


# DIGITAL AND ANALOG GUYS CAN AGREE. THIS GAUGE HAS IT ALL.

Get out of the dark ages with the industry's first hybrid gauge. hilmor's Electronic Gauge offers true analog capabilities with unmatched digital precision, all within 1% accuracy. Not to mention it's clad in a high-impact, protective boot.

## Quick-Start Instructions:

1. Insert batteries.
2. Attach hoses, and insert thermocouple clamps.
3. Press and hold the power button  .
4. Select the appropriate refrigerant.
5. And forget the flashlight.







## Important:

Read the entire instruction manual carefully, and have a complete understanding of the tool's features, limitations and specifications before using the hilmor Electronic Gauge. hilmor products are designed and manufactured to be used by trained and licensed HVAC/R technicians. Incorrect application could result in accidents, injuries or death.

Do not expose the hilmor Electronic Gauge to rain or wet conditions.

Safety glasses and gloves should be worn at all times while using the manifold.

## Operating Instructions:

1. Install the complimentary batteries by removing the battery cover from the backside of the manifold set with a screwdriver.
2. Press the power button  to turn on. The gauges will self-calibrate to ensure accuracy.
3. To change the units of measure, press the unit button for either Pressure  or Temperature .
4. Select the appropriate refrigerant by using the center knob. Press and hold the center knob for two seconds to activate selection. Find the appropriate refrigerant by turning the center knob. The top 10 most common refrigerants are listed first, followed by all 43 in numerical order. Press the knob to select the refrigerant. If the refrigerant selection is blinking, the selection has not been made. The exterior gauges' backlight will change color to indicate the chosen refrigerant. The corresponding VSAT and LSAT temperatures will display on the outside displays.
5. Insert hilmor K-style Thermocouple Clamp Probes (included) to measure T1 and T2 temperatures. Superheat and subcool will automatically calculate.
  - a. The smaller of the two blades is the positive end indicated by a plus icon (+). This end should be inserted into the top position on the Electronic Gauge indicated by a plus icon (+).
  - b. Subsequently, the larger of the two blades, indicated by a negative icon (-), should be inserted into the bottom position on the Electronic Gauge.
6. To turn off the button volume, depress the mute button .
7. The  button will display the minimum, maximum and mean pressure and temperature that has been recorded since the unit has been powered on. To reset these levels, simply power off and immediately power back on the manifold set. *Note: The type of refrigerant cannot be changed when in the MIN/MAX/MEAN mode. Cycle out of the mode before changing refrigerants.*
8. To turn off the unit, press and hold the power button  for two seconds.
9. Remember you did all that with one tool.

## Along the Way:

- To change the batteries, remove the back door with a screwdriver and insert 4 AA batteries. hilmor recommends brand name high-performance alkaline batteries.
- The temperature probes are factory calibrated and ready for immediate use with the hilmor Electronic Gauge. If recalibration is needed, place probes in an ice water bath. Press and hold the “+” and “-” buttons simultaneously for three seconds to enter calibration mode. Once in calibration mode, push the corresponding “+” or “-” button to adjust to 32° Fahrenheit (0° Celsius). To exit calibration mode, hit the power button.
- Although the hilmor Electronic Gauge is manufactured to be used with the hilmor Thermocouple Clamps, different thermocouples may be paired with the hilmor tool after proper field calibration (see item 2 above for instructions).

## Controls and Displays:

### PRESSURE

Low (left) and High (right) side.

Measured in:

psig - pounds per square inch gauge

barg - bar gauge

### TEMPERATURE

T1 and T2 measured in:

°F - Fahrenheit

°C - Celsius

K - Kelvin

Superheat: Low (left) side

Subcool: High (right) side

°F - Fahrenheit

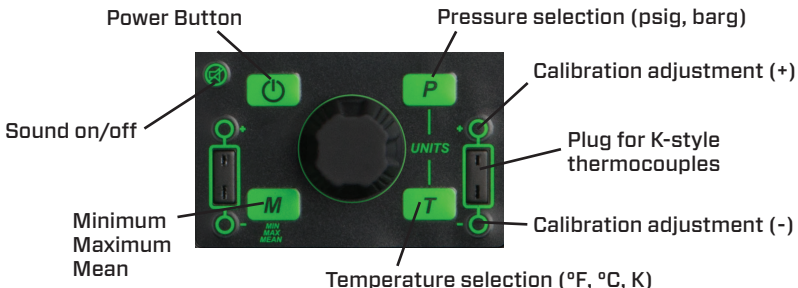
°C - Celsius

K - Kelvin

Mute Indicator


Refrigerant selected

Low Battery Indicator



## Zeroing out the Pressure Sensor:

*Note: Before beginning, disconnect the Electronic Gauge from the unit and hoses, and open all valves to ensure there is no pressure remaining in the manifold.*


1. Press and hold the  button for 5 seconds.
2. The display screen will read “zero out pr 1 pr 2” once in the zeroing out mode.
3. Turn center knob to “yes,” and press knob to select.
4. Restart the unit (power off and on) before using the Electronic Gauge.
5. Take a break. You deserve it.

## Maintenance:

- Exterior: Clean the outside of the unit with a dry cloth if needed. Do not use liquid on any part of the manifold or display unit.

## Refrigerant Updates:

This unit comes with 43 refrigerants preloaded to the device. On occasion, hilmor will make an update to the P/T Chart. Had your Electronic Gauge for a while? Check [hilmor.com](http://hilmor.com) for the most up-to-date P/T version.

1. Download the refrigerant file from [hilmor.com](http://hilmor.com) to an empty USB flash drive.
2. Plug the USB flash drive into the USB port located in the battery compartment.
3. Press the power button  to turn on the unit.
4. Turn and press the center knob to “yes.”
5. The display screen will read “USB Load” while information is loading.
6. The upload is complete when the display screen reads “Load Done.”



## **Limited Warranty:**

At hilmor, we have put the highest priority on thoughtful product design and manufacturing quality. That is why we guarantee our Electronic Gauge to be free of material and workmanship defects for a period of three years from purchase. We get the tough conditions in which you work and have designed products to stand up to those challenges. Unfortunately, this warranty does not apply to product that has been damaged as a result of improper maintenance, accident or misuse, or which fails to operate due to normal wear and tear. All warranty claims should be returned to the place of purchase. They will contact hilmor for next steps which could include field scrap or return to the factory for analysis and work with you on a replacement or credit. HILMOR MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OR FITNESS THEREOF FOR ANY PURPOSE. IN NO EVENT SHALL HILMOR BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

## **Technical Support:**

Please contact hilmor Technical Services if you need additional product information that is not covered in this instruction manual: 1-800-642-0010.

## Technical Specifications:

<i>Preloaded Refrigerants:</i>	11, 12, 13, 22, 23, 113, 114, 123, 124, 125, 134A, 401A, 401B, 402A, 402B, 404A, 406A, 407A, 407C, 407F, 408A, 409A, 410A, 414B, 416A, 417A, 420A, 421A, 421B, 422A, 422B, 422C, 422D, 424A, 427A, 434A, 437A, 438A, 500, 502, 503, 507A, 508B
<i>Display Size:</i>	3-1/4" diagonal
<i>Batteries:</i>	AA × 4
<i>Battery Life:</i>	24 hours of continuous use
<i>Low Battery Indicator:</i>	Display symbol on screen,  display when below operating voltage. The low battery icon indicates the unit has approximately 15-20 minutes left on the current battery.
<i>Volume:</i>	Mute by pressing  ; mute icon will display on the screen.
<i>Auto Shut-off:</i>	After 20 minutes of inactivity (no buttons engaged)
<i>Thermocouple Connector:</i>	Type K
<i>Pressure Measurement:</i>	Range: 0 to 800 psi, Resolution: 0.1 psi, Accuracy 1%
<i>Temperature Measurement:</i>	Range: -76.0° F to 999.9° F, Resolution: 0.1°F/C, Accuracy: ± 1.0° C/ ± 2.0° F at 68°F
<i>Maximum Overload Pressure:</i>	1000 psi
<i>Operating Temperature:</i>	0° C to +50° C
<i>Product Dimensions:</i>	Length: 8-7/8", Width: 4", Height: 8-1/4", Weight: 4.25 lbs.
<i>Altimeter:</i>	Built-in to measure atmosphere pressure based on location and automatically adjusts.

## **Warning:**

To avoid electrical shock or personal injury, follow these guidelines:

- Do not use the hilmor Electronic Gauge if it appears damaged.
- Replace the batteries as soon as the battery indicator appears, and properly install the + and – ends of the battery in the battery case. Do not use rechargeable batteries with this tool.
- If repairs are needed, only use replacement parts approved by hilmor Technical Service.
- If any part of the manifold is removed or damaged, discontinue the use of the tool.

To avoid damage to the manifold or equipment being serviced or tested, follow these guidelines:

- Do not use the manifold with refrigerants that are not listed in the menu.
- Use the proper thermocouples, function and operating range laid out in this instruction manual.
- Do not operate the tool around explosive gas, vapor or dust.
- Do not exceed the specified pressure range indicated in this manual.

