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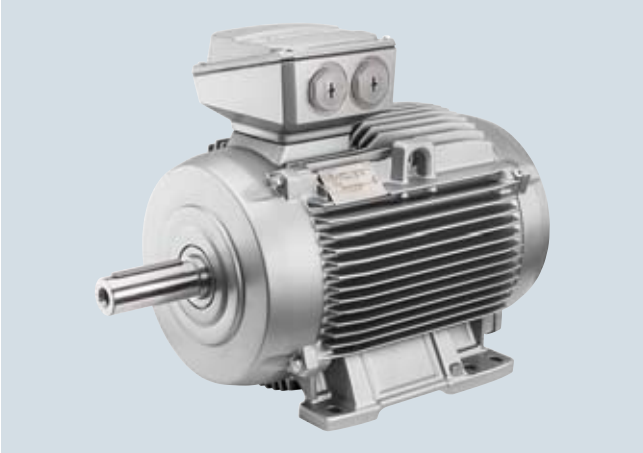
Overview



Motors deployed in steel rolling mills and other metal-processing sectors must be capable of operating under diverse electrical conditions, but must also withstand high mechanical stresses.

The analysis of plant-specific requirements can be divided into two parts.

The first part includes duty with typical reversing operation under conditions of extreme mechanical stress and very high temperatures. 1LP3 roller table motors must be deployed for this purpose. Modern transport roller tables and work roller tables situated close to roll stands in rolling mills are now equipped with directly driven reversing rollers.

The second part includes the downstream applications such as slab furnace feed, cooling line, reheating furnace, straightening machines and slitting lines in which the mechanical stresses are significantly lower. These are the applications for which the new steel plant motors have been designed by Siemens. These motors are available for direct-on-line operation (DOL) in efficiency class IE3, and as variants optimized for converter operation (VSD).

Whether a steel plant or roller table motor is selected depends on stress factors and the decision as to which motor type is suitable must be taken by the customer (ordering party).

Benefits

The steel plant motors offer the user a number of advantages and benefits:

- Highly efficient in efficiency class IE3 for direct-on-line operation (DOL)
- Highly efficient motors for converter operation
- Cast-iron versions for corrosive ambient conditions, in corrosivity class C3 (IEC 12944-2)
- Increased corrosion protection using specially designed paint finishes is available
- Self-ventilated motors for direct-on-line operation (DOL) 1PC1433 with efficiency class IE3
- Self-ventilated motors 1PC1443 for converter operation (VSD) on SINAMICS S120
- Naturally cooled motors 1PC1463 in enclosed version, without external fan, for converter operation (VSD) on SINAMICS S120
- Motors are designed to withstand vibration and shocks to Class 3M4 according to EN 60721-3-3 (approx. 10G incl. 10 shocks/min)
- Simple to commission in combination with a SINAMICS S120 converter
- In depth know-how with respect to plant-specific designs
- Worldwide service network with 24 hour service hotline for motors and converters
- High resistance to peak transient torques $T_B = 3 \cdot T_{rated}$
- Naturally cooled.