

ACH580 ACS580 ACQ580 Cooling Fan Control

Details of cooling fan operation

This document addresses some questions on how cooling fans for 580 drives are designed to operate. It is important to note that the main fans in ACX580-01/04 drives for frame sizes R1 through R9 (except for R5 frame which is a special case) “Do Not” turn off fully, even when the modulation is stopped, and even when the drive IGBT temperature is low. These main fans need to continue circulating air to avoid the accumulation of heat in the power supply areas of these drives. This minimum speed is at approximately 30-40% of full speed even if the IGBT temperature is low and the drive is not running.

The R5 frame drive has an auxiliary fan even for Type 1 drives that has on/off control, and because of this, the R5 main fan can go to zero speed. This means that both Type 1 and Type 12 R5 frame drives can turn the main fan off when internal drive conditions allow.

The table below can be used to reference the operation of the main and auxiliary fans for the various frame sizes and enclosure types.

ACx580-01/04 Frame Size	Main Fan		Auxiliary Fan (Type 1)		Auxiliary Fan (Type 12)	
	Variable speed	Can go to 0 speed	Variable speed	Can go to 0 speed	Variable speed	Can go to 0 speed
R1	Yes	No	N/A	N/A	No	On/Off Control
R2	Yes	No	N/A	N/A	No	On/Off Control
R3	Yes	No	N/A	N/A	No	On/Off Control
R4	Yes	No	N/A	N/A	No	On/Off Control
R5	Yes	Yes	No	On/Off Control	No	On/Off Control
R6	Yes	No	No	No	No	No
R7	Yes	No	No	No	No	No
R8	Yes	No	No	No	No	No
R9	Yes	No	No	No	No	No

*Note: All Variable speed Main Fans will go to min speed at low IGBT temperatures. ~ 30-40% speed except for R5 frame which can go to zero speed.