CLAIMS

[Claim 1]

An air conditioner, comprising

a refrigerant circuit in which a compressor, an outdoor heat exchanger, an expansion valve, and an indoor heat exchanger are connected to one another; and

an evaporation temperature detecting means for detecting an evaporation temperature, wherein

in a predetermined dehumidification operation mode, the indoor heat exchanger includes: an evaporation region where a liquid refrigerant evaporates; and a superheat region downstream of the evaporation region, and the compressor and the expansion valve are controlled so that an extent of the evaporation region varies depending on a load and so that the evaporation temperature detected by the evaporation temperature detecting means falls within a predetermined temperature range.

[Claim 2]

The air conditioner according to claim 1, further comprising a superheat temperature detecting means for detecting a superheat temperature.

[Claim 3]

The air conditioner according to claim 1 or 2, wherein

the indoor heat exchanger includes: an auxiliary heat exchanger to which a liquid refrigerant is supplied in the

predetermined dehumidification operation mode; and a main heat exchanger disposed downstream of the auxiliary heat exchanger in the predetermined dehumidification operation mode.

[Claim 4]

The air conditioner according to claim 3, wherein:

the main heat exchanger includes a front heat exchanger disposed on a front side in the indoor unit, and a rear heat exchanger disposed on a rear side in the indoor unit; and

the auxiliary heat exchanger is disposed forward of the front heat exchanger.

[Claim 5]

The air conditioner according to claim 4, wherein

the number of rows of tubes functioning as the evaporation region in the auxiliary heat exchanger in the predetermined dehumidification operation mode is not less than a half of the total number of rows of tubes of the front heat exchanger.

[Claim 6]

The air conditioner according to any one of claims 1 to 5, further comprising:

an indoor fan configured to supply air flow to the indoor heat exchanger; and

a changing means for changing the number of revolution of the indoor fan.

CLAIMS

[Claim 1]

An air conditioner, comprising

a refrigerant circuit in which a compressor, an outdoor heat exchanger, an expansion valve, and an indoor heat exchanger are connected to one another; and

an evaporation temperature detecting means for detecting an evaporation temperature, wherein

in a predetermined dehumidification operation mode, the indoor heat exchanger is structured to include a part where a liquid refrigerant supplied to a liquid inlet flows toward an upper end of the indoor heat exchanger, the indoor heat exchanger includes (i)an evaporation region where the liquid refrigerant evaporates and (ii)a superheat region downstream of the evaporation region, and the compressor and the expansion valve are controlled so that the evaporation temperature detected by the evaporation temperature detecting means falls within a predetermined temperature range;

when a load increases, a frequency of the compressor is increased and an opening degree of the expansion valve is increased, and thereby an extent of the evaporation region varies to increase within the part where the refrigerant flows from the liquid inlet of the indoor heat exchanger toward the upper end of the indoor heat exchanger; and

when the load decreases, the frequency of the compressor

is decreased and the opening degree of the expansion valve is decreased, and thereby the extent of the evaporation region varies to decrease within the part where the refrigerant flows from the liquid inlet of the indoor heat exchanger toward the upper end of the indoor heat exchanger.

[Claim 2]

The air conditioner according to claim 1, further comprising a superheat temperature detecting means for detecting a superheat temperature.

[Claim 3]

The air conditioner according to claim 1 or 2, wherein

the indoor heat exchanger includes: an auxiliary heat exchanger to which a liquid refrigerant is supplied in the predetermined dehumidification operation mode; and a main heat exchanger disposed downstream of the auxiliary heat exchanger in the predetermined dehumidification operation mode.

[Claim 4]

The air conditioner according to claim 3, wherein:

the main heat exchanger includes a front heat exchanger disposed on a front side in the indoor unit, and a rear heat exchanger disposed on a rear side in the indoor unit; and

the auxiliary heat exchanger is disposed forward of the front heat exchanger.

[Claim 5]

The air conditioner according to claim 4, wherein

the number of rows of tubes functioning as the evaporation region in the auxiliary heat exchanger in the predetermined dehumidification operation mode is not less than a half of the total number of rows of tubes of the front heat exchanger.

[Claim 6]

The air conditioner according to any one of claims 1 to 5, further comprising:

an indoor fan configured to supply air flow to the indoor heat exchanger; and

a changing means for changing the number of revolution of the indoor fan.