

# PRINCO™

*Instrumentation designed  
with the user in mind*

Instruction Manual

## Princo DataScope

HART® Programming and Data Accessing Software

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# Princo DataScope Software

## 1. INTRODUCTION

DataScope software is a programming and data accessing program for Princo SmartSonic devices with on-board data acquisition function. The program supports the L4660-SE□/SG□-3□□-1, -3, -5, -7 and L4660R-SP□-3□□-3, -7 models.

## 2. ON-BOARD LOGGER OPERATION

The logger stores device-specific data. During development, the main aim was to facilitate fault detection. As a result, the data logger also stores data which are of no interest to the average user.

Item	Comment
Date	Date of log (minute precision)
Event code	Type of log
Index	Index of log
Primary value	according to P01
Measured level	
Measured distance	
TOT1,TOT2	
Sensor temperature	
Calculated output current	
Internal statuses	
No. of detected echoes	
No. of selected echo	
Amplitude of selected echo	

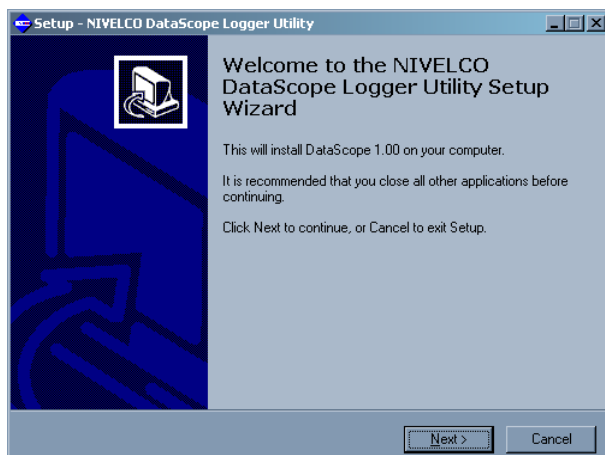
The logger can store 12288 entries.

## 3. SYSTEM REQUIREMENTS

- **SmartSonic** device with logger function
- SAT-304 HART modem, ELink Adapter or SAP-200 (IrDA)
- WINDOWS XP SP2
- P4 2.0GHz processor
- 256 MB RAM
- 20 GB free hard-disc capacity

## 4. SOFTWARE INSTALLATION

Put EView Light / DataScope CD in computer CD drive. Follow the instructions on the display for installing EView Light. The setup wizard guides you through the setup process and automatically installs the software. (If given a choice of "run" or "save", choose "run".)



## 5. PROGRAM OPERATION

The program can read the content of the log using HART protocol, Elink-USB adapter, or Infra-Red SAP-200-IrDA display unit (not available for L4660-R units).

The program is capable of the following:

- Configuring logger functions
- Reading the log (downloading from the logger in the device)
- Saving log to file
- Reading log from file
- Exporting log to ASCII text file
- Exporting log to DBase file
- Displaying trend

### 5.1. STARTING THE PROGRAM

For starting, click on the DataScope icon on the Windows desktop or follow the standard Windows procedure: Start/ Programs/ Nivelco/ DataScope. Starting the program brings up the **Device Detection** window (Figure 1).

Note: There are three main windows in the DataScope program – **Device Detection**, **Logger Settings** and **Logger Control Sheet**. Use **Back** or **Next** buttons whenever necessary to toggle between these windows.

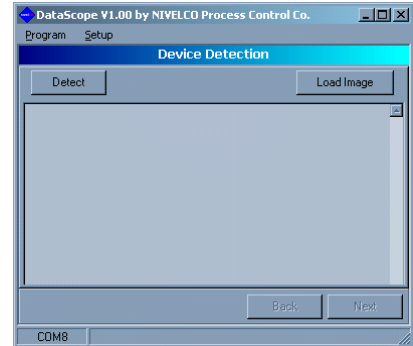


Figure 1. Device Detection Window

### 5.2. SELECTING COMMUNICATION

Communication can be set in the **Setup/Communication** menu (Figure 2) accessed from the **Device Detection** window.

- **Port:** select the port for communication device
- **Adapter:** select the type of device (HART modem, ELink adapter, SAP-200-IrDA)
- **Mode:** operating mode of the selected device
- **Cycle Time:** in case of a communication error, the query can be slowed down. A greater value results in slower querying.

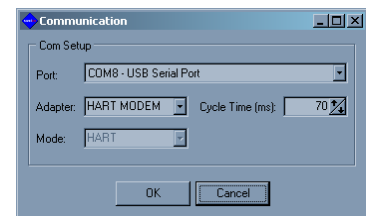


Figure 2. Setup / Communication Menu

Type of communication device	Read time
HART modem (HART protocol)	approx. 3 hrs.
ELink Adapter	approx. 10 min.
SAP200 - IrDA Adapter	approx. 10 min.

### 5.3. IDENTIFICATION OF THE DEVICE

Click the **Detect** button to identify the device. Successful identification lists the information shown (Figure 3) and leads to the next window - **Logger Settings** window (Figure 4).

### 5.4. LOADING LOG

It is possible to read data from a previously saved log file by clicking on the **Load Image** button in **Device Detection** window. Successful loading leads to the next window - **Logger Settings** window (Figure 4).

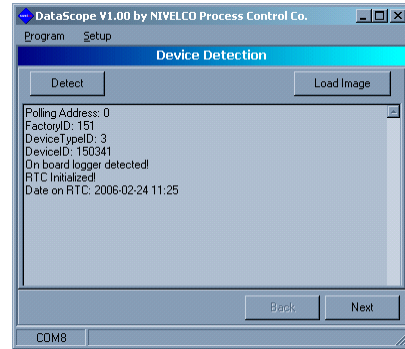


Figure 3. Device Detection Window

### 5.5. LOGGING SETTINGS

In the **Logger Settings** window the user can access the settings for timing and operating modes of the logger.

For detailed description of operating modes, see the installation and programming manual of the device - parameters P34, P35 and P36.

When setting time of the "On Board Clock", click the **Write** button to download the desired time. Click **Sync.** to synchronize with the PC's clock. You can re-check the settings with the **Read** button.

During setting of log, the function of **Write** and **Read** are similar.

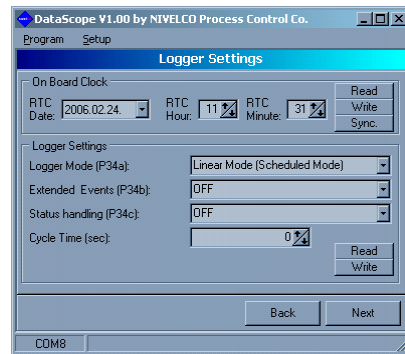


Figure 4. Logger Settings Window

### 5.6. READING LOG DATA

To start reading log from the device use the **Start Reading** button in the **Logger Control Sheet** window. (The **Logger Control Sheet** window may be accessed by hitting the **Next** button in the **Logger Settings** window.) This operation can be aborted at any time by the **Stop Reading** button. Reading progress is displayed in the status bar.

### 5.7. DELETING LOG DATA

To delete (clear) the log from the device click the **Clear Logger** button.

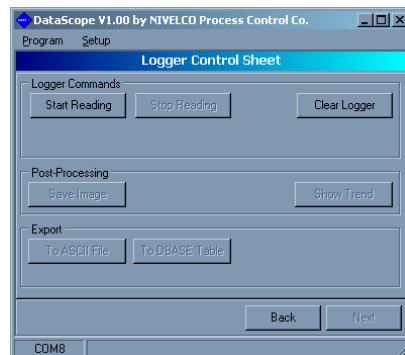


Figure 5. Logger Control Sheet Window –Before Reading

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**Warning!**

**The log contents will be lost!!**

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### 5.8. SAVING LOG DATA

The current log can be saved for further processing with the **Save Image** button.

### 5.9. DISPLAYING TREND FUNCTION

Trend of the currently loaded log file can be displayed with the **Show Trend** button.

### 5.10. EXPORTING LOG DATA

The read or loaded log data can be exported to ASCII text file or DBASE file using the **To ASCII File** or the **To DBASE File** buttons respectively.

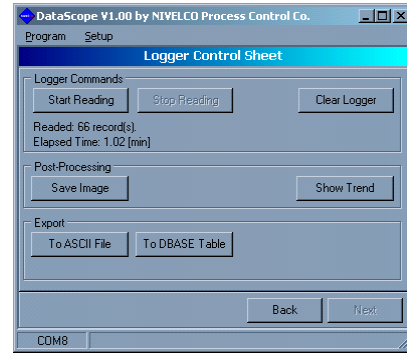


Figure 6. Logger Control Sheet Window –After Reading

### Warning!

In case of DBase files, a new file is always created, overwriting the previous database. Resolving the problem of linking multiple log databases (to get a longer period log) is up to the user.

## 6. TREND

In order to examine the logged data and events, the program offers a basic trend display.

The program offers the following possibilities:

- Date and time filter
- Log event filter
- Device error event filter
- Selectable secondary trend value on the right axis
- Printing



Figure 7. Logger Trend Window

The primary value is displayed on the left side of the axis (PV according to parameter P01, see manual). If the operation mode of the primary value changes during logging the user should pay attention to it (E.g.: by filtering to the appropriate time interval).

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## 6.1. FILTERING

To ease the examination of the log content the log can be filtered. Filtering conditions can be set at the top of the window.

Name	Meaning	Comment
Start date	Filter start date	This will be the date of the first record
End date	Filter end date	This will be the date of the last record
Event Filter	Log event	type of event to be in the filter result
Error Event Filter	Logged device errors	type of errors to be in the filter result

After configuring the appropriate filters events, the settings can be validated with the **Apply** button. The **Reset** and **Reset Date** buttons are for loading the default filtering settings.

## 6.2. SETTING THE SECONDARY VALUE

The following units are available on the right axis of the trend diagram:

- Level
- Distance
- Current output (calculated)
- Sensor temperature

The above values can be selected from the **Right Axis** list. A color can also be selected. To validate the settings click the **Apply** button.

## 6.3. PRINTING

To print the trend, click the **Print** button.