and can be controlled accurately using the Stienen MPM-5 or SPM-6/12 power controller or a frequency drive.

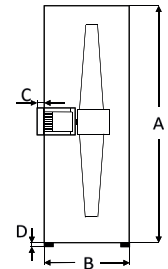


## Configuration overview

General	
Supply voltage	230 Vac, 50/60 Hz
Protection class housing	IP 25
Protection class actuator	IP 55
Min. ambient temperature	-5°C
Max. ambient temperature	40°C

## Dimensions

Section	mm
A	881
B	292
C	35
D	13



## ECO-Prop-50

RPM	460 RPM
Current	0.78 A
Load	90 W
Noise level	50 dB
Air volume	5400 m <sup>3</sup> /h
Weight	12.45 kg

## ECO-Prop-70

RPM	620 RPM
Current	0.88 A
Load	135 W
Noise level	53 dB
Air volume	7500 m <sup>3</sup> /h
Weight	12.45 kg



The ECO-Prop-50 and -70 are covered in white plastic sheeting.

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## SGS

### Controllable high-pressure fans

- Ventilating with counter-pressure
- Low energy consumption in the control range
- Low-noise
- Stable pressure in the control range
- Suitable for central exhaust systems, air scrubbers and manure drying systems
- A suitable solution for every situation
- IE3 motor
- Appropriate protection grille available



## SGS high-pressure fans

Stienen SGS fans have been specially developed for easily controllable low-noise and energy-efficient ventilation, even with high counter-pressure. This makes the SGS fans ideally suited for central exhaust systems, possibly in combination with air scrubbers and manure drying systems. The fans (wall of fans) must always be positioned in front of the air scrubber. Stienen BE supplies nine different versions of SGS fans enabling to provide the best suitable solution for each situation!

## Technical specifications

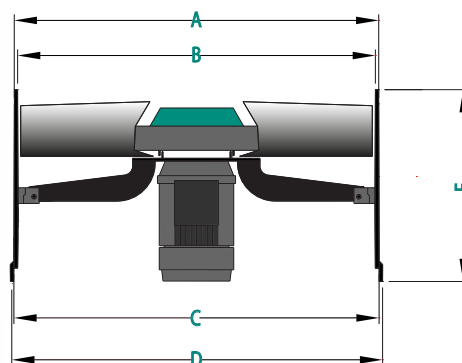
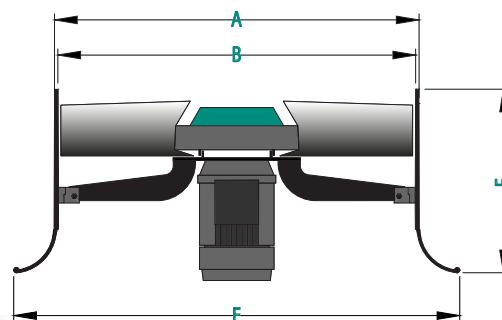
- Max. 960 RPM
- Low-noise level: i.e. 66 dB(A) with SGS-92H-D4S
- (measured on the blade's pressure side at a distance of 7m, under an angle of 45°)
- Pressure-stable, also at low speeds
- Available as ø 71, 82 and 92cm
- Available with 0.75, 1.1, 1.5 or 2.2kW motors
- With 2 or 4 blades
- Protection grille available (obligatory with mounting heights < 2.7m)
- Protection class: IP 56

## Airflow of SGS fans in m³/h

Type	RPM	30 Pa	40 Pa	50 Pa	60 Pa	70 Pa	100 Pa	125 Pa	150 Pa	175 Pa	200 Pa	I-max
SGS-71H-A4X	900	16.090	15.990	15.550	15.130	14.180	13.950	x	x	x	x	2,3
SGS-82H-A2A	900	18.550	18.120	17.230	16.840	15.130	13.410	x	x	x	x	2,3
SGS-82H-B4A	900	20.150	19.990	19.830	18.980	18.550	17.270	x	x	x	x	3,3
SGS-82H-C4D	900	25.080	24.860	24.330	24.010	23.900	22.830	22.400	x	x	x	4,0
SGS-82H-C4E	900	23.150	22.610	22.510	22.290	21.970	21.550	20.690	19.830	17.266	x	4,0
SGS-92H-B2K	900	28.070	27.000	26.250	25.720	24.110	21.120	x	x	x	x	3,3
SGS-92H-B4L	900	24.860	24.860	24.110	23.580	22.610	21.150	x	x	x	x	3,3
SGS-92H-C4R	900	28.210	27.970	27.430	26.840	26.500	25.820	x	x	x	x	4,0
SGS-92H-D4S	900	33.230	32.730	32.250	31.820	31.390	30.100	28.390	27.540	25.820	24.970	6,0

## Dimensions in mm

Type	A	B	C	D	E	F
SGS-71H-VAR	729	716	730	747	x	430
SGS-71H	729	716	x	x	872	412
SGS-82H-VAR	818	802	818	835	x	430
SGS-82H	818	802	x	x	1000	412
SGS-92H-VAR	930	920	931	947	x	430
SGS-92H	930	920	x	x	1116	412



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## AQC

Air control unit for accurately measuring and controlling room ventilation

- Reliable control, even at low air speeds
- Stienen's labyrinth principle protects rotating parts against dirt and moisture
- Easy to install: 'plug and control'
- Provided with a double or quadruple control flap
- Accurate one-piece measuring fan
- Minimum capacity loss thanks to the aerodynamic design





## AQC

for accurate and reliable ventilation control

The excellent aerodynamic properties of the AQC measuring fan and control flap (double or quadruple) enable highly reliable ventilation control. In combination with a Stienen climate computer, the AQC can be used as a measuring and control unit in a central exhaust system or under the extraction fan in a ventilation chimney. The AQC measuring and control unit enables the ventilation to be controlled starting from 0,4 m/s. As standard, the AQC is supplied with a unique connector, guaranteeing trouble-free installation. Furthermore, the measuring fan has an ingenious labyrinth seal, protecting the rotating parts from dust and dirt. This guarantees a long service life.

## VAR

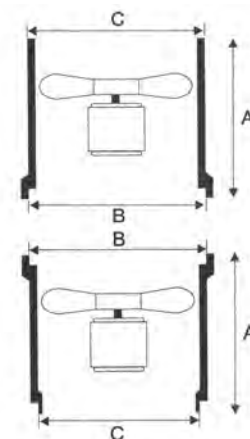
universal mounting ring for fans

Stienen BE delivers a universal ring to mount the fan above the AQC measuring and control unit. This ring has more attachment points\* for the most common fans and is available in various versions.



Type	A	B	C
VAR-35	285	371	345
VAR-40	285	421	395
VAR-45	285	474	445
VAR-50	285	522	492
VAR-56	380	582	564
VAR-63	380	656	627
VAR-71*	430	731	729
VAR-82*	430	820	816
VAR-92*	430	932	929

\* Types VAR 71 thru 92 are not factory-equipped with fan fixing points.



## Technical specifications

### General

- Ventilation capacity controllable from 0,4 m/s
- Connection cable (1,5m) with a moulded 5 pole connector
- Double or quadruple control flap
- Available in 10 different dimensions
- Suited as measuring and control unit in a central exhaust system
- Suited as measuring and control unit under exhaust fans
- AQC-30G thru AQC-63G: double control flap
- AQC-71G thru AQC-92G: quadruple control flap

### Measuring unit

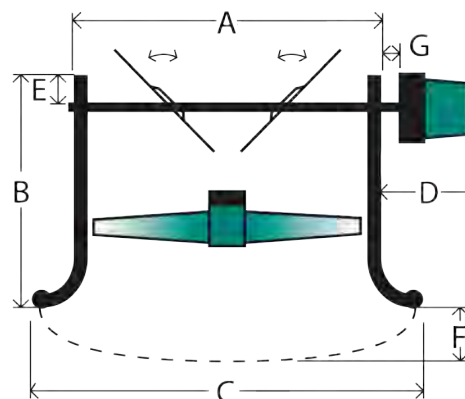
Min. ambient temperature	-5 °C
Max. ambient temperature	40 °C
Connection load	12 to 24Vdc
Power consumption	0,2W/24Vdc
Number of pulses per revolution	6

### Servomotor

Supply voltage	24Vdc
Power consumption	1W/24Vdc-2VA/24Vac
Control signal	10-2Vdc

## Dimensions and minimum ventilation

Type	A	B	C	D	E	F	G	Min. ventilation
AQC-30G	304	290	405	225	50	80	60	95m <sup>3</sup> /h
AQC-35G	358	290	457	225	50	80	60	134m <sup>3</sup> /h
AQC-40G	410	290	513	225	50	80	60	175m <sup>3</sup> /h
AQC-45G	458	325	576	225	60	80	60	220m <sup>3</sup> /h
AQC-50G	505	330	624	225	60	80	60	280m <sup>3</sup> /h
AQC-56G	575	340	698	225	60	80	60	350m <sup>3</sup> /h
AQC-63G	637	340	764	225	60	80	60	435m <sup>3</sup> /h
AQC-71G	730	412	872	185	165	95	20	565m <sup>3</sup> /h
AQC-82G	818	412	1000	185	165	95	20	730m <sup>3</sup> /h
AQC-92G	931	412	1115	185	165	95	20	940m <sup>3</sup> /h



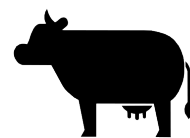
## Stienen BE, Agri Automation

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## Air inlet systems

for modern livestock farming

- Made entirely of plastic and stainless steel
- An appropriate solution for every situation
- Modular system
- Flexible dimensions
- Easy to install



## An optimum climate in the animal house

Your animals are your capital and the climate in the animal house is an important factor in their development. The right amount of air, of the right quality, with the right speed and in the right place for your animals. That is the secret to a healthy climate in animal houses. What is important for your animals is how the air enters the house; not how it leaves the house. Good air distribution where there is a calm,

consistent movement of air means a good climate in your animal house. The AeroWing has been carefully shaped to achieve this. The result: a constant temperature in the house, without any draughts. This should be combined with sufficient ventilation to remove temperature, moisture, CO<sub>2</sub>, ammonia and dust. Stienen BE supplies air intake systems of several different types and designs:

- AeroWing
- AeroWing-tunnel
- AeroFlex
- AeroRoof
- AeroFree

### AeroWing

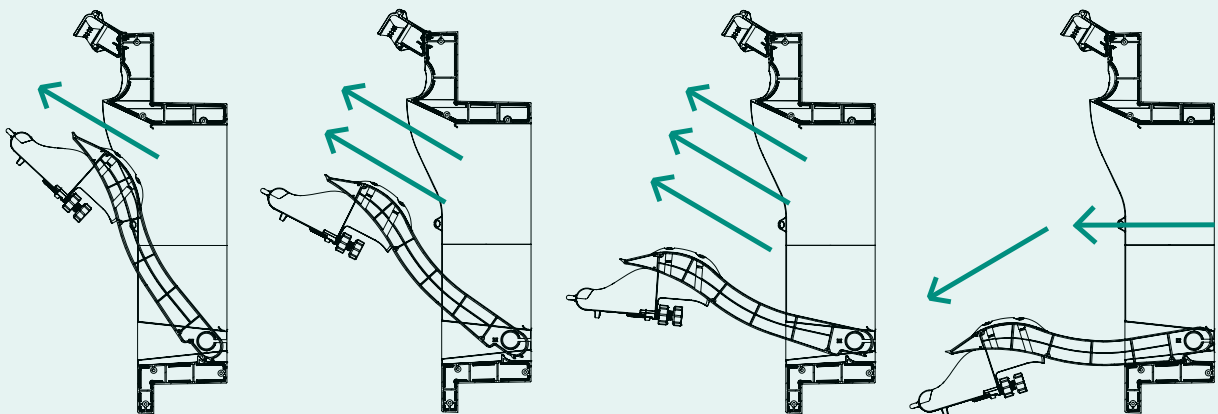
for a constant and independent incoming air throw

The aerodynamic shape of the AeroWing angles the incoming air at 22°. This means that the path of the air throw is always known and this enables ventilation independently of the roof. A constant air throw is guaranteed, even at minimum ventilation levels. The AeroWing is available in various different sizes and tunnel versions, with two, three, four or five valve layers.

### AeroWing-tunnel

for extra ventilation

Tunnel ventilation can be used to increase ventilation levels on extremely hot days. Tunnel flaps are applied in addition to the conventional AeroWing in order to create a cooling effect by subjecting the animals to air at a higher velocity.



#### LOWERING PRESSURE DROP

If the ventilation level is 70% or higher, the pressure can be lowered to apply displacement ventilation.

## Technical specifications AeroWing and AeroWing-tunnel

Type	Layers	Cut-out (mm) *		Rear view (mm)		Front view (mm)		Air flow (m <sup>3</sup> /h)				Force Kg
		Width	Height	Width	Height	Width	Height	10 Pa	20 Pa	30 Pa	40 Pa	
AW1-16 C	1	617	390	610	385	690	520	1,600	2,200	2,700	3,100	5
AW1-24 C	1	902	390	895	385	975	520	2,400	3,400	4,100	4,800	6
AW1-32 C **	1	1187	390	1180	385	1260	520	3,200	4,500	5,500	6,400	7
TAW2-48	2	902	745	895	740	975	875	4,800	6,700	8,300	9,500	12
TAW2-64	2	1187	745	1180	740	1260	875	6,400	9,100	11,100	12,800	14
TAW3-72	3	902	1100	895	1095	975	1230	7,200	10,100	12,400	14,300	18
TAW3-96	3	1187	1100	1180	1095	1260	1230	9,600	13,600	16,600	19,200	21
TAW3-120	3	1472	1100	1465	1095	1545	1230	12,000	17,000	20,900	24,100	24
TAW4-95	4	902	1455	895	1450	975	1585	9,500	13,500	16,500	19,100	24
TAW4-128	4	1187	1455	1180	1450	1260	1585	12,800	18,100	22,200	25,600	28
TAW4-161	4	1472	1455	1465	1450	1545	1585	16,100	22,700	27,800	32,100	32
TAW5-119	5	902	1810	895	1805	975	1940	11,900	16,900	20,700	23,900	30
TAW5-160	5	1187	1810	1180	1805	1260	1940	16,000	22,600	27,700	32,000	35
TAW5-201	5	1472	1810	1465	1805	1545	1940	20,100	28,400	34,800	40,200	40

\* Tolerance deviations in width and height have been taken into account in the cut-out dimensions.

\*\* AW1-32 C has two brackets as standard.

## AeroFlex

for situations where the air needs to be steered

We recommend the AeroFlex in situations where it is very important that the air is steered. The adjustable fins steer the air in the desired direction. This enables perfect steering of the air in broad animal houses, animal houses with obstacles, or in poultry houses with aviary or cage systems. The AeroFlex with a V-type slide valve guarantees the desired throw even at minimum ventilation levels. The air is then bundled to create a 'jet stream'. To ensure a long service life, the AeroFlex is made entirely of plastic and stainless steel; it can also be custom-made to fit any opening. The AeroFlex valves are also available in transparent (daylight) and multiple designs. The AeroFlex is self-opening and is closed by a motor. The fins are installed in front of the slide; the fin position has little or no impact on the effective air intake.



## Technical specifications AeroFlex

Type	Integration dimensions			Net surface area (cm <sup>2</sup> )	Capacity (m <sup>3</sup> h)			Tensile force (kg)	Stroke length (mm)
	W	H	D		10Pa	20Pa	80Pa		
UF-2500	540	345	100	1525	1800	2500	2900	2	350
UF-3500	640	395	100	2130	2550	3500	4050	2.5	400
UF-5350	940	445	100	3240	3900	5350	6150	3.5	450
UF-7500	1,040	495	100	4550	5450	7500	8650	4.5	500
UF-9000	1,120	545	100	5454	6550	9000	10350	5	550

### Dimensions of made to measure solutions

Width : 200-1120 mm (any increment is possible)  
 Height : 245-670 mm (in 25mm increments)  
 Depth : 0-500 mm (in 25mm increments)



## AeroRoof

for situations that require the 'coanda' effect

The AeroRoof is self-opening and is closed by a motor. The design with a curved flap steers the air horizontally along the ceiling for an optimum 'coanda' (ceiling) effect. Versions with a straight flap direct the air downwards, in a straight line. The AeroRoof ceiling valves are available with single and double valves and are made entirely of plastic and stainless steel to guarantee a long service life. We can provide matching solutions for all applications. The valves are also available as kits that need to be assembled on site. This saves up to 70% on transport volume.

## Technical specifications AeroRoof

Type	Integration dimensions			Net surface area (cm <sup>2</sup> )	Capacity (m <sup>3</sup> h)			Tensile force (kg)	Stroke length (mm)
	W	H	D		10Pa	20Pa	80Pa		
PVH-E-2400	320	100	600	1456	1750	2400	2750	1.5	320
PVH-E-3350	670	100	700	2046	2450	3350	3850	2	370
PVH-E-4500	420	100	800	2736	3250	4500	5150	2.5	420
PVH-D-4800	600	100	600	2912	3500	4800	5500	3	320
PVH-D-6750	700	100	700	4092	4900	6750	7750	4	370
PVH-D-9000	800	100	800	5472	6550	9000	10350	5	420

### Dimensions of made to measure solutions

Width : 320/670/420/600/700/800  
 Height : 100-500 mm (in increments of 25 mm)  
 Depth : 200-1120 (in increments of 25 mm)

## AeroFree

for smooth and hassle-free pop-hole opening control

The AeroFree enables you to smoothly control the pop-holes to the outdoor range. The AeroFree pop-hole door is self-closing and is opened using a motor. Fitting rooms with multiple pop-holes doors offers the advantage of being able to close some shutters in cold periods. To ensure a long service life, the AeroFree pophole slide shutter is made entirely of plastic and stainless steel.



## Technical specifications AeroFree

Type	Integration dimensions			Net pop-hole (mm)	Cut-out(mm)		Tensile force (kg)	Stroke length (mm)	Dimensions of made to measure solutions
	W	H	D		W	H			
KU-H1-1000	1040	540	100	1000	1050	550	6	550	Width: 200-4800 mm (any increment is possible)
KU-H1-1100	1140	540	100	1100	1150	550	6.5	550	
KU-H2-2000	2086	540	100	2001	2096	550	12	550	Height: 245-670 mm (in 25mm increments)
KU-H2-2200	2286	540	100	2201	2296	550	13	550	
KU-H3-3000	3132	540	100	3002	3142	550	18	550	Depth: 0-500 mm (in 25mm increments)
KU-H3-3300	3432	540	100	3302	3442	550	19.5	550	

## Overview Aero product range

available made to measure



AeroWing



AeroWing-tunnel



AeroFree single



AeroFree multiple



AeroRoof horizontal with a single air intake



AeroRoof horizontal with a double air intake



AeroRoof horizontal with turn-air



AeroRoof vertical with a single air intake



AeroRoof vertical with a double air intake



AeroFlex with a V-type / lag slide valve



AeroFlex transparent



AeroFlex multiple

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## SPM/MPM

to control fans or lights

- 0-10V or 10-0V control signal
- Possibility to control high power
- Minimum voltage output setting
- Electronic off position
- Main switch with bridging position (SPM only)
- Easy to operate by means of rotary knob



## Different amperage versions

driven by an external controller or manually

The power controls are available in three different versions: 5A (MPM), 6A (SPM-6) and 12A (SPM-12). They are driven by an external controller during normal operation. The power can also be controlled manually. The rotary knob lets you easily adjust the required power. A higher power can be achieved by interconnecting several controllers that provide the same control signal.

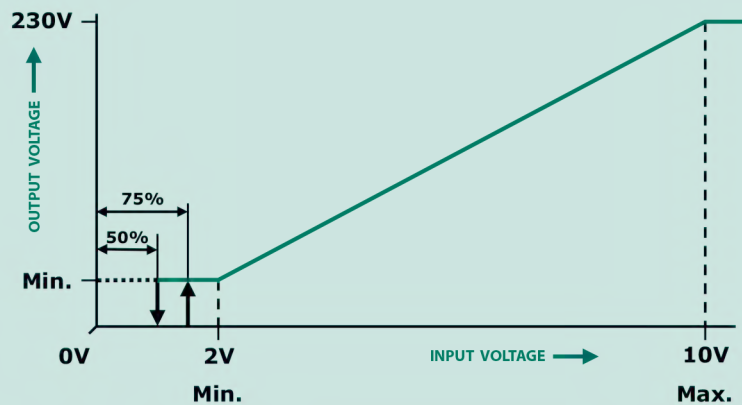
## 0-10V input with 10-0V modus

extra protection in case of calamities

If the 0-10V control signal is suddenly lost, the output will automatically be controlled to maximum voltage.

## Fan stop with 2-10V control signal

SPM with electronic off position



## ECO-Prop

energy efficient, silent recirculation fan

The recirculation fan is distinguished by its hugely energy-efficient character. Its large diameter enables this Stienen fan to displace the same amount of air as the usual smaller fans, but at a much lower speed.

This offers three advantages:

1. considerable energy savings
2. a low sound level
3. reduced draught and dehydration symptoms



The ECO-Prop is covered in plastic sheeting and can be precisely controlled by the MPM-5, SPM-6 or SPM-12 power control or using a frequency controller.

## Technical specifications

General	MPM-5	SPM-6	SPM-12
Supply voltage: 230Vac - 50/60Hz	230V/5A	230V/6A	230V/12A
Control signal: 0-10V or 10-0V	1,2kVa	1,5kVa	3kVa
Adjustable min. output voltage	on/off	man/0/autom.	man/0/autom.
Electronic off position	-	✓	✓
Protection class: IP 54	220x180x100mm	220x180x115mm	280x220x150mm
Min. ambient temperature: -5°C			
Max. ambient temperature: 40°C			

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## MFC

Accurate fan control

- Available in 10 different versions
- Simple rotary knob operation
- Fan voltage read-out
- Reliably maintains the preset temperature
- Internal fan voltage stabilisation
- In an emergency situation the mains voltage can be activated directly
- The series offers several extra functions that can be selected





## MFC series

a fan controller for every situation

The MFC series features 10 different configurations so that the right fan controller is always available for you. The series is a simple and easy tool for keeping the climate in a house and the corresponding energy costs under control. The fans are controlled such that the preset temperature is maintained. Variations in mains voltage are compensated by the integrated internal stabilisation function. The mains switch with its bridging position switches the fans over directly to mains voltage in the event of a calamity. These technologies ensure a reliable series of fan controllers.

## Technical specifications

General	MFC-3	MFC-6	MFC-6S	MFC-12S	MFC-3V	MFC-6V(A)	MFC-12V(A)	MFC-3VAD	MFC-6VAD	MFC-12VAD	
supply voltage	230Vac-50/60Hz	230Vac-50/60Hz	230Vac-50/60Hz	230Vac-50/60Hz	230Vac-50/60Hz	230Vac-50/60Hz	230Vac-50/60Hz	230Vac-50/60Hz	230Vac-50/60Hz	230Vac-50/60Hz	
maximum load fan output	3A	6A	6A	12A	3A	6A	12A	3A	6A	12A	
temperature range	5-40°C	5-40°C	10-40°C	10-40°C	10-40°C	10-40°C	10-40°C	10-40°C	10-40°C	10-40°C	
heat sink	internal	external	external	external	internal	external	external	internal	external	external	
dimensions (mm)	W H D	185 223 119	190 223 138	190 223 138	245 284 170	185 223 119	190 223 138	245 284 170	185 223 119	190 223 138	245 184 170
housing	ABS	ABS	ABS	ABS	ABS	ABS	ABS	ABS	ABS	ABS	
<b>Inputs and outputs</b>											
temperature sensor	1	1	1	1	1	1	1	1	1	1	
heating relay	X	X	230Vac/ 2A	230Vac/ 2A	230Vac/ 2A	230Vac/ 2A	230Vac/ 2A	230Vac/ 2A	230Vac/ 2A	230Vac/ 2A	
aux. relay 2 <sup>nd</sup> fan group	X	X	230Vac/ 2A	230Vac/ 2A	X	X	X	X	X	X	
temp. fault relay	X	X	X	X	X	230Vac/ 2A	230Vac/ 2A	X	X	X	

## Different versions

of the MC-series

**MFC I** This series is available in 3A and 6A versions that control ventilation according to a preset bandwidth. As is the case with all other controllers, the display shows the current house temperature, but you only have to press a button to bring up the current fan voltage

**MFC-V-series I** This series is available in 3A, 6A, and 12A versions with a voltage free heating contact. You can use a rotary knob to set the point where heating is switched on and select the relevant symbol to keep the room free from frost.

**MFC-VA-series I** This series is available in 6A and 12A versions. In addition to controlling ventilation and heating, these controllers also monitor the room temperature. The rotary knobs allow you to easily set the minimum and maximum temperature limits.

**MFC-S-series I** This series is available in 6A and 12A versions. These controllers can control the fans in two groups. And just like the MFC-V series, they have a voltage free heating contact.

**MFC-VAD-series I** This series is available in 3A, 6A, and 12A versions and has a unique minimum ventilation functionality. The fans are switched on and off according to a time-proportional minimum (duty cycle) as and when ventilation requirements decrease. These controllers also have a voltage free heating contact.

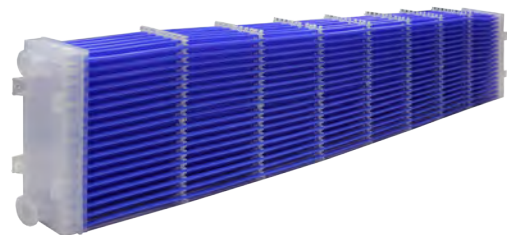
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## AeroX

Air-to-water heat exchanger

- Heating/cooling air
- Pre-conditioning fresh air
- Recovering residual heat from gases and liquids



## AeroX

In AeroX air-to-water heat exchangers, the liquid flows through the plastic tubes of the heat exchanger. The gas flows between the water-filled tubes.

The difference in temperature between the water and the surrounding air will cause energy to be transferred from the water to the air, or vice versa, from the air to the water.

### An appropriate solution for each application

AeroX heat exchangers are ideally suited for industrial, agricultural and offshore applications.

Heating, cooling and heat recovery are just some of the possibilities offered by these heat exchangers which are often combined with air scrubbers, TES systems, heat pumps, etc.

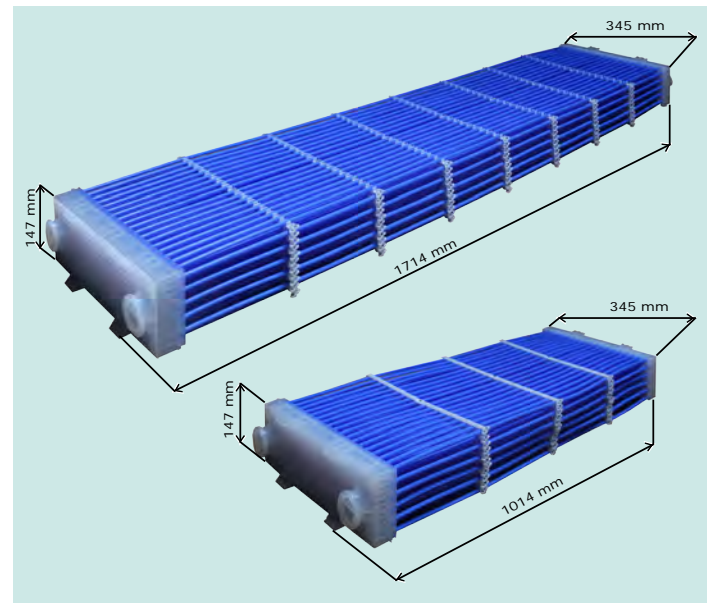
The AeroX consists of flexible, thin-walled thermoplastic polyethylene tubes that ensure maximum heat transfer. The liquid in the heat exchanger may freeze, but this will not damage the packages. The material of the heat exchanger is resistant to a wide range of liquids and aggressive environments. This has made corrosion a thing of the past. An extra advantage of this material is the extremely light weight of the packages.

Since dirt does not easily adhere to the smooth surface of the tubes, little or no cleaning is required. And any cleaning necessary will be very easy to do. In combination with the AeroX's corrosion resistance, this is your guarantee of the continued high efficiency of the AeroX for many years. This is in stark contrast to conventional heat exchangers whose efficiency often decreases quickly.



## Heat exchanger applications

- recover low-grade energy from ventilation and waste water
- comply with statutory energy saving obligations
- store energy
- cool incoming air using groundwater
- heat in combination with a heat pump system or TES
- for offshore purposes: to extract energy from seawater / to use seawater for cooling



### AeroX packages

The modular design of AeroX packages enables more capacity to be created. This enables optimum heat exchangers to be offered and created for all situations. Before leaving our factory, our heat exchangers are extensively tested for any leaks and production errors. This enables Stienen BE to maintain a consistently high quality.

The AeroX air-to-water heat exchanger is available in two models, each with its own area of application:

- AeroX 1.6: 1600 mm tube package  
ideal for pre-conditioning large quantities of air and efficient for integration in walls, ceilings, etc.
- AeroX 0.9: 900 mm tube package  
its more compact dimensions make this model ideal for installation in air handling units, ducts, climate units, incubators, etc.

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## EGM

Winch motor for controlling  
air inlet valves

- Robust 24V motor
- Long service life thanks to brushless stepping motor
- Easy to adjust
- Completely dust and splash proof
- Protected against overload
- Available with an ESE emergency power supply module



## EGM-100 and EGM-250

with massive torque

The EGM motors have been specially developed to control air inlet systems in intensive livestock buildings. They are fitted with robust brushless 24V motors with a tensile force of 100 and 250 kg respectively. The integrated microprocessor continuously monitors the maximum torque preventing damage due to overload. The EGM can be adjusted without tools and without opening it, thus ensuring a long service life and splash water tightness. As standard, the EGM series

is supplied with a cable drum and is available with a 0-10V control signal or potentiometer feedback. The intelligent DMS-24-2CA or DMS-24-AM end station can control the EGM-CA motor and feedback its exact position by means of communication through a single cable. This minimises the need of wiring, resulting in attractive cost savings.

### Technical specifications

General	
Supply voltage	24 Vac (50/60 Hz) / 24-30 Vdc
Control voltage	0-10 Vdc
Input impedance	≥ 10 kΩ
Max. duty cycle	15 minutes
Protection class	IP 54
Ambient temperature	0-40 °C
Max. number of revolutions	5.25

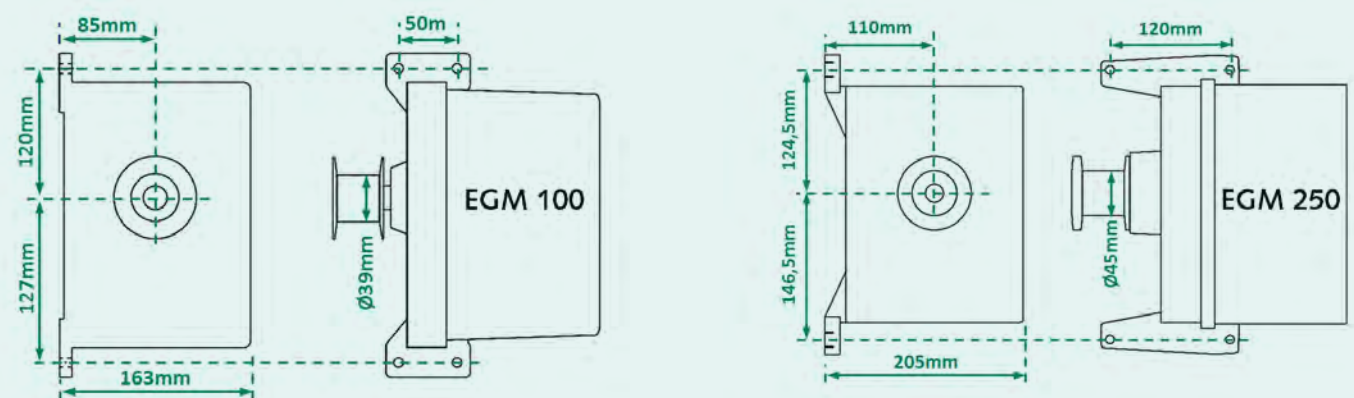
### ESE (optional)

emergency current module for maximum certainty

The EGM winch motors can be expanded by an ESE emergency current module. In the event of a power outage or an emergency situation, an ESE module immediately ensures that the EGM motors drive the air inlet valves to their pre-set positions. Of course, the battery condition is monitored permanently to guarantee that the primary needs of the animals are fulfilled. A maximum of eight EGM-100 motors or four EGM 250 motors can be connected to a single ESE module.

	EGM-100P	EGM-100CA	EGM-250P	EGM-250CA
Max. load	30 VA / 20 W	30 VA / 20 W	60 VA / 40 W	60 VA / 40 W
Stroke length (min. - max.)	13-70 cm	13-70 cm	15-80 cm	15-80 cm
Nominal tensile force	1000 N	1000 N	2500 N	2500 N
Speed	6-13 cm/min.	6-13 cm/min.	5-11 cm/min.	5-11 cm/min.
Potentiometer feedback	✓	-	✓	-
0-10Vdc signal with position feedback	-	✓	-	✓

### Dimensions EGM-100 and EGM-250



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## ELM

Winch motor for controlling  
air inlets

- Robust 230V motor
- Self-locking drive
- Low noise
- Maintenance-free



## ELM winch motor

geared motor with limit switch

The ELM motor has been specially developed to control various types of air inlets in intensive livestock buildings. The winch motor is fitted with a 230V motor with a tensile force of 335 to 800 kg, depending on the model. The ELM is available in four different versions:

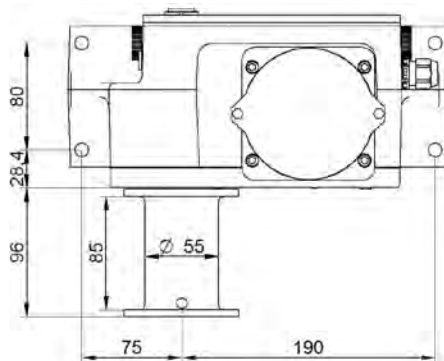
- ELM-150V Valve control
- ELM-150C Curtain control
- ELM-100-2A Gear rack drive (2-shaft)
- ELM-250-2A Gear rack drive (2-shaft)



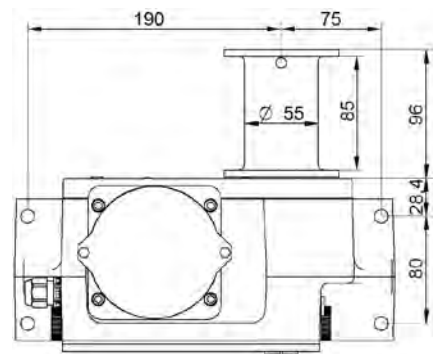
## Technical specifications

	ELM-150V	ELM-150C	ELM-100-2A (2-shaft)	ELM-250-2A (2-shaft)
Drive	valve control	curtain control	gear rack drive	gear rack drive
Supply voltage	230 Vac, 50 Hz	230 Vac, 50 Hz	230 Vac, 50 Hz	230 Vac, 50 Hz
Max. current	0.7 A	0.7 A	1.1 A	1.0 A
Weight	12.5 kg	12.5 kg	11.0 kg	13.0 kg
Shaft torque	150 Nm	150 Nm	100 Nm	250 Nm
Max. tensile force	500 kg	500 kg	335 kg	800 kg
Speed	1 rpm	1 rpm	2,5 rpm	1 rpm
Limit switches	max. 6 rev.	max. 12 rev.	max. 18 rev.	max. 6 rev.
Max. duty cycle	10 minutes	10 minutes	20 minutes	20 minutes
Feedback potmeter	10 kΩ ±20%	10 kΩ ±20%	10 kΩ ±20%	10 kΩ ±20%
Connection cable length	1.6 m	1.6 m	1.6 m	1.6 m
Protection class	IP 54	IP 54	IP 54	IP 54
Ambient temperature	-5 °C to +52 °C	-5 °C to +52 °C	-15° C to +60 °C	-15 °C to +60 °C
Wind-up length Ø4 mm cable resp. revolutions of motor shaft				
• gearwheel, 1 thread	58-116 cm	63-218 cm	3-9.5 rev.	3-9.5 rev.
•• gearwheel, 2 threads	26-116 cm	36-132 cm	-	-
••• gearwheel, 3 threads	17-80 cm	27-81 cm	1-5 rev.	1-5 rev.
•••• gearwheel, 5 threads	8-49 cm	18-50 cm	1-3.5 rev.	1-3.5 rev.

### Dimensions ELM-150V / ELM-150C



### Dimensions ELM-100-2A / ELM-250-2A



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## AL-10

Smart alarm device  
with specified messages

- Clear displaying of activated inputs
- Independant operation of alarm contacts
- Optional alarm key switch
- Internal battery for constant contact monitoring
- Protected communication with FarmConnect and FarmRemote





## AL-10

for constant and transparent monitoring

This alarm controller takes its name from its ten independent alarm groups. Every alarm input has an alarm output linked to it, enabling alarm handling priorities to be programmed. The keys and the corresponding signal LEDs provide you with a straightforward and clear indication of where a problem was detected. The AL-10 communicates the alarm and the corresponding location to either your siren and/or phone output (as selected by you), enabling you to take action as

required. The alarm inputs can be switched on/off individually and have a default retard function of 30 minutes. This retard function can be activated if the alarm is reported via your phone. You can also program a dialler delay for every individual input. A key switch is optionally available to prevent unauthorised deactivation of an alarm. The internal battery powers the AL-10 if the mains power is down, thus guaranteeing constant monitoring.

## Technical specifications

General	
Supply voltage	230Vac - 50/60Hz
Connected load	15VA
Dimensions	300x230x120
ABS housing	✓
Protection class	IP 20
Min. ambient temperature	-5°C
Max. ambient temperature	20°C
Inputs	
Individually programmable alarm inputs	10
Alarm retard input	1
Outputs	
Individually programmable alarm outputs per input, 24Vdc/0.5A	10
Error relay 24Vdc/0.5A (dialler)	1
Siren output 12Vdc/0.5A	1
Options	
Key switch	✓
Communication via RS-485 PCB	✓

## Sirene

with optical alarm

To ensure that the alarm is always heard, this tight and waterproof siren with its sound level between 117dB and 127dB and flashing light signal generates highly noticeable alarm signals. The AL-10 enables you to deviate from the default siren pattern and set a pattern of your own preference. This controller also has a night-time siren setting, where the siren will not be activated during the nighttime period as programmed by you. Of course, the dialler will then still relay the signal to your phone.



## FarmRemote (optional)

The remote control feature of the AL-10 enables you to read the current data of your animal house remotely using your smartphone, tablet or PC. You can even operate the AL-10 from the comfort of your armchair. The Stienen WEB-SEC interface guarantees a secure connection.



## FarmConnect (optional)

The FarmConnect farm software collects all current and historical data of all control computers on your farm, combines this data, and then presents it in clear overviews, graphs and tables. FarmConnect gives you access to your farm data. Wherever you are, you are always connected to your company so that you can intervene immediately if necessary.

## Stienen BE, Agri Automation

Stienen BE is a leading family company (1977) which has its roots in livestock farming. It is in our nature to be very close to our end users. We are a global supplier of innovative automation solutions for poultry and pig houses. Our climate solutions, automation systems, management software and the accompanying peripheral equipment are all developed and produced in-house.

## AM/AS

### ALARM PANELS

Contact alarm with or without memory

- Available with various alarm inputs
- Alarm contacts can be operated separately
- Active input clearly visible
- Standard with internal battery for constant contact monitoring
- Easy to use



## AM alarm panel

easy to use and transparent panel with memory

The AM-6 enables six contacts (e.g. control devices, line voltage pilots or thermostats) to be monitored independently of each other. All inputs can be switched on or off as you wish. The corresponding signal LEDs indicate the current status:

- Led off: alarm contact is inactive
- Led on: there is/was an alarm
- Led is blinking: alarm contact switched off

The AM-6 has a memory function so if the reason for the alarm is solved without your intervention, you can still see which contact was affected. This makes it easy to trace malfunctions that occur repeatedly. The internal battery is tested automatically every day, guaranteeing constant monitoring.

## AS alarm panel

easy to use and transparent panel with 1, 12 or 18 contacts

Easy to use and highly efficient at the same time. Three different alarm panels are available as part of this series. The front panel is designed such that it is easy to understand and you can see at a glance where an alarm has occurred. All inputs can be switched on or off as you wish. The test button can be used to test the attached siren. If the mains voltage is down, the internal battery will activate the alarm.

## Technical specifications AM / AS

General	AM	AS-1	AS-12	AS-18
Supply voltage	230Vac - 50/60Hz	230Vac - 50/60Hz	230Vac - 50/60Hz	230Vac - 50/60Hz
Connected load	15VA	15VA	15VA	15VA
Protection class	IP 54	IP 54	IP 54	IP 54
ABS housing	✓	✓	✓	✓
Dimensions	170x216x120	170x216x120	216x275x130	216x275x130
<b>Inputs and outputs</b>				
Contact inputs	6	1	12	18
Error relay 24Vac/2A	1	1	1	1
Siren output 12Vdc /0.5A	1	1	1	1
<b>Functionalities</b>				
Internal memory	✓	-	-	-
Permanent battery monitoring	✓	-	-	-

## Siren

with optical signal

To ensure that the alarm is always heard, this tight and waterproof siren with its sound level between 117dB and 127dB and flashing light signal generates highly noticeable alarm signals.



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## ASU series

Constant and independent house temperature monitoring

- Independent alarm system for maximum safety
- Can be applied in 4, 10, or 16 zones
- Alarm functions can be expanded by means of contact inputs
- Easy to understand lay-out so that you can see at a glance which zone triggers the alarm
- Temperature compensation
- Features a selector switch to activate the alarm siren and/or telephone dialler in the event of an alarm
- Permanent battery monitoring
- Simple operation



## ASU serie

ensures permanent temperature monitoring

The alarm systems in the ASU series independently monitor the house temperature. Separate temperature sensors ensure constant house climate registration and the system activates the alarm if any set limits are exceeded. The alarm system also features contact inputs to monitor external functions and factors such as the climate control system or door contacts. The easy-to-understand panel lay-out of the ASU series shows you at a glance which alarm zone has been triggered and whether it is a temperature alarm or an external alarm. The integrated temperature compensation prevents any unnecessary alerts in the event of high outside temperatures. The Stienen alarm systems are powered by their own batteries that feature an intelligent drip charging system with temperature compensation. This is monitored permanently. All these features allow the ASU series to guarantee maximum reliability at your farm at all times.

## Technical specifications

General	ASU-4	ASU-10	ASU-16
Supply voltage	230Vac - 50/60Hz	230Vac - 50/60Hz	230Vac - 50/60Hz
Load	15VA	15VA	15VA
Protection category	IP-54	IP-54	IP-54
ABS housing	✓	✓	✓
Min. ambient temp.	-5°C	-5°C	-5°C
Max. ambient temp.	40°C	40°C	40°C
<b>Inputs and outputs</b>			
Outside temperature sensors	2	2	2
Siren output, 12Vdc/0.5A	1	1	1
Alarm contacts for dialler	2	2	2
Temperature sensors	4	10	16
Contact inputs	4	10	16
Dimensions	280x220x120mm	370x285x145mm	370x285x145mm

## ALSIR

Siren with optical alarm

To ensure that the alarm is always heard, this siren with its sound level of 122±5dB and flashing light signal generates highly noticeable alarm signals. The siren is dust tight and waterproof.



## Temperature sensor

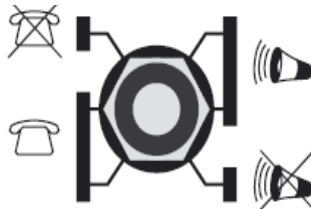
NB10



## Frontswitch

for easy operation

The front switch makes it easy for you to set how you would you like to be alerted in the event of an alarm. You can activate and/or deactivate both the dialler and the siren independently of each other.



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## Matrix

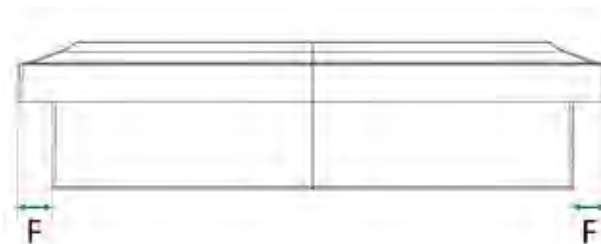
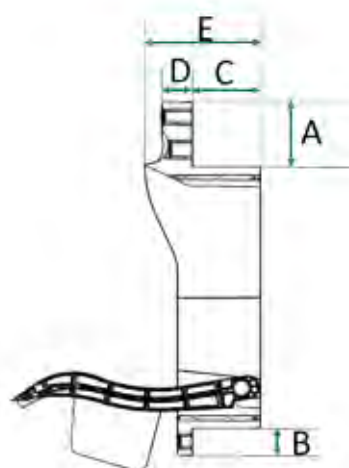
Type	Layers	Cut-out (mm) *		Rear view (mm)		Front view (mm)		Air flow (m <sup>3</sup> /h)				Force Kg
		Width	Height	Width	Height	Width	Height	10 Pa	20 Pa	30 Pa	40 Pa	
AW1-16 C	1	617	390	610	385	690	520	1,600	2,200	2,700	3,100	5
AW1-24 C	1	902	390	895	385	975	520	2,400	3,400	4,100	4,800	6
AW1-32 C **	1	1187	390	1180	385	1260	520	3,200	4,500	5,500	6,400	7
TAW2-48	2	902	745	895	740	975	875	4,800	6,700	8,300	9,500	12
TAW2-64	2	1187	745	1180	740	1260	875	6,400	9,100	11,100	12,800	14
TAW3-72	3	902	1100	895	1095	975	1230	7,200	10,100	12,400	14,300	18
TAW3-96	3	1187	1100	1180	1095	1260	1230	9,600	13,600	16,600	19,200	21
TAW3-120	3	1472	1100	1465	1095	1545	1230	12,000	17,000	20,900	24,100	24
TAW4-95	4	902	1455	895	1450	975	1585	9,500	13,500	16,500	19,100	24
TAW4-128	4	1187	1455	1180	1450	1260	1585	12,800	18,100	22,200	25,600	28
TAW4-161	4	1472	1455	1465	1450	1545	1585	16,100	22,700	27,800	32,100	32
TAW5-119	5	902	1810	895	1805	975	1940	11,900	16,900	20,700	23,900	30
TAW5-160	5	1187	1810	1180	1805	1260	1940	16,000	22,600	27,700	32,000	35
TAW5-201	5	1472	1810	1465	1805	1545	1940	20,100	28,400	34,800	40,200	40

\* With the recess dimensions any tolerance variations in width or height have been taken into account.

\*\* As standard, the AW1-32 C has been equipped with 2 brackets.

### Standard dimensions

A	95 mm
B	40 mm
C	100 mm
D	45 mm
E	170 mm
F	40 mm



## Characteristic values

AQC-xxG

Ø [mm]	300		350		400		450		500		560		630	
Min. [m³/h]	95		134		175		220		280		350		435	
Cap. [m³/h]	[m/s]	Value	[m/s]	Value	[m/s]	Value	[m/s]	Value	[m/s]	Value	[m/s]	Value	[m/s]	Value
1.000	4,19	263												
1.100	4,61	239												
1.200	5,03	219												
1.300	5,44	202												
1.400	5,86	187	4,16	266										
1.500	6,28	175	4,46	248										
1.600	6,70	164	4,75	232										
1.700	7,12	154	5,05	219										
1.800	7,54	145	5,35	206	4,13	269								
1.900	7,96	138	5,65	195	4,36	255								
2.000	8,38	131	5,94	185	4,59	242								
2.200	9,21	119	6,54	168	5,05	220	3,95	276						
2.400	10,05	109	7,13	154	5,51	201	4,31	252						
2.600	10,89	101	7,73	142	5,97	185	4,67	232						
2.800	11,73	93	8,32	132	6,43	172	5,03	215	3,96	269				
3.000	12,56	87	8,91	123	6,89	160	5,39	201	4,24	251				
3.200	13,40	82	9,51	115	7,34	150	5,75	188	4,53	234				
3.400			10,10	109	7,80	141	6,11	177	4,81	220				
3.600			10,70	103	8,26	133	6,46	167	5,09	208	4,06	268		
3.800			11,29	97	8,72	126	6,82	158	5,38	197	4,28	253		
4.000			11,89	92	9,18	120	7,18	150	5,66	186	4,51	240		
4.200			12,48	88	9,64	114	7,54	143	5,94	177	4,74	228		
4.400					10,10	109	7,90	136	6,22	169	4,96	218	4,01	256
4.600					10,56	104	8,26	130	6,51	162	5,19	208	4,19	244
4.800					11,02	100	8,62	125	6,79	155	5,41	199	4,37	234
5.000					11,48	96	8,98	120	7,07	148	5,64	191	4,56	225
5.200					11,93	92	9,34	115	7,36	143	5,86	183	4,74	216
5.400					12,39	89	9,70	111	7,64	137	6,09	176	4,92	208
5.600					12,85	85	10,06	107	7,92	132	6,31	170	5,10	200
5.800							10,42	103	8,21	128	6,54	164	5,29	193
6.000							10,77	99	8,49	123	6,77	158	5,47	187
6.200							11,13	96	8,77	119	6,99	153	5,65	181
6.400							11,49	93	9,05	116	7,22	148	5,83	175
6.600							11,85	90	9,34	112	7,44	143	6,01	170
6.800							12,21	88	9,62	109	7,67	139	6,20	165
7.000							12,57	85	9,90	106	7,89	135	6,38	160
7.200									10,19	103	8,12	131	6,56	155
7.400									10,47	100	8,34	128	6,74	151
7.600									10,75	97	8,57	124	6,93	147
7.800									11,03	95	8,79	121	7,11	143
8.000									11,32	92	9,02	118	7,29	140
8.200									11,60	90	9,25	115	7,47	136
8.400									11,88	88	9,47	112	7,65	133
8.600									12,17	86	9,70	109	7,84	130
8.800											9,92	107	8,02	127
9.000											10,15	104	8,20	124
9.200											10,37	102	8,38	121
9.400											10,60	100	8,57	119
9.600											10,82	98	8,75	116
9.800											11,05	96	8,93	114
10.000											11,28	94	9,11	112
10.400											11,73	90	9,48	107
10.800											12,18	87	9,84	103
11.200													10,21	100
11.600													10,57	96
12.000													10,93	93
12.400													11,30	90
12.800													11,66	87
13.200													12,03	84
13.600													12,39	82

# Characteristic values

AQC-xxG

Ø [mm]	630		710		820		920	
Min. [m <sup>3</sup> /h]	435		565		730		940	
Cap. [m <sup>3</sup> /h]	[m/s]	Value	[m/s]	Value	[m/s]	Value	[m/s]	Value
5.600	5,10	200						
5.800	5,29	193	4,07	273				
6.400	5,83	175	4,49	247				
6.800	6,20	165	4,77	232				
7.200	6,56	155	5,05	219	3,98	281		
7.600	6,93	147	5,33	208	4,20	265		
8.000	7,29	140	5,61	197	4,42	252		
8.400	7,65	133	5,89	188	4,64	240		
8.800	8,02	127	6,17	179	4,86	229		
9.200	8,38	121	6,45	171	5,08	219		
9.600	8,75	116	6,74	164	5,31	209	4,06	277
10.000	9,11	112	7,02	157	5,53	201	4,22	266
10.400	9,48	107	7,30	151	5,75	193	4,39	255
10.800	9,84	103	7,58	146	5,97	186	4,56	245
11.200	10,21	100	7,86	140	6,19	179	4,73	236
11.600	10,57	96	8,14	135	6,41	173	4,90	228
12.000	10,93	93	8,42	131	6,63	167	5,07	220
12.400	11,30	90	8,70	127	6,85	161	5,24	213
12.800	11,66	87	8,98	123	7,07	156	5,41	206
13.200	12,03	84	9,26	119	7,29	152	5,58	200
13.600	12,39	82	9,54	115	7,52	147	5,75	194
14.000			9,82	112	7,74	143	5,91	188
14.500			10,17	108	8,01	138	6,13	182
15.000			10,52	105	8,29	133	6,34	176
15.500			10,87	101	8,57	129	6,55	170
16.000			11,23	98	8,84	125	6,76	164
16.500			11,58	95	9,12	121	6,97	159
17.000			11,93	92	9,39	117	7,18	155
17.500			12,28	90	9,67	114	7,39	150
18.000			12,63	87	9,95	111	7,60	146
18.500			12,98	85	10,22	108	7,82	142
19.000			13,33	82	10,50	105	8,03	138
19.500			13,68	80	10,78	102	8,24	134
20.000			14,03	78	11,05	100	8,45	131
20.500			14,38	76	11,33	97	8,66	128
21.000			14,73	75	11,61	95	8,87	125
21.500					11,88	93	9,08	122
22.000					12,16	91	9,29	119
22.500					12,43	89	9,50	116
23.000					12,71	87	9,72	114
23.500					12,99	85	9,93	111
24.000					13,26	83	10,14	109
24.500					13,54	81	10,35	107
25.000					13,82	80	10,56	105
25.500					14,09	78	10,77	103
26.000					14,37	77	10,98	101
26.500					14,64	75	11,19	99
27.000					14,92	74	11,41	97
27.500					15,20	72	11,62	95
28.000					15,47	71	11,83	93
28.500					15,75	70	12,04	92
29.000							12,25	90
30.000							12,67	87
31.000							13,10	84
32.000							13,52	82
33.000							13,94	79
34.000							14,36	77
35.000							14,79	74



## Matrix I-O overview

	Inputs					Outputs							AQC		Communication					
	10K NTC sensors	0-10Volt input	Digital input	Potentiometer feedback	Power supply 0-10V sensor(s)	0-10Volt output	230V 2A relais out	24Vac 2Amp. Alarm relais	Output 35Vdc 30mA opt.	Output 230V/24Vac solid state	Open/Close motor/valve contr	6Amp out 30-230V	12Amp out 30-230V	AQC 24Vdc	AQC manufactured $\geq 2010$	RS-485	Module-Bus	FN-Bus	ME-54W meteostation	PL-Meteostation
CBA-2000	3		1			3	2	1						4	Yes	No	No	No	No	No
CBA-2006	3		1			2	2	1			1			4	Yes	No	No	No	No	No
CBA-2012	3		1			2	2	1				1		4	Yes	No	No	No	No	No
CB-3000	4(6)	2(0)	1		Yes	5	3	1						4	Yes	No	No	No	No	No
ECB-4 <i>option CB-3000</i>		2					4								No	No	No	No	No	No
CL-5400	5	4	3		Yes	5	9	1						2	Yes	Yes	No	Yes	Yes	Yes
KL-6001-6	4	1	1			2		1		2	1			4	Yes	Yes	No	No	No	No
KL-6001-12	4	1	1			2		1		2		1		4	Yes	Yes	No	No	No	No
KL-64															No	Yes	No	No	No	No
KL-6401	4	1	1			3		1		2				4	Yes	Yes	No	No	No	No
RKL-4 <i>Option KL-6401</i>							4								No	No	No	No	No	No
KL-6402	12	4				12		1						4	Yes	Yes	No	No	No	No
KL-6405	12	5*				12		1						5	Yes	Yes	No	No	No	No
KL-6410	12	10*				22	12	1						10	Yes	Yes	No	No	No	No
KL-6405-Input <i>Opt.LL-6405/10</i>	5	5			Yes	5									No	No	No	No	No	No
KFV-6400	10	4	5		Yes	8	7	1						2	Yes	No	No	No	No	Yes
KFM-6400			6				6	1	2						Yes	Yes	Yes			
KL-6500								1							Yes					
KLC-100	2	2			Yes	3	6	1							Yes					
KLD-100	3					3	2	1						2	Yes					
PL-9000	5	4	3		Yes	5	9	1						2	Yes	Yes	No	No	No	Yes
PL-9400	10	4	5		Yes	8	7	1						1	Yes	No	No	No	No	Yes
PL-9500	10	4	5		Yes	8	7	1						1	Yes	No	No	No	No	Yes
PFA-9400			3				6	1	3						Yes	Yes	Yes	No	No	No
PFS-16			3				6	1	3						Yes	Yes	Yes	No	No	No
PFV-9400								1							Yes	Yes	Yes			
PFV-9412			3				6	1	3						Yes	Yes	Yes	No	No	No
PSW-16								1							Yes	Yes	Yes	No	No	No
PEC-9200								1							Yes	Yes	Yes	No	No	No
PW-8															Yes	No	No	No	No	No
CLK-20	5	4	3		Yes	5	9	1						2	Yes	Yes	No	No	No	Yes
DLOG-20	5	5	10					1							Yes	Yes	No	No	No	No
DLOG-40	10	10	20					1							Yes	Yes	No	No	No	No
DINP-10K	10														No	Yes	No	No	No	No
DINP-10L		10			Yes										No	Yes	No	No	No	No
DINP-16M			16												No	Yes	No	No	No	No
DINP-20MM			20												No	Yes	No	No	No	No
DOUT-5C-i								5							No	Yes	No	No	No	No
PL-9200 METEO															No	Yes	No	No	No	No
RTO-10-EXT			5			10	2								No	Yes	No	No	No	No
DIN/OUT-i	5	1	4		Yes	4	6								No	Yes	No	No	No	No
DIN/OUT-12-i	5	1	4		Yes	4	6					1			No	Yes	No	No	No	No

\*12V power supply or 0-10V input



## Matrix SGS fans

### Air output of SGS fans as m<sup>3</sup>/h

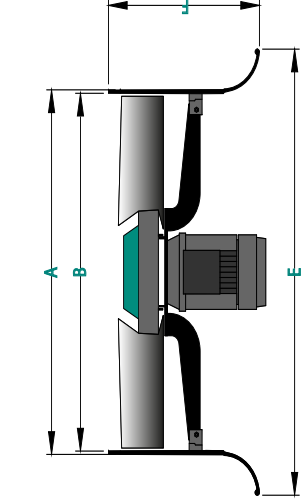
Part. Nr.	Type	RPM	30 Pa	40Pa	50Pa	60Pa	75Pa	100Pa	125Pa	150Pa	175Pa	200Pa	Watt	I-max.
36.40.00	SGS-71T-A4X	900	16.090	15.990	15.550	15.130	14.810	13.950	x	x	x	x	750	2,3
36.40.01	SGS-82T-A2A	900	18.550	18.120	17.230	15.130	15.130	13.410	x	x	x	x	750	2,3
36.40.02	SGS-82T-B4A	900	20.150	19.990	19.830	18.980	18.550	17.270	x	x	x	x	1100	3,3
36.40.03	SGS-82T-C4D	900	25.080	24.860	24.330	24.010	23.900	22.830	22.400	x	x	x	1500	4,0
36.40.04	SGS-82T-C4E	900	23.150	22.610	22.510	22.290	21.970	21.550	20.690	19.830	17.266	x	1500	4,0
36.40.05	SGS-92T-B2K	900	28.070	27.000	26.250	25.720	24.110	21.120	x	x	x	x	1100	3,3
36.40.06	SGS-92T-B4L	900	24.860	24.110	23.580	22.830	22.610	21.150	x	x	x	x	1100	3,3
36.40.07	SGS-92T-C4R	900	28.210	27.970	27.430	26.840	26.500	25.820	x	x	x	x	1500	4,0
36.40.08	SGS-92T-D4S	900	33.230	32.730	32.250	31.820	31.390	30.100	28.390	27.540	25.820	24.970	2200	6,0

### Danfoss frequency converter IP55

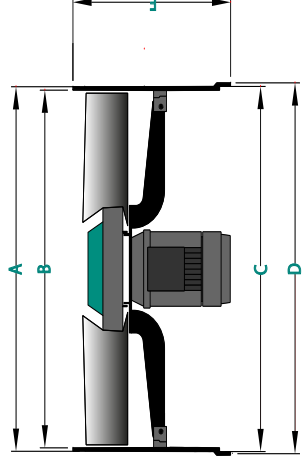
Part. Nr.	Type	kW	Amp.
50.24.06	FC-102-P1K1	1,1	3,0
50.24.07	FC-102-P1K5	1,5	4,1
50.24.08	FC-102-P2K2	2,2	5,6
50.24.09	FC-102-P3K0	3,0	7,2
50.24.10	FC-102-P4K0	4,0	10,0
50.24.11	FC-102-P5K5	5,5	13,0
50.24.12	FC-102-P7K5	7,5	16,0
50.24.13	FC-102-P11K	11,0	24,0
50.24.14	FC-102-P15K	15,0	32,0
50.24.15	FC-102-P18K	18,5	37,5
50.24.16	FC-102-P22K	22,0	44,0

### Dimensions of SGS fans in mm

Type SGS Fan	A	B	C	D	E	F
SGS-71T-VAR	729	716	730	747	-	430
SGS-71T	729	716	-	-	872	412
SGS-82T-VAR	818	802	818	835	-	430
SGS-82T	818	802	-	-	1000	412
SGS-92T-VAR	930	920	931	947	-	430
SGS-92T	930	920	-	-	1116	412



SGS 71T - 82T - 92T



SGS 71T VAR - 82T VAR - 92T VAR

## Multifan fans

### Multifan Axial Fans 230V

Part. Nr.	Type	RPM	30 Pa	40Pa	50Pa	70Pa	80Pa	100Pa	Watt	I-nom	I-max	Min. AQC
36.70.41	4E30	1400	2.140		1.870				104	0,5	0,6	95
36.70.43	4E35	1400	3.200		2.910				170	0,9	1,1	134
36.70.45	4E40	1400	3.480		4.030				237	1,1	1,3	175
36.70.47	4E45	1400	5.860		5.400		4.460		317	1,6	1,9	220
36.70.49	4E50	1400	7.610		7.080		6.110	5.540	443	2,0	2,4	280
36.70.51	6E56	900	8.980		8.200		6.400		530	2,4	2,9	350
36.70.53	6E63	900	10.920		10.100		8.520		600	3,0	3,6	435
36.70.55	6E71	900	11.900		11.080		9.550	9.750	630	3,0	3,6	565
36.70.57	6E82	900	13.040	12.294	11.551	9.999	9.001	7.418	592	2,5	2,8	730
36.70.59	6E92	900	18.400		16.500				790	4,0	4,8	940

### Multifan Axial Fans 400V

Part. Nr.	Type	RPM	30 Pa	40Pa	50 Pa	70Pa	80Pa	100Pa	Watt	I-nom	I-max	Min. AQC
36.70.61	4D30	1400	2.050		1.810				94	0,3	0,3	95
36.70.63	4D35	1400	3.280		2.880				169	0,5	0,6	134
36.70.65	4D40	1400	4.380		4.040		3.500		225	0,6	0,7	175
36.70.67	4D45	1400	5.850		5.390		4.610		299	0,7	0,8	220
36.70.69	4D50	1400	7.630		7.160		6.280		414	1,1	1,2	280
36.70.71	6D56	1400	7.450		6.500				310	1,2	1,3	350
36.70.73	6D63	900	10.560		9.620		7.740		520	1,3	1,6	435
36.70.75	6D71	900	15.050		13.930		11.930	9.980	920	2	2,2	565
36.70.77	6D82	900	20.723	19.453	18.088	14.969	13.061	8.443	945	1,9	2	730
36.70.79	6D92	900	22.300		20.400		17.000		1080	2,6	3,2	940

### Multifan End Wall Fan 230/400V 50Hz

Part. Nr.	Type	RPM	20 Pa	40Pa	60Pa				Watt	I-nom	I-max
35.40.25	MF-130	450	41.370	37.030	30.940				1.650	5.4 / 3.1	5.9 / 3.4

### AQC-G

Ø	Min.	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0
30	95	1.526	1.653	1.780	1.908	2.035	2.162	2.289	2.416	2.543	2.671	2.798
35	134	2.077	2.250	2.423	2.596	2.769	2.943	3.116	3.289	3.462	3.635	3.808
40	175	2.713	2.939	3.165	3.391	3.617	3.843	4.069	4.296	4.522	4.748	4.974
45	220	3.434	3.720	4.006	4.292	4.578	4.864	5.150	5.436	5.723	6.009	6.295
50	280	4.239	4.592	4.946	5.299	5.652	6.005	6.359	6.712	7.065	7.418	7.772
56	350	5.317	5.760	6.204	6.647	7.090	7.533	7.976	8.419	8.862	9.305	9.749
63	435	6.730	7.291	7.851	8.412	8.973	9.534	10.095	10.656	11.216	11.777	12.338
71	565	8.548	9.260	9.972	10.684	11.397	12.109	12.821	13.534	14.246	14.958	15.670
82	730	11.401	12.351	13.301	14.252	15.202	16.152	17.102	18.052	19.002	19.952	20.902
92	940	14.352	15.548	16.744	17.939	19.135	20.331	21.527	22.723	23.919	25.115	26.311