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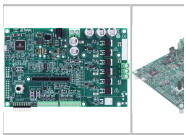
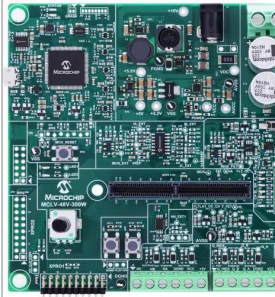
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[Overview](#)[Documentation](#)**Part Number: EV18H47A**

# MCS MCLV-48V-300W Development Board



- Three-phase motor control power stage
- Motor phase current feedback to implement Field Oriented Control (FOC) of a PMSM/BLDC motor
- DC bus current feedback for overcurrent protection and to demonstrate a single shunt current reconstruction algorithm
- DC bus voltage feedback for overvoltage protection and DC bus compensation
- Phase voltage feedback to implement sensorless Back-EMF (BEMF) control or flying start (windmilling)
- Optional analog sensor (e.g., thermistor) interface circuit

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- Quadrature Encoder Interface (QEI) for an optical/incremental shaft encoder
- MOSFET temperature measurement
- Overvoltage and current protection circuits
- PICkit™ On-Board 4 (PKOB4) for programming and debugging
- Optional ICSP™ header for interfacing a Microchip programmer/debugger
- 120-pin high-speed edge card connector to interface Dual In-Line Modules (DIMs) controller boards
- User interface elements:
  - Two debug LEDs
  - Two push buttons
  - One potentiometer
  - MCU Reset push button
  - Fault Reset push button
  - Power-on status indication LED
  - Six PWM indication LEDs
- Two dual row headers for interfacing Microchip Xplained Pro add-on boards or other user interface boards to extend the application functionality
- On-board EEPROM for

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configuration information

- Dynamic brake circuit to support regenerative braking applications
- Auxiliary power supply to power the circuitry and external interfaces

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## Overview

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The Motor Control System (MCS) Development Tool Ecosystem enables rapid prototyping of motor control designs using the dsPIC<sup>®</sup> DSCs, SAM, PIC32MK, PIC32MC and PIC32C MCUs. The MCS Development Tools consist of modular and interchangeable inverter boards, controller boards (Dual In-Line Modules or DIMs) and expansion boards. DIMs and expansion boards must be purchased separately, see the links for the MC DIMs below. The MCLV-48V-300W Inverter Board is targeted to drive a low-voltage (12-48V) three-phase Permanent Magnet Synchronous Motor (PMSM) or Brushless DC (BLDC) motor up to 25A RMS continuous per phase at 25°C.

Motor Control DIMs:

- dsPIC33AK128MC106 MC DIM (EV68M17A) - <https://www.microchip.com/en-us/development-tool/EV68M17A>
- dsPIC33CK64MC105 MC DIM (EV03J37A) - <https://www.microchip.com/en-us/development-tool/EV03J37A>
- dsPIC33CK256MC506 MC DIM (EV13F63A) -











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[tool/EV13F63A](#)

- dsPIC33CK256MP508 MC DIM (EV62P66A) - <https://www.microchip.com/en-us/development-tool/EV62P66A>
- dsPIC33CK1024MP710 MC DIM (EV04L63A) - <https://www.microchip.com/en-us/development-tool/EV04L63A>
- dsPIC33CH512MP508 MC DIM (EV76L31A) - <https://www.microchip.com/en-us/development-tool/EV76L31A>

## All Application Notes

## Documentation

Title 		
Motor Control Low-Voltage 48V-300W Inverter Board User's Guide	 <a href="#">Download</a>	
HURST Series NT DYNAMO® Brushless DC Permanent Magnet Motor Datasheet	 <a href="#">Download</a>	
Hurst DMA0204024B101 BLDC Motor DataSheet	 <a href="#">Download</a>	
Hurst DMB0224C10002 BLDC Motor DataSheet	 <a href="#">Download</a>	
Code Examples - MCLV 48V 300W	 <a href="#">Link</a>	

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