

Get to Know the Symbols in Analog Measuring Meter

MES meswitchgear.com

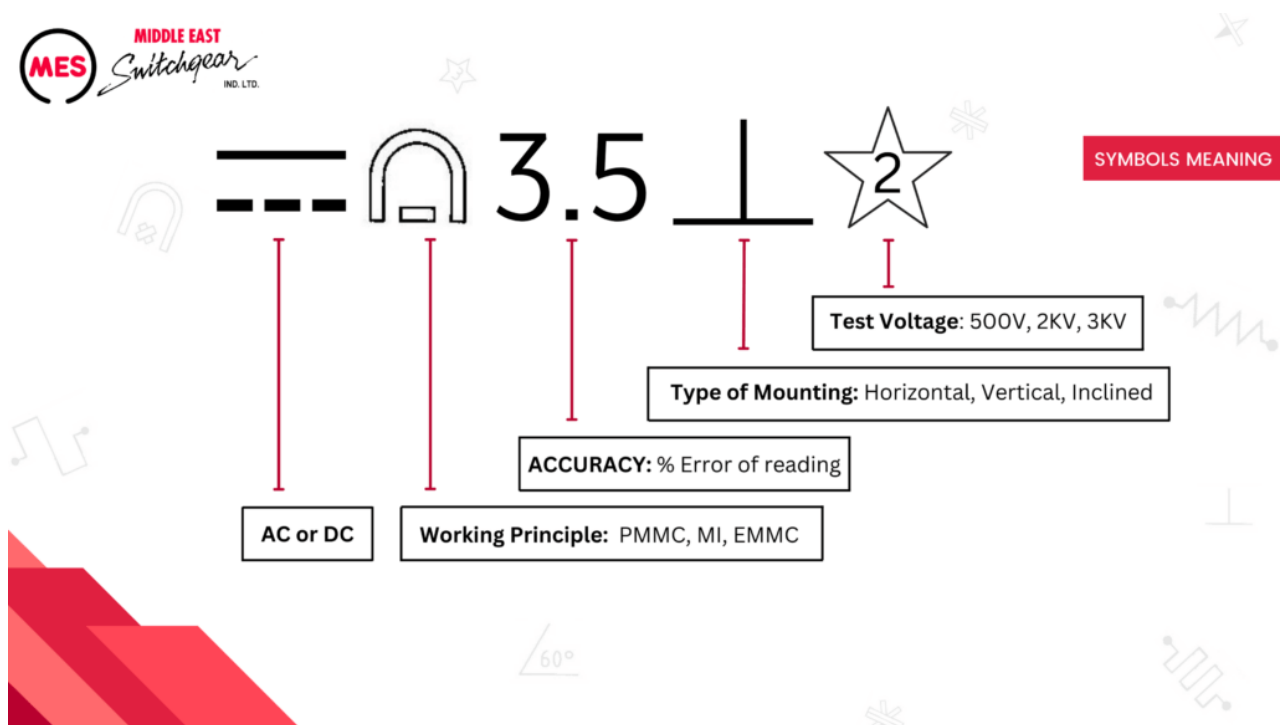
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Analog Measuring Meter Symbols

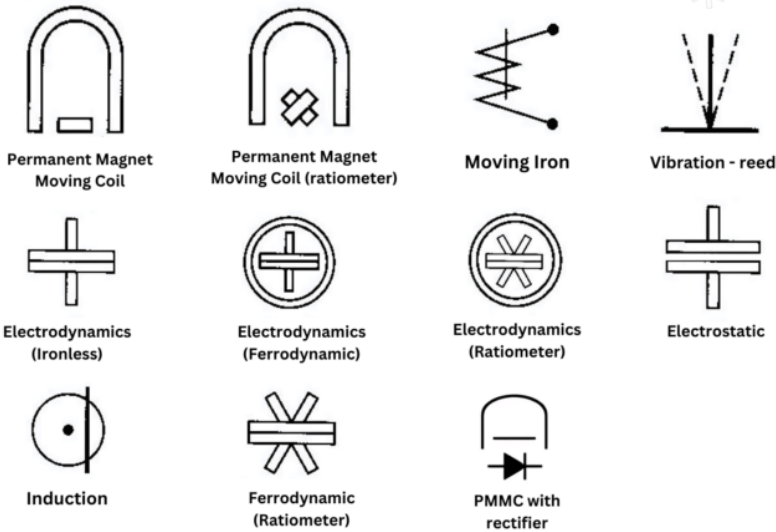
Do you know the meaning of symbols used in the Ammeter scale? Do you know the type of an analog meter just by looking at it? Let's **Learn about all these things** and more so next time you can figure out the difference and this article will help you **find out what type** is the device and what is it telling you.

In above picture, a few things are highlighted which 70% of the users neglect to watch. The symbols give entire specification of your analog measuring meter. This specification includes type and principle of operation, Accuracy of your meter, at what voltage your equipment is tested as shown below.



Principle of Operation

In the below figure 2.0, there is a magnet shown. This indicates the type of operating principle. Usually there are many types so we will discuss some popularly used ones.



PMMC (Permanent Magnet Moving Coil)

Permanent Magnet Moving Coil PMMC instrument is defined as the instruments which use the permanent magnet to create the stationary magnetic field between which the coil moves is known as the permanent magnet moving coil or PMMC instrument. For Dc rectifier type is used AC measurement. The instruments are used in ammeter, voltmeter, ohmmeter and galvanometer.

- Material used for magnet in PMMC is Alnico and Alcomax
- The field strength in PMMC varies from 0.1 Wb/m² to 1 Wb/m²
- Damping: Eddy current damping is used. This is produced by aluminum former
- Control: Spring control is used

MI (Moving Iron)

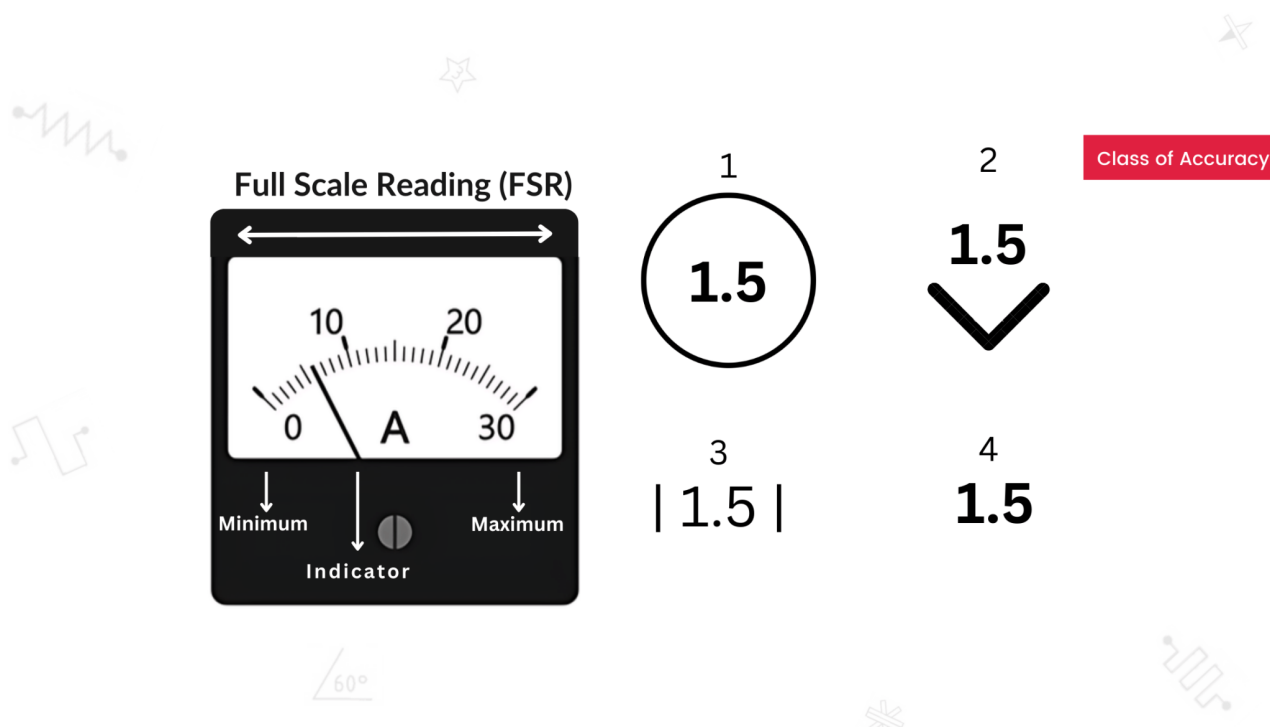
A soft iron piece when attracted or repelled by the magnetic field, a coil is moved, then shows deflection on a calibrated scale. These instruments are simple, cheap and reasonably accurate and can be used for AC or DC measurement. Hence it finds use in practical field, it is used for Ammeter, Voltmeter and Wattmeter

EMMC (Electromagnet Moving Coil)

The instrument can be used for the measurement for voltage, current and power. The difference between the PMMC and dynamometer (EMMC) type instrument is that the permanent magnet is replaced by an electromagnet. the instrument can be used for the measurement of voltage, current and power

Class of Accuracy

The class of accuracy tells you how accurate is your meter. the measured value cannot make exactly with the theoretical value, the different ways these can be represented can be seen in the above figures.



1.5 In the circle represents the 1.5 percent error with respect to indicated value (the value at which pointer points)

1.5 with arrow down means 1.5 percent error with respect to FSR (full scale reading i.e, 0 to maximum)

1.5 with bracket means 1.5 percent error with respect to span (the difference between minimum and maximum)

Only numbers is shown, then it means error with respect to fiducial value. (In other words error with respect to maximum reading, say your ammeter can measure from 25 to 50Amps then 50Amps is you fiducial value)