SAFETY INSTRUCTIONS

To ensure safe and efficient operation, it is essential to read and follow each of the warnings and precautions relating to this equipment, the pesticide product to be transferred and applicable legislation. Do not exceed an internal meter pressure of 8.2 Bars. Improper use or installation of this product may cause serious bodily injury. The 850 Digital Meter is not a flammable fluid meter. Do NOT use with fluids with a flashpoint below 100°F such as solvents petrol and alcohol.

Please Remember.
Use equipment and liquids wisely - Keep chemicals out of water
Follow the instructions for use and applicable Codes of Practice

Outstanding Features

- Compatible with SCR Urea (also known as Adblue) Liquids
- Simple Construction
- Positive displacement pump – easy to prime
- Stainless Steel Wall mounting plate included
- Drip free Nozzle Option for Cleaner filling areas
- Digital Meter Accurate to 0.5%
- Meter does not measure air – just liquid - Consistent accuracy.
- Meter Powered by two AA batteries.
- Easy access for battery change or cleaning without special tools.
- Multiple position display.
- Rugged, corrosion resistant polypropylene body.
- Tested in the Field and Laboratory
Assembly and Fitting Instructions

The SCR Urea Transfer System can be mounted on the wall near the dispense position and has a suction hose that can be connected to the container of SCR Liquid. Most installations benefit from a permanent location but the system can also be rested on the container or hung from the top rail or rim of the container to be emptied.

The equipment is usually pre-assembled and ready to be installed. If your equipment has been shipped with the hoses disconnected please take good care to locate the hose connections into the pump carefully avoiding dirt, contamination or damage and follow the arrow to maintain the flow of liquid through the pump from the container to the vehicle tank.

First Use. – Please be particularly careful when the pump is first used. The equipment is tested and then emptied before shipping. The pump will self prime and for this to happen it is essential that the hoses are fitted correctly and do not allow ANY Air into the suction side of the pump. Any air on the suction side will prevent the pump priming. If problems are encountered then the pump can be primed by pouring a little de-ionised water or SCR liquid into the suction hose while the pump is running. This will make the pump valves wet and aid priming. Adding liquid in this way will not however overcome the effect of poorly fitted hoses. Failure to prime should be addressed by checking that all connections are airtight. To release air from the system gently lift the nozzle tip valve.

Cleaning and De-contamination

Cleaning between loads of the same chemical types. To empty the delivery hose and rinse the equipment, first set the digital display to FLUSH by pressing button 4 for 3 seconds, then remove the coupler from the container. With the transfer pump operating purge the ElecTran and the connection hose with air. This should take approximately 5 seconds. Place the coupler into the rinse socket or directly into a supply of de-ionised water and connect it by pressing the coupler handle down. Ensure the display still shows FLUSH. At approximately 10-second intervals turn off the yellow valve for 5 seconds and then open the yellow valve. Repeat this cycle to achieve 6 x 10-second rinses. At the end of the rinse cycles raise the coupler handle, close the yellow valve and leave the coupler attached to the rinse socket in the transport position until required for the next load.

Digital Display Information

The display will automatically shut off after 60 seconds without use (except when left on FLUSH setting). It will automatically re-activate when flow resumes. All information is retained during periods of inactivity.

850 Meter - General Description

The 850 Digital Meter is a nutating disk, positive displacement, meter which uses a magnetic coupling to convert fluid flow into digital display information. The meter can store and display the current flow amount (current total), or accumulated total flow in any of five user specified units (ounces, pints, quarts, liters, and gallons) or special units (e.g. per acre volume). The meter can be calibrated without dispensing fluid simply by selecting a calibration factor from the 20 stored settings. The 850 Digital meter will not record bulk amounts of air in the system. Two AA field replaceable batteries supply power.

Technical Features

Flow Ports: 1” NPT inlet/outlet ports, female threads
Flow Range: 0 to 20 U.S. GPM / 7.6 to 75.7 LPM
Pressure: 120 PSI / 8.2 Bars maximum at 70°F/21°C 50 psi/3.4 Bars maximum at 130°F/54°C
Temperature: Min. operating temperature = 0°F/-17°C
Max. Operating temperature = 130°F/54°C
Accuracy: ± 0.5% using calibration factor ± 0.2% using liquid calibration
Units of measure: liters or US gallons, ounces, pints and quarts; special calibration option also available
Range: 9999 current total; 10,000,000 accumulated total.
Materials of Construction
Body: Polypropylene
Sensor Springs: Hastelloy-C
Chamber: Ryton, 302 Stainless Steel
Wetted Seals: Fluorocarbon
Electronic Module Weather & Dust Seal: Buna-N
Display: LCD (Liquid Crystal Display)
Power: Two alkaline AA batteries, included

Material Compatibility
The 850 Digital Meter is NOT compatible with very strong acids. If in doubt about compatibility of a specific fluid, contact supplier of fluid to check for any adverse reactions to the following wetted materials. The ElecTran is believed to be compatible with most Pesticides however please ask your supplier or contact Wisdom Systems if in doubt.

Changing Meter Readout Position & Batteries
If it is necessary to change position of the meter readout, follow these steps (Refer to exploded view).
1. Unscrew meter cap by hand (item 1). Use a strap type oil filter wrench if nut is tighter than hand tight.
2. Insert a wide, flat-head screwdriver into the upper slot and gently pry up electronics module (see Figure 1 Below).
3. DO NOT ROTATE METER COVER - Sensor receptacle will break. Gently rotate electronics module to desired location being careful not to pull on lead wire from module to meter cover.
4. Reinstall the o-ring on electronics cover (see Figure 2 Below).
5. Press electronics module down into meter cover in the correct orientation.
6. Thread on meter cap until hand tight. To check tightness, there should be little or no gap between cap and ridge on outlet port. (See Figure 3 Below).
Operating Functions

- Turns meter on when off. Displays accumulated total as long as it is held on. If accumulated total is larger than 9999, the numbers will scroll across the screen.

- When held for 1 second, it resets current total to zero. Also resets to normal operating mode when in CAL or FLUSH mode. When desired number is displayed, press button 2 to lock in the new number and return to normal operation.

- When held for 3 seconds, it allows changes to the calibration factor displayed in the bottom left corner. Repeated activation will increment the number up to 19 and back to zero.

- When held for 3 seconds, FLUSH is displayed. Fluid dispensed will not be added to either the accumulated total or current total. Press button 2 to return to normal operation.

Operation

1. Press ON button to turn meter on. Current total, unit of measure, and calibration factor are displayed. The meter also turns on automatically and begins recording when fluid starts flowing through it.

2. Hold button 2 for one second to set current total to "0.00."

3. Begin dispensing.

**NOTE:** Meter display automatically goes blank after 60 seconds of inactivity and automatically comes back on when flow resumes. **No data is lost during periods of inactivity.**

The Meter should be flushed between uses with water to prevent chemicals from hardening and blocking the meter mechanism.

Calibration Factor Settings

The Calibration Factor is displayed in the bottom left of the display. The ‘CAL’ Factor can be set between 0 and 19 to match the liquid being measured. Generally the more viscous the liquid the larger the CAL factor needs to be to maintain an accurate measurement.

To select a calibration (CAL) factor that best fits the selected fluid, see Tables below and opposite. For many fluids it is necessary to know the temperature at which the fluid will be dispensed.

**CAUTION:** Wear proper safety equipment when handling hazardous fluids.

To Change the Calibration Factor

1. Turn meter on.

2. Hold button 3 for 3 seconds. Only CAL and the number below it will be displayed. Press button 3 repeatedly to change the number. The number will flip back to zero after reaching 19.

3. Press 2 to set number.

4. Meter is now ready to use.

**CALIBRATION NOTE:** If the volume displayed on meter is lower than the amount dispensed, use a lower CAL factor. If volume displayed on meter is higher than the amount dispensed, use a higher CAL factor. Changing the CAL factor by one changes the accuracy by about 1%. Over time, the chamber inside the 850-meter will wear, requiring the meter to be recalibrated. When this should be done depends on the amount and type of fluid dispensed. In most crop protection fluid uses (less than 1000 gallons of a clean fluid per year), the 850-meter will remain accurate for many years without recalibration. On the other hand, dispensing an abrasive fluid may require more frequent recalibration.

Replacing Batteries

**NOTE:** Low battery icon will flash when batteries begin to lose power. Meter still functions properly for several days after the icon begins to flash. Neither calibration, current total or accumulated total quantities will be lost when replacing batteries.

To Replace Batteries (refer to exploded view above)

1. Unscrew meter cap (item 1). Use a strap type oil filter wrench or large 5" jaw pipe wrench if needed.

2. Insert a flat-head screwdriver into the top slot (see Figure 4) and gently pry up electronics module.

3. Gently raise electronics module being careful not to pull on lead wire between module and meter cover.

**CAUTION:** Be careful not to get fluid or dirt in electronics area.

4. Remove old batteries and insert new batteries, making sure battery polarity is correct, or meter damage could occur.

5. Reinstall o-ring on electronics module. Align sensor stem in proper location. Press module gently down into meter cover.

6. Thread on meter cap until hand tight. To check tightness, there should be little or no gap between cap and ridge on outlet port.

*Chart was updated April 2000 See separate table for latest additions Meters were calibrated using clean water.

**Fluid temperature in containers stored outdoors will be approximately the average of the daily high and low temperatures.

**NOTE:** The Chart is accurate with original factory calibration or after a water calibration.
Repairs
Meters being returned for repair must be flushed thoroughly or they will not be accepted. A Material Safety Data Sheet (MSDS) describing last fluid metered must accompany any meter needing service.

If any meter components are damaged, they should be replaced. See meter drawing and parts list for correct replacement part number before ordering.

Cleaning
The 850 Meter can be flushed without adding to the accumulated total. Turn meter on by pressing the ON button. Press 4 and hold for 3 seconds. Display will show FLSH. Flush meter with suitable fluid (water is suitable for most herbicides). When completed, press 2 to leave FLSH mode and return to normal operation. Quantity of fluid flushed will not be added to total.

Thorough Cleaning (refer to exploded view)
If meter is blocked due to hardened chemical or debris, do the following:
1. Drain all fluid from meter.
2. Unscrew meter cap (item 1). Use a strap type oil filter wrench or large 5" jaw pipe wrench if necessary.
3. Insert a flat-head screwdriver in the lower slot (see Figure 7) and turn to pry up meter cover
4. The meter chamber (item 8) can now be removed.
5. Air sensor can be removed by gently prying towards center of meter with a screwdriver.
6. Rinse all meter components with flushing fluid. Do NOT submerge display assembly. Be careful not to get any fluid or dirt in the electronics module.
7. Reassemble meter.

Store in a cool, dry place. Drain out all fluid that could freeze in the meter.
The units of measure can be changed to ounces (OZ), pints (PT), quarts (QT), gallons (GAL), or liters (LITER) without recalibrating the meter. If special units are desired, see note below.

1. Hold buttons 2 and 4 for three seconds. Display will read "7r1.02".
2. Press button 3. Display will show the current units.
3. To change units press the ON button repeatedly until the desired unit is displayed.
4. Press button 2. Display will read "7r1.02".
5. To return to normal operating mode press button 2 again. The units selected will be displayed. Current or accumulated total will be changed to reflect the new units.

**Special Units**

To use special units, you need to know how many ounces are in your special unit. Here is an example: You want to use "acres" as your "special" unit. The fluid is to be applied at 18 ounces per acre.

These are the additional steps to set the meter to "special" units (ignore steps 4 & 5 above):

a. After selecting "special" in step 3 above, press button 2.
b. Enter the number of ounces in a special unit by pressing button 4 to increment the digit, and the ON button to move the flashing digit to the right. If you make a mistake, press button 2 to start back at the left most digit. Per our example, we would enter 018.0.
c. Press the ON button again. Display will read "7r1.02".
d. To get back to the normal operating mode, press button 2

**Reset Accumulated Total**

1. Press buttons 2 and 4 and hold for 3 seconds

The Display will show the software version used in your meter example: 7r1.02

2. Press button 'ON' to display accumulated total, if this is over 9999 the display will scroll across the screen.

3. Hold buttons ON and 4 for 5 seconds to reset the Accumulated total to ‘0’

4. Press button 2 twice, to return the meter to normal operating mode
### ElecTran Fault Diagnosis Table

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>POSSIBLE CAUSE</th>
<th>REMEDY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suction appears to be good but product is slow to transfer</td>
<td>1. Air leak between coupler and container valve face</td>
<td>Inspect and clean surfaces. Listen for leak or apply a little water to the valve and coupler interface and observe if it is removed by suction. Clean surfaces. Replace the seal. Remove the dip tube check and reseal.</td>
</tr>
<tr>
<td></td>
<td>2. Outer Face seal of coupler damaged or missing</td>
<td>Fill the ElecTran hose with water when the suction is OFF and observe system for leaks. Repair as necessary.</td>
</tr>
<tr>
<td></td>
<td>3. Container valve dip tube cracked or damaged</td>
<td>Clean the inlet tube and ports of the pump. The pump head can be removed and the valves cleaned and inspected but great care is needed.</td>
</tr>
<tr>
<td></td>
<td>4. Container valve dip tube not sealed on to valve</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Air leak in pipe joint</td>
<td></td>
</tr>
<tr>
<td>System does not fully clean with normal procedures</td>
<td>1. Very viscous chemical or insufficient washing</td>
<td>Dismantle the ElecTran remove the electronic module and soak all other parts in a warm solution of Agral or similar product and water over night. Rinse clean and re assemble.</td>
</tr>
<tr>
<td>Coupler fails to engage easily with the Container valve resulting in difficult operation or leaks.</td>
<td>1. Attempted use with incompatible valve (this may be a valve from spurious supply or a plastic version)</td>
<td>Contact your chemical supplier or Wisdom for a replacement valve</td>
</tr>
<tr>
<td>Coupler centre valve remains in the raised</td>
<td>1. Debris trapped on the valve edges.</td>
<td>Carefully clean the coupler in a bucket of water and rinse. Inspect the valve seal and surfaces and clean. Replace seal as appropriate.</td>
</tr>
</tbody>
</table>

**Screen is blank or fails to record**

1. Batteries flat
2. Meter disc blocked
3. Electronic module failed
4. Air detect unit jammed

**Clean system and replace parts as required.**