HOTRACO HELPS

ORION-PS

Poultry computer for free range and aviary keeping

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General

The Orion-PS is a versatile and user-friendly climate and management computer that has been specially developed for free range and aviary keeping. By displaying symbols, the Orion-PS computer is very easy in use. The Orion-PS can control and monitor each conceivable climate system. Also the Orion-PS collects all necessary management information and can provide this in an overview.

CLIMATE

Ventilation

The Orion-PS can control different ventilation systems on the basis of temperature.
- Basic ventilation
- Natural ventilation
- Tunnel ventilation

Or various combinations of these.

Fans

A choice can be made between "on/off" fans (maximal 16 groups) and/or "proportional adjustable" fans (maximal 2 groups).

Dampers

Maximal 2 damper (groups) can be used to lower the ventilation level, when the fans run at minimum speed. These dampers are controlled on the basis of temperature.

Inlet flaps

The inlet flaps can be divided in 1, 2, 4 or 6 zones (maximum 3x left and 3x right). The inlet flaps can be controlled on the basis of temperature, ventilation position or negative pressure. Also a control for summer / winter flap is available in the Orion.

Other controls

- Winter garden control
- Ridge flaps
- Tunnel inlet flap
- Mixing ventilation
- Mix air ventilation

Heating, Cooling, CO_2, RH

Heating

Maximal four heating systems can be controlled by means of a heating contact or a 0-10 volt signal. Mixing fans can be used for a better temperature distribution.

Cooling

A maximum of two cooling systems can be controlled by means of an on/off contact.

Relative humidity

When a RH sensor is connected, the Orion computer can guard the humidity in the broiler house. If necessary, the Orion can control a humidifying unit and/or adapt the ventilation.

CO_2

The CO_2 level in a house can be monitored when a CO_2 sensor is connected to an Orion computer, if needed the ventilation is adapted to the level of CO_2.

Weather station

The weather situation can be of influence at your broiler house conditions. For this reason the Orion has the possibility to measure and record the weather conditions like temperature, RH, wind speed and wind direction. If needed the Orion can adapt certain settings to control the perfect climate.

Universal controls

A choice can be made out of four universal "on/off" or "proportional" controls on the basis of temperature.

Timers / Lighting

The lighting can be controlled two ways; 1st by means of an "on/off" control (max. 24 "on-/off" times), and 2nd by means of the amount hours light per day. Also it is possible to set a light dimming time and a lighting level. A maximum of 13 timers can be set in the Orion.
- 1 x main lighting timer
- 1 x feed timer
- 1 x water timer
- 4 x proportional lighting timers
- 4 x on / off timers
- 1 x timer for nest control
- 1 x timer for outlet doors

Manure drying

When using manure drying, a choice can be made out of;
- Air mixer (max 2)
- Heat exchanger (max 2)

The manure drying is switched on/off by means of a timer.

PRODUCTION

Feed control

Registration

The Orion computer makes it possible to registrate the feed consumption, this gives you the advantage of a daily view in feed consumption. Differences in feed consumption can be spot easily. There are four ways for feed registration:
- Pulse weigher (one type of feed)
- Silo weighing system
- Feed weigher (max. 9 types of feed)
- Orion-FWS feed weighing computer

Regulation of feed lines

The regulation of feed lines (feed chain or feed pans) can be set three ways.
- amount per day
- amount per feeding time
- on / off times

Water

Registration

The Orion computer can registrate the water consumption using a pulse input for a water counter. The water consumption of the present day and the last two days is registrated. The total amount of water is also registrated.

Control

By using a timer, a maximum number of 24 "start-/stop" times can be set for the provision of water. This timer can be coupled to the main lighting timer. A choice can be made in "amount water per start time" or "amount water per day".

Animal weighing

When animal weighing is applied, you get a continuous view in course of the animal weight, in consequence the uniformity can be guarded. A maximum of two animal weighing systems can be connected to the Orion-PS computer. If needed a distinction can be drawn between hens and cocks, using one or two animal weighing systems.

Egg counting

Per house, the Orion-PS can count and registrate the production off eggs, by using;
- Egg counters (digital inputs)
- Emec-12 (multiple egg counters)
- Emec-20-75 (single egg counter)

ALARM

The Orion can trigger a "hard" or a "soft" alarm. The "soft" alarm shows an alarm description on the flashing display, when a "hard" alarm occurs the additional alarm contact is opened. All of the solved alarm calls are stored in the alarm history together with the start- and end times.

MANAGEMENT

In the management group, data is stored which gives information about e.g.; the present number of animals, water- and feed consumption and feed conversion. When using animal weighing scales, information like average weight and the uniformity of weights can be looked into. When the Orion is linked to the optional management software Rainbow+, the information can be processed into tables and graphs, therefore the information can be easily analysed.

DIAGNOSIS

In the diagnosis group additional functions with extra information can be acquired such as "minimum and maximum values" or "ventilation/ flap position calculations". Also the Orion software version can be seen in diagnosis.

COMMUNICATION

The Orion-PS uses different communication protocols
- Can-Backbone protocol
- Can-Local protocol
- RS232 protocol

The newest Orion-CPU boards disposes of a USB connection and a SD-slot for data storage. (SD-card to a maximum of 2 GB)

Expanding the Orion in-/outputs

More in-/outputs can be created by connecting IO-modules via the CAN-Local to the Orion computer. For example CAN-IO-6-14, CAN-IO-12-6 or CAN-IO-LCA.

Communication with other computers

By using the CAN-Backbone communication, the Orion can be placed into a network consisting out of multiple Orion or Sirius computers. With an additional SmartLink, this network can be connected to a PC or modem.

Via RS232 the Orion can communicate directly with a modem or a PC, however, using the RS232 you can not create a network.
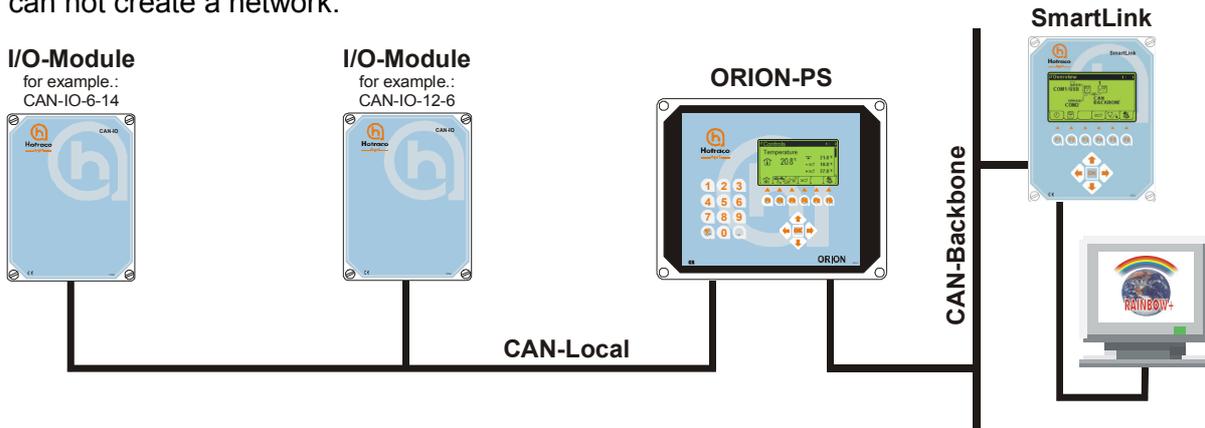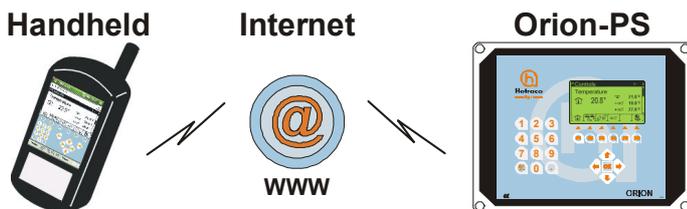

ORION-PS and Rainbow+

By using the advanced communication module and the Rainbow+ management system, the Orion can be remote controlled from your home pc. Here too, user friendliness and graphic display were the points of departure. At a single glance the user gets an overall view of all his production houses, what systems in said houses are activated and if an alarm has been released in one of them.
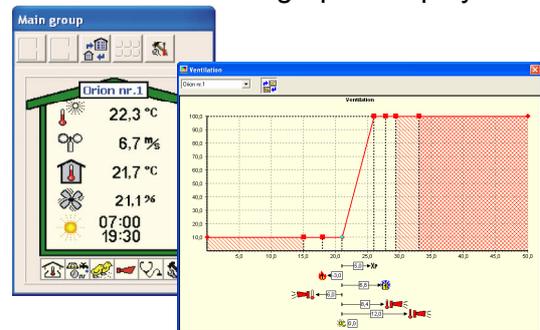
ORION-PS and Remote+

With the optional Remote+ package it is possible to control your Orion computer by means of a handheld computer. The Remote+ software needs to be installed on your PDA, Smartphone or

pocket-pc. Through the internet a connection between the Orion computer and your handheld needs to be established, by using the SmartLink-W. The Orion control panel appears on the handheld display, therefore the Orion operation on the handheld is completely identical to the Orion itself.

ORION-PS poultry computer

12 x Analogue Inputs

For example:

Temperature	°C
Negative pressure	Pa
RH	♦♦%
CO_2	ppm
Wind direction	n/e/s/w
Wind speed	m/s
Animal weighing	gr/kg
Feed weigher	kg

8 x Digital Inputs

For example:

Water counter	⊓⊓
Feed counter	⊓⊓
Egg counter	⊓⊓
Level switch feed	⟋

▊ =Option

INPUTS

OUTPUTS

16 x Analogue Outputs

For example:

Ventilation	0-10V
Inlet control	0-10V
Heating	0-10V
Lighting	0-10V
Universal control	0-10V
Manure drying	0-10V

16 x Digital Outputs

For example:

Ventilation	0/1
Heating	0/1
Cooling	0/1
RH	0/1
Timer	0/1
Lighting	0/1
Universal control	0/1
Tunnel ventilation	0/1
Water	0/1
Feed control	0/1
Feed auger	0/1
Manure drying	0/1

Alarm	⟋

	RS-232

▭ RAINBOW+

To CAN-IO-Module	CAN-Local	To CAN-IO-Module
ORION/SIRIUS	CAN-Backbone	SmartLink ▭ RAINBOW+
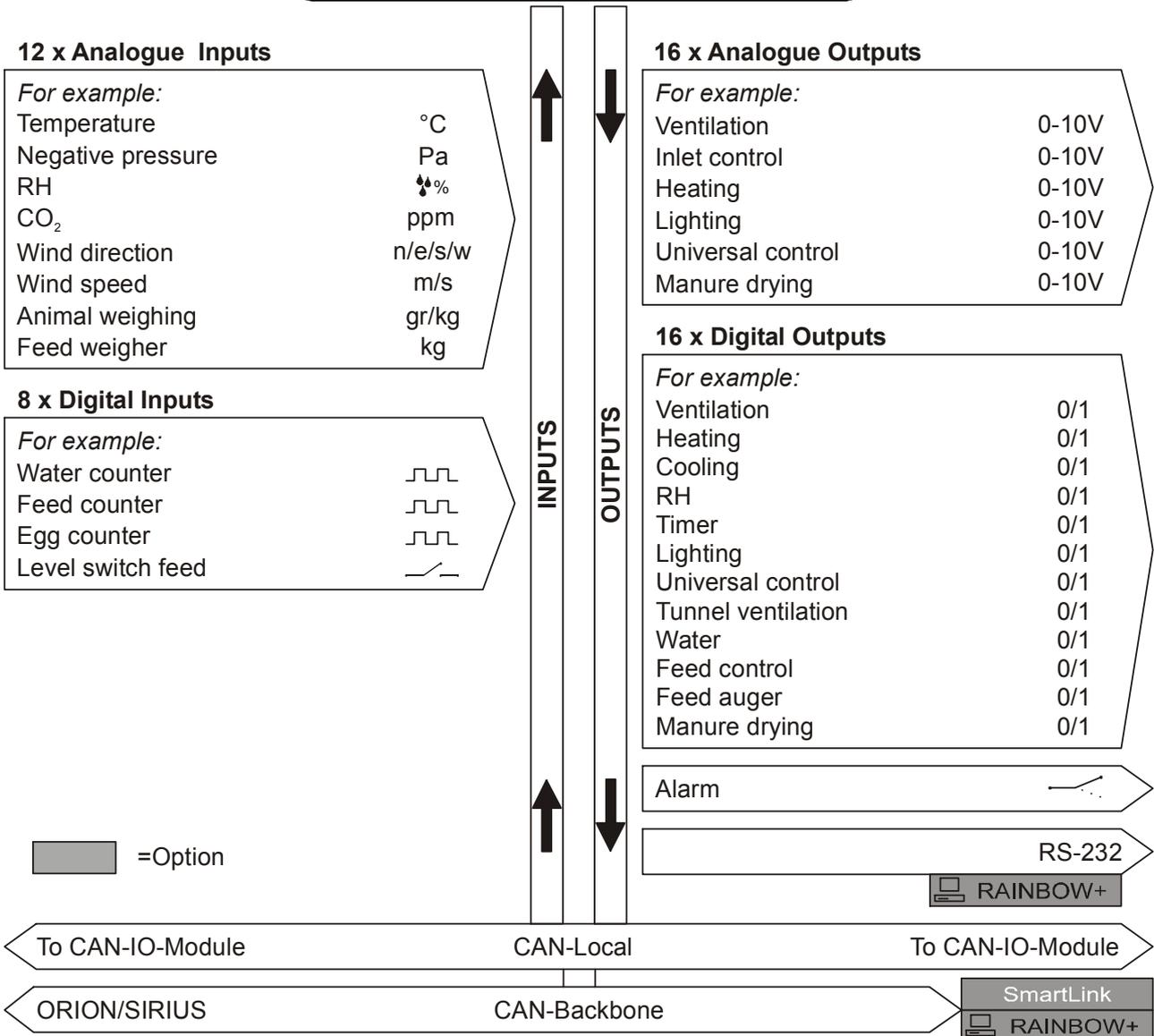
Technical specifications

Electrical
Power supply : 230 Vac ±10% , 50/60 Hz
Power consumption : max. 25 VA
Fuse : T 500 mA (dim. 5 x 20 mm)

Analogue inputs
Temperature sensor : -40 °C tot 100 °C, ± 0,5 °C
0…5 V : 0-5 V (R_i = ∞ Ω)

Digital inputs
Counter : NPN / PNP sensor 12..24 Vdc 8 mA max. 10 Hz
TTM : NPN / PNP sensor 12..24 Vdc 8 mA max. 100 Hz

Analogue outputs
0…10 Vdc : 0-10 V / max. 1 mA

Digital outputs
Relay outputs K1…K16 : 0,5 A, 230 Vac
Alarm relay : 0,5 A, 24 Vac/dc

Complies with EC directives
EMC : 2004 / 108 / EC
Low tension : 2006 / 95 / EC

Power 24 Vdc
Power : 24 Vdc / max. 25 mA

Mechanical
Operating temperature range : 0…40 °C
Dimensions (H x W x D) : 270 x 345 x 115 mm
Encasing : IP 54 synthetic
Weight : approx. 4 kg