LCC4 CLIMATE CONTROL

The top model of climate control with a myriad of options - controls up to 16 compartments

Highlights

- 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 10.4" TFT colour touch display
- Get technical online support via internet

When developing LCC4, we attached great importance to achieving a simple user interface without compromising the setting options. We collaborated with nurseries, and this is clearly expressed by the user friendliness of the computer. LCC4 features a touch screen and in combination with the option to design own screen pictures, this 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 state-of-the-art technology and an advanced operating system and is therefore easy to update and expand with more functions and capacity.

The LCC4 communicates via Ethernet with the installed expansions, and this ensures a great degree of flexibility in connection with future expansions.

The flexible composition of the hardware in the LCC4 makes it possible to choose the sensor which is exactly optimal for a particular production, and it is also possible to use more than one of each sensor in each room. This flexibility provides a high degree of accuracy and safety.

Energy saving climate control

LCC climate computer can divide 24 hours into 6 time zones with optional automatic correction, depending on sunset and sunrise. Furthermore, control of the screen can be done depending on the sun radiation, heat loss and the artificial light. In this way the screens are maintaining the heat.

For the LCC4, 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 of air and the energy added by artificial lighting. The model "recognizes" the greenhouse and the energy demand ensuring a better and more stable regulation also known as "feed forward regulation".

Common and individual control

LCC4 can control up to 16 compartments and each compartment can be divided into two subzones, depending on the function. All functions can have common set points. It is also possible to have local set points in the subzones. These can be dependent or independent of the common set points. This gives a simpler operation of the computer and at the same time it is possible to adapt the conditions to the different cultures.

With the LCC4, we continue ventilating control with cascade vent control. This means opening the lee side and the wind side at the same time. The wind side is opened to a small crack while the lee side is opened as much as needed. This cascade control of vents gives an effective ventilation in the greenhouse, even at small vent opening percentages.

senmatic

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
- Analog inputs   8
- Analog outputs   2

Medium
- Digital inputs   2
- Digital outputs   32
- Analog inputs   14
- Analog outputs   2

Large
- Digital inputs   16
- Digital outputs   64
- Analog inputs   16
- Analog outputs   2

The use of more LCC4s
The LCC4 climate control can be used in many different installations, and more LCCs can be connected in a network.

LCC4 essential functions
- Heating valves: 4
- Vents: 4 (can be used for either a bipartite top ventilation or for top and side ventilation)
- Screens: 8
- 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

Expansion software
- Average temperature control
- Irrigation program for 2- 16 valves
- Super Step

Software for LED fixtures
Software for Senmatic's LED fixtures is included

Weather station
One common weather station for the net of LCCs.
A weather station comes with wind direction and wind speed as standard. It can be expanded with a rain and light sensor.

Optional central control
LCC4 is a network model which communicates with SuperLink via Ethernet. SuperLink is used for further analysis of data.

Distributor:

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