

# Easily Increase Functionality in Motor Drive Applications

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[Visit our DesignDRIVE training series to learn more about solutions for industrial drives and motor control](#)

If you're a developer of servo drive or motor drive applications, then you're facing a growing number of technical questions regarding your future designs:

- Is it possible to design one controller capable of handling different motor types?
- How do you stay up with the latest position sensor standards and the revisions?
- Which current sensing technique is best for your application?
- What about all those industrial networking options?
- And now your customers are also demanding integrated functional safety?

Taken all together, these questions may seem overwhelming. At the same time, your company competencies are probably in motion control and motor control. Therefore, time spent exploring and developing new solutions to these questions is actually taking you away from building on those core competencies.

With the [C2000™ microcontroller \(MCU\) DesignDRIVE software and kit](#), we want to help you spend more of your time differentiating your product in your core areas and less of it evaluating new technologies that will eventually become table stakes in the industry. Using [DesignDRIVE software](#) will ultimately help you get to market faster with a more valuable product.



The [DesignDRIVE kit](#) and example software offers an easy path to begin exploring current sensing technologies and interfacing various position sensors and motor types. The on board expansion slots make the kit ready for

adding real-time EtherNet as well as functional safety circuits. The integration and flexibility of the kit will allow you to investigate combinations of solutions without the need to fabricate your own drive hardware every time.

Based on the real-time control architecture of TI C2000 MCUs, DesignDRIVE is a deal for the development of industrial inverter and servo drives used in robotics, computer numerical control machinery, elevators, materials conveyance, and other industrial manufacturing applications. The new DesignDRIVE kit hardware offers an integrated power module, delivering up to 8 amps to drive a three-phase 1 horsepower motor.

In addition, you can also explore options that allow the MCU to be placed on either side of the high-voltage isolation barrier. The kit uses a powerful [Delfino™ MCU](#) that integrates dualC28x real-time processing cores and dual CLA, real-time coprocessors, thus providing up to 800 MIPS with integrative floating point trigonometry and FFT acceleration.

Along with flexible best in class PWM actuation, the sophisticated sensing peripherals integrated on the [Delfino MCU](#) include sigma delta filters, high performance 16-bit ADCs and window comparators, thus enabling the DesignDRIVE kit to support shunt, fluxgate, hall and delta-sigma current sensing simultaneously.

For position feedback, the kit again leverages Delfino MCU peripherals for simplified interfacing to resolvers and incremental and absolute encoders. To help developers jump start their work, DesignDRIVE software is now part of the C2000 MCU [ControlSUITE™ library](#) installation and includes specific examples of vector-based motor control incorporating current, speed, and position loops with integrated current sensing and position feedback routines.

Moving forward, the DesignDRIVE kit will serve as a common platform showcasing new software projects that will be delivered in future ControlSUITE software releases. Just look for the DesignDRIVE icon in the Explorer window.

The kit includes the main board, control card, software download instructions, CodeComposer™ Studio IDE tools, and an optional high-voltage permanent magnet synchronous motor with integrated QEP encoder. Using DesignDRIVE will help you get a more compelling product more quickly to market.

To learn more and start your investigation of a range of industrial drive designs with TI's DesignDRIVE kit click the below links:

- [Learn more about DesignDRIVE](#)
- [Order the DesignDRIVE development kit now](#)
- [Learn more about DesignDRIVE with our video training series](#)

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