



SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

COIMBATORE-35



Accredited by NBA-AICTE and Accredited by NAAC – UGC with A++ Grade

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

COURSE NAME: 23EET206/ Measurements and Instrumentation

II YEAR / IV SEMESTER

UNIT 3 - ELECTRICAL AND ELECTRONIC MEASUREMENTS

Topic 2 – Measurement of power, energy: Wattmeter, Energy meter



SUCCESSFUL STUDENT

Positive
Attitude

Professionally
Groomed

Socially
Interactive

Technically
Skillful



The wattmeter is an instrument for measuring the electric active power (or the average of the rate of flow of electrical energy) in watts of any given circuit. Electromagnetic wattmeters are used for measurement of utility frequency and audio frequency power; other types are required for radio frequency measurements.



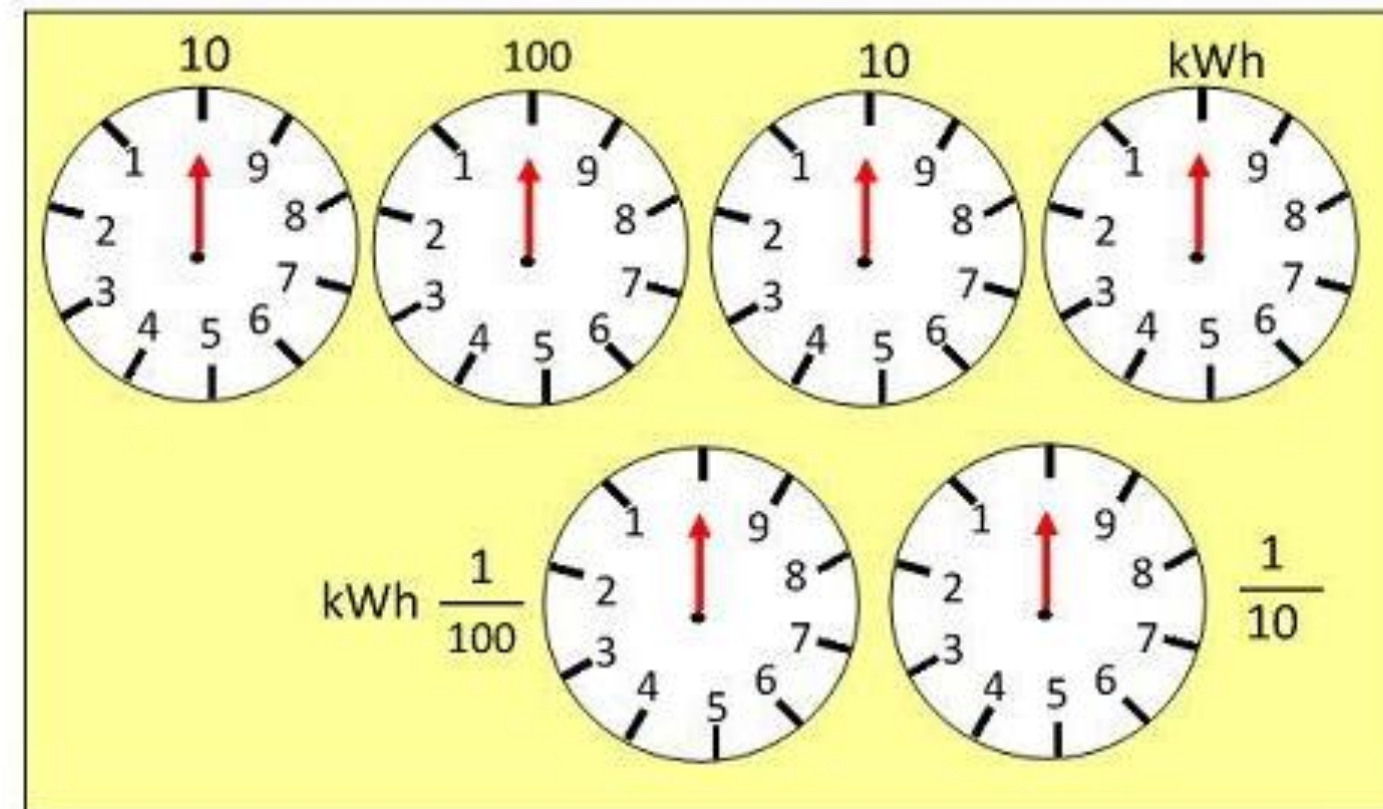


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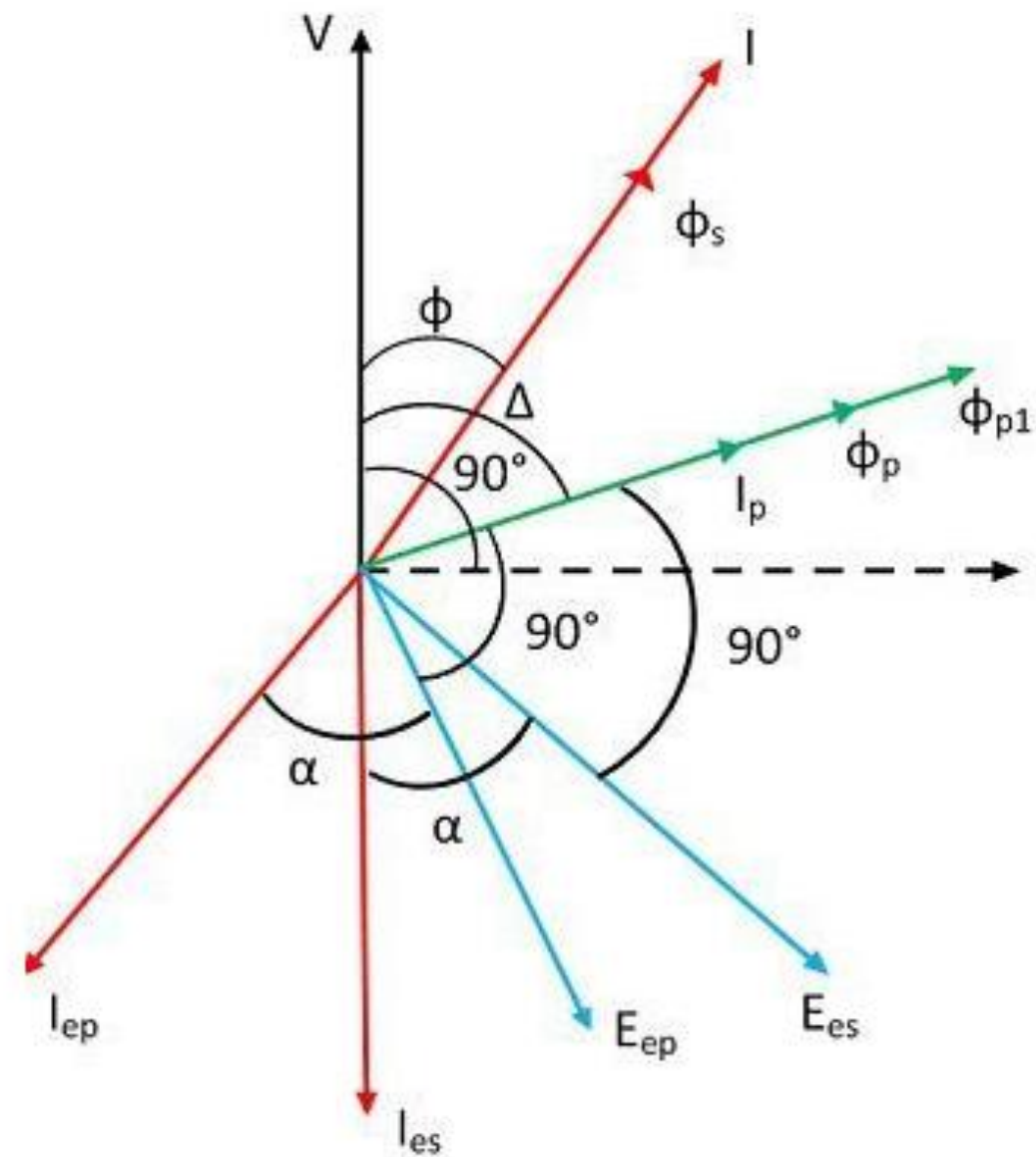
4. Registration (Counting Mechanism) – The main function of the registration or counting mechanism is to record the number of rotations of the aluminium disc. Their rotation is directly proportional to the energy consumed by the loads in the kilowatt hour.

The rotation of the disc is transmitted to the pointers of the different dial for recording the different readings. The reading in kWh is obtained by multiply the number of rotations of the disc with the meter constant. The figure of the dial is shown below.





The phasor diagram of the energy meter is shown in the figure below.



Phasor Diagram of Energy Meter





ASSESSMENT



publicdomainvectors.org





REFERENCE

TEXT BOOKS

- T1 A. K. Sawhney, “A Course in Electrical & Electronic Measurements & Instrumentation”, Dhanpat Rai & CO., New Delhi, 2022.**
- T2 S. Gupta and J. John , "Virtual Instrumentation using Lab VIEW", Tata McGraw-Hill Publishing Company Limited, New Delhi, 2010.**

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- R1 David A.Bell, "Electronic Instrumentation and Measurements”, Oxford Higher Education, 2013**
- R2 Bouwens A J, “Digital Instrumentation”, Tata Mc Graw Hill, New Delhi2016**
- R3 Martin U. Reissland, “Electrical Measurement – Fundamental Concepts and Applications”, New Age International (P) Ltd., 2015**
- R4 J. B. Gupta, “A Course in Electronic and Electrical Measurements and Instrumentation”, S. K. Kataria & Sons, Delhi, 2013**
- R5 M. S. Anand, “Electronics Instruments and Instrumentation Technology”, Prentice Hall India, NewDelhi, 2012.**

WEB REFERENCES

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- W2 https://www.vssut.ac.in/lecture_notes/lecture1423813026.pdf**
- W3 <https://hombredelamancha.com/products/ebook-electrical-and-electronic-measurements-and-instrumentation?srsltid=AfmBOorTb5k9Ga1rsImj69-l3SximYYra7U8VhGcqYahqsfk9BR9rC7k>**



THANK YOU!!