

TOUCH PAD CONTROLLER

MANUAL FOR 12, 24 & 48 VOLT

CK-209-B



Australian Designed Temperature Control
Suits all DC Air Conditioners

Series 2011 Manual

CK 209-b



CK-209-B



Operational voltage: 24Vdc (with a range of 20Vdc to 30Vdc)

Inputs:

Set point temperature sensor (range 5°C to 25°C Rb=5K)

Defrost temperature sensor (range preset 0°C to 2°C Rb=5k)

Input power (+24Vdc)

Safety circuit (negative ground return)

Controller earth circuit (-24Vdc)

Outputs:

Air conditioning compressor

Evaporator fan speed low (F1)

Evaporator fan speed medium (F2)

Evaporator fan speed high (F3)

Aux output circuit

All outputs are +24Vdc and have a max current rating of 400mA

Display: 2 segment LED with an accuracy of 1°C

Weight: 100g

Error Display & Resolution

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The system would consider the pressure switch and sensor status as checking point to check the error

Error:

E4: Pressure error; EH/EL: defrost temp sensor error (notice it when checking the defrost temp). H / L: Air inlet sensor error

1) E4: Pressure error

When system is in cooling mode, the system pressure lower or over the setting value, it is the pressure error. As the error happened, the cooling stop automatically, output low level; It display the error code, the fan speed and fresh air signal is normal.

Resolution: Check the coolants system for trouble shooting. The controller would get right until the pressure get well for 3s.

2) EH/EL: Defrost temp sensor error

The defrost temp sensor range: -9°C to 69°C. When it is above 69°C, it display EH, which means the defrost temp sensor short circuit. When lower than -9°C, it display EL, which means defrost temp sensor open circuit. It is prove that the controller do not receive the signal from defrost sensor. Please check whether the sensor loop is short or open circuit, whether the sensor failed.

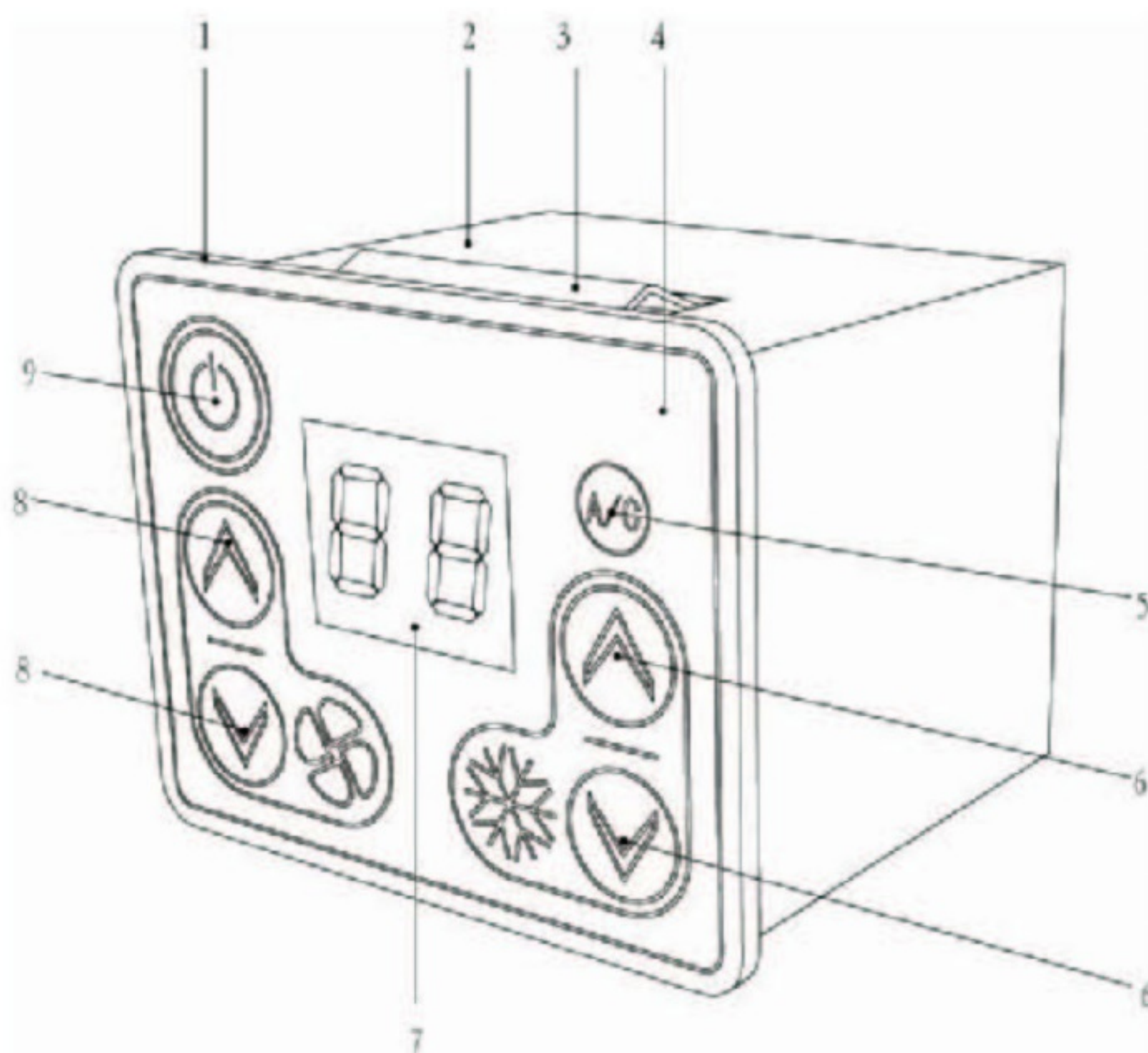
When this error, the cooling procedure would not follow the defrost sensor signal, but the cooling time, setting temp and air inlet temp decide the cooling signal output, make sure the compressor would stop 5min every 60min working time

3) H/L: Inside temp sensor error

The inside temp range -9°C to 69°C; when it is above 69°C, it display H, which means the inside temp sensor short circuit. When it is lower than -9°C, it display L, which means the inside temp sensor open circuit. As the H/L error, the cooling would not based on the inside temp sensor, make sure the compressor would stop 5min every 60min working time

General View CK-209B

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1 figure1

- 1、 front cover
- 2、 back cover
- 3、 retaining clips
- 4、 PET cover
- 5、 fresh air-in display
- 6、 temp. setting button
- 7、 display screen
- 8、 fan .setting button
- 9、 On/off button (fresh air button)

CK200209-b controller can be mounted vertically or horizontally on a panel of maximum thickness 3mm(0.12in). Adequate access space must be available at the rear of Instrument panel for wiring and servicing purposes. Take care not to cover ventilation holes in the top, and bottom of the instrument.

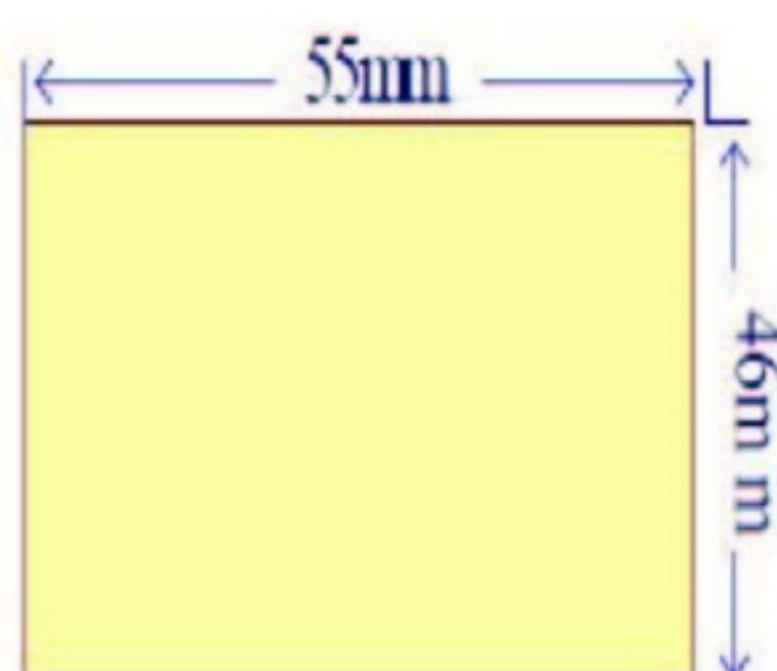
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Error Code

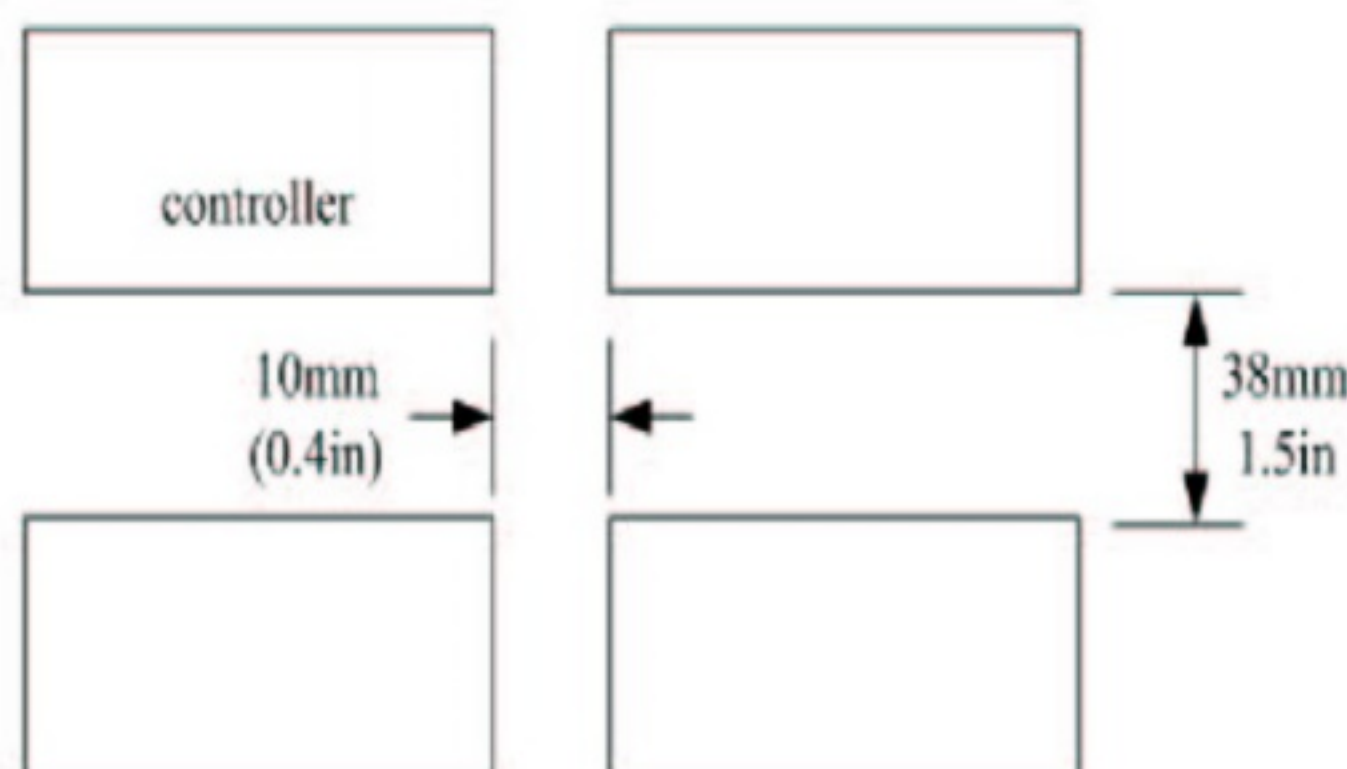
Error code	Pressure switch	De-frost	Inside temp short circuit	Inside temp open circuit	Code explanation (Check & resolution)
E4	#				System pressure error, check pressure switch loop or system pressure.
H			#		Inside temp sensor short circuit, check the sensor loop circuit
L				#	Inside temp sensor open circuit, check the sensor loop circuit
EH/EL		#			Defrost sensor open or short circuit, check the sensor loop circuit

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3 figure3

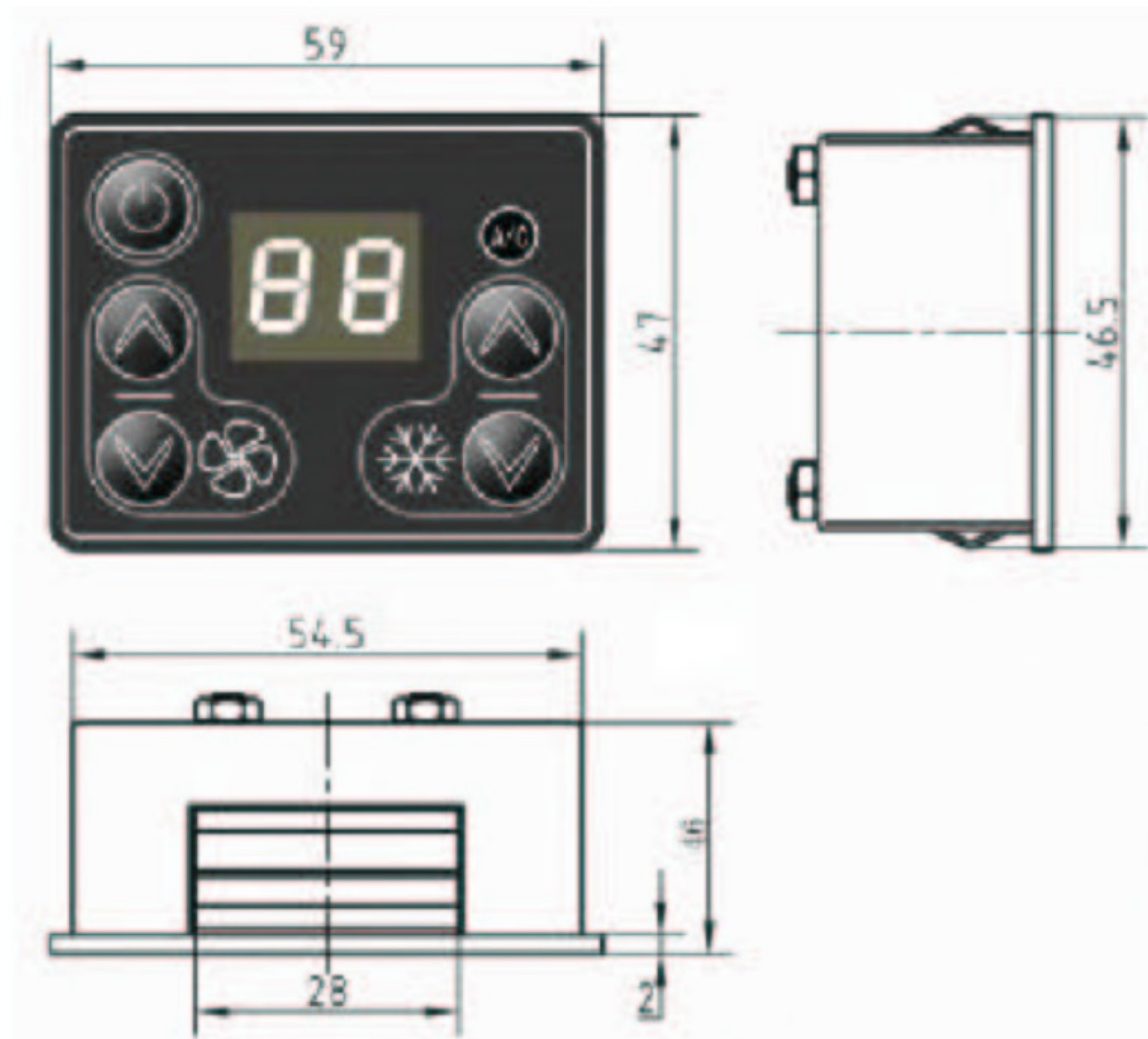


4 figure4

1. Prepare the panel cut-out to the size shown in Figure 2 & 3. Ensure that there is sufficient space between instruments as shown by the minimum dimensions given in Figure 4. Ensure also that the controller is not mounted close to any device which is likely to produce a significant amount of heat which may affect the performance of the controller.
2. Insert the controller (cable assembled) through the panel cut-out.
3. Feel through hands that the clips can be spring up, as well as lock the controller, the installed controller should be fixed on the panel, no losing.
4. Check whether the controller installed in the right place

Note: If the retaining clips subsequently need removing, in order to extract the controller from the panel, they can be unhooked from the side with either your fingers or a screw-driver.

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2 figure

If required, the controller can be unplugged from its retaining clips by two screwdrivers. Plug the two screwdrivers into the left and right sides of the controller, then pulling the controller forward out of the panel. When plugging the controller back into the panel, ensure that the retaining clips click into place. It is recommended that the power to the controller is switched off when unplugging or plugging the controller in to the place.

Functions

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 On/off button	After the installation and connection, the system and engine would be in working status, press the button, start up the a/c system,. Keep long time pressing the button, shut off the a/c system. The buzzer tone indicate the operation effective. To ensure engine loading go smoothly, other control button should be in locking status in 6seconds before on/off a/c system,
 Temp setting button	Apply to temp setting. The temp can be adjust between 5℃ – 25℃, Press the button, change the temp up &down 1℃, Long pressing the button, the setting temp would change automatically until the max &mini value. The buzzer tone indicate efficient operation,
Fan speed setting button 	Apply to fan speed setting. The fan speed can be adjust among F1 , F2, F3 until the max &mini value. The buzzer tone indicate the efficient operation,
 Fresh air button	Apply to the fresh air device on/off In starting up mode, press the button at any other working mode, it would start up the fresh air device, Bring in the fresh air, at the same time ,the indicate lamp lights . The buzzer tone indicate the efficient operation.

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Display Information

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Display 	The “A” would display kinds of information without lacking, such as inside temp, setting temp, fan speed, etc. Simultaneously, it would display the error code.
Cooling mode 	Usually, press the power button, the system would enter into the cooling mode, “A” display the inside temperature.
Temp setting 	Press “B” button to adjust the setting temp, “A” display the setting temp for 5s. Press the button to adjust the temp between 5℃ – 25℃. Keep pressing the button, the setting temp would adjust automatically until the max&mini value. The buzzer tone indicate the effective operation.
Fan speed setting button 	Press “B, it would adjust the fan speed among F1,F2,F3. “A” display fan speed. The buzzer tone indicate the effective operation.

Technical Information

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Fresh air setting 	Press “A” , on/off fresh air, “B” lights means the fresh air in on. The buzzer tone indicate the effective operation.
Hold cool 	Press “B” for 3s, it display” 88” ,entering into hold cool mode. Press any key to relieve. The buzzer tone indicate the effective operation.
Defrost temp display 	Press “B” for 3S, “A” display air outlet temp for 3s, then step back. The buzzer tone indicate the effective operation.
Error display 	For pressure error, “A” display E4, which should be displayed with inside temp alternately. There are 6 warning tones, too. For defrost error, there are 6 warning tones, at the same time, ‘A’ would display EH/EL .

Operation Explained

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Starting up Process Explanation

When power on, press the on/off button, start up the a/c system, To ensure engine loading go smoothly, other control button should be in locking status. In 6seconds before turn on a/c system, It only display inside temp, fan speed, error code, The a/c system starting up order:

- 1). After starting up, it would display the setting temp of last time for 3s
- 2). it would display the fan speed setting of last time for 3s. The fan speed should display by F1 / F2/F3. As displaying the fan speed, the control would start the fan from low to high automatically until it is the same as last time setting.
- 3).It display the inside temp, then the locking relieve.

Cool Mode Explanation

The controller would compare the inside &outside temp and the setting temp.

Inside temp $\leq$ setting temp, , it would shut off compressor and condenser fan, enter into cooling waiting mode.

Inside temp $\geq$ setting temp-3°C , it would turn on compressor and condenser fan,

That means: when the air inlet temp less than or equal to setting temp, the system enter into cool waiting mode; when air inlet temp is great than or equal to the setting temp-3°C, the system enter into cooling mode again, the compressor, condenser fan began to work, to ensure the setting temp is the same as inside temp.

When defrost temp $\leq 0^{\circ}\text{C}$, the a/c system enter into defrost mode automatically, cooling stop.

When defrost temp $\geq 2^{\circ}\text{C}$, the defrost status relieve automatically.

Remark: As cooling stop, the system would wait for 30s, to enter into cooling mode again,

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Memory Function

行。After setting the temp or fan speed, the controller would remember this. As start up next time, it would follow the last setting value .

Hold Cool Function Explanation

Press the fan speed “-” button for more than 3s, the controller would give out three warning tone, the system enter into hold cool status . Press any button to relieve.

Shift Function Explanation

1). Air outlet temp display

Press fan speed “+” for more than 3s, the controller give out three warning tone. It should display the air outlet sensor temp, after 2s, it return back to the previous status

2). Hold cool function

Press fan speed “-” for more than 3s, the controller give out three warning tone, it display “88” , entering into hold cool status.

Shut-off Process Explanation

As shut off the a/c system, the controller would shut off the parts in order(2s interval): compressor, fresh air device, condensation fan, evaporation fan, then the system, to ensure the safe of the system and the whole power supply system.