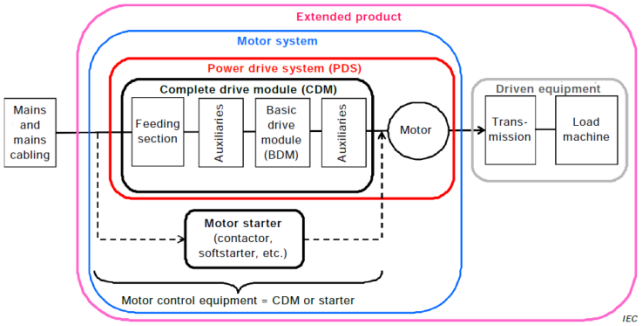
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MEAN WELL VFD Product Introduction

Date: 2024.7.31
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A motor system consists of power source (e.g. AC mains or DC power supply), motor drive module, control circuit, electric motor itself and its potential loads.

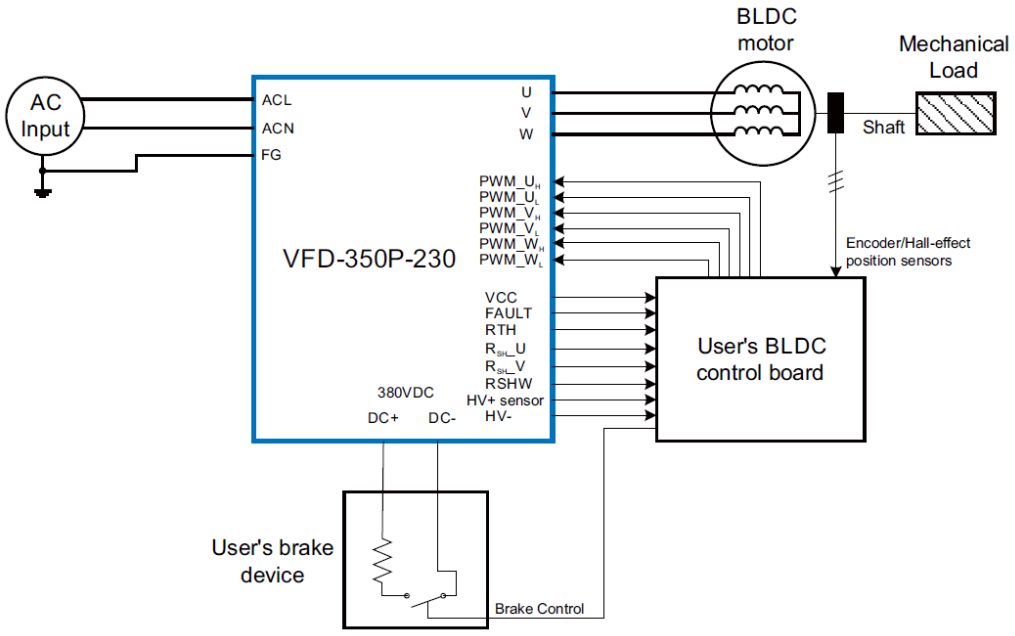


IEC-61800

The driving and control circuits together form a completer drive module (CDM). This is the core of the electrical control for a motor system. The design consideration of the driving part and control part are related but different. The driving part needs to deal with power conversion, high voltage and high current operation and the thermal problem comes with it. Whereas the controlling part is more focus on the control logic and mainly dealing with the low voltage signals. Due to the usage and motor selection, the controlling parts are mostly different from case to case. The power driving part, however, does share some common need and could have a universal platform for different applications.

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MEAN WELL has more than 40 years of experience in power conversion and knowledge for thermal design. We bring to the market the 3-phase motor drive modules, the VFD series that integrate power conversion, 3-phase driving circuit and a complete interface for sensors and control input to provide a seamless link to the controlling circuit. A typical construction diagram is shown in the figure below.



The VFD product has three major functional blocks inside and each of them has an I/O port to work with the other part of the motor system.

First, the power input port connects to an AC or DC power source.
For the AC input models, they are built-in with PFC so that it can be used within AC input range 110~230VAC without the need to change motors. This makes the motor design more convenient without having two separate driving systems or motors for different countries due to their AC input difference. One design can be used globally with the same drivability.

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Secondly, the motor output port to drive the motor. “VFD” is specially design for 3-phase motor and therefore with 3 output namely U, V and W. These 3 outputs are internally controlled by 6x IGBT switches which can work at high ambient temperature and capable of carrying peak current for the start-up initialization.

Thirdly, “VFD” has a set of control/feedback interface to connect to the motor control board. This part is mainly with low level signals that process the control and feedback command and signals. The intelligent is inside the control board from customer design which is specifically designed for that motor and that purpose.

Since the power conversion, critical signal, thermal design and safety distance are already designed ok in the VFD. Motor control designer need only focus on the motor selection and the control logic. Advantages of this approach includes time saving, cost reduction and lower effort on the full design. To further accelerate the design period, an optional programmable control board is also available. If you need more information, please contact with MEAN WELL distributors and representatives for more detail.



VFD-350P-230



Controlled Board