

Level-Eye® User Manual

Product Description

Level-Eye® is an electronic liquid level capacitance gauge that can calculate and display accurate liquid level measurements. A coaxial type stainless steel wand is used to measure a non-conducting liquid, such as liquid nitrogen, liquid oxygen, liquid argon, and liquid carbon dioxide.



Level-Eye® Head

Description

The Level-Eye® Head contains the electronics that receive signals sent from the probe rod for capacitance level readings. The head is able to translate these signals into information and display it on the LCD screen. The head is detachable from the wand and also allows for rotation when installed.

Technical Parameters and Materials

Housing (Case)	Aluminum
Display	LCD
Storage and Operating Temperature Range	-40°F to 175°F -40°C to 80°C
Accuracy	± 2%
Head Housing Specification	IP65
Operating Voltage	3VDC
Connection Jack	Brass
Connection Stem and Nut	304 Stainless Steel
O-Ring Seals	Teflon, Viton

Level-Eye® Wand

Description

The Level-Eye®™ wand is available in different lengths to accommodate various makes and models of cryogenic vessels. The wand is specifically designed to measure the liquid level in a cryogenic vessel and send a signal back to the head, relaying its information.

Technical Parameters and Materials

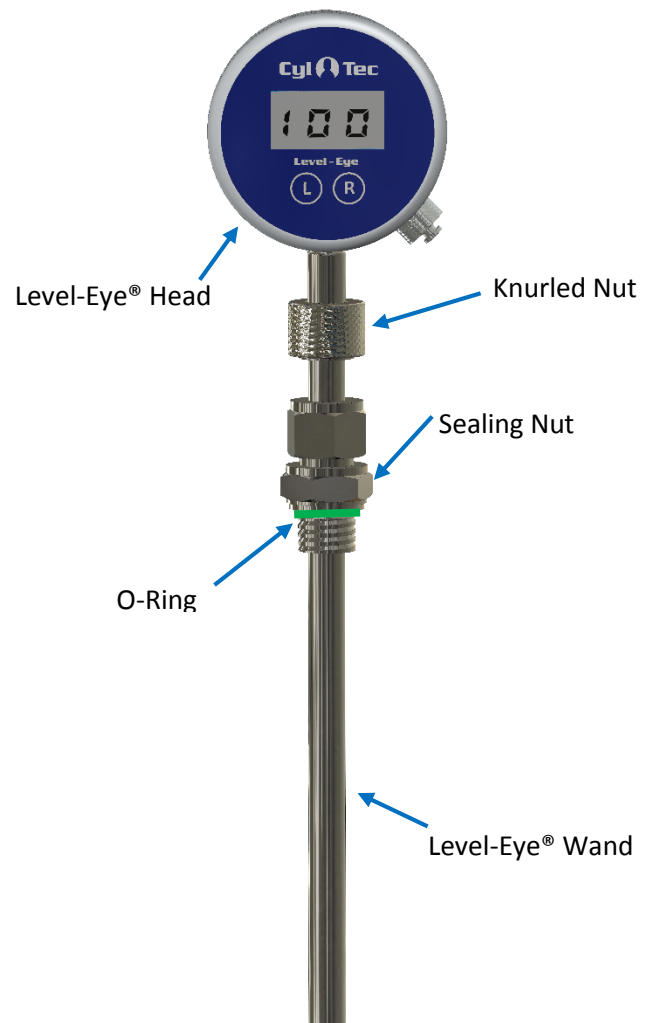
Sealant*	Solder Glass*
Connection Fitting	304 Stainless Steel
Connection Jack	Brass
Wand*	304 Stainless Steel*
Spacers*	PTFE* (Teflon)
O-Ring Seals*	Teflon*, Viton*

*Gas Wetted Material

Level-Eye® Procedures

Installation

The Level-Eye® is very simple to install and similar to installing any other traditional mechanical float. Make sure the tank is empty and at atmospheric pressure. Verify that an O-ring or gasket is in place on the sealing nut. Slide the wand into the top of the knuckle. Most tanks will have a ring to help guide the rod straight down. Tighten with a wrench from the sealing nut **only**, but do not over-tighten.



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Battery Percentage

The Level-Eye® is equipped with the ability to calculate the amount of battery power remaining and display it by percentage on the LCD screen.

1. Single press the “L” button to view the battery percentage remaining.



Calibration

The Level-Eye® will need to be calibrated in the cryogenic tank that it will be operating in and also with the Liquefied gas the tank is in service with. Calibration should be performed during the filling process.

Low Calibration

1. Add five (5) lbs of liquid to the empty tank.
2. Wait 5-10 minutes to allow the probe rod to chill.
3. Enter Calibration Mode



- a. Press the “L” and “R” buttons together for 5 seconds until the word “CAL” is displayed on the LCD screen.

4. Perform Low Calibration

- a. While “CAL” is still displayed, hold down the “L” button for 5 seconds until “Lo” is displayed. At this point, release the button and wait for the word “CLo” to display on the LCD screen, confirming low calibration is complete.



High Calibration

1. Fill the tank full on a scale by weight.
2. Wait 5-10 minutes to allow the liquid in the tank to settle.
3. Enter Calibration Mode



- a. Press the “L” and “R” buttons together for 5 seconds until the word “CAL” is displayed on the LCD screen.

4. Perform High Calibration

- a. While “CAL” is still displayed, hold down the “R” button for 5 seconds until “Hi” is displayed. At this point, release the button and wait for the word “CHi” to display on the LCD screen, confirming High calibration is complete.



Replacement Part List w/ Part

- 1) Level-Eye® Head = CTLE
- 2a) Wand (**C** = 0.875-14) = CTPR**XXC**
- 2b) Wand (**TW** = 0.750-16) = CTPR**XXTW**
XX = Length of wand in inches. Refer to the Sizing Guide.
- 3a) Sealing Nut (**Chart**) = Level-Eye-Nut-.850-14
- 3b) Sealing Nut (**TW**) = Level-Eye-Nut-.750-16
- 4) Battery = CTLEBATT (Min Order quantity=20)

Level-Eye® Troubleshooting

The Level-Eye® head does not display anything

- Replace the battery
 - Unthread the O-ring sealed back to expose the black plastic battery holder
 - Install a new battery
 - Re-thread the back housing (be sure to fully tighten)

The Level-Eye® head only displays 0% or 100%

- The Level-Eye® may have undergone an incorrect calibration. A new calibration (low and high span) needs to be performed. *See calibration section, same page.*

A circle with a line through it is indicated on the LCD

- This indicated that the head unit is not properly communicating with the wand
 - DO NOT perform a calibration while this symbol is present
- Check the connectivity between the head and the wand
 - Loosen the knurled nut
 - Remove the head from the wand
 - Wait 30 seconds
 - Re-attach the head to the wand