

# Portable reference source

## ReferenceMate handheld shaker



Front panel controls

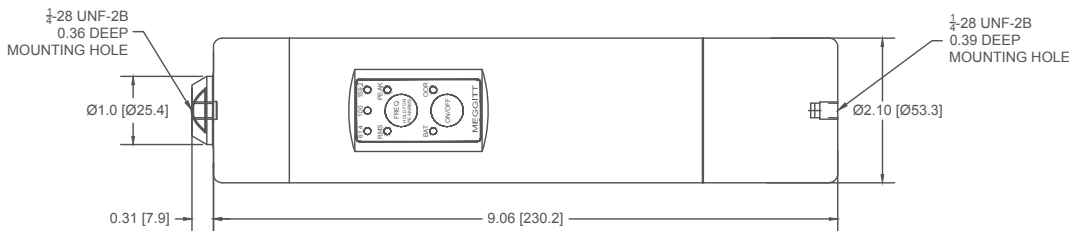


The ReferenceMate portable vibration reference source enables users in the field to easily verify sensor performance and the integrity of the cabling between the sensor and the online system. A built-in reference accelerometer assures that a 1 g test level is maintained for sensors weighing up to 250 grams.

Frequency of operation and measurement type (peak/RMS) are push button selected.

- 61.4 Hz for imperial measurements, where 1 g is equal to 1 inch per second (ips), for verification of acceleration and velocity
- 100.0 Hz to confirm sensor calibration value
- 159.2 Hz for metric measurements, where 1 g is equal to 9.81 m/sec<sup>2</sup> and 9.81 mm/sec

LEDs notify the user when battery condition falls below operational levels or if the unit is overloaded. For calibration verification, reference test points are provided to verify the output of the internal sensor.



### Key features

- 1 g selectable reference source (61.4 Hz, 100.0 Hz or 159.2 Hz)
- Crossover frequencies designed for easy velocity verification
- Verify and adjust entire systems from transducers to measurement equipment
- User selections retained on power off
- Test vibration sensors weighing up to 250 g
- Accessories for every application
- Optional cube for checking triaxial sensor outputs simultaneously
- Standard AA battery operation for field use
- Manufactured in an approved ISO 9001 and AS9100 facility

### Certifications



## Meggitt Sensing Systems

### Additional product lines and services

Piezoelectric accelerometers | Piezoresistive accelerometers | Variable capacitance accelerometers | IEPE and Isotron® accelerometers | 4-20 mA vibration sensors | Cable assemblies | Transmitter modules

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### Specifications

<b>Operating frequency</b>	± 1%	61.4 Hz	100.0 Hz	159.2 Hz
<b>Acceleration output<sup>1</sup></b>	± 3%	1.00 g (9.81 m/s <sup>2</sup> )	1.00 g (9.81 m/s <sup>2</sup> )	1.00 g (9.81 m/s <sup>2</sup> )
<b>Velocity output<sup>1</sup></b>		1.00 ips (25.4 mm/s)	0.61 ips (15.6 mm/s)	0.39 ips (9.8 mm/s)
<b>Displacement output<sup>1</sup></b>		2.6 mils (65.9 µm)	0.98 mils (24.8 µm)	0.39 mils (9.8 µm)
<b>Operating cycles, 250 gram load<sup>2</sup></b>		1,280	320	240
<b>Mounting thread</b>		1/4-28 female		
<b>Mounting torque, maximum</b>		10 in-lb (112 N-cm)		
<b>Distortion, 100-250 gram load</b>		≤3%		
<b>Load, min - max</b>		none - 8.8 oz (250 g)		
<b>Automatic switch off time</b>		approximately 90 ±10 sec defeatable		
<b>Temperature range</b>	<b>operating</b>	+15 to +130° F (-10 to +55° C)		
	<b>storage</b>	-40 to +248° F (-40 to +120° C)		
<b>Ramp-up time</b>		≤3 sec		
<b>Internal battery</b>		4x AA alkaline batteries		
<b>DC power</b>		6 VDC ±5%, 1A, center positive		
<b>Dimensions</b>		diameter: 2.10 in (5.33 cm), height: 9.25 in (23.50 )		
<b>Weight, with batteries</b>		32 oz (900 g)		
<b>Case material</b>		6061 aluminum, black hard-coat anodized		
<b>IP rating</b>		IP54		

<sup>1</sup>User selectable: peak or rms

<sup>2</sup>Using supplied alkaline batteries

### Ordering information

#### REF2510 industrial kit

<b>Handheld shaker</b>	REF2500
<b>AA batteries (4x)</b>	A69203
<b>Calibration sheet</b>	94511
<b>Belt clip</b>	A61164
<b>Wrench</b>	A61088
<b>Carrying case with foam insert</b>	80315-01/80311-01
<b>1/4-28 to 1/4-28 mounting stud</b>	SF6

#### REF2520 measurement kit

<b>Handheld shaker</b>	REF2500
<b>AA batteries (4x)</b>	A69203
<b>Calibration sheet</b>	94511
<b>Belt clip</b>	A61164
<b>Wrench</b>	A61088
<b>Carrying case with foam insert</b>	80315-01/80311-01
<b>1/4-28 to 1/4-28 mounting stud</b>	SF6
<b>1/4-28 to 10-32 adaptor stud</b>	SF3
<b>1/4-28 to flat plate</b>	42974
<b>1/4-28 to 2-56 mounting base</b>	42976-1
<b>1/4-28 to 6-32 mounting base</b>	42976-3
<b>1/4-28 to 10-32 mounting base</b>	42975-1

### Applications

#### Industrial

- Industrial and manufacturing equipment
- Rotating machinery
- Online monitoring systems
- Cable integrity checks

#### Measurement

- General laboratory vibration
- Automotive (NVH, component reliability)
- University/research
- Aerospace component reliability
- Defense systems
- Consumer electronics

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### Optional accessories

#### REF001 universal mounting kit

1/4-28 to 10-32 adaptor stud	SF3
1/4-28 to 8-32 adaptor plate for 997 and 712 sensors	13249-01
1/4-28 to 10-32 adaptor plate	13249-02
90° adaptor plate for 993 series sensors	13267-01

#### REF002 metric mounting kit

1/4-28 to M6 adaptor stud	SF6M-1
1/4-28 to M8 adaptor stud	SF6M
1/4-28 to M4 adaptor plate for 997 and 712 sensors	13249-03
1/4-28 to M6 adaptor plate for captive screw sensors	13249-04
1/4-28 to M8 adaptor plate for captive screw sensors	13249-05

Universal AC adaptor, international compatibility REF003

2 pole magnet MD055

Triaxial accelerometer angled adaptor 13268-01



Note: Due to continuous process improvement, specifications are subject to change without notice.  
This document is cleared for public release.

### Contact

#### Industrial applications REF2510

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#### Measurement applications REF2520

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