



Climate and Farm Management for Broilers



Climate for growth

For more than 40 years SKOV has been developing and manufacturing ventilation systems and farm management systems for pig and poultry producers around the world and we are known as being one of the world's leading system suppliers. This means we must constantly strive to develop and manufacture products that ensure optimum conditions in livestock houses for the benefit of both animals and humans.

Innovative quality supplier

A significant share of SKOV's turnover is spent on product development, both for

the development of new products and improvement of existing systems and components. We have 65 skilled employees working in our development departments in Denmark and Malaysia. Our products are developed in close collaboration with our innovative customers and business partners, who provide their input and feedback so that we can deliver the solutions that the market demands. One of the reasons that SKOV's systems are known for high operational reliability, long service life and high efficiency is that major emphasis is placed on checking the quality of our products before

they reach the customer. We quality test all our products under the climatic conditions in which they will operate, and are also certified in accordance with standard DS/EN ISO9001:2008.

Global and close at hand

SKOV's head office is in Denmark, and the company is represented internationally by sales departments, distributors and service technicians. SKOV also has a subsidiary in Bangkok, Thailand that employs 20 workers and ensures our Asian customers well-functioning ventilation and farm management systems



and competent service. SKOV's systems are installed all over the world and our systems can be adapted to all climatic conditions.

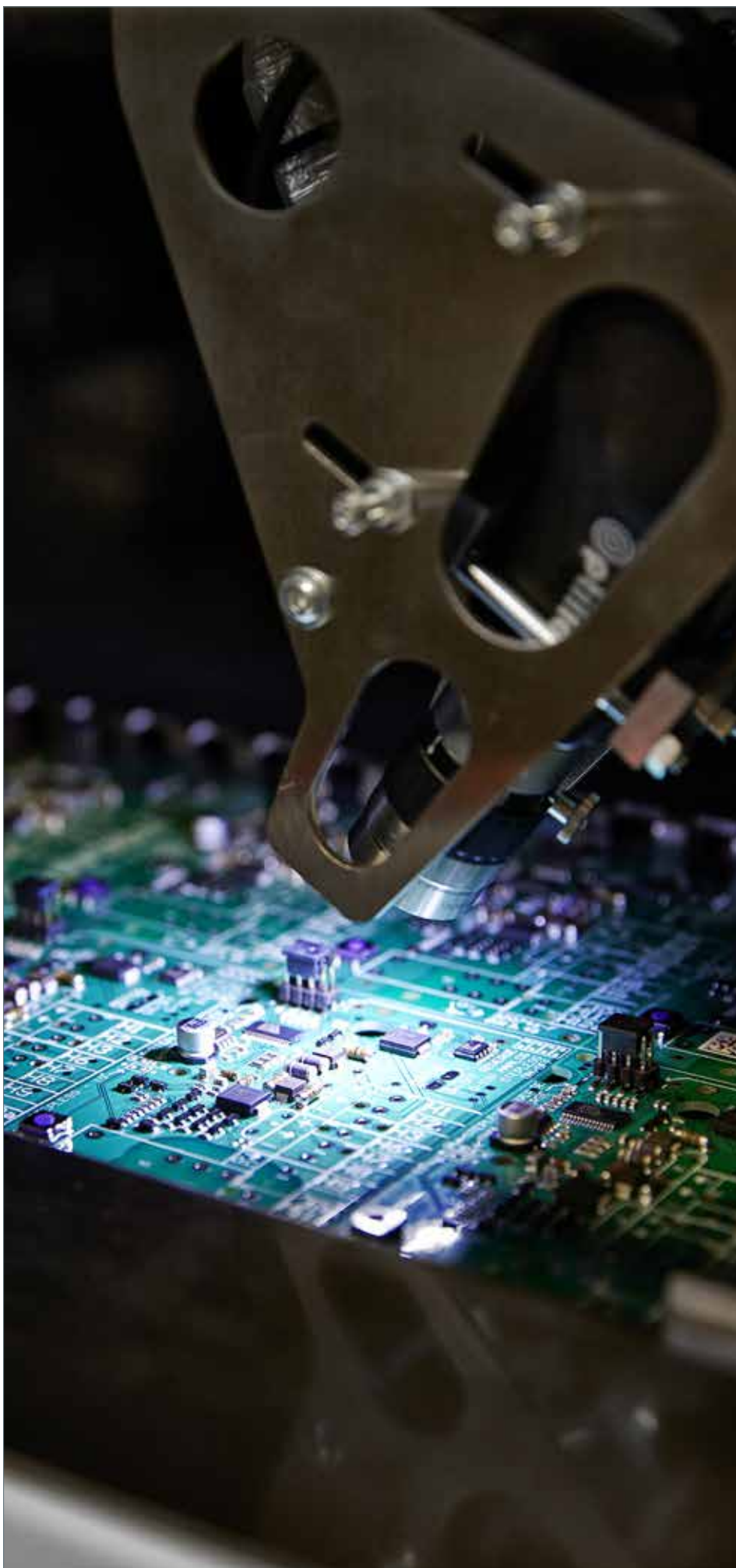
We sell both directly to the producer and also through our many business partners. We have an extensive network of dealers so our customers can receive help and advice regardless of geographical location.

A ventilation and farm management system is an important investment and therefore we also aim to advise customers in their choice of system. We ensure we fit and commission the system and instruct the staff on the farm in the best use of the system. We have our own specialists in animal husbandry who ensure that the animals in the livestock house have the best possible conditions.

Energy-conscious system supplier

SKOV is aware of its responsibilities and therefore there is considerable focus on ensuring that the systems not only create optimum conditions for animals and people in the livestock house, but also consume as little energy as possible for the benefit of the surrounding environment. Through the years we have developed systems and components which reduce power consumption substantially for the benefit of the producer without compromising on the animals' conditions.

SKOV has the best and most efficient ventilation and farm management systems on the market. We have been in existence for more than 40 years and we are a financially sound business partner that will continue to be an important actor on the market well into the future.





SKOV ventilation systems



"We work for optimum conditions for animals, people and the environment. Our systems can be adapted to all types of buildings and are reliable and efficient under all climatic conditions".

- Jørgen Yde Jensen, CEO, SKOV A/S



In order for the animals in the livestock house to perform optimally, it is crucial that the climate in the house is adapted to their needs. Regardless of the size, layout and location of the livestock house, SKOV has a solution to create optimum conditions in the house - for both animals and employees.

Why is ventilation important?

Modern agriculture demands constant optimisation and streamlining of production in order to be able to deliver the best results. In order for the birds to perform optimally, there are some requirements for their environment that must be met. The livestock house climate is one of the most important factors for the animals' well-being, and there are major requirements in terms of the ventilation system, which must ensure the correct temperature, air quality and air humidity, regardless of what climatic conditions the livestock house is situated in.

During cold periods, ventilation is used to create a healthy climate in the house and thereby keep undesirable gas types to a minimum.

The air which is sucked in is cold and must not reach the animals without being mixed with the warmed air in the livestock house. The ventilation system mixes the air so that the temperature is correct in the animal zone and the animals are not exposed to draught nuisances. In warm periods the ventilation system removes the animals' excess heat

and sucks air into the house to create a cooling effect by ensuring air movement around the animals.

A producer who ensures his livestock enjoys the correct climate minimises the risk of diseases and will have livestock with stable, high gain. Likewise, the correct climate will ensure the correct and ideal utilisation of the livestock house.

Regardless of the size, layout and location of the livestock house, SKOV has a solution for creating optimum conditions in the house - both for animals and people tending them. SKOV's professional technicians dimension the ventilation system so that it is adapted to the individual production facility and in a way that ensures the lowest possible energy consumption at the same time.

Basic elements of the ventilation system

To create the perfect climate in the livestock house, it is necessary to be able to supply fresh air, to extract the air in the house and to create optimum temperatures based on the breed and age of the birds. The animals must never be

exposed to draught nuisances and the ventilation must be uniform throughout the livestock house. The air must therefore be taken in at the correct height, direction, quantity and at the correct speed. Correct air control requires a climate computer to ensure that the air intake and extraction are set correctly in relation to one another. In order for the climate computer and air intake and extraction to operate perfectly, it is crucial that the connection between them is stable and correct. Products which are incorporated into a SKOV ventilation system have mainly been developed and manufactured at SKOV in Denmark. All products have been developed and designed in relation to one another, so our customers receive a reliable and efficient ventilation system which guarantees a perfect climate for the animals and employees in the livestock house.



Low Power Ventilation system

SKOV's LPV system is a classic negative pressure system used in ventilation of poultry production facilities. The system has been developed for temperate regions of the world and can be adapted to most livestock buildings.

The components of the LPV system

As a rule, an LPV system consists of the following four elements:

- Air intake
- Air outlet
- Controller
- Interlinking

Air intake

In an LPV system, the fresh air is supplied with wall inlets, type DA 1200/1211/1911. During cold periods, fresh air is directed towards the ceiling and mixed with the house air before it reaches the animal zone.

In warm periods, the air is taken in the same way, but is sucked into the livestock house at a higher speed. This creates air circulation around the birds, and it stays cool without causing the increased air circulation to be perceived as a draught.

Air outlet

Air exhaust in a SKOV LPV system is handled by DA 600 or DA 920 exhaust units, which have both been developed for high output with low power consumption. The exhaust units are aerodynamic, and the exhaust unit and fan are optimised as a unit.

The exhaust units are adjusted in accordance with SKOV's adjustment principles MultiStep® and Dynamic MultiStep®, which reduce the power consumption substantially.

Controller

The LPV system is controlled by SKOV's DOL 534/539 house computer. These computers contain all necessary functions and ensure efficient and precise control of the climate in the livestock house. DOL 534/539 has a modular construction and is easy to operate.

Interlinking

The open-close function of the system is handled by the winch motor DA 75, which is supplied with a complete mounting set. The efficiency and precision of the entire system depends on robust and reliable interlinking.



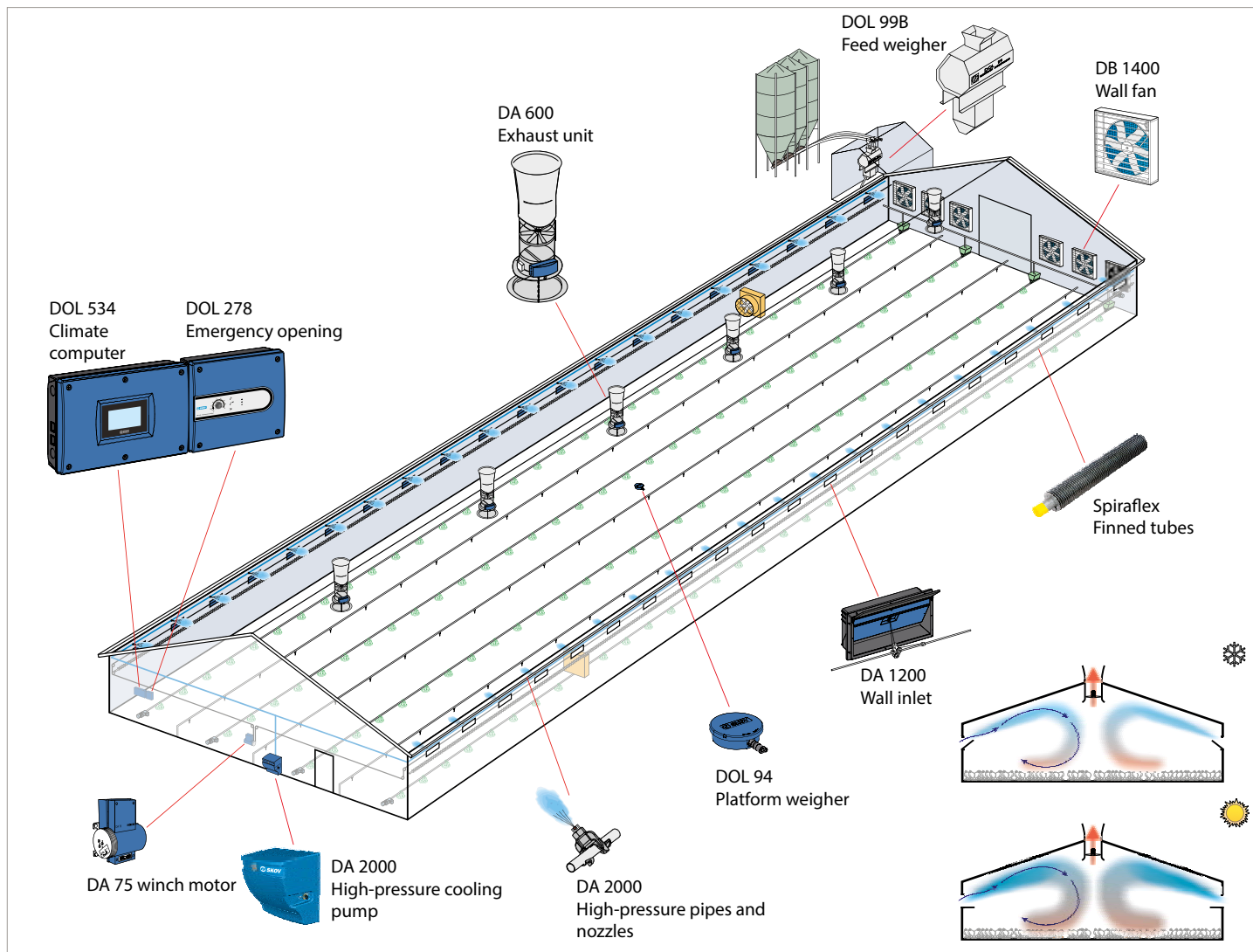
The LPV system can be supplemented with the following:

- Alarm & emergency opening
- Cooling & heating
- Farm Management

SKOV's LPV system

- Stable climate all year round
- Optimum control of air direction, volume and air velocity
- Secure climate control which is easy to operate
- Low power consumption
- Integrated emergency ventilation





Tunnel Ventilation

In the tropical regions of the world the heat is constant; it is therefore important to be able to lower the temperature in the livestock house. SKOV's Tunnel system ensures correct temperature in the livestock house despite high outdoor temperatures.

The components of the Tunnel system

As a rule, a Tunnel system consists of the following four elements:

- Air intake
- Air outlet
- Controller
- Interlinking

Air intake

The air inlet in a Tunnel system is located in the sides or the gable of one end of the building and is lined with cooling pads.

Air outlet

At the opposite end of the tunnel opening there are large gable fans so as to create a cooling air current (chill effect) along the longitudinal direction of the livestock house. Depending on humidity, it is possible to lower the temperature by 10-25°C.

Controller

The Tunnel system is controlled using the DOL 534 climate computer or DOL 539 climate and production computer; both offer an array of functions and are easy to operate. The computer ensures efficient and accurate climate control, allowing for optimal production despite high temperatures. The computer controls the ventilation system based on the temperature perceived by the birds.

Interlinking

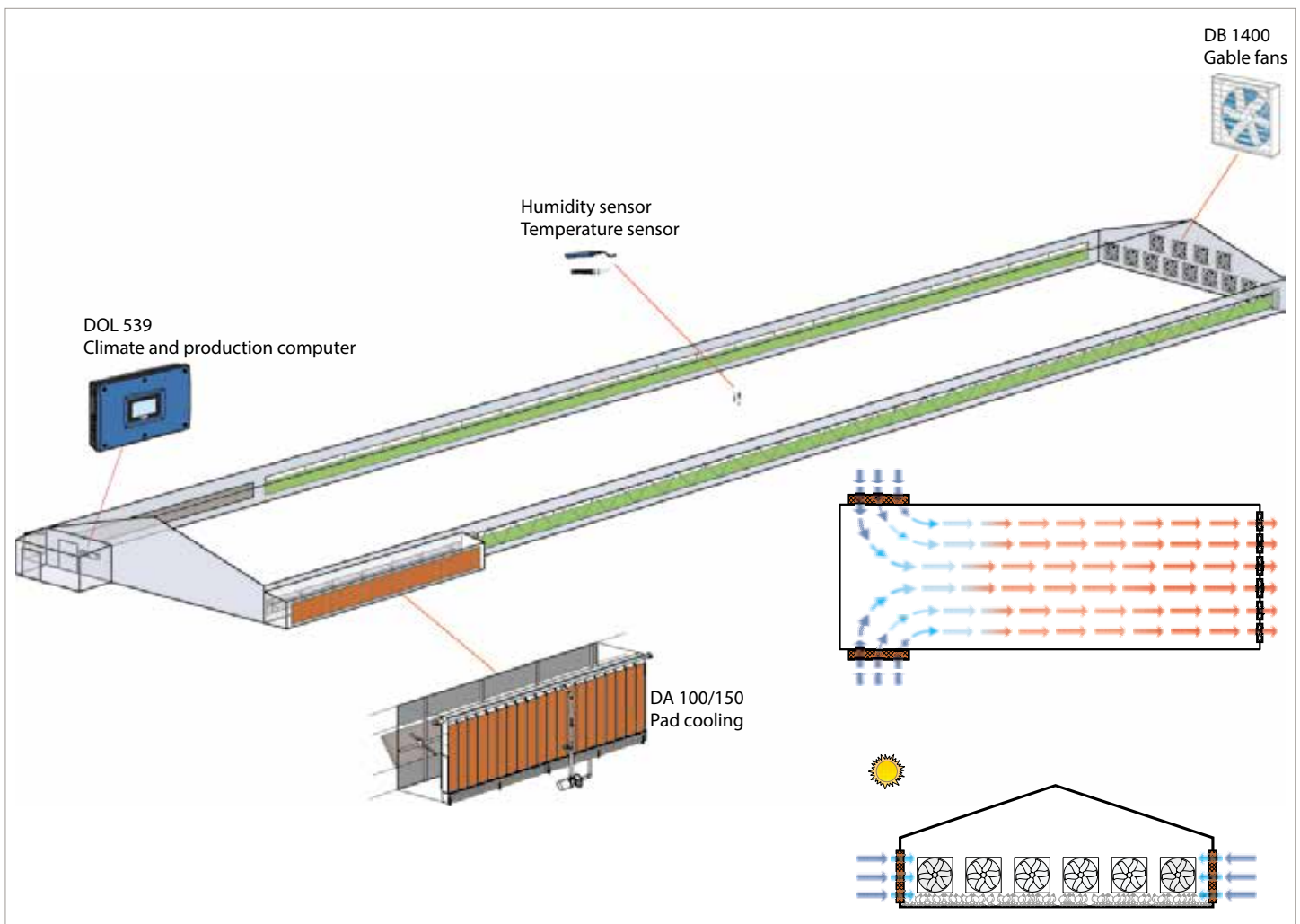
The open-close function of the system is handled by the winch motor DA 75, which is supplied with a complete mounting set. The efficiency and precision of the entire system depends on robust and reliable interlinking.



The tunnel system can be supplemented with the following:

- Alarm & emergency opening





SKOV's Tunnel system

- Low initial costs
- Cooling through air velocity
- Effectively removes excess heat and undesirable gas types
- Efficient and manageable

Combi-Tunnel ventilation

SKOV's Combi-Tunnel system is a negative pressure system used in poultry production facilities in tropical and subtropical regions of the world, where there are considerable temperature fluctuations on both a daily and seasonal basis.

The components of the Combi-Tunnel system

The Combi-Tunnel system consists of the following four elements:

- Air intake
- Air outlet
- Controller
- Interlinking

Air intake

In cold periods, fresh air is supplied through the wall inlets DA1200/1211/1911, which direct the fresh air towards the ceiling. The fresh air is mixed with the air in the livestock house before it reaches the animal zone. In warm periods, the air is sucked into the livestock house using a tunnel door at one end of the house. The tunnel doors come in two variations: Rack & Pinion and Tunnel Door Light. Pads or

high-pressure cooling are used for air cooling.

Air outlet

In cold periods, exhaust in the Combi-Tunnel system is handled by DA 600 or DA 920 exhaust units, which have both been developed so they have a high output with low power consumption. The exhaust units are aerodynamic and the exhaust unit and fan are optimised as a unit. The exhaust units can be installed in the wall and ceiling or side mounted in combination with other wall fans.

The exhaust units are adjusted in accordance with SKOV's adjustment principles MultiStep® and Dynamic MultiStep®, which reduce the power consumption substantially.

At high outside temperatures, air is extracted by large gable fans located opposite the tunnel opening with cooling pads. This creates a flow of cool air (chill effect) along the livestock house, which can lower the temperature in the house by up to 10-25°C.

Controller

The Combi-Tunnel system is controlled



by SKOV's DOL 534/539 house computers. These computers contain an array of functions and ensure efficient and accurate control of the climate in the livestock house. The livestock house computers have a modular construction and are easy to operate.

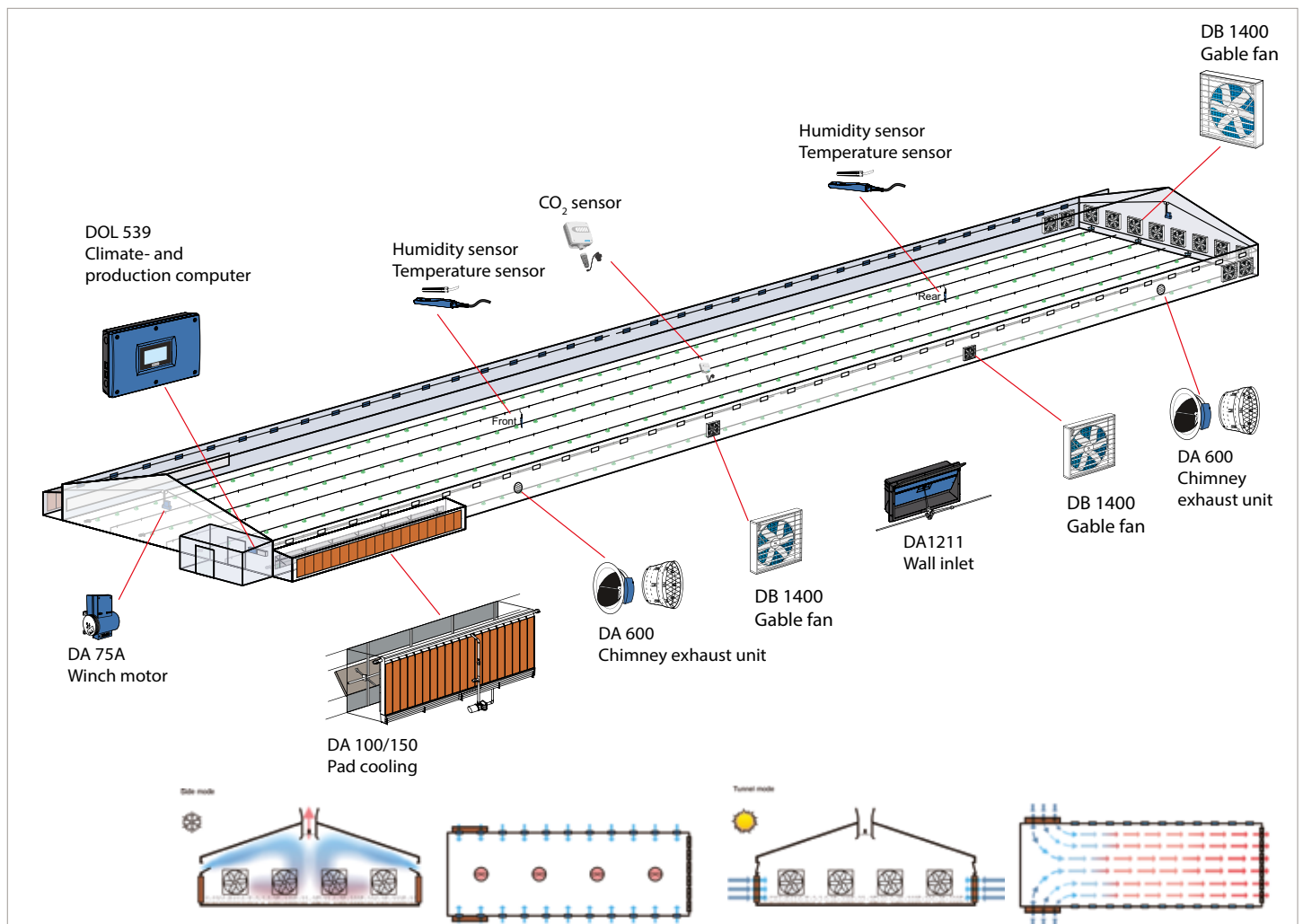
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The Combi-Tunnel system can be supplemented with the following:

- Alarm & emergency opening
- Cooling & heating
- Farm Management





SKOV's Combi-Tunnel system

- Optimum climate without excess heat
- Control of air direction, volume and air velocity
- Cooling effect through air velocity during hot periods
- Minimum risk of draught nuisances during cold periods
- Reliable and efficient control



Welfare and productivity with SKOV's cooling systems

In those parts of the world where the outside temperature can exceed 30 °C it may be necessary to use cooling in the livestock house so that the house temperature is not inappropriately high. Depending on their age and the type of production, the animals are affected to a greater or lesser degree if the house temperature is too high. This has a negative impact on productivity, including reduced feed intake and can ultimately lead to increased mortality due to heat stress. The negative impacts can be reduced significantly through the use of cooling.

SKOV offers two forms of cooling - high-pressure cooling or pad cooling. The development of SKOV's cooling products has put great emphasis on quality and flexibility. Quality is ensured by using very reliable components with a long service life.

High-pressure cooling in an LPV system

An LPV system uses high-pressure cooling, which adds atomized water particles to the air in the livestock house. The water particles evaporate in the heated house air, thus cooling the air. With correct high-pressure cooling, it is possible to lower the temperature in the livestock house by 2-10°C. This reduction may be made without the increased humidity having negative consequences for the

animals and litter.

High-pressure cooling is very flexible, as it is constructed from standard components that can be easily adapted to the concrete livestock house.

High-pressure cooling in Tunnel mode

High-pressure cooling is also suitable for use in Tunnel systems in areas with relatively low humidity. Here the cooling pads are removed and high-pressure nozzles are mounted on lines in the Rack & Pinion opening. It is possible to install high-pressure cooling to meet the cooling and humidity requirements.

Pump unit – complete with filters

The pump forms the basis for an efficient cooling system.

The pump unit is supplied complete, ready for connection to power and water. Effective filters ensure a reliable system with a long life. Furthermore the pump can be equipped with an additional phosphate filter and electronic lime decomposer for optimum reduction of lime and minerals in the water.

Piping system

Only stainless-steel, acid-resistant pipes and joints with high durability and long life. The holes for the nozzles are made with special punch pliers after the piping is fitted. The nozzles in the patented FlexClamp nozzle holders can be placed

anywhere, allowing for optimal positioning above the air intake. Alternatively the pipes can be supplied with prefabricated holes for nozzles.

Nozzles

The patented nozzles are equipped with a filter in front of each nozzle head to reduce the risk of clogging. Furthermore, the nozzle heads are supplied with an anti-lime coating, which further reduces problems with lime deposits in the nozzle head. All nozzles are fitted with an anti-drip valve.

Automatic control

Control of the cooling system can be operated manually or automatically via a cooling computer or the climate computer in the livestock house's.

High pressure system – more than cooling

A high-pressure system has more functions than cooling of the air in the livestock house.

Humidification

A high-pressure system can also be used for humidification of the livestock house. The system can be used to increase the humidity level in the livestock house during periods when it is deemed that the air humidity in the house is too low, and at the same time the humidity can reduce dust problems in the house. Correct humidification can remedy these problems for the benefit of animals and people.

Soaking

Between batches the high-pressure system can be used for soaking the livestock house. With interrupted ventilation, the dense mist of water particles quickly soaks debris on the various surfaces. Cleaning thus becomes quicker and easier.



Lower the temperature with cooling pads

Pad cooling is used in connection with SKOV Combi-Tunnel and Tunnel systems. Cooling is performed by the air intake being made through the pads, which are kept moist by recirculation of the water. The air passes through these pads and is cooled when absorbing water vapour.

Gutter system with integrated water tank

In contrast to other systems, there is no need for a separate water tank in connection with DA 150B pad cooling. The tank is built into the lower gutter and is thus an integrated part of the gutter system.

The tube which irrigates the pads is an integrated part of the upper gutter. Water is supplied directly without the use of the special distributing pads that are used in many other systems.





Optimal livestock climate with an efficient heating system

SKOV provides ventilation solutions in which heating is an integrated part of the overall solution.

A good house climate is important for the animal well-being, health and productivity. Heating is part of the total climate solution. Like cooling and ventilation, heating is a crucial parameter for creating the best possible climate in the house with a high level of productivity.

The climate in the livestock house, where temperature and relative humidity are the most important factors, is of critical significance for feed intake, gain, stress, risk of infection, etc. It is necessary to ventilate and to be able to supply heat to the house in order to achieve total climate control, including temperature, humidity and CO₂.

Effective room heating

Heating systems from SKOV are based on supply and circulation of hot water. SKOV heating components are of a very high quality and they are well suited for a harsh livestock house environment. Spiraflex finned tubes provide an efficient and economical heating of the air in the house. The Spiraflex tube's heat emission per metre is much greater than a smooth tube can deliver. The tubes are mounted below the wall inlets. The finned tubes emit heat (convection) to the surrounding air.

The air gets lighter, rises and carries the cold air from the inlets further into the house, ensuring circulation of the air. The positioning helps provide the correct ventilation with optimum mixing of cold air from the outside and heated housing air so that the broilers are not exposed to cold air downdraughts.

Heating - a prerequisite for good litter

In order to give the broilers and the litter the best possible start, it is important to heat the livestock house for a prolonged period of time before stocking the broilers. This is essential in climate areas where it is cool/cold. The air temperature can be raised within a few hours, but it may take a long time for the walls and floor to be heated. For the same reason, it is a good idea not to let the heat out of the house between the batches.

The small broilers are completely dependent on the ambient air temperature and the basis for good production results are formed during the first week after stocking. Therefore, it is a good investment to ensure optimum climatic conditions from the point of stocking.

Floor heating is well suited for heating of the house prior to broilers being stocked, but floor heating is not recommended as the only heat source in the livestock house. It takes a relatively long time to adjust the temperature in the

house either up or down by means of floor heating and it can be difficult to reach the set point temperature in the livestock house shortly afterwards. With Spiraflex finned tubes, it is possible to raise the temperature rather quickly in order to improve the distribution of the birds throughout the house.

Direct heating

As a supplement or alternative to SKOV's water-based heating unit, SKOV offers high-quality blow heaters for direct heating. Direct heating means that heat is generated through direct, open combustion of gas in the house section itself. Hot-air blowers are quickly responding and powerful heat sources that are effective for warming and drying livestock houses after cleaning.



SKOV's efficient and quickly responding heating system ensures an optimum climate in the livestock house.



Recycle heat and save money

Modern agriculture places major emphasis on reducing heating costs, and SKOV has therefore come out with a heat recovery unit that can cut overall heat consumption by more than half in broiler production.

The heat recovery unit uses the heat naturally present in the exhaust air and heats the supplied air, which is then blown back into the house. Not only does the heat recovery unit reduce energy consumption, but humidity and CO₂-concentration in the house will also be lower. Lower air humidity will result in a drier litter, to the benefit of the air quality and the animals' state of health.



A man with dark hair and glasses, wearing a blue polo shirt, is shown in profile, looking towards the right. He is standing in front of a light-colored wall. To his right, a white thermometer is mounted on the wall. The background is slightly out of focus. A semi-transparent blue banner is overlaid at the bottom of the image, containing white text.

SKOV's production control for broilers





Production control

Delivering the best results demands the ability to monitor production continuously and take corrective actions if it takes an unanticipated course.

SKOV's DOL 535/539 house computer has production modules adapted to broilers with functions that enable systematic monitoring and effective control of production.

Production control for broiler producers

Common to these production modules is the fact that they can monitor animals' daily gain, feed intake, feed conversion ratio (FCR), water and feed consumption ratio and mortality.

Systematic monitoring of the above will provide an image of broiler productivity and an indication of any problems in the house, such as disease outbreak or improper climate, as the feed and water intake of the birds changes.

Monitoring serves no purpose if no action can be taken to address the situations observed. With SKOV DOL 535/539, the producer has the ability to use recorded data to control his production.

Advanced feeding technology

Feed is the most cost-intensive factor in

production and at the same time one of the most important to optimise productivity and gain.

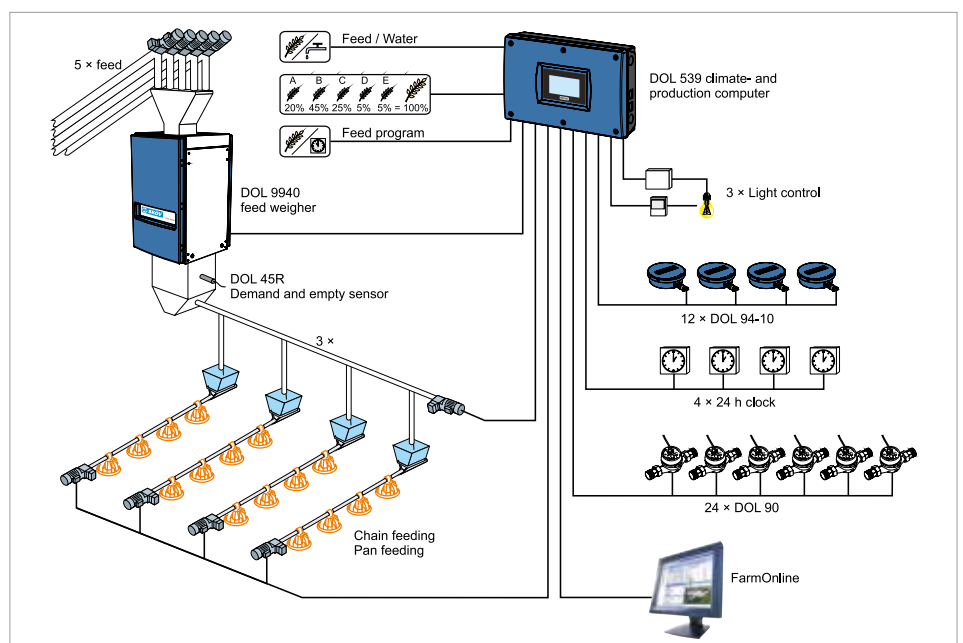
Feeding is controlled by an advanced program that can apportion up to five different feed components and deliver to two houses. The program records volumes of feed used and generates an

alarm if a silo is empty.

DOL 535/539 works together with SKOV's feed weigher, which is known for its high accuracy and great reliability.

Recording of water consumption

Changes in water consumption can indicate potential disease outbreak, but can



Possible connections for SKOV's DOL 535/539 in a broiler production facility

also be an indication of water wastage, increased temperature in the house, or poor feed.

In cases of disease outbreak or increased temperature in the house, the animals' water intake will increase. The water intake of the broilers will also increase- and they will eat less - if there are problems with the feed, such as excessively high levels of salt or fat content.

Water consumption is measured by a water meter and saved by the computer, which continuously calculates relevant key figures.

Weighing of poultry

It is of particular importance to broiler producers to know the weight of the animals in order to monitor and control their productivity. SKOV has several types of poultry weighers, all known for their high accuracy and durability.

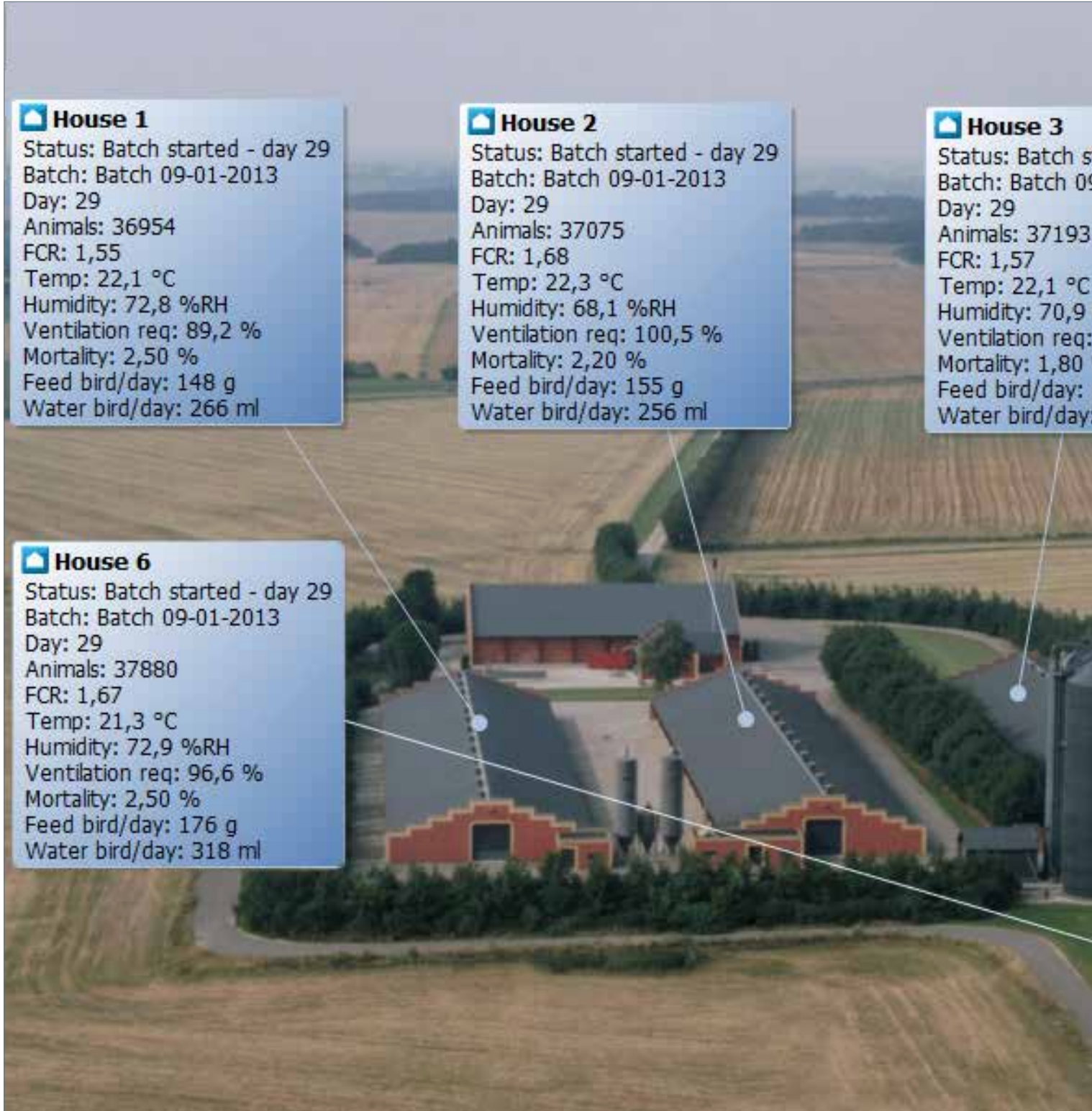
Light control increases productivity

Being able to control animal behaviour means providing them the right amount of light in the right places at the right times. DOL 535/539 has a built-in lightprogram that can handle up to 16 light periods per day. The program can be adjusted to all conditions and also has a dimmer function. Proper light control promotes production, as it controls animals' feed and water intake along with their circadian rhythm.



Production functionalities DOL 535/539

- Feed control:
 - pan feeding
 - chain feeding
- Feed programs for filling and feed dispensing
- Electronic silo weighing with two feed demand sensors
- 5 silos
- Water control
- Water consumption monitoring
- Light control with light program and dimmer
- Automatic and manual broiler weighing
- Recording of animals
- 5 feed components
- Feed mixing (drum scale)
- Feed consumption monitoring
- Calculation and display of FCR and PEF
- Calculation and display of feed and water per animal



House 1

Status: Batch started - day 29
Batch: Batch 09-01-2013
Day: 29
Animals: 36954
FCR: 1,55
Temp: 22,1 °C
Humidity: 72,8 %RH
Ventilation req: 89,2 %
Mortality: 2,50 %
Feed bird/day: 148 g
Water bird/day: 266 ml

House 2

Status: Batch started - day 29
Batch: Batch 09-01-2013
Day: 29
Animals: 37075
FCR: 1,68
Temp: 22,3 °C
Humidity: 68,1 %RH
Ventilation req: 100,5 %
Mortality: 2,20 %
Feed bird/day: 155 g
Water bird/day: 256 ml

House 3

Status: Batch started - day 29
Batch: Batch 09-01-2013
Day: 29
Animals: 37193
FCR: 1,57
Temp: 22,1 °C
Humidity: 70,9 %RH
Ventilation req: 96,6 %
Mortality: 1,80 %
Feed bird/day: 176 g
Water bird/day: 318 ml

House 6

Status: Batch started - day 29
Batch: Batch 09-01-2013
Day: 29
Animals: 37880
FCR: 1,67
Temp: 21,3 °C
Humidity: 72,9 %RH
Ventilation req: 96,6 %
Mortality: 2,50 %
Feed bird/day: 176 g
Water bird/day: 318 ml

SKOV Farm Management

Batch started - day 29
09-01-2013

%RH
128,6 %
%
159 g
258 ml



House 4

Status: Batch started - day 29
Batch: Batch 09-01-2013
Day: 29
Animals: 37183
FCR: 1,63
Temp: 21,4 °C
Humidity: 70,9 %RH
Ventilation req: 96,2 %
Mortality: 1,80 %
Feed bird/day: 159 g
Water bird/day: 271 ml



House 5

Status: Batch started - day 29
Batch: Batch 09-01-2013
Day: 29
Animals: 36894
FCR: 1,63
Temp: 22,3 °C
Humidity: 75,7 %RH
Ventilation req: 94,1 %
Mortality: 2,90 %
Feed bird/day: 113 g
Water bird/day: 286 ml





Intelligent and user-friendly farm management

For the ever-larger broiler producers with production on sites spread over a large geographical area, it is important to maintain a collective overview of operations.

FarmOnline® can be used together with house computers in an existing network, and SKOV's new generation of house computers features integrated LAN Ethernet. There is therefore no need for collection of data between the house computers and PC, which results in a higher data validity, and the producer will have more time to tend to the animals. This also means that the producer can react immediately to alarms, for instance by changing the house computer setup via FarmOnline®. The poultry producer can act quickly and rationally in case of an alarm. Rapid intervention can ensure the well-being of the broilers and financial losses can be reduced or entirely avoided.

User-friendly and intuitive

Today's house controls are advanced, with numerous settings and options. With FarmOnline®, any deviation from the planned strategy is clearly displayed, making it easy for the producer to ensure that all the livestock houses follow the planned strategy.

FarmOnline® can import the producer's own photos and drawings of the farm

and sections, ensuring high graphic recognition in the programme. So-called hotspots can be added to the overviews to show the key values for inside temperatures, alarm status, etc. By adding graphic features for all levels (farm, livestock house) the producer can easily navigate around and gain an overview, allowing rapid and accurate identification of deviations.

The FarmOnline® system makes it possible to have a list in table form of key values, alarms and house status for the entire farm. The producer chooses which values shall be included in the overview function.

Easy data extraction

With the FarmOnline® system, the producer can select specific key values for temperature, humidity, ventilation, cooling, heating and production and have them displayed in a clear graphic interface, from which settings can also be changed.

The efficient climate history function of FarmOnline® enables data storage for up to five years. Several search criteria enable requested data to be extracted and indicated in the form of graphs.

FarmOnline® optimises broiler production

For broiler producers it is possible to gather an array of production data using FarmOnline®, which presents data in a comprehensive graphic format that allows a rapid overview and possibility for in-depth analysis of production. It is possible to view certain data for, among other things, mortality, weight and feed intake, which makes it possible to compare individual batches with one another and with previous batches.

Keep an eye on the livestock house from your smartphone

Internet access is all you need to access all your house computers with the SKOV FarmOnline® smartphone app, no matter where in the world the computers are located. This enables the producer to see climate data and alarms, thereby minimising the risk of losses in case of a system breakdown. SKOV's mobile app can be downloaded free of charge to Android, iPhone and Windows Phone.



Do you want to monitor the livestock house, even though you may not be there? With SKOV's FarmOnline® app for smartphones you have access to all the current climate data and alarms on all your house computers.



A close-up photograph of a dandelion seed head against a clear blue sky. The seed head is in focus, showing its intricate structure of many small seeds. One seed is captured in mid-air, having just blown away from the head, leaving a thin trail behind it. The stem of the dandelion is visible at the bottom.

SKOV components



Air intake



1



2



1

Air outlet



1



2

Interlinking



3

Product characteristics

1 DA 1200/1211/1911 Wall inlet

- For embedding in concrete walls or installation in light-duty walls
- An air direction baffle directs the air jet in an optimum direction towards the ceiling
- A baffle plate neutralises the outside wind action in narrow livestock houses
- A metal band-reinforced shutter makes the inlet shut tightly
- An insulated shutter counteracts condensation
- Quick and easy cleaning
- Light trap solutions for poultry production

2 DA 50 Air supply unit

- Used in poultry houses
- Uniform distribution at 100% stepless regulation
- High performance at low air velocity
- No draughts in the animals' zone
- Can be adapted to all types of livestock buildings

1 Rack & Pinion

- Open/close function of tunnel opening
- Powerful and stable system
- Sturdy and tight closing mechanism

1 DA 600/920 Exhaust unit

- Aerodynamic design
- Dynamic Air – improved minimum ventilation and optimised heat consumption
- A smooth and dirt-repellent surface, which tolerates high-pressure cleaning
- Impact-proof material
- Is adapted to the individual building as regards roof pitch, colour, side/ridge installation, attic, etc.
- Installation in ridge, side of roof or in the wall
- Environmental module increasing the air discharge height
- Recyclable plastic materials

2 Wall fans

- High performance level for the investment
- Fan housing, fan blade and louver gate made of galvanised steel
- Quality control of each motor
- Centrifugal clutch for controlled open and close function on the louver gate
- Option of attaching light traps
- Easy to clean
- Louvre gate closes tightly when the fan is not running

1 DA 75 Winch motor

- Can operate up to 128 wall inlets
- Change-over switch for manual control
- 24 V type can be used for emergency opening
- Mechanical override of emergency opening

Interlinking

- Complete mounting kit (washers, wires, screws, fittings, pulleys, etc.)

Controller



1



2



3

Alarm & emergency opening



1



2

Heating



1



2



3

Product characteristics

1 DOL 539 Climate and production computer

- PID-regulation technique
- Temperature, humidity, and ventilation control according to animal age
- MultiStep® and Dynamic MultiStep®
- LAN Ethernet to FarmOnline®
- Can mix up to 5 feed components
- Recording of water consumption, stocked and depopulated birds
- Log files for alarms and operation
- Light control
- Weighing function for broilers presents data concerning gain and deviation in relation to the average weight

2 Climate sensor

- Used for atmospheric measurements
- Robust
- Easy to install and use
- The range includes sensors which can measure:
 - Temperature
 - Air humidity
 - CO₂ intensity
 - Light
- All climate sensors can withstand the aggressive livestock house environment

3 Capacitive sensor

- Broad selection of capacitive sensors
- Can be used on largely all materials: feed, metal, wood, plastic, paper, etc.
- Large assortment of ATEX approved sensors
- High precision
- Design adapted to the purpose of the sensor: drop tube, smooth and flat sensors, and threaded sensors

NOTE! Also available as a climate computer (DOL 534) or production computer (DOL 535).

1 DOL 2200 Alarm

- Alarms through a local alarm unit or by telephone
- Built-in fixed line or GSM module
- Can monitor the temperature in ten sections
- Extension module – ten extra alarm inputs
- Overview by means of a graphic display
- Voice alarm – voice message
- Compensation for high outside temperature

2 DOL 278 Temperature-controlled emergency opening

- Opens the ventilation system upon excess temperature in the event of a technical or power failure or operational error
- Easy to operate
- Separate temperature sensor
- Works independently of the climate computer, thus doubling the level of safety for most possibilities of error
- Also available as an ON/OFF emergency opening unit

1 Spiraflex finned tubes

- Regulation of temperature within a few hours
- Fully-welded finned tube ensuring a high, documented heat output
- The finned tube is hot-dip galvanised
- Available with threading for standard plumbing fittings
- Mounting with stainless brackets
- Even supply of heat

2 Blow heater

- Minimum maintenance, and tolerates high-pressure cleaning
- Robust stainless steel construction
- Electronic ignition and monitoring with a BCU (burner control unit)
- Error indication with LEDs
- Automatic restart (3x) (gas)
- Compact housing, protection class IP54
- Gas valves with 2x protection class A

3 Heat recovery unit

- Reduces heat consumption
- Improves air quality
- Lower humidity
- Drier litter
- Controlled by DOL 534/539
- Durable and easy-to-clean GRP construction
- One unit can be used for 10,000 broilers

Cooling



1



2

Management



1



2



Product characteristics

1 DA 2000 High-pressure cooling

- Lowers the temperature in the live-stock house without affecting the air humidity negatively
- Stainless steel, acid-proof pipes and joints with a high degree of durability and a long service life
- Flexible system where the nozzles can be mounted after pipe assembly
- Additional functions:
 - Soaking
 - Disinfection
 - Humidification
 - Dust binding

Can be used as an alternative to pad cooling in tunnel mode.

2 Pad cooling

- Complete gutter system with integrated water reservoir
- The air is directed through the pads which are being continuously sprinkled - this way the air is cooled
- Can be adapted to practically all types of livestock houses
- Quick and easy installation
- Pump with built-in filter - cleans the water
- Quick and easy cleaning

1 FarmOnline® Management

- Live monitoring of an unlimited number of livestock house computers the world over via the internet
- Clear data overview - in graphical or tabular form
- Detailed alarm log, history and analysis
- FarmOnline® app for smartphones
- Data from several houses can be collected centrally at a head office, and data can be used to benchmark the individual farms against one another
- Possible to change the settings in the livestock house computer
- Production data

2 Hardware

- LAN and WLAN components which withstand the livestock house environment
- SKOV's components ensure secure network connection
- SKOV is happy to install and deploy the network so that it works properly



Feed weighers



1

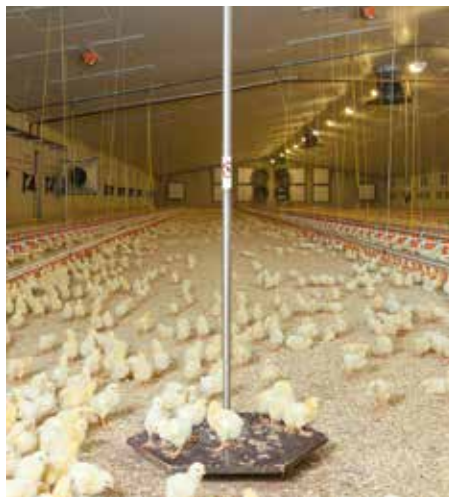


2

Animal weighers



1



2



Product characteristics

1 DOL 99 and 99-2 Feed weigher

- Stand-alone weigher with a control unit that calculates and saves values for weighed feed quantities
- Can distribute one or two components

DOL 99B Feed weigher

- Integrates with DOL 539/535
- Can distribute up to five components
- All via DOL 535/539
- The total weighed volume of feed as well as the volume at periodic, 24-hour and batch levels can be read on the production computer
- Both feed weighers can handle feed portions between 10-30 kg.

2 DOL 9940 Feed weigher

- Can handle up to 40 kg feed per weighing
- Equipped with control unit that calculates and stores values for the feed volumes weighed
- Controlled by SKOV production computer
- Can distribute up to five components
- All data input and output takes place through DOL 535/539
- The total volume of feed weighed and quantity at periodic, 24-hour and batch levels can be read on the production computer

1 DOL 9410 Poultry weigher

- Primarily used for broilers
- Data transfer to DOL 535/539
- Weighing of poultry up to 10 kg
- Data concerning, for example, the animals' average weight, weight distribution, number of weighings, and gain
- Possibility to set a behavioural constant and ignore weighings (feeding)
- The weigher's mechanical construction is specially adapted to the poultry house environment

2 DOL 985-20 Poultry weigher

- Platform weigher for poultry
- Used for broilers with high slaughter weight - up to 20 kg
- Data concerning, for example, the animals' average weight, weight distribution, number of weighings, and gain
- Possibility to set a correction factor and ignore weighings (feeding)
- Stands high-pressure cleaning



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Dealer



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