

ULTRAPRECISION VIBRATING SAMPLE MAGNETOMETER

Feed-back controlled

MVSM-Series

Introduction:

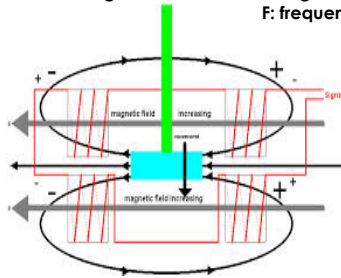
MVSM series of Vibrating sample magnetometers are available in eight different models to measure magnetic field upto 10.0 tesla in high temperature/crogenic ranges and in radiation are where normal magnetic field sensing fails.(0.01-500,000.0 n) and upto 800 kilo watts in more than 100 different models with different coupling schemes meeting all operational requirement of packaging reliability, yarn, petrochem, hoist, automobile, robotic, semiconductors industries, heavy electrical/mechanical engineering, solid state physical applications, seismic simulation, vibration control applications, structure reliability simulation, precious metal industries, avionics, railway automation/protection and many other research & development applications. Updated design topology ensures better controllability and efficiency with additional integrated control/protection. Company offers tailor made solution to custom requirement.

Operating Principle:

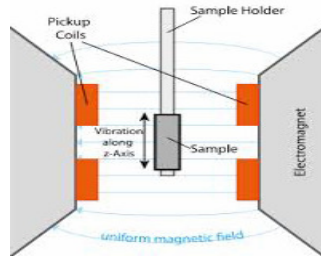
In these magnetometers, a periodical oscillating coil placed laterally under the influence of under measurement magnetic field as shown, generates a signal voltage in sensing coil holding sample which is proportional to magnetization level of sample placed in applied magnetic field. This voltage is transmitted to signal conditioner through a leaf spring. These may operate either in periodical or impulse excitation mode. The amount of energy injected into the payload is controlled by varying the excitation current or its frequency. Force generated in is elementarily given as under...

$$V_{sig} = I \times B \times LXW \times f \quad V_{sig} = \text{current}, B = \text{magnetic field}, L = \text{conductor length}$$

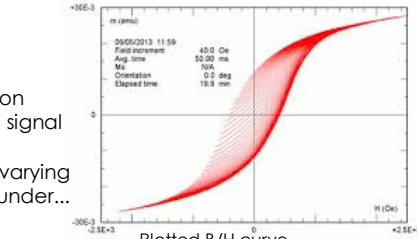
F: frequency



Micro-view of VSM



pictorial view of magnetometer



Plotted B/H curve



magnetometer assembly with electrometer excitation

Specification of Vibrating sample magnetometers & controllers:

Model	Magnetic field (Tesla)	Temperature Deg-cel	Sample size m.m. ²	Step down ration	Sample payload (m.g.)	Burden count	Accuracy Restricted to Resolution level	Resolution Quantified/ optional	Stability(count drift) (24 hour)	Interface
MVSM-000310	0.5	-200 - 500	5.0	1:10000	1.0-5.0	<100	99.99999%	1/2/5 count	2-3 count	RS-232
MVSM-000610	0.5	-200 - 500	5.0	1:10000	1.0-5.0	<100	99.99999%	1/2/5 count	2-3 count	RS-232
MVSM-001210	1.0	-200 - 500	5.0	1:10000	1.0-5.0	<100	99.99999%	1/2/5 count	2-3 count	RS-232
MVSM-002008	1.0	-200 - 500	5.0	1:10000	1.0-5.0	<100	99.99999%	1/2/5 count	2-3 count	RS-232
MVSM-003008	1.0	-200 - 500	10.0	1:10000	2.0-10.0	<100	99.99999%	1/2/5 count	2-3 count	RS-232
MVSM-004008	2.0	-200 - 500	10.0	1:10000	2.0-10.0	<100	99.99999%	1/2/5 count	2-3 count	RS-232
MVSM-005007	2.0	-200 - 500	10.0	1:10000	2.0-10.0	<100	99.99999%	1/2/5 count	2-3 count	RS-232
MVSM-006007	2.0	-200 - 500	10.0	1:10000	2.0-10.0	<100	99.99999%	1/2/5 count	2-3 count	RS-232
MVSM-007507	5.0	-200 - 500	20.0	1:10000	10.0-100.0	<100	99.99999%	1/2/5 count	2-3 count	RS-232
MVSM-009007	5.0	-200 - 500	20.0	1:10000	10.0-100.0	<100	99.99999%	1/2/5 count	2-3 count	RS-232
MVSM-010007	10.0	-200 - 500	20.0	1:10000	10.0-100.0	<100	99.99999%	1/2/5 count	2-3 count	RS-232

General Specification of Vibrating sample magnetometers & Controller Specification:

Operating voltage: 220 volt A.C. (50-20,000 Hz)/ 12 volts D.C.

Measurement range (full scale): as above in different model.

Measurement Range (gauss)-A.C./D.C.: as above and upto 999999 gauss

Input capacitance: 10 nF

Response time: 1000 sample/sec

Burden: less than 100 count

Accuracy error : 0.5/1.0/2.0 % reading

Repeatability: 100 of reading

Resolution: 1/5 count may be altered based on time behaviour of signal

Linearity adjustment: upto 100 count

Input impedance: ultra high(<100 giga ohm),

Filtering: low pass(adjustable)

Offset: variable upto 10,000 nano volts (manual/auto)

CMMR: >80 db at 50-60 Hz

Isolation: > 100 giga ohm

Connector: BNC-9 pinx2 and BNC-25 pinx2

Size: 8X8x12 inches/rack mounted or portable

Interface: RS-232

Option : ADDITIONAL SOFTWARE to plot V/I OR ANY DESIRED INFERENTIAL PARAMETER./ SPECIFICATIONS OR PART THERE OF MAY BE MODIFIED TO MEET ANY TAILOR MADE SOLUTIONS.

Protection over voltage/short ckt & inline surge protection.

Tailor made specification controllers are also offered.

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