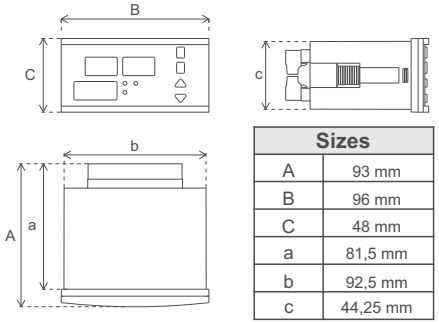
ems kontrol

PANEL TYPE TEMPERATURE HUMIDITY AND CARBON DIOXIDE CONTROL DEVICE

KR-751
USER MANUAL



Sizes	
A	93 mm
B	96 mm
C	48 mm
a	81,5 mm
b	92,5 mm
c	44,25 mm

WHAT IS IT?
The panel-type temperature, humidity and carbon dioxide control device allows you to precisely measure temperature, relative humidiy and carbon dioxide levels and control your connected systems within desired ranges.

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.

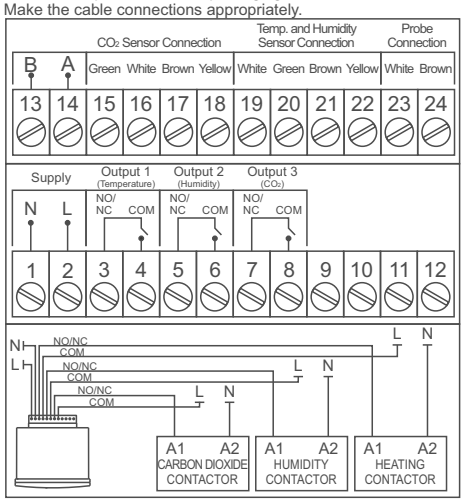
GENERAL FEATURES
Accurate and Precise Measuring, 3 Relay Outputs, Durable and Handy Design, Long Operating Life, Cleanable Filter, Panel Type Mounting, Adjustable Relay Sensitivity

TECHNICAL DATA
Product Name . . . . . Panel Type Temperature, Humidity and Carbon Dioxide Control Device
Power Supply . . . . . 220 V AC
Output. . . . . Relay (3*5A)
Measurement Range (Temperature) . . . . . -40...+80 °C
Sensitivity (Temperature). . . . . ± 0,1 °C
Accuracy (Temperature). . . . . ± 0,3 °C
Measurement Range (Humidity) . . . . . 0-100 % RH
Sensitivity (Humidity) . . . . . ±1.% RH
Accuracy (Humidity). . . . . ±3.% RH
Measurement Range (CO_2) . . . . . 0-10.000 ppm
Sensitivity (CO_2) . . . . . ± 10 ppm
Accuracy (CO_2) . . . . . ± 50 ppm + %2
Operating Temperature . . . . . -10...+55 °C
Storage Temperature . . . . . -20...+60 °C

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

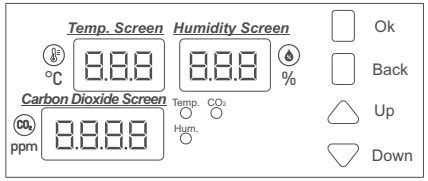
SAFETY PRECAUTIONS
1- Always read the user manual before using the device and its apparatus.
2- Damages caused by opening, breaking or misuse of the plastic parts of the device and its apparatus are considered out of warranty.
3- Keep the device and its apparatus away from external influences such as liquid, high dust, high temperature, etc. and protect them.
4- Do not expose the device cables to crushing, pinching, or excessive 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, dropping the device, 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 the cable connections appropriately.



3- Place the product in the appropriate location on the panel.
4- After power is supplied to the product, the word "OPEN" will appear on the screen for 30 seconds. The measurement process will then begin. To obtain accurate measurement values, it is recommended that the product remain in the environment for at least 5 minutes.
5- It is recommended to use shielded cable as the communication cable to prevent communication signals from being affected by external factors.
6- Since the communication cable will create resistance, check the measurement values again after installing the cable.

MAIN SCREEN



Temperature Control Relay LED
Humidity Control Relay LED
CO_2 Control Relay LED

Ok - Enter / Confirmation Key
Back - Back Key
Up- Up Arrow Key
Down- Down Arrow Key

STARTUP SCREEN

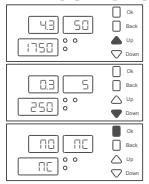
When power is supplied, all screen LEDs light up for 15 seconds. The carbon dioxide sensor is allowed to warm up. **OPEN** appears on the screen for 15 seconds. The device then switches to the normal operating screen and the carbon dioxide data appears on the screen.

SET, HYSTERESIS VALUE, AND RELAY POSITIONS

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

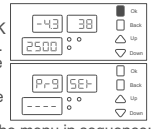
holding down the "Down" button displays the **HYSTERESIS** values,

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.

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. Press the OK button to make a selection. The Back button returns to the main menu.

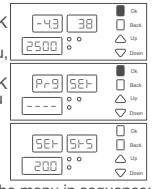


The following program options are available in the menu in sequence;

SEt **Set Settings Menu**
↓
HiS **Hysteresis Settings Menu**
↓
rLY **Relay Settings Menu**
↓ ↳ rZn **Time Settings Menu**
rL9 **Relay Delay Settings Menu**
↓
tSr **Sensor Response Time Settings Menu**
↓
SEn **Sensor Settings Menu**
↓
CAL **Calibration Menu**
↓
rSt **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.

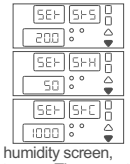
When the menu you want to enter is displayed on the screen, press and hold the OK button for 3 seconds to enter that menu. You can navigate between menu options using the arrow keys. Press the OK button to make a selection. Press the Back button to return to the main menu.

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. Press the OK button to make a selection. You can return to the main menu using the Back button.



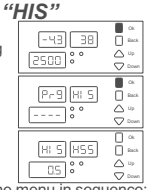
The following program options are available in the menu in sequence;

StS **Temperature Set Value**
↓
StH **Humidity Set Value**
↓
StC **Carbon Dioxide Set Value**



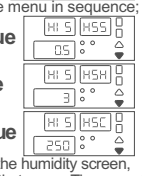
When the menu you want to enter is displayed on the humidity screen, press and hold the OK button for 3 seconds to enter that menu. The current value can be increased or decreased using the arrow keys, or the mode can be changed if available. Press the OK button to make a selection. You can return to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



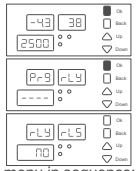
The following program options are available in the menu in sequence;

HSS **Temperature Hysteresis Value**
↓
HSH **Humidity Hysteresis Value**
↓
HSC **Carbon Dioxide Hysteresis Value**



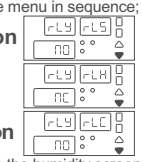
When the menu you want to enter is displayed on the humidity screen, holding down the OK button for 3 seconds will enter that menu. The current value can be increased or decreased using the directional buttons, or the mode can be changed if available. Press the OK button to make a selection. The Back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

3- 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. Press the OK button to make a selection. The Back button can be used to return to the main menu.



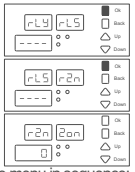
The following program options are available in the menu in sequence;

rLS **Temperature Relay Position**
↓
rLH **Humidity Relay Position**
↓
rLC **Carbon Dioxide Relay Position**



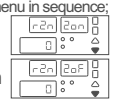
When the menu you want to enter is displayed on the humidity screen, holding down the OK button for 3 seconds will enter that menu. The current value can be increased or decreased using the direction keys, or the mode can be changed if available. Press the OK button to make a selection. You can return to the previous menu using the Back button.
Selection range: NO // NC // on // oFF // rZn
• "rZn" is the time setting menu. Press the Set button to enter the time setting menu.
• "NO" (Normally Open) opens the contact below the set value and closes the contact above the set value.
• "NC" (Normally Close) closes the contact below the set value and opens the contact above the set value.

3.1- 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 OK button to make a selection. Press the Back button to return to the main menu.

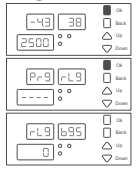


The following program options are available in the menu in sequence;

Zon **Time Setting Open Duration**
↓
ZoF **Time Setting Closed Duration**



4- RELAY DELAY SETTING MENU "rL9"
While in the main menu, press and hold the arrow key for 5 seconds to enter programming mode. The fourth program option that appears, when entering the programming menu is the "rL9" relay delay 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 OK button to make a selection. Press the Back button to return to the main menu.



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

b9S **Temperature Relay Start Delay**

↓

F9S **Temperature Relay End Delay**

↓

b9H **Humidity Relay Start Delay**

↓

F9H **Humidity Relay End Delay**

↓

b9C **Carbon Dioxide Relay Start Delay**

↓

F9C **Carbon Dioxide Relay End Delay**

When the menu you want to enter appears on the 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 OK button to make a selection. Press the Back button to return to the previous menu.

5- 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 fifth 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 OK button to make a selection. Press the Back button to return to the main menu.

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

tSS **Temperature Sensor Response Time Level**

↓

tSH **Humidity Sensor Response Time Level**

↓

tSC **Carbon Dioxide Sensor Response Time Level**

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 OK button to make a selection. Press the Back button to return to the previous menu.

6- SENSOR SETTINGS MENU "SEn"

When in the main menu, holding down the OK button for 5 seconds will enter programming mode. The sixth 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. Press the OK button to make a selection. You can return to the main menu with the back button.

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

tCn **Control Temperature Setting Menu**

↳ Ort ***Ort:*** *Ambient Temperature*

↓ Prb ***Prb:*** *Probe Temperature*

ntC **NTC Sensor Setting Menu**

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 OK button to make a selection. Press the Back button to return to the previous menu.

7- CALIBRATION SETTINGS MENU "CAL"

When in the main menu, press and hold the OK button for 5 seconds to enter programming mode. The seventh 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. Press the OK button to make a selection. The back button can be used to return to the main menu.

CAS **Temperature Calibration**

The sensor settings menu works if "Prb" is active at the control temperature.

↓

CAC **Carbon Dioxide Calibration**

Hold down the Enter key for 10 seconds to start calibration. After 5 seconds, the system returns to the main menu. While the system is running on the main screen, the countdown continues on the carbon dioxide screen. The calibration time is 180 seconds. Once calibration is complete, the system continues normally. The relay does not activate during calibration.

Automatic Calibration: *The device has automatic calibration. Automatic calibration starts when the sensor drops below 360 ppm. When automatic calibration starts, the AUC message flashes three times on the screen, and then the sensor calibrates itself to 400 ppm.*

PROGRAMS

"SEt" Set Settings Menu		Default	Range / Option
"StS"	Temperature Set Value	20 °C	(-40)-(+60)°C
"StH"	Humidity Set Value	% 50	0-100 %
"StC"	Carbon Dioxide Set Value	1.000 ppm	0-5.000 / 0-10.000ppm

"HIS" Hysteresis Settings Menu		Default	Range / Option
"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

"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
"on" Manual Control On
"oFF" Manual Control Off
"rZn" Time Settings (Press the Set button to enter the time settings menu.)

"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

"rLG" Relay Delay Setting Menu		Default	Range / Option
"bGS"	Temperature Relay Start Delay	0 second	0-120 second
"FGS"	Temperature Relay End Delay	0 second	0-120 second
"bGH"	Humidity Relay Start Delay	0 second	0-120 second
"FGH"	Humidity Relay End Delay	0 second	0-120 second
"bGC"	Carbon Dioxide Relay Start Delay	0 second	0-120 second
"FGC"	Carbon Dioxide Relay End Delay	0 second	0-120 second

"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

"CAL" Calibration Settings Menu		Default	Range / Option
"CAS"	Calibration Settings Menu	0.0	(-5.0)-(+5.0)°C

USER MANUAL
DECLARATION CONFORMITY

Headquarters and place of production, Mersinli Mah. 1201/2 Sk. Temsil Plaza No:2/F 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.

Brand: EMS KONTROL
Product Name: KR- 751
Product Type: Panel Type Temperature, Humidity and Carbon Dioxide Control Device
Compatible Directives:
Electromagnetic Compatibility Directive
2014/30/EU (EMC EN 61000-6-3: 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 the entire system with these directives.

This declaration is not valid if the product is modified without our approval.

EMS KONTROL ELEKTRONİK
VE MAKİNE SAN. TİC. A.Ş.
Mersinli Mahallesi 1201/2 Sk. Temsil Plaza
No:2/F Konak / İ Z M İ R
EGE V.D. 334 104 4628
Mersis No: 0334104452800001

CE RED

WARRANTY TERMS

1- The warranty period of the device and accessories starts from the invoice date and is guaranteed for 2 years against manufacturing defects.
2- Device and accessories are delivered to the customer in working condition in our company. On-site commissioning is subject to service fee.
3- The repair of the device and accessories 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 shall be borne by 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.
4- Maintenance of device and accessories is done in our company. Shipping and transportation costs of the device and accessories to and from our company for maintenance shall be borne by the customer
5- In case of malfunction of the device and accessories whose warranty period continues, whether the malfunction is caused by the fault of the customer or the manufacturer is tested in our company and reported with the report to be issued by our company.
6- In case of detection of manufacturer-induced faults of the device and accessories whose warranty period continues, the customer may request a replacement or may request that the repair costs of the device and accessories be fully covered by the manufacturer, provided that it does not exceed the product price.
7- In the event that the faults of the device and accessories whose warranty period continues are determined to be caused by the customer, all costs shall be borne by the customer.
8- If the customer does not indicate that he/she is aware of the defects in the device and accessories 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.
9- Failures arising from the use of device and accessories contrary to the points in the user manual are not covered by the warranty.
10- Device and accessories are not covered by the warranty if they are dropped, broken or scratched by the customer.
11- Damages caused by the use of device and accessories of other brands and models without the approval of the manufacturer are not covered by the warranty.
12- Errors caused by rusting, oxidation and liquid contact due to working in dusty / acidic / humid environments are not covered by the warranty.
13- Damages that may occur during transportation of device and accessories are not covered by the warranty. If the customer wishes, he/she can have transportation insurance.
14- Damages caused by mains voltage / faulty electrical installation are not covered by the warranty.
15- Device and accessories are not covered by the warranty in case of malfunctions caused by force majeure such as fire, flood, earthquake, etc.
16- All parts of the device and accessories, including all parts, are covered by our company's warranty.
17-If the device and accessories 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, 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. If the malfunction of the goods is not resolved within 20 business days, the manufacturer-manufacturer or importer; until the repair of the goods is completed, another product with similar characteristics must be allocated to the use of the consumer.
18- Despite the consumer's right to repair 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,
-If 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 or a price reduction at the rate of defect.
19-Customer may file complaints and objections to consumer courts or consumer arbitration committees.
20-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 device and accessories 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 potential 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: Mersinli Mah. 1201/2 Sokak Temsil Plaza No:2/F Konak / İzmir-TÜRKİYE
Telephone: 0 (232) 431 2121
E-Mail: info@emskontrol.com

Company Stamp:

STAMP

EMS KONTROL ELEKTRONİK
VE MAKİNE SAN. TİC. A.Ş.
Mersinli Mahallesi 1201/2 Sk. Temsil Plaza
No:2/F Konak / İ Z M İ R
EGE V.D. 334 104 4628
Mersis No: 0334104452800001

Product's

Type: Panel Type Temperature, Humidity and Carbon Dioxide Control Device
Brand: Ems Kontrol
Model: KR-751
Warranty Duration: 2 Years
Maximum Repair Time: 20 Days
Banderol and Serial Number:

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

STAMP

Product's
Type: Panel Type Temperature, Humidity and Carbon Dioxide Control Device
Brand: Ems Kontrol
Model: KR-751

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

*For all changes, please visit emskontrol.com.

ems kontrol

www.emskontrol.com