

Capacity Control; Current Release Control - Toshiba RAS-B10SKVP-E Service Manual

Split type air conditioner

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Troubleshooting

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Item

4. Capacity

The cooling or heating capacity depending on the load is control adjusted.

According to difference between the setup value of temperature and the room temperature, the capacity is adjusted by the compressor revolution.

Remote controller

Set temp (Ts)

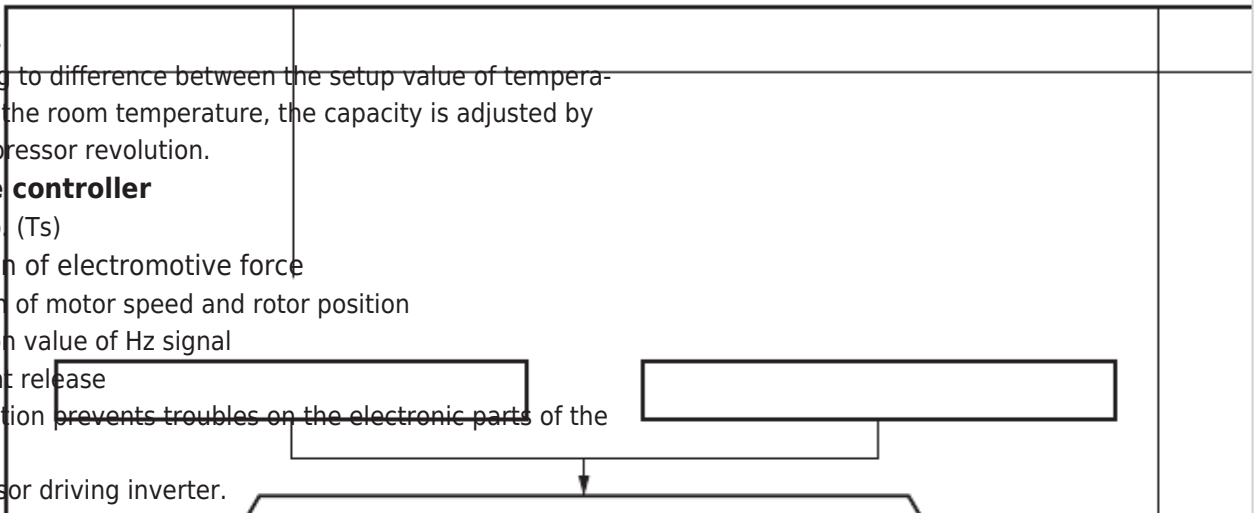
Detection of electromotive force

Detection of motor speed and rotor position

Correction value of Hz signal

5. Current release

This function prevents troubles on the electronic parts of the control compressor driving inverter.



This function also controls drive circuit of the compressor speed so that electric power of the compressor drive circuit does not exceed the specified value.

Outdoor unit inverter main circuit control current

Operating current

Setup value

YES

Capacity control continues.

Outdoor temp.

50°C < TO

45°C < TO < 50°C

40°C < TO < 45°C

16°C < TO < 40°C

11°C < TO < 16°C

-5°C < TO < 11°C

TO < -5°C

Operation flow and applicable data, etc.

Ts -Ta

Correction of Hz signal

of compressor motor winding

Operating Hz

Inverter output change

Commutation timing change

Change of compressor speed

Outdoor temp. To

Setup of current release point

NO

Reduce compressor speed

Current decrease

Cooling current

release value

6.45A

6.75A

8.47A

6.90A

Indoor unit

Room temp. (Ta)

Heating current

release value

7.72A

9.22A

10.80A

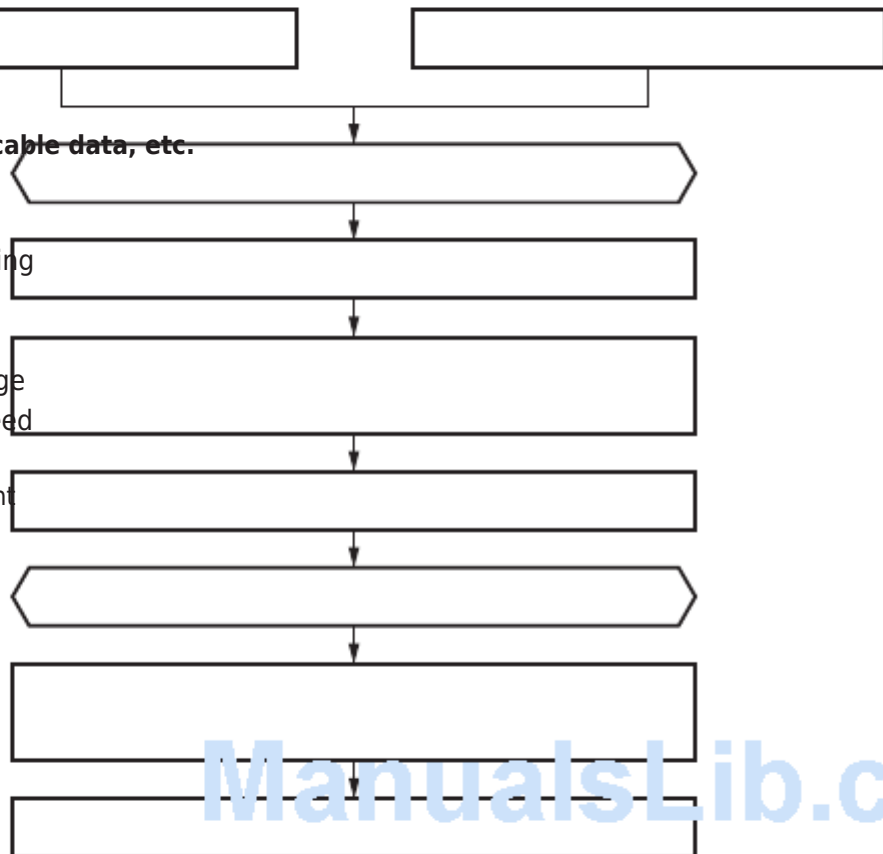
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Description

1) The difference between set temperature on remote controller (Ts) and room temperature (Ta) is calculated.

2) According to the temperature difference, the correction value of Hz signal which determines the compressor speed is set up.

3) The rotating position and speed



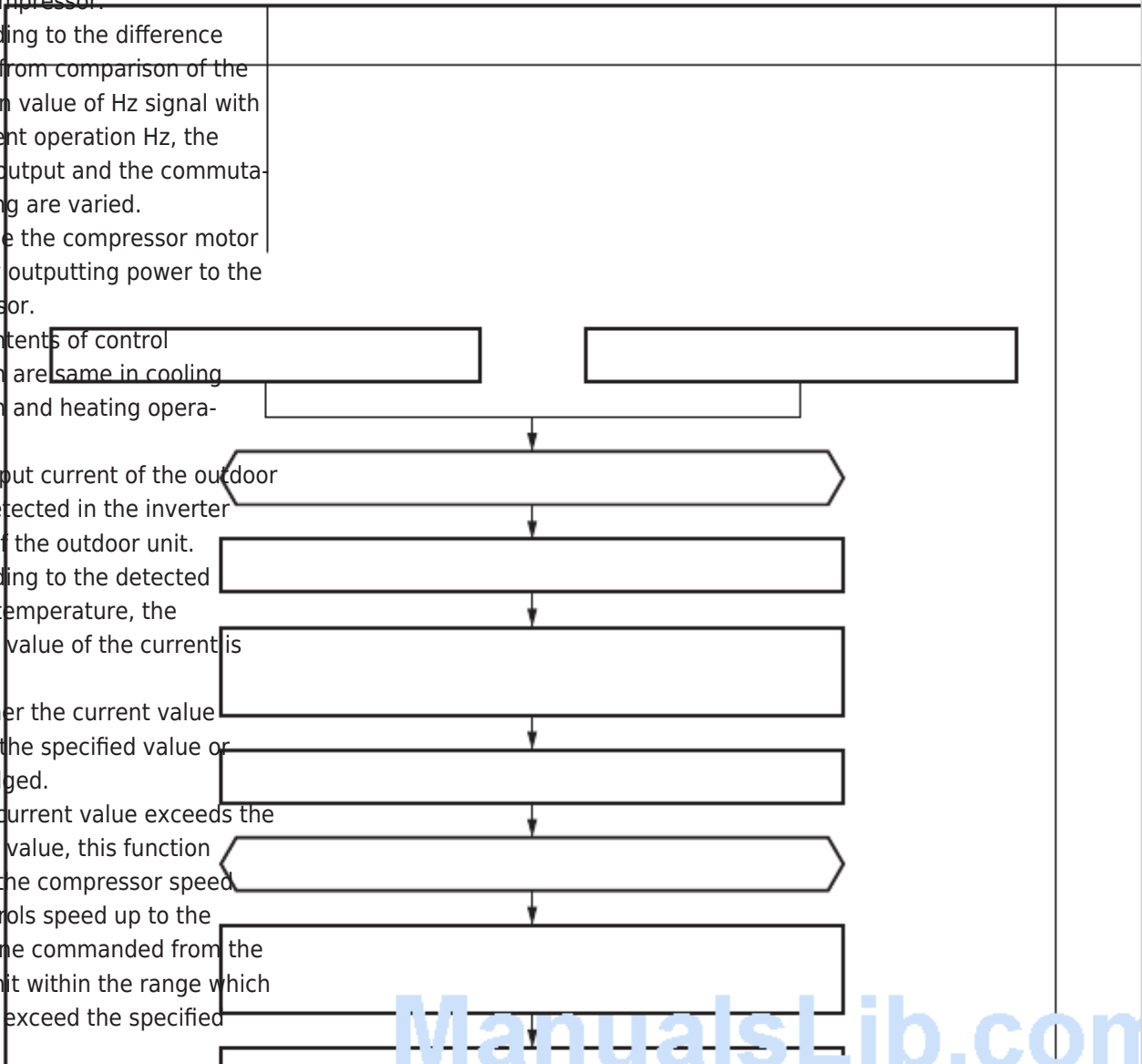
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of the motor are detected by the electromotive force occurred on the motor winding with operation of the compressor.

- 4) According to the difference resulted from comparison of the correction value of Hz signal with the present operation Hz, the inverter output and the commutation timing are varied.
- 5) Change the compressor motor speed by outputting power to the compressor.

* The contents of control operation are same in cooling operation and heating operation

- 1) The input current of the outdoor unit is detected in the inverter section of the outdoor unit.
- 2) According to the detected outdoor temperature, the specified value of the current is selected.
- 3) Whether the current value exceeds the specified value or not is judged.
- 4) If the current value exceeds the specified value, this function reduces the compressor speed and controls speed up to the closest one commanded from the indoor unit within the range which does not exceed the specified value.



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