Title (en)

DEFROST CONTROL METHOD AND DEVICE FOR HEAT PUMPS

Publication

EP 0142663 B1 19881109 (DE)

Application

EP 84111031 A 19840915

Priority

DE 3333907 A 19830920

Abstract (en)

[origin: EP0142663A2] 1. A defrosting control method for heat pumps, a defrosting operation being controlled in dependence upon the temperature difference between the evaporator temperature and the ambient or supply air temperature of the evaporator, the actual temperature difference (DELTA T) being compared with a set-value temperature difference (DELTA Tm) which varies in dependence upon the ambient or supply air temperature (Tm), a defrosting signal being delivered on the basis of such comparison when the actual temperature difference exceeds the set-value temperature difference, characterised in that the continuously detected actual value signals of the ambient or supply air temperature (Tm) and the evaporator temperature (Tk) are supplied to a subtractor (60) determining the temperature difference DELTA T = Tm -Tk , the actual value signal (Tm) is also supplied to a function former (62) which forms the set-value temperature difference (DELTA Tm) from the actual-value signal (Tm) and an adjusted temperature difference signal (Uv), the actual-temperature difference signal (DELTA T) output by the subtractor (60) and the set-value temperature difference signal (DELTA Tm) output by the function former (62) are supplied to a hysteretic comparator (61) which when DELTA T > DELTA Tm produces an output signal transmitted as first instruction signal (54) to a facility (65, 66) for triggering different defrosting signals, the actual value signal (Tm) is also supplied to a hysteretic comparator (72) and compared therein with a signal (Uk) corresponding to a fixed temperature above 0 degree C, more particularly 5 degrees C, and an output signal supplied as second instruction signal (56, 57 respectively) to the facility (65, 66) is produced, the actual value signal (Tk) is supplied to a hysteretic comparator (71) and compared therein with a signal (Uo) corresponding to a temperature of 0 degree C, and only when (Tk) is below 0 degree C is an output signal produced which is supplied as third instruction signal (55) to the facility (65, 66) and when the first instruction signal (54) and the third instruction signal (55), the latter signalling a temperature Tk < 0 degree C, are present, the facility (65, 66) : a) if the second instruction signal (56, 57 respectively) signals a temperature Tm < Tuk , triggers a switching process whereby the heat pump drive is stopped and accelerated defrosting with heating gas is started or b) if the second instruction signal (56, 57 respectively) signals a temperature Tm > Tuk triggers a switching process whereby the heat pump drive is stopped and a normal defrosting process started.

IPC 1-7

F25D 21/00

IPC 8 full level

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CPC (source: EP)

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Cited by

EP2717002A1; CN111076364A; EP1591736A1; EP0285690A1; DE3539817A1; EP0272196A3; GB2340922A; GB2340922B; CN100340829C; EP1134519A3; WO0235165A1; WO0122014A1; EP0164948B1; DE102020123960A1; DE102020123960B4

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