



pCO²

MICROPROCESSOR REGULATION USER MANUAL

**THIS MANUAL REFERS TO THE FOLLOWING UNITS:
AIR CONDITIONERS FOR TELECOMMUNICATIONS: K and R SERIES**

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1 TYPICAL USE OF THE BUTTONS IN STANDARD APPLICATIONS

BUTTON	NAME	FUNCTION
	Menù button	displays the values measured by the feelers
	Maintenance button	displays the values relating to the maintenance of the devices (working hours and operating hour counter reset);
	Printer button	accesses the group of screens for printer management (where included);
	I/O button	displays the status of inputs and outputs (both digital and analogue);
	Clock button	allows the display/programming of the clock (if present);
	Set button	allows the Set-Point setting.
	Programming button	allows the various operating parameters to be set (safety parameters, thresholds)
	Info button	displays the version of the application program and other information;.
	Orange button	allow to modify the user terminal used.

The LED next to each button are illuminated when the relative function is active

BUTTON	NAME	FUNCTION
	On-off button	switches the unit on or off. The green LED that lights up in the button shows if the machine is turned on;
	Alarm button	used for displaying or manually resetting the alarms and resiliencing the buzzer. If the button lights up (red), at least one alarm has been detected;
	Up/downwards arrow button	allows to manage the currently displayed screen and to set the values of the control parameters
	Enter button	to confirm the set data. The button is constantly back-lit (yellow) indicating the presence of mains power..

The display pCOT foresees on the façade a small tray that opens with a maximum inclination of 150°. With closed small tray it is only accessed the keys on-off, alarm, arrow up/down and enter. To access the remaining keys is owed to open the small tray. When the small tray is close are visible only the three LEDs that retroilluminate the keys on-off, alarm and enter. The other LEDs are only visible to open the small tray.

2 CONFIGURATION OF THE UNIT

2.1 LOOP MENU: READING OF VALUES SIGNALLED BY THE FEELERS (K & R SERIES)

You access this loop of masks after having pressed the Menu key. In this loop of masks the values are visualized and read by the existing feelers. To this intention we remember that the temperature feeler for the environment is the only feeler to be always present.

Pressing once the key Menu ignites the corresponding led and on the display the mask that points out: - the value of the temperature environment; is visualized.

- the value of the damp environment (the indication of damp is different only from zero if the probe of damp is present);
- the time and the actual date (if it foresees the card clock);
- the state of the unit (ON-OFF).

By Pressing the keys Increase and Decrease it is possible to flow through the loop of masks of menu. Following this the loop of the masks of menu is brought

12:14	08/07/2001	It displays the time and date
Temperature	20.0BC °	It displays the values of temperature and humidity of the ambiance.
Humidity	50.0ur%°	
* UNIT OFF *		It displays the units status

Supply air	00.0°	Supply air temperature/humidity value
Supply humid.	00.0%°	
Ext.air	00.0BC °	Fresh air/humidity temperature values (with presence of feelers)
Ext.humid.	00.0ur%°	

Steam prod. #1	00.0 Kg/h	Steam production during humidification request
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2.2 MANTAINANCE LOOP: READING OF COMPONENTS WORKING HOURS (K & R SERIES)

You access this loop of masks after having pressed the **MANTAINANCE** key.. In this loop of masks the functioning hours are visualised for the main components of the air conditioner (fans, compressors....)

Pressing once the maintenance key the relative leds switch on and the masks indicating the functionment hours of the fans and compressors is visualised.

Pressing the increase and decrease keys it is possible to scroll throug the mantainance mask loop. The following is the mantainance mask loop.

ba Time counter		It display the functioning hours of the unit (by referring to the main fan) and of the compressor(s).
Unit	00000	
Compressor 1	00000	
Compressor 2	00000	

bb Time Counter		It display the functioning hours of the humidifier
Humidifier	00000	It display the functioning hours of the heaters # 1
Heater 1	00000	It display the functioning hours of the heaters # 2
Heater 2	00000	

bc Insert.counter.		Number of compressors # 1 starting ups (if present)
Compressor 1	00000	Number of compressors # 2 starting ups (if present)
Compressor 2	00000	How to reset: the enter key will move the cursor; the arrow will change the parameter into "yes" (after a few seconds, it will automatically go back to "no").
Reset #1No	#2No	

bd fan		It display the functioning hours of the fan
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Working hours	00000
Threshold	00000
Reset	No

Mask to set the Threshold for the functioning alarm
Possibility to reset it as described before.

be Compressor 1	
Working hours	00000
Threshold	00000
Reset	No

Functioning hours compressor #1 (if present)
Threshold for indicative alarm
How to reset: the enter key will move the cursor; the arrow will change the parameter into "yes" (after a few seconds, it will automatically go back to "no").

bf Compressor 2	
Working hours	00000
Threshold	00000
Reset	No

Functioning hours compressor #2 (if present)
Threshold for indicative alarm
How to reset: the enter key will move the cursor; the arrow will change the parameter into "yes" (after a few seconds, it will automatically go back to "no").

bg Humidifier	
Working hours	00000
Threshold	00000
Reset	No

Functioning hours humidifier (if present)
Threshold for indicative alarm
How to reset: the enter key will move the cursor; the arrow will change the parameter into "yes" (after a few seconds, it will automatically go back to "no").

bh Heater 1	
Working hours	00000
Threshold	00000
Reset	No

Functioning hours heater #1 (if present)
Threshold for indicative alarm
How to reset: the enter key will move the cursor; the arrow will change the parameter into "yes" (after a few seconds, it will automatically go back to "no").

bi Heater 2	
Working hours	00000
Threshold	00000
Reset	No

Functioning hours heater #2 (if present)
Threshold for indicative alarm
How to reset: the enter key will move the cursor; the arrow will change the parameter into "yes" (after a few seconds, it will automatically go back to "no").

NOTE

To reset the hours of operation of the components, It is necessary to press ENTER up to bring the cursor under the writing N. So to perform the reset it is necessary to press the increase or decrease key up to when the writing Y appears. At this point release the key and wait for the writing N to appears.

Planning 0000 as threshold value for the times of operation the operation alarm will never be had.

2.3 LOOP CLOCK: SETTING OF THE OPERATION (K & R SERIES)

You access this loop of masks after having pressed the Clock key. In this loop of masks it is possible to visualize and to plan the current time and the current date.

Pressing once the key clock ignites the corresponding led and on the display the mask is visualized for the visualization of the date and the current time.

By pressing the Increase and Decrease key it is possible to flow through the loop of the masks related to the clock. What follows is the loop of the masks of the clock.

ea Clock & Date	
dd/mm/yy	
00/00/00	
hh:mm	00:00

Setting of the date
Setting of the time

eb TIME ZONE	
Insert the password	
for daily time zone	0000

Mask to insert the password to acces to the delay time zone configuration.
(password 0123)

Ec TIME ZONE
Daily Time Zone
Enabled N

Mask to enable the daily time zone.

ed Temperature
Daily Time Zone 1
Setpoint 00.0°C
End Time 00:00

Mask to set the temperature set point of the period 1
Mask to set the end time for the period 1

eh Humidity
Daily Time Zone 1
Setpoint 00.0°C
End Time 00.00

Mask to set the humidity set point of the period 1
Mask to set the end time for the period 1

2.4 LOOP SET: SET POINTS REGULATION (K & R SERIES)

You access this loop of masks after having pressed the set key. In this loop of masks it is possible to plan the set-point for the regulation of the temperature and humidity in the environment, brought air, over/under pressure in the environment,

Pressing once the set key Set ignites the corresponding led and on the display the mask is visualized for the formulation of the set-point of temperature.

By pressing the increase and decrease keys it is possible to flow through the loops of the set masks.

fa Set Point --
Temp. 23.0 °C

Mask for introduction of the set temperature

fb Humidifier -
Humidity 55.0 ur%
Production 12.5 kg/h

Mask to set the humidity set-point and the steam production.

fd Humidification
Humidity band 10.0 UR%
Low humidity 30.0 UR%
High humidity 30.0 UR%

Mask to assign the range of regulation for the humidity and the alarm values (tied up to the minimum and maximum value admitted of humidity) of high and low humidity.

Mask to set the functionemnt of the humidifier

2.5 LOOP PROGRAMMATION; OPERATION PROGRAM SETTING (K & R SERIES)

You access this loop of masks after having pressed the Prog key. This loop of masks allows the user to personalize the regulation in upon his own demands.

Pressing once the down key arrow a mask appears for the insertion of the password for the access to the user planning masks. After having inserted the correct password for the user (0123 is the default) it is possible to flow the loop of the user planning masks by pressing the increase and decrease keys. The following is the loop of the masks for the user planning..

ga
Insert the user password
0000

This function is to allow introducing the user password

gb Temperature prop.Band 00.0°C Type Prop. Integr.Time 000sec	Mask to configure the temeparture proportional band and to set the type of temperature control (we can select proportion or Proportion+Integar!) Mask the set the integration time (if selected P+I)
gc temperature Alarm's offset High Temp.: 05.0 °C Low Temp.: 05.0 °C	Mask to determinate of the alarm thresholds for low and high room temperature. Thresholds are connected with the temperature set point (ex. By introduction 5°C for high and 5°C for low temperature, with a 20°C introduction, the high temperature alarm will occur at 25°C, while the low temperature alarm will occur at 15°C).
gd Temp.outlet air Low Temp. 00.0°C High Temp. 00.0°C	Mask to set the limit for lowest supply air temperature. Mask to set the limit for highest supply air temperature.
ge Water Temperature Alarm Threshold High Temp. 00.0°C Low Temp. 00.0°C	Mask to set the threshold valkue for for low water temperature. Mask to set the thres hold valkue for for low water temperature.
gf Use humidification plus cooling ?	Mask which allows the abilitation to the symulatneous use of the functions of humiditifcation and chilling.
Gh ID User 0000000000 History enabled SI/NO	Unit serial number introduction (useful to program an ordinary or extraordinary maintenance)
gi CALIBRATION Temperature 0.0βC External Air 0.0βC Pressure 0.0bar	Mask to calibrate the room temeparture sensor Mask to calibrate the external air temeparture sensor Mask to calibrate the room pressure sensor
gj CALIBRATION Humidity 0.0U% Outlet Water 0.0°C Outlet Air 0.0°C	Mask to calibrate the room humidity sensor Mask to calibrate the outlet water temeparture sensor Mask to calibrate the outlrt airtemeparture sensor
gl Insert the new user password 0000	Mask to insert the new user password Note: the original password will still be valid .

3 ALARM MASKS MEANING (K & R SERIES)

Each alarm situation is signaled by:

- Activation of the buzzer incorporated in the user terminal;
- Lightening of the red led on the front of the user terminal;
- Visualization of the words "AL" on the right hand side angle of the display.

Each alarm mask is identified with a code of two characters situated in the higher left hand side angle of the display, so to ease the recognition of the mask itself.

Pressing the alarm key the message corresponding to the last activated alarm s visualised. With the increase and decrease keys it is possible to scroll through all the alarm signals memorized. Pressing once more the alarm key the memorized alarm signals are cancelled.

If the alarm signals are cancelled without having removed the alarm causes, the alarm signal will immediately reactivate itself.

All alarms are delayed by one minute at the activation of the unit, with the exception of the high/low temperature and humidity alarms and also the broken feeler alarm are delayed by the user for a settable time.

XA Compressor 1 main alarm	Alarm for Compressor 1 high pressure threshold reaching. This is just an indication alarm. It does not compromise the units good operation. To re-activate the unit manually the cause must be individuated
XB Compressor 2 main alarm	Alarm for Compressor 2 high pressure threshold reaching. This is just an indication alarm. It does not compromise the units good operation. To re-activate the unit manually the cause must be individuated
XC Pressostat low pressure 1	Alarm for the fan functioning hour threshold reaching. This is just an indicative alarm. It does not compromise the unit good operation. To delete this alarm reset the hours (see mantainance as described before). With the Tecnaïr default values this alarm does not appear.
XD Pressostat low pressure 2	Alarm for the fan functioning hour threshold reaching. This is just an indicative alarm. It does not compromise the unit good operation. To delete this alarm reset the hours (see mantainance as described before). With the Tecnaïr default values this alarm does not appear.
XE ** SERIOUS ALARM ** Air flow ** UNIT OFF **	Alarm for missing air flow. This is a serious alarm that stop the unit.
** SERIOUS ALARM ** Fans overload ** UNIT OFF **	Alarm for fans overload. It stops the unit.
XF Alarm fan 1 overload	Thermic alarm for the intervention of fan 1
XG Alarm fan 2 overload	Thermic alarm for the intervention of fan 2
XJ Heaters overload	Thermostat electric heater intervention alarm. The thermostat intervenes at 70°C and is with automatic re-arm. The unit continues working.
XK ** SERIOUS ALARM ** Smoke-Fire-Flooding ** UNIT OFF **	Smoke- fire- flooding alarm. The unit shuts down.
XL Clogged filter	Clogged filter alarm. Needs to be substituted.
XM High room temeparture	Alarm for high ambient temperature which is reached once the set point is reached and passed and after the set time. Does not shut down the unit. If the air condiitoner is in local network this alarm makes the unit switch to stand by mode.
XN Low ambient temperature	Alarm for low ambient temperature which is reached once the set point is reached and passed and after the set time. Does not shut down the unit. If the air condiitoner is in local network this alarm makes the unit switch to stand by mode.
XO Operation hours compressor 1	Alarm which indicates the reaching of the limit of working hours for compressor 1. it is an only signalling alarm and therefore the unti continues working. To eleiminate the alarm reset the hours (see mantainance as described before) With the Tecnaïr default this alarm does not appear.
XP	Alarm which indicates the reaching of the limit of working hours for compressor 2 it

Operation hours compressor 2	is an only signalling alarm and therefore the unit continues working. To eliminate the alarm reset the hours (see maintenance as described before) With the Tecnaïr default this alarm does not appear.
XQ Operation hours Fan	Alarm which indicates the reaching of the limit of hours for the functioning of the fans. It is an only signalling alarm and therefore the unit continues working. To eliminate the problem reset the hours.
XR Operation hours Heater 1	Alarm which indicates the reaching of the limit of hours for the functioning of the electric heater 1. It is an only signalling alarm and therefore the unit continues working. To eliminate the problem reset the hours.
XS Operation hours Heater 2	Alarm which indicates the reaching of the limit of hours for the functioning of the electric heater 2. It is an only signalling alarm and therefore the unit continues working. To eliminate the problem reset the hours.
XT Operation hours Humidifier	Alarm which indicates the reaching of the limit of hours for the functioning of the humidifier. It is an only signalling alarm and therefore the unit continues working. To eliminate the problem reset the hours.
XU High temp water out	Alarm for high water outlet temperature.
XV Low temp water out	Alarm for low water outlet temperature
XW SERIOUS ALARM ** Room temperature feeler broken or disconnected ** UNIT OFF **	Feeler alarm for ambient temperature broken or disconnected. It stops the unit to avoid operating improperly THIS IS AN ALARM WHICH SHUTS THE UNIT OFF
XX Supply air temperature feeler broken or disconnected	Feeler alarm for supply air temperature broken or disconnected.
XY Water out.temp.probe Faulty/Disconnected	Outlet water temperature feeler broken or disconnected
XZ Ext.air temp.probe Faulty/Disconnected	Temperature feeler alarm broken or disconnected
YA Ambient humid.probe Faulty/Disconnected	Internal humidity feeler alarm broken or disconnected
Alarm E06	High tension alarm humidifier 1 or 2. The unit continues working.

Humidifier High current	
Alarm E09 Humidifier Lack of water	Water loss alarm humidifier 1 or 2. The unit continues working.
Alarm E10 Humidifier Lack of current	Tension loss alarm humidifier 1 or 2. The unit continues working.
Alarm E12 Humidifier Low amb.humidity	Low humidity environment alarm. The unit continues working. (see set mask branch).
Alarm E11 Humidifier High amb.humidity	Alarm for high room humidity
Unit 1 Unit 4 Unit 2 Unit 5 Unit 3 Unit 6 Faulty/Disconnected	Alarm that indicates that one unit of the local network is faulty or disconnected. (alarm showed only on the master unit).
YD *** ALARM *** UNIT'S ALARM N°	Mask the indicate on the master unit that one of the unit connected in local network has an alarm (this mask is showed only on the master unit).
YE Low outlet air temp.	Low temperature alarm for the supply air. The unit continues working but this alarm shuts down the cold component.
YK high outlet air temp	High temperature alarm for the outlet air. The unit continues working but this alarm shuts down the cold component.
No active alarms	No active alarms; This mask appears by pressing the alarm key when no alarm is active.

