SDM4000Aseries

digital multimeter

Data sheet

CN01A

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SDM4065A
SDM4065A-SC

Product overview

SDM4065A 6The ½-digit digital multimeter has outstanding measurement accuracy and a touch screen. It is a product designed to meet the user needs of high-precision, multi-function, and automatic measurement.

Product Features

Basic measurement functions

- DC voltage measurement
- DC current measurement
- True-RMSAC voltage measurement
- True-RMSAC current measurement
- 2,4Line resistance measurement
- Capacitance measurement
- Connectivity test
- Diode testing
- frequency measurement
- period measurement
- temperature measurement

Expand functions

- statistics, limits,dB/dBm, relative measurement, bar graph, histogram, trend graph, dual display, probe hold, custom sensor, etc.

Recorder function

- Logging interval0.1 s ~ 3600 s, record to the maximum recordable memory2MClick to record to the maximum recordable file360Mpoints, the longest that can be recorded100Hour

Digitizer function

- Highest sampling rate50kSa/s, the maximum single collection can2Mpoint, bandwidth 10kHz

Application areas

- Scientific research and education
- R&D institutions
- Inspection and maintenance
- calibration
- Automated production testing

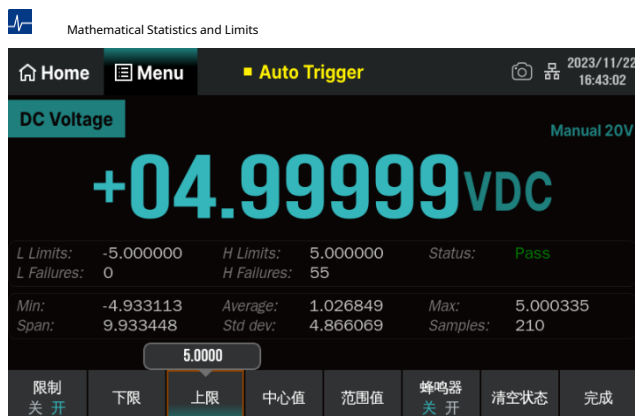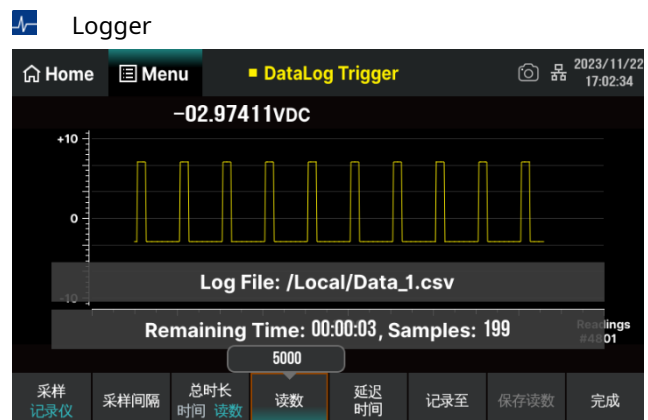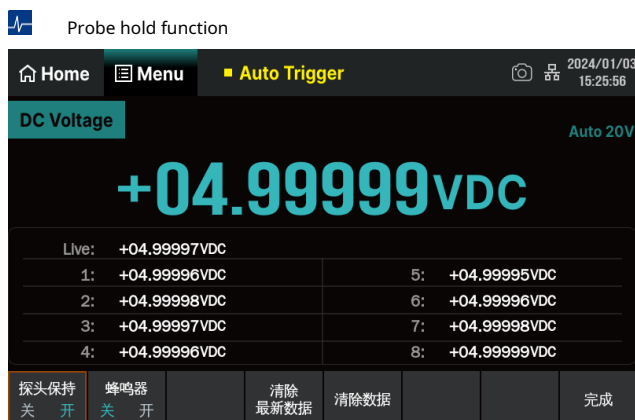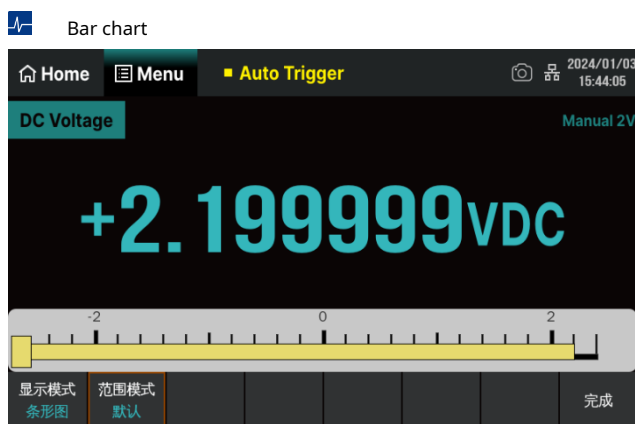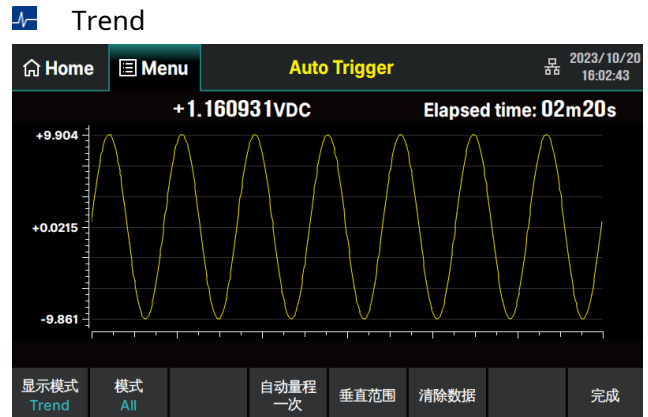## Features and Benefits

- 5inch true colorTFT-LCDLarge screen display, resolution800*480, with touch screen and newUI
- for real6½ digit reading resolution (2,200,000 count) Reading rate
- maximum to50k rdgs/s, supports maximum100PLC, minimum0.001 PLCsampling interval
- DaZhi2MInternal storage space of points, supporting timestamps
- 4Three trigger modes, automatic trigger, single trigger, external trigger and level trigger
- 4Three display modes, digital display, bar graph, trend graph, histogram DC measurement
- with automatic zero adjustment and offset compensation functions
- True RMS AC voltage and AC current measurements
- Support automatic switching10Alarge current and3ASmall current measurement mode, with an external shunt, can test up to30A
- Supports thermocouples, thermal resistance temperature sensors and custom sensor
- functions. Supports dual display and probe hold functions.
- 16Channel multi-function measurement scanning cardSC1016(only SDM4065A-SCsupport)
- Support standardsSCPIRemote control commands, host computer software, compatible with the latest mainstream multimeter command set
- Equipped with host computer software, the device and scanning card can be controlled through the host computer
- Configuration interface:USB Device(ShopUSB-GPIB adapter), USB Host,LAN
- supportBNC VMCoutput,TriggerInput
- supportVNC, Web-server
- Chinese and English menus, built-in help system, convenient for information acquisition

Model and main parameters

model	SDM4065A	SDM4065A-SC
Bits of resolution	6½	
DCVBasic accuracy	35 ppm	
Maximum reading rate	50,000readings/second	
memory	maximum20010,000 readings	
Support scanning card	no	yes
DCVMeasuring range	200mVto1000V	
ACVMeasuring range	200mVto750 V	
DCIMeasuring range	200uAto10A	
ACIMeasuring range	200uAto10A	
2line sum4Line resistance range	200Ωto100 MΩ	
conduction, diode	have,4 V	
frequency, period	3 Hzto1MHz	
temperature	RTD, thermocouple	
capacitance	2nFto100mF	
IO	USB Host,USB Device,LAN,GPIB(optional)	
external interface	external trigger,VMCoutput	
Display	5inchTFTDisplay, touch screen	

design feature

Digital Display

Trend

Bar chart

Histogram

Probe hold function

Logger

Mathematical Statistics and Limits

Digitizer

Specifications

DC characteristics

Accuracy index ± (% reading + % range)[1]

Function	Measuring range[2]	Test current or load voltage	twenty fourHour[3] TCAL°C±1°C	90Day accuracy TCAL°C±5°C	One year accuracy TCAL°C±5°C	Temperature Coefficient 0°Cto(TCAL°C-5°C) (TCAL°C+5°C)to50°C
DC Voltage	200.0000mV		0.0020+0.0015	0.0030+0.0020	0.0040+0.0023	0.0005+0.0003
	2.000000 V		0.0015+0.0004	0.0020+0.0004	0.0035+0.0006	0.0005+0.0001
	20.00000V		0.0020+0.0003	0.0030+0.0004	0.0040+0.0004	0.0005+0.0001
	200.0000 V		0.0020+0.0004	0.0040+0.0004	0.0050+0.0005	0.0005+0.0001
	1000.000V[4]		0.0020+0.0005	0.0040+0.0008	0.0055+0.0008	0.0005+0.0001
DC current	200.0000μA	< 0.03V	0.009+0.005	0.040+0.005	0.050+0.005	0.0020+0.0026
	2.000000 mA	< 0.25 V	0.007+0.001	0.030+0.002	0.050+0.002	0.0020+0.0001
	20.00000mA	< 0.07 V	0.006+0.005	0.030+0.005	0.050+0.005	0.0020+0.0015
	200.0000mA	< 0.7 V	0.009+0.001	0.030+0.001	0.050+0.002	0.0020+0.0001
	2.000000A	< 0.12 V	0.045+0.005	0.080+0.005	0.100+0.012	0.0050+0.0008
	10.00000A[5]	< 0.6V	0.090+0.005	0.120+0.005	0.150+0.005	0.0050+0.0018
resistance [6]	200.0000Ω	1 mA	0.0030+0.0031	0.009+0.005	0.010+0.005	0.0006+0.0006
	2.000000 kΩ	1 mA	0.0020+0.0005	0.008+0.001	0.010+0.001	0.0006+0.0002
	20.00000 kΩ	100μA	0.0020+0.0005	0.008+0.001	0.010+0.001	0.0015+0.0001
	200.0000 kΩ	10μA	0.0020+0.0005	0.008+0.001	0.010+0.001	0.0015+0.0001
	1.000000 MΩ	2μA	0.002+0.001	0.010+0.001	0.012+0.001	0.0030+0.0002
	10.00000 MΩ	200nA	0.015+0.001	0.030+0.001	0.040+0.001	0.0030+0.0005
	100.0000 MΩ	200 nA ‖ 10 MΩ	0.300+0.010	0.800+0.010	0.800+0.010	0.1500+0.0002
Diode Tube[7]	0~2V	1 mA	0.002+0.009	0.008+0.020	0.010+0.020	0.0010+0.0020
	2~4V	1 mA	0.002+0.010	0.008+0.020	0.010+0.020	0.0010+0.0020
conduction	2000.0Ω	1 mA	0.002+0.010	0.008+0.020	0.010+0.020	0.0010+0.0020

Note:

[1] 90minute warm-up and integration time set to100PLC. When＜100PLC, plus the "Additional Noise RMS" described in the next table.

[2]removeDCV 1000VandDCI 10AOutside the measuring range, all measuring ranges are10%Over range.

[3]Relative to calibration standards.

[4]More than ±500Vtime, every time it exceeds1 VIncrease0.03mVerror.

[5]For greater than DC7Aor communicate7 Armscontinuous current, turn on30Need to disconnect after seconds30Second.

[6]Indicators refer to four-wire resistance measurements or two-wire resistance measurements using the "relative" operation. When not using the "relative" operation, the two-wire resistance measurement increases0.2Ωadditional error.

[7]Accuracy specification for voltage measurements at input terminals. Typical values for test current are1 mA. Changes in the current source will cause changes in the voltage drop across the diode junction.

Performance and measurement speed

Integration time	resolution[1]	NMRR[2]	Readings/second[3]		Additional noise rms[4](%Measuring range)			
power cycle number[5](NPLC)	(ppmrange)	(dB)	50 Hz	60 Hz	DC voltage 20V	DC voltage 2V,1000V resistance2 kΩ,20 kΩ,200 kΩ, 1 MΩ,10 MΩ	DC voltage 200 V	DC voltage 200mV resistance200Ω DC 2mA,200mA, 10A
0.001 (0.001)	2.7	0	50000	50000	0.0003	0.0008	0.0015	0.0050
0.01 (0.01)	1.6	0	5000	5000	0.0002	0.0005	0.0008	0.0025
0.1 (0.1)	1	0	500	500	0.0001	0.0003	0.0006	0.0025
1	0.22	60	50	60	0	0.0001	0.0002	0.0005
10	0.08	60	5	6	0	0	0	0.0002
100	0.08	60	0.5	0.6	0	0	0	0

Note:

[1]Typical value. Resolution is defined as DC voltage20VThe noise effective value of the range.

[2]Normal Mode Rejection Ratio, vs. Mains Frequency±0.1%. Power frequency±1%,minus20dB;Power frequency±3%,minus30dB.

[3]DCV,DCI,2line resistance and4Maximum rate of line resistance.

[4]Basic DC accuracy specifications include100PLCrms noise. For <100PLC, adds "additive noise rms" to the basic DC accuracy specification.

[5]in bracketsPLCThe parameter is the power grid frequency50Hzintegration time.

communication characteristics

Accuracy index ± (% reading + % range)[1]

Function	Measuring range[2]	Frequency Range	twenty fourHour[3] TCAL℃±1℃	90skyAccuracy TCAL℃±5℃	One year accuracy TCAL℃±5℃	Temperature Coefficient 0℃to(TCAL℃-5℃) (TCAL℃+5℃)to50℃
Really effective value exchange Voltage[4]	200mV	3 Hz – 5 Hz	1.00+0.03	1.00+0.04	1.00 + 0.04	0.100 + 0.004
		5 Hz – 10 Hz	0.35+0.03	0.35+0.04	0.35 + 0.04	0.035 + 0.005
		10 Hz – 20 kHz	0.04+0.03	0.05+0.04	0.06+ 0.04	0.005 + 0.004
		20 kHz – 50 kHz	0.10+0.05	0.11+0.05	0.12+ 0.05	0.011 + 0.005
		50 kHz - 100 kHz	0.55+0.08	0.60+0.08	0.60+0.08	0.060 + 0.008
		100 kHz - 300 kHz	4.00+0.50	4.00+0.50	4.00+0.50	0.20 + 0.02
	2V	3 Hz – 5 Hz	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	0.035+0.003
		10 Hz – 20 kHz	0.04+0.02	0.05+0.03	0.06+0.03	0.005+0.003
		20 kHz – 50 kHz	0.10+0.04	0.11+0.05	0.12+0.05	0.011+0.005
		50 kHz - 100 kHz	0.55+0.08	0.60+0.08	0.60+0.08	0.060+0.008
		100 kHz - 300 kHz	4.00+0.50	4.00+0.50	4.00+0.50	0.20+0.02
	20V	3 Hz – 5 Hz	1.00+0.03	1.00+0.04	1.00+0.04	0.100+0.004
		5 Hz – 10 Hz	0.35+0.03	0.35+0.04	0.35+0.04	0.035+0.004
		10 Hz – 20 kHz	0.04+0.04	0.07+0.04	0.08+0.04	0.008+0.004
		20 kHz – 50 kHz	0.10+0.05	0.12+0.05	0.15+0.05	0.012+0.005
		50 kHz - 100 kHz	0.55+0.08	0.60+0.08	0.60+0.08	0.060+0.008
		100 kHz - 300 kHz	4.00+0.50	4.00+0.50	4.00+0.50	0.20+0.02
	200 V	3 Hz – 5 Hz	1.00+0.03	1.00+0.04	1.00+0.04	0.100+0.004
		5 Hz – 10 Hz	0.35+0.03	0.35+0.04	0.35+0.04	0.035+0.004
		10 Hz – 20 kHz	0.04+0.04	0.07+0.04	0.08+0.04	0.008+0.004
		20 kHz – 50 kHz	0.10+0.05	0.12+0.05	0.15+0.05	0.012+0.005
		50 kHz - 100 kHz	0.55+0.08	0.60+0.08	0.60+0.08	0.060+0.008
		100 kHz - 300 kHz	4.00+0.50	4.00+0.50	4.00+0.50	0.20+0.02
	750 V[5]	3 Hz – 5 Hz	1.00+0.02	1.00+0.03	1.00+0.03	0.100+0.003
		5 Hz – 10 Hz	0.35+0.02	0.35+0.03	0.35+0.03	0.035+0.003
		10 Hz – 20 kHz	0.04+0.02	0.07+0.03	0.08+0.03	0.008+0.003
		20 kHz – 50 kHz	0.10+0.04	0.12+0.05	0.15+0.05	0.012+0.005
		50 kHz - 100 kHz	0.55+0.08	0.60+0.08	0.60+0.08	0.060+0.008
		100 kHz - 300 kHz	4.00+0.50	4.00+0.50	4.00+0.50	0.20+0.02
Really effective value exchange current[6]	200uA	3 Hz – 5 Hz	1.10+0.06	1.10+0.06	1.10+0.06	0.200+0.005
		5 Hz – 10 Hz	0.35+0.06	0.35+0.06	0.35+0.06	0.100+0.005
		10 Hz – 5 kHz	0.15+0.06	0.15+0.06	0.15+0.06	0.015+0.005
		5 kHz – 10 kHz	0.35+0.70	0.35+0.70	0.35+0.70	0.030+0.005
	2mA	3 Hz – 5 Hz	1.00+0.04	1.00+0.04	1.00+0.04	0.100+0.005
		5 Hz – 10 Hz	0.30+0.04	0.30+0.04	0.30+0.04	0.035+0.005
		10 Hz – 5 kHz	0.12+0.04	0.12+0.04	0.12+0.04	0.015+0.005
		5 kHz – 10 kHz	0.20+0.25	0.20+0.25	0.20+0.25	0.030+0.005

		3 Hz – 5 Hz	1.10+0.06	1.10+0.06	1.10+0.06	0.200+0.005
	20mA	5 Hz – 10 Hz	0.35+0.06	0.35+0.06	0.35+0.06	0.100+0.005
		10 Hz – 5 kHz	0.15+0.06	0.15+0.06	0.15+0.06	0.015+0.005
		5 kHz – 10 kHz	0.35+0.70	0.35+0.70	0.35+0.70	0.030+0.005
		3 Hz – 5 Hz	1.00+0.04	1.00+0.04	1.00+0.04	0.100+0.006
	200mA	5 Hz – 10 Hz	0.30+0.04	0.30+0.04	0.30+0.04	0.035+0.006
		10 Hz – 5 kHz	0.10+0.04	0.10+0.04	0.10+0.04	0.015+0.006
		5 kHz – 10 kHz	0.20+0.25	0.20+0.25	0.20+0.25	0.030+0.006
		3 Hz – 5 Hz	1.10+0.06	1.10+0.06	1.10+0.06	0.100+0.006
	2A	5 Hz – 10 Hz	0.35+0.06	0.35+0.06	0.35+0.06	0.035+0.006
		10 Hz – 5 kHz	0.15+0.06	0.15+0.06	0.15+0.06	0.015+0.006
		5 kHz – 10 kHz	0.35+0.70	0.35+0.70	0.35+0.70	0.030+0.006
		3 Hz – 5 Hz	1.10+0.08	1.10+0.10	1.10+0.10	0.100+0.008
	10A[7]	5 Hz – 10 Hz	0.35+0.08	0.35+0.10	0.35+0.10	0.035+0.008
		10 Hz – 5 kHz	0.15+0.08	0.15+0.10	0.15+0.10	0.015+0.008

AC measurement additional error

	Additional low frequency error(%reading)			Additional crest factor error (non-sine wave)[8]	
	ACfilter			Crest coefficient	Error (% of range)
frequency	＞3 Hz	＞20 Hz	＞200 Hz		
10Hz-20Hz	0	- -	- -	1-2	0.05
20Hz-40Hz	0	0.8	- -	2-3	0.2
40Hz-100Hz	0	0.3	- -	3-4	0.4
100Hz-200Hz	0	0.2	- -	4-5	0.5
200Hz-1kHz	0	0.15	0.3		
＞1 kHz	0	0	0.1		

Note:

[1] 90minute warm-up, filter set to >3 Hz, sine wave input.

[2]removeACV 750 VandACI 10AOutside the measuring range, all measuring ranges are10%Over range.

[3]Relative to calibration standards.

[4] > 5%Performance index of AC wave input for the measuring range. Enter in1%arrive5%Within the measuring range, if frequency <50kHzwhen, then increase0.1%Additional error of measuring range; if

the frequency is within50kHzarrive100kHzinterval, then increase0.13%Additional error in measuring range.

[5]ACV750The measuring range is limited to8x10₇Volts·Hz. Enter more than300 Vrmstime, every time it exceeds1 VIncrease0.7mVerror.

[6]＞5%Performance specifications for AC sine wave input across the range. Enter in1%arrive5%Increase when within range0.1%Additional error of measuring range;200uA,2mA,2Aand

10ARange>1 kHzIndicators are typical values.

[7]For greater than DC7Aor communicate7 Armscontinuous current, turn on30Need to disconnect after seconds30Second.

[8]Frequency＜100 HzWhen , the slow filter performance specification is only for sine wave input.

Frequency and Periodic Characteristics

accuracy index±(%reading)[1] [2]

Function	Measuring range	Frequency Range	twenty fourHour[3] TCAL°C±1°C	90Day accuracy TCAL°C±5°C	One year accuracy TCAL°C±5°C	Temperature Coefficient 0°Cto(TCAL°C-5°C) (TCAL°C+5°C)to50°C
frequency, period	200mV to750 V	3 Hz – 5 Hz	0.07	0.07	0.07	0.005
		5 Hz – 10 Hz	0.04	0.04	0.04	0.005
		10 Hz – 40 Hz	0.02	0.02	0.02	0.001
		40 Hz – 300 kHz	0.005	0.006	0.007	0.001
		300 kHz – 1 MHz	0.005	0.006	0.007	0.001

Additional low frequency error: (% of reading)

frequency	Gate time (resolution)			
	1Second(0.1ppm)	0.1Second(1ppm)	0.01Second(10ppm)	0.001Second(100ppm)
3 Hz – 5 Hz	0	0.12	0.12	0.12
5 Hz – 10 Hz	0	0.17	0.17	0.17
10 Hz – 40 Hz	0	0.20	0.20	0.20
40 Hz – 100 Hz	0	0.06	0.21	0.21
100 Hz – 300 Hz	0	0.03	0.21	0.21
300 Hz – 1 kHz	0	0.01	0.07	0.07
>1 kHz	0	0	0.02	0.02

Note:

[1] 90minutes to warm up, use1Gate time in seconds.

[2]Frequency ≤300kHzWhen, the indicator system10%to110%Range AC input voltage; frequency>300kHzwhen, the indicator is20%to110%Range AC input voltage.

Maximum input is limited to750 Vrmsor8x10₇Volts·Hz(Take the smaller value)　　.200mVThe range is the input with the largest full scale range. for20mVto200mV,

Multiply the total % reading error by10.

[3]Relative to calibration standards.

Capacitance characteristics

accuracy index±(% reading + % range)[1]

Function	Measuring range[2]	Test current	One year accuracy TCAL°C±5°C	Temperature Coefficient 0°Cto(TCAL°C-5°C) (TCAL°C+5°C) to50°C
capacitance	2.0000 nF	10μA	2+2.4	0.05+0.06
	20.000nF	10μA	1+0.1	0.05+0.01
	200.00nF	100μA	1+0.1	0.01+0.01
	2.0000μF	100μA	1+0.1	0.01+0.01
	20.000μF	1 mA	1+0.1	0.01+0.01
	200.00μF	1 mA	1+0.1	0.01+0.01
	2.0000mF	1 mA	1+0.1	0.01+0.01
	20.000 mF	1 mA	1+0.2	0.01+0.01
	100.00 mF	1 mA	3+0.1	0.05+0.02

Note:

[1] 90minute warm-up and using "relative" operations, non-film capacitors may introduce additional errors.

[2]Indicator refers to2nFrange1%to110%range and other ranges10%to110%range.

Temperature characteristics

accuracy index±(reading)[1]

Function	Probe type	Probe model	range of working temperature[2]	One year accuracy TCAL℃±5℃	Temperature Coefficient 0℃to(TCAL℃-5℃) (TCAL℃+5℃)to50℃
temperature	RTD[3](R0value 49Ωto2.1kΩ)	α=0.00385	- 200℃~660℃	0.16℃	0.01℃
	Thermocouple[4][5]	B	1100℃~1820℃	0.76℃	0.14℃
		E	- 150℃~1000℃	0.5℃	0.02℃
		J	- 150℃~1200℃	0.5℃	0.02℃
		K	- 100℃~1370℃	0.5℃	0.03℃
		N	- 100℃~1300℃	0.5℃	0.04℃
		R	300℃~1760℃	0.5℃	0.09℃
		S	400℃~1760℃	0.6℃	0.11℃
		T	- 100℃~400℃	0.5℃	0.03℃

Note:

[1] 90minutes to warm up. Excludes probe error.

[2]The temperature measurement function can also be applied outside the operating temperature range, but there is a certain error in the measurement accuracy.

[3]Indicators refer to the sensor's four-wire resistance measurement or its two-wire resistance measurement using the "relative" operation.

[4]Relative to cold junction temperature, accuracy is based onITS-90. The built-in cold end temperature refers to the temperature inside the banana socket, and the accuracy is±3.5℃.

[5]During calibration and testing, "reference temperature - external" is preferred for measurement.

Logger

Function	Specification
record source	AC and DC voltage, AC and DC current, resistance, capacitance, frequency, period, temperature
sampling interval	1ms~3600s
Record points	Record to internal maximum2000,000point, recorded to external maximum360,000,000point
Recording duration	Maximum recording duration100Hour
Record delay	maximum delay100Hour

Digitizer

Function	Specification
source	DC voltage, DC current
Sampling Rate	10Hz~50kHz
Sampling points	maximum2000,000point
- 3dBbandwidth	10kHz

Spurious-free dynamic range&**Signal to noise and distortion ratio**[1]

Function	Measuring range	Spurious-free dynamic range (SFDR)	signal to signal-noise sum Distortion ratio (SINAD)
DCV	200mV	70	60
	2V	75	65
	20V	75	68
	200 V	8	70
	1000V	80	75
DCI	200uA	75	60
	2mA	74	69
	20mA	75	62
	200mA	75	70
	2A	75	62
	10A	70	65

Note:

[1]Typical value. -1 dBFS, 1 kHzsingle frequency.20usAperture time, auto-zero off.

Measurement rate

Multimeter measuring rate[1]

Function	set up	Integration time	Readings/second50 Hz(60 Hz)
DC voltage DC 2-wire resistor Four wire resistor	0.001 PLC	20 (20)us	50000 (50000)
	0.01 PLC	200 (200) us	5000 (5000)
	0.1 PLC	2 (2) ms	500(500)
	1PLC	20 (16.7) ms	50 (60)
	10PLC	200 (167) ms	5 (6)
	100PLC	2 (1.67) s	0.5 (0.6)
AC voltage Alternating current	3 HzAC filter		0.5
	20 Hz		2
	200 Hz		50
frequency and period[2]	1 sgate time		1
	0.1 seconds		10
	0.01 seconds		100
	0.001 seconds		500
capacitance [3]	100mFMeasuring range		1

Note:

[1]Automatic trigger, trigger delay is0, turn off automatic zero adjustment, turn off automatic range.

[2] 20 Vrange,1 kHzenter.

[3]The measurement period changes with the size of the capacitance being measured, and refers to the update period after the capacitance value stabilizes.

Measurement methods and other characteristics

DC voltage	
Input resistance	200mV,2V,20Vrange;10 MΩor >10GΩOptional (when input exceeds these ranges±26 Vwhen, will pass408 kΩResistor clamp.)
	200 Vand1000Vrange;10 MΩ±1%
Input bias current	50pA,25℃Typical value
Input protection	All ranges1000V
common mode rejection ratio	140dB,forLOleaded1 kΩUnbalanced resistance, maximum ±500 VDC peak

resistance	
Test Methods	2line resistance or4Line resistance optional
	current source referenced toLOenter
open circuit voltage	Limit to <10V
Maximum lead resistance (4line resistance)	200Ω,2 kΩThe measuring range of each lead is10% Ranges All other ranges Each lead is1 kΩ
Input protection	All ranges1000V

DC	
shunt resistor	200µA,2mAfiles:100Ω
	20mA,200mAfiles:1Ω
	2A,10Afiles:0.01Ω
Input protection	Replaceable rear panel10A,250Vslow blow fuse
	internal12A,250 Vslow blow fuse

Continuity/Diode Test	
Measurement methods	use1 mA±5%Constant current source measures resistance or voltage
Response time	300samples/second
buzzer	have
continuity threshold	1Ωto2 kΩCan be set
diode threshold	0V~4VCan be set
Input protection	All ranges1000V
Setup time Precautions	Reading settling time is affected by source impedance, cable dielectric properties, and input signal changes. The default measurement delay chosen by your multimeter will result in correct first readings for most measurements.
Measurement precautions	Recommended for use when measuringTeflonor other conductors insulated with high impedance, low dielectric absorption materials

True rms AC voltage	
Measurement methods	ACCoupled true RMS measurement, with the highest possible value in any range400 VDC bias
Crest factor	Full scale crest factor ≤5
input resistance	All ranges are1 MΩ±2%Parallel<150pFcapacitance
Input protection	All ranges750 Vrms
ACfilter bandwidth	slow:3 Hz~300kHz
	middle:20 Hz~300kHz
	quick:200 Hz~300kHz

True RMS AC current	
Measurement methods	DC coupled to fuse and shunt resistor,ACCoupled to true rms measurement (measurement input ofACElement)
Crest factor	Full scale crest factor ≤3
maximum input	IncludeDCIngredientsRMSCurrent＜10 Arms

shunt resistor	200uA,2mAfiles:100Ω
	20mAand200mAThe file is1Ω
	2A,10AThe file is0.01Ω
Input protection	Replaceable rear panel10A,250Vslow blow fuse
	internal12A,250Vslow blow fuse
Setup time Precautions	The default measurement delay chosen by your multimeter will result in correct first readings for most measurements. Before making accurate measurements, it is necessary to ensure that the inputRCThe loop has completely stabilized (approx.1 s). Input＞300 Vrms(or>5 Arms) will cause the signal conditioning components to self-heat. The resulting errors are included in the instrument characteristics, and internal temperature changes caused by self-heating will bring additional errors to the smaller AC ranges. The additional error is less than 0.02%reading and usually disappears within a few minutes

frequency and period	
Measurement methods	Countdown frequency measurement technology,ACCoupled input, using AC voltage function
input resistance	All ranges are1 MΩ±2%Parallel connection<150pFcapacitance
Input protection	All ranges750 Vrms
Measurement precautions	All frequency counters introduce errors with small voltage, low frequency signals
	Shielded inputs are very helpful in reducing measurement errors caused by external noise
Setup time Precautions	When the signal being measured contains a varying DC component, errors will occur when measuring period or frequency. Before making accurate measurements, it is necessary to ensure that the inputRCThe loop has completely stabilized (approx.1 s)

Capacitance measurement	
Measurement methods	Charge the capacitor with a fixed current and measure the average rate of voltage rise
Connection Type	2Wire
Input protection	All ranges1000V
Measurement precautions	When measuring small capacitors, they are easily affected by external noise, causing measurement errors. Shielding the input can help reduce measurement errors caused by external noise.

temperature measurement	
Measurement methods	Supports thermocouple and thermistor temperature measurement
Measurement precautions	The built-in cold-junction temperature compensation tracks the temperature inside the banana socket hole. Temperature changes in the banana socket hole may introduce additional errors. When using the built-in cold junction temperature compensation, connect the thermocouple wire to the rubber socket and preheat it >3Minutes can minimize the error in cold junction compensation

Trigger and memory	
Sample/trigger	Pre-trigger or delay trigger, internal level trigger or external trigger, rising edge trigger or falling edge trigger
Trigger delay	0to1000 secondsCan be set
Single trigger sampling number	1to599999999
External trigger input	Input level:5 V TTLCompatible (high when the input is left floating)
	Trigger condition: rising edge/falling edge optional
	Input impedance: ≥30kΩ//500pF
	Delay:＜50 μs
	Maximum rate:300/s
	Minimum pulse width:2 μs
VMCoutput	Level:5 V TTLcompatible
	Output polarity: positive and negative polarity optional
	Output impedance:100ΩTypical value
	Pulse width: approx.2 μs

Mathematical operation function	
Minimum value/Maximum value/Mean value/Standard deviation,dBm,dB, limit value	

**General technical indicators**

power supply	
AC100 V~120 V	45Hz-66Hz
AC200 V~240 V	45Hz-66Hz
Power consumption	30 VA max

Mechanical properties	
length*width*height	381*261*107mm
weight	net weight4.4kg

Other features	
Display	5inchTFTdisplay, resolution800*480, support touch
working environment	Full precision:0℃ ~50℃;Full precision: in40℃Crelative humidity80%RH(no condensation)
	storage temperature:-20℃ ~70℃
	Altitude: upper limit3000rice
remote interface	LAN,USB Device,USB Host
programming language	standardSCPICompatible with the latest mainstream multimeter command set
Warm-up time	90minute

standard			
electromagnetic compatibility	conform toEMCcommand (2014/30/EU), consistent with or better thanIEC 61326-1:2020/EN61326-1:2021 (basic requirements)		
	conducted disturbance	CISPR 11/EN 55011	CLASS A group 1, 150kHz-30MHz
	Radiation harassment	CISPR 11/EN 55011	CLASS A group 1, 30MHz-1GHz
	electrostatic discharge (ESD)	IEC 61000-4-2/EN 61000-4-2	4.0kV(touch),8.0kV(Air)
	RF electromagnetic field immunity	IEC 61000-4-3/EN 61000-4-3	10V/m(80 MHz to 1 GHz) 3V/m(1.4GHz to 2GHz) 1 V/m(2.0GHz to 2.7GHz)
	electrical fast transient burst (EFT)	IEC 61000-4-4/EN 61000-4-4	2 kV(ACinput port)
	surge	IEC 61000-4-5/EN 61000-4-5	1 kV(live line to neutral line) 2 kV(Fire/neutral wire to ground)
	RF Continuously Conducted Immunity	IEC 61000-4-6/EN 61000-4-6	3 V,0.15-80MHz
	Voltage dips and short interruptions	IEC 61000-4-11/EN 61000-4-11	Voltage sag: 0% UT during 1 cycle 40% UT during 10/12 cycles 70% UT during 25/30 cycles Short interruption:0% UT during 250/300 cycles
safety	Complies with the Low Voltage Directive (2006/95/EC),Standards compliantEN61010-1:2010		

Scan cardSC1016technical parameters

Scan cardSC1016Integrate a high-precision, multi-functional,16aisle(12multi-function channels +4A current channel) data acquisition product that combines precise measurement functions with flexible signal connection functions to provide a wealth of test and measurement solutions.
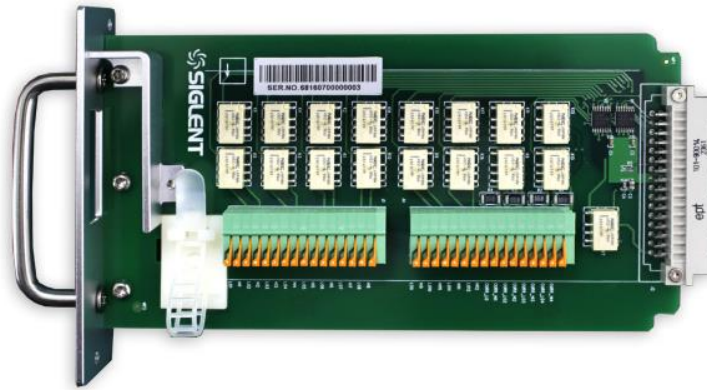
In order to better use the scanning card test and measurement function, please read the following instructions carefully and use this product safely.

Specifications

Measurement items	Connection line number
Maximum input AC voltage	125Vrmsor175Vpeak-to-peak value, frequency100kHz, 0.3Aswitching current,125VAC(Contact resistive load)
Electrical durability	＞100000times, in1A 30VDCUnder conditions＞ 100000Second-rate,0.3A 125VDCunder conditions
Contact resistance	75 mΩ(exist6VDC, 1Amaximum resistance value)
Maximum switching voltage	250VAC,220VDC
Maximum switching power	62.5VA/30W
Insulation resistance	more than the1G ohm(500VDC)
Fastest switching time	180ms(channel → channel)
Connector type	Press snap terminals, #24AWGModel cable

Note: In order to avoid damaging the instrument, please do not pull out the scanning card when the instrument is performing scanning card measurements, and wait until the power of the instrument is turned off before performing the corresponding operations.

Scan card channel configuration

Measurement items	Connection line number	Channel number
DCV,ACV[1]	2Wire(H,L)	12(CH1~CH12) (125VAC,110VDC)
DCI,ACI[2]	2Wire(H,L)	4(CH13~CH16) (only 2Agear)
2Wresistance	2Wire(H,L)	12(CH1~CH12)
4Wresistance	4line (inputH,L+inductionH,L)	6right(CH1 [enter]&CH7 [induction],2&8,…,6&12)
capacitance	2Wire(H,L)	12(CH1~CH12)
diode	2Wire(H,L)	12(CH1~CH12)

continuity	2Wire(H,L)	12(CH1~CH12)
frequency, period	2Wire(H,L)	12(CH1~CH12)
Temperature (thermocouple)	2Wire(H,L)	12(CH1~CH12)
temperature2W RTD	2Wire(H,L)	12(CH1~CH12)

Note:

[1] DCV/ACV 200 Vgear, the input signal is limited to125VAC,110 VDCthe following.

[2]Only supports measurement2.2 AFor the following current, the error is: accuracy ± (3%(reading) +0.02%(range))

Ordering Information

Product number	Product Description
SDM4065A	6.5high precision multimeter
SDM4065A-SC	6.5High-precision multimeter with16channel scan card

Standard accessories	quantity
power cable	1
Test pen	a pair
Alligator clips	a pair
USBdata cable	1
quick guide	1
warranty card	1
PC software	Official website free download

Optional accessories	Specifications and models
USB-GPIBadapter	USB-GPIB
30Ashunt	SCD30A

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About Dingyang

Dingyang Technology (SIGLENT) is an industry leader in the field of general electronic test and measurement instruments.Astock listing

company.

2002In 2008, the founder of Dingyang Technology began to focus on the research and development of oscilloscopes.2005Successfully developed the first Dingyang

A digital oscilloscope. After years of development, Dingyang's products have expanded to digital oscilloscopes, handheld oscilloscopes, letter

Digital/arbitrary waveform generator, spectrum analyzer, vector network analyzer, RF/microwave signal source, desktop millionaire

Basic test and measurement instrument products such as meters, DC power supplies, and electronic loads are among the very few in the world that can simultaneously develop

R&D, production and sales of digital oscilloscopes, signal generators, spectrum analyzers and vector network analyzers

One of the main manufacturers of electronic test and measuring instruments, it is a national key "little giant" enterprise. It is also a country

Very few of the main domestic competitors have these four main products at the same time and have all four main products in the market.

Manufacturers in the high-end field. The company is headquartered in Shenzhen, with offices in Cleveland, USA, Augsburg, Germany, and East Japan.

A subsidiary was established in Beijing and a branch was established in Chengdu. The products are exported to the world.80Many countries and regions,

SIGLENTIt has become a world-renowned brand of testing and measuring instruments.

contact us

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statement

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