

# TOS6100

## AC LOW OHM TESTER



### Earth Continuity Tester

Measuring Range: 0 to 0.12Ω/0 to 0.6Ω

Test Current: 3 to 30 A

### Outline

The Model TOS6100 is an AC low ohm tester compatible with all domestic and overseas standards that is able to perform resistance measurement and testing of ground connections for class I electrical devices as stipulated in IEC, CEE, BS, VDE, AS and other safety standards.

The test current can be set as desired within a range of 3 to 30 A, and two measuring ranges of 0.1 and 0.5 Ω are available (measuring ranges: 0 to 0.12Ω and 0 to 0.6Ω). In addition, in the case the specified current deviates from the test current during testing, a warning alarm is released to prevent the occurrence of erroneous testing in advance.

Testing can be performed simply by pressing the start button. An accurate four terminal measuring method is employed for measurement. In addition, the subtraction function enables Pass/Fail judgments to be made after subtracting surrounding resistance values.

Moreover, the TOS6100 is also provided with various signal outputs including TEST, PASS, FAIL and READY. When combined with the remote control function for start and stop operations, the TOS6100 is able to significantly contribute to automation and improved efficiency of testing.

### Features

#### ■ Arbitrary Setting of Test Current

The test current can be set as desired between 3 and 30 A to match the standard of the testpiece.

#### ■ Equipped with Various Signal Outputs

Various signal outputs are provided consisting of TEST, PASS, FAIL, WARNING, READY and MONITOR.

#### ■ Test Time Set as Desired

Test time can be set as desired over a wide range from 0.5 seconds to 10 minutes enabling testing to be performed according to the specific objective.

#### ■ Four Terminal Measuring Method for Accurate Evaluation of Low Resistance Values

A four terminal measuring method is employed that is able to eliminate minute levels of resistance of connection lead wires and contact resistance in the terminal generated by the sampling terminal.

#### ■ Subtraction Function for Accurate Measured

When direct measurement cannot be executed due to structure or circuit configuration of DUT, surrounding resistance value can be previously set as subtraction value so that values are displayed and evaluated by applying subtracted value while measurement.

# TOS6100

## AC LOW OHM TESTER

### Specifications

■ Resistance Measured Values Accuracy	0 to 0.12Ω/0 to 0.6Ω, 2 ranges ±10% of full scale (3 to 5 A) ±5% of full scale (5 to 30 A)
■ Test Current Output	3 to 30 A AC, adjusted by dial on panel Max. current 30 A AC, max. voltage: 8 V (when line voltage is at the central value of each input voltage range) ⚡ These values cannot be obtained at the same time.
■ Output Ammeter Scale Accuracy Indication	3 to 30 A AC ±5% of full scale Mean value response/rms value scale graduation
■ Pass/fail Judgement Judgement Method	<ul style="list-style-type: none"> <li>● A FAIL judgement is made and output is cut off if the measured value is greater than the reference value.</li> <li>● A PASS judgement is made and a PASS signal is output if there are no abnormalities after the set time has elapsed.</li> </ul>
Limit Value Setting Range	Set as desired between 5 to 100% of the measuring range
Judgement Accuracy	±15% of full scale for reference value (3 to 5 A) ±10% of full scale for reference value (5 to 30 A)
■ Subtraction Function	<ul style="list-style-type: none"> <li>● A predetermined value can be subtracted from the measured value and the result of subtraction can be displayed</li> <li>● The result of subtraction can be compared with the judgement reference value and the result of comparison can be used for PASS/FAIL judgement</li> </ul>
Subtraction Range	0 to 0.1Ω
Subtraction Error	Max. ±5 of full scale (added to measuring accuracy or PASS/FAIL judgement accuracy)
■ Test Current Monitoring Function	<ul style="list-style-type: none"> <li>● Test current can be monitored during testing</li> <li>● A warning alarm is generated when the test current value deviates from the range of approximately 10% of the monitoring reference value</li> <li>● Reference values can be set as desired within a range of 3 to 30 A</li> <li>● Continuation or stopping of testing when a warning has occurred can be selected</li> </ul>
■ Test Time	0.5 seconds to 10 minutes (with 4-range timer)
■ Remote Control Start/Stop Operation	<ul style="list-style-type: none"> <li>● Low active control</li> <li>● Input conditions: <ul style="list-style-type: none"> <li>◆ High level input voltage: 11 to 15 V</li> <li>◆ Low level input voltage: 0 to 4 V</li> <li>◆ Low level sweepout current: Max. 2 mA</li> <li>◆ Input signal time width: Min. 20 ms</li> </ul> </li> <li>⚡ Since the input terminal is pulled up to a +15V power supply by a resistor, input becomes equal to high level input if the input terminal is open.</li> </ul>

### ■ Signal Outputs

Signal Type	Conditions for Signal Output	Signal Contents
TEST	Testing in progress	Make contact signal, amp
PASS	Approx. 50 ms when PASS judgement is made	Make contact signal, amp, buzzer
FAIL	Continuous when FAIL judgement is made	Make contact signal, amp, buzzer
WARNING	See test current monitoring function	Make contact signal, amp
READY	During standby	Make contact signal
MONITOR	Normal	DC 0 to 10 V

- ⚡ (1) The contact rating of the contact signal is 100 V AC, 1 A/30V DC, 1 A.
- ⚡ (2) Buzzer volume can be adjusted with a single dial for the PASS signal and FAIL alarm.
- ⚡ (3) The MONITOR output consists of an output of direct current voltage proportional to the angle of deflection of the pointer on the ohmmeter. The scale is as indicated below.
  - 0.5 Ω range: 10V/0.5Ω
  - 0.1 Ω range: 10V/0.1Ω
The absolute value of output voltage error is either 5% of the output value or 50 mV, whichever is larger.

■ Environment Specification temperature and humidity ranges	5 to 35°C/20 to 85% RH
Operating temperature and humidity ranges	0 to 40°C/20 to 90% RH
Storage temperature	-20 to 70°C/Max. 90% RH
■ Power Requirements Allowable Line Voltage	A: 90 to 110V, B: 104 to 125V, C: 194 to 236V, D: 207 to 250V Frequency: 50/60 Hz Max. 20 VA under no-load conditions (READY state) Approx. 280 VA during 30 A output (RM ≈ 0.22Ω)
Power Consumption	Min. 30 MΩ at 500V DC 1000V AC for 1 minute
Insulation Resistance Withstanding Voltage	430W × 149H × 370Dmm (430W × 164H × 435Dmm)
■ Dimensions (MAX)	Approx. 16 kg
■ Weight	● Short bars (to be attached to the tester): 2
■ Accessories	<ul style="list-style-type: none"> <li>● Power cable set: 1</li> <li>● Operation manual: 1</li> <li>● Fuse 3 A (S.B): 1</li> <li>● Fuse 1.6 A (S.B): 2</li> </ul>
■ Options	<ul style="list-style-type: none"> <li>● Model RC01-TOS/RC02-TOS remote control box</li> <li>● Model LTP-2 low resistance test probe</li> <li>● Model BZ01-TOS buzzer unit</li> <li>● Model PL01-TOS warning light unit</li> <li>● Model BH3M-TOS rack mount bracket for JIS</li> <li>● Model BH4-TOS rack mount bracket for EIA</li> </ul>