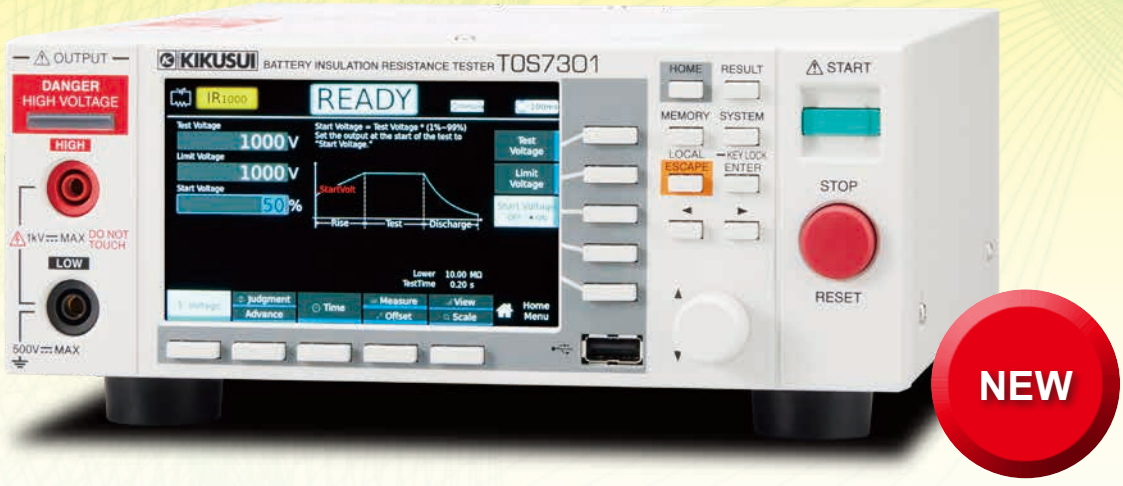
KIKUSUI

TELONIC
TEST INSTRUMENTS & POWER SUPPLIES
ISO 9001 QUALITY MANAGEMENT
UKAS MANAGEMENT SYSTEMS 0015
ESTABLISHED OVER 50 YEARS SINCE 1966
01189 786911 TELONIC.CO.UK

TOS7300 SERIES



Insulation Resistance & Battery Insulation Resistance Tester

TOS7300 Series

Output voltage range: 25 Vdc to 1000 Vdc

Resistance measurement range: 0.001 MΩ to 10.00 GΩ

Upper/lower limit judgement, short-circuit detection, and contact check function

dV judgment function that helps protect the EUT from damage during testing (TOS7301)

RS-232C / USB interface standard

WITH LAN models come standard with a LAN interface

Equipped with a color LCD

Graphing of test result data (TOS7301)

Safe and Reliable

Includes contact check and short-circuit detection!

Features a contact check function that detects poor connections to the EUT or broken test leads, plus a short-circuit detection function that identifies a shorted EUT before high voltage is applied to help prevent EUT damage.

High-Speed Measurement Times

Boost productivity with speeds down to 10 ms!

Select a measurement time from 10 ms*/16.66 ms/ 20 ms/ 100 ms. Shorter measurement times help reduce takt time.

*TOS7301 and TOS7301 WITH LAN only

Color LCD Display

Equipped with a 4.3-inch color display!



Test settings, overviews, and diagrams are clearly visible on the 4.3-inch display, making operation more intuitive.

Easy operation for fast, safe, reliable testing!!

Built-in dV Judgment Function*

Helps protect the EUT from damage!



If a voltage difference exceeding the delta voltage is detected consecutively for the times specified in Continuous Count, it is judged as an Upper-FAIL(dV), and the test ends, protecting the EUT from damage.

*TOS7301 and TOS7301 WITH LAN only

Versatile Interfaces

Flexible automated testing made easy!

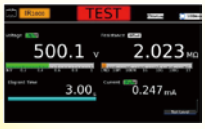


All models come standard with USB 2.0, USB-TMC compliant USB, and RS232C interfaces. In addition, WITH LAN models allow the use of a LAN interface.

Graphing of Test Result Data*

Zoom in on what you want to see!

Accurately graphed sample characteristics make it easy to spot defects and other issues.



▲ Measurement screen: Numeric display



▲ Measurement screen: Graph display

*TOS7301 and TOS7301 WITH LAN only

It is suitable for research and development facilities, quality assurance testing and standard certification agency testing facilities, production lines, and more.

In the TOS7300 series, the output voltage can be freely set from 25 V to 1000 Vdc in 1 V steps (compliant with the output characteristics of JIS C 1302), making it an insulation resistance tester suitable for a wide range of applications—from electrical/electronic components to complete electrical and electronic equipment.
Test settings, summaries, and diagrams are clearly visible on 4.3-inch color display.
This series also comes standard with USB 2.0, USB compliant with USB-TMC, and RS232C. WITH LAN models come with a LAN interface. When used together with external control via Signal I/O, you can build highly flexible automated test setups.
In addition, TOS7301 and TOS7301 WITH LAN models support dV judgment, which helps protect the EUT from damage during testing. They also have faster selectable measurement times (Aperture Time) and provide a graphical display of measurement data during testing. These models are ideal not only as insulation resistance testers for secondary batteries where tight takt times are required, but also for R&D applications across a wide variety of materials.

Supported Features / Models	TOS7300	TOS7300 WITH LAN	TOS7301	TOS7301 WITH LAN
Insulation resistance test (IR) DC 25 V to 1000 V	✔	✔	✔	✔
Communication interface USB 2.0, RS232C	✔	✔	✔	✔
Communication interface LAN	–	✔	–	✔
Data storage / CSV export	✔	✔	✔	✔
Graphing of test result data	–	–	✔	✔
dV pass/fail function to help protect the EUT from damage	–	–	✔	✔
Measurement time: set as fast as 10 ms	–	–	✔	✔
Contact check function	✔	✔	✔	✔

Insulation Resistance & Battery Insulation Resistance Tester

TOS7300 Series

4 Models



Specifications

Insulation Resistance Test Section

Output section

Item		Specifications
Output voltage		25 Vdc to 1000 Vdc
Output setting accuracy		±(1.0 % of setting + 2 V)
Output setting range		0 V to 1025 V
Output setting resolution		1 V
Max. rated load		1 W (1000 V/1 mA)
Max. rated current		1 mA
OUTPUT terminal	Output form	Floating
	Isolation voltage	±500 Vdc (including the output of the TOS73 series)
Ripple	1 kV no load	5 Vp-p or less
	Max. rated load	10 Vp-p or less
Voltage regulation		1 % or less (when changing from maximum rated load to no load)
Constant current charge function		Charge current 2 mA
Short-circuit current		10 mA or less
Discharge function		At the end of the test, constant current discharge, discharge current 10 mA (TYP), Maximum capacitance: 2 µF *1
Output voltage rise time		1 ms or less (when Voltage rise time (Rise Time) is OFF)
Output voltage monitor function		If the output voltage exceeds ±(10 % of setting + 5 V), the output is turned off, and the protection function is activated

*1. Maximum capacitance that can be discharged within 0.2 seconds in a insulation resistance test. Tests can still be conducted beyond the maximum capacitance, but the discharge time will increase.

Voltmeter

Item	Specifications
Measurement range	0 Vdc to 1200 Vdc
Resolution	0.1 V
Accuracy	±(1 % of reading + 1 V)

Resistance meter

Item		Specifications
Measurement range		0.001 MΩ to 10.00 GΩ (in the range of maximum rated current of 1 mA to 40 nA)
Accuracy *1 (i: measured current) (R: measurement resistance)	40 nA ≤ i ≤ 100 nA	200.00 MΩ ≤ R < 10.000 GΩ: ±(20 % of reading)
	100 nA < i ≤ 200 nA	100.00 MΩ ≤ R < 5.000 GΩ: ±(10 % of reading)
		5.000 GΩ ≤ R < 10.000 GΩ: ±(20 % of reading)
	200 nA < i ≤ 1000 nA	10.000 MΩ ≤ R < 5.000 GΩ: ±(5 % of reading)
	1 µA < i ≤ 2 mA	0.001 MΩ ≤ R < 10.000 MΩ: ±(2 % of reading + 5 digit)
		10.000 MΩ ≤ R < 1.000 GΩ: ±(2 % of reading)
Display (R: measurement resistance)	10.000 GΩ < R	Over
Hold function		The resistance measurement after a test is finished is held while the PASS judgment is displayed.
Offset cancel function		Cancels up to 2000 GΩ of the unnecessary insulation resistance across output cables and the like. OFF function available.

*1. Humidity: 70 %rh or less (no condensation), when there is no interference caused by wobbly test leads or other problems.

Judgment function

Item			Specifications
Behavior based on judgment	Common functions		The output is shut off when a judgment is made, and a beep sounds.
			The beep sound can be enabled and disabled.
	UPPER FAIL	Judgment method	pper-FAIL results when a resistance greater than or equal to the Upper limit (Upper) is detected. Judgment is not made during or Voltage rise time (Rise Time).
		Display	"Upper-FAIL" is displayed.
		Beep sound	On
		SIGNAL I/O connector	The U FAIL signal is generated continuously until a STOP signal is received.
	LOWER FAIL	Judgment method	Lower-FAIL results when a resistance less than or equal to the Lower limit (Lower) is detected. Judgment is not made during the Judgment delay (Judge Delay).
		Display	"Lower-FAIL" is displayed.
		Beep sound	On
		SIGNAL I/O connector	The L FAIL signal is generated continuously until a STOP signal is received.
	dV FAIL	Judgment method	When a voltage difference exceeding the Delta Voltage is measured consecutively for a number of times exceeding the Number of consecutive detections (Continuous Count), it is judged as Upper-FAIL (dV). Judgment is not made during the Judgment delay (Judge Delay).
		Display	"Upper-FAIL(dV)" is displayed.
		Beep sound	On
		SIGNAL I/O connector	The U FAIL signal is generated continuously until a STOP signal is received.
	PASS	Judgment method	If the Test Time elapses without a FAIL judgment, a PASS judgment is made.
		Display	"PASS" is displayed.
		Beep sound	On (fixed to 50 ms)
		SIGNAL I/O connector	The PASS signal is generated for the length of time specified by the Pass Hold setting. If Pass Hold is set to Infinity, the PASS signal is generated continuously until a STOP signal is received.
Upper limit (Upper) setting range			0.02 MΩ to 10.00 GΩ (in the range up to the maximum rated current), OFF
Lower limit (Lower) setting range			0.01 MΩ to 9.99 GΩ (in the range up to the maximum rated current), OFF
Judgment accuracy *1 (i: measured current) (R: measurement resistance)	40 nA ≤ i ≤ 100 nA *2		200.00 MΩ ≤ R < 1.000 GΩ: ±(20 % of setting + 0.01 MΩ)
			1.000 GΩ ≤ R < 10.000 GΩ: ±(20 % of setting + 0.01 GΩ)
	100 nA < i ≤ 200 nA *2		100.00 MΩ ≤ R < 1.000 GΩ: ±(10 % of setting + 0.01 MΩ)
			1.000 GΩ ≤ R < 5.000 GΩ: ±(10 % of setting + 0.01 GΩ)
			5.000 GΩ ≤ R < 10.000 GΩ: ±(20 % of setting + 0.01 GΩ)
	200 nA < i ≤ 1000 nA		10.000 MΩ ≤ R < 1.000 GΩ: ±(5 % of setting + 0.01 MΩ)
			1.000 GΩ ≤ R < 5.000 GΩ: ±(5 % of setting + 0.01 GΩ)
	1 µA < i ≤ 2 mA		0.001 MΩ ≤ R < 10.000 MΩ: ±(2 % of setting + 5 digit+ 0.01 MΩ)
			10.000 MΩ ≤ R < 1.000 GΩ: ±(2 % of setting + 0.01 MΩ)

*1. Humidity: 70 %rh or less (no condensation), when there is no interference caused by wobbly test leads or other problems.
*2. A Judgment delay (Judge Delay) of 3.0 seconds or more and a Test Time of 3.0 seconds or more are required for judgment of 200 nA or less.

Time

Item	TOS7300, TOS7300 WITH LAN	TOS7301, TOS7301 WITH LAN
Aperture Time settings range	16.66 ms (60 Hz) *1, 20 ms (50 Hz), 100 ms	10 ms *1, 16.66 ms (60 Hz) *1, 20 ms (50 Hz), 100 ms
Voltage rise time (Rise Time) settings range *2	[16.66 ms] *1 0.05 s to 5.00 s [20 ms] 0.02 s to 200.00 s [100 ms] 0.1 s to 200.0 s (OFF function available)	[10 ms] *1 0.01 s to 5.00 s [16.66 ms] *1 0.05 s to 5.00 s [20 ms] 0.02 s to 200.00 s [100 ms] 0.1 s to 200.0 s (OFF function available)
Test Time settings range *2	[16.66 ms] *1 0.05 s to 10.00 s [20 ms] 0.04 s to 1000.00 s [100 ms] 0.2 s to 1000.0 s (OFF function available)	[10 ms] *1 0.04 s to 10.00 s [16.66 ms] *1 0.05 s to 10.00 s [20 ms] 0.04 s to 1000.00 s [100 ms] 0.2 s to 1000.0 s (OFF function available)
Judgment delay (Judge Delay) settings range *2	[16.66 ms] *1 0.05 s to 15.00 s [20 ms] 0.04 s to 100.00 s [100 ms] 0.2 s to 100.0 s (Rise Time + Test Time ≥ Judge Delay Time)	[10 ms] *1 0.04 s to 15.00 s [16.66 ms] *1 0.05 s to 15.00 s [20 ms] 0.04 s to 100.00 s [100 ms] 0.2 s to 100.0 s (Rise Time + Test Time ≥ Judge Delay Time)
Accuracy	±(100 ppm of setting + 2 ms) (Settings range < 10 s) ±(100 ppm of setting + 20 ms) (Settings range ≥ 10 s)	

*1. If the Test Time is set to OFF, the Aperture Time is changed to 20 ms.
*2. The setting range changes according to the set value of the Aperture Time (values in []).

Specifications

Interface

Item			TOS7300, TOS7301	TOS7300 WITH LAN, TOS7301 WITH LAN
SIGNAL I/O	Function		D-sub 25-pin connector. For the pin arrangement, see “SIGNAL I/O Connector”. Enable/disable interlock, recall setup memories, start/stop testing, monitor the test and voltage generation status, monitor the test state, monitor judgment results, monitor the activation status of protection functions.	
	Input specifications	Control	The input signals are all low-active control. The input terminal is pulled up to +12 V by a resistor. Leaving the input terminal open is equivalent to applying a high level signal.	
		High-level input voltage	11 V to 15 V	
		Low-level input voltage	0 V to 4 V	
		Low-level input current	5 mA max.	
		Input time width	5 ms min.	
	Output specifications	Output method	Open collector output (4.5 Vdc to 30 Vdc)	
		Output withstanding voltage	30 Vdc	
		Output saturation voltage	Approx. 1.1 V (25 °C)	
		Maximum output current	400 mA (TOTAL)	
Remote control	RS232C	Function	All functions except turning on and off the power can be remotely controlled.	
		Hardware	D-sub 9-pin connector (EIA-232D compliant)	
		Baud rate	9600, 19200, 38400, 57600, 115200 bps selectable.	
		Flow control	None/CTS-RTS	
		Message terminator	During reception: LF, During transmission: LF	
	USB (device)	Function	All functions except turning on and off the power can be remotely controlled.	
		Hardware	Standard Type B socket, complies with the USB 2.0 specifications. Data rate: 480 Mbps (high speed)	
		Message terminator	During reception: LF or EOM, During transmission: LF+EOM	
		Device class	Complies with the USBTMC-USB488 device class specifications	
	LAN	Hardware	n/a	1000BASE-T/100BASE-TX Ethernet, Auto-MDIX compliant, IPv4, RJ-45 connector
		Compliant standards	n/a	LXI 1.5 Core Specification 2016
		Communication protocol	n/a	HiSLIP, SCPI-RAW
		Message terminator	n/a	• HiSLIP/ During reception: LF or END, During transmission: LF+END • SCPI-RAW/ During reception: LF, During transmission: LF
USB (host)			Standard type A socket, FAT32 (32 GB or less), exFAT, Complies with the USB 2.0 specifications; data rate: 480 Mbps (high speed)	
Display			4.3-inch LCD: Displays set values, measured values, judgment results, etc.	

General Specifications

Item			Specifications
Environment	Installation location		Indoors, 2000 m or less. Pollution Degree 2 *1
	Spec guaranteed range	Temperature/ Humidity	18 °C to 28 °C (64.4 °F to 82.4 °F)/ 20 %rh to 80 %rh (no condensation)
	Operating range	Temperature/ Humidity	0 °C to 40 °C (32 °F to 104 °F)/ 20 %rh to 80 %rh (no condensation)
	Storage range	Temperature/ Humidity	-25 °C to 70 °C (-13 °F to 158 °F)/ 90 %rh or less (no condensation)
Power supply	Nominal voltage range (allowable voltage range)		100 Vac to 240 V (90 Vac to 250 V)
	Power consumption	No load (READY state)	10 VA or less
		Rated load	50 VA max.
	Allowable frequency range		47 Hz to 63 Hz
Insulation resistance (between AC LINE and chassis)			30 MΩ or more (500 Vdc)
Withstanding voltage	Between AC LINE and chassis		1500 Vac, 1 minute, 10 mA or less
	Between output terminal and chassis		800 Vac, 1 minute, 10 mA or less
Earth continuity			25 Aac, 0.1 Ω or less
Dimensions/ Weight			214 (8.43) (MAX220 (8.66)) W × 80 (3.15) (MAX105 (4.13)) H × 260 (10.24) (MAX290 (11.42)) D mm (inches)/ Approx. 2.5 kg (5.5 lb.)
Accessories			Power cord (1 pc., length: 2.5 m), High-voltage test lead: TL35-TOS (1 set), Getting Started Guide, Safety Information, China RoHS sheet
Electromagnetic compatibility *2 *3			Complies with the requirements of the following directive and standards EMC Directive 2014/30/EU. EN 61326-1 (Class A *4), EN 61000-3-2, EN 61000-3-3, EN 55011 (Class A *4, Group 1 *5) Applicable under the following conditions: The maximum length of all cabling and wiring connected to the TOS73 series must be less than 2.5 m. Use the included high voltage test leads. Electrical discharges are applied only to the EUT. Shielded cables are being used when using the SIGNAL I/O.
Safety *2 *3			Complies with the requirements of the following directive and standards Low Voltage Directive 2014/35/EU *3. EN 61010-1, EN 61010-2-034 (Class I *6, Pollution Degree 2 *1)

*1. Pollution is addition of foreign matter (solid, liquid or gaseous) that may produce a reduction of dielectric strength or surface resistivity. Pollution Degree 2 assumes that only non-conductive pollution will occur except for an occasional temporary conductivity caused by condensation.
*2. Does not apply to specially ordered or modified products.
*3. Only for models with CE mark/UKCA mark on their body.
*4. This product is a Class A instrument. This product is intended for use in an industrial environment. This product may cause interference if used in residential areas. Such use must be avoided unless the user takes special measures to reduce electromagnetic emissions to prevent interference to the reception of radio and television broadcasts.
*5. This product is a Group 1 instrument. This product does not generate and/or use intentionally radio-frequency energy, in the form of electromagnetic radiation, inductive and/or capacitive coupling, for the treatment of material or inspection/analysis purpose.
*6. This product is a Class I instrument. Be sure to ground this product's protective conductor terminal. The safety of this product is guaranteed only when the product is properly grounded.

KIKUSUI

KIKUSUI ELECTRONICS CORPORATION
1-1-3, Higashiyamata, Tsuzuki-ku, Yokohama, Kanagawa, 224-0023, Japan
Phone:(+81)45-593-0200, Facsimile:(+81)45-593-7591, https://global.kikusui.co.jp/

KIKUSUI AMERICA, INC. https://kikusuiamerica.com/
3625 Del Amo Blvd., Suite 160 Torrance, CA90503
Phone: +1(310)214-0000, Facsimile: +1(310)214-0014, E-mail: kikusui@kikusuiamerica.com

KIKUSUI TRADING(SHANGHAI)Co., Ltd. http://www.kikusui.cn
Room 305, Shenggao Building, No.137, Xianxia Road, Shanghai City, China
Phone: +86-(0)21-5887-9067, Facsimile: +86-(0)21-5887-9069, E-mail: sales@kikusui.cn

KIKUSUI ELECTRONICS EUROPE GmbH https://kikusui-europe.com
Grossenbaumer Weg 8, 40472 Duesseldorf, Germany
Phone: +49(211)54257600, E-mail: support@kikusui-europe.com

KIKUSUI ELECTRONICS INDIA PRIVATE LIMITED
200-10 17th Cross Rd, Govindaraja Nagar Ward, MC Layout, Vijayanagar, Bengaluru, Karnataka 560040
Phone: +91 8023156713, Whatsapp: +91 9880028259, E-mail: kikusui-india.sales@kikusui-india.com

For our local sales distributors and representatives, please refer to "sales network" of our website.

● Distributor:

TELONIC
TEST INSTRUMENTS & POWER SUPPLIES
ESTABLISHED OVER 50 YEARS SINCE 1966
01189 786911 TELONIC.CO.UK

■ All products contained in this catalogue are equipment and devices that are premised on use under the supervision of qualified personnel, and are not designed or produced for home-use or use by general consumers. ■ Specifications, design and so forth are subject to change without prior notice to improve the quality. ■ Product names and prices are subject to change and production may be discontinued when necessary. ■ Product names, company names and brand names contained in this catalogue represent the respective registered trade name or trade mark. ■ Colors, textures and so forth of photographs shown in this catalogue may differ from actual products due to a limited fidelity in printing. ■ Although every effort has been made to provide the information as accurate as possible for this catalogue, certain details have unavoidably been omitted due to limitations in space. ■ If you find any misprints or errors in this catalogue, it would be appreciated if you would inform us. ■ Please contact our distributors to confirm specifications, price, accessories or anything that may be unclear when placing an order or concluding a purchasing agreement.

Printed in Japan
Issue: Sep. 2026 202609PDFEC11