

Item	Operation flow and applicable data, etc.	Description						
7. Quick heating control	<p>This function quickens the starting of heating operation when indoor/outdoor temperature is low. (Available only in heating operation)</p> <p>When indoor temperature is low, this function stores the heat by heating winding depended on the outdoor temperature and then it enables the hot air blowing out quickly.</p> <div><p style="text-align: center;">----- In case of operation stop -----</p><div><div><div>The previous operation was heating and 2 hours passed after the operation had stopped.</div><div>NO</div><div>YES</div></div><div><div><div>Indoor temperature</div><div>20°C</div><div>Outdoor heat exchanger temperature</div><div>0°C</div><div>-1°C</div><div>-6°C</div><div>-7°C</div><div>Winding is not heated.</div><div>Heating output for winding</div><div>OFF</div><div>10W or equivalent</div><div>10W or equivalent</div></div></div></div></div> <p>When the following conditions are satisfied, winding is heated by output varied by the outdoor heat exchanger temperature.</p> <p>Condition 1 : The previous operation was heating.</p> <p>Condition 2 : 2 hours passed after operation stop.</p> <p>Condition 3 : The room temperature is 20°C or lower. The indoor temperature sensor detects the room temperature. If the detected room temperature is 20°C or lower, the outdoor heat exchanger temperature sensor detects the outdoor heat exchanger temperature. As shown in the left figure, winding of the compressor is heated for each division of the temperature (≒ for each outdoor temperature) and the heat is stored.</p>							
8. Defrost control (Only in heating operation)	<p>(This function removes frost adhered to the outdoor heat exchanger.)</p> <p>The temperature sensor of the outdoor heat exchanger (Te sensor) judges the frosting status of the outdoor heat exchanger and the defrost operation is performed with 4-way valve reverse defrost system.</p> <div><div><div>Start of heating operation</div><div>0'</div><div>10'</div><div>15'</div><div>29'</div><div>35'</div><div>Operation time (Minute)</div><div>Outdoor heat exchanger temperature</div><div>-4°C</div><div>-6°C</div><div>-25°C</div><div>C zone</div><div>A zone</div><div>B zone</div><div>Te0 detection time</div><div>*</div></div><div><p>* The minimum value of Te sensor 10 to 15 minutes after start of operation is stored in memory as Te0.</p><p style="text-align: center;">Table 1</p><table><tr><td>A zone</td><td>When $Te0 - TE \geq 2.5$ continued for 2 minutes in A zone, defrost operation starts.</td></tr><tr><td>B zone</td><td>When the operation continued for 2 minutes in B zone, defrost operation starts.</td></tr><tr><td>C zone</td><td>When $Te0 - TE \geq 3$ continued for 2 minutes in C zone, defrost operation starts.</td></tr></table></div></div> <p>The necessity of defrost operation is detected by the outdoor heat exchanger temperature. The conditions to detect the necessity of defrost operation differ in A, B, or C zone each. (Table 1)</p> <p><Defrost operation></p> <ul style="list-style-type: none">Defrost operation in A to C zones <ol style="list-style-type: none">Stop operation of the compressor for 20 seconds.Invert (ON) 4-way valve 10 seconds after stop of the compressor.The outdoor fan stops at the same time when the compressor stops.When temperature of the indoor heat exchanger becomes 38°C or lower, stop the indoor fan. <p><Finish of defrost operation></p> <ul style="list-style-type: none">Returning conditions from defrost operation to heating operation <ol style="list-style-type: none">Temperature of outdoor heat exchanger rises to +8°C or higher.Temperature of outdoor heat exchanger is kept at +5°C or higher for 80 seconds.Defrost operation continues for 15 minutes. <p><Returning from defrost operation></p> <ol style="list-style-type: none">Stop operation of the compressor for approx. 50 seconds.Invert (OFF) 4-way valve approx. 40 seconds after stop of the compressor.The outdoor fan starts rotating at the same time when the compressor starts.	A zone	When $Te0 - TE \geq 2.5$ continued for 2 minutes in A zone, defrost operation starts.	B zone	When the operation continued for 2 minutes in B zone, defrost operation starts.	C zone	When $Te0 - TE \geq 3$ continued for 2 minutes in C zone, defrost operation starts.	
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