



# **DIGITAL MULTIMETERS** KEW 1051/1052/1061/1062

# The Best of Reliable Multimeters with Terminal Safety Shutters

Versatile Multimeters

For Electrical and Electronic **Troubleshooting** 

KEW 1051/1052

**Top Class Multimeters** For Laboratory and **Industrial Use** 

**KEW 1061/1062** 









# High Accuracy, High Performance and **Reliable Measurements**

### Top Accuracy

- · 0.02% basic DC accuracy for KEW 1061/1062.
- · 0.09% basic DC accuracy for KEW 1051/1052.

#### Dual Display

- · KEW 1061/1062: 50,000 counts, Bar graph with 51 segments. White back light display.
- ·KEW 1051/1052: 6,000 counts, Bar graph with 31 segments. Orange back light display.

## Wide AC Frequency Bandwidth \*\*only for 1061, 1062

- · KEW 1062: ACV frequency bandwidth from 10Hz to 100kHz.
- · KEW 1061: ACV frequency bandwidth from 10Hz to 20kHz.

# **Advanced Functions**

#### User calibration function

- · Calibration and adjustment are possible by simple operation of DMM keys.
- · New technology enables the adjustment for the frequency bandwidth characteristic. \*\*only for 1061, 1062 A calibrator is necessary for calibration.

#### Low-pass Filter \*\*except for 1061

- · AC measurement can be limited to low frequency, helping for instance voltage measurements in the presence of variable speed motor drivers or inverters.
- · The Low-pass filter can be switched ON/OFF.

#### LowPower-Ω measurement \*\*only for 1062

· This function uses a test voltage which is lower than 0.7V (that is the typical junction voltage drop of semiconductors) thus it allows testing of resistors on a circuit board without unsoldering them.

#### Selection of the reading mode \*\*only for 1052, 1062

· Selectable TRMS or MEAN measurement. The presence of distortion in an AC signal can be confirmed, if the measured TRMS and MEAN values are different.

#### Sensor mode \*\*only for 1051, 1052

· The DMM measures the output voltage of an external sensor (e.g. clamp sensor, light sensor, temperature sensor, etc.) in the secondary display, while the primary display can be set to show the unit of the measured parameter (e.g. A, mA, Lux, °C) according to the conversion ratio chosen.

#### Peak Hold function \*\*only for 1062

- · Response time: 250µs
- · The instantaneous peak values can be easily captured where normally it is impossible by MIN/MAX/AVG function.

#### Auto Hold function

- · The measured value is held on the display just by removing the test leads from the circuit under test. Users can remain safely concentrated on the measuring point without the need to press the Hold key.
- Relative and Percentage calculation

#### TRMS Measurement

· Ensures accurate readings, avoiding errors (of up to 50%) which can occur when non-sinusoidal waveforms, created by common non linear loads such PCs, Inverters, switch-mode power supplies, etc, are measured

#### DC+AC TRMS Measurement \*\*only for 1061, 1062

- · Accurate AC TRMS measurements also in the presence of superimposed DC component.
- · AC and DC values are displayed simultaneously via dual display.







#### Minimum / Maximum / Average function \*\*except for 1051

- · Can record the MIN/MAX/AVG values during the measurement process displaying the data and the elapsed time.
- \*The average value is shown by dividing the integrated record data by the number of recording time.

#### Duty cycle ratio measurement \*\*only for 1061, 1062

- · The duty cycle ratio is displayed in percentage (%).
- Decibel dBV, dBm calculation \*\*only for 1061, 1062

# Safe and Durable Design. Wide Operating Temperature.

- ■Complies with IEC 61010-1, CAT.IV 600V, CAT.II 1000V
- ■Safety shutters to prevent incorrect test leads' insertion in current terminals
  - ·Terminal shutters are opening or closing being linked with the rotation of the function switch.

## **Operation of the Safety Shutters**

Safety shutters are open or closed when the appropriate function is selected because they are linked with the rotation of the function switch



If the DMM has the function switch in position 1 (V,  $\Omega$ , TEMP, etc) the safety shutters close the input terminals for the current measurements (µA, mA, A) and then the test leads cannot be plugged-in.

If the DMM has the function switch in position 2 (current measurements) then the safety shutters automatically open making it possible to plug-in the test leads in the input terminals for the current measurements (µA, mA, A).

#### ■Very wide operating temperature range

- · From -20°C to +55°C for KEW 1061/1062
- · From -10°C to +55°C for KEW 1051/1052

## High specs UL standard fuses for extra safety

· Fuses rated at 1000V with 30kA of breaking capacity.

#### Over molding case

· Made by "Elastomer", a superior shock sustainable material. Perfectly fits to hand.

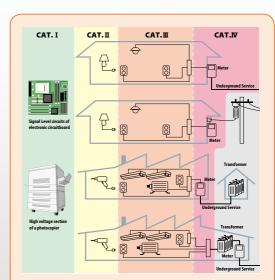
# Reliable support for data management \*\*except for 1051

#### Large internal memory to store test data

- ·KEW1062: 10,000 data in Logging mode, 100 data manually saved.
- · KEW1061: 1,000 data in Logging mode, 100 data manually saved.
- ·KEW1052: 1,600 data in Logging mode, 100 data manually saved.
- · Logging interval can set from 1 sec. to 30 min.

#### Test data can be transferred to a PC or directly to a Printer\*

- ·Real-time data can be transferred and shown on a PC.
- ·Real-time transferring permits the saving of a considerable amount of data on a PC.
- ·Stored data of internal memory can be monitored by PC.
- Data management with the software DMM Application\*



To protect us against overvoltage spikes, we must use instruments that meet the requirements for high protection standards

The IEC (International Electrotechnical Commission) has prepared an International and European safety standard named IEC 61010-1 with the aim of defining the safety requirements for measuring instruments.

In particular IEC 61010-1 standard defines also the safety Measurement areas called Categories, shortly indicated with the abbreviation "CAT"

These Categories start from CAT. If to CAT. IV and the most dangerous one is the CAT. IV. The figure above shows some area examples of Measurement Categories.

Measurement category	Description	Examples
CAT. I	For measurements performed on circuits not directly connected to MAINS.	Signal level circuits of electronic PCBs, etc.
CAT.II	For measurements performed on circuits directly connected to the low voltage installation.	Appliances, portable equipment, ect.
CAT.Ⅲ	For measurements performed in the building installation.	Distribution board, circuit breaker, ect.
CAT.IV	For measurements performed all the source of the low-voltage installation.	Overhead wire, cable systems, ect.

#### Printer output

0000 N+12.539 VDC L0001 N+12.532 VDC L0002 N+12.532 VDC L0003 N+12.539 VDC L0004 N+12.539 VDC L0005 N+12.538 VDC L0006 N+12.534 VDC L0007 N+12.546 VDC L0008 N+12.557 VDC L0009 N+12.555 VDC L0010 N+12.555 VDC L0011 N+12.555 VDC L0012 N+12.554 VDC L0014 N+12.555 VDC

#### Printed items (from the left)

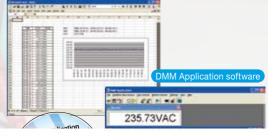
·L: Logging memory ·4 digit numbers: Data numbe ·N: Normal measurement

(O: at "OL" display)
(B: at "Battery warning" display)

5 digit numbers: Measurement

VDC: Unit (VDC is DC Voltage)

#### Data analysis with Excel

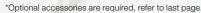


1.888.610.7664

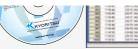


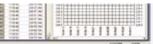
www.calcert.com

sales@calcert.com



<sup>\*\*</sup>Excel is a registered trademark of Microsoft in the USA.





#### Versatile Digital Multimeters KEW 1051/1052

#### General Specifications

Measurement function: DC Voltage, AC Voltage, DC Current, AC Current, Resistance, Frequency,

Temperature, Capacitor, Continuity Check, Diode Test

Effective value (root mean square value) detection (RMS) and mean value detection (MEAN) can be switched during AC voltage measurement (KEW1052 only). The low-pass filter can be switched on/off during AC voltage or AC current measure-

Data Hold (D•H), Auto Hold (A•H), Range Hold (R•H), Maximum value\* (MAX),

Minimum value\* (MIN), Average value\* (AVG), Zero Adjustment (Capacitor, Resistance), Relative values, Save to Memory\*, Auto Power Off (Approx. 20 minutes), LCD

backlight. \*: For model KEW1052 only

Display: 4-digit (LCD)......7-segment Main-display......6000 counts

Sub-display......6000 counts

Bar graph indicator......31-segment
Polarity Indicator......"-" Appears automatically when the polarity is negative.
Overrange Indicator..... " OL "

Low-battery Indicator...." - Appears when the batteries become low.

Measurement cycle: 5 times per second (except frequency measurement : one time per second, Resistance measurement (6M $\Omega$ /60M $\Omega$ ) : 2.5 times per second, capacitor med

ment (1000µF): max.0.14 time per second)

Bar graph display approx 25 times per second (at AC,  $\Omega$ )

Operating temperature and humidity ranges:
-10 to 55°C, 80%RH or less (no condensation) 70%RH or less at 40 to 55°C.

Storage temperature and humidity ranges: -30 to 70°C, 70%RH or less (no condensation)

Temperature coefficient: (Accuracy at 23±5°C× 0.1)/°C should be added.

(Temperature ranges: -10 to 18°C and 28 to 55°C)

AA-size (R6/LR6) 1.5V batteries: 4 Power supply:

Battery life: Approximately 300 hours (Operating hours of alkaline batteries when in DC voltage-mode.) Note: The battery life varies depending on the operating conditions.

Withstand voltage: 6.88kVrms AC for five seconds (across input terminals and casing)

Approx. 192(L)×90(W)×49(D)mm Approx. 560g (including batteries) Dimensions: Weight:

Applicable standards: IEC61010-1 CAT.IV 600V, CAT.III 1000V Pollution degree 2, IEC61010-031, IEC61326-1

Accessories included: Batteries : 4, Test leads: 1set (7220), Fuse (included): 440mA/1000V (8926), 10A/1000V (8927), Instruction manual: 1, Calibration Certificate

#### Specifications

Test conditions: Temperature and humidity: 23±5°C at 80%RH or less Accuracy: ± (% of reading + digits) Note: Each response time is a value to rated accuracy within selected range.

#### DC Voltage Measurement (...V)

Range	Accuracy	Input Impedance	Overload Protection
600.0mV		10ΜΩ	
6.000V	0.09+2	11ΜΩ	1000V DC
60.00V	0.09+2		1000V DC 1000V rms AC
600.0V		10ΜΩ	1000V rms AC
1000V	0.15+2		

NMRR: 60dB or more 50/60Hz  $\pm$  0.1% CMRR: 120dB or more 50/60Hz (Rs=1k $\Omega$ )

#### AC Voltage Measurement(~V) AC Coupling: RMS value detection, sine wave MEAN value detection and RMS value calibration (KEW1052 only)

Range		Accuracy		Input Impedance	Overload Protection
Kunge	50/60Hz 40~500Hz 500Hz~1kHz importingedan		input impedance	Overload Projection	
600.0mV				10MΩ<200pF	
6.000V			1.5+5	11MΩ<50pF	1000V rms AC
60.00V	0.5+5	1+5	1.5+5		1000V IIIIs AC
600.0V				10MΩ<50pF	10000 DC
1000V			_	·	

Accuracy: At 5 to 100% of range and 1000V range is 200 to 1000V. less than 1500V peak For non-sinusoidal waveforms, add  $\pm$ [2% + 2% of full scale], for Crest factor<3. CMRR: 60dB or more DC to 60Hz [Rs=1k $\Omega$ ] 4 counts or less is corrected to 0, Response time: 2 sec max.

#### $\text{Resistance Measurement}(\Omega)$

	Range	Accuracy	Maximum Measuring Current	Open Circuit Voltage	Overload Protection
60	Ω0.00		<1.2mA	<3.5V	
6.0	000kΩ	0.4+1	<110µA		
60	.00kΩ	0.4+1	<13µA		
60	0.0kΩ		<1.3µA	<1.3V	1000V rms
6.0	ΩΜ000	0.5+1		\1.34	
60	.00ΜΩ	1+2(0~40MΩ) 2+2(40~60MΩ)	<130nA		

Accuracy is specified after zero adjustment at 600  $\Omega$  to 6k  $\Omega$  (Resistance) Response time: 2 sec max. at 600  $\Omega$  to 600k  $\Omega$ , 10 sec max. at 6M to 60M  $\Omega$ 

#### Continuity Check(3)

600.0Ω Buzzer sounds at lower than 50±30Ω Approx.<1.2mA <3.5V 1000V rms	Range	Range of Operation	Measuring Current	Open Circuit Voltage	Overload Protection
	600.0Ω	Buzzer sounds at lower than 50±30Ω	Approx.<1.2mA	<3.5V	1000V rms

#### DC Current Measurement (=)(A)

Range	Accuracy	Voltage Drop	Overload Protection
600.0µA		<0.12mV/µA	
Αμ000δ	0.2+2	<0.12Ⅲ <b>1</b> /pA	440mA Protected by a
60.00mA		<3.3mV/mA	440mA/1000V fuse.
440.0mA		\3.3111V/111A	
6.000A	0.5+5	<0.11//4	10A Protected by A
10.00A		<0.1V/A	10A/1000V fuse.

Response time: 1 sec max.

#### AC Current Measurement [RMS] (~A)

#### RMS value detection, sine wave

Range	Accuracy		Voltage Drop	Overload Protection
Kunge	50/60Hz	40Hz~1kHz	vollage Diop	Overload Projection
Αμ0.006 Αμ0000			<0.12mV/µA	440mA Protected by a
60.00mA	0.75.5	0.75+5 1.5+5	<3.3mV/mA	440mA/1000V fuse.
440.0mA	0.73+3		\3.3111V/111A	
6.000A			<0.1V/A	10A Protected by A
10.00A			<0.1V/A	10A/1000V fuse.

Accuracy: At 5 to 100% of range, 10A range is 2 to 10A and 440mA range is 30 to 440mA. For non-sinusoidal waveforms, add ±(2% + 2% of full scale), for Crest factor<3. 4 counts or less is corrected to 0, Response time: 3 sec max.

#### Diode Test(+)

Range	Accuracy	Measuring Current(Vf=0.6V)	Open Circuit Voltage	Overload Protection
2.000V	1+2	Approx. 0.5mA	<3.5V	1000V rms

#### Temperature Measurement(TEMP)

Range	Accuracy	Overload Protection
-50.0~600.0℃	2+2℃	1000V rms
		1 = 14

Use optional Temperature Probe: Thermocouple Type K

#### Frequency Measurement (Hz) AC Coupling, Maximum Reading 9999

rioquoney riioauurunu	(112)	
Range	Accuracy	Input Voltage
10.00~99.99Hz		0.2~600Vrms
90.0~999.9Hz	0.02+1	0.2~600vrms
0.900~9.999kHz		0.4~600Vrms
9.00~99.99kHz		0.8~100Vrms

#### Capacitor Measurement (H-)

Range	Accuracy	Overload Protection
10.00nF	2+10	
100.0nF		
1.000µF	2+5	10001/
10.00µF		1000V rms
100.0µF	3+5	
1000uF	3+3	

Accuracy is specified after zero adjustment at 10nF to 1 $\mu$ F (Capacitance).

#### Selection Guide

Model	1051	1052	1061	1062
Display				
Detection method	RMS	RMS/MEAN	RMS	RMS/MEAN
Maximum count display	6000	6000	50000	50000
Dual display	•	•	•	•
Bar graph	31-segment	31-segment	51-segment	51-segment
Back light	Orange LED	Orange LED	White LED	White LED
Function				•
Auto hold	•	•	•	•
Peak hold	_	-	_	•
Max/Min/Ave	_	•	•	•
REL	•	•	•	•
Manual memory	_	•	•	•
Logging memory	=	•	•	•
Communication	_	•	•	•

Model	1051	1052	1061	1062	
Measurement					
DC Voltage	600.0mV~1000V	600.0mV~1000V	50.000mV~1000.0V	50.000mV~1000.0V	
AC Voltage	600.0mV~1000V	600.0mV~1000V	500.00mV~1000.0V	50.000mV~1000.0V	
DC Current	600.0μA~10.00A	600.0μA~10.00A	500.00μA~10.000A	500.00μA~10.000A	
AC Current	600.0μA~10.00A	600.0μA~10.00A	500.00μA~10.000A	500.00µA~10.000A ●	
AC+DC	_	-	•		
Resistance	600.0Ω~60.00MΩ	600.0Ω~60.00MΩ	500.00Ω~50.000MΩ	500.00Ω~50.000ΜΩ	
Frequency	10.00Hz~99.99kHz	10.00Hz~99.99kHz	2.000Hz~99.99kHz	2.000Hz~99.99kHz	
Temperature	−50.0~600.0℃	−50.0~600.0℃	−200.0∼1372.0℃	−200.0~1372.0℃	
Capacitance	10.00nF∼1000µF	10.00nF~1000μF	5.000nF~50mF	5.000nF~50mF	
Duty cycle	-	-	•	•	
Decibel calculation	_	-	•	•	
Continuity Check	•	•	•	•	
Diode Test	•	•	•	•	

1.888.610.7664



#### Top-Class Digital Multimeters KEW 1061/1062

#### General Specifications

Measurement function: DC Voltage, AC Voltage, DC Current, AC Current, Resistance, Frequency,

Temperature, Capacitor, Duty cycle ratio, Decibel (dBv, dBm), Continuity Check, Diode Test Low power-  $\Omega^*$ , Effective value (root mean square value) detection (RMS) and mean value detection (MEAN) can be switched during AC voltage or

AC current measurement (KEW1062 only).

The low-pass filter can be switched on/off during AC voltage or AC current mea-

surement (KEW1062 only).

Data Hold (D+H), Auto Hold (A+H), Peak Hold\* (P+H), Range Hold (R+H), Maxi-Other functions: mum value (MAX), Minimum value (MIN), Average value (AVG), Zero Adjustment (Capacitor, Resistance), Relative values, Save to Memory, Auto Power Off

(Approx. 20 minutes), LCD backlight. \*: For model KEW1062 only

5-digit (LCD)......7-segment Main-display......50000 counts Display

Sub-display... .....50000 counts

Sur-display..........50-segment

Polarity Indicator:....."-" Appears automatically when the polarity is negative.

Overrange Indicator....." " OL "

Low-battery Indicator...." " Tappears when the batteries become low.

Measurement cycle: 6 times per second (except frequency measurement: one time per second, Resistance measurement : four times per second, capacitor measurement (50mF): max. 0.03 time per second) Bar graph display 15 times per second Operating temperature and humidity ranges:

-20 to 55°C, 80%RH or less (no condensation), 70%RH or less at 40 to 55°C. Storage temperature and humidity ranges: -40 to 70°C, 70%RH or less (no condensation)

Temperature coefficient: (Accuracy at 23±5°C×0.05)/°C or less

(Temperature ranges: -20 to 18°C and 28 to 55°C) AA-size (R6) 1.5V batteries: 4 Power supply:

Approximately 120 hours Battery life:

(Operating hours of alkaline batteries when in DC voltage-mode.) Note: The battery life varies depending on the operating conditions. 6.88kVrms AC for five seconds (across input terminals and casing)

Dimensions: Approx. 192(L)×90(W)×49(D)mm Weight: Approx. 560g (including batteries)

Applicable standards: IEC61010-1 CAT.IV 600V, CAT.III 1000V Pollution degree 2, IEC61010-031,

IEC61326-1(EMC)

Accessories included: Batteries: 4, Test leads: 1set (7220), Fuse (included): 440mA/1000V (8926),

10A/1000V (8927), Instruction manual: 1, Calibration Certificate

#### Specifications

Test conditions: Temperature and humidity: 23±5°C at 80%RH or less Accuracy: ± (% of reading + digits) Note: Each response time is a value to rated accuracy within selected range.

#### DC Voltage Measurement (:::V)

Range Accuracy 1061,1062		Input Impedance	Overload Protection	
50.000mV	50.000mV 0.05+10			
500.00mV	0.02+2	Approx. 100MΩ		
2400.0mV	0.02+2		1000V DC	
5.0000V	0.025+5		1000V DC 1000V rms AC	
50.000V		10MO	1000V TIIIS AC	
500.00V	0.03+2	IOMII		
1000.0V	1			

NMRR: 80dB or more 50/60Hz  $\pm$ 0.1% [70dB or more 50/60Hz  $\pm$ 0.1% when 50mV Range] CMRR: 100dB or more 50/60Hz [Rs=1k $\Omega$ ] Response time: 0.3 sec. max.

#### AC Voltage Measurement [RMS](~V) AC Coupling, RMS value detection, sine wave

Range		Jpper:106					Input	Overload
Kange	10~20Hz	20Hz~1kHz	1k~10kHz	10k~20kHz	20k~50kHz	50k~100kHz	Impedance	Protection
50.000mV	-			_	-	_		
30.000mv	2+80 <sup>₩2</sup>	0.4+40**2	5+40 <sup>®2</sup>	5.5+40 <sup>®2</sup>	15+40 <sup>®2</sup>		11MΩ<50pF	
500.00mV							11M12 < 30pi	1000V rms
5.0000V	1.5+30 <sup>®1</sup>	0.7+		2+50 <sup>#2</sup>	_	-		AC AC
50.000V	1+30 <sup>®1</sup>	0.4+	30 <sup>®1</sup>	1+40**1	2+70 <sup>®2</sup>	5+200 <sup>®2</sup>		1000V DC
500.00V	]						10MΩ<50pF	10000 DC
1000.0V	<b></b> 2	<b></b> 2	3+30**2		_		10Mt2<30pi	
1000.00	<b></b> 2	<b></b> 2	3+30 <sup>®2</sup>					

**%**1: At 5 to 100% of range

\*2: At 10 to 100% of range

Crest factor <1.5V at 1000V range; Crest factor <3 at other rang: CMRR: 80dB or more DC to 60Hz (Rs=1k $\Omega$ ) Response time: 1 Response time: 1 sec max.

AC Voltage Measurement [MEAN]( $\sim$ V) %1062 only AC Coupling, RMS value detection, sine wa

ı	Range		Accuracy	In a set I am a almost a	Overload Protection		
ı	Kullge	10~20Hz	20~500Hz	500~1kHz	Input Impedance	Overload Protection	
	50.000mV	4+80 <sup>₩2</sup>	1.5+30**2	5+30 <sup>#2</sup>			
ı	500.00mV				11MΩ<50pF	1000V rms	
ı	5.0000V	2+30 <sup>®1</sup>	1+30**1	3+30**1		AC.	
ı	50.000V	2+30	1+30	3+30		1000V DC	
ı	500.00V				10MΩ<50pF	1000V DC	
ı	1000.0V	<b></b> 2	<b></b> 2	<b></b> 2	·		

\*1: At 5 to 100% of range
 \*2: At 10 to 100% of range
 CMRR: 80dB or more DC to 60Hz (Rs=1kΩ)
 Response time: 1 sec max.

#### DCV+ACV(=+~) AC Coupling, RMS value detection, sine wave

П		Accur	acy (Upper	::1001; Lov					Overload
ı	Range	DC,10~	DC,20Hz	DC,1k~	DC,10k~	DC,20k~	DC,50k~	Input Impedance	Protection
ı	_	20Hz	~1kHz	10kHz	20kHz	50kHz	100kHz		FIOIECTION
	5.0000V	1.5+10**1	1+10**1		2+10 <sup>®2</sup>	_	_	11MΩ<50pF	
	50.000V	1.5+10**1	0.5+		1+10**1	2+10 <sup>⊕2</sup>	5+20 <sup>®2</sup>		1000V rms
	500.00V	1.5+10	0.5+	-10	1+10	2+10	J+20	10MΩ<50pF	AC
ſ	1000.0V	<b></b> *2	<b></b> 2		-	-		10M117 < 30bi	1000V DC
L	1000.07	<b></b> 2	<b></b> 2						

\*1: At 5 to 100% of range

%2: At 10 to 100% of range
Crest factor <1.5V at 1000V range; Crest factor <3 at other range
CMRR: 80dB or more DC to 60Hz (Rs=1kΩ)
Response time: 2 sec max.

## Resistance Measurement $(\Omega)$

Range	Accı	ıracy	Maximum	Open Circuit	Overload	
Kulige	1061	1062	Measuring Current	Voltage	Protection	
500.00Ω			<1mA			
5.0000kΩ	0.1+2**1	0.05.0#1	0.05+2**1	<0.25mA		
50.000kΩ	0.1+2	0.05+2	<25µA	< 2.5V	1000V rms	
500.00kΩ			<2.5µA	\2.5V	1000v rms	
5.0000ΜΩ	0.5	5+2	<1.5µA			
50.000ΜΩ	1-	+2	<0.13µA			

Accuracy is specified after zero adjustment (resistance). Response time: 1 sec. max. at  $500\Omega$  to  $500k\Omega$ , 5 sec. max. at  $5M\Omega$  to  $50M\Omega$ 

LowPower- $\Omega$ (LP- $\Omega$ )	*1062 only	М	aximum Reading 5000

ĺ	Range	Accuracy	Maximum Measuring Current	Open Circuit Voltage	Overload Protection
	5.000kΩ		<10µA		
	50.00kΩ	0.2+3	<1.0µA	Z0 717	10001/

 Range
 Range of Operation
 1061,1062
 Measuring Current
 Open Circuit Voltage
 Overload Protection

 500.0Ω
 Buzzer sounds at lower than  $100\pm50\Omega$  Approx. 0.5mA
 <5V</td>
 1000V rms

Withstand voltage:

DC Correll Medsorellell () (A)									
Range	Range Accuracy 1061,1062		Overload Protection						
500.00μA		<0.11mV/µA							
5000.0μA	0.2+5	O.TIMV/PA	440mA Protected by a						
50.000mA	0.2+3	<4mV/mA	440mA/1000V fuse.						
500.00mA		4mv/mA							
5.0000A	0.6+10	<0.1V/A	10A Protected by A						
10.000A	0.6+5	\0.1V/A	10A/1000V fuse.						

Maximum measurement current: 440mA at 500mA range

Response time: 0.3 sec. max.

#### AC Current Measurement [RMS] (~A)

RMS value detection, sine wave

Range	Upper:1061;	Lower:1062; -: 1	Not Specified	Voltage Drop	Overload
Kunge	10~20Hz	20Hz~1kHz	1k∼5kHz	vollage Drop	Protection
500.00μΑ				<0.11mV/µA	
5000.0μA	1.5+20	1+20	_	<0.11mv/pA	440mA Protected by a
50.000mA	1+20	0.75+20	1+30	<4mV/mA	440mA/1000V fuse.
500.00mA				\4mv/mA	
5.0000A	1.5+20	1+20	_	<0.1V/A	10A Protected by A
10.000A	1.5+20	1+20	2+30	<0.1V/A	10A/1000V fuse.

Accuracy At 5 to 100% of range, At 10 to 100% of range for 10A Range

440mA at 500mA range Crest factor<3. Response time: 1 sec max.

#### AC Current Measurement [MEAN](~A) \*1062 only MEAN value detection, RMS value calibration

D		Accuracy			Overload
Range	10~20Hz	20~500Hz	500Hz~1kHz	Voltage Drop	Protection
500.00µA	2+20		2+30	<0.11mV/µA	
5000.0µA		1.5+20		<0.11mv/pA	440mA Protected by a
50.000mA				<4mV/mA	440mA/1000V fuse.
500.00mA <sup>®3</sup>					
5.0000A	2.00	2.20	4.20	<0.1V/A	10A Protected by A
10.000A	3+20	2+20	4+30	\\0.1V/A	10A/1000V fuse.

ccuracy At 5 to 100% of range, At 10 to 100% of range for 10A Range

#### $DCA+ACA(=+\sim)$

Maximum Reading 5000

Range	Accuracy (Upper: DC.10~20Hz	1061; Lower:1062; DC,20Hz~1kHz	-:Not Specified) DC.1k ~5kHz	Voltage Drop	Overload
	DC,10~20Hz	DC,20HZ~IKHZ	DG, IK ∼SKHZ	,	Protection
500.00µA				<0.11mV/µA	
5000.0µA	2+10	1.5+10	_	\0.11111V/pA	440mA Protected by a
50.000mA	1.5+10	1+10	1.5+10	<4mV/mA	440mA/1000V fuse.
500.00mA <sup>#3</sup>				\4mv/mA	
5.0000A	2+10	1.5+10	_	<0.1V/A	10A Protected by A
10.000A	2+10	1.5+10	3+10	\0.1V/A	10A/1000V fuse.

Accuracy At 5 to 100% of range, At 10 to 100% of range for 10A Range 440mA at 500mA ran

Crest factor<3. Response time: 2 sec max.

#### Diode Test(+1-)

Range	Accuracy 1061,1062	Measuring Current (Vf=0.6V)	Open Circuit Voltage	Overload Protection
2.4000V	1+2	Approx. 0.5mA	<5V	1000V rms

#### ature Measurement(TFMP)

	Accuracy 1001,1002	Overload Protection
-200.0∼1372.0°C	1+1.5℃	1000V rms
Use optional Tempe	rature Probe: Thermoc	ouple Type K

#### Capacitor Measurement (HF) Maximum Reading 5000

Range	Accuracy 1061,1062	Overload Protection
5.000nF		
50.00nF		
500.0nF	1+5**1	
5.000µF		1000V rms
50.00µF		1000V IIIIS
500.0µF	2+5	
		1

### Frequency Measurement(Hz)

#### AC Coupling, Maximum Reading 9999

Range(AUTO)	Accuracy 1061,1062	
2.000~9.999Hz		
9.00~99.99Hz	0.02+1*1	
90.0~999.9Hz	0.02+1	
0.900~9.999kHz		
9.00~99.99kHz	<b>*2</b>	

: At 10 to 100% of input voltage or current range \*2: At 40 to 100% of input voltage or current range

Duty cycle ratio(%)

Accuracy 1061,1062

1.888.610.7664



sales@calcert.com

Peak Hold(P·H) ※1062 only Maximum Reading 5000

Range	Resolution	Response Time Maximum
DCV, DCA	±100 digit	>250µs

#### Included Accessories

Description	MODEL	Contents
Test leads 7220		CAT.IV 600V, CAT.Ⅲ 1000V 1set
F	8926	440mA/1000V×1
Fuse	8927	10A/1000V×1





#### Optional Accessories

Description	MODEL	Contents
Alligator Clip	7234	CAT.IV 600V, CAT.III 1000V 1set
USB Communication set 82		USB adaptor+USB cable+DMM Software
DMM Printer full set	8249	8243+8246+8248
Printer Communication set	8243	Printer Adapter+RS232 cable
Printer	8246	Printer (paper width 112mm)+paper×1 roll
AC adapter for printer [EU]	8248	AC230V±10%
Thermal paper for printer	8247	10 rolls
	8405	Max. 500℃ (Surface type, Point material: Ceramic)
The same of the same of	8406	Max. 500°C (Surface type)
Thermocouple Type K	8407	Max. 700℃ (Liquid, Semi-solid)
	8408	Max. 600℃ (Air, Gas)
	8121	AC 100A
	8122	AC 500A
Cl	8123	AC 1000A
Clamp sensor	8146	AC 30A
	8147	AC 70A
	8148	AC 100A
Banana Ø4mm Adjuster Plug	7146	length :190mm
Carrying case 9150 Hard Type (for the mai communication cable)		Hard Type(for the main unit with test leads and communication cable)















#### Clamp sensor Specification

	AC/DC current sensor	rent sensor AC current sensor			Leakage & AC current sensor		
MODEL	8115	8121	8122	8123	8146	8147	8148
		P		<b>P</b>	<b>P</b> (6	<b>P</b> (6	Q (E
Conductor size	Φ12	Ф24	Φ40	Ф55	Φ24	Φ40	Ф68
Rated current	AC 130A / DC 180A	AC 100A	AC 500A	AC 1000A	AC 30A	AC 70A	AC 100A
Output voltage	AC/DC 10mV/A	AC 500mV/100A	AC 500mV/500A	AC 500mV/1000A	AC 1500mV/30A	AC 3500mV/70A	AC 5000mV/100A
Accuracy (50/60Hz)	AC ±1.0%rdg±0.4mV DC ±1.0%rdg±0.4mV (This accuracy is defined after a zero-adjustment)	g±0.4mV			0~15A ±1.0%rdg±0.1mV 15~30A ±5.0%rdg	0~40A ±1.0%rdg±0.1mV 40~70A ±5.0%rdg	0~80A ±1.0%rdg±0.1mV 80~100A ±5.0%rdg
Frequency range	ronge 40Hz~1kHz						
Dimensions	127(L)×42(W)×22(D)mm	97(L)×59(W)×26(D)mm	128(L)×81(W)×36(D)mm	170(L)×105(W)×48(D)mm	100(L)×60(W)×26(D)mm	128(L)×81(W)×36(D)mm	186(L)×129(W)×53(D)mm
Weight	approx. 160g	approx. 150g	approx. 260g	арргох. 360д	approx. 150g	approx. 240g	approx. 510g

<sup>\*\*</sup> Other Kyoritsu clamp sensors can be used with these DMMs, please check our website for more info. \*\* Banana #04 mm adjuster plug (7146) is required to use these sensors with the DMMs, with the exception for the 8115.

#### ■ Thermocouple Type K Specification

• morniocoupie type it openineation						
Model	Usage	Measurement temprature	Tolerance (t: measurement temperature)	Response speed		
8405	(Surface type, Point material: Ceramic)	Max. 500℃	±2.5°C/t=-40°C~333°C,  ±0.0075× t °C/t=333°C~500°C	approx. 1.8 Sec.		
8406	Surface type		±0.00/5× 1  U/t=333U~500U	approx. 1.0 Sec.		
8407	(Liquid, Semi-solid)	Max. 700℃	±2.5°C/t=-40°C~333°C, ±0.0075× t °C/t=333°C~700°C	1 Sec. or less		
8408	(Air, Gas)	Max. 600°C	±2.5°C/t=-40°C~333°C, ±0.0075× t °C/t=333°C~600°C	0.4 Sec.		







