Claims

1. A method of managing a compressor start operation for a transport refrigeration unit including the compressor (210), the method comprising controlling a valve (250;275) disposed in a refrigerant line upstream of a compressor to lower a saturated suction temperature of a refrigerant to be below an ambient temperature while starting the compressor;

characterised by:

actively controlling a valve disposed within a refrigerant line and upstream of the compressor, wherein actively controlling the valve adjusts the pressure of the refrigerant to lower the saturated suction temperature of the refrigerant to be below the ambient temperature by a threshold temperature difference.

2. The method of claim 1, wherein the valve (250;275) is a suction modulation valve.

3. The method of claim 1, wherein the valve (250;275) is an electronic evaporator expansion valve.

4. The method of claim 1, 2, or 3, wherein the saturated suction temperature of the refrigerant is lowered to be at least 30 degrees Fahrenheit below the ambient temperature.

5. The method of any preceding claim, wherein the method is performed when the ambient temperature is below a threshold ambient temperature.

6. The method of claim 5, wherein the threshold ambient temperature is equal to or less than 120 degrees Fahrenheit.

7. A transport refrigeration system comprising:

a compressor (210), a condenser (230) downstream of the compressor, an expansion device (250) downstream of the condenser, and an evaporator (260) downstream of the expansion device, and a refrigerant circulating from the

compressor to the condenser, through the expansion device and the evaporator and then returning to the compressor; and

a control module configured to manage a compressor start by adjusting a valve (250;275) disposed in a refrigerant line and upstream of the compressor, adjustment of the valve including actively controlling the valve to thereby adjust the pressure of the refrigerant to lower the saturated suction temperature of the refrigerant to be below the ambient temperature by a threshold temperature difference.

8. The transport refrigeration system of claim 7, wherein the valve (250;272) is a suction modulation valve.

9. The transport refrigeration system of claim 7, wherein the valve (250;272) is an electronic evaporator expansion valve.