

- **Synchronous and Full-Load Speeds of AC Motors**

**Synchronous and Full-Load Speeds of AC Induction Motors**

No. of Poles	60 Cycle R.P.M.		50 Cycle R.P.M.		40 Cycle R.P.M.		30 Cycle R.P.M.		25 Cycle R.P.M.	
	Sync.	Full Load	Sync.	Full Load	Sync.	Full Load.	Sync.	Full Load	Sync.	Full Load
2	3600	3500	3000	2900	2400	2310	1800	1750	1500	1450
4	1800	1770	1500	1450	1200	1150	900	860	750	720
6	1200	1170	1000	960	800	770	600	575	500	480
8	900	870	750	720	600	575	450	375	375	360
10	720	690	600	575	480	460	360	340	300	285
12	600	575	500	480	400	385	300	285	250	240
14	514	490	428	410	343	330	257	247	215	205
16	450	430	375	360	300	288	225	215	187	180
18	400	380	333	319	266	256				
20	360	340	300	285	240	230				
22	326	310	273	260	218	208				
24	300	285	240	230	200	192				
30	240	230	200	192	160	153				

The speed of the AC squirrel cage induction motor is determined by the frequency of the supply system and the number of poles for which the motor is wound:

$$\text{Sync RPM} = (F \times 60) \div P$$

where F is the frequency of supply in cycles per second and P is the number of *pairs* of poles.