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T E C H N I C A L N O T E

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Subject:	**Estimate of time between failures of MC206 Motion Coordinator**

The purpose of the this Tech Note is to estimate the average life expectancy of an MC206 Motion Coordinator by using field data, and a sample lot of controllers spread over 5 years. The results are similar to MTBF methods, and can be used to calculate product life span. Certain assumptions are made such as the number of hours per day a typical controller will operate, and the number of days per year it will operate. These assumptions will impact the results, so the estimates are based on realistic values and experience. For purposes of this calculation, a fixed sample run time of 2500 hours is used as a base line.

Parameters:

Run time base line for data:	2500 hrs.
Sample MC206 controllers:	1954
Estimated hours per day of operation:	12 hrs.
Estimated days per year of operation:	313 (6 days/week)
Estimated total hours of operation per year:	3756 hrs.

To estimate a failure rate, a simple ratio (units per 1,000,000 operating hours) can be used in conjunction with an operating time base line. The sum total operating hours for all 1954 controllers is used and will include all units that reach the 2500 hours base line, and all units that fall short. Units that fall short would include actual field errors such as; I/O failure, serial port error, or IC device/memory fault. The operating hours for the units that fall short is also added together.
The sum total hours of operation for all 1954 units = 4,812,160 hrs. If all 1954 units ran for the 2500 hours with zero failures the total operating hours would be 4,885,000 hrs. Using this data, we can estimate the failure rate at:

10.598 units / 1,000,000 hrs of operation.

or

94,357.43 hours of operation between failures (based on the parameters defined above).

Note:
Many factors can shorten controller life expectancy in a given application such environmental conditions (temperature, humidity) and proper application of the product.