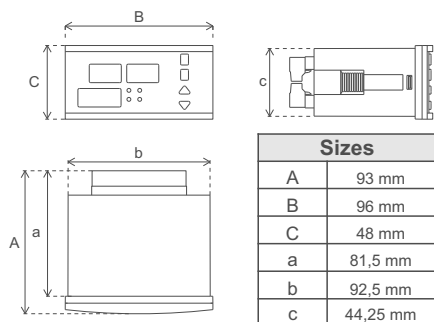




PANEL TYPE MUSHROOM FARM CONTROL DEVICE

KC-720 USER MANUAL



WHAT IS IT?

The panel-type mushroom farm control device allows you to precisely measure temperature, relative humidity and carbon dioxide levels and control your connected systems within desired ranges. Enables you to perform time-dependent lighting.

HOW DOES IT WORK?

It operates with a 220 V AC power supply. Depending on the connected temperature, humidity and CO₂ systems, control can be achieved directly via the controller or through a contactor.

GENERAL FEATURES

Accurate and Precise Measuring, 4 Relay Outputs, Durable and Handy Design, Long Operating Life, Cleanable Filter, Panel Type Mounting, Adjustable Relay Sensitivity

TECHNICAL DATA

Product Name Panel Type Mushroom Farm Control Device
Power Supply 220 V AC
Output Relay (2A)
Temperature Measurement Range (-40)-(+60) °C / (-40)-(+100) °C
Temp. Sensitivity ± 0,1 °C
Temp. Accuracy ± 0,3 °C
Humidity Measurement Range 0-100 %
Humidity Sensitivity ± %1
Humidity Accuracy ± %3
Carbon Dioxide Measurement Range 0-5.000 ppm / 0.10.000 ppm
Carbon Dioxide Sensitivity ± 10 ppm
Carbon Dioxide Accuracy ± 50 ppm + %2
Operating Temperature (-10)-(+55) °C
Storage Temperature (-20)-(+60) °C

* With sintered sensor.

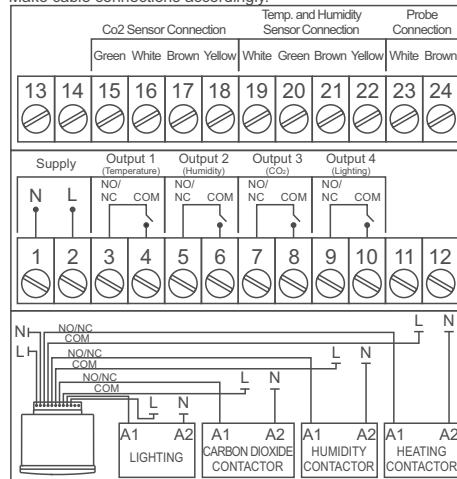
If the device is to be used outside the operating temperature, the manufacturer must be informed and approval must be obtained.

RULES TO BE CONSIDERED FOR SAFETY

- 1- Always read the user manual before using the device and its apparatus.
- 2- Damages caused by opening, breaking or misuse of the plastic parts of the device and its apparatus are considered out of warranty.
- 3- Keep the device and its apparatus away from external influences such as liquid, high dust, high temperature, etc. and protect them.
- 4- Do not expose the device cables to any jamming and pressure.
- 5- Disconnect the electrical power when your device is not used for a long time.
- 6- Our devices and apparatus should be used by paying attention to the points in the user manual. In case of damages and malfunctions arising from external use (liquid contact, falling to the ground, etc.) ask for help from the service.
- 7- Failures due to electrical connection errors and electrical voltage or current errors are not covered by the warranty.

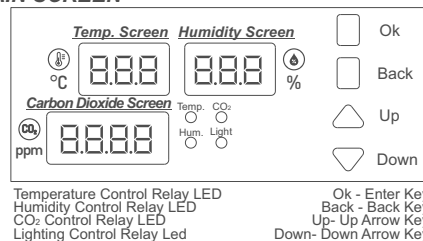
INSTALLATION

- 1- Remove the product from its packaging.
- 2- Make cable connections accordingly.



- 3- Place the product in the appropriate place on the panel.
- 4- After the product is powered on, all screen LEDs will light up for 15 seconds. Then, the temperature and humidity values will appear on the screen. The word "OPEN" will appear on the carbon dioxide screen for 15 seconds. After that, the screen will switch to the normal operating screen. It is recommended that the product remain in the environment for at least 5 minutes to obtain accurate measurement values.
- 5- It is recommended to use shielded cable as communication cable as it will prevent communication signals from being affected by external influences.
- 6- Since the communication cable will create resistance, check the measurement values again after cable installation.

MAIN SCREEN



STARTUP SCREEN



When power is supplied, all screen LEDs light up for 15 seconds. The carbon dioxide sensor is allowed to warm up. **OPEN** appears on the screen for 15 seconds. The device then switches to the normal operating screen and the carbon dioxide data appears on the screen.

SET, HYSTERESIS VALUE, AND RELAY POSITIONS

While in the main menu, holding down the "Up" button displays **SET**,

holding down the "Down" button displays the **HYSTERESIS** values,

and holding down the "Back" button displays the **RELAY** positions.

ERROR DISPLAY

If communication with any of the sensors is lost, the word "Err" appears on the sensor's screen, and the relay does not activate.

PRE-PROGRAMMING MENU

While in the main menu, holding down the OK button for 5 seconds enters programming mode. Using the directional buttons, you can navigate through the program options in sequence. The Back button returns to the main menu.

The following program options are available in the menu in sequence;

Set Settings Menu

Hysteresis Settings Menu

Lighting Settings Menu

When the menu you want to enter is displayed on the screen, press and hold the OK button for 3 seconds to enter that menu. You can navigate between menu options using the arrow keys. Press the Back button to return to the main menu.

1- SETTINGS MENU "SET"

When in the main menu, holding down the OK button for 5 seconds will enter programming mode. When entering the programming menu, the first program option that appears is the "SET" set settings menu. Holding down the OK button for 3 seconds will enter this menu. You can navigate through the program options in order using the direction buttons. You can return to the main menu using the Back button.

The following program options are available in the menu in sequence;

Temperature Set Value

Humidity Set Value

Carbon Dioxide Set Value

When the menu you want to enter is displayed on the humidity screen, press and hold the OK button for 3 seconds to enter that menu. The current value can be increased or decreased using the arrow keys, or the mode can be changed if available. You can return to the previous menu by pressing the Back button.

2- HYSTERESIS SETTING MENU "HIS"

When you are in the main menu, press and hold the OK button for 5 seconds to enter programming mode. The second program option that appears when you enter the programming menu is the "HIS" hysteresis setting menu. Press and hold the OK button for 3 seconds to enter this menu. Use the arrow keys to navigate through the program options in order. Press the Back button to return to the main menu.

The following program options are available in the menu in sequence;

Temperature Hysteresis Value

Humidity Hysteresis Value

Carbon Dioxide Hysteresis Value

When the menu you want to enter is displayed on the humidity screen, holding down the OK button for 3 seconds will enter that menu. The current value can be increased or decreased using the directional buttons, or the mode can be changed if available. The Back button can be used to return to the previous menu.

2- LIGHTING SETTING MENU "AYd"

When you are in the main menu, press and hold the OK button for 5 seconds to enter programming mode. The second program option that appears when you enter the programming menu is the "AYd" lighting setting menu. Press and hold the OK button for 3 seconds to enter this menu. Use the arrow keys to navigate through the program options in order. Press the Back button to return to the main menu.

The following program options are available in the menu in sequence;

Manual Setting

Time Setting

Time Setting Duration When Open
Time Setting Duration When Closed

When the menu you want to enter is displayed on the humidity screen, holding down the OK button for 3 seconds will enter that menu. The current value can be increased or decreased using the directional buttons, or the mode can be changed if available. The Back button can be used to return to the previous menu.

PROGRAMMING MENU

While in the main menu, holding down the OK button for 5 seconds enters programming mode. Using the directional buttons, you can navigate through the program options in sequence. The Back button returns to the main menu.

The following program options are available in the menu in sequence;

Relay Settings Menu

Time Settings Menu

Sensor-Connected Relay Time Setting Menu

Sensor Response Time Settings Menu
Sensor Settings Menu

Calibration Menu

Factory Reset Settings

The only option in the reset menu is "rSt". Holding down the OK button for 10 sec in this menu will reset all parameters to their factory default settings.

When the menu you want to enter is displayed on the screen, press and hold the OK button for 3 seconds to enter that menu. You can navigate between menu options using the arrow keys. Press the Back button to return to the main menu.

1- RELAY SETTING MENU "rLY"

While in the main menu, holding down the OK button for 5 seconds enters programming mode. The third program option that appears when entering the programming menu is the "rLY" relay settings menu. Holding down the OK button for 3 seconds enters this menu. Using the directional buttons, you can navigate through the program options in order. The Back button can be used to return to the main menu.

The following program options are available in the menu in sequence;

Temperature Relay Position

Humidity Relay Position

Carbon Dioxide Relay Position

When the menu you want to enter is displayed on the humidity screen, holding down the OK button for 3 seconds will enter that menu. The current value can be increased or decreased using the direction keys, or the mode can be changed if available. You can return to the previous menu using the Back button.

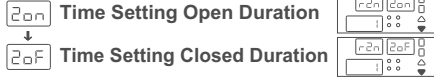
Selection range: NO // NC // on // off // rzn

* "rzn" is the time setting menu. You can enter the time setting menu by pressing the Set button.

1.1- TIMING SETTING MENU "rZn"

After navigating to the "rZn" option in the "rLY" relay setting menu using the arrow keys, press and hold the Set button for 3 seconds to enter this menu. You can navigate between menu options using the up and down arrow keys. Press the Back button to return to the main menu.

The following program options are available in the menu in sequence:

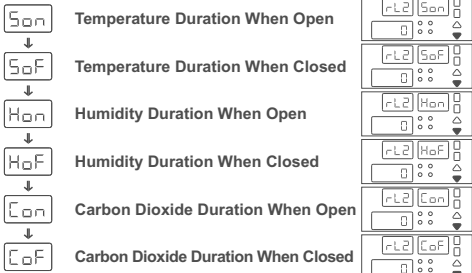


2- SENSOR-CONNECTED RELAY TIME SETTING MENU "rLZ"

When you are in the main menu, press and hold the OK button for 5 seconds to enter programming mode. The second program option that appears when you enter the programming menu is the "rLZ" relay timing setting menu. Press and hold the OK button for 3 seconds to enter this menu. Use the arrow keys to navigate through the program options in order. Press the Back button to return to the main menu.

* To activate the sensor-connected relay's time setting menu, "SNO" or "SNC" must be selected from the relay settings menu. Otherwise, this menu will not be active.

The following program options are available in the menu in sequence:



When the menu you want to enter is displayed on the screen, press and hold the OK button for 3 seconds to enter that menu. You can navigate between menu options using the arrow keys. Press the Back button to return to the main menu.

3- SENSOR RESPONSE TIME SETTINGS MENU "tSr"

When you are in the main menu, press and hold the OK button for 5 seconds to enter programming mode. When you enter the programming menu, the third program option that appears is the "tSr" sensor response time settings menu. Press and hold the OK button for 3 seconds to enter this menu. Use the arrow keys to navigate through the program options in order. Press the Back button to return to the main menu.

The following program options are available in the menu in sequence:

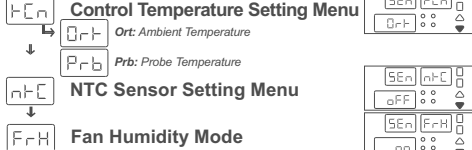


When the menu you want to enter is displayed on the humidity screen, press and hold the OK button for 3 seconds to enter that menu. Use the arrow keys to increase or decrease the current value or change the mode, if available. Press the Back button to return to the previous menu.

4- SENSOR SETTINGS MENU "Sen"

When in the main menu, holding down the OK button for 5 seconds will enter programming mode. The fourth program option that appears when entering the programming menu is the "Sen" sensor response time settings menu. Holding down the OK button for 3 seconds will enter this menu. You can navigate between the program options in order using the arrow keys. You can return to the main menu with the back button.

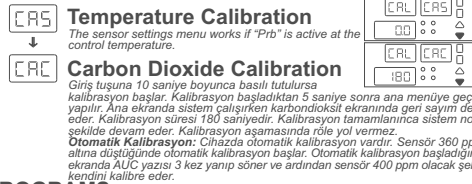
The following program options are available in the menu in sequence:



When the menu you want to enter is displayed on the humidity screen, press and hold the OK button for 3 seconds to enter that menu. Use the arrow keys to increase or decrease the current value or change the mode, if available. Press the Back button to return to the previous menu.

5- CALIBRATION SETTINGS MENU "CAL"

When in the main menu, press and hold the OK button for 5 seconds to enter programming mode. The fifth program option that appears when entering the programming menu is the "CAL" calibration settings menu. Press and hold the OK button for 3 seconds to enter this menu. The program options can be navigated using the direction keys. The back button can be used to return to the main menu.



AUCRMS

"SEI" Set Settings Menu

	Default	Range / Option
"SIS" Temperature Set Value	20 °C	(-40)~(+60)°C
"SIH" Humidity Set Value	50 %	0-100 %
"SIC" Carbon Dioxide Set Value	1.000 ppm	0-5.000 / 0-10.000ppm
Hysteresis Settings Menu		
"HSS" Temperature Hysteresis Value	0.5 °C	0-9.9 °C
"HSH" Humidity Hysteresis Value	3 %	0-9 %
"HSC" Carbon Dioxide Hysteresis Value	250 ppm	0-1.000ppm
Lighting Settings Menu		
"AYD" Manual Setting	Default	Range / Option
"Zna" Lighting Time Setting	0:OFF	On / OFF
"ZCa" Time Setting Duration When Open	0 hour	0-24 hour
"ZdA" Time Setting Duration When Closed	0 hour	0-24 hour

"rLY" Relay Settings Menu

	Default	Range / Option
"rLS" Temperature Relay Position	NO	NO / NC / on / off / rZn
"rLH" Humidity Relay Position	NC	NO / NC / on / off / rZn
"rLC" Carbon Dioxide Relay Position	NO	NO / NC / on / off / rZn
"NO" Normally Open		
"NC" Normally Closed		
"OFF" Manual Control On		
"ZNO" Sensor Dependent Time Normally Open		
"ZNC" Sensor Dependent Time Normally Closed		

"rZn" Time Setting Menu

	Default	Range / Option
"Zon" Time Setting On Duration	0 minute	0-60 minute
"Zof" Time Setting Off Duration	0 minute	0-60 minute
"Son" Temperature Duration When Open	0 minute	0-60 minute
"Sof" Temperature Duration When Closed	0 minute	0-60 minute
"Hon" Humidity Duration When Open	0 minute	0-60 minute
"Hof" Humidity Duration When Closed	0 minute	0-60 minute
"Con" Carbon Dioxide Duration When Open	0 minute	0-60 minute
"Cof" Carbon Dioxide Duration When Closed	0 minute	0-60 minute

"tSr" Sensor Response Time Setting Menu

	Default	Range / Option
"tSS" Temperature Sensor Response Time Level	4	1-5
"tSH" Humidity Sensor Response Time Level	4	1-5
"tSC" Carbon Dioxide Sensor Response Time Level	3	1-5

"SEN" Sensor Settings Menu

	Default	Range / Option
"tCn" Control Temperature Settings Menu	Ort	Ort - Prb
"Ort" Ambient Temperature		
"Prb" Probe Temperature		
"nTC" NTC Sensor Settings Menu	oFF	on - oFF
"FrH" Fan Humidity Mode	on	on - oFF
"CAL" Calibration Settings Menu		
"CAS" Calibration Settings Menu	0.0	(-5.0)~(+5.0)°C

UYGUNLUK BEYANI

Headquarters and place of production: Halkapınar Mah. 1376 Sok. Boran Plaza No:1/L Konak / İZMİR - TÜRKİYE. EMS KONTROL ELEKTRONİK VE MAKİNE SAN. TİC. A.Ş. declares that the product marked with CE, whose name and specifications are given below, covers the specified directives and provisions.

EMS KONTROL ELEKTRONİK VE MAKİNE SAN. TİC. A.Ş.

Brand: EMS KONTROL
Product Code: KR-751
Product Type: On-site commissioning is subject to service fee.
Temperature, Humidity and Carbon Dioxide Control Device
Compatible Directives:
Electromagnetic Compatibility Directive
2014/53/EU (EMC 2000-6-3: 2007 + A1: 2011, EN 61000-6-1: 2007)
Low Voltage Directive
2014/35/EU (LVD EN 60730-2-9:2010, EN 60730-1:2011)

Additional information: This product can be used in combination with other devices and compliance with the directives covers only the product. EMS KONTROL is not responsible for the compliance of entire system with the directives.



WARRANTY TERMS

- The warranty period of the devices and apparatus starts from the invoice date and is guaranteed for 2 years against manufacturing defects.
- Devices and apparatus are delivered to the customer in working condition.
- The repair of the devices and apparatus under warranty is carried out in our company as a result of sending them with the transportation company contracted by our company. In on-site services, transportation and accommodation expenses of the service personnel belong to the customer. The cost of the working time spent on the road is added to the service fee and the collection is made in advance.
- Maintenance of devices and apparatus is not included in our company.
- In case of malfunction of the devices and apparatus whose warranty period continues, when the malfunction is not resolved within 20 business days, the customer or the manufacturer is tested in our company and reported with the report to be issued by our company.
- In case of detection of manufacturer-induced faults of the devices and apparatus whose warranty period continues, the customer may request a replacement or may request that the repair costs of the devices and apparatus be fully covered by the manufacturer, provided that it does not exceed the product price.
- In the event that the faults of the devices and apparatus whose warranty period continues are determined to be caused by the customer, all costs belong to the customer.
- If the customer does not indicate that he/she is aware of the defects in the devices and apparatus from the date the warranty period starts or in cases where he/she is expected to be aware, he/she cannot benefit from Article 6.
- Failures arising from the use of devices and apparatus contrary to the instructions in the user manual are not covered by the warranty.
- Devices and apparatus are not covered by the warranty if they are beaten, broken or scratched by the customer.
- Damages caused by the use of devices and apparatus of other brands and models without the approval of the manufacturer are not covered by the warranty.
- Errors caused by rusting, oxidation and liquid contact due to working in salty / acidic / humid environments are not covered by the warranty.
- Damages that may occur during transportation of devices and apparatus are not covered by the warranty. If the customer wishes, he/she can have transportation insurance.
- Damages caused by lightning voltage / faulty electrical installation are not covered by the warranty.
- Devices and apparatus are not covered by the warranty in case of malfunctions caused by force majeure such as fire, flood, earthquake, etc.
- All parts of the devices and apparatus, including all parts, are covered by our company's warranty.
- If the devices and apparatus malfunction within the warranty period, the time spent in repair shall be added to the warranty period. The repair period of the goods shall not exceed 20 working days. This period starts from the date of notification of the malfunction of the goods to the service station, in the absence of a service station, to the seller, dealer, agent, representative, importer or manufacturer, manufacturer of the goods. It is possible for the consumer to notify the malfunction by telephone, fax, e-mail, registered letter with return receipt or similar means. However, in case of dispute, the burden of proof belongs to the consumer. In the event of a dispute, the burden of proof belongs to the consumer. It is not possible for the consumer to return the goods within 20 business days, the manufacturer-manufacturer or importer; until the repair of the goods is completed, another goods with similar characteristics must be allocated to the use of the consumer.
- Despite the right to repair, the consumer has the right to return the goods. Provided that it is within the warranty period from the date of delivery to the consumer, it fails at least four times within a year or six times within the warranty period determined by the manufacturer-manufacturer and / or importer, as well as the fact that these failures make the inability to benefit from the goods continuous.
- Exceeding the maximum time required for repair.
- It is determined that it is not possible to repair the malfunction with the report to be issued by the service station of the company's service station, if the service station is not available, respectively by one of its dealer, dealer, agency, representative, importer or manufacturer-manufacturer, it may request a refund of the reduction in the value of the goods.
- Customer may file complaints and objections to consumer courts or consumer arbitration committees.
- The warranty certificate must be kept by the customer during the warranty period. In case of loss of the document, a second document will not be issued. In case of loss, repair and replacement of devices and apparatus will be made for a fee.
- This device is a Waste Electrical and Electronic Device according to the directives applied in Europe 2002/96/EC. (WEEE) Before scrapping or throwing away this device, you must prevent its environmental negative consequences for the environment and human health. Otherwise it would be inappropriate waste. This symbol on the product is intended to warn that the product should not be treated as household waste and should be delivered to electrical and electronic waste collection points. Disposal of the product must be done in accordance with local environmental regulations. You can obtain detailed information from authorized units on how to destroy, reuse and recycle the product.

Manufacturer's

Title: EMS KONTROL ELEKTRONİK VE MAKİNE SAN. VE TİC. A.Ş.

Address: Halkapınar Mah. 1376 Sokak Boran Plaza No:1/L Konak / İzmir-TÜRKİYE
Telephone: 0 (232) 431 2121
E-Mail: info@emskontrol.com

Company Stamp:

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Halkapınar Mahallesi 1376 Sok. Boran Plaza
No:1/L Konak / İZMİR
EĞE V.D. 134 104 2628
Mersis No 033410446280001

Product's

Type: Panel Type Mushroom Farm Control Device
Brand: EMS Kontrol
Model: KC-720
Warranty Duration: 2 Years
Maximum Repair Time: 20 Days
Banderol and Serial Number:



Vendor Company

Title:
Address:
Telephone:..... Faks:.....
E-Mail:.....
Invoice Date and Number:.....
Delivery Date and Place:.....
Signature of Authorised Person:.....
Company Stamp:

STAMP

Product's

Type: Panel Type Mushroom Farm Control Device
Brand: EMS KONTROL
Model: KC-720

EMS Kontrol reserves the right to make changes and improvements to the product specifications and user manual.

*For all changes, please visit emskontrol.com.



www.emskontrol.com