



Universal Calibrator (UniCal 38534)



The Universal Calibrator (UniCal 38534) is a micro-controller based precision instrument designed for sourcing and measuring Ohm, RTDs, mA, mV, T/Cs and V signals. It is designed to calibrate a broad spectrum of instruments and retain its precision and repeatability over long periods in worst environmental conditions. An exceptionally stable voltage/current source provides continuously variable precision output signals with two ten-turn potentiometers. It is available in panel mounted, table top and handheld (portable & battery-operated) enclosures.



Features

- ☑ Sources & measures Ohms, 9 RTDs, mA, mV, 8 TCs, V
- ☑ High precision, accuracy, reliability & longevity
- ☑ Graphical(128x64) LCD with backlight for excellent UI
- ☑ Simultaneous display of temperature & mV or Ohms
- ☑ Auto & Manual cold junction compensation (CJC) for TC
- ☑ Continuous indication of cold junction temperature
- ☑ Compact in size and built for toughest environments
- ☑ Unique self-check facility ensures reliable operations
- ☑ Powered by AC/DC adapter or 6 AA Ni-Mh batteries

Applications

- ☑ Powers (24V_{DC}) & calibrates 2-wire transmitter
- ☑ Simulates transmitter (with 24V_{DC} loop power)
- ☑ Simulates & measures T/Cs with Auto/Manual CJC
- ☑ Simulates & measures multiple RTDs
- ☑ Works as voltage and current regulator or source
- ☑ Powers (24V_{DC}) and calibrates control valve positioner
- ☑ Calibrates various temperature and process indicators

Function	Range	Resolution	Accuracy	Self-Check	Order Code (X1X2)					
					Feature(X1)			Enclosure(X2)		
					E	F	G	H	P	T
Resistance	0.0 to 500.0 Ω	0.1 Ω	0.02% of rdg ± 3 dgt	NA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	User specified requirements ^[4]	Handheld (200x125x55 mm)	Panel Mounted (96x192x200 mm)	Table Top (96x192x200 mm)
	0.0 to 2500.0 Ω	0.1 Ω			<input checked="" type="checkbox"/>					
DC mV	-10.00 to 100.00 mV	10 μV		88.88 ± 3 dgt	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
DC mA ^[1]	0.000 to 20.000 mA	1 μA		17.777 ± 3 dgt	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
DC Volts	0.000 to 20.000 V	1 mV		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					
Low Resistance RTDs ^[2]	Pt46 -200.0 to 850.0 °C	0.1 °C	0.05% of rdg ± 3 dgt	NA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
	Pt100 -200.0 to 850.0 °C									
	Pt200 -200.0 to 400.0 °C									
	Cu53 -50.0 to 180.0 °C									
	Ni100 -60.0 to 180.0 °C									
High Resistance RTDs ^[2]	Pt120 -60.0 to 180.0 °C				<input checked="" type="checkbox"/>					
T/Cs ^[3]	Pt200 -200.0 to 850.0 °C	0.1 °C	0.05% of rdg ± 3 dgt	NA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
	Pt500 -200.0 to 850.0 °C									
	Pt1000 -200.0 to 400.0 °C									
	Ni1000 -60.0 to 180.0 °C	1 °C	0.05% of rdg ± 3 dgt	88.88 ± 3 dgt	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
	J -210.0 to 1200.0 °C									
	K -200.0 to 1372.0 °C									
	N -200.0 to 1300.0 °C									
T -200.0 to 400.0 °C										
E -200.0 to 1000.0 °C										
R -50 to 1768 °C										
S -50 to 1768 °C										
B 250 to 1820 °C										

[1] The current loop power supply is 24V DC
 [2] RTDs conform to IEC751/DIN43760 standard

[3] T/Cs conform IEC584/ITS-90 standard
 [4] Contact us for specific requirements

GIPITRONIX Pvt. Ltd.
Vadodara (Gujarat) – 390010 (INDIA)


+91-265-2642854
 +91-997-4002836

www.gipitronix.com
contact@gipitronix.com

Technical Specifications $22 \leq T_A \leq 32^\circ\text{C}$; $V_S = V_{\text{LoBAT}}$; 1yr of calibration validity unless otherwise noted

Display		Graphical (128x64) LCD with backlight		
Input Impedance	Voltage	> 1M Ω		
	Current	1 or 10 Ω depending on range		
	Resistance	Bridge current of 0.1 to 0.5 mA depending on range		
Output Impedance	Voltage	< 0.05 Ω		
	Current	> 1M Ω		
Source Capability	Voltage	Up to 15V in 600 Ω or 20V in 2000 Ω		
	Current	20mA in 800 Ω		
	Resistance	Up to the maximum specified range		
Battery	Type	6 AA sized Ni-Mh batteries with longer life for field use		
	Life	10 - 12 Hrs. @ 12 mA output current		
	Status	Displays battery level using status bars and "LoBAT"		
Mains Operation		Power jack for AC/DC adapter/charger (230V _{AC} , 50Hz to 9V _{DC} , 200mA)		
CJ Compensation		Automatic and Manual CJ compensation		
CJ Error		$\pm 0.5^\circ\text{C}$ for $5 \leq T_A \leq 55^\circ\text{C}$		
Effect of leads in mV/TCs		1 $^\circ\text{C}$ for lead resistance of 100 Ω per lead		
Input Protection		I/O terminals are protected up to 24 V _{DC} for Ω/V and 48 V _{DC} for mA		
Storage Temperature		0 to 70 $^\circ\text{C}$ w/o batteries		
Humidity		Less than 90% Rh (Non-condensing)		
Operating Temperature		5 to 55 $^\circ\text{C}$		
Zero Drift		< 1 dgt per 10 $^\circ\text{C}$ outside the range of $22 \leq T_A \leq 32^\circ\text{C}$		
Span Drift		< 15ppm per $^\circ\text{C}$ or 0.0015% of rdg per $^\circ\text{C}$		
Enclosures	Type	Handheld	Panel Mounted (DIN)	Table Top
	Dimensions (H x W x D)	200x125x55 mm	96x192x200 mm	96x192x200 mm
	Material & Finish	MS (Powder Coated)	Aluminum & ABS Plastic	Aluminum & ABS Plastic
Weight		0.75 Kg w/o batteries	1 Kg	1 Kg

Standard Accessories

Accessories	Included	BS-5(4mm) probes, crocodile clips, SP3, screw driver, leather case, AC/DC adapter	 <p>[3]</p>
	Optional	6 AA sized Ni-Mh batteries, external battery chargers, wooden case	
Documentation	Included	Warranty certificate ^[1] , Calibration certificate ^[2] , User manual, RTD & T/C temperature tables	
	Optional	NABL Calibration certificate	

Ordering Information

Model No.	Feature Code	Enclosure Code
38534	X1	X2
Example	Specify 38534EH to order the Handheld Universal Calibrator using graphics (128x64) LCD with backlight for ranges of 500 Ω , 6 RTDs, 20mA, 100mV, 8 T/Cs and 20V.	

[1] Valid for 2 years against mfg defects

[2] Traceable to NABL, India

[3] Some accessories in the picture are optional