Dry Block Temperature Calibrator

Test & Measure With Touch Screen Display

AI-DBC-650A | Range: 50°C to 650°C



Overview

The AI-DBC-650A Touch Screen Precision Dry Block Calibrator is a portable, high-performance temperature calibration system designed for quick and accurate calibration of RTDs, thermocouples, bi-metal thermometers, temperature switches, and indicators in industrial and marine applications. It offers a temperature range of 50°C to 650°C with 0.01°C resolution, ±0.4°C accuracy, and ±0.04°C stability.

The calibrator features a 128 × 64 Color screen with feather touch display , countdown timer, stability indicator, and interchangeable multi-hole thermowell inserts with a 30 mm well diameter and 150 mm immersion depth. In addition to temperature generation, it provides precision measurement capability for mV (0–1000 mV),Voltage (0–10 V), Current (0–25 mA), Resistance (0–500 Ω / 3.5 kΩ), Thermocouples (J, K, R, S, N, B, T), and RTDs (Pt100, Pt200, Pt500, Pt1000) with measurement accuracy up to ±0.025% of reading. The unit includes switch test functionality, USB computer interface with METCAL calibration software, operates on 230 VAC, 50 Hz, and is supplied with NABL-traceable calibration certification for reliable field and laboratory calibration applications.

Features

- Advanced – Micro-controller based Technology
- Heavy Duty Portable / Bench-top Model
- High Accuracy, Resolution & Stability
- Informative Color Display with feather touch
- Measurement Capability for TC, RTD, mV / mA / V & Resistance Signals
- Touch Membrane Keypad
- Switch Test Contact Measurement
- Multi-hole Thermowell Inserts
- Computer Interface & Calibration Software
- Count down timer (Shows when unit is stable)
- Stability Indicator

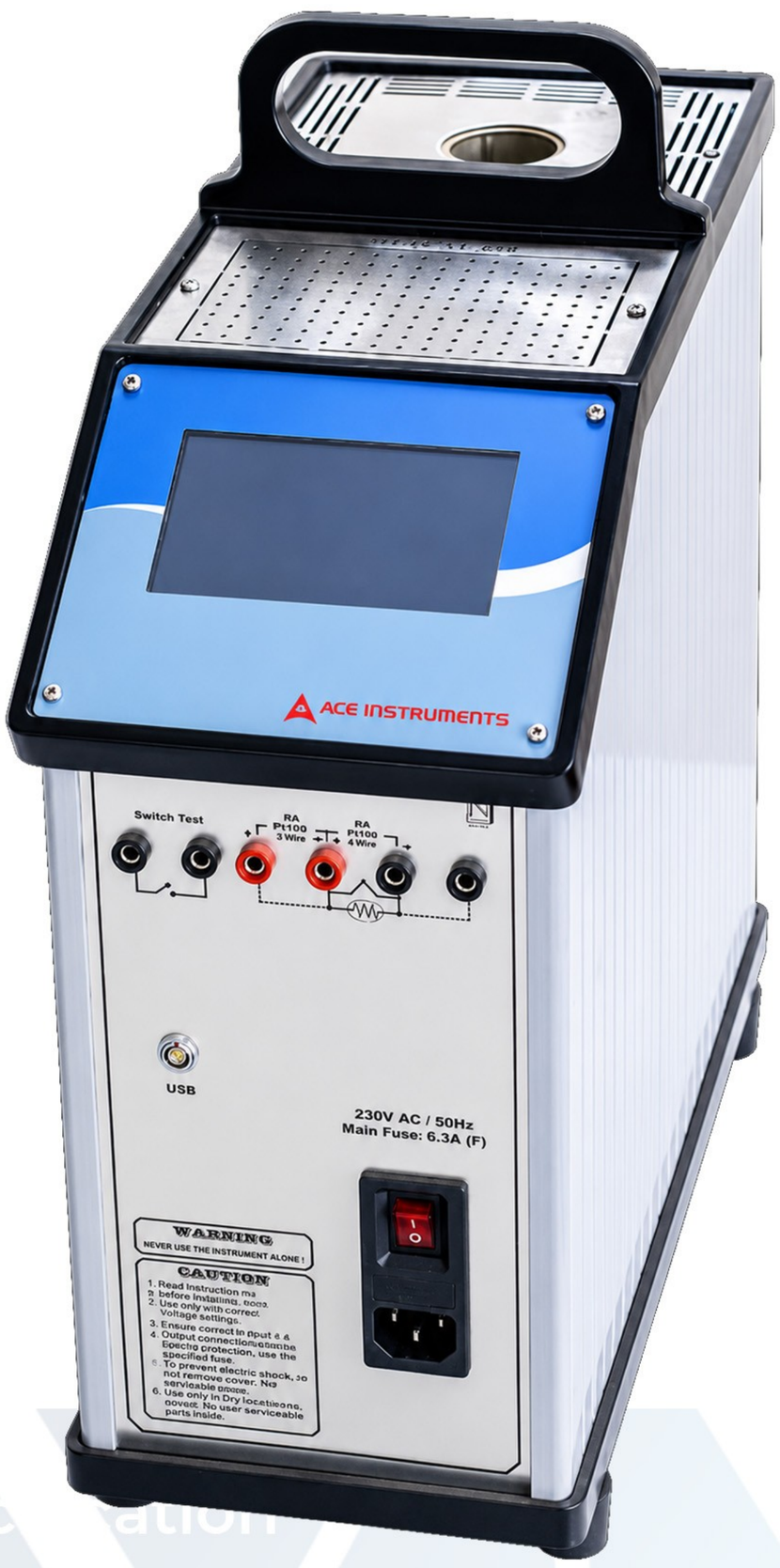
Specification

Features	Specification			
Range	50°C to 650°C			
Resolution	0.01°C			
Accuracy	±0.4°C			
Stability	±0.04°C			
Stabilisation Time	15 Minutes			
Temperature Readout	°C / °F Selectable			
Radial Uniformity	±0.04°C			
Well Diameter	30 mm			
Immersion Depth	150 mm			
Heating Time (50 to 650°C)	36 Minutes (approx.)			
Cooling Time (650 to 100°C)	75 Minutes (approx.)			
Switch Test facility	Provided			
Interchangeable Thermowells	Multihole to suit 2 x ¼" & 1 x ½" Probes. Other Sizes available as optional			
Housing / Mounting	Bench-top			
Power Supply	230V AC, 50 Hz			
Instrument Dimensions (L x D x H)	160 x 365 x 450 mm			
Instrument Weight (approx.)	11 Kg.			
Measurement Capability	Thermocouples	ISA Types J, K, R, S, N, B, T	RTD	Pt100, 200, 500, 1000 IEC Std.
	mA	0 to 25 mA	mV	0 to 100 / 1000 mV
	Volt	0 to 10 V	Resistance	0 to 500Ω / 3.5 KΩ

MEASUREMENT : RANGE, RESOLUTION & ACCURACY

Type	*Range*	*Resolution*	*Accuracy (% of reading)*
mV (Low)	0 to 100	0.001	±(0.025%+2µV)
mV (High)	0 to 1000	0.01	±(0.025%+10µV)
Volts	0 to 10	0.0001	±(0.025%+0.08mV)
mA	0 to 25	0.0001	±(0.025%+0.4µA)
Ohms	0 to 500	0.001	±(0.025%+12mΩ)
KOhms	0 to 3.5	0.00001	±(0.025%+120mΩ)
RTD Pt100	-100 to 800	0.01	±(0.025%+0.1°C)
RTD Pt200	-100 to 600	0.01	±(0.025%+0.05°C)
RTD Pt500	-100 to 530	0.01	±(0.025%+0.1°C)
RTD Pt1000	-100 to 650	0.01	±(0.025%+0.1°C)

Type	*Range*	*Resolution*	*Accuracy (% of reading)*
TC Type J	-100 to 1200	0.1	±(0.025%+0.1°C)
TC Type K	-60 to 1260	0.1	±(0.025%+0.1°C)
TC Type R	150 to 1700	0.1	±(0.025%+0.2°C)
TC Type S	170 to 1700	0.1	±(0.025%+0.2°C)
TC Type N	0 to 1300	0.1	±(0.025%+0.1°C)
TC Type B	920 to 1820	0.1	±(0.025%+0.01°C)
TC Type T	-100 to 400	0.1	±(0.025%+0.1°C)



FRONT PANEL

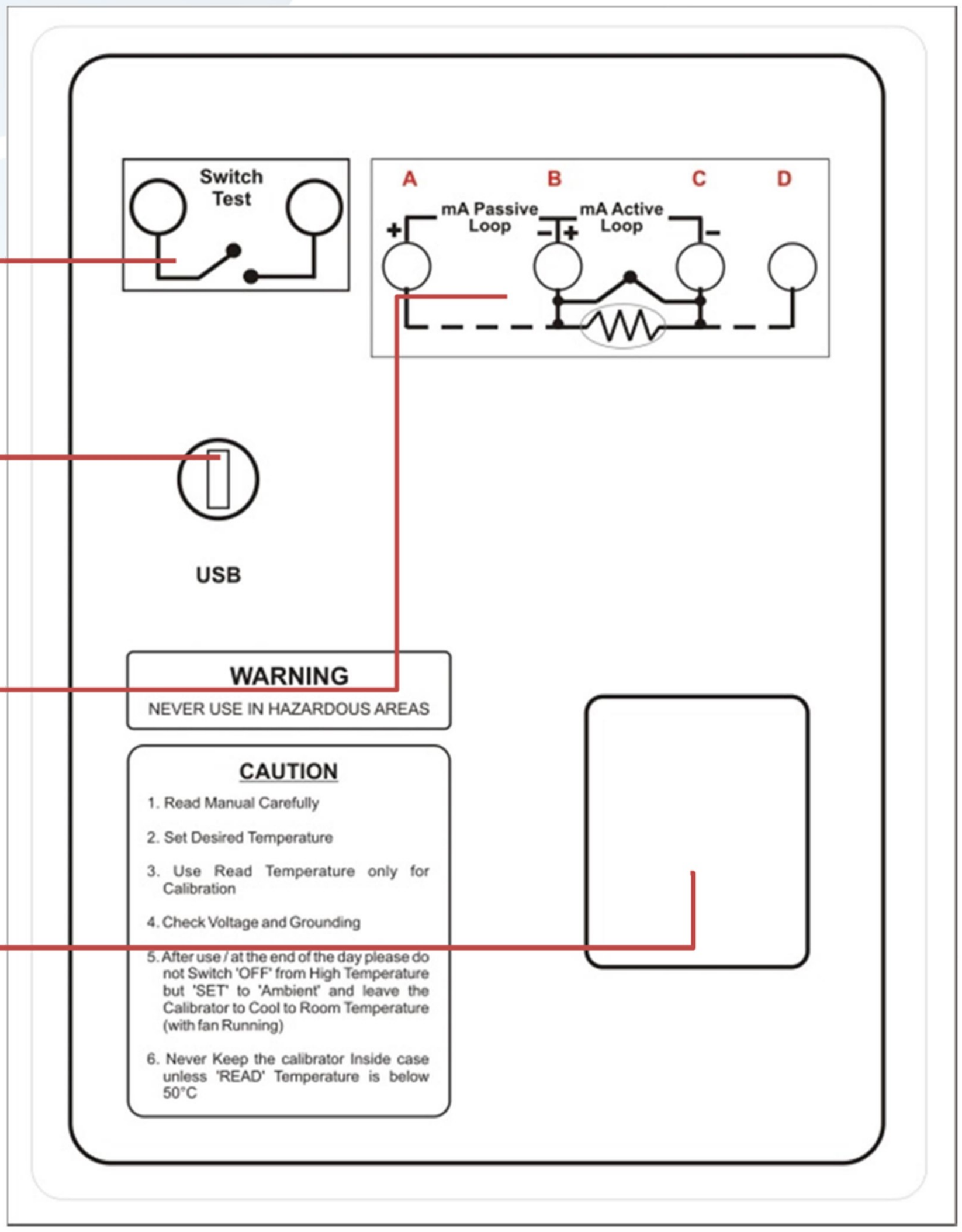
BACK PANEL

1. Input for Switch Test

2. PC Interface Connector

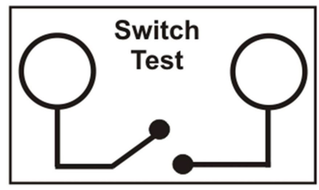
3. Input for RTD, TC, mA & Voltage Test

4. Power Inlet Socket (230V, 50Hz)

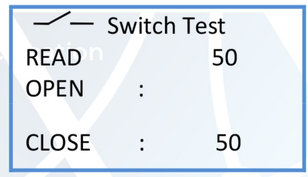


1.Input for Switch Test :

Switch Test Connection details are shown below :



Select menu option in keypad, press ⇧ upward key, the display shows in



1. Switch test
2. Edit date/time.

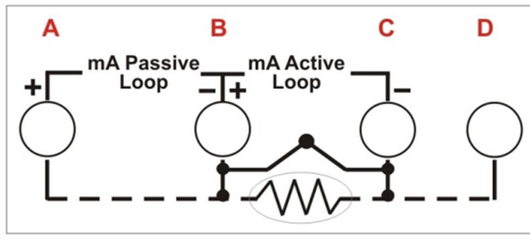
Enter Numeric key 1.

2. Computer Interface :

To interface with Computer USB

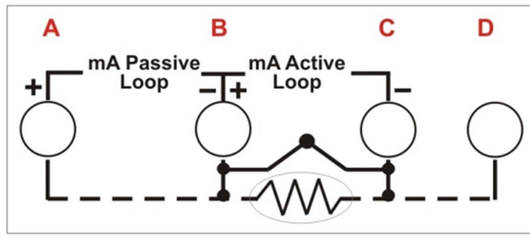
3.Input for RTD, TC, mA and Voltage Test

RTD : The RTD Input Connection details are shown below :

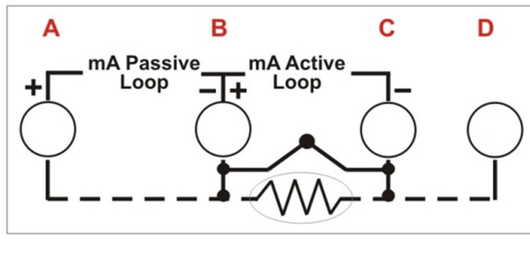


2 Wire Use terminals BC for 2 wire with A, B and C, D to be short
3 Wire Use terminals A, B, C for 3 wire with C, D to be short
4 Wire Directly insert to A, B, C, D.

Thermocouple : For all TC, B for Positive (+) and C for Negative (-)



mA



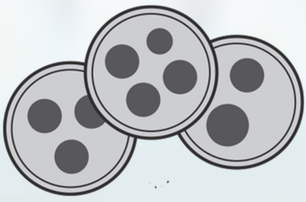
What's in the Box

Standard Inclusions

- Basic Instrument
- Test Leads
- Mains Cable
- Insertion Tubes (2x¼" & 1x½" probes)
- Tool for Insertion Tubes
- Spare Fuses
- Traceable Calibration Certificate
- Instruction Manual
- Carrying Case



Multi-Hole Insertion Tube



Optional (Add-On) Items

- Computer Interface
- Caltemp" Calibration Software
- Additional Thermowells/Insertion Tubes (to choose from):
  Single hole standard sizes to suit:
  1/8", 1/4", 3/8", 1/2", 3/4" & 3, 4, 5, 6, 7, 8, 10, 12, 13, 15, 17, 19 & 21 mm probes
  Multihole (Typical): (1x6 + 1x8) or (3x4) or (1x10+ 1x4) mm
- Calibration Certificates are issued in Accordance with our Scope as granted by NABL per ISO/IEC 17025:2017 Standards
- Dual Voltage Selection

Applications



Marine Facilities



Pharmaceutical Production Areas



Laboratories & Testing Rooms



Power Plants



Bioreactors & Autoclaves



Food Processing Plants

Related Products



AI-DBC



AI-DBC Ultra-Low



AI-Humidity Calibrator

Temp | Humidity | Pressure | Differential Pressure | Vacuum | Gases | Particle | Air Flow
Moisture | Dissolved Oxygen | Radiation | Air Quality | Light / Lux | Distance | Vibration

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