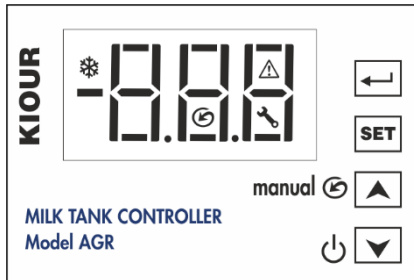


**ATTENTION**

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 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 electronic equipment.

**DESCRIPTION**

**AGR** is a milk tank controller, which controls temperatures in range  $-50^{\circ} \div +99^{\circ} \text{C}$  ( $-58^{\circ} \div +302^{\circ} \text{F}$ ), through a **PTC** sensor. In temperature range  $-19.9^{\circ} \div +99.9^{\circ} \text{C}$ , the accuracy is  $\pm 0,1^{\circ} \text{C}$ . It has **two** relays, one for the **compressor 30A** and one for the agitator (10A). The plastic case of the device is suitable for  $\Omega$  rail with 70mm width. The controller has a serial input and can connect to the **KIOUR CAMIN** modbus network for full monitoring and data logging of the device.

**INDICATIONS AND BUTTONS FUNCTION**

| Indications |                |
|-------------|----------------|
|             | compressor ON  |
|             | agitator ON    |
|             | malfunction ON |

| button     | Operations outside the parameter menu                                     |   |
|------------|---|---|
|            | pressed once  | pressed once  |
|            | enter parameter's menu  | enter parameter's menu  |
|            | temperature scale $^{\circ}\text{C}/^{\circ}\text{F}$ and mute the buzzer | temperature scale $^{\circ}\text{C}/^{\circ}\text{F}$ and mute the buzzer |
|            | -   | -   |
| <b>SET</b> | cancel new value of parameter   | cancel new value of parameter   |

**SWITCHING ON/OFF THE DEVICE**

By pressing **more than 3sec** the button [] we **switch ON or OFF** the device.

**MANUAL AGITATION**

By keeping pressed for 3 sec the [] the agitator is started. It remains ON for time equals the parameter "**AGt**", regardless the state of the compressor.

**PROGRAMMING THE PARAMETERS**

- By pressing [] we **enter or exit** the parameter's menu.
- The first parameter "**SPo**" is displayed and with the [], [] we scroll into the parameters based on the parameter's table below.
- By pressing [**SET**] the value of the parameter is displayed and with the [], [] we adjust the value.
- By pressing [] we **confirm** the new value and the name of the parameter is displayed
- By pressing [**SET**] we **cancel** the new value and the name of the parameter is displayed.

**TECHNICAL SPECIFICATIONS**

Power supply: 230VAC 50/60Hz / Maximum power consumption: 3W  
 It is recommended using a power supply safety fuse 0.5A (not included)  
 Cabinet's temperature sensor PTC 1K 25°C / Accuracy: 0.1°C  
 Relay compressor 250VAC 30A resistive load / Relay agitator 250VAC 10A  
 Operating temperature:  $-15 \div +55^{\circ} \text{C}$  / Storage temperature:  $-20 \div +80^{\circ} \text{C}$   
 The device is mounted in  $\Omega$  rail / Connection with terminal blocks 18A and terminals 6.3mm  
 Serial Input / Firmware : V2.0.0

**SERIAL INPUT**

**AGR** can connect to the **key programmer** or to the data logger **Mini Logger** or to the **KIOUR CAMIN** network or to any **modbus network**.

- Key programmer:** controller's parameter values can be saved or retrieved from the programming key. Plug in the programming key to the controller and press at the same time [**SET**]+[]. The device connects to the key and the message "**Eo**" is displayed. By pressing [] the device downloads the parameters from the key and the message "**ro**" = read O.K. or "**rF**" = read Fail is displayed. By pressing [] the device uploads the parameters to the key and the message "**Yo**" = Write O.K. or "**YF**" = Write Fail is displayed. In case of failure (**rF** or **YF**) reenter the key to the serial input and repeat the procedure from the beginning. The key can connect to all **KIOUR** devices. If you try to read the parameters of a different device, message "**rF**" is displayed. At any time, we can perform the aforesaid operation. After 10sec the key is disconnected.
- CAMIN network:** the controller can connect to the **CAMIN** network via an interface **NET-INS-485**. **CAMIN** is a PC software application designed to collect information, watch and fully control a net of **KIOUR** devices while sending SMS and email in case of an alarm. The maximum length of the net can be 1000 meters.

**AGITATION CYCLE**

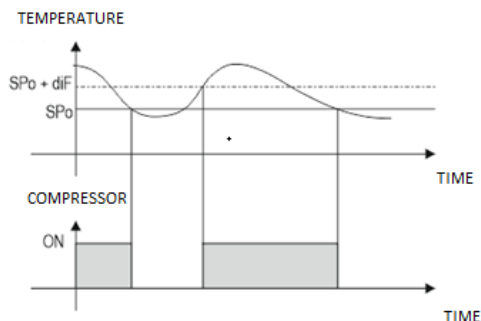
The function of the agitator can be selected by means of the "**AGC**" parameter:

- AGC = 0**, the agitator operates when the compressor is running and continues to do so for a length of time - which can be set in parameter "**AGt**" (duration of agitation cycle)- even after the compressor stops. If the compressor does not run longer than the time set in parameter "**iAG**" (interval between agitation cycles), the agitator will start to function anyway for the length of time set in parameter "**AGt**".
- AGC = 1**, the agitator is switched ON and OFF according to the "**iAG**" parameter independently from the state of the compressor. It operates for the time set in the "**AGt**" parameter.

**MANUAL AGITATION**

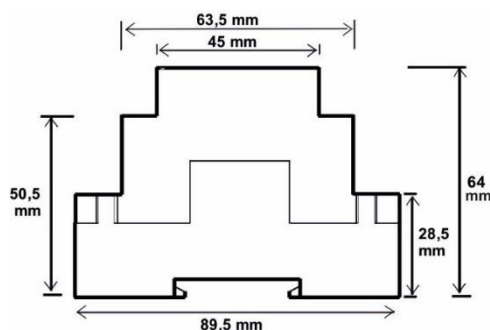
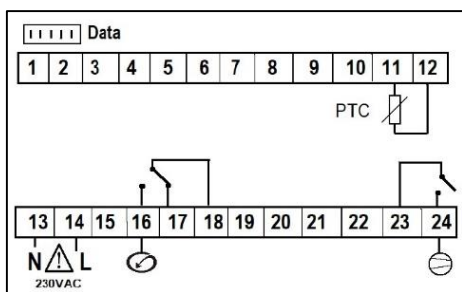
By keeping pressed for 3 sec the [] the agitator is started. It remains ON for time equals the parameter "**AGt**", regardless the state of the compressor.

## COMPRESSOR OPERATION



The regulation is performed according to the temperature measured by the thermostat probe with a positive differential(diF) from the set point. If the temperature increases and reaches set point (SPo) plus differential the compressor is started and then turned off when the temperature reaches the set point (SPo) value again. In case of fault in the thermostat probe the start and stop of the compressor are timed through parameter "Cf"

## CONNECTIONS - DIMENSIONS



## PARAMETER TABLE

| α/α |     | περιγραφή  | min   | max   | default | UOM   |
|-----|-----|--|-------|-------|---------|-------|
| 1   | SPo | SET POINT: temperature control tank  | SLo   | SHi   | 4.0     | °C/°F |
| 2   | Cod | code to enter parameter's menu= "22"   | 0     | 255   | 0       | -     |
| 3   | SLo | lower limit temperature of SPo   | -50.0 | SHi   | -2.0    | °C/°F |
| 4   | SHi | maximum limit temperature of SPo   | SLo   | +150  | 8.0     | °C/°F |
| 5   | diF | differential of set point SPo  | 0.1   | 25.0  | 0.5     | °C/°F |
| 6   | Cr  | ελάχιστος χρόνος OFF του συμπιεστή   | 0     | 4     | 0       | min   |
| 7   | Cf  | in case of sensor's fault (LF1), the compressor operates as follows:<br>0 = 40% operation of the compressor (3min ON, 4min OFF)<br>1 = 100% operations of the compressor (ON continuously)   | 0     | 1     | 0       | -     |
| 8   | dF  | (not in use)   | -     | -     | -       | -     |
| 9   | dt  | (not in use)   | -     | -     | -       | -     |
| 10  | dL  | (not in use)   | -     | -     | -       | -     |
| 11  | do  | (not in use)   | -     | -     | -       | -     |
| 12  | dr  | (not in use)   | -     | -     | -       | -     |
| 13  | td  | (not in use)   | -     | -     | -       | -     |
| 14  | AJ1 | zero adjustment of sensor  | -10.0 | +10.0 | 0.0     | °C/°F |
| 15  | ts  | refresh delay of temperature indication at display   | 0     | 20    | 0       | sec   |
| 16  | FC  | switch °C/F (0=°C, 1=°F) ATTENTION: changes between °C/°F do not affect SPo  | 0     | 1     | 0       | °C/°F |
| 17  | Br  | baud rate (9600mbps)   | -     | -     | -       | -     |
| 18  | tr  | time response: the respond time of the device to the network   | 5     | 100   | 20      | msec  |
| 19  | FF  | (not in use)   | -     | -     | -       | -     |
| 20  | Uf  | serial input configuration where:<br>0 = operates with the serial key and the network, 1 = connects to an outer device for exporting alarms,<br>ATTENTION!: when the value of Add parameter is ≠ 0, automatically is programmed to Uf = 0. | 0     | 1     | 0       | -     |
| 21  | ALo | ρύθμιση ενεργοποίησης alarm χαμηλής θερμοκρασίας θαλάμου   | -50.0 | AHi   | -4.0    | °C/°F |
| 22  | AHi | ρύθμιση ενεργοποίησης alarm υψηλής θερμοκρασίας θαλάμου  | ALo   | +150  | +15.0   | °C/°F |
| 23  | Od  | (not in use)   | -     | -     | -       | -     |
| 24  | tH  | (not in use)   | -     | -     | -       | -     |
| 25  | AGC | agitator configuration where: 0 = agitator parallel to the compressor, 1 = independent agitator  | 0     | 1     | 0       | -     |
| 26  | AGt | length of agitation cycle  | 0     | 255   | 3       | min   |
| 27  | iAG | interval between agitation cycles  | 1     | 120   | 15      | min   |
| 28  | Add | address of the device at the network operation   | 0     | 255   | 1       | -     |

**ALARM TABLE**

|  |     |                                |
|--|-----|--------------------------------|
| 1  | LF1 | tank sensor malfunction        |
| 2  | ALo | alarm low temperature in tank  |
| 3  | AHi | alarm high temperature in tank |
| The alarms are automatically deactivated when the cause of the alarm disappears. |     |                                |

**REVISION HISTORY**

| PDF Version | Date | Comments |
|-------------|------|----------|
|             |      |          |

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*