

### 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
- Mesuring and Simulating RTD
- With standard jack for external power supply

### 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)



Preliminary Data

### 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

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.

## LIST OF PRODUCTS

- \* Digital Multimeter
- \* Digital AC & AC/DC Clampmeter
- \* AC Clamp Adaptor
- \* AC/DC Current Adaptor
- \* Transistorised Electronic Analog & Digital Insulation Resistance Testers(upto 10 KV)
- \* Digital Sound Level Meter & Sound Level Calibrator
- \* Digital contact & Non-contact Type Tachometer
- \* Digital Non-contact (infrared) Thermometer & Portable Infrared Calibrator
- \* Thermo Hygrometer / Anemometer
- \* Digital Absolute pressure meter
- \* Wood, Paper & Grain Moisture Meter
- \* Distance Meter & Network Cable Tester
- \* Digital Hand Held Temperature Indicators
- \* Digital Lux Meter
- \* Thermal Imaging Camera
- \* Power Factor Regulator
- \* Maximum Demand Controller/Digital Power Meter
- \* Earth Resistance Tester
- \* Digital Panel Meters & DC Power Supplies
- \* Digital Storage / Analog Storage Oscilloscope.
- \* Coating Thickness Gauge
- \* Process Calibrators & Multifunction Calibrators
- \* Gas Analysers & Waterproof Pen Testers
- \* Frequency Counter / Function Generator
- \* Phasing Sticks & High Voltage Detector
- \* Transducer & Transmitter
- \* Digital Milli Ohm Meter
- \* Solar Power Meter
- \* EMF/ELF Detector / RF Field Strength Meter

**KUSAM-MECO**<sup>®</sup>

17, Bharat Industrial Estate, T. J. Road, Sewree (W),  
Mumbai-400015. INDIA

Sales Direct: 24156638 Tel.:(022)2412 4540, 2418 1649 Fax:2414 9659

E-mail : kusam\_meco@vsnl.net, Website : www.kusamelectrical.com,  
www.kusam-meco.co.in

**KUSAM-MECO**<sup>®</sup>

## RTD PROCESS CALIBRATOR MODEL KM 720



**OPERATION  
MANUAL**

## **INDEX**

1) Safety Information.....	01
2) Introduction.....	01
3) Specification.....	02
4) General Specification.....	04
5) International Symbols.....	04
6) Explanation on Front Panel.....	05
7) Operation Instructions.....	06
8) Maintenance.....	08
9) Test Certificate & Warranty.....	09

### **SAFETY INFORMATION**

#### **To avoid possible electric shock or personal injury:**

- Never apply more than 30V between any two jacks, or between any jack and earth ground.
- Make sure the battery door is closed and latched before you operate the calibrator
- Remove test leads from the calibrator before you open the battery door.
- Do not operate calibrator if it is damaged.
- Do not operate the calibrator around explosive gas, vapor, or dust.

#### **To avoid possible damage the calibrator :**

- Make sure to choose the right jack and range, before using the calibrator to measure or source.

### **INTRODUCTION**

RTD Process Calibrator is a precise measurement and source instrument, it can be use to calibrate the RTD\* transmitter (include most impulse transmitter).

RTD Process Calibrator can measure or simulate 7 difference types of RTD (°C or °F), and measure or simulate the Resistance. But it cannot be use for measurement and source at a same time.

The accessories : Pair of test lead and alligator clip, 6\* AAA 1.5V battery, user's manual.

If the Calibrator is broken or short of some accessories, please contact the supplier.

The following table shows the technical parameters and function of the calibrator.

**SPECIFICATION**

All the specification will be under 1year calibration cycle and temperature between 18~28°C, except if specified in manual.

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

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
Pt 500 385	250~630°C / 482~1166°F	0.8	1.6	0.8	0.05 ~ 0.8
	-200~500°C / -328~932°F	0.3	0.6	0.3	
Pt1000 385	500~630°C / 932~1166°F	0.4	0.9	0.4	0.05 ~ 0.8
	-200~100°C / -328~212°F	0.2	0.4	0.2	
Pt100 JIS	100~630°C / 212~1166°F	0.2	0.5	0.2	0.05 ~ 0.8
	-200~630°C / -328~1166°F	0.3	0.5	0.3	

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

**GENERAL SPECIFICATIONS :**

**Maximum voltage applied between any jack and earth ground or between any two jack : 30V**

- **Resolution :** RTD 0.1 °C / °F
- **Resistance** 0.01/0.1
- **Storage temperature :** -40 °C ~ 60°C
- **Operating temperature :** -10 °C ~ 55°C
- **Operating altitude :** 3000 meters maximum
- **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
- **Shock :** Random 2g, 5Hz to 500Hz
- **Safety :** 1 meter drop test
- **Power requirement :** 6 x AAA 1.5V Battery
- **Size :** 205mm x 98mm x 46mm
- **Weight :** 472g (include battery)

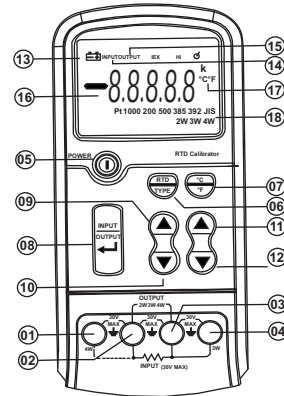
**INTERNATIONAL SYMBOLS**

Symbol	Meanings
	Earth ground
	Conforms to European Union directives
	Refer to this instruction sheet for information about this feature.
	Battery
	Double insulation

**Explanation on Front Panel**

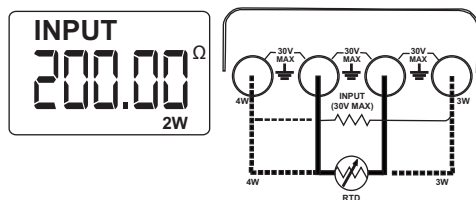
The front panel is show as in figure:

- |   |                             |
|---|-----------------------------|
| 1) 4wire input jack (NC on output)            | 11) Increase less value key |
| 2) 2wire input/output jack                    | 12) Reduce less value key   |
| 3) 2wire input/output jack                    | 13) Low power indication    |
| 4) 3wire input jack (NC on output)            | 14) Input state indication  |
| 5) Power key                                  | 15) Output state indication |
| 6) RTD mode key                               | 16) Reading value           |
| 7) °C / ° F key                               | 17) Unit indication         |
| 8) Input / Output key                         | 18) Mode indication         |
| 9) Increase more value key / wire mode select |                             |
| 10) Reduce more value key / wire mode select  |                             |



**Operation Instructions**

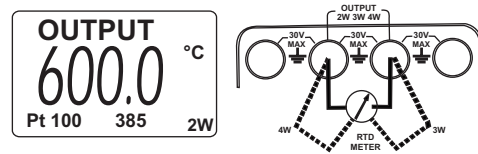
**RTD measurement / Resistance measurement**



- 1) Press the power key **[5]**, turn on the calibrator.
- 2) Press the Input / Output key **[8]**, to turn on the input mode.
- 3) Press RTD mode key **[6]**, on the measure type you want.
- 4) Put the RTD or Resistance on the input jack.
- 5) If you want to measure with 3W / 4W mode, press the wire mode select key **[9]**, **[10]** to select, and put the test leads to the corresponding input jack.
- 6) Get the reading value **[16]**

\* The number in the , referring to the "Explanation on Front Panel" (Page 5)

**RTD Simulate / Resistance simulate**



- 1) Press the power key **[5]**, turn on the calibrator.
- 2) Press the Input / Output key **[8]**, to turn on the Output mode.
- 3) Press RTD mode key **[6]**, to select the type you want.
- 4) Press the adjust value key **[9]** **[10]** **[11]** **[12]**, to set the value required.
- 5) Put the RTD meter or Resistance meter on the output jack.
- 6) If you want to output with 3W / 4W mode, put the other wire on the 2 wire jack.
- 7) If you want to change the output value, then press the adjust value key **[9]** **[10]** **[11]** **[12]**, or change to other RTD type, use the RTD mode key **[6]**

\* The number in the , referring to the "Explanation on Front Panel" (Page 5)



### **MAINTENANCE**


#### **Cleaning**

Periodically wipe the case with a damp cloth and detergent; do not use abrasives or solvents.

#### **Calibration**

Calibrate your calibrator once a year to ensure that it performs according to its specifications.

#### **Replacing the Battery**

Please change the battery when the LCD  indicates. Turn off the power of the Calibrator, When you change the battery, and screw off the breechblock on the battery cabinet cover, then take off it and insert the fresh AAA 1.5V batteries



### **TEST CERTIFICATE**

This Test Certificate that warrants the product has been inspected and Tested in accordance with the published specifications. The instrument has been calibrated by using equipment which has already been calibrated to standards traceable to national standards.

MODEL NO. KM-CAL-720

ISO 9001  
REGISTERED



SERIAL NO. \_\_\_\_\_

DATE: \_\_\_\_\_

### **WARRANTY**

Each "KUSAM-MECO" product is warranted to be free from defects in material and workmanship under normal use & service. The warranty period is one year (12 months) and begins from the date of despatch of goods. In case any defect occurs in functioning of the instrument, under proper use, within the warranty period, the same will be rectified by us free of charges, provided the to and fro freight charges are borne by you. This warranty extends only to the original buyer or end-user customer of a "KUSAM-MECO" authorized dealer. This warranty does not apply for damaged IC's, fuses, burnt PCB's, disposable batteries, carrying case, test leads, or to any product which in "KUSAM-MECO's" opinion, has been misused, altered, neglected, contaminated or damaged by accident or abnormal conditions of operation or handling. "KUSAM-MECO" authorized dealer shall extend this warranty on new and unused products to end-user customers only but have no authority to extend a greater or different warranty on behalf of "KUSAM-MECO". "KUSAM-MECO's" warranty obligation is limited, at option, free of charge repair, or replacement of a defective product which is returned to a "KUSAM-MECO" authorized service center within the warranty period.