

## ER-MA-5 High Accuracy MEMS Accelerometer (Alternative of MS1000)

Accelerometer is an inertial sensor, which can measure the linear acceleration due to gravity. MEMS accelerometer has the characteristics of small volume, light weight and low energy consumption that can be widely used in vibration detection, attitude control, security alarm, consumer applications, motion recognition and status recording. Accelerometers are combined with gyroscopes and magnetometers to create IMU (inertial measurement units).

### Application

ER-MA-5 High Accuracy MEMS Accelerometer (alternative of MS1000)

Inertial measurement: inertial guidance, overload measurement, combined navigation

Tilt measurement: antenna attitude, platform measurement, dip test

Vibration measurement: mechanical equipment, bridge dam, safety test

Axis	X	X	X	X	Unit
Range	2-10	30-50	70-100	150-200	g
Bandwidth	100.00	100	100	100	Hz
Bias Stability (Allan Curve)	<5	<10	<20	<30	ug
Bias Stability (1s Standard Deviation) (1 $\sigma$ )	<20	<50	<100	<150	ug
Bias Month Repeatability	100-300	300-500	1000	1000	ug
Bias Temp Coefficient	<10	<50	<100	<200	ug/ $^{\circ}$ C
Bias Temp Hysteresis	<0.5	<1	<3	<5	mg
Factor Scale Non-linearity	<500	<1000 (2000@50g)	<1000	<2000 (3000@50g)	ppm
Factor Scale Month Repeatability	<300	<300	<300	<300	Ppm

Factor Scale Temp Coefficient	10	10	10	10	ppm/°C
ClassII Non-linearity Coefficient	<100	<100	<100	<100	ug/g2
Factor Scale	4000000-800000	200000-150000	100000-80000	50000-40000	Lsb/g
Resolution	5	10	25	50	ug
Start Time	<1	<1	<1	<1	s
Sampling Rate	1500	1500	1500	1500	Hz
Shock(charged)	10000	10000	10000	10000	g
Shock(uncharged)	10000	10000	10000	10000	g
Vibration Rectification Error (6grms)	/	<0.4	<0.15	<0.05	mg/grms
Operation Temp	-40--110				°C
Voltage	5±0.25	5±0.25	5±0.25	5±0.25	V
Current	<15	<15	<15	<15	ma
Interface	SPI	SPI	SPI	SPI	SPI