NEPTUNE
TECHNOLOGY GROUP

Cello with Neptune E-Coder®
Quick Install Guide

CELLO WITH NEPTUNE E-CODER® QUICK INSTALL GUIDE

1 General Instructions

The Cello Quick Install Guide is for Cello implementation with the Neptune E-Coder®, the Badger HRELCD register, and the Sensus ICE 8-digit register.

You will need to purchase a USB to RS232 adapter to connect to the Cello for configuration and setup, if your PC does not have a 9-pin RS232 connector.

Cello Part Numbers

When ordering the Cello for the first time, you should include a PC Communication Cable (Part #: 13303-004).

The following table shows available parts for the Cello with Neptune E-Coder. See Table 1.

Table 1 Cello Part Number

Part Number	Description
13303-001	Standard Cello
13303-002	Cello flow input cable
13303-003	Hanging bracket
13303-004	PC communication cable
13303-005	WinGPS software CD
12482-003	Large capacity splice tube kit

2 Safety & Preliminary Checks

- Verify that you are at the location specified on the Site Work Order.
- Check that the site is safe for you and your equipment.

- Notify the customer of your presence and tell the customer that you must have access to the water meter.
- Confirm and/or update the Cello number on the Site Work Order.

When installing meters, follow any guidelines issued by your company in addition to those given in this guide. Never perform an installation during a lightning storm or under excessively wet conditions.

Before wiring the Cello to the register or registers, complete the configuration and setup process of the Cello. You can set up the Cello in the office before connecting to the register.

The Cello will need to send all identifying numbers to the data servers prior to reading the register data.

Domestic Wireless Voice Coverage maps are found at the following two links. Select the 2G coverage maps.

- Go to: http://www.att.com/maps/wireless-coverage.html#fbid=YfMhdJIrSq0

3 Configuring the Cello

Install the WinGPS software and save the configuration files that are included in the manufacturer's installation CD. If the configuration files are not found contact Neptune Customer Support.

To configure the Cello, complete the following steps.

After completing the setup of the Cello, an email MUST be sent the next business day to datacentre@technology.com asking to enable the Neptune export for this Cello ID. The email must include the Cello ID.

1 Remove the black screw cap from the Cello. See Figure 2.

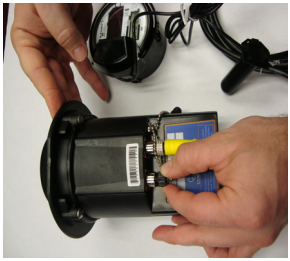
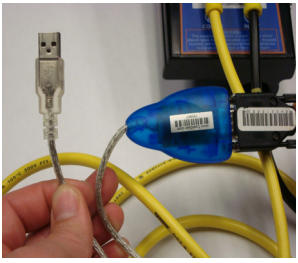


Figure 1 Black Screw Cap



2 Connect the Cello to the laptop using a **PC 9-pin RS232 to 6-way B/H communication input cable** (Part #:13303-004) with a serial to USB cable (not supplied). See Figure 2.

Figure 2 Connect Cello to Laptop

Accessing the WinGPS Software

WinGPS software is compatible with the following:

- Windows XP®
- Windows Vista
- Windows 7 (32 or 64 bit)
- Windows 8 (32 or 64 bit)

To access the WinGPS software (Part #:13303-005) on the PC and set up the Cello, complete the following steps.

1 Double-click  on the desktop to access the setup software for the Cello. The following screen appears.

Figure 3 WinGPS Screen

2 From the Menu bar, select **Tools | Options** if this is your first time opening the WinGPS software.

The WinGPS options screen appears. See Figure 4 on page 5. On initial access, you must choose a Comm Port; going forward the WinGPS Options screen remains the same.

Figure 4 WinGPS Options

3 Locate the field labeled **Configuration files directory**.

4 Click **Browse** and navigate to the file folder where you saved the **CNEP1.cfg** and **CNEP2.cfg** files.

5 Select this folder.

- CNEP1.cfg is for one register application.
- CNEP2.cfg is for two register applications.

6 Click **OK**.

7 Click Communicate on the main screen to initiate communication between the WinGPS software and the Cello Logger. See Figure 3 on page 4.

The following screen appears.

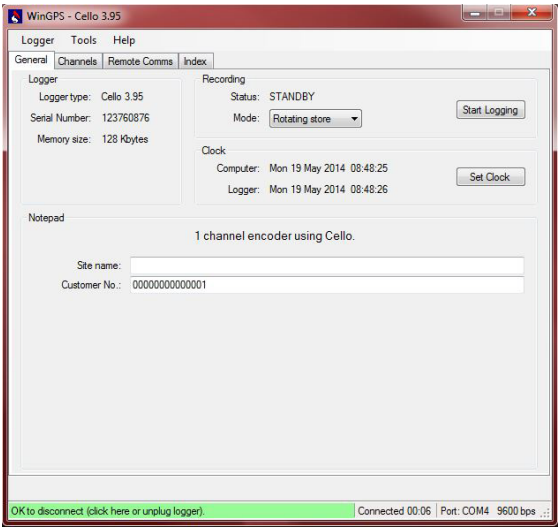


Figure 5 WinGPS - General Tab

On the General Tab

1 Select **Logger** at the top of the screen, and then select **Configure** (or press **Ctrl + C).**

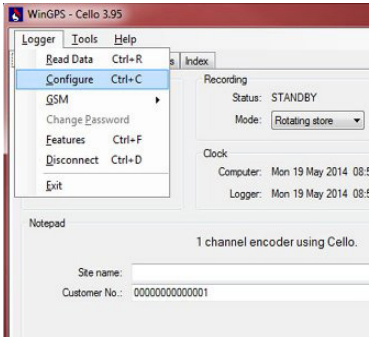


Figure 6 WinGPS - Logger

2 From the WinGPS folder, select one of the following files:

- **CNEP1.cfg** (one register application).
- **CNEP2.cfg** (two register applications).

3 Double-click the**.cfg file**, then click **Configure** to send the configuration to the Cello.

4 Type the following when configured:

- **Site Name** (such as Hospital Cello 300 Main Street)
- **Customer Number** (Utility Customer Number, such as the Utility's Zip Code)

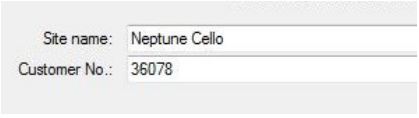


Figure 7 Site Name and Customer Number

5 Click **Save**.

On the Channels Tab

On the Channels tab you have significant columns of data. See Figure 8 on page 8.

- The Channel column shows the Channel Name.
- The Range column shows the scale factor and unit of measure.

- The Live Input column shows the current read once a register is connected and polled.
- The Rate column shows the interval data timing.

The Communications Server populates the Channels tab with the correct information once the initial Config and Setup file is received.

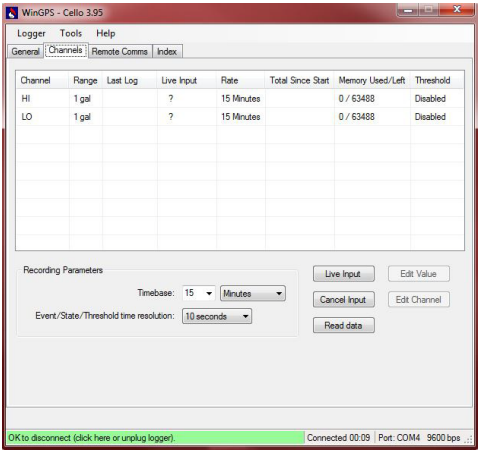


Figure 8 WinGPS - Channels Tab

After connecting the register, click **Live Input** and the current read displays in the field to confirm Register to Cello connectivity. See Figure 9.

Figure 9 Live Input Button and Reading

The registers connected to the Cello are identified by the number on the Cello ID Label, as shown in Figure 10 on page 9.

The Cello ID with a 2 for HI and a 3 for LO are visible on the Cello Label. Use these numbers to identify the registers once they are imported into N_SIGHT™.

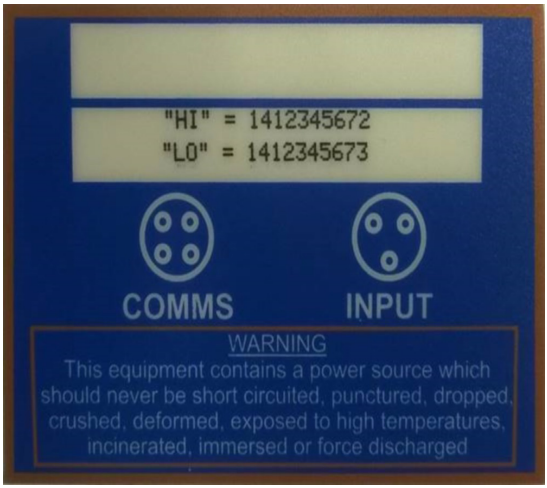


Figure 10 Cello ID Label

To edit the Channel fields:

1 Click **Channel** to highlight. See Figure 11

Channel	Range	Last Log	Live Input	Rate	Total Since Start	Memory Used/Left	Threshold
HI	1 gal		?	15 Minutes		0 / 63488	Disabled
LO	1 gal		?	15 Minutes		0 / 63488	Disabled

Figure 11 Channel Highlighted

2 Click **Edit Channel**. See Figure 12.

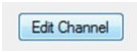


Figure 12 Edit Channel Button

Leave the Logging Rate as the default value. Changing can increase data charges. Look at the Ch Name and type the corresponding MIU ID from the Cello ID Label. Edit the Scale Factor field to match the utilities unit of measure, gal= gallons, cuf= cubic feet, etc. See Figure 12.

Figure 13 MIU ID and Scale Factor Fields

Neptune recommends using the HI and LO numbers found on the Cello label for the MIU ID.

When connecting two registers, use the HI and LO numbers for the MIU ID.

When setting up the Cello, include the HI and LO ID numbers on a utility work order for reference.

3 After editing is completed, click **OK**.

On the Remote Comms Tab

1 Select the **Remote Comms** tab.

The following screen appears.

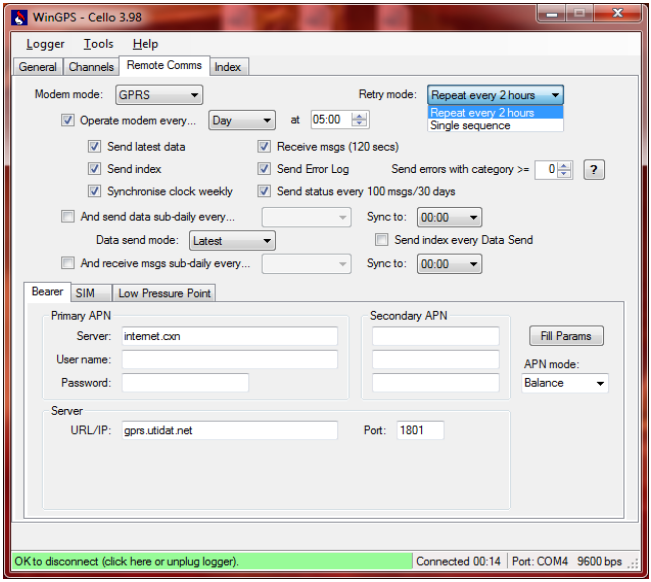


Figure 14 WinGPS - Remote Comms Tab

2 Select the **Operate modem every** check box.

- Leave the drop-down selection as **Day**. This is the default.
- Select the time for the modem call in time. The default is 5:00 a.m.

3 Click the **Retry Mode** drop-down menu, and choose **Repeat every 2 hours**.

All other values can be left as the defaults. Changing these to a more frequent reporting interval can reduce battery life and increase cellular data charges.

On the Index Tab

1 Select the **Index** tab.

The following screen appears.

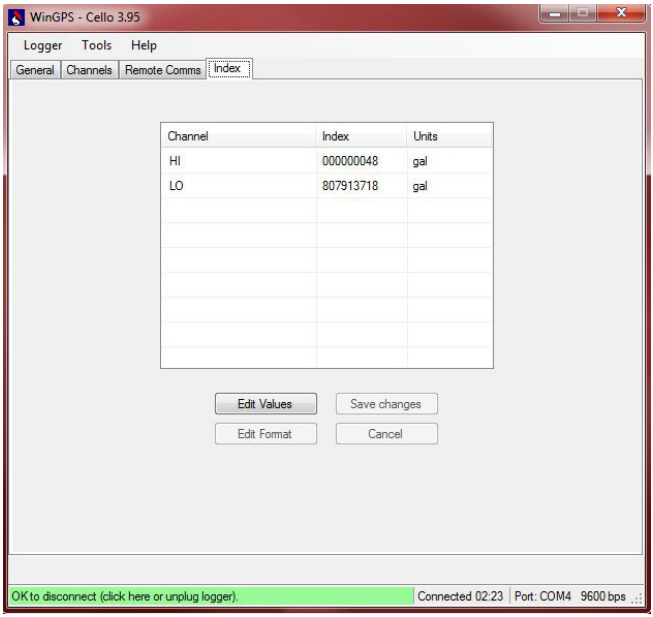


Figure 15 WinGPS - Index Tab

2 Confirm the Index is formatted like the reading you are expecting.

The reading that comes from the register populates this field after it is connected.

On the General Tab

1 Select the **General** tab.

The following screen appears.

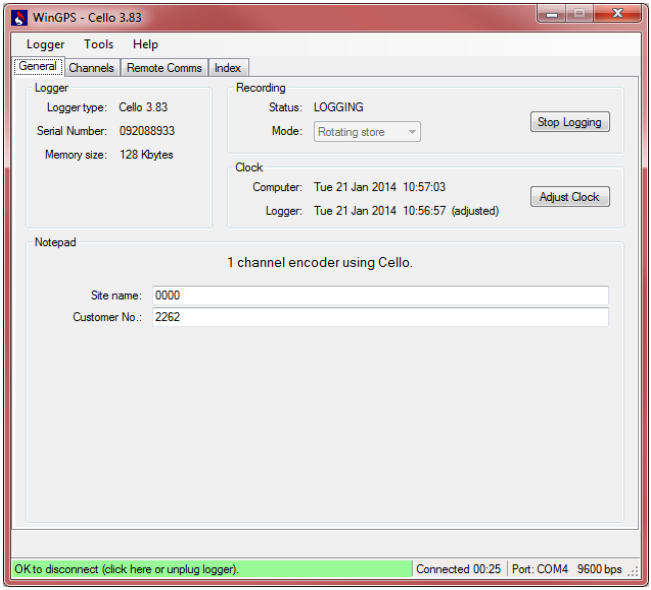


Figure 16 WinGPS Complete Configuration

2 Click **Adjust Clock** to synchronize the clock with the PC.

3 Click **Start Logging**.

A WinGPS prompt appears to Clear Data and Start recording.

4 Choose **Now** or another specified time.

5 Leave the **Monitor Comms after Start** selected.

The communications dialog appears for the duration of the Cello's communications.

6 Confirm there is a message stating **Connected to Server**. If this message does not appear, the unit will retry every two hours until the unit is successfully connected.

When the communication is complete, the dialog displays **modem off**. At this time, it is safe to disconnect the Cello from the PC and replace the communication cap.

7 Disconnect the Cello from the PC by removing the **PC 9-pin from the 6-way B/H communication input cable** that connected the Cello to the laptop. See Figure 2 on page 3.

8 Replace the black screw cap that protects the communications port. See Figure 2 on page 3.

An email MUST be sent the next business day to **datacentre@technolog.com** asking to enable the Neptune Export for this Cello ID. **The email must include the Cello ID**.

4 Wiring Diagram for the E-Coder Register

- The number on the label attached to the Cello is used, and not the ID number programmed into the register.
- Before wiring the E-Coder register, make sure the cable is long enough. When the installation is complete, the pit lid can be removed easily without straining the cable.

22 American Wire Gauge (AWG) three-conductor cable must be used to connect the encoder register to the Cello.

Connect the three-conductor wire to the E-Coder register's terminals per the manufacturer's instructions.

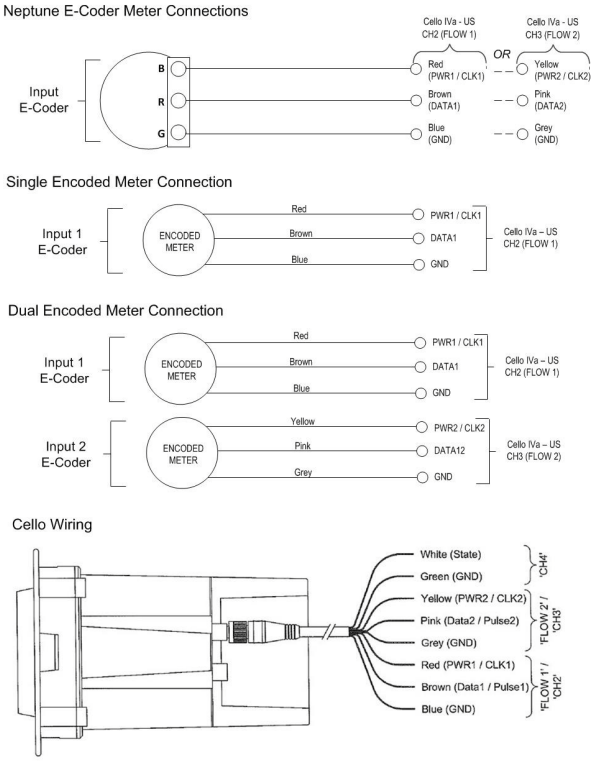


Figure 17 Neptune E-Coder Color Codes for Wires

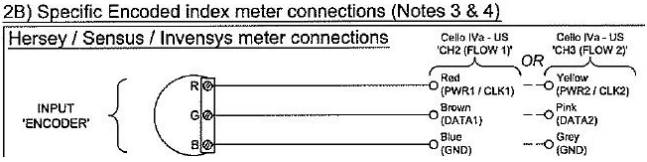


Figure 18 Cello Wiring for Sensus and Badger

Table 2 Badger Color Codes for Wires

Cello	Badger
Blue	Black
Red	Red
Brown	Green

All encoder terminal connections that are not pre-wired and potted must be covered with Novagard (G661) or Dow® Corning Compound 4.

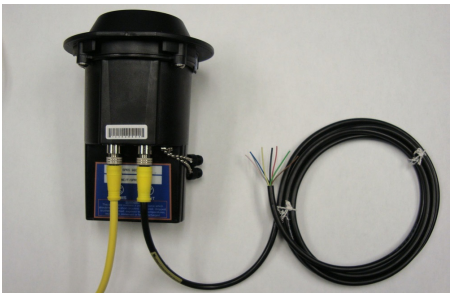


Figure 19 Cello Wires

5 Wiring the E-Coder and Cello

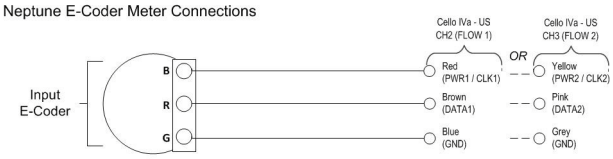


Figure 20 E-Coder and Cello Wiring

1 Use a 3M Scotchlok Type UR connector to connect the MIU wires to the encoder wires.

2 Hold the Scotchlok connector between your index finger and thumb with the red cap facing down. See Figure 21.

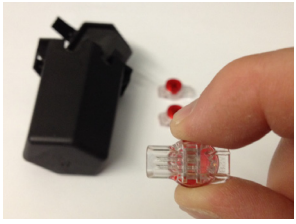
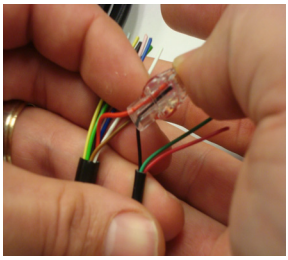


Figure 21 Scotchlok Connector

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



3 Using a non-stripped black wire from the pigtail and a non-stripped red wire from the Cello, insert the wires into the Scotchlok connector until fully seated in connector. See Figure 22

Figure 22 Seating Connector Wires

4 Place the connector (red cap side down) between the jaws of the UR crimping tool as shown in Figure 23

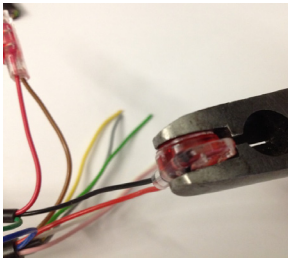
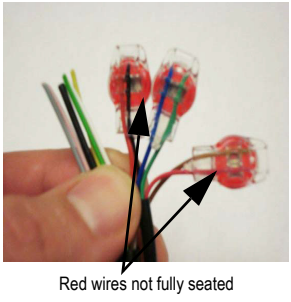


Figure 23 UR Crimping Tool



5 Check to ensure that the wires are still fully seated in the connector before crimping the connector. Figure 24 shows improper connections as the wires are not fully seated.

Figure 24 Improper Connections

6 Squeeze the connector firmly with the proper crimping tool until you hear a pop and gel leaks out the end of the connector.

7 Repeat steps 2 through 6 for each color wire.

When all three color wires are correctly seated and connected in the Scotchloks, the unit is properly wired. See Figure 25

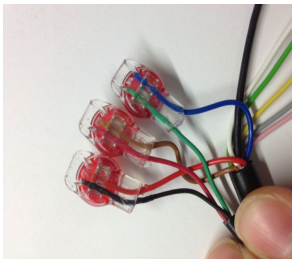
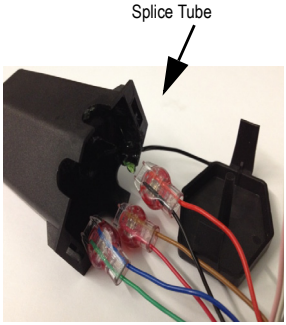


Figure 25 All Three Color Wires Connected

Connecting the Splice Tube

To finish the installation of the Scotchloks, complete the following steps to install the Connector King Splice Tube (Kit Part Number 12482-003).



1 Take all three connected Scotchloks and push them into the splice tube until fully covered by the silicone grease. See Figure 26.

Figure 26 Splice Tube

Neptune recommends the Large Capacity King Splice Tube Kit (PN 12482-003) for use with the Cello communication input cable.

2 Separate each black wire, then place them in the slots on each side of the splice tube as shown in Figure 27.

Figure 27 Black Wires in Slots

3 Snap the cover closed, making sure that both black wires are properly seated in the slots of the splice tube.

6 Configuring N_SIGHT™ R900® Host Software to Process Cello Data

Neptune Customer Support MUST be contacted prior to setting up the host software to confirm software version and generate a user name and password for the secure FTP server.

You must have the R900® Gateway module activated in your host software in order for this capability to be available. Contact Customer Support at (800) 647-4832 to get further information regarding the activation of additional modules.

Setting Up the FTP Host Information

In N_SIGHT R900, complete the following.

1 Click **Utilities**.

2 Click **Table Maintenance**.

3 Click **FTP Host Information** from the drop-down selection list.

4 Click  in the toolbar.

5 Complete the following information in the new line:

- **FTP Server Desc**, type **Cello.**
- **Address**, type **ftp.cello.neptunetg.biz.**
- **User-id**, provided by Neptune Customer Support**.**
- **Password**, provided by Neptune Customer Support**.**
- **FTP Server Directory**, type **readings.**
- **Local Sync Directory**, type **c:\users\public\neptune\temp.**
- **Download File Extension**, type.**dat.**
- **Rename Extension**, type.**xxx.**
- **Data File Extension**, type.**dat.**
- **Log File Extensions**, leave **blank.**

6 Click **Save**.

Setting Up the Host Software

You must complete the following steps in the host software before the host software can communicate with the FTP site.

Setting Up the CELLO Table as a Collector

In N_SIGHT R900, complete the following.

1 Click **Utilities**.

2 Click **Table Maintenance**.

3 Click **Gateways/Belt Clip Table** from the drop-down selection list.

4 Click  in the toolbar.

5 Complete the following information in the new line:

- **Serial Number**, type **CELLO.**
- **Collector Description**, type **CELLO.**
- **Address** (optional), type the address.
- **City** (optional), type the city.
- **State** (optional), type the state.
- **Zip** (optional), type the zip code.
- **Site ID,** type the assigned site ID provided by Neptune.
- **Hardware Version**, select **V1.**
- **FTP Server**, select **CELLO.**

6 Click **Save**.

7 Click 

on the tool bar, and then click **OK** to save the configuration settings.

Enabling Gateway File Processing Events

1 Click **Utilities**.

2 Click the **Gateway** tab.

3 Click **Gateway File Processing Event Enabled**.

4 Click **Save**.

7 Mounting the Cello

Mounting instructions for the Cello can be found in the *Cello Mk.IVb User Guide 3.*

Figure 28 Cello Bracket Closeup

8 Checklist

Before leaving the installation site, be sure to do the following.

- ☑ Record the MIU ID for each register.
- ☑ Verify that you have followed all requirements in this Quick Install Guide.
- ☑ Verify that you have recorded all required information.
- ☑ Clean up any installation debris.
- ☑ Verify that the requirements of the site work order have been completed.
- ☑ Let the customer know you are finished or when you will return to complete your work if you are unable to finish in one day.

9 Contact Information

Within the United States, Neptune Customer Support is available Monday through Friday, 8:00 a.m. to 6:00 p.m. Eastern Standard Time, by telephone or fax.

To contact Customer Support by phone, call (800) 647-4832. If all Support Technicians are helping other customers, your call will be routed to the Customer Support voice mail system. Please leave your name, the name of your company, and your telephone number. Your call will be returned during business hours in the order it was received.

To contact 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 Technician to contact you. To contact Customer Support by email, send your letter to the following address: hhsupp@neptunetg.com.

Notes

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