733 Series

Provides Safety Levels Demanded in Field Work

Model

73301
73302
73303

3.5 digits | 4000 count | RMS (73303) | Terminal shutters | 0.2% (73302/03,DCV) | 0.3% (73301,DCV)

3-year Warranty

CE

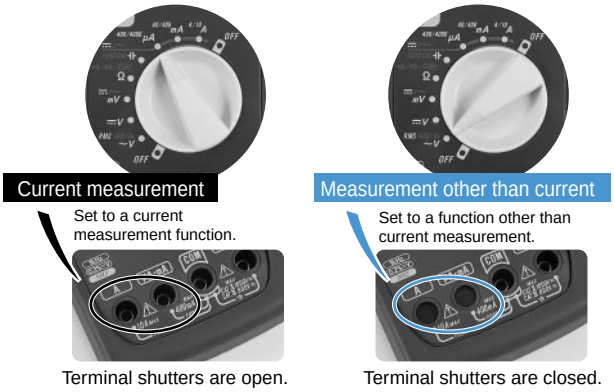
RMS and Mean Value Measurement Models Available

0.2% rdg + 1 dgt (73302/03, for DC voltage)
0.3% rdg + 1 dgt (73301, for DC voltage)
AC RMS value measurement (73303)

Increased Safety for Use in the Field Safe Design Prevents Human Error

Terminal shutters prevent erroneous insertion of test leads into current measurement terminals

If the function is switched to voltage measurement while a test lead is left inserted into a current measurement terminal, neither the fuse built into the current measurement circuit of the DMM nor the input protection circuit for voltage measurement can protect the circuits. The terminal shutters prevent the rotary switch from being moved from the current measurement function while a test lead is inserted into a current measurement terminal, thus preventing erroneous settings due to human error and ensuring the safety of the user. The terminal shutters open and close with operation of the function select (rotary) switch, so operation efficiency is not sacrificed.



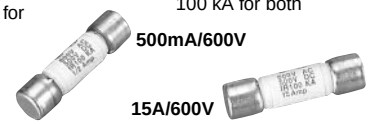
Terminal shutters are open.

Terminal shutters are closed.

Employs high-performance fuses rated at 100 kA

Uses withstand current fuses with an arc extinguishing material for an assured prearcing time-current characteristic in the event of an excessive current.

Rated breaking current: 100 kA for both



Conforms to EN61010-10 Safety Standard

Conforms to overvoltage category AC/DC 1000 V, CAT II, and AC/DC 600 V CATIII.

Elastomer material used for impact absorption

An elastomer material that provides better grip and impact resistance than conventional ABS resin or polycarbonate is used for the casing of the meter thus improving both safety and ease of use.

To highlight the elastomer construction it is colored in this photograph.

Satisfying Performance with Concentrated Functionality

AC voltage measurement method selectable between RMS value and mean value measurement (73303)

You can compare the waveform of the measured AC voltage with a sine wave to check for distortion. If the measured RMS value is not equal to the measured mean value, you can conclude that the waveform deviates from the sine wave.

Relative and percentage value computation

Displays the measured values as relative values with respect to a reference measurement or as the percentages with respect to the reference measurement.

Sets currently measured value as reference value.

Displays only the differential (the voltage has decreased to 90 V).

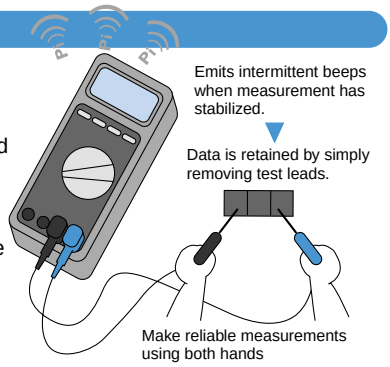
Displays the change as a percentage (%).

Zero calibration for stray capacitance when checking capacitors (73302/03)

The stray capacitance of the instrument can be zeroed by using this function with the test leads open (only when the 10 nF range is selected).

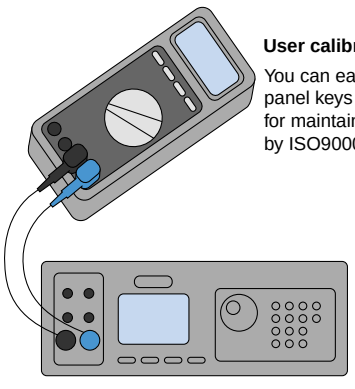
Auto hold function

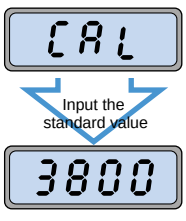
Just removing the test leads from the measured object retains the measured value. Because the measurement is held, there is no need to operate the hold switch for each measurement, freeing both hands for performing safe and accurate measurements with the test leads.



User calibration

You can easily perform calibration and adjustment using the panel keys on the multimeter and standard instrument—optimal for maintaining accuracy of measurement instruments required by ISO9000 international standards for quality systems.





The calibration mode is enabled by powering up the multimeter using special procedures.

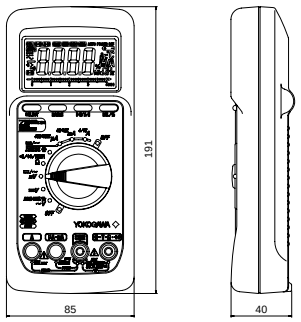
Adjustment is performed with a single key operation.

General Specifications of 73301 / 02 / 03

Additional Functions	Relative and percentage value computation, data / auto hold, overvoltage warning
Display	Digital display: 4,000-count digital reading; 40-segment bar graph
Measuring Rate	Digital display: 2.3 times/sec Bar graph display: 23 times/sec
Operating Temp. and Humidity	-10˚C to 50˚C; 80% RH or less at -10˚C to 40˚C, or 70% RH or less at 40˚C to 50˚C (no condensation)
Storage Temp. and Humidity	-20˚C to 60˚C, 70 RH or less (no condensation)
Temperature Coefficient	Add the accuracy (0.1/˚C to the basic accuracy at a temperature within -10˚C to 18˚C and 28˚C to 50˚C
Withstanding Voltage	5.55 kV AC for 1 minute (between input terminals and casing)
Power Supply	Two AA (R6) dry cells
Battery Life	73301: Approx. 1000 hours (for continuous DC voltage measurement with alkaline cells) 73302/03: Approx. 350 hours
Auto Power Off	The power is automatically turned off when no operation is made for approx. 20 minutes (can be disabled).
Dimensions	85 (W) x 191 (H) x 40 (D) mm
Weight	Approximately 450 g (including batteries)
Compliance with Standards	Safety EN61010-1 (1995); EN61010-2-031 (1995) (AC/DC 1000 V, CAT II; AC/DC 600 V, CAT III) EMC EMI: EN55011 (1998); EN61326-1 (1998) + A1(Class B, Group 1) EMS: EN50082-1 (1997); EN61326-1 (1998) + A1
Standard Accessories	Instruction manual:1, Test lead set (RD031):1, AA (R6) dry cells(built in):2

Optional Accessories

Name	Model	Specification
Fuse	A1518EF	500 mA/600 V
	A1519EF	15 A/600 V
Test leads	RD031	Red / black (1 set)
Thermistor probe	234901	-50˚C to 150˚C
Carrying case (hard)	B9646HH	Houses the DMM and test leads



Performance

Test conditions: Temperature and humidity = 23˚C ± 5˚C, 80% RH or less;Accuracy = ±(% rdg + dgt).
Note: A response time is the time required for achieving the accuracy specified for the corresponding range.

• DC Voltage Measurement (⎓ V)

Range	Accuracy 73301	Accuracy 73302/03	Input Resistance	Maximum Input Voltage
400.0 mV fixed	0.3% + 1	0.2% + 1	10 MΩ	1000 Vrms AC, 1000 V DC
4.000 V			11 MΩ	
40.00 V			10 MΩ	
400.0 V				
1000 V				

Response time: 1 second or less

• AC Voltage Measurement (~V)

Model 73301 — Mean-value detection and RMS-value calibration

Range	Accuracy 50/60 Hz	50 – 500 Hz	500 Hz – 1 kHz	Input Impedance	Maximum Input Voltage
400.0 mV fixed	0.5% + 2	1% + 2	1.5% + 4	10 MΩ, <50 pF	1000 Vrms AC, 1000 V DC
4.000 V				11 MΩ, <50 pF	
40.00 V				10 MΩ, <50 pF	
400.0 V					
1000 V			——		

Response time: 2 seconds or less

Model 73302 — Mean-value detection and RMS-value calibration

Range	Accuracy 50/60 Hz	50 – 500 Hz	500 Hz – 1 kHz	Input Impedance	Maximum Input Voltage
400.0 mV fixed	0.5% + 2	0.75% + 2	1.5% + 4	10 MΩ, <50 pF	1000 Vrms AC, 1000 V DC
4.000 V				11 MΩ, <50 pF	
40.00 V				10 MΩ, <50 pF	
400.0 V					
1000 V			——		

Response time: 2 seconds or less

Model 73303 — RMS detection, and mean-value detection and RMS-value calibration(except 400 mV range)

Range	Accuracy 50/60 Hz	50 – 500 Hz	500 Hz – 1 kHz	Input Impedance	Maximum Input Voltage
400.0 mV fixed	0.5% + 5 *1	1% + 5 *1	1.5% + 5 *1	10 MΩ, <50 pF	1000 Vrms AC, 1000 V DC
4.000 V				11 MΩ, <50 pF	
40.00 V				10 MΩ, <50 pF	
400.0 V					
1000 V			——		

Response time: 2 seconds or less; crest factor: <3
*1: 5 to 100% of F.S., or 200 to 1000 V for 1000 V range:

• DC Current Measurement (⎓ A)

Range	Accuracy 73301	Accuracy 73302/03	Voltage Drop	Maximum Input Current
400.0 µA	1% + 2	0.5% + 2	<0.11 mV/µA	400 mA (500 mA/600 V fuse-protected)
4000 µA				
40.00 mA			<2.5 mV/mA	
400.0 mA				
4.000 A	1.2% + 2		<0.1 V/A	10 A (15 A/600 V fuse-protected)
10.00 A				

Response time: 1 second or less

• AC Current Measurement (~A)

Model 73301 — Mean-value detection and RMS calibration

Range	Accuracy 50/60 Hz	Accuracy 40 Hz – 1 kHz	Voltage Drop	Maximum Input Current
400.0 µA	1% + 5	1.5% + 5	<0.11 mV/µA	400 mA (500 mA/600 V fuse-protected)
4000 µA				
40.00 mA			<2.5 mV/mA	
400.0 mA				
4.000 A	1.2% + 5		<0.1 V/A	10 A (15 A/600 V fuse-protected)
10.00 A				

Response time: 2 seconds or less

• AC Current Measurement (~AC)

Models 73302/03 — RMS-value detection (73303 only), and mean-value detection and RMS calibration

Range	Accuracy 50/60 Hz	Accuracy 40 Hz – 1 kHz	Voltage Drop	Maximum Input Current
400.0 µA	0.75% + 5 *1	1.5% + 5 *1	<0.11 mV/µA	400 mA (500 mA/600 V fuse-protected)
4000 µA				
40.00 mA			<2.5 mV/mA	
400.0 mA				
4.000 A	1% + 5 *1		<0.1 V/A	10 A (15 A/600 V fuse-protected)
10.00 A				

Response time: 3 sec or less; crest factor: <3 (73303 only)
*1: 5 to 100% of F.S., 2 – 10 A for 10 A range (73303 only)

• Resistance Measurement (Ω)

Range	Accuracy 73301	Accuracy 73302/03	Maximum Testing Current	Open-circuit Voltage	Input Protection Voltage
400.0 Ω	0.5% + 1*	0.4% + 1*	<1.4 mA	<2.5 V	600 Vrms
4.000 kΩ			<120 µA	<1.3 V	
40.00 kΩ			<13 µA		
400.0 kΩ			<1.3 µA		
4.000 MΩ		0.5% + 1	<130 nA		
40.00 MΩ	1% + 2				

Response time: 2 seconds or less for 400 Ω range, 10 seconds or less for 4 MΩ range or greater
*: Accuracy after zero calibration for 400 Ω range

• Continuity Check (•))

Range	Continuity Beeper	Maximum Testing Current	Open-circuit Voltage	Input Protection Voltage
400.0 Ω	Buzzer sounds at 20 Ω or less.	0.8 mA	<3.4 V	600 Vrms

• Diode Test (⊣◂)

Range	Accuracy	Testing Current (Vf = 0.6 V)	Open-circuit Voltage	Input Protection Voltage
2.000 V	1% + 2	Approximately 0.5 mA	<3.4 V	600 Vrms

• Temperature Measurement (TEMP)

Range	Accuracy	Input Protection Voltage
-50.0˚C to 150.0˚C	0˚C to 70.0˚C: ± 1˚C -30.0˚C to 0˚C or 70.0˚C to 150.0˚C: ± 2˚C	600 Vrms

Accuracy when used in combination with optional thermistor probe (234901)

• Capacitor Check (⊣⊢)

Models 73302/03 (function not available with 73301)

Range	Accuracy	Input Protection Voltage
10.00 nF	2% + 10 (after zero calibration)	600 Vrms
100.0 nF	2% + 5	
1000 nF		
10.00 µF		
100.0 µF	3% + 5	
1000 µF		

• Frequency Measurement (Hz)

Models 73302/03 (function not available with 73301)

Range	Accuracy 73302/03	Input Voltage Range	Maximum Input Voltage
10.00 – 99.99 Hz	0.02% + 1	0.2 – 400 Vrms	600 Vrms
90.0 – 999.9 Hz			
900 – 9999 Hz		0.4 – 400 Vrms	
9.00 – 99.99 kHz		0.8 – 100 Vrms	100 Vrms

Coupling type: AC coupling