

Machine tools and process equipment can perform better if the speed of the prime mover can be controlled. This requirement leads to use of Variable Frequency Inverters or Drives, popularly known as VFDs in combination with the electric motors. It is advisable to use Inverted Rated motors while controlling the motor through VFDs. Invert Rated Insulation protects the motor from voltage spikes and surges generated while operating the motor with VFDs.

Depending upon the requirement, motor can be selected.

**(a)** Where speed of the motor is to be reduced approximately up to 50% of the rated speed, an integral (directly driven) fan mounted on the motor shaft provides sufficient cooling (IC41 cooling). Hence only insulation system becomes important which provides protection against voltage spikes and surges.

**(b)** Where the speed of the motor to be reduced further the integral fan mounted on the motor shaft becomes inactive OR when the speed of the motor is to be increased with a frequency above 60 Hz, the integral fan overloads the motor. In such a situation, it becomes very important to provide cooling by a separately powered fan servo ventilation (IC 46 cooling) Servo ventilation (IC 46 cooling) is available from frame size 71 to 225M.

**(c)** When the motors are to be used in synchronization, positioning or similar applications, “ELCEN” motors available with rotary optical encoders. The criteria for selection of cooling system remains as described earlier. Depending upon the speed, either integral cooling fan or servo ventilated cooling can be selected. As a standard 1024PPR incremental encoder, with 4,75V to 26.8V with short circuit push-pull output and RS422 functionality at 5V operation, how ever if application demands, either incremental or absolute encoder can be supplied fitted with the motor.

Servo Ventilated motors, encoder fitted motors with or without servo ventilation are longer then the standard motors. Confirm the length at the time of selection