

# 3-Phase BLDC Motor Kit with DRV8312 and MSP430 FRAM MCU



DRV8312-430FR-KIT - 3-Phase BLDC Motor Kit with DRV8312 and MSP430 FRAM MCU

The Texas Instruments' Medium Voltage Digital Motor Control Kit for MSP430 FRAM Microcontrollers (DRV8312-430FR-KIT) is a development platform for spinning 3-phase brushless DC (BLDC) motors. The low-cost low power MSP430 FR5739 microcontroller (MCU) on the MSP-CNCD-FR5739 controlCARD module comes pre-programmed with the necessary firmware in FRAM memory to run the Texas Instruments' (TI) InstaSPIN™ BLDC motor control solution out-of-the-box once plugged into the DRV8312 baseboard.

The operation of this system is controllable and viewable across a USB interface using an included GUI. The FR5739 MCU provides all of the necessary computational requirements to run TI's **InstaSPIN-BLDC** and many other customer-developed applications as well.

## Features

The DRV8312-430FR-KIT motor control kit contains a cost-effective and low-power, MSP430 FR5739 MCU-based controlCARD module compatible with other TI motor control platforms. MSP430FRx FRAM Technology offers faster read/write speeds, virtually unlimited write endurance and ultra-low power performance. Go to [www.ti.com/fram](http://www.ti.com/fram) for more information.

In addition to instantly spinning your motor, the kit also demonstrates the InstaSPIN-BLDC motor control solution's operational advantages with simplified tuning, immediate acceleration adaptation, reliable low-speed operation, and more.

The included GUI enables users to control and monitor the total solution through an easy-to-use PC application.

## What's Included

The DRV8312-430FR-KIT is a bundle of the following components:

MSP-CNCD-FR5739 controlCARD module

MSP430FR5739 FRAM based 24-MHz microcontroller

Pluggable 100-pin DIMM form factor

DRV8312 baseboard (TI-integrated 3P motor driver board supporting up to 50V and 6A Peak):

NEMA17 BLDC/PMSM 55W motor

24V 2.5A DC power adapter, 110-240V AC input, USA power cable

USB-miniB to USB-A plug cable (for debug and serial communication)

Kit CD:

Complete documentation

GUI

Applicable source code

Schematics

Texas Instruments' Code Composer Studio™ Integrated Development Environment (IDE)