

Datasheet

Monitoring

MC6000



Introduction.

The MC6000 arrester tester is designed to measure:

- 1) the static break down voltage of gas discharge tubes
- 2) the 1mA-voltage of varistors, Z and TAZ diodes.

The tester automatically detects whether a varistor or a gas tube is connected.

Operating principle.

The tester generates a saw tooth voltage with a rise time of 8s. If the current through the test device exceeds 1 mA the voltage value is stored and displayed with the indicator „Varistor - Diode“. The ramp voltage drops to zero.

A small capacitor is connected parallel to the ramp voltage and acts as a low impedance to force a starting glow discharge of a gas tube into break down. The current exceeds 1 A for less than 1µs, is detected and displayed as „Gas Tube“ together with the voltage value. The ramp drops to zero.

The tester is operating from a lead acid battery: 12 V - 4.5 Ah. The power consumption is 0.12 A in standby - going up to 1.2 A when testing a 6 kV varistor at 1 mA. So battery time depends on the kind of measurements made. 5h to 8h continuous operation should be possible.

The tester has an internal charger. The mains input (L, N, PE) is highly isolated from the tester circuit - 5 kV AC - so the charger may be running during tests. Normal charging current is 0.22 A, automatically decreasing to zero if the battery is above 13.5 V.

Electrical safety considerations:

The MC6000-tester generates high voltages and charges internal capacitors. Even if the tester is switched off when the output current exceeds 1 mA, the capacitor delivers pulse current ($< 1\mu\text{s}$; $> 1\text{ A}$). In the lower range the stored energy is $< 0.7\text{ J}$ and considered as safe. In the high range the stored energy is $< 0.45\text{ J}$ and dangerous.

The following rules must be obeyed!:

- 1) the test device must be free and not connected to any other circuitry.
- 2) the test leads and clamps must be securely fastened to the test device - an adaptor is highly recommended. It is not allowed to hold or handle the test device during the test.
- 3) The test device must be placed on an isolating sheet like Teflon, silicon rubber, glas. A 6 kV a wooden desk top is not sufficient.

Technical Data		MC6000
	Range 1:	10 V up to 800 V
Ramp		100 V/s
Parallel capacitor		22 nF
Stored energy		7 mJ max.
Static output current		1 mA max.
Resolution		1 V
	Range 2:	100 V up to 6 kV
Ramp		800 V/s
Parallel capacitor		25 nF
Stored energy		0,45 J max.
Static output current		1 mA max.
Resolution		3 V

Order Data

Product	MC6000
Article-No.	87 01 60