Allowable Number of Starts and Minimum Time Between Starts for NEMA Design A & Design B Motors

HP	2 Pole			4 Pole			6 Pole		
	A	B	C	A	B	C	A	B	C
1	15	1.2	75	30	5.8	38	34	15	33
1.5	12.9	1.8	76	25.7	8.6	38	29.1	23	34
2	11.5	2.4	77	23	11	39	26.1	30	35
3	9.9	3.5	80	19.8	17	40	22.4	44	36
5	8.1	5.7	83	16.3	27	42	18.4	71	37
7.5	7	8.3	88	13.9	39	44	15.8	104	39
10	6.2	11	92	12.5	51	46	14.2	137	41
15	5.4	16	100	10.7	75	50	12.1	200	44
10	4.8	21	110	9.6	99	55	10.9	262	48
25	4.4	26	115	8.8	122	58	10	324	51
30	4.1	31	120	8.2	144	60	9.3	384	53
40	3.7	40	130	7.4	189	65	8.4	503	57
50	3.4	49	145	6.8	232	72	7.7	620	64
60	3.2	58	170	6.3	275	85	7.2	735	75
75	2.9	71	180	5.8	338	90	6.6	904	79
100	2.6	92	220	5.2	441	110	5.9	1181	97
125	2.4	113	275	4.8	542	140	5.4	1452	120
150	2.2	133	320	4.5	640	160	5.1	1719	140
200	2	172	600	4	831	300	4.5	2238	265
250	1.8	210	1000	3.7	1017	500	4.2	2744	440

Where:

  A = Maximum number of starts per hour

  B = Maximum product of starts per hour times load WK^2 (Note this is also max. allowable inertia per NEMA)

  C = Minimum rest or off time in seconds between starts

Allowable starts per hour is the lesser of A or B divided by the load WK^2 or

Starts per hour $< A < \dfrac{B}{\text{Load } WK^2}$

Note - The above table is based on the following conditions

a. Applied voltage and frequency are in accordance with MG1, 12.44
b. During the acceleration period, the connected load torque is equal to or less than a torque which varies as the square of the speed and is equal to 100% of rated torque at rated speed. (e.g. a variable torque load)
c. External load WK^2 is equal to or less than the values listed in MG1, 12.54

For conditions which exceed the above parameters, the motor manufacturer should be consulted