

TechTopics Topic: Heat Generation Estimation for Series 81000 Controllers

We are often asked to provide estimated heat generation data for our equipment. This paper provides information that allows calculation of approximate heat generated by the Series 81000 motor controller equipment under assumed loading conditions.

The heat generation data given in the table for motor controllers is on the basis of full load operation at 1.0 Service Factor, and assumes that each controller includes a 0.75kVA control power transformer that is only lightly loaded when the motor is running. For the main bus, the data assumes operation at full rated continuous current.

To estimate the heat generated under actual loading conditions, determine the component heat generation for each of the components indicated in the table. For simplicity, assume that main bus loading in each vertical section is equal to the total estimated load of the controller lineup, and adjust the heat generated for each vertical section by the square of the percentage of total estimated load to rated main bus current. Space heater load should be assumed to be continuous.

Approximate full load heat generation (in watts) for Series 81000 Motor Controllers

Motor Controller Fuse Size	Maximum FLA	FVNR	RVAT
2R	26A	440W	710W
3R	46A	545W	850W
4R	64A	645W	975W
6R	88A	740W	1110W
9R	123A	775W	1215W
12R	183A	910W	1485W
18R	272A	1290W	1930W
24R	360A	1570W	2530W
36R	420A	2090W	3290W
Vertical section with main bus	Rated current		
	600A	60W	
	1200A	185W	
	2000A	265W	
Space heaters, per vertical section		125W	
VT trunnion		50W	

Conversion factor: watts X 3.415179 = BTU/hour.

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