ECB-100 Instruction

ar customers:

Thanks for your choosing my company's products: ECB-100 is a vly designed product after lots of market research and nsideration of customer's advice. We are confident that ECB-100 st meet your requirements:

Strictly according to National standard (GB)
Especially designed for refrigerated Units
Use famous brand Low voltage electronics
Complete and reliable multi-ply protections
More advance、more reliable and more stable

fore use please read this instruction carefully. It will better ur understanding on ECB-100 and its functions, avoiding stake operation and incidents, prolong its using time.

atures and function:

Use high stable PIC to increase the system stability
SMT&THT assembly technology, optimizing programming design and multi hardware solutions to better the system's anti-nterference ability
Easy to set the parameters and easy to operate
Can reset the parameters when the system is running without stop
Manual/Auto switch functions, when manually operate, can ontrol the load of Fan、Compressor and Defroster separately
Compressor open delay functions
Fan open delay functions
Defroster auto/manual defrosting functions
Sound and Light alarm when pressure、overload and phase lacking error.
With control ability when pressure、overload and phase lacking error
Main heavy current controllers are used domestic famous brands with high reliability

ain technical parameters:

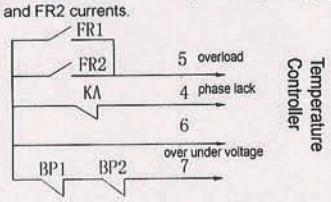
Temperature measuring range: -40℃ ~ +50℃
Temperature controlling range: -39℃ ~ +49℃
Accuracy: ±1℃
Resolution: 0.1℃
Defrosting cycle: 0~99 Hour
Defrosting time: 0~99 Minute
Sensor temperature calibration: -5.0℃~+5.0℃
Control Ways: 3 ways(for control of Compressor、Fan and Defroster)
nput Way: 4 ways (1 way for temp. measuring others for error monitoring)

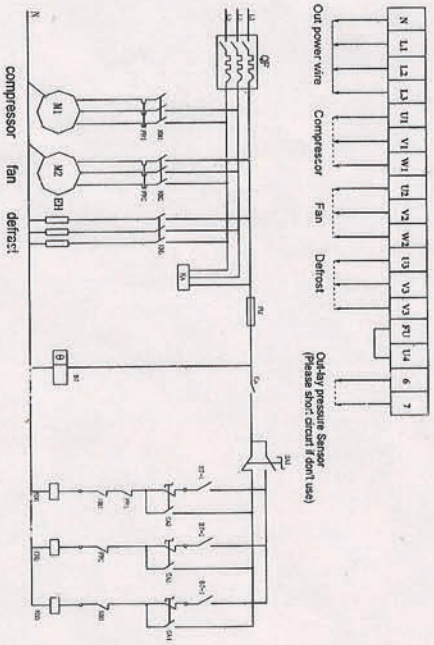
Model	Type	Host Voltage supply	Control unit Power Supply	Max. load						Dimension(mm)			Suited Unit	Gross Weight (Kg)
				Compressor		Fan		Defrost						
				Watt(kw)	Current(A)	Watt(kw)	Current(A)	Watt(kw)	Current(A)	L	W	H		
ECB-100	i	380V AC 50Hz	220V AC 50Hz	7.5	18	4	9	5.5	12	420	300	150	6~9	8

lectric principle and Elementary diagram:

otice:

This system is universal controlling system
Fan max. controlling watt: 4KW
Defrost max. controlling watt:5.5KW
Compressor max. controlling watt:7.5KW
Users can control Fan and Compressor by changing the referring FR1 and FR2 currents.





Installing requirements:

1. ECB-100 should be installed by professionals
2. Abide to the universal electronics installing regulations
3. ECB-100 should be installed in the environment of ventilating、dry and no direct sunshine places
4. Prohibit to get close to condenser or other heat fountains
5. Should avoid high magnetic field and other interfering fountains
6. Can select inflatable bolt to fix the ECB case
7. All connections of wires should be according to the elementary diagram
8. Sensors should be connected separately. Keep distances from the heavy current wires
9. Keep the case of ECB-100 touching the ground firmly

Operation description:

1. Power on: Close the power switch in the Electronic Control Box, then the controller display normally and then into controlling status, and now can set each parameters.
2. Temp. upper limit set: press "SET" key for 3 seconds into parameters setting status. Press "UP" or "DOWN" to select "F01" item and then press "SET" and "UP" (or "DOWN") together to set the parameters.
3. Temp. lower limit set: press "SET" key for 3 seconds into parameters setting status. Press "UP" or "DOWN" to select "F02" item and then press "SET" and "UP" (or "DOWN") together to set the parameters.
4. Temp. Calibration: press "SET" key for 3 seconds into parameters setting status. Press "UP" or "DOWN" to select "F03" item and then press "SET" and "UP" (or "DOWN") together to set the parameters.
5. Defrosting cycle set: press "SET" key for 3 seconds into parameters setting status. Press "UP" or "DOWN" to select "F04" item and then press "SET" and "UP" (or "DOWN") together to set the parameters.
6. Defrosting time set: press "SET" key for 3 seconds into parameters setting status. Press "UP" or "DOWN" to select "F05" item and then press "SET" and "UP" (or "DOWN") together to set the parameters.
7. Alarm when exceeding temp. limit: press "SET" key for 3 seconds into parameters setting status. Press "UP" or "DOWN" to select "F06" item and then press "SET" and "UP" (or "DOWN") together to set the parameters.
8. Save the set parameters: Press "RESET" to save the newly set parameter, display cold room temperature and "Refrigerate" light flashes, it shows the system begins to control and the compressor in delay status
9. Examine the set parameters: in non-setting status, press "UP" to display set upper limit value, 2 seconds later to display current temperature; press "DOWN" to display set lower limit value, 2 seconds later to display current temperature; press "SET" to display defrosting cycle and then defrosting time each for 2 seconds and then display current temperature.

Parameter instruction and set:

Code	Function	Set range	Default	Unit
F01	Temp. upper limit	-39~+50	-10	℃
F02	Temp. lower limit	-40~+49	-20	℃
F03	Temp. calibration	±5	0	℃
F04	Defrosting cycle	0~99	6	Hour
F05	Defrosting time	0~99	30	Minute
F06	Alarm when exceeding temp. limit	0~20	15	℃
Alarm when sensor error	Buzzer and Flash "444" when sensor short or open circuit			

Indicator description:

Indicator light	Color	Status
Refrigerate Indicator light	Green flash	Compressor delay starts
	Green	Forced refrigeration run
	Red	Auto refrigeration run
Fan indicator light	Red	Fan run
Defrost indicator light	Green	Forced defrosting run
	Red	Auto defrosting run
Alarm	Red	Error alarm

Notices:

1. The connected load of ECB Units can't be over the contact capacity.
2. Before use, the currents of two thermal overload relays should be modified to proper values according to practical load.
3. Auto running status: make all switches in the ECB-100 cases on "AUTO" places
4. Manual running status: place AUTO/MANUAL switches into "MANUAL" place, then modify the switches of refrigeration、defrosting and fan to set the single load value.
5. When AUTO/MANUAL on AUTO status, the load of refrigeration、fan and defrosting be in "stop" status

Common errors and repairs

Error		Reason	Repair
1	Display "444"	Temp. sensor short circuit or open circuit	Check temp. sensor or replace a new one
2	Temp. flashes to display and sound alarms	Temp. exceeds limit	Check exceeding limit set value and unit working status
3	No defrosting	Defrosting cycle and time set with "0"	Reset defrosting cycle and time
		In forced (manual) refrigerating status	Exit from forced (manual) refrigerating status
4	Temp.Controller Overload indicator light on,sound alarm	Overload protection	Check overload
5	Temp.Controller Pressure indicator light on, sound alarm	The pressure of unit pipeline abnormal	Check unit working status
6	?Temp.Controller Phase lacking light on, sound alarm	380V power abnormal	Check the power
		Phase lacking relay broken	Replace a new relay
7	Temp. controller works normally and alternative current contactor can not work	SA1 in ECB -100 case in Manual status	Switch SA1 into AUTO place
		Alternative current contactor coil broken	Check and replace a new fuse
8	Temp. controller can not display	ECB-100 Connecting ends L1 no power	Check whole power
		Fuse in ECB -100 broken	Replace the fuse
9	Temp. controller can not work	Temperature controller broken	Replace a new temperature controller and operate manually

Warranty:

1. Warranty time: as to Temp. Controller free to repair within one year from the purchasing day; other units for 3 monthes.
2. Warranty unavailable:

A: operations not according to the instruction
B: not right repair
C: Man-made mistake or wrong use or change the system
D: Without the buying certificate like Invoice..

3. We will offer you professional、efficient and prompt services.
4. Technical service telephone: 0139196816869