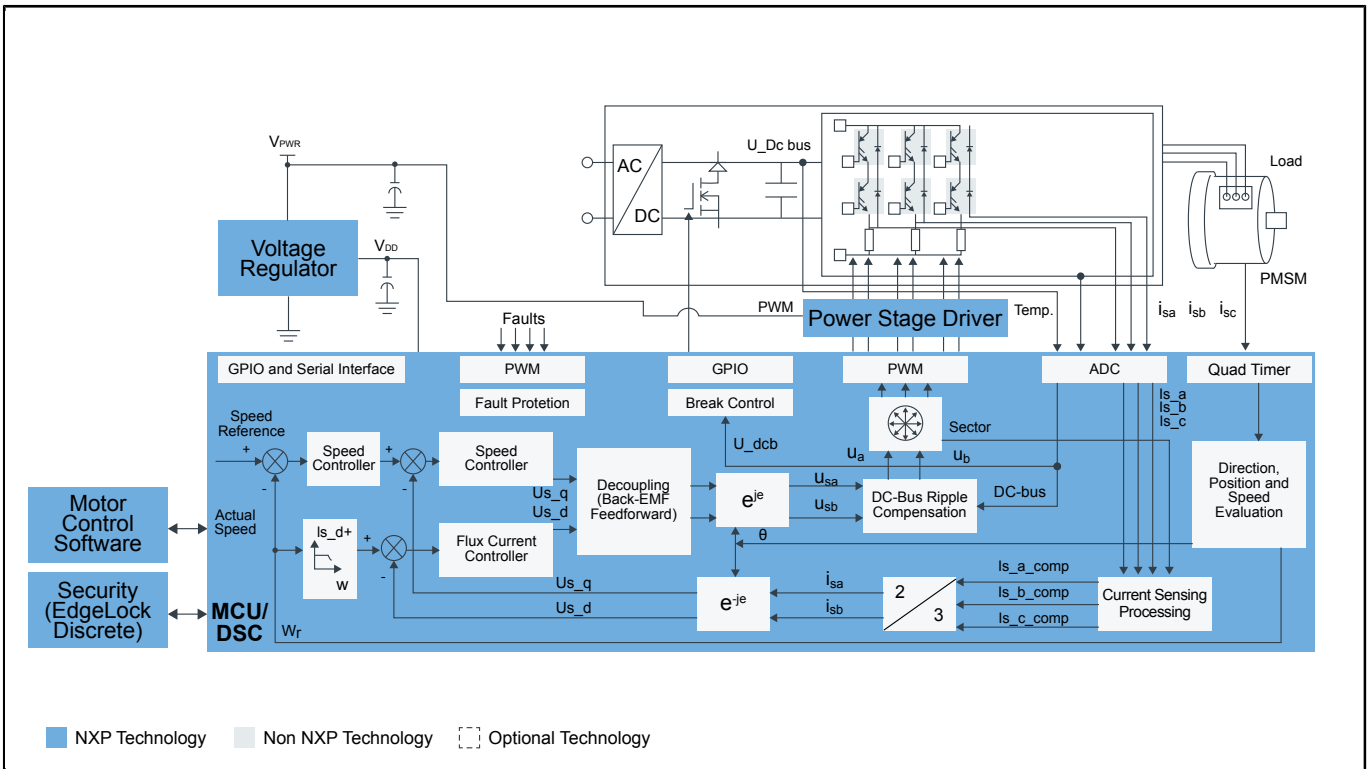
Permanent Magnet Synchronous Motor (PMSM)

Last Updated: Nov 15, 2022

Permanent magnet synchronous motors (PMSM) are typically used for high-performance and high-efficiency motor drives. High-performance motor control is characterized by smooth and accurate rotation over the entire speed range of the motor. NXP provides a comprehensive development ecosystem to support a rapid design of motor control devices that integrates PMSM.

3 Phase PMSM Block Diagram



Recommended Products for 3 Phase PMSM	
MCU	• S32K3 Microcontrollers for Automotive General Purpose

	• KV Series Arm Cortex-M4/M0+/M7: KV Series: Real-time Motor Control and Power Conversion MCUs based on Arm® Cortex®-M0+/M4/M7 • i.MX RT Crossover MCUs: i.MX RT Crossover MCUs • KE Series Arm Cortex-M4/M0+: Kinetis® E Series: 5V, Robust Microcontrollers (MCUs) based on Arm® Cortex®-M0+/M4 Core • MC56F83xxx: Performance Level Digital Signal Controllers, USB FS OTG, CAN-FD • S32K1 Microcontrollers for Automotive General Purpose • MPC574xP: Ultra-Reliable MPC574xP MCU for Automotive & Industrial Safety Applications
Power stage driver	• MC33937: 3-Phase Field Effect Transistor Pre-Driver • GD3100: Advanced High Voltage Isolated Gate Driver for IGBT and SiC MOSFETs
Motor Control Software	• FreeMASTER Run-Time Debugging Tool • RTCESL: Real Time Control Embedded Software Motor Control and Power Conversion Libraries • Model-Based Design Toolbox (MBDT) • MCATSW: Motor Control Application Tuning (MCAT) Tool
Voltage regulator	• MC33730: Power Supply with Multiple Linear Regulators • TJA1042: High-Speed CAN Transceiver with Standby Mode • MC33903: SBC Gen2 with High-Speed CAN and LIN • MC33904: System Basis Chip Gen2 with High Speed CAN • MC33905: SBC Gen2 with High-Speed CAN and LIN • MC34717: 5.0 A, 1.0 MHz Integrated Dual Switch-Mode Power Supply
Security (EdgeLock Discrete)	• EdgeLock® SE050: Plug & Trust Secure Element Family – Enhanced IoT security with high flexibility
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View our complete solution for Permanent Magnet Synchronous Motor (PMSM).

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