



Nagman 25

- Compact, Light Weight Unit with Holster

- Capability to Measure & Simulate DC Voltages, DC Current, Frequency, Resistance, Thermocouples & RTDs

- 5 digits display of Measurement & 6 digits display for Simulation

- Dual LCD with white LED for backlight

- Measurement & Simulation of :

DC Voltages : 50 mV & 500 mV & 5 V in Measurement Mode 100 mV, 1V & 10V in Simulation Mode

DC Current : 50 mA in Measurement Mode; 20 mA in Simulation Mode

Resistance : 500 Ω & 5 K Ω in Measurement Mode; 400 Ω , 4 K Ω & 40 K Ω in Simulation Mode

Thermocouples : R, S, B, E, K, J, T & N

RTDs : Pt100, Pt1000 & Cu50

Frequency : 500 Hz, 5 KHz & 50 KHz in Measurement Mode; 100 Hz, 1 KHz, 10 KHz & 100 KHz in Simulation Mode

- Capability to perform Switch Test & Continuity Test

INPUT FUNCTIONS (Measurement)

Functions	Reference	Ranges	Resolution	Accuracy	Remarks
DC Voltage	50 mV	-5 to 55 mV	1 mV	0.02 + 0.02	Input Resistance : 100M Ω
	500 mV	-50 to 550 mV	10 mV	0.02 + 0.01	
	5 V	-0.5 to 5.5 V	0.1 mV	0.02 + 0.01	Input Resistance : 1 M Ω
	50 V	-5 to 55 V	1 mV	0.03 + 0.01	

DC Current (mA)	50 mA	-5 to 55 mA	1 mV	0.02% + 0.01	Shunt Resistance : 10Ω
Resistance (Ohm)	500Ω Test current : approx. 1 mA	0 to 550 Ω	0.01 Ω	0.05% + 0.02	Open circuit voltage about 2.5 V
	5 KΩ test current; approx. 0.1mA	0 to 5.50 KΩ	0.1 Ω	0.05% + 0.02 Ω	Does not include lead resistance
Frequency	500 Hz	3 Hz to 500 Hz	0.01 Hz	±2 digit	Input Impedance 100KΩ atleast;
	5 KHz	3 Hz to 5 KHz	0.1 Hz		Sensitivity : 3Vp-p minimum; duty cycle :
	50 KHz	3 Hz to 50 KHz	1 Hz		50%
Thermocouples	R	0 to 1767°C	1°C	0 to 500°C : 1.8°C	By using ITS-90 temperature scale, the Accuracy does not include the error of internal temperature compensation caused by a sensor.
	S	0 to 1767°C		500 to 1767°C : 1.5°C	
	K	-100 to 1372°C	0.1°C	-100 to 0°C : 1.2°C	
				0 to 1372°C : 0.8°C	
	E	-50 to 1000°C		-50 to 0°C : 0.9°C	

				0 to 1000°C : 1.5°C	
	J	-60 to 1200°C		-60 to 0°C : 1°C	
				0 to 1200°C : 0.7°C	
	T	-100 to 400°C		-100 to 0°C : 1°C	
				0 to 400°C : 0.7°C	
	N	-200 to 1300°C		-200 to 0°C : 1.5°C	
			0 to 1300°C : 0.9°C		
	B	600 to 1820°C	1°C	600 to 800°C : 2.2°C	
				800 to 1000°C : 1.8°C	
				1000 to 1820°C : 1.4°C	
RTD	Pt100 385	-200 to 800°C	0.1°C	-200 to 0°C : 0.5°C	By using Pt100-385 does not include lead resistance.
				0 to 400°C : 0.7°C	
				400 to 800°C : 0.8°C	

	Pt1000 385	-200 to 630°C		-200 to 100°C : 0.3°C	
				100 to 300°C : 0.5°C	
				300 to 630°C : 0.7°C	
	Pt200 385	-200 to 630°C		-200 to 100°C : 0.8°C	
				100 to 300°C : 0.9°C	
				300 to 630°C : 1.0°C	
	Pt500 385	-200 to 630°C		-200 to 100°C : 0.4°C	
				100 to 300°C : 0.5°C	
				300 to 630°C : 0.7°C	
	Cu10	-100 to 260°C		1.8°C	
	Cu50	-50 to 150°C		0.7°C	
Switch		Close / open		Approx.. 1 mA test current. Short circuit display “Close Open” : OPEN Threshold value about 200 to 300Ω	

Continuity	500Ω	<50Ω sound			Approx. 1 mA test current
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* Accuracy expressed as Percentage of Reading + Percentage of Range

OUTPUT FUNCTIONS (Simulation)

Functions	Referenc e	Ranges	Resoluti on	Accuracy	Remarks
DC Voltage	100 mV	-10 to 110 mV	1 mV	0.02 + 0.01	Max output current 5 mA
	1 V	-0.1 to 1.10 V	10 mV	0.02 + 0.01	Max output current 2 mA
	10 V	-1 to 11 V	0.1 mV	0.02 + 0.01	Max output current 5 mA
DC Current	20 mA	0 to 22 mA	1 mA	0.02 + 0.02	External supply for simulate mA : 5V – 28V. Max. load 1KΩ at 20mA
Resistance	400Ω	0 to 400Ω	0.01Ω	0.02 + 0.02	Excitation current : ±0.5 – 3mA; if ±0.1 – 0.5 add 0.1Ω Accuracy does not include lead resistance
	4KΩ	0 to 4KΩ	0.1Ω	0.05 + 0.025	Excitation current : ±0.05 – 0.3mA; does not include lead resistance.
	40KΩ	0 to 40KΩ	1Ω	0.1 + 0.1	Excitation current : ±0.01mA; does not include lead resistance.
Thermoco uple	R	0 to 1767°C	1°C	0 to 100°C:1.5°C	By using ITS-90 temperature scale, the accuracy does not include the error internal temperature compensation caused by a sensor.
				100 to 1767°C : 1.2°C	
	S	0 to 1767°C		0 to 100°C : 1.5°C	
				100 to 1767°C : 1.2°C	

	K	-200 to 1372°C		-200 to -100°C : 0.6°C	
				-100 to 400°C : 0.5°C	
				400 to 1200°C : 0.7°C	
				1200 to 1372°C : 0.9°C	
	E	-200 to 1000°C		-200 to -100°C : 0.6°C	
				-100 to 600°C : 0.5°C	
				600 to 1000°C : 0.4°C	
	J	-200 to 1200°C		-200 to -100°C : 0.6°C	
				-100 to 800°C : 0.5°C	
				800 to 1200°C : 0.7°C	
	T	-250 to 400°C		-250 to 400°C : 0.6°C	
	N	-200 to 1300°C		-200 to -100°C : 1°C	
				-100 to 900°C : 0.7°C	
				900 to 1300°C : 0.8°C	
	B	600 to 1820°C		400 to 800°C : 2°C	
				800 to 1820°C : 1.1°C	
RTD	Pt100 385	-200 to 800°C	0.1°C	-200 to 0°C : 0.3°C	By using Pt100-385 Excitation Current :
				0 to 400°C : 0.5°C	

				400 to 800°C : 0.8°C	±0.5 to ±3 mA for Pt100, Cu10, Cu50; Excitation Current : ±0.05 to ±0.3mA for Pt200, Pt500, Pt1000; does not include lead resistance	
	Pt200 385	-200 to 630°C		-200 to 100°C : 0.8°C		
				100 to 300°C : 0.9°C		
				300 to 630°C : 1.0°C		
	Pt500 385	-200 to 630°C		-200 to 100°C : 0.4°C		
				100 to 300°C : 0.5°C		
				300 to 630°C : 0.7°C		
	Pt1000 385	-200 to 630°C		-200 to 100°C : 0.2°C		
				100 to 300°C : 0.5°C		
				300 to 630°C : 0.7°C		
	Cu10	-100 to 260°C		1.8°C		
	Cu50	-50 to 150°C		0.6°C		
Frequency	100 Hz	1 to 110 Hz	0.01 Hz	±2 count	Output voltage : +1 to 11 Vp-p (zero base waveform); Amplitude Accuracy :	
	1 KHz	0.100 to 1.100 KHz	1 Hz			
	10 KHz	1 to 11 KHz	0.1 KHz			
	100 KHz	10 to 110 KHz	2 KHz	±5 count		
Pulse	100 Hz	1 to 100000 cycles	1 cycle	±2 count	±(5% +0.5V);	
	1 KHz					

	10 KHz				Maximum load : >100KΩ; Duty cycle : 50%
Switch	100 Hz	1 Hz to 110 Hz	0.01 Hz	±2 count	FET Switch maximum open/close Voltage : +28V Max. open/close Current : 50mA
	1 KHz	0.100 KHz to 1.100 KHz	1 Hz		
	10 KHz	1 KHz to 11 KHz	0.1 KHz		
	100 KHz	10 KHz to 110 KHz	2 KHz	±5 count	