



REAN

RN312M

Milk Tank Controller

DESCRIPTION

RN312M Series Milk Tank Defrost Control Devices;

Controls the relay output with a single NTC sensor.

Provides ON/OFF control with selectable heating and cooling control. In cooling control, it has defrost and compressor protection parameters.

Provides time-based control with the mixer relay output.

Temperature values can be read in decimal format with the decimal reading option.



TÜRK MALI

TECHNICAL SPECIFICATIONS

The external dimensions of the device, including the socketed connection terminals, are 76x34x75mm.

Self-extinguishing plastic material has been used.

It has an IP65 protection class from the front panel.

Connections are made with detachable socketed terminals, and when making these connections, a maximum cable thickness of 2.5mm² should be used for all inputs and outputs.

The operating temperature should be between 0 and 55°C.

The storage temperature should also be between 0 and 55°C.

The relative humidity for operation should be between 10% and 80%, without condensation.

The supply voltage varies depending on the product ordered, so the label values should be carefully observed. These values are 230VAC (+10% -15%), 50/60Hz, or 9-32V AC/DC ±10%.

NTC of 10k @ 25°C is used, with a beta value of 3435.

Temperature sensitivity can be adjusted from the menu parameters and can be selected as 0.1°C or 1°C.

A function can be assigned to the digital input through the menu parameters.

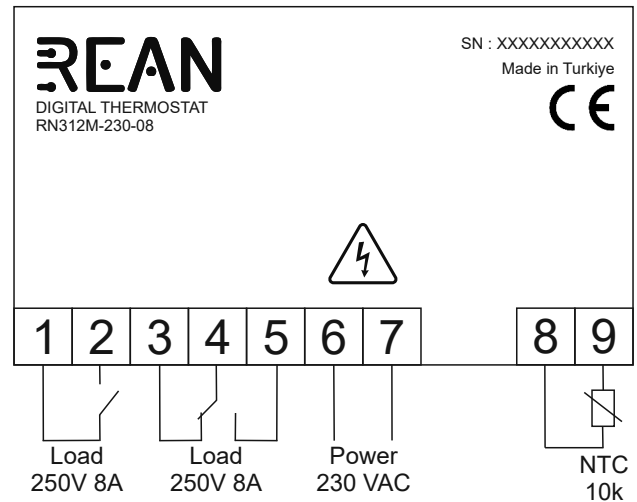
It features a 3.5-digit, 7-segment white LED display.

Relay outputs should be specified based on requirements at the time of ordering. Options available are 8A (NO) and 8A (NO+NC).

The device weighs approximately 200 grams, including the packaging.

ELECTRICAL WIRING

During installation or maintenance of the device, there should be no electrical power in the connection cables. The power supply and signal cables entering the device should be kept as far apart as possible. The device should be protected from vibration, and attention should be paid to the operating temperature. Before starting the installation of the device, static electricity from the body should always be discharged by touching a grounded surface. The maximum length for the cables used for power supply, relay outputs, sensor, and digital inputs should be 10 meters each.








Note: For repair or any questions regarding the device, please contact the REAN sales team.

REAN

ESSEM OTOMASYON MÜHENDİSLİK SAN. TİC. LTD. ŞTİ.
Çakmak Mah. Varan Cad. Bahariye Sk. No:2A 34774
ÜMRANIYE/İSTANBUL-TÜRKİYE
Tel : +90 216 364 75 45
url : www.rean.com.tr

KEYPAD FEATURES

M Manual Mixing Mode When this button is held down for 5 seconds: -The Out1 relay activates, enabling the mixer output. -After the set time expires, the Out1 output turns off.	 Up Key Feature When this button is pressed: -It increases the values -Allows navigation within the programming menu
SET Set Key Feature When this button is held down for 5 seconds: -The device enters programming mode -It is pressed to confirm the entered commands	 Down Key Feature When this button is pressed: -It decreases the values -Allows navigation within the programming menu

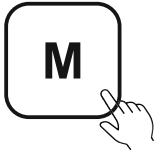
ICONS	
 Compressor Status Led If the LED is on: The compressor output is active. If the LED is off: The compressor output is passive.	 Defrost Status Led If the LED is on: Defrost cycle is active. If the LED is off: Defrost cycle is passive.
OUT1 Mixer (Aux Output) Status LED If the LED is on: The mixer output is active. If the LED is off: The mixer output is passive.	 Degree Status Led Celsius (°C) is displayed.

Reading and changing the set value



After pressing the set button and releasing it, the set value appears on the screen, and then the desired set value can be adjusted using the up and down buttons.

Entering Manual Mixer Mode



When the Manual Mixer button is held for 5 seconds, the mixer output is activated, and the Out1 symbol appears on the screen. The corresponding output remains active for the set mixer duration and then turns off.

Entering Manual Defrost



While in cooling control mode, when the down arrow button is held down for 5 seconds, the system enters manual defrost mode.

Entering Programming Mode



While in operational mode, when the SET button is held down for 5 seconds, the message "PA" appears on the screen, and the parameter menu is entered. After entering the parameter menu, the desired values can be changed using the up and down buttons.

Error Messages



Sensor Error
Please check the sensor connections.



Low Temperature Alarm
Please check the ambient temperature.



High Temperature Alarm
Please check the ambient temperature.

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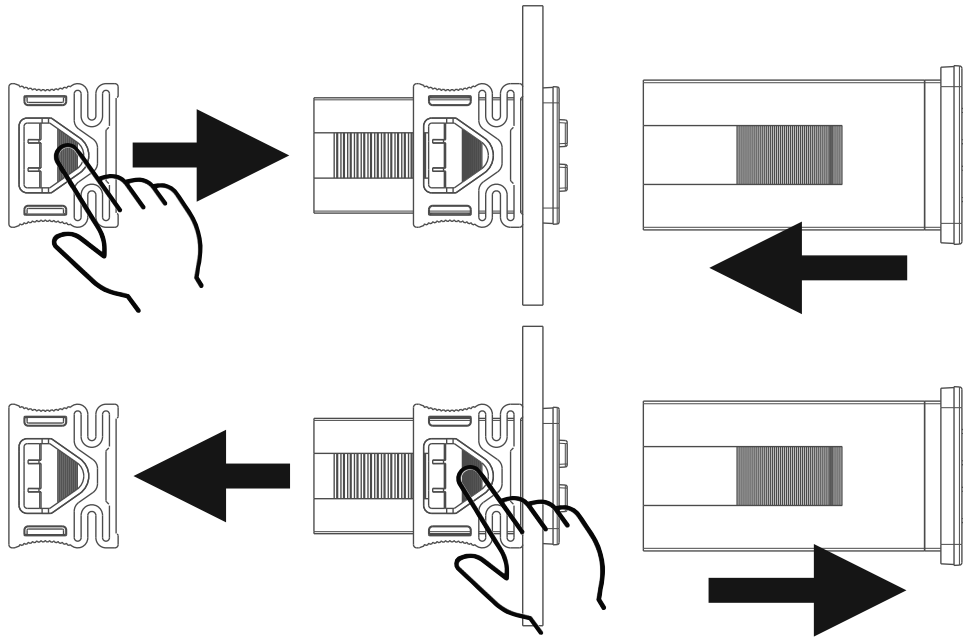
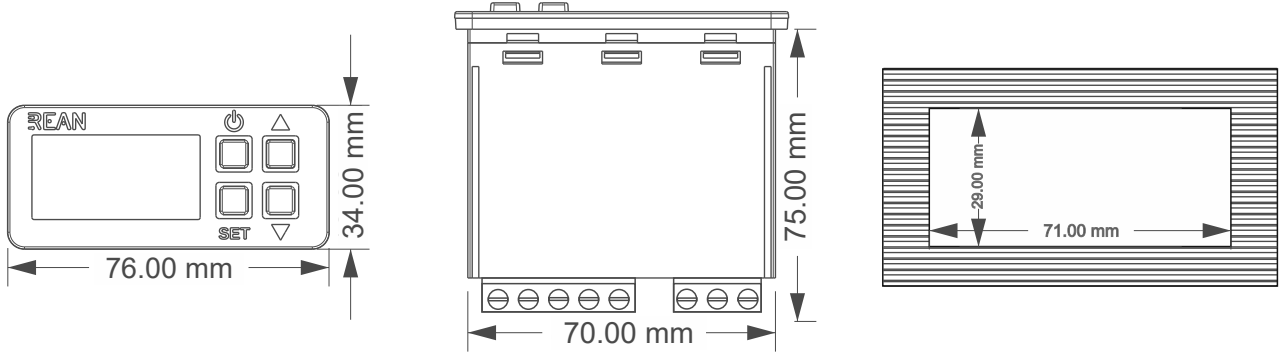
PROGRAMMING TABLE

In the table below, the parameters in the programming menu of the device, along with their default settings and descriptions, are provided.

Parameter	Minimum	Maximum	Unit	Default	Description
SP	r1	r2	°C	4	Set value
o1	-50	50	°C	0	Offset value
P1	0	1	---	0	Decimal point (0:No, 1:Yes)
r0	0.1	20	°C	2	Hysteresis set value
r1	-50	r2	°C	-50	Low limit of Set value
r2	r1	150	°C	150	High limit of Set value
r5	0	1	---	0	Control Type (0:Cooling, 1:Heating)
c0	0	15	dk	0	Compressor start delay time after the device is turned on
c2	0	240	dk	3	Minimum compressor switch-off duration
c3	0	240	dk	0	Minimum compressor switch-on duration
d0	0	99	saat	8	Defrost interval time
d3	1	99	dk	30	Defrost time
d4	0	1	---	0	Option to start with defrost when power is on (0: No, 1: Yes)
d5	0	30	dk	0	Defrost start delay when power is on (if d4=1)
d6	0	1	---	1	Displayed value on the screen during defrost (0: Ambient temperature, 1: Set value)
A1	-50	A4	°C	-50	Low temperature alarm set value
A4	A1	150	°C	150	High temperature alarm set value
A6	0	199	dk	12	Alarm warning delay when a high temperature alarm condition (RH) occurs.
A7	0	199	dk	17	Alarm warning delay when a low temperature alarm condition (RL) occurs.
b1	0	1	---	0	Mixer Type Selection (0:Operates dependent on the compressor,1:Auto mode, operates independently of the compressor based on b2 and b3 parameters)
b2	0	99	dk	3	Mixer Operation Time (If this value is set to "0", both automatic and manual mixing functions are disabled)
b3	0	99	dk	15	Mixer stop (Interval) time
b4	0	1	---	0	Mixer Operation at Power On (0: Mixing does not start with power on, 1: Mixing starts with power on)
b5	0	99	dk	0	Mixer start delay at initial power on
dPr	-99	99	---	0	Reset to factory settings (-19 resets to default factory settings) Note: After this process, the device must be powered off and on again.

DIMENSIONS AND MOUNTING

For this device designed for panel mounting, a hole measuring 71 x 29mm must be cut, and after the product is installed, it should be secured to the panel with fastening devices. The thickness of the part to be mounted should be a minimum of 0.5mm and a maximum of 10mm.



WIRING

WARNING ! Loose wiring can cause electric shock and fire. Installation and electrical connections must be made according to the instructions provided by technical personnel. Ignoring these warnings may result in death or serious injury.

mm in.	6.5 0.26								
mm ²		0.2...2.5	0.2...2.5	0.2...2.5	0.2...2.5	0.2...2.5	0.2...2.5	0.2...2.5	0.2...2.5
AWG		0.2...2.5	0.2...2.5	0.2...2.5	0.2...2.5	0.2...2.5	0.2...2.5	0.2...2.5	0.2...2.5

		N•m	0.5...0.6
Ø 3.5 mm (0.14 in.)		lb-in	4.42...5.31

Note: Pay attention to the tightening torque specified in the table above and the dimensions of the cables to be used.