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Cellular MIU (CMIU™) Pit and Wall Installation and Maintenance Guide

Cellular MIU (CMIU™) Pit and Wall Installation and Maintenance Guide

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FCC Notice

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

Note: 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.

RF Exposure Information

This equipment complies with the FCC RF radiation requirements for uncontrolled environments. To maintain compliance with these requirements, the antenna and any radiating elements should be installed to ensure that a minimum separation distance of 20 cm is maintained from the general population.

Changes or modifications not expressly approved by the party responsible for compliance could void the users' authority to operate the equipment.

Professional Installation

In accordance with section 15.203 of the FCC rules and regulations, the Meter Interface Unit (MIU) must be professionally installed by trained meter installers. Changes or modifications not expressly approved by the party responsible for compliance void the user's authority to operate the equipment.

ISED Statement (Canada)

This device complies with Industry Canada license -exempt RSS standards. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.
- The device has been designed to comply with safety standards for exposure to radio waves (SAR) in accordance to RSS-102.
- The device should be installed and operated with a minimum distance of 20 cm between the equipment and the user's body.

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'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Cet artifice a été conçu pour se plier à la sécurité les exigences pour l'exposition aux ondes radioélectriques (SAR) dans conformité avec RSS-102. Cet artifice devrait être installé et fait marcher avec la distance minimale 20 centimètres entre l'équipement et votre corps.

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Chapter 1: Product Description

This chapter provides a general description of the Neptune Cellular Meter Interface unit (CMIU™) for wall and pit applications.

The CMIU is a network endpoint that collects meter reading data from an encoder register. It then transmits the data for collection using 4G LTE cellular technology. The collection data is stored and downloaded into the utility billing system for processing.

The CMIU is easily installed in wall or pit applications. It operates on AT&T or Verizon 4G LTE cellular networks. The CMIU stops RF transmissions when the battery discharges below the normal operating voltage.

Figure 1 – Cellular MIU – Wall

Figure 2 – Cellular MIU – Pit

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Chapter 2: Specifications

This chapter covers the specifications for the CMIU™.

Electrical Specifications

The power is supplied by a lithium battery.

Transmitter

The following table defines the CMIU transmitter specifications.

Table 1 – Transmitter Specifications

Specification	Description
Transmit Period	• Basic – hourly readings delivered every 24 hours • Advanced – hourly readings delivered every four hours • Pro – 15-minute readings delivered every hour
Encoder Reading	15-minute and 60-minute options
Output Power	Meets FCC Part 15.247 and FCC Part 27
FCC Verification	Part 15.247

Encoder Register Interface

The following table provides information on the maximum cable lengths required for different registers.

Table 2 – Supported Encoder Maximum Cable Length

Cable Brand	Length
Neptune ARB® V	300 feet (91 meters). Meets manufacturer's published specifications for wire length between the encoder and the remote receptacle. The length is based on solid three conductor wire, 22 AWG.
Neptune® ProRead™ and E-CODER®	500 feet (152 meters)
Sensus Protocol registers	200 feet (61 meters)

Environmental

The following table provides the environmental specifications of the CMIU.

Table 3 – Environmental Conditions

Condition	Description
Operating Temperature	–22° to 149°F (–30° to 65°C)
Storage Temperature	–40° to 158°F (–40° to 70°C)
Operating Humidity	0 to 100% condensing

Functional

The following table provides the functional specifications of the CMIU.

Table 4 – Functional Specifications

Specification	Description
Register Reading	Eight digits
MIU ID	Nine digits

Dimensions and Weight

This section provides the dimensions and weight of the CMIU.

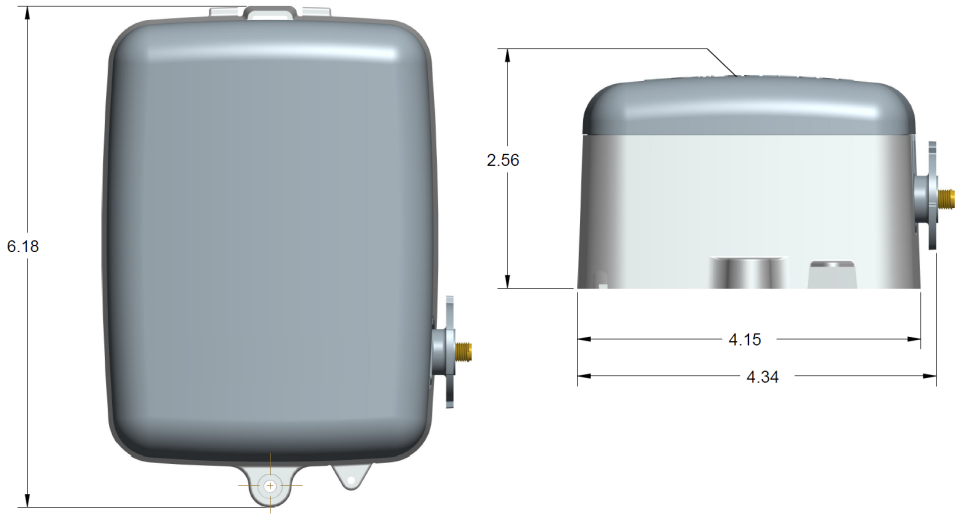

Figure 3 – CMIU™ Pit Dimensions - Front and Side

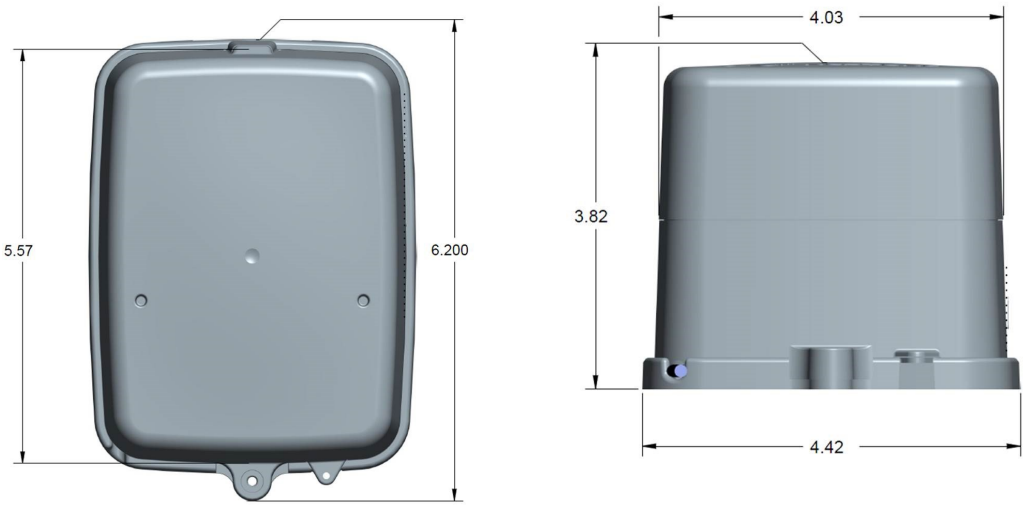

Figure 4 – CMIU™ Wall Dimensions - Front and Side

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Chapter 3: General Installation Guidelines

This chapter describes tools, materials, and general installation guidelines for the CMIU™.

Tools and Materials

Chapter 3 defines the recommended tools and materials you need to successfully install the CMIU.

Some items may not apply to your specific installation, or the list may not contain all required tools or materials.

Recommended Tools

The following table defines the tools recommended to install the CMIU.

Table 5 – Recommended Tools

Tool	Description	Use
Took Kit	Contains standard tools including: • Assorted screwdrivers • Needle-nose pliers • Wire stripper • Diagonal cutters • Electrician's knife • Hammer • Crimping tool (part # 5500-158)	Perform various installation procedures
Magnet	6 lb. force (part # 12287-001)	Activating the CMIU
CMIU Manager	iOS application	Manage, configure, and troubleshoot the CMIU iOS application

Recommended Materials

The following table defines the materials recommended to install the CMIU.

Table 6 – Recommended Materials

Material	Description	Use
Cable	Solid 3 Conductor #22 AWG (black / green / red) (part # 6431-352)	Connect CMIU to encoder register.
Moisture Protection Compound	Novagard® sealant (part# 96018-072)	Cover exposed wires and terminal screws on register and CMIU.
Scotchloks	Part# 8138-125	Connect wall CMIU or replacement pit CMIU to encoder register.
Site Work Order	Documentation provided by your utility	Receive and record information about the work site.

Safety and Preliminary Checks

Observe the following safety and preliminary checks before and during each installation:

- Verify that you are at the location specified on the site work order.
- Verify that the site is safe for you and your equipment.
- Notify the customer of your presence, and tell the customer that you need access to the water meter.
- Write the ID numbers of the CMIU you are installing, if the site work order does not include the numbers.
- Verify that the ID numbers match the ID numbers on the CMIU you are installing, if the site work order already includes them.

Verifying and Preparing the Encoder Register

The CMIU is designed for use with the following encoder registers:

- ARB® V
- ProRead™
- ProRead™ AutoDetect
- E-CODER®
- ProCoder™
- MACH 10®

The CMIU also operates with competitor registers using Sensus which include:

- Sensus ECRIII
- ICE
- iPerl
- OMNI, and electronic registers
- Hersey/Mueller Translator
- Badger ADE
- HR-E® LCD

Before installing a CMIU, the encoder register must be correctly wired and programmed to work with the CMIU. E-CODER registers do not require programming.

When using a ProRead encoder register, the non-AutoDetect ProRead register must be programmed for three-wire mode.

If connecting the CMIU to a new ProRead encoder register, or if a three-conductor cable is already connected to a ProRead encoder register, ensure that the ProRead register is programmed for three-wire mode using the field programmer, and the format is set to (NTG) RF MIU Transport Driver Interface format (TDI). You can accomplish this through the ProRead receptacle before removing the receptacle.

Installing a Register (Non Pre-Wired or Potted Only)

Consider the following:

1. Make sure the cable is long enough before wiring the pit encoder register.
2. Use only 22 American Wire Gauge (AWG) cable to make the connection from the encoder register to the CMIU.
3. Remove the terminal screw from the encoder register.
4. Strip off 3/4 inch of the jacket from the cable, leaving only the three insulated wires.
5. Take precautions not to nick or cut the insulation on the three wires.

6. Strip off 1/2 inch of insulation from each of the three wires.

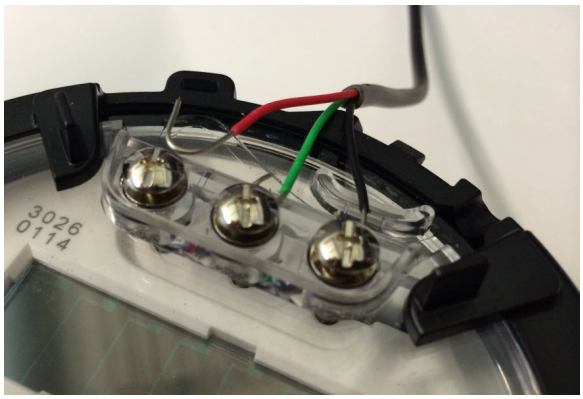


Figure 5 – Wiring a Neptune Encoder Register

7. If required, connect the three conductor wires to the encoder register's terminal per the manufacturer's instructions.

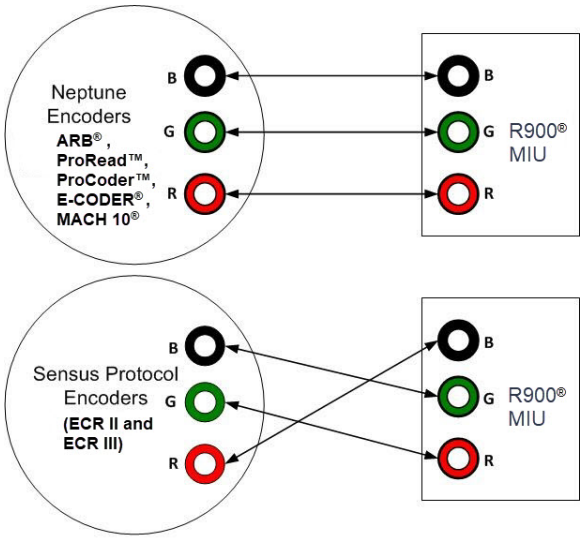


Figure 6 – CMIU™ Color Code for Wires

8. Thread the cable around the strain relief posts of the encoder.

Figure 7 – Cable Threaded Around Strain Relief Posts

9. Apply sealant liberally and ensure that it encapsulates the terminal screws and exposed wires.

Neptune requires Novagard G661 sealant or Dow® compound 4.

Figure 8 – Application of the Sealant

10. Snap the cover onto the encoder register.

Figure 9 – Covering the Terminal Screws

11. Run the cable to the CMIU and fasten it securely.

Do not exceed maximum cable lengths as defined in "Encoder Register Interface" on page 3. If the encoder register is prewired and potted, use Schotchloks for connecting the register to the CMIU.

Chapter 4: Wall Installation

This chapter describes storage and unpacking instructions, preliminary tests, tools, materials, site selection, and the wall installation procedure for the CMIU™.

Prior to Installation

Any existing network registers must be reprogrammed.

The CMIU does not have networking capability.

Storage

After receipt, inspect the shipping containers for damage, and inspect the contents for damage prior to storage.

After completing the inspection, store the cartons in a clean, dry environment. The CMIU has an internal battery and storing it for more than one year can affect product life. Be sure to use a first-in, first-out inventory control system. For more information, see "Environmental" on page 4.

Unpacking

Handle the CMIU carefully; however, no additional special handling is required.

After unpacking the CMIU, inspect it for damage. If the CMIU appears to be damaged or proves to be defective upon installation, notify your Neptune sales representative. If one or more items requires reshipment, use the original cardboard box and packing material.

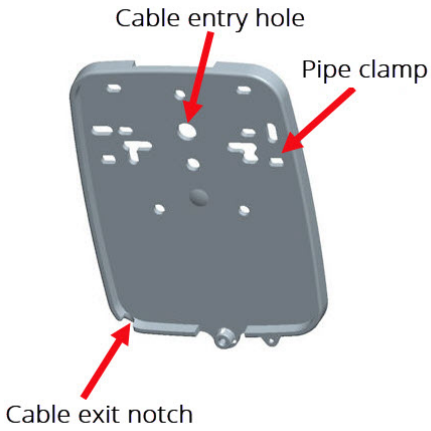


Figure 10 – CMIU™ Back Plate

Figure 11 – CMIU™ Wall Kit

Tools and Materials

"Tools and Materials" on page 7 shows the recommended tools and materials you need to successfully install the CMIU.

Some items may not apply to your specific installation, or the list does not contain all required tools or materials.

Site Selection

Always follow your company's safety practices, and installation guidelines when installing a CMIU. Never perform an installation during a lightning storm or under excessively wet conditions.

Installation and operation in moderate temperatures increase reliability and product life. For more information, see "Environmental" on page 4.

Follow these guidelines when selecting a location to install the CMIU.

- Mount the CMIU on the outside of the building.
- Install the CMIU approximately 5 feet above the ground.
- Install the CMIU in a vertical and upright position.
- Mount the CMIU on a flat surface like a wall, but it can also be mounted on a pipe.

- Clear the selected location of all obstructions.
- Avoid installing the CMIU behind metal fences or walls.

The maximum cable length between the encoder register and CMIU depends on the register's manufacturer and model. See the following table for the maximum cable lengths.

Table 7 – Maximum Cable Lengths

Encoder Register	Maximum Cable Lengths
Neptune ARB V. Meets manufacturer's published specification for wire length to the encoder.	300 feet (91 meters)
Neptune ProRead™ / E-CODER®	500 feet (152 meters)
Sensus Protocol registers	200 feet (61 meters)

Installing the CMIU™

This section defines the procedure to install the wall CMIU.

Removing the Main Housing

Complete the following steps to install the wall CMIU.

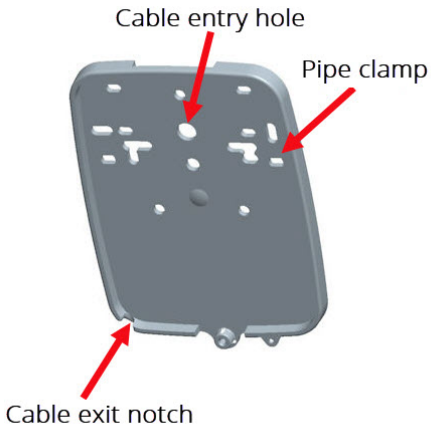
1. Remove the main housing from the adapter.

Figure 12 – CMIU™ Main Housing

The Hi-Lo fastener for securing the main CMIU housing to the adapter plate is shipped separately.

2. Study "Site Selection" on page 14 and then decide how to install the CMIU.

   - You can insert the cable through any of the entry holes in the back of the mounting adapter. A variety of holes allows for a quick and easy installation.



   - When the CMIU replaces a receptacle, use the appropriate hole to allow reuse of the receptacle's original mounting holes.
   - When mounting the CMIU to a pipe, use the pipe clamp holes to secure the mounting adapter to a pipe.

Applying the Scotchlok™ Gel Caps

Follow this procedure to apply the Scotchlok™ gel caps.

1. Using Scotchlok gel caps, connect the register to the pigtail from the CMIU.

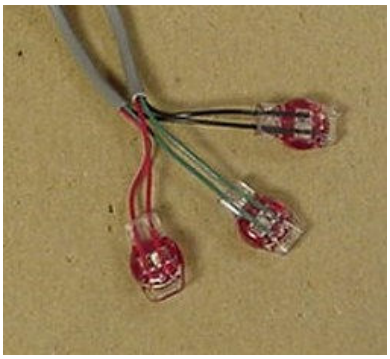


Figure 13 – Gel Cap Connectors

2. Pair the wires according to the color diagram.

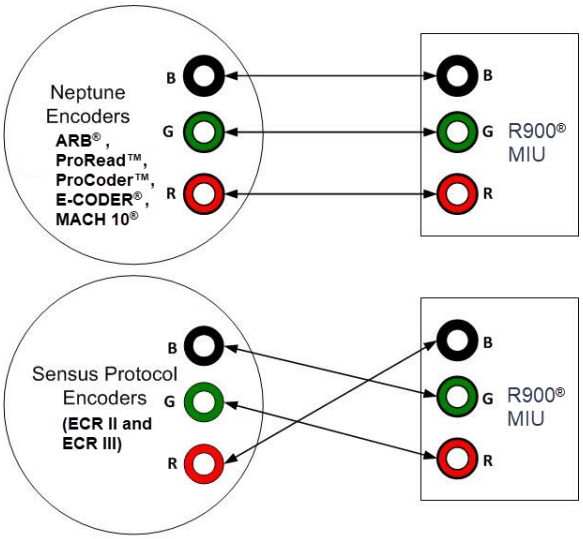


Figure 14 – CMIU™ Color Code for Wires

3. Slide the paired wires into the grooves provided until they seat into the back of the gel cap.
4. Squeeze the gel cap firmly using the appropriate crimping tool to ensure a good connection.
5. Repeat this process until all connections are complete.
6. Store excess wire and Scotchloks in the hollow cavity in the back of the CMIU using the strain relief guides.

Figure 15 – Cable in Back of Mounting Adapter

7. Continue to guide the remaining wire through the cable exit notch at the bottom right side of the CMIU.

Figure 16 – Cable Exit Notch

Completing and Testing the Installation

Follow this procedure to complete and test the installation.

1. Slide the tongue on the top of the CMIU into the groove on the top of the mounting adapter.
2. Secure the CMIU to the mounting adapter using the set screw.

Figure 17 – Securing the Mounting Adapter

3. Position the magnet against the left side of the CMIU directly in line with the Neptune logo.
4. Move the magnet up and over the top left corner of the CMIU.

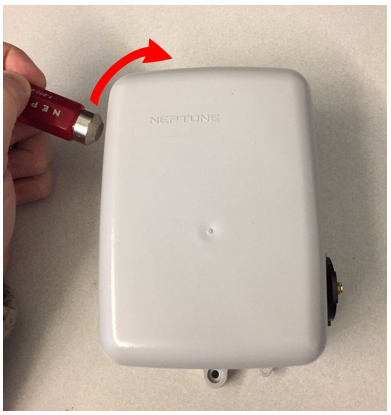


Figure 18 – Swiping the CMIU™

Testing the Installation

The CMIU Manager is used to verify cellular signal strength and meter reading to ensure that the CMIU is installed correctly.

Figure 19 – CMIU™ Manager Options

To test the installation, complete the following steps. Before testing, be sure to swipe the CMIU with a magnet. For more information, see "Completing and Testing the Installation" on the previous page.

1. Open the CMIU Manager on an iOS device.

2. Select a CMIU ID from the list.

Figure 20 – Selecting a CMIU™

3. Click **CONNECT**.

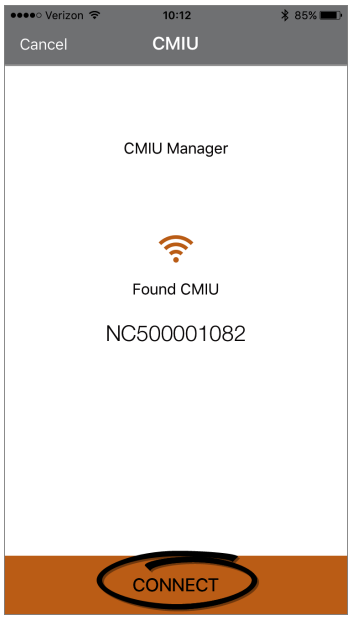


Figure 21 – Connecting the CMIU™

4. Verify the signal strength. If the signal strength is:

   - Acceptable, continue to the next procedure.
   - Not acceptable, move the CMIU to another location to improve the signal strength and test the installation again.

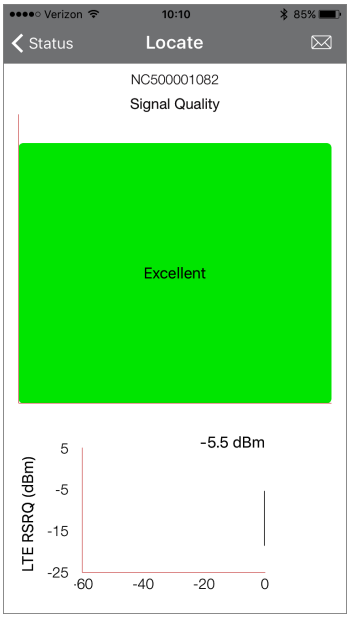


Figure 22 – Signal Strength

Verifying the Meter Reading

To verify the meter reading, complete the following steps.

1. From the CMIU Manager menu, select **Meter**.
2. Verify that the meter reading is valid. If the meter reading is:

   - Valid, continue with the next step.
   - Invalid, verify all connections and test the installation again.

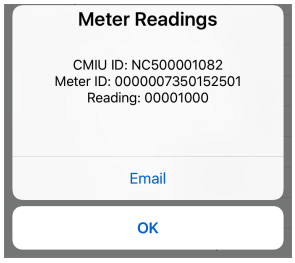


Figure 23 – Meter Readings

3. Install a seal wire or seal clip through the seal hole at the bottom of the main housing.

Figure 24 – Installing the Seal Wire

4. Verify that the requirements of the site work order have been met and that you have recorded all information.
5. Clean up the installation site before leaving.

Chapter 5: Pit Installation

This chapter describes storage and unpacking instructions, preliminary tests, tools, materials, site selection, and pit installation of the CMIU™.

Prior to Installation

Follow the procedures in this section before you install the CMIU.

Storage

After receiving the shipment, inspect the containers for damage and inspect the contents for damage prior to storage.

After completing the inspection, store the cartons in a clean, dry environment. Keep in mind that the CMIU has an internal battery. Storage for more than one year may affect product life. Be sure to use a first-in, first-out inventory control system. For more information, see "Environmental" on page 4.

Unpacking

Handle the CMIU carefully; however, no additional special handling is required.

After unpacking the CMIU, inspect it for damage. If the CMIU appears to be damaged or proves to be defective upon installation, notify your Neptune sales representative. If one or more items requires reshipment, use the original cardboard box and packing material.

Figure 25 – CMIU™ for Pit Installation

Tools and Materials

The tables in "Tools and Materials" above show the recommended tools and materials you need to successfully install the CMIU.

Some items may not apply to your specific installation, or the list may not contain all required tools or materials.

Site Selection

Installation and operation in moderate temperatures increase reliability and product life. For more information, see "Environmental" on page 4.

Always follow your company's safety practices and installation guidelines when installing a CMIU. Never perform an installation during a lightning storm or under excessively wet conditions.

Follow these guidelines when selecting a location to install the CMIU.

- Select a location where there is no chance that another object can be set over the antenna.
- Avoid installing the CMIU behind metal fences or walls.
- Make sure the pit location gives adequate room for installing both the CMIU and the pit antenna.
- Install the pit antenna above the lid in low traffic areas, as illustrated below, for maximum performance.

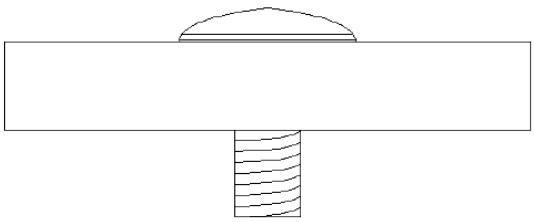


Figure 26 – Antenna Placement for Low Traffic Areas

- When installing in a high traffic area, Neptune recommends that the dome of the antenna be recessed in the pit lid as shown in the following figure.
- Recessing the installation reduces the range of the antenna.

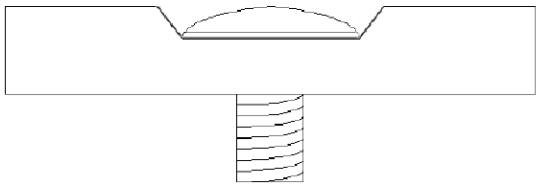


Figure 27 – Antenna Placement for High Traffic Areas

Although the CMIU has a cable already attached (2 feet or 6 feet), some installations can require additional cable. In these cases, the maximum cable length between the encoder register and the CMIU depends on the register's manufacturer and model. For more information, see "Encoder Register Interface" on page 3.

Table 8 – Cable Length and Manufacturer

Encoder Register	Maximum Cable Length
Neptune ARB® V Meets manufacturer's published specification for wire length between encoder and remote receptacle.	300 feet (91 meters)
Neptune ProRead™ / E-CODER®	500 feet (152 meters)
Sensus Protocol Register	200 feet (61 meters)

Pit CMIU™ Installation

The following section describes how to install a single CMIU in a pit location.

Select a location for the CMIU that meets the recommendations in the previous section titled "Site Selection" on the previous page."

Installing the Antenna

Follow this procedure to install the antenna.

1. Insert the antenna cable and housing through the 1-3/4 inch hole in the meter pit lid.

Figure 28 – Inserting the Antenna into the Pit Lid

2. Thread the locking nut onto the antenna, with the unthreaded end toward the lid.

Figure 29 – Locking the Nut on the Antenna

Figure 30 – Antenna Installation Complete

Begin the Installation

Complete the following steps to install the CMIU in a pit.

1. Place the flat black rubber washer around the male antenna connector on the CMIU.

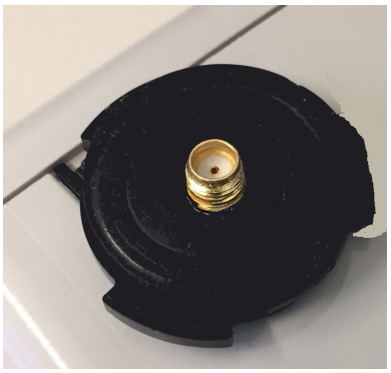


Figure 31 – Antenna Connector

2. Apply a coating of Novagard around the base of the antenna connector and inside on the flat rubber washer.
3. Using a torque wrench, connect the coaxial cable connector to the antenna on the CMIU housing tightening it to 16 inch-pounds.

Threading the F Connector

Follow this procedure to thread the female-threaded (F) connector to the CMIU.

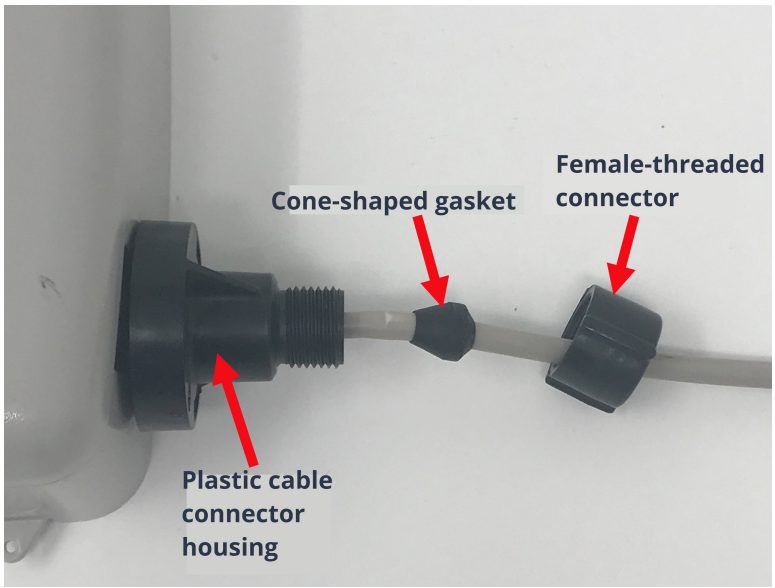


Figure 32 – Components of the Connector

1. Make sure the flat washer is properly seated, and then connect the black plastic cable connector housing to the three-lobed plastic latch plate.
2. Tighten the connector by making a 1/4 turn to the right.

Figure 33 – Tightening Connector and Latch Plate

3. Slide the black cone-shaped gasket down the cable until it seats against the connector housing.
4. Slide the black plastic female-threaded connector down the coaxial cable.

Figure 34 – Cone-Shaped Gasket and Connector

5. Seat on top of cone-shaped rubber gasket and thread onto the three-lobed plastic latch plate
6. Finger tighten the connector to depress the cone-shaped rubber gasket. This seals the coaxial cable from moisture intrusion.

Installing the Scotchlok™ Connectors

Complete the following steps to install the Scotchlok™ connectors.

Make sure you complete the steps outlined in "Pit CMIU™ Installation" on page 25 to install the CMIU through the lid before you install the Schotchloks.

1. Use the 3M Scotchlok-type connector to connect the CMIU wires to the encoder wires.
2. Hold the Scotchloks connector between the index finger and thumb with the red cap facing down.

Figure 35 – Scotchlok™ Connector

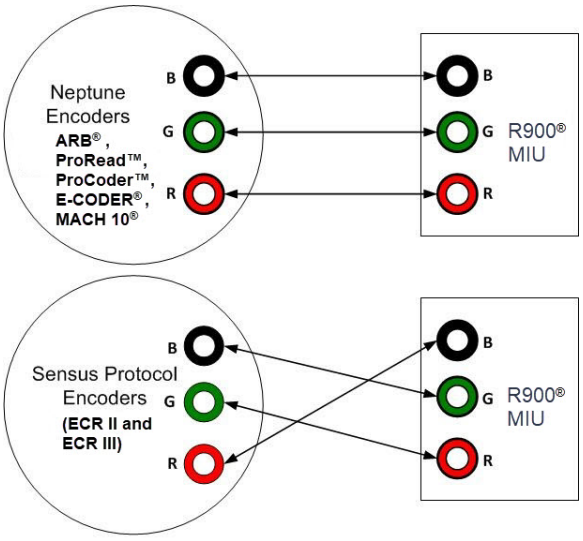


Figure 36 – CMIU™ Color Code for Wires

3. Take a non-stripped black wire from the pigtail and a non-stripped black wire from the CMIU and insert the wires into the Scotchlok connector until fully seated.

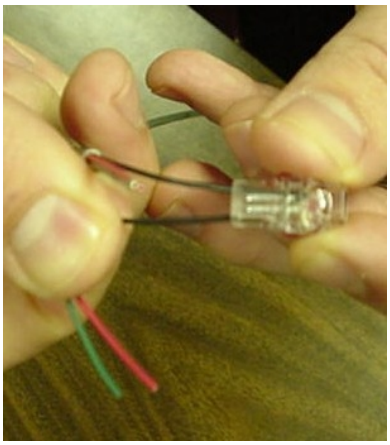


Figure 37 – Seating Connector Wires

4. Do not strip colored insulation from the wires, or strip and twist bare wires prior to inserting into a connector. Insert the insulated colored wires directly into the Scotchlok connector.
5. Place the connector (red cap side down) between the jaws of the crimping tool.

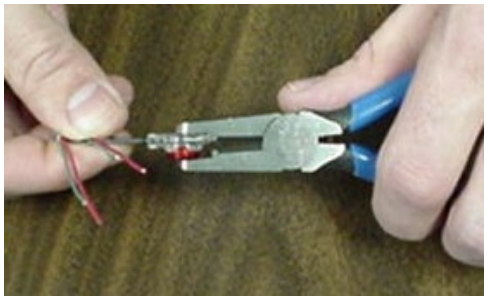


Figure 38 – Crimping Tool

6. Check to ensure the wires are still fully seated before crimping the connector. The following image illustrates improper connections due to wires not being fully seated.

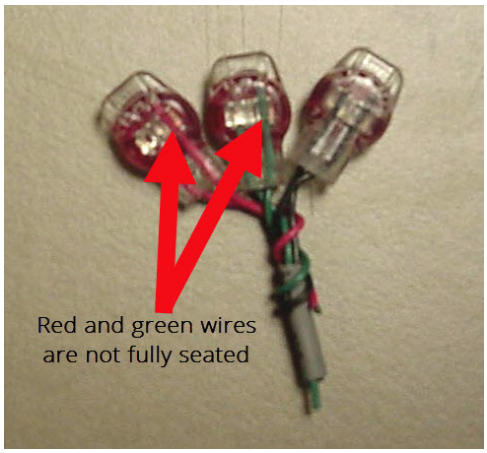


Figure 39 – Improper Connections

7. Squeeze the connector firmly with the proper crimping tool until you hear a pop and gel leaks out the end of the connector.
8. Repeat steps two through six for each color wire.
9. After connecting all three color wires, read the encoder register to ensure proper connections, and the CMIU is functioning properly.

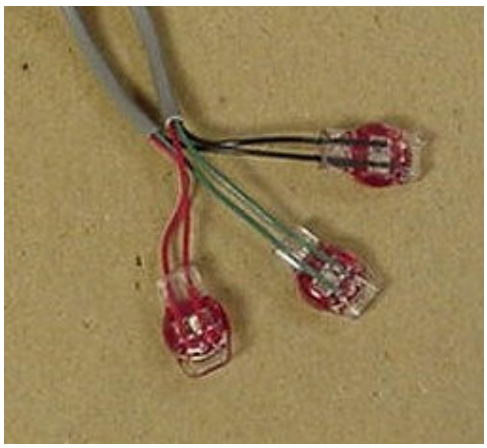


Figure 40 – Three Colored Wires Properly Connected

Connecting the Splice Tube

To finish installing the Scotchloks, complete the following steps to install the connector king splice tube.

1. Take all three connected Scotchloks and push them into the splice tube until fully encapsulated by the silicone grease.

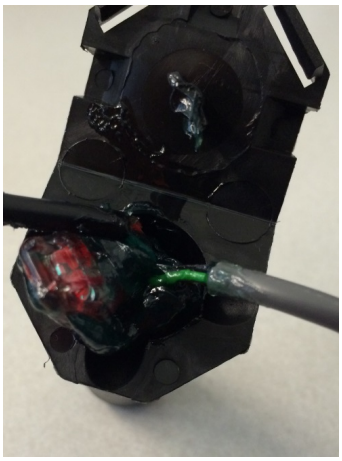


Figure 41 – Splice Tube

2. Separate each gray wire and place them in the slots on each side.

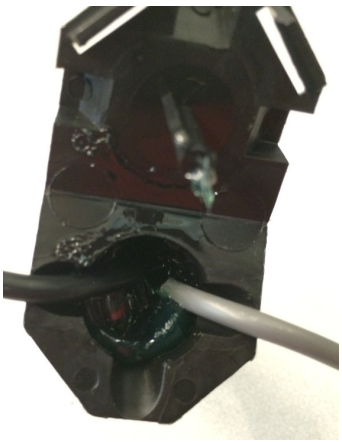


Figure 42 – Gray Wires in Slots

3. Snap the cover closed to finish the installation.

Tying the Cable and Activating the CMIU™

Follow this procedure to tie the cable and activate the CMIU.

1. Place the CMIU in the pit location:

   - In a shallow pit application, you can place the CMIU beside the meter.
   - In deep pit applications, use a cable tie to suspend the CMIU from the antenna shaft.
   - Do not lodge the CMIU between the meter box and any components inside the box.

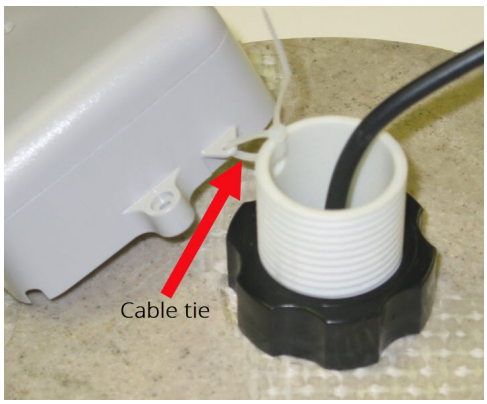


Figure 43 – Attaching the CMIU™ to the Antenna Shaft

2. Place the CMIU in such a way that it does not lodge itself when the pit lid is removed.
3. Swipe the CMIU with a magnet:

   - Position the magnet against the left side of the CMIU directly in line with the Neptune logo.
   - Move the magnet up and over the top left corner of the CMIU.

Figure 44 – Swiping the CMIU™

Testing the Installation

To test the installation, follow the steps in "Testing the Installation" on page 19.

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Chapter 6: Maintenance and Troubleshooting

This chapter takes you through maintenance and troubleshooting procedures for the CMIU™.

Six Wheel Encoders

If the odometer reads 123456, the CMIU Manager should show 1 2 3 4 5 5 0 0.

The sixth digit displayed is a five, if the last digit on the odometer is five through nine. The sixth digit is a zero, if the last digit on the odometer is zero through four. The CMIU adds two zeros on the end to provide an eight-digit reading to the host software.

Four Wheel Encoders

If the odometer reads 1234, the CMIU Manager shows 1 2 3 4 0 0 0 0.

The CMIU adds four zeros on the end to provide an eight-digit reading to the host software.

Troubleshooting

This section provides examples of possible reading values and what they indicate.

Table 9 – Example Reading Values

Reading Value	Definition	Troubleshooting
::::::::	Failure to retrieve reading	• Usually indicates a cut wire. Check the connection between the register and CMIU. • If using a non-autodetect ProRead™ register, verify that it is programmed for three-wire mode.
????????	Indicates an ambiguous, bad read, replaces ------- and HHHHHHHH	N/A

Contact Information

Within North America, Neptune Customer Support is available Monday through Friday, 7:00 A.M. to 5:00 P.M. Central Time, by telephone or email.

By Phone

To contact Neptune Customer Support by phone, complete the following steps.

1. Call **(800) 647-4832**.
2. Select one of the following options:
   - **1** if you have a Technical Support Personal Identification Number (PIN).
   - **2** if you do not have a Technical Support PIN.
3. Enter the six-digit PIN and press #.
4. Select one of the following options:
   - **2** for Technical Support.
   - **3** for maintenance contracts or renewals.
   - **4** for Return Material Authorization (RMA) for Canadian Accounts.

   You are directed to the appropriate team of Customer Support Specialists. The specialists are dedicated to you until the issue is resolved to your satisfaction. When you call, be prepared to give the following information:

   - Your name and utility or company name.
   - A description of what occurred and what you were doing at the time.
   - A description of any actions taken to correct the issue.

By Email

To contact Neptune Support by email, send your message to support@neptunetg.com.

Appendix A: CMIU™ Modes

The CMIU™ has three modes of operation.

- Basic
- Advanced
- Pro

Each mode has a distinct method of operation based on the frequency:

- Of cellular connection to transmit the meter readings.
- In which the CMIU interrogates the register to store meter readings.

Table 10 – CMIU™ Modes

Mode	Register Interrogation	Readings Delivery by Cellular Connection
Basic	1 hour	Every 24 hours
Advanced	1 hour	Every 4 hours
Pro	15 minutes	Every hour

Leak Status Flag (Resets After 35 Days)	
Based on total amount of 15-minute periods recorded in the previous 24-hour period.	
Leak icon off	Eighth digit incremented less than 50 of the 96 days of 15-minute intervals
Flashing leak icon	Eighth digit incremented in 50-95 of the 96 days of 15-minute intervals
Solid leak icon	Eighth digit incremented in all of the 96 days 15-minute intervals
Consecutive Days with Zero Consumption Flag (Resets After 35 Days)	
Number of days the “leak status” was at a minimum value	

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Appendix B: CMIU™ Manager

The CMIU™ Manager is an iOS application that communicates with a CMIU by Bluetooth® link during the installation, troubleshooting, and maintenance of the CMIU. The CMIU Manager provides information on the CMIU:

- Status
- Meter reading
- Register ID of the connected register
- Cellular network status

The CMIU Manager is compatible with iOS version 9.3 using either an iPhone or iPad.

CMIU™ Status

The CMIU Status screen provides a snapshot of the current configuration of the CMIU. This information includes:

- Cellular signal
- CMIU clock
- CMIU firmware version
- Cellular modem information
- Configuration of the CMIU for register interrogation and cellular connectivity

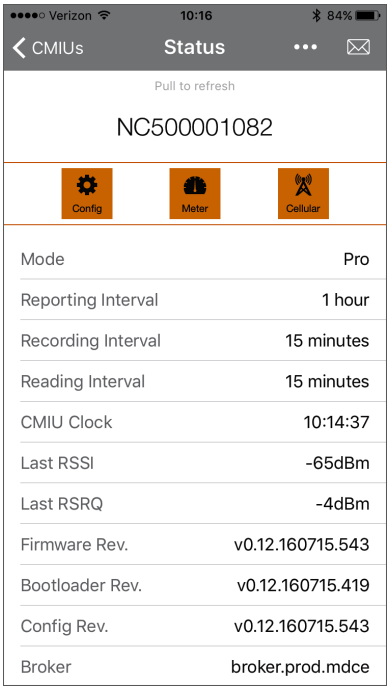

Figure 45 – CMIU™ Status Screen

Meter Reading

An operator can use the CMIU Manager to verify a valid installation of the CMIU with a connected register. Using the **Meter** button, the operator can verify the meter reading and register ID.

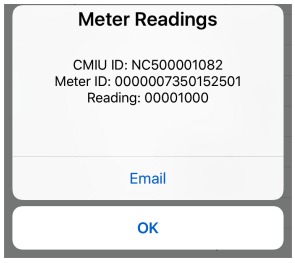

Figure 46 – Meter Reading

Cellular Network

The Cellular Network screen allows an operator to view the signal strength of the cellular connection. This allows the operator to verify cellular connectivity during installation or troubleshooting of a CMIU.

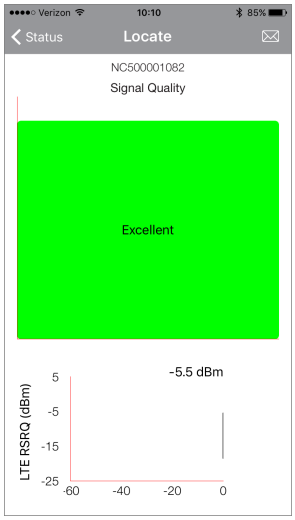

Figure 47 – Cellular Network Screen

Glossary

A

antenna (pit)

MIU antenna used for pit installations

AWG

American Wire Gauge

C

CMIU

Cellular Meter Interface Unit

F

FCC

Federal Comunications Commission

L

Liquid Crystal Display (LCD)

Component where the meter-reading and value-added icons are displayed

M

MIU

Meter Interface Unit

R

register read time

The default time is 15 minutes for all registers. Custom time is not available.

S

seal pin

Small, black plastic nail used to secure the E-CODER®)R900*i* to the meter

serial number

Unique identification number given to each MIU at the factory. The default value is the last programmed, plus one. Custom serial numbers are not available.

T

TDI

Transport Driver Interface format

transmission time

The time between MIU transmissions

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