

EN1501-EXT Pulse Meter Transmitter Board for Integration

Installation Instructions

1 Overview

The EN1501-EXT pulse meter transmitter board for integration is a board-only transmitter with external header pins. It is designed for integration into a customer-designed meter or product.

The pulse meter transmitter board for integration is available in North America, Australia and New Zealand; the radio frequency band has been configured for the appropriate geographic area at the factory.

1.1 Inovonics Contact Information



For product and installation videos visit us at www.inovonics.com/videos or use the QR code below.



If you have any problems with this procedure, contact Inovonics Wireless technical services:

- E-mail: support@inovonics.com.
- Phone: (800) 782-2709.

1.2 EN1501-EXT Pulse Meter Transmitter Board for Integration Components

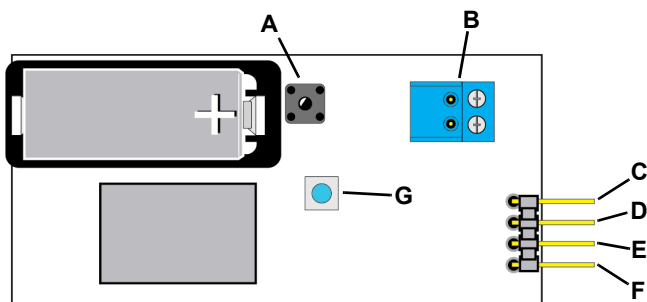


Figure 1 Pulse Meter Transmitter Board for Integration Components

- A** Housing tamper switch **B** Removable terminal block **C** Tamper input block
D Count input **E** Power output **F** Ground
G Reset button

Housing tamper switch Sends an alert message when the housing is opened.

Removable terminal block Allows connection to an external meter.

Tamper input Connects a tamper input to send a message when the user-specific end-device is tampered with.

Count input Connects a count input to increment the meter count.

Power output Allows for another device to share battery power.

Ground Connects to the ground.

1.3 Pulse Meter Transmitter Board for Integration for Integration Dimensions

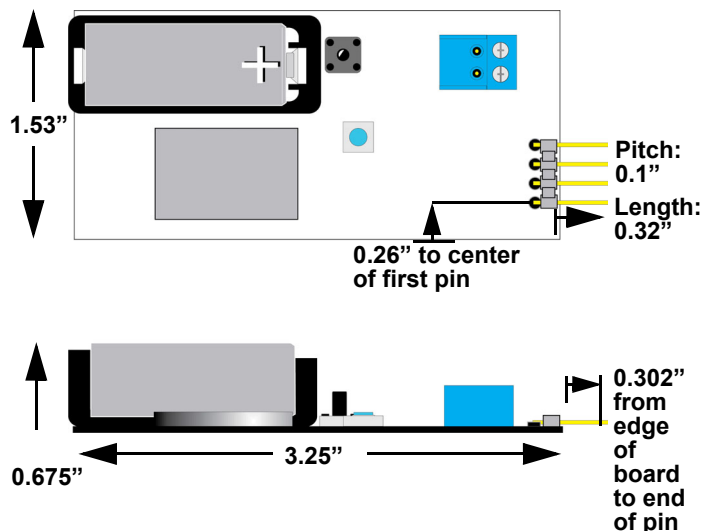


Figure 2 Pulse Meter Transmitter Board for Integration Dimensions

2 Installation

- The EN1501-EXT must only be connected at the four pin header.
- All cables and wires must be routed away from the component side of the EN1501-EXT.
- The on-board antenna must not be tampered with; no connection to an alternate antenna is provided.
- The meter or product must not include an integrated secondary co-located radio module.
- The EN1501-EXT on-board antenna should be placed so that it is facing away, or otherwise isolated from, your device's ground plane.
- Components that are sensitive to RF transmission, such as high gain circuits, should be isolated from the on-board antenna to prevent interference.
- EN1501-EXTs should not be mounted on metal surfaces or inside metal enclosures. They should also not be mounted where sheet metal ductwork, wire mesh screens, etc. might block transmissions.

Note: The EN1501-EXT has a regular check-in time of 60 minutes. It will also check in after it receives 255 pulses, enabling the EN1501-EXT to monitor electric meters which pulse at a significantly faster rate than water meters, where an EN1501 might typically be used.

3 Pulse Meter Transmitter Board for Integration Requirements

3.1 Power

Power is supplied by the on-board 3v battery. The low battery flag is set when the measured voltage is less than 2.4 v.

3.2 External Tamper Requirements

The housing tamper switch and tamper pin have the same specification. Connecting the tamper pin to ground initiates the tamper condition.

3.3 Count Requirements

The removable terminal block and count pin have the same specification. On the terminal block, the outer terminal is the negative terminal if polarity is present from the connected meter.

The count is incremented by connecting the count to ground or receiving a contact closure from a pulse-output meter via a wired connection. The EN1501-EXT requires the following input specifications for compatibility with the meter:

- A dry contact such as a reed switch.

- The pulse width of a switch output when it is activated must be greater than or equal to 10ms.
- A maximum rate of six pulses per second.
- Closed impedance of the pulser mechanism must be smaller than 1k ohm.
- Open impedance of the pulser mechanism must be greater than five megohms.

The count totalizer corresponds to the number of totalizer input pulses. The counts accumulate until the number 9,999,999 is reached. The totalizer will then go to zero on the next count.

4 Register the Transmitter

To register the EN1501-EXT

1. Confirm that transmitter is connected to the meter.
2. Confirm that the battery is installed.
3. Press the reset button to take the transmitter out of sleep/shipping mode.
 - The LED on the board will blink, indicating the transmitter has woken up.
4. See the *TapWatch Application User Manual* for details about adding transmitters to a site.

5 Compliance Requirements

5.1 FCC Requirements for the EN1501-EXT

The EN1501-EXT has received a Modular Grant to FCC/IC regulations. The integrator is responsible to test the final installation to verify compliance to FCC/IC regulation for unintentional emissions.

The integrator is responsible for properly labeling the product containing the EN1501-EXT. Labels must be placed on the outside of the product, and must include a statement indicating that the product contains the EN1501-EXT, along with the FCC and IC number.

Example 1 "Contains EN1501-EXT Pulse Counting Transmitter

FCC ID: HCQ3B6T; IC ID: 2309A - T

Example 2 "Contains FCC ID: HCQ3B6T; IC ID: 2309A - OTPMTX

5.2 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 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.

5.3 FCC Part 15 and Innovation, Science and Economic Development Canada (ISED) Compliance

This device complies with part 15 of the FCC Rules, and ISED 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 that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR Innovation, Sciences et Développement économique 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.

5.4 Radiation Exposure Limits

FCC

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20 cm during normal operation and must not be co-located or operating in conjunction with any other antenna or transmitter.

ISED

This equipment complies with ISED RSS-102 radiation exposure limits set forth for an uncontrolled environment. This transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

Cet équipement est conforme avec ISED RSS-102 des limites d'exposition aux rayonnements définies pour un environnement non contrôlé. Cet émetteur doit être installé à au moins 20 cm de toute personne et ne doit pas être colocalisé ou fonctionner en association avec une autre antenne ou émetteur.

Note: Inovonics supports recycling and reuse whenever possible. Please recycle these parts using a certified electronics recycler.
