

LUDLUM MODEL 2350(-1)
Windows Interface
Version 1.2.2
LMI Part #: 1370-065

October 2015

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1. Description of Purpose

The Model 2350-(1) Windows Interface software is a personal computer interface designed for users running a Microsoft Windows XP operating system or higher. The software allows the user to perform multiple data recovery, manipulation and preservation functions on information collected by the Ludlum Measurements Inc. Model 2350 or 2350-1 Data Logger. Software uses are as follows:

- Download logged readings from instrument
- Download associated detector setups from instrument
- Display downloaded information in table or record format
- Print records of individual samples or setups
- Save downloaded information to .CSV files for generating reports or viewing at a later date

2. Software Installation

2.1 On the Installation Disk

The installation CD for the Model 2350-(1) Windows Interface software is in a case that has the software version and part number marked on it. Please take note of this information for any support questions or issues. The disc itself also includes the version number and part number. Information on the CD includes all software manuals as PDF documents as well as all files needed for proper software installation. Output examples are included and will be explained later on in this manual.

2.2 Minimum Requirements

- Operating System: Microsoft Windows XP Professional
- PC with 1 gigahertz or higher processor clock speed recommended; 233MHz minimum required (single or dual processor system); Intel Pentium/Celeron family, AMD K6/Athlon/Duron family, or compatible processor recommended.
- 256 megabytes (MB) of RAM or higher recommended (64 MB minimum supported); may limit performance and some features.
- 10.00 Megabytes of available hard disk space.
- Super VGA (800 x 600) or higher-resolution video adapter and monitor.

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- CD-ROM or DVD drive.

- Keyboard and Microsoft Mouse or compatible pointing device.

- LMI Cable Part ID #: 8303-380; Part Description: D-Receipt 9P-15P M2350

- Available serial port. If a serial port is not available, a USB to Serial adapter must be used (LMI Part # 2310846).

2.3 Installation Procedure

To begin the installation of the Model 2350-(1) Windows Interface software, place the CD containing the program into the CD drive. If the install does not automatically begin, open the appropriate drive for viewing. Double-click the Setup.exe file and the installation wizard will take you through the installation process. It is recommended that default values set by the installation wizard are accepted; however, the installation path may be altered if necessary.

3. Software Operation

3.1 Setting up Options

The only option that must be set to achieve a proper download is the 2350 type (2350 or 2350-1). Select the option that reflects the type of instrument you are attempting to download from. The Model 2350 option is for instruments with one location code only, the Model 2350-1 option is for instruments with location codes 1-8. The option is saved when the program is closed.

3.2 The Download Process

Once the type of 2350 is set, the download process may be started. Ensure the instrument is connected to a serial port on your PC with LMI Cable #8303-380. Also be sure the instrument batteries are not low and instrument power is on. Once all the above conditions are verified, click the Download and Save button on the main form. The following is an explanation of the download process as well as a picture illustration of messages and windows displayed during download.

The program will attempt to contact the instrument by sending out a request for the firmware version on each COM port in numerical order. After the firmware version request is sent a set period of time is given to allow a response.

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If none is received, the next COM port is checked. In the event that all COM ports have been checked and no response was received, an error message is displayed with a reminder to check the connection to the instrument as well as instrument power.

The firmware number received from the Model 2350(-1) is used to determine if the serial number can be requested from the Model 2350(-1) or if it must be manually entered by the user. If it is determined that the value can be retrieved, the software will request and display the serial number for verification. If the serial number displayed is incorrect, the correct value may be typed in. The serial number changed here is not saved in the instrument, and to store the change permanently, the “SNE” command must be used.

Note: The SNE command will only work for instruments that do not require manual entry of the serial number. Clicking the “Cancel” button will stop the download process. If the firmware does not support storing the serial number, manual entry of the serial number is required.

Once the serial number is correct and the download process is continued no more notification windows will display unless an error is encountered or no logged readings can be found on the instrument.

During the download process, the status bar of the main window will display information on how the download is progressing. A progress bar will also be displayed at the bottom of the main form, as well as a “working” indication to demonstrate that the program is still involved in the downloading process. The download process begins with a request from the interface program for all detector setups followed by a request for all logged readings available on the instrument. The output files are generated and given a name determined by the following format.

File naming formats:

Logged data file =

App path\serial #_date_time_LOG.csv

Detector setups file =

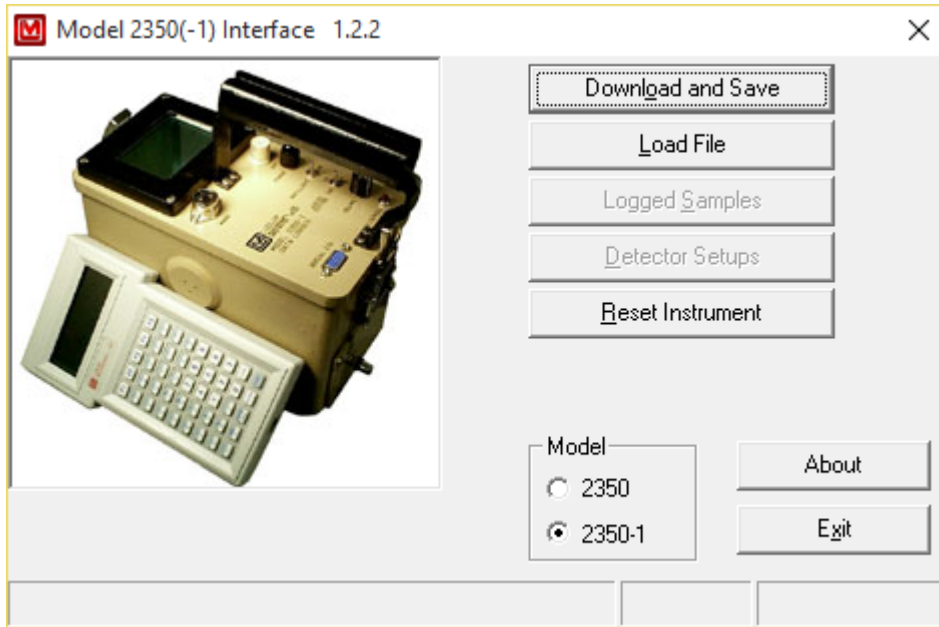
App path\serial #_date_time_DET.csv

✓ **NOTE: The data files are stored in C:\Program Files\Ludlum Measurements, Inc\Model 2350 Interface.**

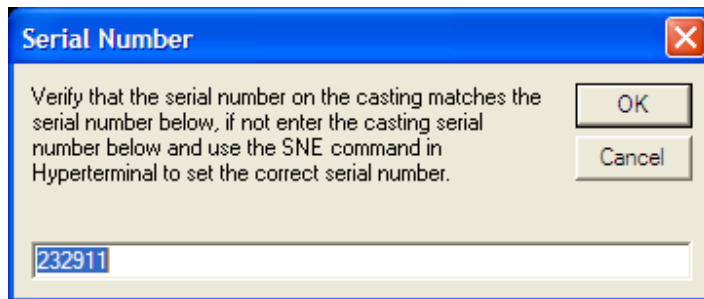
Now that the download process is complete, information that has been attained can be viewed (see Section 3.4 for viewing instructions).

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Click the “Download and Save” button to begin download.



Serial Number verification window.



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Main window during download.



3.3 Loading Saved Data

If there are any saved data files, they can be loaded into the Model 2350-(1) Windows Interface program for viewing. Simply click the Load File button, select the log file from the open dialog, and click Open. The logged data will be loaded for display or printing.

Select file and click open.

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3.4 Viewing Data

Both logged readings and detector setups can be viewed using the Model 2350(-1) Windows Interface software. Once data has been downloaded or loaded from a saved file, clicking the Logged Samples or Detector Setups button will display the data.

To view logged data, click the Logged Samples button. A window will be displayed with two buttons and a list box containing all available sample numbers. Select the sample number for viewing from the list box. This will display information on that sample in the appropriate blanks on the record window. Click the Print button to print the currently displayed information to the system default printer. Click the Main button to close the record window and return to the main window.

To view the detector setups, click the Detector Setups button. The detector setups window will be displayed with the first available setup loaded in record format. Select the desired setup number to view from the list box and click the Display button to load information on the setup. Click the Print Setup button to print the currently displayed setup to the system default printer. Click the Print Barcodes button to print a page with all the detector setup commands listed as barcodes. The program uses the free 3 of 9 barcode font which can be downloaded here: <http://www.barcodesinc.com/free-barcode-font/>. The Print Checklist button will print a detector setup and is mainly used for calibration.

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Logged data

Model 2350(-1) Readings

Select Sample Number

167
168
169
170
171
172
173
174
175
176
177
178
179
180
181
182
183
184
185
186
187
188
189
190
191
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197
198
199
200
201
202
203
204
205
206
207
208
209
210

Print Main

Model Number
Serial Number
Sample # 204
Location Code1
Location Code2
Location Code3
Location Code4
Location Code5
Location Code6
Location Code7
Location Code8 0
Month 9
Day 20
Year 12
Hour 20
Minute 16
Detector Setup # 0
Logged Reading 0.000000e+00 c
Count Time 60 sec
Logging Mode 1
Model 2350 Status 0
Time Base minutes

Detector setups display view.

Model 2350(-1) Detector Setup

Select the Detector Setup

Setup 0
Setup 1
Setup 2
Setup 3
Setup 4
Setup 5
Setup 6
Setup 7
Setup 8
Setup 9
Setup 10
Setup 11
Setup 12
Setup 13
Setup 14
Setup 15

Print Setup
Print Barcodes
Print Checklist
Main

Detector Setup 5
Serial Number
Range Auto
High Voltage 0 Volts
Overload Alarm 40.0 Microamperes
Overload ON/OFF OFF
Calibration Constant 1.000000E+00
Ratemeter Alarm 1.000000E+09
Scaler Alarm 1000000
Model Number
Time Base minutes
Window 1000
Window ON/OFF OFF
Threshold 100
Dead Time 0.000000E+00 Seconds
Count Time 10 Seconds
Integrated Dose Alarm 1.000000E+09 Counts
Units c

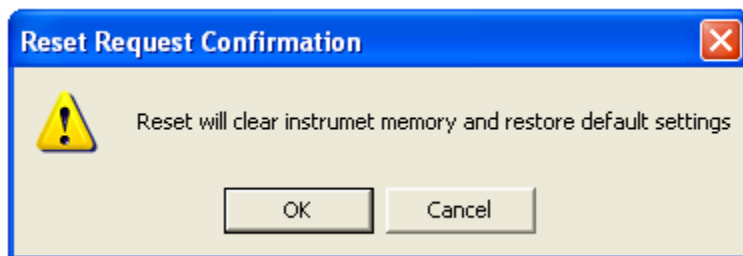
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3.5 Resetting Instrument Parameters

The Reset Instrument button, which is available on the Model 2350(-1) Interface main window sends a connected Model 2350 the SSR command, which will clear the memory and reset the instrument to the default factory setup.

This button is available to the user as soon as the program is executed. (No “Download and Save” is required to enable this button.) The button can be used at any time before or after a Download and Save. A typical sequence in which this button is used is described below.

1. User executes the Model 2350 Interface program (Assume an instrument connected on Com Port 2)
2. User clicks the Reset Instrument button (Hot Key = Alt+R)
3. Pop-up prompts user to click OK to continue or Cancel to abort



4. Program begins searching com ports for a Model 2350
5. Program locates Model 2350 on com port 2
 - a. If a Model 2350 cannot be located, actions taken are the same as for not finding a Model 2350 when using the Download and Save button
6. Program sends SSR command immediately followed by Y for confirmation
7. Model 2350 Resets and the Logged Samples and Detector Setups buttons remain disabled (or become disabled if previously enabled by a Download and Save)

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4. Output Formats

Four different outputs are available for the Model 2350(-1) Windows Interface software. The first two are in the form of .csv files and are intended for use with either a database or spreadsheet program for report generation and information tracking. The naming of these files is discussed in section 3.2. The following is the file format that can be expected. All columns have a column header that designates what value is stored in a particular column.

For Logged Data files:

Model Number, Serial Number, Calibration Date(empty), Sample Number, Survey Material(empty), Location Code1 (For the Model 2350, this is the only location code that has a value.), Location Code2, Location Code3, Location Code4, Location Code5, Location Code6, Location Code7, Location Code8, Month, Day, Year, Hour, Minute, Formatted Date, Detector Setup, Logged Reading, Units, Count Time, Logging Mode, Status, M2350(-1) Serial Number, M2350(-1) ID (Next Line)

Refer to the included file named X79041_12_07_2004_1.csv for an example of the output.

For Detector Setup files:

Detector Setup Number, Model Number, Serial Number, Units, Range, Time Base, High Voltage, Window, Window ON/OFF, Count Time, Threshold, Calibration Constant, Dead Time, Ratemeter Alarm, Scalar Alarm, Integrated Dose Alarm, Overload Alarm, Overload ON/OFF, M2350(-1) Serial Number, M2350(-1) ID (Next Line)

The two other available outputs are the printouts for logged readings or detector setups. Logged Data printouts include the following information.

Date of printout
Model Number
Serial Number
Model 2350(-1) Serial Number
Model 2350(-1) ID
Sample Number
Location Code 1-8 (Model 2350 has only location code1)
Month
Day
Year
Hour
Minute

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Detector Setup Number
Logged Reading
Count Time
Logging Mode
Status
Time Base

Detector Setup printouts include the following information.

Date of Printout
Model Number
Serial Number
Model 2350(-1) Serial Number
Model 2350(-1) ID
Range
High Voltage
Overload current
Overload ON/OFF
Calibration constant
Ratemeter Alarm
Scaler Alarm
Time base
Window
Window ON/OFF
Threshold
Dead Time
Count Time
Integrated Dose Alarm
Units