



NATIONAL TYPE EVALUATION PROGRAM

Certificate of Conformance

for Weighing and Measuring Devices

For:

Register for Meter
Indicating Element, Digital Electronic
Model: RR301 and RR301-TR

Submitted By:

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Standard Features and Options

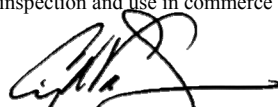
Standard Features:

- Eight-digit Liquid Crystal Diode (LCD) display
- Power: 1 X 3.6 Voltage Direct Current (VDC) internal alkaline battery
- Meter pulses per increment displayed (programmable in units/pulse: 0.0064, 0.1, 0.5, 1, 5, 10, 50, 100)
- Unit of measure(s): liters, gallons, cubic feet, cubic meters or kWh
- For water meters, electric watthour meters, and hydrocarbon gas vapor-measuring devices

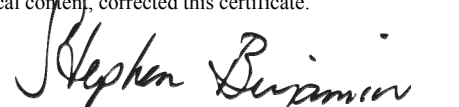
Options:

- Water meter indicator (liters, gallons or cubic feet)
- Hydrocarbon gas vapor-measuring device indicator (cubic feet or cubic meters)
- Electric watthour meter indicator (kWh)
- Encoded meters (direct read, two-way communication)
- Pulsed output meters (reed switch analog indicator capability) (must be programmed to match the register reading)

This device was evaluated under the National Type Evaluation Program and was found to comply with the applicable technical requirements of "NIST Handbook 44: Specifications, Tolerances and Other Technical Requirements for Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages. *Editorial changes, not affecting the type or metrological content, corrected this certificate.



Craig Van Buren
Chairman, NCWM, Inc.



Stephen Benjamin
Committee Chair, NTEP Committee
Issued: February 14, 2020

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Next Century Submetering Systems

Register for Meter / RR301 and RR301-TR

Application: For use as an indicator for certified and compatible water meters (hot or cold), hydrocarbon gas vapor-measuring devices, and electric watthour meters that are either pulsed output or encoded meters.

Identification: The make, model number, serial number, and National Type Evaluation Program (NTEP) Certificate of Conformance (CC) number is permanently printed on the face of the indicator (*Figures 1 and 2*). The unit of measurement is indicated on the face below the LCD screen (*Figures 1 and 2*).

Model RR301 – Single or Dual Meter Display Unit

Model RR301-TR – Single or Dual Meter Display Unit with Integrated Automatic Meter Reading (AMR) Radio

Sealing: The indicator is Category 2 with local remote capability and has an event counter for configuration. When activated (refer to the operation section), the LCD screen will display the event counter every 30-60 seconds (*Figure 3*).

Operation: The indicator receives the pulsed output from the meter or encoded direct-read signals to display registration for water (liters, gallons, or cubic feet), hydrocarbon gas vapor-measuring device (cubic feet or cubic meters), or electric watthour meter (kWh). Each meter can be assigned different units and units per pulse, along with hot/cold designation.

The indicator has two modes of operation. The display is either always on or it has a "TAP TO DISPLAY" mode.

If the display mode is always on, then the display is always on (only applicable for pulse meters). The event counter will indicate the event counter every 30 seconds (if configured for 1 meter) or 60 seconds (if configured for 2 meters).

If the display mode is set to "TAP TO DISPLAY," then the display will say "TAP TO DISPLAY" (*Figure 4*), and the LCD will turn on and display the indications upon tapping the unit. After the tap, the display will cycle through the meter readings and then show the event count after 30 seconds (if configured for 1 meter) and after 60 seconds (if configured for 2 meters).

Test Conditions: Models RR301 and RR301-TR were tested with a NextCentury model M201CH (NTEP CC 15-045) water meter with a pulsed output in gallons and a Neptune model T-10 (NTEP CC 12-100) water meter with an encoded output in cubic feet with water as the product. Additionally, a model RR301 was connected to an Actaris model hydrocarbon gas vapor-measuring device [Certificate of Approval Number (CTEP) Certificate of Approval (COA) 5356-07] with a pulsed output in cubic feet was tested with air as the product. Finally, a model RR301-TR was connected to an EKM Metering model EKM-OMIv.3 (CTEP COA 5645-11) electric watthour meter with a pulsed output in kWh. The indicators were subjected to various throughput times of over 2.5 hours and over 220 gallons of water, 345 cubic feet of air, and 2 kWh of electrical power with no missed pulses. Emphasis of the evaluation was on marking, sealing, and agreement of indications.

Evaluated By: J. Roach (CA)

Type Evaluation Criteria Used: *NIST Handbook 44 Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices*, 2020 Edition. *NCWM Publication 14 Weighing Devices*, 2019 Edition.

Conclusion: The results of the evaluation and information provided by the manufacturer indicate the device complies with applicable requirements.

Information Reviewed By: D. Flocken (NCWM)



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Example(s) of Device:

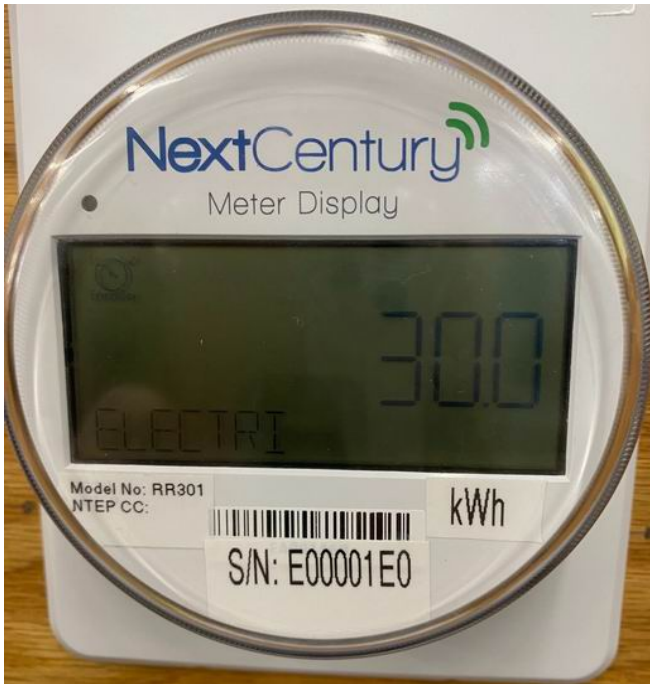


Figure 1. Example of the required ID markings on the face of the indicator with kWh

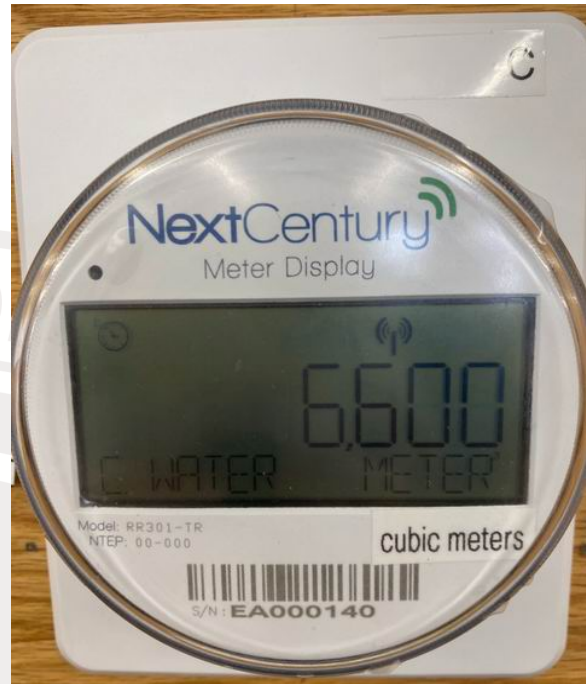


Figure 2. Example of cubic meters with the required ID markings.



Figure 3. Example of the event counter at count “00004.”



Figure 4. Example of the statement “TAP TO DISPLAY” mode. When this screen appears, one will need to tap the displace to activate the display.