

ABSTRACT

CURRENT SENSING DEVICES AND METHODS

A low-cost and high-precision current sensing device and methods for use and manufacturing, in one embodiment, the current sensing apparatus comprises a Rogowski-type coil which is manufactured in segments so as to facilitate the manufacturing process. In an exemplary embodiment, the current sensing apparatus segments comprise a number of bobbin elements that are wound and subsequently formed into complex geometric shapes such as torus-like shapes. In an alternative embodiment, bonded windings are utilized which allow the segments to be formed without a bobbin or former. In yet another alternative embodiment, the aforementioned current sensing devices are stacked in groups of two or more. Methods of manufacturing and using the aforementioned current sensing apparatus are also disclosed.

Fig.2