



Advantage II Operating Instructions



Advantage II
Operating Instructions

Copyright

This manual is an unpublished work and contains the trade secrets and confidential information of Neptune Technology Group Inc., which are not to be divulged to third parties and may not be reproduced or transmitted in whole or part, in any form or by any means, electronic or mechanical for any purpose, without the express written permission of Neptune Technology Group Inc. All rights to designs or inventions disclosed herein, including the right to manufacture, are reserved to Neptune Technology Group Inc.

The information contained in this document is subject to change without notice. Neptune reserves the right to change the product specifications at any time without incurring any obligations.

Trademarks Used in This Manual

The following are registered trademarks of Neptune Technology Group Inc.:

- ProRead
- ARB

Other brands or product names are the trademarks or registered trademarks of their respective holders.

FCC Notice

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) 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.
- 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.

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.

Professional Installation

In accordance with section 15.203 of the FCC rules and regulations, the MIU must be professionally installed by trained meter installers.

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

Industry Canada (IC) Statements

Section 8.4 of RSS-GEN

This device complies with Industry Canada License-exempt RSS standard(s). 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.

Cet appareil est conforme aux normes RSS exonérées de licence d'Industrie Canada. L'opération est soumise aux deux conditions suivantes: 1) cet appareil ne doit pas provoquer d'interférence, et 2) cet appareil doit accepter toute interférence, y compris les interférences pouvant entraîner un fonctionnement indésirable de l'appareil.

Section 8.3 of RSS-GEN

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

This radio transmitter IC: 4171B-L900M has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

- Maximum permissible gain of +1 dBi and required impedance of 75 ohm.
- Approved Antenna types:
 - R900[®] Pit Antenna, part number 12527-XXX.
 - High Gain R900[®] Pit Antenna, part number 13586-XXX.
 - R900[®] Wall Antenna, part number 13717-000.
 - Wire monopole, part number 12641-XXX.

En vertu de la réglementation d'Industrie Canada, cet émetteur radio ne peut fonctionner qu'avec une antenne d'un type et un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Pour réduire les interférences radio potentielles avec d'autres utilisateurs, le type d'antenne et son gain devraient être choisis de manière à ce que la puissance rayonnée isotropiquement équivalente (e.i.r.p.) ne soit pas supérieure à celle nécessaire à une communication.

Cet émetteur radio IC: 4171B-L900M a été approuvé par Industrie Canada pour fonctionner avec les types d'antennes énumérés ci-dessous avec le gain maximal admissible et l'impédance d'antenne requise pour chaque type d'antenne indiqué. Les types d'antenne non inclus dans cette liste, ayant un gain supérieur au gain maximal indiqué pour ce type, sont strictement interdits pour être utilisés avec ce périphérique.

- Gain maximal admissible de +1 dBi et impédance requise de 75 ohms.
- Types d'antenne approuvé
 - Antenne de puits R900[®], numéro de pièce 12527-XXX
 - Antenne de puits à gain élevé R900[®], référence 13586-XXX
 - Antenne murale R900[®], numéro d'article 13717-00
 - Fil monopôle, numéro d'article 12641-XXX

Advantage II Operations Guide
 Literature No. OI ADVANTAGE 04.06 01.2021
 Part No. xxx

Neptune Technology Group Inc.
 1600 Alabama Highway 229
 Tallassee, AL 36078
 Tel: (800) 633-8754
 Fax: (334) 283-7293

Copyright © 2006 - 2021
 Neptune Technology Group Inc.

All Rights Reserved.

<i>Chapter 1: Product Description</i>	1
Power On the Advantage II	1
<i>Chapter 2: Use the Advantage II</i>	3
Obtain a Meter Reading from a Remote ARB® Receptacle	3
Obtain a Meter Reading from a Remote Touch Pad	3
<i>Chapter 3: Troubleshooting</i>	5
ARB® End Probe Error	5
ProRead™, Sensus End Probe Error	5
Wiring Errors	5
Short Circuit	6
Open Circuit	6
Correcting Wiring Errors	6
Menu Options	6
Retransmit	7
Review	7
Recharging the Battery	7
Low Battery Message	8
Replacing the Battery	8
Disposing of Old Batteries	8
Repairing the Advantage II	8
Contact Information	9
By Phone	9
By Email	9
<i>Glossary</i>	11
<i>Index</i>	13

This page intentionally left blank.

Figures

Figure 1 – Normal Meter Reading Screen	1
Figure 2 – Captured Reading	3
Figure 3 – ARB® End Probe Error	5
Figure 4 – ProRead™ End Probe Error	5
Figure 5 – Short Circuit Screen	6
Figure 6 – Open Circuit Screen	6

This page intentionally left blank.

The Advantage II is a convenient, lightweight meter reading device that provides single-handed reading of remote readings through radio frequency communications. Readings can be transmitted to devices running Neptune® 360™ Mobile, or transmitted to handhelds. Use the unit as a visual reader, an encoder installation testing device, or as a cordless interface for collecting and transmitting meter readings to a Neptune handheld through radio frequency communications. The Advantage II is designed to read ProRead™ and Sensus remotes from the round end probe, while the rectangular end probe reads ARB® remotes. A model that includes a wand extension for pit mounted remote pads is also available.

The Advantage II displays meter reading data on the unit's screen. Simultaneously, it transmits this same data via RF to a Neptune handheld that is equipped with an Advantage II or DAP RF Receiver Adapter. Each Advantage II unit ships with:

- Four orange safety stickers. Place the stickers on the sides of the unit near the probe ends.
- A metal ring and hand strap. Clip the strap into the holes on either side of the screen.

Power On the Advantage II

Follow this step to power on the unit.

1. Using the tip of a pen or pencil, press the **ON/OFF** key once to activate the unit. The ON/OFF switch is a miniature recessed push switch located on the right side of the ARB or blank end of the unit. The unit plays a tone. Copyright and version data momentarily display on the screen, followed by the normal meter reading screen:



Figure 1 – Normal Meter Reading Screen



- The meter reading may be preceded by an N or an R.
- The trigger pull or block insert also orients the display to the proper viewing direction.



- Neptune ProRead meter readings are followed by a single character indicating meter type (for example, w = water) and a three-character user code.
- The trigger must be pulled down to obtain a reading from a pad. A trigger pull is not required if inserting the ARB interrogator into the ARB receptacles. The reading is automatic.

This chapter provides the steps to use the Advantage II.

Obtain a Meter Reading from a Remote ARB[®] Receptacle

1. First, make sure the unit is on. If it is off, press the **ON/OFF** key once to turn it on.
2. To obtain a meter reading from a remote ARB[®] receptacle, insert the rectangular ARB interrogator squarely into the ARB receptacle.

The unit plays a short tone and displays the meter reading.

Obtain a Meter Reading from a Remote Touch Pad

1. Place the round end probe squarely onto the touch pad.
 2. Pull and hold down the trigger to obtain the meter reading.
- The unit plays a short tone and displays the meter reading screen.



Figure 2 – Captured Reading

The captured reading displays on the unit until you:

- Capture another reading,
- Pull the trigger,
- Press a key.

This page intentionally left blank.

This chapter provides the procedures to troubleshoot the Advantage II meter.

ARB[®] End Probe Error

If the ARB[®] end probe is NOT making proper contact with a remote receptacle when inserted in the block, the unit plays a long error tone. The following screen appears.

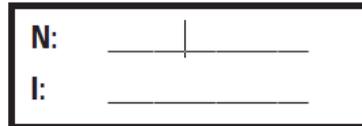


Figure 3 – ARB[®] End Probe Error

ProRead[™], Sensus End Probe Error

If the ProRead[™], Sensus end probe is NOT in contact with a remote pad when you pull the trigger for an extended period of time, the unit plays a long error tone. The following screen appears.

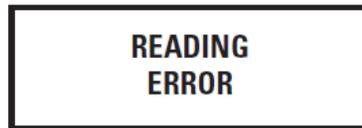


Figure 4 – ProRead[™] End Probe Error

1. To correct either end probe error condition, position the probe so that proper contact with the remote is achieved. For ProRead and Sensus meters, pull the trigger after making proper contact.

Wiring Errors

Two types of wiring errors can occur: short circuits and open circuits. On screen, short circuits appear as an H and open circuits appear as a dash (-).



The autosearch feature in the Neptune[®] handheld does NOT function when there is a wiring error in the captured ID.

Short Circuit

An **H** in the place of a number represents a short circuit. It usually means that the copper portions of two wires are touching each other. A screen similar to the following is displayed.



Figure 5 – Short Circuit Screen

Open Circuit

An open circuit is represented by a dash (-) in place of numbers. This usually means that a wire is broken or cut which can be caused by corrosion or contamination of the pins of an ARB V box. A screen similar to the following appears.

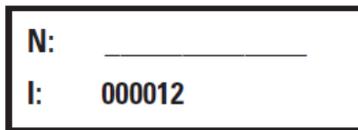


Figure 6 – Open Circuit Screen

Correcting Wiring Errors

Follow these steps to correct a wiring error.

1. Check the pins in both the ARB V remote receptacle and the front interrogator of the Advantage II for dirt, corrosion, and other contamination.
2. Clean the pins if required.
3. Insert the Advantage II again to obtain the reading.

Menu Options

Each time you press a MENU key a different menu option is displayed. To clear the menu return to the normal meter reading screen, continue pressing MENU. The menu options are:

- Retransmit Last.
- Retransmit All.
- Review.

Retransmit

The Advantage II stores the previous five captured meter readings. This option allows you to retransmit either the last reading or the previous five readings captured to the Neptune 360 mobile device or a handheld. As the unit captures additional readings it overwrites the oldest reading.

1. Press ITEM to display RETRANSMIT LAST.
2. Press ENTER to retransmit the last read captured.

or,

1. Press ITEM again to display RETRANSMIT ALL.
2. Press ENTER to retransmit all readings.

or,

1. Press MENU to go to the next menu option.

Review

Reviews any readings stored.

1. Press ITEM to display the last reading captured.
2. Press ITEM again to see the next reading.
3. If the unit contains no readings, REVIEW remains on the screen.

or,

1. Press MENU to go to the next menu option.

Recharging the Battery

A battery charger is supplied with each Advantage II unit. Use the supplied charger to recharge the battery. Using any other type charger voids the warranty.

1. Plug the charger transformer into a 110V outlet.
2. Insert the charging plug into the charging jack in the Advantage II handle. Make sure the plug is fully seated into the jack. The amber light on the transformer illuminates when a good connection is made.



- During daily use, recharge the unit overnight, every night.
- During long periods of storage or non-use, DO NOT charge the unit. Before using the unit again, charge it for 16 hours.
- Use the ON/OFF button to turn the unit On, Off, or Reset it.

Low Battery Message

The Advantage II displays a low battery message and ceases operating when the battery is too low for operation. The keypad remains operational, but the unit does not capture meter readings.

If a low battery condition is detected, the low battery message appears and the unit remains in this mode until you recharge the battery or until it ceases operation.

Replacing the Battery

Replacement batteries are available from your local Neptune sales representative. If you want to replace the battery yourself, follow these steps.

1. Turn the battery cover screw and remove the cover.
2. Turn off the unit and carefully disconnect the battery at the white connector.
3. Reconnect the new battery in the same connector orientation.
4. Replace the battery, reposition the battery cover, and turn the screw to lock it into place.
5. Press the **ON/OFF** key once to turn on the unit.

Replacement battery part number: 11992-101 (comes with wiring harness and connector)

Disposing of Old Batteries

You must dispose of old batteries properly. Never put old batteries in a trash receptacle. Use the return procedure and address on the next page to return old batteries from any Neptune meter reading product back to Neptune for disposal.

Repairing the Advantage II

For help on the Advantage II System, contact Neptune Customer Support at the number on the following page and follow the instructions the support representative provides.

Our repair department attempts to repair equipment as quickly as possible. If you require Express shipping (Federal Express, UPS Blue or Red Label), please notify Customer Support by telephone to expedite your order. To obtain pricing or order related parts and equipment, contact your local Authorized Neptune sales office, Authorized Neptune® Distributor, or contact the Factory Customer Service Department at 800-645-1892.

Contact Information

Within North America, Neptune Customer Support is available Monday through Friday, 7:00 A.M. to 5:00 P.M. Central Standard 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, 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.

This page intentionally left blank.

A

ARB®

Automatic Reading and Billing.

AWWA

American Water Works Association.

D

DAP

aDAPtable - DAP technologies is a subsidiary of Roper Technologies.

F

FCC

Federal Communications Commission.

I

Imperial Gallon

Unit for measuring a volume of liquid or the capacity of a container for storing liquid, not the mass of a liquid. One imperial gallon is equivalent to approximately 1.2 U.S. liquid gallons.

P

PSI

Pounds per square inch.

R

RMA

Return Material Authorization.

U

U.S Gallon

U.S. liquid gallon is defined as 231 cubic inches and equates to approximately 3.785 liters.

UL

Underwriters Laboratory.

UME

Unitized Measuring Element.

B

battery part number 8

battery warranty 7

C

captured meter readings 7

contamination 6

corrosion 6

Customer Support 8-9

D

DAP 1

distributor, Neptune® 8

E

error tone 5

M

meter readings 7

P

pad, remote 5

part number, battery 8

pins 6

R

reading tone 3

readings, meter 7

remote pad 5

S

specifications, environmental 3

T

tone

error 5

reading 3

tools and materials 5

W

warranty 7



Neptune Technology Group Inc.

1600 Alabama Highway 229
Tallasse, AL 36078
USA Tel: (800) 633-8754
Fax: (334) 283-7293

Neptune Technology Group Canada Co.

7275 West Credit Avenue
Mississauga, Ontario L5N 5M9
Canada Tel: (905) 858-4211
Fax: (905) 858-0428

Neptune Technology Group Inc.

Avenida Ejercito Nacional No 418
Piso 12, Despacho 1203
Colonia Polanco V Sección
C.P. 11560 Delegación, Miguel Hidalgo
Mexico D.F.
Tel: (55) 5203-5708, (55) 5203-4032,
(55) 5203-5294

Online
www.neptunetg.com

