

JCQ Type
Lightning Arrester Monitor
Operation Instruction

JCQ- Type Lightning Arrester Monitor

A Characteristics

JCQ- type lightning arrester monitor is a device that in series under the arrester, and is used to monitor leakage current and records the time of arrester action. JCQ type lightning arrester monitor used on the lightning arrester in the 220kV and below power system; type lightning arrester monitor used on the lightning arrester in the 500kV and below power system. The operating environmental conditions are the same as the lightning arrester which it is connected with.

The lightning arrester monitor characterizes figure showing count, current pointer indication and shock-resistant.

B Structure and Capability

The monitor is mainly made up of signal input circuit, current measuring circuit, discharge counting circuit and protecting circuit. Under normal circumstances, the leakage current of arrester is directly figured out by the ammeter. The range of survey is 0 ~ 2mA or 0 ~ 5mA. The ammeter used color scale to scale the running region of lightning arrester leakage current respectively. It substantially convenient for users to determine the operational status of arrester, thereinto:

Green: Shows that the tested leakage current is in the range of nominal operating current, the lightning arrester operates normally.

Yellow: Shows that the tested leakage current is not in the range of nominal operating current, the circuitry and the lightning arrester demand to be examined or replaced.

Red: Shows that the tested leakage current has overtopped the range of nominal operating current, the lightning arrester must be examined and replaced.

When the leakage current overtop the survey arrange, the ultra-range indicator light shows.

When the arrester acts, the counter adds up the discharge times. The counter is adapted to the three-electromagnetic, automatically return to full-scale zero, cycle counting and not cleared.

The counter unit capability is in confirmed to JB2440-91 with counter arrester standards, and the current showing unit capability is confirmed to GB7676-94 with pointer electrical instrumentation standards.

Specification and Mainly Capability of the Monitor

No.	Mainly Capability	Type of Product	
		JCQ-	JCQ-
1	Applicable Power System Rated Voltage kV (rms)	6~220	330~500
2	Nominal Discharge Current Level 8/20 μ s kA (crest)	10	10 20
3	Count Current Range 8/20 μ s kA (crest)	50~10000	50~10000 50~20000
4	Residual Voltage under Nominal Discharge Current 8/20 μ s kA (crest)	3.0	3.0
5	2000 μ s 18 times Rectangular Current Impulse Withstand A (crest)	800 1500 2000	1500 2000 4000
6	4/10 μ s 2 times High Current Impulse Withstand kA (crest)	65	100
7	Current Survey Range mA	0~2	0~5
8	Count Range	Trinity (888)	
9	Weight kg	2.0	2.0

C Installation

a. Installation Schematic

In the figure:

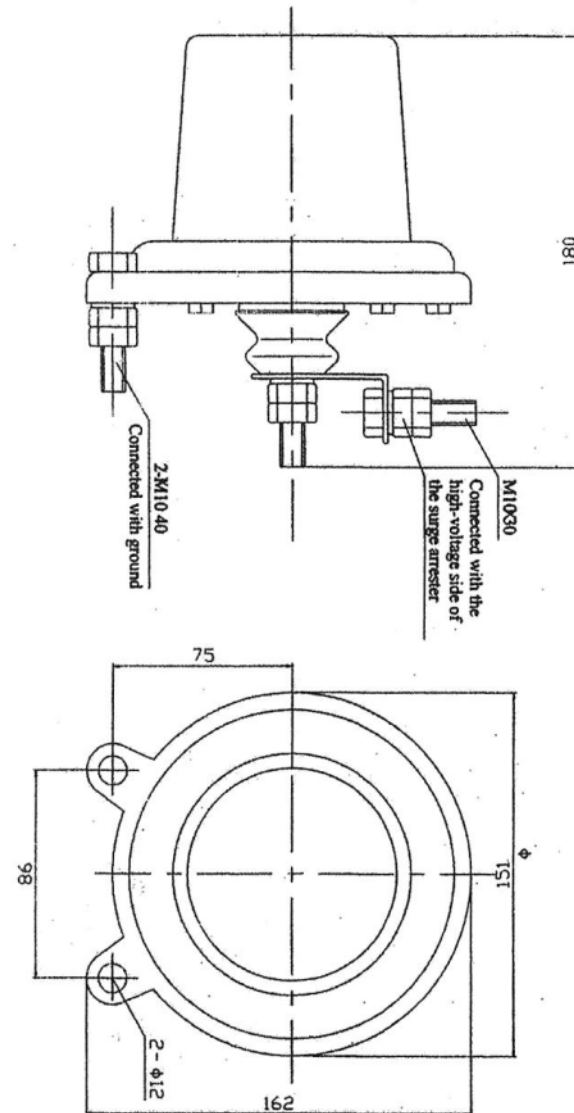
JCQ- : Lightning Arrester Monitor

MOA: Lightning Arrester (Metal-Oxide Surge Arrester)

D: the Base of Lightning Arrester

L: Conducting Wire

Installation Sample



c. User should use the products under the prescribed condition listed in the operating instruction. The warranty period of surge arrester is two years from the date of the rollout of the factory (or to implement to the confirmed technical requirements of the agreement with two sides). Of breakdowns caused by fault operating during the warranty period, we have no responsibility to mend.

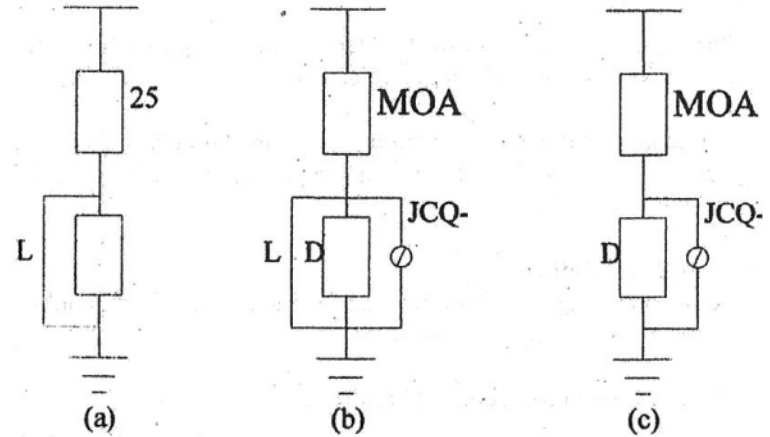
d. Enclosed JCQ- monitor exterior dimension and installation drawing.

F Caution:

a. It is forbidden to put a A.C. 220V, 50Hz voltage on the two side of the monitor.

b. When the monitor current is going on to measure and proofread, the regular current going through should be no more than 2mA.

c. When the monitor is doing the count action test, it should do not bring to bear steady signal.



b. Installation Method (refer to figure 1)

Firstly use the lead "L" whose diameter is more than 2.5mm to firmly short-connect the two sides (the upper flange and the down flange) of the lightning arrester base "D", to connect the down flange of the base firstly, and then connect the upper flange of the base, to make the bottom of the lightning arrester "MOA" credibly grounded, as figure 1 (a).

Install the monitor "JCQ-" hard between the upper flange of the lightning arrester base and the down flange of the lightning arrester base, as figure 1 (b). Firstly use the housing of the monitor "JCQ-" as the grounding side to connect on the bottom of the lightning arrester base "D", and then connect the high-voltage wiring side of the monitor "JCQ-" to the bottom of the lightning arrester "MOA".

Remove the short line "L" between the two sides of the lightning arrester base "D" (the upper flange and the down flange), in order to make the monitor tied in series between the lightning arrester "MOA" and the ground, as figure 1 (c).

During installation, the down-lead tension of the high-voltage wiring side of the monitor should not more than 100N.

Before unloaded the monitor from the line, the grounding side of the lightning arrester should be firstly reliable grounded by a line, and then remove the monitor.

D Inspection Method

Before operating and after operating for 1 to 2 years, there should be a simple on-site testing of the monitor.

a. Monitor Current Measure and Proofread

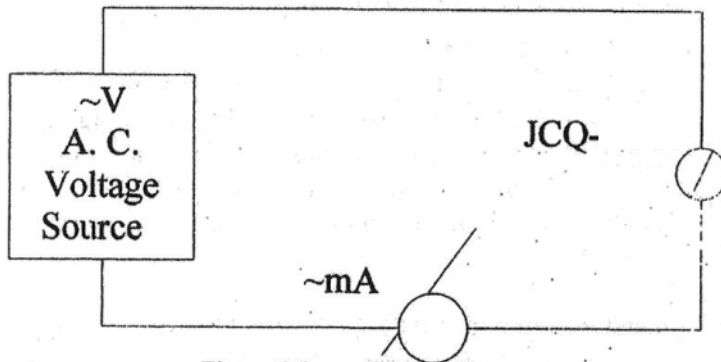


Figure 2 Loop Wiring Diagram
of Monitor Current Measure and Proofread

In the figure:

JCQ- : Lightning Arrester Monitor

~mA: A.C. Milliammeter Level 1.0 10mA

~V: A.C. Voltage Source Level 1.0 0~500V

(a) Put the A.C. milliammeter, the A.C. voltage source and the tested monitor in a circuit.

(b) Slowly regulate the A.C. voltage source output voltage, in order to make the ammeter of the monitor point to the number of sub-degrees in each line, and correspondingly record the sub-degree online A.C. current value.

(c) Calculate the basis error of the current. If the error range of the monitor current is in Level 5.0, it can be estimated that the monitor current measure is up to grade.

b. Counting Action Test

The simple method of measuring the monitor active character is: a 1000V shake watch, a 10 microfarad capacitor. Measuring process: firstly shake the table to charge the capacitor. When charge stability, in maintaining the shake table speed, charging off circuit. Make the well-charged capacitor to discharge to the high-voltage wiring side of the monitor and the grounding side, and the monitor should record once. After test for 5~10 times and for really reliable action, it can sure that the monitor is well. Otherwise, the monitor would take to carry out maintenance.

E User Notice:

a. After the monitor has problem, please do not remand by yourself. It is the right action to send bake to the producing factory.

b. When ordering, please point out the type, the name and the needed quantity of the product, and if there is specialized requirements.

We can change the current measure capacity and the color scale according to your requirements.

We can offer specialized monitor which show the parameters such as high rectangular current capacity and high nominal current according to your requirements.