



Data Sheet

RISHABH 6012/13/15/16

True RMS Digital Multimeter



Measure



Control



Record



Analyze

Model Wise Functional Overview

Functions/Features	6012	6013	6015	6016
Voltage VDC (Ri>9MΩ)	•	•	•	•
Voltage VAC TRMS (Ri>9MΩ)	•	•	•	•
Voltage LoZ VAC TRMS (Ri=1MΩ)		•	•	•
Voltage VAC TRMS (Ri>9MΩ) LPF 1kHz		•	•	•
Voltage LoZ VAC TRMS (Ri=1MΩ) LPF 1kHz		•	•	•
Voltage VACDC (Ri>9MΩ)	•	•	•	•
High impedance, high bandwidth mV measurement	600mV	60mV/ 600mV	60mV/600mV	60mV/600mV
Bandwidth VAC & mV ACDC	10kHz	10kHz	10kHz	100 kHz
Frequency Measurement			•	•
Duty cycle %			•	•
Voltage level measurement dB,dBu,dBm		•	•	•
Resistance	•	•	•	•
Conductance measurement	•	•	•	•
Continuity test (I const = 1 mA)	•	•	•	•
Diode measurement (I const = 1 mA)	•	•	•	•
Temperature measurement (TYP J,TYP K)		•	•	•
Temperature measurement (PT100,PT1000)	•		•	•
Capacitance measurement			•	•
Current ADC	600mA	6 A/16 A (20 A)	600 μA/6 mA 60 mA/600 mA 6 A/10 A (16 A)	600 μA/6 mA 60 mA/600 mA 6 A/10 A (16 A)
Current AAC+DC TRMS				
Current AAC TRMS				
Bandwidth @ AAC+DC or AAC 10 kHz	•	•	•	•
Measurement with Clamp Sensor	•	•	•	•
Data Logging / Viewing Function			•	•
Protective rubber holster	•	•	•	•
Fuse 16A/ 1000V	1.6A		•	•
0-20mA / 4-20mA percentage scale			•	•
Square wave Out			•	•
Self battery voltage measurement	•	•	•	•
MIN/MAX/AVG and Auto Hold functions	•	•	•	•
Dangerous contact voltage indication	•	•	•	•
REL/Zero function	•	•	•	•
USB IR-interface		Optional		
External power supply adapter		Optional		
Measuring Category	1000 V CAT III 600 V CAT IV	1000 V CAT I 600V CAT II	1000 V CAT III 600 V CAT IV	1000 V CAT III 600 V CAT IV

Environmental Condition

Operating temperature	-10 to +50°C
Storage temperature	- 25 to +70°C
Relative humidity	<75% non condensing.
IP	IP 50 for Housing, IP20 for terminals.
Altitude	Up to 2000 m



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Technical Specification

Voltage

Measurement Function	Measuring Range	Resolution	Input Impedance	Intrinsic Uncertainty under Reference Condition $\pm(\dots\%$ of the rdg.+...Digits)			Overload Capacity ²⁾	
				DC ⁷⁾	AC ^{1) 3)}	ACDC ^{1) 3)}	Value	Time
V	6V	100 μ V	>9M Ω	0.05 + 5	0.5 + 9	1 + 30	1000 V DC/ AC RMS Sine	Continuous
	60V	1mV		0.05 + 5				
	600V	10mV		0.05 + 9				
	1000V	100mV		0.09 + 10				
mV	60mV	1 μ V	>10M Ω	0.09 + 15	-	1 + 30		Max 10 s
	600mV	10 μ V	0.09 + 15					
Influence Quantity	Range of Influence		Range	Accuracy				
Frequency ^{6) 9)}	>15 Hz...45 Hz		60 mV ⁻⁵⁾ , 600 mV ~	3+30				
	>65 Hz...100kHz							
	>15 Hz...45 Hz		6V, 60V, 600V ~	2+9	3+9			
	> 65Hz... 1kHz			1+9	3+9			
	>1kHz...20kHz			3+9	4+9 ¹⁰⁾			
	>20kHz...100kHz ⁸⁾		1000V ~	3.5+30				
	>15 Hz...45 Hz			2+9	3+9			
	> 65Hz... 1kHz			2+9	3+9			
>1kHz...10kHz		3+30						
1) Specified Accuracy is valid as of 3% of the measuring range. With Short-circuited test probes: residual value of 1 to 30 d at zero point due to the TRMS converter.								
2) At 0°C to 40°C (Accuracy Range)								
3) In VAC measurement, Frequency will be shown above 10% of the present range, except for 1000V & 60mV range i.e. 25% & 50% respectively.								
4) Frequency Influence upto 10kHz.								
5) Frequency response up to 50 kHz								
6) Frequency response is valid from 10% to 100% of range								
7) With Zero Balancing								
8) Frequency response up to 100 kHz, for greater than 50 kHz plus 2.5%								
9) Overload capacity of the voltage measurement input: power Limiting: Frequency x Voltage Max : 6x10 ⁶ V x Hz for V>100V								
10) Frequency response greater than 2 kHz plus 2.5%								

Frequency, Duty Cycle

Measurement Function	Measuring Range	Frequency	Intrinsic Uncertainty	Overload Capacity ¹⁾	
				Value	Time
Hz ⁵⁾	600Hz, 6kHz, 60kHz, 600kHz, 1MHz	fmin ²⁾ : 6Hz	0.05 + 5	1000 V DC/ AC RMS Sine	Max 10 s
Hz(V) ³⁾	10Hz...100kHz		0.1 + 5 ⁴⁾		
Duty Cycle(%)	2.0...98%	15Hz... 1kHz	0.1 R + 5 d		
	5.0...98%	... 10kHz	0.2 R per kHz + 5d		
	10...90%	... 50kHz	0.5 R per kHz + 5d		
1) At 0°C to 40°C (Accuracy Range)					
2) Lowest measurable frequency for square measuring signals symmetrical to the zero point ($\pm 5V$).					
3) Overload capacity of the voltage measurement input : Power limiting: Frequency x voltage max : 6x10 ⁶ V x Hz for U> 100V.					
4) Input sensitivity, sinusoidal signal , 10% to 100% of the measuring range					
5) At input $\pm 5V_{rms}$,Square wave, Bipolar inputs.					
R= Range d= digit					



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Current

Measurement Function	Measuring Range	Resolution	Voltage Drop Approx.	Intrinsic Uncertainty under Reference Condition $\pm(\dots\%$ of the rdg.+...Digits)			Overload Capacity ²⁾	
				DC ⁴⁾	AC ¹⁾	ACDC ¹⁾	Value	Time
mA	600 μ A	10 nA	60 mV	0.5 + 15	1 + 10	1.5 + 10	0.7A	Continuous
	6 mA	100 nA	60 mV	0.5 + 5	1 + 10	1.5 + 10		
	60 mA	1 μ A	60 mV	0.1 + 5	1 + 10	1.5 + 10		
	600 mA	10 μ A	60 mV	0.2 + 5	1 + 10	1.5 + 10		
A	6 A	100 μ A	60 mV	0.9 + 10	1 + 10	1.5 + 10	10 A: = 5 min ³⁾	
	10 A	1 mA	300 mV	0.9 + 10	1 + 10	1.5 + 10		
Influence Quantity	Range of Influence	Range	Accuracy					
			DMM 6016	Others				
Frequency ⁵⁾	>15 Hz....45 Hz	600 μ A..... 10A	3+10					
	>65Hz....10 kHz							
1) Specified Accuracy is valid as of 3% of the measuring range. With Short- circuited test probes: residual value of 1 to 30 d at zero point due to the TRMS converter.								
2) At 0°C to 40°C (Accuracy Range)								
3) Off time 30 min and TA = 40°C								
4) With Zero Balancing								
5) Frequency response is valid from 10% to 100% of range								

Resistance, Diode, Continuity

Measurement Function	Measuring Range ⁴⁾	Resolution	Open Ckt. Voltage	Meas. curr. @ range limit	Intrinsic Uncertainty	Overload Capacity		
						Value	Time	
Ω ¹⁾	600 Ω	10m Ω	<1.4V	Approx. 300 μ A	0.1 + 10	1000 V DC/ AC RMS Sine	Max 10 s	
	6k Ω	100m Ω		Approx. 250 μ A	0.1 + 10			
	60k Ω	1 Ω		Approx. 100 μ A	0.1 + 10			
	600k Ω	10 Ω		Approx. 12 μ A	0.5 + 10			
	6M Ω	100 Ω		Approx. 1.2 μ A	1 + 10			
	60M Ω	10k Ω		Approx. 125 nA	5 + 10			
Continuity	600 Ω	-	Appx. 8V	Approx. 1 mA	3 + 5			
Diode ¹⁾	6.0V ³⁾	-	Appx. 8V	Approx. 1 mA	0.5 + 5			
1) Measurement of Resistance, Diode will be more accurate after removal from device under test								
2) At 0°C to 40°C (Accuracy Range)								
3) Displays up to max 6.0 V, "OL" in excess of 6.0V.								
4) With Zero Balancing								

Temperature

Measurement Function	Measuring Range		Intrinsic Uncertainty	Overload Capacity ¹⁾	
	Value	Time			
Temperature °C/°F	Pt 100	-200 °C .. +850 °C	0.3 + 15 ²⁾	1000 V DC/ AC RMS Sine	Max 10s
	Pt 1000	-150 °C .. +850 °C	0.3 + 15 ²⁾		
	TC K	-200 °C .. +1372 °C	1% + 20 ²⁾		
	TC J	-210 °C .. +1200 °C	1% + 20 ²⁾		
1) At 0°C to 40°C (Accuracy Range)					
2) Plus Sensor Deviation					



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