Datalogger and RS232 Interface

RS232 Wiring Hardware	2
RS232 Code	3
Hardware Requirements and Setup	5
Software Requirements and Setup	6
Communicating Operation	9
Run the Software	9
Record	11
Download	
Data Convert	14
Apply for Excel	14
Apply for Graph	
Sampling Time	
RTC	21

RS232 Wiring Hardware

Computer's Serial Port side of Interface Cable

The RS-232 "DB-9" side of the PC Interface Cable connects to the PC's COM port. Refer to the diagram below for wiring information. Note that a SERIAL to USB Adapter may be used.



RS232 Protocol

1. RS232 Settings :

① Baud rate : 9600bps ② Parity check : None ③ Data bits : 8 ④ Stop bit : 1

2. Recall : To receive data from the meter, input an (any key) command then it will reply

02H + FFH + FFH + FFH + FFH + 03H to recall.

3. Transfer Format :

Content :

Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6
02H	Function1 Byte	Function2 Byte	Data High Byte	Data Low Byte	03H

Function1:

Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
	x			011→50-110	000→20	- 80	
X			X	100→60-120	001→30	- 90	
			101→70-130	010→40	-100		

Function2:

Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Under	Over	A/C	x	x	X	$00 \rightarrow Fast$ $10 \rightarrow \mathbf{x} 11 \rightarrow$	01→Slow x

4. Command : (After Recalled)

"W" + YY + MM + DD → Set RTC's YY,MM,DD (Year, Month, Date)

"X" + HH + NN + SS→ Set RTC's HH,NN,SS (Hour, Minute, Second)

"Z" + \mathbf{x} + Second(High Byte) + Second(Low Byte) \rightarrow Set Meter's Recording Interval

"K" + \mathbf{x} + \mathbf{x} + 01H→ A / C

- $02H \rightarrow Fast / Slow$
- $04H \rightarrow Max / Min$
- $09H \rightarrow$ Level up
- $0AH \rightarrow$ Level down

"R" + \mathbf{x} + $\mathbf{35H} \rightarrow 02H$ + AAH + \mathbf{x} + Interval High Byte + Interval Low Byte + 03H

"R" + \mathbf{x} + $\mathbf{33H} \rightarrow 02H + AAH + \mathbf{x} + 3$ Bytes of Last Address + 03H

Data Logger

"U" → 02H

x : don't care

Hardware Requirements and Setup

PC HardWare Requirements :

HDD, CD Rom, 486 PC or above, with available COM port EGA or higher monitor 4M bytes or more memory size

PC HardWare Setup :

- 1) Switch off all power related to the PC
- 2) Connect the DB9 (female) end of the supplied RS-232 cable to available COM port
- 3) Switch on all related power
- 4) Connect the DB9 (male) end of the supplied RS-232 cable to the meter

Software Requirements and Setup

- 1) Start up windows 95 / 98 / 2000 / XP operating system
- 2) Close all other applications
- 3) Insert disk in CD drive

Wait for "Autorun" to start and follow on-scree instructions

(If "autorun" does not sart, click on "Start" then "Run". Type the drive letter and

":VB\Disk1\Setup.exe" and click "OK" .)

1).	
Setu	
9	ISLM2 Setup is preparing the InstallShield(R) Wizard which will guide you through the rest of the setup process. Please wait.
	100 %

Setup program will run automatically.

2).

Welcome	X
	Welcome to the ISLM2 Setup program. This program will install ISLM2 on your computer.
	It is strongly recommended that you exit all Windows programs before running this Setup program.
	Click Cancel to quit Setup and then close any programs you have running. Click Next to continue with the Setup program.
	WARNING: This program is protected by copyright law and international treaties.
	Unauthorized reproduction or distribution of this program, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under law.
	Cancel

Click <u>N</u>ext> button

3).



a. Click <u>N</u>ext> to use the default folder

or

b. Click Browse... to select a different folder

4).



Click Next> button



Setup is complete.

Communicating Operation

Run the software

1. Click "Start" form Start menu then move to "All Programs" (or "Programs") then "ISLM2" and then click the "ISLM2" icon.

	🗐 New Office Document	
	🖓 Open Office Document	
	🧐 Windows Catalog	
	🌯 Windows Update	
	🗐 WinZip	
	🛅 WinZip 🔹 🕨	
	📧 Acrobat Distiller 5.0	
	🖄 Adobe Acrobat 5.0	
Нарру	🥶 Internet Explorer	
	Microsoft Access	
🔊 Internet	Microsoft Excel	
🔝 Internet Explorer	🚫 Microsoft FrontPage	
E-mail	🙆 Microsoft Outlook	
Microsoft Outlook	Microsoft PowerPoint	
W Paint	W Microsoft Word	
W rank	📢 MSN Explorer	
Visual Basic 5.0	National Instruments LabVIEW 6.1	
₩.:jr ////	🗐 Outlook Express	
Notepad	칠 Remote Assistance	
National Instruments	🕑 Windows Media Player	
LabVIEW 6.1	🔏 Windows Messenger	
Calculator	🛅 GameChannel 🛛 🕨 🕨	
	🛅 Logitech 🔹 🕨	
Microsoft Excel	musicmatch	
8	🛅 Nero 🕨	
All Programs 👂	🛅 ISLM2 🔸	🛔 ISLM2
	🔎 Log Off 🚺 Turn Off Computer	
🥶 start		

2.

Click an available COM port



3. Main software screen



If no connection, shows as below: "No COM"



Record

Save to Hard Disk (PC)

Click 🖬 button. The dialog box shown below will appear.

Save As					? 🛛
Savejn:	📋 My Document	\$	•	← 🗈 💣 🎟•	
💋 Recent	🕍 My Music 🕘 My Pictures				
Desktop					
My Documents					
My Computer					
My Network Places	File <u>n</u> ame: Save as <u>t</u> ype:	 Data Files (*.txt)		• •	<u>S</u> ave Cancel
T IOUGS					

Input a file name and then click "Save" to begin saving data to the file just named.



Click ២ button to stop recording.

Download Data

1. Download Data from Hard Disk

Click 🥮 button. The Open window, shown below, appears

Open					? 🛛
Look jn:	🕒 My Document	3	•	+ 🗈 💣 🎟+	
📁 Recent	📸 My Music 😬 My Pictures				
Desktop					
My Documents					
My Computer					
	File <u>n</u> ame:			•	<u>O</u> pen
My Network	Files of type:	Data Files (*.txt)		-	Cancel
Places		C Open as read-only			

Input the file that was selected earlier and then click the Open button.

2. Download Data from EEP ROM

Click Sutton. The Data Logger window, shown below, will open.

🔷 Da	ta Logg	er 🔀]
Mem	ory Size	Remained	
64	4 K	29.8 K	
100.)%Comp	pleted	
Set 1 2	Samplin	g Records 1 11 1 19815	

Click on a SET number to view the set's details. For example, in the window above, there are 2 sets from which to choose. The list below is an example of an opened set.

🎞 Data	List		×						
8									
11 in No.1 Set									
No.s	DateTime	Display Mode	SPL						
1	2005/05/05 13:39:25	FAST A130-70	76.7						
2	2005/05/05 13:39:26	FAST A130-70	77.7						
3	2005/05/05 13:39:27	FAST A130-70	76.6						
4	2005/05/05 13:39:28	FAST A130-70	76.9						
5	2005/05/05 13:39:29	FAST A130-70	77.5						
6	2005/05/05 13:39:30	FAST A130-70	76.3						
7	2005/05/05 13:39:31	FAST A130-70	76.6						
8	2005/05/05 13:39:32	FAST A130-70	77.7						
9	2005/05/05 13:39:33	FAST A130-70	78.2						
10	2005/05/05 13:39:34	FAST A130-70	77.7						
11	2005/05/05 13:39:35	FAST A130-70	77.7						
Max :	78.2 dB2005/0	5/05 13:39:33							
Min :	76.3 dB2005/05	05 13:39:30							

Data Convert

Apply for Excel

Open Microsoft Excel, find the file saved in Excel type, for example, test.xls.

Open										?	×
Look in:	🛅 My Docur	nents		•	+ €	×	<u>6</u>	•••	Too <u>l</u> s •		
History My Documents Desktop Favorites	Adobe	;									
Mv Network	, File <u>n</u> ame:							•		子 Open	-
Places	Files of type:	All Files						-		Cancel	
		All Files All Micro Microsof Web Pag Text File Query Fi	soft Excel Fi t Excel Files ges s les	iles				•			

or find any file already saved in HDD, for example, sample.dat.

The "Text Import Wizard" then appears. Follow the steps 1 to 3 to complete.

Text Import Wizard - Step 1 of 3	? 🛛		
The Text Wizard has determined that your data is Delimited. If this is correct, choose Next, or choose the data type that best describes your data. Original data type Choose the file type that best describes your data: © Delimited - Characters such as commas or tabs separate each field. © Fixed width - Fields are aligned in columns with spaces between each field.			
Start import at <u>r</u> ow: 1 - File <u>origin</u> : Windows (ANSI)	•		
1 No.sDateTimeDisplay ModeSPL 2 12005/04/25 10:26:48SLOW A80-2066.3 3 22005/04/25 10:26:49SLOW A80-2066.8 4 32005/04/25 10:26:50SLOW A80-2065.8 5 42005/04/25 10:26:51SLOW A80-2065.6			
Cancel < Back Next > Fin	ish		

Click Next> button

Text In	nport Wizard - Step 2	of 3		? 🗙	
This so how yo	reen lets you set the delimit our text is affected in the pr	ers your data contai eview below.	ns. You can see		
Delim V	Delimiters Image: Treat consecutive delimiters as one Image: Tab Semicolon Comma Image: Space Other: Text gualifier:				
-Data pi	review				
No.s	DateTime	Display Mode	SPL		
1 1	2005/04/25 10:26:48	SLOW A80-20	66.3		
2	2005/04/25 10:26:49	SLOW A80-20	66.8		
3	2005/04/25 10:26:50) SLOW A80-20	65.8		
4	2005/04/25 10:26:51	. SLOW A80-20	65.6	-	
		·			
		Cancel	< Back	inish	

Click Next> button

Text Import Wizard - Step 3 o	f 3		? 🛛
This screen lets you select each column and set the Data Format. 'General' converts numeric values to numbers, date values to dates, and all remaining values to text.		Column data format	
<u>A</u> dvanced		C Do not import column (skip)	
GenerGeneral	General	General	
No.s DateTime 1 2005/04/25 10:26:48 2 2005/04/25 10:26:49 3 2005/04/25 10:26:50 4 2005/04/25 10:26:51	Display Mode SLOW A80-20 SLOW A80-20 SLOW A80-20 SLOW A80-20 SLOW A80-20	SPL 66.3 66.8 65.8 65.6	-
	Cancel	< Back Next >	inish

Text Import Wizard - Step 3 o	f 3		? 🗙
This screen lets you select each colur the Data Format.	mn and set	Column data format	
'General' converts numeric values to numbers, date values to dates, and all remaining values to text.		C <u>T</u> ext C <u>D</u> ate: MDY ▼	
<u>A</u> dvanced		(* Do not import column (skip)	
Data preview			
Skip General	General	General	
No.s DateTime	Display Mode	SPL	
1 2005/04/25 10:26:48	SLOW A80-20	66.3	
2 2005/04/25 10:26:49	SLOW A80-20	66.8	
3 2005/04/25 10:26:50	SLOW A80-20	65.8	
4 2005/04/25 10:26:51	SLOW A80-20	65.6	-
•			
	Cancel	< Back Next > Fi	inish

Text Import Wizard - Step 3 o	f 3		? 🛛
This screen lets you select each column and set the Data Format. 'General' converts numeric values to numbers, date values to dates, and all remaining values to text.		Column data format © <u>G</u> eneral © <u>T</u> ext © <u>D</u> ate: MDY ▼ © Do not import column (skip)	
<u>A</u> dvanced	l		
Data preview	Conorol	Conorol	
No s DateTime	Display Mode	SPI.	
1 2005/04/25 10:26:48	SLOW A80-20	66.3	
2 2005/04/25 10:26:49	SLOW A80-20	66.8	
3 2005/04/25 10:26:50	SLOW A80-20	65.8	
4 2005/04/25 10:26:51	SLOW A80-20	65.6	-
		•	▶
	Cancel	< <u>B</u> ack Next > E	inish

Text In	nport Wizard - Step 3 (of 3		?×
This sci the Da 'Gene value	reen lets you select each colu :a Format. eral' converts numeric values is to dates, and all remaining	ımn and set to numbers, date values to text.	Column data format C <u>G</u> eneral • <u>Text</u> C <u>D</u> ate: MDY	
	<u>A</u> dvanced		C Do not import column (skip)	
Data p	review			
Skip	Text	General	General	
No.s	DateTime	Display Mode	SPL	
μ	2005/04/25 10:26:48	SLOW A80-20	66.3	
2	2005/04/25 10:26:49	SLOW A80-20	66.8	
3	2005/04/25 10:26:50	SLOW A80-20	65.8	
4	2005/04/25 10:26:51	SLOW A80-20	65.6	-
		Cancel	< <u>B</u> ack Next > E	inish

Click Finish button

	A	В	С	D
1	No.s	DateTime	Display Mode	SPL
2	1	2005/04/25 10:26:48	SLOW A80-20	66.3
3	2	2005/04/25 10:26:49	SLOW A80-20	66.8
4	3	2005/04/25 10:26:50	SLOW A80-20	65.8
5	4	2005/04/25 10:26:51	SLOW A80-20	65.6
6	5	2005/04/25 10:26:52	SLOW A80-20	65.6
7	6	2005/04/25 10:26:53	SLOW A80-20	65.6
8	7	2005/04/25 10:26:54	SLOW A80-20	65.2
9	8	2005/04/25 10:26:55	SLOW A80-20	65.2
10	9	2005/04/25 10:26:56	SLOW A80-20	65.1
11	10	2005/04/25 10:26:57	SLOW A80-20	65.2
12	11	2005/04/25 10:26:58	SLOW A80-20	65.3
13	12	2005/04/25 10:26:59	SLOW A80-20	65.1
14	13	2005/04/25 10:27:00	SLOW A80-20	65.2
15	14	2005/04/25 10:27:01	SLOW A80-20	65.4
16	15	2005/04/25 10:27:02	SLOW A80-20	65.3
17	16	2005/04/25 10:27:03	SLOW A80-20	65.2
18	17	2005/04/25 10:27:04	SLOW A80-20	65.1
19	18	2005/04/25 10:27:05	SLOW A80-20	65.2
20	*			
21	**Max : 66	.8 dB2005/04/25 10):26:49	
22	2 ***Min : 65.1 dB2005/04/25 10:26:56			

Apply for Graph

Open a saved data file in the software program and then click ${\displaystyle \underrightarrow{\hbox{$\hbox{$\blacksquare$}$}}}$.

III Sample.txt				×
28				
No.s	DateTime	Display Mode	SPL	~
1	2005/05/16 10:08:15	FAST A130-70	93.4	T
2	2005/05/16 10:08:16	FAST A130-70	92.5	-
3	2005/05/16 10:08:17	FAST A130-70	96.5	
4	2005/05/16 10:08:18	FAST A130-70	91.8	
5	2005/05/16 10:08:19	FAST A130-70	99.9	
6	2005/05/16 10:08:20	FAST A130-70	104.1	
7	2005/05/16 10:08:21	FAST A130-70	104.2	
8	2005/05/16 10:08:22	FAST A130-70	104.1	
9	2005/05/16 10:08:23	FAST A130-70	104.1	
10	2005/05/16 10:08:24	FAST A130-70	104.1	
11	2005/05/16 10:08:25	FAST A130-70	99.7	~
Max : 104.2 dB2005/05/16 10:08:21				
Min : 89.5 dB2005/05/16 10:08:26				



Sampling Time

PC Sampling Rate:

(rate at which the PC collects readings while connected to the meter)

Click 💁 on the Menu Bar.



In the **Input Sampling Time** dialog box, input a sampling time and then click "**OK**" button to confirm.

Meter Sampling Rate:

(rate at which meter stores readings)

Click 🔯 on the Menu Bar .
• PC Sampling Rate
Meter Sampling Rate
OK

Choose "PC Sampling Rate" and then click "OK" buton.

Input Interval	×
Enter the Willing Interval in second (0 <= interval <= 65535)	OK Cancel
0	

Input a sampling time and then click "OK" button to confirm.

RTC (Real Time Clock)

Click 🕥 on the **Menu Bar** to set the meter time to PC system time.