

## Multifunction Process Calibrator

Portable

## PRC 5X

Suitable for Calibration of Thermocouples, RTDs, Thermometers, Transmitters, Indicators, Controllers, Receivers, mA, V, mV, Ohms, Frequency Measuring Instruments etc.

### SALIENT FEATURES

- Compact, Light Weight Unit with Holster
- Capability to Measure & Simulate DC Voltages, DC Current, Frequency, Resistance, Thermocouples & RTDs
- Dual Display with White LED Back Light
- Capability to Provide 24V Loop supply (24V) & Continuity Test
- Simulate Two Wire Transmitter



### SPECIFICATIONS

#### DC VOLTAGE / DC CURRENT/ FREQUENCY MEASURE & SOURCE

Functions	Range	Maximum measurement range	Resolution	Accuracy ( % of reading + counts)	Remarks
DC Voltage (Measure)	28V (upper display)	-33V ~ 33V	0.001V	0.05 + 2	-10°C ~ 18°C, + 28°C ~ 55°C temperature coefficient, ±0.005%FS / °C. Input resistance : >1MΩ.
	200mV (upper display)	-80mV ~ 80mV	0.001mV	0.05 + 20	
		-200mV ~ 200mV	0.01mV	0.05 + 2	
	50V (lower display)	-1V ~ 60V	0.001V	0.05 + 2	
	100mV (lower display)	-15mV ~ 80mV	0.001mV	0.05 + 20	
80mV ~ 125mV		0.01mV	0.05 + 2		
DC Voltage (Source)	100 mV	-15mV ~ 99.999mV	0.001mV	0.05 + 20	-10°C ~ 18°C, + 28°C ~ 55°C temperature coefficient, ±0.005%FS / °C. Maximum load : 1mA or 1kΩ (It should be based on the lower load.)
		100mV ~ 125mV	0.01mV	0.05 + 2	
DC Current mA (Measure)	20mA (upper display)	-24mA ~ 24mA	0.001mA	0.05 + 2	-10°C ~ 18°C, + 28°C ~ 55°C temperature coefficient, ±0.005%FS / °C. Input resistance : <100Ω.
	20mA (loop of upper display)	0 ~ 24mA	0.001mA	0.05 + 2	
20mA (lower display)	0 ~ 24mA	0.001mA	0.05 + 2		
DC Current mA (Source)	20mA	0 ~ 24mA	0.001mA	0.05 + 2	-10°C ~ 18°C, + 28°C ~ 55°C temperature coefficient, ±0.005%FS / °C. Maximum load voltage : 20V, equivalent to voltage of 20mA on 1000Ω load resistance.
	20mA (Transducer simulation)	0 ~ 24mA	0.001mA	0.05 + 2	
Frequency (Measure)	100Hz	1 ~ 99.999Hz	0.001Hz	0.02 + 1	Sensitivity : 10Hz ~ 10kHz, Vp-p≥1V; rest : Vp-p≥2V. Wave form : Square wave. 5 counting points should be added to errors of other wave forms. Commercial frequency can be measured directly.
	1000Hz	100 ~ 999.99Hz	0.01Hz	0.02 + 1	
	10kHz	1k ~ 9.9999kHz	0.1Hz	0.02 + 1	
	100kHz	10k ~ 99.999kHz	1Hz	0.02 + 1	
Frequency (Source)	200Hz	0 ~ 200Hz	0.01Hz	0.02 + 1	Output amplitude : ≥4.5Vp-p; Wave form : Square wave
	2000Hz	0 ~ 2000Hz	0.1Hz	0.02 + 1	
	20kHz	0 ~ 20kHz	1Hz	0.02 + 1	

Technical Datasheet

RESISTANCE MEASURE & SOURCE

Functions	Range	Maximum measurement range	Resolution	Accuracy	Remarks
Resistance (Ohm) - UPPER display  (Measure)	400Ω	0 ~ 440Ω	0.1Ω	0.05%rdg + 2 count	-10°C ~ 18°C, + 28°C ~ 55°C temperature coefficient, ±0.005%FS / °C. Maximum load voltage : 20V, equivalent to voltage of 20mA on 1000Ω load resistance.
	3200Ω	420Ω ~ 3300Ω	1Ω	0.05%rdg + 2 count	
	On-off test	0 ~ 200Ω	1Ω	0.05%rdg + 1 count	
Resistance (Ohm) - Lower display  (Measure)	400Ω	0 ~ 440Ω	0.01Ω	0.25 Ω (2 wire & 0.15 Ω (4 wire)	-10°C ~ 18°C, + 28°C ~ 55°C temperature coefficient, ±0.005%FS / °C. Exciting current during measurement : 400Ω : 0.4mA±10%; 3200Ω : 0.2mA±10%. Two wire : Does not include lead resistance. Three wire : Assumes matched leads with a total resistance not exceeding 25Ω.
	3200Ω	420Ω ~ 3600Ω	0.1Ω	1.5 Ω (2 wire & 1.0 Ω (4 wire)	
Resistance (Source)	400Ω (External exciting current : 0.40mA ~ 3.30mA)	0 ~ 440Ω	0.01Ω	0.25 Ω	-10°C ~ 18°C, + 28°C ~ 55°C temperature coefficient, ±0.005%FS / °C.
	3200Ω (External exciting current : 0.1mA ~ 0.6mA)	400 ~ 3600Ω	0.1Ω	1.0 Ω	

THERMOCOUPLE & RTD - MEASURE & SOURCE

Functions	Range	Resolution	Accuracy °C	Remarks	
J	-200°C ~ 0°C 0°C ~ 1200°C	0.1°C	1.5°C 1.0°C	Errors of cold-junction compensation are not included in the table. Accuracy of cold-junction compensation : 1.5°C	
K	-200°C ~ 0°C 0°C ~ 1370°C	0.1°C	1.8°C 1.2°C		
T	-200°C ~ 0°C 0°C ~ 400°C	0.1°C	1.8°C 1.2°C		
E	-200°C ~ 0°C 0°C ~ 950°C	0.1°C	1.5°C 1.0°C		
R	-20°C ~ 0°C 0°C ~ 500°C 500°C ~ 1750°C	0.1°C	4°C 2.5°C 2°C		
S	-20°C ~ 0°C 0°C ~ 500°C 500°C ~ 1750°C	0.1°C	4°C 2.5°C 2°C		
B	600°C ~ 800°C 800°C ~ 1000°C 1000°C ~ 1800°C	0.1°C	3.5°C 2.5°C 2°C		
N	-200°C ~ 0°C 0°C ~ 1300°C	0.1°C	2.0°C 1.2°C		
Pt100	-200°C ~ 850°C	0.1°C	2 / 3 wire : 0.7 4 wire : 0.4 Output : 0.7		As for exciting current during measurement, please refer to resistance measurement function. As for allowable external exciting current during output, please refer to resistance output function. 2 wire : Does not include lead resistance. 3 wire : Assumes matched leads with a total resistance not exceeding 25Ω.
Pt1000	-200°C ~ 650°C	0.1°C	2 / 3 wire : 0.4 4 wire : 0.3 Output : 0.3		
Cu50	-50°C ~ 150°C	0.1°C	2 / 3 wire : 1.2 4 wire : 0.8 Output : 0.8		
Cu100	-50°C ~ 150°C	0.1°C	2 / 3 wire : 0.7 4 wire : 0.4 Output : 0.4		

## Technical Datasheet

### STANDARD INCLUSIONS

- Multifunction Process Calibrator
- 1.2Vdc “AAA” Rechargeable Battery (6 Nos.) with Power Adaptor (12V / 1A)
- Operation Manual
- Test Leads & Alligator Clips – 2sets
- Carrying Case
- Traceable Calibration Certificate

### OPTIONAL

- Calibration Certificates are issued in Accordance with our Scope as granted by NABL per ISO/IEC 17025:2017 Standards

*Manufactured by*



**NAGMAN INSTRUMENTS AND ELECTRONICS PRIVATE LIMITED**

**AN ISO 9001:2015 CERTIFIED COMPANY**

170/1a2, Chennai Bangalore Highway Road, Sembarambakkam, Chennai – 600 123. INDIA.

**Phone : Domestic Sales** 044 – 66777020, 005, 021, 024.

**E-Mail :** mktgchennai@nagman.com

**Phone : Export Sales** +91-44-66777006, 008.

**E-Mail :** exports@nagman.com

**[www.nagman.com](http://www.nagman.com)**

Specifications subject to change owing to continuous development. Contact us for latest Datasheet.

NIE/TDS/PRC 5X/01/00

Apr.2022