



# LCC4 CLIMATE CONTROL

- ✓ No software cost when adding new compartments
- ✓ Increase production output and yield and improve growing precision through accurate control
- ✓ Prevent waste of energy and resources
- ✓ Access from mobile devices
- ✓ Quick change between more languages on the user-friendly touch display
- ✓ Get technical online support via internet
- ✓ Possible to connect to SuperLink for analysis of data



## The top model of climate control with a myriad of options

When we developed LCC4, we put a lot of effort into creating a simple user interface without compromising on control. We have collaborated with nurseries and this is clearly reflected in the user-friendliness of the computer. The LCC4 has a touch screen and this, combined with the ability to design your own screen pictures, makes the climate control a safe and logical tool at all times.

- The LCC4 can control all climate functions from one to 16 compartments.
- The LCC4 is based on the latest technology and an advanced operating system, making it easy to update and expand with more functions and capacity.
- The LCC4 communicates via Ethernet with the installed expansions, providing a high degree of flexibility for future expansions.

The LCC4's flexible hardware configuration allows the user to select the most ideal sensor for a particular production, and to use more than one of each sensor in each room. This flexibility provides a high level of accuracy and safety.

### Energy saving climate control

- The LCC4 can divide 24 hours into 6 time zones with optional zones with optional automatic correction according to sunset and sunrise.
- The screens can be controlled according to solar radiation, heat loss and artificial light. In this way, the screens maintain the heat.

### We have developed a new energy balance model

- The model calculates the energy demand based on the K-factor of the greenhouse and the screens, the change in air and the energy added by artificial lighting.
- The model "knows" the greenhouse and the energy demand, ensuring better and more stable regulation, also known as "feed forward regulation".

### Common and individual control

- Each compartment can be divided into two subzones according to function.
- All functions can have common setpoints.
- It is also possible to have local setpoints in the subzones. These can be dependent or independent of the common setpoints. This makes the computer easier to use and allows the conditions to be adapted to different crops.

With the LCC4 we continue the ventilation control with cascade ventilation control. This means that the lee and windward sides are opened at the same time.

- The windward side is opened to a small crack, while the leeward side is opened as much as necessary.
- This cascade control of the vents ensures that the greenhouse is effectively ventilated, even with small percentages of the vents open.



# SPECIFICATIONS / LCC4 CLIMATE CONTROL

## Technical specifications

Supply Voltage:	100 - 240 V AC - 50/60 Hz
Power consumption:	65 VA
Communication:	Ethernet

## Physical specifications

Temperature, operation:	0 - 50°C (32 - 122°F) No direct sun radiation
Humidity:	0 - 95 % RH Without condensation
Density:	IP65
Dimensions L x W x H:	440 x 330 x 130 mm (16 x 12 x 5")
Weight:	App. 9 kg (20 lb)

## Expansions

### Small:

- Digital inputs 2
- Digital outputs 18
- Analogue inputs 8
- Analogue outputs 2

### Medium:

- Digital inputs 2
- Digital outputs 32
- Analogue inputs 14
- Analogue outputs 2

### Large:

- Digital inputs 16
- Digital outputs 64
- Analogue inputs 16
- Analogue outputs 2

## Using more LCC4s

The LCC4 climate control unit can be used in many different installations and several LCCs can be connected in a network.

## Optional Central Control

LCC4 is a network model that communicates with SuperLink via Ethernet. SuperLink is used for further data analysis.

## LCC4 essential functions

- Heating valves: 4
- Vents: 4 (can be used for either a bipartite top ventilation or for top and side ventilation)
- Screens: 1-4
- CO2 control Max. humidity: 2 (1 per sub-zone)
- Artificial light: 4 zones
- Time zones: 6 (4 day + 2 night)
- 3 steps of artificial lighting (HPS)
- Tripple tariff
- Subzones: 2 - optimize your climate control by dividing the compartments into subzones
- Heating steps: 4 (2 per subzone) - on/off signal of e.g. a fan heater
- Vent step: 4 (2 per subzone) - on/off signal for control of e.g. a cooling unit
- Horizontal Air Fan (HAF): 2 (1 per subzone) - activated by temperature and humidity
- Negative diff.
- Irrigation valves: 1 (2-16 by purchased program)
- Irrigation program for 1 valve and supply pump
- Misting valves: Up to 8 - controlled by humidity
- Cooling step: 1 - on/off signal
- Ring main control
- Flexible I/O (input / output)
- Change of set-points on centrally placed LCC4 climate control

## Extension software purchase option

- Average temperature control
- Irrigation program for 2- 16 valves
- Super Step
- Screens: 5-8

## Software for LED fixtures

Software for Senmatic LED lights is included.

## Weather Station

A common weather station for the network of LCCs. A weather station comes standard with wind direction and wind speed. A rain and light sensor can be added.

## Distributor:

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