



# Installation Instructions

## TouchRead® Electronic Communications Register (ECR) TouchRead® Electronic Communications Register / Weatherproof (ECR/WP) with Remote Touchpad Module

### Important

For ease of installation, follow these step-by-step instructions.

Be sure that the meter is the right size and the register is in the desired units of measurement. Install the Water Meter in the line as prescribed by local code and in the proper direction as indicated by the arrow on the meter.

### Recommended Tools And Materials

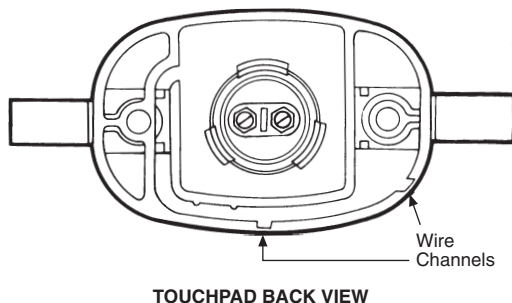
- Three conductor, 22 gauge, solid conductor vinyl-covered cable is supplied by Sensus for distances up to 100 feet.
- The register comes with a three-conductor, 22 gauge cable pre-attached and sealed (potted) at the factory. All three conductors are connected to individual terminals on the register; all would be active when used for Automatic Meter Reading (AMR) service. The conductors are solid copper wires with color-coded insulation, encapsulated in a solid-fill vinyl jacket. The cable must not be subjected to sharp bends or creases.
- Electric drill and bit (1/4")
- Screwdriver
- Wire Stripper
- Stapler with 3/8" non-corrosive staples (electrical non-interference wire type)
- #10 flat-head or oval countersunk head wood screws at least one inch long
- Plastic anchor plugs for masonry wall installations
- Lead seals and seal wire
- Visual Reader for system test and I.D. check TouchPad and Cables Installation

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#### TouchPad and Cables Installation

1. Select the TouchPad location on the wall. Drill a 1/4" diameter cable entry hole in a location convenient to the TouchPad. (The hole should be located behind the TouchPad for maximum protection and to discourage tampering.)
2. For ease of reading operation, the TouchPad should be mounted approximately 48" above ground level. Use the TouchPad as a template to locate the mounting holes.
3. If the drilled cable hole is not located directly behind the TouchPad, it will be necessary to break-out one of the thin side wall panels to gain access to the wire channel. See Illustration 1.

Illustration 1



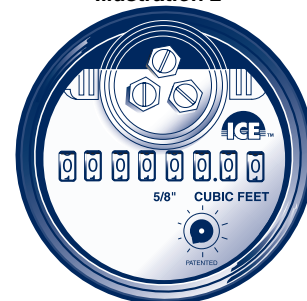
4. Feed the remote cable through the hole in the wall and extend the cable to the meter. The cable is supplied on a spool and should be cut to length at the site. Leave several inches of excess cable at the TouchPad and two (2) feet or more at the meter for ease of handling.
5. Attach the cable to the TouchPad as follows:
  - a. Tie a single overhand knot in the cable, 2-1/2" from the end.
  - b. Prepare the cable end by cutting off 1-1/2" of the outer jacket.
  - c. Strip 3/4" of insulation from the two conductors.
  - d. Bend a loop in each bare wire and fasten the cable to the terminal screws. (It isn't necessary to observe polarity or color coding when using 2-conductor wire; however, make certain that there is no bare wire-to-wire contact.)
  - e. To improve moisture and strain resistance when conditions will NOT allow the hole for the cable to be covered by the TouchPad, be sure to push the cable into the underside channel until no unjacketed cable protrudes.
6. Feed any excess wire that will not fit in the cavity behind the TouchPad back into the hole, and caulk up the hole.
7. Mount the TouchPad by using the proper wood screws, and anchor plugs, if necessary.
8. Staple the cable to floor joists or beams. CAUTION-STAPLES MUST NOT CUT OR DEFORM THE CABLE INSULATION. Note: If installing ECRWP, proceed to Step B5.

**Note: If installing ECR/WP, proceed to Step B5.**

#### Connection to the ECR Register

1. Prepare the cable for installation at the meter:
  - a. Remove approximately 1-1/2" of the outer jacket.
  - b. Strip 3/4" of insulation from the two connectors.
  - c. Bend a loop in each bare wire.
2. Remove the terminal cover on the meter register by rotating the cover counterclockwise.
3. Beneath the cover, three terminals are visible, labeled "R," "B," and "G" (Illustration 2). If three-conductor cable is used, connect the same color wires as were connected to the TouchPad's terminals to the register terminals "R" and "B." If two-conductor cable is being used, make a connection to the register terminals "R" and "B," (it isn't necessary to observe polarity or color coding for 2 conductor cable). However, using the green register terminal for two-wire connection may cause damage to the register.

Illustration 2



TOP VIEW (Terminal Cover Removed)

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**Note: If you anticipate future connection to Automatic Meter Reading, you may want to make the TouchRead Register installation compatible with connection to a Meter Interface Unit. For future compatibility, observe the color coding when making wire connections: black wire to terminal "B," red wire to terminal "R" and green wire to terminal "G." In either installation, make certain there is no bare wire-to-wire contact.**

4. Replace the cover, turning clockwise to lock in place.
5. Coil and secure excess cable to the body of the meter or service line in a presentable manner.
6. Use the Visual Reader (Model 3096) to verify the register reading and identification number by touching the TouchPad, which should be wall-mounted by this time. The reading that appears first on the Reader's screen should correspond to the meter's odometer reading. Depress the reading button to view the eight-digit register I.D. number. Record the reading and I.D. number for the proper customer location (address) along with the meter's serial number.
7. After you have successfully read the meter from the TouchPad and thus verified correct installation, seal wire the register top through the seal wires holes provided in the terminal cover. At the TouchPad, fold the hinged screw covers into place and seal wire to secure.

2. Check to see if there is a broken or shorted wire between the register and the TouchPad. Check the staples to make sure they have not cut into the cable and shorted the wires.
  - a. Disconnect the wires from the installed register terminals and connect to another test register. If a reading cannot be obtained through the TouchPad, the problem most likely is in the cable.

**Special Note: However, as an additional check, a different TouchPad should be utilized in an attempt to secure a reading before time is spent on checking the cable. ECR/WP wires are potted and cannot be disconnected from the terminals.**

- b. Following the above procedure will verify a broken or shorted cable, a faulty ECR Register or a faulty TouchPad. (Since the critical components are electronic and tested prior to shipment, it is unlikely that a faulty register or TouchPad will be found.)

*If the display shows "E-1" for register reading and the I.D. number reads correctly:*

1. Take another test reading after a quantity of water has been run through the meter (200 gal./30 cu. ft. or more preferred).
  - a. Proper reading - system is satisfactory.
  - b. If the display still shows "E-1" for register reading - replace register or meter assembly.
  - c. If the register reading is correct, but the display shows "E-2" for the I.D. number, replace the register or meter assembly.
  - d. If no response shows on the display, the visual reader's battery must be charged.

## Troubleshooting

The following can be used as a guideline.

*If the display shows "E-1" for meter reading and "E-2" for I.D. number:*

1. Check to see if all connections are secure at the terminals on the register and on the back of the TouchPad (make certain that bare wires are not touching each other at the terminals).

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