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Technical Bulletin

ECM Fan Performance Chart: CFM LED Blinks

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The CFM shown in the GT/GS/H, "B" revision units' ECM Fan Performance charts is not equivalent to the CFM displayed by the LED on the ECM control board. In most units, the number of flashes of the CFM LED will indicate a higher CFM than the ECM Fan Performance Chart. Further testing proved all units to be at the CFM levels represented in the ECM Fan Performance Chart.

ECM motors generate this signal based upon the RPM and torque of the motor. The module is able to convert this into an electrical signal which will indicate CFM levels. Design variables have created the discrepancy between the actual programmed CFM and the CFM indicated by the LED.

In the case of our units' design, the CFM indicated by the LED flashes could be higher than the actual CFM by as much as 4 flashes or 400 CFM. Since the number of blinks are not an exact representation of the true CFM, the CFM LED on the ECM control board can be used as a point of reference when making changes to the dip switches. This will reassure the adjustment is increasing or decreasing the CFM without registering the true CFM from the number of blinks. On the following page, the ECM Fan Performance Chart contains additional columns representing the actual number of blinks displayed by the ECM control board.

In units with electric resistive heaters, a field service check of the CFM can be completed by utilizing the calculation and instructions below.

$$\text{CFM} = \frac{\text{BTU}}{\text{Air TD} \times 1.08}$$

$$\text{CFM} = \frac{\text{Watts} \times 3.413}{\text{Supply and Return TD} \times 1.08} \quad \text{Watts} = (\text{Volts} \times \text{Amps})$$

1. Jumper R to W to bring on resistive heat.
2. Check your total voltage and amperage on the electric resistive heat circuit. Measure these readings without heat pump operation.
3. Check supply and return air temperature to determine the delta T. Confirm the volts and amps remain the same after checking air temperatures. Staging up of the heater will increase watts.

GT/GS/H "B" Revision Units

ECM Fan Performance - Two-Stage Compressor Units

Model ¹	Program ²	Heating/Cooling Modes			Dehumidification Mode ³			DIP Switch Settings ⁴								# of Blinks	
		1st Stage	2nd Stage	Fan	1st Stage	2nd Stage	Fan	S1	S2	S3	S4	S5	S6	S7	S8	1st Stage	2nd Stage
024 - 028	C	425	765	383				ON	ON	OFF	ON	ON	ON	OFF	OFF	4	7.5
	A	500	900	450	425	765	450	ON	ON	OFF	OFF	ON	ON	OFF	OFF	5	9
	B	550	990	495	468	842	495	ON	ON	ON	OFF	ON	ON	OFF	OFF	5.5	10
036 - 040	C	765	1105	553				ON	ON	OFF	ON	ON	ON	OFF	OFF	8.5	12.5
	A	900	1300	650	765	1105	650	ON	ON	OFF	OFF	ON	ON	OFF	OFF	10	14.5
	B	990	1430	715	842	1216	715	ON	ON	ON	OFF	ON	ON	OFF	OFF	11	15.5
048 - 054	C	935	1445	723				ON	ON	OFF	ON	ON	ON	OFF	OFF	11.5	18.5
	A	1100	1700	850	935	1445	850	ON	ON	OFF	OFF	ON	ON	OFF	OFF	13.5	21
	B	1210	1870	935	1029	1590	935	ON	ON	ON	OFF	ON	ON	OFF	OFF	14.5	23
060 - 066	C	1105	1785	893				OFF	ON	OFF	ON	OFF	ON	OFF	OFF	11	19.5
	A	1300	2100	1050	1105	1785	1050	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF	13	23
	B	1430	2310	1155	1216	1964	1155	OFF	ON	ON	OFF	OFF	ON	OFF	OFF	14	25
072/073	C	1360	1785	893				ON	OFF	OFF	ON	ON	OFF	OFF	OFF	13.5	17.5
	A	1600	2100	1050	1360	1785	1050	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF	16	21
	B	1760	2310	1155	1496	1964	1155	ON	OFF	ON	OFF	ON	OFF	OFF	OFF	17.5	23

ECM Fan Performance - Single Stage Compressor Units

Model ¹	Program ²	Heating/Cooling Modes			Dehumidification Mode ³			DIP Switch Settings ⁴								# of Blinks Heat/Cool Modes
		Heating	Cooling	Fan	Heating	Cooling	Fan	S1	S2	S3	S4	S5	S6	S7	S8	
018	C	510	510	255				OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	5
	A	600	600	300	600	510	300	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	6
	B	660	660	330	660	561	330	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	6.5
024	C	680	680	340				OFF	ON	OFF	ON	OFF	ON	OFF	OFF	6.5
	A	800	800	400	800	680	400	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF	8
	B	880	880	440	880	748	440	OFF	ON	ON	OFF	OFF	ON	OFF	OFF	8.5
030	C	850	850	425				OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	9
	A	1000	1000	500	1000	850	500	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	10.5
	B	1100	1100	550	1100	935	550	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	11.5
036	C	1020	1020	510				OFF	ON	OFF	ON	OFF	ON	OFF	OFF	10.5
	A	1200	1200	600	1200	1020	600	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF	12.5
	B	1320	1320	660	1320	1122	660	OFF	ON	ON	OFF	OFF	ON	OFF	OFF	13.5
042	C	1190	1190	595				OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	15.5
	A	1400	1400	700	1400	1190	700	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	18
	B	1540	1540	770	1540	1309	770	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	19.5
048	C	1445	1445	723				ON	ON	OFF	ON	ON	ON	OFF	OFF	18.5
	A	1700	1700	850	1700	1445	850	ON	ON	OFF	OFF	ON	ON	OFF	OFF	21
	B	1870	1870	935	1870	1590	935	ON	ON	ON	OFF	ON	ON	OFF	OFF	22.5
060	C	1700	1700	850				ON	OFF	OFF	ON	ON	OFF	OFF	OFF	17.5
	A	2000	2000	1000	2000	1700	1000	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF	20.5
	B	2200	2200	1100	2200	1870	1100	ON	OFF	ON	OFF	ON	OFF	OFF	OFF	22.5
072	C	2040	2040	1020				ON	ON	OFF	ON	ON	ON	OFF	OFF	20.5
	A	2400	2400	1200	2400	2040	1200	ON	ON	OFF	OFF	ON	ON	OFF	OFF	24
	B	2640	2640	1320	2640	2244	1320	ON	ON	ON	OFF	ON	ON	OFF	OFF	26.5