

Model 101 Power Reel

Warning

Motor must be grounded in accordance with the national electrical code and local codes by trained personnel to prevent serious electrical shocks.

Operation of the Controller

1. Ensure that the controller has been set up for the proper line voltage and the 'Run/Stop' switch is in the 'Stop' position. Set the "Speed" potentiometer on zero.
2. Connect AC line power.
3. Move the 'Run/Stop' switch to the 'Run' position.
4. Slowly turn the 'Speed' potentiometer clockwise until the motor just starts to turn.
5. If the motor is turning in the wrong direction, set the 'Speed' potentiometer to zero and the 'Run/Stop' switch to 'Stop'.

Remove AC line power. Reverse the motor armature connections at terminals A1 and A2 on the Controller.

Re-apply AC line power and run the control. Set the 'Speed' pot to maximum.

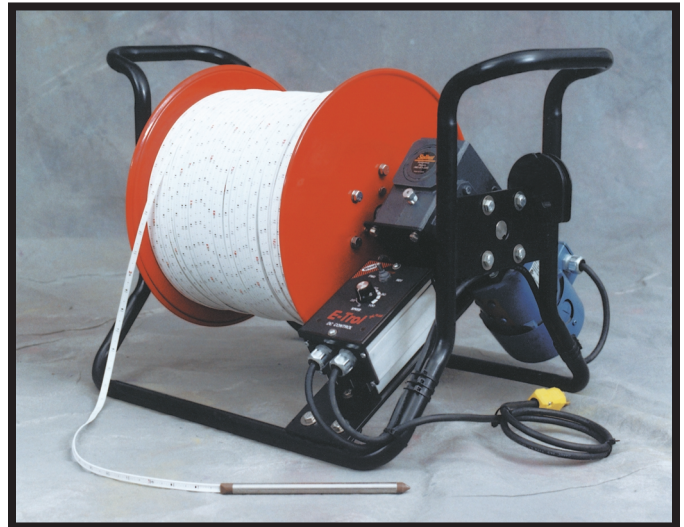
6. Adjust the 'Max spd' potentiometer on the control board for the desired maximum motor speed.
7. Set the 'Speed' potentiometer on zero and adjust the 'Min spd' potentiometer on the control board for desired minimum motor speed.
8. With the load disconnected set the control for nominal operation speed and measure motor speed. Re-apply the load and adjust the 'IR Comp' potentiometer on the control board for the same speed.
9. Make sure the cover is properly secured to the base after completing this procedure.

Caution

If down-hole component gets stuck, do not use power motor. To avoid injury, turn motor off immediately, and attempt retrieval manually.

Dimensions

1. Entire unit is 20" x 28" x 18"
2. Reel is suitable to hold: 3300' of flat tape



Motor

Lubrication

The shaft bearings contain grease fittings. After one year, insert multipurpose chassis grease, and re-apply once per year.

The gear box is lubricated for life, and should never need to be lubed.

Servicing

Disconnect power source from motor and any accessory devices and allow motor to come to a complete stand still.

Controller

Input Ratings

Voltage: 115V AC single phase +/- 10%
Frequency: 50/60Hz +/- 2Hz

Front Panel Controls

Speed Pot: Adjusts motor speed from MIN SPD setting to MAX SPD setting.
RUN/STOP: Starts and Stops motor
FWD/STOP/REV: Starts and Stops motor, selects motor rotation.

Internal Adjustments (DO NOT ALTER THESE SETTINGS)

MIN SPD: Adjusts Minimum motor speed (0-30% of base speed)
MAX SPD: Adjusts Maximum motor speed (60-120% of base speed)
IR COMP: Adjusts motor speed regulation with varying loads. 0-10% of base speed with 100% load.
Motor Amps: Calibrates for motor full load current rating. Four bit binary switch

Ambient Temperature Conditions

Temperature: 0 - 40°C
Humidity: 90% RH or less, non-condensing

Water Level Meter Operation:

Equipment Check

1. Turn Sensitivity Dial fully clockwise.

Note:

- clockwise rotation of sensitivity dial turns meter on and increases sensitivity.
- always set switch to highest sensitivity position, then decrease if necessary.

2. Depress the Battery Test button to test the battery and circuitry (excluding the probe when not in use).
3. Submerge the probe in tap water. This completes the circuit and activates the buzzer and light.

Water Level Measurement

The zero measurement point is:

P2 Probe-tip of the inner sensor pin visible near the centre of the probe

P4 Probe-tip of inner electrode at base of probe.

P5 Probe-exposed electrode at tip of probe.

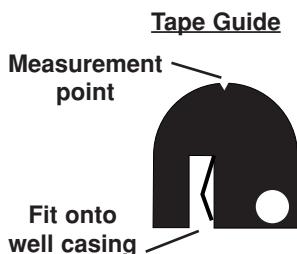
Using the Tape Guide

1. The tape guide has been designed to:

- improve accuracy when reading water levels,
- easily obtain repeatable measurements,
- prevent tape being cut by well casing,
- allow the tape and probe to hang straight from the side of the well.

2. Feed the tape into and out of the well using the groove in the top of the Tape Guide.

Note: When using the tape guide, the measuring point is offset from the top of casing. To adjust your measurements to the top of the casing, simply subtract the amount indicated on the front of the tape guide (ie 6 cm or 2/10 ft.).



Routine Care

1. After the depth to water has been recorded, the tape should be carefully rewound onto the reel, the probe wiped dry and placed into the probe holder.
2. The probe, tape and reel can be cleaned with phosphate free (non-abrasive) detergent and warm water.
3. Use of the Tape Guide adds to the life of the tape.

Care of the P4 Probe

Note: Do not remove or twist strain relief pieces at the top of the probe as this will cause damage to the pressure seal. If the pressure seal integrity is in question, please call Solinst for the best repair option.

1. While holding firmly onto the black Delrin section at the top of the probe, turn the P4 sleeve body clockwise slightly and pull down. **Do not twist back and forth.**
2. Remove any dirt and water from inside the sleeve body, the centre electrode and the Teflon® pieces.
3. Carefully pull the coil spring from its recessed area and onto the centre electrode.
4. Clean the recessed area where the coil spring rests and check to see that the exposed wire is in place and clean.
5. Push the coil spring back into place. The cant of the spring must curve clockwise when observing from the bottom of the probe.
6. Remove and clean o-rings. Clean recessed areas and check o-rings for damage. Lightly lubricate and replace o-rings.
7. Turning clockwise slightly, gently push the sleeve body over the electrode to the black Delrin piece.
8. To test, turn the unit on and lower the probe into a glass of water. When the probe touches water, the buzzer will sound and the light will come on.
9. Wipe dry and return to probe holder.

Battery Replacement

- battery type - alkaline, 9 volt.

1. The battery is housed conveniently on the front of the box with the sensitivity switch.
2. To replace the battery, simply open the compartment with a screw driver.
3. Note the polarity and place another new battery in the drawer and slide it back into the faceplate.

SYMPTOM	CAUSE	REMEDY
No sound when probe immersed in water.	Dead battery.	Replace with 9V Alkaline.
	Water conductivity is very low.	Increase sensitivity switch setting (turn clockwise) or call Solinst for assistance.
	Disconnected wires on circuit board.	Check all connections inside hub of reel for loose/disconnected wires - solder or reconnect.
	Broken wire in tape.	Locate break in tape - splice and seal. (Contact Solinst)
Instrument continuously sounds after being immersed in water.	Water in probe.	P4 Probe: please follow instructions above. If water is inside the probe, there has been a breach of the probe seal. Inspect the o-rings and replace if necessary. If problem persists, contact Solinst. Other probes: call Solinst for instructions to remove, clean and reseal probe.
	Probe may be dirty which could interfere with the circuit connection.	

Replacement Parts

The following parts can be provided should they become lost or damaged.

1. Probes and seal kits
2. Splice kits
3. Lights, switches, etc.
4. Reels
5. Replacement tape with probe (Complete).