KRUEGER SENTRY GAUGE
1873 SIESTA LANE GREEN BAY, WI 54313 | 920-434-8860 | www.ksentry.com

Therma Gauge – Type H - FDEP EQ 730

Top mounted liquid level gauge that can measure from 6 inches to 144 inches in depth. Bushing sizes can be 2" or 1.5". Gauges are custom made in house to fit your tank. Can also accommodate for double walls and pipe risers. The Type H Gauge has a 2-piece bushing construction that allows you to aim your swing arm away from walls, corners, and other obstructions.



Calibration: Cellulose Acetate
Consists of 3 pieces –
Outer plastic piece, inner plastic piece, and a piece of paper in between.
Upgrades: Inner glass or Solid Glass

Lock Nut: HDPE Plastic
Upgrades: Aluminum and PVC

Bushing: Aluminum
Can be 2", 1.5".
Upgrades: PVC and Stainless steel

Thermallwell:

Float: HDPE
Upgrades: Stainless Steel and Nitrophyll.

Internal Rods: Galvanized steel rods with brass rivets.
Additional options are stainless steel rods, peek rods, or Kynar (PVDF) rods.

Other Materials:
Indicator is HDPE
Gasket is Duro Nitrile (Upgrade: Viton)

Part Number—
H-(size opening)-(tank depth)+(ext)-(list options)
Example: H-2-48+12

Material Options:

- **Standard Therma Gauge**-Type H-Rods are galvanized steel, floats are HDPE plastic, bushing is aluminum, calibration top is plastic.
- **Stainless Level One**-Type H-S1- Rods become stainless.
- **Stainless Level Two**-Type -H-S2- Rods and floats become stainless.
- **Stainless Level Three**-Type H-S3- This model comes standard with Glass Calibration, Aluminum Locking Nut, Stainless Steel Bushing, Stainless Steel Rods, and Stainless Steel Floats.
- **All Plastic Model**—Type PH—This model comes standard with Glass Calibration, PVC Gauge Guard, PVC Bushing, PEEK Plastic Rods, HDPE Plastic Float.

Material Limitations:
Standard choices are listed on picture to the left.
Stainless Steel Floats: Maximum tank depth is reduced to 120 inches.
Plastic Rods: Maximum tank depth is reduced to 110 inches.

Accessories & Add-ons:

- Gauge Guard: A cover that protects the exposed plastic components on top of the gauge.
- Audible Alarm: Can turn your mechanical gauge into an audible Hi or Lo level alarm.
- LED At-A-Glance: Can give your mechanical gauge remote reading capability.
- KSG SmartGauge Transmitter: Can convert a Krueger mechanical gauge into a digital output, 4-20mA, industry standard signal.

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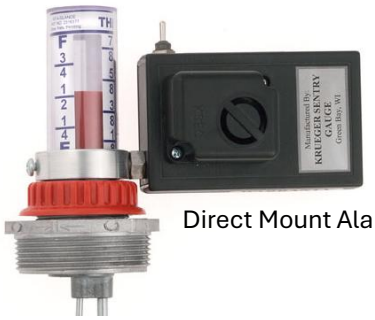
Accessories and Replacement Parts

Accessories

LED At A Glance Remote Display-Turns the direct reading gauge into a wired remote reading gauge.
(part # add -LEDAAG)
Direct Mount Alarms- Audible alarm that mounts directly to the gauge and provides your choice of overfill or low-level warnings.
(part # add -DAlarm)
Remote Mount Alarms- Audible alarm that can be remotely wired and provides your choice of overfill or low-level warnings.
(part # add -RAlarm)
KSG SmartGauge Transmitter- accessory system converts a Krueger mechanical gauge into a digital output, 4-20mA, industry standard signal
(part # add – KSG SmartGauge Transmitter)

KSG SmartGauge Transmitter





Direct Mount Alarm



LED At A Glance



Gauge Guard

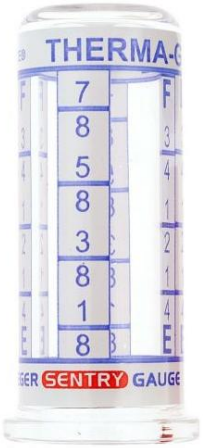


Aluminum Lock Nut



Inner Glass Calibration

Solid Glass Calibration



Upgrades / Add-ons

Aluminum Lock Nut- Replace the red lock nut for added durability.
(part # add -ALN)
Gauge Guard- Protective cover that replaces the red locking nut providing protection from physical damage, weathering damage, and helps with passing fire inspections.
(part # add -ALG)
Inner Glass Calibration- The internal piece of the calibration becomes glass. Provides protection from heat, fumes, weathering, and helps with passing fire inspections. (part # add -GLC)
Solid Glass Calibration- Calibration is a solid glass. Increases resistance to a variety of environmental factors including sun damage, heat damage, and weathering. (Requires aluminum lock nut)



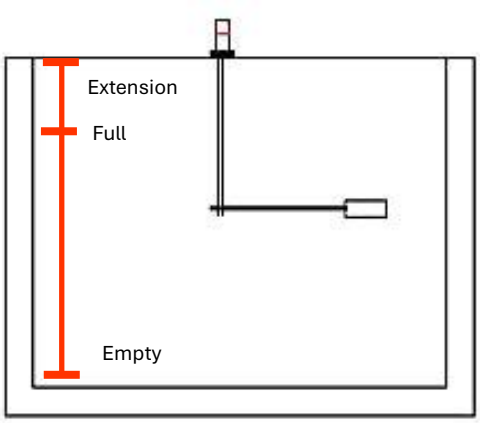
HSG-KIT

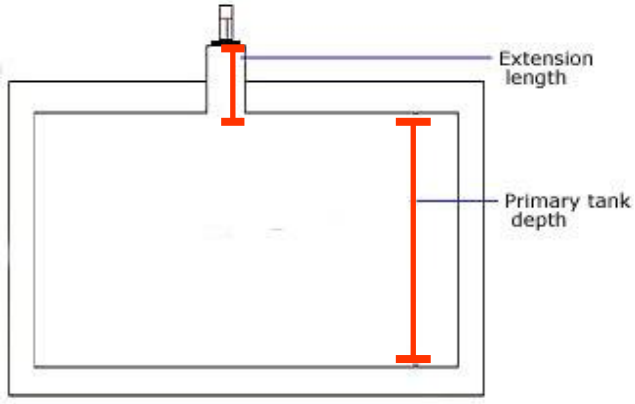
Replacement Parts

H-Kit- Replaces all the top components with standard materials.
HG-Kit- Replaces all the top components with standard materials and a glass calibration.
HALN-Kit- Replaces all the top components with standard materials and an aluminum lock nut.
HGALN-Kit- Replaces the top components with a glass calibration and aluminum lock nut.
HSG-KIT- Replaces the top components with a solid glass calibration and aluminum lock nut.

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Ordering, Installation, Maintenance and Operation





Installation Instructions:

When installing, unthread the red nut and remove the calibration and bushing. Thread in the bushing first. Drop the gauge through the center hole, make sure your swing arm is facing in the direction you want. Replace the calibration and tighten down your red locking nut.

Instructions for Operation:

The top of the red indicator is an indication of your approximate fuel level in your tank. Once installed, you simply view the calibration to monitor your tank level. Indicator is calibrated in eighths of a tank on one side, and quarters of a tank on the other.

Ordering Instructions:

Part Number Layout:
H-(Opening Size)-(tank depth)-(ext. length)-(material package)-(options)

1. State the gauge type (Type H for metal or Type PH for all plastic)
2. State the opening size you are using. (1.5”---2”)
3. State the tank depth (pictured left). Tank depth is the distance from empty to full.
4. When necessary, provide the extension length (pictured left). Extension length is the distance from full to gauge threads. *sometimes zero*
5. List the material package you prefer for best compatibility with your liquid. Material packages are explained on page 1 of this document. *Skip this if you want standard materials*
6. List other material options and accessories that you prefer. These options and accessories can be located on page 2 of this document. *Skip this if you want standard materials.*

Example Part numbers

- H-2-48-12-S2
- H-2-24-GLC

Maintenance:

The Therma Gauge can fail in one of three ways.

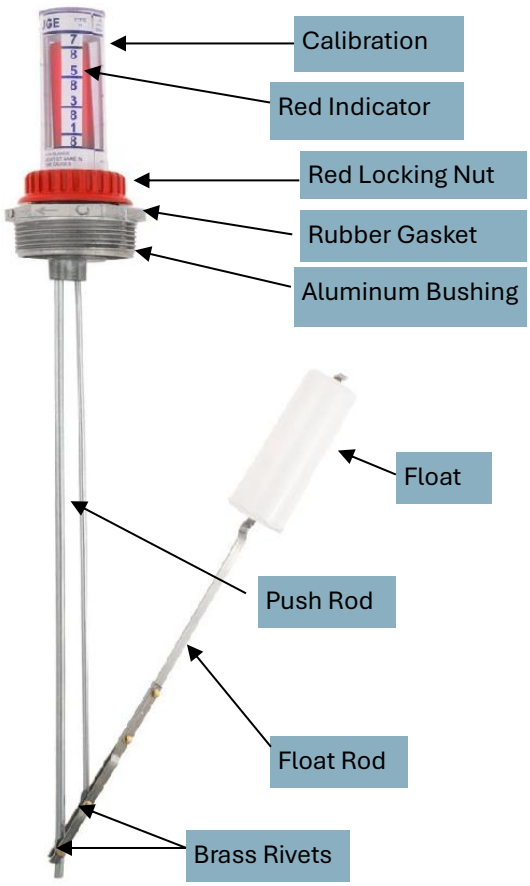
- The calibration assembly on the outside of the tank can become weathered, unreadable, or broken.
- The connecting rods that extend into the tank can come apart or become damaged.
- The float that sits at the bottom of the gauge can come off or become saturated with product (leak).

Recommended Maintenance Procedures:
When performing maintenance, be sure to follow the installation instructions to prevent damaging the gauge.

- Once per month: Inspect the top of the unit once per month to ensure that the calibration is visible, readable, and unbroken. (these top pieces can be easily replaced without having to replace the whole gauge)
- Once every 6 months: Unthread the unit and carefully remove it from the tank. Be sure all rods are connected as one piece from the red indicator all the way down to the float. Also inspect the float for damage or leakage. To ensure proper working order, manually raise the float arm from empty to full to be sure that the red indicator freely moves up and down with the motion of the float rod.

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FAQ's and Troubleshooting



Helpful Information:

- Restocking Fee is typically 25% but may vary depending on the individual situation and the type of gauge.
- 1 year warranty after date of purchase
- PSI rating for gauges is 70 PSI
- Level Gauge are **not** field adjustable



Solid Glass



Inner Glass


Gauge Guard

Frequently Asked Questions:

Q: What is the difference between the Therma Gauge and the standard Direct Reading Gauge?
A: The two gauges are nearly identical, but the Therma gauge has a two piece bushing. This allows you to remove the bushing, thread it in, then drop the gauge in and point the swing arm in the direction of your choice. This makes installation easier when you fitting is near a wall/corner or if you have baffles/obstructions in your tank that you need to avoid.

Q: The top plastic portion of my gauge has become damaged or weathered, what can I do?
A: The top of the gauge is easily replaced, just order a D-Repair Kit which replaces all of the top components of the gauge.

Q: How can I prevent the top of my gauge from becoming weathered or warped in the future?
A: Several upgrades exist that improve the life and performance of the gauge. The glass calibration, which makes the internal part of the calibration into glass, increases the gauges resistance to heat, fumes, and sun.

Q: My gauge top keeps getting broken by hoses/weather/people, do you have a more durable option?
A: We offer something called a Gauge Guard. This is an aluminum cage that replaces the red lock nut and protects the top of your gauge from physical damage and weathering.

Q: The fire inspector says my gauge is not up to code? How can I satisfy their requirements.
A: If you get the glass calibration and the gauge guard, you are creating a glass and metal barrier between the inside of the tank and the external environment. Explain this to your inspector and see if it satisfies their requirements.

Q: I have aggressive chemicals that I need to gauge, will this work?
A: Our gauge has many material options, including all stainless components or all plastic components. We can help with determining what material option you need, but compatibility is ultimately the end user's decision.

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FDEP Letter

Mr. Lee Geurts
Krueger Sentry Gauge
1873 Siesta Lane
Green Bay, WI 54313

SUBJECT: Approval of Krueger Therma Gauge and Overfill Alert Gauge, File No. **EQ-730**

Dear Mr. Geurts:

The Bureau of Petroleum Storage Systems has concluded review of Equipment Approval request dated March 23, 2009, submitted for the above referenced equipment that pursuant to Rule 62-762.851, Florida Administrative Code (F.A.C.).

Based on the information provided by Krueger Sentry Gauge, the Department finds that the Krueger Therma Gauge and Overfill Alert Gauge will provide environmental protection substantially equivalent to that provided by compliance with the requirements established in Rule 62-762.501 (2)(d), F.A.C.

Pursuant to Rule 62-762.851, F.A.C., the request for the use of Krueger Therma Gauge and Overfill Alert Gauge is approved for overfill prevention for aboveground storage tanks in the State of Florida. A copy of this Order shall be distributed to any facility that uses this product. A copy of the annual operability test shall be given to any tank owner purchasing or using this system in the state of Florida. The annual operability test shall be done in accordance of Exhibit A attached to the Final Order.

Please be advised that the above referenced DEP rules are subject to change. If the above rule standards are modified in the future, this order may be modified or rescinded for future upgrades and installations. Additionally, if the product(s) shows a consistent pattern of failure(s), and therefore does not provide substantially equivalent environmental protection, the Department may rescind this order.

The Department's Order shall become final unless a timely petition for an administrative hearing is filed under sections 120.569 and 120.57, F.S., within 21 days of receipt of this Order. Persons who have filed such a petition may seek to mediate the dispute and choosing mediation will not adversely affect the right to a hearing if mediation does not result in a settlement. The procedures for petitioning for a hearing and pursuing mediation are set forth below.

Persons affected by this Order have the following options:

A. If you choose to accept the Department's decision regarding the Order, you do not have to do anything. This Order is final and effective as of the date on the top of the first page of this Order.
B. If you choose to challenge the decision, you may do the following:
1. File a request for an extension of time to file a petition for hearing with the Department's Agency Clerk in the Office of General Counsel within **21** days of receipt of this Order. This request should be made if you wish to meet with the Department in an attempt to resolve any disputes without first filing a petition for hearing or negotiate an agreement to mediate; or
2. File a petition for administrative hearing with the Department's Agency Clerk in the Office of General Counsel within **21** days of receipt of this Order.
3. In addition to requesting an administrative hearing, any petitioner may elect to pursue mediation under Section 120.573, F.S., and must negotiate an agreement to mediate within **10** days after the deadline for filing a petition.

How to Request an Extension of Time to File a Petition for Hearing

For good cause shown, pursuant to Rule 62-110.106(4), F.A.C., the Department may grant a request for an extension of time to file a petition for hearing. Such a request must be filed (received) by the Agency Clerk in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida, 32399-3000, within **21** days of receipt of this Order. Petitioner, if different from the applicant, shall mail a copy of the request to the applicant at the time of filing. Failure to file a petition within this time period shall waive the right of anyone who may request an administrative hearing under Sections 120.569 and 120.57, F.S.

How to File a Petition for Administrative Hearing

A person whose substantial interests are affected by this Order may petition for an administrative proceeding (hearing) under Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed (received) by the Agency Clerk in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, MS 35, Tallahassee, Florida, 32399-3000, within **21** days of receipt of this Order. Petitioner, if different from the applicant shall mail a copy of the petition to the applicant at the time of filing. Failure to file a petition within this time period shall waive the right of anyone who may request an administrative hearing under Sections 120.569 and 120.57, F.S.

Pursuant to Subsection 120.569(2), F.S., and Rule 28-106.201, F.A.C., a petition for administrative hearing shall contain the following information.
a. The name, address, and telephone number of each petitioner; the name, address, and telephone number of the petitioner's representative, if any, the site owner's name and address, if different from the petitioner, the DEP facility number, and the name and address of the facility;
b. A statement of when and how the petitioner received notice of the Department's action or proposed action;
c. An explanation of how each petitioner's substantial interests are or will be affected by the Department's action or proposed action;
d. A statement of the disputed issues of material fact, or a statement that there are no disputed facts;
e. A concise statement of the ultimate facts alleged, including a statement of the specific facts the petitioner contends warrant reversal or modification of the Department's action or proposed action;
f. A statement of the specific rules or statutes the petitioner contends requires reversal or modification of the Department's action or proposed action; and
g. A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the Department to take with respect to the Department's action or proposed action.

How to Pursue Mediation

In addition to requesting an administrative hearing, any petitioner may elect to pursue mediation. The election may be accomplished by filing with the Department a mediation agreement with all parties to the proceeding (i.e., the applicant, the Department, and any person who has filed a timely and sufficient petition for hearing). The agreement must contain all the information required by Rule 28-106.404, F.A.C. The agreement, signed by all parties, must be received by the Agency Clerk in the Office of General Counsel of the Department at 3900
Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida, 32399-3000 within **10** days after the deadline for filing a petition, as set forth above. Choosing mediation will not adversely affect the right to a hearing if mediation does not result in a settlement.
Pursuant to Rule 28-106.404, F.A.C., an agreement to mediate must include the following.

- The name, address, and telephone number of the persons who may attend the mediation, (also the DEP facility number, the name and address of the facility if applicable);
- The name, address, and telephone number of the mediator agreed to by the parties;
- How the costs and fees associated with the mediation will be allocated (the Department will not pay any of the costs of mediation);
- The agreement of the parties regarding the confidentiality of discussions and documents introduced during mediation to the extent authorized by law;
- The date, time, and place of the first mediation session;
- The name of the party's representative who shall have authority to settle or recommend settlement; and
- The signature of the parties.

As provided in Section 120.573, F.S., the timely agreement of all parties to mediate will toll the time limitations imposed by Sections 120.569 and 120.57, F.S., for holding an administrative hearing and issuing a final order. Unless otherwise agreed by the parties, the mediation must be concluded within sixty days of the execution of the agreement. If mediation results in settlement of the administrative dispute, the Department must enter a final order incorporating the agreement of the parties. Persons seeking to protect their substantial interests that would be affected by such a modified final decision must file their petitions within 21 days of receipt of this notice, or they shall be deemed to have waived their right to a proceeding under Sections 120.569 and 120.57, F.S. If mediation terminates without settlement of the dispute, the Department shall notify all parties in writing that the administrative hearing processes under Sections 120.569 and 120.57, F.S., are resumed.
This Order is final and effective as of the date on the top of the first page of this Order. Timely filing a petition for administrative hearing postpones the date this Order takes effect until the Department issues either a final order pursuant to an administrative hearing or mediation settlement.

Judicial Review

Any party to this Order has the right to seek judicial review of it under Section 120.68, F.S., by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the Agency Clerk of the Department in the Office of General Counsel, Mail Station 35, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000, and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate district court of appeal.
The notice of appeal must be filed within thirty days after this order is filed with the clerk of the Department.