PRECISION ELECTRODYNAMIC TYPE WATTMETER

(D.C./A.C. TYPE) (LOW/HIGH- FREQUENCY)

Introduction:

MKWM range of electrodynamic type kilowatt indicator is 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:

These meter has a inductive compensated high resistance copper/other moving coil moving radially under the influence of high current carrying current coil. Moving coil occupies proportional position when mutual inductance electromagnetic force balance spring force.

D = k1. V x I x Cos (O) x dM/d (D),

Where D = angular displacement, V: VOLTAGE (A.C./D.C.), I: (D.C./A.C.), K1: spring, m: mutual Inductance between moving and stationary coil. Normally mutual inductance is linear function of angular displacement over +/- 45° movement. These are available for...1 **Phase 1 Element /3 Phase 1 Element Balance Load only Phase 2 Element [3 Wire] Balance or Unbalance Load/3 Phase 3 Element [4 Wire] Balance or Unbalance Load.**

MAEDM-0100

MAEDM-10000

MAEDM-80000

WATTMETER

WATTS< 99999.9/Frequency<50: p.f. <0.2

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
MAEDM-00100	0220.0/1/option	**Direct/PT/HALL**	Proprietory	0.500	Direct/CT/HALLT	Proprietory	0-2000	+/-45/option	0.2/0.5/1%
MAEDM-00250	0220.0/1/option	**Direct/PT/HALL**	Proprietory	1.000	Direct/CT/HALLT	Proprietory	0-2000	+/-45/option	0.2/0.5/1%
MAEDM-01000	0220.0/1/option	**Direct/PT/HALL**	Proprietory	5.000	Direct/CT/HALLT	Proprietory	0-2000	+/-45/option	0.2/0.5/1%
MAEDM-02000	0220.03/option	**Direct/PT/HALL**	Proprietory	10.00	Direct/CT/HALLT	Proprietory	0-2000	+/-45/option	0.2/0.5/1%
MAEDM-05000	0220.0/3/option	**Direct/PT/HALL**	Proprietory	25.00	Direct/CT/HALLT	Proprietory	0-2000	+/-45/option	0.2/0.5/1%
MAEDM-10000	0220.0/3/option	**Direct/PT/HALL**	Proprietory	50.00	Direct/CT/HALLT	Proprietory	0-2000	+/-45/option	0.2/0.5/1%
MAEDM-10000	11000/3/option	**Direct/PT/HALL**	Proprietory	1.000	Direct/CT/HALLT	Proprietory	0-2000	+/-45/option	0.2/0.5/1%
MAEDM-30000	11000/3/option	**Direct/PT/HALL**	Proprietory	2.000	Direct/CT/HALLT	Proprietory	0-2000	+/-45/option	0.2/0.5/1%
MAEDM-80000	11000/3/option	**Direct/PT/HALL**	Proprietory	5.000	Direct/CT/HALLT	Proprietory	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 D.C. or option
Power range: 1000 mili watt/100.0 watt/1000 watt/10.00 KW/100.0 watt/1000 k.w
Power factor: 0.2/0.5/1.0
TDH: 3%/5%/10% or as option for non-linear loads
Burdon: 50 mili-watt/1.0 watts/5.0 Watt
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/220 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 wattmeter
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:

NOTES:
The numeral after product code indicates the watt.

Explosion proof wattmeter

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

PRECISION ELECTRODYNAMIC TYPE WATTMETER

(D.C./A.C. TYPE)/ (LOW/HIGH- FREQUENCY)

WATTMETER

WATTS< 99999.9/Frequency<50: p.f. <0.5

Model	VOLTS AC/DC	Volts Signal/sensor	Current Coil- L/R	Ampere AC/DC	AMPERE Signal/sensor	Current Coil- L/R	Frequency	Movement range	Accuracy
MAEDM-00100	0220.0/1	DIRE/PT/HALLT	Proprietory	0.500	DIRE/CT/HALLT	Proprietory	0-2000	+/-45/oCTion	0.2/0.5/1%
MAEDM-00250	0220.0/1	DIRE/PT/HALLT	Proprietory	1.000	DIRE/CT/HALLT	Proprietory	0-2000	+/-45/oCTion	0.2/0.5/1%
MAEDM-00500	0220.0/1	DIRE/PT/HALLT	Proprietory	5.000	DIRE/CT/HALLT	Proprietory	0-2000	+/-45/oCTion	0.2/0.5/1%
MAEDM-01000	0220.03	DIRE/PT/HALLT	Proprietory	10.00	DIRE/CT/HALLT	Proprietory	0-2000	+/-45/oCTion	0.2/0.5/1%
MAEDM-01000	0220.0/3	DIRE/PT/HALLT	Proprietory	25.00	DIRE/CT/HALLT	Proprietory	0-2000	+/-45/oCTion	0.2/0.5/1%
MAEDM-01000	0220.0/3	DIRE/PT/HALLT	Proprietory	50.00	DIRE/CT/HALLT	Proprietory	0-2000	+/-45/oCTion	0.2/0.5/1%
MAEDM-00100	11000/3	DIRE/PT/HALLT	Proprietory	1.000	DIRE/CT/HALLT	Proprietory	0-2000	+/-45/oCTion	0.2/0.5/1%
MAEDM-00250	11000/3	DIRE/PT/HALLT	Proprietory	2.000	DIRE/CT/HALLT	Proprietory	0-2000	+/-45/oCTion	0.2/0.5/1%
MAEDM-00100	11000/3	DIRE/PT/HALLT	Proprietory	5.000	DIRE/CT/HALLT	Proprietory	0-2000	+/-45/oCTion	0.2/0.5/1%

WATTMETER

WATTS< 99999.9/Frequency<50: p.f. < 0.9

Model	VOLTS AC/DC	Volts Signal Volts.	Voltage Coil- L/R	Ampere AC/DC	AMPERE Signal/sensor	Coil Coil- L/R	Frequency	Movement range	Accuracy
MAEDM-00100	0220.0/1	DIRE/PT/HALLT	Proprietory	0.500	DIRE/CT/HALLT	Proprietory	0-2000	+/-45/oCTion	0.2/0.5/1%
MAEDM-00250	0220.0/1	DIRE/PT/HALLT	Proprietory	1.000	DIRE/CT/HALLT	Proprietory	0-2000	+/-45/oCTion	0.2/0.5/1%
MAEDM-00500	0220.0/1	DIRE/PT/HALLT	Proprietory	5.000	DIRE/CT/HALLT	Proprietory	0-2000	+/-45/oCTion	0.2/0.5/1%
MAEDM-01000	0220.03	DIRE/PT/HALLT	Proprietory	10.00	DIRE/CT/HALLT	Proprietory	0-2000	+/-45/oCTion	0.2/0.5/1%
MAEDM-01000	0220.0/3	DIRE/PT/HALLT	Proprietory	25.00	DIRE/CT/HALLT	Proprietory	0-2000	+/-45/oCTion	0.2/0.5/1%
MAEDM-01000	0220.0/3	DIRE/PT/HALLT	Proprietory	50.00	DIRE/CT/HALLT	Proprietory	0-2000	+/-45/oCTion	0.2/0.5/1%
MAEDM-00100	11000/3	DIRE/PT/HALLT	Proprietory	1.000	DIRE/CT/HALLT	Proprietory	0-2000	+/-45/oCTion	0.2/0.5/1%
MAEDM-00250	11000/3	DIRE/PT/HALLT	Proprietory	2.000	DIRE/CT/HALLT	Proprietory	0-2000	+/-45/oCTion	0.2/0.5/1%
MAEDM-00100	11000/3	DIRE/PT/HALLT	Proprietory	5.000	DIRE/CT/HALLT	Proprietory	0-2000	+/-45/oCTion	0.2/0.5/1%

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

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

PRECISION ELECTRODYNAMIC TYPE POWER FACTOR METER

(D.C./A.C. TYPE)/ (LOW/HIGH- FREQUENCY)

MKWM range of electrodynamic type kilowatt indicator is 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 [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:

These meter has a inductive compensated high resistance copper/other moving coil moving radially under the influence of high current carrying current coil. Moving coil occupies proportional position when mutual inductance electromagnetic force balance spring force.

D = k1. V x I x Cos (O) x dM/d (D),

Where D = angular displacement, V: Voltage (A.C./D.C.), I: (D.C./A.C.), K1: spring, m: mutual inductance between moving and stationary coil. Normally mutual inductance is linear function of angular displacement over +/- 45° movement.

These are available for…1 Phase 1 Element /3 Phase 1 Element Balance Load only Phase 2 Element [3 Wire] Balance or Unbalance Load/3 Phase 3 Element [4 Wire] Balance or Unbalance Load.

MDPM-00999

MDPM-99999

MAEDM-00100

WATTMETER

-0.2<Power factor<+0.2 D.C.<Frequency<500

Model	VOLTS AC/DC	Volts Signal Volts.	Voltage Coil- L/R	Ampere AC/DC	AMPERE Signal/sensor	Coil Coil- L/R	Frequency	Movement range	Accuracy
MAEDM-00100	0220.0/1	DIRE/PT/HALLT	Proprietory	0.500	DIRE/CT/HALLT	Proprietory	0-2000	+/-45/oCTion	0.2/0.5/1%
MAEDM-00250	0220.0/1	DIRE/PT/HALLT	Proprietory	1.000	DIRE/CT/HALLT	Proprietory	0-2000	+/-45/oCTion	0.2/0.5/1%
MAEDM-00500	0220.0/1	DIRE/PT/HALLT	Proprietory	5.000	DIRE/CT/HALLT	Proprietory	0-2000	+/-45/oCTion	0.2/0.5/1%
MAEDM-01000	0220.03	DIRE/PT/HALLT	Proprietory	10.00	DIRE/CT/HALLT	Proprietory	0-2000	+/-45/oCTion	0.2/0.5/1%
MAEDM-01000	0220.0/3	DIRE/PT/HALLT	Proprietory	25.00	DIRE/CT/HALLT	Proprietory	0-2000	+/-45/oCTion	0.2/0.5/1%
MAEDM-01000	0220.0/3	DIRE/PT/HALLT	Proprietory	50.00	DIRE/CT/HALLT	Proprietory	0-2000	+/-45/oCTion	0.2/0.5/1%
MAEDM-00100	11000/3	DIRE/PT/HALLT	Proprietory	1.000	DIRE/CT/HALLT	Proprietory	0-2000	+/-45/oCTion	0.2/0.5/1%
MAEDM-00250	11000/3	DIRE/PT/HALLT	Proprietory	2.000	DIRE/CT/HALLT	Proprietory	0-2000	+/-45/oCTion	0.2/0.5/1%
MAEDM-00100	11000/3	DIRE/PT/HALLT	Proprietory	5.000	DIRE/CT/HALLT	Proprietory	0-2000	+/-45/oCTion	0.2/0.5/1%

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 D.C. or option
Power range: 1000 mili watt/100.0 watt/1000 watt/10.00 KW/100.0 watt/1000 k.w
Power factor: 0.2/0.5/1.0
TDH: 3%/5%/10% or as option for non-linear loads
Burdon: 50 mili-watt/1.0 watts/5.0 Watt
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/220 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 wattmeter
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

NOTES: The numeral after product code indicates the (volt/ampere) range and
Last digit corresponds to size of panel (48x48-1, 72x72 2, 96x96-3, 96x192-4 As for example, MDVM-999991 corresponds to 99999 volts (max) and panel body is ceramic coated mild steel.

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

PRECISION ELECTRODYNAMIC TYPE POWER FACTOR METER

(D.C./A.C. TYPE)/ (HIGH/LOW FREQUENCY)

WATTMETER

-0.2<Power factor<+0.2 <0500Frequency<1000

Model	VOLTS AC/DC	Volts Signal Volts.	Voltage Coil- L/R	Ampere AC/DC	AMPERE Signal/sensor	Coil Coil- L/R	Frequency	Movement range	Accuracy
MAEDM-00100	0220.0/1	DIRE/PT/HALLT	Proprietory	0.500	DIRE/CT/HALLT	Proprietory	0-20,00	+/-45/oCTion	0.2/0.5/1%
MAEDM-00250	0220.0/1	DIRE/PT/HALLT	Proprietory	1.000	DIRE/CT/HALLT	Proprietory	0-20,00	+/-45/oCTion	0.2/0.5/1%
MAEDM-00500	0220.0/1	DIRE/PT/HALLT	Proprietory	5.000	DIRE/CT/HALLT	Proprietory	0-20,00	+/-45/oCTion	0.2/0.5/1%
MAEDM-01000	0220.03	DIRE/PT/HALLT	Proprietory	10.00	DIRE/CT/HALLT	Proprietory	0-20000	+/-45/oCTion	0.2/0.5/1%
MAEDM-01000	0220.0/3	DIRE/PT/HALLT	Proprietory	25.00	DIRE/CT/HALLT	Proprietory	0-20000	+/-45/oCTion	0.2/0.5/1%
MAEDM-01000	0220.0/3	DIRE/PT/HALLT	Proprietory	50.00	DIRE/CT/HALLT	Proprietory	0-20000	+/-45/oCTion	0.2/0.5/1%
MAEDM-00100	11000/3	DIRE/PT/HALLT	Proprietory	1.000	DIRE/CT/HALLT	Proprietory	0-20000	+/-45/oCTion	
MAEDM-00250	11000/3	DIRE/PT/HALLT	Proprietory	2.000	DIRE/CT/HALLT	Proprietory	0-20000	+/-45/oCTion	
MAEDM-00100	11000/3	DIRE/PT/HALLT	Proprietory	5.000	DIRE/CT/HALLT	Proprietory	0-20000	+/-45/oCTion	

WATTMETER

-0.2<Power factor<+0.2 1000<Frequency<10000

Model	VOLTS AC/DC	Volts Signal Volts.	Voltage Coil- L/R	Ampere AC/DC	AMPERE Signal/sensor	Current Coil- L/R	Frequency	Movement range	Accuracy
MAEDM-00100	0220.0/1	DIRE/PT/HALLT	Proprietory	0.500	DIRE/CT/HALLT	Proprietory	0-20,00	+/-45/oCTion	0.2/0.5/1%
MAEDM-00250	0220.0/1	DIRE/PT/HALLT	Proprietory	1.000	DIRE/CT/HALLT	Proprietory	0-20,00	+/-45/oCTion	0.2/0.5/1%
MAEDM-00500	0220.0/1	DIRE/PT/HALLT	Proprietory	5.000	DIRE/CT/HALLT	Proprietory	0-20,00	+/-45/oCTion	0.2/0.5/1%
MAEDM-01000	0220.03	DIRE/PT/HALLT	Proprietory	10.00	DIRE/CT/HALLT	Proprietory	0-20,00	+/-45/oCTion	0.2/0.5/1%
MAEDM-01000	0220.0/3	DIRE/PT/HALLT	Proprietory	25.00	DIRE/CT/HALLT	Proprietory	0-20,00	+/-45/oCTion	0.2/0.5/1%
MAEDM-01000	0220.0/3	DIRE/PT/HALLT	Proprietory	50.00	DIRE/CT/HALLT	Proprietory	0-20,00	+/-45/oCTion	0.2/0.5/1%
MAEDM-00100	11000/3	DIRE/PT/HALLT	Proprietory	1.000	DIRE/CT/HALLT	Proprietory	0-20,00	+/-45/oCTion	0.2/0.5/1%
MAEDM-00250	11000/3	DIRE/PT/HALLT	Proprietory	2.000	DIRE/CT/HALLT	Proprietory	0-20,00	+/-45/oCTion	0.2/0.5/1%
MAEDM-00100	11000/3	DIRE/PT/HALLT	Proprietory	5.000	DIRE/CT/HALLT	Proprietory	0-20.00	+/-45/oCTion	0.2/0.5/1%

NOTES:

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

Last digit corresponds to size of panel (48x48-1, 48x96-2, 96x96-3, 96x192-4 As for example, MAEDM-999991 corresponds to 99999 watt (max) and panel body is ceramic coated mild steel.

MOTORON SEMICONDUCTORS CORPORATION

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

motoronenergy@hotmail.com