



## MOVING-IRON MEASURING INSTRUMENTS

### **Application:**

Moving-iron measuring instruments mainly are used in power plants in order to measure alternating current and alternating voltage (direct measuring or by current resp. voltage transformers).

Moving-iron measuring instruments will indicate the root mean square even in case of distorted quantities within the frequency range of 15 up to 100 c.p.s. Regarding direct current and direct voltage additional indication errors of about 1 % may arise due to any faults of magnetization in the iron.

The own consumption of these measuring instruments is relatively high compared with moving-coil measuring devices and is situated between 0,6 VA and 2 VA. Thus they are unsuitable for measuring small currents or voltages such as at shunt resistors, impulse transmitters, thermoelements, measuring transducers.

### **Meters:**

- Rugged and with high electrical overload capacity
- Spring-loaded toe bearing in sapphire stones
- Damping by silicon fluid bearing, response time about 1 sec.
- High torque
- Magnetic screening from external fields:
  - Voltmeters and ammeters up to 5 A 4 kA/m (type 72, 96, 144)
  - Ammeters higher than 5 A 2 kA/m (type 72, 96 144)
  - Type WQ 48 DIN 0,5 kA/m

### **Design:**

Moving-iron measuring instruments are manufactured according to DIN EN 60 051 as well as to the further VDE and DIN directions concerned. The precision amounts to 1,5 % referred to the final value of the measuring range. The dial graduation of ammeters in the normal design possesses a twofold overload scale and begins at about 10 % (20 % in case of voltmeters) of the final value of the measuring range. Moving-iron measuring instruments can be overcharged 1,2-fold permanently, ammeters up to 50-fold for a short period and voltmeters up to 2-fold. As for the rest DIN EN 60 051 will be applicable.

The connection will be effected by screws M 4 in case of voltmeters and ammeters up to 15 A, screws M 5 up to 60 A.

Accuracy:	According to DIN EN 60 051 class 1,5, in special design class 1
Test voltage:	2 kV
Own consumption:	Voltmeters about 2 VA, ammeters 0,6 – 2 VA
System of protection:	According to DIN EN 60 529 Front side IP 52, in special design IP 54 Terminals shock-proof, IP 10

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