

# Model 3022 Accelerometer



Piezoresistive MEMS  
DC Response  
Circuit Board Mountable  
Low Cost

The **Model 3022** is a silicon MEMS accelerometer in a Wheatstone bridge configuration. The accelerometer is packaged on a ceramic substrate with an epoxy sealed ceramic cover and is designed for adhesive mounting. The accelerometer is offered in ranges from  $\pm 2g$  to  $\pm 200g$  range and provides a flat frequency response to minimum 2000Hz. The silicon MEMS sensor is gas damped and incorporates over-range stops for high-g shock protection.

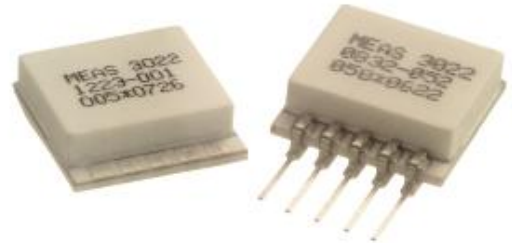
For a similar accelerometer designed for bolt mounting, see the [Model 3028](#).

## FEATURES

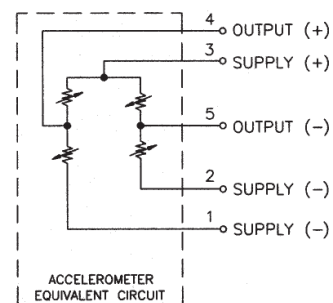
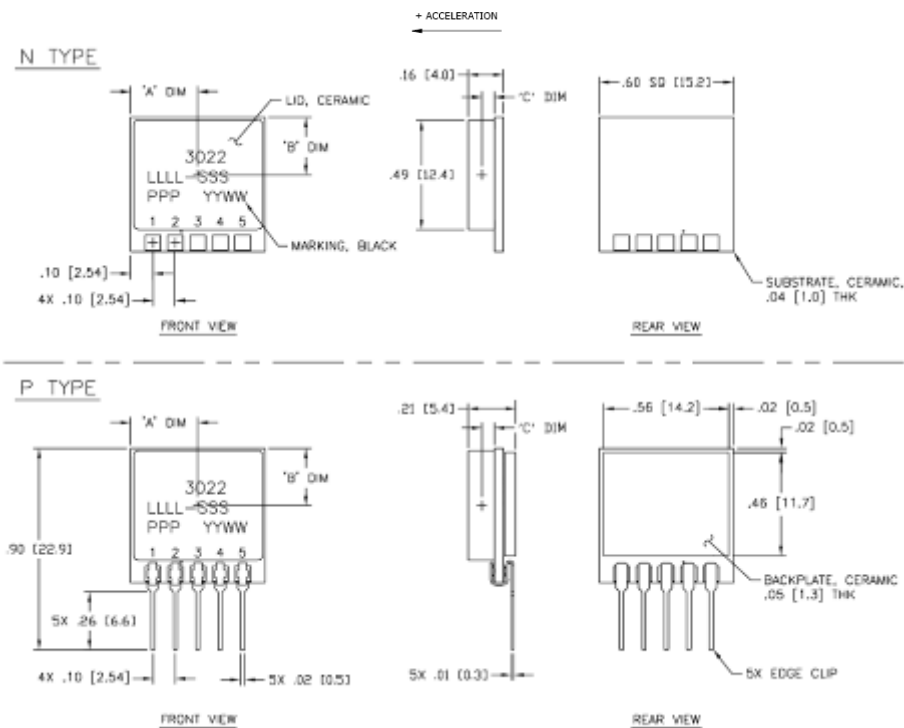
- Adhesive Mounted
- $\pm 0.5\%$  Non-linearity
- Open Wheatstone Bridge
- DC Response
- Gas Damping
- Built-in Overrange Stops
- Low Power Consumption

## APPLICATIONS

- Vibration & Shock Monitoring
- Motion Control
- Impact & Shock Testing
- Modal Analysis
- Embedded Applications
- Machinery



## Dimensions



# Model 3022 Accelerometer

## Performance Specifications

All values are typical at +24°C, 100Hz and 5Vdc excitation unless otherwise stated. Measurement Specialties reserves the right to update and change these specifications without notice. Measurement Specialties' family of [DC Response Embedded Accelerometers](#) are used for vibration/shock monitoring, structural analysis, motion control, impact testing, and transportation study. These MEMS sensors feature internal gas damping and outstanding shock survivability.

### Parameters

#### DYNAMIC

	±2	±5	±10	±20	±50	±100	±200	Notes
Range (g)	±2	±5	±10	±20	±50	±100	±200	
Sensitivity (mV/g) <sup>1</sup>	8.0-20.0	6.0-15.0	3.0-6.0	1.5-3.0	0.6-1.5	0.3-0.6	0.15-0.3	@5Vdc Excitation ±5%
Frequency Response (Hz)	0-150	0-250	0-400	0-600	0-1000	0-1500	0-2000	
Natural Frequency (Hz)	700	800	1000	1500	4000	6000	8000	
Non-Linearity (%FSO)	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5	
Transverse Sensitivity (%)	3	3	3	3	3	3	3	
Damping Ratio	0.7	0.7	0.7	0.7	0.7	0.7	0.6	
Shock Limit (g)	5000	5000	5000	5000	5000	5000	5000	

#### ELECTRICAL

Zero Acceleration Output (mV)	±25	±25	±25	±25	±25	±25	±25	Differential
Excitation Voltage (Vdc)	2 to 10	2 to 10	2 to 10	2 to 10	2 to 10	2 to 10	2 to 10	
Input Resistance (Ω)	2500- 6500	2500- 6500	2500- 6500	2500- 6500	2500- 6500	2500- 6500	2500- 6500	
Output Resistance (Ω)	2500- 6500	2500- 6500	2500- 6500	2500- 6500	2500- 6500	2500- 6500	2500- 6500	
Insulation Resistance (MΩ)	>100	>100	>100	>100	>100	>100	>100	@50Vdc
Residual Noise (µV RMS)	10	10	10	10	10	10	10	Maximum
Ground Isolation	Isolated from Mounting Surface							

#### ENVIRONMENTAL

Thermal Zero Shift (%FSO/°C)	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	Typical
Thermal Sensitivity Shift (%/°C)	-0.15	-0.15	-0.15	-0.15	-0.15	-0.15	-0.15	Typical
Operating Temperature (°C)	-40 to +125							
Compensated Temperature (°C)	Not Compensated							See Note 2
Storage Temperature (°C)	-40 to +125							

#### PHYSICAL

Case Material	Ceramic
Weight (grams)	3.1
Mounting	Adhesive or solder

<sup>1</sup> Output is ratiometric to excitation voltage

<sup>2</sup> Order model 3022-XXX-10254 for temperature compensation resistor values included in the calibration certificate.

## Ordering Info

PART NUMBERING Model Number+Range+Electrical Connection

3022-GGG-P

    | |  
    | |\_\_\_\_ Electrical Connection (P=pins, N=solder pads)  
    |\_\_\_\_ Range (010 is 10g)

Example: 3022-010-P  
          Model 3022, 10g, Pins

## 联系方式



深圳市亿为测控电子有限公司  
Shenzhen Bill-Well Measurement & Control Electronics Co., Ltd.

广东省深圳市南山区创业路怡海广场东座2407 邮编：518000

电话：+86 755 2641 9890 传真：+86 755 2641 9680

电子邮箱：sales@bill-well.com