

ABSTRACT**HUMIDITY CONTROLLER APPARATUS**

Provided is a refrigerant circuit (1) which includes a first heat exchanger (3) and a second heat exchanger (5). The refrigerant circuit (1), through which a refrigerant

5 circulates, performs a vapor compression refrigeration cycle. An adsorbent material is supported on a surface of the first heat exchanger (3) as well as on a surface of the second heat exchanger (5). The circulation of refrigerant in the refrigerant circuit (1) and the distribution of air are switched so that moisture present in a stream of air flowing through the refrigerant evaporating heat exchanger (3, 5) is adsorbed by the adsorbent material of

10 the heat exchanger (3, 5) and the stream of air thus converted into a stream of dehumidified air is supplied indoors while, on the other hand, moisture desorbed from the adsorbent material of the refrigerant condensing heat exchanger (5, 3) is released to a stream of air flowing through the heat exchanger (5, 3) whereby the adsorbent material of the heat exchanger (5, 3) is regenerated. In addition, the circulation of refrigerant in the

15 refrigerant circuit (1) and the distribution of air are switched so that moisture present in a stream of air flowing through the refrigerant evaporating heat exchanger (3, 5) is adsorbed by the adsorbent material of the heat exchanger (3, 5) while, on the other hand, moisture desorbed from the adsorbent material of the refrigerant condensing heat exchanger (5, 3) is released to a stream of air flowing through the heat exchanger (5, 3) whereby the adsorbent

20 material of the heat exchanger (5, 3) is regenerated, and the stream of air thus converted into a stream of humidified air is supplied indoors.