

DESCRIPTION

Title of Invention

REMOTE CONTROL FOR AIR-CONDITIONING APPARATUS

Technical Field

5 [0001]

The present disclosure relates to a remote control for an air-conditioning apparatus that communicates bi-directionally with an indoor unit.

Background Art

[0002]

10 Hitherto, for the purpose of controlling the operation of an air-conditioning apparatus, indoor units and remote controls in related-art air-conditioning apparatuses bi-directionally communicate with each other to transmit and receive information about room temperature and other operating status. If the user suspects that an outdoor unit or an indoor unit may have failed, the user sends a command to
15 an indoor unit from a remote control to diagnose the failure of an outdoor unit or an indoor unit. Then, the indoor unit sends an error code indicating the content of the failure and the remote control displays the received error code. At this time, the remote control also displays a transmission code indicating which of an outdoor unit and an indoor unit is to be diagnosed. That is, the remote control is required to
20 display a transmission code and an error code. Patent Literature 1 discloses a remote control for an air-conditioning apparatus in which a dot matrix display part is provided in a part of a liquid crystal display screen.

Citation List

Patent Literature

25 [0003]

Patent Literature 1: Japanese Unexamined Patent Application Publication No. 2007-101174

Summary of Invention

Technical Problem

30 [0004]

Since the remote control for an air-conditioning apparatus disclosed in Patent Literature 1 has a dot matrix display part, the remote control can display a transmission code and an error code. However, in the dot matrix display part, the wiring of the substrate is complicated, and hence an arithmetic element is increased in size, resulting in an increase in size of the remote control. In addition, the dot matrix display part is more expensive than the segment display part in which printing is performed in advance on a part to be displayed.

[0005]

The present disclosure has been made to solve the problems mentioned above, and an object thereof is to provide a remote control for an air-conditioning apparatus that can display a transmission code and an error code even if an increase in size is suppressed by using a segment display part that is less expensive than the dot matrix display part.

Solution to Problem

[0006]

The remote control for an air-conditioning apparatus according to an embodiment of the present disclosure is the remote control used for the air-conditioning apparatus that includes an outdoor unit and an indoor unit connected to the outdoor unit by a pipe to condition air in an indoor room, the remote control being configured to bi-directionally communicate with the indoor unit, the remote control comprising: a first segment display part in which two or more seven-segments are arranged; a second segment display part in which two or more seven-segments are arranged; and a controller, wherein, in a failure mode in which a failure in either the outdoor unit or the indoor unit is diagnosed, the controller makes the first segment display part display a transmission code indicating which of the outdoor unit and the indoor unit is diagnosed to thereby identify a failure, and makes the second segment display part display an error code being sent from the indoor unit and representing diagnosis content for the outdoor unit or the indoor unit.

Advantageous Effects of Invention

[0007]

According to the present disclosure, the controller makes the first segment display part display the transmission code and makes the second segment display part display the error code in the failure mode. As described above, the remote control for an air-conditioning apparatus can display the transmission code and the error code even if the segment display part, which is less expensive than the dot matrix display part, is used to prevent the segment display part from increasing in size.

Brief Description of Drawings

[0008]

[Fig. 1] Fig. 1 is a circuit diagram illustrating an air-conditioning apparatus 100 according to Embodiment 1 of the present disclosure.

[Fig. 2] Fig. 2 is a perspective view illustrating an indoor unit 2 and a remote control 1 according to Embodiment 1 of the present disclosure.

[Fig. 3] Fig. 3 is a hardware configuration of the air-conditioning apparatus 100 according to Embodiment 1 of the present disclosure.

[Fig. 4] Fig. 4 is a schematic view illustrating an operating part 5 of the air-conditioning apparatus 100 according to Embodiment 1 of the present disclosure.

[Fig. 5] Fig. 5 is a schematic view illustrating a display 4 in the normal mode of the air-conditioning apparatus 100 according to Embodiment 1 of the present disclosure.

[Fig. 6] Fig. 6 is a schematic view illustrating the display 4 in the failure mode of the air-conditioning apparatus 100 according to Embodiment 1 of the present disclosure.

[Fig. 7] Fig. 7 is a schematic view illustrating the display 4 in the failure mode of the air-conditioning apparatus 100 according to Embodiment 1 of the present disclosure.

[Fig. 8] Fig. 8 is a flowchart illustrating the operation in the failure mode of the remote control 1 according to Embodiment 1 of the present disclosure.

Description of Embodiments

[0009]

Embodiment 1

Hereinafter, an embodiment of the remote control for the air-conditioning apparatus according to the present disclosure will be described referring to the drawings. Fig. 1 is a circuit diagram illustrating the air-conditioning apparatus 100 according to Embodiment 1 of the present disclosure. As shown in Fig. 1, the air-conditioning apparatus 100 is a device that conditions air in an indoor space, and includes an outdoor unit 6, an indoor unit 2 capable of communicating with the outdoor unit 6, and a remote control 1. The outdoor unit 6 is provided with a compressor 71, a flow passage switching device 72, an outdoor heat exchanger 73, an outdoor fan 74 and an expansion device 75. The indoor unit 2 is provided with an indoor heat exchanger 76 and an indoor fan 77.

[0010]

The compressor 71, the flow passage switching device 72, the outdoor heat exchanger 73, the expansion device 75 and the indoor heat exchanger 76 are connected by pipes to form a refrigerant circuit 70. The compressor 71 is configured to suction a refrigerant in a low-temperature and low-pressure state, and decompress the suctioned refrigerant to turn it to be a high-temperature and high-pressure refrigerant and discharge. The flow passage switching device 72 is configured to switch the direction in which refrigerant flows in the refrigerant circuit 70, and is a four-way valve, for example. The outdoor heat exchanger 73 causes, for example, heat exchange to be performed between the outdoor air and the refrigerant. The outdoor heat exchanger 73 serves as a condenser during the cooling operation, and serves as an evaporator during the heating operation.

[0011]

The outdoor fan 74 is a device configured to send outdoor air to the outdoor heat exchanger 73. The expansion device 75 is a pressure reducing valve or an expansion valve configured to decompress and expand refrigerant. The expansion device 75 is, for example, an electronic expansion valve of which the opening degree is adjusted. The indoor heat exchanger 76 is, for example, one that causes heat exchange to be performed between the indoor air and the refrigerant. The indoor heat exchanger 76 serves as an evaporator during the cooling operation and serves

as a condenser during the heating operation. The indoor fan 77 is a device configured to send the indoor air to the indoor heat exchanger 76.

[0012]

(Operation mode, cooling operation)

5 Next, the operation modes of the air-conditioning apparatus 100 will be described. First, the cooling operation will be explained. In the cooling operation, refrigerant which is suctioned into the compressor 71 is compressed by the compressor 71 and is discharged in a high-pressure and high-temperature gaseous state. The high-temperature and high-pressure gaseous refrigerant discharged from
10 the compressor 71 passes through the flow passage switching device 72, and flows into the outdoor heat exchanger 73 serving as a condenser. The refrigerant condenses and liquefies in the outdoor heat exchanger 73 through heat exchange with the outdoor air sent by the outdoor fan 74. The condensed liquid state refrigerant flows into the expansion device 75, and is expanded and decompressed to
15 be two-phase, low-temperature and low-pressure gas-liquid refrigerant. Then, the two-phase gas-liquid refrigerant flows into the indoor heat exchanger 76 serving as an evaporator. In the indoor heat exchanger 76, the refrigerant evaporates and gasifies through heat exchange with the indoor air sent by the indoor fan 77. At this time, the indoor air is cooled, whereby cooling is performed in the room. The evaporated low-
20 temperature, low-pressure gaseous refrigerant passes through the flow passage switching device 72 and is suctioned into the compressor 71.

[0013]

(Operation mode, heating operation)

25 Next, the heating operation will be described. In the heating operation, the refrigerant suctioned into the compressor 71 is compressed by the compressor 71 and is discharged in a high-temperature and high-pressure gaseous state. The high-temperature and high-pressure gaseous refrigerant discharged from the compressor 71 passes through the flow passage switching device 72 and flows into the indoor heat exchanger 76 serving as a condenser. In the indoor heat exchanger 76, the
30 refrigerant condenses and liquefies through heat exchange with the indoor air sent by

the indoor fan 77. At this time, the indoor air is heated, whereby heating is performed in the room. The condensed liquid state refrigerant flows into the expansion device 75, and is expanded and depressurized to be the low-temperature and low-pressure two-phase refrigerant. Then, the two-phase gas-liquid refrigerant flows into the outdoor heat exchanger 73 serving as an evaporator, and in the outdoor heat exchanger 73, the refrigerant evaporates and gasifies through heat exchanged with the outdoor air sent by the outdoor fan 74. The evaporated low-temperature, low-pressure gaseous refrigerant passes through the flow passage switching device 72 and is suctioned into the compressor 71.

[0014]

Fig. 2 is a perspective view illustrating the indoor unit 2 and the remote control 1 according to Embodiment 1 of the present disclosure. The remote control 1 performs bi-directional communication with the indoor unit 2. As shown in Fig. 2, the remote control 1 transmits and receives data to and from the indoor unit 2 via the filters 3 provided in the remote control 1. In Embodiment 1, the remote control 1 has a normal mode and a failure mode as built-in modes. The normal mode is a mode used when the air-conditioning apparatus 100 performs the cooling operation or the heating operation. The failure mode is a mode used when diagnosing the failure of the outdoor unit 6 or the indoor unit 2. If there is a possibility that the outdoor unit 6 or the indoor unit 2 has failed, when the user sends a command from the remote control 1 to the indoor unit 2 to diagnose the failure of the outdoor unit 6 or the indoor unit 2, the remote control 1 switches from the normal mode to the failure mode.

[0015]

The remote control 1 and the indoor unit 2 communicate using signals relating to air conditioning. By the air-conditioning-related signals, for example, an operation switching command for switching between the cooling operation and the heating operation, air conditioning-related information such as information of the set temperature and the temperature of the room measured by the air-conditioning apparatus 100 are transmitted. For example, if the heating operation is performed, when the user presses the operation switching button of the remote control 1, the

remote control 1 transmits the indoor unit 2 the operation switching command for switching from the heating operation to the cooling operation as an air conditioning-related signal. The indoor unit 2 receives the air conditioning-related signal of the operation switching command, the air-conditioning apparatus 100 switches from the heating operation to the cooling operation.

[0016]

Fig. 3 is the hardware configuration of the air-conditioning apparatus 100 according to Embodiment 1 of the present disclosure. As shown in Fig. 3, the indoor unit 2 has an indoor side transmitting and receiving unit 20 and an indoor side control device 23. The indoor side transmitting and receiving unit 20 is configured to transmit and receive information to and from the remote control 1, and includes an indoor side transmitting unit 21, and an indoor side receiving unit 22. The indoor side transmitting unit 21 includes a light emitting diode, which is a transmitting module. The light emitting diode transmits air conditioning-related signals by combining emission and non-emission of infrared rays. The indoor side receiving unit 22 has a photodiode, which is a receiving module. The photodiode receives infrared rays emitted by the light emitting diode, to thereby generate an electric signal corresponding to emission and non-emission of infrared rays. The indoor side control device 23 transmits an electric signal that makes the light emitting diodes of the indoor side transmitting unit 21 emit and not emit infrared rays. Further, the indoor side control device 23 receives an electric signal from the indoor side receiving unit 22.

[0017]

The remote control 1 includes a remote control-side transmitting and receiving unit 10, an operation unit 5, a display 4, and a controller 13. The remote control side transmitting and receiving unit 10 is configured to transmit and receive information to and from the indoor unit 2, and includes a remote control side transmitting part 11 and a remote control side receiving part 12. The remote control side transmitting part 11 has a light emitting diode, which is a transmission module. The light emitting diode transmits the air conditioning-related signal by combining the emission and non-

emission of infrared rays. The remote control side receiving part 12 has a photodiode, which is a receiving module. The photodiode receives the infrared light emitted by the light emitting diode, to thereby generate an electrical signal corresponding to emission and non-emission of infrared rays.

5 [0018]

Fig. 4 is a schematic view illustrating the operating part 5 of the air-conditioning apparatus 100 according to Embodiment 1 of the present disclosure. As shown in Fig. 4, the operating part 5 includes an operation stop button 44, a temperature setting button 40, a wind speed setting button 41, a wind direction setting button 42, a timer-on button 45, a timer-off button 46, a time setting button 43, and a failure mode button 47. The operation stop button 44 is a button configured to command the air-conditioning apparatus 100 to run or stop running. The temperature setting button 40 is a button configured to set the temperature of the indoor unit 2.

[0019]

15 The wind speed setting button 41 is a button configured to set the speed of the air sent to the room by the indoor unit 2. The wind direction setting button 42 is a button configured to set the direction of the air sent by the indoor unit 2 to the room. The timer-on button 45 is a button configured to set a turn-on timer that enables the air-conditioning apparatus 100 to automatically start the operation at a set time. The timer-off button 46 is a button configured to set a turn-off timer that enables the air-conditioning apparatus 100 to automatically stop the operation at a set time. The time setting button 43 is a button configured to set a time for either of the turn-on timer and the turn-off timer.

[0020]

25 The failure mode button 47 is a button that can be pressed by only a thing with a narrow tip, and when pressed, the remote control 1 enters the failure mode. Incidentally, in Embodiment 1, a case of using the failure mode button 47 is exemplified. However, as long as it has a function of preventing an erroneous operation, the failure mode button may have other configurations. For example, the remote control 1 may be switched to the failure mode by multiple pressing by the user,

i.e. pressing a plurality of buttons simultaneously. Further, the remote control 1 may be switched to the failure mode by pressing plurality of buttons in a predetermined order by the user.

[0021]

Fig. 5 is a schematic view illustrating the display 4 in the normal mode of the air-conditioning apparatus 100 according to Embodiment 1 of the present disclosure. As shown in Fig. 5, the display 4 is, for example, a segmented liquid crystal display in which image pixels and a transparent electrode identical with the image pixels are printed. The display 4 includes a first segment display part 54, a second segment display part 50, a wind speed display part 51, and a wind direction display part 55. The first segment display part 54 has two or more seven-segments being arranged, and displays the current time or the timer time. In Fig. 5, the time "12:24" is displayed as an example of the first segment display part 54.

[0022]

The second segment display part 50 has two seven-segments being arranged, and displays the set temperatures of the indoor unit 2. Here, the second segment display part 50 is larger than the first segment display part 54. As a result, the user can easily see the set temperatures of the indoor unit 2. It should be noted that the second segment display part 50 may have two or more seven-segments being arranged. In Fig. 5, the set temperature of "22°C" is displayed as an example of the second segment display part 50.

[0023]

The wind speed display part 51 displays the velocity of the air sent by the indoor unit 2 to the room. The wind direction display part 55 displays the direction of the air sent by the indoor unit to the room. The wind direction display part 55 has a vertical direction display part 52 and a horizontal direction display part 53. The vertical direction display part 52 displays the wind direction perpendicular to the indoor unit 2. The horizontal direction display part 53 displays the wind direction in the horizontal direction relative to the indoor unit 2.

[0024]

The controller 13 transmits an electric signal to make the light emitting diode of the remote control side transmitting part 11 emit or not emit infrared rays. Further, the controller 13 receives an electric signal from the remote control side receiving part 12. Here, when the user sends to the indoor unit 2 a command to diagnose a failure of the outdoor unit 6 or the indoor unit 2 from the remote control 1, an error code indicating the content of the diagnosis is transmitted from the indoor unit 2, and the remote control 1 displays the received error code.

[0025]

When the remote control 1 transmits a transmission code for diagnosing the failure of the indoor unit 2, the indoor unit 2 immediately diagnoses its own failure condition and transmits an error code indicating the diagnosis result to the remote control 1. On the other hand, when the remote control 1 transmits a transmission code for diagnosing a failure of the outdoor unit 6, the indoor unit 2 communicates with the outdoor unit 6. The outdoor unit 6 diagnoses its own failure condition and sends the diagnosis result to the indoor unit 2. Upon receiving the diagnosis result of the outdoor unit 6, the indoor unit 2 transmits an error code indicating the diagnosis result of the outdoor unit 6 to the remote control 1. Therefore, diagnosing the outdoor unit 6 takes a little longer time than diagnosing the indoor unit 2 since the remote control requires to communicate with the indoor unit 2 and the outdoor unit 3.

[0026]

The remote control 1 also displays a transmission code indicating which of the outdoor unit 6 and the indoor unit 2 should be diagnosed. In this Embodiment 1, the transmission code is, for example, "25" when diagnosing the failure of the outdoor unit 6, and "24" when diagnosing the failure of the indoor unit 2, but the transmission code can be changed as appropriate. Transmission codes may be set for individual functions other than diagnosis of the failure in either of the outdoor unit 6 and the indoor unit 2. When the remote control 1 enters the failure mode, the controller 13 partially changes the functions of the operating unit 5. For example, in the failure mode, the controller 13 changes the operation stop button 44 to a button for transmitting a transmission code. In the failure mode, the controller 13 changes the

wind speed setting button 41, the wind direction setting button 42, and the time setting button 43 to buttons for setting transmission codes.

[0027]

Fig. 6 is a schematic view illustrating the display 4 in the failure mode of the air-conditioning apparatus 100 according to Embodiment 1 of the present disclosure. When the remote control 1 enters the failure mode, the controller 13 partially changes the functions of the display 4. As shown in Fig. 6, the controller 13 displays the transmission codes on the first segment display part 54 in the failure mode. In Fig. 6, a transmission code "24" for diagnosing a failure of the indoor unit 2 is displayed. Further, the controller 13 makes all the segments of the wind speed display part 51 and the wind direction display part 55 light up. Fig. 6 shows the display 4 in the state before the transmission of the transmission code by the remote control 1, and no numerical value is displayed on the second segment display part 50.

[0028]

Fig. 7 is a schematic view illustrating the display 4 in the failure mode of the air-conditioning apparatus 100 according to Embodiment 1 of the present disclosure. As shown in Fig. 7, the controller 13 displays an error code on the second segment display part 50 in the failure mode. In Fig. 7, for example, the error code "82" is displayed. In Fig. 7, after transmitting the transmission code, the remote control 1 receives the error code transmitted from the indoor unit 2, thereby displaying the error code on the second segment display part 50.

[0029]

Fig. 8 is a flow chart illustrating the operation of the remote control 1 according to Embodiment 1 of the present disclosure in the failure mode. Next, the operation of the remote control 1 in the failure mode will be described. If the user determines that a failure needs to be diagnosed, as shown in Fig. 8, the user presses the failure mode button 47 (step S101). At this stage, the remote control 1 enters the failure mode, but the remote control 1 does not immediately transmit signals to the indoor unit 2.

[0030]

When the user presses the failure mode button 47, the remote control 1 enters the failure mode, and the operating unit 5 and the display 4 function as they function in the failure mode (step S102). The displays other than the wind speed display part 5, the wind direction display part 55 and the first segment display part 54 are turned off. As a result, it is possible to allow the user to recognize that the remote control is in the failure mode. The second segment display part 50 is also turned off.

[0031]

Next, the controller 13 determines whether the user has pressed any button (step S103), and returns to step S102 if the button has not been pressed. When the user presses one of the buttons, the controller 13 determines whether the pressed button is the wind speed setting button 41, the wind direction setting button 42, and the time setting button 43 for setting the transmission code (step S104). If the pressed button is not the wind speed setting button 41, the wind direction setting button 42 or the time setting button 43, the controller 13 clears the failure mode, and a reset operation is performed (step S105). When the pressed button is the wind speed setting button 41, the wind direction setting button 42, or the time setting button 43, the transmission code displayed on the first segment display part 54 is set to "24" or "25" ± 1 . That is, when the wind speed setting button 41, the wind direction setting button 42 or the time setting button 43 is pressed, the transmission code is increased or decreased by 1. When the user presses the operation stop button 44, the remote control 1 transmits a transmission code to the indoor unit 2 (step S106). At this time, the remote control 1 transmits a transmission request signal to the indoor unit 2 to request to return an error code.

[0032]

Then, the controller 13 counts the time, and if an error code is not returned from the indoor unit 2 before the predetermined reception wait set time elapses (step S107), the controller 13 displays a transmission/reception error code on the second segment display part 50 (step S108). If the error code is received from indoor unit 2 before the reception wait set time elapses, the controller 13 determines whether or not the error code is data that is set in advance relating to the transmitted code (step

S109). If the error code differs from the data that is set in advance relating to the transmission code, the controller 13 displays the transmission/reception error code on the second segment display part 50 (step S108). On the other hand, if the error code does not differ from the data that is set in advance relating to the transmission code, the controller 13 collates the error code with a signal that is set in advance, and displays the error code on the second segment display part 50 (step S110).

[0033]

According to Embodiment 1, in the failure mode, the controller 13 makes the first segment display part 54 display the transmission code and makes the second segment display part 50 display the error code. As described above, the remote control 1 of the air-conditioning apparatus 100 can display the transmission code and the error code even if an increase in size of the remote control 1 is suppressed by using the segment display part which is less expensive than the dot matrix display part. Thus, it is possible to reduce the size of the wiring and the components, and as a result, the entire remote control 1 can be reduced in size. Accordingly, the user can obtain and use the remote control 1 having the same function at a low cost. Since the second segment display part 50 is larger than the first segment display part 54, the user can easily see the error code displayed on the second segment display part 50.

[0034]

In this Embodiment 1, when the remote control 1 enters the failure mode, the remote control 1 does not transmit the transmission code to the indoor unit 2 until the user presses the operation stop button 44. However, this is not restrictive, and when the remote control 1 enters the failure mode, the remote control 1 may automatically transmit the transmission code to the indoor unit 2. In this case, it is preferable that the default transmission code to be transmitted be, for example, a transmission code for diagnosing a failure of the indoor unit 2. This is because diagnosis of the failure of the indoor unit 2 completes more quickly than the diagnosis of the failure of the outdoor unit 6 since the communication between the indoor unit 2 and the outdoor unit 6 is omitted. After the remote control 1 sends the indoor unit 2 a transmission

code for diagnosing the failure in the indoor unit 2 and receives an error code, the user may change it a transmission code for diagnosing the failure in the outdoor unit 6 and the remote control 1 may send the transmission code to the indoor unit 2 again.

[0035]

5 In this Embodiment 1, a case is exemplified in which the display 4 has a plurality of segment display part, but the display 4 may have a dot matrix display part. In this case, the controller 13 switches a plurality of kinds of operation information sent from the indoor unit 2 to let the dot matrix display part display the plurality of kinds of operation information sequentially. Further, in Embodiment 1, a case is exemplified in which the transmitting module is a light emitting diode and the receiving module is a photodiode, and the indoor unit 2 and the remote control 1 communicate with each other using infrared rays. Note that the transmission module used for performing communication using infrared rays is not limited to a light-emitting diode. The receiving module used for performing communication using infrared rays is not limited to a photodiode, and a phototransistor, a thermoelectric element or a pyroelectric element may be used. As the transmission/reception module, a module such as Bluetooth (registered trademark) or Wi-Fi (registered trademark) may be used. In this case, the filter 3 provided in the remote control 1 becomes unnecessary.

Reference Signs List

[0036]

1 remote control, 2 indoor unit, 3 filters, 4 display, 5 operating unit, 6 outdoor unit, 10 remote control side transmitting and receiving unit, 11 remote control side transmitting part 12 remote control side receiving part, 13 controller, 21 indoor side transmitting and receiving unit, 22 indoor side receiving unit, 23 indoor side control device, 40 temperature setting button, 41 wind speed setting button, 42 time setting button, 44 operation stop button, 45 timer-on button, 46 timer-off button, 47 failure mode button, 50 second segment display part, 51 wind speed display part, 52 vertical direction display part, 53 horizontal direction display part, 54 first segment display part, 55 wind direction display part, 70 refrigerant circuit, 71 compressor, 72 flow

passage switching device, 73 outdoor heat exchanger, 74 outdoor fan, 75 expansion device, 76 indoor heat exchanger, 77 indoor fan, 100 air-conditioning apparatus

CLAIMS

[Claim 1]

A remote control for an air-conditioning apparatus, the remote control being used for the air-conditioning apparatus that includes an outdoor unit and an indoor unit connected to the outdoor unit by a pipe to condition air in an indoor room, the remote control being configured to bi-directionally communicate with the indoor unit, the remote control comprising:

a first segment display part in which two or more seven-segments are arranged;

a second segment display part in which two or more seven-segments are arranged; and

a controller,

wherein, in a failure mode in which a failure in either the outdoor unit or the indoor unit is diagnosed, the controller makes the first segment display part display a transmission code indicating which of the outdoor unit and the indoor unit is diagnosed to thereby identify a failure, and makes the second segment display part display an error code being sent from the indoor unit and representing diagnosis content for the outdoor unit or the indoor unit.

[Claim 2]

The remote control for the air-conditioning apparatus of claim 1, wherein the second segment display part is larger than the first segment display part.

[Claim 3]

The remote control for the air-conditioning apparatus of claim 1 or 2, wherein, in a normal mode in which the air-conditioning apparatus performs air-conditioning operation, the controller makes the second segment display part display a set temperature for the indoor unit.

[Claim 4]

The remote control for the air-conditioning apparatus of any one of claims 1 to 3, wherein, in a normal mode in which the air-conditioning apparatus performs air-conditioning operation, the controller makes the first segment display part display a

current time or a timer time.

[Claim 5]

The remote control for the air-conditioning apparatus of any one of claims 1 to 4, comprising:

5 a wind speed display part having a plurality of segments to display speed of air sent by the indoor unit; and

 a wind direction display part having a plurality of segments to display a direction of the air sent by the indoor unit,

 wherein the controller makes all the segments of the wind speed display part
10 and the wind direction display part light up during the failure mode.