

PRECISION MOVING IRON VOLT/AMPEREMETER

D.C. & A.C.-(L.F. & H.F.). TYPE

Introduction:

MDVM/MIAM range of moving iron precision voltmeters/ammeters [DC/AC] are available in 8 different regular models apart from tailor made solutions virtually covering all industrial and research applications meeting all electrical, thermal, mechanical, and environmental specifications. These indicators are first choice for online monitoring of voltage/current (D.C.) and (A.C., L.F./H.F.) at generation, transmission/distribution or at user end. These meters also find application in heavy electrical engineering industries, defense, and electrical/mechanical m/c testing instrument, industrial electronics, railway, and avionics and many research and development activities. These meters are compatible to any standard CT/PT or hall/shunt sensor and display with very high degree of accuracy/repeatability/reliability. These indicators are available in different constructional material like ceramic-coated ms/poly carbonate.

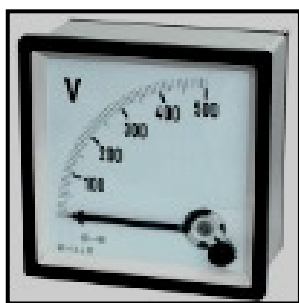
Operating Principle: These ultra-precision meters are working on principle of least magnetic reluctance path of magnetic flux, magnetic moving vane settles rotating under the influence voltage/current magnetic field at certain angular position proportion to applied voltage/current counter balanced by spring force $K.O.$, where K is spring constant, O is angular displacement, current (I/V) is voltage/current in coil. These measurement systems are immune to any climatically, mechanical, tribological, rheological, chemical constraints and displays very consistently with high level of accuracy.

$O = k_1 \times N \times I^2$

where O = angular displacement, I: (D.C.), K_1 : spring, N: number of turn, W & L: width and breadth of former, I: measurement current.

Benefits:

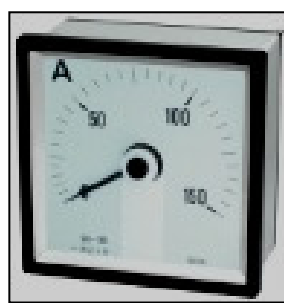
- Simple installation and operational compatibility./Consistent performance over large temperature range (100°C)
- Scaled directly in Volt/Ampere with repeatable accuracy. /least zero offsets without drift.
- All standards din sizes and custom sizes.



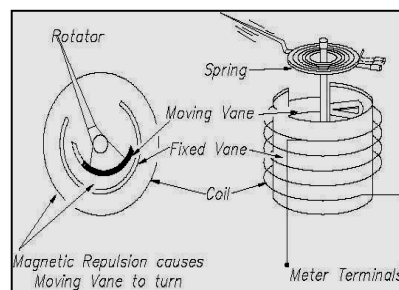
MIVM-00100.0



MIAM-00250.0



MIAM-00100.0



WORKING PRINCIPLE OF MOVING IRON MET ER

VOLTMETER (A.C./D.C.) Voltage < 99999.9 milli-volts **AMPEREMETER (A.C./D.C.) AMPERE < 99999.9 milli-amps**

Model	VOLTS	Volts Signal Volts.	Coil Current resistance	Frequency K.hz	Model	Ampere	AMPERE Signal Milli-volt	Coil Current/ Resistance	Frequency KHz
MIVM-00100	00100.0	220.0/option	Proprietary	0-10,000	MIAM-00100	00100.0	Main/option	Proprietary	0-10,000
MIVM-00250	00250.0	220.0/option	Proprietary	0-10,000	MIAM-00250	00250.0	main/option	Proprietary	0-10,000
MIVM-00500	00500.0	220.0/option	Proprietary	0-10,000	MIAM-00500	0500.0	main/option	Proprietary	0-10,000
MIVM-01000	01000.0	220.0/option	Proprietary	0-10,000	MIAM-01000	1000.0	main/option	Proprietary	0-10,000
MIVM-02500	02500.0	220.0/option	Proprietary	0-10,000	MIAM-02500	2500.0	main/option	Proprietary	0-10,000

General electrical/mechanical specifications:

Operating voltage: self-excited

Volt/Current range: 0-5/25/250 amp 2. 0-1.0/5.0/10.0/25.0/100.0 AC/D.C. Amps
: 0-5/25/250/500/1000/3000 Volt AC/DC.

Permissible harmonic: upto 33% of principle harmonic

Voltage/current ripple: 3% of peak voltage/current

Signal Frequency: 0-20,000 Hz

Voltage transformer signal: 5/12 volts AC/DC or D.C.

Current transformer signal: 75-milli-volts/5 volts AC or DC

TCV: 0.0002/°C

Accuracy: 0.2/ 0.5/1.0/2.0 % reading

Sensitivity: 1.0 micro-amp/degree without scaling to higher ranges of Voltmeter/ammeter.

Repeatability/Resolution: 100% and 1:50/1:100/1:200

Effect of Ripple: 3% of D.C. of frequency > 1/Tm

Control: two set point control (low/high)

Display: 90°/240°

Repeatability: 100 of reading

Resolution: 1/10 of least significant bit

Size: 72x72/96x96/144x144m.m. or option

NOTES:

The numeral after product code indicates the (volt/ampere) range.



Double movement Volt/Amp meter



Explosion type voltmeter

MOTORON SEMICONDUCTORS CORPORATION

11, Shri Nagar Colony, Shakti Nagar Extension, Delhi-110052 .Tel: 011-236548181/23991188

motoronenergy@hotmail.com

PRECISION PERMANENT MOVING IRON VOLT/AMPEREMETER (D.C. /A.C. TYPE)

VOLTMETER (A.C. /D.C.) Voltage < 99999.9 volts **AMPEREMETER (A.C./D.C.)** **AMPERE < 99999.9 amps**

Model	VOLTS	Volts Signal Volts.	Coil Current resistance	Frequency hz	Model	Ampere	AMPERE signal	Coil Current/ Resistance	Frequency K.hz
MIVM-00100	00100.0	12.0	75	0-10,000	MIAM-00100	00100.0	48.0	75	0-10,000
MIVM-00250	00250.0	12.0	75	0-10,000	MIAM-00250	00250.0	48.0	75	0-10,000
MIVM-00500	00500.0	12.0	75	0-10,000	MIAM-00500	0500.0	48.0	75	0-10,000
MIVM-01000	01000.0	12.0	75	0-10,000	MIAM-01000	1000.0	96.0	75	0-10,000

NOTES:

The numeral after product code indicates the (volt/ampere) range.

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PRECISION PERMANENT MAGNET VOLT/AMPEREMETER (D.C./A.C. TYPE)- low/high voltage type

Introduction:

MDVM/MAPM range of permanent magnet precision voltmeters/ammeters [DC/AC] are available in 8 different regular models apart from tailor made solutions virtually covering all industrial and research applications meeting all electrical, thermal, mechanical, and environmental specifications. These indicators are first choice for online monitoring of voltage/current [D.C. /A.C.] at generation, transmission/distribution or at user end. These meters also find application in heavy electrical engineering industries, defense, and electrical/mechanical m/c testing instrument, industrial electronics, railway, and avionics and many research and development activities. These meters are compatible to any standard CT/PT or hall/shunt sensor and display with very high degree of accuracy/repeatability/reliability. These indicators are available in different constructional material like ceramic-coated ms/poly carbonate.

Operating Principle: These ultra precision meters are working on Fleming principle of electromagnetic force, where a current (I) carrying conductor of length (L) experience force (F) when placed in a magnetic field (B). This force is balanced by incremental weight under measurement using sensitive feedback controlled D.S.P. system and is converted into equivalent display. These measurement systems are immune to any climatically, mechanical, tribological, rheological, chemical constraints and displays very consistently with high level of accuracy.

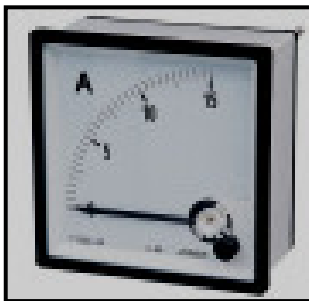
D = 1/k₁ x N x BxLxWxl x I where D = angular displacement, I: (D.C.), K₁: spring, N: number of turn,
W & L: width and breadth of former, I: measurement current.

Benefits:

- Simple installation and operational compatibility./Consistent performance over large temperature range (100°C)
- Scaled directly in Volt/Ampere with repeatable accuracy./least zero offsets without drift.
- All standards din sizes and custom sizes.



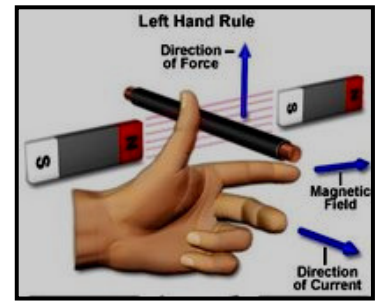
MAVM-00100.0



MAPM-00250.0



MAPM-00100.0



WORKING PRINCIPLE OF PMDC METER

VOLTMETER (A.C./D.C.) Voltage < 99999 volts

AMPEREMETER (A.C./D.C.) AMPERE < 99999 amps

Model	VOLTS	Volts Signal Volts.	Coil Current resistance	Frequency K.hz	Model	ampere	AMPERE Signal Milli-volt	Coil Current/resistance	Frequency K.hz
MAVM-00100	00100	12.0/option	Proprietary	D.C./A.C	MAAM-00100	00100	75.0/option	Proprietary	D.C./A.C
MAVM-00250	00250	12.0/option	Proprietary	D.C./A.C.	MAAM-00250	00250	75.0/option	Proprietary	D.C./A.C.
MAVM-00500	00500	12.0/option	Proprietary	D.C./A.C.	MAAM-00500	0500	75.0/option	Proprietary	D.C./A.C.
MAVM-01000	01000	12.0/option	Proprietary	D.C./A.C.	MAAM-01000	1000	75.0/option	Proprietary	D.C./A.C.
MAVM-02500	02500	12.0/option	Proprietary	D.C./A.C.	MAAM-02500	2500	75.0/option	Proprietary	D.C./A.C.
MAVM-05000	05000	12.0/option	Proprietary	D.C./A.C.	MAAM-050000	5000	75.0/option	Proprietary	D.C./A.C.
MAVM-9999	09999	12.0/option	Proprietary	D.C./A.C.	MAAM-09999	9999	75.0/option	Proprietary	D.C./A.C.
MAVM-19999	20,000	12.0/option	Proprietary	D.C./A.C.	na	na	na	na	na
MAVM-29999	29999	12.0/option	Proprietary	D.C./A.C.	na	na	na	na	na

General electrical/mechanical specifications:

Operating voltage: self-excited
 Volt/Current range: 0-5/25/250 micro-amp 2. 0-1.0/5.0/10.0/25.0/100.0 D.C. Amps
 : 0-5/25/250/500/1000/3000 Volt D.C.

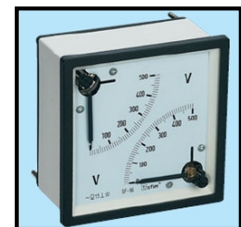
Permissible harmonic: upto 33% of principle harmonic
 Voltage/current ripple: 3% of peak voltage/current
 Signal Frequency: 0-20,000 Hz

Voltage transformer signal: 5/12 volts AC or DC
 Current transformer signal: 75-milli-volts/5 volts AC or DC
 TCv: 0.0002/°C

Accuracy: 0.2/ 0.5/1.0/2.0 % reading
 Sensitivity: 1.0 micro-amp/degree without scaling to higher ranges of Voltmeter/ammeter.
 Repeatability/Resolution: 100% and 1:50/1:100/1:200
 Effect of Ripple: 3% of D.C. of frequency > 1/Tm
 Control: two set point control (low/high)
 Display: 90°/240°

Repeatability: 100 of reading
 Resolution: 1/10 of least significant bit
 Size: 72x72/96x96/144x144m.m. or option

NOTES: The numeral after product code indicates the (volt/ampere) range.



Double movement Volt/Amp meter



High voltage meter(ac/dc)

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PRECISION PERMANENT MAGNET VOLT/AMPEREMETER (D.C./A.C. TYPE)

Introduction:

MDVM/MAPM range of permanent magnet precision voltmeters/ammeters [DC/AC] are available in 8 different regular models apart from tailor made solutions virtually covering all industrial and research applications meeting all electrical, thermal, mechanical, and environmental specifications. These indicators are first choice for online monitoring of voltage/current [D.C./A.C.] at generation, transmission/distribution or at user end. These meters also find application in heavy electrical engineering industries, defense, electrical/mechanical m/c testing instrument, industrial electronics, railway, and avionics and many research and development activities. These meters are compatible to any standard CT/PT or hall/shunt sensor and display with very high degree of accuracy/repeatability/reliability. These indicators are available in different constructional material like ceramic-coated ms/polycarbonate.

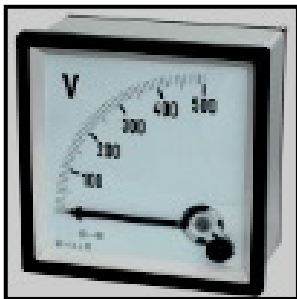
Operating Principle: These ultraprecision meters are working on Fleming principle of electromagnetic force, where a current (I) carrying conductor of length (L) experience force (F) when placed in a magnetic field (B). This force is balanced by incremental weight under measurement using sensitive feedback controlled D.S.P. system and is converted into equivalent display. These measurement systems are immune to any climatically, mechanical, tribological, rheological, chemical constraints and displays very consistently with high level of accuracy.

$$D = 1/k_1 \times N \times B \times L \times W \times I$$

where D = angular displacement, I: (D.C.), K₁: spring, N: number of turn,
W & L: width and breadth of former, I: measurement current.

Benefits:

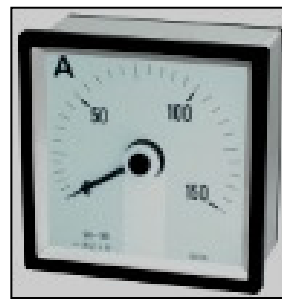
- Simple installation and operational compatibility./Consistent performance over large temperature range (100°C)
- Scaled directly in Volt/Ampere with repeatable accuracy./least zero offsets without drift.
- All standards din sizes and custom sizes.



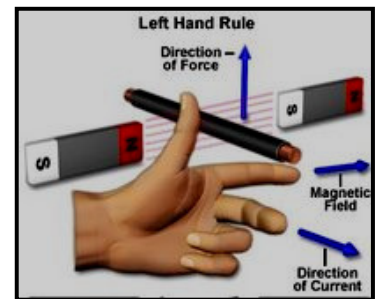
MVPM-00100.0



MAPM-00250.0



MAPM-00100.0



WORKING PRINCIPLE OF PMDC METER

VOLTMETER (A.C./D.C.) Voltagemilli-<99999

AMPEREMETER (A.C./D.C.) AMPERE< 99999 micro-amps

Model	Volts Milli-	Volts Signal Volts.	Coil Current resistance	Frequency K.hz	Model	Ampere micro	Ampere Signal Milli-volt	Coil Current/resistance	Frequency K.hz
MAVM-00100	00100	12.0/option	Proprietary	D.C./A.C.	MAAM-00100	00100.0	75.0/option	Proprietary	D.C./A.C.
MAVM-00250	00250	12.0/option	Proprietary	D.C./A.C.	MAAM-00250	00250.0	75.0/option	Proprietary	D.C./A.C.
MAVM-00500	00500	12.0/option	Proprietary	D.C./A.C.	MAAM-00500	0500.0	75.0/option	Proprietary	D.C./A.C.
MAVM-01000	01000	12.0/option	Proprietary	D.C./A.C.	MAAM-01000	1000.0	75.0/option	Proprietary	D.C./A.C.
MAVM-02500	02500	12.0/option	Proprietary	D.C./A.C.	MAAM-02500	2500.0	75.0/option	Proprietary	D.C./A.C.
MAVM-05000	05000	12.0/option	Proprietary	D.C./A.C.	MAAM-050000	5000.0	75.0/option	Proprietary	D.C./A.C.
MAVM-9999	09999	12.0/option	Proprietary	D.C./A.C.	MAAM-09999	9999.0	75.0/option	Proprietary	D.C./A.C.

General electrical/mechanical specifications:

Operating voltage: self-excited

Volt/Current range: 0-5/25/250 micro-amp 2. 0-1.0/5.0/10.0/25.0/100.0 D.C. Amps
: 0-5/25/250/500/1000/3000 Volt D.C.

Permissible harmonic: upto 33% of principle harmonic

Voltage/current ripple: 3% of peak voltage/current

Signal Frequency:0-20,000 Hz

Voltage transformer signal: 5/12 volts AC or DC

Current transformer signal: 75-mili-volts/5 volts AC or DC

TCV: 0.0002/°C

Accuracy: 0.2/ 0.5/1.0/2.0 % reading

Sensitivity: 1.0 micro-amp/degree without scaling to higher ranges of Voltmeter/ammeter.

Repeatability/Resolution: 100% and 1:50/1:100/1:200

Effect of Ripple: 3% of D.C. of frequency>1/Tm

Control: two set point control (low/high)

Display: 90°/240°

Repeatability: 100 of reading

Resolution: 1/10 of least significant bit

Size: 72x72/96x96/144x144m.m. or option

NOTES:

The numeral after product code indicates the (volt/ampere) range.



Double movement Volt/Amp meter



Explosion type voltmeter

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motoronenergy@hotmail.com

PRECISION REAL POWER METERS

(A.C. TYPE-LINEAR FOUR/SINGAL QUADRANT)

(LOW/HIGH- FREQUENCY)

Introduction: MKWM range of Watt/VAR/VA indicators/controllers are available in 10 different regular models apart from tailor made solutions. Virtually covering all industrial and research applications meeting all electrical, thermal, mechanical, and environmental specifications. These indicators are first choice for online power measurement of [high frequency/low frequency] at generation, transmission/distribution or at user end. These meters find application in heavy electrical engineering industries, defense, electrical/mechanical m/c testing, industrial electronics, railway, and avionics and many research and development activities. These meters are compatible to any standard CT/PT or hall/shunt sensor and display with very high degree of accuracy/repeatability/reliability. These indicators are available in different constructional material like ceramic-coated

Operating Principle: High resistance moving coil excited by voltage source is moving between two pole electromagnet excited by current signal. A high permeability core inside moving coil former ensure uniform radial distribution of magnetic field and hence lateral rate of change of mutual inductance between both the coils is constant. And accordingly these meters offers linear scale apart from large frequency range. Care full compensation ensures low power factor measurement accurately.

Angular displacement is defined as under.....

$$D = 1/K_1 \times N \times V \times l \times W \times l$$

where D = angular displacement, I/V: are current and voltage(A.C.), K₁: spring, N: number of turn, W & L: width and breadth of former,

Benefits:

- Simple installation and operational compatibility./Consistent performance over large temperature range (70°C)
- Scaled directly in Volt/Ampere with repeatable accuracy.All standards din sizes and custom sizes./Linear
- upto 200 count/per 90 degree/more r.m.s measurement than digital over large harmonic distortion range



MWAM-00099.9



MVARM-00999.9



multirange Kwatt meter

Wattmeter –electrodynamic type

1000k >WATTS> 1k Frequency<50: p.f. >0.5

Model	Volts Ac/dc	Volts Signal/sensor	Voltage Coil- L/R	Ampere AC/DC	Ampere Signal/sensor	Current Coil- L/R	Frequency Option	Movement range-DEGREE	Accuracy
MWDM-00100	0250.0/1/option	Direct/PT/HALL	Proprietary	0.500	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-00250	0250.0/1/option	Direct/PT/HALL	Proprietary	1.000	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-01000	0250.0/1/option	Direct/PT/HALL	Proprietary	5.000	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-02000	0250.03/option	Direct/PT/HALL	Proprietary	10.00	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-05000	0250.03/option	Direct/PT/HALL	Proprietary	25.00	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-10000	0250.03/option	Direct/PT/HALL	Proprietary	50.00	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-10000	11000/3/option	Direct/PT/HALL	Proprietary	1.000	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-30000	11000/3/option	Direct/PT/HALL	Proprietary	2.000	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-80000	11000/3/option	Direct/PT/HALL	Proprietary	5.000	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%

NOTES: The numeral after product code indicates the watts range.

General electrical/mechanical specifications:

Operating voltage: self-excited

Current range: 0-0.01/0.5/1.0/5.0/25.0 A.C./D.C. Amps or option

Voltage: 0-25/250/500/1000/3000 Volt A.C.D.C. or option

Power range: 1000 milli watt/100.0 watt/1000 watt/10.00 KW/100.0 watt/1000 k.w

Reactive Power Range: 1000 milli KVAR/1000 KVAR/10.00 KVAR/100.0 KVAR/100.0 KVAR

Apparent Power range: 1000 milli V.A./1000 VA/10.00 KVA/100.0 KVA/100.0 KVA/1000 KVA

Power factor: 0.2/0.5/1.0

Frequency range: D.C. / 0.001-100,000 Hz

TDH: 3%/5%/10% or as option for non-linear loads

Burdon: 50 milli-VA/1.0 VAs/5.0 VA

Voltage/current ripple (for D.C.) 3% of peak voltage/current

Effect of Ripple: 3% of D.C. of frequency>1/Tm

Signal Frequency:0-20,000 Hz

Voltage transformer signal: 5/12 volts/100 volt/250 volts AC/DC

Current transformer signal: 0-5 amps ac/50 Hz or option

Accuracy: 0.2/ 0.5/1.0/2.0 % reading

Sensitivity: 1.0 micro-amp/degree without scaling to higher ranges of Ammeter

Resolution: 1/10 of least significant bit

Repeatability/Resolution: 100% and 1:50/1:100/1:200

TCV: 0.0002/°C

Control: two set point control (low/high)

Material: GLASS FILL NYLON/ABS

Size: 72x72/96x96/144x144 or option/MOUNTING:



MWDM-80000

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motoron@hotmail.

PRECISION REAL POWER METERS**(A.C. TYPE- FOUR/SINGAL QUADRANT)****(LOW/HIGH- FREQUENCY)****Wattmeter –electrodynamic type****1000k >WATTS> 1.0 watt 1000Hz >Frequency>50: p.f. <0.5**

MODEL	VOLTS AC/DC	Volts Signal/sensor	Voltage Coil- L/R	Ampere AC/DC/m.a.	AMPERE Signal/sensor	Current Coil- L/R	Frequency Option	Movement range-degree	Accuracy
MVARDM-00100	0250.0/1/option	Direct/PT/HALL	Proprietary	0.500	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-00250	0250.0/1/option	Direct/PT/HALL	Proprietary	1.000	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-01000	0250.0/1/option	Direct/PT/HALL	Proprietary	5.000	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-02000	0250.03/option	Direct/PT/HALL	Proprietary	10.00	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-05000	0250.0/3/option	Direct/PT/HALL	Proprietary	25.00	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-10000	0250.0/3/option	Direct/PT/HALL	Proprietary	50.00	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-10000	11000/3/option	Direct/PT/HALL	Proprietary	1.000	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-30000	11000/3/option	Direct/PT/HALL	Proprietary	2.000	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-80000	11000/3/option	Direct/PT/HALL	Proprietary	5.000	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%

Wattmeter –electrodynamic type**1000k >WATTS> 1k 400>Frequency>50: p.f. <0.5**

Model	VOLTS AC/DC	Volts Signal/sensor	Voltage Coil- L/R	Ampere AC/DC	AMPERE Signal/sensor	Current Coil- L/R	Frequency Option	Movement range-DEGREE	Accuracy
MWDM-00100	0250.0/1/option	Direct/PT/HALL	Proprietary	0.500	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-00250	0250.0/1/option	Direct/PT/HALL	Proprietary	1.000	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-01000	0250.0/1/option	Direct/PT/HALL	Proprietary	5.000	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-02000	0250.03/option	Direct/PT/HALL	Proprietary	10.00	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-05000	0250.0/3/option	Direct/PT/HALL	Proprietary	25.00	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-10000	0250.0/3/option	Direct/PT/HALL	Proprietary	50.00	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-10000	11000/3/option	Direct/PT/HALL	Proprietary	1.000	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-30000	11000/3/option	Direct/PT/HALL	Proprietary	2.000	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-80000	11000/3/option	Direct/PT/HALL	Proprietary	5.000	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%

MOTORON SEMICONDUCTORS CORPORATION

11, Shri Nagar Colony, Shakti Nagar Extension, Delhi-110052 .Tel: 011-236548181/23991188

motoron@hotmail.

PRECISION REAL POWER METERS

(D.C. TYPE- FOUR/SINGAL QUADRANT)

Wattmeter –electrodynamic type**100K >WATTS> 1.0K watt**

MODEL	VOLTS DC	Volts Signal/sensor	Voltage Coil- L/R	Ampere DC/m.a.	Ampere Signal/sensor	Current Coil- L/R	Frequency Option	Movement range-degree	Accuracy
MVARDM-00100	0250.0/1/option	Direct/PT/HALL	Proprietary	0.500	Direct/CT/HALLT	Proprietary	50	+/-45/option	0.2/0.5/1%
MWDM-00250	0250.0/1/option	Direct/PT/HALL	Proprietary	1.000	Direct/CT/HALLT	Proprietary	50	+/-45/option	0.2/0.5/1%
MWDM-01000	0250.0/1/option	Direct/PT/HALL	Proprietary	5.000	Direct/CT/HALLT	Proprietary	50	+/-45/option	0.2/0.5/1%
MWDM-02000	0250.03/option	Direct/PT/HALL	Proprietary	10.00	Direct/CT/HALLT	Proprietary	50	+/-45/option	0.2/0.5/1%
MWDM-05000	0250.0/3/option	Direct/PT/HALL	Proprietary	25.00	Direct/CT/HALLT	Proprietary	50	+/-45/option	0.2/0.5/1%
MWDM-10000	0250.0/3/option	Direct/PT/HALL	Proprietary	50.00	Direct/CT/HALLT	Proprietary	50	+/-45/option	0.2/0.5/1%
MWDM-10000	11000/3/option	Direct/PT/HALL	Proprietary	1.000	Direct/CT/HALLT	Proprietary	50	+/-45/option	0.2/0.5/1%
MWDM-30000	11000/3/option	Direct/PT/HALL	Proprietary	2.000	Direct/CT/HALLT	Proprietary	50	+/-45/option	0.2/0.5/1%
MWDM-80000	11000/3/option	Direct/PT/HALL	Proprietary	5.000	Direct/CT/HALLT	Proprietary	50	+/-45/option	0.2/0.5/1%

Wattmeter –electrodynamic type**1000 >WATTS> 1.0**

MODEL	VOLTS DC	Volts Signal/sensor	Voltage Coil- L/R	Ampere DC/m.a.	Ampere Signal/sensor	Current Coil- L/R	Frequency Option	Movement range-degree	Accuracy
MWDM-00100	0250.0/1/option	Direct/PT/HALL	Proprietary	0.500	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-00250	0250.0/1/option	Direct/PT/HALL	Proprietary	1.000	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-01000	0250.0/1/option	Direct/PT/HALL	Proprietary	5.000	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-02000	0250.03/option	Direct/PT/HALL	Proprietary	10.00	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-05000	0250.0/3/option	Direct/PT/HALL	Proprietary	25.00	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-10000	0250.0/3/option	Direct/PT/HALL	Proprietary	50.00	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-10000	11000/3/option	Direct/PT/HALL	Proprietary	1.000	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-30000	11000/3/option	Direct/PT/HALL	Proprietary	2.000	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-80000	11000/3/option	Direct/PT/HALL	Proprietary	5.000	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%

Wattmeter –ferrodynamic type**1.0 >WATTS> 1.0 mili watt**

MODEL	VOLTS DC	Volts Signal/sensor	Voltage Coil- L/R	Ampere DC/m.a.	Ampere Signal/sensor	Current Coil- L/R	Frequency Option	Movement range-degree	Accuracy
MVARDM-00011	010.0/option	Direct/PT/HALL	Proprietary	0.500	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-00012	010.0/option	Direct/PT/HALL	Proprietary	1.000	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MVARDM-00013	010.0/option	Direct/PT/HALL	Proprietary	5.000	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-00014	010.0/option	Direct/PT/HALL	Proprietary	10.00	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MVARDM-00015	010.0/option	Direct/PT/HALL	Proprietary	25.00	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-00016	010.0/option	Direct/PT/HALL	Proprietary	50.00	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MVARDM-00017	010.0/option	Direct/PT/HALL	Proprietary	1.000	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-00017	010.0/option	Direct/PT/HALL	Proprietary	2.000	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MVARDM-00018	010.0/option	Direct/PT/HALL	Proprietary	5.000	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%

Wattmeter –ferrodynamic type-Audiofrequency range**5000k >WATTS> 1.0 watt 20,000Hz >Frequency>100: p.f. <0.5**

MODEL	VOLTS H.F.	Volts Signal/sensor H.F.	Voltage Coil- L/R	Ampere HF/m.a.	Ampere Signal/sensor	Current Coil- L/R	Frequency Option	Movement range-degree	Accuracy
MWDM-00100	0200.0/1/option	Direct/PT/HALL	Proprietary	0.500	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-00250	0200.0/1/option	Direct/PT/HALL	Proprietary	1.000	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-01000	0200.0/1/option	Direct/PT/HALL	Proprietary	5.000	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-02000	0200.0/1/option	Direct/PT/HALL	Proprietary	10.00	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-05000	0200.0/1/option	Direct/PT/HALL	Proprietary	25.00	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-10000	0200.0/1/option	Direct/PT/HALL	Proprietary	50.00	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-10000	0200.0/1/option	Direct/PT/HALL	Proprietary	100.0	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%

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motoron@hotmail.

PRECISION REACTIVE POWER METERS**(A.C. SINGLE/FOUR QUADRANT TYPE)****(LOW/HIGH- FREQUENCY)****VAR –electrodynamic type****1000k >VAR> 1.0 VAR 1000Hz >Frequency>50: p.f. <0.5**

MODEL	VOLTS AC/DC	Volts Signal/sensor	Voltage Coil- L/R	Ampere AC/DC/m.a.	AMPERE Signal/sensor	Current Coil- L/R	Frequency Option	Movement range-degree	Accuracy
MVARDM-00100	0250.0/1/option	Direct/PT/HALL	Proprietary	0.500	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-00250	0250.0/1/option	Direct/PT/HALL	Proprietary	1.000	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-01000	0250.0/1/option	Direct/PT/HALL	Proprietary	5.000	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-02000	0250.03/option	Direct/PT/HALL	Proprietary	10.00	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-05000	0250.0/3/option	Direct/PT/HALL	Proprietary	25.00	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-10000	0250.0/3/option	Direct/PT/HALL	Proprietary	50.00	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-10000	11000/3/option	Direct/PT/HALL	Proprietary	1.000	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-30000	11000/3/option	Direct/PT/HALL	Proprietary	2.000	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-80000	11000/3/option	Direct/PT/HALL	Proprietary	5.000	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%

VAR –electrodynamic type**1000k >VAR> 1k 400>Frequency>50: p.f. <0.5**

Model	VOLTS AC/DC	Volts Signal/sensor	Voltage Coil- L/R	Ampere AC/DC	AMPERE Signal/sensor	Current Coil- L/R	Frequency Option	Movement range-DEGREE	Accuracy
MWDM-00100	0250.0/1/option	Direct/PT/HALL	Proprietary	0.500	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-00250	0250.0/1/option	Direct/PT/HALL	Proprietary	1.000	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-01000	0250.0/1/option	Direct/PT/HALL	Proprietary	5.000	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-02000	0250.03/option	Direct/PT/HALL	Proprietary	10.00	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-05000	0250.0/3/option	Direct/PT/HALL	Proprietary	25.00	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-10000	0250.0/3/option	Direct/PT/HALL	Proprietary	50.00	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-10000	11000/3/option	Direct/PT/HALL	Proprietary	1.000	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-30000	11000/3/option	Direct/PT/HALL	Proprietary	2.000	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-80000	11000/3/option	Direct/PT/HALL	Proprietary	5.000	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%

MOTORON SEMICONDUCTORS CORPORATION**11, Shri Nagar Colony, Shakti Nagar Extension, Delhi-110052 .Tel: 011-236548181/23991188**

motoron@hotmail.

PRECISION APPARANT POWER METER**(A.C. TYPE)****(LOW/HIGH- FREQUENCY)****VA –electrodynamic type****1000 >VA> 1.0 VA Frequency<50: p.f. >0.5**

MODEL	VOLTS AC/DC	Volts Signal/sensor	Voltage Coil- L/R	Ampere AC/DC/m.a.	AMPERE Signal/sensor	Current Coil- L/R	Frequency Option	Movement range-degree	Accuracy
MVARDM-00100	0250.0/1/option	Direct/PT/HALL	Proprietary	0.500	Direct/CT/HALLT	Proprietary	50	+/-45/option	0.2/0.5/1%
MWDM-00250	0250.0/1/option	Direct/PT/HALL	Proprietary	1.000	Direct/CT/HALLT	Proprietary	50	+/-45/option	0.2/0.5/1%
MWDM-01000	0250.0/1/option	Direct/PT/HALL	Proprietary	5.000	Direct/CT/HALLT	Proprietary	50	+/-45/option	0.2/0.5/1%
MWDM-02000	0250.03/option	Direct/PT/HALL	Proprietary	10.00	Direct/CT/HALLT	Proprietary	50	+/-45/option	0.2/0.5/1%
MWDM-05000	0250.0/3/option	Direct/PT/HALL	Proprietary	25.00	Direct/CT/HALLT	Proprietary	50	+/-45/option	0.2/0.5/1%
MWDM-10000	0250.0/3/option	Direct/PT/HALL	Proprietary	50.00	Direct/CT/HALLT	Proprietary	50	+/-45/option	0.2/0.5/1%
MWDM-10000	11000/3/option	Direct/PT/HALL	Proprietary	1.000	Direct/CT/HALLT	Proprietary	50	+/-45/option	0.2/0.5/1%
MWDM-30000	11000/3/option	Direct/PT/HALL	Proprietary	2.000	Direct/CT/HALLT	Proprietary	50	+/-45/option	0.2/0.5/1%
MWDM-80000	11000/3/option	Direct/PT/HALL	Proprietary	5.000	Direct/CT/HALLT	Proprietary	50	+/-45/option	0.2/0.5/1%

VA –electrodynamic type**1000k >VA> 1k Frequency>50: p.f. >0.5**

Model	VOLTS AC/DC	Volts Signal/sensor	Voltage Coil- L/R	Ampere AC/DC	AMPERE Signal/sensor	Current Coil- L/R	Frequency Option	Movement range-DEGREE	Accuracy
MWDM-00100	0250.0/1/option	Direct/PT/HALL	Proprietary	0.500	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-00250	0250.0/1/option	Direct/PT/HALL	Proprietary	1.000	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-01000	0250.0/1/option	Direct/PT/HALL	Proprietary	5.000	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-02000	0250.03/option	Direct/PT/HALL	Proprietary	10.00	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-05000	0250.0/3/option	Direct/PT/HALL	Proprietary	25.00	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-10000	0250.0/3/option	Direct/PT/HALL	Proprietary	50.00	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-10000	11000/3/option	Direct/PT/HALL	Proprietary	1.000	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-30000	11000/3/option	Direct/PT/HALL	Proprietary	2.000	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-80000	11000/3/option	Direct/PT/HALL	Proprietary	5.000	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%

VA –ferrodynamic type**1000k >VA> 1.0 VA Frequency>50: p.f.>0.5**

MODEL	VOLTS AC/DC	Volts Signal/sensor	Voltage Coil- L/R	Ampere AC/DC/m.a.	AMPERE Signal/sensor	Current Coil- L/R	Frequency Option	Movement range-degree	Accuracy
MVARDM-00100	0250.0/1/option	Direct/PT/HALL	Proprietary	0.500	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-00250	0250.0/1/option	Direct/PT/HALL	Proprietary	1.000	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-01000	0250.0/1/option	Direct/PT/HALL	Proprietary	5.000	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-02000	0250.03/option	Direct/PT/HALL	Proprietary	10.00	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-05000	0250.0/3/option	Direct/PT/HALL	Proprietary	25.00	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-10000	0250.0/3/option	Direct/PT/HALL	Proprietary	50.00	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-10000	11000/3/option	Direct/PT/HALL	Proprietary	1.000	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-30000	11000/3/option	Direct/PT/HALL	Proprietary	2.000	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-80000	11000/3/option	Direct/PT/HALL	Proprietary	5.000	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%

VA –ferrodynamic**1000k >VA> 1k 1000Hz >Frequency>50: p.f. <0.5**

Model	VOLTS AC/DC	Volts Signal/sensor	Voltage Coil- L/R	Ampere AC/DC	AMPERE Signal/sensor or	Current Coil- L/R	Frequency Option	Movement range-DEGREE	Accuracy
MWDM-00100	0250.0/1/option	Direct/PT/HALL	Proprietary	0.500	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-00250	0250.0/1/option	Direct/PT/HALL	Proprietary	1.000	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-01000	0250.0/1/option	Direct/PT/HALL	Proprietary	5.000	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-02000	0250.03/option	Direct/PT/HALL	Proprietary	10.00	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-05000	0250.0/3/option	Direct/PT/HALL	Proprietary	25.00	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-10000	0250.0/3/option	Direct/PT/HALL	Proprietary	50.00	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-10000	11000/3/option	Direct/PT/HALL	Proprietary	1.000	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-30000	11000/3/option	Direct/PT/HALL	Proprietary	2.000	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-80000	11000/3/option	Direct/PT/HALL	Proprietary	5.000	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%

VA –electrodynamic type**1000 >VA> 1.0 VA 1000Hz >Frequency>50: p.f. <0.5**

MODEL	VOLTS AC/DC	Volts Signal/sensor	Voltage Coil- L/R	Ampere AC/DC/m.a.	AMPERE Signal/sensor	Current Coil- L/R	Frequency Option	Movement range-degree	Accuracy
MVARDM-00100	0250.0/1/option	Direct/PT/HALL	Proprietary	0.500	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-00250	0250.0/1/option	Direct/PT/HALL	Proprietary	1.000	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-01000	0250.0/1/option	Direct/PT/HALL	Proprietary	5.000	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-02000	0250.03/option	Direct/PT/HALL	Proprietary	10.00	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-05000	0250.0/3/option	Direct/PT/HALL	Proprietary	25.00	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-10000	0250.0/3/option	Direct/PT/HALL	Proprietary	50.00	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-10000	11000/3/option	Direct/PT/HALL	Proprietary	1.000	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-30000	11000/3/option	Direct/PT/HALL	Proprietary	2.000	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-80000	11000/3/option	Direct/PT/HALL	Proprietary	5.000	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%

MOTORON SEMICONDUCTORS CORPORATION

11, Shri Nagar Colony, Shakti Nagar Extension, Delhi-110052 .Tel: 011-236548181/23991188

motoron@hotmail

PRECISION APPARANT POWER METER

(A.C. TYPE)

(LOW/HIGH- FREQUENCY)

VA –ferrodynamic type**1.0 >VA> 1.0 mili. VA 1000Hz >Frequency>50: p.f. <0.5**

MODEL	VOLTS AC/DC	Volts Signal/sensor	Voltage Coil- L/R	Ampere AC/DC/m.a.	AMPERE Signal/sensor	Current Coil- L/R	Frequency Option	Movement range-degree	Accuracy
MVARDM-00100	0250.0/1 /option	Direct/PT/HALL	Proprietary	0.500	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-00250	0250.0/1 /option	Direct/PT/HALL	Proprietary	1.000	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-01000	0250.0/1 /option	Direct/PT/HALL	Proprietary	5.000	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-02000	0250.03/option	Direct/PT/HALL	Proprietary	10.00	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-05000	0250.0/3/option	Direct/PT/HALL	Proprietary	25.00	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-10000	0250.0/3/option	Direct/PT/HALL	Proprietary	50.00	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-10000	11000/3/option	Direct/PT/HALL	Proprietary	1.000	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-30000	11000/3/option	Direct/PT/HALL	Proprietary	2.000	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-80000	11000/3/option	Direct/PT/HALL	Proprietary	5.000	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%

VAr –electrodynamic type**1000k >VA> 1.0 VA 1000Hz >Frequency>50: p.f. <0.5**

MODEL	VOLTS AC/DC	Volts Signal/sensor	Voltage Coil- L/R	Ampere AC/DC/m.a.	AMPERE Signal/sensor	Current Coil- L/R	Frequency Option	Movement range-degree	Accuracy
MVARDM-00100	0250.0/1 /option	Direct/PT/HALL	Proprietary	0.500	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-00250	0250.0/1 /option	Direct/PT/HALL	Proprietary	1.000	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-01000	0250.0/1 /option	Direct/PT/HALL	Proprietary	5.000	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-02000	0250.03/option	Direct/PT/HALL	Proprietary	10.00	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-05000	0250.0/3/option	Direct/PT/HALL	Proprietary	25.00	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-10000	0250.0/3/option	Direct/PT/HALL	Proprietary	50.00	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-10000	11000/3/option	Direct/PT/HALL	Proprietary	1.000	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-30000	11000/3/option	Direct/PT/HALL	Proprietary	2.000	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%
MWDM-80000	11000/3/option	Direct/PT/HALL	Proprietary	5.000	Direct/CT/HALLT	Proprietary	50-400	+/-45/option	0.2/0.5/1%

VA –electrodynamic type**1000k >VA> 1k 400>Frequency>50: p.f. <0.5**

Model	VOLTS AC/DC	Volts Signal/sensor	Voltage Coil- L/R	Ampere AC/DC	AMPERE Signal/sensor	Current Coil- L/R	Frequency Option	Movement range-DEGREE	Accuracy
MWDM-00100	0250.0/1 /option	Direct/PT/HALL	Proprietary	0.500	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-00250	0250.0/1 /option	Direct/PT/HALL	Proprietary	1.000	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-01000	0250.0/1 /option	Direct/PT/HALL	Proprietary	5.000	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-02000	0250.03/option	Direct/PT/HALL	Proprietary	10.00	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-05000	0250.0/3/option	Direct/PT/HALL	Proprietary	25.00	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-10000	0250.0/3/option	Direct/PT/HALL	Proprietary	50.00	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-10000	11000/3/option	Direct/PT/HALL	Proprietary	1.000	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-30000	11000/3/option	Direct/PT/HALL	Proprietary	2.000	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%
MWDM-80000	11000/3/option	Direct/PT/HALL	Proprietary	5.000	Direct/CT/HALLT	Proprietary	0-2000	+/-45/option	0.2/0.5/1%

MOTORON SEMICONDUCTORS CORPORATION

11, Shri Nagar Colony, Shakti Nagar Extension, Delhi-110052 .Tel: 011-236548181/23991188

motoron@hotmail.

PRECISION BALLISTIC GALVANOMETER (D.C. /A.C. TYPE)

Introduction:

MDVM/MAPM range of permanent magnet precision voltmeters/ammeters [DC/AC] are available in 8 different regular models apart from tailor made solutions virtually covering all industrial and research applications meeting all electrical, thermal, mechanical, and environmental specifications. These indicators are first choice for online monitoring of voltage/current [D.C. /A.C.] at generation, transmission/distribution or at user end. These meters also find application in heavy electrical engineering industries, defense, and electrical/mechanical m/c testing instrument, industrial electronics, railway, and avionics and many research and development activities. These meters are compatible to any standard CT/PT or hall/shunt sensor and display with very high degree of accuracy/repeatability/reliability. These indicators are available in different constructional material like ceramic-coated ms/poly carbonate.

Operating Principle: These ultra precision meters are working are nothing but galvanometer but with negligible damping coefficient And large J/K ration. Known current is passed through ballistics galvanometer and on account of large inertial and low damping, first large stroke displacement reading is proportional to total charged passed over a definite tome. Empirical relation of charge measured is as under

$D = (N.B.L.d/J.Wn)Q$ where **D** = angular displacement, **I**: (D.C.), **K₁**: spring, **N**: number of turn: inertial
B: Magnetic flux, **I**: current, **Wn**: natural frequency of movement; **W & L**: width and breadth of former,

Benefits:

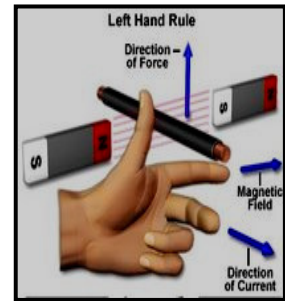
- Simple installation and operational compatibility./Consistent performance over large temperature range (100°C)
- Scaled directly in Volt/Ampere with repeatable accuracy. /least zero offsets without drift.
- All standards din sizes and custom sizes.



MBGM-00100.0



MGGM-00100.0



WORKING PRINCIPLE OF GALVANOMETER

BALISTIC GALVANOMETER

999999<Coulomb<999999 micro-coulomb

Model	Ampere-sec	Coil Current resistance	Frequency K.hz	Model	Ampere-mili-sec	AMPERE Signal Milli-volt	Coil Current/Resistance	Frequency K.hz
MBGM-00100	00100.0	Proprietary	D.C./A.C.	MBGM-00100	00100.0	75.0/option	Proprietary	D.C./A.C.
MBGM-00250	00250.0	Proprietary	D.C./A.C.	MBGM-00250	00250.0	75.0/option	Proprietary	D.C./A.C.
MBGM-00500	00500.0	Proprietary	D.C./A.C.	MBGM-00500	0500.0	75.0/option	Proprietary	D.C./A.C.
MBGM-01000	01000.0	Proprietary	D.C./A.C.	MBGM-01000	1000.0	75.0/option	Proprietary	D.C./A.C.
MBGM-02500	02500	Proprietary	D.C./A.C.	MBGM-02500	2500.0	75.0/option	Proprietary	D.C./A.C.
MBGM-05000	05000	Proprietary	D.C./A.C.	MBGM-050000	5000.0	75.0/option	Proprietary	D.C./A.C.
MBGM-9999	09999	Proprietary	D.C./A.C.	MBGM-09999	9999.0	75.0/option	Proprietary	D.C./A.C.
MBGM-20000	20,000	Proprietary	D.C./A.C.	MBGM-09999	9999.0	75.0/option	Proprietary	D.C./A.C.

General electrical/mechanical specifications:

Operating voltage: self-excited

Current range: 0-5/25/250 micro-amp.sec 2. 0-1.0/5.0/10.0/25.0/100.0 D.C. Amps.sec
: 0-5/25/250/500/1000/3000 Volt D.C.

coulomb: 99999 to 999999 milli.C

Permissible harmonic: upto 33% of principle harmonic

current ripple: 3% of peak voltage/current

Signal Frequency:0-20,000 Hz

Current transformer signal: 75-mili-volts/5 volts AC or DC

TCV: 0.0002/°C

Accuracy: 0.2/ 0.5/1.0/2.0 % reading

Sensitivity: 1.0 micro-amp/degree without scaling to higher ranges of Voltmeter/ammeter.

Repeatability/Resolution: 100% and 1:50/1:100/1:200

Effect of Ripple: 3% of D.C. of frequency>1/Tm

Control: two set point control (low/high)

Display: 90°/240°

Repeatability: 100 of reading

Resolution: 1/10 of least significant bit

Size: 5x6 inch

NOTES: The numeral after product code indicates the (volt/ampere) range

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