

Data Acquisition Multi Meter System SME1454



Features

- 7" colour capacitive touch screen 800 x 480 resolution
- 5-slot mainframe, standard with 6 1/2 multimeter card
- Stand alone support for up to 160 channels
- 6 1/2 multimeter (DMM) card supports DCV, DCI, ACV, ACI, 2WR, 4WR, period, frequency, temperature.
- USB data direct storage
- Standard SCPI command set
- Scanning Speed
- Low Speed Card : 90 channels/sec
- High Speed Card : 800 channels/sec
- Temperature acquisition supports thermocouples, thermistors and RTDs
- 0.0035% DC Voltage (DCV) measurement accuracy
- 0.0100% base resistance measurement accuracy

DC Voltage

Range	24 Hours $T_{CAL} \pm 1^{\circ}C$	90 Days $T_{CAL} \pm 5^{\circ}C$	1 Year $T_{CAL} \pm 5^{\circ}C$	2 Year $T_{CAL} \pm 5^{\circ}C$	Temperature Coefficient/ $^{\circ}C$
100.0000mV	0.0030 + 0.0030	0.0040 + 0.0035	0.0050 + 0.0035	0.0065 + 0.0035	0.0005 + 0.0005
1.000000V	0.0020 + 0.0006	0.0030 + 0.0007	0.0040 + 0.0007	0.0055 + 0.0007	0.0005 + 0.0001
10.00000V	0.0015 + 0.0004	0.0020 + 0.0005	0.0035 + 0.0005	0.0050 + 0.0005	0.0005 + 0.0001
100.0000V	0.0020 + 0.0006	0.0035 + 0.0006	0.0045 + 0.0006	0.0060 + 0.0006	0.0005 + 0.0001
300.000V	0.0020 + 0.0006	0.0035 + 0.0010	0.0045 + 0.0010	0.0060 + 0.0010	0.0005 + 0.0001

DC Resistance

Range	Test Current	24 Hours $T_{CAL} \pm 1^{\circ}C$	90 Days $T_{CAL} \pm 5^{\circ}C$	1 Year $T_{CAL} \pm 5^{\circ}C$	2 Year $T_{CAL} \pm 5^{\circ}C$	Temperature Coefficient/ $^{\circ}C$
10 Ω	10mA	0.0050 + 0.0030	0.008 + 0.004	0.010 + 0.004	0.012 + 0.004	0.0006 + 0.0005
100 Ω	1mA	0.0030 + 0.0020	0.008 + 0.003	0.010 + 0.003	0.012 + 0.003	0.0006 + 0.0003

DC Resistance						
Range	Test Current	24 Hours $T_{CAL} \pm 1^{\circ}C$	90 Days $T_{CAL} \pm 5^{\circ}C$	1 Year $T_{CAL} \pm 5^{\circ}C$	2 Year $T_{CAL} \pm 5^{\circ}C$	Temperature Coefficient/ $^{\circ}C$
1k Ω	1mA	0.0020 + 0.0005	0.008 + 0.001	0.010 + 0.001	0.012 + 0.001	0.0006 + 0.0001
10k Ω	100 μ A	0.0020 + 0.0005	0.008 + 0.001	0.010 + 0.001	0.012 + 0.001	0.0006 + 0.0001
100k Ω	10 μ A	0.0020 + 0.0005	0.008 + 0.001	0.010 + 0.001	0.012 + 0.001	0.0006 + 0.0001
1M Ω	5 μ A	0.002 + 0.001	0.008 + 0.001	0.010 + 0.001	0.012 + 0.001	0.0030 + 0.0030
10M Ω	500nA	0.015 + 0.001	0.020 + 0.001	0.040 + 0.001	0.060 + 0.001	0.0030 + 0.0030
100M Ω	500nA/10M	0.300 + 0.010	0.800 + 0.010	0.800 + 0.010	0.800 + 0.010	0.0030 + 0.0030

DC Current						
Range	Internal Resistance Voltage Drop	24 Hours $T_{CAL} \pm 1^{\circ}C$	90 Days $T_{CAL} \pm 5^{\circ}C$	1 Year $T_{CAL} \pm 5^{\circ}C$	2 Year $T_{CAL} \pm 5^{\circ}C$	Temperature Coefficient/ $^{\circ}C$
100 μ A	<0.11V	0.010 + 0.020	0.040 + 0.025	0.050 + 0.025	0.060 + 0.025	0.0020 + 0.0030
1mA	<0.11V	0.010 + 0.006	0.030 + 0.006	0.050 + 0.006	0.060 + 0.006	0.0020 + 0.0005
10mA	<0.5V	0.010 + 0.020	0.030 + 0.020	0.050 + 0.020	0.060 + 0.020	0.0020 + 0.0020
100mA	<0.5V	0.010 + 0.004	0.030 + 0.005	0.050 + 0.005	0.060 + 0.005	0.0020 + 0.0005
1A	<0.7V	0.050 + 0.006	0.080 + 0.010	0.100 + 0.010	0.120 + 0.006	0.0050 + 0.0010
3A	<2.0V	0.180 + 0.020	0.200 + 0.020	0.200 + 0.020	0.230 + 0.020	0.0050 + 0.0020
10A	<0.5V	0.050 + 0.010	0.120 + 0.010	0.120 + 0.010	0.150 + 0.010	0.0050 + 0.0010

Diode Test						
Function	Test Current	24 Hours $T_{CAL} \pm 1^{\circ}C$	90 Days $T_{CAL} \pm 5^{\circ}C$	1 Year $T_{CAL} \pm 5^{\circ}C$	2 Year $T_{CAL} \pm 5^{\circ}C$	Temperature Coefficient/ $^{\circ}C$
5V	1mA	0.002 + 0.030	0.008 + 0.030	0.010 + 0.030	0.012 + 0.030	0.0010 + 0.0020

Continuity (Conductivity) Test						
Function	Test Current	24 Hours $T_{CAL} \pm 1^{\circ}C$	90 Days $T_{CAL} \pm 5^{\circ}C$	1 Year $T_{CAL} \pm 5^{\circ}C$	2 Year $T_{CAL} \pm 5^{\circ}C$	Temperature Coefficient/ $^{\circ}C$
1k Ω	1mA	0.002 + 0.030	0.008 + 0.030	0.010 + 0.030	0.012 + 0.030	0.0010 + 0.0020

Temperature Test						
Temperature						
PT100 (DIN/IEC751)			Probe Accuracy + 0.05 $^{\circ}C$			
5k Ω Thermistor			Probe Accuracy + 0.10 $^{\circ}C$			

AC Voltage Test					
Frequency/Range	24 Hours $T_{CAL} \pm 1^{\circ}C$	90 Days $T_{CAL} \pm 5^{\circ}C$	1 Year $T_{CAL} \pm 5^{\circ}C$	2 Year $T_{CAL} \pm 5^{\circ}C$	Temperature Coefficient/ $^{\circ}C$
3Hz ~ 5Hz	1.00 + 0.02	1.00 + 0.02	1.00 + 0.03	1.00 + 0.03	0.100 + 0.003
5Hz ~ 10Hz	0.35 + 0.02	0.35 + 0.03	0.35 + 0.03	0.35 + 0.03	0.035 + 0.003
10Hz ~ 20kHz	0.04 + 0.02	0.05 + 0.03	0.06 + 0.03	0.07 + 0.03	0.005 + 0.003
20kHz ~ 50kHz	0.10 + 0.04	0.11 + 0.05	0.12 + 0.05	0.13 + 0.05	0.011 + 0.005
50kHz ~ 100kHz	0.55 + 0.08	0.60 + 0.08	0.60 + 0.08	0.60 + 0.08	0.060 + 0.008
100kHz ~ 300kHz	4.00 + 0.50	4.00 + 0.50	4.00 + 0.50	4.00 + 0.50	0.200 + 0.020

AC Current Test						
Frequency/Range		24 Hours $T_{CAL} \pm 1^{\circ}C$	90 Days $T_{CAL} \pm 5^{\circ}C$	1 Year $T_{CAL} \pm 5^{\circ}C$	2 Year $T_{CAL} \pm 5^{\circ}C$	Temperature Coefficient/ $^{\circ}C$
Range	Pressure Drop					
100 μ A	<0.011V					
1mA	< 0.11V					
10mA	<0.05V					
100mA	<0.5V					
3Hz ~ 5kHz		0.10 + 0.04	0.10 + 0.04	0.10 + 0.04	0.10 + 0.04	0.015 + 0.006
5kHz ~ 10kHz		0.10 + 0.04	0.10 + 0.04	0.10 + 0.04	0.10 + 0.04	0.030 + 0.006
1A Range	<0.7V					
3Hz ~ 5kHz		0.10 + 0.04	0.10 + 0.04	0.10 + 0.04	0.10 + 0.04	0.015 + 0.006
5kHz ~ 10kHz		0.10 + 0.04	0.10 + 0.04	0.10 + 0.04	0.10 + 0.04	0.030 + 0.006
3A Range	<2.0V					
3Hz ~ 5kHz		0.23 + 0.04	0.23 + 0.04	0.23 + 0.04	0.23 + 0.04	0.015 + 0.006
5kHz ~ 10kHz		0.23 + 0.04	0.23 + 0.04	0.23 + 0.04	0.23 + 0.04	0.030 + 0.006
10A Range	<0.5V					
3Hz ~ 5kHz		0.15 + 0.04	0.15 + 0.04	0.15 + 0.04	0.15 + 0.04	0.015 + 0.006
5kHz ~ 10kHz		0.15 + 0.04	0.15 + 0.04	0.15 + 0.04	0.15 + 0.04	0.030 + 0.006

Interface	RS232, LAN, Handler, USB Host, USB Device
Dimension (W X H X D)	235 X 154 X 530 mm
Weight	7.8kg
Accessories	Mains Cord, Test Fixture

Options

SM2554-DMM	6 ½ DMM board
SM2554-01	Basic Board, 10CH (4-Wire)/20CH (2-Wire), 90CH/s
SM2554-02	Multiplexbasic Board, 20CH (4-Wire)/40CH (2-Wire), 90CH/s
SM2554-03	High Speed Board, 20CH 800CH/s

Subject to change

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