KUSAM-MECO®

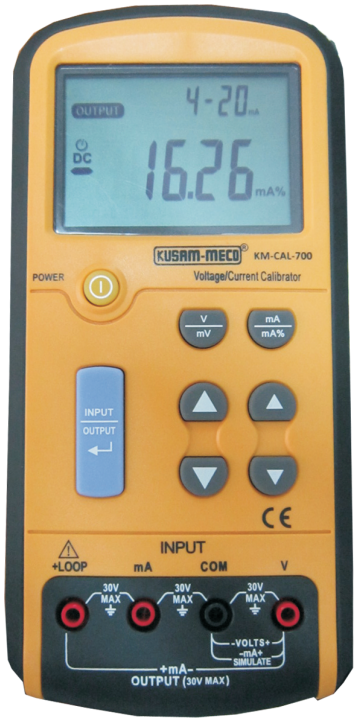
An ISO 9001:2008 Company

VOLT / mA CALIBRATOR

SOURCE & MEASURES

Volt / mA Calibrator is a source and measurement tool. This calibrator is use to measure or output 0 to 24 mA DC Current loop, & 0 to 20V DC Voltage. But the calibrator cannot be used to measurement and source simultaneously.

Mode KM-CAL-700



GENERAL SPECIFICATIONS :

- **DC Voltage input and output :** 0-100.00mV / 20.000V± (0.02% + 3)
- **DC Current input and output:** 24.000mA ± (0.015% + 3)
- **Loop Power output :** 24V ± 10%
- **Input impedance :** 2Megohm.
- **Over Voltage protection :** 30V
- **Voltage driver capability :** 1mA
- **5 digit LCD dual display**
- **LCD size :** 64 x 42mm
- **Operating Temperature :** -10°C ~ 55°C
- **Storage Temperature :** -40°C ~ 60°C
- **Operating altitude :** 3000 meters maximum
- **Temperature Coefficient :** ± 0.005% of range per °C for the temperature range -10°C to 18°C & 28°C to 55°C
- **Relative Humidity :** 95% upto 30°C, 75% upto 40°C, 45% upto 50°C, 35% upto 55°C.
- **Shock :** Random 2g, 5Hz to 500Hz
- **Fuse :** 125mA / 250V fast acting fuse
- **Power Supply :** 1.5V AAA x 6 batteries.
- **External power optional**
- **Dimension :** 204(L) x 99(W) x 46(H)mm
- **Weight :** Approx. 460g. (including battery)

ACCESSORIES :

Double insulation Test Leads , 2 Crocodile Clips, DC 1.5V (AAA) Battery x 6, Carrying Case, User's Manual.

Preliminary Data

ELECTRICAL SPECIFICATIONS : KM-CAL-700

Measurement & Output Voltage Parameter

Function	Range	Resolution
DCV mV Input	0 ~ 100mV	0.01mV
	0 ~ 20 V	0.001V
DCV mV Output	0 ~ 100mV	0.01mV
	0 ~ 20 V	0.001V
Loop Power Output	24 V DC	N / A

Measurement & Output mA Parameter

Function	Range	Resolution
DC mA Input	0 ~ 24 mA	0.001 mA
DC mA Output	0 ~ 24 mA	0.001 mA

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

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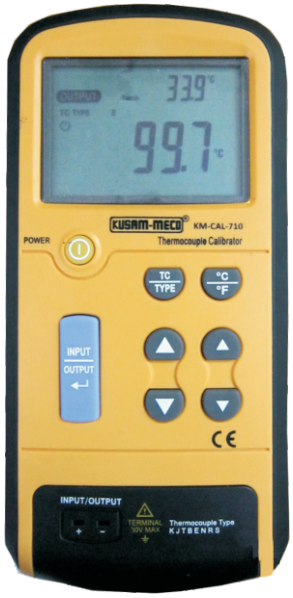
THERMOCOUPLE CALIBRATOR

Mode KM-CAL-710

Thermocouple Process Calibrator is a exactitude measurement and source handhold instrument, it can be use to calibrate the Thermocouple instrument. Thermocouple Process Calibrator can measure or simulate 8 types of difference Thermocouple (°C or °F), and measure or simulate the millivolt. But is could not use to measurement or source at a same time.



Preliminary Data

SPECIAL FEATURES :

- Maximum voltage applied between any jac and earth ground or between any two jack : 30V
- Sources and measures 7 thermocouple type devices (J, K, T, E, R, S, B, N) or mV (-10mV ~ 100mV)
- Large 5 digit LCD with full angel
- High accuracy maximum up to 0.3°C and 0.025% for mV
- With standard jack for external power supply

GENERAL SPECIFICATIONS :

- **Thermocouple Type :** J, K, T, E, R, S, B, N
- **Measure or Simulating a Thermocouple**
- **Ambient temperature compensation and display**
- **Operating Temperature :** 0°C ~ 50°C
- **Storage Temperature :** -40°C ~ 60°C
- **Operating altitude :** 3000 meters maximum.
- **Temperature Coefficient :** ± 0.02% / °C on 0°C ~ 18°C and 28°C ~ 50°C
- **Relative humidity :** 95%upto 30°C, 75% upto 40°C, 45% upto 50°C
- **Shock :** Random 2g. 5Hz to 500Hz.
- **Fuse :** F 0.125A / 250V
- **Temperature Resolution :** J,K,T,E,B,R,S,N 0.1°C or °F
- **Temperature error :** ± (0.3 + 10uV)
- **Voltage range :** -10mV ~ 75mV
- **Voltage resolution :** 0.01mV
- **Voltage accuracy :** ± (0.025% + 2 counts)
- **LCD size :** 64 x 42mm
- **Power Supply :** 1.5V AAA x 6 batteries.
- **External power option**
- **Dimension :** 205(L) x 97(W) x 45(H)mm
- **Weight :** Approx. 472g. (including battery)

ELECTRICAL SPECIFICATIONS : KM-CAL-710

Measure (input) / Simulate (output) Millivolt specification

Input / Output Range	Resolution	Accuracy
-10mV ~ 100mV	0.01mV	±(0.025% + 2 counts)

Maximum Input Voltage : 30Vpp.

Measure (input) / Simulate (output) Thermocouple Specification

Function	Range	Resolution	Accuracy	Reference Junction Error
J TYPE	-200 ~ 1200°C / -328 ~2192°F	0.1°C / °F	±(0.3°C + 10 V)	± 0.3°C
K TYPE	-200 ~ 1370°C / -328 ~2498°F			
T TYPE	-200 ~ 400°C / -328 ~752°F			
E TYPE	-200 ~ 950°C / -328 ~1742°F			
Function	Range	Resolution	Accuracy	Reference Junction Error
R TYPE	-20 ~ 1750°C / -4 ~3182°F	1°C / °F	±(1°C + 10 V)	± 0.3°C
S TYPE	-20 ~ 1750°C / -4 ~ 3182°F		±(1°C + 10 V)	± 0.3°C
B TYPE	600 ~ 1800°C / 1112 ~3272°F		±(1°C + 10 V)	± 0.3°C
N TYPE	-250 ~ 1300°C / -418 ~2372°F	0.1°C / °F	±(0.3°C + 10 V)	± 0.3°C

Maximum Input Voltage : 30Vpp.

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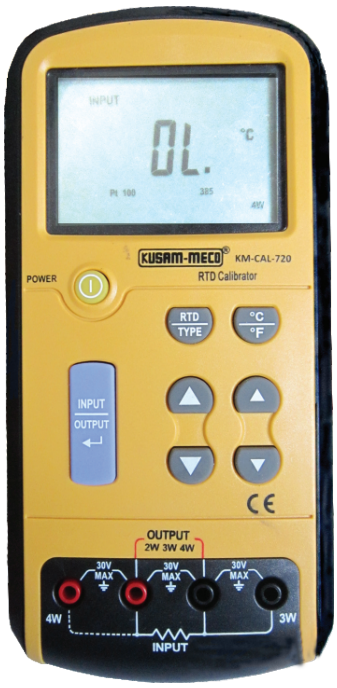
RTD CALIBRATOR Mode KM-CAL-720

SPECIAL FEATURES :

- Sources and measures 7 RTD types devices (PT10, PT50, PT100, PT200, PT500, PT1000 (385), PT100 (JIS)) or
- Large 5 digit LCD with full angel
- High accuracy maximum up to 0.2°C and 0.1
- Mesurinag and Simulating RTD
- With standard jack for external power supply



Preliminary Data

GENERAL SPECIFICATIONS :

- **Maximum voltage applied between any jack and earth ground or between any two jack :** 30V
- **Storage temperature :** -40 °C ~ 60°C
- **Operating temperature :** -10 °C ~ 55°C
- **Temperature coefficient :** ± 0.01% / °C on 0°C ~ 18°C and 28°C ~ 50°C
- **Relative humidity :** 95% up to 30°C, 75% up to 40°C, 45% up to 50°C, 35% up to 55°C
- **Temperature accurate :** ± 0.2°C with 0.1° Resolution
- **Resistance accurate :** ± 0.1 with 0.1 resolution
- **Operating altitude :** 3000 meters maximum
- **Resolution :** RTD 0.1 °C / °F
- **Resistance :** 0.01/0.1
- **Range :** 0.00 ~ 3200.0 or -200.0 ~ 630.0°C
- **LCD size :** 205 x 97 x 45
- **Dimension :** 205 x 97 x 45mm
- **Shock :** Random 2g, 5Hz to 500Hz
- **Power Supply :** 6 x AAA 1.5V Battery
- **Dimension :** 205mm x 98mm x 46mm
- **Weight :** 472g (include battery)

ACCESSORIES :

Colour box, Calibrator, Secondary injection insulation test lead, Crocodile Clips, Battery 1.5V (AAA) x 6
Carrying Case, User's manual & External Power supply (Optional)

ELECTRICAL SPECIFICATIONS : KM-CAL-720

Measure (input) / Simulate (output) RTD specification

Mode	Range	Range			Current Excitation mA
		Input 4W	Input 2W/3W	Output	
Pt10 385	-200~800°C / -328~1472°F	1.5	2.0	1.5	0.1 ~ 3.0
Pt 50 385	-200~800°C / -328~1472°F	0.7	1.0	0.7	0.1 ~ 3.0
Pt100 385	-200~800°C / -328~1472°F	0.33	0.5	0.33	0.1 ~ 3.0
Pt 200 385	-200~250°C / -328~482°F	0.2	0.3	0.2	0.1 ~ 3.0
	-250~630°C / -482~1166°F	0.8	1.6	0.8	
Pt 500 385	-200~500°C / -328~932°F	0.3	0.6	0.3	0.05 ~ 0.8
	-500~630°C / -932~1166°F	0.4	0.9	0.4	
Pt1000 385	-200~100°C / -328~212°F	0.2	0.4	0.2	0.05 ~ 0.8
	-100~630°C / -212~1166°F	0.2	0.5	0.2	
Pt100 JIS	-200~630°C / -328~1166°F	0.3	0.5	0.3	0.1 ~ 3.0

Excitation current only apply on simulate mode.
The excitation current be marked on the OHM meter or RTD meter which was connected to the calibrated.

Excitation current : 0.2mA.

MAX input voltage : 30V

Measure (input) / Simulate (output) Resistance specification

Range	Measure Accuracy 4W ±	Simulate Accuracy ±	Current excitation mA
0.00 ~ 400.00	0.1	0.15	0.1~ 0.5
		0.1	0.5~ 3.0
400.0 ~ 1500.0	0.5	0.5	0.05~ 3.8
1500.0 ~ 3200.0	1	1	0.05~ 0.4
	2		

Excitation current only apply on simulate mode. The excitation current could be marked on the OHM meter or RTD meter which was connected to the calibrator

Excitation current : 0.2mA.

MAX input voltage : 30V

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

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