

This supplement should be used together with the user's manual for PHL2700.

This supplement describes the RF-ID feature of the PHL2700 and provides additional information or changes of the general functioning of PHL2700-RFID terminal in comparison to the standard PHL2700 terminal.

The exact behavior of the terminal depends on the installed user application. For instructions about applications please consult the documentation of that software.

Read this supplement for RF-ID and the user's manual for PHL2700 carefully before using the terminal, to maximise the efficiency of this terminal.

The changes for PHL2700 RF-ID in comparison to the standard PHL2700, (displayed in bold text) concerns:

Chapter 1	added RF-ID technology
Chapter 2	updated details of terminal
Chapter 3	use different software
Chapter 4	added scanning instructions for RF-ID
Chapter 5	unchanged
Chapter 6	added RF-ID specifications updated battery specifications
Chapter 7	added troubleshooting for RF-ID scanning
Chapter 8	new terminal article code new software article code

Laser Terminal PHL 2700

with

RF - Identification

feature

RF-ID SUPPLEMENT

CAUTION: This user's manual is preliminary and may be revised or withdrawn at any time without prior notice.

Copyright 2003, Opticon Sensors Europe B.V.
All rights reserved.

**RF-ID
SUPPLEMENT**

1

INTRODUCTION

The terminal is a compact, programmable handheld terminal, and is well suited for a variety of indoor portable applications. It has a built-in laser scanner that can scan all popular bar code labels at varying distances.

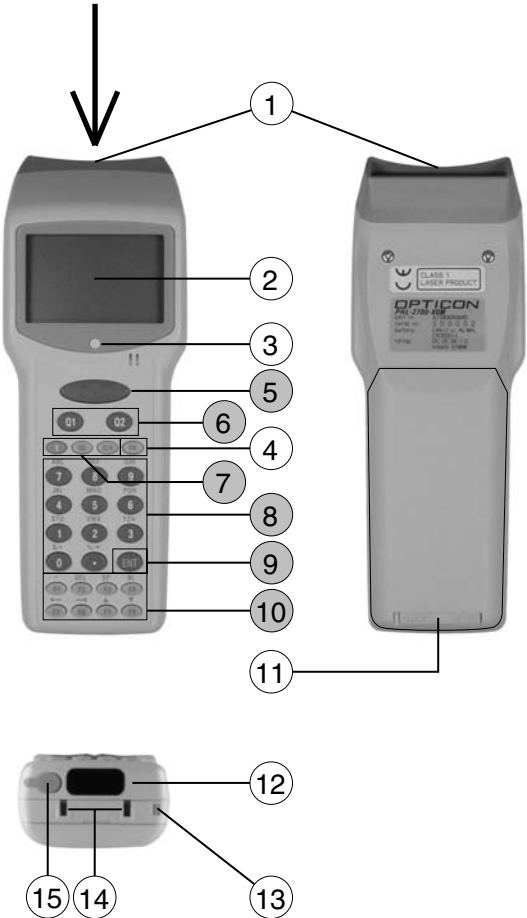
In addition, the terminal is equipped with RF-ID technology and has RF read/write capability for various types of RF-ID tags.

**RF-ID
SUPPLEMENT**

2

INSTALLATION

1. Reading window
 - laser beam for barcode reading will be emitted from here
 - **antenna for RF-ID reading / writing is located here**



2. LCD Display
for displaying information
3. LED indicator
can be used to indicate results, for example
bar code reading / status of communication
4. Power key
for switching power On/Off
5. Trigger key ● definable by user's application
typical use: dual read key
- switches laser beam on for barcode reading
- switches RF-ID module on for RF-ID
reading/writing
6. Quick keys ● definable by user's application
typical use: menu scroll keys or yes/no input
7. Control keys ● definable by user's application
for controlling basic functions
typical use as below:
CLR : Cancel input
BS : Back space
S : Shift key
"S" on the LCD display indicates
the terminal is in the shift mode
8. Character keys ● definable by user's application
typical use: for input of alpha-numeric and
punctuation characters
9. ENT key ● definable by user's application
typical use: for confirming input
10. Function keys ● definable by user's application
user programmable keys, to be used
together with shift key.
typical use as shown on next page
11. Battery case cover
for housing main battery
12. Optical interface window
for infra red communication
13. Hand strap pillar
for attaching hand strap
14. Electrical contacts
for power supply from the cradle IRU2700
to terminal
15. RS-232C connector
for connecting external device, or for system
expansion, through Opticon RS232 cable

RF-ID SUPPLEMENT

3

OPERATION OF THE TERMINAL

The functionality of the terminal is determined by software, the so-called user application, that is running on the terminal.

A tool for developing a user application on the PC for use on the terminal, as supplied by Opticon is:

- ☐ **C language, consisting of:**
 - Microtec ANSI-C compiler
 - C library for handheld terminals
 - RF-ID add-on library

Note!

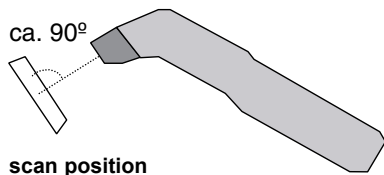
- ☐ **An additional C-library for the PHL2700 with RF-ID feature has been developed, that needs to be used together with the C-compiler and C-library for handheld terminals.**
- ☐ **Application Generator Potstar will soon support Opticon handheld terminals with RF-ID technology.
(Contact Opticon for availability)**

RF-ID SUPPLEMENT

4

SCANNING

Depending on the user application that is running, the terminal can use the RF-ID technology for reading a RF-ID tag or for a combination of reading and writing. The terminal will detect, read, and write the RF-ID tag in the way as defined by the user.



- How to position the terminal

The read direction must be perpendicular to the plane surface of the tag, as shown in the scan position illustration.

- How to read the RF-ID tag

Point the nose of the terminal on the tag. Note that the maximum reading distance depends on the type of tag.

When a tag is not responding to the terminal move the nose to another location of the tag.

- How to write the RF-ID tag

Make sure the tag will not move and hold the terminal stable for the time that it is writing. If the tag moves out of the antenna field before the writing is completed, the writing operation will fail.

- RF-ID tag reading/writing problems

- ☐ Reduce the distance between the tag and the terminal.
- ☐ Point the terminal to the edge of the tag.
- ☐ Make sure there is only one tag in the reading range.

RF-ID SUPPLEMENT

6

SPECIFICATIONS

6.1 SPECIFICATIONS TERMINAL

6.1.1 Electrical specifications

Main battery	☐ rechargeable pack: Ni-MH ☐ dry cell: Alkaline penlite ☐ optional: other 2 x AA-size penlite
Main battery operating time	☐ Ni-MH: When having every 10 seconds on: 1 sec laser, 0.4 sec. green LED, 0.4 sec. buzzer, 1 sec. RFIDtag reading, 0.2 sec. RFIDtag writing, operating time is: approx. 22 hours ☐ Alkaline: When having every 10 seconds on: 1 sec laser, 0.4 sec. green LED, 0.4 sec. buzzer, 1 sec. RFIDtag reading, 0.2 sec. RFIDtag writing, operating time is: approx. 43 hours ☐ Different operation conditions affect the operating time ☐ Use of other penlite batteries affect the operating time
Backup battery	Lithium (CR2032)
Backup battery operating time	If fully charged: 30 days backup time
Battery management	☐ Low voltage indicated on the terminal display. ☐ When battery is low the terminal switches off automatically.
Charging method	☐ Rechargeable Ni-MH pack in terminal via cradle

6.1.5 Environmental specifications

Emission	According to EN50081, part 1
Immunity	According to EN50082, part 1
R&TTE	conform I-ETS 300-330

Additional specifications

- ☐ **Specifications RF-ID module (RF-ID tag reading)**

Reading range up to 15 mm, dependent on type of RF-ID tag.
- ☐ **Supported RF Tags at 13.56 MHz**
Philips I-Code
Texas Instruments Tag-It
ISO 15693
- ☐ **Supported RF Tags at 134.2 kHz**
Texas Instruments TIRIS

RF-ID SUPPLEMENT

7 TROUBLE SHOOTING

General checks:

- ☐ Make sure everything is installed properly
- ☐ Check the power supply of all devices
- ☐ Is the reading window of the terminal clean?
- ☐ Is the optical window of the cradle clean?
- ☐ Is the RF-ID tag readable, eg. not damaged?
- ☐ Has the terminal been configured to read the type of RF-ID tag? Consult your application.

7.2 READ OPERATION PROBLEMS

When the terminal has a problem with reading/writing the RF-ID tag:

- ☐ *A metal object is placed direct above or below the RF-ID tag.*
- ☐ Remove the metal object or move the tag to an other area.

- ☐ *The RF-ID tag is not read*
- ☐ Decrease the distance between the tag and the terminal.
- ☐ Point the terminal to the edge of the tag.
- ☐ Make sure there is only one tag in the reading range.
- ☐ Place the nose of the terminal in perpendicular direction with the tag.

- ☐ *The RF-ID tag is not recognized*
- ☐ When using I-code tag, possibly the tag is in “quiet” mode.
Enable the terminal to send a “reset quiet mode” command. (consult documentation of user application)
- ☐ Check if the type of RF-ID tag is supported by the user’s application. If not, enable it. (consult documentation of user application)

8

**RF-ID
SUPPLEMENT****ORDERING
INFORMATION****Article Code****Terminal**

- ☐ PHL 2700-RFID-13.56 **A73800R0045**
- ☐ PHL 2700-RFID-134.2 **A73800R0110**

Software development tools

- ☐ Microtec
ANSI-C cross compiler **O8010000010**
- ☐ C-library for handheld
terminals **D4030000020**
including addon
PHL2700 - RFID

OPTICON

Opticon Article Code