

HEATING VENTILATING AIR CONDITIONING GUIDE 1940

TABLE 1. CLASSIFICATION OF MOTORS

CURRENT	TYPE	SPEED CHARAC- TERISTICS	FULL VOLTAGE		HP RANGE	TYPE OF APPLICATION SEE FOOTNOTE*
			STARTING TORQUE	STARTING CURRENT		
		Constant Speed Drives				
DIRECT	1. Shunt	Constant	Medium	Medium	All	(a) Fans and (c) Centrifugal Pumps
	2. Compound	Constant or Variable	High	Medium	All	(b) (c) (e) Recip- roating Pumps and fre- quent or hand starting
	3. Series	Variable	High	Medium	Small	(d) Fans direct connected
POLY- PHASE	4. Squirrel Cage General Purpose	Constant	Normal	High 6-8 Times	All	(a) Fans and (c) Centrifugal Pumps
	5. Squirrel Cage Medium Torque	Constant	Normal	Medium 5-6 Times	Medium Small	(a) Fans and Centrifugal Pumps
	6. Squirrel Cage. High Torque	Constant	High	Medium 5-6 Times	Medium Small	(b) Reciprocating Pumps (e) and Compressors started loaded
	7. Automatic Start High Torque	Constant	High	Low 3 Times	Medium	(b) Reciprocating Pumps (e) and Compressors started loaded
	8. Slip Ring Wound Rotor	Constant	High	Low 1-3 Times with sec- ondary control	All	(a) and Hoists (b) Reciprocating Pumps (c) and Frequent (e) or Hand Start
	9. Synchronous High Speed	Constant	Medium	Medium 5-7 Times	Medium Large	(a) Fans and Cen- trifugal Pumps
	10. Synchronous Low Speed	Constant	Low	Low 3-4 Times	Medium Large	(a) Reciprocating Compressors start- ing unloaded
SINGLE PHASE	11. Capacitor	Constant	High	Normal	Medium Small	(b) Pumps and Compressors

*Applications:
a. Drives having medium or low starting torque and inertia (WR^2) such as fans and centrifugal pumps or reciprocating pumps and compressors started unloaded.
b. Drives having high starting torques, such as reciprocating pumps and compressors started loaded.
c. Similar to (a) except where frequent or hand starting (large WR^2) requires a higher starting and accelerating torque.
d. Fans direct connected.
e. Stoker drives.

CHAPTER 39. MOTORS AND CONTROLS

TABLE 1. CLASSIFICATION OF MOTORS—(Continued)

CURRENT	TYPE	SPEED CHARACTERISTICS	FULL VOLTAGE		HP RANGE	TYPE OF APPLICATION SEE FOOTNOTE*
			STARTING TORQUE	STARTING CURRENT		
SINGLE PHASE	12. Capacitor Fan	Constant	High	Medium	Medium Small	(a) Fans—belted
	13. Capacitor Fan	Constant	Low	Medium	Medium Small	(d) Fans—direct
	14. Capacitor Start Induction Run	Constant	Any	Medium	Medium Small	(a) Fans (b) Pumps and Compressors
	15. Repulsion Induction	Constant	High	Medium	Medium Small	(a) Fans (b) Pumps and Compressors
	16. Repulsion Start Induction Run	Constant	High	Medium	Medium Small	(a) Fans (b) Pumps and Compressors
	17. Split Phase	Constant and Adjustable	Medium	Medium	Fractional	(a) Fans (b) Pumps and Compressors
<i>Adjustable Speed Drives</i>						
DIRECT	18. Shunt Field Adjustment	Constant	Medium	Medium	All	(a) Fans and (e) Centrifugal Pumps
	19. Shunt Armature Resistor	Variable	Medium	Medium	All	(a) Fans and (e) Centrifugal Pumps
POLY-PHASE	20. Squirrel Cage High Slip, Tapped Winding	Variable	Medium	Medium	Medium Small	(a) Fans
	21. Squirrel Cage High Slip, Transformer Adjustment	Variable	Medium	Medium	Medium Small	(a) Fans
	22. Squirrel Cage Separate Winding or Regrouped Poles	Constant Multi-Speed	Medium or High	Low	All	(a) Fans (b) Pumps and (c) Compressors