Selection of PM Motors

Condition of Temperature

The major factor limiting output torque is the temperature of the motor coil. It is therefore necessary to gain an understanding of the temperature characteristics of the motor under conditions of normal usage. Also, the surface area varies according to motor size, and radiation characteristics therefore also naturally vary, leading to changes in motor temperature. The following shows the major characteristics of our motors. Please pay particular attention to this information when selecting a motor.

Coil temperature rise per 1W input

PM15S	PM20S	PM20L	PM25S	PM25L	PM35S	PM35L	PM42S	PM42M	PM42L	PM55L
54	35	31	30	26	19	16	15	14	13	8

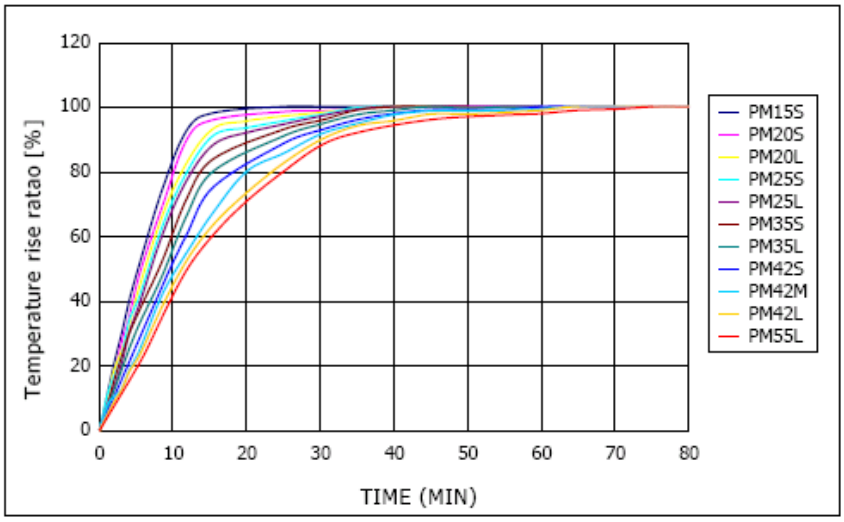
* If input power (W) is multiplied by the relevant value above, you can gain a rough estimate of the coil temperature.

Ratio between motor surface temperature and coil temperature

PM15S	PM20S	PM20L	PM25S	PM25L	PM35S	PM35L	PM42S	PM42M	PM42L	PM55L
0.9	0.91	0.91	0.91	0.91	0.88	0.87	0.87	0.88	0.88	0.87

* If you measure the motor surface temperature and divide that figure by the relevant value above, you can gain a rough estimate of the coil temperature.

Time to reach coil temperature saturation



The graph shows the amount of time until the coil reaches saturation temperature.
This information allows you to judge when overdrive is possible for a short time, such as when the motor is operating under light duty conditions of use.