

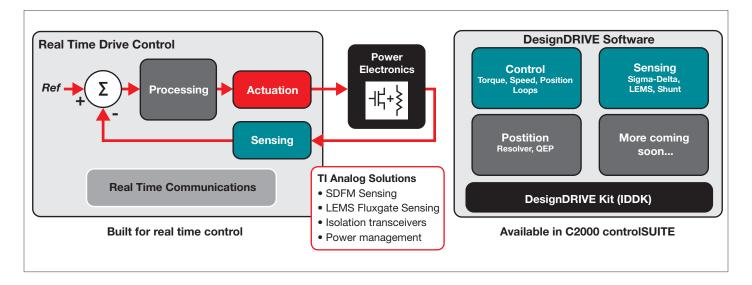
# **DesignDRIVE Kit**

# The ONE place to create MANY designs for Industrial Drives



# Integrated Drive Controller - Delfino™ TMS320F2837x C2000™ MCU

Processing	Actuation	Feedback Interface Circuits	
• Up to 800 MIPS (Dual Core)	Up to 24 ch Flexible PWM	• Quad 16 bit/12 bit ADCs	
Trigonometric Math Unit	3 phase to multil-level	Sinc Filters with compare	
Up to 1MB flash	Programmable Trip Zones	AMC130x, AMC120x compliant	
Up to 204KB SRAM	Safety diagnostics	LEMS, Shunt topologies	



# Flexible System Expansion Support

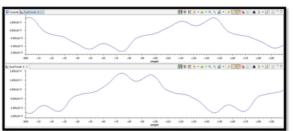
Industrial Connectivity	Functional Safety	Position Encoder Feedback	
Expansion slot for future	Expansion slot for future	• EnDat	• SinCos
enhancements	enhancements	• BiSS	• QEP
		Resolver	

# **Getting Started**

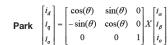
DesignDRIVE Kit: www.ti.com/tool/tmdxiddk377	TMDXIDDK377	\$ 999
Delfino™ MCU: www.ti.com/tool/tmdxdock28377d	TMDXIDDK377D-MTR-BNDL	
DeltaSigma Mod: http://www.ti.com/tool/TIDA-00171	TIVIDAIDDROTT D-WITH-DINDL	Ψ1,199

# **Current Measurement Topology Comparison and Real-time Control Performance Evaluation**

#### **SDFM Current Sense**

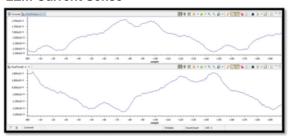


#### **Park Transform cycles**



Coding Format	C28-TMU	Competition
Inline C Macro	19	150-250
C Function Call	29	150-250

#### **LEM Current Sense**

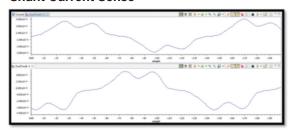


### **Resolver Angular Position Calculation cycles**

(Using ATAN2 operation)

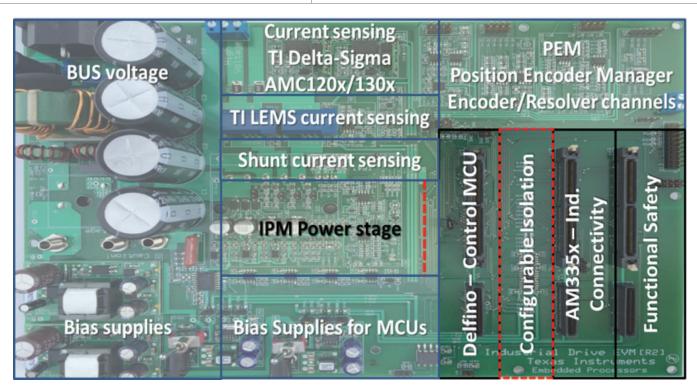
Coding Format	C28-TMU	Competition
Inline C Macro	14	100+
C Function Call	24	100+

#### **Shunt Current Sense**



# **Field Oriented Control Loop cycles**

Motor Type	C28-TMU Min cyc Max		Compe Min cyc	
PMSM	547	592	1096	1208
ACInduction	593	670	1260	1387



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