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PRECISE-LOG

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## Multi-Channel Data Loggers





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## **About this Manual**

This manual contains operational information for PRECISE-LOG Data Loggers. Please read this manual before using the data loggers.

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Defective Product Return:

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#### Non-defective Product Return:

Products that are not defective may be returned to MEI within 30 days from the date of shipment. All non-defective product returns are subject to a 20% restocking fee. If the product is unsatisfactory for the application for which it was purchased, MEI shall, at its option, either refund the purchase price paid by the Buyer or replace the product with one that is satisfactory for the application. The Buyer shall be responsible for all shipping costs and restocking fee determined by MEI.

#### Method of Return:

Prior to returning the product, completely fill out the RMA Application Form, send it to MEI or contact MEI directly for a Return Material Authorization number. All products returned to MEI must be securely packaged in the original shipping materials and reach MEI without damage and shipped in accordance with Applicable laws, rules, and regulations. The products must contain all software and accessories that were shipped to the Buyer in connection with the product.

5. MEI reserves the right to alter any feature or specification at any time.

#### Notes to Buyer:

If you disagree with any of the above terms or conditions you should promptly return the unit to the manufacturer or distributor within 30 days from date of purchase.

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## **1. Introduction**

## **1.1 Features of the logger**

Congratulations on purchasing the PRECISE-LOG series data loggers! These portable battery powered data loggers allow recording information and saving measurements to a 8MB flash memory for later retrieval.

The internal lithium battery provides up to 10 years of instantaneous logging operation when sampling at interval of one minute in stand-alone mode.

PRECISE-LOG data logger can be manipulated by SiteView Windows software for data downloading, logging management, and property configuration. It has USB interface for local communications and a WIFI module for remote access.

PRECISE-LOG data logger features a wide sampling interval range from one second to 12 hours.

The 16-bit analog-to-digital converter makes the measurements more precise and accurate.

Rugged, splash resistant aluminum enclosure makes it excellent in the harshest industrial environment.

Remote data monitoring and downloading through its WIFI module.

## **1.2 Approvals**

# CE

All PRECISE-LOG Series data loggers are in conformity with the EN standard(s) listed below:

EN 61000-6-1:[2007] EN61000-4-2:2009 EN61000-4-3:2006/A2:2010 EN61000-4-4:2012 EN61000-4-5:2006 EN61000-4-6:2014 EN61000-4-11:2004

EN 61000-6-3:[2007]

EN Standards for WIFI module:

EN62311:2008 EN60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013 ETSI EN300 328 V1.8.1 (2012-06) ETSI EN 301 489-1 V1.9.2 (2011-09) ETSI EN 301 489-17 V2.2.1 (2012-09)



For WIFI enabled models:

Contains FCC ID:2ACZO-WIFI1232T, In Canada: Contains IC: 20326-USRC216

All PRECISE-LOG Series data loggers comply with Part15 of the FCC Rules. Operation is subject to the following two conditions:

- 1. These devices may not cause harmful interference, and
- 2. These devices must accept any interference received, including interference that may cause undesired operation.

## **1.3 Care of the logger**

PRECISE-LOG data loggers are designed to work in humid atmospheres of up to 95% RH noncondensing. They should be protected against immersion. The environment temperature should be within -40 to  $+70^{\circ}$ C (-40 to  $+158^{\circ}$ F).

## 1.4 Identity of the logger

Each logger has its own unique serial number, which can be found on the back of the enclosure. The serial number is used to identify the logger and enable us to keep a record of its history like calibrations and warranty. Please reference it in any correspondence with MEI.

## 1.5 Battery

The battery lasts in excess of 10 years when sampling at 1-minute intervals in stand-alone mode. When the battery is nearing the end of its service life, the on-board status LED will glow in amber each time the logger is sampling the data. The battery indicator on the status window in SiteView software will also display warning of low battery level. The battery operates approximately one or two weeks from the time the logger first indicates a low battery, but we recommend that the battery be changed as soon as the warning is displayed. The battery is factory replaceable only.

## **1.6 Recalibration**

Any PRECISE-LOG data logger is supplied with all channels pre-calibrated and should not require any further recalibration for a period of 12 months.

We recommend the logger be recalibrated every year. You may recalibrate the logger longer than a year depending on your application standard.

You may return the logger to the supplier for recalibration service or recalibrate it on your own via SiteView software.

SiteView software provides two-point calibration for the most of the loggers.

## 1.7 Safety Warning

#### Maximum Input Voltage Range

For logger model: PL-VW, PL-TW (WIFI enabled): The logger is designed to measure single common ground DC voltages in the range up to 20 VDC. Any voltages over this range may cause permanent damage to the device.

#### Maximum Input Current Range

For logger model: PL-CW (WIFI enabled):

The logger is designed to measure single common ground DC current in the range up to 50 mA. Any current over this range may cause permanent damage to the device.

#### **External Power Supply**

When using external power supply (via PC's USB port or thirty party +5 VDC power supply) to power the logger please make sure that the external power supply has the same common ground with the external input process signals.

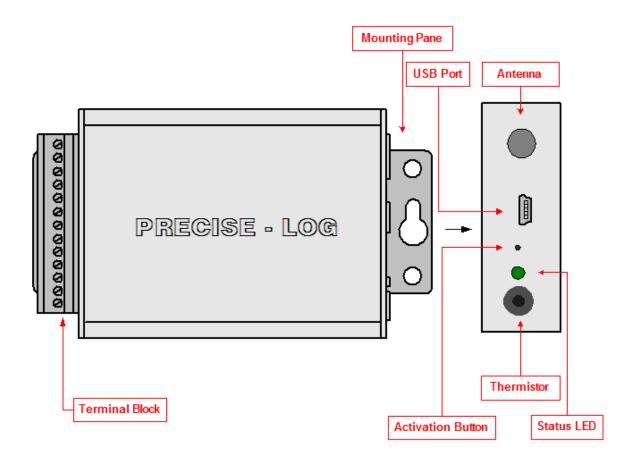
When using other third party external power supplies, please make sure the voltage of the external power supply is +5 VDC (+/- 5% ripple).

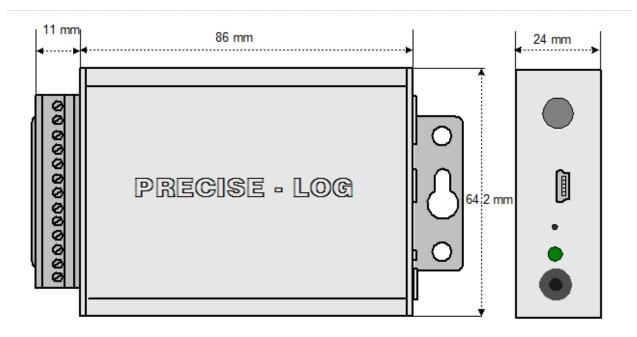
#### Grounding

The common ground of the PRECISE-LOG data logger is connected directly to the ground of the input process signals and the ground of the external power supply (if applicable).

# 2. Hardware & Mechanical Dimension

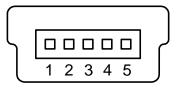
Logger Diagram:





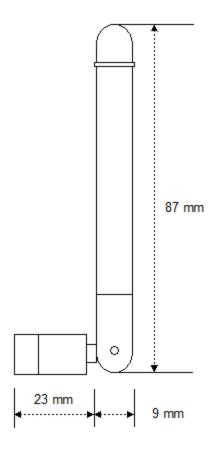
Dimension: 88 X 64.2 X 24 MM 3.46 X 2.53 X 0.95 Inches

#### **USB Port Pin-out (Face-In)**



- Pin1: External Power Supply (+5 VDC)
- Pin2: Logger Communications Receiver Line (RX)
- Pin3: Logger Communications Transmitter Line (TX)
- Pin4: Common Ground (COM, GND)

#### Antenna:

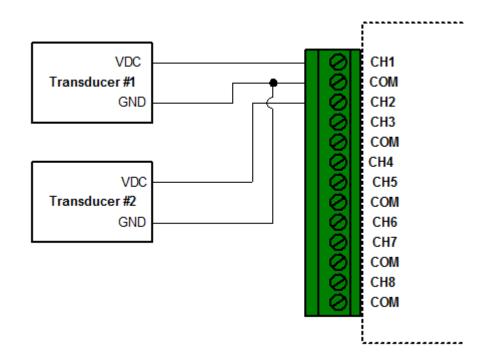


## **3. Channels and Sensor connections**

All "COM" terminals are connected together and should be connected to the common ground of the process signals.

## PL-VW – Voltage Inputs

A PL-VW logger has eight external voltage DC channels used to measure single-ended voltage DC signals maximum of 20 volt. The following figure illustrates the correct input connections:



### **Voltage External Input Connections**

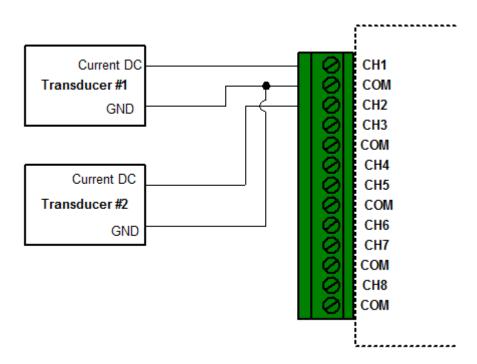
Note: All inputs must share the same common ground.

#### **Channel and Sensor Specifications:**

Connections:	Pluggable terminal block for eight external channels
Channels:	CH1 to CH8: Eight external Voltage DC with software
	programmable input range selections for each channel:
	0 to 20 V, 0 to 5 V
<b>Resolution:</b>	0.0018%
Accuracy:	+/- 0.05% FSR @ 25°C
Input Impedance:	>1 Mohms
<b>Over-voltage protection:</b>	+/- 40 VDC

## **PL-CW – Current Inputs**

A PL-CW logger has eight external current DC channels used to measure single-ended current DC signals maximum of 50 mA. The following figure illustrates the correct input connections:



#### **Current External Input Connections**

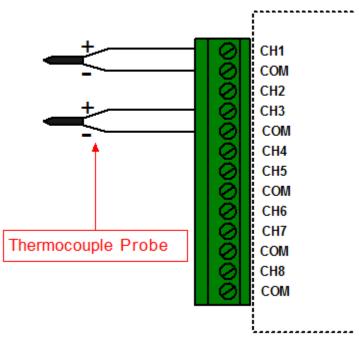
Note: All inputs must share the same common ground.

#### **Channel and Sensor Specifications:**

Connections:	Pluggable terminal block for eight external channels
Channels:	CH1 to CH8: Eight external current DC with software
	programmable input range selections for each channel:
	4-20 mA, 50 mA
ADC Resolution:	0.0018%
Accuracy:	+/- 0.1% FSR @ 25°C
Load Resistance:	12 Ohm
<b>Over-current Protection</b>	+/- 100 mA

## **PL-TW** – Thermocouple Inputs

Besides the on-board thermistor channel, PL-TW logger has eight external voltage DC channels used to measure thermocouple probes or small voltage signals. The following figure illustrates the correct input connections:



**Thermocouple Input Connections** 

Note: All inputs must share the same common ground.

#### **Channel and Sensor Specifications:**

Connections:	Plugeable terminal block for eight external channels
Channels:	CH0: on-board thermistor $(-40 \sim +70^{\circ}\text{C})$ $(-40 \text{ to } +158^{\circ}\text{F})$ .
	CH1 to CH8: Eight external Voltage DC with software
	programmable input range selections for each channel:
	Range1: -8 to +73 mV
	Range3: -2 to +18 mV
<b>Resolution:</b>	0.0018%
Accuracy:	Voltage channels:
	Range:(-8 to +73 mV:
	+/- 0.1% (0.08 mV) @ 25°C + T/C Accuracy
	Range $-2$ to $+18$ mV:
	+/- 0.15% (0.03 mV) @ 25°C + T/C Accuracy
Temperature Compensation:	On-board thermistor
<b>Over-voltage protection:</b>	+/- 20 VDC

#### Measure Temperature:

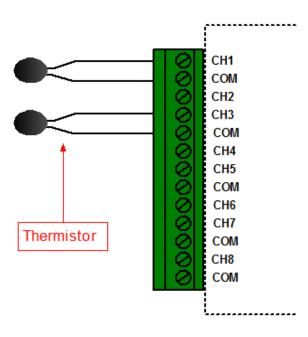
Based on the thermocouple type you want to use and the desired temperature range you want to measure you can select one of four channel's available ranges and the correct factory thermocouple equation:

Channel #	Channel Type/Input Range	Enabled	Description	Equation
0	Thermistor 😽		СНО	Temperature [Temperature]
1 (	TC Range1(-8 to +73mV) 💌		CH1	VoltageDC [VoltageDC]
2	TC Range1(-8 to +73mV)		CH2	VoltageDC [VoltageDC]
3	TC Range1(-8 to +73mV) 💌	<ul> <li>Image: A set of the set of the</li></ul>	СНЗ	ThermocoupleJ [ThermocoupleJ]
4	TC Range1(-8 to +73mV) 💌	<ul> <li>Image: A start of the start of</li></ul>	CH4	ThermocoupleK [ThermocoupleK]
5	TC Range1(-8 to +73mV) 💌	<ul> <li>Image: A start of the start of</li></ul>	CH5	ThermocoupleT [ThermocoupleT] Digit [ADC Digit Value]
6	TC Range1(-8 to +73mV) 🔽	<ul> <li>Image: A start of the start of</li></ul>	СН6	Ave5Points Average of Previous 5 P

For detailed temperature range and voltage – temperature look-up table of a specific thermocouple type please refer to NIST's website at: <u>http://srdata.nist.gov/its90/download/download.html</u>

## **PL-HW – Thermistor / Resistor Inputs**

PL-HW logger has eight external channels used to measure the external thermistors or resistors. The following figure illustrates the correct input connections:





Note: All inputs must share the same common ground.

Connections:	Plugeable terminal block for eight external channels
Channels:	CH1 to CH8: Eight external thermistor
<b>Resolution:</b>	0.0018%
Accuracy:	Thermistor channel: $+/- 0.2^{\circ}C(0^{\circ}C \sim 70^{\circ}C)$
-	External channels:
	+/- 0.2% FSR @ 25°C

#### **Channel and Sensor Specifications:**

#### **Measure Resistance:**

SiteView provides factory resistance equation for measuring the resistor's value. In Configuration dialog:

Choose Resistance equation:

Channel #	Channel Type/Input Rang	le	Enabled	Description	Equation
0	Thermistor	~	<b>~</b>	Office	Temperature [Temperature]
1	Resistance (>8K)	*	<b>V</b>	Lab with Temperature	Resistance [Resistance]
2	External Thermistor	¥	<b>~</b>	СН2	Resistance [Resistance]
3	Resistance (8K)	¥	<b>~</b>	СНЗ	Ave5Points Average of Previous 5 Pc
4	Resistance (8K)	¥	<b>~</b>	CH4	CO_200PPM [CO 200 PPM Equation]
5	Resistance (8K)	~	<b>~</b>	CH5	ExtThermistor2 [Equation for an exterr PowerConsume [Power consumption]
6	Resistance (8K)	*	<b>~</b>	CH6	StraightLine [Custom Line Test]

#### **Measure Temperature:**

The simple way to measure temperature is by using built-in "Temperature" equation. You select "Temperature" in "Equation" column:

#	Channel Type/Input Rang	e	Enabled	Description	Equation		Cali. Low	Cali. High	Action
0	Thermistor	~		СНО	Temperature	×	0	0	
1	External Thermistor	~	<b>V</b>	СН1	Temperature	~	192	-176	Change Coefficients
2	External Thermistor	¥	<b>V</b>	CH2	Resistance	~	39	-11	
3	Resistance (8K)	¥	<ul> <li>Image: A set of the set of the</li></ul>	СНЗ	Resistance	<	10	11	
4	Resistance (8K)	~		CH4	Resistance	~	0	0	
5	Resistance (8K)	~		CH5	Resistance	~	0	0	
6	Resistance (8K)	~		CH6	Resistance	~	0	0	
7	Resistance (8K)	~		CH7	Resistance	~	0	0	

Then you need to change temperature coefficient values by clicking "Change Coefficients" button in "Action" column:

#	Channel Type/Input Range	e	Enabled	Description	Equation		Cali. Low	Cali. High	Action
0	Thermistor	~		CHO	Temperature	¥	0	0	
	External Thermistor	~	<b>V</b>	CH1	Temperature	~	192	-176	Change Coefficients
2	External Thermistor	¥	<b>~</b>	CH2	Resistance	~	39	-11	
3	Resistance (8K)	~	<b>~</b>	СНЗ	Resistance	~	10	11	
4	Resistance (8K)	¥		CH4	Resistance	4	0	0	
5	Resistance (8K)	~		CH5	Resistance	~	0	0	
6	Resistance (8K)	~		CH6	Resistance	~	0	0	
7	Resistance (8K)	~		CH7	Resistance	~	0	0	
								1	

In the pop-up dialog enter new temperature coefficient values and click "OK" button.

A thermist temperatu	or is a type of resistor whose resistand re.	e varies significant	ly with
	nart-Hart equation is widely used for th res with high precision:	ermistors for a wide	range of
T =	$\frac{1}{a+b\ln(R)+c}$	$\frac{1}{\ln^3(R)}$	- 273.15
Where:	T is temperature in Celsius a, b and c are called the Steinhart-F	lart parameters als	o called
	temperature coefficients		
	R is resistance in ohms		
	R is resistance in ohms use 'Temperature' equation for any e		
to specify	R is resistance in ohms use 'Temperature' equation for any e a, b and c coefficients which you can g	get from the thermist	or manufacturer.
to specify Please e	R is resistance in ohms use 'Temperature' equation for any e	get from the thermist	or manufacturer.
to specify	R is resistance in ohms use 'Temperature' equation for any e a, b and c coefficients which you can g enter the following temperature c b:	get from the thermist oefficient values:	or manufacturer.
to specify Please e a: 0.00090326 If you know	R is resistance in ohms use 'Temperature' equation for any e a, b and c coefficients which you can g enter the following temperature c b:	get from the thermist oefficient values: c: 2.041095 esistance values yo	5E-07 bu can use below

You can also use a custom equation to do the same job or even more complicated calculation. An example of external thermistor equation is included in SiteView package. When you create your own equation you can refer to this equation and replace those temperature coefficients with the ones obtained from the thermistor manufacturer. The contents of the sample equation looks like this:

```
1
2
3
  //An example for external thermistor channel.
4
  //You may change a,b and c values based on the thermistor spec
  //Value 'Input' is resistance value
5
6 public double ExtThermistor2 (double Input)
7
  {
8
9
       double a, b, c, lgr, Output;
10
       //different thermistor will have different a, b, c values
11
       a = 0.001028444;;
12
       b = 0.000239244;
13
       c = 0.00000156;
14
15
       //validation
16
       if(Input <= 0)</pre>
17
           Input = 1;
       //-----
18
19
       lgr = Math.Log(Input);
20
21
         Output = 1f / (a + b * lgr + c * lgr * lgr * lgr) - 273.15f;
22
23
         return Output;
24
25 }
26
```

Once you have created your equation (for example YSI2252(YSI thermistor 44004)), you can apply it to the channel:

Channel #	# Channel Type/Input Range		Enabled	Description	Equation	
0	Thermistor	~	<ul> <li>Image: A start of the start of</li></ul>	Office	Temperature [Temperature]	
1	External Thermistor	~	<b>~</b>	Lab with Temperature	Thermistor103J2 [Mytest] 🛛 👻	
2	External Thermistor	¥	<ul> <li>Image: A start of the start of</li></ul>	CH2	DewPointEquation [Dew point equatic ExtThermistor2 [Equation for an exterr	
3	Resistance (8K)	¥	<ul> <li>Image: A start of the start of</li></ul>	СНЗ	PowerConsume [Power consumption]	
4	Resistance (8K)	¥	<ul> <li>Image: A start of the start of</li></ul>	CH4	StraightLine [Custom Line Test] StrightLineLow [Low Temp] testTemp [Test] Thermistor103J2 [Mytest]	
5	Resistance (8K)	~	<ul> <li>Image: A start of the start of</li></ul>	CH5		
6	Resistance (8K)	~	<ul> <li>Image: A start of the start of</li></ul>	СН6	YSI2252 [YSI thermistor 44004]	

## **4 Basic Functions**

## **Built-In Equations**

Equation and Channel Type are two essential parameters to make sure the physical measurement can be converted correctly.

An equation is a software functionality identified by its name of up to 16 characters. A built-in equation is an equation provided by SiteView software to convert a measurement for a specific channel type.

A channel must have an equation assigned to it in order to make the measurement conversion.

"Digit" built-in equation can be assigned to any channel type. If you assign "Digit" equation to a channel the physical measurement will be the original digital value measured by ADC (Analog-to-digital converter) hardware.

The following table lists all available b	ouilt-in equations for all channel types:
---	---

Channel Type	Equation Name	Equation Description
Internal-Thermistor	Temperature	Temperature
External-Thermistor	Temperature	Temperature
0-5 VDC	VoltageDC	Voltage DC
0-20 VDC	VoltageDC	Voltage DC
4-20 mA DC	CurrentDC	Current DC
0-50 mA DC	CurrentDC	Current DC
Thermocouple	ThermocoupleE	Thermocouple E
Range:	ThermocoupleJ	Thermocouple J
-8 to +73 mV	ThermocoupleK	Thermocouple K
	ThermocoupleN	Thermocouple N
	ThermocoupleT	Thermocouple T
	VoltageDC	Voltage DC
Thermocouple	ThermocoupleB	Thermocouple B
Range:	ThermocoupleE	Thermocouple E
-2 to +18 mV	ThermocoupleJ	Thermocouple J
	ThermocoupleK	Thermocouple K
	ThermocoupleN	Thermocouple N
	ThermocoupleR	Thermocouple R
	ThermocoupleS	Thermocouple S
	ThermocoupleT	Thermocouple T
	VoltageDC	Voltage DC
Х	InternalBattery	Measure the internal battery
		voltage level
Х	ExternalPower	Measure the external power
		supply

## Measuring & Logging

During the session of logging, when it's time to sample, the PRECISE-LOG measures the signal of each enabled channel, converts it to digital value and saves to the on-board memory.

The PRECISE-LOG uses a group of pre-set parameters to decide when and how to take in data and save it to the memory. Those parameters can be configured by SiteView software and their definitions are given as below:

#### Start Time:

This parameter specifies the date and time when the logger starts the session of logging.

#### **End Time:**

This parameter specifies the date and time when the logger will stop the session of logging. This value may be overridden by **Logging Mode** parameter. If **Logging Mode** was set to **Continue Logging**, the **Start Time** and the **End Time** will be shifted forward.

#### **Sampling Interval:**

This parameter specifies the time span the logger will wait after it takes the first sample and before it takes the second sample.

#### **Logging Mode:**

This parameter specifies if the logger will stop or continue logging when the memory is full. Available settings are **Stop Logging** and **Continue Logging**.

If **Logging Mode** was set to **Stop Logging**, the logger will stop logging at the **End Time**. If **Logging Mode** was set to **Continue Logging**, the logger will continue logging and the oldest data will be overwritten by the new data.

## **Downloading Data**

The data in the logger can be transferred to the computer by SiteView software even when the logger is still recording

The readings saved in the logger are ADC digital values, and will be converted to physical measurements by SiteView software after they are downloaded to the computer. The data conversion is handled by an equation that may be embedded in SiteView software or a script provided by the user.

## **Field Activation**

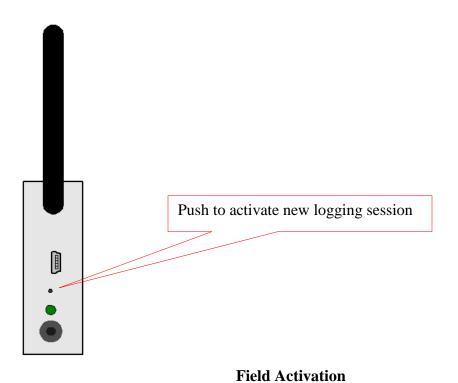
PRECISE-LOG data logger comes with an on-board activation button which can be used to activate/initiate the logging session in the field.

To activate the logger for new session:

1. With the SiteView software, open the configuration dialog of the logger, and set the start time to any time the desired start time will never reaches. Click **OK** button to save new settings to the logger.

	Time to Start: 07/08/2010, 4:11:44 PM	¥	
	Time to End:	₽ A	
	18/09/2010, 4:31:44 PM	~	
			_ _
Apply	ок	Cancel	
			2

2. The logger is now in **Start Delay** mode. When you need to activate the logger, press and hold the Activation button on the logger. When you see the status LED starts to flash release the button. The logger is now activated and is recording data.



Note: The activation button cannot be further activated once the logger has started the new session.

## **Reset Device**

The on-board activation button can also be used as a reset button in case the data logger does not respond to the PC communications.

Reset of CPU will cause the data and clock losses. Please reconfigure the logger after the recovery.

To reset the CPU, press and hold the activation button, the LED starts to blink in RED color with interval of one second. After 10 seconds the LED starts quick blinking to indicate it will reset the CPU. Release the button when you see this. Then plug the logger to USB port of PC, Site View should show it under the USB comm Tab.

## Status LED

PRECISE-LOG logger has an on-board LED used to indicate:

1. Sampling:

When the LED was enabled by SiteView, it will flash once in green when the logger is sampling. The colour of the LED can be overridden by the following conditions:

- Alarms: The LED will flash in red when it samples if any channel alarms are enabled and are triggered.
- 3. Low Battery:

The LED will flash in amber when it samples if the logger detects a low battery level.

If you do not need the LED to indicate the status of operation you can disable it (via SiteView) in order to increase the battery life.

## 5. Software

SiteView Windows software is used to communicate with the PRECISE-LOG data logger for data downloading, logging management, and channel range configuration.

This section outlines basic functions that SiteView offers. For complete instructions on how to use SiteView software please refer to **SiteView User's Manual** available for download online.

## System Requirements

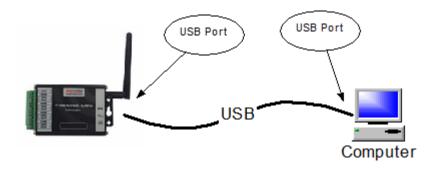
Computer: CPU: 1.0 GHZ or above Memory: 1 GB or above Port: 1 USB port Hard Drive: 1GB or above

Operating System: Window XP with SP2 or above, Window Vista, Window 7, 8, 10

## **Communications Interfaces**

The PRECISE-LOG logger has a USB port used for communications with a computer. The WIFI enabled version has an on-board WIFI module used for remote communication.

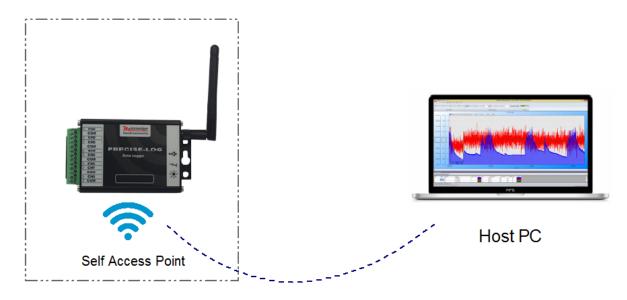
The following schematics illustrate different options that SiteView software can communicate with a data logger.



**USB** Connection



WIFI Wireless Connection (Standard Server Mode)



WIFI Wireless Connection (AccessPoint Server Mode)

## Install SiteView and USB Driver

1. Install SiteView.

Insert the included CD to the CD Drive. The installation should start to run automatically. Follow the on-screen instructions to complete the installation.

<b>1</b>	SiteView 3.0.3 - InstallShield Wizard			×
			Welcome to the InstallShield Wizard for SiteView 3.0.3	
	Site View		The InstallShield(R) Wizard will allow you to modify, repair, or remove SiteView 3.0.3. To continue, click Next.	r
			< Back Next > Cancel	

Click "Next >" button to proceed to the next page.

SiteView 3.0.3 - InstallShield Wizard	x
License Agreement Please read the following license agreement carefully.	lge Inc.
Software License Agreement	^
PLEASE READ THIS SOFTWARE LICENSE AGREEMENT CAREFULLY BEFORE DOWNLOADING OR USING THE SOFTWARE. BY CLICKING ON THE ACCEPT BUTTON, OPENING THE PACKAGE, DOWNLOADING THE PRODUCT, OR USING THE EQUIPMENT THAT CONTAINS THIS PRODUCT, YOU ARE CONSENTING TO BE BOUND BY THIS AGREEMENT. IF YOU DO NOT AGREE TO ALL OF THE TERMS OF THIS AGREEMENT, CLICK THE DO NOT ACCEPT OF CANCEL BUTTON AND THE INSTALLATION PROCESS WILL NOT CONTINUE.	
Ownership of the Software	×
O I accept the terms in the license agreement Print	
I do not accept the terms in the license agreement	
InstallShield	
<back next=""> Cancel</back>	

Please read the License Agreement carefully. If you accept the terms click "I Agree", then click "Next >" button. Otherwise click "Cancel" to cancel the installation.

₿	SiteView 3.0	0.3 - InstallShie	d Wizard	X
Contraction (Section	tion Folder ext to install to this folder, or d	lick Change to install	to a different fold	struments Inc.
P	Install SiteView 3.0.3 to:	100 Notes		
	C: Wicroedge Instruments I	nc\SiteView\		Change
InstallShield				
		< Back	Next >	Cancel

In this dialog select a destination folder where SiteView will be installed. We recommend you keep the default folder.

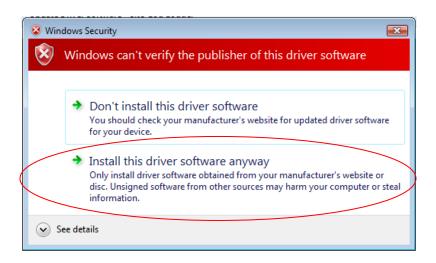
Once you are ready, click "Next >" button to proceed to the next page.

₿	SiteView 3.0.3 - InstallShield Wizard
	eady to Install the Program The wizard is ready to begin installation.
	If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard. Current Settings:
	Setup Type: Typical
	Destination Folder: C: \Microedge Instruments Inc\SiteView\
Insta	allShield

## Click "Install" button to start the installation.

閿	SiteView 3.0.3 - InstallShield Wizard 🛛 – 🗖 🗙
and a second second	bg SiteView 3.0.3
Þ	Please wait while the InstallShield Wizard installs SiteView 3.0.3. This may take several minutes. Status:
InstallShield	< Back Next > Cancel

Depending on the operating system, you may see the dialog similar to the one below displayed. Please select "**Continue Anyway**" or "**Install this driver software anyway**" to allow the software and the driver to be installed.



As SiteView is being installed the above dialog shows the installation progress by percentage. Once the installation is complete, the below dialog appears:

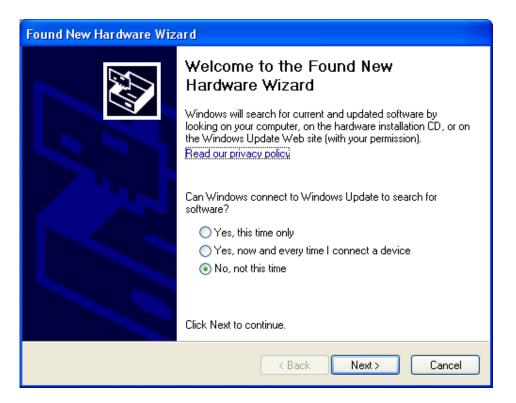
<b>B</b>	SiteView 3.0.3 - InstallShield Wizard		
		InstallShield Wizard Completed	٦
	Site Veres	The InstallShield Wizard has successfully installed SiteView 3.0.3. Click Finish to exit the wizard.	
		Launch the program	
		< Back Finish Cancel	

Click "Finish" button to finish the installation and close the dialog.

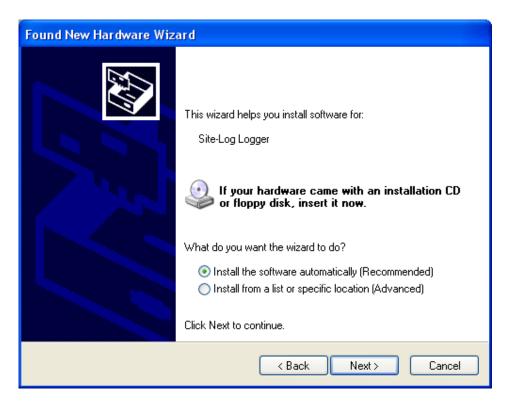
## **Connect Data Logger**

Connect the logger to the computer's USB port. Windows Vista and Windows 7, 8, 10 will automatically recognize the data logger.

For Windows XP user, the following dialog window will appear:



Select "No, not this time" from options available and then Click "Next >" to proceed with the installation.



Select "Install the software automatically (Recommended)" as shown in the above figure and then click "Next >".

Found New Hardware Wizard
Please select the best match for your hardware from the list below.
Site-Log Logger
Description Version Manufacturer Location
Site-Log Logger 2.8.8.8 FTDI c:\windows\inf\oem5.ir
Site-Log Logger 2.8.8.0 Microedge Instruments Inc. c:\windows\inf\oem9.ir
This driver is not digitally signed! <u>Tell me why driver signing is important</u>
< Back Next > Cancel

Select the item with Manufacturer of Microedge Instruments Inc and click "Next>" to proceed.



In the following message dialog, click "Continue Anyway" to continue with the installation:

The screen below will be displayed as Windows copies required driver files:

Found New Hardware Wizard		
Please wait while the wizard installs the software		
Site-Log Logger		
Setting a system restore point and backing up old files in case your system needs to be restored in the future.		
< Back Next > Cancel		

Windows should then display a message indicating the installation was successful:

Found New Hardware Wizard					
Found New Hardware Wiz	Completing the Found New Hardware Wizard The wizard has finished installing the software for: Site-Log Logger				
	Click Finish to close the wizard.				
	< Back Finish Cancel				

## Activate SiteView

After the installation SiteView needs to be activated by entering Product Key you obtained when you bought SiteView.

If the above installation of SiteView was successful, SiteView can be launched by either one of the following methods:

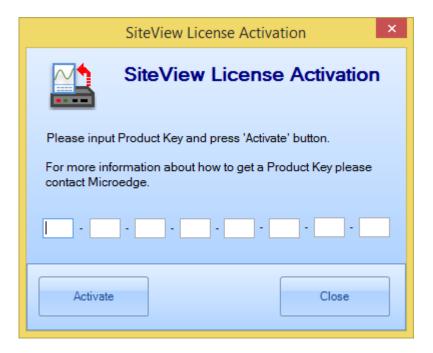
Double click on SiteView icon on the desktop:



Or:

Using Windows Start Menu, select Start : All Programs: Microedge Instruments Inc.: SiteView.

Double click "SiteView" icon on the desktop, and the following dialog appears:



Enter the Product Key, then click the **Activate** button. If the Product Key is accepted the following confirmation dialog will appear:



Click **OK** button to finish the activation. From now you can start using SiteView.

	sion Available		S	iteView by Mi	croedge Ins	struments (	(IN HOUSE VI	ERSION)		↔ _ □
General	Logs Others Help									
About	Contents 🕜 Index	Get Latest Versi	on							
	Help	Upgrade SiteView								
SB	*	📥 SITE-LOG LPT	'H-1 (S/	N: 01060100023	34)					
I SITE	-LOG LPTH-1 (S/N: 010601000234)	Real-Time	Refre	sh 🕘 Downl		lear 🏓	Configure	Calibrate 👻 💽	Add to Schedule Download	Factory Calibrate
		General			Alarm & Excit	ation				Device Info:
		SITE-LOG LPTH-1	(S/N: 0	10601000234)						Firmware:
1		LED light when	samplin	q						2.26
		Description:			Loggi	ng Method:				Board ID:
		New Logger				-	n memory full			SL RHT-F-5
		Sampling Interval:			Total	Memory:				
		5 Seconds			41922	256 Reading	S	30 Days 7 Hou	irs 49 Minutes 20 Seconds	Battery Level:
		Start Time:			Hear	- Selected Me	mon			0.08V (2%)
		2018-04-14 8:36:56	AM.0			04 Readings		2 Days 7 Hour	s 49 Minutes	Low Battery!!
		End Time:				-		i i		Restart Cause:
		2018-04-14 8:36:56	AMO		0 Rea	Memory:		(0.0%)		NORMAL_POWER_U
		4	The logger was last configured at: 2018-04-14 8:36:51 AM.0							
		The logger has	1							
		Channels:								
		Channel #	Ena	Description	Equation	Cali. Low	Cali. High	Fact Cali Zero	Fact Calli Span	
		0 [ PT103J2 Ther	-	CH0	Tempera	0	0	30	29	
		1 [External Thermi	✓	CH1	Resistan	0	0	46	16	
		2 [External Thermi	•	CH2	Resistan	0	0	20	9	
		3 [External Thermi	✓	CH3	Resistan	0	0	191	-1289	
		4 [External Thermi	•	CH4	Resistan	-	0	26	-5	
		5 [External Thermi	✓	CH5	Resistan	0	0	-15	-11	
_		Logs								
S USB		Time	F	leporter			Log			
3	er	2018/4/15 10:17:41.707								
IISB Some		2018/4/15 10:17:41.735 2018/4/15 10:17:41.747	2018/4/15 10.17:41.735         SITE-LOG LPTH-1 (S/N: 010601000234)         Loading equation properties Succeeded           2018/4/15 10.17:41.747         SITE-LOG LPTH-1 (S/N: 010601000234)         Loading extra data							
USB Serv	Serial Port		2018/4/15 10:17:41.747 SITE-LOG LPTH-1 (SIN: 010601000234) Loading extra data 2018/4/15 10:17:41.759 SITE-LOG LPTH-1 (SIN: 010601000234) Loading extra data Succeeded							
5	t	2018/4/15 10:17:41.759	Sl	TE-LOG LPTH-1 (	S/N: 010601000	0234)	Loading extra dat	a Succeeded		

## Main Window Frame

#### **Communication Panel**

The communication Panel contains USB, USB Device Server, Serial Port tabs that are used to deal with the respective physical logger connections to the computer. For instance, if the logger is connected to the computer via a USB port you need to use USB tab to communicate with the logger.

#### Menu Bar

The Menu Bar contains File, View, Tools, and Help menus and their respective sub menus that are used to complete various tasks.

#### **Tool Bar**

The Tool Bar provides an easy way to access the menu items by including some of the frequently used items on the tool bar as the tool bar buttons.

#### Main Working Panel

The Main Working Panel contains a series Tab pages for logger status and the graph information illustrated as the follows:

SITE-LOG LPTH-1 (S/N: 01060100023	SITE-LOG LRTD-1 (S/N: 021001000099)
Real-Time Refresh Downloa	ad Clear PC Configure Calibrate -
General A	larm & Excitation
SITE-LOG LRTD-1 (S/N: 021001000099)	
LED light when sampling	
Description:	Logging Method:

#### **Information Log Panel**

This section shows the information logs for any activities SiteView does. This is for diagnostics and information purposes.

## **View Logger Status**

This manual will use USB as an example of communications interface. For other communications interfaces please refer to **SiteView User's Manual** available for download online.

If the logger is connected to the computer correctly the logger icon should show in USB tab of the communication panel illustrated below:

	New Version Available
	General Logs Others Help
	SVF File DB Explorer Logs Explorer Data
USE	<b>}</b>
-	VL-TH (S/N: 106CC00001)
涿	PRECISE-LOG PL-TW (S/L 060300600299)
×	
C)	
C	USB
4	USB Server
<b>5</b>	Serial Port

Double clicking **PRECISE-LOG Logger** icon or clicking "Contact" button with the icon been highlighted will bring up the logger status page.

The status page shows the start and end time, sampling interval and other properties of the connected logger:

Real-Time CRefresh	Dow		ar 🥂 Configu	ire 🔀 Cal	ibrate 🔹 📝 Ad	dd to Schedule Download		l
General		Alarm	X		WIFI		Device Info:	
PRECISE-LOG PL-TW (S/N:	060300600	0299)					Firmware:	
LED light when sampling	J						2.01	
Description:		Loggir	g Method:				Board ID:	
New Logger		Stop lo	gging when mer	nory full			WVIT-E-6	
Sampling Interval:		Total	Memory:					
5 Seconds		41922	56 Readings		26 Days 22 Hours	57 Minutes 10 Seconds	Battery Level:	
Start Time:		User S	elected Memory	:			0.17V (5%)	
2018-04-15 11:25:50 AM		30423	304236 Readings 1 Days 22 Hours 57 Minutes			Low Battery!!		
End Time:		Used	Used Memory:					
2018-04-15 11:25:50 AM		9 Read	9 Readings 5 Seconds (0.0%)					
The logger was last configur	red at:	2018-0	)4-15 11:25:45 AI	M				
The logger is currently Channels:	logging d	lata						
Channel #	Enabled	Description	Equation	Cali. Low	Cali. High			
) [ Thermistor ]	✓	CH0	Temperature	0	0			
1 [ TC Range1(-8 to +73mV) ]	✓	CH1	VoltageDC	0	0			
[ IC Range (-o to +75mV)]	✓	CH2	VoltageDC	0	0			
	•		N. 1. D.O.	0	0			
? [ TC Range1(-8 to +73mV) ]	•	CH3	VoltageDC	•				
2 [TC Range1(-8 to +73mV)] 8 [TC Range1(-8 to +73mV)]	✓ ✓	CH3 CH4	VoltageDC	0	0			
2 [TC Range (-8 to +73mV)] 2 [TC Range1(-8 to +73mV)] 3 [TC Range1(-8 to +73mV)] 4 [TC Range1(-8 to +73mV)] 5 [TC Range1(-8 to +73mV)] 6 [TC Range1(-8 to +73mV)]	•		VoltageDC	-	0 0			

### General

This sub tab page displays the general properties of the logger.

### Alarm

This sub tab page displays the properties regarding the alarm. By clicking the "Alarm" tab page caption, the following page will appear:

nannei Alai	rm Settings	:			
Channel #	Enabled	Low Alarm	High Alarm	Unit	
0 [ Thermis		433.48	433.48	°C	
1 [ TC Ran		-8.000	-8.000	mV	
2 [ TC Ran		-8.000	-8.000	mV	
3 [ TC Ran		-8.000	-8.000	mV	
4 [ TC Ran		-8.000	-8.000	mV	
5 [ TC Ran		-8.000	-8.000	mV	
6 [ TC Ran		-8.000	-8.000	mV	
7 [ TC Ran		-8.000	-8.000	mV	
8 [ TC Ran		-8.000	-8.000	mV	

### WIFI:

This sub tab page displays the properties regarding the WIFI:

General	Alarm	WIFI	
Wifi Mode:	MAC Address:		
Server Mode	D8:B0:4C:B1:E1:08		
Pr	operties		
Device IP Address:	Port:		
192.168.0.112	5678		
SSID: meitest1	Connected		
Signal S	trength: 66%		

Through the tool bar buttons you can act on other tasks described in the following chapters.

### **Configure Logger**

Configuration of the logger is a procedure to edit the properties of the logger and to start the new logging session.

If you are already in the logger status panel, clicking on the **Configure** button will bring up the configuration dialog window:

< PRECISE-LOG PL-TW (	S/N: 0603006002	199)		
Real-Time	Download		Configure	Calibrate
General		Alarm		WIFI

•				Log	ger Co	nfigura	ation	PREC	ISE-LO	g pl	-TW (S/N	: 060300600	)299)	<b>+</b>	-		x
	General	C	AI	arm		( 1	WIFI S	Settings									
	Description:			Time	e To Sta	ırt:				Cu	rrent Time:	2018-04-15 1	11:29:30 AM				
	New Logger				8-04-15, 1		AM				al-Time:						
	Sampling Interval:			Tim	e To En	d.					hannel #	Reading	Unit				
	5 Seconds		*		8-04-17.1		AM										
				Tot	al Time	Span:			9								
				Yea		Months		Days									
	On-Board LED:			0		0		1	¥								
1	<ul> <li>Light When Sampling</li> </ul>			Ho		Minute		Secon	Ids								
	When Memory Full:			22	~	57	~	0	*								
	Stop Logging			Mer	nory Usa	age:											
(	Continue Logging								7.26%								
C	hannels:																
#	Channel Type/Input Rang	e	Enabled	Descri	ption		Equat	tion			Cali. Low	Cali. High					
0	Thermistor	~	~	CH0		1	Tempe	erature		~	0	0					
1	TC Range1(-8 to +73mV)	~	•	CH1		١	/oltag	eDC		~	0	0					
2	TC Range1(-8 to +73mV)	~	-	CH2		١	/oltag	eDC		~	0	0					
3	TC Range1(-8 to +73mV)	~	-	CH3		١	/oltag	eDC		~	-	0	_				
4	TC Range1(-8 to +73mV)	~	✓	CH4		١	/oltag	eDC		_	0	0	_				
5	TC Range1(-8 to +73mV)	~	-	CH5			/oltag			_	0	0					
6	TC Range1(-8 to +73mV)	~	<b>_</b>	CH6			/oltag			_	0	0	-				
7	TC Range1(-8 to +73mV)	~	-	CH7			/oltag			_	0	0	-				
8	TC Range1(-8 to +73mV)	~	✓	CH8		١	/oltag	eDC		~	0	0					
	Help		Real-Time		Load Te	molate		Sauce	As Templa	to		Apply	ок		C-	ncel	
	нер		rteal-Time		Load Te	sinplate		Save A	ks i empla	ne		Apply	UK		Ca	ncer	

There are three tab pages in this dialog. The **General** page is displayed in the above screen shot. If you click **Alarm** tab the following page will appear:

General		Alarm	WIFI Setti	ngs	
Channel Alarm Sel	ttings:				
Channel #	Enabled	Low Alarm	High Alarm	Unit	
0 [ Themistor ]		433.48	433.48	°C	
1 [ TC Range1(-8		-8.000	-8.000	mV	
2 [ TC Range1(-8		-8.000	-8.000	mV	
3 [ TC Range1(-8		-8.000	-8.000	mV	
4 [ TC Range1(-8		-8.000	-8.000	mV	
5 [ TC Range1(-8		-8.000	-8.000	mV	
6 [ TC Range1(-8		-8.000	-8.000	mV	
7 [ TC Range1(-8		-8.000	-8.000	mV	
8 [ TC Range1(-8		-8.000	-8.000	mV	

If you click **WIFI Settings** tab the following page will appear:

•2		Logger	Configuration PRECISE	-LOG PL-CW (S/N: 060800600110)
Genera	I (	Alarm	WIFI Settings	
Wifi Mode	Standard Server M	ode	Use Modbus P	Protocol Save WIFI Settings
Device	e IP/Port	WIF	I Access Point	Server Mode Properties
Device IP /	Address:	SSID	Security:	Logger Password:
10.10.100.2	254 I	meitest1	WPA2PSK V	
Port:		Password	Encryption:	Re-enter Password:
5678 🚖			AES 🗸	
		Reenter Passw	rord:	
			Show	Show

The following fields are for editing:

### **Description:**

Description specifies the information about the logging session with a maximum of 30 characters. It will be the default Title section of the plot in the plot view.

### **Sampling Interval:**

This field specifies the time span the logger will wait between two measurements sampling. Valid settings are:

Sampling Interval
1 second to 9 seconds in 1-second increment
10 seconds to 50 seconds in 10-second increment
1 minute to 59 minutes with 1-minute increment
1 hour to 12 hour with 1-hour increment

Making changes to the Sampling Interval will affect Total Time Span fields.

### **On-Board LED**

Check this field to enable the on-board status LED. If the LED is enabled it will flash each time when it samples data to indicate:

- 1. The logging is active if the LED flashes in green.
- 2. The logger is in alarm state if the LED flashes in red.
- 3. The battery will die soon if the LED flashes in amber.

If you do not need LED indication, you can uncheck this field to increase the battery life.

### When Memory Full

If you want the logger to stop logging when the memory is full select **Stop logging**. If you want the logger to continue logging and overwrite the oldest data with the new data (FIFO), you choose **Continue logging**.

### Time to Start & Time to End

These two fields specify the desired time the logger will start logging data and the time to stop logging data.

Making changes to the Time to Start/End will affect Total Time Span fields mentioned later.

If you have selected the **Continue logging** field, when the memory is full, both start time and end time will move forward accordingly.

### **Total Time Span**

These fields are an alternate way to specify the total logging time from the start time you specified above.

Changes made on these fields will affect **Time to End** field.

### **Channel Settings:**

### Enabled

Check this field to enable this channel for logging.

### Channel Range

This field specifies the measurement range the channel will use. Different channel types have different input range selections. Please refer to **Channels and Sensor Connections** chapter for details.

### Description

This field specifies the name or the description of the channel (maximum of 30 characters).

### Equation

This field specifies the equation used for the channel. Different channel ranges have different default equations. Please refer to **Channels and Sensor Connections** chapter for details.

In order to convert a process signal to a correct measurement value an equation must be applied to the channel.

For example, if you want to use the 0-5 VDC channel to record a battery voltage output, the logger will first convert the battery voltage values to digital values and save them in the memory. Later when all data are downloaded to a computer, SiteView will use equation "VoltageDC" to convert the digital values back to voltage values.

If you are recording the voltage output of a transducer or transmitter and the range of the voltage refers to another measurement unit, you will need to create your own equation for this conversion. For instance, if your CO2 transducer outputs 0 - 5VDC representing 0 - 5000PPM of CO2, the custom equation you need to create looks like this:

```
public double CO2Equation(double Input)
{
     double output;
     output = 5000 * Input / 5;
```

return output;

For detailed instructions on how to create a custom equation please refer to the **SiteView User's Manual** available for download online.

### Cali. Low & Cali. High

}

These two fields specify the custom calibration values that are used for measurement adjustment.

Cali. Low value specifies the digital value that is over zero when the input value is in the low range value (for 0-5 VDC channel the low range is zero volt). The equation will subtract this value from the original digital value when doing the conversion.

Cali. High value specifies the digital value that is over 65535 when the input value is in the high range value (for 0 - 5VDC channel the high range is 5 volt). The equation will subtract this value from the original digital value when doing the conversion.

The valid range for these two parameters is from -32768 to 32767.

These two parameters for each channel were originally set to zero when the logger was first released.

If you have finished the **Cali. Low** and **Cali. High** calibration instructed in the later chapter, the "Cali. Low" and "Cali. High" values may be readjusted.

### Alarm

This table specifies how each channel controls alarm state by:

Alarm Enabled:	Check this field to associate this channel to the alarm state.
Low & High Alarm:	These fields define the alarm thresholds. If the reading is beyond these thresholds, the alarm is triggered.

Channel Alarm Settings:						
CH#	Alarm Enabled	Low Alarm	High Alarm	Unit		
0	<b>V</b>	-134.09	110.50	°C		
1	<b>V</b>	-353.3989	20568.2460	mV		
2	<b>~</b>	-8.5205	10.0501	mV		
3	<b>~</b>	0.0000	0.0000	mV		
4	<b>~</b>	0.0000	0.0000	mV		
5	<b>~</b>	0.0000	0.0000	mV		
6	<ul> <li>Image: A start of the start of</li></ul>	0.0000	0.0000	mV		
7	<ul><li>✓</li></ul>	0.0000	0.0000	mV		

### Channel Alarm Settings:

### **WIFI Settings:**

WIFI Mode:	
Wifi Function Disalbed:	disable the wifi function
Standard Server Mode:	The logger will run as server. Both client PC and the logger
	will join an existing WIFI Access Point and a client PC can
	communicate with it.
AccessPoint Sterver Mode:	The logger will create a WIFI Access Point(AP), then a client
	PC can join this network and start to communicate with the
	logger.

#### **Device IP/Port:**

The device's IP address is dynamically assigned by the router. You can specify the port the device will work on.

### Wifi Access Point:

This is the wifi network the logger will connect to.

SSID:	In Standard Server mode: the name of the wifi network both PC and logger
	to join.
	In AccessPoint Server mode: the name of the wifi is "PL" + "Serial Number
	of the Logger"
Password:	The password of the wifi network
Security:	You can specify the following security: Open, Shared, WPAPSK,
	WPA2PSK.
Encryption:	You can specify the following encryption: None, WEP-H, WEP-A, TKIP,
• •	AES.

### **Server Mode Properties:**

You can specify a password at the logger level to prevent other clients from accessing logger.

### **Use Modbus Protocol:**

If you want to turn the data logger into a Modbus server communicating with Modbus client/master, you can check this entry.

### **Save WIFI Settings:**

Click this button to save wifi related settings to the logger. Then the logger will blink in amber to indicate it is trying to connect to the wifi network. Once it successfully connected to the network it will stop amber blinking and return to the normal operation.

Once you have finished making changes to the available settings, you can click **OK** button to save the settings to the logger. The logger will start to record data from **Time to Start** you have set.

# Note: clicking on OK or Apply buttons will erase all existing measurements saved in the logger.

For a detailed description of each available setting please refer to the **SiteView User's Manual** available for download online.

### Download Logger

If you are already in logger status tab, clicking on "Download" button will bring up **Download** dialog window:



Download Log	gger PRECISE	-LOG PL-TW S/N: 060300600299	×
Choose where to downloa	ad data to:		
Append Data To System Database	e	Download Data To SiteView File	
	Databas	se Information	
Session:	Already Dowr	nloaded Data:	
2018-04-15 11:28:09 AM	Not available		
			ļ
	Data to t	be Downloaded	
Start Time:		End Time:	
2018-04-15 11:28:14 AM	-	2018-04-15 11:28:34 AM	
20 Seconds [45 Readings]			
			)
Help		OK Cancel	

Started from Site View 3, data can be downloaded to the system database. Each data logger has a life-time database file associated to it. If you choose to "Append Data to System Database" you can specify End Time and start to download the data.

If you choose to download data to a separate Site View file, the user interface looks like:

Download Logger PRECISE-L	OG PL-TW S/N: 060300600299
Choose where to download data to:	
	Download Data To SiteView File
Download Data	to SiteView File
Filename:	
C:\Microedge Instruments Inc\SiteView\Download\PREC	ISE-LOG PL-TW-060300600299-2018-04-15-11-31-38.svf
Browse	
Data to be	Downloaded
Start Time:	End Time:
2018-04-15 11:28:14 AM	2018-04-15 11:28:34 AM
20 Seconds [45 Readings]	
Help	OK Cancel

### The fields that you can edit are:

### Filename & Browse

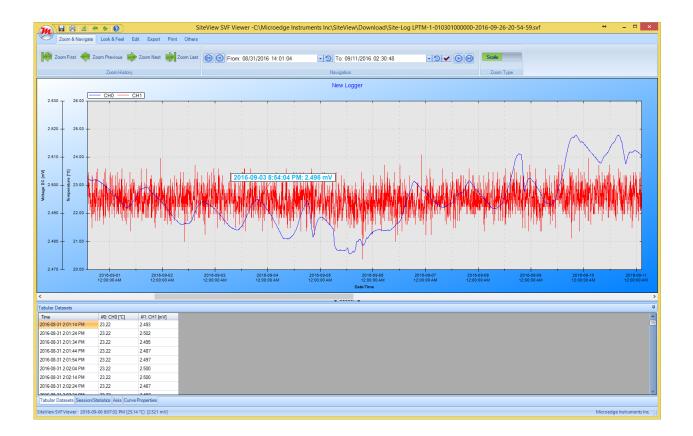
These fields specify the full file path the downloaded data will be saved into. Clicking on **Browse** button will display **File Save** dialog where you can edit or choose a file name.

### **Start Time & End Time**

These fields specify the desired start and end time for the data to be downloaded. You can use either scroll bars or the calendar controls to change the start and end time.

Once you have selected a desired time frame you can click **OK** button to start the download process.

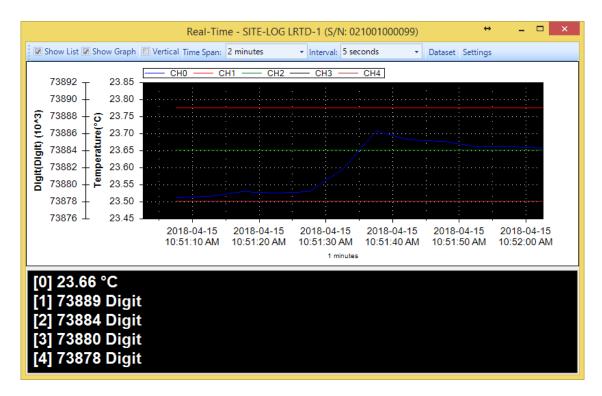
After the download the plot and tabular data will be displayed (If **Display plot after download** was not checked the plot will not display):



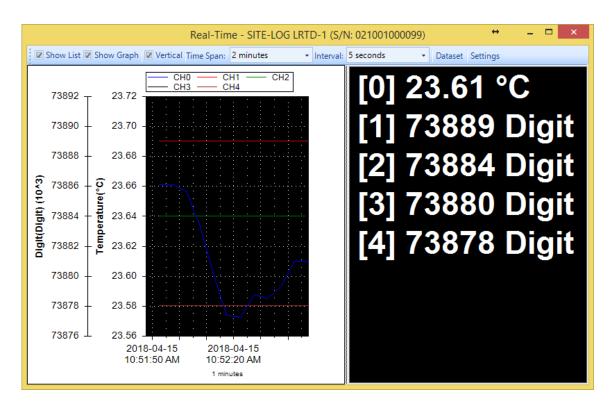
## **Real-Time Display**

SiteView can view the real-time measurements while the logger is still logging data. The realtime display shows the list of the latest channel real-time measurements, as well as the trend chart of all channel real-time measurements for the past given period of time from the current time.

To open real-time view, if the logger has been contacted and the status of the logger is displayed, click on **Real-Time** tool bar button. The following real-time dialog appears:









### **Tool bar buttons:**

#### Show List

Click to show/hide the list view panel.

### Show Graph

Click to show/hide the chart view panel.

### Vertical

Click to display the chart and list views vertically.

### **Time Span**

This field allows changing the time span for the chart view. Available settings are:

5 minutes	~
1 minute	
2 minutes	
5 minutes	
10 minutes	
20 minutes	
30 minutes	
1 hour	
2 hours	
5 hours	
12 hours	
1 day	
2 days	
5 days	
10 days	
1 month	

### Dataset

Click to display the tabular view of the recorded measurements illustrated below:

Time	CH1 (°C)	CH2 (mV)	CH3 (mV)	CH4 (mV)	CH5 (mV)	CH6 (mV)	CH7 (mV)	CH8 (mV)
21/08/2010 9:57:45 PM	23.94	76.9055	76.9055	76.9055	76.9055	77.2107	77.2107	77.5158
21/08/2010 9:57:50 PM	23.93	76.2951	76.6003	76.2951	76.6003	76.6003	76.9055	76.9055
21/08/2010 9:57:55 PM	23.91	76.6003	76.6003	76.6003	76.6003	76.9055	77.5158	76.9055
21/08/2010 9:58:00 PM	23.90	76.6003	76.9055	76.2951	77.2107	77.2107	77.2107	77.2107
21/08/2010 9:58:05 PM	23.91	76.6003	76.6003	76.9055	77.2107	76.6003	75.9899	76.2951
21/08/2010 9:58:10 PM	23.92	76.9055	76.9055	77.2107	76.6003	76.9055	76.6003	76.9055
21/08/2010 9:58:15 PM	23.94	76.6003	76.2951	77.2107	77.2107	76.9055	76.6003	76.9055
21/08/2010 9:58:20 PM	23.93	77.2107	76.2951	76.2951	76.9055	76.9055	77.2107	77.2107
21/08/2010 9:58:25 PM	23.94	76.6003	76.2951	76.6003	77.2107	76.9055	76.9055	76.2951
21/08/2010 9:58:30 PM	23.94	76.2951	76.6003	76.9055	77.2107	77.5158	76.9055	77.2107
21/08/2010 9:58:35 PM	23.94	76.6003	76.2951	76.9055	76.9055	76.9055	76.6003	76.9055

### Settings

Click to display more properties illustrated below:

	Real-Time Settings							×					
	Line Properties:						Axis Properti	ies:					
	Channel #	Visible	Width	C	Color		Name	Visible	Auto Scale	Min	Nax		
	0	✓	1	<b>v</b>			Celsius (°C)	✓	✓	0	10		
	1	✓	1	~			Digit (Digit)	✓	✓	0	10		
	2	✓	1	¥									
	3	✓	1	$\mathbf{v}$									
	4	✓	1	<b>~</b>									
													_
										ist View Pr	operties		
							<ul> <li>Channe</li> </ul>	el Index \	lsible				
							Chann	el Descrip	tion Visible				
							Apply (	Channel C	Color To List				
<b>'</b>							(						_
										_			_
	Help										ОК	Cancel	

For detailed instructions on how to change real-time view settings please refer to **SiteView Instruction Manual** available for download online.

### Calibrate a Channel

SiteView software provides two-point calibration for most of the loggers.

### Understand Cali. Low & Cali. High

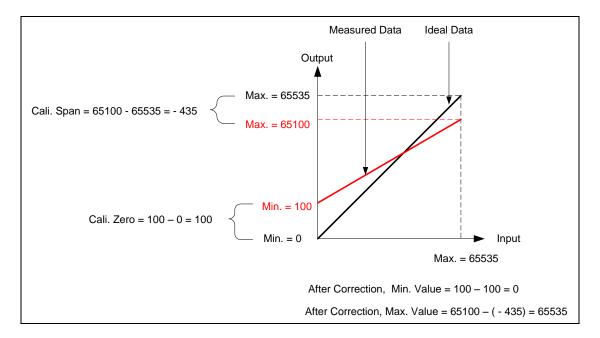
In the logger status page, there are two properties for each listed channel called **Cali. Low** and **Cali. High**. These two fields specify the calibration values that are used for measurement adjustment.

**Cali. Low** value specifies the digital value that is over zero when the input value is the lowest value (for 0-5 VDC channel the lowest value is zero volt). For instance, if you apply zero volt input and the logger measured 100 as the digital value, then **Cali. Low** should be 100 digits. The equation entity will subtract this value when resolving the correct lowest digital value.

**Cali. High** value specifies the digital value that is over 65535 when the input value is the highest value (for 0 - 5VDC channel the high range is 5 volt). For instance, if you apply 5 volt voltage to the channel and the logger measured 65100 as the digital value. Then **Cali. High** is "- 435" (calculated from 65100 – 65535). The equation entity will subtract this value (-435) from the digital value when resolving the highest digital value.

The valid range for these two parameters is from -32768 to 32767.

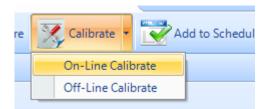
The following figure illustrates the relationship between an ideal data line and a measured data line and how **Cali. Low** and **Cali. High** correct the measured data line.



### **Decide On-Line or Off-Line Calibration**

If the source signal like voltage or current can be connected to the logger while the logger is connecting to the computer, you can calibrate the logger on-line. If the source signal like a temperature or relative humidity is not available for on-line calibration, you can calibrate the logger off-line after the logger has recorded the low and high point data.

You access On-Line / Off-Line Calibration via Calibrate button on the logger status tool bar.



The following dialog appears:

Select Channel 😁 🛛 🗕 🗖 🗙
Warning
Select a channel to calibrat
Help OK Cancel

Select the channel you want to calibrate on and click **OK** button. The calibration dialogs appear as follows:

	Channel Calibra	ation Wizard - Channel:1	×
<b>A</b>	tep 1: Low Point (	Calibration	
0	the channel is using, the range MilliVolt(mV) To point value of the source input th	of the channel is:           20000         MilliVolt(mV)           hat is connected to the channel:	
Input Low Reference 10 Click "Start Calibration"	ze Value MilliVolt(mV)	When you see the current reading is stable you	
Start Calibration	Current Reading	MilliVolt(mV)	
Click "Next >>" button Timer: 00:00:16 seconds	to proceed for High Point Calibri 3 readings	ation.	
Help		Previous Next >> Cancel	

Channel Calibration Wizard - Channel:1	×
Step 2: High Point Calibration	
Based on the equation the channel is using, the input range of the channel is:           0         MilliVolt(mV)         To         20000         MilliVolt(mV)           Please type in the high point value of the source input that is connected to the channel:	
Input High Reference Value           800         MilliVolt(mV)           Click "Start Calibration" button to start the calibration. When you see the current reading is stable you can click "Stop Calibration" button to stop this procedure.(Minimum 3 readings)	
Start Calibration Current Reading MilliVolt(mV)	
Click "Next >>" button to proceed for the result. Timer: 00:00:16 seconds. 3 readings	
Help     Previous     Next >>     Cancel	

	Channel Calibration Wizard - Channel:1					
Str	ep 3: Calibration I	Result				
Given Parameters: Channel Range 0 Input Low Reference 0.000 Calculated Parameter Measured Input Low 2289 Calibration Low Va 2288	] MilliVolt(mV) rs Digit	20000 Input High Reference 900.000 Measured Input High I 2290 Calibration High V [-63224	] MilliVolt(mV) Digit			
Help	Save Parameters to the logge	revious	Done			

The above dialogs are for On-Line Calibration.

			(	Channel Cal	ibration		<b>+</b>	- 1	×
· ·	. Retrieve reference an Make sure the followir			t.					
1.1									
	Channel	Cali. Zero	Cali. Span	Equation	Range From	Range To	Unit		
	#1 (PT100 (0-400 Ohms))	0	0	Digit	0	65535	Digit (Digit)		
1.3	Make sure the logger from 'parameter in the designated channel for Adjust the source inpi 'High Referene' Value accuracy of the source Download the logger applied by the source value in the second p	e above table or a period of ut to a value a Apply the s in put. first. Open the input. Write	e. Take note f time that car close to 'Ran source input to ne downloaded down the mea	of this input best reflect ge To' param b the designa d file and zoo an value in th	value as 'Low R the accuracy of eter in the abov ted channel for m in to the time	eferene' Value. the source inp e table. Take n a period of time frames when th	Apply the sou ut. note of this inp that can bes de designated	nce input out value : t reflect ti channel v	to the as he was
Step 2	. Calibrate channel:								
2.1	Fill out the following f	ields with th	e parameters r	etrieved in st	ер 1.				
2.2	Click "Calibrate" butt	on to calcula	ate the calibra	tion values a	nd save them ba	ick to the logge	er.		
	Low Reference Value:	Rei	al Low Value:		High Reference	Value:	Real High Val	ue:	
	Digit		Digi	t		Digit		Digit	
	Help					Calibra	ite	Close	9

The above dialog is for Off-Line Calibration.

Please refer to Calibrate Logger chapter in SiteView User's Manual for details.

### **Communicate with PRECISE-LOG Wirelessly**

### In Standard Server Mode:

Once you have configured the logger with correct WIFI propertied, the logger will register with the WIFI network. An IP address can be found in the logger's status window:

<b>/ifi Mode:</b> erver Mode	MAC Address: D8:B0:4C:B1:E1:08
I	Properties
Bevice IP Addres. 192.168.0.112	Port:
SSID:	5678
meitest1	✓ Connected
Signal	Strength: 66%

To add the logger to the USB Device Server tab, click "Add" button under USB Server tab to add a new connection:

USE	3 Server	*
\$	<b>116</b>	
1	192.168.1.148 (PL06060CD00104)	
×	192.168.1.64	
Ø4	79	
6x	Add new connection e site	
e,		

In the pop-up window, fill out the information. Make sure to enter the right IP address.

	192.16	8.0.120	×
Description: New remote sit IP Address 192.168.0.120			
Port: 5678 (1024 to 6553)		Packet Size: 500 Bytes (1 - 5000)	
Timeout: 8000 (100 - 10000) Password:	Milliseconds	Retry: 5 V Times (1 - 10) Confirm Password:	
(4 - 10 characters or numbers)			
Help	OF	K Cancel	

Then click "OK" button to save the connection.

Then double click the new added connection to open it. Upon the success, the logger icon will be added under this connection. Double click the logger icon to show the status window:

	User logged off New Version Available
	General Logs Others Help
2	SVF File DB Explorer Logs
	Explorer Data
USE	Server «
1	116
*	192.168.1.148 (PL 05050C D00104)
X	P Double click to open status window
Ø4	New remo
1/x	□ 🔜 192.168.1.64
Q	PRECISE-LOG PL-VW (S/N: 06070060

### In AccessPoint Server Mode:

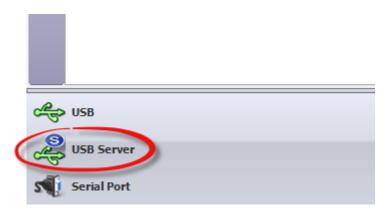
In this mode, the data logger will create a WIFI AP.

From the client computer, open the wifi network list to look for an access point named 'PL' + 'Serial Number of the logger'.



Click the access point and choose 'Connect'. Type in the password you set in 'AP Password field' when you configure the logger. Wait until you joined the network.

Inside SiteView, go to 'USB Server' panel:



Click 'Create New' icon to create an AP connection.

	USB Server		
	-	140	
	*	<b>1</b> 41	
	X	142	
C	94	144	
	Se co	Add new connection	
	ų	<b>192.168.0.129</b>	

In the pup-up dialog, fill in the IP address field with '10.10.100.254' and give a name of this connection. Then click OK button to create the connection.

	192.16	8.0.120	
Description:			
AP10.10.100.2	54		
IP Address	IP Address		
10.10.100.254			
Port:		Packet Size:	
5678		500 Bytes	
(1024 to 65535	)	(1 - 5000)	
Timeout:		Retry:	
8000	Milliseconds	5 Y Times	
(100 - 10000)		(1 - 10)	
Password:		Confirm Password:	
12345		•••••	
(4 - 10 characte	rs or numbers)		
	,		
Help	ок	Cancel	
noip		Cancer	

Double click on the new created icon to start communicate with the data logger. If everything is fine, you should see the logger icon shows under the new created connection.



Double click the logger icon to show the logger status window.

# **6. Specifications**

# **Common Specifications**

1	
Two editable alarm thresholds per channel.	
On-board LED lights in red when in alarm state.	
1	
8 Mega-bytes (4 Mega measurements)	
Over 20 years	
1 second to 12 user selectable.	
Stop recording or FIFO when memory is full.	
Programmable instant, start delay or field push button activation.	
USB (Mini-USB-B) (USB-A-mini USB-B Cable included)	
WIFI module for W series	
115200 bps	
Built-in 3.6V Lithium Battery.	
10 years based on 1 minute sampling interval in stand-alone mode.	
Configuration, downloading, scheduled downloading, plotting,	
real-time plotting, custom calibration and custom equation	
Computer with 1.0 GHZ or faster processor	
1.0 GB Memory or higher	
1.0 GB of available hard-drive space or higher	
Windows XP with SP2 or later, Vista, Window 7	
At least one USB port.	
802.11b/g/n,	
2.412 - 2.484GHz	
11-18 dBm	
-82 to -93 dBm	
WEP/WPA-PSK/WPA2-PSK	
WEP64/WEP128/TKIP/AES	

Physical		
Material	Aluminum Enclosure.	
PCB Treatment	Conformal coating	
Dimension	88 X 64.2 X 24 mm	
	3.46 X 2.53 X 0.95 Inches	
Weight	200g	
Mounting	Probe/wall-mount holes for hanging/mounting.	
Others		
LED Indicator	Tri-Color LED: (can be disabled for power saving)	
	Normal Sampling: green when sampling.	
	Alarm: red when sampling.	
	Low Battery: amber when sampling.	
Operating Environment	$-40 \sim +70^{\circ}$ C (-40 to + 158°F), 0 ~ 95 %RH non-condensing.	
Clock Accuracy	+/- 1 minute per month	
Approvals	CE, FCC	

[1]: Sold separately.

[2]: Must be powered by external 5VDC power supply via Mini-USB Port.

# Logging Capacity

Sampling	Enabled	Logging
Interval	Channel	Capacity
1 minute	1	8 years
1 minute	2	4 years
1 minute	8	1 year
10 seconds	1	485 days
10 seconds	2	242 days
10 seconds	8	60 days

Sampling Interval	Enabled Channel	Logging Capacity
1 second	1	48 days
1 second	2	24 days
1 second	8	6 days