

NEW 5 4/5 Digits Hand Held DIGITAL MULTIMETER

50000/500,000 counts

SURGE PROTECTION
8kV (1.2/50 s)



KM859CF, KM857 GENERAL SPECIFICATIONS

DISPLAY : 4-4/5 digits 50,000 counts.
Selectable stable mode 5-4/5 digits
500,000 counts for DC Voltage, & 6 digits
999,999 counts for Hz.

POLARITY : Automatic

UPDATE RATE :

4-4/5digits fast mode : 5 per second nominal;
5-4/5 digits stable mode : 1.25 per second nominal;
42 Segments Bar
Graph : 60 per second max

LOW BATTERY : Below approx. 7V

OPERATING TEMPERATURE :
0°C to 45°C

RELATIVE HUMIDITY : Maximum relative humidity 80% for temperature upto 30°C decreasing linearly to 50% relative humidity at 45°C

STORAGE TEMPERATURE : -20°C to 60°C, 80% R.H. (With battery removed)

SENSING : AC, AC+DC True RMS

POWER SUPPLY : Single alkaline 9V battery.

POWER CONSUMPTION : 5 mA typical

APO TIMING : Idle for 4.5 minutes

APO CONSUMPTION : 20 A

DIMENSION : L186mm X W87mm X H35.5mm;
L198mm X W97mm X H55mm with holster

WEIGHT : 390 gm; 500 gm with holster Approx.

SAFETY : The Meters meet the requirements for double insulation to IEC61010-1 (1995), EN61010-1 (1995), UL3111-1(6.1994), CSA C22.2 NO. 1010-1-92 Installation CAT III 1000 V AC and DC, CAT IV 600V

E.M.C. : Meets EN55022(1994/A1; 1995/Class B) and EN50082-1(1992)

OVERLOAD PROTECTION :

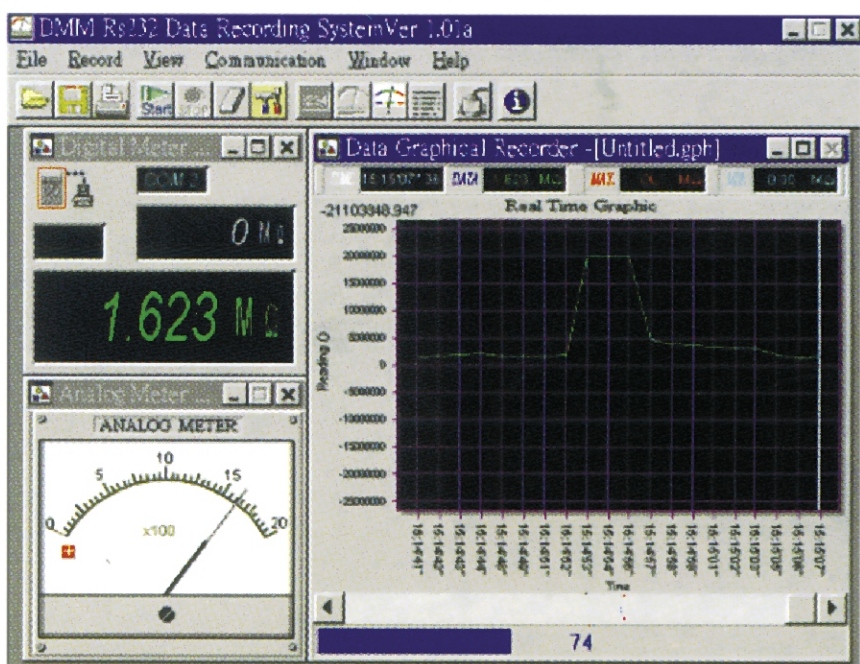
- A & mA : 0.63A/500V, IR 100kA, F fuse for KM857; 1A/600V, IR 100kA, F fuse for KM859CF
- A : 12.5A/500V, IR 10kA, F fuse for KM857; 15A/1kV, IR 10kA F fuse for KM859Cf
- V : 1050Vrms, 1450Vpeak;
- mV : & Others : 600VDC/VAC rms for KM857 (1050Vrms, 1450Vpeak for KM859CF

TRANSIENT PROTECTION : 8kV (1.2/50 s surge)

STANDARD ACCESSORIES : Test leads (pair), holster, battery installed, user's manual, banana plug K type Thermocouple x1 (KM859CF only)

OPTIONAL ACCESSORIES : PC interface Kit (RS232 optical adapter cable + RS232 Software floppies) banana pins to K-type socket plug adapter

SPECIAL FEATURES : Record MAX, MIN, MAX-MIN reading. Crest (Instantaneous Peak hold) MAX, MIN, MAX-MIN reading. Relative zero mode. 500,000 counts high resolution stable reading mode. Backlighted display dBm readings. T1-T2 differential temperature readings (KM859CF only). %4-20mA loop current readings. High noise rejection filtered Line Level Frequency mode. Data Hold. Audible & Visible input warning.





ELECTRICAL SPECIFICATIONS

ACCURACY IS \pm (%Reading digits + number of digits) or otherwise specified, at 23°C \pm 5°C & less than 75% relative humidity. True RMS voltage & current accuracies are specified from 5% to 100% of range or otherwise specified, Maximum Crest Factor < 5:1 at full scale & <10:1 at half scale, and with frequency component within the specified frequency bandwidth for non-sinusoidal waveforms.

DC VOLTAGE

Range	KM859CF	KM 857
Accuracy		
500.00mV, 5.0000V, 50.000V	0.02% rdg + 2 dgts	0.03% rdg + 2 dgts
500.00V	0.04% rdg + 2 dgts	0.05% rdg + 2 dgts
1000.0V	0.05% rdg + 2 dgts	0.1% rdg + 2 dgts

NMRR : > 60dB @ 50/60Hz
 CMRR : > 120dB @ DC, 50/60Hz, Rs = 1k
 Input Impedance : 10M , 30pF nominal (80pF nominal for 500mV ranges)

DIODE TESTER

Range	Accuracy	Test Current (Typical)	Open Circuit Voltage
5.0000V	1%+1d	0.8mA	<3.5 VDC

dBm :

At 600 , -11.76dBm to 54.25dBm,
 Accuracy : \pm 0.25dB + 2d (@40Hz -- 20kHz)
 Input Impedance : 10M , 30pF nominal Selectable reference impedance values of 4, 8, 16, 32, 50, 75, 93, 110, 125, 135, 150, 200, 250, 300, 500, 600, 800, 900, 1000, 1200

Crest mode (Instantaneous Peak Hold) :

Accuracy : Specified accuracy \pm 100 digits for changes > 0.8ms in duration

AC & AC + DC CURRENT

Range	KM859CF	KM857	Burden Voltage
Accuracy			
50Hz -- 60Hz			
500.00 A	0.5% + 50d	1.0% + 40d	0.15mV/ A
5000.0 A			0.15mV/ A
50.000mA			3.3mV/mA
500.00mA			3.3mV/mA
5.0000A			0.03V/A
10.000A*			0.03V/A
40Hz -- 1kHz			
500.00 A	0.7% + 50d	1.0% + 40d	0.15mV/ A
5000.0 A			0.15mV/ A
50.000mA			3.3mV/mA
500.00mA			3.3mV/mA
5.0000A			0.03V/A
10.000A*			0.03V/A
1kHz -- 10kHz			
500.00 A	2.0% + 50d	Unspec'd	0.15mV/ A
5000.0 A			0.15mV/ A
50.000mA			3.3mV/mA
500.00mA			3.3mV/mA
5.0000A			0.03V/A
10.000A*			0.03V/A

*10A continuous, 20A for 30 second max with 5 minutes cool down interval

Hz LOGIC LEVEL FREQUENCY

Range	Accuracy
5.0000Hz--2.00000MHz	0.002%+4d

Sensitivities : 2.5Vp square wave

CAPACITANCE

Range	Accuracy*
50.00nF	0.8%+3d
500.0nF	0.8%+3d
5.000 F	1.0%+3d
50.00 F	2.0%+3d
500.0 F	3.5%+5d
9999 F	5.0%+5d

*Accuracies with film capacitor or better

Hz Line Level Frequency

Range	Accuracy
5.0000Hz--200.000kHz	0.002%+4d

Sensitivities (Sine RMS):
 0.1V min @500mV range
 1V min @5V range
 10V min @50V range
 100V min @500V range
 900V min @1000V range

OHMS

Range	KM859CF	KM857
Accuracy		
500.00	0.07% + 10d	
5.0000 k	0.07% + 2d	0.1%+6d
50.000 k		
500.00 k		
5.0000 M	0.2% + 6d	0.4% + 6d
50.000 M	2.0% + 6d	2.0% + 6d

Open Circuit Voltage : <1.3VDC (<3VDC for 500 range)

AC & AC + DC VOLTAGE

Range	KM859CF	KM857
Accuracy*		
20Hz -- 45Hz		
500.00mV, 5.0000V, 50.000V	1.5% rdg + 40 dgts	Unspec'd
500.00V, 1000.0V	Unspec'd	
45Hz -- 300Hz		
500.00mV, 5.0000V, 50.000V	0.3% rdg + 20 dgts	0.8% rdg + 60 dgts
500.00V, 1000.0V	0.4% rdg + 40 dgts	
300Hz -- 5kHz		
500.00mV, 5.0000V, 50.000V	0.3% rdg + 10 dgts	0.8% rdg + 40 dgts
500.00V, 1000.0V	0.4% rdg + 40 dgts	2.0% rdg + 60 dgts
1000.0V	0.8% rdg + 40 dgts (300Hz--1kHz)	1.0% rdg + 40 dgts
5kHz -- 20kHz		1kHz -- 20kHz
500.00mV, 5.0000V, 50.000V	0.5% rdg + 20 dgts	1dB* **
500.00V	0.8% rdg + 20 dgts	2dB* **
1000.0V	0.5% rdg + 20 dgts	3dB* **
1000.0V	Unspec'd	Unspec'd
20kHz -- 100kHz		
500.00mV, 5.0000V, 50.000V	2.0% rdg + 40 dgts	Unspec'd
500.00V	4.0% rdg + 40 dgts* **	
1000.0V	Unspec'd	
1000.0V	Unspec'd	

*From 5% to 10% of range : accuracy % of reading (or in dB) + 80d
 **From 5% to 10% of range : accuracy % of reading (or in dB) + 180d
 ** From 10% to 15% of range : accuracy % of reading (or in dB) + 100d
 CMRR : > 90dB @ DC to 60Hz, Rs = 1k
 Input Impedance : 10M , 30pF nominal (80pF nominal for 500mV range)
 Residual reading less than 50 digits with test leads shorted.

T1-T2 DUAL TEMPERATURE (KM859CF only)

Range	Accuracy
-50.0 °C TO 1000.0°C	0.3% + 1°C
-58.0 °F TO 1832.0°F	0.3% + 2°F

Thermocouple range & accuracy not included

DC CURRENT

Range	Accuracy	Burden Voltage
500.00 A	0.15% rdg + 20 dgts	0.15mV/ A
5000.0 A	0.1% rdg + 20 dgts	0.15mV/ A
50.000mA	0.15% rdg + 10dgts	3.3mV/mA
500.00mA	0.1% rdg + 20 dgts	3.3mV/mA
5.0000A	0.5% rdg + 10 dgts	0.03V/A
10.000A*	0.5% rdg + 20 dgts	0.03V/A

* 10A continuous, 20A for 30 second max with 5 minutes cool down interval

DC Loop Current %4--20mA

4mA = 0% (zero); 20mA = 100% (span)
 Resolution : 0.01% Accuracy : \pm 25d

Audible Continuity Tester

Audible threshold : between 20 and 120 . Response time < 100 s

%DUTY CYCLE

Range	Accuracy
0.1 % -- 99.99%	3d/kHz+2d

Input Frequency : 5Hz -- 500 kHz, 5V Logic Family



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