












DESCRIPTION

ICE is an ideal thermostat for sprinkling ice machine and has the following specifications: two PTC sensors on a scale $-50\pm+130^{\circ}\text{C}$ ($-28\pm+266^{\circ}\text{F}$) where one is for the evaporator control and the other for the ice bucket in order to terminate the ice production if the bucket is full; **three relays** (for compressor 30A, water pump 10A, and defrost 10A) with NO contact, three adjustable **timers** in minutes for the control of the compressor/water pump and defrost relays, electrical or HOT-GAS defrost mode, **OFF** mode for the device and an alarm **buzzer** for high or low temperature.

DEVICE OPERATION IN ELECTRIC DEFROSTING

- During start-up, the defrost relay activates  and a timer starts counting **t2**. The screen displays **t2**, which counts backwards, the indication  flashes and the indication  turns on. In case the **evaporator temperature is lower than the set point after defrosting is finished**, all operations and relays will be deactivated automatically and the screen will display the indication "EEE". The alarm deactivates automatically after the device is restarted using the ON/OFF button or by cutting the power supply. **Manual defrost** takes as long as **t2** and the same procedure as described below is followed.
- When **t2** is over, the defrost relay  is deactivated, then **t3** starts counting while the compressor  and water pump  relays are activated based on SPo. The display shows the current evaporator temperature and the indicators  and  light up. When the evaporator temperature reaches the set point, the time **t1** begins to count, while the compressor and water pump relay remain energized until the time **t1** is over. The display shows the time **t1**, which counts backwards, while the indication  is blinking and the indications  and  light up. When the time **t1** is over, the compressor and water pump relays are deactivated, and then the first cycle starts again with activation of defrost relay, etc.
- In case of malfunction in the cooling circuit and the **evaporator temperature does not drop**, the aforesaid process will end with time **t3**. All functions and relays will be deactivated automatically and "FFF" will be displayed on the display. The alarm is automatically deactivated by restarting the thermostat from the power supply or the ON / OFF button.
- When the ice bucket temperature sensor reaches the SP2, the production will stop when the last production of ice drops on the bucket and the cycle ends. On screen the indication "FUL" is displayed and it will remain until the bucket temperature reaches SP2+dF2 and the cycle resumes.

This cycle is repeated continuously without interruption during the smooth operation of the thermostat.










In case of **evaporator temperature sensor failure or OFF device state**, all thermostat functions are deactivated.




In case of **bucket temperature sensor failure**, the cycle continues and does not stop because of this failure.

OPERATING PRINCIPLES IN HOT-GAS DEFROST MODE


Parameter **do** define the defrost function in electric or HOT-GAS. Only in hot-gas operation (**do = 1**), the compressor relay works in parallel with the defrost relay during the defrosting process, for time **t2**.



INDICATIONS AND FUNCTIONS OF BUTTONS OUTSIDE PARAMETERS MENU

Indications		Buttons	
	compressor ON		enter
	water pump ON	  Ta	down arrow buzzer mute indication of ice bucket temperature
	defrost ON	 Tc	Up arrow display evaporator temperature instead of time
dFr	manual defrost ON	SET dF	set start manual defrost
	timer ON		ON/OFF


Button	Functions outside the parameter menu	
	By pressing once	By pressing continuously
	enter the parameter menu	-
 Ta	Temperature scale indication °C/°F and buzzer mute	indication of storage temperature
 Tc	-	display cabinet temperature instead of time
SET dF	-	manually starts defrosting for time t2

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 **SE** the value of the parameter is displayed and with the ,  we adjust the value.

By pressing  or **SET** we **confirm** the new value and the name of the parameter is displayed.

SWITCHING ON/OFF THE DEVICE

By pressing  and  **at the same time** the device turns **ON or OFF**.

TECHNICAL SPECIFICATIONS

Power supply: 230Vac 50/60Hz / Maximum operating power: 3W

It is recommended using a power supply safety fuse 0.5A (not included)

Evaporator and ice bucket temperature sensor PTC 1K@25°C / Precision: 1°C

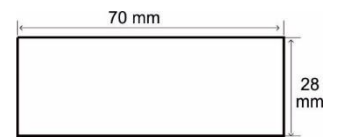
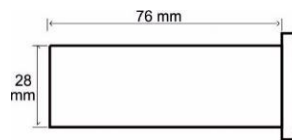
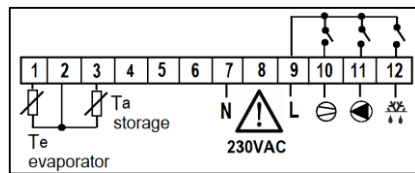
Alarm buzzer

Compressor relay with N.O. contact 250Vac 30A, water pump and defrost relays N.O. contact 250Vac 10A

Operating temperature: $-15\pm+55^{\circ}\text{C}$ / Storage temperature: $-20\pm+80^{\circ}\text{C}$

The device is mounted through panel hole 29x71mm and is restrained with two plastic side brackets / Connection with terminal blocks 18A

CONNECTIONS - DIMENSIONS



PARAMETER TABLE

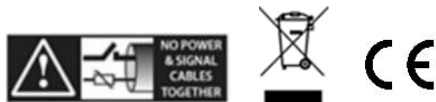
#	Description	min	max	ICE	M.M
1	SP2 Bucket SET POINT: temperature control of the ice bucket	-50	+150	1	°C/°F
2	SLo minimum temperature limit of SPo	-50	SHi	-20	°C/°F
3	SHi maximum temperature limit of SPo	SLo	+150	8	°C/°F
4	dF2 differential of temperature sensor ice bucket SP2	1	+150	4	°C/°F
5	Cod code to enter parameter's menu Cod = 22	0	255	0	-
6	Cr minimum pause time of the compressor	0	4	0	min
7	CF (not used)	-	-	-	-
8	dFr (not used)	-	-	-	-
9	dt (not used)	-	-	-	-
10	SPo Evaporator SET POINT: temperature control of the evaporator	SLo	SHi	-12	°C/°F
11	do Defrost Mode: electrical for do = 0 or hot-gas for do = 1 (the compressor relay works in parallel with the defrost relay during the defrosting process)	0	1	0=electrical	-
12	dr (not used)	-	-	-	-
13	td (not used)	-	-	-	-
14	SE1 zero adjustment of evaporator temperature sensor	-9	+15	0	°C/°F
15	SE2 zero adjustment of ice bucket temperature sensor	-9	+15	0	°C/°F
16	tS temperature indication delay time	0	20	0	sec
17	FC Switch between °C/°F (0=°C, 1=°F) ATTENTION: toggling between °C/°F does not change SPo	0	1	0=°C	°C/°F
18	t1 countdown time where the compressor relay remains activated as long as the evaporator reaches the desired set temperature	1	255	10	min
19	t2 countdown time where the defrost relay remains ON	1	255	2	min
20	dHL delay time until the activation of the alarm "AHi" and "ALo"	0	99	0	min
21	t3 maximum compressor operating time during the cooling process until it reaches the desired set point. At the end of time t3, all functions and thermostat relays are deactivated and "FFF" indication is displayed. the alarm is deactivated automatically by restarting the device.	0	255	30	min
22	ALo Low evaporator temperature alarm	-50	+150	-30	°C/°F
23	AHi High evaporator temperature alarm	-50	+150	+35	°C/°F

ALARM TABLE

1	LF1 Evaporator temperature sensor failure. In this case all functions and relays are automatically deactivated
2	LF2 Bucket temperature sensor failure where the cycle continues without any interruption
3	ALo Low evaporator temperature alarm
4	AHi High evaporator temperature alarm
5	FFF Cooling failure. All functions and relays are deactivated automatically after the end of time t3. The alarm deactivates automatically by restarting the device
6	EEE Upon completion of the defrosting procedure, the evaporator temperature remains less than the SPo. All functions and relays are deactivated automatically. The alarm is deactivated automatically by restarting the device.
7	FUL The bucket is full with ice. The ice production stops until the bucket sensor reaches SP2+dF2 temperature.

The alarms LF1, LF2, ALo, AHi are deactivated automatically when the cause of their activation is no longer present

Made in Greece



ATTENTION according to safety standards, the device must be properly positioned and protected from any contact with electrical parts. All parts that provide protection must be fastened in such a way that they cannot be removed without the use of tools. **ATTENTION:** disconnect the power supply of the device before proceeding to any kind of maintenance. **ATTENTION:** do not place the device near heat sources, equipment containing strong magnets, in areas affected by direct sunlight or rain. **ATTENTION:** prevent electrostatic discharges at the side slots of the device and sharp objects from being inserted. **ATTENTION:** separate the signal's cables from the power supply's cables to prevent electromagnetic disorders. Signal cables must never be in the same pipe with the power supply cables. **Use the device only as described in this document, not to 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. Read and keep these instructions.** The device is under two year's guarantee of good operation. 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 preserves the right to adjust its products without further notice.