



uCAL

LC 12

The Ultimate Loop Calibrator



iCAL model LC 12 is the Ultimate Loop Calibrator for sourcing, measuring and simulating loop current, mV and V. It is compact, rugged and easy to use handheld device with graphical user interface.

LC 12 has simultaneous source and sense capability with independent parameter and range selection for source and sense, also the source and sense circuits are isolated from each other.

Masibus LC 12 Loop Calibrator is designed to provide base accuracy of 0.02% of reading in all modes of operation. 2W simulate and Read/Power are unique features for loop testing and calibration.

It has been designed to give maximum battery life on full charge, the backlight is adjustable for power saving and the display can be programmed to automatically switch off when not in use.

Automatic Step/Ramp output with Auto/Man selection, data logging, Max/Min/Average values, scaling to engineering units and filter settings enhances the use of LC 12 makes it multifunctional. LC 12 has automatic switch test feature.

LC 12 comes with a mini USB connector for charging, logged data retrieval and firmware upgrade, standard accessories provided patch cables, charger, USB cable, instruction manual, logged data retrieval software CD and calibration certificate, all in an attractive carrying case.

Features

- Easy to read color graphical TFT LCD display
- Available with EMI/EMC compliance
- Rechargeable lithium ion battery with enhanced power control for prolonged battery life
- Simultaneously measure and source: mA, mV and V with dual readings on display
- 24 VDC loop power supply to power transmitters and loops
- 2W simulate and Read/Power mode for in-situ loop checking and calibration
- Step/Ramp functions with Auto/Man selection
- Switch test with condition (open/closed) indicator
- Universal Serial Bus (USB) communication port for charging, data retrieve and firmware upgrade
- Data logging to measure long time drift
- Other features: Max/Min/Average, filter settings, tare facility, adjustable backlight, alarm annunciation (on display and buzzer), automatic display off.

Applications

- Loop check and calibration
- Calibration of transmitters and transducers
- Switch test and calibration
- Drift test of transmitters and transducers

TECHNICAL SPECIFICATIONS

Measurement Range				Power supply	
Parameter	Range	Resolution	Accuracy	Battery type	Rechargeable Li-ion battery pack, 2300mAh 3.7V
mV	0-250.00 mV	0.01 mV	±0.02% of reading ± 2 counts	Charging time	<5 hours max
V	0-30.000 VDC	0.001 V	±0.02% of reading ± 2 counts	Charger supply	100-240 VAC, 50/60 Hz; Output 5V DC@1A
mA	0-24.000 mA	0.001 mA	±0.02% of reading ± 2 counts		>18 hours max for mA, mV, V measurement with minimum backlight brightness.
Source Range				Battery life on full charge	> 8 hours max for 12mA generation with minimum backlight brightness
Parameter	Range	Resolution	Accuracy	Battery status indication	Battery symbol displayed with % power remaining
mV	0-250.00 mV	0.01 mV	±0.02% of reading ± 2 counts		
V	0-12.000 VDC	0.001 V	±0.02% of reading ± 2 counts		
mA	0-24.000 mA	0.001 mA	±0.02% of reading ± 2 counts		
General Specifications				Physical	
Display mode	Measure + Source, Measure only, Source only, Switch test + Source			Dimensions (in mm)	161.7 (L) x 82.1 (W) x 39.5 (H)
Max. input voltage	30 V DC			Housing material	ABS plastic
Temperature coefficient	30 ppm			Electrical terminals	Four nos., 2 mm safety sockets
Input impedance	V, mV >1MΩ			Weight	<300 grams
Measure	mA =10 Ω			Protection	IP20
Response time	Input <100ms Output <100ms			Environmental	
Load impedance	>10 KΩ for mV/V <750 Ω for mA			Operating temperature	0 to 55 °C
Display update rate	10 readings / sec			Operating temperature while charging batteries	0 to 45 °C
Isolation	500VDC between measure & source			Storage temperature	-20 ° to 60 °C
Data logging	Logged data is stored in a user defined file in internal memory Periodic logging: 150000 readings max			Relative humidity	30% to 90% non-condensing
Communication Interface	USB 2.0			Warm-up time	15 minutes
Display and Keys				Accessories	
Display	2.4" TFT LCD, 262K Color, Graphical, 42.72 mm x 60.26 mm, 240x320 pixels, White LED backlight			Calibration certificate	
Keys	6 Membrane keys			User guide	
Special Features				2 Sets of 2mm to 2mm banana cable	
Loop power output	24V DC, ±10% (24mA maximum)			2 Sets of 2mm crocodile cable	
HART mA loop resistor	250 Ω ±20%			2 Sets of connecting plug 4mm to 2mm	
Special function	Step/Ramp functions: Automatic/Manual, √X, x²: for measure & source			USB A male to USB mini B Male cable for PC communication and charging	
Switch test	• Potential free contacts Trigger level : 24V, 24mA (2V) • Voltage level detection Trigger level : 0 to 30V in 1V steps Input impedance : >1 MΩ			5 VDC charging adapter	
				Carrying bag	
				Data logging software CD-mCAL	
				Directive Conformity*	
				Electromagnetic Compatibility Directive 2014/30/EU	EN 61326-1:2013
				Low Voltage Directive 2014/68/EU	EN 61010-1:2010
				*(Applicable only for CE marked)	

Ordering Code

Model	CE Compliance	
LC12	X	
	Y	YES