

ROTOR POSITION ENCODER FOR AN ELECTRICAL MACHINE**ABSTRACT**

A rotor position encoder is provided for an electrical machine having a rotor and a stator, the encoder including a coded disc having teeth of widths that vary in a repeating sequence and being arranged to rotate with the rotor past a sensor which outputs a signal corresponding to the coded sequence. By comparing the coded signal with an internally generated signal the position of the rotor can be determined at a first resolution level. In addition, a counter is enabled as each tooth is sensed and provides a second output signal at a higher resolution level indicative of the rotor position between successive teeth. For a multi-phase machine, a value representative of the rotor position relative to each phase is combined with the value representative of the incremental position common to all phases.

The invention thus provides high resolution rotor position encoding with simplified logic.

Figure 6