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(57) Abstract :

The present invention discloses a two-level three-phase voltage source inverter (VSI) (14) having an intelligent power module (IPM) (18) comprises a plurality of insulated gate bipolar transistors (IGBTs) (20). A plurality of power supplies (66) to supply DC power. A voltage and current sensors (22) embedded in the main power circuit for measurement of dc-link current and voltage signals. A signal conditioning circuit (24) provides for alliance between pulse controller circuit (30) and IPM (18). The signal conditioning circuit (24) further comprises a pulse amplifier (buffer), dead-time, fault detection, protection, isolation, pulse transfer to IPM (18) and reset circuits. The IPM (18) provides fault signal when control-power supply under and over voltage (UV), over temperature (OT), over current (OC) and short circuit (SC) occurs. An over-current trip circuit (48) is configured for the protection of the load. A dead-time circuit is designed to prevent short-circuit in the inverter (14) legs. [FIGURE.1B]

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