

# JOB ROLE – Consumer Energy Meter Technician

Sector: Power  
(Qualification Pack Code : PSS/Q0107)



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Shyamla Hills, Bhopal – 462013, Madhya Pradesh, India

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**Unit 4: Introduction to Energy meter**  
**Session 2: Types of Meter**

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# Session Objectives

1. The student will be able to identify the various types of energy meters.
2. explain duties and responsibility of consumer energy meter technician.

## Type of Energy meter

**Single Phase Meter:** They are rated for 240V AC supply, current rating 2.5-10A, 10-60A or 20-80A (max). They are directly connected to the mains. The meters have a simple, compact & robust design with outstanding performance & characteristics.



**Three phase whole current meter (Polyphase Meter):** These meters are directly connected to the supply if load is up to 50A in LT system for sanctioned load up to 25 kW. Poly phase whole current meter is three phase four wire meter which is combination of three single phase meters the entire load current to be measured, passes through the meter itself. They are rated for 415 volts.



**HT Meter (Trivector Meter):** Besides the energy charges & kW demand charges the tariff provide for kVA demand charges. It is designed to record active, reactive & apparent energy along with MDI. And the meter which records all three parameter of active, reactive & apparent energy simultaneously is termed as TRIVECTOR meter.



**Smart Meter:** Smart meters are the next generation of electricity meters and offer a range of intelligent functions.

For example, they can tell you how much energy you are using through a display in your home. They can also communicate directly with your energy supplier meaning that no one will need to come and read your meter in future.

Most of the smart meters that are being installed today use mobile phone-type signals to send meter readings to your supplier, and other wireless technologies to send information to the in-home display.





**Prepaid Meter:** A prepayment meter lets you pay for your energy before you use it. It's an excellent way to keep track of how much you're spending and can help you budget for your energy bills. In other words, you pay for your energy up front instead of by quarterly bill or monthly direct debit. And if there is no credit in the meter, there is no energy supply to the home.



A pre-payment meter can help you to budget for your energy bills, but it can also be one of the most expensive ways to pay for electricity.

The consumer energy meter technician installs, remove and changes low voltages, single phase or three phase consumer energy meter and also HT meters and supportive equipment at works site in accordance with the guidelines of Discom (State Power Utilities and Private Distribution Companies).

In some of the Discom, the power the recruitment for consumer energy meter technicians are delegated to the concerned Supdt. Engr of the Circle.

## **Duties and Responsibility of CEM Technician**

It may take note Consumer Meter Technician is allowed to work on live line as such it is mandatory that he posses Competency certificate issued by Electrical Inspector.

The jurisdiction of Consumer Meter Technician will be fixed by the Asst. Engineer (AE)/Asst. Manager (AM) in writing. The Helpers coming in the area shall be subordinate to the Consumer Meter Technician, if so specified. The Consumer Meter Technician will be responsible for all the meter related works done under his jurisdiction. Any negligence and consequent losses will be treated as negligence of his duties.

He shall know all the network details within his jurisdiction such as length of, HT and LT lines and Telephone lines, type of conductors, spans, number of distribution transformers and number of service and their connected load etc.

He shall be responsible for proper ground clearance of all service connections in his area. It is his responsibility to intimate his next superior in writing about the defects noticed by him in the distribution.

The Consumer Meter Technician shall be responsible for maintaining continuity of supply to the consumer in his jurisdiction.

He shall be responsible for upkeep of T&P and safety appliances supplied to him and keep them in working order.

He is responsible for maintaining the proper gradation of fuses in all service connections.

A certificate has to be given regarding inspection of services under his charge, stating that the connected load, tariff, meters and other properties of Board are safe.

He shall maintain register showing the detail of new energy meter issued, meter replaced, burnt meters, meter waited for testing and meter related complaints of slow, fast, stop and defective meters. Detail of meter seals with numbers, fixation and get the signatures of his superiors on daily basis.

He shall maintain diaries showing the day to day work done and get the signatures of his superiors once in a fortnight

Any field complaints or defects shall be recorded in the register kept at Section office and no other plea of the staff that the matter was brought to the notice of Section Officer orally will be entertained. He should also maintain a register showing all the statistics and details of services, lines, transformers, equipment. He shall also possess maps of these lines, with location numbers, cut points and geographical features etc., supplied by the Section Officer. He shall associate with meter testing Schedules, after completing the testing of each connection and hand over the report to his superiors.

He shall be responsible to ensure that the code of safety rules is followed by him and his colleagues. A copy of said code is already supplied to him. Any instances where the staffs fail to use safety appliances as per the code shall be brought to the notice of his superiors immediately for taking disciplinary action.

The above functions are broad, general indication of his functions. In addition to the above, Line staff have to perform the role expected of them in the respective Distribution Companies with which they are associated.



# **Central Electricity Authority**

## **Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006 NOTIFICATION No.501/70/CEA/DP&D**

In exercise of the powers conferred by sub-section (1) of section 55 and clause (e) of section 73 read with sub-section (2) of the section 177 of Electricity Act, 2003, the Central Electricity Authority hereby makes the following regulations for managing the installation and operation of meters:

### **1. Short Title and Commencement**

These regulations may be called the Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006.

These regulations shall come into force on the date of their publication in the Gazette of India.

## **2. Applicability of Regulation**

These regulations shall be applicable to meters installed and to be installed by all the generating companies and licensees who are engaged in the business of generation, transmission, trading, distribution, supply of electricity and to all categories of consumers. After coming into force of these regulations, the provisions of the Indian Electricity Rules, 1956, related to installation and operation of meters in this regard, shall not be applicable.

These regulations provide for type, standards, ownership, location, accuracy class, installation, operation, testing and maintenance, access, sealing, safety, meter reading and recording, meter failure or discrepancies, anti-tampering features, quality assurance, calibration and periodical testing of meters, additional meters and adoption of new technologies in respect of the following meters for correct accounting, billing and audit of electricity.

## **Types of Meters**

All interface meters, consumer meters and energy accounting and audit meters shall be of static type.

The meters not complying with these regulations shall be replaced by the licensee on his own or on request of the consumer. The meters may also be replaced as per the regulation or direction of the appropriate commission or pursuant to the reforms programme of the appropriate government.

## Standards

All interface meters, consumer meters and energy accounting and audit meters shall: Comply with the relevant standards of Bureau of Indian Standards (BIS). If BIS Standards are not available for a particular equipment or material, the relevant British Standards (BS), International Electro-technical Commission (IEC) Standards, or any other equivalent Standard shall be followed.

Provide that whenever an International Standard or IEC Standard is followed, necessary corrections or modifications shall be made for nominal system frequency, nominal system voltage, ambient temperature, humidity and other conditions prevailing in India before actual adoption of the said standard.

Conform to the standards on 'Installation and Operation of Meters' as specified in schedule annexed to these regulations and as amended from time to time.

All consumer meters shall bear BIS mark, meet the requirements of these regulations and have additional features as approved by the appropriate Commission or pursuant to the reforms programme of the appropriate government. To facilitate this, the licensee shall provide a list of makes and models of the meters.

### **Location of Meter Installation**

The Location of meter installation is very important to minimise the theft, malpractice, easy approach, and comfortable meter reading.

The benefits are:

Less temptation to bypass.

This discourage meter tampering activity.

Easy meter reading.

The location of an electricity meter varies with each installation. Possible locations include on a utility pole serving the property, in a street-side cabinet (meter box) or inside the premises adjacent to the consumer unit / distribution board. Electricity companies may prefer external locations as the meter can be read without gaining access to the premises or the meter location should be in door step and to be installed not more than 5 feet height.

Current transformers permit the meter to be located remotely from the current-carrying conductors. This is common in large installations. For example, a substation serving a single large customer may have metering equipment installed in a cabinet, without bringing heavy cables into the cabinet.

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