

LUMINA 36

LUMINA 36 TOUCH

F36



PRODUCT APPLICATION MANUAL

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The Lumina 36 can be applied worldwide in:

- Breeder houses
- Rearing houses
- Layer houses
- Broiler houses
- Turkey houses

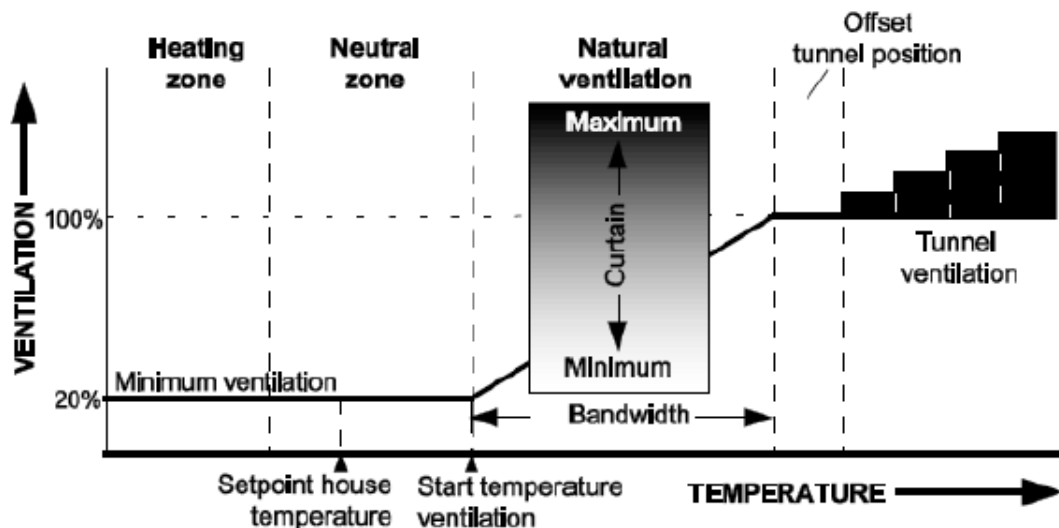
The Lumina 36 ensures optimal conditions in your house under all circumstances. It distinguishes itself by a number of unique control options for extra user advantages with a well-organised and simple control.

The Lumina 36 controls the following concepts:

- Fancom MTT Natural
- Fancom MTT Minimum - Natural
- Fancom MTT Natural – Tunnel
- Fancom MTT Minimum – Natural - Tunnel

Features

- User-friendly user interface, graphical display (320 x 240 pixels), with variable menu.
- Access with optional password protection up to 3 different levels (moderate user, advanced user and installer).
- Complete implementation of the Fancom MTT Natural concept (Minimum Transitional Tunnel, combined with natural ventilation).



- Natural ventilation mode can be disabled manually or by (cold) outside temperature.
- Very extensive combi table with 30 set points, 10 combi relays, 1 controllable part, 1 inlet control (or winter inlet), 1 tunnel control (or summer inlet), 1 natural baffle or curtain and negative pressure.

Sensors

- Room temperature measurement using maximum 16 room sensors and temperature setting per 0.1°C.
- 1 RH measurement using 1 electronic RH sensor, 0-100 %.
- 1 Pressure measurement using negative pressure sensor, setting 0-100 Pa.
- 1 CO2 measurement using CO2 sensor 5000 PPM, setting in 0 – 5000 ppm
- 1 NH3 measurement using NH3 sensor, not available yet
- Weather station connection (outside temperature, outside RH, wind direction and wind speed).

Ventilation

- Ventilation is calculated based on animal weight or %.
- Maximum 8 ventilation zones.
- Ventilation control based on house temperature, with low and high temperature and relative humidity, CO2 and NH3 influence.
- Night correction on setpoint house and/or ventilation percentage, connected to a light clock.
- Wind relay.
- HumiTemp® control.

Exhaust

- Maximum 16 relays controlled, optionally combined with a linear fan control (Combi or EC-Combi).
- Linear fan control to control controllable fans (via triac, frequency controller, EC-fans, ITM) or modulating ON/OFF fans. Rotation (changing between fans) can be used with modulating fans.
- Up to maximum 4 ITM's can be controlled using the I/O network.
- Separate vortex damper control, linked to linear exhaust using a settable factor.

Inlet control

- 8 Inlet controls (8 zones) to control inlets or valves using the same setting. The valves can mutually be corrected based on temperature difference.
- 1 Tunnel inlet. Separate inlet control to control a tunnel shutter or curtain.
- 8 Curtain controls (8 natural zones) to control curtains or baffles using the same setting.
- The curtains or baffles can mutually be corrected based on temperature difference.

Curve

- The following settings can be programmed in a curve (maximum 20 set points):
 - Day number
 - House temperature
 - Extra temperature (e.g. for heating)
 - Desired RH
 - Animal weight
 - Minimum ventilation (in m³/kg/h)
 - Maximum ventilation (in % or a tunnel position)

Heating / cooling / humidification

- 8 Heating controls, ON/OFF, time modulating, analog, based on their own sensor and linked to:
 - the house temperature or
 - an extra temperature (e.g. floor heating or brooders)
- 8 Cooling controls, ON/OFF or time modulating, based on their own sensor and linked to:
 - the house temperature or
 - the house temperature + bandwidth or
 - an extra temperature or
 - a tunnel position
- 1 Humidification control, ON/OFF or time modulating based on relative humidity in the house.
- Heat demand through F-Net; in combination with a central heating control (e.g. F21).
- OptiSec® control.

Time clocks and registration

- 1 Feed clock to enter maximum 24 start and stop times for feeding. Feed consumption is registered for a settable time interval (Management & Monitoring ®), of today, yesterday, day before yesterday and total. Dosing mode for restricted feeding is available.
- A pulsed weighing system or external weighing systems generating pulses (e.g. directly on an auger) can be used for registration. Feed flow (under- and overflow) alarm and maximum runtime alarm.
- 1 Water clock to enter maximum 24 start and stop times for water dosage. Water consumption is registered for a settable time interval (Management & Monitoring ®), of today, yesterday, day before yesterday and total. Dosing mode for restricted watering is available. A water meter can be used for the water registration. Water flow (leaks, underflow and overflow) alarm.
- 8 Light clocks to enter maximum 24 start and stop times. Setting possibilities: increase/decrease times (dimmer functions), settable light intensity (with light meter) and connection to light curve.
- 8 Time clocks to enter maximum 24 start and stop times. This time clock has several applications, but no registration functions.
- 32 Registration groups for feed, water or other purposes.
- From the D-version it is possible to register a maximum of 10 water lines per hour, and the total of all water lines.



Alarm

- 12 External alarms (free programmable) and application alarms via 1 alarm relay.
- Temperature differential signaling for giving a signal to an external automatic fire alarm system (AFAS).

Wiring

← 3 x 2,5 mm ²	_____	Power
← 2 x 0,8 mm (0,5 mm ²)	_____	Max. 16 x room temp. sensor
← 3 x 0,8 mm (0,5 mm ²)	_____	RH sensor
← 3 x 0,8 mm (0,5 mm ²)	_____	Negative pressure
← 3 x 0,8 mm (0,5 mm ²)	_____	CO2 sensor
← 3 x 0,8 mm (0,5 mm ²)	_____	NH3 sensor
_____	→ 2 x 0,8 mm (0,5 mm ²)	Voltage output (0-10V)
_____	→ 2 x 0,8 mm (0,5 mm ²)	Max. 8 x air inlet control
_____	→ 2 x 0,8 mm (0,5 mm ²)	Voltage output (0-10V)
_____	→ 2 x 0,8 mm (0,5 mm ²)	Max. 8 x natural control
_____	→ 2 x 0,8 mm (0,5 mm ²)	Voltage output (0-10V)
_____	→ 2 x 0,8 mm (0,5 mm ²)	tunnel control
_____	→ 2 x 0,8 mm (0,5 mm ²)	Heating
_____	→ 2 x 0,8 mm (0,5 mm ²)	Max. 8 x on/off
_____	→ 2 x 0,8 mm (0,5 mm ²)	Humidification relay
_____	→ 2 x 0,8 mm (0,5 mm ²)	Cooling relay
_____	→ 2 x 0,8 mm (0,5 mm ²)	Max. 16 x ventilation group
_____	→ 2 x 0,8 mm (0,5 mm ²)	Alarm
← 2 x 0,8 mm (0,5 mm ²)	_____	Outside temperature
← 3 x 0,8 mm (0,5 mm ²)	_____	Outside RH sensor
← 2 x 0,8 mm (0,5 mm ²)	_____	Wind direction
← 2 x 0,8 mm (0,5 mm ²)	_____	Wind velocity
_____	→ FNet*	Network communication

* Greenlink: 2 x 0,8 mm² twisted pair, unshielded

** Maximum 30 FNet modules in 1 network

Technical specifications

FDP45		
Mains voltage	90Vac – 264Vac	
Mains frequency	50/60Hz	
Maximum power consumption	45VA	
IOB.12		
Power available for sensors		
24Vdc, fused	Max. 200mA	
12Vdc, short circuit resistant	Max. 70mA	
Power available for sensors and peripheral equipment		
24Vdc, short circuit resistant	Max. 500mA	
6x analog outputs (AO)		
Voltage range	0 – 10Vdc	
Maximum load	1mA	
Output resistance	570Ω	
12x analog inputs (AI)		
Type selectable through jumpers	Resistance or voltage	
Resistance:	Temperature range sensor type S.7	–50°C to +110°C
	- accuracy (–25°C to +100°C)	<0.5°C
	- accuracy (0°C to +60°C)	<0.2°C
	Measuring range for position feedback	0 – 20kΩ
Voltage:	Measuring range (input resistance 100kΩ)	0 – 10Vdc
	Accuracy	± 15mVdc
8x Digital inputs (DI)		
Open contact voltage	12Vdc	
Low level	<1.0Vdc	
Application: Counter input, min. pulse width 25mSec	Max. frequency 20Hz	
Application: Frequency input	Max. frequency 5kHz	
16x Digital outputs (DO)		
1 – 8 connection for FRM.8 printed circuit board		
9 – 16 connection for FRM.8 printed circuit board		
Alarm contact		
Relay: make-and-break contact, voltage free	Max. 2A 60Vdc/30Vac	
Communication		
I/O-Net for extra inputs and outputs using I/O-modules.		
FNet, Fancom network for intercommunication of control computers and PC connection.		
FRM.8		
8 Digital outputs (relays)		
Relay 1, 3, 5, 7: make-and-break contact	Max. 2A 60Vdc/30Vac	
Relay 2, 4, 6, 8: voltage free	Max. 2A 60Vdc/30Vac	

Housing	
Plastic housing with screw-on lid	IP54
Dimensions (l×w×h)	300×360×140mm
Weight (unpacked)	3.5kg
Ambient climate	
Operating temperature range	0°C to +40°C
Storage temperature range	-10°C to 50°C
Relative humidity	< 95%, uncondensed