Duty Cycle

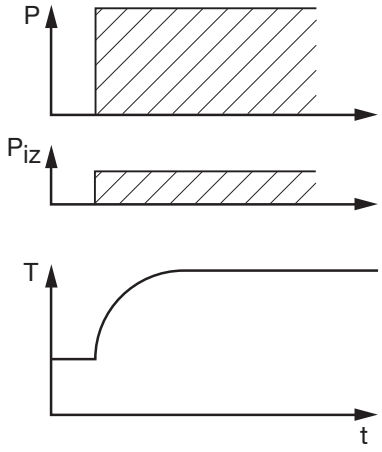
The term 'duty' defines the load cycle to which the motor is subjected, including, if applicable, starting, no-load and rest periods.

Under IEC 60034-1 standards, there are many duty cycle categories. For simplicity, we've listed the three most common.

Operating motors out of the recommended duty cycle will damage the motor and invalidate warranty.

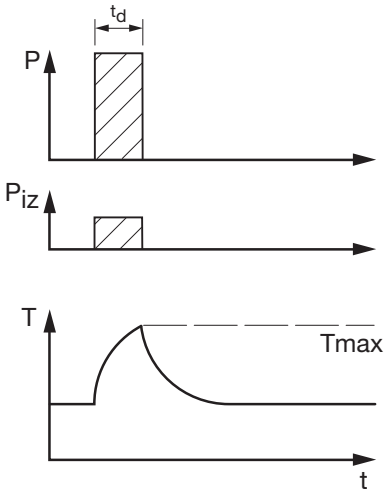
Continuous Operation S1

Steady load operation for an indefinite period, but sufficient to achieve a thermal balance which does not exceed the highest permissible temperature.



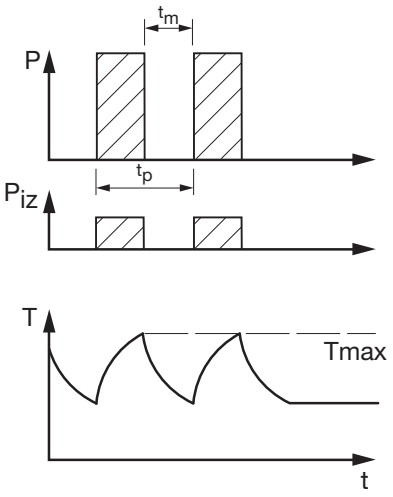
Short-time Operation S2

Steady load operation for a limited time, insufficient to achieve a thermal balance, followed by a resting period sufficient to return the motor to ambient temperature.



Periodic Operation S3

Motor operation according to a cycle that includes a steady load time and a rest time. The highest permissible temparature is reached during operation, while during its idle period it does not cool to ambient temperature.



P.....load
Piz.....electrical loss
T.....temperature

Tmax.....max. permisible temp.
t.....time
td.....time of operation

tm.....time of idling
tp.....cycle time

Note:

All DC motors supplied by RFP are intermittently rated, and can only operate within S2 & S3 categories. As a general rule, the higher the load, the shorter the run-time before cooling. Do not allow DC motors to run with no load for more than a few seconds.

It is not uncommon to overload AC motors for short periods (e.g. some lift applications). This restricts them to S2 & S3 duty.

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