

WinCT-DLC

Windows data communication software

INSTRUCTION MANUAL



1. Introduction

This software, WinCT-DLC, is Windows data communication software that transfers measured data from a USB load cell made by A&D to a computer.

Caution

- Before using WinCT-DLC, please back up important data on a computer in case of emergency.
- For information on the computer itself or commercially available software other than WinCT-DLC, please contact the relevant manufacturer.

2. License agreement

- Any reproduction of WinCT-DLC without the consent of A&D Company, Limited is prohibited.
- WinCT-DLC specifications may be changed without prior notice.
- The copyright for WinCT-DLC is owned by A&D Company, Limited.
- WinCT-DLC is used for the transfer of data from a USB load cell made by A&D Company, Limited to a computer.
- WinCT-DLC can only be installed and used on the hard disk or other storage of a computer connected to a USB load cell.
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3. Preparation

3.1. Compatible products

USB load cell made by A&D.

LCCU21 series, CMX-USB series, LC1205-USB series, LCC28-USB series, and LCC33-USB series

3.2. Computer

3.2.1. Operating environment

OS	Windows 7/8.1/10/11 (64-bit) *1
USB port	1 port (USB 2.0 or higher)
Memory	At least 4GB required.
Hard disk	At least 20GB required.
Remarks	.NET Framework 4.5 or later required.

*1 WinCT-DLC can operate on 32-bit operating systems. However, when run on computers with insufficient RAM or slower CPUs operation may stop during measurement.

3.2.2. Connection

Connect the corresponding product and the computer with a USB cable, and then check the number of COM Port.

For specific connection operation methods, refer to the instruction manual of the corresponding product.

3.3. WinCT-DLC

Download the compressed WinCT-DLC file from the A&D website.

After the download is complete, decompress the compressed file. Make sure that "WinCT-DLC.exe" is present in the folder after decompression.

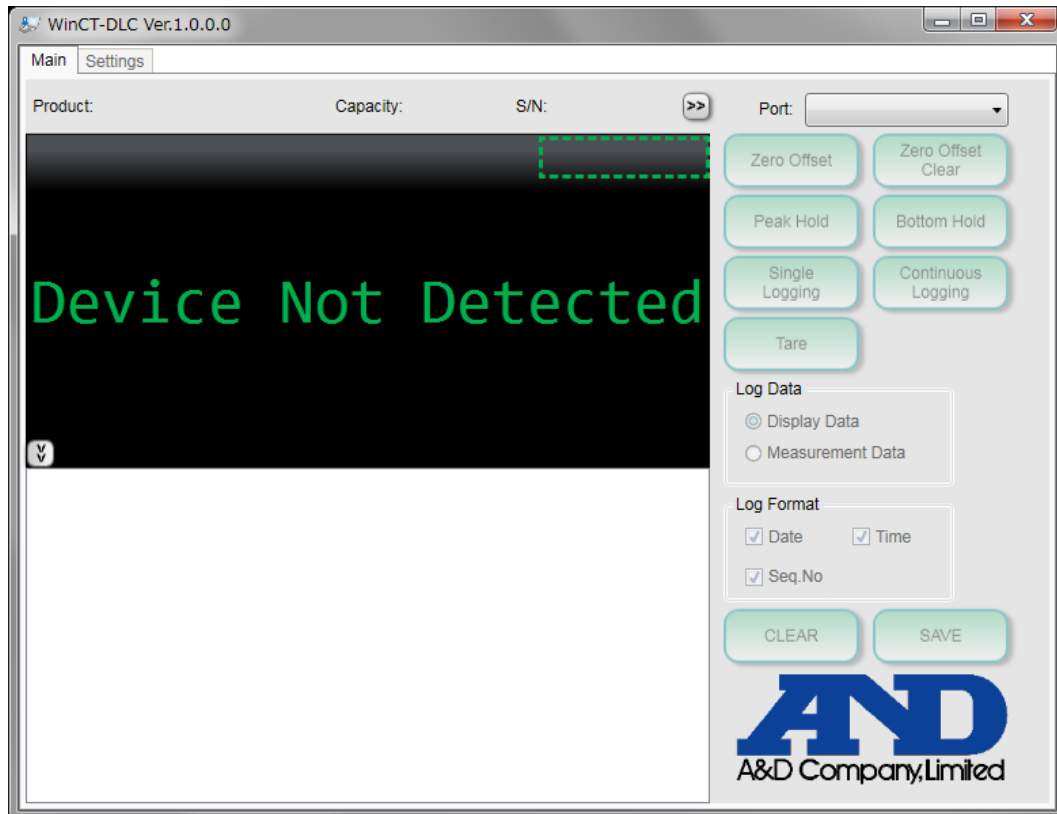
4. Communication specification (fixed)

Baud rate : 38400 bps
Character bit length : 8 bits
Parity : Even
Stop bit length : 1 bit
Terminator : CR LF
Code : ASCII

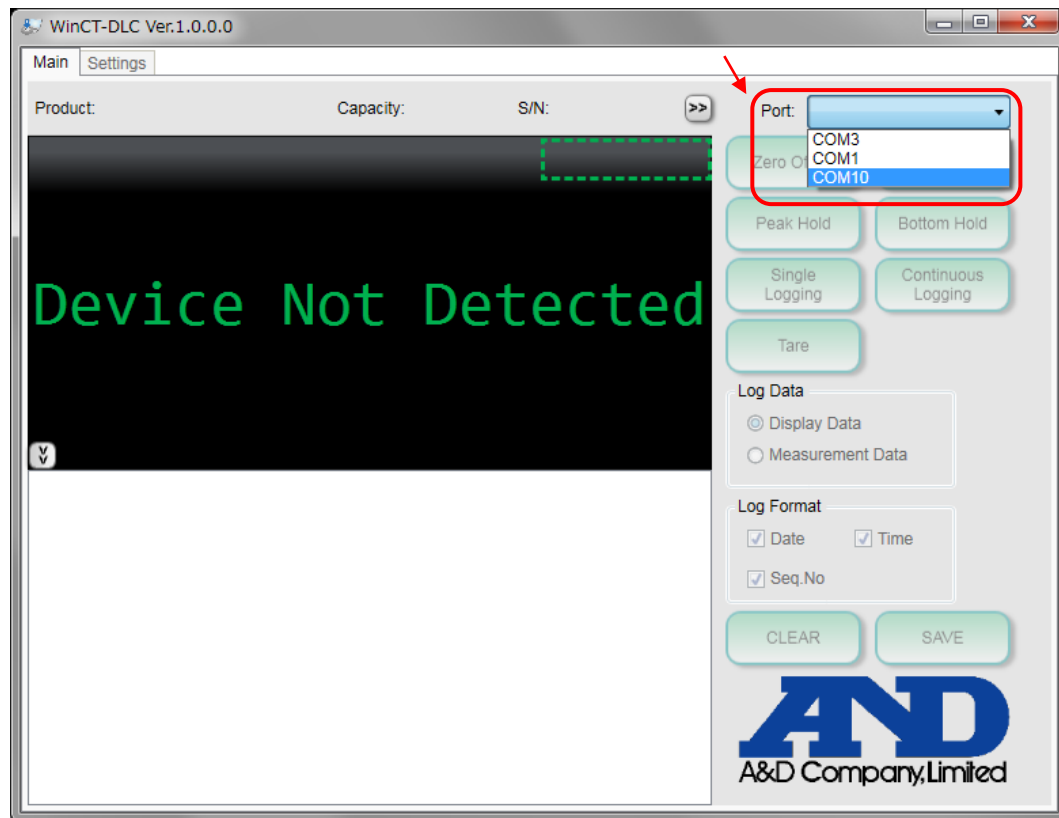
5. Operation of WinCT-DLC

5.1. Operation at the time of start-up

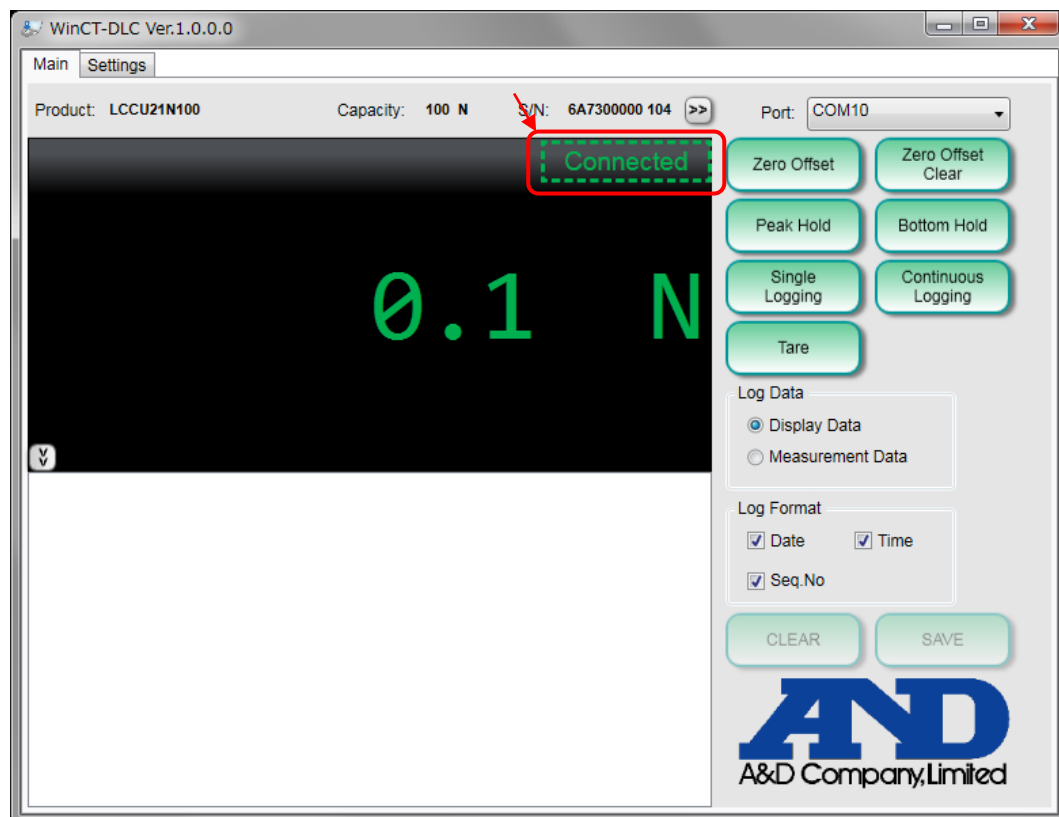
1) When "Win-CT-DLC.exe" is double-clicked, Win-CT-DLC will launch, and the following screen will appear.



2) Select the product COM Port to be measured from **[Port]**.

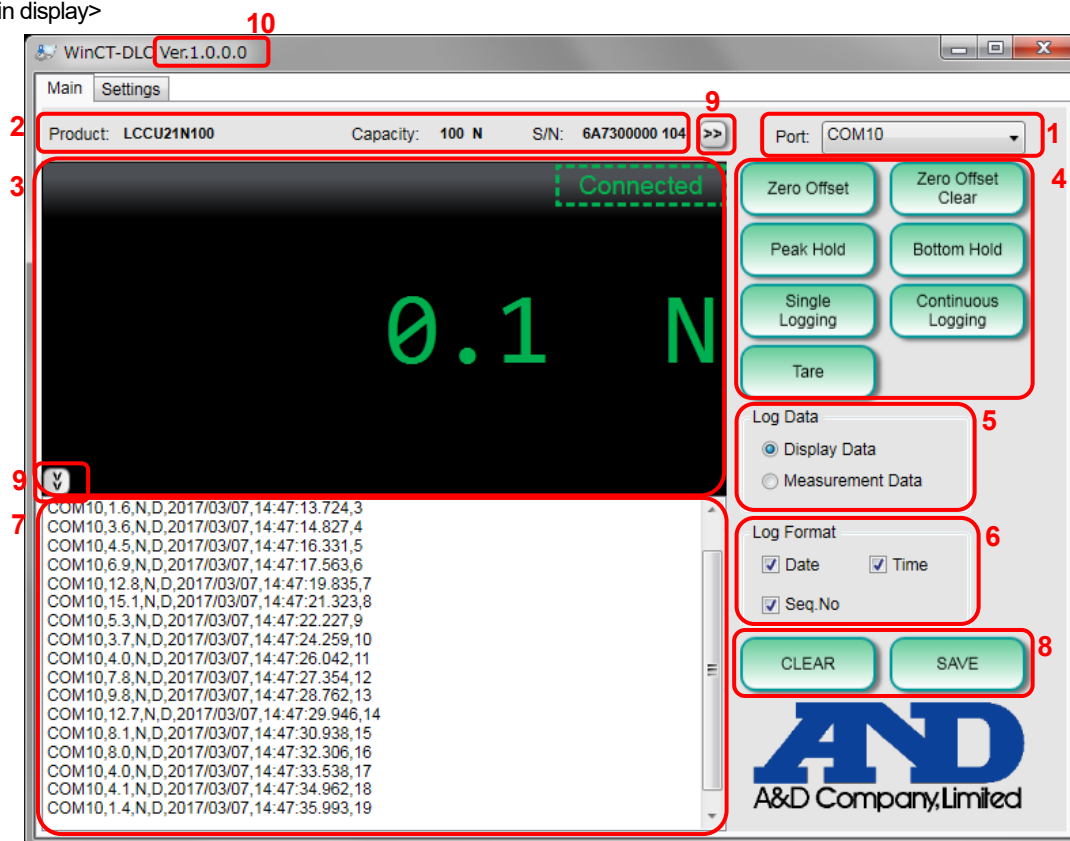


3) When the COM Port is selected and communication with the product is successful, "Connected" is displayed and measurements can be taken.



5.2. Explanation of the display and buttons.

<Main display>



- Display Items

1. COM Port Display/Selection
2. Product information
3. Measurement value display
4. Operation button
5. Selection of the value to be recorded
6. Data format settings
7. Data display box
8. Save / Clear data
9. Expand measurement display window
10. Application version

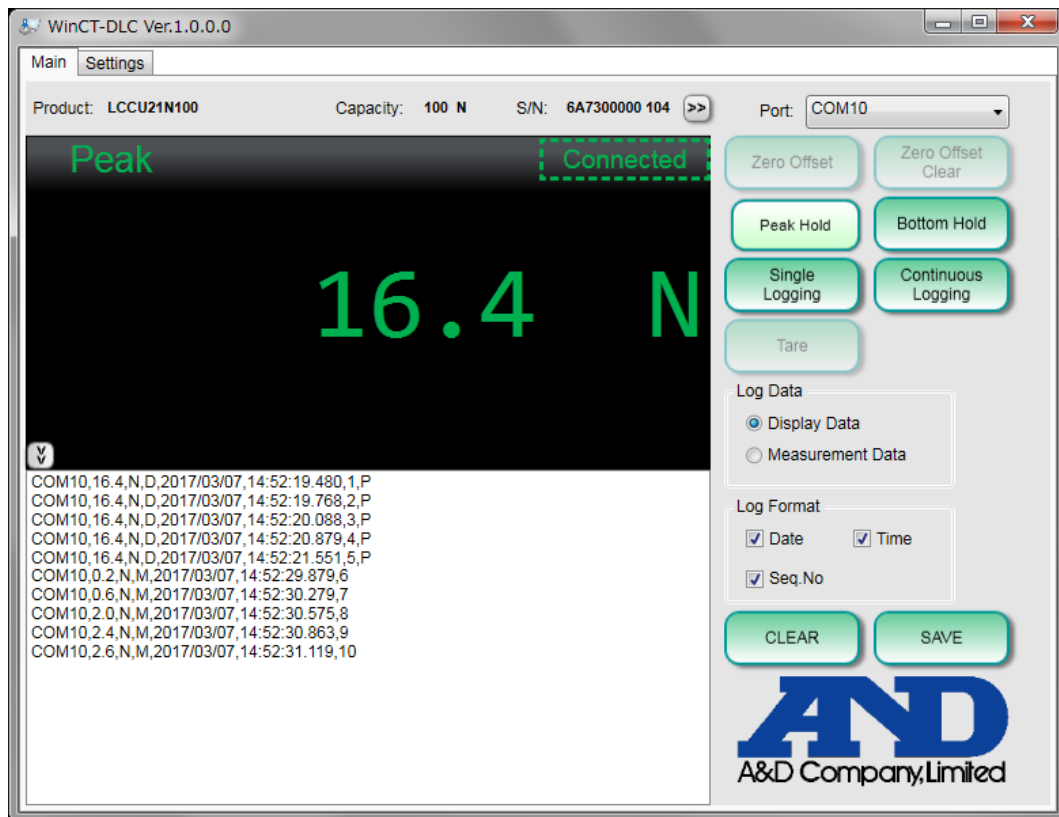
- Description of display items

1. COM Port Display / Selection
Allows selection of COM Port and displays the currently selected COM Port.
2. Product information
Displays the product name, rated capacity and serial number of the connected product.
3. Measurement value display
Displays the measurement value and the status of each button.
Decimal symbol is dependent on the format that is set in the computer.
4. Operation button
 - Zero Offset
This button sets the current value as zero and offsets the measurement value at the time the button is pressed.
The offset is also reflected when recording the measurement value.
 - Zero Offset Clear
This button cancels the offset set by **[Zero Offset]**.

- Peak Hold

This button executes or cancels a peak hold.

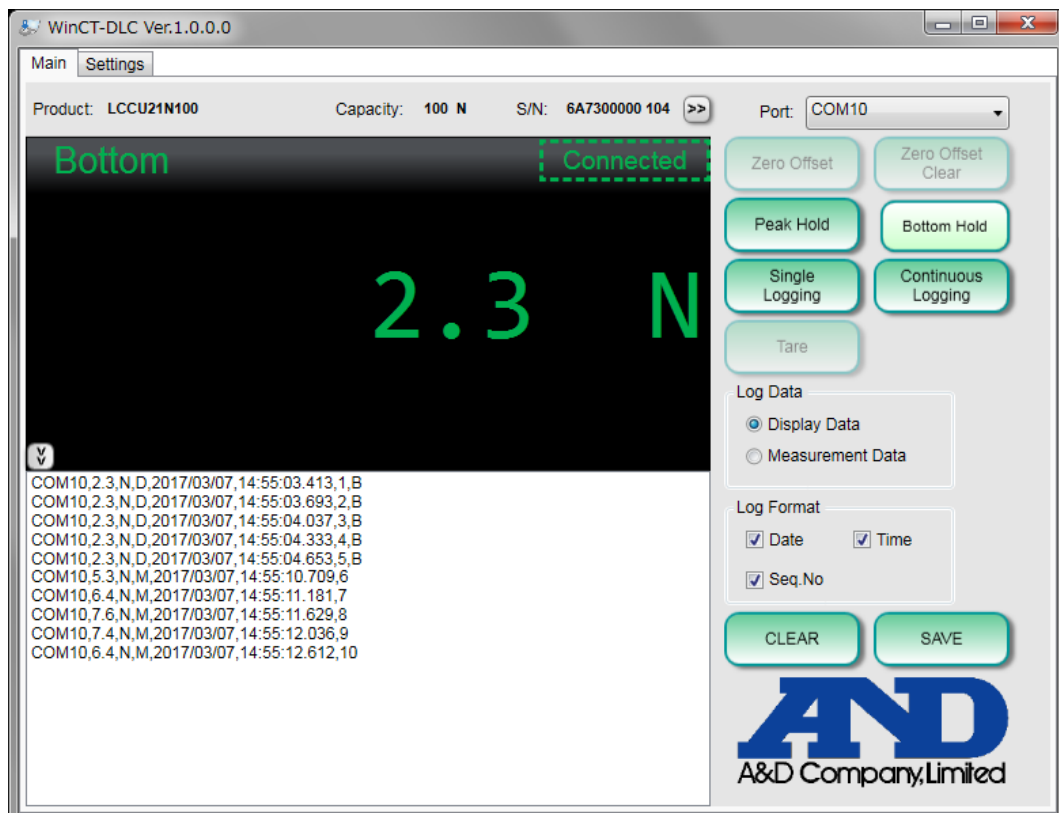
During execution, the word "Peak" will display with the highest value measured while peak hold is running.



- Bottom Hold

This button executes or cancels a bottom hold.

During execution, the word "Bottom" will display with the lowest value measured while bottom hold is running.

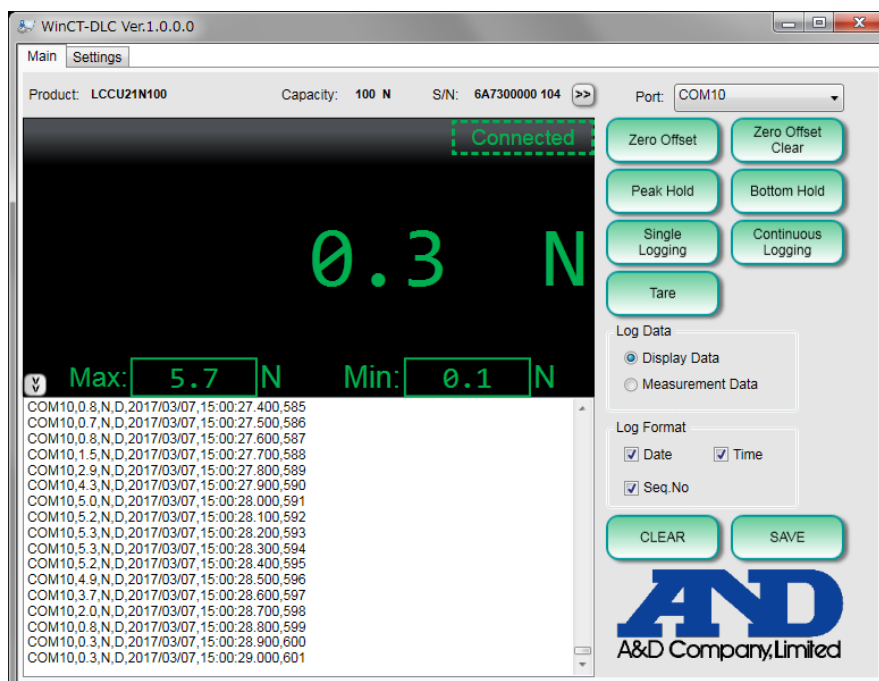
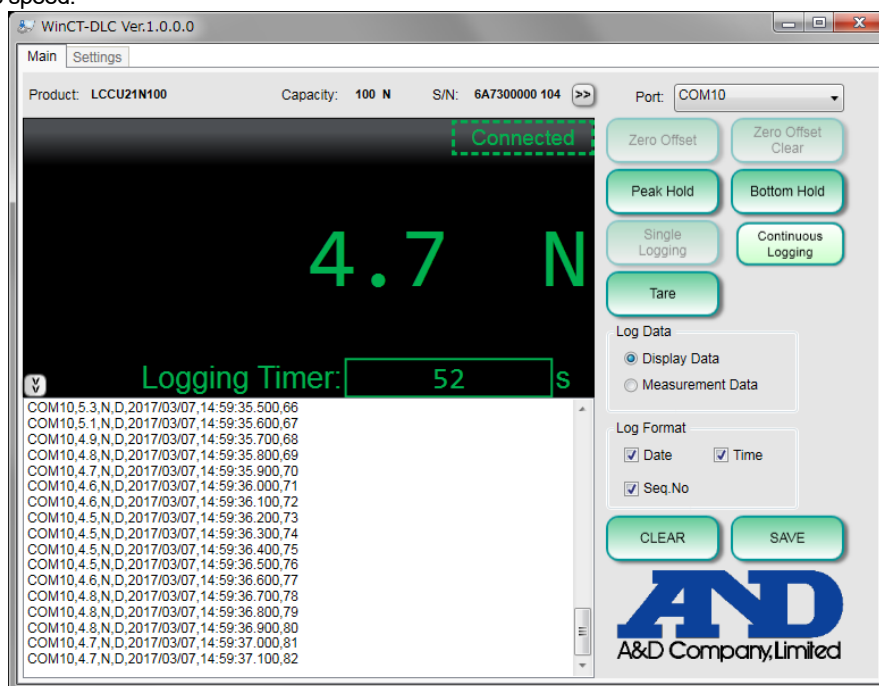


- When pressed, this button records the current value based on the Log Data setting.

- This button executes or cancels a continuous logging.

If the record time in **[Continuous Logging Timer]** is set, the remaining recording time is displayed and recording will stop automatically when the set time has elapsed. When stopped, the maximum and minimum values from recording are displayed (*2). The maximum and minimum values are deleted when continuous logging is run again (Maximum and minimum values can not be recorded.)

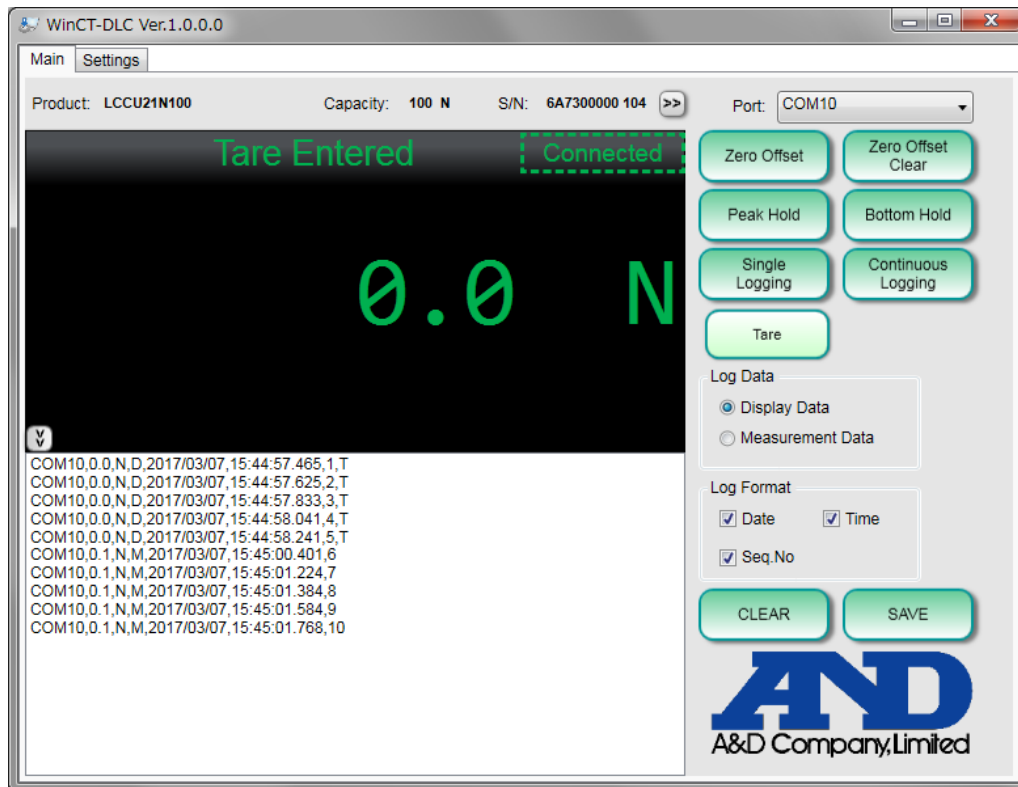
*2 When the Log Data setting is changed during recording, the maximum value / minimum value displayed will follow the Log Data setting when recording stops. The maximum value / minimum value displayed are the maximum value / minimum value during A/D converter sampling. Therefore, if the **[Output Rate]** is slower than the A/D conversion rate of the product, the maximum value / minimum value displayed in the recorded data may not be included. Likewise, peak hold and bottom hold display values may not match maximum value / minimum value. Also, if there are maximum / minimum values at the start or stop of recording, the maximum value / minimum value displayed in the recorded data may not be recorded due to the response speed.



- Tare

The button executes or cancels a tare.

When executed, the measured value when the button is pressed is regarded as "0" and "Tare Entered" is displayed with the value.



5. Selection of the value to be recorded

- Display Data

This mode records the display data into measurement value display.

The operations **[Zero Offset]**, **[Peak Hold]**, **[Bottom Hold]** and **[Tare]** are reflected in the recorded values.

- Measurement Data

This mode records the value of set by **[Zero Offset]** subtracted from the output of the product.

Only the **[Zero Offset]** operation is reflected in the recorded value.

6. Data format settings

- Date

When checked, the date will be recorded.

- Time

When checked, the time will be recorded.

- Seq. No

When checked, data will be numbered in order. When unchecked, the number will be reset.

7. Data display box

This box displays the recorded data in accordance with each setting.

When the decimal marker is set to comma (,) the delimiter is a semi-colon (;), otherwise the delimiter is a comma (,).

The order of data is as follows.

- (1) <COM Port>

The selected COM Port number

- (2) <Display data or measurement data>

Data based on the Log Data setting

- (3) <Unit>

The unit of the data value

- (4) <Log Data setting value>

The Log Data setting as follows.

D: Display data

M: Measurement data

(5) <Date>

The date in accordance with the format set on the computer.

(6) <Time>

The time to the millisecond in accordance with the format set on the computer.

[Single Logging]: The computer set time to the millisecond

[Continuous Logging]: The first data is recorded at the computer clock time to the second (.000) and later values are incremented according to the **[Output Rate]** setting.

(7) <Data number>

The number of data points recorded.

(8) <Running state of each function>

When the peak hold, bottom hold and tare are running at the time of display value recording, the record appears as follows.

P: Peak hold running

B: Bottom hold running

T: Tare running

PT: Peak hold and tare running

BT: Bottom hold and tare running

<Recording example>

COM 10, 5.7, N, D, 2016/10/06,10:48:51.767,122, P

(1) (2) (3)(4) (5) (6) (7) (8)

Selected COM Port: COM10 ...(1)

Recorded display value 5.7 N during peak hold execution ...(2)(3)(4)(8)

Recording date and time: 2016/10/06, 10:48:51.767 ...(5)(6)

Data number: 122 ...(7)

8. Save / Clear data

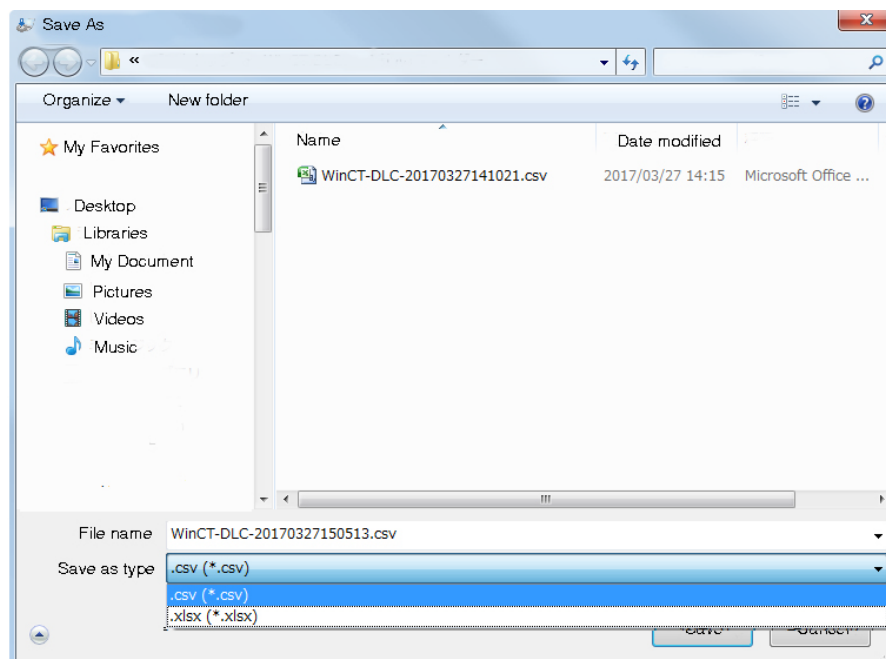
- CLEAR

All recorded data will be deleted and the data number will be reset.

- SAVE

Set the file name (*3) and location, and save the recorded data to the computer. Other operations can not be performed while saving.

File format: csv (*4) or xlsx (*5)



*3 The initial setting of the file name is "header name - date time". The header name is set in **[Save File Header]**.

*4 When opening a csv file with Microsoft Excel, please change the display format of time to "hh:mm:ss.000".

*5 The xlsx file is split every 300,000 pieces of data. At this time the file number is added to the end of the set file name.

<Example>

Saving 750,000 data points in an xlsx file.

(File name) -1.xlsx: Save 1 to 300,000 th data

(File name) -2.xlsx: Save 300,001 to 600,000 th data

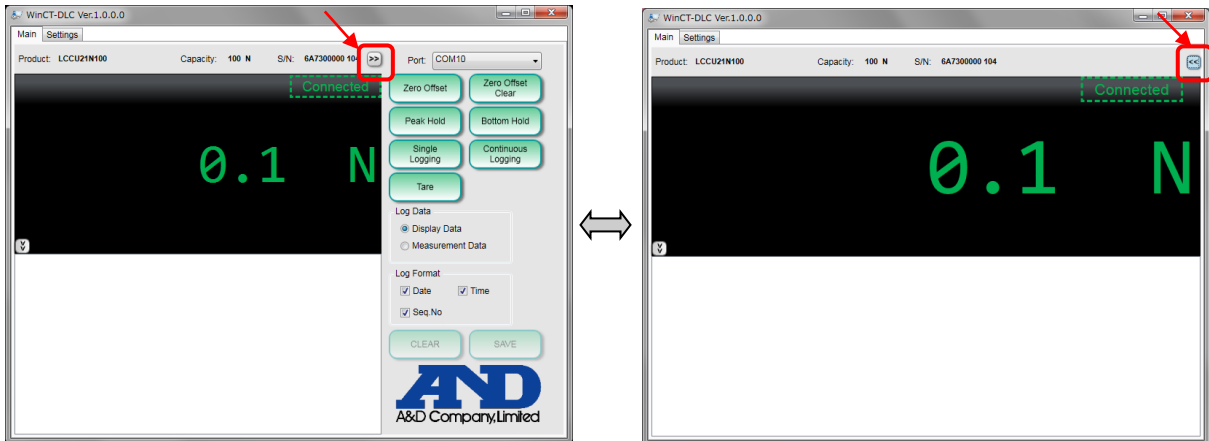
(File name) -3.xlsx: Save 600,001 to 750,000 th data

9. Expand measurement display window

When pressing the button, the size of the measured value display will be changed as follows.

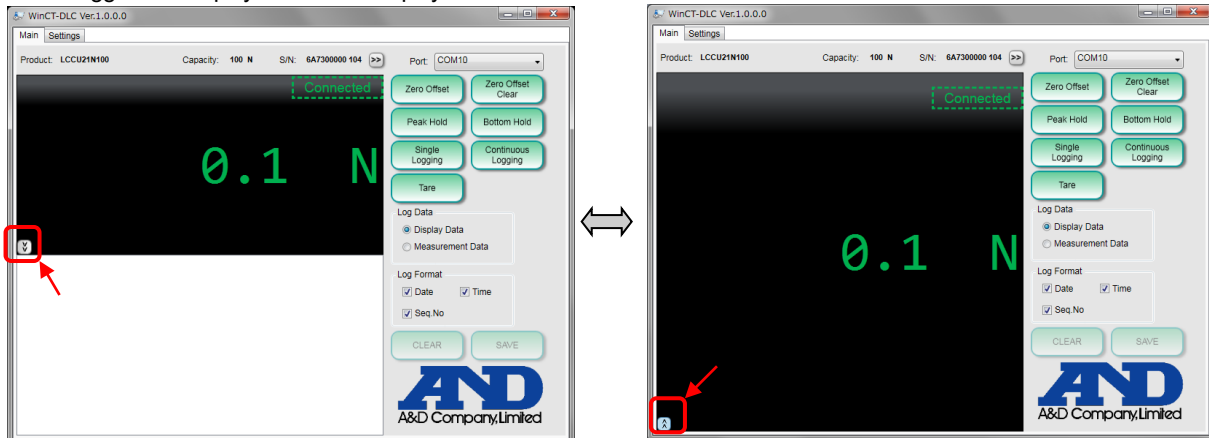
(Width change)

This toggles the display of COM Port Display / Selection, Operation button, Selection of the value to be recorded, Data format settings and Save / Clear data.

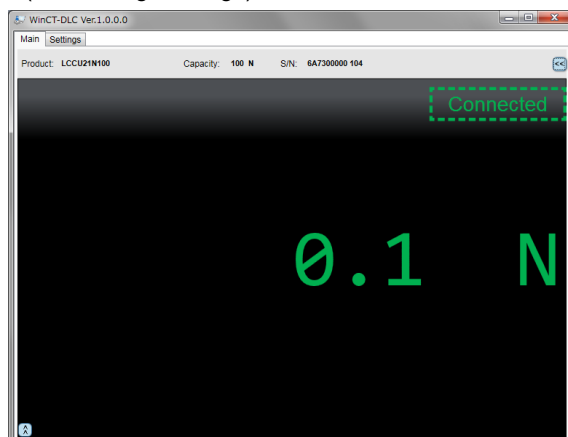


(Height change)

This toggles the display of the Data display box.



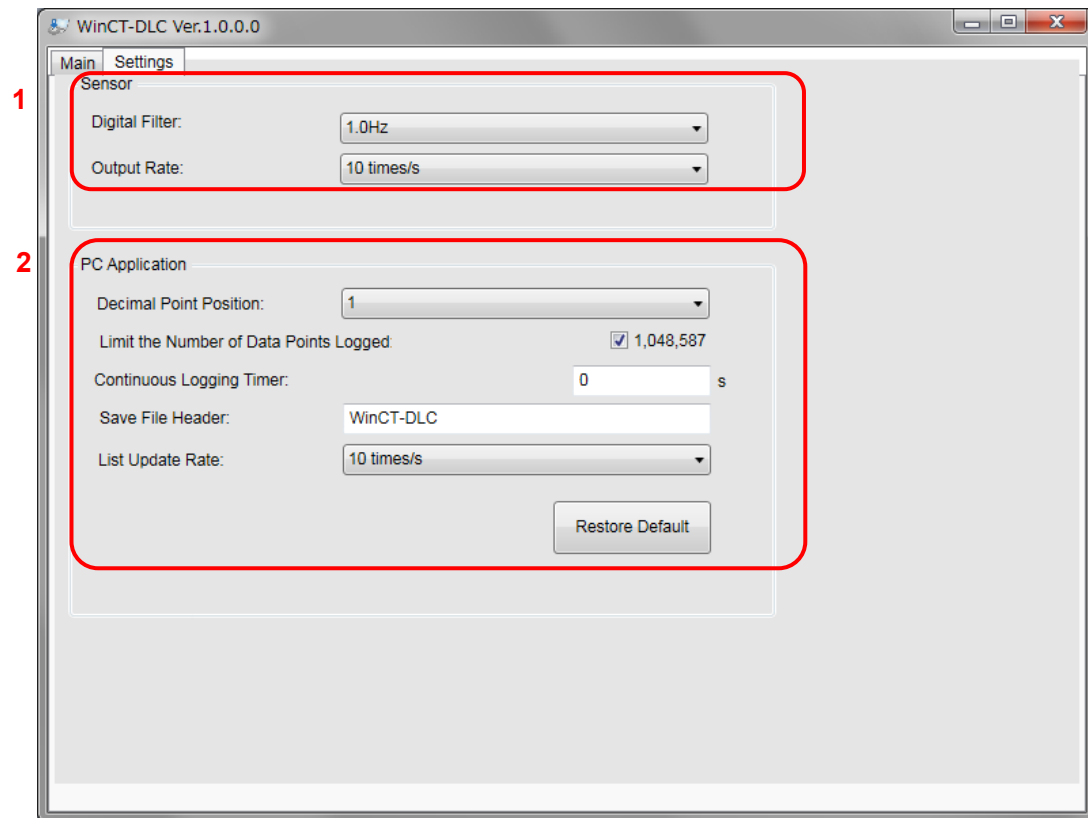
(Width / height change)



10. Application version

Displays the WinCT-DLC application version.

<Settings display>



1. Sensor setting

Sensor settings are used to change the settings of the product.

- Digital Filter
This setting is used to select the digital filter (cut-off frequency).
- Output Rate
This setting is used to select the output rewrite frequency of the product.

2. Application setting

Application settings are used to change the settings of the WinCT-DLC software. The settings are stored in "winct_dlc_setting.ini" when WinCT-DLC ends.

- Decimal Point Position
Select / set the number of digits after the decimal point of the display value and the recorded value. (Initial setting: 1) (*6)

*6 Recommended display settings

The recommended display settings are different because the rated capacity and combined error (accuracy) are different for each load cell. When using, we recommend that you first change the display settings to the recommended settings to make the display easier to see.

The table below shows the recommended display settings for each load cell. If a finer digit than recommended is displayed, please understand that the combined error (accuracy) of the load cell is the value shown in the table below.

Model	Rated Capacity (R.C.)	Combined error	Recommended display settings (Number of digits after the decimal point)
LCCU21-N100	100N	0.5 % of R.O. (0.5N)	1
LCCU21-N200	200N	0.5 % of R.O. (1N)	0
LCCU21-N500	500N	0.5 % of R.O. (2.5N)	0
LCCU21-KN001	1kN	0.5 % of R.O. (5N)	0
CMX-50L-USB	500N	0.2 % of R.O. (1N)	0
CMX-100L-USB	1kN	0.2 % of R.O. (2N)	0
CMX-200L-USB	2kN	0.2 % of R.O. (4N)	0
CMX-500L-USB	5kN	0.2 % of R.O. (0.01kN)	2
CMX-1-USB	10kN	0.2 % of R.O. (0.02kN)	2
CMX-2-USB	20kN	0.2 % of R.O. (0.04kN)	2
LC1205-K020-USB	200N	0.02 % of R.O. (0.04N)	2
LC1205-K050-USB	500N	0.02 % of R.O. (0.1N)	1
LC1205-K100-USB	1kN	0.02 % of R.O. (0.2N)	1
LC1205-K200-USB	2kN	0.02 % of R.O. (0.4N)	1
LC1205-K500-USB	5kN	0.02 % of R.O. (1N)	0
LC1205-T001A-USB	10kN	0.02 % of R.O. (2N)	0
LC1205-T002-USB	20kN	0.02 % of R.O. (4N)	0
LC1205-T005-USB	50kN	0.02 % of R.O. (0.01kN)	2
LCC28-N050-USB	50N	0.5 % of R.O. (0.25N)	1
LCC28-N100-USB	100N	0.5 % of R.O. (0.5N)	1
LCC28-N200-USB	200N	0.5 % of R.O. (1N)	0
LCC28-N500-USB	500N	0.5 % of R.O. (2.5N)	0
LCC33-N005-USB	5N	1 % of R.O. (0.05N)	2
LCC33-N010-USB	10N	1 % of R.O. (0.1N)	1
LCC33-N020-USB	20N	1 % of R.O. (0.2N)	1
LCC33-N050-USB	50N	1 % of R.O. (0.5N)	1

- Limit the Number of Data Points Logged

If checked, recordable data will be limited to 1,048,576 data points. When this number is reached during continuous logging, recording will automatically stop. This is the number of data points that can be checked by Microsoft Excel (2007-2016). If recorded data exceeds this number and is not checked, the save file may not open with Microsoft Excel. (Initial setting: On)

- Continuous Logging Timer

This timer sets the recording time of continuous logging in seconds.

When the setting value is "0", saving will continue until stopped by the continuous logging button. However, if **[Limit the Number of Data Points Logged]** is checked, that setting is prioritized.

The setting range is from "0" to "99999". (Initial setting: 0)

- Save File Header

Sets the header name of the file. Headers can consist of up to 200 characters. (Initial setting: WinCT-DLC)

- List Update Rate

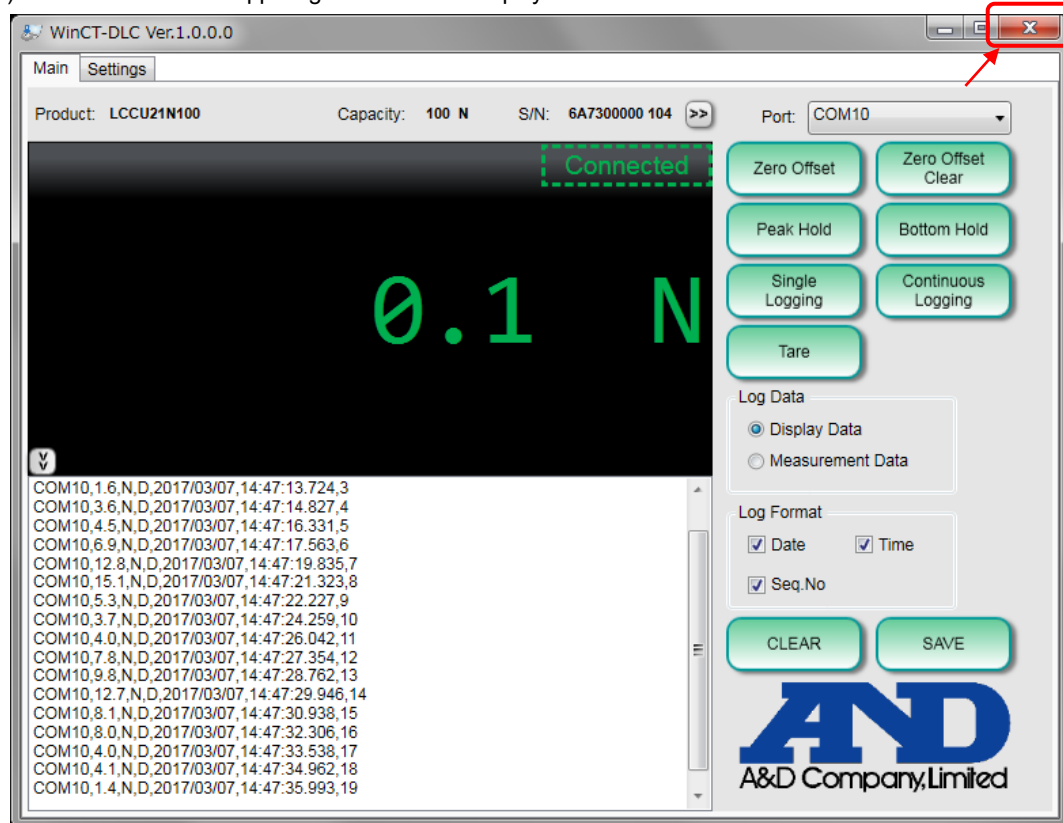
Select the rate at which the data recording is updated on the display. The value for **[Output Rate]** is prioritized if this value is larger. Reducing the value of this setting can reduce the load on the computer. (Initial setting: 10 times/s)

- Restore Default

Return all application settings to the initial values.

5.3. Closing the application

1) Select the × mark the upper right corner of the display.



2) After "Are you sure you want to exit?" displays and "Yes" is selected, the WinCT-DLC will close.(*7).

*7 If unsaved data remains, "Are you sure you want to clear this data?" will display.

Select "Yes" exit without saving.

To save, select "No" to cancel. Then press save to save the data and close WinCT-DLC once more.

5.4. Display errors

- Cannot Open COM x (x is the number of the COM Port)
This error displays when the COM Port connection can not be performed normally.
*Please confirm that the selected COM Port is not used by another application.
- Timeout Error
This error displays when there is no response from the product for a certain period of time.
*Please confirm that the cable is connected properly.
*Please confirm that the computer is not sleeping or busy.
- Response Error
This error displays when the response from the product is not normal.
*It may be caused by disturbances and noise. Please check again for a source of noise in your environment.
Refer to the instruction manual of the product for information on how to use the load cell.

5.5. Usage notes

In order to prevent possible communication failures, avoid performing operations unrelated to measurements when there is an active data connection with WinCT-DLC.

If the computer goes to sleep or the display turns off these may be problems with data transmission on measurement.

6. Q&A

Q: What is the difference between [Zero Offset] and [Tare] ?

A: Both functions are similar in that they zero the value when pressed but they do so differently and are used for different application. [Zero Offset] sets an offset from the zero point which is used as measurement reference point. This value is carried over when saving the measurement values.

[Tare] is used to temporarily zero the display and the value not used when saving measurement values.

MEMO

[illegible]