SELECTOR GUIDE
SENSORS

		TDK Invensense	SiLabs	Murata	TDK Micronas	Digi International	iC-Haus	MPS
Motion	Accelerometer	x		x				
	Gyroscope	x		x				
	Pressure	x		x				
	Compass	x						
	Rotary Position			x				
	Shock			x				
	Inclinometer			x				
Biometric	Heart Rate		x	x				
Magnetic	Hall Sensor Switch		x		x			
	Hall Sensor Linear		x		x			
	Hall Sensor Direct Angle				x		x	x
	Hall Sensor I2C Programmable		x					
	AMR Direct Angle			x			x	
Capacitive Touch	Capacitive Touch		x					
Ultrasonic	Ultrasonic			x				
Optical	Proximity		x					
	UV		x					
	Ambient Light		x			x	x	
	Encoder						x	
	Infrared			x				
Temperature	Temperature		x	x		x		
	Humidity		x			x		
	NTC Thermistor			x				
	PTC Thermistor			x				

Symmetry ELECTRONICS
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5400 West Rosecrans Avenue, Hawthorne, California 90250
866.506.8829 (U.S. Only) | 310.536.6190 | www.SymmetryElectronics.com

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Technology	Supplier	Suggested Products
MOTION		
Accelerometer	**Murata**	
	• Resistant against temperature variations and high vibration environments • Provides high accuracy in demanding and safety-critical applications • Leading provider of low-G acceleration sensors for automotive safety systems	1-axis: SCA800, SCA6X0 (analog) 2-axis: SCA2100 3-axis: SCA3100, SCA3300
Gyroscope	**Invensense**	
	• 1-axis: small and low cost designs such as toys and consumer electronics devices • 2-axis: motion-based gaming and television 3D remote control menu navigation • 3-axis: tracking both fast and slow motions of consumer electronic devices that require very high robustness in a small package	1-axis: ISZ-2510 2-axis: IXZ-2510 3-axis: ITG-1010
Accelerometer + Gyroscope	**Invensense**	
	• Offered as "Base" sensors that do not include Digital Motion Processor (DMP) or "Smart" sensors with integrated DMP running APEX engine • Ideal for small size constraints and simple board design • 6-axis: general purpose accelerometer and gyroscope with DMP • 7-axis: embedded barometric pressure sensor, accelerometer, and gyroscope • 9-axis: embedded barometric pressure sensor, accelerometer, gyroscope, and compass	6-axis: ICM-20602 7-axis: ICM-20789 9-axis: ICM-20948
	Murata	
	• Ideal for automotive, industrial, and healthcare applications	3-axis: SCC2000 (X- or Z-axis gyro), SCC1300 (X-axis gyro)
Pressure	**Invensense**	
	• High accuracy and temperature stability • Waterproof barometric pressure and temperature sensor IC • Based on MEMS capacitive-based technology, ideal for e-cigarettes and drones • Ultra-low noise at low power	ICP-101xx
Compass	**Invensense**	
	• World's lowest-power 9-axis motion-tracking device, ideally suited for smartphones, tablets, wearable sensors, and IoT applications	9-axis: ICM-20948
Shock	**Murata**	
	• High dynamic range and sensitivity to detect force across wide measurement frequency band. • Excellent mechanical shock endurance for harsh environments	PKGS-00TAV/ 25TA/ 45TAV/00GXP1/ 00LDP1/25SXAP1/25WXP1/ 90LDP1
Inclinometer	**Murata**	
	• Specialized sensors for angle/tilt monitoring • For applications that need help keeping gravity force perpendicular to floor (leveling instruments, platform stabilizers)	1-Axis: SCA61T (Analog), SCA103T (Analog), 2-Axis: SCA100T (Analog)
Rotary Position	**Murata**	
	• For applications that require frequent adjustments (consumer, automotive, measurement, etc.) • Analog sensors output for -40°C to +125°C	SV01, SV03, SV04
BIOMETRIC		
Heart Rate/ Biometric	**SiLabs**	
	• HR, PPG, ECG, SpO2 for wrist and finger • Low power for wearables and power-sensitive applications • High performance algorithms optimized for optical measurements • Fully integrated solutions and wearable development boards • Low energy BLE + MCU solutions to run algorithms and custom code	Si117x
	Murata	
	• Ballistocardiogram sensors • Single axis accelerometer for vital sign monitoring • Contactless monitoring	SCA10H, SCA11H

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Technology	Supplier	Suggested Products
MAGNETIC		
Hall Sensor Switch	**SiLabs**	
	• Omnipolar and latch outputs • Ultra-low power ideal for battery-powered applications such as wearables • Configurable digital output to allow the host to be interrupted when specified events happen • Small size	Si720x
	Micronas	
	• Unipolar, bipolar inverted, bipolar, and latch outputs • Different package sizes, switching points, and behavior • Many variants available with near zero ppm – ideal for automotive applications	HAL 15xy
	iC-Haus	
	• Differential hall switches for gear wheel and magnetic tape scanning	iC-MZ, iC-MJ
Hall Sensor Linear	**SiLabs**	
	• Ultra-low power • Analog, PWM, and SENT outputs	Si721x
	Micronas	
	• Analog, PWM, and SENT outputs • Programmable • Many variants available with near zero ppm – ideal for automotive applications • Different packages available: through hole SMD, single or dual die configuration, with or without integrated capacitors	HAL 24xy
Hall Sensor Direct Angle	**Micronas**	
	• Integrated capacitor options • Analog, Modulo, PWM, and SENT outputs • 12-bit resolution; programmable	HAL 37xy
	MPS	
	• ABZ, PWM, SPI, UVW, and SSI outputs • 8 to 14-bit resolutions	MA850
Hall Sensor I2C Programmable	**SiLabs**	
	• Can control, configure, and read the magnetic field data over I^2C on demand • Feature a configurable digital output to allow the host to be interrupted when specific events happen, making it an ideal replacement for switch/latch and linear output magnetic sensors	Si7210
AMR (Anisotropic Magneto Resistance)	**Murata**	
	• World's first omnidirectional (360°) sensor with uniform sensitivity in all directions • Suitable for tamper detection for electricity meters, gas meters, etc.	MRMS591
	iC-Haus	
	• High amplitude consistency with changes in distance • Ideal for linear position sensing and length measurement systems – similar to a typical encoder but in linear form factor instead of axial • Resistant to strong magnetic fields and nonsensitive to external homogenous magnetic fields	iC-SM2L
CAPACITIVE TOUCH		
Capacitive Touch	**SiLabs**	
	• Capacitive touch replaces mechanical buttons and switches – eliminating firmware complexity and reducing development time • Offers an IEC-6073 Class B certified • Great development tools, documentation, example code and support	CPT213B-GM
ULTRASONIC		
Ultrasonic	**Murata**	
	• Ideal for object detection and range measurement applications (security, consumer, industrial) • Lead type (2-pin) • High S.P.L. and sensitivity	MA300D1, MA40S4R, MA40S4S, MA58MF14

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OPTICAL		
Proximity	**SiLabs**	
	• Ultra-low power consumption, ideal for battery-powered applications • Proximity and ambient light options • Adjustable infrared proximity detection, with sensing range of 1-200cm • Analog and I^2C output	Si1102
UV	**SiLabs**	
	• I^2C interface with programmable-event interrupt output • Integrated DSP • UV + ambient light sensor options • Dual 23-bit A2D	Si1133
Ambient Light	**SiLabs**	
	• Integrated high-sensitivity infrared photodiode provides a single-pulse infrared proximity measurement, enabling ultra-low power levels • Ambient light + 2D gesture sensing options • Ambient light + motion sensing options	Si1120
	Digi	
	• Integrated Zigbee module, sensors, and battery, within a single housing (plug and play solution)	XS-Z16-CB2R
Encoder	**Trinamic**	
	• Offered as complete encoder module solution • Incremental encoders for stepper and 3-phase PMSM/BLDC motors with high-resolution optical code wheels	TMCS-20-4-8192
	iC-Haus	
	• Optical encoder ICs from 8 to 21-bit • Linear and axial incremental encoder discs with index • Interpolators and signal conditioning ICs for encoder applications	iC-PR
Infrared	**Murata**	
	• Passive infrared sensors • Lead type (3-pin) • Mainly for consumer and security applications	IRA Series
TEMPERATURE		
Temperature	**SiLabs**	
	• Best-in-class solutions for temperature and relative humidity within a single package • ±0.1 °C and ±1 °C options available	Si7007/22/23, Si7006/13/20/21/34
	Digi	
	• Integrated Zigbee module, sensors, and battery, within a single housing (plug and play solution)	XS-Z16-CB2R
Humidity	**SiLabs**	
	• Best-in-class solutions for temperature and relative humidity within a single package • I^2C and PWM output at up to 400kHz • Factory calibrated • Industry-leading power consumption, for extended system battery life	PWM output: Si7023 I2C output: Si7034
	Digi	
	• Integrated Zigbee module, sensors, and battery, within a single housing (plug and play solution)	XS-Z16-CB2R
NTC Thermistor	**Murata**	
	• NTC series: sensor resistance reduces as temperature increases • Fast thermal response and compact size • Ideal for detecting temperature at a point separate from PCB	NXF, NXR
PTC Thermistor	**Murata**	
	• PTC series: sensor resistance remains constant if temperature is below threshold; resistance increases as temperature exceeds threshold • Ideal for overcurrent protection applications	PTFM, PTFL, PRF