[0004] One particular challenge that arises in such products is the design for various motor sizes, for facilitating programming, for sharing programming and control parameters, and so forth. Most such products have been designed to power specific sizes of motors (typically rated by the power output or frame size), and the user must select and program the appropriate product for the particular motor to be powered. All of the circuitry used to control power electronic devices within the drives has typically been included in the single package. Programming has been done either manually or by an interface with a configuration computer or network connected to the unitary package. This product paradigm, however, suffers from drawbacks including limitations of installation and configuration of the drives, relatively inefficient use of control platforms between drives, in accessibility of the programming once the drive is commissioned, or, conversely, risks of access to the drives from exterior sources due to resident network connections.

[0005] There is a need, therefore, for improved techniques for driving electric motors that can respond to such drawbacks.

BRIEF DESCRIPTION

[0006] Embodiments of t~~T~~he present invention provides a motor drive system and method that seek~~designed~~ to respond to these needs. In accordance with an aspect~~s~~ of the invention, a motor drive system comprises a power subassembly including power electronic switches controllable to provide controlled frequency AC power to an electric motor, and driver circuitry configured to apply gate drive signals to the power electronic switches. The system further comprises a control subassembly separable from the power subassembly but physically configured to be toollessly attached to the power subassembly and to make electrical connections with the power subassembly when attached, the control subassembly including a user interface and control circuitry that, in operation, applies control signals to the drive circuitry for controlling the power electronic switches.

[0007] In accordance with another aspects of the invention, a motor drive system comprises a control subassembly separable from but physically configured to be toollessly attached to a power subassembly and to make electrical connections with the power subassembly when attached. The control subassembly includes a user interface and control circuitry that, in operation, applies control signals to drive circuitry within the power subassembly for controlling power electronic switches to provide controlled frequency AC power to an electric motor.

[0008] Another aspect of tThe invention also provides a motor drive method that comprises connecting a power subassembly to an electric motor, the power subassembly including power electronic switches controllable to provide controlled frequency AC power to an electric motor, and driver circuitry configured to apply gate drive signals to the power electronic switches. A programmed control subassembly is then toollessly attached to the power subassembly to make electrical connections with the power subassembly, the control subassembly including a user interface and control circuitry that, in operation, applies control signals to the drive circuitry for controlling the power electronic switches.

DRAWINGS

[0009] These and other features, aspects, and advantages of the present invention will become better understood when the following detailed description is read with reference to the accompanying drawings in which like characters represent like parts throughout the drawings, wherein:

[0010] FIG. 1 is a perspective view of an exemplary motor drive system in accordance with aspects of the present techniques;

[0011] FIG. 2 is a similar perspective view of the system of FIG. 1 with a control sub-assembly removed from a power sub-assembly;