

# Fast and Accurate 2.8ms measurement time

## Digital Resistance Meter

# 7556



- High-speed measurement (2.8ms)
- Highly accurate  $\pm(0.006\%$  of reading + 3digits)
- High resolution (5.5digits)
- Wide range (1 $\Omega$  range to 100M $\Omega$  range)
- Advanced contact check function
- Superior noise resistance

# Production Line High-Speed Resistance Meter for Greater Precision in Resistor Devices

Mobile computers, cellular phones and consumer electronics products are being made in smaller and smaller sizes and with more advanced features. The resistor devices used in these products also need to be smaller and more precise, while pricing is becoming more of an issue. At the same time, ISO9000 and other standards

have made the maintenance of measurement instruments more important, and the globalization trend is leading companies to move more of their device production facilities offshore. The 7556 Series of digital resistance meter was developed in light of these issues to meet the new requirements for resistor device production lines.

## 7556 SERIES



### Superior Performance

- High-speed measurement (2.8ms)  
(4.8ms when a contact check is performed prior to measurement)
- Higher accuracy in high-end model
  - 755611: (0.006% of reading + 3digits)
  - 755601: (0.015% of reading + 1digit)
- High resolution (5.5 digits in model 755611)

### Practical Functions

- Wide range (1Ω range to 100MΩ range)
- Fully remote control through serial (RS-232) or GP-IB interface
- Software-based calibration function
- Printer output of measurement results and statistics

### High Reliability

- Advanced contact check function
  - Check level and contact check time settings
  - Check time sufficient to ensure reliability
  - Monitoring of measured current even when measurement is in progress
- Superior noise resistance based on floating input

# Specifications

## Range and Resolution

### ● Deviation Display

· Percent Limit : 9.99 Mode

Input reference value range	Selected range	Reading range (Deviational value)	
		755601	755611
0.0001Ω to 1.0009Ω	1Ω	-99.99% to 19.99%	-99.999% to 19.999%
1.001Ω to 10.009Ω	10Ω		
10.01Ω to 100.09Ω	100Ω		
0.1001kΩ to 1.0009kΩ	1kΩ		
1.001kΩ to 10.009kΩ	10kΩ		
10.01kΩ to 100.09kΩ	100kΩ		
0.1001MΩ to 1.0009MΩ	1MΩ		
1.001MΩ to 10.009MΩ	10MΩ		
10.01MΩ to 120.00MΩ	100MΩ		

· Percent Limit : 99.9 Mode

Input reference value range	Selected range	Reading range (Deviational value)	
		755601	755611
0.001Ω to 1.009Ω	10Ω	-99.9% to 19.9%	-99.99% to 19.99%
1.01Ω to 10.09Ω	100Ω		
10.01Ω to 100.9Ω	1kΩ		
0.101kΩ to 1.009kΩ	10kΩ		
1.01kΩ to 10.09kΩ	100kΩ		
10.1kΩ to 100.9kΩ	1MΩ		
0.101MΩ to 1.009MΩ	10MΩ		
1.01MΩ to 120.0MΩ	100MΩ		

- \* Auto-ranging based on reference input.
- \* "-oL-" is displayed if the display range is exceeded.
- \* "-oL-" is displayed if 120% of the range is exceeded.
- \* Resolution: 0.01% on 755601, 0.001% on 755611

### ● Absolute Value Display

Range	Maximum display		Resolution	
	755601	755611	755601	755611
1Ω	1,2000	1,20000	100μΩ	10μΩ
10Ω	12,000	12,0000	1mΩ	100μΩ
100Ω	120,00	120,000	10mΩ	1mΩ
1kΩ	1,2000	1,20000	100mΩ	10mΩ
10kΩ	12,000	12,0000	1Ω	100mΩ
100kΩ	120,00	120,000	10Ω	1Ω
1MΩ	1,2000	1,20000	100Ω	10Ω
10MΩ	12,000	12,0000	1kΩ	100Ω
100MΩ	120,00	120,000	10kΩ	1kΩ

\* Displayed digits: 4.5 on 755601, 5.5 on 755611

## Range and Measured Current

Range	Measured current
1Ω	100mA
10Ω	100mA
100Ω	10mA
1kΩ	1mA
10kΩ	100μA
100kΩ	50μA
1MΩ	5μA
10MΩ	500nA
100MΩ	50nA

## Accuracy

### ● 755601 (one year after calibration, at 23 ± 5°C)

Range	Measurement mode		
	Normal	Fast	High Speed
1Ω	0.02 +2	0.02 +3	0.02 +5
10Ω	0.02 +1	0.02 +2	0.02 +4
100Ω	0.02 +1	0.02 +2	0.02 +4
1kΩ	0.015+1	0.015+2	0.015+4
10kΩ	0.015+1	0.015+2	0.015+4
100kΩ	0.015+1	0.015+2	0.015+4
1MΩ	0.02 +1	0.1 +2	0.1 +4
10MΩ	0.04 +1	0.3 +2	0.3 +4
100MΩ	0.2 +2	—	—

- \* The above accuracy figures are for ±9.99% mode (multiply by 10 for the values in ±99.9% mode).
- \* ± (% of reading + digits)
- \* At 5 to 18°C and 28 to 40°C, the following addition is made: temperature coefficient ± (1/10% of measurement accuracy)/°C

### ● 755611 (90 days after calibration, at 23 ± 5°C)

Range	Measurement mode		
	Normal	Fast	High Speed
1Ω	0.012 +10	0.012 +20	0.012 +30
10Ω	0.01 +3	0.01 +10	0.01 +20
100Ω	0.008 +3	0.008 +10	0.008 +20
1kΩ	0.006 +3	0.006 +10	0.006 +20
10kΩ	0.006 +3	0.006 +10	0.006 +20
100kΩ	0.006 +3	0.006 +10	0.006 +20
1MΩ	0.01 +4	0.01 +20	0.01 +40
10MΩ	0.03 +10	0.3 +20	0.3 +40
100MΩ	0.2 +20	—	—

### ● 755611 (1 year after calibration, at 23 ± 5°C)

Range	Measurement mode		
	Normal	Fast	High Speed
1Ω	0.015 +10	0.015 +20	0.015 +30
10Ω	0.012 +3	0.012 +10	0.012 +20
100Ω	0.011 +3	0.011 +10	0.011 +20
1kΩ	0.009 +3	0.009 +10	0.009 +20
10kΩ	0.009 +3	0.009 +10	0.009 +20
100kΩ	0.009 +3	0.009 +10	0.009 +20
1MΩ	0.015 +4	0.015 +20	0.015 +40
10MΩ	0.04 +10	0.3 +20	0.3 +40
100MΩ	0.2 +20	—	—

- \* The above accuracy figures are for ±9.999% mode (multiply by 10 for the values in ±99.99% mode).
- \* ± (% of reading + digits), 1 digit = 0.001%
- \* At 5 to 18°C and 28 to 40°C, the following addition is made: temperature coefficient ± (1/10% of measurement accuracy)/°C

## Trigger

### ● Trigger Delay (for EXTERNAL and MANUAL trigger modes)

Setting range	Resolution
0 to 1000ms	0.1ms

### Measurement Time (for EXTERNAL trigger mode)

Mode	Measurement time	
Normal	60Hz	19.9ms
	50Hz	23.2ms
Fast	5.7ms	
High Speed	2.8ms	

- \* Measurement time: From trigger input to fall of EOM
- \* Add 2 ms when contact check is used prior to measurement.
- \* Add 1 ms when contact check is used after measurement.
- \* Add 4 ms for a 10 MΩ range.
- \* Add 50 ms for a 100 MΩ range.

## Contact Check Function

Check level	Setting range	Resolution
1	1 to 30Ω	1Ω

- \* Execute checks before or after a measurement (selectable).
- \* Check current : 50 mA
- \* Display when contact check error is detected : "-nC-"  
Judgment : HI
- \* Display when measured current abnormality is detected : "-CF-"  
Judgment : HI
- Handler interface : NO CONTACT, HI output

## Comparator Function

### ● Setting Range (755601)

Parameter	Deviation setting range		Absolute value setting range
	±9.99% mode	±99.9% mode	
Hi	-9.99% to 9.99%	-99.9% to 99.9%	0.000Ω to 1.200Ω
Lo	-9.99% to 9.99%	-99.9% to 99.9%	0.000Ω to 1.200Ω

### ● Setting Range (755611)

Parameter	Deviation setting range		Absolute value setting range
	±9.999% mode	±99.99% mode	
Hi	-9.999% to 9.999%	-99.99% to 99.99%	0.0000Ω to 1.2000Ω
Lo	-9.999% to 9.999%	-99.99% to 99.99%	0.0000Ω to 1.2000Ω

## Data Memory

\* Number of stored entries: Maximum 2000 data entries

### Handler Interface (optically isolated open collector signal)

Signal name	Active state	Load
EXT TRIG	In	Rising or falling edge
HOLD	In	L
INDEX	Out	L
EOM	Out	L
NO CONTACT	Out	L
HI	Out	L
IN	Out	L
LOW	Out	L
+12V	Out	50mA
COM	—	—

\* Voltage between individual signals and case : Maximum 42 Vpeak  
 \* EOM pulse width selection : 0.1 ms, 5 ms, 10 ms, 15 ms

### Communication Interfaces

- Serial (RS-232) (standard)
- GP-IB (optional)

### Centronics Interface (optional)

#### ●Output

Stored data	Maximum 2000 entries
Panel settings	Reference value, HI limit, LO limit
Comparator results	HI, IN, and LO counts
Contact check error	Contact check error (including detection of measured current abnormality)
Statistics	Number of valid samples, number of invalid samples : Counts for -oL-, -nC- and -CF- Maximum, minimum, range (maximum to minimum), average, standard deviation $\sigma$ , $3\sigma$ (6 valid digits or 6 digits below decimal point)

### General Specifications

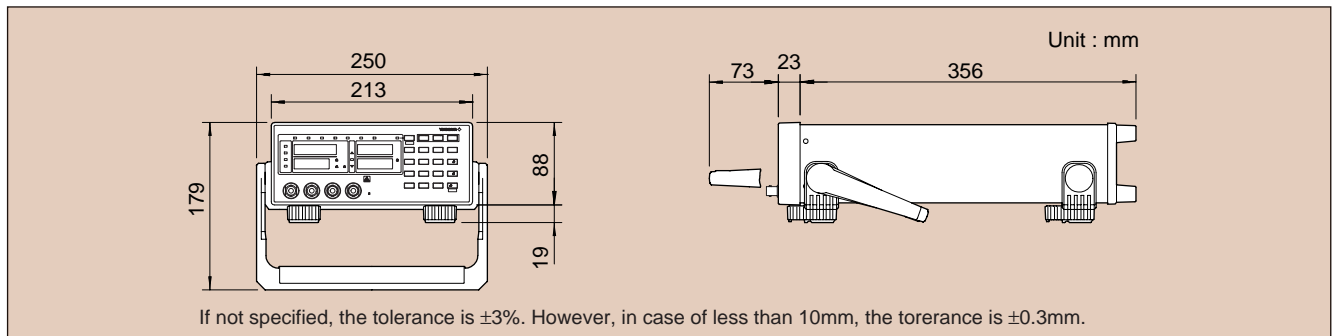
Display	7-segment LED
Maximum terminal input	42 Vpeak (between individual measurement terminals and case)
Operating temperature range	5 to 40°C
Operating humidity range	20 to 80% RH
Storage temperature range	-25 to 60°C
Consumed power	25 VA or less
Warmup time	30 minutes minimum

### Models and Suffix Codes

#### Main Unit

Model	Suffix code	Description
755601	.....	Digital resistance meter
755611	.....	Digital resistance meter (Highly accurate)
Supply voltage	-1	100 V AC, 50/60 Hz
	-4	120 V AC, 50/60 Hz
	-6	220 V AC, 50/60 Hz
	-8	240 V AC, 50/60 Hz
Power cord	-D	UL/CSA standard
	-F	VDE standard
	-R	SAA standard
	-Q	BS standard
Optional Features	/C1	GP-IB interface
	/C2	Centronics interface
	/C3	GP-IB + Centronics interface

### Exterior



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