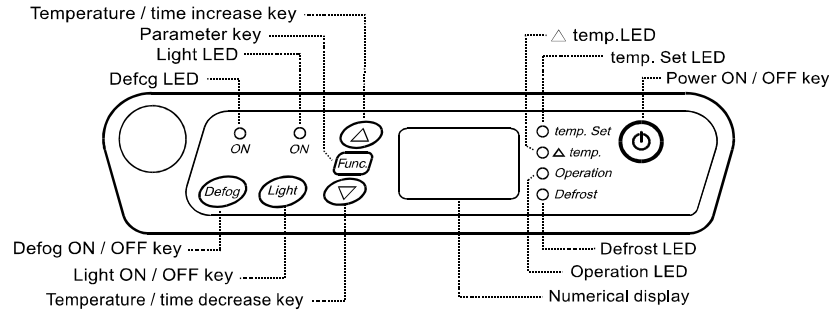


1. CAUTIONS :

- 1.1 Before wiring, please make sure that power is switched off to prevent from getting electric shock.
- 1.2 The product should be avoided to install at humid environment.
- 1.3 To prevent the controller burning out, please make sure the water-proofed procedure is undertaken during installation.
- 1.4 Please install according to the wiring diagram, in order to avoid incorrect wiring.
- 1.5 Before supplying the power, please always check if the wiring and input power is connected correctly.
- 1.6 Please always read this instruction carefully before installation. If the damage is caused of incorrectly wiring, the product would not be guaranteed.



2. SPECIFICATION :

- 2.1 Dimension :
 - 2.1.1 Front panel size : 40mm (H) x 170mm (W) ± 1 mm
 - 2.1.2 Mounting hole size : 33mm (H) x 140mm (W) ± 1 mm
- 2.2 Operating environment : -5°C ~ 55°C, RH20% ~ 85% (non - condensing)
- 2.3 Storage environment : -10°C ~ 65°C, RH20% ~ 85% (non - condensing)
- 2.4 Output / Input :
 - 2.4.1 Power supply : AC 230 / 115V ± 10% , single phase 50 / 60Hz.
 - 2.4.2 Power consumption : Max. 10 Watts (controller only)
 - 2.4.3 Temperature display range : -45°C ~ 45°C , ± 1°C (-45°F ~ 99°F , ± 1°F)
 - 2.4.4 Temperature sensor : NTC , PVC cord , 1.5M / 2.5M / 5M (L)
 - 2.4.5 Compressor contact capacity : 25(7)A / 250VAC Resistance.
 - 2.4.6 Defrost contact capacity : 25A / 250VAC Resistance.
 - 2.4.7 Fan contact capacity : 7A / 250VAC Resistance.
 - 2.4.8 Lighting contact capacity : 7A / 250VAC Resistance.
 - 2.4.9 Defog contact capacity : 7A / 250VAC Resistance.
 - 2.4.10 Alarm output : Built - in buzzer

3. FUNCTION :

- 3.1 Button Operation :
 - 3.1.1 Power ON / OFF : Press and hold it for 3 seconds to switch on or off the controller and switch OFF the glass defog function.
 - 3.1.2 Lighting : Press and hold it for 3 seconds to switch on or off the lighting output.
 - 3.1.3 Glass defog : Press and hold it for 3 seconds to switch on or off the defog function.
 - 3.1.4 Defrost : Press and and hold them for 3 seconds to enter defrost mode or to terminate the defrost function.
 - 3.1.5 Lock / unlock parameters : In normal operation mode, press and and hold them for 3 seconds to lock the parameters, if "00" is shown on the display, or to unlock if "33" is displayed. (No any setting modification is allowed after locking the parameters)
 - 3.1.6 Buzzer OFF : Press and hold it for 3 seconds to switch off the buzzer temporarily when failures occurred.
 - 3.1.7 Evaporator temperature displayed : In normal operation mode, press and hold it for 3 seconds to display the evaporator temperature. After 5 seconds, the display shows indoor temperature.
 - 3.1.8 User's parameter setup : Press and hold it for 5 seconds to enter user's parameter setup mode and LED of temp. Set is ON.

3.2 Function instruction :

3.2.1 Compressor operation :

- 3.2.1.1 The compressor starts operation when room temperature ≥ (setting temperature + temperature differential) ; compressor stops operation when room temperature ≤ (setting temperature + temperature differential) .
- 3.2.1.2 Compressor delay protection : It is able to be set from 0 to 15 minutes. Even it is set to 0, compressor still operates one minute later when power is resupplied.
- 3.2.1.3 When under sensor failure, compressor operates for 15 minutes and stops for another 15 minutes, operating automatically and cyclically.

3.2.2 Setup mode :

- 3.2.2.1 Press to select the parameters to be set, the adjustable values please refer to the parameter list.
- 3.2.2.2 Press or to adjust the parameter values. If there is no any further instruction within 10 seconds, the controller will save the current setting and back to the operation mode.

3.2.3 Defrost mode and fan operation : Defrost through electric heater or hot gas are both available.

3.2.3.1 Electric heater defrost :

- 3.2.3.1.1 Defrost is performed by the present operation duty or forced manually. When defrost in progress, the Defr. LED blinks, compressor and fan stop operation and heater starts operation.

- 3.2.3.1.2 When defrost terminates, heater stops and compressor starts operation 30 seconds later.

Fan starts operation when the evaporator temperature ≤ fan start temperature.

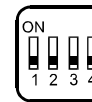
3.2.3.2 Hot gas defrost :

- 3.2.3.2.1 Defrost is performed by the present operation duty or forced manually. When defrost in progress, the Defr. and Operation LEDs are on and compressor off. After 30 seconds, defrost output is on and compressor starts after another 30 seconds then defrost starts to perform.

- 3.2.3.2.2 When defrost terminates, compressor off, after 30 seconds, defrost off. Compressor starts operation another 30 seconds later and fan starts when evaporator temperature ≤ fan start temperature.

3.3 DIPSW Function : Power MUST off under setting DIPSW function.

Default



DIPSW1 : ON : Hot gas defrost

OFF : Electric heater defrost

DIPSW2 : ON : Temperature unit °F

OFF : Temperature unit °C

DIPSW3 : ON : Lock temperature in defrost mode, which means display temperature will not be changed when under defrost mode. After defrost is completed and when indoor temperature reaches setpoint, the display temperature will back to normal temperature.

DIPSW3 : OFF : Unlock temperature in defrost mode, which means display temperature will be changed by any temperature changes and displayed normally.

DIPSW4 : ON : Fan starts operation when the evaporator temperature ≤ fan start temperature.

DIPSW4 : OFF : Fan keeps operation and stops when under defrost mode.

3.4 Parameter list :

Set by	Function	Min.	Max.	Default
User	Setpoint	-40°C / -40°F	40°C / 94°F	-18°C / 0°F
	Differential	2°C / °F	10°C / °F	4°C / °F
	Defrost cycle	0 HR	99 HRS	6 HRS
	Defrost period	0 MIN	60 MINS	30 MINS
Manufacturer	Defrost stop temperature (Evaporator)	0°C / 32°F	45°C / 99°F	20°C / 70°F
	Probe calibration (Indoor)	-8°C / °F	7°C / °F	0°C / °F
	Compressor delay protection	0 MIN	15 MINS	3 MINS
	Fan start temperature (Evaporator)	-25°C / -15°F	25°C / 80°F	0°C / 32°F

4. ERROR CODES :

- 4.1 EE : Parameter memory failure (Please press power button to make the parameters back to default value and re - supply the power. If EE still exists, please send back to factory for inspection.)
- 4.2 E1 : Room sensor failure (Please check the sensor if inconnected or replace a new one.)
- 4.3 E2 : Evaporator sensor failure (Please check the sensor if inconnected or replace a new one.)