

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



NEPTUNE
TECHNOLOGY GROUP



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

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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.

Any change or modification to the product is not expressly approved by Neptune and could void the user's authority to operate the device.

This equipment complies with the FCC radiation exposure limits in an uncontrolled environment.

This equipment should be installed and operated with a minimum distance of 20 cm between the equipment and the user's body.

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 instruction, 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 not 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.



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

CMIU Pit and Wall Installation and
Maintenance Guide

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Chapter 1: Product Description

This chapter provides a general description of the Neptune Technology Group cellular meter interface unit (subsequently referred to as CMIU) for wall and pit applications.

Overview

This section gives an overview of the CMIU.

About the CMIU

The CMIU by Neptune 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.

Features

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: CMIU Specifications

This chapter covers the specifications for the CMIU.

Electrical

The power is supplied by a Lithium battery.

Transmitter

This section provides information on transmitter specifications.

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
FCC Verification	Part 15.109

Encoder Register Interface

This section provides information on the maximum cable lengths required for different registers.

Table 1 – Supported Encoder Maximum Cable Length

Neptune ARB® V ¹	300 feet (91 meters)
Neptune ProRead™ and E-CODER®	500 feet (152 meters)
Sensus Protocol registers	200 feet (61 meters)

¹ Meets manufacturer's published specifications for wire length between encoder and remote receptacle. The length is based on solid three conductor wire, 22 AWG.

Environmental

This section provides the environmental specifications of the CMIU.

Table 2 – Environmental Conditions

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

This section provides the functional specification of the CMIU.

Table 3 – Functional Specification

Register Reading	Eight digits
MIU ID	Nine digits

Dimensions and Weight

This section provides the dimensions and weight of the CMIU. See Figure 3 below and Figure 4 on the next page.

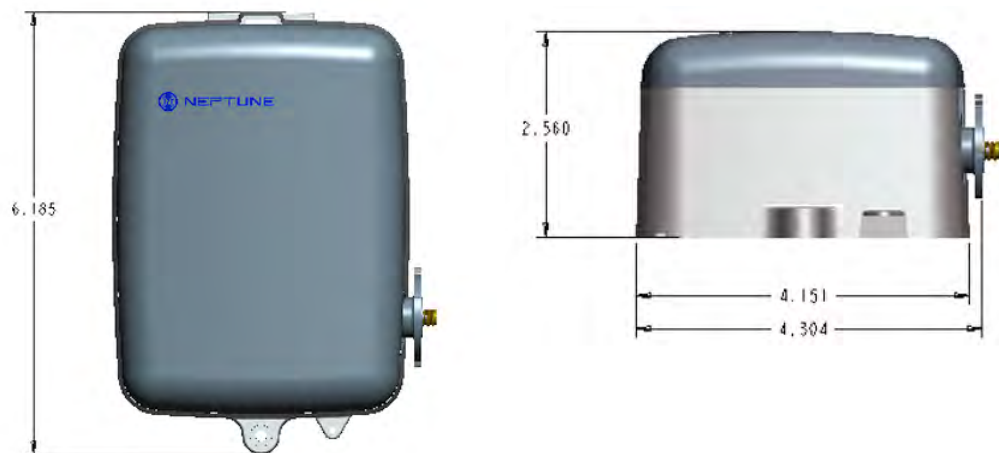


Figure 3 – CMIU Pit Dimensions - Front and Side

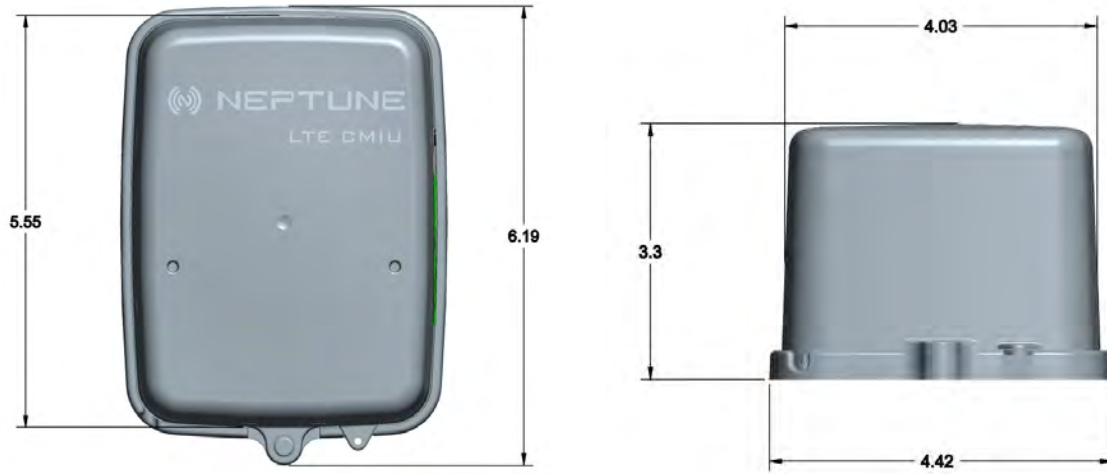


Figure 4 – CMIU Wall Dimensions - Front and Side

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Chapter 3: General Installation Guidelines

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

Tools and Materials

Table 4 below and Table 5 on the next page show the recommended tools and materials you need to successfully install the CMIU.



It is possible that some items do not apply to your specific installation, or the list does not contain all required tools or materials.

Table 4 – Recommended Tools

Item	Description/Recommendations	Use
Tool Kit	Contains standard tools including: <ul style="list-style-type: none">• Assorted screwdrivers• Needle-nose pliers• Wire stripper• Diagonal cutters• Electrician's knife• Hammer• Crimping tool (Part # 5500-158)	Performs various installation procedures.
Magnet	6 lb. force (Part # 12287-001)	Activates the CMIU.
CMIU Manager	Mobile application for interfacing with CMIU	Provides a tool to use in installing and troubleshooting the installation of CMIUs.

Table 5 – Recommended Materials

Item	Description/Recommendation	Use
Cable	Solid 3 Conductor #22 AWG (black/green/red) (Part # 6431-352)	Connects CMIU to encoder register.
Moisture Protection Compound	Novaguard sealant (Part# 96018-072)	Covers exposed wires and terminal screws on register and CMIU.
Scotchloks	Part# 8138-125	Connects wall CMIU or replacement pit CMIU to encoder register.
Site Work Order	Documentation provided by your utility	Receives and records 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 them you need access to the water meter.
- Write in the ID number(s) of the CMIU you are about to install, if the site work order does not have a CMIU ID number.
- Verify that the ID number(s) matches the ID number(s) on the CMIU you are about to install, if the site work order already has a CMIU ID number.

Verifying/Preparing the Encoder Register

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

- ARB V
- ProRead

- ProRead AutoDetect
- E-CODER
- Competitive registers using Sensus which include: Sensus ECRIII, ICE, iPerl, OMNI, and electronic registers; also Hersey/Mueller Translator, Badger ADE, and HR ELCD

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



When a ProRead encoder register is used, 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 TDI. This can be accomplished through the ProRead receptacle before it is removed.

Installation of 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 AWG cable to make the connection from the encoder register to the CMIU.
3. Remove the terminal screw from the encoder register.
4. Strip $\frac{3}{4}$ inch insulation from the cable jacket, leaving only the three insulated wires.



Take precautions not to nick or cut the insulation on the three wires.

- Strip ½ inch of insulation from each of the three wires. See Figure 5 below.

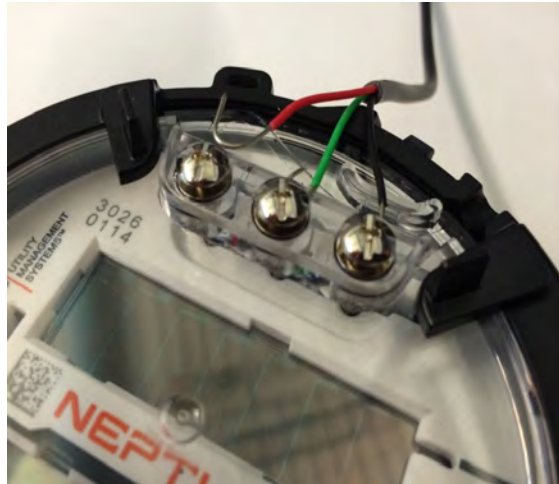


Figure 5 – Wiring a Neptune Encoder Register

- If required, connect the three conductor wires to the encoder register's terminal per the manufacturer's instructions. See Figure 5 and Figure 6.

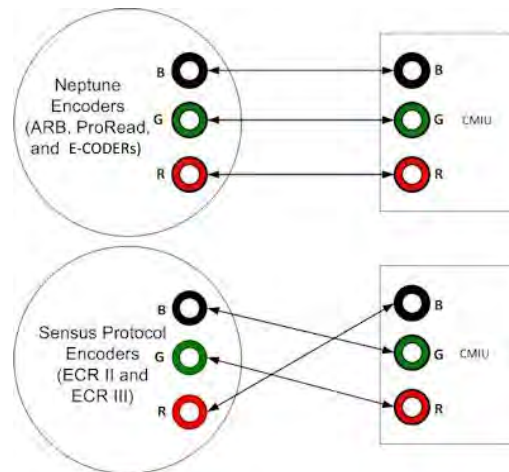


Figure 6 – CMIU Color Code for Wires

- Thread the cable around the strain relief posts of the encoder. See Figure 7 on the next page.



Figure 7 – Cable Threaded Around Strain Relief Posts

8. Apply sealant liberally and ensure that it encapsulates the terminal screws and exposed wires. See Figure 8.



Neptune requires Novaguard G661 sealant or Dow Corning Compound 4.



Figure 8 – Application of the Sealant

9. Snap the cover onto the encoder register. See Figure 9 on the next page.



Figure 9 – Covering the Terminal Screws

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



Do not exceed maximum cable lengths as defined in Table 1 on page 3. If the encoder register is prewired and potted, use Schotchkloks 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 wall installation of the CMIU.

Prior to Installation

Any existing network registers must be reprogrammed.



The CMIU is not capable of being connected to networked registers.

Storage

After receipt, inspect shipping containers and contents for damage prior to storage. After the inspection is complete, store the cartons in a clean, dry environment. Keep in mind that the CMIU has an internal battery. Storage for more than one year can affect product life. Be sure to use a first-in first-out inventory control system. See "Environmental" on page 4.

Unpacking

As with all precision electronic instruments, the CMIU should be handled carefully; however, no additional special handling is required.

After unpacking the CMIU, inspect 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 Wall Kit

Tools and Materials

Table 4 on page 7 and Table 5 on page 8 show the recommended tools and materials you need to successfully install the CMIU.



It is possible that some items do 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 lightening storm or under excessively wet conditions.

Installation and operation in moderate temperatures increase reliability and product life. 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. Refer to Table 6 on page 15 for maximum cable lengths.

Table 6 – Maximum Cable Lengths

Encoder Register	Maximum Cable Lengths
Neptune ARB V*	300 feet (91 meters)
Neptune ProRead/ E-CODER	500 feet (152 meters)
Sensus Protocol registers	200 feet (61 meters)

* Meets manufacturer's published specification for wire length between encoder.

Installing the CMIU

Remove the Main Housing

Complete the following steps to install the wall CMIU.

1. Remove the main housing from the mounting adapter.
See Figure 11.



Figure 11 – CMIU Main Housing

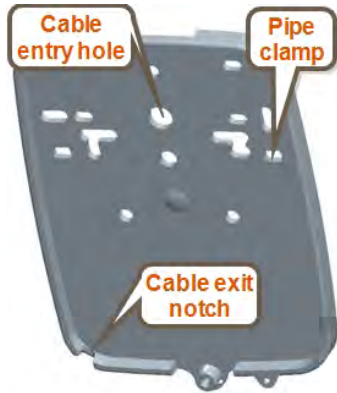



Figure 12 – Mounting Adapter

2. Study Figure 12 and the location requirements, and then decide how to install the CMIU.
 - The cable enters through the cable entry hole in the back of the mounting adapter.
 - When the CMIU replaces a receptacle, use the appropriate holes to allow reuse of the receptacle's original mounting holes. See Figure 12.
 - When mounting the CMIU to a pipe, use the pipe clamp holes to secure the mounting adapter to a pipe.



A variety of holes in the mounting adapter allows for a quick and easy installation.

Applying the Scotchloks



Figure 13 – Gel Cap Connections

1. Using Scotchloks gel caps, connect the register to the pigtail from the CMIU. See Figure 13.

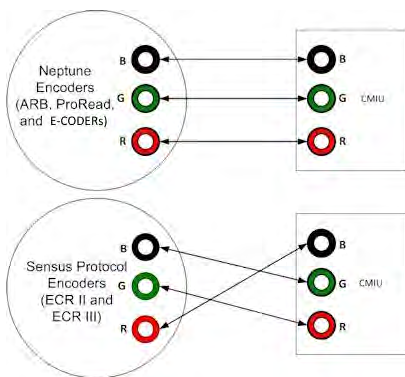


Figure 14 – Color Code for Wires

2. Pair the wires according to the color diagram. See Figure 14.



Figure 15 – Adapter Cable

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 as shown in Figure 15.



Figure 16 – Cable Exit Notch

7. Continue to guide the remaining wire through the cable exit notch at the bottom right side of the CMIU as shown in Figure 16.

Testing and Completing the Installation



Figure 17 – Securing Adapter

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. See Figure 17.



Figure 18 – Magnet Swipe

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. See Figure 18.

Testing the Installation



Figure 19 – CMIU Manager Menu

Figure 19 shows the CMIU Manager with the following options.

- Meter
- Cellular

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

To test the installation, complete the following steps.

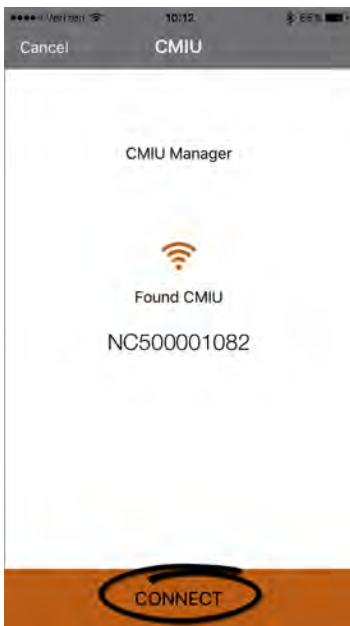


Before testing, be sure to swipe the CMIU with a magnet.



1. Open the CMIU Manager on an iOS device.
2. Select CMIU ID from list. See Figure 20.

Figure 20 – Select CMIUs



3. Click **Connect**. See Figure 21.

Figure 21 – Connect

Verify Signal Strength

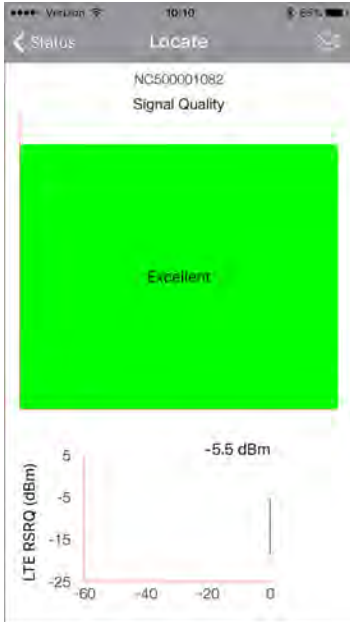



Figure 22 – Signal Strength

To verify the signal strength, complete the following steps.



1. Select  from the CMIU Manager menu.
2. Verify the signal strength. See Figure 22.
 - If the signal strength displayed is Excellent, the cellular coverage is adequate.
 - If the signal strength is marginal or poor, cellular connectivity can be impacted.



If the signal strength is marginal or poor, Neptune recommends moving the CMIU to another location to improve the signal.

Verify Meter Reading

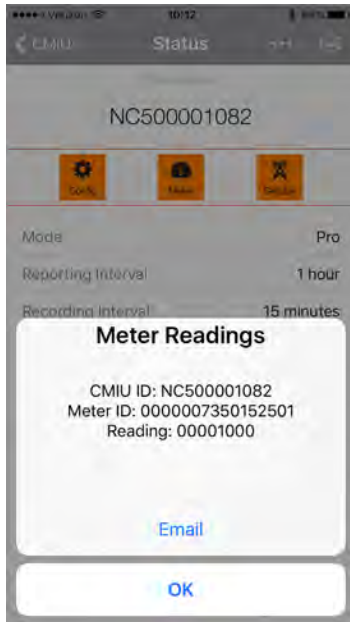



Figure 23 – Verify Meter Reading

To verify the meter reading, complete the following steps.

1. Select  from the CMIU Manager menu.
2. Verify the meter reading is valid. See Figure 23.
 - If the meter reading is valid, continue.
 - If the meter reading is invalid, verify all connections and test the installation again.

After the meter reading is verified, complete the following steps.



Figure 24 – Install Seal Wire

1. Install a seal wire or seal clip through the seal hole at the bottom of the main housing. See Figure 24.
2. Verify that the requirements of the site work order have been met and that you have recorded all information.
3. Clean up the installation site before leaving.

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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

Storage

After receipt, inspect shipping containers and contents for damage prior to storage. After the inspection is complete, store the cartons in a clean, dry environment. Keep in mind that the CMIU has an internal battery. Storage for more than one year can affect product life. Be sure to use a first-in first-out inventory control system. See Table 2 on page 4.

Unpacking

The CMIU must be handled 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 Pit

Tools and Materials

Table 4 on page 7 and Table 5 on page 8 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



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

Installation and operation in moderate temperatures increase reliability and product life. See "Environmental Conditions" on page 4.

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.



For maximum performance, the flange of the pit antenna needs to be located above the pit lid.

- Install pit antennas above the lid in low traffic areas as illustrated in Figure 26.

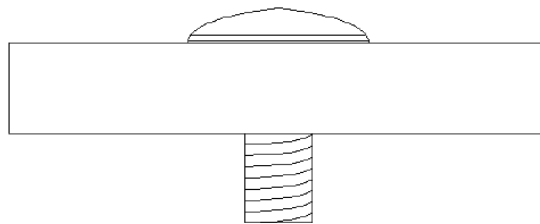


Figure 26 – Antenna Placement for Low Traffic Areas

- When installing in a high traffic area, Neptune recommends that the dome of the antenna be recessed in the pit lid as shown in Figure 27.
- Recessing the installation reduces the range of the antenna.

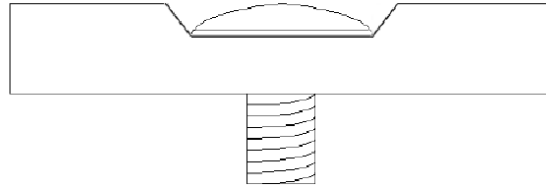


Figure 27 – Antenna Placement for High Traffic Areas

- 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 CMIU depends on the register's manufacturer and model. Refer to Table 7 for maximum cable lengths.

Table 7 – Cable Length and Manufacturer

Encoder Register	Maximum Cable Length
Neptune ARB V*	300 feet (91 meters)
Neptune ProRead / E-CODER	500 feet (152 meters)
Sensus Protocol Register	200 feet (61 meters)

* Meets manufacturer's published specification for wire length between encoder and remote receptacle.

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 "Site Selection" on the previous page.

Installing the Antenna



Figure 28 – Antenna and Pit Lid

1. Insert the antenna cable and housing through the 1 $\frac{3}{4}$ -inch hole in the meter pit lid. See Figure 28.



Figure 29 – Locking Nut on Antenna

2. Thread the locking nut onto the antenna (unthreaded end towards lid). See Figure 29.



Figure 30 – Securing the Locking Nut

3. Hand tighten the nut securely to the lid. See Figure 30.



Figure 31 – Installation Completed

Figure 31 shows a completed installation of the antenna.

Begin the Installation

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



Figure 32 – Seating Washer

1. Place the flat black rubber washer around the male antenna connector on the CMIU as shown in Figure 32.



Figure 33 – Apply Novaguard

2. Apply a coating of Novaguard around the base of the antenna connector and on the flat rubber washer. See Figure 33.
3. Using a torque wrench, connect the coaxial cable connector to the antenna on the CMIU housing tightening it to 16 inch-pounds.



Antenna connection should have Novaguard applied inside the connector.

Threading the F Connector

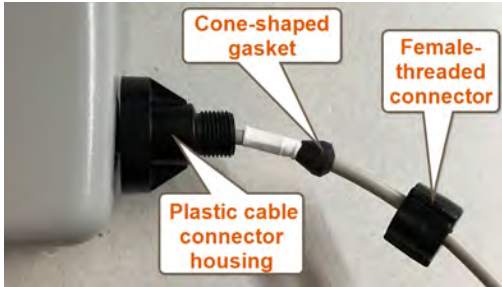


Figure 34 shows the different components of the connector.

Figure 34 – Parts of the Connector

Complete the following steps.



Figure 35 – Tightening 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 $\frac{1}{4}$ turn to the right as shown in Figure 35.
3. Slide the black cone-shaped gasket down the cable until it seats against the connector housing.



Figure 36 – Gasket and Connector

4. Slide the black plastic female-threaded connector down the coax cable.
5. Seat on top of cone-shaped rubber gasket and thread onto the three-lobed plastic latch plate as shown in Figure 36.
6. Finger-tighten the connector to depress cone-shaped rubber gasket.

This seals the coax cable from moisture intrusion.

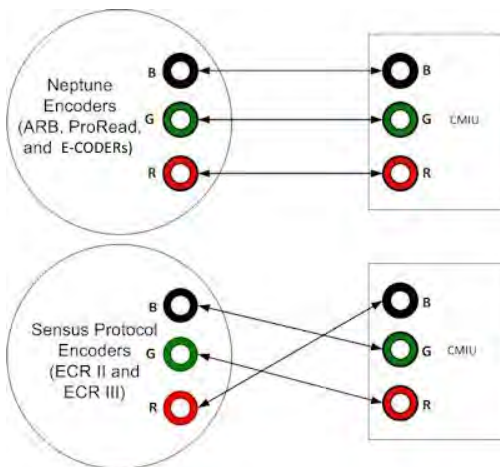
Installing the Scotchloks

Complete the following steps to install the Scotchloks.



Figure 37 – Scotchloks Connector

1. Complete steps outlined in "Pit CMIU Installation" on page 25 to install the CMIU through the lid.
2. Use 3M Scotchloks type UR connector to connect the CMIU wires to the encoder wires.
3. Hold the Scotchloks connector between the index finger and thumb with the red cap facing down. See Figure 37.



This diagram shows the CMIU color code for wires.

Figure 38 – CMIU Color Code for Wires

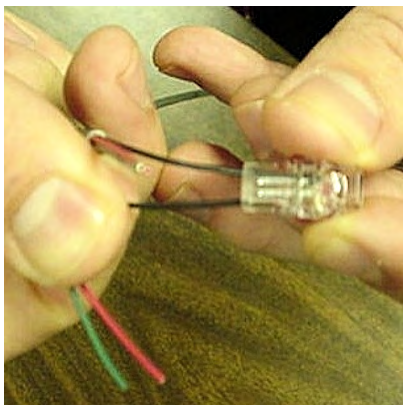


Figure 39 – Seating Connector Wires

4. Take a non-stripped black wire from the pigtail and a non-stripped black wire from the CMIU and insert wires into the Scotchloks connector until fully seated in the connector. See Figure 39.



Do not strip colored insulation from wires, or strip and twist bare wires prior to inserting in a connector. Insert insulated colored wires directly into the Scotchloks connector.



Figure 40 – UR Crimping Tool

5. Place the connector (red cap side down) between the jaws of the UR crimping tool as shown in Figure 40.

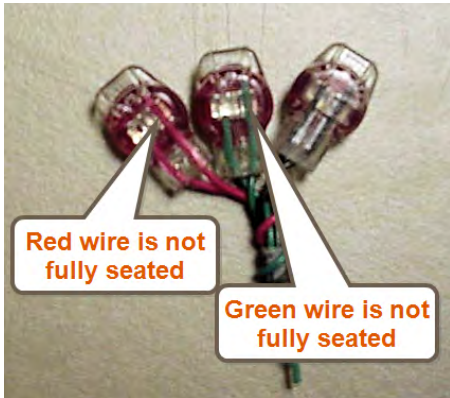


Figure 41 – Improper Connections

6. Check to ensure the wires are still fully seated before crimping the connector. Figure 41 illustrates improper connections due to wires not fully seated.



Figure 42 – Three Color Wires Connected

7. Squeeze the connector firmly with the proper crimping tool until you hear a pop and gel leaks out of the end of the connector.
8. Repeat steps two through seven for each color wire. See Figure 42.
9. After all three color wires have been connected, go to "Testing the Installation" on page 18 to ensure proper connections and the CMIU is functioning properly.

Connecting the Splice Tube

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

1. Take all three connected Scotchloks and push into the splice tube until fully encapsulated by the silicone grease. See Figure 43.



Figure 43 – Splice Tube

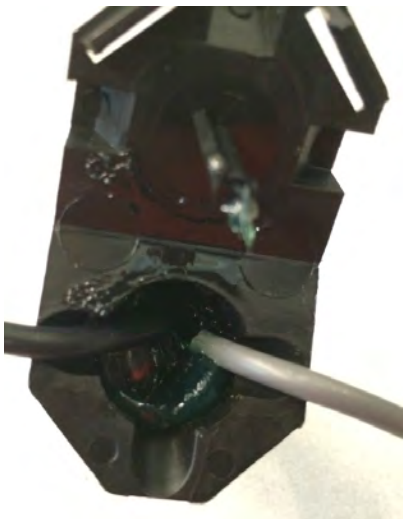


Figure 44 – Gray Wire in Slots

2. Separate each gray wire and place in the slots on each side as shown in Figure 44.
3. Snap cover closed to finish the installation.

Completing the Installation



Figure 45 – CMIU Attached to Antenna

1. Place the CMIU in the pit location using the following suggestions.

- 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, as shown in Figure 45.



Be careful not to lodge the CMIU between the meter box and any components inside the box.

Make sure the CMIU is placed in such a way that it does not lodge itself when the pit lid is removed.



Figure 46 – Magnet Swipe

2. 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. See Figure 46.

Testing the Installation

To test the installation, refer to topic "Testing the Installation" on page 18.

Chapter 6: Maintenance and Troubleshooting

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

Six Wheel Encoders

Normal Operation

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 an additional two zeros on the end to provide an eight-digit reading to the host software.

Four Wheel Encoders

Normal Operation

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



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

Troubleshooting

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

Table 8 – Reading Values - Error Codes

Reading Value	Definition	Troubleshooting
: : : : : :	Failure to retrieve reading	<ul style="list-style-type: none"> • Usually indicates a cut wire. Check the connection between the register and CMIU. • If using a non-autodetect ProRead register, verify that it has been programmed for three-wire mode.
?????????	<ul style="list-style-type: none"> • Indicates an ambiguous, bad read • Replaces ----- and HHHHHHHH 	

Chapter 7: Contact Information

Within North America, Neptune Customer Support is available Monday through Friday, 7:00 AM to 5:00 PM CST by telephone, email, or fax.

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.
 - Press **1** if you have a Technical Support Personal Identification Number (PIN).
 - Press **2** if you do not have a Technical Support PIN.
3. Enter the six-digit PIN number and press #.
4. Select one of the following options.
 - Press **2** for Technical Support.
 - Press **3** for maintenance contracts or renewals.
 - Press **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 Fax

To contact Neptune Customer Support by fax, send a description of your problem to (334) 283-7497. Please include on the fax cover sheet the best time of day for a Support Specialist to contact you.

By Email

To contact Customer Support by email, send your email message to hhsupp@neptunetg.com.

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Appendix A: CMIU Modes

The CMIU has three modes of operation.

- Basic
- Advanced
- Pro

Each mode has a distinct method of operation based on:

- Frequency of cellular connection to transmit the meter readings.
- Frequency in which the CMIU interrogates the register to store meter readings.

Table 9 – 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

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Appendix B: CMIU Manager

The CMIU Manager is an iOS application that is used to communicate 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, and 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 (see Figure 47) 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

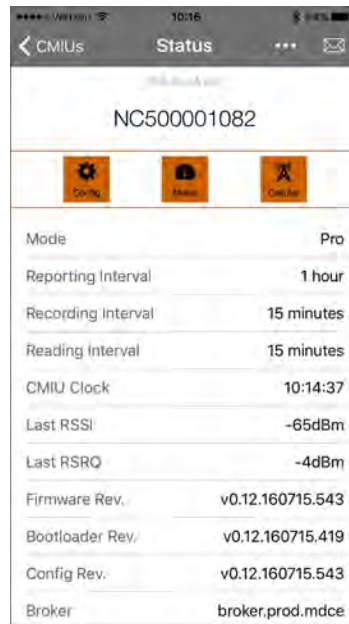
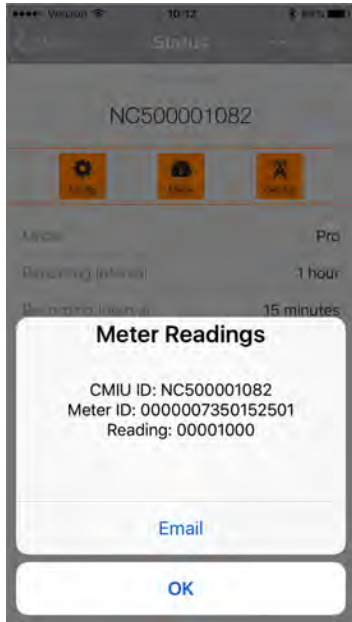


Figure 47 – CMIU Status Screen

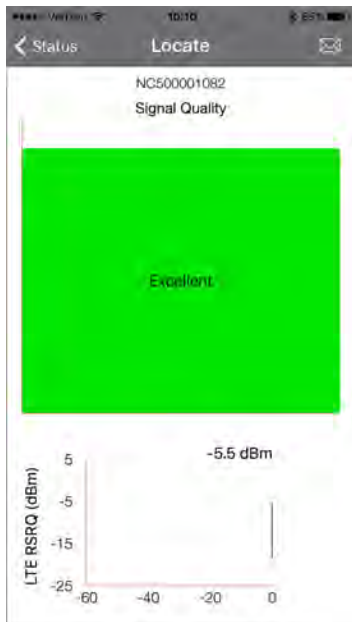
Meter Reading



The CMIU Manager can also be used to verify a valid installation of the CMIU with a connected register. Using the Meter button, an operator can verify the meter reading and register ID. See Figure 48.

Figure 48 – Meter Reading

Cellular Network



The Cellular Network screen allows an operator to view the signal strength of the cellular connection. This allows an operator to verify cellular connectivity during installation or troubleshooting of a CMIU. See Figure 49.

Figure 49 – Cellular Network Screen

Glossary

C

CMIU

Cellular Meter Interface Unit.

CMIU Manager

iOS application that is used to communicate with a CMIU via Bluetooth link during the installation, troubleshooting, and maintenance of the CMIU.

M

main housing

Main body of the CMIU that attaches to the mounting adapter.

maximum cable length

Length set by the manufacturer for the wire between the encoder remote receptacle. The specifications for this length are based on a solid three-conductor wire.

mounting adapter

Back plate of the CMIU that is attached to the wall.

N

Novaguard sealant

Moisture protection compound.

P

potting

Covering of an electronic or electrical device to protect it from the surrounding environment.

R

register read time

Read time options are 1, 5, and 15 minutes.

S

Scotchloks

Gel caps used to connect the register to the pigtail from the CMIU.

seal wire

Wire inserted into the seat holes adjacent to the main housing fastner screw. This seal must be broken to remove the main housing from the mounting adapter.

serial number

Unique identification number given to each CMIU at the factory. Custom serial numbers are not available.

splice tube

Device used to join two pieces of wire.

strain relief posts

Posts located on the encoder register and the back of the main CMIU housing.

T

terminal screw

Screws on the encoder register face that are used to connect and anchor the three (3) conductor wire to the register.

terminal screw cover

Plastic cover on the encoder register that protects the terminal screws and exposed wires.

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