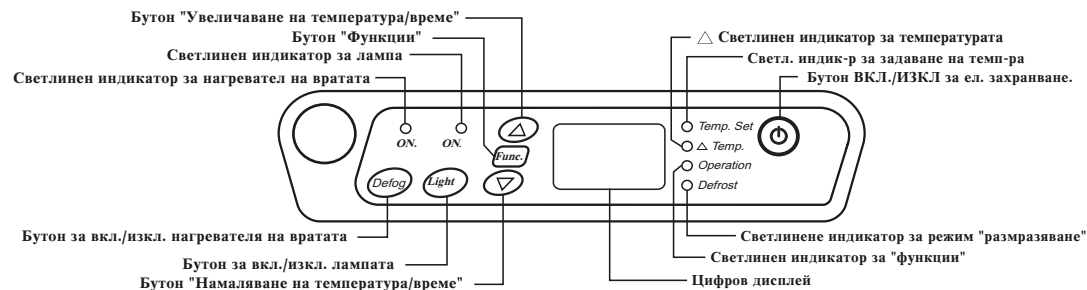


Model : 815 Instruction



815 is designed for refrigeration units at normal or low temperature. It contains a transformer and five output relays for compressor (25A resistive), defrost heating (25A resistive), evaporator fan control, light and glass heating. Two input probes connect to the room for temp. control and defrost management. It assembles all the functions in one front panel. The alarm is also installed in the controller. 815 provides four parameters for the user to change the temperature setpoint and defrost management. It also provides four parameters for the refrigeration manufacturers to set the special parameters prevent the user changing.

COMMANDS ON FRONT PANEL

The instrument is provided with six keys.

- ⏻ Key: hold it for more than 3 seconds to turn on/off the controller.
- Defog Key: hold it for more than 3 seconds to turn on/off the glass heating.
- Light Key: hold it for more than 3 seconds to turn on/off the light.
- Func Key: use to change the parameters.
- ▲ Key: use to increase values.
- ▼ Key: use to decrease values.

KEYBOARD LOCKING

Pressing Defog and Light keys simultaneously, "00" will be displayed and the keyboard is locked (no change). To unlock the keyboard by holding Defog and Light keys again. "33" will be displayed and the keyboard is unlocked.

ALARM ACTIVITY

When an error message appears, the alarm will start warning.

Before solving the problem, users can press ▼ key to silence the alarm.

DISPLAY THE EVAPORATOR TEMPERATURE

Hold ▲ key for more than 3 seconds, the evaporator temperature will be displayed.

COMPRESSOR OPERATION

The compressor operates between setpoint plus 1/2 differential and setpoint minus 1/2 differential. (Find diagram 1 below) Compressor functions for one minute after the first time power on even the compressor delay protection is set at "0".

No matter the sensor failed or not, the compressor operates for 15 minutes and stops for 15 minutes.

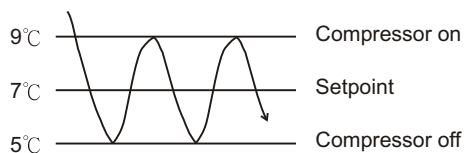


Figure 1. When Setpoint = 7°C, differential = 4°C

MANUAL ACTIVATION OF THE DEFROST CYCLE

To enter manual defrost cycle by pressing ▲ and ▼ keys simultaneously for 3 seconds.

▲ and ▼ keys are not available when the evaporator temperature is higher than defrost stop temperature.

DURING DEFROST CYCLE (ELECTRICAL DEFROST)

During defrost cycle (Defrost LED flashes), compressor and fan are off and heating is on.

After defrost cycle, the heating stops and the compressor restarts one minute later.

The fan starts running when evaporator temperature is lower than fan start temperature to avoid the heat blow into the room.

SETTING THE SETPOINT AND OTHER USER

PARAMETERS

To press Func key for more than 3 seconds to enter into the setpoint and other user's parameter setting mode. Temp. Set LED is on, when the setpoint is been setting.

To change to next parameter by pressing Func key again.

When the required parameter is selected, use ▲ or ▼ keys to adjust values.

If no more command is given within 10 seconds, the controller will save new parameters and return to normal operation.

USER PARAMETER DESCRIPTION

Setpoint

allow to set the temperature from -40°C to 40°C. When it is setting, Temp. Set LED is on.

The compressor operates between setpoint plus 1/2 differential and setpoint minus 1/2 differential.

Setpoint intervention differential

When it is setting, Temp. LED is on.

Operation time

the operation time is counted in real time. When it is setting, Operation LED is on.

Defrost time

defrost interval time When it is setting, Defrost LED is on.

SETTING THE REFRIGERATOR MANUFACTURE

PARAMETERS

The following four parameters can be set by holding the Func key and supplying the power into the power box simultaneously. Temp. Set LED is on, when the defrost stop temperature is been setting. To change to next parameter by pressing Func key again.

When the required parameter is selected, use ▲ or ▼ keys to adjust values.

If no more command is given within 10 seconds, the controller will save new parameters and return to normal operation.

REFRIGERATOR MANUFACTURE PARAMETERS DESCRIPTION

Defrost stop temperature

Defrost stop temperature causes defrost end. When it is setting, Temp. Set LED is on.

Temperature calibration

Temperature calibration allows to calibrate temp. from -8°C to 7°C. When it is setting, the Temp. LED is on.

Comp. delay protection

During the compressor delay protection, Operation LED flashes. When it is setting, Operation LED is on.

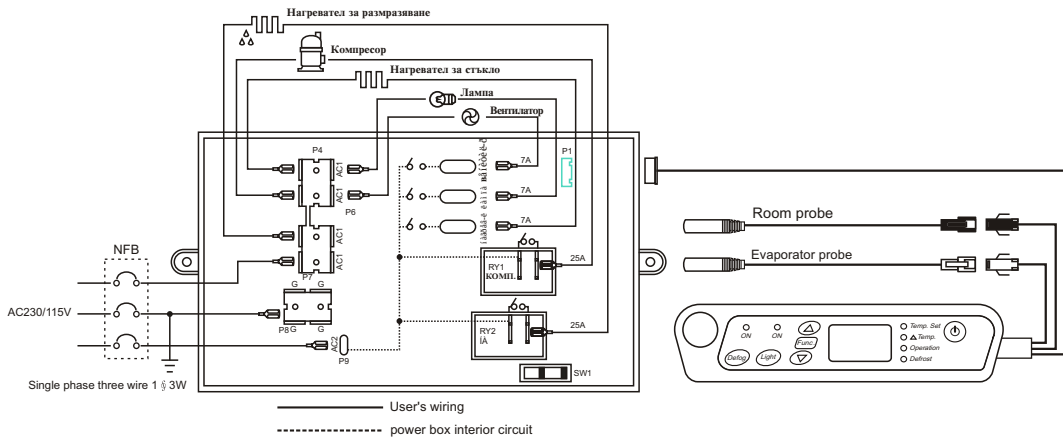
Fan start temperature

Evaporator temperature causes fan running after defrost cycle to avoid heat blow into the room. When it is setting, Defrost LED is on.

THE FOLLOWING FOUR FUNCTIONS ARE AVAILABLE UPON REQUEST

- 1.Hot gas defrost (warm gas) : During defrost cycle , compressor is on and fan is off . After defrost cycle,compressor will re-start one minute later.
- 2.Resolution Unit : allow to display the temperature in Fahrenheit.
- 3.Defrost display lock : allow to lock the temperature display during defrost cycle.
- 4.Fan activity depends on evaporator temperature. Fan is on when the evaporator temperature is lower then fan start temperature, and will be off when evaporator temperature is higher then fan start temperature no mater in normal operation or defrost cycle.

Parameters & Description	Range	Default	Unit	Set by
Setpoint	-40...40℃	-18	℃	User
Differential	2.....10	4	℃	User
Defrost time	0.....99	6	Hours	User
Defrost time	0.....60	30	Minutes	User
Defrost stop temperature	0.....45℃	20	℃	Manufacturer
Temperature calibration	-8.....7	0	℃	Manufacturer
Compressor delay protection	0...15	3	Minutes	Manufacturer
Fan start temperature	-25...25℃	0	℃	Manufacturer



CAUTION

Before supplying the power, please check if the voltage switch is set correctly or not. The output contact capacity shows on the specification. Do not over load. If the compressor uses 220V, but the other devices are 110V, connect other devices's common line to terminal #G instead of terminal #AC1.

ERROR MESSAGES

When "EE" is displayed , the parameter memory is error. (Replug-in, then the parameter will back to the default)
When "E1" is displayed, the room probe failed.(Check the connection of room probe)
When "E2" is displayed , the evaporator probe failed. (Check the connection of evaporator probe)

CONNECTIONS

815 front panel provides a wire harness to the power box and two probes as the diagram on the left. Two probes must be fastened to the terminal wafers. The room probe fastens to the black terminal housing, and the evaporator probe fastens to the white terminal housing. For the safety, the power switch must be selected to the voltage that the local area used in the power box.

SPECIFICATION

Size of front Panel : 40mm(H)x170mm(L) ± 1mm
Size of power box : 160.8mm(H)x109.7mm(L) ± 1mm
Mounting hole : 33mm (H) x 140mm (L) ± 1mm
Connections : A wire harness to power box.(Length:1M)
Operating temperature : -5℃ ~ 55℃, RH20% ~ 95%
Storage temperature : -10℃ ~ 65℃, RH20% ~ 95%

Input

Power supply : AC 230/115V ± 10%, single phase 50/60Hz
Power consumption : Max. 10 watts (Control only)
Reading range : -45℃ ~ 45℃, ± 1℃(-45°F~99°F, ± 1°F)
Sensor probe : NTC PVC 1.5m (L)

Outputs

Compressor output contact : 25A/250VAC Resistance
Heater output contact : 25A/250VAC Resistance
Fan output contact : 7A/250VAC Resistance
Light output contact : 7A/250VAC Resistance
Glass heating output contact : 7A/250VAC Resistance
Alarm output : built-in

