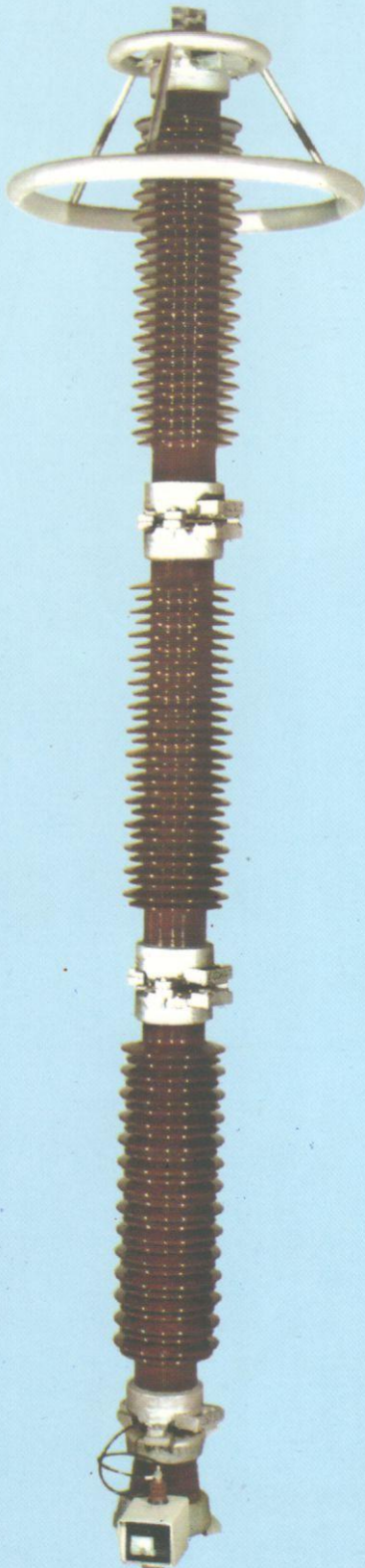


ELPRO INTERNATIONAL LTD.

ELPRO

Discharge Counter



Reliability of operation.

In-built leakage current indicating device.

No external source required.

Simplicity of installation/mounting.

Maintenance free.

Sensitive to discharges of minor nature.

Anti corrosive housing & connecting terminals.

Performance not affected by the outside environment.

Tested for Ingress Protection - 67

DISCHARGE COUNTER MODEL No. DC 904.

Discharge Counter Model no. DC 904 is a device used to count and indicate the number of discharges that an Arrester experiences and also to indicate the leakage current of the Arrester. The Discharge Counter is connected in series with the Surge Arrester. Non-resetable electro mechanical type cyclometer counter is used to count and indicate the number of discharges. The Discharge Counter incorporates a meter and associated circuit to indicate the leakage current of the Arrester.

CONSTRUCTION AND WORKING

The Discharge Counter is a self-contained unit consisting of a non-linear resistor, capacitors, inductor, counter, rectifier, meter and other components. The complete assembly is housed in an aluminium casting which makes it ideal for outdoor installation.

Counter

A capacitor - Inductor tank circuit enables the counter to count & indicate the number of discharges seen by the arrester. When a surge is experienced by the Arrester the capacitor in the tank circuit gets charged. The coil of the cyclometer counter provides the path for discharging the charged capacitor and this causes the increment in counter indication.

Leakage Current Meter

During the normal operation, the leakage current passes through the Discharge Counter connected in series with the arrester. A leakage current meter provided in the Discharge Counter indicates the leakage current of the arrester.

PERFORMANCE

The Discharge Counter unit is a self-contained device and does not require any external energy source for its operation. The voltage across the Discharge Counter during the normal operation and even at the time of highest impulse current encountered during service is very low, leading to added personnel safety and no increase in the protection level of the Arrester. The sensitivity as low as 100A, (8/20 μ s) enables the counter to indicate the discharges of minor nature also, which are seen by the Surge Arrester. Since no gaps are used, there is no risk of internal arcing and consequent explosion of the counter in the rare event of arrester failure.

TESTING

Discharge Counter model no. DC 904 is successfully tested for the Ingress Protection 67 test requirements for prevention of ingress of moisture as per IS 13947 (Part 1) 1993. Each Counter is routine tested for the following operational tests.

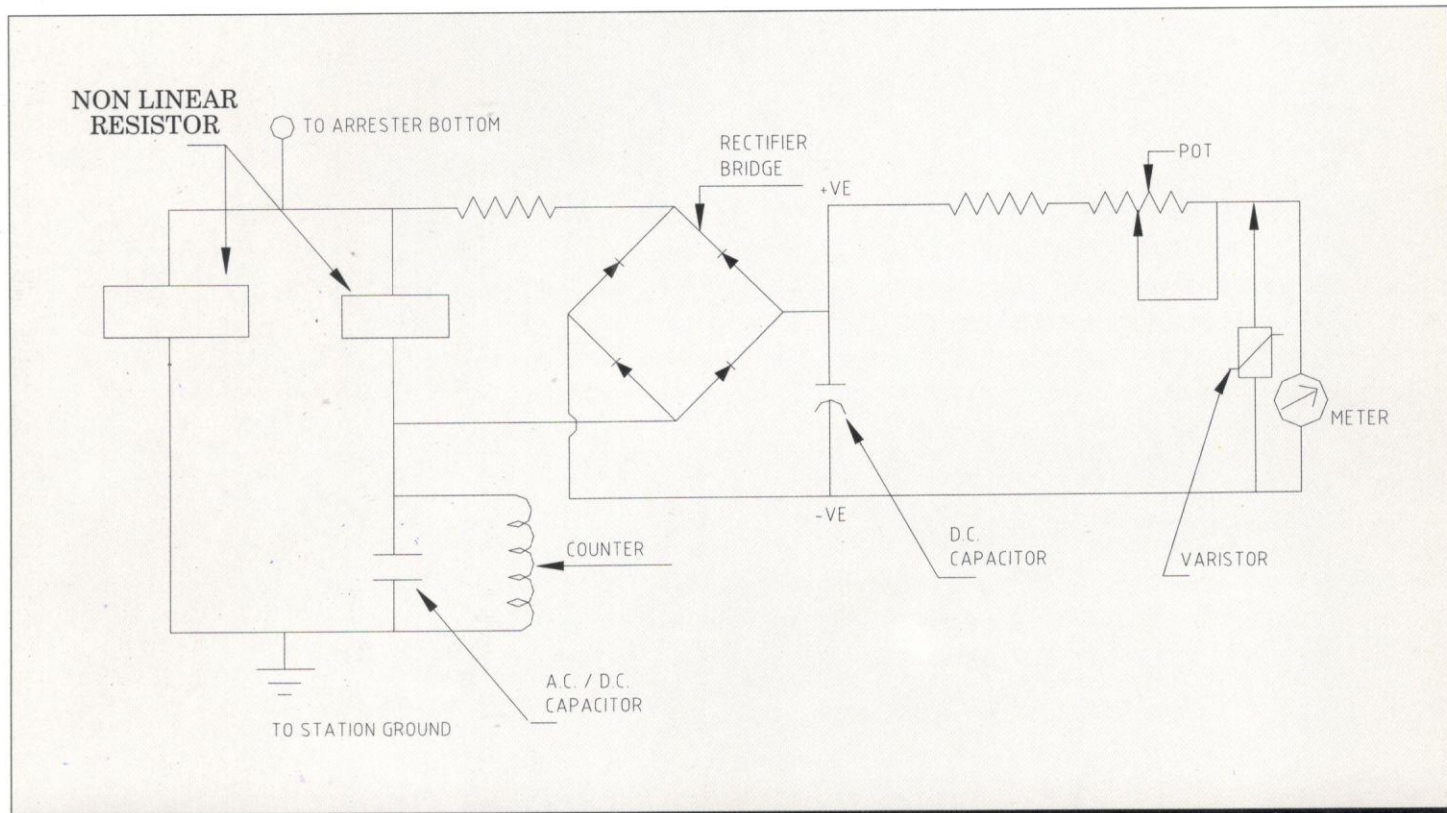
- Operational test of counter
3 impulses of 10 kA, (8/20 μ s) are applied to the counter & counter reading is verified for the same.
- Calibration of leakage current meter
Each leakage current meter is calibrated for proper indication before fitting into the Discharge Counter.

MOUNTING

The equipment should be mounted at a suitable height for easy reading.

Recommended procedure for inspection of Counter and Arrester working condition

1. Register/record the reading of the leakage current meter & counter immediately after charging / installation of the Surge Arrester when the arrester surface is clean & dry.
2. Register/record the readings of counter & current meter on regular basis or as per the schedule of the respective switchyard. It is strongly recommended to maintain all these readings in the log book.
3. In case the pointer of the leakage current meter approaches Red zone, follow the below mentioned steps.
 - (a) Clean the arrester surface thoroughly and then check the current meter reading.
 - (b) If, still the pointer lies in the Red zone, it is recommended that the counter be replaced with a new counter for verification of reading of leakage current meter.
 - (c) If the pointer of the new counter also lies in the Red region, the arrester can be removed from the service at the earliest convenience of the customer for inspection.
4. If the pointer of the leakage current meter enters the red zone, the arrester should be removed from the service immediately.



SCHEMATIC DIAGRAM OF INTERNAL CIRCUIT OF DISCHARGE COUNTER