Handheld Digital Tachometer DT-2100 Specialized Software

Instruction Manual

Be sure to read before use.

Precaution

- All the rights including copyrights related to the tachometer "DT-2100", specialized software, and its relevant documents belong to NIDEC-SHIMPO CORPORATION.
- + For other precautions, refer to the terms of use described in this instruction manual.
- Some specifications differ depending on the sales area of the DT-2100.

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1. Introduction

Thank you for purchasing the Handheld Digital Tachometer "DT-2100" (hereinafter referred to as the DT-2100).

This instruction manual summarizes the operation procedure of the DT-2100 specialized software.

2. Software Operation Requirements

The software operation requirements for the DT-2100 specialized software is as follows:

Software Operation requirements

- •DOS/V compatible machines
- •Microsoft Windows® 7* (Japanese/English environment) (32 bit/64 bit)
- •Microsoft Windows® 8* (Japanese/English environment) (32 bit/64 bit)
- •Required Memory 2GB RAM

Communication method: RS-232C (Virtual COM port)

Communication protocol

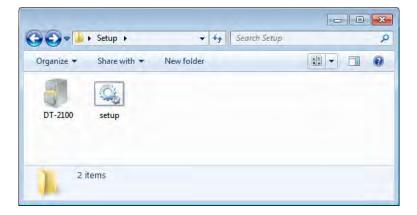
Baud rate	38400bps	
Data	8bit	
Parity	None	
Stop bit	1bit	
Flow control	None	

^{*}Microsoft and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

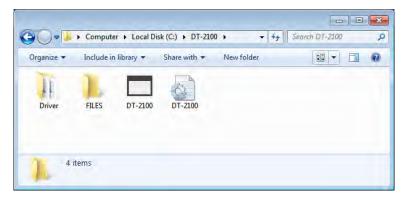
3. Installation

(1) Application installation

Double click setup.bat in the installation media "setup" folder to execute installation.



When installation is completed, the following files and folders are created under "C:\DT-2100".



(2)File configuration

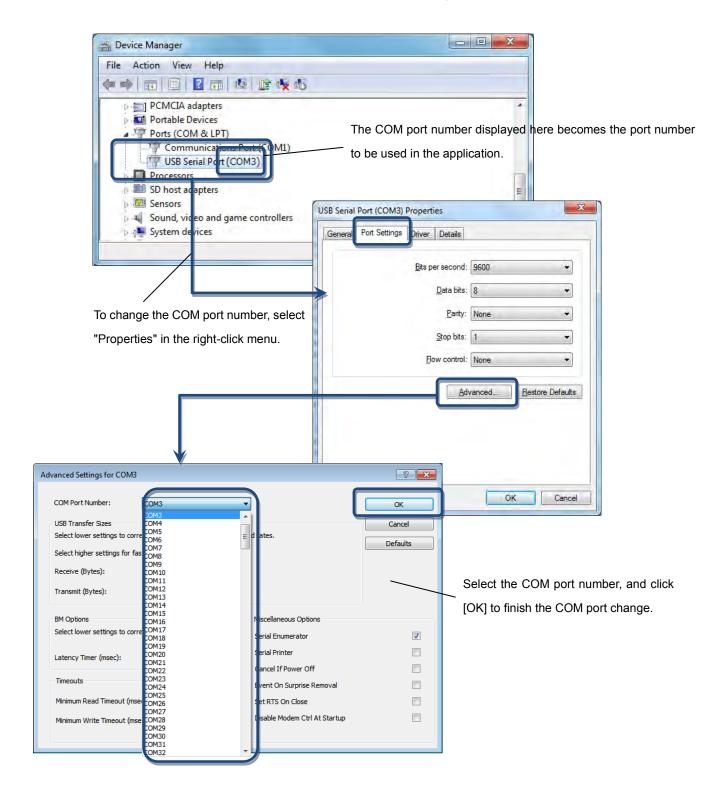
Installation	Folder		Remark
destination			
C drive	C:\DT-2100	DT-2100.exe	Execution file
		DT-2100.ini	Setting value save file
		FILES	Used for saving the CSV file
			Initial folder to be specified at the time of
			saving
		Driver	USB driver

(3) USB driver installation

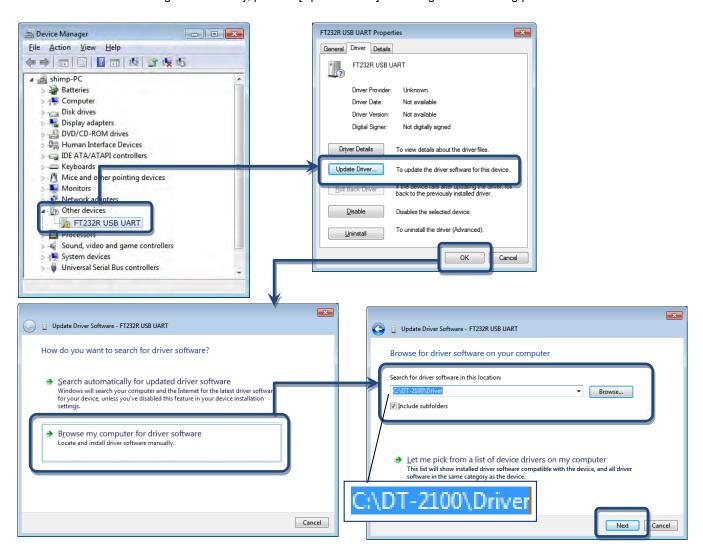
When connecting a USB device to the PC where the DT-2100 has been installed, the USB driver is automatically installed. Wait for several minutes until the installation is completed.

(4) COM port setting

Select "USB Serial Port" created under [Control Panel] - [Device Manager], and start to set the port.

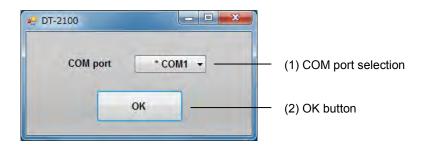


If the driver is not recognized correctly, perform [Update Driver] according to the following procedure.



Starting Application

Double click "DT-2100.exe" in the installation folder to start application.

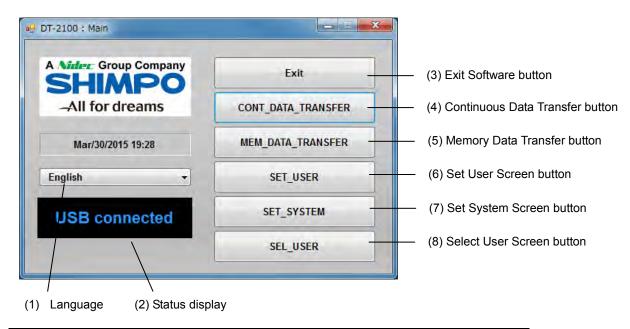


(1)COM port selection*	Select from among COM1 to COM15.	
	Detects the available ports automatically, and attaches "*" before the COM number.	
(2)OK button	Opens the selected COM port, and displays the main screen.	

^{*}Label and message descriptions depend on the language setting. (same as those for other screens)

^{*}The initial language setting is English. From the next startup, the application starts with the language set when last closed.

5. Main Screen



(1) Language selection	Select the language from Japanese or English.
(2) Status display	Displays the USB connection status.
(3) Exit button	Exits the application.
(4) CONT_DATA_TRANSFER button	Displays the Continuous Data Mode screen.
(5) MEM_DATA_TRANSFER button	Displays the Memory Mode screen.
(6) SET_USER button	Displays the SET_USER screen.
(7) SET_SYSTEM button	Displays the SET_SYSTEM screen.
(8) SEL_USER button	Displays the SEL_USER screen.

5.1 USB Connection Status

Check the connection status with the DT-2100 in the status display screen.



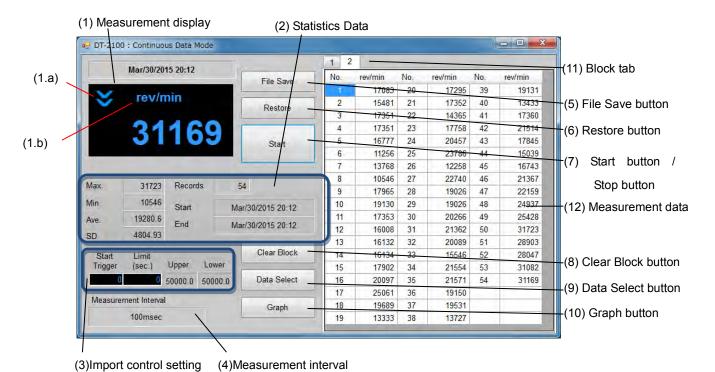
USB disconnected

Connected

Disconnected

6. Continuous Data Import Screen

Select the "CONT_DATA_TRANSFER button" in the menu to display the continuous data import screen.



(1) Measurement display	(1.a) Upper/lower judgment marks: Compared to the values specified in the user		
	setting, indicates the upper limit mark when the upper limit value is less than the		
	measurement value, and the lower limit mark when the lower limit value is more than		
	the measurement value.		
	(1.b) Measurement unit: Indicates the unit specified in the user setting, and indicates		
	"OVER" when the measured value exceeds the measurement range.		
	Measurement value: Indicates the measurement value (6 digits + decimal point).		
	When the measurement value exceeds 999999, indicates "" (hyphens).		
(2) Statistics Data	For the imported measurement data, indicates the maximum value, minimum value,		
	average value, standard deviation, the number of measurement data, and the		
	measurement start, end time. Updates during measurement.		
	For the average value, when the integer part of the calculated result has x digits, the		
	number of digits after decimal point becomes 6-x.		
(3) Import control setting	Import start trigger: After the measurement value exceeds the user defined Start		
	Trigger, importation of data begins		
	Import time limit: Importation ends when the user defined limit (sec), setting value has		
	elapsed.		
	Upper/lower judgment values: Indicates the upper/lower judgment values specified in		
	the user setting screen.		
(4) Measurement interval	Indicates the measurement interval specified in the system setting.		
(5) File Save button	Generates the save destination folder selection screen.		
	Saves the measurement data being displayed and statistics data (Max./Min./Ave./SD)		
	to the file in the CSV format.		
(6) Restore button	Indicates the file selection screen.		
	Creates a new block, and reads the selected measurement data into it.		

(7) Start button	Press the Start button to start importing the data. The Start button then becomes the
/Stop button	Stop button.
·	Press the Stop button to finish importing the data. The Stop button then becomes the
	Start button.
	During data import, buttons other than the Stop and Graph buttons, as well as the
	selection columns are disabled.
(8) Clear Block button	Click this button to display the confirmation screen. Click OK to delete the block that
	has been selected.
	When there are blocks No.1 to 4 and you delete block No.3, block No.4 is changed to
	No.3.
(9) Data Select button	Click this button to keep only the data that has been selected.
(10) Graph button	Click this button to display the Graph screen.
(11) Block tab*	Indicates the measurement data for every measurement. Up to 1000 block.
	Creates a new block for every measurement by pressing the Start button.
	You cannot switch data tabs while taking measurement.
(12) Measurement data*	Indicates the measurement value. Up to 65535 data points can be imported.
	Importing ends automatically when the maximum number of data points is attained.

^{*}The measurement data and block tab are synchronized with the graph screen.

6.1 Measurement Display

Indicates the data importing status during measurement.

(1) Measurement value

•Indicates the measurement value (6 digits + decimal point).



•When the measurement value exceeds 999999, indicates "-----" (hyphens).



(2) Upper/lower limit judgment marks

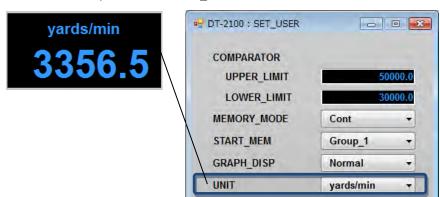
• Indicates the upper limit mark when COMPARATOR UPPER_LIMIT in the user setting is less than the measurement data.



• Indicates the lower limit mark when COMPARATOR LOWER_LIMIT in the user setting is more than the measurement data.



•Indicates the unit specified in the SET_USER.



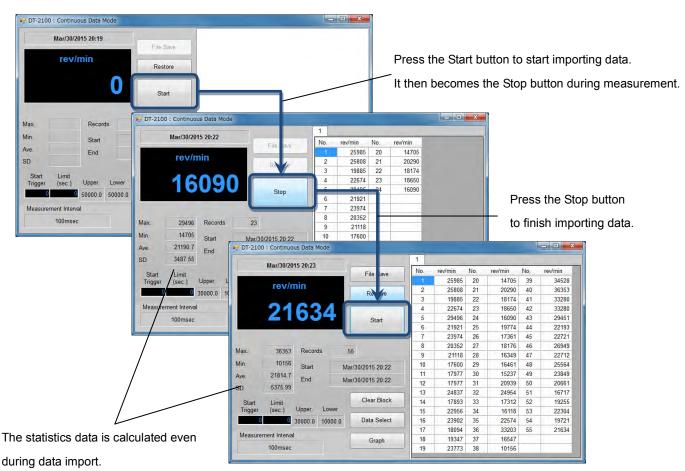
•Indicates "OVER" when the measured value exceeds the measurement range.



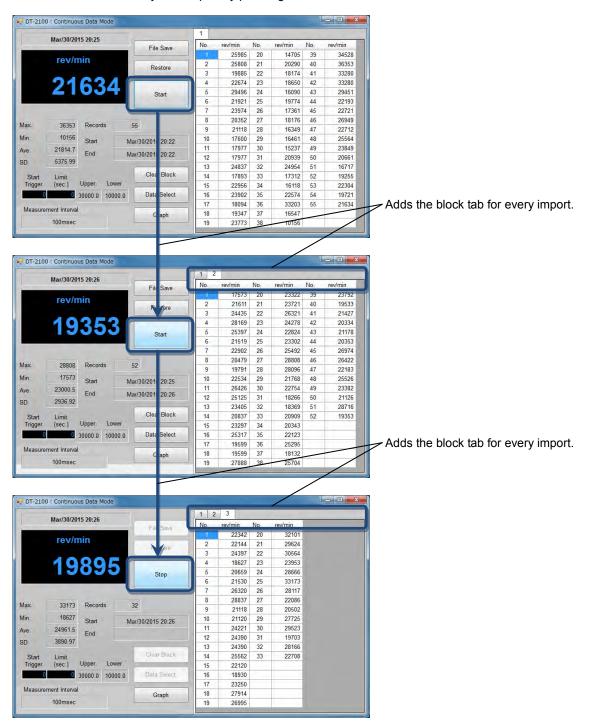
6.2 Measurement Results

(1) Measurement data

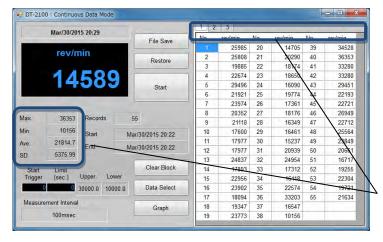
Measurement operation - 1



Adds a new block for every data import by pressing the Start button. Measurement data is retained.



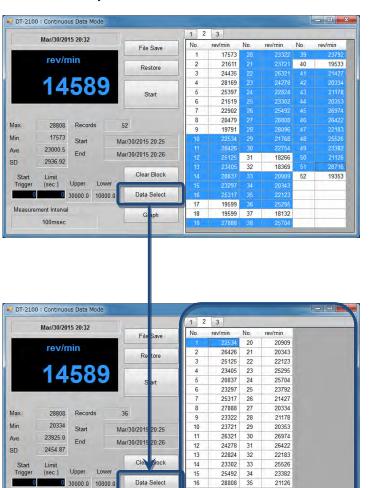
From the measurement data, calculates the maximum value/minimum value/average value/standard deviation (Max./Min./Ave./SD). Indicates and retains the data for every import.



Calculate and holds the statistics data for every import.

(3)Exporting the measurement data

Select the arbitrary measurement data. Click the Data Select button to export the selected data.



17

Graph

28096 36

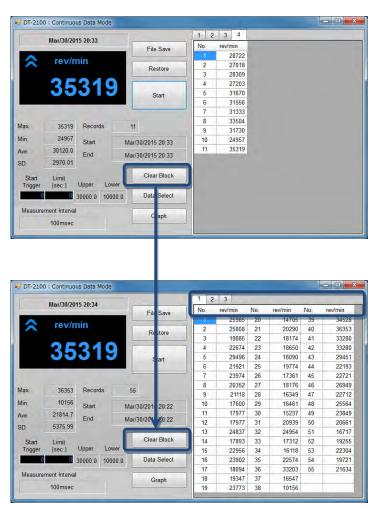
22754

*Multiple data may be selected when you press and hold the Ctrl key while clicking cells with the mouse button. Groups may be highlighted and selected by dragging the mouse while holding the Ctrl key.

100msec

28716

Click the Clear Block button to delete the block tab that has been selected.



6.3 CSV File Operation

The measurement results can be saved in or read from the arbitrary CSV file.

• Save the measurement results in the CSV file

Click the File Save button to display the "Save as" dialog window.

Specify the arbitrary file name and save destination and click the save button to save the setting contents.

• Read the measurement results from the CSV file

Click the File Save button to display the "Open" dialog window.

Select the CSV file you want to open and click the "Open" button.

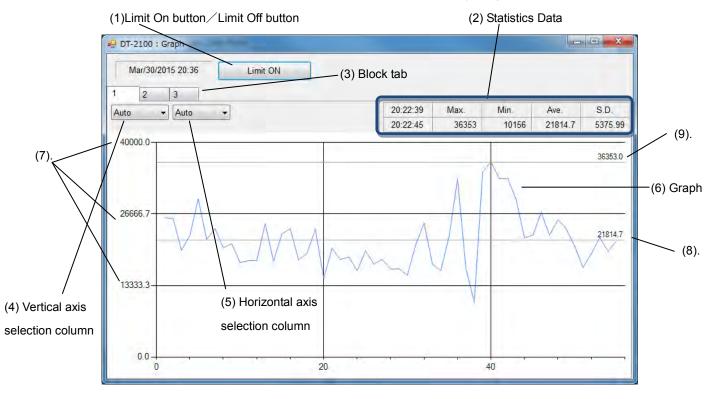
A new block tab is created and the measurement data as well as statistics data are displayed in the tab.

Only CSV files that have been saved with this application can be opened here.

If you try to open files other than those specified above, they cannot be opened normally.

7. Graph Screen

Select the "Graph button" in the continuous data import screen to display the graph screen.



(1)Limit On button / Limit	Press the Limit On button to draw the upper/lower limit graph. The Limit On button	
Off button	then becomes the Limit Off button	
	Press the Limit Off button to erase the upper/lower limit graph lines. The Limit Off	
	button then becomes the Limit On button	
(2) Statistics data	For the imported measurement data, indicates the maximum value/	/minimum
	value/average value/standard deviation, the number of measurement data	, and the
	measurement start/end time. Updates during measurement.	
	For the average value, when the integer part of the calculated result has x of	digits, the
	number of digits after decimal point becomes 6-x.	
(3) Block tab	Synchronized with the block tab in the continuous data import screen, stores the	
	measurement data and statistics data.	
(4) Vertical axis selection	Select the maximum value on the vertical axis and specify the measuren	ment data
column	range.	uto 🔻
	l Dangoo danand an agah unit catting	uto 100000
	l it the measurement data does not tit within the rande, the scroll har 🔛	0000
	I DECULIES ELIADIEU LO ALIOW VOU LO SCIOII UD OL UOWIT LITE COIUITITI.	0000
	If the Auto setting is selected, it switches the range automatically based	000
	on the measured data.	600 600

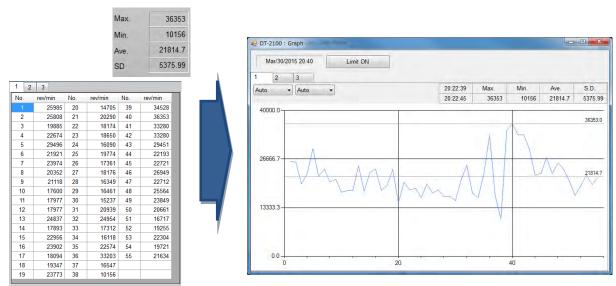
(5) Horizontal axis selection column	Select the maximum value on the horizontal axis. Auto: Automatically adjusts to the time during measurement. Limit: Applies the Limit setting in the USB main screen. When the Limit is 0, the range setting is same as that for the Auto. 10sec, 100sec, 300sec: Sets to the specified measurement time. If the measurement data exceeds the setting range, the scroll bar becomes enabled to allow you to scroll up and down the column.	
(6) Graph	Indicates the real-time graph.	
(7) Graph values	Indicates the maximum graph value divided into three	
(8) Average value	Indicates the average value of measured data	
(9) Max value	Indicates the maximum value of measured data	

7.1 Graph Drawing

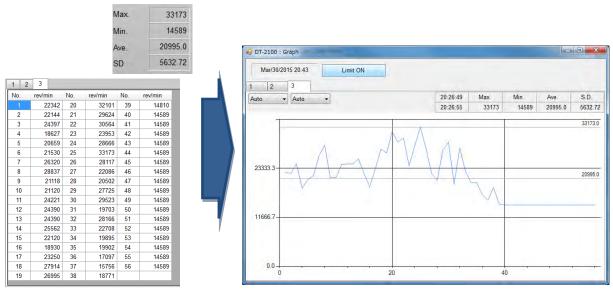
(1) Synchronization of measurement data and statistics data with the continuous data import screen

The graph and statistics data to be displayed are synchronized with the block tab in the continuous data import screen.

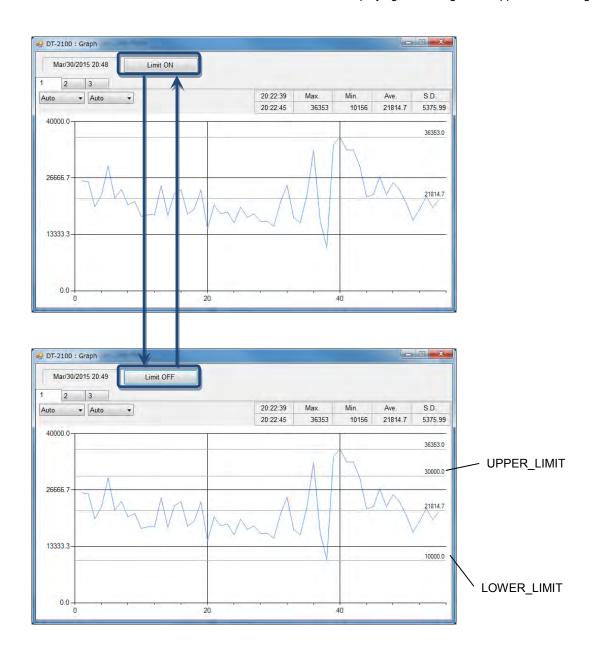
The 1st measured data



The 3rd measured data

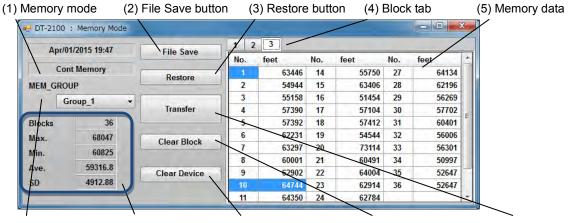


Use the Limit On button/Limit Off button to switch between displaying and hiding of the upper/lower limit graph.



8. Memory Data Import Screen

Select the "MEM_DATA_TRANSFER button" in the menu to display the memory data import screen.



(6) MEM GRO	UP (7) Statistics data	(8)Clear Device button	(9) Clear Block button	(10) Transfer button

(1) Memory mode	Indicates the memory mode specified in the user setting.	
(1) Wellioty Hode	indicates the memory mode specified in the user setting.	
(2) File Save button	Indicates the save destination folder selection screen.	
	Saves the memory data being displayed to the file in the CSV format.	
(3) Restore button	Indicates the file selection screen.	
	Creates a new block, and reads the selected memory data into it.	
(4) Block tab	Indicates the measurement data every time the memory data is read from the DT-2100. Up	
	to 1000 blocks.	
(5) Memory data	Indicates the memory data that has been read.	
	The contents depend on the measurement mode (continuous memory/each	
	memory/statistics memory).	
(6) MEM_GROUP	Select the MEM_GROUP.	
(7) Statistics Data	Indicates the maximum value, minimum value, average value, and standard deviation for the	
	selected block number. Indicates the number of memory data in Blocks.	
(8)Clear Device button	Click this button to display the confirmation screen. Click OK to delete the memory data for	
	the MEM_GROUP that has been selected.	
(9)Clear Block button	Click this button to display the confirmation screen. Click OK to delete the block that has	
	been selected.	
(10) Transfer button	Reads the memory data for the MEM_GROUP that has been selected.	

8.1 Continuous Memory

Displays "No." and the corresponding "measurement value" recorded on the first row of the memory data, and the serial number and memory data below them.

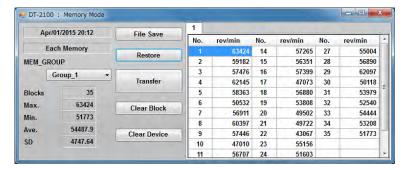
Indicates the statistics data corresponding to the memory data on the statistics data column.



8.2 Each Memory

Displays "No." and the corresponding "measurement value" on the first row of the memory data, and the serial number and memory data below them.

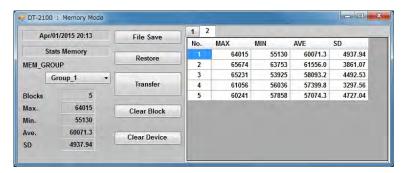
Indicates the statistics data corresponding to the memory data on the statistics data column.



8.3 Statistics Memory

Indicates "No.", "MAX", "MIN", "AVE", and "SD"on the first row of the memory data, and the serial number and memory data below them.

Indicates the selected memory data on the statistics data column.



8.4 CSV File Operation

The measurement results can be saved in or read from the arbitrary CSV file.

• Save the measurement results in the CSV file

Click the File Save button to display the "Save as" dialog window.

Specify the arbitrary file name and save destination. Click the save button to save the setting contents.

• Read the measurement results from the CSV file

Click the File Save button to display the "Open" dialog window.

Select the CSV file you want to open and click the "Open" button.

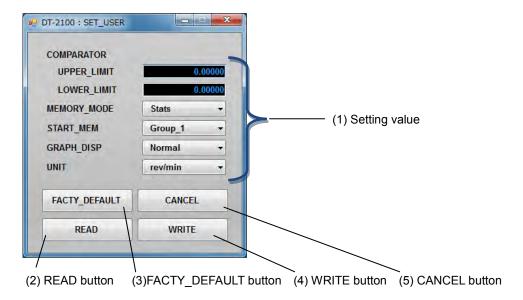
A new block tab is created and the measurement data as well as statistics data are displayed in the tab.

Only CSV files that have been saved with this application can be opened here.

If you try to open files other than those specified above, they cannot be opened normally.

9. SET USER Screen

Select "SET_USER button" in the menu to display the SET_USER screen.

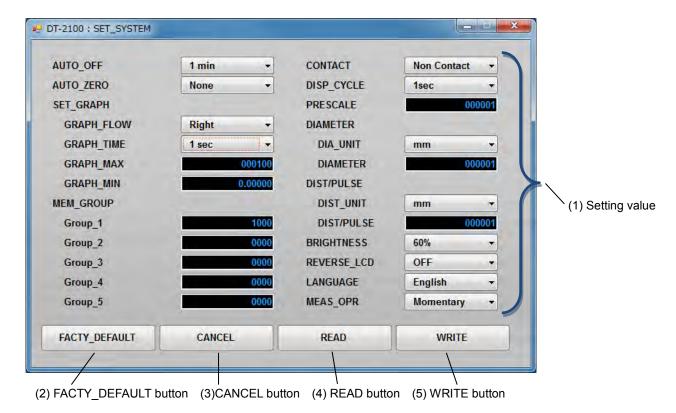


(1) Setting value	COMPARATOR	_	
	UPPER_LIMIT	Enter 0.00000 to 999999 (0.00000)	
	LOWER_LIMIT	Enter 0.00000 to 999999 (<u>0.00000</u>)	
	MEMORY_MODE	Select from Cont, Each, or Stats	
	START_MEM	Select from Group 1 , Group_2, Group_3, Group_4, or	
		Group_5	
	GRAPH_DISP	Select from Normal, Graph_1, Graph_2, or Graph_3	
	UNIT	Select from the following items	
		rev/min, m/min, cm/min, inch/min, feet/min, yards/min,	
		rev/sec, m/sec, cm/sec, inch/sec, km/h, miles/h, cm, m, km,	
		inch, feet, yards, or STP	
(2) READ button	Reads the current user setting information from the DT-2100.		
(3) FACTY_DEFAULT	Indicates the factory default values.		
button			
(4) WRITE button	Saves the user setting in the DT-2100 and returns to the main screen.		
	If the MEMORY_MODE value is different from the current setting value in the		
	DT-2100, the confirmation message (OK/Cancel) is displayed.		
(5) CANCEL button	Returns to the main screen without saving the changed content.		

Note: default value indicated in bold letters

10. SET SYSTEM Screen

Select "SET_SYSTEM button" in the menu to display the SET_SYSTEM screen.



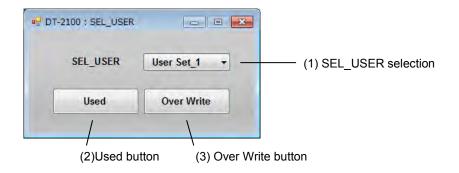
(1) Setting value	AUTO_OFF	Select from 1min, 10min, or 30min	
	AUTO_ZERO	Select from 1sec, 10sec, 30sec, 60sec, or None	
	SET_GRAPH	_	
		Select Right or Left	
	RAPH_FLOW		
		Select from 1sec, 10sec, 50sec, or 100sec	
	GRAPH TIME		
	_	Enter 0.00001 to 999999 (000100)	
	GRAPH MAX	,,	
	_	Enter 0.00000 to 999999 (0.00000)	
	GRAPH MIN	,,	
	MEM GROUP	_	
	Group_1	0 to 1000/100/100 (Cont/Each/Stats)	
	Group_2	<u>0</u> to 1000/100/100 (Cont/Each/Stats)	
	Group 3	<u>o</u> to 1000/100/100 (Cont/Each/Stats)	
	Group_4	<u>0</u> to 1000/100/100 (Cont/Each/Stats)	
	Group_5	<u>o</u> to 1000/100/100 (Cont/Each/Stats)	
	CONTACT	Select from Contact, Non Contact, Auto, or Contact(Low)	
	DISP_CYCLE	100msec, 500msec, 1sec , 5sec	
	PRESCALE	Enter 0.00001 to 999999 (000001)	
	DIAMETER		
	DIA UNIT	Select from mm , cm, m, inch, feet, or yards	
	DIAMETER	Enter 0.00001 to 999999 (000001)	
i	DI/ (IVIL I LIX	Litter 0.00001 to 000000 (<u>000001</u>)	

	DIST/PULSE	_	
	DIST_UNIT	Select from mm, cm, m, inch, feet, or yards	
		Enter 0.00001 to 999999 (000001)	
	DIST/PULSE		
	BRIGHTNESS	Select from 20%, 40%, <u>60%</u> , 80%, or 100%	
	REVERSE_LC	Select OFF or ON	
	D		
	LANGUAGE	Select Japanese or English	
	MEAS_OPR	Select Momentary or Continuous	
(2) FACTY_DEFAULT button	Overrides the factory default values.		
(3) CANCEL button	Returns to the main screen without saving the changed content.		
(4) READ button	Reads the current system setting information from the DT-2100.		
(5) WRITE button	Saves the system setting in the DT-2100 and returns to the main screen.		

Note: default value indicated in bold letters

11. SEL USER Screen

Select "SEL_USER button" in the menu to display the SEL_USER screen.



(1) SEL_USER selection	Select SEL_USER from User Set_1, User Set_2, or User Set_3.
(2) Used button	Reads the user setting and system setting contents for the selected SEL_USER.
(3) Over Write button	Writes the contents specified in the user setting and system setting for the selected
	SEL_USER.

12. Error Message List

Error Message	Cause	Countermeasure
Language file not found.	A valid localized file does not exist in the "lc" folder	Perform reinstallation of this application.
DT-2100 Communication failure. Check connection. OK	The DT-2100 cannot communicate normally with PC Or the COM port number is incorrect	Check communication between the DT-2100 and PC, as well as the power supply. Check the COM port number from the Device Manager.
DT-2100 Choose the data file imported as Each memory data. OK	Tried to open continuous data CSV file in the MEM_DATA_TRASFER screen.	Open the measurement data saved in the memory data import screen.
Choose the data file imported as Cont memory. OK	Tried to open memory data CSV file in the CONT_DATA_TRASFER screen.	Open the measurement data saved in the measurement data import screen.
No memory data in {0}. OK	There is no memory data in the group where the memory is imported	Create the memory data. *The target group is shown in {0}.
Choose Cont memory data file. OK	In the memory data import screen (continuous memory mode), tried to open the measurement data saved in modes other than the continuous memory mode	Open the measurement data saved in the continuous memory mode
© DT-2100 Choose Each memory data file. OK	In the memory data import screen (each memory mode), tried to open the measurement data saved in modes other than the each memory mode	Open the measurement data saved in the each memory mode

Choose Stats memory data file.	In the memory data import screen (statistics memory mode), tried to open the measurement data saved in modes other than the statistics memory mode	Open the measurement data saved in the statistics memory mode
□□ DT-2100 Input {0}. OK	There is a blank in the input item of the user setting screen and/or system setting screen	*The target item name is shown in {0}.
Input the value between {1} ~ {2} for {0}.	There is the value beyond the specified range in the input item of the user setting screen and/or system setting screen	Enter the correct value within the specified range. *The target item name is shown in {0}. *The lower limit value of the range is shown in {1}. *The upper limit value of the range is shown in {2}.
Input the value under decimal point of {1} for {0}. OK	There is a wrong input item of the user setting screen and/or system setting screen	Enter the correct value.
Over the capacity of importing data. Stop importing.	When reading files for data measurement and continuous data, the number of tab blocks exceeds the maximum number	Delete the existing tab blocks so that the maximum number of the tab blocks does not exceed 1000.
File save failure. OK	An error occurred while saving a file.	Check that the save destination folder exists. If not, create a folder. Check that you have write permission into the save destination folder. If not, perform the write permission setting. Check that the free space is sufficient on the drive. If not, secure the free space.
File read failure.	An error occurred while reading a file	The file may be corrupt. Select the file in the correct format.

Irregular setting: UPPER_LIMIT < LOWERLIMIT OK	In the user setting screen, the LOWER_LIMIT value is higher than the UPPER_LIMIT value	Set the UPPER_LIMIT value higher than the LOWER_LIMIT value.
Irregular setting: GRAPH_MAX < GRAPH_MIN OK	In the system setting screen, the GRAPH_MIN value is higher than the GRAPH_MAX value	Set the GRAPH_MAX value higher than the GRAPH_MIN value.
Please check the mode.	Measurement data cannot be imported correctly from the DT-2100	Check that the DT-2100 is in the correct mode for measurement.
Start measuring with DT-2100.	The Start button was pressed when the DT-2100 was not in the measurement mode	Start measurement.
DT-2100 If the memory mode is changed, the memory data will be reset. Do you want to continue? OK Cancel	This message is displayed when you have changed the memory mode value in the user setting screen, and have clicked the WRITE button.	Select "OK" to initialize the memory data, and switch the memory mode. Select "Cancel" to avoid switching the memory mode.
DT-2100 If the memory group is changed, the memory data will be reset. Do you want to continue? OK Cancel	This message is displayed when you have changed the memory group value in the system setting screen, and have clicked the WRITE button.	Select "OK" to initialize the memory data, and change the memory group. Select "Cancel" to avoid changing the memory group.
The memory data will be reset. Do you want to continue? OK Cancel	This message is displayed when you have clicked the Clear Device button in the memory data import screen.	Select "OK" to initialize the memory data. Select "Cancel" not to initialize the memory data.
Selected tab will remove. OK Cancel	This message is displayed when you have clicked the Clear Block button in the memory data import screen.	Select "OK" to delete the selected tab. Select "OK" not to delete the selected tab.

Terms of Use

Please read the conditions of use below carefully before using this Special software of Handheld Digital Tachometer DT-2100 (hereinafter referred to as "this software"). By using this software, the user shall be subject to the terms and conditions below.

1. Rights

Nidec-Shimpo Corporation (hereinafter referred to as "the company") shall grant the user a license to use this software only for our company's products; provided, however, that the company shall retain all rights including, but not limited to, the copyrights related to this software and applicable documentations.

2. Restrictions

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14. Communication Commands

For communication commands, refer to the "RS232C Command List".