

Signal

Nagman

Multifunction Process Calibrator

Portable, Handy
& Sturdy case with grip

Basic Accuracy : $\pm 0.02\%$ F.S.

**Capability to Measure & Simulate
DC Voltages, DC Current, Frequency, Resistance,
Thermocouples & RTD**

Model

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 & 50 V in Measurement Mode
100 mV, 1 V & 10 V 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 :
100 Hz, 1 KHz & 10 KHz in Measurement Mode
100 KHz, 1 KHz, 10 KHz & 100 KHz in Simulation Mode

Capability to perform Switch Test & Continuity Test



SPECIFICATIONS

MEASURING FUNCTIONS

Functions	Range / Type	Ranges	Resolution	Accuracy	Remarks
DC Voltage	50 mV	-5 to 55 mV	1 μ V	0.02% + 10	impedance : about 100 M Ω
	500 mV	-10 to 550 mV	10 μ V	0.02% + 2	
	5 V	-0.1 to 5.5 V	0.1 mV	0.02% + 5	impedance : 1 M Ω
	50 V	0 to 55 V	10 mV	0.02% + 5	
DC Current	50 mA	-5 to 50 mA	1 μ V	0.02% + 2	impedance : 10 M Ω
Resistance	500 Ω about 1 mA exciting	0 to 550 Ω	0.01 Ω	0.02% + 0.1 Ω	Plough voltage about 2.5 V not including the accuracy of down-lead resistance
	5 K Ω about 0.1 mA exciting	0 to 5.5 K Ω	0.1 Ω	0.02% + 0.5 Ω	
Frequency	100 Hz	2 to 110 Hz	0.1 Hz	± 2	impedance : 100 k Ω or more Square wave at least 1Vp-p 50% duty cycle
	1 KHz	0.1 KHz to 1.1 KHz	1 Hz		
	10 KHz	0.1 KHz to 10 KHz	0.1 KHz		
Thermocouples	R	0 to 1767 $^{\circ}$ C	1 $^{\circ}$ C	0 to 500 $^{\circ}$ C : 1.8 $^{\circ}$ C	Adopt ITS-90 Thermometric scale not including the accuracy of inner temperature compensatory error
	S	0 to 1767 $^{\circ}$ C		500 to 1767 $^{\circ}$ C : 1.5 $^{\circ}$ C	
	K	-100 to 1372 $^{\circ}$ C	0.1 $^{\circ}$ C	-100 to 0 $^{\circ}$ C : 1.2 $^{\circ}$ C	
	E	-50 to 1000 $^{\circ}$ C		0 to 1372 $^{\circ}$ C : 0.8 $^{\circ}$ C	
				-50 to 0 $^{\circ}$ C : 0.9 $^{\circ}$ C	
				0 to 1000 $^{\circ}$ C : 1.5 $^{\circ}$ C	
				-60 to 0 $^{\circ}$ C : 1 $^{\circ}$ C	
	J	-60 to 1200 $^{\circ}$ C		0 to 1200 $^{\circ}$ C : 0.7 $^{\circ}$ C	
	T	-100 to 400 $^{\circ}$ C	-100 to 0 $^{\circ}$ C : 1 $^{\circ}$ C		
	N	-200 to 1300 $^{\circ}$ C	0 to 400 $^{\circ}$ C : 0.7 $^{\circ}$ C		
-200 to 0 $^{\circ}$ C : 1.5 $^{\circ}$ C					
0 to 1300 $^{\circ}$ C : 0.9 $^{\circ}$ C					
B	600 to 1820 $^{\circ}$ C	1 $^{\circ}$ C	600 to 800 $^{\circ}$ C : 2.2 $^{\circ}$ C		
RTD	Pt100	-200 to 800 $^{\circ}$ C	0.1 $^{\circ}$ C	-200 to 0 $^{\circ}$ C : 0.5 $^{\circ}$ C	Pt100-385 Thermometric scale not including the accuracy of down-lead resistance
				0 to 400 $^{\circ}$ C : 0.7 $^{\circ}$ C	
				400 to 850 $^{\circ}$ C : 0.8 $^{\circ}$ C	
	Pt1000	-200 to 630 $^{\circ}$ C		-200 to 100 $^{\circ}$ C : 0.22 $^{\circ}$ C	
				100 to 300 $^{\circ}$ C : 0.3 $^{\circ}$ C	
				300 to 630 $^{\circ}$ C : 0.4 $^{\circ}$ C	
	Cu50	-50 to -150 $^{\circ}$ C		-50 to 0 $^{\circ}$ C : 0.5 $^{\circ}$ C	
				0 to 150 $^{\circ}$ C : 0.7 $^{\circ}$ C	
Switch Meter Measure	About 1 mA exciting	Close / open			
Continuity Test	500 Ω about 1 mA exciting	<50 Ω vocalism	0.01 $^{\circ}$ C		

OUTPUT FUNCTIONS

Functions	Range / Type	Ranges	Resolution	Accuracy	Remarks
DC Voltage	100 mV	-10 to 110 mV	1 μ V	0.02% + 10	Max output current 5 mA Output resistance <0.1 Ω
	1 V	-0.1 to 1.10 V	10 μ V	0.02% + 10	
	10 V	-1 to 11 V	0.1 mV	0.02% + 10	
DC Current	20 mA	0 to 22 mA	1 μ A	0.02% + 10	Inside power supply 24 V, 1 K Ω resistance at 20 mA
Analog Transducer	-20 mA	-0 to 22 mA	1 μ A	0.02% + 10	Outside power supply 5 to 28 V, 1 K Ω resistance at 20 mA
Resistance	400 Ω	0 to 400 Ω	0.01 Ω	0.02% + 0.1 Ω	\pm 0.1 to 3 mA exciting current
	4 K Ω	0 to 4 K Ω	0.1 Ω	0.05% + 1 Ω	\pm 0.05 to 0.3 mA exciting current
	40 K Ω	0 to 40 K Ω	1 Ω	0.1% + 10 Ω	\pm 0.01 to 0.03 mA exciting current
Thermocouple	R	0 to 1767	1 $^{\circ}$ C	0 to 100 $^{\circ}$ C : 1.5 $^{\circ}$ C	ITS-90
	S	0 to 1767		100 to 1767 $^{\circ}$ C : 1.2 $^{\circ}$ C	
	K	-200 to 1372	0.1 $^{\circ}$ C	-200 to -100 $^{\circ}$ C : 0.6 $^{\circ}$ C	
				-100 to 400 $^{\circ}$ C : 0.5 $^{\circ}$ C	
				400 to 1200 $^{\circ}$ C : 0.7 $^{\circ}$ C	
				1200 to 1372 $^{\circ}$ C : 0.9 $^{\circ}$ C	
	E	-200 to 1000	0.1 $^{\circ}$ C	-200 to -100 $^{\circ}$ C : 0.6 $^{\circ}$ C	
				-100 to 600 $^{\circ}$ C : 0.5 $^{\circ}$ C	
				600 to 1000 $^{\circ}$ C : 0.4 $^{\circ}$ C	
	J	-200 to 1200	0.1 $^{\circ}$ C	-200 to -100 $^{\circ}$ C : 0.6 $^{\circ}$ C	
				-100 to 800 $^{\circ}$ C : 0.5 $^{\circ}$ C	
	T	-250 to 400	0.1 $^{\circ}$ C	800 to 1200 $^{\circ}$ C : 0.7 $^{\circ}$ C	
	N	-200 to 1300	0.1 $^{\circ}$ C	-250 to 400 $^{\circ}$ C : 0.6 $^{\circ}$ C	
-200 to -100 $^{\circ}$ C : 1 $^{\circ}$ C					
B	400 to 1820	1 $^{\circ}$ C	-100 to 900 $^{\circ}$ C : 0.7 $^{\circ}$ C		
			900 to 1300 $^{\circ}$ C : 0.8 $^{\circ}$ C		
			400 to 600 $^{\circ}$ C : 2 $^{\circ}$ C		
RTD	Pt100	-200 to 850	400 to 600 $^{\circ}$ C : 2 $^{\circ}$ C		
			600 to 800 $^{\circ}$ C : 1.5 $^{\circ}$ C		
			800 to 1820 $^{\circ}$ C : 1.1 $^{\circ}$ C		
	Pt1000	-200 to 630	-200 to 0 $^{\circ}$ C : 0.3 $^{\circ}$ C		
			0 to 400 $^{\circ}$ C : 0.5 $^{\circ}$ C		
			400 to 850 $^{\circ}$ C : 0.8 $^{\circ}$ C		
Cu50	-50 to 150	0.1 $^{\circ}$ C	-200 to 100 $^{\circ}$ C : 0.22 $^{\circ}$ C		
		0.1 $^{\circ}$ C	100 to 300 $^{\circ}$ C : 0.3 $^{\circ}$ C		
					300 to 630 $^{\circ}$ C : 0.4 $^{\circ}$ C
					-50 to 150 $^{\circ}$ C : 0.6 $^{\circ}$ C
Frequency	100 Hz	1 to 110 Hz	0.1 Hz	\pm 2	1 to 11Vp-p square wave Accuracy \pm 10% 50% duty cycle load >100 K Ω
	1 KHz	0.1 to 11. KHz	1 Hz		
	10 KHz	1 to 11 KHz	0.1 KHz		
	100 KHz	1 to 110 KHz	1 KHz		
Pulse	100 Hz	10 to 100000 cycles	1 cycle	\pm 2	1 to 11 Vp-p square wave Accuracy \pm 10% 50% duty cycle load > 100 K Ω
	1 KHz				
	10 KHz				
	100 KHz				
Switch	100 Hz		0.1 Hz	\pm 2	Max switch current voltage / current : +28 V / 50 mA
	1 KHz		1 Hz		
	10 KHz		0.1 KHz		
	100 KHz		1 KHz		
Loop	24 V				Max output current about 25 mA short circuit protection

STANDARD DELIVERY

- Multifunction Process Calibrator - Nagman 25
- 9V Alkaline Battery
- Operation Manual
- Test Leads
- Traceable Calibration Certificate

OPTIONAL

- Calibration Certificate from NABL Accredited – as per ISO/IEC 17025:2005 Laboratory

Product of

NAGMAN INSTRUMENTS & ELECTRONICS (P) LTD.

- Comprehensive Calibration Solutions (Standards / Systems / Packages / Software / Services)

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