

**TEMPERATURE CALIBRATOR
(V, THERMOCOUPLE, RTD)****4 FUNCTIONS 13 RANGES****Model KM-CAL-901**

This Calibrator is a source for Volts, Ohms RTD & Thermocouples. It gives output of Volts in 2 ranges 100mV & 1000mV. It gives output of 400 Ohms & output for calibrating R, S, B, E, K, J, T & N type Thermocouples. It also gives out put for RTD PT100 & CU50. It has very high accuracy 0.05%.

GENERAL SPECIFICATIONS

- * Accuracy : $\pm 0.05\%$
- * Display : 5 Digit LCD display.
- * Max. Allowable Voltage : 30V..
- * Operating Temperature Range : 0 ~ 50°C.
- Humidity range : 80% RH
- * Power : 9V Alkaline battery.
- * Weight : About 550g
- * Storage Temperature Range : -10°C ~ 55°C
- Humidity range : 0% RH
- * Power : 9V Alkaline battery.
- * Battery Life : Approx 20 hours under the condition of 10mA.
- * Dimension : 200 (H) x 100 (L) x 40 (W) mm

ACCESSORIES :

Operation Manual, Test lead, (probe with alligator clip), Holster & Carrying case.

SAFETY :

Certified as complaint to IEC 1010 provision (Safety Standard issued by international Electro technical Commission)

ELECTRICAL SPECIFICATIONS - KM - CAL-901**OUTPUT FUNCTION**

Output	Range	Output Range	Resolution	Accuracy	Remarks
Voltage	100mV	-10.00 ~ 110.00mV	0.01mV	±0.05% Setting value ± 30 V	The max. Output current ± 2mA
	1000mV	-100.00 ~ 1100.00mV	0.1mV	±0.05% Setting value ± 0.3mV	
Resistance	400	0.0 ~ 400.0	0.1	±0.05% Setting value ± 0.2	1mA exciting current (Note1,2)
Thermo-Couple	R	-40 ~ 1760°C	1°C	±0.05% Setting value ± 3°C(100°C)	Adopt the ITS-90 temperature standard (Note 3)
	S	-20 ~ 1760°C	1°C	±0.05% Setting value ± 2°C(>100°C)	
	B	400 ~ 1800°C	1°C	±0.05% Setting value ± 3°C(400~600°C)	
				±0.05% Setting value ± 2°C(>600°C)	
	E	-200.0 ~ 1000.0°C	0.1°C	±0.05% Setting value ± 2°C(-100°C) ±0.05% Setting value ± 1°C(>-100°C)	
	K	-200.0 ~ 1370°C	0.1°C		
	J	-200.0 ~ 1200.0°C	0.1°C		
	T	-200.0 ~ 400.0°C	0.1°C		
N	-200.0 ~ 1300.0°C	0.1°C			
Thermo-Resistance (RTD)	PT-100	-200.0 ~ 850.0°C	0.1°C	±0.05% Setting value ± 0.6°C	Adopt the PT100-385 1mA (Note1,2)
	CU 50	-50.0 ~ 150.0°C	0.1°C		

Note : 1. Not including the accesories lead resistance.

2. The range of exciting current : 0.5mA ~ 2mA, the max. Output voltage 2V.

3. Not including the accuracy of inner temperature compensatory transducer.

The range of inner temperature compensatory transducer : -10 - 50°C, compensatory error 0.5°C

4. Temperature coefficient : $\pm 0.005\%$, range / °C (0°C- 18°C, 28°C - 50°C).

Note: All Specification are Subject to change without prior notice.

**THERMOCOUPLE CALIBRATOR
(mV, THERMOCOUPLE)****4 FUNCTIONS 19 RANGES**

This is a Thermocouple "Source" & "Sink" Calibrator. It gives output of DC Volts & output for R, S, B, E, K, J, T & N Thermocouples. It measures DC Voltage & also R, S, B, E, K, J, T & N Thermocouples. It has 5 digit LCD display & extremely high accuracy 0.05%.

Model KM-CAL-902**GENERAL SPECIFICATIONS**

- * Basic Accuracy : $\pm 0.05\%$
- * Display : 5 Digit LCD display.
- * Max. Allowable Voltage : 30V..
- * Operating Temperature Range : 0 ~ 50°C.
- * Storage Temperature Range : -10°C ~ 55°C
- * Humidity range : 80% RH
- * Humidity range : 90% RH
- * Storage Temperature Range : -10°C ~ 55°C
- * Humidity range : 90% RH
- * Storage Temperature Range : -10°C ~ 55°C
- * Humidity range : 90% RH
- * Power : 9V Alkaline battery.
- * Battery Life : Approx 20 hours under the condition of 10mA.
- * Dimension : 200 () x 100 () x 40 () mm
- * Weight : About 550g

ACCESSORIES :

Operation Manual, Test lead, (probe with alligator clip), Holster & Carrying case.

ELECTRICAL SPECIFICATIONS - KM - CAL-902**OUTPUT FUNCTION**

Output	Range	Output Range	Resolution	Accuracy	Remarks
Voltage	100mV	-10.00 ~ 110.00mV	0.01mV	±0.05% Setting value ± 30 V	The max. Output current ± 2mA
	1V	-0.10000 ~ 1.1000V	10 V	±0.05% Setting value ± 0.3mV	
Thermo-couple	R	-40 ~ 1760°C	1°C	±0.05% Setting value ± 3°C(100°C) ±0.05% Setting value ± 2°C(>100°C)	Adopt the ITS-90 temperature standard (Note 1)
	S	-20 ~ 1760°C	1°C		
	B	400 ~ 1800°C	1°C	±0.05% Setting value ± 3°C(400~600°C) ±0.05% Setting value ± 2°C(>600°C)	
	E	-200.0 ~ 1000.0°C	0.1°C	±0.05% Setting value ± 2°C(-100°C) ±0.05% Setting value ± 1°C(>-100°C)	
	K	-200.0 ~ 1370°C	0.1°C		
	J	-200.0 ~ 1200.0°C	0.1°C		
	T	-200.0 ~ 400.0°C	0.1°C		
	N	-200.0 ~ 1300.0°C	0.1°C		

MEASURING FUNCTION

Input	Range	Input Range	Resolution	Accuracy	Remarks
Voltage	100mV	-10.00~110.00mV	10 V	±0.05% Measuring value ± 30uV	Input resistance 1M
Thermo-couple	R	-40~1760°C	1°C	±0.05% Measuring value ± 3°C(<or=100°C)	Input resistance 1M Adopt the ITS-90 temperature standard (Note 1,2)
	S	-20~1760°C	1°C	±0.05% Measuring value ± 2°C(>100°C)	
	B	400~1800°C	1°C	±0.05% Measuring value ± 3°C(400~600°C) ±0.05% Setting value ± 2°C(>600°C)	
	E	-200.0~1000.0°C	0.1°C	±0.05% Measuring value ± 2°C(<or=100°C) ±0.05% Measuring value ± 1°C(>-100°C)	
	K	-200.0~1370°C	0.1°C		
	J	-200.0~1200.0°C	0.1°C		
	T	-200.0~400.0°C	0.1°C		
	N	-200.0~1300.0°C	0.1°C		

Note : 1. The accuracy does not include the error of internal temperature compensation caused by a sensor.

The range of the internal temperature compensation sensor is from -10 to 50°C with its compensating error up to 0.5°C.

2. Temperature coefficient : $\pm 0.005\%$ of range per °C for the temperature ranges from 0 to 18°C and from 28 to 50°C.

Note: All Specification are Subject to change without prior notice.

Model KM-CAL-903

This is a Source & measure Calibrator. It gives output of 400 Ohms, (it has high accuracy of 0.05% and works on 9V alkaline battery. Thermo resistance PT 100 & Cu 50), and 5 digits LCD display.

GENERAL SPECIFICATIONS

- * Accuracy : $\pm 0.05\%$
- * Display : 5 Digit LCD display.
- * Max. Allowable Voltage : 30V..
- * Operating Temperature Range : 0 ~ 50°C. Humidity range : 80% RH
- * Storage Temperature Range : -10°C ~ 50°C Humidity range : 90% RH
- * Power supply : 9V Alkaline battery.
- * Battery Life : Approx 20 hours under the condition of 10mA.
- * Dimension : 200 x 100 x 40 mm
- * Weight : About 550g

ACCESSORIES :

Operation Manual, Test lead, CF-36 (probe with alligator clip),
Holster & Carrying case.

OPTIONAL ACCESSORIES :

Ac adaptor (VCPS),
Test Line CF-31-A (probe Clip)

SAFETY :

Certified as complaint to IEC1010 provision (Safety Standard issued by international Electro technical Commission).

ELECTRICAL SPECIFICATIONS - KM - CAL-903**MEASURING FUNCTION**

Input	Range	Input Range	Resolution	Accuracy	Remarks
Resistance	400	0.0 ~ 450.0	0.1	$\pm 0.05\%$ Setting value ± 0.2	Measuring current 1mA Note 1
Thermo Resistance	Pt100	-200.0 ~ 850.0°C	0.1°C	$\pm 0.05\%$ Setting value $\pm 0.6^\circ\text{C}$	1mA exciting current use PT100-385
	Cu50	-50.0 ~ 150.0°C	0.1°C		Measuring current 1mA Note 1, Note2
					1mA exciting current Note 1, Note 2

OUTPUT FUNCTION

Output	Range	Output Range	Resolution	Accuracy	Remarks
Resistance	400	0.0 ~ 400.0	0.1	$\pm 0.05\%$ Setting value ± 0.2	$\pm 1\text{mA}$ exciting current, Note 1, Note 2
Thermo Resistance	Pt100	-200.0 ~ 850.0°C	0.1°C	$\pm 0.05\%$ Setting value $\pm 0.6^\circ\text{C}$	$\pm 1\text{mA}$ exciting current use Pt100-385 Note 1, Note 2
	Cu50	-50.0 ~ 150.0°C	0.1°C		$\pm 1\text{mA}$ exciting current Note 1, Note 2

Note :

- 1 . Not including the accessorial lead resistance.
- 2 . The range of exciting current : 0.5mA ~ 2mA, the max. Out put voltage 2V.
- 3 . Temperature coefficient : $\pm 0.005\%$, range /°C (0°C - 18°C, 28°C - 50°C)

Note: All Specification are Subject to change without prior notice.

The new KUSAM-MECO Volt & milliampere Calibrator Model KM-CAL-904 is a high accuracy (0.05%) Calibrator. It has 5 digit LCD display with high stability. It can be used for calibrating Transmitters, Thermocouples, SCADA systems, Transducers. It also provides loop circuit power 24V.

The max. load is 1k at 20mA range when the power is higher than 6.8V; The max. load is 700 at 20mA range when the power is within 5.8V - 6.8V. Temperature Coefficient $\pm 0.005\%$, range / °C (5°C -18°C, 28°C - 40°C). It works on 9Volt alkaline battery and battery life is approx 20 hours under the condition of 10mA.

GENERAL SPECIFICATIONS

- * Accuracy : $\pm 0.05\%$
- * Display : 5 Digit LCD display.
- * Max. Allowable Voltage : 30V..
- * Operating Temperature Range : 0 ~ 50°C.
- Humidity range : 80% RH
- * Power supply : 9V Alkaline battery.
- * Storage Temperature Range : -10°C ~ 50°C
- Humidity range : 90% RH
- * Battery Life : Approx 20 hours under the condition of 10mA.
- * Dimension : 200 x 100 x 40mm
- * Weight : About 550g

ACCESSORIES :

Operation Manual, Test lead, (probe with alligator clip) & Carrying case.

OPTIONAL ACCESSORIES :

Ac adaptor (VCPS), Test Line CF-31-A (probe Clip)

SAFETY :

Certified as complaint to IEC1010 provision (Safety Standard issued by international Electro technical Commission).

Model KM-CAL-904**ELECTRICAL SPECIFICATIONS - KM-CAL-904****OUTPUT FUNCTION**

Output	Range	Output Range	Resolution	Accuracy	Remarks
DC Voltage	10V	0.000 - 11.000V	1 mV	$\pm 0.05\%$ setting value + 2mV	The max. Output current is 2mA
DC Current	20mA	0.000 - 22.000mA	0.001 mA	$\pm 0.05\%$ setting value + 4 A	20mA, the max.overload is 1k (Note1)
Analogue Transducer (absorption Current)	-20mA	0.000 - 22.000mA	0.001 mA	$\pm 0.1\%$ setting value + 4 A	20mA, the max.overload is 1k
Loop Power	24V	—	—	$\pm 10\%$	The max. Output current 25mA

- Note:-**
1. The max. load is 1k at 20mA range when the power is higher than 6.8V;
The max. load is 700 at 20mA range when the power is higher than 5.8V - 6.8V.
 2. Temperature Coefficient : $\pm 0.005\%$, range/ °C (5°C -28°C, 18°C - 40°C)

Note: All Specification are Subject to change without prior notice.