GEOKON TRUSTED MEASUREMENTS®

Product Tutorial

Using Agent Software with LC-2 Dataloggers



Topics Covered in this Tutorial

- Program Overview
- Adding Projects and Dataloggers
- Logging Data
- Downloading Data
- Charts

Before Using Agent

- Navigate to <u>www.geokon.com/Software</u> and download the "USB Drivers for GEOKON Devices" file
- Connect the LC-2 to the computer using the supplied cable(s)

(For information regarding the installation of LC-2 Dataloggers, consult the instruction manual provided with the datalogger)

Program Download

- 1. Before installing Agent onto a computer, verify that it meets these minimum system requirements:
 - Microsoft[®] Windows[®] 7, 8, or 10; running a 32-bit or 64-bit operating system
 - ▶ 1 GB of RAM (physical memory) available during runtime
- 2. Navigate to www.geokon.com/Software
- 3. Select the appropriate installer based on the operating system of the computer:
 - ► For 32-bit systems, download "Agent Software (x86)"
 - For 64-bit systems, download "Agent Software (x64)"

(To determine the computer's operating system, click Start, type "system" in the start search box, click "System" in the control panel list, then look for "System Type:")

Installing the Software

1. Locate and open the Agent-x64.zip (or Agent-x86.zip) folder that was downloaded from the GEOKON website



2. Double click on the windows installer



Agent-x64-1.6.1.1.msi

3. If a security warning appears, click "Run"



Installing the Software (Continued)

4. Read the License Agreement, check the box below to accept the terms of the agreement, and then click "Install"



5. When the installation is complete, click "Finish" to close the installer and launch the program

Program Overview



Program Overview

- On startup, Agent defaults to a screen that shows any "Projects" that have been created
- Projects are at the top of the program's hierarchy and are used to organize LC-2 Dataloggers into groups
- Each Project can be assigned multiple LC-2 dataloggers



Program Overview (Continued)

- Each LC-2 can be assigned multiple "sensors" and "charts"
- Sensors import data collected by the datalogger
- Charts display the data imported by the sensors



Program Overview (Continued)

 The menu on the left side of the screen is used to navigate the program

AGENT»	\bigcirc	
projects Sample Project Sample LC-2 LC2 settings general sensors intervals download schedule export schedule commands	General Settings LC2 Logger ID AG190910191536 Name Sample LC-2 Serial Number 1916652 Description	

 The menu expands and contracts as the user navigates through the different levels of the program's hierarchy

Adding Projects and Dataloggers

AGENT»							?			
projects list add project	name Sample Project Project 1 Project 2 Dam Project	AGENT		description NH Bridge Brazil Airport Euro Tunnel South East Asia	created Wed Sep 09 Fri Sep 11 2 Fri Sep 11 2 Fri Oct 23 2	9 2020 2020 2020 2020 2020	delete X X X X X			
		projects Sample Project list add network add lc2 transfer project settings	LC2 Data Loggers name Sample LC-2 4-Channel LC-2 16-Channel LC-2 Piezometer datalogger		e e e e e	downloa 2 2 2 2 2 2 2 2 2 2 2 2 2	ad serial numbe 1916652 1827891 1817655 1916689	r address COM3 COM9 COM3 COM6	scan rate 10 min. 30 min. 60 min. 60 sec.	type_ single 4 channel 16 channel single

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delete X X X

Х

Adding Projects

1. Click "add project"



2. Enter a Name and Description for the project, then click "Save" (Name is required, Description is optional)



Project List

Once a project has been created, it will be added to the projects list

projects	name	description	created	delete
add project	Sample Project	NH Tunnel Site	Thu Sep 20 2018	Х
add project	Project 1	Strain Gauges	Tue Aug 13 2019	Х
	Project 2	Addressable MEMS	Tue Aug 13 2019	Х

 The list of projects can be accessed at any time by clicking "projects" at the top of the menu

Adding an LC-2 Datalogger

1. Select a project by clicking on the project name

projects	name	description	created	delete
add project	Sample Project	NH Tunnel Site	Thu Sep 20 2018	X
	Project 1	Strain Gauges	Tue Aug 13 2019	X
	Project 2	Addressable MEMS	Tue Aug 13 2019	X

2. Click "add LC-2"

projects	
Sample Project	This project doesn't have any GeoNet networks or loggers.
list	Use 'add network' or 'add Ic2' to add them.
add network	
add Ic2	
transfer	
project settings	

Adding an LC-2 Datalogger

3. Enter a name for the LC-2 Datalogger

projects Sample Project list add network add lc2 transfer project settings	Add LC2 Name Sample LC-2 Name is required COM port or Internet address Connection is required
	Baud Rate 9600 Connect to LC2

Adding an LC-2 Datalogger: USB and RS-232 Cables

4a. If connecting to the Datalogger using a cable, type "COM" in the "COM port or Internet address" field, then select the COM port the LC-2 is connected to (If the correct port is not shown, close Agent, make sure the batteries are not depleted and the cable connection secure, then try again)

Adding an LC-2 Datalogger: USB and RS-232 Cables (4a. Continued)

• Unsure of which COM port the LC-2 is connected to?

- RS-232 connections will normally use COM1, but may use COM2 or COM3 if the computer has multiple serial ports
- To determine the correct port for a USB connection, click Start , type "device" in the search box, then click "device manager" in the control panel list. Next, click the triangle next to "Ports (COM & LPT)" to expand the list



Disconnect and then reconnect the USB cable to the computer—the COM port the LC-2 is using will disappear and then reappear on the list

Adding an LC-2 Datalogger: Wireless Connections

4b. If connecting to the LC-2 via an external serial server or cellular modem, enter the device URL or IP Address as the "Internet Address"
(IP addresses must be followed by a colon and then the port number)

projects Sample Project	Add LC2
list	Sample LC-2
add network	
add lc2	COM port or Internet address
transfer	10.1.7.91:5555
project settings	Baud Rate 9600 Connect to LC2

Adding an LC-2 Datalogger (Continued)

- 5. The 9600 "Baud Rate" is the factory default setting and only needs to be changed if the user has set the LC-2 to communicate at a Baud Rate of 115200
- 6. Click the "Connect to LC-2" button; Agent will attempt to connect to the datalogger

projects Sample Project	Add LC2
list	Sample LC-2
add network	
add lc2	COM port or Internet address
transfer	COM3
project settings	Baud Rate 9600 Connect to LC2

General LC-2 Settings

7. After a connection has been made, Agent will automatically navigate to the "General" LC-2 settings. Enter the LC-2 serial number and a description if desired, then click Save

projects	- General Settings -
Sample Project	LC2 Logger ID
Sample LC-2	AG200915172151
I C2 settings	Name
deperal	Sample LC-2
sensors	Serial Number
inten/alc	1916652
	Description
download schedule	Piezometer S/N 1845652
export schedule	Connection
commands	COM3
	Baud rate
	9600 Change
	Туре
	single •
	Save Care

Logging Data



Logging Data

The LC-2 will not collect data from internal or external sensors until logging has been initiated by Agent

1. Select a Project, then click the 💿 icon that corresponds with the desired LC-2

projects Sample Project	GeoNet Networks —							
list add network	name	settings	download	supervisor serial number	address	scan rate	download rat	te delete
add lc2 transfer	Sample Network	۲	₹	1537815	COM9	10 min.	45 min.	x
project settings	LC2 Data Loggers –							
	name	settir	ngs downlo	oad serial num	ber addr	ess scan	rate type	delete
	Sample LC2		₹	1742325	CON	14 60 se	c. single	X

Logging Data (Continued)

2. Click "commands"

projects	- General Settings
Sample Project	LC2 Logger ID
Sample LC-2	AG200915172151
I C2 settings	Name
general	Sample LC-2
sensors	Serial Number
intenvale	1916652
	Description
	Piezometer S/N 1845652
export schedule	Connection
commands	COM3
	Baud rate
	115200 Change
	Туре
	single •
	Save

Logging Data (Continued)

3. Click "Set Logger Time" to overwrite the date and time information stored on the logger with the local time and date

general	Device type. Single
sensors	Connection: COM3
intervals	Upload settings
download schedule	
export schedule	- Status
commands	Get Status Status: Firmware version: ID: Start Logging Stop Logging
	Get Battery Status
	Get Trap Count: Clear Trap Count
	- Set Time on Logger
	Loager time:
	Server time: Thu Sep 17 2020 15:28:14 GMT-0400 (Eastern Davlight Time)
	Get Logger time Set Logger time
	Advanced
	Log Debug Info Reset Logger Advanced

Logging Data (Continued)

4. Click "Start Logging" to have the LC-2 begin logging data (The "Status" field will change to "Logging")

general	Device type: single
sensors	Connection: COM3
intervals	Upload settings
download schedule	
export schedule	- Status
commands	Get Status Status: Logging Firmware version: 5.9.0 ID: AG200915172151 Start Logging Stop Logging Stop Logging Stop Logging Stop Logging
	Get Battery Status
	Get Trap Count Trap Count Clear Trap Count
	- Set Time on Logger
	Logger time: Thu Sep 17 2020 15:39:18 GMT-0400 (Eastern Daylight Time)
	Server time: Thu Sep 17 2020 15:39:19 GMT-0400 (Eastern Davlight Time).
	Get Logger time Set Logger time
	Advanced
	Log Debug Info Reset Logger Advanced

Logging Data: Intervals

- By default the LC-2 will take a reading every 60 seconds
- The interval at which readings occur can be changed using the "intervals" screen
- Refer to the Agent manual for more information on intervals)

projects	- Interval Type
Sample Project Sample LC-2 LC2 settings general sensors intervals download schedule export schedule commands	 Single interval 60 seconds Logarithmic intervals (see table below) Intervals Table Seconds between Number of iterations Memory LC2 Maximum Arrays 16000 Wrap when array memory is full

Logging Data: Monitor Mode

- The data being logged by the LC-2 may be viewed as it is collected by using "Monitor Mode"
- 1. To enable Monitor Mode, return to the project list and then click the \checkmark icon to navigate to the "Download" screen

projects Sample Project	GeoNet Networks —							
list	name	settings	download	supervisor serial number	address	scan rate	download ra	te delete
add lc2 transfer	Sample Network	٢	₹	1537815	COM9	10 min.	45 min.	X
project settings	LC2 Data Loggers –							
	name	settir	ngs downlo	oad serial num	ber addr	ress scan	rate type	delete
	Sample LC2	۲		1742325	CON	14 60 se	c. single	X

Logging Data: Monitor Mode (Continued)

2. Click "Enable Monitor Mode"

projects Sample Project	Last Status
Sample LC2	Last Download Completed: <never></never>
view charts	Last Read Array: 0
download	
export	Number of arrays read by last poll: U
chart settings	Last Message:
summary	Download Read Now Continuous Read Now Halt Continuous Read
lc2 settings	
sensor summary	Enable Monitor Mode Disable Monitor Mode

Logging Data: Monitor Mode (Continued)

3. Agent will display readings taken by the LC-2 as they occur (These readings will not be saved until they are "downloaded")

projects Sample Project Sample LC-2 view charts download export chart settings summary lc2 settings sensor summary	Last Status Last Download Compl Last Read Array: Number of arrays read Last Message: Download R Enable Monitor Mo	eted: T 6 1 by last poll: 6 ead Now Disa	Thu Sep 17 2020 16 36 36 36 36 36 36 36 36 36 36 36 36 36	::04:10 GMT-0400 (f Now Halt Cor	Eastern Daylight Tr	ime)
		¥ ¥				
	Date/time	Array AuxE	Bat(V) Battery(V)	Logger Temp(°C)	Reading(Digits)	Thermistor(°C)
	9/17/2020, 4:04:00 PM	66	0.0	26.6		-99.0
	9/17/2020, 4:03:00 PM	65	0.0	26.5		-99.0
	9/17/2020, 4:02:00 PM	64	0.0	26.5		-99.0
	9/17/2020, 4:01:00 PM	63	0.0	26.5		-99.0
	9/17/2020, 4:00:00 PM	62	0.0	26.5		-99.0
	9/17/2020, 3:59:00 PM	61	0.0	26.5		-99.0

Downloading Data



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Downloading Data

- Data will only be collected from the LC-2 when a data download occurs
- Downloads can be initiated manually or set to occur automatically
- When Automatic Download is enabled, Agent will automatically download data from the LC-2 at specific times or intervals
- If Automatic Download is disabled, Agent will only download data when the user initiates a manual download

Manual Download

1. Click the 🛃 icon to navigate to the "Download" screen

projects Sample Project	┌─ LC2 Data Loggers ──							
list	name	settings	download	serial number	address	scan rate	type	delete
add network add Ic2	Sample LC2	٢		1742325	COM4	60 sec.	single	X

 Click the "Download" button to initiate an immediate, one time download of new data (i.e., data collected since last download)



Automatic Download

1. Select a project by clicking on the project name

project	S	name	description	created	delete
list		Sample Project	NH Tunnel Site	Thu Sep 20 2018	X
add	project	Project 1	Strain Gauges	Tue Aug 13 2019	X

2. Click the 🧐 icon that corresponds with the LC-2 to be downloaded

projects Sample Project list add network add lc2 transfer project settings	GeoNet Networks – name Sample Network	settings	download	supervisor serial number 1537815	address COM9	scan rate 10 min.	download ra 45 min.	ate <u>delete</u> X
	LC2 Data Loggers – name Sample LC2	settin	ngs downlo L	oad serial num 1742325	ber addr CON	r ess <mark>scan</mark> //4 60 se	rate type ec. single	delete X

Automatic Download (Continued)

3. Click "download schedule"

projects	General Settings
Sample Project	LC2 Logger ID
Sample LC-2	AG200915172151
I C2 settings	Name
deperal	Sample LC-2
sensors	Serial Number
inten/als	1916652
	Description
evnort schedule	Plezometer S/N 1845652
commands	Connection
commanus	COM3

4. Check "Enable automatic Download"

projects Sample Project Sample LC-2	Automatic Download Enable automatic Download Download at a scheduled interval	Download at specified Times
LC2 settings general sensors intervals download schedule	Start Time: Download every 1440 minutes	Times: Enter a time to add:

Automatic Download: Download at Scheduled Intervals

5a. To set automatic download to occur at scheduled intervals, click the "Download at a scheduled interval" button, then enter a Start Time and an interval in minutes (An interval in minutes is required, a Start Time is optional. Start Times must be entered in 24-hour hour format, e.g., 3:30 PM becomes 15:30)

projects Sample Project	Automatic Download
Sample LC-2	Download at a scheduled interval Download at specified Times
general	Start Time: Times: Enter a time to add:
sensors intervals	Download every 60 minutes
download schedule	
export schedule commands	Save Cancel

Automatic Download: Download at Specific Times

5b. To set automatic download to occur at specific times, click the "Download at specified Times" button, enter a time (in 24-hour hour format) in the "Enter a time to add field" and then click ⊕ (To remove a time from the list, click ●)

projects Sample Project	Automatic Download Reader Structure Control of the second structure of the s
Sample LC-2	Ownload at a scheduled interval Ownload at specified Times
LC2 settings	Start Time: Times: Enter a time
general	15:30 O3:30 O
sensors	Download every 60 minutes
download schedule	
export schedule commands	Save Cancel

6. When finished editing the download settings, click "Save"

Charts

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Charts

- "Sensors" in Agent import data collected by the LC-2
- Charts display data from user selected sensors as a graph
- If automatic download is enabled, new data will be added to charts automatically each time data is downloaded from the LC-2
- If automatic download is disabled, charts will not update until a manual download is performed

Creating Charts

1. Select a project, and then the LC-2 the chart will be added to

projects	– LC2 Data Loggers ––––							
list	name	settings	download	serial number	address	scan rate	type	delete
add network	Sample LC2	٢	₹	1742325	COM4	60 sec.	single	x
add lc2								
transfer								
project settings								

2. Click "chart settings" then "add chart"



Creating Charts (Continued)

3. Give the chart a name, and then click "Ok"



4. Charts that have been added to the LC-2 will be shown in the "chart settings" screen

projects Sample Project	add chart remove chart
[™] Sample LC-2 view charts download	 Logger Temp Chart
export chart settings	

Adding Sensors to Charts

1. Click on a chart name, and then click "add sensor"



2. Select a sensor to add, and then click "Ok"



Adding Sensors to Charts (Continued)

3. Sensors that have been added to a chart will be shown below the chart name



Viewing Charts

1. Click "view charts" to display all charts associated with the LC-2



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For more information...

 The LC-2 instruction manuals, which can be accessed at any time by clicking on the question mark at the top of the screen

AGENT»		•?
projects Sample Project	Show tooltips on charts	*
Sample LC-2 view charts download	Sample Chart	=

- Instruction manuals are available for download at: <u>www.geokon.com/Manuals</u>
- Please visit <u>www.geokon.com/Tutorials</u> for more tutorials

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