

SQ-72 Series Analog Ammeter Instruction Manual

Product Overview

The SQ-72 series instruments are of the moving-iron type (for AC) or moving-coil type (for DC), featuring a square shape with overall dimensions of 72mm × 72mm. They are constructed with a flame-retardant ABS plastic case, a transparent glass window, and a printed scale dial, offering clear readings and an attractive appearance. They are widely used in industrial and mining enterprises, metallurgy, chemical industry, electric power systems, and various electrical control devices for measuring current in AC or DC circuits.

Technical parameter

Accuracy level: 1.5 level and 2.5 level

Range Specifications

AC Direct Connection: 1A to 50A.

AC with Current Transformer (CT): 20A to 10kA / 5A (secondary current 5A or 1A).

DC Direct Connection: 1A to 20A.

DC with External Shunt: 20A to 10kA / 75mV (requires external 75mV shunt).

Resistance to mechanical forces: Can withstand 30m/s² wind; Impact frequency 80-120 times/min, 2h transport bumping

Dielectric strength: 2KV 50Hz for 1min

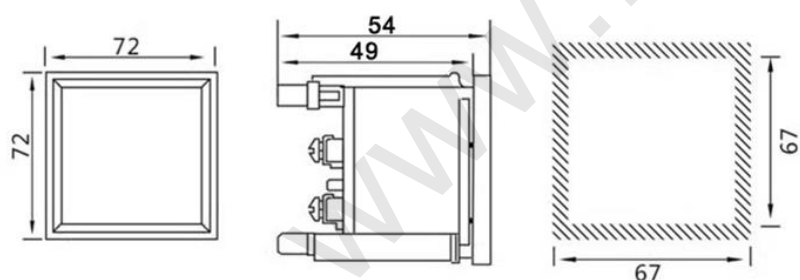
Voltage affection: The measured tolerance don't exceed base tolerance when the measured value changed 15%

Work position: Vertical

Operating temperature: -20 to 40 °C (-4 to 104 °F)

Operating humidity: 85% RH max, non-condensing

External dimensions and Perforation dimensions



External dimensions

Perforation dimensions

Model number legend

SQ-72-A	□
└ Design code	└ 1: 1A (Connect directly)
	└ ...
	└ 20/5: 20/5A (Need current transformer)
	└ ...

Wiring Guide

WARNING: All wiring operations must be performed with the power disconnected by a qualified electrician!

1. AC Ammeter Wiring

Direct connection type: Connect the meter directly in series with the circuit being measured.

Current transformer type: Must be connected via a standard current transformer (CT).

Connect the meter terminals to the secondary side of the CT (typically 0-5A output).

CAUTION: The secondary circuit of the current transformer must NEVER be opened when the primary is energized, and one side of the secondary circuit must be reliably grounded.

2. DC Ammeter Wiring

Direct connection type: Connect the meter directly in series.

Observe polarity: The terminal marked - connects to the negative side, the other terminal connect to positive side

Shunt type: Requires an external DC shunt (standard output is 75mV).

Connect the two current terminals of the shunt in series with the main circuit.

Connect the two leads (preferably specified leads) from the meter to the potential terminals of the shunt (+ to +, - to -).

Usage Precautions

Pre-power Check: Always ensure the wiring is correct and secure. For current transformer circuits, terminal screws must be tightened firmly to prevent poor contact, which can lead to heating or open circuits.

Matching Load/Transformers:

If you are using a 150A ammeter, it will typically be marked "150/5A" or similar. This means it MUST be used with a 150/5 current transformer and cannot be directly connected to a 150A current.

Indication of Abnormalities:

If the pointer moves backwards (for DC meters): This indicates reversed polarity. Power off immediately and swap the two connections.

If the pointer pegs at full scale (hits the stop): This could be due to circuit overload, a mismatched CT ratio, or an open CT secondary circuit (for AC) generating high voltage. Power off and check immediately.

Maintenance: Regularly clean the meter glass surface with a dry cloth. Check if the pointer rests on the mechanical zero mark when no power is applied. If not, gently adjust the "mechanical zero adjuster" screw located on the front of the meter case.

Common Troubleshooting

Fault Symptom	Possible Cause(s)	Remedy
No Indication (Pointer does not move)	<ol style="list-style-type: none"> 1. No voltage/current in the circuit. 2. Loose wiring connection. 3. Open circuit in CT secondary. 	<ol style="list-style-type: none"> 1. Check if the circuit is energized. 2. Tighten the terminal screws. 3. Check the CT circuit.
Reading too high or too low	<ol style="list-style-type: none"> 1. CT ratio or shunt rating does not match meter. 2. Damaged meter. 	<ol style="list-style-type: none"> 1. Verify CT ratio (e.g., 150/5 meter with 150/5 CT). 2. Replace with matching meter or CT/shunt.
Pointer vibrates excessively	<ol style="list-style-type: none"> 1. Large fluctuation in the signal source. 2. Internal hairspring issue. 	<ol style="list-style-type: none"> 1. Check if it's normal load fluctuation. 2. Send for repair.
Pointer moves backwards	<ol style="list-style-type: none"> 1. Reversed polarity (DC meter). 2. Phase sequence issue (AC - rare). 	<ol style="list-style-type: none"> 1. Power off and swap the two connections (DC).

Warranty

This product is warranted against manufacturing defects for 12 months from the date of purchase under normal use conditions.