ATTENTION *Firmware V3.1.0*

Read carefully these instructions before installing and using this device and keep them for future reference. Attention to installation and electrical wiring. Use this device only as described in this document and never use itself as a security device. The device must be disposed of in accordance with local standards for the collection of electrical and electronic equipment.

DESCRIPTION

The AG is a milk tank controller, which controls temperatures with an NTC / PTC sensor. It has 3 digits of temperature display with an accuracy of 0.5 °C and 4 keys. It has a 16A 250VAC relay for the compressor and a 10A 250VAC relay for the agitator. It has a buzzer that activates in case of alarm. The device is mounted on a panel front with a 29x71mm hole and is restrained with two plastic side brackets. Through the serial input it can be connected to a network either through Cloud IoT on the CORTEX platform, or through a local computer in the CAMIN program for complete local recording and monitoring of the device.

INDICATIONS AND BUTTONS FUNCTION

Display indications	
❄	Compressor ON
⟲	agitator ON
⚠	alarm ON
🔧	malfunction ON

Keyboard	
↵	enter/exit the parameter's menu enter a new parameter
SET	display the parameter's value enter parameter's value manual agitator
T2	up arrow
⏻	down arrow mute buzzer ON/OFF device (check below)

For more indications regarding the alarms please see the alarm's table at page 3.

ADJUSTING TEMPERATURE – SET POINT

1. Press ↵ to display the first parameter **SPo**.
2. Press SET to display its value. With T2 or ⏻ change **SPo** value.
3. Press SET to save the new value. The device is working properly with the new adjustment.

INDUSTRIAL FACTORY SETTINGS

1. Press ↵ to display **SPo**. By pressing ⏻ the parameter **Cod** is displayed.
2. Press SET to display its value and press T2 to enter the value **31**. Press SET to store the value to parameter **Cod.**
3. Press ↵ again to exit the parameter menu, 'YES' is displayed on the screen. All appropriate factory settings are now stored in the device.

⏻ ON/OFF DEVICE

To activate or deactivate the device, press for 3 seconds ⏻

MANUAL AGITATION

Press for 3 seconds SET to start the agitator. It remains ON for time equals the parameter "**AGt**", regardless the state of the compressor.

PROGRAMMING A PARAMETER

ATTENTION*: to gain full access to the parameter's menu, the 5th parameter* ***Cod*** *must be adjusted to* ***22*** *(see parameter table next page)*

1. Press ↵ to enter the parameter menu.
2. Choose the parameter you want to adjust by pressing ⏻ or T2 and press SET to display its value.
3. Press ⏻ or T2 to change its value and then press SET to store the new value.
4. Press ↵ to exit the parameter menu.

TECHNICAL SPECIFICATIONS

Model **AG** power supply: 230VAC 50/60Hz / Maximum power consumption: 3W. Model **AGW** switching power supply 100-264VAC 50/60Hz 5W.
It is recommended using a power supply safety fuse: 0.5A (not included)
Room temperature sensor NTC 10K 1% 25°C IP68 with temperature range -37÷+110°C (-34÷+230°F) (or PTC 1K 25ºC with temperature range -50÷+110°C (-58÷+230°F) not included) / Accuracy: ±0.5°C
Alarm buzzer / Serial input with 5pin connector
Compressor relay 16A res. 250VAC normally open contact / Agitator relay 10A res. 250VAC which is a SPDT relay / Max current load 16A
Connections: cable cross section 2.5 mm² for all relays / cable cross section from 0.25 to 1.0 mm² for the sensors
Connections with terminal blocks 18A using cable with cable cross section up to 2.5 mm² / It is recommended using a torque wrench with maximum torque 0.4Nm
Operating temperature: -15÷+55°C / Storage temperature: -20÷+80°C
Dimensions 28x70x60mm / The device is mounted on a panel hole 29x71mm and it is restrained with plastic side brackets / Protection IP65 front
Firmware: V3.1.0

SERIAL INPUT

AG connects via serial input to the cloud and the online CORTEX platform or to a local computer with the CAMIN program or to the memory key or to the Mini Logger or to any Modbus network.

- Mobile application for android and iOS, Cloud service and CORTEX platform: connection to the cloud and the CORTEX platform for monitoring - recording and managing the thermostat from your mobile, tablet or any computer, email and mobile notifications in case of an alarm.
- CAMIN program: local connection and monitoring - recording and management of the thermostat through the CAMIN program installed on a local computer.

AGITATION CYCLE

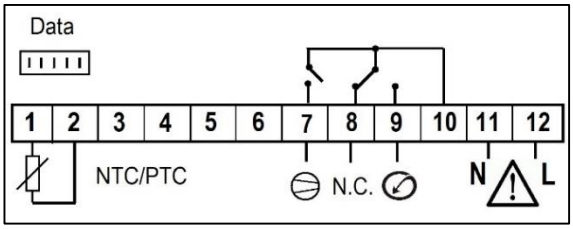
The function of the agitator is set by the parameter "**AGC**" as follows:

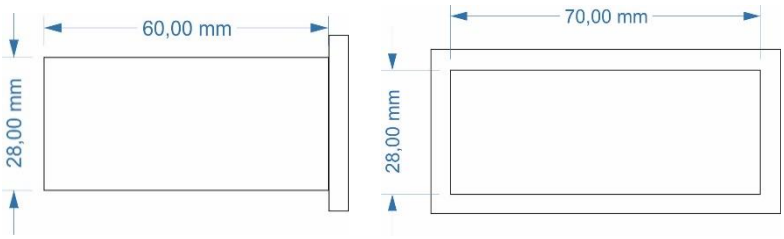
• **AGC = 0,** the agitator always operates in parallel with the compressor. The agitation cycle starts with the OFF of the compressor, where the agitator remains ON for a time equal to the parameter "**AGt**" (agitator duration) and OFF for a time equal to the parameter "**iAG**".
• **AGC = 1**, the agitator operates independently of the compressor. The ON - OFF agitation cycle is based on the parameters "**AGt**" (agitator time) and "**iAG**" (agitator stop).

ELECTRICAL DIAGRAM - DIMENSIONS

***ATTENTION**: according to safety standards, the device must be properly positioned and protected from any contact with electrical parts. The device must be fastened in such a way that it cannot be removed without the use of tools. Disconnect the main safety switch of the installation before proceeding to any maintenance. Disconnect the power supply of the device before proceeding to any maintenance. Do not place the device near heat sources, equipment containing strong magnets, in areas affected by direct sunlight or rain. Prevent electrostatic discharges and sharp objects from been inserted to the device. Separate signal cables from power supply cables to prevent electromagnetic disorders. Signal cables must never be in the same pipe with the power supply cables. **ATTENTION**: Read carefully the technical specifications and make sure that the working conditions are appropriate. According to safety standards, the device must be fastened in such a way that it cannot be removed without the use of tools*

Dimensions are in mm. The device is mounted on panel hole with cut 29x71mm and restrained with plastic side brackets





PARAMETER TABLE

#		description	min	max	AG	M.M
1	**SPo**	SET POINT: room temperature setting	LSP	HSP	4.0	°C/°F
2	**Cod**	Enter password code Cod = 22 and press to enter the other parameters	0	255	0	-
		ANALOG INPUTS - TEMPERATURE				
3	**diF**	Differential of set point SPo (thermostat delay)	0.1	25.0	2.0	°C/°F
4	**LSP**	Lower setting limit of SPo	-50.0	HSP	-2.0	°C/°F
5	**HSP**	Maximum setting limit of SPo	LSP	+110	8.0	°C/°F
6	**dEC**	Temperature indication as integer or decimal, where 0 = integer / 1 = decimal	0	1	1=decimal	-
7	**Sen**	*Sensor type NTC/PTC* 0 = PTC / 1 = NTC	0	1	1=NTC	-
8	**SE1**	Milk tank sensor offset	-9.9	+15.5	0.0	°C/°F
9	**C_F**	Temperature measurement unit: toggling between °C/°F do not adjust the SPo automatically, it must be changed by the user: 0 = °C / 1 = °F	0	1	0=°C	°C/°F
		ALARMS				
10	**ALo**	lower alarm limit temperature of the milk tank	-50.0	+110	-1.0	°C/°F
11	**AHi**	higher alarm limit temperature of the milk tank	-50.0	+110	+15.0	°C/°F
12	**At2**	*Time delay in activating "AHi" and "ALo" with parallel buzzer operation* This setting does not apply to sensor failure "LF1"	0	99	90	min
		COMPRESSOR				
13	**CP2**	Compressor's minimum time OFF	0	4	3	min
14	**CF3**	*Compressor's operation in case of room's sensor malfunction LF1 and in cooling mode, the compressor operates as follows*: 0 = 40% ON compressor (3 minutes ON, 4 minutes OFF) / 1 = ON constantly the compressor.	0	1	0	-
		AGITATION				
15	**AGC**	agitator configuration where : **0 =** agitator parallel to the compressor, **1 =** independent agitator	0	1	0	-
16	**AGt**	length of agitation cycle	0	255	3	min
17	**iAG**	Interval between agitation cycles	1	120	15	min
		NETWORK - GENERAL SETTINGS				
18	**Add**	Device address on network	0	255	1	-

19	**trE**	Response time of the device on network	5	100	40	msec
20	**bAU**	*Baud rate: 0 = 2400 / 1 = 4800 / 2 = 9600 / 3 = 19200*	0	3	3	-
21	**Pro**	*Cabinet's program (factory settings) is displayed – no access*	-	-	31	-
22	**tPE**	*Unique product number – no access*	-	-	227	-
23	**SrU**	*Milk tank service*: after the end of the selected time, 'SrU' is displayed and informs that the tank needs service. The thermostat continues to operate normally and its functions are not suspended. -01 = disabled function 0 to 150 weeks = remaining time to activate the 'SrU' milk tank service notification. The countdown starts once a new value is stored. Whenever we enter the parameter, the remaining time until the activation of 'SrU' notification is displayed. To deactivate the notification, insert SrU = -1.	-01	150	-01	weeks
24	**UEr**	*Firmware version - no access*	-	-	3.X.X	-

ALARM TABLE

1	**LF1**	temperature sensor malfunction
2	**ALo**	Low milk tank temperature
3	**AHi**	High milk tank temperature
4	**SrU**	room service notification: timer has elapsed and the milk tank needs a service (see parameter 23, SrU)
5	**EEr**	Error in memory RAM: re-enter the SPo (see ADJUSTING TEMPERATURE – SET POINT page 1)

The alarms are automatically deactivated once the cause of the alarm disappears.

Made in Greece.

The device is under two year's guarantee. The guarantee is valid only if the manual instructions have been applied. The control and service of the device must be done by an authorized technician. The guarantee covers only the replacement or the service of the device. KIOUR PC implements a Quality Management System according to EN ISO 9001:2015 Standard with registration number 01013192. KIOUR preserves the right to adjust its products without further notice