



Time Electronics
Calibration, Test and Measurement

Extended Specifications

5075 Digital Multimeter

Version 1.4
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Accuracy Specifications

Accuracy specified as \pm ppm of reading \pm Floor at default resolution (shown in brackets), relative to calibration standards. TCAL = 23°C. Temperature coefficient outside TCAL \pm 5°C is 1/10th of the 90 day specification.

DC Voltage

RANGE	RESOLUTION Resolution at default in brackets	NUMBER OF DIGITS *	INPUT IMPEDANCE	24 HOUR STABILITY \pm 1°C	90 DAY \pm 5°C	1 YEAR \pm 5°C	2 YEAR \pm 5°C
0 to 3mV	10nV (10nV)	4 to 6 (6)	>1G Ω	5 + 40nV	22 + 80nV	30 + 80nV	45 + 80nV
0 to 10mV							
0 to 30mV	10nV (100nV)	4 to 7 (6)		5 + 400nV	22 + 800nV	30 + 800nV	45 + 800nV
0 to 100mV							
0 to 300mV	100nV (1 μ V)			5 + 4 μ V	22 + 8 μ V	30 + 8 μ V	45 + 8 μ V
0 to 1V							
0 to 3V	1 μ V (10 μ V)			3 + 3 μ V	12 + 6 μ V	18 + 6 μ V	30 + 6 μ V
0 to 10V							
0 to 30V	10 μ V (100 μ V)			3 + 30 μ V	12 + 60 μ V	18 + 60 μ V	30 + 60 μ V
0 to 100V							
0 to 300V	100 μ V (1mV)		5 + 400 μ V	20 + 600 μ V	30 + 600 μ V	45 + 600 μ V	
0 to 1kV							
0 to 3kV	1mV (10mV)	10 + 5mV	22 + 8mV	30 + 8mV	45 + 8mV		
0 to 10kV							
0 to 3kV	1mV (10mV)	4 to 7 (6)	100M Ω	50 + 150mV	250 + 1.0V	350 + 1.2V	500 + 1.5V
0 to 10kV				300 + 1.2V	350 + 1.2V	500 + 1.5V	750 + 2.0V

All DC specifications \pm 0.4 μ V. Above 5 kV add 250 ppm / kV.

Number of digits is expressed as Minimum to Maximum and (Default) available on that range.

DC Current

RANGE	RESOLUTION Resolution at default in brackets	NUMBER OF DIGITS *	BURDEN VOLTAGE	24 HOUR STABILITY \pm 1°C	90 DAY \pm 5°C	1 YEAR \pm 5°C	2 YEAR \pm 5°C	
0 to 3 μ A	10pA (10pA)	4 to 6 (6)	30mV	30 + 50pA	150 + 200pA	200 + 250pA	300 + 300pA	
0 to 10 μ A			100mV					
0 to 30 μ A	100pA (100pA)	4 to 6 (6)	30mV	25 + 500pA	75 + 1nA	100 + 1nA	150 + 1.5nA	
0 to 100 μ A			100mV					
0 to 300 μ A	100pA (1nA)	4 to 7 (6)	30mV	25 + 5nA	75 + 10nA	100 + 10nA	150 + 15nA	
0 to 1mA			100mV					
0 to 3mA	1nA (10nA)		30mV	25 + 50nA	75 + 100nA	100 + 100nA	150 + 150nA	
0 to 10mA			100mV					
0 to 30mA	10nA (100nA)		30mV	25 + 500nA	75 + 1 μ A	100 + 1 μ A	150 + 1.5 μ A	
0 to 100mA			100mV					
0 to 300mA	100nA (1 μ A)		30mV	40 + 8 μ A	150 + 10 μ A	200 + 10 μ A	300 + 20 μ A	
0 to 1A			100mV					
0 to 3A	10 μ A (10 μ A)		4 to 6 (6)	30mV	100 + 150 μ A	500 + 200 μ A	750 + 200 μ A	1000 + 300 μ A
0 to 10A				100mV				
0 to 30A	100 μ A (100 μ A)	300mV		100 + 1.5mA	500 + 2mA	750 + 2mA	1000 + 3mA	

Number of digits is expressed as Minimum to Maximum and (Default) available on that range.

Resistance

RANGE	RESOLUTION Resolution at default in brackets	NUMBER OF DIGITS	MEASUREMENT CURRENT	24 HOUR STABILITY $\pm 1^{\circ}\text{C}$	90 DAY $\pm 5^{\circ}\text{C}$	1 YEAR $\pm 5^{\circ}\text{C}$	2 YEAR $\pm 5^{\circ}\text{C}$
0 to 30m Ω	10n Ω (100n Ω)	4 to 7 (6)	100mA	20 + 1 $\mu\Omega$	70 + 2 $\mu\Omega$	100 + 2.5 $\mu\Omega$	150 + 3 $\mu\Omega$
0 to 100m Ω							
0 to 300m Ω	100n Ω (1 $\mu\Omega$)			15 + 8 $\mu\Omega$	40 + 10 $\mu\Omega$	60 + 15 $\mu\Omega$	90 + 20 $\mu\Omega$
0 to 1 Ω							
0 to 3 Ω	1 $\mu\Omega$ (10 $\mu\Omega$)		10mA	10 + 50 $\mu\Omega$	30 + 80 $\mu\Omega$	40 + 100 $\mu\Omega$	60 + 120 $\mu\Omega$
0 to 10 Ω							
0 to 30 Ω	10 $\mu\Omega$ (100 $\mu\Omega$)			5 + 300 $\mu\Omega$	20 + 600 $\mu\Omega$	30 + 800 $\mu\Omega$	40 + 1m Ω
0 to 100 Ω							
0 to 300 Ω	100 $\mu\Omega$ (1m Ω)		1mA	5 + 3m Ω	20 + 6m Ω	30 + 8m Ω	40 + 10m Ω
0 to 1k Ω							
0 to 3k Ω	1m Ω (10m Ω)		100 μA	5 + 30m Ω	20 + 60m Ω	30 + 80m Ω	40 + 100m Ω
0 to 10k Ω							
0 to 30k Ω	10m Ω (100m Ω)		10 μA	6 + 300m Ω	30 + 600m Ω	45 + 800m Ω	60 + 1 Ω
0 to 100k Ω							
0 to 300k Ω	100m Ω (1 Ω)			12 + 5 Ω	60 + 8 Ω	90 + 10 Ω	120 + 12 Ω
0 to 1M Ω							
0 to 3M Ω	1 Ω (10 Ω)	1 μA	20 + 80 Ω	100 + 100 Ω	150 + 120 Ω	200 + 200 Ω	
0 to 10M Ω							
0 to 30M Ω	100 Ω (100 Ω)	4 to 6 (6)	100nA	250 + 5k Ω	750 + 10k Ω	1000 + 10k Ω	1800 + 20k Ω
0 to 100M Ω							
0 to 300M Ω	10k Ω (10k Ω)	4 to 5 (5)	10nA	0.25% + 500k Ω	0.5% + 1M Ω	0.75% + 1M Ω	1% + 2M Ω
0 to 1G Ω							

AC Voltage

RANGE	RESOLUTION *	FREQUENCY RANGE	INPUT IMPEDANCE	24 HOUR STABILITY $\pm 1^{\circ}\text{C}$	90 DAY $\pm 5^{\circ}\text{C}$	1 YEAR $\pm 5^{\circ}\text{C}$	2 YEAR $\pm 5^{\circ}\text{C}$
0 to 30mV	1 μV	40Hz to 20kHz	100M Ω	0.03% + 3 μV	0.05% + 4 μV	0.06% + 4 μV	0.09% + 6 μV
0 to 300mV	10 μV			0.03% + 30V	0.05% + 40 μV	0.06% + 40 μV	0.09% + 60 μV
0 to 3V	100 μV			0.03% + 3mV	0.05% + 4mV	0.06% + 4mV	0.09% + 6mV
0 to 30V	1mV			0.03% + 30mV	0.05% + 40mV	0.06% + 40mV	0.09% + 60mV
0 to 300V	10mV	40Hz to 1kHz	1M Ω	0.1% + 500mV	0.15% + 0.1V	0.2% + 0.12V	0.5% + 0.15V
0 to 3kV	100mV	40Hz to 60Hz	100M Ω	0.1% + 500mV	0.15% + 1.0V	0.2% + 1.2V	0.5% + 1.5V

All AC Voltages $\pm 50\mu\text{V}$. Above 1 kV add 0.025 % / kV.

Default Resolution is 6 digits, 6 digits maximum, 4 digits minimum on all ranges.

AC Current

RANGE	RESOLUTION *	FREQUENCY RANGE	BURDEN VOLTAGE	24 HOUR STABILITY $\pm 1^{\circ}\text{C}$	90 DAY $\pm 5^{\circ}\text{C}$	1 YEAR $\pm 5^{\circ}\text{C}$	2 YEAR $\pm 5^{\circ}\text{C}$
0 to 30 μA	1nA	40Hz to 1kHz	300mV	0.05% + 5nA	0.1% + 8nA	0.2% + 10nA	0.3% + 12nA
0 to 300 μA	10nA			0.05% + 50nA	0.1% + 80nA	0.2% + 100nA	0.3% + 120nA
0 to 3mA	100nA			0.05% + 500nA	0.1% + 800nA	0.2% + 1 μA	0.3% + 1.2 μA
0 to 30mA	1 μA			0.05% + 5 μA	0.1% + 8 μA	0.2% + 10 μA	0.3% + 12 μA
0 to 300mA	10 μA			0.05% + 50 μA	0.1% + 80 μA	0.2% + 100 μA	0.3% + 120 μA
0 to 3A	100 μA	40Hz to 400Hz	30mV	0.1% + 500 μA	0.15% + 1mA	0.2% + 1mA	0.5% + 1mA
0 to 30A	1mA		300mV	0.1% + 5mA	0.15% + 10mA	0.2% + 10mA	0.5% + 10mA

All AC Current $\pm 50\text{nA}$.

Resolution is 6-digit default, 6 digits maximum, 4 digits minimum.

Frequency

RANGE	RESOLUTION	NO OF DIGITS	24 HOUR STABILITY $\pm 1^{\circ}\text{C}$	90 DAY $\pm 5^{\circ}\text{C}$	1 YEAR $\pm 5^{\circ}\text{C}$	2 YEAR $\pm 5^{\circ}\text{C}$
0 to 100kHz	1Hz	4 to 5 (5)	2 + 1	10 + 1	12 + 1	15 + 1

Capacitance

RANGE	RESOLUTION *	NUMBER OF DIGITS	24 HOUR STABILITY $\pm 1^{\circ}\text{C}$	90 DAY $\pm 5^{\circ}\text{C}$	1 YEAR $\pm 5^{\circ}\text{C}$	2 YEAR $\pm 5^{\circ}\text{C}$
0 to 30nF	1pF	4 to 5 (5)	0.05% + 5pF	0.2% + 20pF	0.25% + 20pF	0.3% + 30pF
0 to 300nF	10pF		0.05% + 50pF	0.2% + 200pF	0.25% + 200pF	0.3% + 300pF
0 to 3 μF	100pF		0.05% + 500pF	0.2% + 2nF	0.25% + 2nF	0.3% + 3nF
0 to 30 μF	1nF		0.05% + 5nF	0.2% + 20nF	0.25% + 20nF	0.3% + 30nF
0 to 300 μF	10nF		0.05% + 50nF	0.2% + 200nF	0.25% + 200nF	0.3% + 300nF

All Capacitances $\pm 1\text{pF}$.

Resolution is 5-digit default, 5 digits maximum, 4 digits minimum.

PRT (Pt100) Temperature

RANGE	RESOLUTION	NUMBER OF DIGITS	24 HOUR STABILITY $\pm 1^{\circ}\text{C}$	90 DAY $\pm 5^{\circ}\text{C}$	1 YEAR $\pm 5^{\circ}\text{C}$	2 YEAR $\pm 5^{\circ}\text{C}$
-200 to +600 $^{\circ}\text{C}$	0.001 $^{\circ}\text{C}$	4 to 6 (6)	0.025 $^{\circ}\text{C}$	0.05 $^{\circ}\text{C}$	0.06 $^{\circ}\text{C}$	0.07 $^{\circ}\text{C}$

Only available in four terminal mode on the 300 Ω range.

General Specifications

Power Supply	
MAINS VOLTAGE	110V / 220V / 240V AC (\pm 10% up to a maximum of 250V AC) @ 50/60 Hz
FUSE RATING	800mA @ 220V/240V or 1.6A @ 110V Anti to Surge
CONNECTOR	IEC PLUG
CONSUMPTION	35 W Max @ 240 V AC

Mechanical	
DIMENSIONS	Height: 90mm. Width: 450mm. Depth: 420mm (including terminals)
WEIGHT	8.5 kg
RACK MOUNTING	Standard 19" rack mount kit available (Order Code 9728).

Environmental	
EMC	Designed to EN50081, EN50082, FCC Rules part 15, sub part J, class B
SAFETY	Designed to IEC348 and IEC1010-15, UL1244
TEMPERATURE	Operating 0°C to 40°C. Storage -20°C to 60°C
HUMIDITY	Operating (0°C to 30°C) <90% (30°C to 40°C) <70%
ALTITUDE	Operating 0 to 3km. Non-Operating 0 to 12km
WARM UP TIME	2 Hours to full accuracy

Maximum Voltages Between Terminals	
IMPORTANT: Do not exceed these specified voltages between terminals otherwise serious damage will result.	
Between V+ and V- terminals	< 1100V DC
Between High Voltage and V- terminals	< 10kV DC
Between V- and Guard	< 200V DC
Between Guard and Earth	< 500V DC