Water Level Indicators
GENERAL
The H-4040 Series Water Level Indicators are self-contained instruments for determining water levels in wells, bore holes, etc. Each unit consists of a hand-held wire spool with indicator module, measuring cable and probe. The spool, constructed ABS plastic and steel is equipped with a brake and clip for probe storage.

The indicator module has both audible and visual indicators to show when water has been detected. A standard 9-volt battery is the only power source required. The multi-conductor cable does not require any additional connections or ground wires. The wire used is high-strength, hard-drawn, copper-coated steel for stretch resistance. Markings are permanently embossed on the wire.

The probe is constructed of stainless steel and Teflon* for environmentally sensitive testing.

FEATURES OF MODULE
The following features are included on the front panel of the CONTROL MODULE:

- The POWER SWITCH controls power to the instrument and is labeled OFF. The unit in ON when the switch is in the upper-most position.
- The TEST SWITCH, labeled TEST, is used to check the battery condition.
- The RED LIGHT at the top of the panel serves two functions. First, it indicates the condition of the battery. It also works in conjunction with the horn, as an indicator to announce when water has been located. The light is not labeled.
- The HORN, in the center of the panel, provides audible signal when water is contacted. The horn is not labeled.
- The SENSITIVITY CONTROL provides a means to adjust the instrument and compensates for varying water conditions. See Section 3.0 for details.

OPERATION
IMPORTANT! Set the SENSITIVITY CONTROL mid-range or higher (toward the + sign), anytime you are searching for water of an unknown conductivity. To test battery, turn power on by sliding the left switch up toward the top of the panel. Press right switch labeled TEST (red light will glow brightly if battery is fully charged). See Section 7.0 for important details regarding battery condition.

To test the system, the power must be on and the SENSITIVITY CONTROL set mid-range or higher (toward + sign). Dip the probe in water and the light and buzzer should function. You can also wet the tip of your thumb and pointer finger with water or saliva and simultaneously touch the two needles at the end of the probe to get the same effect.

For normal operation, simply lower the probe down the well or bore hole. When the probe touches water, the buzzer and light will operate. When the probe is lifted clear of the water, the indicators will shut off. The SENSITIVITY

* Teflon is a registered trademark of E.I. Du Pont de Nemours & Co., Inc.
CONTROL can be adjusted to compensate for varying conditions.

NOTE! After this unit has been in use for some time, you may find you have
to set the SENSITIVITY CONTROL toward the minus (-) sign to achieve good
results. This is an indication that the white tip of the probe is not shedding
water as well as it did originally.

**MAXIMUM SELECTIVITY**

Maximum selectivity is that point where the instrument can best differentiate
between the static water level and water that may be cascading from above.

Do the following to make the water level indicator be most selective:

Turn the power switch to ON.

Set the SENSITIVITY CONTROL mid-range or higher (toward + sign).

Lower the probe down the well or bore hole until the instrument indicates
you have contacted water. Leave the probe submerged with buzzer & light
operating.

Rotate the SENSITIVITY CONTROL counter-clockwise (toward -) until the
light and buzzer shut off.

Now slowly rotate the SENSITIVITY CONTROL clockwise (toward +), until
the light and buzzer start to function again. Try moving the probe in and out
of the water and observe the indicators on the front panel. The instrument
should respond with a solid on/off response. If that isn’t happening, make a
final adjustment by rotating the knob clockwise very slightly.

**MAINTENANCE - PROBE**

Keeping the probe clean is essential for reliable operation. The white
plastic tip has to be clean and slippery enough to shed water quickly. This
is important because the instrument can sense any film of water that may
remain between the two sensing needles when the SENSITIVITY CONTROL
is at the higher settings.

Often a probe needs only to be washed in soapy water followed by a clear
water rinse. In extreme cases, use a non-abrasive liquid kitchen/bath cleaner
good for removing grease. Follow up with soap wash/clear water rinse.
Don’t use strong chemicals/abrasives for cleaning. **DO NOT DISASSEMBLE
THE PROBE!**

**BATTERY INSTALLATION**

Remove the two (2) screws holding the round plate, located in the center of
the spool. This is the Electronic Control Module, which contains the buzzer,
LED indicator and switch. Remove the plate from the spool, being careful
not to damage the wires and components attached to the back of this panel.

Locate the batter connector, attached to the red and black wires.

Snap the connector onto the battery and place it in the bottom of the spool.
Make sure that there is a foam pad on each side of the battery and the black
pad is between the battery and the printed circuit board.

Re-install the Electronic Control Module (being careful not to pinch the
wires), and secure with the two (2) screws. (Do not over-tighten these
screws!)
BATTERY TEST FUNCTION
The TEST function discloses the function of the battery. Push the TEST SWITCH. The red light should glow brightly. The buzzer will remain silent during this time. As the battery loses power, the light will begin to dim and it will eventually go out when the battery discharges to 7.5 volts. The indicator will usually still function normally and can be used in an emergency, but you are urged to replace the battery as soon as possible.

Warranty
Humboldt Mfg. Co. warrants its products to be free from defects in material or workmanship. The exclusive remedy for this warranty is Humboldt Mfg. Co., factory replacement of any part or parts of such product, for the warranty of this product please refer to Humboldt Mfg. Co. catalog on Terms and Conditions of Sale. The purchaser is responsible for the transportation charges. Humboldt Mfg. Co. shall not be responsible under this warranty if the goods have been improperly maintained, installed, operated or the goods have been altered or modified so as to adversely affect the operation, use performance or durability or so as to change their intended use. The Humboldt Mfg. Co. liability under the warranty contained in this clause is limited to the repair or replacement of defective goods and making good, defective workmanship.