

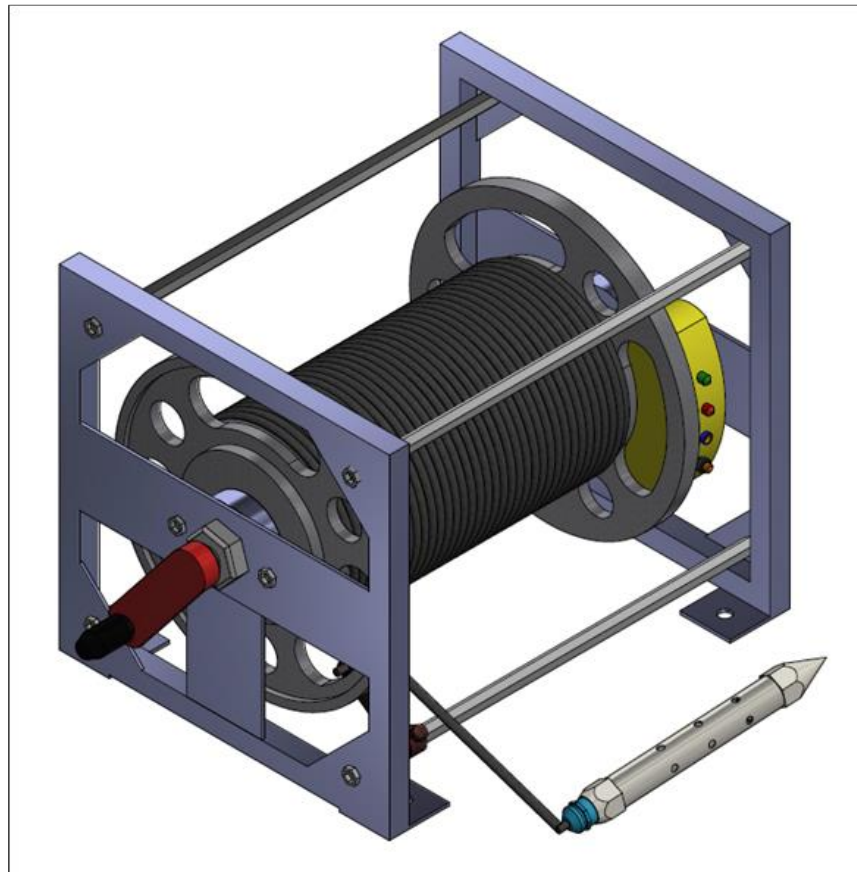


USER'S MANUAL

A PRODUCT OF RuTAG IIT DELHI



GROUND WATER LEVEL MEASURING DEVICE



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Revision sheet



Revision no.	Date	Revision description	Created by
Revision 0	25/08/2020	User's manual created	Davinder Pal Singh

1 INTENDED USE

Ground water level measuring device is used for measuring the depth of ground water table inside measuring wells only.

2 SAFETY PRECAUTIONS








- Keep this manual where the user can easily find it. If equipment is transferred to a new user, be sure to hand over the manual.
- Read the precautions in this manual carefully before operating device.
- The precautions described herein are classified as WARNING and CAUTION. They both contain important information regarding safety. Be sure to observe all precautions without fail.
- Meaning of WARNING and CAUTION notices

 WARNING	Failure to follow these instructions properly may result in personal injury or loss of life
 CAUTION	Failure to follow these instructions properly may result in property damage or personal injury, which may be serious depending on the circumstances

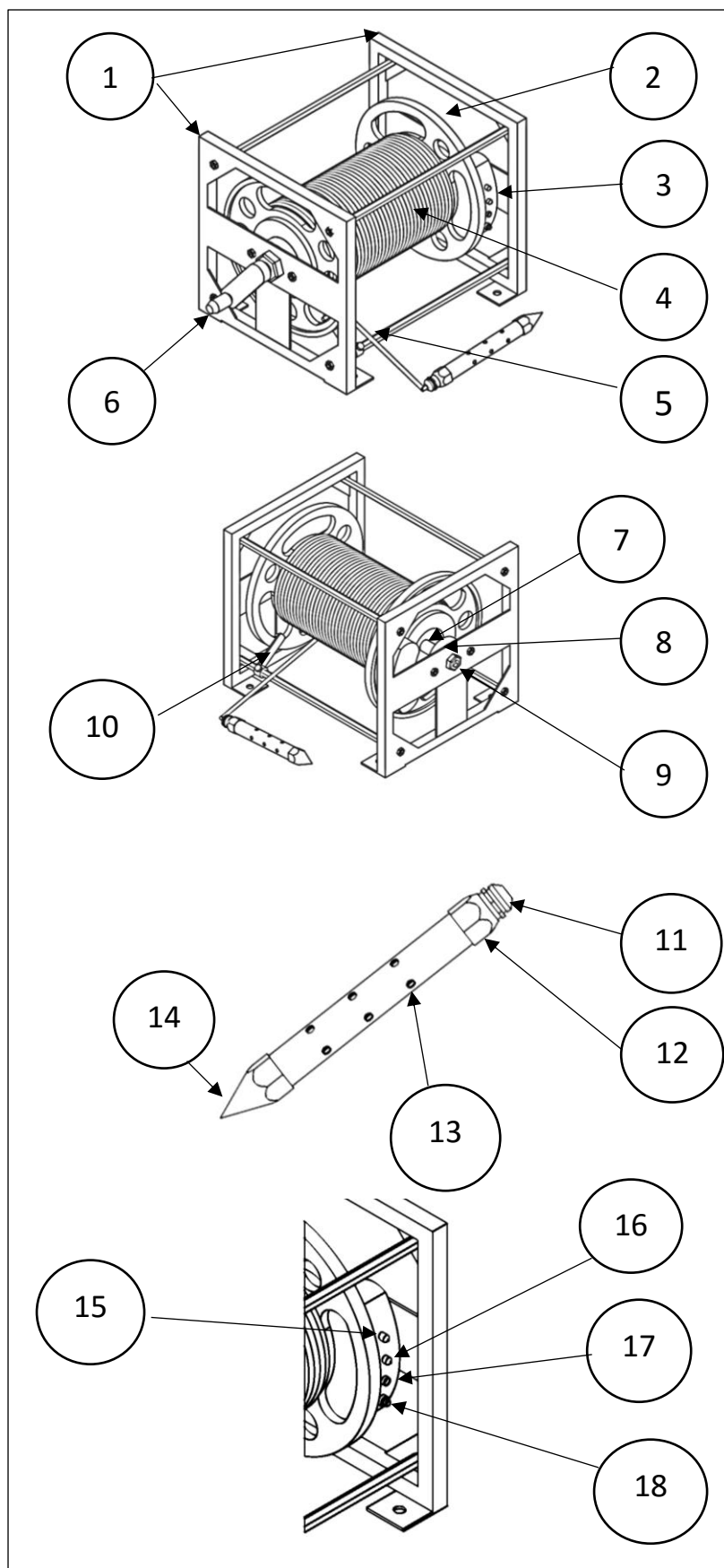
 DO NOT ATTEMPT

 BE SURE TO FOLLOW INSTRUCTIONS.

 BE SURE TO ESTABLISH EARTH CONNECTION.

 WARNING	 CAUTION
<ul style="list-style-type: none"> • To avoid injury, keep drum lock engaged until device is ready for operation  • Do not put objects, including rods, your fingers, etc. into wheel attached to the drum. It may damage the wheel and can cause injury. • Do not measure any liquid other than water. It may result in shock or fire. 	<ul style="list-style-type: none"> • Do not use the Ground Water Level Measuring Device for the purpose other than for which it is intended. It may cause adverse effects.  • Protect the circuit box from water ingress. It may damage it. • Do not insert batteries in the wrong polarity (+/-) orientation as this may result in short circuiting, fire, or battery leakage.
<ul style="list-style-type: none"> • Do not attempt to repair device yourself. Improper workmanship may damage the product.  	<ul style="list-style-type: none"> • Only connect the specified battery.  • Do not drop the probe. Handle it carefully 

3 PARTS AND FUNCTIONS



1. Frame
 2. Wheel
 3. Circuit Casing
 4. Drum
 5. Graduated Cord
 6. Handle
 7. Shaft
 8. Bearing
 9. Hex pivot
 10. Wheel Lock
 11. Pressure Resistant /leak proof Gland
 12. Hex Bush (Gland housing)
 13. Water Ingress Holes
 14. Plumb Bob
 15. ON/OFF Switch
 16. Operation LED (Green)
 17. Level Detection LED (RED)
 18. Level Detection Beeper
- | CASE | SOUND TYPE |
|-----------------|------------|
| Water Detection | Long Beep |
19. Probe electrodes

4 DEVICE FEATURES

1. Novel sensor design for zero false reading.
2. Robust frame.
3. Graduated Chord (for instantaneous readings).
4. Plumb Bob for stable and smooth insertion into well.

5 OPERATION

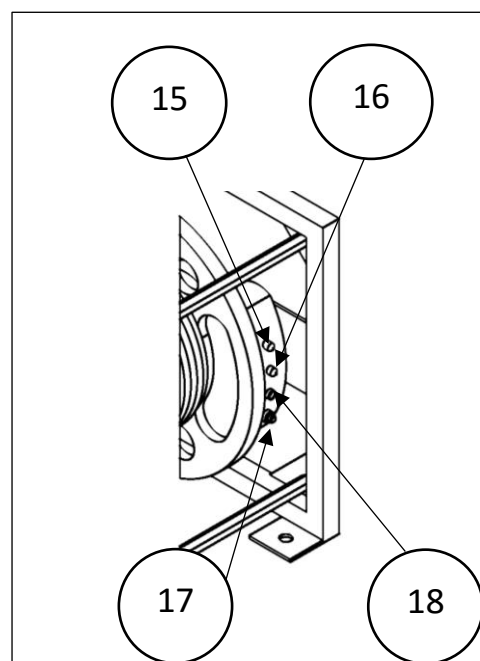
5.1 PREPRATION BEFORE OPERATION

A. TO INSERT THE BATTRIES

1. Unscrew the circuit box from the wheel.
2. Attach 9V battery with protruding 9V snap connector.
3. Replace circuit box cover.

B. TURN ON THE OPERATIONAL LED

1. Turn the ON/OFF switch to ON position.
2. After power is turned ON, the operational LED will light green.



CAUTION

Incorrect handling of batteries can result in injury from battery leakage, rupturing or heating, or lead to equipment failure. Please observe the following precautions and use safely

1. If solution from the batteries should get in the eyes, do not rub the eyes. Instead, immediately flush the eyes with tap water and seek the attention of a medical professional.
2. Keep batteries out of reach of children. If batteries are swallowed, seek the immediate attention of a medical professional.
3. Do not expose batteries to heat or fire. Do not disassemble or modify batteries.
4. Do not damage or peel off labels on the batteries.

NOTE

❖ Tips for saving Battery

1. Always switch off the device when not in use.
2. Do not dip the probe for longer period to ascertain depth.

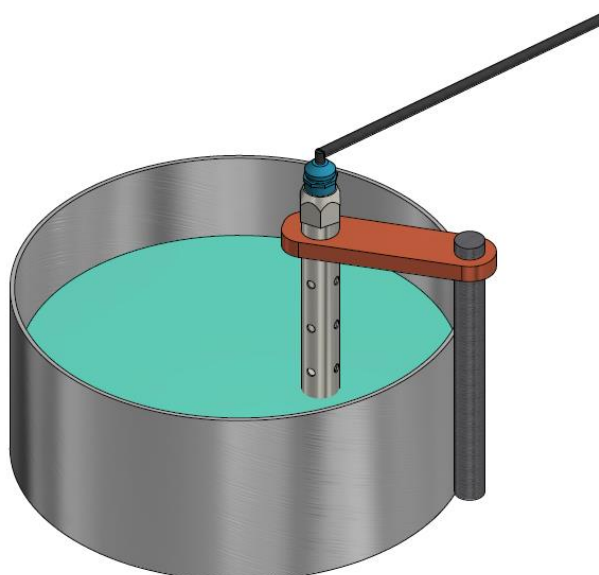
❖ Notes for Batteries

1. The standard replacement is about 1 Year. However, subjected to usage.
2. If the LED display begins to fade or beeper tone changes, replace batteries.

5.2 TRIAL OPERATION AND TESTING

1. Trial operation and testing

- a) Turn the ON/OFF switch to ON position.
- b) After power is turned ON, the operational LED will light green.
- c) Take water in a bucket.
- d) Take out probe from the probe holder attached to the wheel.
- e) Dip the probe completely into water contained in a bucket.
- f) The beeper will sound long beep and detection LED will light red.
- g) Carry out the operation following instruction twice or thrice
- h) **Device is ready to use.**



Note:

Test Items	Symptom	Check
LED lights Green	No signal	Polarity/life/terminals of battery
LED Lights RED	No signal	-----do-----
Beeper Beep	No sound	Connections/ wires damage

5.3 MEASURING GROUND WATER LEVEL OF MESURING WELL

1. Turn the ON/OFF switch to ON position.
2. Unhook the wheel lock.
3. Hang the probe vertically one foot above the opening of the monitoring well
4. Slowly release the graduated cord down the well casing
5. Hold the cord firmly and simultaneously allow it to fall free inside the casing.
6. The weight will increase as the probe goes deeper inside well.
7. Lower the probe until the sensor (copper electrodes) encounters water and beeper beeps.
8. Grab the measuring point on the graduated cord which is an embossed unit of length.
9. Record the water level measurement at the measuring point on the data sheet.
10. Repeat the steps to determine a consistent measurement.
11. Turn off the water level meter.
12. Slowly rewind the cord onto the drum, sanitize it, and hook the wheel lock.
13. Replace the well cap.



NOTE

- a) Always wear gloves to avoid wire burn on hands while lowering and pulling.
- b) Do not touch the cord with edge of well casing while lowering probe to avoid damaged.
- c) Gradually lower the probe into well. Do not drop it hastily. It will reduce its working life.

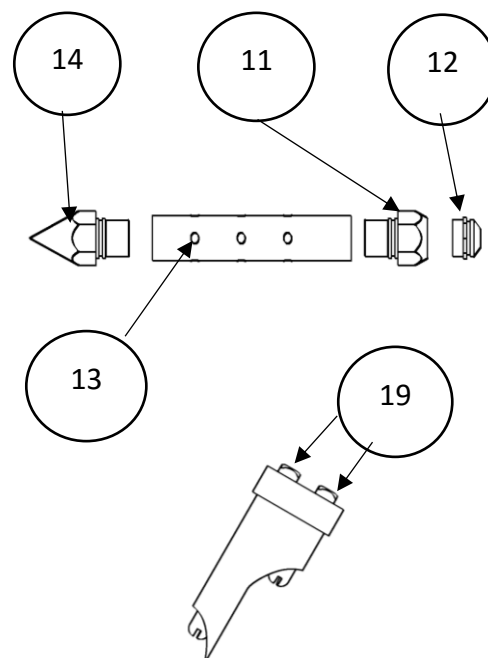
6 MAINTENANCE

6.1 CARE AND CLEANING

A. CHECK RUSTING OF SENSOR ELECTRODES

1. To open probe do the following
 - a) Always unscrew the gland first.
 - b) Unscrew the hex bush (gland housing) from the body.
 - c) Use sandpaper to scrub the copper electrodes.
 - d) Gently attach hex gland to the body.

2. Check the wearing off from graduated scale regularly.



CAUTION

1. Before cleaning, be sure to stop the operation and turn off the device.
2. Do not use rough materials such as scrubbing brush.

NOTE:

We recommend regular maintenance

In certain operating conditions, the electrodes of the sensor inside probe may get scaling, resulting in poor performance. Also, the wire attached to the gland may get elongated thus reducing its diameter.

7 TROUBLESHOOTING

CASE	EXPLANATION
Device does not turn ON	Check battery health or wire connection
Beeper do not beep	Check level detection LED. If its light red, then beeper needs replacement/check probe for scaling/wire connection.
Abnormal sound	Beeper fault



WARNING

- When an abnormality (such as a burning smell) occurs, stop operations and turn off the circuit.
- Continued operation in an abnormal condition may results in damaging circuit
- Do not attempt to repair or modify the device by yourself.
- Consult the service provider.

8 SPECIFICATIONS

Sl. No.	Part Name/Number	Classification	Remarks
1.	9V Alkaline Battery	ANSI 1604A, IEC-6LF22 or 6LR6	
2.	Two core 1.5 sq mm cable	IS 694-2010	Length Engraved

9 WARRANTY/ GUARANTEE

WARRANTY PERIOD ONE YEAR FROM THE DATE OF PURCHASE.

THIS PRODUCT HOLD ONE YEAR REPLACEMENT WARRANTY.

10 DISPOSAL REQUIREMENT

1. Dispose metal in accordance with relevant local and national legislation.
2. Wire, Batteries, and electronic hardware must be removed and disposed separately in accordance with relevant local and national legislation.

11 CONTACTS

Technical support:

RURAL TECHNOLOGY ACTION GROUP

Room No. 343, Block-III,

DEPARTMENT OF MECHANICAL ENGINEERING

INDIAN INSTITUTUE OF TECHNOLOGY DELHI

HAUZ KHAS NEW DELHI-110016

Ph.: 011-26591385