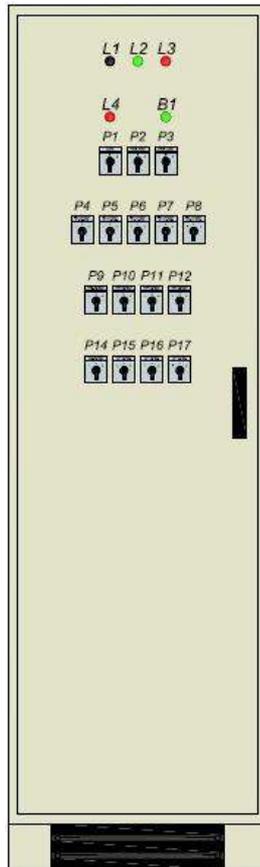




Series VKS ULTIMATE On-Off Fan Control Panels User's Guide



INDEX	PAGE
SAFETY PRECAUTIONS AND WARNINGS	3
1.General Informations	3
1.1. Technical Spesifications	4
1.2. General Panel Appearance	5
1.3. Equipment Descriptions	6
2. Installation and Start-Up	13
2.1. Start-Up Controls	13
2.2. Installation	13
2.3. Cable connections of motors and field equipments	14
2.4. Energizing and first setup	14
3. Processor Usage and Programming	14
4. Periodic Maintanance	42
5. Suggestions	43
6. Fault Detection and Trouble Shooting	44

SAFETY PRECAUTIONS AND WARNINGS

WARNING

Before installation and energizing of fan control panel, please read safety precautions and warnings carefully!

- Imbalances in your electricity network (low and high voltages) might destroy the panel and stop it to work properly.
- There is high voltage electricity energy which can be dangerous for human health and the equipments. Interference to the panel or equipments connected to the panel without cutting out the energy might result serious damages for human health or equipments.
- Usage of the panel for long years depends on installing properly, operating and having periodic maintenance by authorised personnel.

ATTENTION

- Please inhibit unauthorised people especially children to reach and interference the panel.
- Please do not forget that all electrical equipments can cause fire. Because of this place the panel away from high temperature, fire and liquids. Do not put easy to fire materials near the panel like nylon, wood or chemicals.
- This panel can be used only with the equipments that are specified by VKS. Changes made without prior notice and approval of VKS might cause serious damages.
- Please place this user's guide at an easy to reach place for all operators who might be have to operate the panel.

1. GENERAL INFORMATIONS

This fan control panel that you have bought has been developed by long years of experience of VKS in the sector and by using all technologic improvements.

Poultry fan control panel is a control panel which is designed to provide the fresh air needed inside the house. It is possible to feed more bird in the

equiped houses than natural ventilated houses per square meter area. In summer, when the temperature inside the house increases, the fans start to work and make fresh air fill inside house by passing through ped panels and cool the house. The temperature is reduced to the desired value by this method. In winter the fans make fresh air come inside the house just to breathe fort he animals not to reduce the temperature. When the fans stops the shutters close and heating energy loss is minimised.

The microcomputer near by the panel is called VKS ULTIMATE. VKS ULTIMATE microcomputer makes the fans work according the house needs automatically.

In automatic mode number of working fans is determined by the microcomputer according the house needs and the parameters which will be adjusted by the operator.

When the panel is made to work in hand mode; the speed and number of working fans is controlled by the operator. In this mode the fans will work or will not work according to the comands of operator.

1.1. Technical Specifications

Supply Voltage : 3 Phase, Neutrol line and self grounded network.

Working Voltage : Between Phases 360...400 V AC.
Between Phase and Neutral 200...240 V AC.

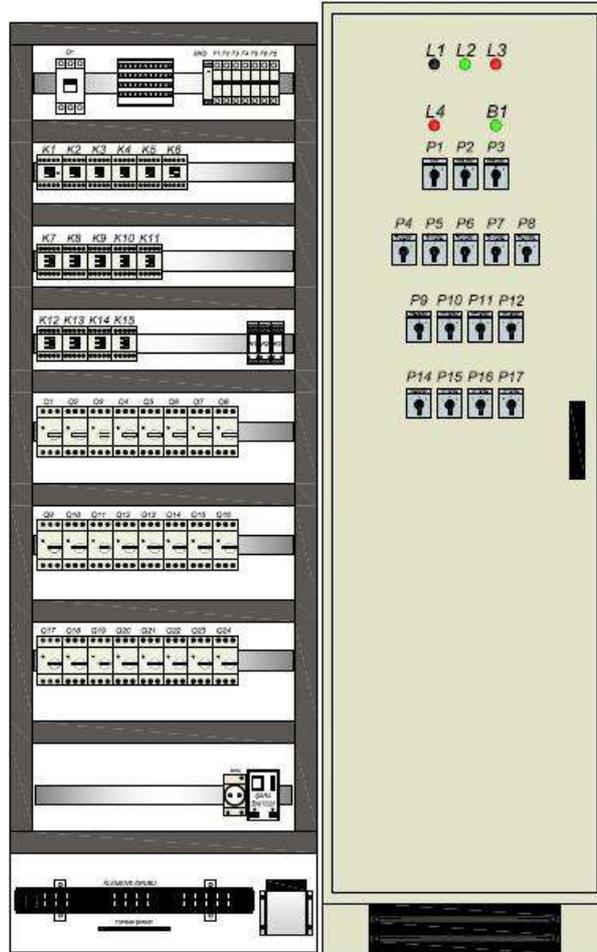
Power Consumption : Varies according to the panel type. The total power of equipments that can be connected to the panel is equal to the power of panel.

Fan Control Type: 2steps for side fans, 4 steps for tunnel on-off control by direct feeding voltage.

Panel Dimensions : Varies according to the panel type.

1.2. Panel General Appearance

PANEL INSIDE APPEARANCE FRONT PANEL APPEARANCE



1.3. Equipment Definitions

Front appearance. Front panel equipments:

- P1** 0 – 1 (off-on) positioned, main alarm switch.
In alarm situations this switch is used to silence the horn until removing the alarm situation. In normal working conditions this switch should never be closed and should always be on 1 position.
- P2** 0 – 1 positioned (Thermic alarm 1) switch, 1. group motor protection relays alarm silencing switch.
Used to silence the alarm when a thermic fault or short circuit occurs at one of the motors in 1. group.
- P3** 0 – 1 positioned (Thermic alarm 2) switch, 2. group motor protection relays alarm silencing switch.
Used to silence the alarm when a thermic fault or short circuit occurs at one of the motors in 2. group.

WARNING

Never forget to take P1 Switch to 1 position to be able to hear the after coming alarms.

- P4** 1 – 0 – 2 positioned, 1 numbered heater hand-0-automatic selection switch.
1 position of switch makes the connected heater work independent from the controller and named as hand mode.
0 position of switch makes the connected heater stop working.
The heater does not work if the computer tries to make it work too.
2 position of switch makes the connected heater work according to the controller and named as automatic mode.
- P5** 1 – 0 – 2 positioned, 2 numbered heater hand-0-automatic selection switch.
1 position of switch makes the connected heater work independent from the controller and named as hand mode.

0 position of switch makes the connected heater stop working. The heater does not work if the computer tries to make it work too.

2 position of switch makes the connected heater work according to the controller and named as automatic mode.

P6 1 – 0 – 2 positioned, pump group hand-0-automatic selection switch.

1 position of switch makes the connected pump group work independent from the controller and named as hand mode.

0 position of switch makes the connected pump group stop working. The pump group does not work if the computer tries to make it work too.

2 position of switch makes the connected pump group work according to the controller and named as automatic mode.

WARNING

P13 After making the pump group work in hand mode by making putting the switch 1 position should be again taken in to 2 position. Unless this is not done, the pump group goes on working and makes the temperature inside the house go down.

P7 1 – 0 – 2 positioned, 1 numbered minimum fan group hand-0-automatic selection switch.

1 position of switch makes the connected fan group work independent from the controller and named as hand mode.

0 position of switch makes the connected fan group stop working. The fan group does not work if the computer tries to make it work too.

2 position of switch makes the connected fan group work according to the controller and named as automatic mode.

P8 1 – 0 – 2 positioned, 2 numbered minimum fan group hand-0-automatic selection switch.

1 position of switch makes the connected fan group work independent from the controller and named as hand mode.

0 position of switch makes the connected fan group stop working. The fan group does not work if the computer tries to make it work too.

2 position of switch makes the connected fan group work according to the controller and named as automatic mode.

P9

1 – 0 – 2 positioned, 1 numbered tunnel fan group hand-0-automatic selection switch.

1 position of switch makes the connected fan group work independent from the controller and named as hand mode.

0 position of switch makes the connected fan group stop working. The fan group does not work if the computer tries to make it work too.

2 position of switch makes the connected fan group work according to the controller and named as automatic mode.

P10

1 – 0 – 2 positioned, 2 numbered tunnel fan group hand-0-automatic selection switch.

1 position of switch makes the connected fan group work independent from the controller and named as hand mode.

0 position of switch makes the connected fan group stop working. The fan group does not work if the computer tries to make it work too.

2 position of switch makes the connected fan group work according to the controller and named as automatic mode.

P11

1 – 0 – 2 positioned, 3 numbered tunnel fan group hand-0-automatic selection switch.

1 position of switch makes the connected fan group work independent from the controller and named as hand mode.

0 position of switch makes the connected fan group stop working. The fan group does not work if the computer tries to make it work too.

2 position of switch makes the connected fan group work according to the controller and named as automatic mode.

P12

1 – 0 – 2 positioned, 4 numbered tunnel fan group hand-0-automatic selection switch.

1 position of switch makes the connected fan group work independent from the controller and named as hand mode.

0 position of switch makes the connected fan group stop working. The fan group does not work if the computer tries to make it work too.

2 position of switch makes the connected fan group work according to the controller and named as automatic mode.

- P13** 1 – 0 – 2 positioned, flap group hand-0-automatic selection switch.
1 position of switch makes the connected flap work independent from the controller and named as hand mode with P14.
0 position of switch makes the connected flap stop working. The flap does not work if the computer tries to make it work too.
2 position of switch makes the connected flap work according to the controller and named as automatic mode.
- P14** 1 – 0 – 2 positioned, flap open-0-close selection switch.
1 position of switch opens the connected flap as hand mode.
0 position of switch makes the connected flap stop working.
2 position of switch closes the connected flap as hand mode.
- P15** 1 – 0 – 2 positioned, curtain group hand-0-automatic selection switch.
1 position of switch makes the connected curtain work independent from the controller and named as hand mode with P16.
0 position of switch makes the connected curtain stop working. The flap does not work if the computer tries to make it work too.
2 position of switch makes the connected curtain work according to the controller and named as automatic mode.
- P16** 1 – 0 – 2 positioned, curtain open-0-close selection switch.
1 position of switch opens the connected curtain as hand mode.
0 position of switch makes the connected curtain stop working.
2 position of switch closes the connected curtain as hand mode.
- L1-2-3** Panel input power phase lamps. They are helpfull in observation of phase failures.

- L4** Alarm lamp.
It is a visual caution in alarm situations. It goes on working if the P7 alarm switch is closed too. It is so important in observation of alarm situations in case of horn failure or cable failure of horn.
- B1** Horn test button. It is used to test the horn if it is working or not in normal conditions.

Interior Appearance. Equipments of assembly plate:

CHARGE UNIT

Battery charge unit.

It is used to charge the batteries that are very important for the continuity of alarms cautions in case of power failure.

- K1, ...K6** Fan motors step contactors.
Supplies the energy needed for fan motor groups to work.
- K7** Pump motor contactor.
Supplies the energy needed for pump group.
- K8,..K11** Flap motor contactors.
Supplies the energy needed for flap motors open and close.
- K12,..K15** Curtain motor contactors.
Supplies the energy needed for curtain motors open and close.
- Q1, ... Q16** Thermic magnetic protection relay for fan motors.
Protects fan motors against phase failure and over load current. Additionally these relays protect the panel against short circuits in field. Motors can be switched on or closed by the opening button on relays.
- Q17,Q18** Thermic magnetic protection relay for pump motors.
Protects pump motors against phase failure and over load current. Additionally these relays protect the panel against short circuits in field. Motors can be switched on or closed by the opening button on relays.

Q19,Q20 Thermic magnetic protection relay for flap motors.
Protects flap motors against phase failure and over load current. Additionally these relays protect the panel against short circuits in field. Motors can be switched on or closed by the opening button on relays.

Q21,Q22 Thermic magnetic protection relay for curtain motors.
Protects curtain motors against phase failure and over load current. Additionally these relays protect the panel against short circuits in field. Motors can be switched on or closed by the opening button on relays.

WARNING

Do not switch on any one of motors open button on the motor protection relays when the panel is energized. To switch on a motor, first of all switch of the energy of whole panel.

A1, A2 Batteries
There are two batteries connected in series. Each of them has a capacity of 4 Ah and voltage of 6 V. The batteries are held under buffer charge. In any case of alarm situation the horn works through battery energy.

MKS03 Phase protection relay
Protects the panel and motors connected to the panel against failures in the energy feeding network. Failure of any one of the phases, wrong phase sequence, neutral failure or %20 voltage drop in one phase against other phases are possible reasons for phase protection relay to stop the whole panel working. If there occurs any one of these causes, MK03 stops panel working and provides an alarm output for energy feeding problems.

F1 Panel input fuse
Protects panel against short circuits inside the panel. In case of a short circuit inside panel, this fuse cuts off the energy and protects the panel.

- F2** Remote fuse
Energy needed for all remote equipments inside panel (VKS ULTIMATE, radians, stove and charge unit) is provided by this fuse. If there occurs a fault in one of these equipments, this fuse cuts off energy and protects the panel.
- F3, ..F6** Radian and stove fuse
These fuses are signal and energy fuses for heater equipments.
- F7** Panel cooling fan and thermostat fuse
These fuse is signal and energy fuses for panel cooling equipments.

NOTE

When remote fuse is closed;
VKS ULTIMATE, radian, stove and charge unit stay out of energy. Unless this fuse is opened none of these equipments work.

- R1** Alarm control relay
In alarm situations this relay makes the alarm lamp and horn work. In case of alarm system faults this relay should be checked.
- R2** Heater 1 control relay
Controls the heater equipments. When heater system is activated by VKS ULTIMATE or operator this relay is energized and provide a 220 V output for radians and a free contact for stove. This relay should be checked in case of heater equipment failure.
- R2** Heater 2 control relay
Controls the heater equipments. When heater system is activated by VKS ULTIMATE or operator this relay is energized and provide a 220 V output for radians and a free contact for stove. This relay should be checked in case of heater equipment failure.

2. INSTALLATION and START-UP

In this section, installing the panel to its place, connection of equipment cables, energizing and steady state adjustments will be explained.

2.1. Start-Up Controls

When you open the original package of panel please check that you completely got all the equipments below which are supplied with panel in standard option. The equipments listed below should be supplied with panel:

- Horn, 1 piece
- Inside temperature sensor, 4 pieces
- Outside temperature sensor, 1 piece
- Humidity sensor, 1 piece
- Pressure sensor, 1 piece
- Joining apparatus for wall mounting, 4 pieces
- Panel cover key, 1 piece
- Terminal box connection scheme.
- Type code labeled on out of panel cover
- Series number and production date labeled inside of front cover.
- Battery warning and green test approval labeled on assembly plate inside panel.

2.2. Installation

WARNING

Choosing right place for installation, wall mounting, cable choosing and cable connections are very important because these Works will be done only once and directly affects life of panel and equipments.

Panel should be placed in a closed, air conditioned and especially away from dust. Sun rays should not reach panel surface directly and unauthorized people should not be able to reach the panel. Panel should not be mounted on outer wall of poultry house and it should not be covered with nylon or something like this. All cables coming to the panel should enter panel through cable entrance hole which is placed under the panel.

2.3. Connecting motor and equipment cables

First think to do is connecting 3 phase 380 V AC network to panel's L1, L2 and L3 terminals as shown in terminal box diagram. Neutral line of network should be connected to terminal named as N. Besides these panel should be grounded with a separate ground line for protection of panel against electrical faults. All cables coming from equipments inside house should be connected to panel as shown in terminal box diagram properly for acceptable conductivity.

2.4. Energising and First Set-Up

After all electrical connections, panel is energised by opening the F1 and F2 named fuses. For start-up all thermic magnetic switches are closed as off position and all switches are set to 1 position for hand mode. All thermic magnetic switches are set to on position for running all motor one by one. By this way all motors and their direction of turn should be checked. If there is determined any motor with an opposite direction of turn, 2 of 3 cables of related motor should be changed to correct direction.

3. PROCESSOR USAGE AND PROGRAMMING

3.1 INSTALLATION

Analog Input Connections

Temperature Sensors

Input 1 is used for inside temperature sensor 1.

Input 2 is used for inside temperature sensor 2. Zone 1

Input 3 is used for inside temperature sensor 3. Zone 2

Input 4 is used for inside temperature sensor 4. Pad

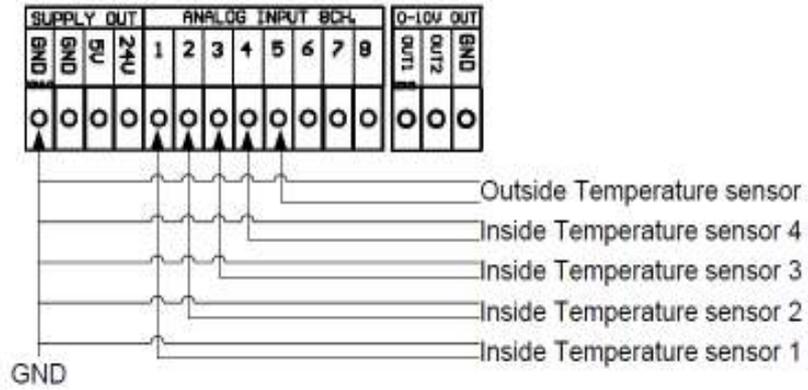
Input 5 is used for the outside temperature sensor.

Humidity and Pressure sensors

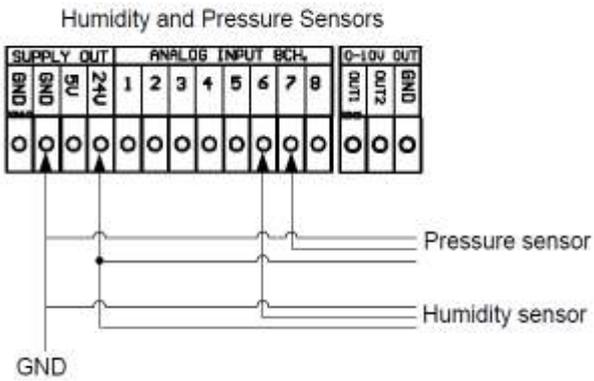
Input 6 is used for humidity sensor. Use a three wire cable.

Input 7 is used for static pressure sensor. Use a three wire cable.

Temperature Sensors



Humidity and Pressure Sensors



Digital Inputs

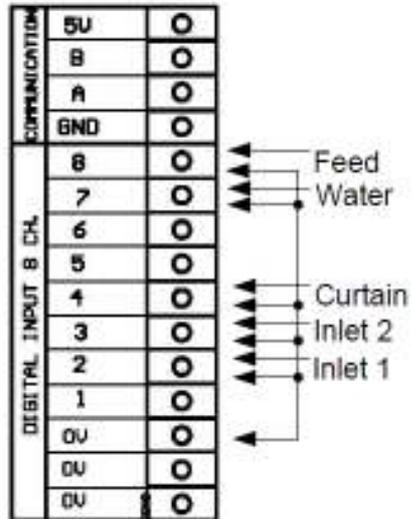
Input 2 is used for the Inlet 1

Input 3 is used for the Inlet 2

Input 4 is used for the Curtain

Input 7 is used for the Water clock dry contact signal

Input 8 is used for the feed dry contact



The Relay Outputs To Fans

Total Fans	Fan Group 1	Fan Group 2	Fan Group 3	Fan Group 4
4	1	1	1	1
5	1	1	1	2
6	1	1	2	2
7	1	2	2	2
8	1	2	2	3
9	1	2	2	4
10	1	2	3	4
11	1	2	4	4
12	1	2	4	5
13	1	2	4	6
14	1	2	4	7
15	1	2	4	8

3.2 OPERATION

Display Sensor

To view each sensor readings separately, press on:

Press KEY 01 = Display Temperature Sensor 1

KEY 02 = Display Temperature Sensor 2

KEY 03 = Display Temperature Sensor 3

KEY 04 = Display Temperature Sensor 4

KEY 05 = Display Temperature Sensor 5

KEY 06 = Display Humidity Sensor

KEY 07 = Display Static Pressure Sensor

KEY 10 = Display Curtain

KEY 11 = Display Inlet 1

KEY 12 = Display Inlet 2

KEY 13 = Display Cycle Timer

The time in seconds that remains until the end of the minimum ventilation on-off cycle.

KEY 14 = Display Cool Timer

Display the timer for the cooling system in seconds.
This is a countdown timer showing
the time in seconds that remains until the end of the
on-off cycle.

KEY 15 = Display Fan Speed

KEY 16 = Digital Input Reading

This is a display of the current digital input in use.
This readout is a binary number.

Digital input 1 = 1 (cool-curtain input)

2 = 2 (inlet 1 input)

3 = 4 (inlet 1 input)

4 = 8 (curtain)

KEY 17 = Alarm Type

TS1 = Temperature Sensor 1 Alarm.

TS2 = Temperature Sensor 2 Alarm.

TS3 = Temperature Sensor 3 Alarm.

TS4 = Temperature Sensor 4 Alarm.

TS5 = Temperature Sensor 5 Alarm.

HSn = Humidity Sensor Alarm.

PSn = Pressure Sensor Alarm.

HAL = High Temperature Alarm.

LAL = Low Temperature Alarm.

HHu = High Humidity Alarm.

PAD = Cooling Pad Alarm.

Curt = Curtain Alarm.

inL 1 = Inlet 1 Alarm.

inL 2 = Inlet 2 Alarm.

AHS = Amount Hestress Alarm

THS = Time Hestress Alarm.

Pres = Pressure Alarm.

Prog = Program Alarm

001.Growth Day

This is the current growth day of the flock. At the beginning of the flock enter here 0.

The room temperature (code 002) will automatically receive the value as entered in Growth day 1 temp. (code 062).

The Current weight (code 051) will automatically receive the value as entered in Day 1 Weight (code 052).

002. Request Temperature

The required temperature is the requested temperature in the house. All set points (except the cool temperature set point) are set as a differential from the requested room temperature. The required temperature will be reduced daily according to the temperature reduction table. See code 062-071.

Minimum Ventilation

The unit can calculate the minimum ventilation needed according to bird weight (code 051), number of birds housed (code 050), ventilation rate multiply (code 039), high outdoor temperature (code 035), low outdoor (code 036), minimum cubic air per kilo (code 049) and the maximum air per hour of the variable speed fan (code 048) and the winter fan (code 047). The unit will multiply the number of housed birds by the weight of each bird (taken from the weight increase graph (code 052-061). The result gives the approximate total weight in kilograms of the flock. The unit will multiply the total weight in kilograms of the flock by the requested minimum cubic air per kilo (code 049) and keeps the result as the minimum ventilation. The unit will also multiply the total weight in kilograms of the flock by the requested ventilation rate multiply (code 039) and keeps the result as the maximum ventilation. When the temperature reaches the high outdoor temperature (code 035), the unit operates the maximum ventilation. When the temperature reached the low outdoor temperature (036), the unit operates the minimum ventilation. The temperature in between the high outdoor and low outdoor temperature, the ventilation is calculated according to linear equation. We now have the total amount of air needed for minimum ventilation per hour. The unit will use this calculation and run the variable speed fan group at the speed needed to supply the proper amount of air for the house. In this stage the unit will open the inlets and the cool curtain according to the calculated speed of the fans. In this stage the unit will open the inlets and the cool curtain according to the calculated speed of the fans. In this mode, the maximum and minimum position

of the inlets are set by code 041 and 042. If the fan var minimum (code 032) is larger than the calculated speed, the speed fans will run at the minimum setting. If the calculated speed is larger, then the speed fans will run at the speed.

When the calculated amount of air that has to be entered into the house is greater than what the variable speed fan can give, the first fan group is also turned on and an on-off cycle begins. While in the on state, the variable speed fan group operates at maximum speed and the first fan group is turned on and the inlets and the cool curtain are opened to maintain the required pressure in the house according to the requested static pressure (code 037-038). While in the off state, all the fans are turned off and the inlets and the cool curtain are closed. The period of the cycle is set in code 019 and the cycle timer can be viewed in **KEY 13**. The minimum on time in percent of the whole period is set by code 032.

Attention: In all ventilation modes in which the inlets are opened, the position difference between the two inlets is set according to the temperature difference between the zone near inlet 1 (sensor 1) and the zone near inlet 2 (sensor 2).

If the zone near inlet 1 is hotter than the zone near inlet 2, then inlet 1 will be opened more than inlet 2 and vice versa. The exact difference is calculated according to the position difference per degree (Celsius) (code 909) and is limited by the maximum position difference (code 910). In all these modes, the cool curtain position is opened to the certain percents of the inlet 2 position (code 045).

003. Total Fan

The total fans in the house or in the system.

004. Fan 1

Fan 1 is the number of degrees above the required room temperature (code 02) that fan group 1 will be turned on.

005. Fan 2

Fan 2 is the number of degrees above the required room temperature (code 002) that fan group 2 will be turned on.

006. Fan 3

Fan 3 is the number of degrees above the required room temperature (code 002) tha fan group 3 will be turned on.

007. Fan 4

Fan 4 is the number of degrees above the required room temperature (code 002) that fan group 4 will be turned on.

008. Fan 5

Fan 5 is the number of degrees above the required room temperature (code 002) that fan group 5 will be turned on.

009. Fan 6

Fan 6 is the number of degrees above the required room temperature (code 002) that fan group 6 will be turned on.

010. Fan 7

Fan 7 is the number of degrees above the required room temperature (code 002) that fan group 7 will be turned on.

011. Fan 8

Fan 8 is the number of degrees above the required room temperature (code 002) that fan group 8 will be turned on.

012. Fan 9

Fan 9 is the number of degrees above the required room temperature (code 002) that fan group 9 will be turned on.

013. Fan 10

Fan 10 is the number of degrees above the required room temperature (code 002) that fan group 10 will be turned on.

014. Fan 11

Fan 11 is the number of degrees above the required room temperature (code 002) that fan group 11 will be turned on.

015. Fan 12

Fan 12 is the number of degrees above the required room temperature (code 002) that fan group 12 will be turned on.

016. Fan 13

Fan 13 is the number of degrees above the required room temperature (code 002) that fan group 13 will be turned on.

017. Fan 14

Fan 14 is the number of degrees above the required room temperature (code 002) that fan group 14 will be turned on.

018. Fan 15

Fan 15 is the number of degrees above the required room temperature (code 002) that fan group 15 will be turned on.

019. Cycle Time Fan (mm:ss)

The time in minutes and seconds for calculation of the minimum ventilation on-off cycle.

020. Heater 1

Heat 1 set point is the temperature differential below the required temperature that the heating system will turn on.

Example: Heat 1 set point = 1.0

If the room temperature should drop 1.0 ° below the required temperature (code 002) setting then the heating system 1 will start to run.

021. Heater 2

Heat 2 set point is the temperature differential below the required temperature that the heating system will turn on.

Example: Heat 2 set point = 1.0

If the room temperature should drop 1.0° below the required temperature (code 002) setting then the heating system 2 will start to run.

022. Cool Temperature

Enter here an absolute temperature. When the average temperature in the house is above this value, the cooling system will be activated.

023. Cool Tunnel Humidity (Summer Mode or Tunnel Mode)

Value is set in percentage. If the humidity level in the house rises above this value, the unit will automatically deactivate the cooling system.

024. Cool Winter Humidity (Winter Mode and transition Mode)

Value is set in percentage. If the humidity level in the house rises above this value, the unit will automatically deactivate the cooling system.

025. Cool On Time (mm:ss)

Enter here the time period in minutes and seconds that the cooling system will run once the house temperature has reached the **Cool Temp** temperature (code 022). The cooling system will run in an on-off cycle.

026. Cool Off Time (mm:ss)

Enter here the time period in minutes and seconds that the cooling system will be off during the cool system cycle. If it set 00.00, the cooling system will continue operating.

027. Cool On Time High Humidity (mm:ss)

Enter here the time period in minutes and seconds that the cooling system will be on during the high humidity.

028. Cool Off Time High Humidity (mm:ss)

Enter here the time period in minute and seconds that the cooling system will be off during the high humidity. If the cool off time (code 026) is set 00.00, this code is not in used.

029. Fan Humidity Set

Value is set in percentage. If a humidity sensor is connected to your unit then it is possible to cause an increase in the ventilation if the humidity is too high in the house. Enter here the maximum humidity level for the house. If the humidity level is larger than this value then the unit will automatically add on extra ventilation. If the unit is in minimum ventilation using only the variable speed fan group the unit will automatically add fan group 1. If fan group 1 is running then the unit will bring into operation fan group 2. The unit will always add on the next group of fans.

030. Fan Variable Diff

Fan Variable Diff is set as a number of degrees above the required room temperature (code 002).

Once the house temperature reaches this temperature, the variable speed fan group will start to increase in speed as set in the Band Width (code 031). The inlets and the cool curtain will open in accordance to the fan speed. At this point there is no static pressure control.

031. Fan Variable Band Width

Fan Variable Band Width is the temperature differential above fans Variable Diff. It represents the temperature range in which the variable speed fan group will speed up from minimum (code 032) to maximum speed.

032. Fan Var Minimum

Fan Var minimum is the minimum speed set in percentage that the variable speed fan group will run and also the minimum percents of the on state out of the whole period in the on-off cycle mode.

Example:

002 Room temp = 23.0°

030 Fan Variable diff = 2.0°

031 Fan Variable Band Width = 4.0°

032 Fan Var Minimum = 10

As long as the inside room temperature is below 25° (room temp+Fan Var Diff) the variable speed fan group will be running at 10%

When the temperature reaches 25° the variable speed fan group will start to increase in speed. Over the next

4° the variable speed fan group will gradually increase in speed. By the time the house temperature has reached 29° the variable speed fan group will be running at 100%

033. Winter Tunnel Temperature

This is a temperature setting, which represents an absolute outside temperature, under which the unit goes into “Winter Tunnel” mode when the set point of fan group 2 has been reached. In this mode the unit will continue to use the inlets and the cooling curtain to get the required static pressure in the house.

034. Max Fan Exit Trans

Enter the last fan group that the unit will run in “Transition” mode, controlling the pressure in the house with the inlets and the cool curtain. Once this group is passed the unit will exit “Transition” mode, meaning will close the inlets and open the cooling curtain 100%.

035. High Outdoor Temp

The high outdoor temperature for calculation of maximum ventilation and static pressure

036. Low Outdoor Temp

The low outdoor temperature for calculation of minimum ventilation and static pressure

037. High Out Temp. Pres

The requested static pressure for the house can be changed according to the outside temperature. Enter here the required static pressure when the outside temperature is above the set temperature as set in code 035

038. Low Out Temp. Pres

The requested static pressure for the house can be changed according to the outside temperature. Enter here the required static pressure if the outside temperature is below the set temperature as set in code 036

039. Ventilation rate multiply

The value is for multiply minimum ventilation when the temperature is higher than the high outdoor temperature (code 035)

040. Pressure Hysteresis

The value entered here will be the difference above and below the required static pressure that the unit will not attempt to change the position of the inlets/cool curtain.

Example: Press His = 1.0

If the required static pressure in the house is 2.0 then any pressure reading between 1.5 and 2.5 will be acceptable.

041. Inlet Max Pos %

Enter here, in percentage, the maximum opening of the inlets during minimum ventilation. This value is used when only the variable speed fan group is active.

042. Inlet Min Pos %

Enter here, in percentage, the value for the minimum position of the inlets while the variable speed fan group is active.

Example: If 10% is entered here, then if the inlets close, they will remain open 10%.

043. Press Min% Inlet

Enter here, in percentage, the minimum position of the inlet when the unit moves them to regulate the static pressure in the house.

Example: If 10% is entered here, then if the inlets close, they will remain open 10%

044. Press Min% Curtain

Enter here, in percentage, the minimum position of the cool-curtain when the unit moves it to regulate the static pressure in the house.

Example: If 10% is entered here, then if the cool-curtain closes, it will remain open 10%

045. Curtain Position %

Enter here the percentage of the cool-curtain position out of the position of inlet 2.

This value is effective when the inlets and the cool-curtain are used together to control the ventilation of the house.

Example: When the position of inlet 2 is 80% and the value entered in Curtain Pos Per is 50%, then the coolcurtain position will be 40%

046. Max Air Tunnel Fans

Enter here the total amount of cubic air per hour that variable fan group 1 can supply divided by 1000.

Example: If fan group 1 can supply 40,000 cubic meters of air per hour then enter the value 40.0.

047. Max Air Winter Fan

Enter here the total amount of cubic air per hour that variable winter fan can supply divided by 1000.

Example: If winter fan can supply 30,400 cubic meters of air per hour then enter the value 30.4.

048. Max Air Variable Speed Fan

Enter here the total amount of cubic air per hour that variable speed fan group can supply while working at 100%, divided by 1000.

Example: If the fan group can supply 20,000 cubic meters of air per hour then enter the value 20.0.

Note: This value is used in calculating the minimum ventilation needed for the house as explained above.

049. Min Air Kg Low

Enter here the minimum amount of cubic air per hour per kilo that is to be supplied to the house.

Note: This value is used in calculating the minimum ventilation needed for the house as explained later.

050. No of Birds

Enter here at the beginning of the flock the number of birds placed in the house.

Note: This value is used in calculating the minimum ventilation needed for the house as explained above.

051. Current Weight

This is the current weight of one bird according to the weight increase graph. See (code 052-031).

This value is used in calculating the minimum ventilation needed for the house as explained above.

052. Day 1 Weight

It is possible to enter an automatic weight increase table to be used by the minimum ventilation system.

Enter here the weight of one bird at one day old. The current weight (code 051) will be updated.

Important: When Day is equal to 1 it is not possible to change current weight (code 051)

053-061. Weight Graph

It is possible to set up to 9 groups. Max. 999 days. Temperature display shows weight. Humidity display shows day of age.

062. Day 1 Temperature

Day 1 temperature is the starting temperature for the first growth day. It is the temperature that will appear as the required temperature (code 002) when 1 is entered here. The room temp will be reduced according to the following table.

Important: When Day is equal to 0 it is not possible to change Required Temperature (code 002).

063-071. Temperature Graph

It is possible to set a temperature graph to reduce automatically the room temperature each day during the raising period.

072. Reset Time

The unit collects all its information on a 24 hours basis. It is possible to set the reset time. The growth day also changes after this time is passed. All information, temperature, humidity, water count and feed consumption will reset at this time.

073. Set date

Enter day:month:year

074. Set Time

Enter time clock

075. Time Alarm On

Enter period of alarm ON when alarm is activated

076. Time Alarm Off

Enter period of alarm OFF when alarm is activated

077. Set Temperature 1 Alarm

Set alarm when temperature sensor #1 is faulty. 0 = not activated 1 = activated

078. Set Temperature 2 Alarm

Set alarm when temperature sensor #2 is faulty. 0 = not activated 1 = activated

079. Set Temperature 3 Alarm

Set alarm when temperature sensor #3 is faulty. 0 = not activated 1 = activated

080. Set Temperature 4 Alarm

Set alarm when temperature sensor #4 is faulty. 0 = not activated 1 = activated

081. Set Temperature 5 Alarm

Set alarm when temperature sensor #5 is faulty. 0 = not activated 1 = activated

082. Set Humidity Sensor Alarm

Set alarm when humidity sensor is faulty. 0 = not activated 1 = activated

083. Set Pressure Sensor Alarm

Set alarm when pressure sensor is faulty. 0 = not activated 1 = activated

084. Set High Temperature Alarm

Set alarm when the temperature in house is too high. 0 = not activated 1 = activated

085. High Temperature Alarm

Enter the number of degrees **Above** the required house temperature that if reached

The unit will activate the alarm relay.

Example: Required temperature 25.0

Alarm high: 5.0

If the house temperature reaches 30.0 then the alarm relay will be activated.

086. Set Low Temperature Alarm

Set alarm when the temperature in house is too low. 0 = not activated 1 = activated

087. Low Temperature Alarm

Enter the number of degrees **below** the required house temperature that if reached, the unit will activate the alarm relay.

Example: Required temperature 25.0°

Alarm Low: 5.0°

If the house temperature drops to 20.0° then the alarm relay will be activated.

088. Set High Humidity Alarm

Set alarm when the humidity in house is too high. 0 = not activated 1 = activated

089. High Humidity Alarm

Enter the number of percentage above the high humidity (code 023,024) that if reached

The unit will activate the alarm relay.

Example: Code 023 90.0

Alarm high: 5.0

If the house humidity reaches 95.0% then the alarm relay will be activated.

090. Set Pad Alarm

Set alarm for the temperature sensor after cooling pad. 0 = not activated 1 = activated

091. Pad Alarm Diff Temperature

Set differential temperature of outside temperature sensor and pad sensor. If temperature is less than preset Diff temperature, the alarm will be activated.

Example: Requires Diff temperature 5.0

If outdoor temp (5) = 37.0 and pad temp sensor (4) = 36.0, the Diff is 1.0°(37.0-36.0 = 1.0). The unit will wait until reach preset time period (code 092) and activate alarm. If the Diff is high 5.0, the unit will not activate alarm.

092. Pad Alarm Time

Set period of time for pad alarm diff temperature (code 091) When the diff temperature is less than preset value, the unit wait for this period before activate alarm.

093. Curtain Alarm

Set alarm for the curtain is faulty 0 = not activated 1 = activated

094. Inlet 1 Alarm

Set alarm for the inlet #1 is faulty 0 = not activated 1 = activated

095 Inlet 2 Alarms

Set alarm for the inlet #2 is faulty 0 = not activated 1 = activated

096. Set Heatstress Alarm

Set alarm for the Heatstress Index 0 = not activated 1 = activated

097. Heatstress Alarm

Set the summation of temperature and humidity (Temperature oC + Humidity % RH = Heatstress Index).

098. Amount Heatstress Time

Set period of time considered as one event. If set 15 minutes and Heatstress (code 097), when Heatstress continue 15 minutes is as consider one event. If Heatstress is only 10 minutes or less than 10 minutes is not counting as one event.

099. Amount Heatstressa

Set the amount of events (code 098) within 1 day to alarm. If set 30 events, when temperature and humidity reach Heatstress (code097) for 30 events, the unit will alarm. The data logger is clear at 00.00 O'Clock.

100. Set Time Heatstress

Set the continuous time or period of one event to alarm. If set 45 minutes, when temperature and humidity reach Heatstress Indes (code097) for 45 minute, the unit will alarm.

101. High Press Alarm

Enter here the maximum static pressure reading for the house. When the pressure measured is above this value for more than 30 seconds, the alarm will be activated.

102. Low Press Alarm

Enter here the minimum static pressure reading for the house. When the unit moves the inlets/cool-curtain to regulate the pressure in the house and the measured static pressure is below this value for a period set by Press Low Delay (code 103), the alarm will be activated. The alarm will remain activated until the pressure reading in the house will be above the value entered here.

103. Press Low Delay (mm:ss)

This is a value in minutes and seconds. Once the unit regulates the pressure in the house and the measured pressure is below Low Press Alarm (code 102), the unit will wait this entered time period before activating the alarm. The alarm will be deactivated the moment the measured pressure is above Low Press Alarm (code 102).

110. Light Dawn/Dusk Time

Set period of time for light intensity (code 111) from 0% - 100% or from dawn to dusk or dusk to dawn.

111. Light Intensity

Set the brightest of light intensity. (0% = 0.0V 100% = 10V)

112. Light On Time Period 1

Set time clock On of the light in the period 1

113. Light Off Time Period 1

Set time clock Off of the light in the period 1

114. Light On Time Period 2

Set time clock On of the light in the period 2

115. Light Off Time Period 2

Set time clock Off of the light in the period 2

116. Light On Time Period 3

Set time clock On of the light in the period 3

117. Light Off Time Period 3

Set time clock Off of the light in the period 3

118. Light On Time Period 4

Set time clock On of the light in the period 4

119. Light Off Time Period 4

Set time clock Off of the light in the period 4

120. Light On Time Period 5

Set time clock On of the light in the period 5

121. Light Off Time Period 5

Set time clock Off of the light in the period 5

122. Light On Time Period 6

Set time clock On of the light in the period 6

123. Light Off Time Period 6

Set time clock Off of the light in the period 6

124. Light On Time Period 7

Set time clock On of the light in the period 7

125. Light Off Time Period 7

Set time clock Off of the light in the period 8

126. Light On Time Period 8

Set time clock On of the light in the period 8

127. Light Off Time Period 8

Set time clock Off of the light in the period 8

128. Feed On Time Period 1

Set time clock On of the feed in the period 1

129. Feed Off Time Period 1

Set time clock Off of the feed in the period 1

130. Feed On Time Period 2

Set time clock On of the feed in the period 2

131. Feed Off Time Period 2

Set time clock Off of the feed in the period 2

132. Feed On Time Period 3

Set time clock On of the feed in the period 3

133. Feed Off Time Period 3

Set time clock Off of the feed in the period 3

134. Feed On Time Period 4

Set time clock On of the feed in the period 4

135. Feed Off Time Period 4

Set time clock Off of the feed in the period 4

136. Feed On Time Period 5

Set time clock On of the feed in the period 5

137. Feed Off Time Period 5

Set time clock Off of the feed in the period 5

138. Feed On Time Period 6

Set time clock On of the feed in the period 6

139. Feed Off Time Period 6

Set time clock Off of the feed in the period 6

140. Feed On Time Period 7

Set time clock On of the feed in the period 7

141. Feed Off Time Period 7

Set time clock Off of the feed in the period 7

142. Feed On Time Period 8

Set time clock On of the feed in the period 8

143. Feed Off Time Period 8

Set time clock Off of the feed in the period 8

200. Today Max Temp. In

Display the reading of the highest house temperature with in 24 hours

201. Today Min Temp. In

Display the reading of the lowest house temperature with in 24 hours

202. Today Max Temp. Out

Display the reading of the highest outdoor temperature with in 24 hours

203. Today Min Temp. Out

Display the reading of the lowest outdoor temperature with in 24 hours

204. Today Max Humidity

Display the reading of the highest house humidity with in 24 hours

205. Today Min Humidity

Display the reading of the lowest house humidity with in 24 hours

206. Today Water Cons.

Display the reading of the total water consumption with in 24 hours

207. Today Feed Cons.

Display the reading of the total feed consumption with in 24 hours

210. 1 Day Ago Max Temp. In

Display the reading of the highest house temperature yesterday

211. 1 Day Ago Min Temp. In

Display the reading of the lowest house temperature yesterday

212. 1 Day Ago Max Temp. Out

Display the reading of the highest outdoor temperature yesterday

213. 1 Day Ago Min Temp. Out

Display the reading of the lowest outdoor temperature yesterday

214. 1 Day Ago Max Humidity

Display the reading of the highest house humidity yesterday

215. 1 Day Ago Min Humidity

Display the reading of the lowest house humidity yesterday

216. 1 Day Ago Water Cons.

Display the reading of the total water consumption yesterday

217. 1 Day Ago Feed Cons.

Display the reading of the total feed consumption yesterday

220. 2 Day Ago Max Temp. In

Display the reading of the highest house temperature 2 days ago

221. 2 Day Ago Min Temp. In

Display the reading of the lowest house temperature 2 days ago

222. 2 Day Ago Max Temp. Out

Display the reading of the highest outdoor temperature 2 days ago

223. 2 Day Ago Min Temp. Out

Display the reading of the lowest outdoor temperature 2 days ago

224. 2 Day Ago Max Humidity

Display the reading of the highest house humidity 2 days ago

225. 2 Day Ago Min Humidity

Display the reading of the lowest house humidity 2 days ago

226. 2 Day Ago Water Cons.

Display the reading of the total water consumption 2 days ago

227. 2 Day Ago Feed Cons.

Display the reading of the total feed consumption 2 days ago

4. PERIODIC MAINTANANCE

Fan control panel does not need a heavy maintainance. In busy working conditions it's working should be checked. The alarm system should be checked frequently. It should be cleaned from dust and powders between growth sessions. The biggest problem for control panels in usage is dust. If the panel is wanted to be used for long years, it's periodic maintainance should be done. Just because of this dust and powder cleaning is very important for control panels.

Between growth sessions the battery cables should be disconnected to disable alarms and make the batteries long life.

The alarm system should be checked frequently by testing thermic magnetic switches and VKS ULTIMATE temperature alarms. It is always very important to keep the alarm system working.

The equipments used inside panel has an end of mechanical and electrical life like everything on earth. Their failure by the time is a normal result. Making the panel and equipment's using life longer depends on installation place choice, electrical network conditions, periodic maintainance, humidity and other environmental conditions. The most important factor for contactor's life is dust. Because of this panel periodic maintainance should be done frequently.

It's adviced to change all contacter switchs with new ones once in 2 or 3 years. It should bdone not to live a fault with panel when there is animal inside house. Possible contacter faults will be seen probably at the first step contacters by time. When there is animal inside, for not to fall in trouble with a contacter fault, it is adviced to keep spare 1 or 2 contacters near panel.

5. SUGGESTIONS

WARNING

This section is prepared to make your panel life longer and work properly. All suggestions are advised because of experiences.

- You should not connect motor or equipment more than the capacity of panel. No more equipment should not be energised through panel accept the ones explained in technical specifications of panel.
- If the distance between the panel and fan motors with power of 1.1 kw, the connection cable should be choosen with dimensions of 4x2.5 mm.
- All fan motors should be grounded locally.
- Front cover of panel should always be closed.
- Between two aniimal growth term, the panel should be cleaned with vacuum cleaner. Panel should never be cleaned with water or any liquid else.
- No cable or connection inside the panel should be changed.
- You should use a power generator against power failures.
- In case of power failures, the power generator should be tested against fan directions.
- The cable canals inside panel should always be kept closed.
- If there is a telephone near the panel, it will be easier to solve the problems that can ocur in future.
- It will protect the animals against death because of closeness if you have natural vantilating system in case of panel failures.
- The horn should be placed at a place that everybody interested in safety of animals inside can hear it.
- The inside temperature sensor should be placed just in to the midpoint of house. It should be placed as near as possible to flor but as high as the animals can not damage the sensor.
- During cleanup between growth terms, the energy of panel should be cut and panel should be closed with a cover like nylon or something like this to protect the panel against water and disinfectant vapour.
- In electric circuit of panel, there should not be made any addition or substraction.
- Panel should never be used with out of it's aim.

6. FAULT DETECTION AND TROUBLE SHOOTING

This section is prepared to help user in case of possible faults. It is aimed to solve possible problems as quick as possible by the operator.

FAULT DETECTION AND TROUBLE SHOOTING		
Energy connections are made but stil the panel is not energised.		
POSSIBLE REASON	FAULT DETECTION	SOLUTION
There may not be enery in connection cables.	Please control network volrages. (Between phases 360...400 V AC) (Between phase neutral 200...240 V AC)	If the problem occurs because of network voltages, the problem must be solved by energy supplier.
Phase sequence might be wrong.	Control the light on MKS03 that if it is on or off.	If the light is off, change the phase sequence until the light comes on position.
The voltages might be low.	Please control network volrages. (Between phases 360...400 V AC) (Between phase neutral 200...240 V AC)	If the problem occurs because of network voltages, the problem must be solved by energy supplier.
One or some of network voltages might be off.	Please control network volrages. (Between phases 360...400 V AC) (Between phase neutral 200...240 V AC)	If the problem occurs because of network voltages, the problem must be solved by energy supplier.
MKS03 might be broken.	Control the light on MKS03 that if it is on or off.	If the light is on, change the MKS03 with a new one.Eğer ışık yamıyorsa MKS03'ü yenisi ile değiştirin. NOTE: Do not change the sequence of cables connected to MKS03 when changing MKS03.
F1 And F2 fuses might be off.	Control F1 and F2 fuses.	If the fuses are off, turn on them and energise the panel.

VKS ULTIMATE is working out of parameters installed in it.		
POSSIBLE REASON	FAULT DETECTION	SOLUTION
VKS ULTIMATE parameters might be entered different.	Check the parameter values.	Correct the parameter values. If you couldn't detect the wrong parameter make your VKS ULTIMATE turn back to factory settings.

VKS ULTIMATE is working out of parameters installed in it. (When the VKS ULTIMATE is made to turn back to factory settings.)		
POSSIBLE REASON	FAULT DETECTION	SOLUTION
VKS ULTIMATE might be broken.	Check if you made the VKS ULTIMATE turn back to factory settings correctly.	If you are sure that you have made the VKS ULTIMATE turn back to factory settings correctly and stil it is not working, please contact to your seller.

Faults occuring time to time.

POSSIBLE REASON	FAULT DETECTION	SOLUTION
Equipment screws, terminal box screws or sockets of equipments might be loosen.	Check all the screws inside panel, on equipments and the sockets.	If the fault is occuring because of this reason, tihten all screws and solve the problem.

VKS ULTIMATE is working but fans are not working.		
POSSIBLE REASON	FAULT DETECTION	SOLUTION
Thermic magnetic protection relay might be off.	Check the butons on the thermic magnetic protection relay if they are open or closed.	If the buttons are closed turn on them and solve the problem.
The temperature set value that VKS ULTIMATE will start fans working migt be set too high.	Control the temperature set value.	If it is set too high, solve problem by correcting the temperature set value.

Switvhes that control working type of fan groups might be closed.	Control the switches.	If the switches are closed, change them to (2) automatic working condition.
---	-----------------------	---

Fan thermic magnetic switches goes off.		
POSSIBLE REASON	FAULT DETECTION	SOLUTION
The temperature at the room that the panel works in might be too high.	Check the room temperature.	If the problem occurs because of high temperature, cool the room and solve problem.
Panel might be placed under direct sun light.	Check the panel placement.	If the panel is placed under direct sun light, embrass the sunlight.
Contacters might be broken.	Check the contacters.	Change the broken contacters with the new ones.

Fan thermic magnetic switches goes off consecutively.		
POSSIBLE REASON	FAULT DETECTION	SOLUTION
Current set of thermic magnetic switch might be set too low for related motor.	Check the current set of thermic magnetic switch.	If the current is set too low, increase it up to the value that is declared on the lable of related motor.
Motor might be broken.	Check the related motor.	If the motor is broken change it with a new one.
Cable that connects the motor to the panel might be broken.	Check the related cable.	If the cable is broken, change it with a new one.

Fansa re working in hand mode but they are not working in automatic mode.		
POSSIBLE REASON	FAULT DETECTION	SOLUTION
The voltages might be low.	Please control network voltages. (Between phases 360...400 V AC) (Between phase neutral 200...240 V AC)	If the problem occurs because of network voltages, the problem must be solved by energy supplier.
Phase sequence might be wrong.	Control the light on MKS03 that if it is on or off.	If the light is off, change the phase sequence until the light comes on position.
MKS03 might be broken.	Control the light on MKS03 that if it is on or off.	If the light is on, change the MKS03 with a new one.Eğer ışık yamıyorsa MKS03'ü yenisi ile değiştirin. NOTE: Do not change the sequence of cables connected to MKS03 when changing MKS03.

Radians are not working.		
POSSIBLE REASON	FAULT DETECTION	SOLUTION
Radian working temperature set value might be set to a very high or low value.	Check the radian working temperature set value.	If the problem occurs because of radian working temperature set value, correct it and solve the problem.

The radian relay on VKS ULTIMATE might be broken.	Check the relay.	If the relay on VKS ULTIMATE is broken, please refer to your seller.
The terminal box or the cable connected to radian valve might be broken.	Check the terminal box and cable.	If there is a problem with terminal box, solve it by tightening the screw on terminal. If the cable is broken change it with a new one.
Gas valve might be broken.	Check the valve. NOTE: When you energise the valve from panel, the valve must make a noise if it is working. You can check the valve by this way.	If the gas valve is broken change it with a new one.

Radians are working continuously.

POSSIBLE REASON	FAULT DETECTION	SOLUTION
Radian working temperature set value might be set to a very high or low value.	Check the radian working temperature set value.	If the problem occurs because of radian working temperature set value, correct it and solve the problem.
The radian relay on VKS ULTIMATE might be broken.	Check the relay.	If the relay on VKS ULTIMATE is broken, please refer to your seller.

Pump motors are not working.

POSSIBLE REASON	FAULT DETECTION	SOLUTION
Pump working temperature set value might be set to a very high value.	Check the pump working temperature set value.	If the pump working temperature set value is set to a very high value, solve the problem by correcting it.
P12 switch might be at (0) position.	Control the position of P12 switch.	If P12 switch is at (0) position, solve the problem by taking it to (1) or (2) position.

P12 switch might be broken.	Check the P12 switch.	If P12 switch is broken, change it with a new one.
Pump thermic magnetic protection switch might be off.	Check the pump thermic magnetic protection switch.	If pump thermic magnetic protection switch is at off position, take it to on position.
Pump contactor switch might be broken.	Check the pump contactor switch.	If it is broken, change it with a new one.
The pump relay on VKS ULTIMATE might be broken.	Check the relay.	If the relay on VKS ULTIMATE is broken, please refer to your seller.

Pumps are working continuously.

POSSIBLE REASON	FAULT DETECTION	SOLUTION
Pump working temperature set value might be set to a very low value.	Check the pump working temperature value.	If pump working temperature set value is set to a very low value, solve the problem by correcting pump working temperature set value.
The pump relay on VKS ULTIMATE might be broken.	Check the relay.	If the relay on VKS ULTIMATE is broken, please refer to your seller.
P13 switch might be at (1) position.	Check the P12 switch position.	If the switch is at (1) position, solve the problem by taking the switch to (0) or (2) position.
Pump contactor switch might be broken.	Check the pump contactor switch.	If it is broken, change it with a new one.
Pump thermic magnetic protection switch might be broken.	Check the pump thermic magnetic switch.	If it is broken, change it with a new one.

Pump motor thermic magnetic protection switch is going off. (Stops the motor)

POSSIBLE REASON	FAULT DETECTION	SOLUTION
The temperature at the room that the panel works in might be too high.	Check the room temperature.	If the problem occurs because of high temperature, cool the room and solve problem.

Pump contactor switch might be broken.	Check the pump contactor switch.	If it is broken, change it with a new one.
Motor might be broken.	Check the related motor.	If the motor is broken change it with a new one.
Cable that connects the motor to the panel might be broken.	Check the related cable.	If the cable is broken, change it with a new one.

Fuses inside the panel go off.

POSSIBLE REASON	FAULT DETECTION	SOLUTION
There might be connected motor or equipment to panel more than capacity of the panel.	Check the equipment and motor numbers connected to panel.	Disconnect the equipment connected to the panel that are not declared by VKS for the related panel.
Charge unit might be broken.	Check the charge unit.	If the charge unit is broken, change it with a new one.
One of the fan or pump contactor switches might be broken.	Check all the contactor switches.	If there is a broken contactor switch inside panel, change it with new one.
Fuse might be broken. NOTE: This situation has never been observed before.	Check the fuse.	If it is broken change it with a new one.

VKS ULTIMATE microcontroller is not working.

POSSIBLE REASON	FAULT DETECTION	SOLUTION
The connectors of VKS ULTIMATE might be loose.	Check the sockets of VKS ULTIMATE microcontroller.	If there is a loose socket, tighten it and solve the problem.
VKS ULTIMATE might be broken.	If you tried to solve your problem with all ways explained above but you could not solve your problem, this means that your VKS ULTIMATE microcontroller is broken.	Please refer to your seller.