

Industrial MEMS motion sensors



High performance and quality devices designed for industrial applications

ST's industrial MEMS sensors offer the high performance and high quality required for use in industrial applications including robotics, condition monitoring, industrial vehicle guidance and stabilization, power tools, building and industrial automation, navigation, medical and defense systems. Thanks to ST's "Golden flow" specifications for manufacturing, each sensor is uniquely and precisely factory regulated, resulting in highly stable outputs under all conditions and in most cases eliminating the need of re-calibration at the customer site. Moreover, as a result of a robust and highly selective testing flow, our sensors offer for industrial applications guarantees high performance, accuracy, reliability, and safety as well as improves the total cost of ownership of the final application.

LONG-LIFE SENSORS:

- 10 years longevity commitment
- Golden manufacturing flow
- Robust and highly selective testing
- Operating temperature: up to 105 °C
- 3-axis accelerometers with dynamically user-selectable full scales (up to 16 g)
- 3-axis gyroscope with user selectable full scales (up to 2000 dps)

HIGH-G ACCELEROMETERS:

- 3-axis, high-g full scale (100 g / 200 g / 400 g)
- Low power consumption (300 μ A typ)

ANALOG SENSORS:

- 3-axis, analog output
- Ultra-low noise and wide bandwidth
- Full scale ± 2 / ± 6 g

APPLICATIONS:

- Robotics
- Monitoring
- Transportation
- Defense
- Navigation



THE 10 YEARS LONGEVITY PROGRAM (IIS328DQ, IIS2DH, and I3G4250D)

ST's long-life MEMS sensors will stay in production for ten years starting from their date of introduction. These products take part in the 10 years longevity commitment program, which assures, on selected parts, continuity and stability of supply for ST customers, especially those that design industrial applications and require long-term product availability. For more information about the 10 years longevity commitment program, visit www.st.com/web/en/support/product_longevity.html



LOW POWER, HIGH-G ACCELEROMETERS (H3LISXXXDL)

H3LISxxxDL sensors are the answer for developers that require precise shock detection in space- and power-constrained applications: wireless nodes for industrial equipment condition monitoring, wireless vibration monitoring, shock detection in tools, equipment and portable instrumentation, car black boxes, parcel-monitoring, concussion detection in sports, blast detection for soldiers and firefighters, and sensors for augmented sports.

ANALOG SENSORS (LIS344ALH)

The LIS344ALH is an analog output accelerometer with a dynamically user selectable full-scale of $\pm 2\text{ g}/\pm 6\text{ g}$ and capable of measuring accelerations with ultra-low noise over a maximum bandwidth of 1.8 kHz. Available in a land grid array package (LGA), the LIS344ALH is guaranteed to operate over an extended temperature range of -40 to +85 °C.

Features	Accelerometers				Gyroscope
	IIS328DQ	IIS2DH	H3LISxxxDL	LIS344ALH	I3G4250D
Acceleration FS (g)	$\pm 2/4/8$	$\pm 2/4/8/16$	$\pm 100/200/400$	$\pm 2/6$	-
Angular rate (dps)	-	-	-	-	$\pm 245/500/2000$
Power Consumption (μA)	250	2	300	680	6100
Output i/f	SPI/I2C	SPI/I2C	SPI/I2C	analog	SPI/I2C
Package	"QFN-24 4x4x1.8 mm"	"LGA-12 2x2x1 mm"	"LGA-16 3x3x1 mm"	"LGA-16 4x4x1.5mm"	"LGA-16 4x4x1.1mm"
Temperature Range (°C)	-40 +105	-40 +85	-40 +85	-40 +85	-40 +85
10y longevity commitment	✓	✓	-	-	✓

EVALUATION TOOLS

ST offers a complete evaluation solution for industrial applications, including an eMotion motherboard, a full set of DIL24 MEMS sensor adapters, and a UNICO graphic user interface for direct and real-time access to the sensor outputs and configuration registers.

Order code	Description
STEVAL-MKI109V2	eMotion motherboard compatible with all adapters and based on an STM32 microcontroller
STEVAL-MKI166V1	Evaluation board for H3LIS100DL
STEVAL-MKI167V1	Evaluation board for H3LIS200DL
STEVAL-MKI153V1	Evaluation board for H3LIS331DL
STEVAL-MKI168V1(*)	Evaluation board for IIS2DH
STEVAL-MKI169V1(*)	Evaluation board for I3G4250D
STEVAL-MKI170V1(*)	Evaluation board for IIS328DQ

(*) available in Q1 2016



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