

# TR-201 TRANSCEIVER

## Operation and Installation Manual

### 1 | Product Review

The NextCentury TR-201 (Transceiver) is an easy to use, full-feature device developed to remotely collect meter reads. It can be connected to either a passive or active pulse-output meter. A Transceiver can send/receive recorded data to/from a GW-201 Gateway, and comes with a replaceable lithium battery. The TR-201 Transceiver has the longest range in its class with easy to understand LED light indicators. Indicators allow for immediate verification of transmission delivery during setup/maintenance.

#### 1.1 - TR-201 Hardware

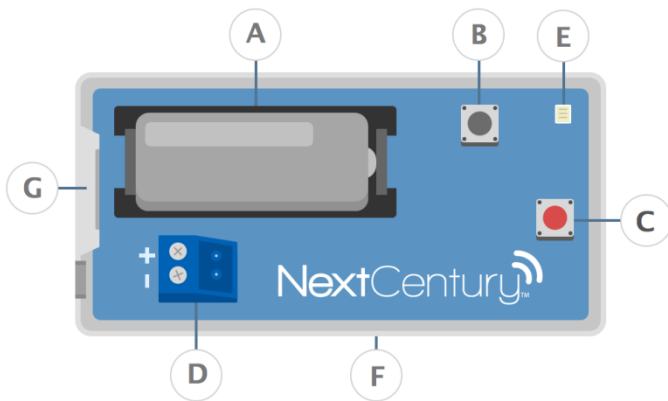


Figure 1 TR-201 Hardware

- |                       |                           |
|-----------------------|---------------------------|
| A Battery             | B Tamper Button           |
| C Test Button         | D Degson Connector (Blue) |
| E Signal Status LED   | F Mounting Plate          |
| G Plastic Release Tab |                           |

### 2 | Specifications

#### 2.1 - Dimensions:

- 74.7mm x 40.3mm x 29.1mm
- 2.9in x 1.6in x 1.1in

#### 2.2 - Operation environment:

- -28C to 60C
- -20F to 140F
- Up to 90% relative humidity (non-condensing)
- Must be installed in an indoor environment

#### 2.3 Certifications:

- FCC: 2A8BI-TR-20-214
- IC: 20949-TR20214

#### 2.4 Typical battery life:

- 6 years average

**Note:** Typical battery life assumes constant operating temperatures are between 70°F and 90°F. Battery life may be reduced with operation outside of this range.

### 3 | Installations and Setup

#### 3.1 - Connect Transceiver to Meter

Connect a Transceiver to a meter as follows:

1. Open the Transceiver plastics by pressing in on the plastic release tab (Figure 1-G) while lifting away the cover.
2. Remove the Degson Connector (Figure 1-D) from the Transceiver board by pulling up on it.
3. Insert the stripped colored wire ends from the meter into the two-terminal Degson Connector.
4. Use a small Phillips screwdriver to tighten the screws that secure wires to the Degson Connector.
5. Place the Degson Connector back onto the Transceiver board as shown in Figure 2.

**Note:** If connected to an active pulse meter that has a polarity pulse output, the positive (+) wire should be placed in the Degson Connector, so when the Degson Connector is placed on the Transceiver board, the positive wire is aligned with the (+) indicator on the board.

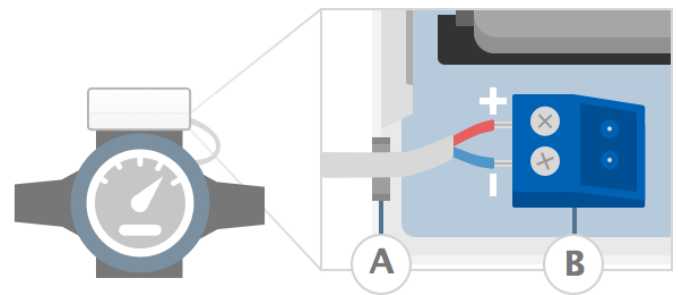


Figure 2 Connect Transceiver to Meter

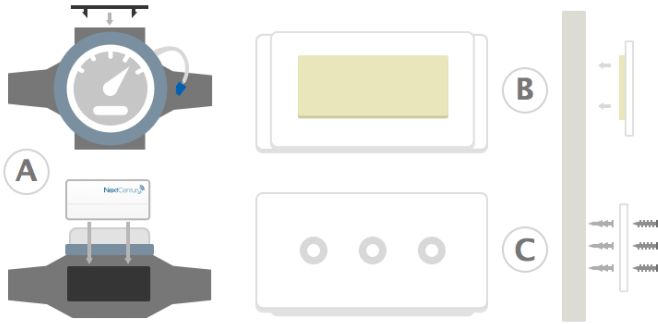
- A Wire Slot      B Degson Connector (Blue)

#### 3.2 - Mount the Transceiver

Each Transceiver comes with a mounting plate and can be installed in one of three different ways.

1. NextCentury's M201C and M201CH meters have a mounting plate that can be attached to them. Simply slide the Transceiver onto the mounting plate. When using this method, the Transceiver mounting plate (Figure 1-F) can be discarded.
2. Remove the 3M double-sided protective cover and place the Transceiver mounting plate (Figure 1-F) on a clean wall.
3. Use the mounting screws and anchors to secure the Transceiver mounting plate (Figure 1-F) to the wall.

**Note:** Ensure the wiring enters through the wire slot (Figure 2-A), allowing the top Transceiver plastic cover to be closed completely.



**Figure 3** Mount the Transceiver

- A** Meter Mounting Plate      **B** Doubled-Sided Tape  
**C** Mounting Screws and Anchor

### 3.3 – Test Connection

Each Transceiver comes from NextCentury in *Travel Mode*. In this mode, all radios on the device are turned off. To exit this mode, simply press the test connect button (Figure 1-C).

**Note:** Once travel mode has been exited, the device will never re-enter that mode and will remain active.

## 4| Signal Status LED/ Test Button

The Signal Status LED (Figure 1-E) provides a way to easily check the status of each device. The following table (Figure 4) shows what the different LED patterns indicate.

LED Pattern	Descipiton
4x Slow Red Blinks	In <i>Travel Mode</i> (see sec. 3.3).
8x Fast Red Blinks	Sending message searching for the GW-201 Gateway it should <i>Sync</i> with.
8x Fast Blue Blinks	Sending message to the GW-201 Gateway that this device is <i>Synced</i> with.
2x Green Blinks	Message has been received succefully by its GW-201 Gateway.

**Figure 4** Signal Status LED Table

#### 4.1 - RF Signal Indicator

- When the Transceiver is out of *Travel Mode* (see Section 3.3) and is not *Synced* with a GW-201 Gateway, the RF light will blink red when sending messages. When the Transceiver has successfully *Synced* with its GW-201 Gateway, the light will blink blue when sending messages. Anytime a message is successfully received, the LED will blink green twice.

#### 4.2 - Test Button

- This button is pressed to see if the Transceiver transmission is being received by its GW-201 Gateway. If the signal is being received, the RF LED (Figure 1-E) will blink green twice.

## 5| Battery Replacements

Once you get a low battery alert on the NextCentury website, you will need to replace the CR123 battery.

- Open the Transceiver plastics by pressing in on the plastic release tab (Figure 1-G) while lifting away the top cover.
- Remove the previous battery.
- Insert the new battery in the orientation indicated on the battery terminal.

**Note:** A TR-201 Transceiver permanently retains pulse data in non-volatile memory. Reprogramming the Transceiver is not necessary once a new battery is placed in the transceiver. Once the new battery is placed into the TR-201 Transceiver it will automatically “Sync” to its GW-201 Gateway. Even though re-programming is not necessary, the initial meter read should be reset to allow for matching meter reads between the “NextCentury Cloud” and the meter.

## 6| Television and Radio Interference

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

## 7| FCC Part 15 and Industry Canada Compliance

This device complies with part 15 of the FCC Rules and Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

This portable equipment with its antenna complies with FCC’s and IC’s RF radiation exposure limits set forth for an uncontrolled environment. Users are advised to maintain a separation distance of 20cm to comply with FCC and IC RF exposure limits.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Cet équipement portable avec son antenne se conforme aux limites d'exposition aux radiations RF du FCC et du IC, énoncées pour un environnement non contrôlé. Les utilisateurs sont conseillés de maintenir une distance de séparation de 20 cm pour se conformer aux limites d'exposition RF du FCC et du IC.

## 8 | Warranty/Disclaimer

### Scope of Warranty

NextCentury warrants that all communication equipment manufactured by NextCentury will be free from defects in materials and workmanship under normal use and in accordance with NextCentury's documented installation and operating procedures for a period of five (5) years from the date of manufacture.

Products not manufactured by NextCentury, including without limitation, accessories, attachments, or batteries used in conjunction with NextCentury equipment are warranted, if at all, only by the original manufacturer. NextCentury's warranties do not include replacement of batteries used to power NextCentury products.

### Limits of Liability

This warranty only applies to Read Management System components produced by NextCentury, and does not cover any products which have been damaged by misconduct, negligence, vandalism, acts of God, excessive operating conditions, or unauthorized attachments or modifications. This warranty will be nullified and void if products are placed in non-recommended installation application/fashion, or are converted, altered, or treated by other than NextCentury recommended procedures and instructions, or are read by equipment not approved by NextCentury.

NextCentury's liability and customer's exclusive remedy under this warranty is expressly limited to repair or replacement of the product at NextCentury's option, and is conditioned upon the customer returning the product(s) to the location designated by NextCentury within the warranty periods or limits stated herein and pre-paying the freight costs both to and from specified location. In no event shall NextCentury be liable for costs or expenses associated with the removal or installation of products under this warranty.

NextCentury shall have no liability or responsibility to the purchaser or any third party for any loss, cost, expense, damage, or liability, whether direct or indirect, or for special, incidental, indirect, or consequential damages of any kind, regardless of whether such liability is based on breach of contract, tort, strict liability, breach of warranties, or otherwise, and even if advised of the likelihood of such damages. Incidental and consequential damages include, but

are not limited to, lost revenue, loss of profits, data, business, or goodwill. In addition, damages resulting from negligence on the part of the customer including, but not limited to, the care and maintenance of NextCentury products, or damages resulting from negligence regarding periodic testing of the product's performance, are not covered under this guarantee.

CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY NEXTCENTURY MAY VOID THIS WARRANTY AND THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

THE FOREGOING WARRANTY IS THE SOLE AND EXCLUSIVE REMEDY AVAILABLE TO THE PURCHASER AND IS IN LIEU OF ALL OTHER WARRANTIES, GUARANTEES, OR REMEDIES, WHETHER WRITTEN OR ORAL, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ALL OF WHICH NEXTCENTURY HEREBY EXPRESSLY DISCLAIMS.

## 9 | NextCentury Submetering System

### Contact Information

If there are any questions or concerns related to these guidelines, please contact NextCentury Submetering Systems Product Support:

- Phone: (844) 538.8203 opt. 2
- Email: [support@nextcenturymeters.com](mailto:support@nextcenturymeters.com)