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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 0.75 kVA 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 (W)) for Series 81000™ motor controllers			
Motor controller fuse size	Maximum FLA	FVNR	RVAT
2R	26 A	440 W	710 W
3R	46 A	545 W	850 W
4R	64 A	645 W	975 W
6R	88 A	740 W	1,110 W
9R	123 A	775 W	1,215 W
12R	183 A	910 W	1,485 W
18R	272 A	1,290 W	1,930 W
24R	360 A	1,570 W	2,530 W
36R	420 A	2,090 W	3,290 W
Vertical section with main bus	Rated current		
	600 A	60 W	
	1,200 A 2,000 A	185 W 265 W	
Space heaters, per vertical section		125 W	
Voltage transformer trunnion		50 W	
Conversion factor: watts x 3.415179 = BTU/hour.			

The information provided in this document contains merely general descriptions or characteristics of performance which in case of actual use do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract.

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