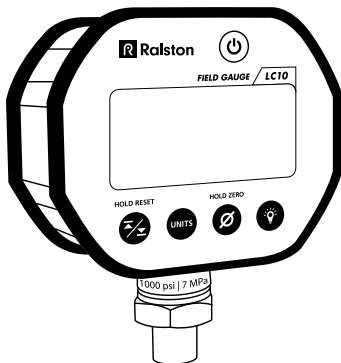


Ralston Field Gauge LC10 (LC10) Operation Manual



**For all models of Ralston Field Gauge LC10 Digital
Pressure or Temperature Gauges**

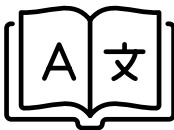


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Included Items

Items included in the package. If any items are missing, please contact your Ralston Instruments distributor.

LC10 Pressure or Temperature gauge

2 x AA batteries

2 meter USB Micro-B cord

Need Replacement Parts?

Replacement parts and accessories can be found at
ralstoninst.com/LC

Important Safety Notices

⚠ WARNING: Do not operate in hazardous locations.

⚠ WARNING: Do not use LC10 until you have read and fully understand the instructions and hazards of the product.

⚠ WARNING: Contents may be under high pressure or temperature.

⚠ WARNING: Any modifications to this product with custom parts can result in hazardous operation of the product.

⚠ WARNING: Use eye protection while using this device.

⚠ WARNING: Do not overpressure LC10 or damage may result.

⚠ WARNING: This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer, and is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

⚠ CAUTION: Installation of LC10 must be in accordance with Ralston Instruments installation instructions.

⚠ CAUTION: Installation of LC10 must be in accordance with applicable local, national and international standards and electrical codes.

⚠ CAUTION: Batteries are not rechargeable and will not be recharged via USB.

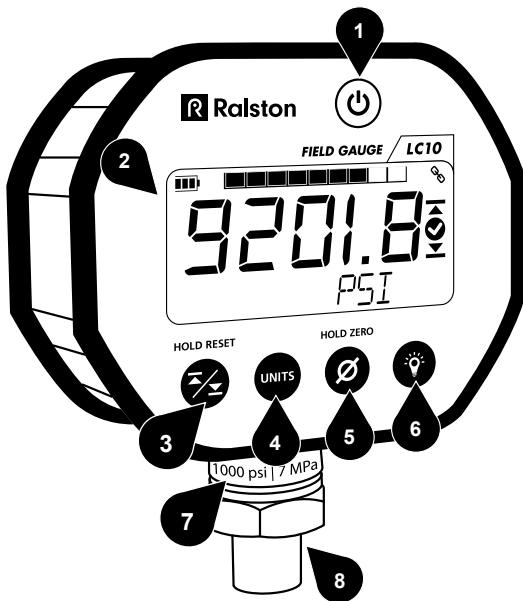
⚠ CAUTION: Use only approved AC/DC power adapter model D-000410.

⚠ CAUTION: Protection impairment may occur if used in a manner not specified by Ralston Instruments.

⚠ CAUTION: Only those personnel trained in the use of this device shall operate it.

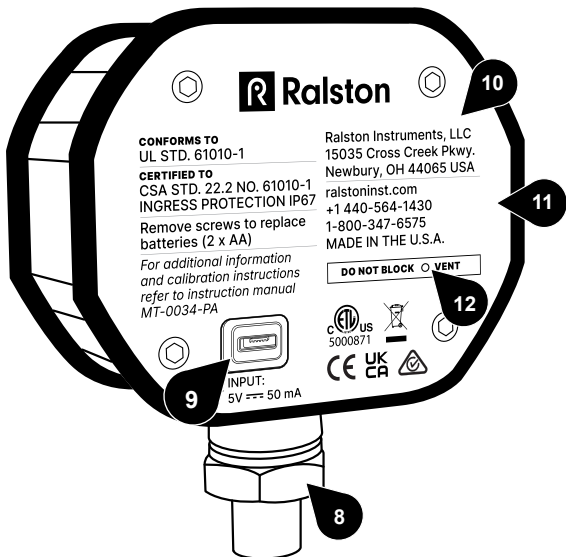
LC10 Features Overview

Front

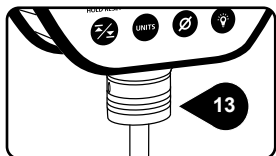


- | | |
|-------------------|----------------------------------|
| 1. Power | 6. Backlight |
| 2. LCD display | 7. Pressure or Temperature Range |
| 3. High/Low/Reset | 8. Pressure sensor option |
| 4. Units | 9. Micro USB port |
| 5. Zero | |

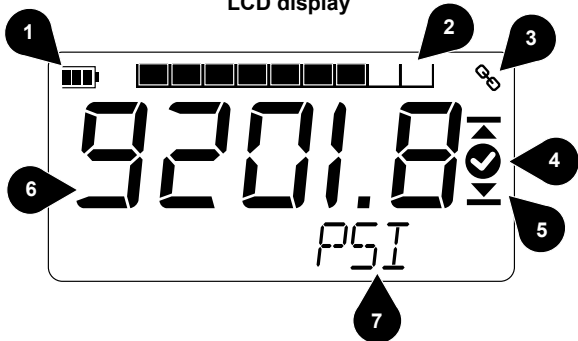
Back



- 10. Warning label
- 11. Battery access door
- 12. Pressure equalizing vent
- 13. Temperature sensor option



LCD display



- | | |
|---|--|
| 1. Battery indicator | 5. High and low arrows |
| 2. Graphical pressure/
temperature meter | 6. Main pressure/
temperature display |
| 3. USB connected symbol | 7. Secondary display |
| 4. Check mark to indicate
success | |

✓ **Power Management**

Configure display and power management to maximize battery life in the field using FieldLab Desktop software.

✓ **Graphic Pressure or Temperature Meter**

See pressure or temperature graphically

✓ **High / Low Readings**

See continuous Maximum and Minimum pressure or temperature readings over a span of time

✓ **Easily Change Engineering Units**

Change to any of the 18 standard pressure engineering units or 4 standard temperature units on the fly.

Manage frequently used units or remove unused units with FieldLab Desktop.

✓ **Custom Engineering Units**

Create custom engineering units using FieldLab Desktop and add them to any LC10 gauge.

Activate Your LC10

Before using your LC10 for the first time, you should activate it and link it to your PC. Note that this is optional and only required if you want to change any settings on the LC10 or calibrate it.

1 Download & Install FieldLab Desktop

Visit **RalstonFieldLab.com** to download and install FieldLab Desktop on your Windows PC*

2 Open & Follow onscreen instructions in FieldLab Desktop software

Follow the onscreen directions closely before connecting your LC10. Do not connect your LC10 until instructed to do so.

3 You're ready to begin!

Find detailed support articles for changing settings, viewing live readings and logging data at **RalstonFieldLab.com**

* Windows version 7 or greater only. Administrative rights required to install FieldLab Desktop software.

Updating LC10 and FieldLab Desktop

Updating FieldLab Desktop

Open FieldLab Desktop on your computer, and select FieldLab > Check for Updates.

Updating your LC10

1. Open FieldLab Desktop on the computer you use to manage your LC10.
2. Connect the LC10 using the USB cable.
3. Select the LC10 from the FieldLab's menu. Any available updates will be displayed.

Operation Instructions

Conditions of Use

- **Environment:** Indoor use or temporary outdoor use. For long term or permanent outdoor use, a suitable enclosure may be required.
- The LC10 gauge requires (2) AA Batteries, power from a PC via USB or power from AC power adapter D-000410 via USB to operate.

Installation Instructions

- Ensure that gauge is oriented in such a way that the “Power” button is always easily accessible.
- If pressure sensor option is installed, then seal pressure connection with thread sealant prior to assembling it in any pressure system.
- If temperature sensor option is installed, then connect thermal probe using a rated thermal well or other approved device.
- Place gauge in area that is protected from damage from weather, excessive temperature, impact or humidity.

Connecting to Accessories or other Equipment

Connect to a PC via USB cable

- Use only approved USB cable P/N D-000040

Connect to AC Mains

- Use only approved power adapter P/N D-000410 and approved USB cable P/N D-000040

Instructions for Cleaning or Decontamination

- Clean enclosure with mild water-based cleaner. Do not use aggressive solvent.
- Flush pressure sensor or thermal probe with alcohol based cleaner (or other cleaner compatible with 316 Stainless steel) if toxic or other hazardous substance is used.

Button Functions



Power

- Press and hold for 5 seconds to turn on.
- When LC10 is on, press and hold to turn off.

Note: LC10 will turn off automatically based on setting in FieldLab Desktop. The default auto-shutoff time is 10 minutes, but can be changed using FieldLab Desktop software.



Hi/Low/ Reset

- Press button once to display highest pressure or temperature reached.
 - Press button again to display lowest pressure or temperature reached.
 - Press and hold button again to clear high and low values.
 - Press button again to return to the current pressure or temperature.
-



Units

- Press button to scroll through available engineering units.

Note: Engineering units that appear in the gauge can be managed using FieldLab Desktop software.



Zero Pressure

- With no pressure applied, press and hold button to zero reading.

Note: If Pressure is greater than 10% of gauge pressure range then a message to vent the pressure will appear.



Backlight

- Press button to illuminate Backlight.

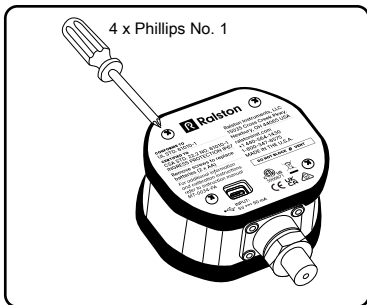
Note: Light will turn off after a set time. Both time and brightness can be adjusted in FieldLab Desktop software.

Battery Installation

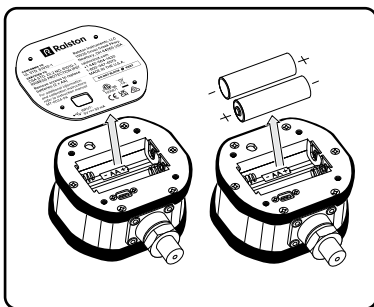
**Recommended Alkaline AA Batteries (2X)
(ANSI 15A, IEC LR6)**

- Duracell MN1500
- Energizer E91
- Rayovac Max Plus 815

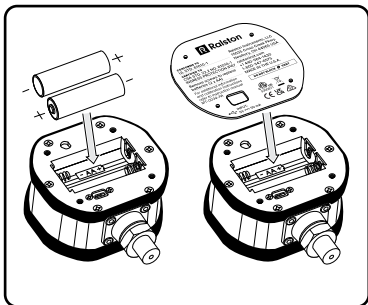
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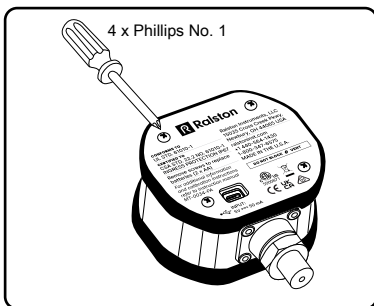
2



3



4



Tighten to 5 in-lb (0.6 N-m) to maintain water resistance.

Calibration

- Download PC software at **RalstonFieldLab.com**
- Follow instructions in software on how to calibrate pressure or temperature

Specifications

Batteries	2 x AA (LR6)
Battery Life	1,500 hours typical
Digital Interface	USB Micro-B (on back)
Dimensions (not including temp. probe)	3.5 x 4.1 x 2.2 in (8.9 x 10.4 x 5.6 cm)
Display	2.2 X 1.1 in (5.6 X 2.8 cm), with backlight
Electrical Rating	USB Mode - 5 VDC, 0.25W Battery Mode - 3 VDC, 0.25W Power Adapter - 90 ~ 264 VAC Input, 5 VDC @ 1 Amp Output
Environment	Indoor use Temporary outdoor use
Ingress Protection	IP67 (1 meter submersion for 30 minutes)
Materials of Construction	Polycarbonate / ABS, Aluminum, 316L Stainless Steel
Media Compatibility	Gases and liquids compatible with 316L S.S.
Operating Altitude	10,000 ft (3050m) maximum
Operating Temperature Range (Enclosure)	-4 to 122°F (-10 to 50°C)
Power	2 x AA batteries, D-000040 power adapter (optional)
Protection Class	Pollution Degree 2

Relative Humidity	90% (-10 to 35°C) 75% RH (35 to 40°C) 45% RH (40 to 50°C)
Storage Temperature Range	-40 to 167°F (-40 to 75°C)
USB Cable	USB Micro, 2 meter, shielded
Weight	8 oz (227 g)

Pressure Specifications (for all models with pressure connection, if included)

Pressure Accuracy	+/-0.25% of full scale (ASME Grade 3A / ISO Class 0.25)
Pressure Connection	1/4" Male NPT

Temperature Specifications (for all models with thermal probe, if included)

Internal Temperature Probe	Permanently mounted - dimensions vary with model, IP67
Temperature Accuracy	+/- (0.27 + 0.004* t) °F +/- (0.15 + 0.002* t) °C (IEC 60751 Class A)
Thermal Probe Calibrated Temperature Range	-22 to 300 °F (-30 to 150 °C)

Standards and Agency Approvals

This product complies with the following standards. Refer to EC Declaration of Conformity for specific details

- CAN/CSA-C22.2 No 61010-1-12: 3rd Edition
- UL 61010-1: 3rd Edition
- EN/IEC 61010-1:2010
- AS 61010-1, 3rd Edition
- IEC 61326-1:2012 2nd Edition
- Pressure Equipment Directive (PED) 2014/68/EU
- Electromagnetic Compatibility Directive (EMC) 2014/30/EU

Electromagnetic Specifications

Conducted RF	IEC 61000-4-6, performance criterion B
DC Power Burst	IEC 61000-4-4, performance criterion B
DC Power Surge	IEC 61000-4-5, performance criterion B
Electro-static Discharge Immunity	IEC 61000-4-2:2008, performance criterion B
Radiated Emissions	CISPR 11:2009, Group 1, Class B
Radiated, Radio-Frequency Electromagnetic Immunity	IEC 61000-4-3:2006, performance criterion A
RF Field effects on Measurement Accuracy	Accuracy of Pressure and Temperature is not specified for RF fields > 3V/m

Support

Online Support

For step-by-step instructions about how to use LC10, install accessories, and troubleshooting, go to:

ralstonfieldlab.com/support

Customer Service

Contact Customer service directly

Hours:

Monday–Friday 8:30am-5:00pm EST

Phone:

+1 440-564-1430

+1 800-347-6575 | US & CANADA

Email:

support@ralstoninst.com

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Toll Free: 1 800-347-6575 (US and Canada)

Support: ralstoninst.com/support

Parts and Service: ralstoninst.com/LC

Email: support@ralstoninst.com